United States
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September 1979

EPA

Resource Recovery MANAGEMENT MODEL

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October 1, 1979

PREAMBLE

In this country progress has been painfully slow in attempting to make constructive use of our municipal waste. It is disturbing to realize that, as we face both the resource potential and the disposal burden of the 145 million tons generated annually, the slow progress is not being accelerated by the present energy crisis and mounting land disposal issues. However, there is a clear reason for that slow advancement, and with the publication of this document the Environmental Protection Agency is addressing what numerous studies and inquiries have identified as the most significant deterrent to implementing resource recovery projects, that is the incredibly complex planning process.

The many factors which contribute to the complexities are quite elusive, and not thoroughly understood by everyone attempting a project. As a result, numerous projects have failed to advance very far, have fallen short of their technical objectives, or have been subjected to extensive time delays and unreasonable additional costs. Up to this point in time a community

contemplating a resource recovery project has not been able to capitalize on the experiences of others in attempting to avoid such problems. This Management Model was thus developed to provide that kind of information and assistance.

Before undertaking its development, EPA consulted many outside sources about the need for such a model, and the uses it may serve. The responses were unanimous in their support of its merits, and in the belief that it would serve well to help communities avoid the heretofore consistent problems associated with inadequate analysis of waste streams and disposal issues; inadequate study of available options, economic considerations, and political sensitivities; inadequate market analyses, and insufficient public participation, inadequate timing and budget projections; as well as the problems associated with the turnover of project personnel and elected officials.

The Model was developed with two goals in mind: first, to provide a comprehensive description of all of the activities that are necessary to conduct a resource recovery project, and second, to present this information in a form that is easy to understand and which lends itself to assist those responsible for the day-to-day management of a project.

EPA engaged the professional services of The MITRE Corporation to develop the details of the Model. In addition, to ensure

the broadest source of experience as input, EPA assembled an Advisory Panel composed of seven men whose unique qualifications of knowledge and experience in this field are widely recognized. Their role in guiding both EPA and The MITRE Corporation in the preparation of the Model was significant, and their services are given separate acknowledgement elsewhere in the front of this document.

In addition to the broad input from the Advisory Panel, the Model was prepared in draft, with some 50 copies distributed for review to recognized authorities in the field of resource recovery, including U.S. EPA headquarters and regional offices, Technical Assistance Panels contractors, private industry, financial advisors, management and engineering consultants, and professional associations. Many comments were received, virtually all in strong support of the effort. Along with the support, however, some concerns were expressed regarding the size (or bulk) of the Model, its rigidity, usefulness, level of detail, extensive use of abbreviations, estimates of work effort and funding, network logic, time frames, and certain series of activities. All of these concerns were carefully considered by the Advisory Panel, and all but a few comments were accepted as feasible and appropriate, and have resulted in modifications to this final document.

In response to the expressed concern of the size of the Model, an abbreviated version called an OVERVIEW, has been prepared for elected officials and other decision-makers at all levels.

Reflecting the need for private sector involvement, the Model has also been revised to call for the early solicitation of private industry capabilities and suggestions.

In summary, the Model is designed as a roadmap, charting a course through the entire spectrum of resource recovery activities required for a thorough planning effort, reflecting the experiences of many professionals who have covered the route. It is axiomatic that no standard procedure will cover every conceivable situation at every possible location. While one specific route is charted and recommended, the Model acknowledges the need for adapting to local situations on occasion, and is, therefore, conceived with the flexibility to be tailored to local needs. The Model should be the basis for all planning actions; experience has shown that the indicated activities must be considered in order to avoid overlooking important steps. Many projects have suffered serious setbacks by attempted "short-cuts". If, however, a strong jusitification is made by the project manager, the Model can be tailored to suit local requirements, AS LONG AS THE RISKS ARE UNDERSTOOD. The detailed information referenced to

each activity will help the manager to understand those risks. Even if changed, in providing the foundation for the planning and forcing such thoughtful analysis, the Model will have served its purpose.

It is the intention of this Agency to update the Model in future years as experience dictates. For that reason constructive criticisms are earnestly solicited.

Albert A. Peter, Jr.
Director
Land Disposal Division

(former Director
Resource Recovery Division)

ACKNOWLEDGEMENTS

EPA selected organizations and people with extensive practical experience in the field to assist in development of this Resource Recovery Management Model. The Metrek Division of The MITRE Corporation prepared the Management Model under contract to EPA (Contract No. 68-01-5809 printed as MTR 79W00320 coauthored by R. T. Felago and P. J. Stoller). To ensure that the Model will meet the needs of those regional, state, and local officials for whom it is intended, its preparation was guided by an Advisory Board of public sector leaders in the field of resource recovery. EPA expresses its appreciation to these dedicated people for their active involvement in and essential contributions to the preparation of this document. The members of the Advisory Board are listed below.

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State of California Solid Waste Management Board

RESOURCE RECOVERY

MANAGEMENT MODEL

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RESOURCE RECOVERY MANAGEMENT MODEL

Introduction

General Discussion

Resource recovery refers to the collection and reuse of solid waste, generally residential and commercial waste, for the production of commodities in the form of energy and materials, either at a central processing facility or by source separation, or both. This effort has gained recognition over the last decade as a partial solution to two major problems confronting this country: the need for environmentally sound disposal of solid wastes, including the need to reduce dependence on land disposal; and the need for alternate energy sources, including energy conservation. While the concept is not new, the potential in more communities for its use as a method for solid waste disposal has stimulated rapid growth in both large and small scale systems technology.

Key Questions

In considering resource recovery the following key questions must be addressed and resolved:

- Is sufficient refuse available to support a resource recovery project and can it be committed in the long term to a facility?
- Do realistic long-term markets for energy and materials products exist?
- Are sites and technologies available which are environmentally sound and politically acceptable?

- Do local laws permit procurement options and necessary contractual agreements?
- Is the project financially feasible?
- How does resource recovery compare to the non-recovery disposal alternatives?

Failure to address any one of these key questions may make project implementation impractical. The inability to obtain any critical item, such as a facility site, energy market, or adequate waste supply can spell the termination, or at least the postponement, of a project. The Management Model shows what tasks must be done and where in the planning process they should be accomplished. The Model is presented in considerable detail, which is necessary for those with limited experience in the field, and useful as a checklist for those with more experience.

The Need for a Management Model

Because of the time span over which planning and procurement of resource recovery facilities takes place, events such as a change in project manager, departure and replacement of a key appointed official, or a newly elected official taking office, can be expected to occur, as well as changes in laws and regulations. The Model provides a systematic approach for charting progress already accomplished, thus helping to maintain project continuity and mitigate a tendency towards the unnecessary retracing of steps.

Recent experience in resource recovery projects indicates that some of the difficult decisions were not addressed in a timely and proper manner; thus time, effort and money have been wasted. The Model is intended to "close the gate" on continuing a project until a needed decision is made, then the gate will be opened to continue with the next major phase. These gates are political decisions conducted publicly based upon written documentation.

The Model allows new projects to benefit from past experience in resource recovery implementation by identifying for project managers the critical decisions in the project which must be made before succeeding activities can begin. It defines the proper relationship of all activities and decisions. This should result in improved decisions and smoother implementation with less redundancy of effort.

Description of the Management Model

The Model is constructed in four phases. Phases I, II, and III are identified as Feasibility Analysis, Procurement Planning, and System Procurement, respectively. These three phases are preceded by a Phase 0, Initial Resource Recovery Feasibility Screening, denoting certain steps necessary to decide if there is a strong reason not to study and plan for a resource recovery project.

Phase 0 depicts an informal preliminary review of certain information which enables decision makers to become aware of the potential for resource recovery even though the information may emerge from past planning efforts. The numeral 0 is used to stress that this phase is less formal than others since it is a test of whether or not local conditions preclude consideration of resource recovery. The function of Phase 0 is to investigate in rough terms whether to proceed with a resource recovery program at all.

Phase I, Feasibility Analysis, includes an evaluation of the feasibility of resource recovery and preliminary identification of alternatives, including source separation and co-disposal. This phase should develop the basis for a decision to terminate, postpone, or proceed. It also includes activities necessary to construct a preliminary implementation strategy.

Phase II, Procurement Planning, further develops all elements leading to system procurement, including obtaining options to

purchase sites with associated environmental analysis and public meetings, strengthening market and waste supply commitments, risk allocation, and selection of a preferred procurement and financing approach.

Phase III, Procurement, covers the steps required for system procurement, including waste supply, market, construction, and operation (if applicable) contracts, necessary preconstruction permits (and associated environmental analysis), and obtaining the debt or equity capital to finance the project.

Towards the end of Phases 0, I and II, a formal report (or statement) is prepared documenting the results and presenting a recommended course of action and associated budget for the next phase. Using the report as a basis, a political/public decision is made either to proceed or terminate.

Major Issues

Major ongoing issues which must be considered in all phases include:

- Public participation
- Environmental considerations
- Waste reduction
- Source separation
- Phase-over planning
- Project communications
- Assessment of industry roles and offers

Public Participation

The public may be involved in the project development in many ways, such as public meetings and hearings, presentations, advisory groups, newsletters, assistance and coordination. The presentation

of issues at an early stage promotes an atmosphere of openness and mutual trust.

History has taught us that early and continuing presentation of issues to the public is essential in gaining public confidence in any program. Not only should the public be informed early, but also continuously for the duration of the project. The importance of this cannot be over-emphasized, nor should the lessons be forgotten of the consequences of past failure to do this. Without public dialogue the project may be undermined for no more sufficient reason than a perceived lack of informed and well-structured process or for the substantial reason that the project does not meet the community's goals and desires.

Environmental Considerations

Depending upon the individual state and local environmental assessment requirements, different environmental analyses may be necessary. The Model contains three types of environmental review. The first is an initial screening in the Feasibility Analysis phase; the second is a refinement of environmental criteria and analytical work, principally site selection (Procurement Planning phase); the third may be an Assessment or a full Environmental Impact Statement which is system-specific and occurs after selection of a system or completion of preliminary design (Procurement phase).

In areas of air quality non-attainment, additional monitoring may be required to be completed prior to design and construction of the facility. This action may be initiated early and may continue throughout a large part of each phase. The Model is more concerned with the position in the process of the completion and in some cases may leave the decision about when to commence this work up to local requirements and local customs. Use of the Model should allow careful and timely consideration of all environmental restrictions which have typically impacted on resource recovery projects.

Waste Reduction

Waste reduction generally refers to reducing the quantity of solid waste generated so that there is simply less waste for disposal in landfills, for resource recovery, or for source separation. The reuse and recycling of beverage containers is an example of waste reduction because fewer containers enter the municipal waste stream.

While the Model is used independently of waste reduction, the two are compatible. The only adjustment needed in the resource recovery planning process is a revision of the estimates of solid waste quantity and composition which will be available to the resource recovery system after all reasonably forseeable waste reduction systems are in place. The Model does not detail a method for introducing waste reduction, but recognizes its potential and allows ample opportunity for a project manager to factor waste reduction into the overall resource recovery management plan.

Source Separation

Source separation is defined as the setting aside of recyclable waste materials at their point of generation for segregated collection, transport, and delivery to specialized waste processing sites or final manufacturing markets.

The Model encourages and promotes the pursuit of a source separation program, either independently or in conjunction with a larger scale program. Analysis of a source separation program is placed early in the consideration of solid waste resource recovery processes. In some cases, source separation may be the only viable recovery program available to a locality.

The Model indicates that source separation is carried out independently, but at specific points is factored into the Master

Network because the municipal decision process may occur on both systems at the same time. See also the special note regarding source separation in the "Using the Model" section.

Phase-over Planning

Most resource recovery projects represent long-term solutions to solid waste disposal for communities. One must, however, count on substantial time to elapse between the initiation of resource recovery planning and the actual commencement of resource recovery plant operation. The transition from the existing solid waste management system to the initiation of the long-term resource recovery program is the phase-over period.

In many cases interest in resource recovery is initiated by a need to abandon the current system, such as an incinerator with excessive emissions or a landfill reaching capacity. In cases such as these, the program manager has two concurrent tasks -- the first is to plan for the shorter term phase-over solid waste management needs, and the second is to plan for the long-term resource recovery program.

Although phase-over planning is required immediately, it should progress along and be compatible with the long-term planning represented by this Management Model. While the two planning functions are often concurrent, and while some of their respective activities may be interdependent, the two planning activities may be separate and distinct. Where possible, the same project manager or task force should be involved in both activities. The primary problem is to avoid actions of a short term or "phase-over" nature that are inconsistent with the long range goal.

It is not the purpose of this Model to address phase-over planning. While the need is acknowledged, as well as points of interdependence (e.g., site selection and size, residual disposal),

the Management Model is designed to assist the project manager in implementation of only the resource recovery program. Concurrent functions, scheduling constraints and other problems facing the municipality must be resolved by the project manager responsible for the function.

Project Communications

There is a need in every project, because of the time which may elapse in activities, to maintain contact with members of the participating organizations especially during periods of low activity. For example, after letters of intent are received from markets, time passes while public presentations and political decisions are made. Project momentum should be continued by the project manager, and continuous contact should be maintained with markets and member municipalities so that they are kept constantly up to date and interest and desire for participation is not lost.

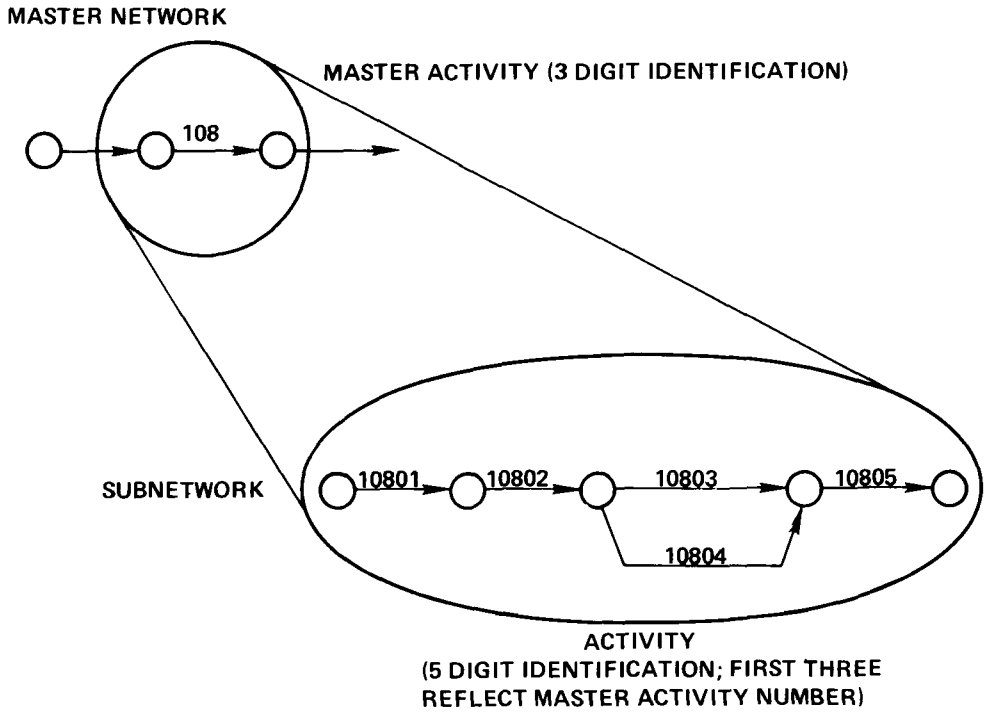
Assessment of Industry Roles and Offers

Throughout the course of the project private industry may occasionally offer to solve the solid waste problem being addressed by the resource recovery project. The project manager should realize that the key questions (found on page 1 of the Introduction) must still be answered. If industry has answered more of these questions than the community, it may be appropriate to entertain involving that industry, using the Model as a guide to monitor the industry progress.

Selection of one firm above others may be subject to reexamination (and possibly reversal) at a later date. Such a selection therefore constitutes a risk of wasting both the government's and private industry's time and money; thus it should be selected only after careful consideration of its legal and political implications.

General Structure

The Model is structured on multiple levels, each of which provides an increasing amount of detailed information to the user.



RELATIONSHIP OF A TYPICAL SUBNETWORK TO THE MASTER NETWORK

Master Network, Master Flow Chart and Master Activity Sheets

The first level of information is provided by the Master Network and Flow Chart, which illustrate sixty Master Activities spread throughout the four phases. They describe the major work items which must be addressed, their recommended sequence, and the elapsed times expected for each Master Activity (see Time Frame and Task Completion, below) and are accompanied by Master Activity Sheets which describe and summarize the purpose, description, requirements, necessary resources, and other pertinent data for each Master Activity, as well as references and sample documents.

Subnetworks and Activity Sheets

Virtually all of the Master Activities are comprised of a number of more detailed activities; thus a second level of networks, designated Subnetworks, is provided. Nearly every Master Activity has an accompanying Subnetwork with associated Activity Sheets. The Activity Sheets provide additional information about the Activities including purpose, description, further steps within the Activity, obstacles, and decisions, as well as indications of appropriate references and sample documents.

Adapting The Model for Use

The Resource Recovery Management Model is intended to be just that -- a Model. It is not intended to illustrate the implementation needs of every individual project, but rather to present the activities common to most projects and their suggested sequence. The Model forces consideration of a logical progression of events which must be addressed, some of which will undoubtedly be tailored to individual project requirements. This specific tailoring should be performed at the local level by the project manager in conjunction with the project team responsible for resource recovery implementation.

Many municipalities may begin using this Model while their individual projects are already in one of the four phases. Use of the Model does not require return to the start of Phase 0, but encourages the user to continue from the current point to completion via the steps of the Model. If an activity that a municipality has not yet considered is shown to appear earlier in the logic sequence in the Model than the point of entry by the municipality, that step should be completed before proceeding further. If, however, all previous steps have been essentially completed, then progressing immediately via the route outlined by the Model is encouraged.

Small Scale Systems

Much resource recovery planning activity is expected for the smaller scale "modular" facilities. Although the general procedure provided by the Model, as well as activity sequence and interrelationships are the same for both large-scale and small-scale systems, time and cost estimates are comparably smaller for projects of smaller scope and lesser complexity.

Time Frames

Resource recovery projects are quite complex, requiring a large number of activities, inputs, and decisions to be meshed smoothly in order to succeed. The average times in calendar weeks shown on the Model are illustrative only; they indicate how much time is required to accomplish the activities, given a team of people with some experience in resource recovery, and with average complications. However, potential setbacks can occur in a project which can take literally months or even years to rectify. Activities such as siting, test case litigation, or securing multi-municipal waste supply arrangements can drag on and on.

All of the time frames selected will probably not fit actual situations, but they offer a reasonable overall estimate of the entire project time frame, particularly for the larger systems.

During development and review of the model, considerable discussion was given to the "fast-track" method of procurement planning. From a management standpoint, fast-tracking in essence means paralleling some of the activities now shown as sequential. The model represents a conservative approach to resource recovery implementation by its sequencing. If, however, the project director and project manager, in conjunction with the consultant and project team examine carefully the options of waiting for the activity to be completed, or of accepting the risk and moving on, then this paralleling of activities or fast-tracking can be used. The model indicates

how to reduce risks by sequencing activities, but acknowledges the possibility of increasing risks to reduce time required. If everything works out, time may be saved; if not, the risk is that time and money may be lost, if the activity originally expected to be completed by a certain time does not actually occur or if the outcome of the activity is not what was expected.

Task Completion

Project participants must use their judgment to decide when the tasks are essentially complete. Consider as an example the task of sampling boilers in the project area in the search for energy markets. If there are 20 industrial boilers in an area, and 18 (including all the largest) have been located, with some believed to offer good potential, and collectively have the potential to use 2 or 3 times the energy available in the waste, then the boiler analysis task may be considered complete (if not overbilled). On the other hand, if only 2 of the 20 boilers, even if they happen to be two largest, are found first, but there is still more refuse based energy potential, it may be premature to consider the task complete. Further boiler location and analysis may be required to cover the task adequately and set up the possibility for secondary market availability. These judgments must continually be made by those responsible for the project.

Inclusion of Phases IV and V on the Master Network

Additional Phases IV and V illustrate the two major phases of a resource recovery project for which the planning in Phases I, II, and III is conducted. Phase IV -- Construction, Shakedown, and Acceptance -- includes those three major steps which are generally a part of the construction contract. In the A/E approach, final design has already been completed; in Turnkey and Full Service approaches, the final design is included in Phase IV. Phase IV is virtually completed when Phase V -- the long term operation of the facility -- commences.

Using The Model

Introductory Procedure

The individual exploring resource recovery on behalf of the municipality should use the document in the following manner:

1. Read the introductory sections and become familiar with the overall structure.

2. Review the Master Flow Chart and the Master Network to understand the entire scope of the project.

3. Review the Master Activity Sheets in conjunction with the Master Network to understand in greater detail the work level required, and the necessary References and Sample Documents so that acquisition of appropriate documents can begin early.

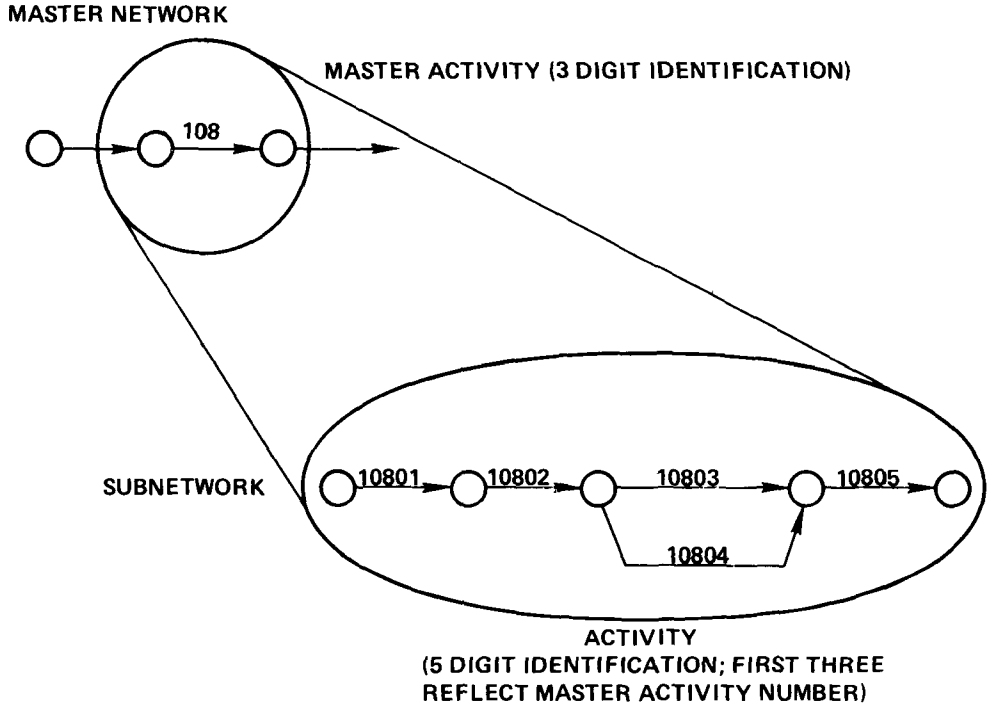
4. Understand where in the sequence of the Model the individual's particular project stands by reviewing the Master Network and Subnetworks with associated activity sheets to determine which activities have already been addressed (this may be a complex task requiring assistance).

5. Proceed according to the work sequence illustrated on the Master Network or tailor the sequence to the local conditions. If changes in sequence are necessary, the reasons for these changes should be noted in a memorandum to the project file.

6. Proceed to the first Master Activity required by that sequence, review the Subnetwork and Activity Sheets and begin according to the actions outlined therein.

Format

The Resource Recovery Management Model consists of 1) a Master Flow Chart, and a Master Network with accompanying Master Activity Sheets, 2) fifty Subnetworks with accompanying Activity Sheets, 3) references, and 4) sample documents. The relationship between the Master Network (and the Master Flow Chart) and its Subnetworks is illustrated below.



RELATIONSHIP OF A TYPICAL SUBNETWORK TO THE MASTER NETWORK

Summary

A Master Network is composed of three-digit Master Activities.
Most Master Activities are exploded into Subnetworks.
Each Subnetwork is composed of five-digit Activities.

Master Flow Chart

The Master Flow Chart found in the rear of the book describes the overall requirements of a resource recovery project in flow chart format. This diagram is designed as a reference which is easy to read and follow. A presentation to decision makers could be made using the Master Flow Chart to mark progress to date or discuss necessary decisions to plan future courses of action.

Each box contains a three digit number which identifies the phase and the Master Activity. The first digit -- 0, 1, 2, or 3 -- designates Phases 0, 1, 2, or 3, respectively. The next two digits indicate the Master Activity.

Master Network

All major activities which must be accomplished in the four phases are displayed sequentially in the Master Network which borrows from the Program Evaluation and Review Technique (PERT) format to illustrate the sequence of activities and their interrelationships. Basic rules of PERT apply both to the Master Network and to Subnetworks. Each arrow represents an activity; each node circle represents an event which is the completion of an activity. On the Master Network most activities are identified by three digit numbers. Five digit numbers only appear on the Master Network when a portion of a Subnetwork is depicted on the Master Network. The Master Activities appearing on the Master Network are identical to the Master Activities on the Master Flow Chart in both title and three digit identifying number.

The Master Network and Master Flow Chart offer an overall view of project work tasks. For that reason, they are located in the

back of the book so that one or the other may be unfolded on a work surface and remain in that position while other sections of the book are used. This allows easy reference to the Master Network (or Flow Chart) at all times.

The Master Network is constructed so that the three digit identification number appears just above the Master Activity arrow. The name of each Master Activity appears immediately above the Master Activity number in most cases, or immediately adjacent to it. The elapsed time required to perform the Master Activity in calendar weeks appears in parentheses just below the Master Activity arrow.

Master Activity Sheets

Each Master Activity has an accompanying reference sheet, the Master Activity Sheet, which is identified by the same three-digit number as the Master Activity appearing on the Master Network. The three digit number appears in the box in the upper right hand corner of the Master Activity sheet. The sheet supplies additional information about the Master Activity, as well as suggestions for references and sample documents. The Master Activity Sheets summarize the information contained on the more detailed Activity Sheets (explained below).

The Master Activity Sheets are grouped together near the front of the book so that they may be reviewed as one set. The entire project is mapped out by the Master Activity Sheets used in conjunction with the Master Network or Master Flow Chart.

Subnetworks

Performance of the Master Activities usually involves completing a number of component activities. A second level of activity networks, defined as Subnetworks, is offered for most Master

Activities. Each Subnetwork is identified by the same three digit number as the Master Activity that it is describing. Also, the two event nodes bracketing the Master Activity are the first and last event nodes of the Subnetwork. The Subnetworks provide the necessary level of detail to describe the interrelationships among the more prominent tasks at the Subnetwork level.

Activities are identified by a five digit number. The first three digits are the same as the related Master Activity; the next two digits identify each individual activity on the Subnetwork.

Activity Sheets

Each Activity is detailed more extensively through the use of an accompanying Activity Sheet. The Activity Sheet is identified by a five digit number, located in the box in the upper right hand corner of each Activity Sheet. The five digit number is the same as the five digit number appearing on the Subnetwork for that task. As with the Subnetworks, the five digit number uses the first three digits to relate to the Master Activity, and the last two digits identify the individual Activity on the Subnetwork.

References

References are indicated near the bottom of each Master Activity Sheet and each Activity Sheet. The References indicated refer to specific documents which exist and are readily available to the resource recovery community from EPA or other sources. The References explain in much greater detail than the Activity Sheets the kind of information required, and how the project manager might want to compile it.

For example, at the end of Phase II, one Master Activity calls for a preliminary decision on procurement approach, and in Phase III the diagram fans out into A/E, Turnkey, and Full Service approaches. A reference of R6 is given in several places. By consulting the index of references in the Appendix, the user finds that the Reference given is the Procurement Guide from the EPA Resource Recovery Plant Implementation: Guides for Municipal Officials Series which lists the three types of procurement approaches and explains their meanings in greater detail.

Good reference material is limited and some existing material is becoming outdated. Updated EPA Implementation Guides are being prepared subsequent to the printing of this Management Model and will be available later.

Sample Documents

In the case where the Subnetwork, Activity Sheet and Reference list are still not quite detailed enough, the Model provides additional information by supplying concrete examples. At the bottom of each Activity Sheet is an item called Sample Documents which refers to examples pertinent to that Activity which have been used previously, which may have the exact format which the project manager needs to perform the task, and are included in the back of this document.

Another type of sample document is referred to as available from the local community, where it would be fruitless to try to supply a universal model. Examples are local building codes, or precedents for particular permit application requirements. There can be significant local differences in procedures like these. In these cases, the Sample Documents item will specifically indicate that the information should be obtained locally.

Times Indicated

The times required to perform activities on the Subnetworks vary from a fraction of a day to several months. Elapsed times for Master Activities are contained on the Master Activity Sheets and on the Master Network. The elapsed times indicated in parentheses just below each activity arrow on the Master Network are considered to be average values. The calendar weeks suggested indicate the approximate time required for a Master Activity, given consistent intensive effort. Particular efforts, such as public participation, may continue on an intermittent basis over a long span of time, and may continue through the duration of several tasks, as with public participation, indicated in a previous section.

Treatment of Source Separation

The Model illustrates source separation in a Subnetwork of the appropriate Master Activity. The first three digits use an alphanumeric coding of SS1 in Phase II of the Model. However, a preliminary review of source separation potential in Phase 0, and a feasibility study of source separation in Phase I are to be considered in the public decision process. If the Phase 0 screening indicates source separation as a possibility, and the Phase I feasibility analysis indicates expectation of a sound program, then in Phase II, the implementation process for source separation is carried out. If, however, the Phase 0 screening indicates a strong resource recovery program through source separation, the Model provides the mechanism for skipping over Phase I and proceeding directly to the implementation process in Phase II. In this case, the decision to proceed incorporates the decision to go directly to implementation.

Definition of Terms

Terms used throughout this document, particularly on the Master Activity Sheets and Activity Sheets, are defined in Tables I and II, beginning on page 23.

Summary of Costs and Critical Path Durations

Table III summarizes the cost of a typical resource recovery project, and the critical path times which can be anticipated for the project. The costs and times are judgemental and represent averages for a hypothetical area of approximately 500,000 population, and with more than one community participating. The indicated ranges show the wide variety of project times possible depending upon the number of participating communities, total population, local opposition, environmental and permit requirements, and sometimes the legislative and judicial processes. Cost will vary accordingly. A sliding scale for costs can be applied for both larger and smaller projects, roughly varying according to population figures. The critical path times will also vary considerably with population; generally, small scale systems should be implemented sooner, and larger scale systems, involving more communities, will take longer.

Table III, page 27, indicates the neighborhood of total cost to the community for project management, administration, in-house staff and consultants in each Phase. In some cases, the cost may be considerably lower than that indicated by simple population proportion, due to the fact that some elected and appointed officials in smaller areas may donate their time. In other cases, costs may be considerably higher, due to unique unforeseen complications. In the case of financial advisors the prospect of a future bond sale may result in financial consulting being performed without fee, since compensation from the bond issue is anticipated.

The major exception to the cost and duration data is in the A/E procurement in Phase III where the full preliminary and final design is completed. The duration is longer and costs are higher, because facility design is completed and a construction contractor is selected; turnkey and full service approaches complete design later, during the next phase. The overall time to arrive at commencement of construction is shorter for A/E, however, because the communities usually require more time to complete procurement and contracts with turnkey and full service vendors. The extra time spent may buy lower risks in terms of satisfactory long-term plant operation.

Abbreviations

Because of the repetitive nature of the terminology, and the sheer size of this Management Model, an effort was made to reduce the volume of words by using abbreviations of the more repetitive terms wherever possible. The draft reviewers indicated that use of abbreviations in the text was cumbersome, and therefore abbreviations were generally eliminated from the narrative. Exceptions are those terms easily recognized in the resource recovery community such as A/E, DPW, EPA, PUC, RDF, RFQ and RR (Resource Recovery). The Roles and Responsibilities on the activity sheets uses abbreviations for two reasons:

1. space limitations; and
2. once an understanding of tasks is obtained from the narrative, the estimating data should be easier to follow.

For the user, the abbreviations sheets appear twice -- one copy may be torn out and wall mounted; the second should be left in the book.

TABLE I

DEFINITION OF TERMS
MASTER ACTIVITY SHEETS

Management Model: A graphic representation of the work activities to be encountered during the life of a particular process. The interrelationships among Master Activities are shown and background information is provided on each activity. This Management Model is intended for use by project managers of resource recovery implementing agencies as a guide during the preparation of project master plans for their particular projects, and for conducting the actual work associated with the projects.

Master Activity: The activity appearing on the Master Network showing all the major activities required by the program. The Master Activity is identified as its own activity on its own reference sheet.

Number: The numerals located in the upper right corner of each page identifying the Master Activity sheet by correlating it with the Master Network number of the Master Activity. On Master Activity sheets the number consists of three digits.

Phase: The overall title given to a group of closely related activities and milestones, preliminarily broken into four major decision points, each providing a decision gate for continuing with the project.

Milestone: The point in time when a significant Activity or series of Activities have been completed. Reaching a milestone indicates an accomplishment which is a major step forward in the implementation process. The milestone may coincide with the end of a Master Activity, but also may extend over several Master Activities.

Purpose: A statement of the reason for which the Master Activity should be performed. The purpose gives an introduction into the ideas behind the Master Activity and how it moves the project closer to the milestone.

Description: A general narrative outlining the process involved in the Master Activity. The narrative includes as much of the following information as practical:

TABLE I (concluded)

1. General portrayal of the requirements of the Master Activity

2. Assumptions or guidelines used; and

3. Relationship of the Master Activity to the prior and subsequent Master Activities.

Major Obstacles: A statement of potential pitfalls which could impact severely on the progress of the Master Activity.

Major Decisions: A listing of major choices or judgments inherent in the Master Activity, and which must be made before the Master Activity can be considered complete.

Roles and Responsibilities: Identification of the key parties who are either involved in or affected by the Master Activity.

Estimating Data: Approximate elapsed calendar time, levels of work effort (level of individual effort, formerly called man-days) and approximate funding levels to be spent by the implementing agency. Funding includes in-house staff (salary and fringe benefits) and consultant costs under contract, but does not include, for example, the funds a potential contractor spends preparing a proposal, or a municipal department spends in the course of its normal work when only peripherally involved in the program.

References: Available materials to which the project manager is referred for a more detailed explanation of the method of accomplishing the requirements.

Sample Documents: Excerpts from documents used to illustrate precedents in performing the activity.

General Note

In most cases, the Master Activity Sheets present a summary and overview of the information contained on the Activity Sheets related to it. That is, general requirements of the set of Activity Sheets can quickly be obtained by reviewing the appropriate Master Activity Sheet.

TABLE II

DEFINITION OF TERMS
ACTIVITY SHEETS

Management Model: A graphic representation of the work activities to be encountered during the life of a particular process. The interrelationships among activities are shown and background information is provided on each activity. This Management Model is intended for use by project managers of resource recovery implementing agencies as a guide during the preparation of project master plans for their particular projects, and for conducting the actual work associated with the projects.

Activity: The detailed work item or subelement in the associated subnetwork included for completion of the Master Activity.

Number: The numerals located in the upper right corner of each page identifying the activity sheet by correlating it with the Subnetwork Activity number. On Activity sheets the number consists of five digits; the first three denote the Master Activity from which the Activity descends, and the last two identify the individual Subnetwork Activity.

Master Activity Milestone: The milestone identified on the associated Master Activity sheet, which may or may not coincide with the end of the Master Activity. The Master Activity Milestone is provided for overall task continuity while the project manager is immersed in the detailed work of the Activity.

Purpose: A statement of the reason for which the Activity should be performed. The purpose gives an introduction into the ideas behind the Activity, how it moves the project closer to the Master Activity Milestone and why the work is done at a particular point.

Description: A general narrative outlining the process involved in the Activity. The narrative includes as much of the following information as practical:

1. General portrayal of the requirements of the Activity;

2. Assumptions or guidelines used; and

3. Relationship of the Activity to the prior and subsequent activities.

TABLE II (concluded)

Steps Within the Activity: A listing of the more important work items performed in execution of the Activity, usually in the form of short statements with greater detail than appears in the Description.

Major Obstacles: A statement of potential pitfalls which could impact severely on the progress of the Activity.

Major Decisions: A listing of major choices or judgments inherent in the Activity, and which must be made before the Activity can be considered complete.

Input: A listing of all data, reports, background information, correspondence, or actions required or normally received before the Activity can be successfully completed.

Output: A listing of all data, reports, forms, memos, and documents, or actions generally taken as a result of the Activity.

Roles and Responsibilities: Identification of the key parties who are either involved in or affected by the Activity. A finer distinction is drawn among involved parties for the Activities than previously for the Master Activities.

Estimating Data: Approximate elapsed calendar time and work effort (level of individual effort, formerly called man-days) required by the implementing agency. As in the Master Activity sheets, the work effort includes consultant effort under contract or agreement, but does not include, for example, the effort expended by an entity external to the implementation team.

References: Available materials to which the project manager is referred for a more detailed explanation of the method of accomplishing the requirements of the Activity.

Sample Documents: Excerpts from documents used to illustrate precedents in performance of the Activity.

TABLE III

SUMMARY OF AVERAGE COSTS (1979 DOLLARS)
AND CRITICAL PATH DURATION

Phase 0		Funding ($K)	Duration (Calendar Weeks)	Duration Range (Calendar Weeks) Low	High
001-007		5	6	3	10
Totals (Funding)		$5K			
	(Critical Path Funding)		6	3	10
Phase I					
101	Organize Project Team and Public Information Process	7	8	3*	13
102	Secure Required Resources	9	12	7	31
103	Screen Environmental Requirements	4	4	2	8
104	Conduct Technology Analysis	5	4	3	11
105	Analyze Waste Stream	9.5	6*	3	14
106	Perform Detailed Energy Market Analysis	10	15*	7*	24
107	Analyze Existing Disposal Options	4	3	2	6
108	Conduct Material Market Analysis	6.5	15*	6*	19
109	Conduct Source Separation Feasibility	6	4	2	7
110	Perform Preliminary Environmental Analysis	3	4	2	8
111	Establish Transportation Analysis Model	3.5	4	2	8
112	Perform Preliminary Site Analysis	3.5	4	2	8
113	Perform Financial, Legal, and Institutional Analysis	8	6	3	12
114	Develop Project Alternatives	9	5	3*	14
115	Establish Political/Public Decision Process	1	1	1*	2
116	Develop Recommendations and Report	10	5	3	20
117	Obtain Political/Public Decision to Proceed	3	8	3	16
Totals (Funding)		$102K			
	(Critical Path Funding)		66*	39	164

*Rounded to the nearest whole week.

TABLE III (Continued)

	Phase II	Funding ($K)	Duration (Calendar Weeks)	Duration Range (Calendar Weeks) Low	High
SS1	Perform Detailed Source Separation Feasibility	25	29	16	61
SS2	Develop Source Separation Program	25	27	17	52
SS3	Execute Program	8	16	8	28
Totals	(Funding)	$58			
	(Critical Path Duration)		72	41	141
201	Define Project	5	4	2	6
202	Draft Environmental Assessment and Determine Site Priorities	18	11	7	18
203	Secure Sites	16	18	11	63
204	Update Project Definition and Costs	5	4	2	8
205	Strengthen Waste Supply Commitments	24	20	10	40
206	Structure Risks to Resolve Institutional Problems	30	25	12	52
207	Strengthen Market Commitments	22	18	10	28*
208	Update Project Definition and Costs	6	4	2	7*
209	Select Technology(s), Risk Assignment, Procurement and Financing Approach; Write Report	15	6	3	11
210	Obtain Political/Public Decision to Proceed	10	12	4	20
Totals	(Funding)	$151K			
	(Critical Path Duration)		80	41	178
	Phase III				
(TURNKEY)					
301	Establish Administrative Framework	10	10	5	19
302	Produce RFP	25	22	14	37
303	Acquire Contractor	90	55	26	136
304	Perform Environmental Assessment	25	31	15*	76

*Rounded to the nearest whole week.

TABLE III (Concluded)

	Phase III (concluded)	Funding ($K)	Duration (Calendar Weeks)	Duration Range (Calendar Weeks) Low	High
305	Acquire Waste Supply Contracts	65	24	16	168
306	Secure Preconstruction Permits	25	26	13	39
307	Perform Preliminary Design	15	20	13	34
308	Acquire Market Contracts	7	8	6	20
309	Secure Financing	10	14	11	26
Totals (Funding)		$272K			
	(Critical Path Duration)		132	72	386
(A/E)					
311	Establish Administrative Framework	10	10	5	19
312	Acquire Preliminary Design	650	30	22	40
313	Secure Preconstruction Permits	25	26	13*	38
314	Perform Environmental Assessment	25	31	15*	76
315	Acquire Waste Supply Contracts	65	24	16	168
316	Acquire Design and Contractor	1,590	72	45	102
317	Acquire Market Contracts	7	8	6	20
318	Secure Financcng	10	14	11	26
Totals (Funding)		$2,382K**			
	(Critical Path Duration)		157	98	329
(FULL SERVICE)					
321	Establish Administrative Framework	10	10	5	19
322	Produce RFP	25	22	14	37
323	Acquire Contractor	90	55	26	136
324	Perform Environmental Assessment	25	31	15*	76
325	Secure Preconstruction Permits	25	26	13	39
326	Acquire Waste Supply Contracts	65	24	16	168
327	Acquire Market Contracts	7	8	6	20
328	Perform Preliminary Design	15	20	13	34
329	Secure Financing	25	38	28	60
Totals (Funding)		$287K			
	(Critical Path Duration)		156	89	420

*Rounded to the nearest whole week.
**Includes total fee for prelimiary and detailed design; varies widely with project size.

Activity Index

Master Activity No.	
	PHASE 0 - INITIAL RESOURCE RECOVERY FEASIBILITY SCREENING
000	Overview of Phase 0
001	Evaluate Non-Recovery Disposal Options and Associated Environmental Issues
002	Sample Citizen and Political Interest
003	Conduct Preliminary Market Survey
004	Conduct Preliminary Waste Supply Assessment
005	Assess Source Separation Potential
006	Assess Economics, Environmental Impacts, and Procurement Methods of Recovery Technologies
007	Test Appropriateness of Proceeding
	PHASE I - RESOURCE RECOVERY FEASIBILITY ANALYSIS
101	Organize Project Team and Public Information Process
	10101 Establish Project Director
	10102 Establish Project Manager
	10103 Identify Organizations to be Solicited for Membership
	10104 Solicit Members
	10105 Establish Team, Assign Responsibilities
	10106 Establish Policy, Goals, and Guidelines
	10107 Establish Public Release Procedures
102	Secure Required Resources
	10201 Establish Scope of Work for Project
	10202 Establish Scope for In-House Staff and Consultants
	10203 Develop Preferred Contracting Method
	10204 Develop Consultant Selection Method
	10205 Advertise for Qualifications
	10206 Secure Commitments from In-House Staff

Master Activity No.		
	10207	Negotiate with Consultants on Retainer
	10208	Select Short List of Firms
	10209	Interview Short Listed Firms
	10210	Select Preferred Firm
	10211	Negotiate and Sign Contract
103	Screen Environmental Requirements	
	10301	Determine Conditions for Requiring A-95 Review
	10302	Determine Zoning Categories and Restrictions
	10303	Determine Ambient Air Quality and Emissions Restrictions
	10304	Determine Surface and Ground Water Use and Effluent Restrictions
	10305	Determine State and Local Environmental Review Requirements Including Major Permits
	10306	Determine Other Restrictions and Requirements
104	Conduct Technology Analysis	
	10401	Review the State-of-the-Art
	10402	Analyze Input Requirements and Output Characteristics (Other than Refuse and Products)
	10403	Investigate Source Separation Technologies
	10404	Determine Refuse Input Requirements and Co-Disposal Capabilities
	10405	Ascertain Product Specifications
	10406	Ascertain Size, Reliability, and Costs
	10407	Determine Procurement Issues and Industry Service Potential
	10408	Summarize Results
105	Analyze Waste Stream	
	10501	Obtain List of Industries
	10502	Obtain Population Data

Master Activity No.		
	10503	Obtain Prior Studies and Reports
	10504	Obtain List of Transfer, Processing, and Disposal Sites
	10505	Obtain List of Collection Agencies and Companies
	10506	Obtain List of Sewage Treatment Plants
	10507	Obtain Sludge Checklist Information for Each Sewage Treatment Plant
	10508	Obtain Septic Tank Pumpings Data
	10509	Determine Existing and Future Sludge Generation and Disposal Needs
	10510	Estimate Municipal Waste Generation
	10511	Estimate Industrial Waste Generation
	10512	Estimate Seasonal Fluctuations of Solid Waste
	10513	Estimate Facility Throughput and Disposal Quantities by Site
	10514	Perform Weighing Survey (Optional)
	10515	Estimate Disposed Quantities from Survey by Site
	10516	Compare Estimates, Develop Consistent Generation and Disposal Quantities
	10517	Perform Compositional Analysis to Support Materials, Energy, and Source Separation Studies
	10518	Estimate Average Yearly Composition
	10519	Estimate Average Heating Value
	10520	Estimate Quantities of Recoverable Materials
106	Perform Detailed Energy Market Analysis	
	10601	Obtain List of Fossil Fuel Users
	10602	Conduct Telephone Survey (Except Utilities)
	10603	Identify Potential Markets
	10604	Visit all Potential Markets
	10605	Identify Viable Potential Markets
	10606	Plot Commodity Demand

Master Activity No.		
	10607	Develop Commodity Pricing Schedule
	10608	Obtain Energy Market Letters of Interest
	10609	Conduct Introductory Meeting with Utilities
	10610	Conduct In-Depth Meeting with Utilities
	10611	Obtain Letters of Interest from Utilities
	10612	Obtain Commodity Demand and Pricing Schedule from Utilities
107	Analyze Existing Disposal Options	
	10701	Determine Future Landfill Requirements
	10702	Obtain Data and Costs of Existing Facilities
	10703	Examine Current Operations and Plans of Neighboring Areas
	10704	Analyze Existing Facilities and Expansion Potential
	10705	Define Existing Disposal Options
108	Conduct Material Market Analysis	
	10801	Obtain List of Possible Markets
	10802	Conduct Market Survey
	10803	Identify Potential Markets
	10804	Analyze Existing Source Separation Programs
	10805	Obtain Materials Market Letters of Interest
109	Conduct Source Separation Feasibility	
	10901	Develop System Parameters and Logistics
	10902	Develop Cost and Revenue Estimates
110	Perform Preliminary Environmental Analysis	
	11001	Determine Whether Air Quality Monitoring is Required Prior to Construction
	11002	Analyze Capabilities of the Various Technologies to Meet the Environmental Requirements

Activity Index (continued)

Master Activity No.		
111	Establish Transportation Analysis Model	
	11101	Establish Centroids of Waste Generation
	11102	Establish Transportation Linkages
	11103	Establish Average Travel Times for Links
	11104	Define Calculation Method
	11105	Establish Cost Functions for Packer Truck Haul, Transfer Trailer Haul, Processing, and Disposal
112	Perform Preliminary Site Analysis	
	11201	Solicit New Site Nominations and Obtain Site Checklist Information
	11202	Obtain Existing and Potential Site Checklist Information
	11203	Categorize Sites Regarding Suitability
	11204	Rank Higher Potential Sites
113	Perform Financial, Legal, and Institutional Analysis	
	11301	Identify Options for Roles, Responsibilities; Procurement, Legal, and Financial Options
	11302	Define Risks Associated with Resource Recovery
	11303	Identify Funding Sources and Constraints
	11304	Examine Existing Waste Supply Status
	11305	Examine Existing Waste Contracting Capability
	11306	Analyze Risk Assignment for Each Option
	11307	Summarize Options, Needed Legislation, Constraints, and Risks
114	Develop Project Alternatives	
	11401	Formulate Technological Alternatives
	11402	Develop Costs for Each Alternative
	11403	Analyze Regionalization and Transportation

Master Activity No.		
	11404	Assess Risks
	11405	Develop Preferred Financial and Institutional Arrangements for Each Alternative
	11406	Summarize Results
115	Establish Political/Public Decision Process	
	11501	Establish Ordered Briefing List
	11502	Establish Decision Path
116	Develop Recommendations and Report	
	11601	Rank Alternatives
	11602	Formulate Preliminary Recommendations
	11603	Conduct Review and Incorporate Comments by Project Team
	11504	Obtain Project Team Adoption
117	Obtain Political/Public Decision to Proceed	
	11701	Conduct Appropriate Briefings
	11702	Obtain Feedback and Brief as Necessary
	11703	Proceed with Decision
	PHASE II - RESOURCE RECOVERY PROCUREMENT PLANNING	
SS1	Perform Detailed Source Separation Feasibility	
	SS101	Establish Source Separation Project Team
	SS102	Secure Required Resources
	SS103	Obtain Market Requirements and Prices
	SS104	Estimate Quantities of Recovered Materials
	SS105	Define Institutional and Legal Requirements
	SS106	Define Separation and Collection Procedures
	SS107	Establish System Configuration, Costs, and Revenues
	SS108	Obtain Political/Public Decision to Proceed

Activity Index (continued)

Master Activity No.		
SS2	Develop Source Separation Program	
	SS201	Define Program
	SS202	Test Program (Conditional)
	SS203	Obtain Market Letters of Intent
	SS204	Develop Institutional and Legal Mechanisms
	SS205	Develop Publicity/Public Education Program
	SS206	Update Costs
	SS207	Obtain Political/Public Decision to Proceed
SS3	Execute Program	
201	Define Project	
	20101	Define Project and Tasks
	20102	Develop Preliminary Project Cost-Estimate
202	Draft Environmental Assessment and Determine Site Priorities	
	20201	Perform Preliminary Archaeological and Historical Check
	20202	Determine Zoning and Land Use
	20203	Determine Traffic Impact
	20204	Determine Existing Air Quality and Impact
	20205	Determine Water Demand and Discharge Impacts
	20206	Determine Aesthetic Requirements
	20207	Determine Impacts on Project Economics
	20208	Determine Site Priorities
	20209	Product Draft Environmental Assessment with Recommended Sites
203	Secure Sites	
	20301	Present Draft Environmental Assessment to Elected Officials and Community Groups
	20302	Hold Public Meeting
	20303	Obtain Zoning and Options on Sites

Activity Index (continued)

Master Activity No.		
204	Update Project Definition and Costs	
	20401	Redefine Project Parameters
	20402	Update Project Cost Estimate
	20403	Summarize Results and Prepare Report
205	Strengthen Waste Supply Commitments	
	20501	Conduct Briefings and Solicit Commitments
	20502	Obtain Commitments
206	Structure Risks to Resolve Institutional Problems	
	20601	Seek Legislative Changes and Resolve
	20602	Distill Required Institutional Arrangements
207	Strengthen Market Commitments	
	20701	Set Energy Market Priorities
	20702	Confirm Energy Requirements and Needs
	20703	Prepare Draft Energy Contract(s)
	20704	Review Energy Contract(s)
	20705	Obtain Letters of Intent
	20706	Re-contact Interested Materials Markets
	20707	Confirm Material Availability and Market Requirements
	20708	Prepare Draft Contract
	20709	Review Materials Contract
	20710	Obtain Letters of Intent
208	Update Project Definition and Costs	
	20801	Redefine Project Parameters
	20802	Update Project Cost Estimate
	20803	Summarize Project Costs and Incorporate into MA 209 Report

Activity Index (continued)

Master Activity No.	
209	Select Technology(s), Risk Assignment, Procurement, and Financing Approach; Write Report
	20901 Review State-of-the-Art
	20902 Select Most Probable Technology(s)
	20903 Define Risks
	20904 Establish Procurement and Financing Approach
	20905 Prepare Report
210	Obtain Political/Public Decision to Proceed
	21001 Conduct Briefings to Elected Officials
	21002 Conduct Briefings to Governing Bodies
	21003 Conduct Briefings to Media
	21004 Conduct Briefings to Interested Citizen Groups
	21005 Conduct Briefings to Public
	21006 Obtain Feedback, Letters of Support and Endorsement
	21007 Proceed with Decision
	PHASE III - RESOURCE RECOVERY SYSTEM PROCUREMENT TURNKEY
301	Establish Administrative Framework
	30101 Review Project Team
	30102 Further Liaison with Other Public Agencies
	30103 Further Liaison with Political Process
	30104 Retain Consultant(s) (Optional)
	30105 Establish Liaison with Specific Permit Agencies
	30106 Continue Process for Public Involvement
	30107 Determine Market Involvement in Procurement

Activity Index (continued)

Master Activity No.		
302	Product RFP	
	30201	Determine Parameters
	30202	Advise Potential Contractors
	30203	Prepare RFP and Evaluation Criteria (Optional)
	30204	Prepare Draft RFP and Draft Contract
	30205	Issue RFQ with Draft RFP (Optional)
	30206	Evaluate RFQ Responses and Qualify Companies (Optional)
	30207	Meet with Companies
	30208	Finalize RFP
303	Acquire Contractor	
	30301	Issue RFP
	30302	Review and Summarize Proposals
	30303	Interview Proposers
	30304	Evaluate Proposals
	30305	Negotiate Contract
304	Perform Environmental Assessment	
	30401	Assess Regulatory and Public Information Needs
	30402	Further Liaison with Regulatory Agencies and Political Process
	30403	Determine Research and Analysis Scope
	30404	Allocate and Perform Tasks
	30405	Draft Report and Issue for Review
	30406	Revise Draft and Issue Final Report
305	Acquire Waste Supply Contracts	
	30501	Prepare Draft Contract(s)
	30502	Negotiate Contract(s)
	30503	Obtain Community Approval

Activity Index (continued)

Master Activity No.		
306	Secure Preconstruction Permits	
	30601	Complete Listing of Applicable Permits
	30602	Review Requirements
	30603	Establish Permit Responsibility
	30604	Perform Necessary Analysis
	30605	Complete and Submit Applications
	30606	Support Application Process
307	Perform Preliminary Design	
	30701	Review Permit Requirements
	30702	Update Plant Technical Parameters
	30703	Provide Permit Support
	30704	Finalize Permitted Configuration
308	Acquire Market Contracts	
	30801	Negotiate Market Contracts
309	Secure Financing	
	30901	Prepare Financing Plan
	30902	Market Bonds
	A/E	
311	Establish Administrative Framework	
	31101	Review Project Team
	31102	Further Liaison with Other Public Agencies
	31103	Further Liaison with Political Process
	31104	Retain Consultant(s) (Optional)
	31105	Establish Liaison with Specific Permit Agencies
	31106	Continue Process for Public Involvement
	31107	Determine Market Involvement in Procurement

Activity Index (continued)

Master Activity No.		
312	Acquire Preliminary Design	
	31201	Secure Experienced A/E Capabilities
	31202	Start Up Project Design
	31203	Screen Environmental Requirements, Address Issues
	31204	Specify Emissions
	31205	Produce Conceptual Design
	31206	Perform Preliminary Engineer's Cost Estimate
313	Secure Preconstruction Permits	
	31301	Complete Listing of Applicable Permits
	31302	Review Requirements
	31303	Establish Permit Responsibility
	31304	Perform Necessary Analysis
	31305	Complete and Submit Applications
	31306	Support Application Process
314	Perform Environmental Assessment	
	31401	Assess Regulatory and Public Information Needs
	31402	Further Liaison with Regulatory Agencies and Political Process
	31403	Determine Research and Analysis Scope
	31404	Allocate and Perform Tasks
	31405	Draft Report and Issue for Review
	31406	Revise Draft and Issue Final Report
315	Acquire Waste Supply Contracts	
	31501	Prepare Draft Contract(s)
	31502	Negotiate Contract(s)
	31503	Obtain Community Approval

Master Activity No.		
316	Acquire Design and Contractor	
	31601	Complete Design Plans, Specifications, and Engineer's Estimate
	31602	Secure Construction Permits
	31603	Review and Approve Design
	31604	Advertise for Construction Bids
	31605	Prepare Bids
	31606	Receive and Review Bids
	31607	Select Bidder and Sign Contract
317	Acquire Market Contracts	
	31701	Negotiate Market Contracts
318	Secure Financing	
	31801	Prepare Financing Plan
	31802	Market Bonds
	FULL SERVICE	
321	Establish Administrative Framework	
	32101	Review Project Team
	32102	Further Liaison with Other Public Agencies
	32103	Further Liaison with Political Process
	32104	Retain Consultant(s) (Optional)
	32105	Establish Liaison with Specific Permit Agencies
	32106	Continue Process for Public Involvement
	32107	Determine Market Involvement in Procurement
322	Produce RFP	
	32201	Determine Parameters
	32202	Advise Potential Contractors

Master Activity No.		
	32203	Prepare RFQ and Evaluation Criteria (Optional)
	32204	Prepare Draft RFP and Draft Contract
	32205	Issue RFQ and Draft RFP (Optional)
	32206	Evaluate RFQ Responses and Qualify Companies (Optional)
	32207	Meet with Companies
	32208	Finalize RFP
323	Acquire Contractor	
	32301	Issue RFP
	32302	Review and Summarize Proposals
	32303	Interview Proposers
	32304	Evaluate Proposals
	32305	Negotiate Contract
324	Perform Environmental Assessment	
	32401	Assess Regulatory and Public Information Needs
	32402	Further Liaison with Regulatory Agencies and Political Process
	32403	Determine Research and Analysis Scope
	32404	Allocate and Perform Tasks
	32405	Draft Report and Issue for Review
	32406	Revise Draft and Issue Final Report
325	Secure Preconstruction Permits	
	32501	Complete Listing of Applicable Permits
	32502	Review Requirements
	32503	Establish Permit Responsibility
	32504	Perform Necessary Analysis
	32505	Complete and Submit Applications
	32506	Support Application Process

Activity Index (concluded)

Master Activity No.	
326	Acquire Waste Supply Contracts
	32601 Prepare Draft Contract(s)
	32602 Negotiate Contract(s)
	32603 Obtain Community Approval
327	Acquire Market Contracts
	32701 Negotiate Market Contracts
328	Perform Preliminary Design
	32801 Review Permit Requirements
	32802 Update Plant Technical Parameters
	32803 Provide Permit Support
	32804 Finalize Permitted Configuration
329	Secure Financing
	32901 Prepare Financing Plan
	32902 Obtain Debt Financing
	32903 Obtain Equity Financing
	32904 Establish Project Feasibility
	32905 Market Bonds

PHASE IV - CONSTRUCTION, SHAKEDOWN, ACCEPTANCE

PHASE V - OPERATION

Master Activity Index

Master Activity No.	
	PHASE 0 - INITIAL RESOURCE RECOVERY FEASIBILITY SCREENING
000	Overview of Phase 0
001	Evaluate Non-Recovery Disposal Options and Associated Environmental Issues
002	Sample Citizen and Political Interest
003	Conduct Preliminary Market Survey
004	Conduct Preliminary Waste Supply Assessment
005	Assess Source Separation Protection
006	Assess Economics, Environmental Impacts, and Procurement Methods of Recovery Technologies
007	Test Appropriateness of Proceeding
	PHASE I - RESOURCE RECOVERY FEASIBILITY ANALYSIS
101	Organize Project Team and Public Information Process
102	Secure Required Resources
103	Screen Environmental Requirements
104	Conduct Technology Analysis
105	Analyze Waste Stream
106	Perform Detailed Energy Market Analysis
107	Analyze Existing Disposal Options
108	Conduct Material Market Analysis
109	Conduct Source Separation Feasibiity
110	Perform Preliminary Environmental Analysis
111	Establish Transportation Analysis Model
112	Perform Preliminary Site Analysis
113	Perform Financial, Legal, and Institutional Analysis
114	Develop Project Alternatives

Master Activity Index (continued)

Master Activity No.	
115	Establish Political/Public Decision Process
116	Develop Recommendations and Report
117	Obtain Political/Public Decision to Proceed
	PHASE II - RESOURCE RECOVERY PROCUREMENT PLANNING
SS1	Perform Detailed Source Separation Feasibility
SS2	Develop Source Separation Program
SS3	Execute Program
201	Define Project
202	Draft Environmental Assessment and Determine Site Priorities
203	Secure Sites
204	Update Project Definition and Costs
205	Strengthen Waste Supply Commitments
206	Structure Risks to Resolve Institutional Problems
207	Strengthen Market Commitments
208	Update Project Definition and Costs
209	Select Technology(s), Risk Assignment, Procurement and Financing Approach; Write Report
210	Obtain Political/Public Decision to Proceed
	PHASE III - RESOURCE RECOVERY SYSTEM PROCUREMENT
	TURNKEY
301	Establish Administrative Framework
302	Produce RFP
303	Acquire Contractor
304	Perform Environmental Assessment
305	Acquire Waste Supply Contracts
306	Secure Preconstruction Permits

Master Activity Index (concluded)

Master Activity No.	
307	Perform Preliminary Design
308	Acquire Market Contracts
309	Secure Financing
	A/E
311	Establish Administrative Framework
312	Acquire Preliminary Design
313	Secure Preconstruction Permits
314	Perform Environmental Assessment
315	Acquire Waste Supply Contracts
316	Acquire Design and Contractor
317	Acquire Market Contracts
318	Secure Financing
	FULL SERVICE
321	Establish Administrative Framework
322	Produce RFP
323	Acquire Contractor
324	Perform Environmental Assessment
325	Secure Preconstruction Permits
326	Acquire Waste Supply Contracts
327	Acquire Market Contracts
328	Perform Preliminary Design
329	Secure Financing

PHASE IV - CONSTRUCTION, SHAKEDOWN, ACCEPTANCE

PHASE V - OPERATION

MASTER ACTIVITY: OVERVIEW OF PHASE 0

number 000

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Determination of Whether or Not Resource Recovery is Precluded

PURPOSE: To ascertain if there are any local conditions which obviate the need to investigate RR in detail by conducting a preliminary investigation which considers the critical ingredients of a RR program.

DESCRIPTION: The vital ingredients necessary for a viable RR program are investigated in a preliminary manner to obtain a conclusion of whether or not any of them are missing to such an extent that a RR program would not be viable. If available, data from reasonably recent studies and reports may be used.

MAJOR OBSTACLES: Lack of even rudimentary information and data about existing disposal systems or recovery options; unavailability of in-house staff.

MAJOR DECISIONS: To preclude or defer further consideration of RR, or proceed into Phase I subject to the availability of staff and funds; whether or not to proceed to Phase II source separation; appropriated budget to proceed.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 3 to 10 weeks.
2. Work Effort: Average = 26 work days.
3. Funding: $6,000 (C fee); $2,000 direct IHS cost

REFERENCES: R2, R3, R8, R9, R10, R11, R25, R28, R49, R82, R105

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: EVALUATE NON-RECOVERY DISPOSAL OPTIONS AND ASSOCIATED ENVIRONMENTAL ISSUES

number 001

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Initial Screening Report on Current Disposal Practices

PURPOSE: To develop a brief narrative (less than 10 pages) discussing the prospects for disposing of the community's solid waste by non-recovery approaches, e.g., incineration without heat recovery or landfill. This task also determines, on a preliminary basis, whether existing landfill or incineration systems are sufficiently adequate environmentally, economically, and in terms of long-term capacity so as to preclude the need to pursue RR as a potential waste disposal solution.

DESCRIPTION: The narrative should look ahead at least 10 years. If appropriate, the need to procure new landfill sites should be discussed and major obstacles described. A rough cost estimate for future disposal (including transportation to the disposal site) is developed. This estimate is both on a per ton and an aggregate annual basis. The status of existing landfills and incinerators in terms of available current capacities and remaining life, potential for regionalization, environmental soundness and regulatory compliance, and cost is evaluated. (See MA 105, and MA 107 for steps in a more detailed analysis.)

MAJOR OBSTACLES: Uncertainty regarding implications of future regulations for landfills; landfill life estimates are frequently in error by several years, resulting from poor estimates both in capacity and waste quantities.

MAJOR DECISIONS: None.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: DPW, EA-(L), EA-(S), MPE

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 3 work days.
3. Funding: See MA 000

REFERENCES: In MA 000

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SAMPLE CITIZEN AND POLITICAL INTEREST

number 002

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Initial Screening Report On Citizen And Political Interest

PURPOSE: To determine on a preliminary basis whether citizen and political interest in RR is sufficient to warrant exploring RR as a viable option, or sufficiently negative to preclude it as a possibility. This is done by developing a brief narrative documenting the views of various citizen and environmental groups and leaders on the subject of RR. This sampling is also used to determine if there are strong opponents or proponents of RR in elected or appointed positions.

DESCRIPTION: In most cases, the extent of citizen and political interest will be known. Other cases will suggest the need for public hearings, meetings, or perhaps an informal opinion poll conducted by contacting a list of selected local (elected and appointed) officials, citizen and public interest group representatives, and others knowledgeable about the local political scene and solid waste activities and plans. Also the positions taken by the press and other communications media are examined.

MAJOR OBSTACLES: Lack of informed opinion or knowledge about the solid waste disposal problem and what a RR project entails; political climate changes makes future interest difficult to predict.

MAJOR DECISIONS: None.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: EO, P, DPW, IG

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 3 work days.
3. Funding:

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: CONDUCT PRELIMINARY MARKET SURVEY

number 003

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Initial Screening Report of Markets

PURPOSE: To determine on a preliminary basis whether the lack of acceptable local markets for recovered energy and materials would preclude RR and to develop preliminary estimates of the revenue that could be expected if various types of RR approaches were implemented locally.

DESCRIPTION: Major industries and utilities are contacted to assess interest in being considered as a market for RR. In some areas of the country it may be helpful for preliminary identification to sight stacks visually from atop a tall building. Demand for steam, RDF, and electric power is estimated, and potential energy revenues are calculated based on the local price of fossil fuel. Material markets are contacted (See A 10801 - A 10805 for steps in a more thorough investigation). On the basis of local fuel costs, develop an estimate of the likely revenue that could be expected for refuse based energy if sold as RDF/dRDF, steam and electricity. Note any major changes in fuel types utilized which are expected to take place locally, such as a conversion of several major boilers from oil to coal. Also estimate likely prices for steel and aluminum scrap, probably based on nearest area sales price figures. The latter should be of sufficient accuracy for the analysis of MA 007.

MAJOR OBSTACLES: Difficulty of holding discussions with industry and utilities on an "informal" and "preliminary" basis.

MAJOR DECISIONS: Whom to contact.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: M, U, MPE, PUC

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 3 work days.
3. Funding: See MA 000

REFERENCES: R1, R4, R10, R11, R15, R16, R20, R26, R39, R84, R85

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY CONDUCT PRELIMINARY WASTE SUPPLY ASSESSMENT

number 004

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Initial Screening Report on Waste Supply Issues

PURPOSE: To determine on a preliminary basis whether there are any waste supply problems which are likely to preclude development of a RR system.

DESCRIPTION: Estimate potential waste quantities for municipal/commercial and nonhazardous industrial refuse, separately identifying waste which is under municipal control and which is privately collected. Consider different region sizes up to, for example, a 30-mile radius or 1 million tons per year. Also identify any legal or other restrictions on directing waste or having "put-or-pay" provisions in community contracts. Estimate the percent paper, steel, aluminum, and glass and from the literature choose a value for waste as fuel RDF/dRDF and for mass burning. A fairly rough estimate is sufficient as input to MA 007.

MAJOR OBSTACLES: Lack of knowledge about the legal barriers to directing refuse to a facility; absence of meaningful data. (See Activities under MA 105 for steps in a more thorough assessment.)

MAJOR DECISIONS: None.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: LD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 5 work days.
3. Funding: See MA 000

REFERENCES: R2, R6, R8, R11, R27, R29, R30, R31, R64, R65, R66, R67, R68, R69 R115, R116

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ASSESS SOURCE SEPARATION POTENTIAL

number 005

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Source Separation Assessment

PURPOSE: To determine in a preliminary way whether source separation is precluded as a possible option.

DESCRIPTION: The potential for a successful source separation program is evaluated by reviewing a) the available markets for newsprint and paper, glass bottles and containers, and cans; b) local attitudes toward voluntary versus mandatory source separation wastes; c) organizations and firms, including municipal waste collectors, that might now be or would become involved in the collection, transportation, and/or marketing of the materials. This includes a preliminary analysis of the economics of source separation. (See Activities under MA 109, MA SS1, MA SS2, MA SS3 for a more complete analysis).

MAJOR OBSTACLES: Difficulty in estimating what the participation will be and in understanding how the system will function.

MAJOR DECISIONS: Whether pursuit of a source separation program should be continued or precluded.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: IG, M, EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 3 work days.
3. Funding: See MA 000

REFERENCES: R2, R3, R4, R5, R11, R25, R27, R29, R31, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R64, R65, R66, R67, R68, R69, R108, R113

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY ASSESS ECONOMICS, ENVIRONMENTAL IMPACTS, AND PROCUREMENT METHODS OF RECOVERY TECHNOLOGIES

number 006

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Economics and Technologies Assessment

PURPOSE: To identify possible RR system concepts to determine on a preliminary basis whether the economics of RR are sufficiently competitive in the local environment to warrant further consideration of RR as an option; also to produce a 3-4 page analysis of existing technologies, economics, environmental impacts, and procurement methods.

DESCRIPTION: Review the state-of-the-art in RR technology. Make rough projections of tipping fees for RR based on literature cost data for selected technologies, local energy prices and typical cost factors, O&M and revenue escalation rates. Develop alternatives based on processing stations, communities involved (total tonnage), transportation network and transfer stations, potential markets, possible participant and organizational roles. Consider options in terms of procurement methods and risk allocation among participants. (See Activities under MA 104, MA 105, MA 106, MA 107, MA 108, MA 111, MA 205, MA 209 for more complete analysis). The result is a 3-4 page report evaluating the extent of technology development, where used, and related success factors. For each approach and site (where possible) the extent of environmental impact, or its uncertainty.

MAJOR OBSTACLES: Review too superficial to contain decision information.

MAJOR DECISIONS: Validity of data; extent of detail needed; format of narrative descriptions.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: DPW

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 4 work days.
3. Funding: See MA 000

REFERENCES: R2, R3, R6, R8, R9

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY TEST APPROPRIATENESS OF PROCEEDING

number 007

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Statement on Whether Resource Recovery is Precluded or Worth Pursuing

PURPOSE: To decide to defer or preclude consideration of RR or to initiate, if possible, a feasibility study, i.e., Phase I; to compare the results of MA 006 with traditional disposal such as landfill, and to decide the technical approaches which appear feasible; to calculate landfill upgrading and cost of operation in a given year (e.g., 5 years hence) as well as RR in that year.

DESCRIPTION: If source separation is the only viable recovery system, proceed to Phase II, MA SS1. The narrative developed as part of MA 007 tests initial estimates by describing different procurement methods, relative costs, the need for local appropriations, and their risks. The narrative serves as an educational tool, and basis for future discussion. Evaluate the results of MA 001 through MA 006. Then make a technical and public/political decision on the merits and advisability of continuing to pursue RR. Briefly document the conclusions, with supporting data, following careful review with concerned agencies and individuals. Terminate effort if recovery is precluded. Otherwise, proceed into Phase I.

MAJOR OBSTACLES: Insufficient time for necessary political input and resources to be gathered due to critical solid waste management situation.

MAJOR DECISIONS: To preclude or defer further consideration of RR, or proceed into Phase I subject to the availability of staff and funds; whether or not to proceed to Phase II source separation; appropriated budget to proceed.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: EO, DPW, IA

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 5 work days.
3. Funding: See MA 000

REFERENCES: R2, R8, R114

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY ORGANIZE PROJECT TEAM AND PUBLIC INFORMATION PROCESS

number 101

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Project Team, Written Policy, Goals and Guidelines

PURPOSE: To involve all involved and affected parties from the beginning in order to develop a project which can be accepted in the community and to develop people who understand the project's evolution and can sell it to their constituents.

DESCRIPTION: The project director and project manager utilize their knowledge of the local area to select and solicit members for the project team. The team's first task is to establish written policy goals and guidelines to be used for guiding the project.

MAJOR OBSTACLES: Low interest by potential team members.

MAJOR DECISIONS: What groups to involve in the project; the project objectives - what to accomplish, by when, what other parameters will affect the project; issues which might be addressed are procurement options, user fees, service area participants, nonmunicipal waste, and related items.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD & PM
2. Must be Consulted or Notified: EO, AO

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 2.5 to 13 weeks.
2. Work Effort: Average = 22 work days.
3. Funding: $7,000

REFERENCES: R2, R12

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE REQUIRED RESOURCES

number 102

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To define the overall project scope; and to obtain and commit the expertise necessary for performing the tasks and developing the project.

DESCRIPTION: The project scope is defined, based on the policy goals and guidelines developed in the previous master activity and allocated to in-house staff and consultants. In-house staff is committed, or hired and committed, and consultants are hired.

MAJOR OBSTACLES: Excessive budget constraints; lack of support by elected officials; indecisiveness on in-house staff capabilities and the consultant scope of work.

MAJOR DECISIONS: Which tasks in-house staff is capable of performing; which consultants to hire.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, PT
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 12 weeks. Range = 7 to 31 weeks.
2. Work Effort: Average = 46 work days.
3. Funding: $9,000

REFERENCES: R2, R8, R32, R87, R114

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SCREEN ENVIRONMENTAL REQUIREMENTS

number 103

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Detailed Knowledge of Environmental Restrictions, Requirements, and Review Process

PURPOSE: Many environmental requirements can impact on costs and facility siting. These requirements must be established very early so that they can be incorporated into the planning process.

DESCRIPTION: Detailed information on air quality, air emission requirements, surface and ground water use and restrictions, zoning restrictions, permits and permitting process, and review (governmental and public) requirements is gathered.

MAJOR OBSTACLES: Incomplete knowledge of detailed project structure; land use incompatible with zoning; uncertainty regarding interpretation of environmental regulations.

MAJOR DECISIONS: A preliminary definition of the RR system aspects to be assumed for purposes of environmental review (e.g., number of transfer stations, tons per day disposed).

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Must be Consulted or Notified: See Activity Sheets

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 20 work days.
3. Funding: $4,000

REFERENCES: R2, R6, R11, R36, R47, R65, R73, R74, R75, R76, R77, R78, R79, R80, Clean Air Act, as amended, 1977 Safe Drinking Water Act, Air and Water Pollution Code Rules and Regulations, OSHA, Prior Environmental Impact Statements.

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: CONDUCT TECHNOLOGY ANALYSIS

number 104

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Current Detailed Knowledge Of Technologies

PURPOSE: To ascertain the availability, capabilities, advantages, disadvantages, and appropriateness of the various technologies for recovering the resources in solid waste.

DESCRIPTION: From past experience, telephone calls to manufacturers, suppliers, and managers of existing facilities, and a literature review, the required information is obtained and analyzed.

MAJOR OBSTACLES: Incomplete, inaccurate or misleading data; information unavailable.

MAJOR DECISIONS: Whether or not all the required data has been obtained; whether or not the obtained data is valid; format for technology presentation.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Must be Consulted or Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 3 to 11 weeks.
2. Work Effort: Average = 26 work days.
3. Funding: $5,000

REFERENCES: R2, R3, R6, R27, R33, R34, R35, R36, R112

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ANALYZE WASTE STREAM

number 105

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: The economics of RR projects are sensitive to changes in throughput, since it affects the revenues derived from both the tipping fee and the sale of recovered energy and materials (via central processing or source separation or both). Therefore, it is extremely important not to overestimate the tonnage available. Seasonal variations in refuse generation must be known to determine peak throughput rates and storage requirements. Compositional analysis is the basis for determining the recoverable quantity of materials and energy, which in turn is used to estimate revenues. Sludge quantities, composition, and disposal needs are used in determining whether co-disposal of sludge and refuse is feasible. All data should be agreed upon by the involved agencies.

DESCRIPTION: Data from multiple sources are obtained and analyzed, and inconsistencies are rectified. Weighing surveys and compositional analyses are conducted where applicable. Sludge quantities, characteristics, and future disposal needs are defined. The effects of existing source separation programs are factored into the estimates.

MAJOR OBSTACLES: Incomplete, inaccurate, or misleading data; lack of cooperation; interagency conflicting information.

MAJOR DECISIONS: Credibility and adequacy of collected data; whether data should be supplemented; whether to perform weighing surveys.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, C, IHS, PT
2. Must be Consulted or Notified: PD, PT, MPE, EA-(S and L), EPA

ESTIMATING DATA:

1. Duration: Average = 6* weeks. Range = 3.2 to 14 weeks.
2. Work Effort: Average = 38 work days.
3. Funding: $9,500

* Rounded to 6

REFERENCES: R2, R4, R6, R11, R27, R29, R30, R31, R64, R65, R66, R67, R68, R69, R106, R115, R116 Chamber of Commerce Industry Listing (local).

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM DETAILED ENERGY MARKET ANALYSIS

number 106

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Letters of Interest

PURPOSE: To obtain a complete picture of the possible energy markets in the area since the energy market is one of the key components of a RR project; the number of alternatives is constrained by the number of markets and therefore they must be identified as completely as possible. This includes establishing general familiarity with the potential markets, their technical constraints, the individuals involved, and the institutional questions which may arise. All these items are necessary to explore because their results will set the tone for conducting many remaining activities in the project.

DESCRIPTION: Utilizing lists of known fossil fuel users, a telephone screening is conducted. The promising users are visited. Utilities in the area are factored from others. The basic technical parameters are solicited and compiled in easily compared form. The availability of energy is determined. Risks specifically related to the technologies available are noted. Facilities are visited, demand and loads are recorded, and the match between demand and supply of energy is made. Plans for the future are noted. A preliminary pricing formula is produced for potential energy markets. Several meetings with the most likely markets are conducted leading to a letter of interest. Letters of interest are solicited.

MAJOR OBSTACLES: Low cooperation; incomplete or inaccurate lists of energy users; politically acceptable explanation of price discount incentive in formula; key staff not participating.

MAJOR DECISIONS: Identifying potential and viable markets; amount of fuel discount; whether or not to solicit price in letter of interest.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, C
2. Must be Consulted or Notified: PD

ESTIMATING DATA:

1. Duration: Average = 15* weeks. Range = 7.4 to 24 weeks.
2. Work Effort: Average = 53 work days.
3. Funding: $10,000

*Rounded to 15

REFERENCES: R1, R4, R11, R15, R16, R20, R26, R90, R93, R94, R95, R97, R98, R99, R100, R101, R102, R112

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ANALYZE EXISTING DISPOSAL OPTIONS

number 107

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Fully Understood Current System Capabilities

PURPOSE: To examine the costs of existing facilities or readily obtainable facilities and their ability to continue in their current mode of operation, consistent with applicable environmental codes. These facilities may be landfills, incinerators, other processing technologies, current sludge disposal lagoons, spreading areas and other disposal facilities.

DESCRIPTION: This activity looks at all existing facilities, assesses their conditions, and analyzes whether or not they could be upgraded and the associated costs. The current system's strengths and shortcomings must be clearly understood, as well as the cost to rectify those facilities. A particular market may lend itself readily to retrofitting an incinerator, for example, or a landfill may be easily and inexpensively expanded. These considerations are analyzed completely.

MAJOR OBSTACLES: Poor data; public pressure to continue or discontinue an operation.

MAJOR DECISIONS: Credibility of existing data or emissions testing; parameters for calculations; level of detail; role of neighboring areas; validity of findings; whether sludge disposal facilities are sufficient in the long term, and co-disposal is therefore unnecessary.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PT
2. Must be Consulted or Notified: MPE, PD, EO, PT, other municipalities

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1.5 to 6 weeks.
2. Work Effort: Average = 19 work days.
3. Funding: $4,000

REFERENCES: R10, R11, R28, R45, R49, R82, R106, R109

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: CONDUCT MATERIAL MARKET ANALYSIS

number 108

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Materials Market Report, Letters of Interest

PURPOSE: To obtain information on local markets for materials recovered from a central RR facility and/or a source separation program. It is important to obtain market requirements (specifications) for the recovered materials so that a determination can be made on the type of technology and processing necessary to meet those requirements.

DESCRIPTION: A list of possible markets for the various materials is compiled and surveyed, potential markets are identified and letters of interest are solicited. Existing source separation programs are identified and analyzed, existing markets are identified, constraints and plans for the future are noted.

MAJOR OBSTACLES: Change of policy by the potential markets when the project concept is transmitted from staff level to corporate level.

MAJOR DECISIONS: Whether or not the initial list of possible markets is reasonably complete; whether or not the survey questionnaire is complete and requests the necessary information.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Must be Consulted or Notified: PT

ESTIMATING DATA·

1. Duration: Average = 15 weeks. Range = 5.7 to 19 weeks.
2. Work Effort: Average = 23 work days.
3. Funding:

REFERENCES: R1, R4, R10, R11, R15, R31, R39, R84, R85

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: CONDUCT SOURCE SEPARATION FEASIBILITY

number 109

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Realistic System Configuration with Costs and Revenues

PURPOSE: To obtain a solid basis for deciding whether or not to pursue implementation of a source separation RR program.

DESCRIPTION: Collection practices are examined in detail, potential markets and their requirements are identified, system parameters are developed, and a realistic system configuration is developed with associated costs and revenues.

MAJOR OBSTACLES: Incomplete information on collection practices or market requirements.

MAJOR DECISIONS: Whether the system is feasible or not; whether system is to be separate curbside collection or self-haul to central collection points.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Must be Consulted or Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 7 weeks.
2. Work Effort: Average = 25 work days.
3. Funding: $6,000

REFERENCES: R2, R4, R5, R11, R25, R27, R29, R30, R31, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R64, R65, R66, R67, R68, R69, R108, R113

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM PRELIMINARY ENVIRONMENTAL ANALYSIS

number 110

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Environmental Constraints

PURPOSE: To identify potential environmental problems and areas of environmental concern and to provide environmental input into the development of project alternatives.

DESCRIPTION: Since many environmental concerns must be analyzed on a site specific basis, this Master Activity should be performed in conjunction with MA 112.

A preliminary examination is made of air, water, noise and other environmental impact categories. Site-specific requirements for air monitoring are determined, and the projected impacts of different technologies are estimated and compared. The results may form the basis for limiting the number of alternatives or constraining the conceptual design of alternative scenarios.

MAJOR OBSTACLES: Uncertainty on final interpretations of regulations; insufficient field data.

MAJOR DECISIONS: Whether or not the existing air quality monitoring network is adequate.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Must be Consulted or Notified: EPA, EA-(S), EA-(L)

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 11 work days.
3. Funding: $3,000

REFERENCES: R2, R6, R11, R47, R65, R73, R74, R76, Safe Drinking Water Act, Air and Water Pollution Code Rules and Regulations, OSHA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ESTABLISH TRANSPORTATION ANALYSIS MODEL

number 111

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Selected Transportation Analysis Model and Data.

PURPOSE: To prepare for later analysis of RR system transportation costs and evaluation of alternative solutions. Transportation analysis can provide input to the determination of facility scale, technology, and site.

DESCRIPTION: Transportation modeling can range from a rough cost estimate of a likely solution calculated by hand to complex computer modeling, which can optimize the transportation configuration for a region and also identify the system technology, scale, and site which would best meet system objectives at the lowest cost. The extent of transportation analysis is dependent upon service region size, potential markets for recovered materials and energy, available facility sites, existing waste transportation and disposal arrangements, and the depth of analysis requested by interested citizen committees and representatives.

MAJOR OBSTACLES: Lack of commitment to the project on the part of service region members and, therefore, an indeterminate and constantly changing waste supply and region size; public objection to routes, methods, assumptions.

MAJOR DECISIONS: Extent of analysis desired for project and level of sophistication of the technique of analysis; identification of desired outputs (costs, transportation configurations, sensitivity analysis, economically preferred technology and scale).

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C with PT
2. Must be Consulted or Notified: DOT-(L), DPW, P, A/E

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 14 work days.
3. Funding: $3,500

REFERENCES: R17, R19, R20, R22, R23, R24, R28

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM PRELIMINARY SITE ANALYSIS

number 112

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Sites Preliminarily Designated

PURPOSE: To establish the most desirable and probable sites for different components of the RR system, including intermediate source separation, processing sites, residue landfill sites, transfer station sites, and RR facility sites.

DESCRIPTION: Since environmental constraints can have an important bearing on site selection and site ranking, this master activity should be performed in conjunction with MA 110.

The site analysis includes preliminary identification of sites, estimate of reasonableness based on environmental, socioeconomic, logistical, and public acceptability criteria. The sites are nominated and preliminary analyses are performed for proximity to markets, and site acceptability for all other aspects of the system.

MAJOR OBSTACLES: No sites; no information available on sites; disagreement concerning site or ranking; untimely or inaccurate leaks to media.

MAJOR DECISIONS: Site ranking

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM, PT
2. Must be Consulted or Notified: EO, PD, MPE, DOT-(L), PT

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 14 work days.
3. Funding: $3,500

REFERENCES: R2, R6, R10, R47, R48

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM FINANCIAL, LEGAL, AND INSTITUTIONAL ANALYSIS

number 113

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Understanding of Constraints, Risks, Need for Legislation, Options

PURPOSE: To understand all constraints, issues, and risks facing the RR program so that options can be formulated.

DESCRIPTION: Each RR project will have unique financing, legal, and institutional constraints which must be recognized and addressed. This master activity identifies all those issues, recognizes the constraints and analyzes the options available for structuring the program.

MAJOR OBSTACLES: Information and analysis unclear or inconclusive.

MAJOR DECISIONS: Which constraints should be changed, which should remain and be worked around; what are the options if the constraints are not changed.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C, FA
2. Must be Consulted or Notified: IB, BC, LC

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 3 to 12 weeks.
2. Work Effort: Average = 31 work days.
3. Funding: $8,000

REFERENCES: R2, R5, R6, R8, R10, R11, R20, R55, R58, R76, R77, R110, R114

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: DEVELOP PROJECT ALTERNATIVES

number 114

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Development of Best Project Alternatives

PURPOSE: To specify all the possible projects which are reasonable to consider, and to develop the rationale for the reason other projects are either not possible or are unreasonable. The major potential alternatives are first formulated, then evaluated to set the stage for the recommended plan and alternative.

DESCRIPTION: Taking into account waste quantity and composition, market, site, and technological requirements, the alternatives which are technically feasible are formulated. For each alternative, the issues of regionalization, transportation, risks, financial, legal, and institutional arrangements are analyzed and assessed, and conclusions are reached for each as to: service area, transportation network, preferred financial and institutional arrangements, risk assignments, technology configurations, potential sites, co-disposal potential, the integration or independent operation of a source separation system, waste supply. Often, the advantages and disadvantages of each project configuration are given.

MAJOR OBSTACLES: Severe disagreement on the alternative or its objectives; excessive number of alternatives which begin to lose meaning.

MAJOR DECISIONS: Distillation of a myriad of possibilities into the most appropriate alternatives.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Must be Consulted or Notified: PT, MPE, EA-(1), EA-(S), EPA, LD, PD

ESTIMATING DATA:

1. Duration: Average = 5 weeks. Range = 2.5 to 14 weeks.
2. Work Effort: Average = 44 work days.
3. Funding: $9,000

REFERENCES: R2, R3, R5, R6, R8, R10, R11, R15, R20, R25, R27, R29, R30, R31, R33, R34, R35, R38, R39, R40, R55, R65, R111, R114

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ESTABLISH POLITICAL/PUBLIC DECISION PROCESS

number 115

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Decision to Proceed, Postpone or Terminate

PURPOSE: To set up the process, which will be compatible with the public information process, by which decisions will be made and adhered to. There is usually an established protocol in municipalities for approaching key individuals and organizations which will be party to the decision (a concurrence list).

DESCRIPTION: This task relies on precedent, protocol, imagination, and interface with the public decision process in order to elicit a binding decision on the part of the municipality. The ongoing public information process is factored into the decision, as well as the decision of the elected officials.

MAJOR OBSTACLES: Not observing protocol, incomplete information, no clear path established for decision.

MAJOR DECISIONS: Protocol required; mechanism for proceeding.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PD, PT
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 5 work days.
3. Funding: $1,000

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: DEVELOP RECOMMENDATIONS AND REPORT

number 116

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Draft Feasibility Analysis Report, Final Feasibility Analysis Report with Recommendations and Action Plan Adopted by Project Team

PURPOSE: To select a course of action to be pursued that will achieve the goals and is consistent with the policy and guidelines set down in MA 101.

DESCRIPTION: The method for determining the order of preference of alternatives is developed and used to select the recommended alternative. A draft Feasibility Analysis report is written (including recommendations and an action plan) and distributed to the project team for comment. The project team develops a consensus of revisions to the draft. The revisions are made and the final Feasibility Analysis is adopted by the project team.

MAJOR OBSTACLES: Disagreement on objectives, evaluation of alternatives and recommendations; disagreement about the facts as presented.

MAJOR DECISIONS: Whether or not the recommendations are consistent with the wishes of the community, whether or not to recommend co-disposal, whether or not to recommend source separation, budget proposal for next phase.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, IHS, C
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 5 weeks. Range = 2.7 to 20 weeks.
2. Work Effort: Average = 40 work days.
3. Funding: $10,000

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: OBTAIN POLITICAL/PUBLIC DECISION TO PROCEED

number 117

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Decision to Proceed, Postpone or Terminate

PURPOSE: To present information, obtain feedback and elicit a conscious decision from all participants in the decision process, using criteria established in MA 115 to decide when the overriding factor or consensus has been realized.

DESCRIPTION: All decisions to proceed with, postpone or terminate a RR project are made consciously by the public decision process. There are many sublevels of decision which must be factored in before the decision reaches the public and political realm. Then a consensus or majority opinion is reached, based on input of the project team, wherein the future of the project is clearly decided.

MAJOR OBSTACLES: Undue delay; lack of high level commitment or disagreement; major opposition to the project in key member municipalities.

MAJOR DECISIONS: To proceed with, postpone or terminate the project; whether or not to proceed with co-disposal; whether or not to proceed with source separation; the amount of money appropriated for the next phase.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO
2. Must be Consulted or Notified: IA, PT

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 3 to 16 weeks.
2. Work Effort: Average = 15 work days.
3. Funding: $3,000

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM DETAILED SOURCE SEPARATION FEASIBILITY

number SS1

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Feasibility Report; Decision to Proceed or Terminate

PURPOSE: To refine the market requirements, system configuration and the estimates of percent participation, percent recovery, costs, and revenues.

DESCRIPTION: A project team is formed; in-house staff is committed; consultants are hired; if necessary a public opinion poll may be conducted (dependent on size of municipality) to establish the level of participation; separation and collection procedures are defined; quantity estimates of recovered materials are derived, based on the percent participation obtained from the public opinion poll; market requirements and prices are obtained; institutional and legal requirements are defined; and system configuration, costs, and revenues are established.

MAJOR OBSTACLES: Unclear work scopes; low interest by elected officials; unqualified or uncommitted individuals; unreasonable quantities or collection practices; unclear existing laws; disagreement over facts presented; excessive delays.

MAJOR DECISIONS: Political/public decisions to proceed with source separation program.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, PM, IHS, C, LC
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 29 weeks. Range = 16 to 61 weeks.
2. Work Effort: Average = 102 work days.
3. Funding: $25,000

REFERENCES: R2, R4, R5, R11, R25, R27, R29, R31, R37, R38, R39, R41, R42, R43, R44, R45, R64, R65, R66, R67, R68, R69, R106, R108, R113

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: DEVELOP SOURCE SEPARATION PROGRAM

number SS2

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Laws, Ordinances, Changes to Contracts, and Budgets Ready for Adoption

PURPOSE: To structure a source separation program which is tailored to the local community and meets its goals, requirements, and needs in accordance with the Political/Public Decision To Proceed (A SS108).

DESCRIPTION: Based on the results of the political/public decisions in MA SS1, the program is defined and tested, the resulting separated materials are brought to the potential markets, and letters of interest are solicited based on the sample recovered material. The institutional and legal framework, as well as the publicity/public education program, is developed.

MAJOR OBSTACLES: Ambiguous or inconsistent previous decision; test not representative of the overall community; no market; delayed or unsatisfactory responses; undue delay on decision.

MAJOR DECISIONS: Political/public decision to proceed including the adoption of institutional and legal framework (e.g., adopt ordinance mandating source separation, change franchise contracts) and adopted budget adjustments (e.g., for publicity/public education, recycling center, purchase of trucks).

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, DPW, PT, PM, PD, EO
2. Must be Consulted or Notified: EA-(L), PD, EO

ESTIMATING DATA:

1. Duration: Average = 27 weeks. Range = 17 to 52 weeks.
2. Work Effort: Average = 91 work days.
3. Funding: $25,000

REFERENCES: R2, R4, R5, R11, R25, R27, R29, R31, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R64, R65, R66, R67, R68, R69, R108, R113

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: EXECUTE PROGRAM

number SS3

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Operating Program

PURPOSE: To commence operation of the source separation program in accordance with the Political/Public Decision To Proceed (A SS207).

DESCRIPTION: Facilities are constructed, equipment is purchased, program is publicized, contracts and ordinances are enforced, contracts on recovered material are signed after bids have been received all as described and decided on during the Political/Public Decision To Proceed (A SS207).

MAJOR OBSTACLES: Equipment lead time is excessive.

MAJOR DECISIONS: Contractor selection and contract terms; size, type and operational parameters of the facilities.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Must be Consulted or Notified: PD, EO, AO

ESTIMATING DATA:

1. Duration: Average = 16 weeks. Range = 8 to 28 weeks.
2. Work Effort: Average = 40 work days.
3. Funding: $8,000

REFERENCES: R108, R113

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: DEFINE PROJECT

number 201

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Preliminary Project Cost and Program Budget Estimates

PURPOSE: To define elements of the RR project based on the Political/Public Decision (MA 117) and all previous data, to develop strategies for removing any institutional barriers and for furthering waste supply and market commitments, and to estimate the costs of the project. This master activity may be unnecessary and can be reduced in scope or omitted if MA 117 has not significantly changed the recommendations made in MA 116.

DESCRIPTION: The project to be pursued is outlined. Transportation, tipping fee, and life cycle costs are estimated. Major elements to be addressed in this phase are identified including roles, responsibilities, timetable and budget. Strategies for removing any institutional barriers and for furthering waste supply and market commitments are outlined.

MAJOR OBSTACLES: Major unanticipated project or policy changes as a result of MA 117.

MAJOR DECISIONS: The major problems to be addressed in the procurement planning phase; responsibilities of the in-house staff, consultants and other participants, scope and cost of Phase II; whether or not additional weighing surveys are necessary.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, PT, IHS, C
2. Must be Consulted or Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 20 work days.
3. Funding: $5,000

REFERENCES: R2, R3, R10, R19, R20, R22, R23

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: DRAFT ENVIRONMENTAL ASSESSMENT AND DETERMINE SITE PRIORITIES

number 202

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To identify potential environmental impacts of the proposed project and to estimate costs associated with resolving these impacts; to evaluate and establish the priorities of nominated system sites; and to write a draft environmental assessment report for use during the process of securing sites (MA 203).

DESCRIPTION: The environmental impacts of the project are identified in quantitative and qualitative terms for the areas of air and water quality, zoning and land use, traffic, historical significance, and aesthetics. The associated effect of resolving these impacts on project economics is estimated. Nominated sites are ranked based on the above impact analysis and a draft environmental assessment report is prepared.

MAJOR OBSTACLES: Existing environmental regulations prohibit construction; cost to resolve impacts of project is excessive.

MAJOR DECISIONS: Quantification of impacts; procedure to rank sites; the amount of detail required based on project parameters, local conditions, and State (and possibly Federal) requirements.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, PT, PD, C
2. Must be Consulted or Notified: Local Historical Society, ZA, Planning Comm., DOT (L), EA-(L), EA-(S), EPA, Local Bldg. Comm., EO

ESTIMATING DATA:

1. Duration: Average = 11 weeks. Range = 7 to 18 weeks.
2. Work Effort: Average = 72 work days.
3. Funding:

REFERENCES: R2, R4, R6, R70, R71, R72, R78, R79, R102, R103, R104, R106

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE SITES

number 203

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Obtain Public Acceptance of Site(s), Obtain Option to Acquire Site(s).

PURPOSE: To gain public acceptance of the proposed site(s) and to obtain purchase options on preferred site(s).

DESCRIPTION: The Draft Environmental Assessment is presented to the elected officials and community groups. Elected officials from participating communities and the respective community groups are solicited for project support. System sites and associated environmental impacts of the resource recovery project are presented to the public via public meetings for their comments. Potential site owners are approached and land purchase option agreements are signed for the preferred site(s).

MAJOR OBSTACLES: Strong public resistance to the project or site; unwillingness of potential site owners to sell property; excessive land costs.

MAJOR DECISIONS: Environmental impacts are perceived to prohibit the resource recovery system; price to be paid for the sites; incentives to be offered to the host communities; should the sites be acquired by eminent domain.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PD, IHS, C, LD, EO
2. Must be Consulted or Notified: Local Community Groups, Potential Site Owners, IB

ESTIMATING DATA:

1. Duration: Average = 18 weeks. Range = 11 to 63 weeks.
2. Work Effort: Average = 64 work days.
3. Funding: $16,000

REFERENCES: R2, R3, R4, R6, R47, R48, R49, R70, R71

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: UPDATE PROJECT DEFINITION AND COSTS

number 204

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Project Costs

PURPOSE: To estimate project costs more accurately based on secured site(s), to develop strategies for removing any institutional barriers to the envisioned project configuration and to present them to the elected officials if major changes (in the project or in the elected officials) have developed since the previous presentation.

This MA may be reduced in scope if no significant changes have been made to the project during MA 203.

DESCRIPTION: Facility costs are refined based on the amount of waste estimated (taking into account existing, expanding, or new source separation programs) and the preliminary agreements with the energy and materials markets obtained in Phase I. Previously calculated (A 20102) transportation costs are revised if necessary and incorporated to estimate tipping fees and life cycle costs for the different procurement approaches.

Detailed strategies are developed for removing any institutional barriers which block the preferred configuration, and furthering waste supply and market commitments. These strategies have been outlined in Phase I and MA 201. Any changes caused by developments between then and now are made and additional details are added as necessary. These strategies are pursued in MA 206, MA 205 and MA 207, respectively.

MAJOR OBSTACLES: Unreliable market and waste stream data; major policy or personnel changes.

MAJOR DECISIONS: Whether or not to perform this master activity if the preferred site(s) has been obtained. However, if the site(s) actually obtained is in a significantly different location than the one sought, this master activity may involve major restructuring of the project configuration.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, PT, IHS, C
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 20 work days.
3. Funding: $5,000

REFERENCES: R2, R3, R5, R17, R19, R20, R22, R23, R111

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: STRENGTHEN WASTE SUPPLY COMMITMENTS

number 205

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Resolutions of Intent or Interest

PURPOSE: To secure the waste stream and estimate accurately the types and tonnages to be included in the RR project. Legal questions of waste stream control and contracting are addressed in MA 206; MA 205 deals with non-institutional questions of securing the waste stream related to municipal intent or desire to deliver waste to the RR system.

DESCRIPTION: Accurate information regarding the amount and content of the waste supply is collected. Each community must decide the waste tonnage for which it will be responsible. Level of expected commitment of waste from the commercial and industrial waste of each community is established.

MAJOR OBSTACLES: Unwillingness of the communities to commit to the project, or the existence of unreliable waste supply data.

MAJOR DECISIONS: The waste tonnage each town should control and for which it will be responsible; methods of waste stream control available for commercial/industrial waste; whether to establish a community committee to analyze risks and possibly obviate the need for new legislation in MA 206.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PT, PD, C, IB, EO, LD, BC
2. Must be Consulted or Notified: IA

ESTIMATING DATA:

1. Duration: Average = 20 weeks. Range = 10 to 40 weeks.
2. Work Effort: Average = 80 work days.
3. Funding: $24,000

REFERENCES: R2, R8, R11, R27, R29, R30, R31, R64, R65, R66, R67, R68

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: STRUCTURE RISKS TO RESOLVE INSTITUTIONAL PROBLEMS

number 206

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Resolved Institutional and Risk Arrangements

PURPOSE: To structure risks according to the favored scenarios of MA 113, MA 114, MA 117, MA 201 and MA 204 and to seek the legislative action or the community action in attempting to effect the favored scenario. The legislative changes and community action will dictate the risk structure. If attempts at those changes or actions are successful, the scenario stands are structured. If attempts at those changes or actions are unsuccessful, the results are incorporated to prepare a favored scenario for risks, or perhaps to determine the only possible course of action open to the community.

DESCRIPTION: MA 113, MA 114, MA 117, MA 201 and MA 204 already have stated the desired project posture. In so doing, contracting constraints as well as financing, procurement, and energy sales constraints were identified, and the course of action which should be pursued to rectify unwanted constraints was identified. In some cases the course was modified legislation; in other cases the decision was to work with the legal mechanism in place. This activity pursues the legislative changes indicated. If the legislation is partly or wholly unsuccessful, this master activity incorporates the results of the legislative process, and sets a course of action for risk assignment. One arrangement or several different institutional arrangements are constructed which will result in that desired risk posture. The results of this activity are then factored into the overall project position of MA 209. If no legislative changes are required, and the method for proceeding is not altered by MA 205, the project definition of MA 204 holds unamended.

MAJOR OBSTACLES: Identified legislation deemed unnecessary in subcommittee hearings; insufficient vote to pass; risk scenario acceptable to elected officials cannot be structured; disagreement on desirable institutional arrangements within project team.

MAJOR DECISIONS: If appropriate legislation was identified, how to draft the legislation; if defeated, whether to return next session or just work around the problem; the mix of institutional arrangements which should result in an acceptable risk posture.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM, LD, LC, PD
2. Must be Consulted or Notified: MPE, DP, PC, IB, U, EA-(L), EA-(S)

ESTIMATING DATA:

1. Duration: Average = 25 weeks. Range = 12 to 52 weeks.
2. Work Effort: Average = 100 work days.
3. Funding: $30,000

REFERENCES: R4, R10, R14, R15, R20, R21, R27, R55, R59, R65

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: STRENGTHEN MARKET COMMITMENTS

number 207

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Letters of Intent

PURPOSE: To secure market commitments for energy and materials in the form of letters of intent to purchase. Legal questions and barriers to securing markets are addressed in MA 206, but this activity addresses the intent and desire to participate on the part of the market regardless of whether the legal mechanism or precedent exists to allow participation by the market with the municipality or vice-versa.

DESCRIPTION: The lead agency recontacts viable energy and material markets to determine: a) the intent of the market to cooperate in the project, b) purchase requirements and contract terms.

MAJOR OBSTACLES: Unwillingness of market to commit to more than an interest in the project.

MAJOR DECISIONS: Which market to approach; whether or not to include a pricing formula in the letter of intent; whether or not to develop a draft contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, PT, IHS, C, U
2. Must be Consulted or Notified: PUC, M

ESTIMATING DATA:

1. Duration: Average = 18 weeks. Range = 10 to 27.5 weeks.
2. Work Effort: Average = 74 work days.
3. Funding: $22,000

REFERENCES: R1, R4, R15, R16, R20, R26

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: UPDATE PROJECT DEFINITION AND COSTS

number 208

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Determine Project Costs

PURPOSE: To update project cost estimates based on secured sites, further commitments from waste suppliers and markets and the decisions and options from the selection of technology(s), risk assignment, procurement and financing approaches developed concurrently during MA 209.

DESCRIPTION: Facility costs are refined based on secured sites, the amount of waste committed (taking into account source separation) and the preliminary agreements with the energy and materials markets. Previously calculated (MA 201 and MA 204) transportation costs continue to be incorporated to estimate tipping fee and life cycle costs. This master activity is performed in conjunction with MA 209 and adjusted accordingly.

MAJOR OBSTACLES: Disagreement on the facts are presented; disagreements on the method of analyzing the costs.

MAJOR DECISIONS: Whether or not to perform this master activity, since if very little change in the project has occurred during MA 205, MA 206 and MA 207, the results of either MA 201 or MA 204 may be used.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, PT, IHS, C
2. Must be Consulted or Notified: EO, M, AO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 6.5 weeks.
2. Work Effort: Average = 22 work days.
3. Funding: $6,000

REFERENCES: R2, R3, R5, R17, R19, R20, R22, R23, R111

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SELECT TECHNOLOGY(S), RISK ASSIGNMENT, PROCUREMENT AND FINANCING APPROACH; WRITE REPORT

number 209

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Report Stating Selected Technology(s), Procurement and Financing Approach, and Risk Assignment.

PURPOSE: To provide definitive information on the scope of the RR system and the risks which the project participants are to assume. This information is needed for the Political/Public Decision to proceed.

DESCRIPTION: Based on the analysis of energy and materials markets, waste quantity and composition (taking into account source separation programs), environmental impacts and site(s), the preferred RR technology(s) is selected. Previous cost analyses have assumed specific technologies; now however, the desired technology is formally stated. The project team also decides on the amount of risk to assume in the project and how the RR system is to be owned and operated.

MAJOR OBSTACLES: Disagreements on the facts as presented; lack of consensus on the most appropriate technology(s), financing and procurement approach, risk assignment.

MAJOR DECISIONS: Selection of most appropriate technology(s), procurement and financing approach and risk assignment.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, PD, PT, LD, C
2. Must be Consulted or Notified: IB, BC, EO

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 3 to 11 weeks.
2. Work Effort: Average = 46 work days.
3. Funding: $15,000

REFERENCES: R2, R3, R6, R8, R27, R29, R33, R34, R35, R36, R55, R58, R110

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: OBTAIN POLITICAL/PUBLIC DECISION TO PROCEED **number** 210

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Letters Of Support And Endorsement, Appropriated Budget For Next Phase, Adopted Resolution To Proceed

PURPOSE: To obtain an official decision to proceed with the project as defined in Phase II from all involved agencies.

DESCRIPTION: A proposed project scope has been developed by the project team with the cooperation of some elected officials. However, in this master activity, all participating elected officials formally accept the project structure, and then make a decision to proceed to Phase III. While elected officials may agree with the project, they should get public reaction and support before they make a decision to proceed. Part of the activity is for the elected officials of both the lead agency and any participating communities to come to a conscious decision to endorse the project, to so state the support, and to demonstrate their commitment by resolution to appropriate the required funds budgeted for Phase III in MA 209.

MAJOR OBSTACLES: Elected officials decide to terminate project in present scope.

MAJOR DECISIONS: Whether or not to proceed with the project structure, risk assignment, and procurement and financing approach.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, IHS, C, EO
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 12 weeks. Range = 4 to 20 weeks.
2. Work Effort: Average = 38 work days.
3. Funding: $10,000

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ESTABLISH ADMINISTRATIVE FRAMEWORK (TURNKEY)

number 301

PHASE: III, Resource Recovery System Procurement

MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule the Procurement Process

PURPOSE: To identify and secure commitments from the public and private organizational resources necessary to carry out the procurement process and to structure and schedule this process so as to accommodate the required inputs.

DESCRIPTION: During Phase II, the elected officials have selected or created a lead agency for Phase III. This agency now reviews the project status and then determines and obtains commitments from the project team participants, hires consultants, establishes and maintains liaison with involved agencies, plans for public and industry involvement, and outlines the approach for soliciting and evaluating proposals from private industry (some or all of this may already be established and does not have to be repeated).

MAJOR OBSTACLES: Insufficient personnel or funding; in-fighting among agencies; weak commitments from key political and agency personnel.

MAJOR DECISIONS: Selection of lead agency and key personnel; composition of the project team for Phase III; selection of consultants; plans for public and industry involvement; procurement plan and schedule.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, LA, C, PT
2. Must be Consulted or Notified: EO, IA, M, IG, P

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 5 to 19 weeks.
2. Work Effort: Average = 38 work days.
3. Funding: $10,000

REFERENCES: R2, R6, R9, R12

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PRODUCE RFP (TURNKEY)

number 302

PHASE: III, Resource Recovery System Procurement

MILESTONE: RFP and Draft Contract

PURPOSE: To specify the content and organization of proposals from potential contractors, and to acquaint the proposers with the various technical, managerial, financial, and institutional aspects of the project; to indicate clearly the desires of the lead agency in seeking a turnkey approach. To prequalify contractors and obtain their input on a draft RFP (optional).

DESCRIPTION: The RFP should clearly transmit the proposal requirements of the lead agency to the potential proposers. These requirements produce proposals of sufficient content and uniform organization for comparable and effective evaluation. An RFQ may be issued to select companies for the receipt of the RFP, thereby limiting the subsequent number of proposals. The turnkey approach implies certain needs and expectations on the part of the lead agency, and the intent should be clearly stated in the RFP. This master activity is designed for procurement of either large or small scale systems, or a combination of the two. Regardless of size, the same areas should be addressed and resolved. The RFP is built on the system - large or small - defined and refined in MA 007, MA 116, MA 201, MA 204 and MA 209. If necessary, waste quantities are updated, taking into account source separation programs and new, expanded and upgraded sewage treatment plants (for co-disposal projects), and the anticipated effects of source reduction. An optional step is to produce and issue an RFQ in order to prequalify contractors and obtain their input on the draft RFP.

MAJOR OBSTACLES: Consensus by the project team concerning the extent of detail and the general content of the RFP.

MAJOR DECISIONS: Whether or not to issue RFQ; selection of qualified proposers; definition of parameters in RFP.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C, LC
2. Must be Consulted or Notified: PD, LA, IA, potential proposers

ESTIMATING DATA:

1. Duration: Average = 22 weeks. Range = 14 to 37 weeks.
2. Work Effort: Average = 126 work days.
3. Funding: $25,000

REFERENCES: R5, R6, R7, R8, R32, R59, R60

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE CONTRACTOR (TURNKEY)

number 303

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Contract

PURPOSE: To engage the services of a contractor to carry out the project as defined in the RFP.

DESCRIPTION: The contractor is selected following an extensive evaluation of proposals and is contracted following either a sequential or simultaneous negotiation procedure. The contract negotiations actually begin upon receipt of proposals and are continued through proposer presentations until it is decided either that one company is superior or that further elaboration is required with a limited number of them. After selection of a preferred proposer, a second proposer should be selected as an alternate in the event of unforeseen difficulties with the preferred contractor. A key consideration is the responsiveness of the proposals to the RFP; no further negotiation is needed if a proposer meets all the requirements of the RFP and the proposed system is acceptable according to the principal criteria.

MAJOR OBSTACLES: Partially-responsive proposals; nonacceptability of certain proposal elements.

MAJOR DECISIONS: Evaluation and ranking of proposals; sequential or simultaneous negotiations; final form of contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C, LC
2. Must be Consulted or Notified: PD, IA, P, EO

ESTIMATING DATA:

1. Duration: Average = 55 weeks. Range = 26 to 136 weeks.
2. Work Effort: Average = 300 work days.
3. Funding: $90,000

REFERENCES: R5, R6, R7, R8, R31, R32, R59

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM ENVIRONMENTAL ASSESSMENT (TURNKEY)

number 304

PHASE: III, Resource Recovery System Procurement

MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To prepare an environmental assessment in conjunction with securing permits where necessary to assure all involved agencies, the markets, and the public that the project is viable.

DESCRIPTION: The environmental assessment required varies widely among municipalities in complexity and review criteria. In some cases it may not be necessary to perform an environmental assessment. Where it is required, the assessment is usually done by a consultant for U.S. EPA or a State environmental agency and considers all air, water, noise, safety, and aesthetic requirements.

MAJOR OBSTACLES: Insufficient design data; design not meeting requirements.

MAJOR DECISIONS: Identification of the critical items for the system; what level of detail the assessment should involve; whether or not to directly involve the turnkey contractor.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Must be Consulted or Notified: PM, PD, EO, IG

ESTIMATING DATA:

1. Duration: Average = 31 weeks. Range = 14.5 to 76 weeks.
2. Work Effort: Average = 105 work days.
3. Funding: $25,000

REFERENCES: R54, R70, R71, R72

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE WASTE SUPPLY CONTRACTS (TURNKEY)

number 305

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Waste Supply Contracts

PURPOSE: To develop final agreements between the lead agency and communities for the supply of waste. This is the key agreement between the lead agency and the communities which identifies the service to be provided, the risks to be borne by either party, and the method of compensation to reflect such service and related risks. If a co-disposal project is being pursued, proper commitments of sewage sludge are also pursued.

SPECIAL NOTE: In the case of a single municipality or single long-term controlling agent, this master activity may be omitted or substantially reduced in scope.

DESCRIPTION: The communities and the lead agency will negotiate a contract for the supply of waste, whose revenues will partially offset the costs and act as security for financing. Provisions for existing or future source separation programs; transportation costs; separate industrial/commercial wastes; and previously committed host community incentives are considered for inclusion in these agreements as appropriate. Bond and other counsel, depending on the form of financing, will review the legality and efficacy of the document, at which time it must be approved by each participating community, which may involve a substantial educational effort. If a co-disposal project is being pursued, the commitment of sewage sludge and septic wastes (treated as appropriate) is sought for inclusion in the system. In the case of a single municipality or single controlling agent, the waste supply may be readily available without specific community contracts, and this task is virtually unnecessary.

MAJOR OBSTACLES: Convincing community decision-makers who have not been directly involved in contract negotiations of provisions, e.g., 20-year term, tonnage and guarantees (if required).

MAJOR DECISIONS: What risk posture to take on industrial/commercial waste; whether to take a hard or soft negotiating posture on draft contracts; what risks the lead agency should take and what risks the communities should take.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD assisted by negotiator, IHS, C, LC, FA
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 24 weeks. Range = 16 to 168 weeks.
2. Work Effort: Average = 240 work days.
3. Funding: $65,000

REFERENCES: R2, R4, R8, R11, R27, R30, R31, R64, R65, R66, R67, R68, R69, R85

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE PRECONSTRUCTION PERMITS (TURNKEY)

number 306

PHASE: III, Resource Recovery System Procurement

MILESTONE: Necessary Permits Secured

PURPOSE: To secure necessary permits such as air quality, NPDES, construction, operation, and highway permits where required before extensive design is performed. Principally to assure the lead agency; the financial community (if revenue bond financing is anticipated); the market(s); participating communities and the public that the project is viable and will meet all regulatory requirements.

DESCRIPTION: Depending on State and local requirements, various types of permits may need to be secured prior to final design and construction in order for the project to have a reasonable probability of success. Some of the permits are contingent upon an acceptable site plan, expected emissions and effluents. The permits are issued. This master activity is performed in conjunction with MA 307 since meeting permit requirements may cause modifications to the contractor's proposed design.

MAJOR OBSTACLES: Permit requirements unclear; incomplete list of permits; renewed public opposition.

MAJOR DECISIONS: Which agencies should be contacted; which permits should be applied for during this master activity; whether or not design modifications are necessary to meet the permit requirements.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, C, with CR assistance
2. Must be Consulted or Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 26 weeks. Range = 13 to 39 weeks.
2. Work Effort: Average = 90 work days.
3. Funding: $25,000

REFERENCES: Local Permit Information

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM PRELIMINARY DESIGN (TURNKEY) (Performed in Conjunction with Master Activity 306)

number 307

PHASE: III, Resource Recovery System Procurement

MILESTONE: Technical Information For Permits (MA 306) and Environmental Assessment (MA 304)

PURPOSE: To produce technical information from the turnkey contractor for pre-construction permits which are pursued for the purposes stated in MA 306; to assure that the proposal (and the contractor's preliminary design) meets the permit requirements of MA 306 and the environmental requirements of MA 304.

DESCRIPTION: Certain major preconstruction permits, such as air quality or water quality (e.g., for cooling water) may require additional technical data for evaluation by the regulatory agencies. Other examples of potential permit requirements are zoning approvals contingent on landscape architecture or solid waste facility permits requiring rodent and odor control details. Any preliminary design work in support of meeting permit requirements is performed as part of this master activity.

MAJOR OBSTACLES: Design not meeting code; interface with permitting agency poorly conducted; misunderstanding of permit requirements; lack of clarity on funding source.

MAJOR DECISIONS: Level of effort required to support permit submittals; level of detail of design work; source of funds to perform enough of the design to support MA 304 and MA 306.

ROLES AND RESPONSIBILITIES:

1. Does Work: CR with PM
2. Must be Consulted or Notified: EA-(L)

ESTIMATING DATA:

1. Duration: Average = 20 weeks. Range = 13 to 34 weeks.
2. Work Effort: Average = 60 work days.
3. Funding: $15,000

REFERENCES: See locally obtained air, water, and zoning laws and codes.

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE MARKET CONTRACTS (TURNKEY)

number 308

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Energy (And Materials) Market Contracts

PURPOSE: To develop final agreements by conversion of preliminary commitments or letters of intent obtained during Phases I and II into contractually binding documents between the lead agency and the buyer(s) of energy (and materials).

DESCRIPTION: The lead agency will negotiate and secure contracts for sale of energy and materials. Revenues from such contracts will partially offset the cost of RR. Negotiations for the sale of energy to utilities should include liaison with the PUC. In the case of RDF production, final contracts may not be deemed necessary at this time, depending on the amount of risk which the lead agency (and possibly the communities in a multi-jurisdictional project) is willing to bear. For materials recovery it may be desirable to wait for the facility to become operational before contracting for the sale of the product.

MAJOR OBSTACLES: Little monetary incentive for a utility to enter into an energy contract; excessive redundancy or penalty requirements by energy market.

MAJOR DECISIONS: What level of compensation is appropriate; what risks should be borne by the lead agency; what risks should be borne by the market; whether or not to seek materials market contract(s).

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, IHS, C, LC
2. Must be Consulted or Notified: EO, PUC in case of U

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 20 weeks.
2. Work Effort: Average = 20 work days.
3. Funding: $7,000 (Highly variable depending on the level of detail obtained in MA 207 and new developments thereafter)

REFERENCES: R1, R4, R8, R15, R16, R20, R85

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE FINANCING (TURNKEY)

number 309

PHASE: III, Resource Recovery System Procurement

MILESTONE: Receipt of Funds

PURPOSE: To secure capital for the construction of RR and related facilities.

DESCRIPTION: There are basically two financing methods available when a governmental organization owns the facility. General obligation bond financing is the method often used for financing publicly-operated projects and places the faith and credit of the sponsoring jurisdiction behind the project. Municipal revenue bond financing pledges the project revenues to guarantee the debt, thus shifting some of the risk from the owner to the user (if they are one and the same, there is no substantial difference between the two methods). Some States offer umbrella bond sales for obtaining a lower interest rate. The risks, however, usually remain with the local government. State or Federal aid in the form of grants, loans or loan guarantees may also be available; however, since the terms and conditions of these vary with State and project, they are not discussed here; the exact method of financing is project and locale specific.

MAJOR OBSTACLES: General obligation debt ceiling may prevent high capital cost projects from being financed.

MAJOR DECISIONS: Type, details, and timing of bond issue.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, IB, BC
2. Must be Consulted or Notified: PD, EO, C

ESTIMATING DATA:

1. Duration: Average = 14 weeks. Range = 11 to 26 weeks.
2. Work Effort: Average = 30 work days.
3. Funding: $10,000

REFERENCES: R5, R8, R34, R50, R52, R53, R55, R58, R110

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ESTABLISH ADMINISTRATIVE FRAMEWORK (A/E)

number 311

PHASE: III, Resource Recovery System Procurement

MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule the Procurement Process

PURPOSE: To identify and secure commitments from the public and private organizational resources necessary to carry out the procurement process and to structure and schedule this process so as to accommodate the required inputs.

DESCRIPTION: During Phase II the elected officials have selected or created a lead agency for Phase III. This agency now reviews the project status and then determines and obtains commitments from the project team participants, hires consultants, establishes and maintains liaison with involved agencies, plans for public and industry involvement, and outlines the approach for soliciting and evaluating proposals from private industry (some or all of this may already be established and does not have to be repeated).

MAJOR OBSTACLES: Insufficient personnel or funding; in-fighting among agencies; weak commitments from key political and agency personnel.

MAJOR DECISIONS: Selection of lead agency and key personnel; composition of the project team for Phase III; selection of consultants; plan for public involvement; procurement plan and schedule.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, LA, C, PT
2. Must be Consulted or Notified: EO, IA, M, IG, P

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 5 to 19 weeks.
2. Work Effort: Average = 38 work days.
3. Funding: $10,000

REFERENCES: R2, R6, R9, R12

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE PRELIMINARY DESIGN (A/E)

number 312

PHASE: III, Resource Recovery System Procurement

MILESTONE: Complete Preliminary Plans, Draft Specifications, and Cost Estimates

PURPOSE: To have an engineer perform the preliminary design of the appropriate facilities and address the critical environmental issues which are necessary to: a) decide on the appropriate plant configuration; b) obtain preconstruction permits; c) obtain waste supply and market contracts; d) satisfy concerns of project impact; and e) refine project economics.

DESCRIPTION: The engineer performs preliminary design (40% of total design work) and addresses all issues related thereto. Close liaison is maintained with agencies issuing permits for the facility, and their input and comments are solicited. If necessary, waste quantities are updated taking into account source separation programs, and new, expanded or upgraded sewage treatment plants (for co-disposal projects), and the anticipated effects of source reduction.

MAJOR OBSTACLES: No experienced firm; conflicting schedules for completion with work the engineer may already have.

MAJOR DECISIONS: Whether to use A/E already on the team or to seek another; what percentage of the total design to complete; source of funds for the preliminary design.

ROLES AND RESPONSIBILITIES:

1. Does Work: A/E
2. Must be Consulted or Notified: IHS, EO, DP

ESTIMATING DATA:

1. Duration: Average = 30 weeks. Range = 22 to 40 weeks.
2. Work Effort: Average = 2,850 work days.
3. Funding: $650,000 (based on facility capital cost of $40 MM), will vary as percent construction cost with facility size.

REFERENCES: Previous design plans, specifications, and permit criteria used by the same municipality on other recent projects; those specifications should reflect local municipal requirements. R2

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE PRECONSTRUCTION PERMITS (A/E)

number 313

PHASE: III, Resource Recovery System Procurement

MILESTONE: Necessary Permits Secured

PURPOSE: To secure necessary permits such as air quality, NPDES, construction, operation, and highway permits where required, before extensive design is performed; to assure the financial community that the project is indeed viable, and to assure communities and markets that the project is viable.

DESCRIPTION: Depending on local requirements, various types of permits may need to be secured for the project to have a reasonable probability of success. Some of the permits are contingent upon an acceptable site location, plan, expected emissions and effluents. The permits are issued.

MAJOR OBSTACLES: Design problem; renewed public opposition.

MAJOR DECISIONS: Conceptual design; which permits should be pursued earliest.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, A/E, PM, and possibly C
2. Must be Consulted or Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 26 weeks. Range = 12.5 to 38 weeks.
2. Work Effort: Average = 90 work days.
3. Funding: $25,000

REFERENCES: Local permit information.

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM ENVIRONMENTAL ASSESSMENT (A/E)

number 314

PHASE: III, Resource Recovery System Procurement

MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To prepare an environmental assessment in conjunction with securing permits where necessary to assure all the involved agencies, the markets, and the public that the project is viable.

DESCRIPTION: The environmental assessment required varies widely among municipalities in complexity and review criteria. In some cases it may not be necessary to perform an environmental assessment. Where it is required, the assessment is usually done by a consultant for U.S. EPA or a State environmental agency and considers all air, water, noise, safety, and aesthetic requirements.

MAJOR OBSTACLES: Insufficient design data; design not meeting requirements.

MAJOR DECISIONS: Identify the critical items for this system and what level of detail the assessment should involve.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, A/E, PM
2. Must be Consulted or Notified: PM, PD, EO

ESTIMATING DATA:

1. Duration: Average = 31 weeks. Range = 14.5 to 76 weeks.
2. Work Effort: Average = 105 work days.
3. Funding: $25,000

REFERENCES: R54, R70, R71, R72

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE WASTE SUPPLY CONTRACTS (A/E)

number 315

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Waste Supply Contracts

PURPOSE: To develop final agreements between the lead agency and communities for the supply of waste. This is the key agreement between the lead agency and the communities which identifies the service to be provided, the risks to be borne by either party, and the method of compensation to reflect such service and related risks. If a co-disposal project is being pursued, proper commitments of sewage sludge are also pursued.

SPECIAL NOTE: In the case of a single municipality or single long-term controlling agent, this master activity may be omitted or substantially reduced in scope.

DESCRIPTION: The communities and the lead agency will negotiate a contract for the supply of waste, whose revenues will partially offset the costs and act as security for financing. Provisions for existing or future source separation programs; transportation costs; separate industrial/commercial wastes; and previously committed host community incentives are considered for inclusion in these agreements as appropriate. Bond and other counsel, depending on the form of financing, will review the legality and efficiency of the document, at which time it must be approved by each participating community, which may involve a substantial educational effort. If a co-disposal project is being pursued, the commitment of sewage sludge and septic wastes (treated as appropriate) is sought for inclusion in the system. In the case of a single municipality or single controlling agent, the waste supply may be readily available without specific community contracts, and this task is virtually unnecessary.

MAJOR OBSTACLES: Convincing community decision-makers who have not been directly involved in contract negotiations of provisions, e.g., 20-year term, tonnage and guarantees (if required).

MAJOR DECISIONS: What risk posture to take on industrial/commercial waste; whether to take a hard or soft negotiating posture on draft contracts; what risks the lead agency should take and what risks the communities should take.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD assisted by negotiator, IHS, C, LC, FA
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 24 weeks. Range = 16 to 168 weeks.
2. Work Effort: Average = 240 work days.
3. Funding: $65,000

REFERENCES: R2, R4, R6, R8, R11, R27, R29, R30, R31, R64, R65, R67, R68, R69, R87

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE DESIGN AND CONTRACTOR (A/E)

number 316

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Construction Contract(s)

PURPOSE: To complete final design and acquire the contractor(s) who will construct the RR facility according to the design.

DESCRIPTION: The preliminary design (with any revisions required by MA 313 and MA 314) is used as the base for completing the final design including drawings, specifications, bid and contract documents. The procurement procedure should follow the local community's standard bidding procedures for acquiring a lowest responsible bidder for the construction project.

MAJOR OBSTACLES: Final design unacceptable to reviewing agency; incomplete, informal, or unacceptable bids.

MAJOR DECISIONS: Whether or not the design meets all the permit and environmental constraints of MA 313 and MA 314; whether or not to accept construction bids and sign the construction contracts; whether one contract or multiple contracts is required or desirable.

ROLES AND RESPONSIBILITIES:

1. Does Work: C (design); MPE, PT (review and approval)
2. Must be Consulted or Notified: DP, LC

ESTIMATING DATA:

1. Duration: Average = 72 weeks. Range = 45 to 102 weeks.
2. Work Effort: Average = 4135 work days.
3. Funding: $1,590,000 (based on facility capital cost of $40 MM; will vary as percent construction cost with facility size).

REFERENCES: Other municipal construction plants and specifications accepted previously.

SAMPLE DOCUMENTS: Municipal contracts obtained locally.

MASTER ACTIVITY: ACQUIRE MARKET CONTRACTS (A/E)

number 317

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Energy (And Materials) Market Contracts

PURPOSE: To develop final agreements by conversion of preliminary commitments or letters of intent obtained during Phases I and II into contractually binding documents between the lead agency and the buyer(s) of energy (and materials).

DESCRIPTION: The lead agency will negotiate and secure contracts for the sale of energy and materials. Revenues from such contracts will partially offset the cost of RR. Negotiations for the sale of energy to utilities should include liaison with the PUC. In the case of RDF production, final contracts may not be deemed necessary at this time, depending on the amount of risk which the lead agency (and possibly the communities in a multi-jurisdictional project) is willing to bear. For materials recovery it may be desirable to wait for the facility to become operational before contracting for the sale of the product.

MAJOR OBSTACLES: Little monetary incentive for a utility to enter into an energy contract; excessive redundancy or penalty requirements by energy market.

MAJOR DECISIONS: What level of compensation is appropriate; what risks should be borne by the lead agency; what risks should be borne by the market; whether or not to seek materials market contract(s).

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, IHS, C, LC
2. Must be Consulted or Notified: EO, PUC in case of U

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 20 weeks.
2. Work Effort: Average = 20 work days.
3. Funding: $7,000 (Highly variable depending on the level of detail obtained in MA 207 and new developments thereafter)

REFERENCES: R1, R4, R8, R15, R16, R20, R85

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE FINANCING (A/E)

number 318

PHASE: III, Resource Recovery System Procurement

MILESTONE: Receipt of Funds

PURPOSE: To secure capital for the construction of RR and related facilities.

DESCRIPTION: There are basically two financing methods available when a governmental organization owns the facility. General obligation bond financing is the method often used for financing publicly-operated projects and places the faith and credit of the sponsoring jurisdiction behind the project. Municipal revenue bond financing pledges the project revenues to guarantee the debt, thus shifting some of the risk from the owner to the user (if they are one and the same, there is no substantial difference between the two methods). Some States offer umbrella bond sales for obtaining a lower interest rate. The risks, however, usually remain with the local government. State or Federal aid in the form of grants, loans, or loan guarantees may also be available; however, since the terms and conditions of these vary with State and project, they are not discussed here. The exact method of financing is project specific.

MAJOR OBSTACLES: General obligation debt ceiling may prevent high capital cost projects from being financed.

MAJOR DECISIONS: Type, details, and timing of bond issue.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, IB, BC
2. Must be Consulted or Notified: PD, EO, C.

ESTIMATING DATA:

1. Duration: Average = 14 weeks. Range = 11 to 26 weeks.
2. Work Effort: Average = 30 work days.
3. Funding: $10,000

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ESTABLISH ADMINISTRATIVE FRAMEWORK (FULL SERVICE)

number 321

PHASE: III, Resource Recovery System Procurement

MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule the Procurement Process

PURPOSE: To identify and secure commitments from the public and private organizational resources necessary to carry out the procurement process and to structure and schedule this process so as to accommodate the required inputs.

DESCRIPTION: During Phase II the elected officials have selected or created a lead agency for Phase III. This agency now reviews the project status and then determines and obtains commitments from the project team participants, hires consultants, establishes and maintains liaison with involved agencies, plans for public and industry involvement, and outlines the approach for soliciting and evaluating proposals from private industry (some or all of this may already be established and does not have to be repeated).

MAJOR OBSTACLES: Insufficient personnel or funding; in-fighting among agencies; weak commitments from key political and agency personnel.

MAJOR DECISIONS: Selection of lead agency and key personnel; composition of the project team for Phase III; selection of consultants; plans for public involvement; procurement plan and schedule.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, LA, C, PT
2. Must be Consulted or Notified: EO, IA, M, IG, P

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 5 to 19 weeks.
2. Work Effort: Average = 38 work days.
3. Funding: $10,000

REFERENCES: R2, R6, R9, R12

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PRODUCE RFP (FULL SERVICE)

number 322

PHASE: III, Resource Recovery System Procurement

MILESTONE: RFP and Draft Contract

PURPOSE: To specify the content and organization of proposals from potential contractors and to acquaint the proposers with the various technical, managerial, financial, and institutional aspects of the project including risk allocation and revenue sharing. To obtain comments on a draft RFP (and other input) from potential contractors. To prequalify potential contractors (optional).

DESCRIPTION: The RFP should clearly transmit the proposal requirements of the lead agency to the potential proposers. These requirements produce proposals of sufficient content and uniform organization for comparable and effective evaluation. An RFQ may be issued to select companies for the receipt of the RFP, thereby limiting the subsequent number of proposals. This master activity is designed for a full service procurement of either large or small scale systems, or a combination of the two. Regardless of size, the same areas of concern should be addressed and resolved. The RFP is built on the system, large or small, and defined and redefined in MA 007, MA 116, MA 201, MA 204 and MA 209. If necessary, waste quantities are updated, taking into account source separation programs and new, expanded or upgraded sewage treatment plants (for co-disposal projects), and the anticipated effects of source reduction.

MAJOR OBSTACLES: Consensus by the project team concerning the extent of detail and the general content of the RFP.

MAJOR DECISIONS: Whether to issue RFQ; selection of qualified proposers; definition of parameters in RFP.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C, LC
2. Must be Consulted or Notified: PD, LA, IA, potential proposers, M, EO

ESTIMATING DATA:

1. Duration: Average = 22 weeks. Range = 14 to 37 weeks.
2. Work Effort: Average = 126 work days.
3. Funding: $25,000

REFERENCES: R5, R6, R7, R8, R32, R59, R60

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE CONTRACTOR (FULL SERVICE)

number 323

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Contract

PURPOSE: To engage the services of a contractor to carry out the project as defined in the RFP.

DESCRIPTION: The contractor is selected following an extensive evaluation of proposals and is contracted following either a sequential or simultaneous negotiation procedure. The contract negotiations actually begin upon receipt of proposals and are continued through proposer presentations until it is decided either that one company is superior or that further elaboration is required with a limited number of them. After selection of a preferred proposer, a second proposer should be selected as an alternate in the event of unforeseen difficulties with the preferred contractor. A key consideration is the responiveness of the proposals to the RFP Further negotiations are needed even if a proposer meets all the requirements of the RFP and the proposed system is acceptable according to the principal criteria, since detailed contractual language will have to be agreed to by all parties to the transaction.

MAJOR OBSTACLES: Partially-responsive proposals; nonacceptability of certain proposal elements.

MAJOR DECISIONS: Evaluation and ranking of proposals, sequential or simultaneous negotiations, final form of contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PT, C, LC
2. Must be Consulted or Notified: PD, IA, P, EO

ESTIMATING DATA:

1. Duration: Average = 55 weeks. Range = 26 to 136 weeks.
2. Work Effort: Average = 300 work days.
3. Funding: $90,000

REFERENCES: R5, R6, R7, R8, R31, R32, R59

SAMPLE DOCUMENTS: SD 32302

MASTER ACTIVITY: PERFORM ENVIRONMENTAL ASSESSMENT (FULL SERVICE)

number 324

PHASE: III, Resource Recovery System Procurement

MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To prepare an environmental assessment in conjunction with securing permits where necessary to assure all involved agencies, markets, and the public that the project is viable.

DESCRIPTION: The environmental assessment required varies widely among municipalities in complexity and review criteria. In some cases it may not be necessary to perform an environmental assessment. Where it is required, the assessment is usually done by a consultant for U.S. EPA or a State environmental agency and considers all air, water, noise, safety, and aesthetic requirements.

MAJOR OBSTACLES: Insufficient design data; design not meeting requirements.

MAJOR DECISIONS: Identification of the critical items for the system; what level of detail the assessment should involve; whether or not to directly involve the full service contractor.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, PM, IHS
2. Must be Consulted or Notified: PM, PD, EO, IG

ESTIMATING DATA:

1. Duration: Average = 31 weeks. Range = 14.5 to 76 weeks.
2. Work Effort: Average = 105 work days.
3. Funding: $25,000

REFERENCES: R54, R70, R71, R72

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE PRECONSTRUCTION PERMITS (FULL SERVICE)

number 325

PHASE: III, Resource Recovery System Procurement

MILESTONE: Necessary Permits Secured

PURPOSE: To secure necessary permits such as air quality, NPDES, construction, operation, and highway permits where required, before extensive design is performed, principally to assure the lead agency; the contractor (if contractor equity is involved); the financial community (if case revenue bond financing is anticipated); the market(s); participating communities and the public that the project is viable and will meet all regulatory requirements.

DESCRIPTION: Depending on State and local requirements, various types of permits may need to be secured prior to final design and construction for the project to have a reasonable probability of success. Some of the permits are contingent upon an acceptable site plan, expected emissions and effluents. The permits are issued. The master activity is performed in conjunction with MA 328, since meeting permit requirements may cause modifications to the contractor's proposed design. The permit applicant will be either the lead agency or the full service contractor, depending on the type of financing employed and the contractual arrangements of the project.

MAJOR OBSTACLES: Permit requirements unclear; incomplete list of permits; renewed public opposition.

MAJOR DECISIONS: Which agencies should be contacted; which permits should be applied for during this master activity; whether or not design modifications are necessary to meet the permit requirements; whether the lead agency or the full service contractor should be the applicant for the permits.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, C, with CR assistance
2. Must be Consulted or Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 26 weeks. Range = 11 to 39 weeks.
2. Work Effort: Average = 90 work days.
3. Funding: $25,000

REFERENCES: Local permit information

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE WASTE SUPPLY CONTRACTS (FULL SERVICE) **number** 326

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Waste Supply Contracts

PURPOSE: To develop final agreements between the lead agency or the full service contractor and communities for the supply of waste. This is the key agreement for the communities and identifies the service to be provided, the risks to be borne by either party, and the method of compensation to reflect such service and related risks. If a co-disposal project is being pursued, proper commitments of sewage sludge are also pursued.

SPECIAL NOTE: In the case of a single municipality or single long-term controlling agent, this master activity may be omitted or substantially reduced in scope.

DESCRIPTION: The communities and the lead agency or the full service contractor will negotiate a contract for the supply of waste, whose revenues partially offset the costs and act as security for financing. Provisions for existing or future source separation programs; transportation costs; separate industrial/commercial wastes; and previously committed host community incentives are considered for inclusion in these agreements as appropriate. Bond and other counsel, depending on the form of financing, will review the legality and efficacy of the document, at which time it must be approved by each participating community, which may involve a substantial educational effort. If a co-disposal project is being pursued, the commitment of sewage sludge and septic wastes (treated as appropriate) is sought for inclusion in the system. In the case of a single municipality or single controlling agent, the waste supply may be readily available without specific community contracts, and this task may be unnecessary unless the lead agency is to contract with the full service contractor for the supply of waste, which only reduces the scope.

MAJOR OBSTACLES: Convincing community decision-makers who have not been directly involved in contract negotiations of provisions, e.g., 20-year term, tonnage guarantees (if required).

MAJOR DECISIONS: What risk posture to take on industrial/commercial waste; whether to take a hard or soft negotiating posture on draft contracts; what risks the lead agency or the full service contractor should take and what risks the communities should take.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD assisted by negotiator, IHS, C, LC, FA, or CR
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 24 weeks. Range = 16 to 168 weeks.
2. Work Effort: Average = 240 work days.
3. Funding: $65,000

REFERENCES: R2, R4, R8, R11, R27, R30, R31, R64, R65, R66, R67, R68, R69, R85

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE MARKET CONTRACTS (FULL SERVICE)

number 327

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Energy (And Materials) Market Contracts

PURPOSE: To develop final agreements by conversion of preliminary commitments or letters of intent obtained during Phases I and II into contractually binding documents between the lead agency or the full service contractor and the buyer(s) of energy (and materials).

DESCRIPTION: The lead agency or the full service contractor (depending upon the contractual agreements arrived at in MA 323) will negotiate and secure contracts for sale of energy and materials. Revenues from such contracts will partially offset the cost of RR. Negotiations for the sale of energy to utilities should include liaison with the PUC. In the case of RDF production, final contracts may not be deemed necessary at this time, depending on the amount of risk which the lead agency or the full service contractor (and possibly the communities in a multi-jurisdictional project) is willing to bear. For materials recovery it may be desirable to wait for the facility to become operational before contracting for the sale of the product.

MAJOR OBSTACLES: Little monetary incentive for a utility to enter into an energy contract; excessive redundancy or penalty requirements by energy market.

MAJOR DECISIONS: What level of compensation is appropriate; what risks should be borne by the lead agency; what risks should be borne by the market; whether or not to seek materials market contract(s).

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, IHS, C, LC
2. Must be Consulted or Notified: EO, PUC in case of U

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 20 weeks.
2. Work Effort: Average = 20 work days.
3. Funding: $7,000 (Highly variable depending on the level of detail obtained in MA 207 and new developments thereafter)

REFERENCES: R1, R4, R8, R15, R16, R20, R85

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM PRELIMINARY DESIGN (FULL SERVICE) (Performed in Conjunction with Master Activities 324 and 325)

number 328

PHASE: III, Resource Recovery System Procurement

MILESTONE: Technical Information For Permits (MA 306) and Environmental Assessment (MA 304)

PURPOSE: To produce technical information from the full service contractor for preconstruction permits which are pursued for the purposes stated in MA 325; to assure that the proposal (and the contractor's preliminary design) meets the requirements of MA 324 and MA 325.

DESCRIPTION: Certain major preconstruction permits, such as air quality or water quality (e.g., for cooling water) may require additional technical data for evaluation by the regulatory agencies. Other examples of potential permit and environmental requirements are zoning approvals contingent on landscape architecture or solid waste facility permits and public hearings requiring rodent and odor control details. Any preliminary design work in support of meeting permit requirements is performed as part of this master activity.

MAJOR OBSTACLES: Design not meeting code; interface with permitting agency poorly conducted; misunderstanding of permit requirements; lack of clarity on funding source.

MAJOR DECISIONS: Level of effort required to support permit submittals; level of detail of design work; source of funds to perform enough of the design to support MA 304 and MA 306.

ROLES AND RESPONSIBILITIES:

1. Does Work: CR with PM
2. Must be Consulted or Notified: EA-(L)

ESTIMATING DATA:

1. Duration: Average = 20 weeks. Range = 13 to 34 weeks.
2. Work Effort: Average = 60 work days.
3. Funding: $15,000

REFERENCES: See locally obtained air, water, and zoning laws and codes.

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE FINANCING (FULL SERVICE)

number 329

PHASE: III, Resource Recovery System Procurement

MILESTONE: Receipt of Funds

PURPOSE: To secure capital for the construction of the RR and related facilities; to choose one or some combination of a number of financing alternatives that provides capital at the lowest cost consistent with the level of risk that a public jurisdiction is willing to take.

DESCRIPTION: A number of financing options exist, including partial loans and grants, municipal general obligation bonds, municipal revenue bonds, 100% corporate financing, 100% tax-exempt revenue bond financing, or leveraged financing using a mix of equity and tax-exempt revenue bonds. Equity participation can provide lowest cost financing based upon current tax laws, but also is the most complex to implement. In some situations, the method of financing may be supported by loan guarantees. Any or all of these methods may be used depending on the size and locale of the project. The more complex approach of leveraged financing is illustrated in A 32902 and A 32903. Other approaches can also be used.

MAJOR OBSTACLES: Need IRS approval on a project-by-project basis in the case of a private tax-exempt bond issue.

MAJOR DECISIONS: Type of financing to pursue; establishment and approval of local financing authority for tax-exempt bonds; timing of bond issue.

ROLES AND RESPONSIBILITIES:

1. Does Work: IB*
2. Must be Consulted or Notified: EO, PD, LC, C, FA, BC

*Work of IB, BC, feasibility study engineer and equity counsel derived directly from the project charged.

ESTIMATING DATA:

1. Duration: Average = 38 weeks. Range = 28 to 60 weeks.
2. Work Effort: Average = 100 work days.
3. Funding: $25,000

REFERENCES: R5

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: OVERVIEW OF PHASE 0

number 000

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Determination of Whether or Not Resource Recovery is Precluded

PURPOSE: To ascertain if there are any local conditions which obviate the need to investigate RR in detail by conducting a preliminary investigation which considers the critical ingredients of a RR program.

DESCRIPTION: The vital ingredients necessary for a viable RR program are investigated in a preliminary manner to obtain a conclusion of whether or not any of them are missing to such an extent that a RR program would not be viable. If available, data from reasonably recent studies and reports may be used.

MAJOR OBSTACLES: Lack of even rudimentary information and data about existing disposal systems or recovery options; unavailability of in-house staff.

MAJOR DECISIONS: To preclude or defer further consideration of RR, or proceed into Phase I subject to the availability of staff and funds; whether or not to proceed to Phase II source separation; appropriated budget to proceed.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 3 to 10 weeks.
2. Work Effort: Average = 26 work days.
3. Funding: $6,000 (C fee); $2,000 direct IHS cost

REFERENCES: R2, R3, R8, R9, R10, R11, R25, R28, R49, R82, R105

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: EVALUATE NON-RECOVERY DISPOSAL OPTIONS AND ASSOCIATED ENVIRONMENTAL ISSUES

number 001

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Initial Screening Report on Current Disposal Practices

PURPOSE: To develop a brief narrative (less than 10 pages) discussing the prospects for disposing of the community's solid waste by non-recovery approaches, e.g., incineration without heat recovery or landfill. This task also determines, on a preliminary basis, whether existing landfill or incineration systems are sufficiently adequate environmentally, economically, and in terms of long-term capacity so as to preclude the need to pursue RR as a potential waste disposal solution.

DESCRIPTION: The narrative should look ahead at least 10 years. If appropriate, the need to procure new landfill sites should be discussed and major obstacles described. A rough cost estimate for future disposal (including transportation to the disposal site) is developed. This estimate is both on a per ton and an aggregate annual basis. The status of existing landfills and incinerators in terms of available current capacities and remaining life, potential for regionalization, environmental soundness and regulatory compliance, and cost is evaluated. (See MA 105, and MA 107 for steps in a more detailed analysis.)

MAJOR OBSTACLES: Uncertainty regarding implications of future regulations for landfills; landfill life estimates are frequently in error by several years, resulting from poor estimates both in capacity and waste quantities.

MAJOR DECISIONS: None.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: DPW, EA-(L), EA-(S), MPE

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 3 work days.
3. Funding: See MA 000

REFERENCES: In MA 000

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SAMPLE CITIZEN AND POLITICAL INTEREST

number 002

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Initial Screening Report On Citizen And Political Interest

PURPOSE: To determine on a preliminary basis whether citizen and political interest in RR is sufficient to warrant exploring RR as a viable option, or sufficiently negative to preclude it as a possibility. This is done by developing a brief narrative documenting the views of various citizen and environmental groups and leaders on the subject of RR. This sampling is also used to determine if there are strong opponents or proponents of RR in elected or appointed positions.

DESCRIPTION: In most cases, the extent of citizen and political interest will be known. Other cases will suggest the need for public hearings, meetings, or perhaps an informal opinion poll conducted by contacting a list of selected local (elected and appointed) officials, citizen and public interest group representatives, and others knowledgeable about the local political scene and solid waste activities and plans. Also the positions taken by the press and other communications media are examined.

MAJOR OBSTACLES: Lack of informed opinion or knowledge about the solid waste disposal problem and what a RR project entails; political climate changes makes future interest difficult to predict.

MAJOR DECISIONS: None.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: EO, P, DPW, IG

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 3 work days.
3. Funding:

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: CONDUCT PRELIMINARY MARKET SURVEY

number 003

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Initial Screening Report of Markets

PURPOSE: To determine on a preliminary basis whether the lack of acceptable local markets for recovered energy and materials would preclude RR and to develop preliminary estimates of the revenue that could be expected if various types of RR approaches were implemented locally.

DESCRIPTION: Major industries and utilities are contacted to assess interest in being considered as a market for RR. In some areas of the country it may be helpful for preliminary identification to sight stacks visually from atop a tall building. Demand for steam, RDF, and electric power is estimated, and potential energy revenues are calculated based on the local price of fossil fuel. Material markets are contacted (See A 10601 - A 10605 for steps in a more thorough investigation). On the basis of local fuel costs, develop an estimate of the likely revenue that could be expected for refuse based energy if sold as RDF/dRDF, steam and electricity. Note any major changes in fuel types utilized which are expected to take place locally, such as a conversion of several major boilers from oil to coal. Also estimate likely prices for steel and aluminum scrap, probably based on nearest area sales price figures. The latter should be of sufficient accuracy for the analysis of MA 007.

MAJOR OBSTACLES: Difficulty of holding discussions with industry and utilities on an "informal" and "preliminary" basis.

MAJOR DECISIONS: Who to contact.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: M, U, MPE, PUC

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 3 work days.
3. Funding: See MA 000

REFERENCES: R1, R4, R10, R11, R15, R16, R20, R26, R39, R84, R85

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY CONDUCT PRELIMINARY WASTE SUPPLY ASSESSMENT

number 004

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Initial Screening Report on Waste Supply Issues

PURPOSE: To determine on a preliminary basis whether there are any waste supply problems which are likely to preclude development of a RR system.

DESCRIPTION: Estimate potential waste quantities for municipal/commercial and nonhazardous industrial refuse, separately identifying waste which is under municipal control and which is privately collected. Consider different region sizes up to, for example, a 30-mile radius or 1 million tons per year. Also identify any legal or other restrictions on directing waste or having "put-or-pay" provisions in community contracts. Estimate the percent paper, steel, aluminum, and glass and from the literature choose a value for waste as fuel RDF/dRDF and for mass burning. A fairly rough estimate is sufficient as input to MA 007.

MAJOR OBSTACLES: Lack of knowledge about the legal barriers to directing refuse to a facility; absence of meaningful data. (See Activities under MA 105 for steps in a more thorough assessment.)

MAJOR DECISIONS: None.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: LD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 5 work days.
3. Funding: See MA 000

REFERENCES: R2, R6, R8, R11, R27, R29, R30, R31, R64, R65, R66, R67, R68, R69 R115, R116

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ASSESS SOURCE SEPARATION POTENTIAL

number 005

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Source Separation Assessment

PURPOSE: To determine in a preliminary way whether source separation is precluded as a possible option.

DESCRIPTION: The potential for a successful source separation program is evaluated by reviewing a) the available markets for newsprint and paper, glass bottles and containers, and cans; b) local attitudes toward voluntary versus mandatory source separation wastes; c) organizations and firms, including municipal waste collectors, that might now be or would become involved in the collection, transportation, and/or marketing of the materials. This includes a preliminary analysis of the economics of source separation. (See Activities under MA 109, MA SS1, MA SS2, MA SS3 for a more complete analysis).

MAJOR OBSTACLES: Difficulty in estimating what the participation will be and in understanding how the system will function.

MAJOR DECISIONS: Whether pursuit of a source separation program should be continued or precluded.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: IG, M, EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 3 work days.
3. Funding: See MA 000

REFERENCES: R2, R3, R4, R5, R11, R25, R27, R29, R31, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R64, R65, R66, R67, R68, R69, R108, R113

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY ASSESS ECONOMICS, ENVIRONMENTAL IMPACTS, AND PROCUREMENT METHODS OF RECOVERY TECHNOLOGIES

number 006

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Economics and Technologies Assessment

PURPOSE: To identify possible RR system concepts to determine on a preliminary basis whether the economics of RR are sufficiently competitive in the local environment to warrant further consideration of RR as an option; also to produce a 3-4 page analysis of existing technologies, economics, environmental impacts, and procurement methods.

DESCRIPTION: Review the state-of-the-art in RR technology. Make rough projections of tipping fees for RR based on literature cost data for selected technologies, local energy prices and typical cost factors, O&M and revenue escalation rates. Develop alternatives based on processing stations, communities involved (total tonnage), transportation network and transfer stations, potential markets, possible participant and organizational roles. Consider options in terms of procurement methods and risk allocation among participants. (See Activities under MA 104, MA 105, MA 106, MA 107, MA 108, MA 111, MA 205, MA 209 for more complete analysis). The result is a 3-4 page report evaluating the extent of technology development, where used, success factors. For each approach and site (where possible) the extent of environmental impact, or its uncertainty.

MAJOR OBSTACLES: Review too superficial to contain decision information.

MAJOR DECISIONS: Validity of data; extent of detail needed; format of narrative descriptions.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: DPW

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 4 work days.
3. Funding: See MA 000

REFERENCES: R2, R3, R6, R8, R9

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY TEST APPROPRIATENESS OF PROCEEDING

number 007

PHASE: 0, Initial Resource Recovery Feasibility Screening

MILESTONE: Statement on Whether Resource Recovery is Precluded or Worth Pursuing

PURPOSE: To decide to defer or preclude consideration of RR or to initiate, if possible, a feasibility study, i.e., Phase I; to compare the results of MA 006 with traditional disposal such as landfill, and to decide the technical approaches which appear feasible; to calculate landfill upgrading and cost of operation in a given year (e.g., 5 years hence) as well as RR in that year.

DESCRIPTION: If source separation is the only viable recovery system, proceed to Phase II, MA SS1. The narrative developed as part of MA 007 tests initial estimates by describing different procurement methods, relative costs, the need for local appropriations, and their risks. The narrative serves as an educational tool, and basis for future discussion. Evaluate the results of MA 001 through MA 006. Then make a technical and public/political decision on the merits and advisability of continuing to pursue RR. Briefly document the conclusions, with supporting data, following careful review with concerned agencies and individuals. Terminate effort if recovery is precluded. Otherwise, proceed into Phase I.

MAJOR OBSTACLES: Insufficient time for necessary political input and resources to be gathered due to critical solid waste management situation.

MAJOR DECISIONS: To preclude or defer further consideration of RR, or proceed into Phase I subject to the availability of staff and funds; whether or not to proceed to Phase II source separation; appropriated budget to proceed.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD (designate)
2. Must be Consulted or Notified: EO, DPW, IA

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 5 work days.
3. Funding: See MA 000

REFERENCES: R2, R8, R114

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY ORGANIZE PROJECT TEAM AND PUBLIC INFORMATION PROCESS

number 101

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Project Team, Written Policy, Goals and Guidelines

PURPOSE: To involve all involved and affected parties from the beginning in order to develop a project which can be accepted in the community and to develop people who understand the project's evolution and can sell it to their constituents.

DESCRIPTION: The project director and project manager utilize their knowledge of the local area to select and solicit members for the project team. The team's first task is to establish written policy goals and guidelines to be used for guiding the project.

MAJOR OBSTACLES: Low interest by potential team members.

MAJOR DECISIONS: What groups to involve in the project; the project objectives - what to accomplish, by when, what other parameters will affect the project; issues which might be addressed are procurement options, user fees, service area participants, nonmunicipal waste, and related items.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD & PM
2. Must be Consulted or Notified: EO, AO

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 2.5 to 13 weeks.
2. Work Effort: Average = 22 work days.
3. Funding: $7,000

REFERENCES: R2, R12

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH PROJECT DIRECTOR

number 10101

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Organize Project Team and Public Information Process

MASTER ACTIVITY MILESTONE: Project Team, Written Policy, Goals and Guidelines

PURPOSE: To designate and acquire the individual who will be ultimately responsible for the project, i.e. answerable to elected officials.

DESCRIPTION: The project director shall be as high level a person as can practically be committed to the project (e.g., Commissioner of Public Works, Director of Authority) and shall be chairperson of the project team and is responsible for overall project direction and policy.

STEPS WITHIN THE ACTIVITY:

1. Decide if potential project director is already on staff or whether a project director must be acquired.
2. If necessary,
   a. Establish qualifications for project director
   b. Develop list of potential candidates
   c. Select best choice
   d. Confirm selection

MAJOR OBSTACLES: No qualified individuals.

MAJOR DECISIONS: Whether or not to use an in-house staff individual.

INPUT: Current structure of municipal department.

OUTPUT: Selected project director.

ROLES AND RESPONSIBILITIES:

1. Does Work: AO, EO
2. Responsible: AO, EO
3. Must be Consulted: other department heads
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.2 to 4 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH PROJECT MANAGER

number 10102

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Organize Project Team and Public Information Process

MASTER ACTIVITY MILESTONE: Project Team, Written Policy, Goals and Guidelines

PURPOSE: To designate or acquire the individual who will run the project on behalf of the municipality on a day-to-day basis.

DESCRIPTION: The project manager shall be responsible for the day-to-day management of the project. In some cases, the project director and project manager will be the same person, in other cases the project manager will be a staff employee under the project director. The project manager must have sufficient authority to force action through the organization, should be full-time for a large project, have sufficient experience to insure respect for his judgment, and must be capable of managing the entire process.

STEPS WITHIN THE ACTIVITY:

1. Establish qualifications for project manager position.
2. Develop list of potential candidates.
3. Consider outside candidates if necessary.
4. Review candidate and select project manager.
5. Confirm selection.

MAJOR OBSTACLES: Right person for job may not exist within the organization.

MAJOR DECISIONS: Whether or not to use an in-house staff individual.

INPUT: Current structure and capabilities of municipal department.

OUTPUT: Selected project manager.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD
2. Responsible: PD
3. Must be Consulted: AO, EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 0.5 to 4 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: IDENTIFY ORGANIZATIONS TO BE SOLICITED FOR MEMBERSHIP

number 10103

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Organize Project Team and Public Information Process

MASTER ACTIVITY MILESTONE: Project Team, Written Policy, Goals and Guidelines

PURPOSE: To identify affected and interested organizations.

DESCRIPTION: From their knowledge of the local situation, the project director and project manager identify and list all organizations to be solicited for membership on the project team which is assembled to oversee, assist, and direct the project. Generally, the working arm of the project team usually consists of the in-house staff, the project manager, the project director, and consultants as required; the advisory committee is usually politically founded; the technical advisory group will consist of business and industry engineers and managers, and local university technical representatives.

STEPS WITHIN THE ACTIVITY: Suggested Organizations: Elected Officials (i.e., Mayors, County Commissioners, State Legislators or members of their staffs); Local Governmental Departments (i.e., Public Works, Planning, Legal, Bond Council); Regional Agencies (e.g., Regional Planning Commission); State and Federal Regulatory Agencies (e.g., Solid Waste, Air Quality); Local Scrap Dealers; Local Waste Hauling and Disposal Companies; Interested Citizen Groups; General Public; Major Energy Markets (utility, major industry); Representatives of Other Major Industry in the Community.

1. Identify the appropriate mix for the community.
2. Discuss and finalize list of members.

MAJOR OBSTACLES: Conflicts of interest among selectees.

MAJOR DECISIONS: The individuals to compose the project team; how many members to give adequate representation, yet still get things done.

INPUT: Organizations suggested above.

OUTPUT: A list of organizations to be solicited for membership on the project team (approximately 10-12).

ROLES AND RESPONSIBILITIES:

1. Does Work: PM
2. Responsible: PD
3. Must be Consulted: EO, AO
4. Must be Notified: other department heads

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.2 to 2 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: SOLICIT MEMBERS

number 10104

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Organize Project Team and Public Information Process

MASTER ACTIVITY MILESTONE: Project Team, Written Policy, Goals and Guidelines

PURPOSE: To obtain commitments for organizational involvement.

DESCRIPTION: Membership in the project team will be solicited via mail, with follow-up telephone calls as appropriate. The letter should contain the purpose of the team and the amount of time which will be required by participants. Letters should come from highest elected official (e.g., mayor) to heads of various organizations requesting the dedicated participation of a knowledgable individual.

STEPS WITHIN THE ACTIVITY:

1. Letter soliciting membership.
2. Follow-up phone call from project director or project manager to explain the need, purpose, format, general schedule and initial meeting date.
3. If necessary, solicit additional members to replace those originally sought.

MAJOR OBSTACLES: Regulatory agencies may view participation as a conflict of interest, in which case a liaison officer to the agencies should be appointed from the team.

MAJOR DECISIONS: Protocol of solicitations.

INPUT: Output of A 10103.

OUTPUT: Completed member solicitation.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO
2. Responsible: PD
3. Must be Consulted: AO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH TEAM, ASSIGN RESPONSIBILITIES

number 10105

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Organize Project Team and Public Information Process

MASTER ACTIVITY MILESTONE: Project Team, Written Policy, Goals and Guidelines

PURPOSE: To obtain commitments from, and assign responsibilities to the members of the project team.

DESCRIPTION: Call initial meeting, establish and assign responsibilities and tasks (i.e., liaison with elected officials, State Agencies, and other organizations which may be affected by or involved in the project).

STEPS WITHIN THE ACTIVITY:

1. Receive responses from contactees, compile and identify team.
2. Decide on roles and responsibilities.
3. Set date, call meeting, discuss and assign roles and responsibilities, obtain firm commitments from individuals.

MAJOR OBSTACLES: Low interest; lack of commitment.

MAJOR DECISIONS: Depth and detail of responsibility.

INPUT: Potential team members.

OUTPUT: Project team with members having clear, definitive assignments.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM
2. Responsible: PD
3. Must be Consulted: C, IHS, PT
4. Must be Notified: EO, AO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH POLICY, GOALS, AND GUIDELINES

number 10106

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Organize Project Team and Public Information Process

MASTER ACTIVITY MILESTONE: Project Team, Written Policy, Goals and Guidelines

PURPOSE: To establish, in writing, project guidance.

DESCRIPTION: The project director and project manager should draft and circulate for comment the policy, goals, and guidelines which will be used to guide the project. The comments should be incorporated and the draft recirculated until agreement is reached. Issues which might be addressed are: procurement options, user fee, nonmunicipal waste, member municipalities, potential markets, degree of municipal commitment and other factors in which the project team's broad-based knowledge will be helpful, such as overall project budget, schedule and institutional constraints.

STEPS WITHIN THE ACTIVITY:

1. Draft policy, goals and guidelines for project.
2. Document known constraints at the outset which will dictate the roles, responsibilities, and guidelines for the project.
3. Disseminate among members; call meeting to discuss responses; finalize policy, goals and guidelines.
4. Summarize and document.

MAJOR OBSTACLES: Major disagreement on the objectives, policy, due to members with strong individual interests.

MAJOR DECISIONS: The policy, goals, and guidelines themselves.

INPUT: Previous municipal policy; draft of guidelines for RR.

OUTPUT: Short document (2-6 pages) with agreed upon guidelines for subsequent use by the project team and project participants.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified: PT members

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH PUBLIC RELEASE PROCEDURES

number 10107

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Organize Project Team and Public Information Process

MASTER ACTIVITY MILESTONE: Project Team, Written Policy, Goals and Gudielines

PURPOSE: To establish at the outset the level of detail of information released and the mechanism by which it will be handled.

DESCRIPTION: Often during feasibility studies there is potential for release of all types of information to the public, usually through electronic and print media. The newly organized project team should decide on the method of dealing with the public, information format and release, and that this format be adhered to throughout the project.

STEPS WITHIN THE ACTIVITY:

1. Discuss method for information release.
2. Designate spokesperson for the project team.
3. Establish frequency and type of releases at regular intervals.
4. Discuss strategy to be used in potentially controversial situations such as waste supply, sites, phase-over planning or markets.

MAJOR OBSTACLES: Lack of coordination on releases; disagreement on frequency and format.

MAJOR DECISIONS: Spokesperson; frequency of release; format of releases.

INPUT: Policy of A 10106.

OUTPUT: Written strategy for public information and releases, incorporated into document of policy goals and guidelines (output of A 10106).

ROLES AND RESPONSIBILITIES:

1. Does Work: PT
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.2 to 2 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: R12

SAMPLE DOCUMENTS: Previous local releases by Ad Hoc or other advisory type of group.

ACTIVITY ESTABLISH SCOPE OF WORK FOR PROJECT

number 10201

PHASE: I, Resource Recovery Feasbility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To obtain a clear understanding of the project boundaries, detailed tasks, and support.

DESCRIPTION: Based on the policy, goals, and guidelines, the overall scope of the project is determined in as much detail as possible. The scope should define requirements in terms of work effort, time and dollar resources needed to carry the project through Phase I and determine that these resources are or will be available when they are needed.

STEPS WITHIN THE ACTIVITY:

1. Prepare scope of project in as much detail as possible.
2. Prepare briefing package to support rationale for proceeding.
3. Identify sources of support (e.g., city council, State and Federal agencies).
4. Present request for funding to appropriate elected officials.
5. Obtain funding from elected officials.
6. Identify and pursue other funding alternatives (e.g., EPA).

MAJOR OBSTACLES: Lack of funds at local level; delays in securing funds.

MAJOR DECISIONS: Project scope; amount and source of funds and resources.

INPUT: Policy, goals and guidelines from MA 101.

OUTPUT: Project scope complete, committed funds.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, PT
2. Responsible: PD
3. Must be Consulted: EO's
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: IMA

ACTIVITY: ESTABLISH SCOPES FOR IN-HOUSE STAFF AND CONSULTANTS

number 10202

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To define clearly the roles of the in-house staff and consultants.

DESCRIPTION: The roles and capabilities of in-house staff must be reviewed to establish which portions of the overall scope of work they are capable of performing. The balance of the work should be performed by consultants, and will vary with each job and the eventual procurement method. The scope of consultants work should reflect only the work which the in-house staff cannot perform.

STEPS WITHIN THE ACTIVITY:

1. Assign in-house tasks.
2. Determine types of consultants required and when service should begin.

MAJOR OBSTACLES: Lack of commitment on the part of the in-house management to release the staff for the RR project.

MAJOR DECISIONS: Reassignment of responsibilities of in-house staff.

INPUT: Previous study recommendations; discussions with funding agency.

OUTPUT: Completed scope of work in detail, leaving no questions on work division.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PT
2. Responsible: PD
3. Must be Consulted: MPE
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DEVELOP PREFERRED CONTRACTING METHOD

number 10203

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To assure that all parties involved agree on the type of contract before contact with consultants is made.

DESCRIPTION: There are various forms that contracts with consultants can take (i.e., fixed fee, cost-plus-fixed-fee, cost plus). There is no one form which is universally preferred, and the preference may be a matter of opinion. However, the form to be used must be established and cleared with all parties.

STEPS WITHIN THE ACTIVITY:

1. Project team develops preferred contracting method.
2. Project manager checks the preferred method with the legal and purchasing departments.
3. Project director clears the recommended method with the elected officials.

MAJOR OBSTACLES: Major difference of opinion on contract type between municipal agents.

MAJOR DECISIONS: Preferred contracting method.

INPUT: Previous contracts.

OUTPUT: Decision on contracting method.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT
2. Responsible: PD
3. Must be Consulted: EO, LD, DP, MPE
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 5 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: Previous local contracts for C services.

SAMPLE DOCUMENTS: NR

ACTIVITY: DEVELOP CONSULTANT SELECTION METHOD

number 10204

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To assure that all parties involved agree on the selection method and criteria and that the roles and responsibilities are assigned before contact with consultant is made.

DESCRIPTION: There are various methods and criteria for selecting consultants. These should be set up in advance of selection and must be consistent with local and State laws. If a subcommittee of the project team is to handle screening, the members should be selected now. The level of detail given to consultants prior to interviewing is established.

Projects supported by Federal Funds should refer to Federal Guidelines published in Federal Register (see reference R12).

STEPS WITHIN THE ACTIVITY:

1. Establish schedule and work level constraints; selected interviewers; ranking methods; level of detail of material which goes out to consultants in request for qualifications (RFQ).
2. Discuss and select consultant selection method.
3. Review selection method with legal department to ascertain that all State and local legal requirements are being met.
4. Discuss with project team.
5. Select members of project team to be involved in consultant selection process; contact and obtain commitments.

MAJOR OBSTACLES: Poor precedents for consultant selection method.

MAJOR DECISIONS: Selection method; schedule for responding to consultants.

INPUT: Precedent selection method; goals, objectives, guidelines, and scope of work.

OUTPUT: Consultant selection method.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, PM
2. Responsible: PD
3. Must be Consulted: LD, DP
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ADVERTISE FOR QUALIFICATIONS

number 10205

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To obtain a wide range of interested consultants with either RR and source separation experience, or RR facility design experience in case of A/E procurement.

DESCRIPTION: An advertisement describing the scope of work and soliciting firms to submit qualifications and comments is placed in local newspapers and national trade journals.

STEPS WITHIN THE ACTIVITY:

1. Identify media to be used for publication of advertisement.
2. Consult legal department for minimum advertising requirements by law.
3. Draft advertisement and obtain approval by elected officials.
4. Allowing proper lead time versus dates for submittal, place advertisement in appropriate journals.
5. Receive, log in and compile responses.

MAJOR OBSTACLES: None, routine procedure.

MAJOR DECISIONS: Dates for submittal of qualifications and experience.

INPUT: Qualifications requirements developed in A 10202.

OUTPUT: Published advertisement.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PT
2. Responsible: PD
3. Must be Consulted: DP
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: Previous municipal advertisements for consultants.

SAMPLE DOCUMENTS: NR

ACTIVITY: SECURE COMMITMENTS FROM IN-HOUSE STAFF

number 10206

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To assure that the qualified in-house staff is available and assigned.

DESCRIPTION: It is necessary to identify which staff members are to participate in the project at what level and for how long. If interdepartmental cooperation is involved, a "Memorandum of Understanding" is written.

STEPS WITHIN THE ACTIVITY:

1. Outline in-house staff capability requirements.
2. Identify the individuals who can fill these requirements, their level of commitment on other projects, and the commitment which can be made to the RR project.
3. Designate commitment of in-house staff to RR project via inderdepartmental "Memorandum of Understanding".

MAJOR OBSTACLES: Lack of or insufficient commitment to the project; commitment stated, but not fulfilled.

MAJOR DECISIONS: Individuals available and level of commitment.

INPUT: Scopes of work from A 10202.

OUTPUT: Secure staff commitments.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM
2. Responsible: PD
3. Must be Consulted: MPE
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 5 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: NEGOTIATE WITH CONSULTANTS ON RETAINER

number 10207

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To establish working relationship on the RR project with consultants already under contract to the lead agency on other work. The object is to design optimum team.

DESCRIPTION: It may be preferable to involve consultants who are already on retainer as advisors to the government (e.g., bond council). The scope of work and cost is negotiated.

STEPS WITHIN THE ACTIVITY: (If no consultants are on retainer, disregard this activity)

1. Contact consultants on retainer; discuss project, lead agency intentions, projected roles and responsibilities of current and future consultants on the job.
2. Discuss current scope of work and RR scope modifications.
3. Negotiate new contract scope and establish cooperative working arrangement between consultants on retainer and new consultants.

MAJOR OBSTACLES: Possible conflict of interest with other projects.

MAJOR DECISIONS: Scope of work of consultants on retainer.

INPUT: Necessary work scope required of all participants; output of A 10202.

OUTPUT: Negotiated scope and cost of consultants on retainer.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PT
2. Responsible: PD
3. Must be Consulted: LD, MPE
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: SELECT SHORT LIST OF FIRMS

number 10208

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To narrow down the field of consultants being considered.

DESCRIPTION: On the basis of the qualifications and comments received from the advertisement and using the selection method developed in A 10204, select at least three consultants.

STEPS WITHIN THE ACTIVITY:

1. Review qualifications and comments submitted by consultants.
2. Choose best three to five firms according to format of A 10204.
3. Recontact all firms submitting qualifications, notify of elimination or short listing.
4. Establish approximate date for interviews and selection.

MAJOR OBSTACLES: Short list too large or small.

MAJOR DECISIONS: Selection of short listed firms.

INPUT: Response to advertisements of A 10205.

OUTPUT: Short list of firms.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PT
2. Responsible: PD
3. Must be Consulted: MPE
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: INTERVIEW SHORT-LISTED FIRMS

number 10209

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: Obtain detailed information on which to base a decision.

DESCRIPTION: The short-listed firms are notified and asked to prepare technical approaches for the project. They present these approaches and are questioned in detail. The commitments from in-house staff and consultants on retainer may not be exactly as envisioned when the advertisement was written. These commitments are now reviewed and the scope of work for the consultants now being selected is adjusted as necessary prior to commencing the interviews.

STEPS WITHIN THE ACTIVITY:

1. Short listed firms are called in and further interviewed and screened for project participation. The lead agency should request meeting with the consultants anticipated project leader and discuss level of commitment, level of work detail, accessibility to project, specific related experience, and other pertinent points.
2. Firm's statements are recorded, discussed and evaluated.

MAJOR OBSTACLES: No clear distinction between most desirable firm and others.

MAJOR DECISIONS: Format and sequence of interview; adjustments to original scope of work.

INPUT: In-house staff commitments - A 10206; consultants on retainer work - A 10207; short list of A 10208.
OUTPUT: Completed interview with recorded comments.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT
2. Responsible: PD
3. Must be Consulted: MPE, DP
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: SELECT PREFERRED FIRM

number 10210

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To complete selection of most qualified, experienced RR consultants.

DESCRIPTION: Using the method developed in A 10204 and the information obtained in A 10205 and A 10209, the short listed firms are ranked in order of preference.

STEPS WITHIN THE ACTIVITY:

1. Review, discuss, and evaluate the short listed firms interviewed previously.
2. Select one preferred firm. Inform that firm of the choice.
3. Document the selection and procedure.
4. Notify unsuccessful firms.

MAJOR OBSTACLES: Lack of PT decision agreement.

MAJOR DECISIONS: Selection of preferred firm.

INPUT: Interview of short listed firms - output of A 10209.

OUTPUT: Selected RR consultant; document selection in 10 page report for presentation to the elected officials.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PT
2. Responsible: PD
3. Must be Consulted: MPE, LD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: NEGOTIATE AND SIGN CONTRACT

number 10211

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Secure Required Resources

MASTER ACTIVITY MILESTONE: Committed In-House Staff, Contracts with Consultants

PURPOSE: To complete the committing of all necessary resources to conduct the RR project.

DESCRIPTION: Negotiations are initiated with the most preferred firm. Both the exact scope of work and the fee are subject to negotiation.

STEPS WITHIN THE ACTIVITY:

1. Summon apparent successful consultant to negotiate contract terms and scope of work.
2. Work out details.
3. Execute contract.

MAJOR OBSTACLES: Impasse over contract provisions.

MAJOR DECISIONS: Dates, deliverables, extent of work, support level, funding.

INPUT: Preferred firm selection of A 10210.

OUTPUT: Consultant signed on board.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM
2. Responsible: PD
3. Must be Consulted: LD, EO
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 6 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: Previous local municipal consultant contracts.

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SCREEN ENVIRONMENTAL REQUIREMENTS

number 103

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Detailed Knowledge of Environmental Restrictions, Requirements, and Review Process

PURPOSE: Many environmental requirements can impact on costs and facility siting. These requirements must be established very early so that they can be incorporated into the planning process.

DESCRIPTION: Detailed information on air quality, air emission requirements, surface and ground water use and restrictions, zoning restrictions, permits and permitting process, and review (governmental and public) requirements is gathered.

MAJOR OBSTACLES: Incomplete knowledge of detailed project structure; land use incompatible with zoning; uncertainty regarding interpretation of environmental regulations.

MAJOR DECISIONS: A preliminary definition of the RR system aspects to be assumed for purposes of environmental review (e.g., number of transfer stations, tons per day disposed).

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Must be Consulted or Notified: See Activity Sheets

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 20 work days.
3. Funding: $4,000

REFERENCES: R2, R6, R11, R36, R47, R65, R73, R74, R75, R76, R77, R78, R79, R80, Clean Air Act, as amended, 1977 Safe Drinking Water Act, Air and Water Pollution Code Rules and Regulations, OSHA, Prior Environmental Impact Statements.

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE CONDITIONS FOR REQUIRING A-95 REVIEW

number 10301

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Screen Environmental Requirements

MASTER ACTIVITY MILESTONE: Detailed Knowledge of Environmental Restrictions, Requirements, and Review Process

PURPOSE: To make sure the project team is aware of the full set of A-95 review requirements early to avoid subsequent delays from omitting necessary steps.

DESCRIPTION: An A-95 review by a clearing house, involving regional planning agencies and Federal, State, and local input, may be required for certain RR projects, e.g., those involving co-disposal of refuse with sewage sludge, and major highway improvements for site access.

STEPS WITHIN THE ACTIVITY:

1. Obtain a description of the A-95 process from the clearing house.
2. Prepare a list of potential aspects of a complete project, including funding sources, type of construction activities including transportation, and categories of technologies to be employed such as sludge disposal or power plant.
3. Discuss with the clearing house and other agencies the type of project being considered and request guidance on the likely A-95 requirements for such a project.

MAJOR OBSTACLES: Incomplete knowledge at this stage of potential funding and detailed project structure; lack of full recognition that RR projects can also be transportation, construction, and possibly other types of projects as well.

MAJOR DECISIONS: The potential aspects of a complete project to be included for A-95 review.

INPUT: Understanding from Phase 0 of what RR might entail.

OUTPUT: List and description of the A-95 review process and understanding of its potential implications in this case.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, IHS
2. Responsible: PM
3. Must be Consulted: CH, EPA, DOT-(F), DOT-(S), EA-(S)
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE ZONING CATEGORIES AND RESTRICTIONS

number 10302

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Screen Environmental Requirements

MASTER ACTIVITY MILESTONE: Detailed Knowledge of Environmental Restrictions, Requirements, and Review Process

PURPOSE: To provide background information needed for site selection.

DESCRIPTION: Information on zoning, current and future land use, and other site restrictions is necessary to support the site nomination and selection process. Where large numbers of communities are potentially involved, detailed zoning and land use maps are not essential--only from communities with potential sites. Zoning and land use categories and known plans to change them should be generally available for most communities.

STEPS WITHIN THE ACTIVITY:

1. Obtain zoning categories and definitions, by community.
2. Obtain general land use designations on a regional level.
3. Obtain zoning and land use maps, current and planned, for known or likely host communities (judgment is required on the detail needed; more may be necessary if an environmental impact statement will be required.)

MAJOR OBSTACLES: Special zoning restrictions may subsequently be created to block RR siting; land use may not be compatible with zoning; plans may be uncertain.

MAJOR DECISIONS: Which host communities to include in determining zoning categories; elimination of clearly unacceptable areas.

INPUT: NA

OUTPUT: List of zoning and other anticipated restrictions.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, IHS
2. Responsible: PM
3. Must be Consulted: ZA (L), PA (L, S), EA-(L), EA-(S)
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE AMBIENT AIR QUALITY AND EMISSION RESTRICTIONS

number 10303

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Screen Environmental Requirements

MASTER ACTIVITY MILESTONE: Detailed Knowledge of Environmental Restrictions, Requirements, and Review Process

PURPOSE: To provide an understanding of applicable air pollution control regulations and requirements.

DESCRIPTION: Air quality considerations are important in siting, technology, and market assessments, and the associated reviews can have a significant effect on the project schedule. This activity enables the process of developing necessary data to begin early and to be built into the overall project schedule. Also air regulations are evolving and often complex, hence the importance of initiating dialog and understanding related issues at an early stage in planning.

STEPS WITHIN THE ACTIVITY:

1. Obtain copies of Federal, State, and local air regulations.
2. Determine applicable sections and specific requirements.
3. Explore possible future requirements.
4. Determine interpretations of applicable regulations, such as for Prevention of Significant Deterioration and New Source Performance Review, through discussions with regulatory agencies.
5. Determine existing status (i.e., attainment or non-attainment area) and potential for trade offs.

MAJOR OBSTACLES: Lack of uniform interpretation of Federal regulations; uncertainty on future requirements.

MAJOR DECISIONS: Determination of applicable sections of air quality regulations.

INPUT: Federal, State and local air regulations; previous interpretations by agencies or courts.

OUTPUT: List of applicable air regulatory standards and requirements; scheduling implications.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, IHS
2. Responsible: PM
3. Must be Consulted: EA-(L), EA-(S), EPA
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: R73, R74, R79, R88

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE SURFACE AND GROUND WATER USE AND EFFLUENT RESTRICTIONS

number 10304

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Screen Environmental Requirements

MASTER ACTIVITY MILESTONE: Detailed Knowledge of Environmental Restrictions, Requirements, and Review Process

PURPOSE: To provide an understanding of water quality regulatory requirements and water use limitations.

DESCRIPTION: RR facilities as well as associated back-up and residue landfills have potential water discharges of various kinds, such as from storm drains, boiler blowdown, quench water, cooling tower blowdown, and landfill leachate. Large RR facilities may also require 100,000 to over 2 million gallons per day of water for processing, cooling, sanitary and other uses. Effluent limitations on facilities and use restrictions as well as other site requirements are identified here. These include, for example, restrictions on construction in wetland areas.

STEPS WITHIN THE ACTIVITY:

1. Obtain copies of Federal, State, and local water quality regulations.
2. Determine applicable sections and specific requirements.
3. Review water supply data.
4. Explore possible future requirements.
5. Determine interpretations of recent applicable regulations.

MAJOR OBSTACLES: Certain areas may have serious water availability problems or extensive wetlands, both of which limit site possibilities.

MAJOR DECISIONS: Which aspects of the project should be included for environmental screening; determination of water quality regulatory requirements; determination of water use restrictions.

INPUT: Federal, State, and local water quality regulations;previous interpretations of laws by agencies or the courts.

OUTPUT: List of applicable water quality standards and possible restrictions on use of effluents.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, IHS
2. Responsible: PM
3. Must be Consulted: EA-(L), EA-(S), EPA
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: R81

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE STATE AND LOCAL ENVIRONMENTAL REVIEW REQUIREMENTS INCLUDING MAJOR PERMITS

number 10305

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Screen Environmental Requirements

MASTER ACTIVITY MILESTONE: Detailed Knowledge of Environmental Restrictions, Requirements, and Review Process

PURPOSE: To obtain a comprehensive picture of the State and local review and permit process.

DESCRIPTION: Environmental reviews and permit requirements vary from State to State, and they range from local site assignment and conservation commission approval to County or State design reviews by regulatory agencies, to public hearing requirements for siting, and environmental impact statement processes required under State law in some States. In some cases local governments also have environmental assessment and public review requirements.

STEPS WITHIN THE ACTIVITY:

1. Obtain and review pertinent legislation and regulations at State level, and local level if siting jurisdictions are known.
2. Discuss the requirements with agencies coordinating such reviews.
3. Construct a tentative schedule, list of participating agencies and groups, and key contacts to keep informed of any changes.

MAJOR OBSTACLES: Local requirements may not be determined prior to site nomination; requirements varying the depth of review depend on the degree of significance of the anticipated impacts which may not always be predicted.

MAJOR DECISIONS: Determination of State and local review and permit process as it applies to RR projects; timetable for review process; liaison process with participating agencies and key contacts.

INPUT: Federal, State and local regulations; discussions with State and local environmental agencies.

OUTPUT: Applicable regulations, list of reviewing agencies and their specific concerns and criteria, estimated schedule of reviews, key contacts for follow-up.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, IHS
2. Responsible: PM
3. Must be Consulted: EA-(L), EA-(S), EPA, CH
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE OTHER RESTRICTIONS AND REQUIREMENTS

number 10306

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Screen Environmental Requirements

MASTER ACTIVITY MILESTONE: Detailed Knowledge of Environmental Restrictions, Requirements, and Review Process

PURPOSE: To acquire necessary information on environmental requirements beyond those identified in A 10301 - A 10305.

DESCRIPTION: Varies with jurisdictions and specific projects.

STEPS WITHIN THE ACTIVITY:

Similar to A 10301 - A 10305.

MAJOR OBSTACLES: These will depend on the nature of the additional restrictions.

MAJOR DECISIONS: What other restrictions apply and depth of review.

INPUT: The appropriate environmental regulations.

OUTPUT: Similar to A 10301 - A 10305.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, IHS
2. Responsible: PM
3. Must be Consulted: EA-(L), EA-(S), EPA
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW THE STATE-OF-THE-ART

number 10401

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Technology Analysis

MASTER ACTIVITY MILESTONE: Current Detailed Knowledge of Technologies

PURPOSE: To obtain information on the most recent developments in the industry.

DESCRIPTION: RR technology is expanding and being refined rapidly by the industry at large. Size reduction and particle separation (front end processing), wet front end processing, thermal conversion large and small scale, including pyrolysis, and RDF systems are available. The entire mix of state-of-the-art technology is reviewed for later application to the RR system, which may be one large plant or several small plants.

STEPS WITHIN THE ACTIVITY:

1. Develop form showing all required information.
2. Review literature and fill in forms.
3. Conduct telephone interviews and fill in forms.
4. Conduct field trips where reasonable and economically possible.

MAJOR OBSTACLES: Review is not complete; if it does not cover every available technology or process, the alternatives analysis may be incomplete.

MAJOR DECISIONS: None.

INPUT: All in-house staff and consultant experience, background, telephone interview, literature and site visit information which can be compiled.
OUTPUT: Complete state-of-the-art review.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PM
3. Must be Consulted: Applicable industry.
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ANALYZE INPUT REQUIREMENTS AND OUTPUT CHARACTERISTICS (OTHER THAN REFUSE AND PRODUCTS)

number 10402

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Technology Analysis

MASTER ACTIVITY MILESTONE: Current Detailed Knowledge Of Technologies

PURPOSE: To develop some of the physical constraints for each technology which must be known to define the site and landfill requirements.

DESCRIPTION: Each technology has unique operational characteristics which should be examined at this time. Technology-related power and water requirements, air and liquid emissions, required quality and other key technological needs and constraints are analyzed. The information may dictate the local applicability of the technology, and will impact on siting and environmental requirements.

STEPS WITHIN THE ACTIVITY:
Develop for each technology:

1. Air emissions.
2. Water input and output quantity and quality.
3. Electrical requirements.
4. Residuals output per ton of input (i.e., sludge, unusable heavy fraction, fly ash, bottom ash, collected dust)

MAJOR OBSTACLES: Incomplete, incorrect or misleading data on each of the above points; no precedent with which to verify the data.

MAJOR DECISIONS: Whether or not all the required data has been obtained; whether or not the obtained data is valid.

INPUT: Data and information of A 10401.

OUTPUT: Operational input and output from the technology suppliers.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: All available literature from full service operators and other RR equipment manufacturers and suppliers.

SAMPLE DOCUMENTS: NR

ACTIVITY: INVESTIGATE SOURCE SEPARATION TECHNOLOGIES

number 10403

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Technology Analysis

MASTER ACTIVITY MILESTONE: Current Detailed Knowledge Of Technologies

PURPOSE: To ascertain the types, availability, capabilities, applicability, advantages and disadvantages of the various source separation technologies in existence.

DESCRIPTION: Source separation programs may take different forms depending on the markets and local participation expectations. Market requirements may dictate the acceptable types of technology and specific equipment which may be used, such as collection vehicles, balers, crushers, bins, loading devices and other support equipment. Information of MA 005 has assessed source separation potential.

STEPS WITHIN THE ACTIVITY:

1. Obtain data on source separation technologies from EPA reports, equipment suppliers and existing source separation programs.
2. Categorize the equipment into major groups with associated costs.
3. Summarize the information and prepare a short narrative description of fundings.
4. Hold technology information for update of current system in A 10804, and for use in source separation feasibility of MA 109.

MAJOR OBSTACLES: Insufficient data; data difficult to obtain.

MAJOR DECISIONS: Whether or not all the required data has been obtained; whether or not the obtained data is valid.

INPUT: Output of MA 005; source separation technology supplier data.

OUTPUT: Complete review, listing and costs of source separation technology.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: --
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE REFUSE INPUT REQUIREMENTS AND CO-DISPOSAL CAPABILITIES

number 10404

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Technology Analysis

MASTER ACTIVITY MILESTONE: Current Detailed Knowledge Of Technologies

PURPOSE: To determine collection requirements and allow consideration of co-disposal.

DESCRIPTION: Recent emphasis on co-disposal or co-utilization of refuse and sewage sludge, as well as the impending ban on ocean dumping, has prompted increased attention to this area. Various technologies are being designed for co-disposal, and the portions of co-disposal systems related to sludge disposal are eligible for partial Federal funding of construction capital under Public Law 92-500, the Water Pollution Control Act of 1972, Title II. More and more RR programs will involve co-disposal.

STEPS WITHIN THE ACTIVITY:

Develop for each technology:

1. Refuse input requirements (i.e., acceptability of bulky waste, tires, or mattress springs).
2. Determine co-disposal capabilities (i.e., acceptability of sludge, minimum percent solids).
3. Need for auxiliary fuel computations and operating data where available.

MAJOR OBSTACLES: Incomplete, insufficient, or misleading data.

MAJOR DECISIONS: Whether or not all the required data has been obtained; whether or not the obtained data is valid.

INPUT: Output of A 10401

OUTPUT: Known input and co-disposal or co-utilization capabilities.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: Industrial information

SAMPLE DOCUMENTS: NR

ACTIVITY: ASCERTAIN PRODUCT SPECIFICATIONS

number 10405

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Technology Analysis

MASTER ACTIVITY MILESTONE: Current Detailed Knowledge Of Technologies

PURPOSE: To aid in market investigations.

DESCRIPTION: To develop fuel or energy output and materials output for each technology. As with all steps in MA 104, sufficient experience is needed to ascertain the validity of claims by suppliers, as well as expected system performance.

STEPS WITHIN THE ACTIVITY:

For each technology develop:

1. Fuel or energy output characteristics such as: output per ton input; form and specifications (i.e., steam at __ temperature and ___ pressure, fluff RDF at ___ Btu/lb with ___% ash).
2. Materials output characteristics and specifications.

MAJOR OBSTACLES: Incomplete, insufficient, or misleading data.

MAJOR DECISIONS: Whether or not the obtained data is valid.

INPUT: Output of A 10401

OUTPUT: Product specs identified and understood.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: --

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ASCERTAIN SIZE, RELIABILITY, AND COSTS

number 10406

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Technology Analysis

MASTER ACTIVITY MILESTONE: Current Detailed Knowledge Of Technologies

PURPOSE: To provide data for developing site requirements and project economics for the most accurate presentation of data to decision makers.

DESCRIPTION: This activity is a natural extension of A 10402 and A 10403 in compiling and presenting technical data on the various technologies. Size, reliability and costs will be key elements in the decision process.

STEPS WITHIN THE ACTIVITY:

Develop for each technology:

1. Sizes available in terms of tph processing capacity and area required, expected downtime, and hours of maintenance per day.
2. Develop capital and operating costs including redundancy, maintenance, and relief personnel.
3. Any other pertinent operating data not previously covered.

MAJOR OBSTACLES: Data insufficiency as in A 10401 - A 10404 previously.

MAJOR DECISIONS: Whether or not the obtained data is valid.

INPUT: Output of A 10401 - A 10404.

OUTPUT: Credible size, reliability and cost data for the various technologies.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: --

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 1.5 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE PROCUREMENT ISSUES AND INDUSTRY SERVICE POTENTIAL

number 10407

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Technology Analysis

MASTER ACTIVITY MILESTONE: Current Detailed Knowledge Of Technologies

PURPOSE: To define the legal and institutional constraints of the various technologies; to examine the potential for system suppliers to enter the project in its current stage of development.

DESCRIPTION: Issues such as procuring and operating a proprietary or patented process and technological risk are defined. Proposals from industry system suppliers (based on the information gathered to date) are solicited and evaluated.
SPECIAL NOTE: Inquiries of industry service potential may produce offers by industry to assume responsibility for the required planning functions. The public official should realize that the key questions (found on page 1 of the introduction) must still be answered. If industry has answered more of these questions than the community, it may be appropriate to entertain involving that industry, using the Model as a guide to monitor progress by industry (see Time Frames in Introduction).
STEPS WITHIN THE ACTIVITY:

1. Identify the technologies which may present a specific procurement problem other than general institutional problems.
2. Indicate where these issues are likely to occur and how they might be addressed. Make a note to include these issues in MA 113 and MA 114.
3. Prepare a fact sheet of information from Phase 0 and Phase I to date and supply it to all interested firms contacted during this master activity and solicit ideas and offers of assistance.
4. Any offers received (probably very few due to the generally high risk at this early stage of project development, although special local conditions may mitigate some risk) are evaluated and a decision is reached (see special note, above and introduction).

MAJOR OBSTACLES: Information not available.

MAJOR DECISIONS: Which technologies may be constrained by unique characteristics; whether or not to involve private industry at this time.

INPUT: Output of A 10401.

OUTPUT: Technology-related procurement issues defined; decision on whether or not to involve private industry at this time.
ROLES AND RESPONSIBILITIES:

1. Does Work: LD, IHS, C, PT
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 3 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: SUMMARIZE RESULTS

number 10408

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Technology Analysis

MASTER ACTIVITY MILESTONE: Current Detailed Knowledge Of Technologies

PURPOSE: To formalize analysis.

DESCRIPTION: The summary addresses all the major points of the various activities and tabulates the information to be included as a chapter in the feasibility report.

STEPS WITHIN THE ACTIVITY:

1. Compile all information collected and computed on technologies.
2. Summarize, tabulate and document findings on the systems.
3. Produce section of final report containing technology information.

MAJOR OBSTACLES: None.

MAJOR DECISIONS: Method of presentation of summarized material.

INPUT: All data of A 10401 - A 10406.

OUTPUT: Technology summary report to be used as a section of the Feasibility Analysis report prepared in MA 116.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ANALYZE WASTE STREAM

number 105

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: The economics of RR projects are sensitive to changes in throughput, since it affects the revenues derived from both the tipping fee and the sale of recovered energy and materials (via central processing or source separation or both). Therefore, it is extremely important not to overestimate the tonnage available. Seasonal variations in refuse generation must be known to determine peak throughput rates and storage requirements. Compositional analysis is the basis for determining the recoverable quantity of materials and energy, which in turn is used to estimate revenues. Sludge quantities, composition, and disposal needs are used in determining whether co-disposal of sludge and refuse is feasible. All data should be agreed upon by the involved agencies.

DESCRIPTION: Data from multiple sources are obtained and analyzed, and inconsistencies are rectified. Weighing surveys and compositional analyses are conducted where applicable. Sludge quantities, characteristics, and future disposal needs are defined. The effects of existing source separation programs are factored into the estimates.

MAJOR OBSTACLES: Incomplete, inaccurate, or misleading data; lack of cooperation; interagency conflicting information.

MAJOR DECISIONS: Crediblity of data determined; data scope adequate or to be supplemented; quantitative result decisions; whether to perform weighing surveys.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, C, IHS, PT
2. Must be Consulted or Notified: PD, PT, MPE, EA-(S and L), EPA

ESTIMATING DATA:

1. Duration: Average = 6* weeks. Range = 3.2 to 14 weeks.
2. Work Effort: Average = 38 work days.
3. Funding: $9,500

* Rounded to 6

REFERENCES: R2, R4, R6, R11, R27, R29, R30, R31, R64, R65, R66, R67, R68, R69, R106, R115, R116 Chamber of Commerce Industry Listing (local).

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN LIST OF INDUSTRIES

number 10501

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To be used in deriving industrial solid waste generation quantities and composition.

DESCRIPTION: The list of industries should be as nearly complete as possible and should indicate the types of goods and services produced, the number of employees, the standard industrial classification (SIC) code number, and the year in which this data was compiled.

STEPS WITHIN THE ACTIVITY:

1. Obtain a current list of industries with SIC code and number of employees from the Chamber of Commerce. Check with the telephone book.
2. Using existing data on industrial waste generation, develop the quantity and types of industrial solid waste generated and disposed.

MAJOR OBSTACLES: Incomplete or inaccurate listing; listing not available.

MAJOR DECISIONS: Spot check existing industries.

INPUT: List of industries; telephone book.

OUTPUT: Complete list of industries.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted:
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 0.2 weeks. Range = 0.1 to 1 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN POPULATION DATA

number 10502

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To obtain present and future population data which will be used to derive solid waste generation estimates and centroids of solid waste generation.

DESCRIPTION: Critical to most public works programs, particularly RR facilities, is an accurate representation of present population and population projections.

STEPS WITHIN THE ACTIVITY:

1. Obtain current population and population projections. If more than one projection is available, select the one to be used.
2. Obtain (or plot) population distribution map.

MAJOR OBSTACLES: Incomplete, inaccurate, or outdated population data.

MAJOR DECISIONS: To use data or generate new projections.

INPUT: Population data listings.

OUTPUT: Complete current and future populations and distributions.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PA or ZA
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 0.2 weeks. Range = 0.1 to 1 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN PRIOR STUDIES AND REPORTS

number 10503

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To build on previous progress, and to avoid unnecessary duplication of effort.

DESCRIPTION: In many RR projects, one or more previous studies may have been completed. All available prior information is compiled to have the broadest possible data base with which to begin.

STEPS WITHIN THE ACTIVITY:

1. Check with environmental, health, and sanitation officials, State solid waste regulatory agencies, local universities, local consultants.
2. Compile all available studies and reports.
3. Review preliminarily to obtain the nature of each.

MAJOR OBSTACLES: Poor previous studies; no copies available.

MAJOR DECISIONS: None

INPUT: Contacts in all applicable agencies (also outputs of MA 001 - MA 007).

OUTPUT: Complete library of prior related work.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: C
3. Must be Consulted: IA
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 0.4 weeks. Range = 0.2 to 1 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN LIST OF TRANSFER, PROCESSING, AND DISPOSAL SITES

number 10504

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To define the existing system for subsequent review and incorporation into the eventual system.

DESCRIPTION: The existing solid waste management system must be identified and understood to be used effectively. This activity is the second step in obtaining the required understanding (A 10513 is the next step).

STEPS WITHIN THE ACTIVITY:

1. Tabulate the information found in the prior studies and reports that relate to existing facilities.
2. Visit environmental, health, and sanitation departments and obtain all information on existing facilities.
3. Discuss all pertinent background, including most recent status and plans for the existing facilities.

MAJOR OBSTACLES: No list; poor information.

MAJOR DECISIONS: None

INPUT: Output of A 10503 (also outputs of MA 001 - MA 007).

OUTPUT: Completed and detailed list.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: IA

ESTIMATING DATA:

1. Duration: Average = 0.2 weeks. Range = 0.1 to 1 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN LIST OF COLLECTION AGENCIES AND COMPANIES

number 10505

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To identify all collection entities, their sizes, locations, existing source separation programs, and quantity handled for subsequent consideration for delivering to the system or continuing as they are.

DESCRIPTION: The list of collection agencies is obtained to assist in compiling quantity data and to define the current waste collection system. Such a list may not exist, in which case it must be generated.

STEPS WITHIN THE ACTIVITY:

1. Obtain list from environmental, health, and sanitation departments or collection vehicle licensing agency of all collectors, public and private.
2. Review list, verify, and check for completeness.
3. Obtain as much complete information as possible on the quantities handled and on existing source separation practices.
4. Interview collectors where required.

MAJOR OBSTACLES: Incomplete list; poor verification; no cooperation.

MAJOR DECISIONS: Comprehensiveness of listing required.

INPUT: Above list (possibly from outputs of MA 001 - MA 007).

OUTPUT: Complete and verified list of collection agencies and companies including quantities handled, discharge points, and existing source separation programs.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 5 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN LIST OF SEWAGE TREATMENT PLANTS

number 10506

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To identify the treatment plants in the area, the capacity of each, and the level of treatment for subsequent computation.

DESCRIPTION: In order to consider co-disposal, perhaps even at the request of the local sewer authority, in conjunction with RR, it is necessary to become familiar with area sewage treatment plants, their locations, capacities, and levels of treatment.

STEPS WITHIN THE ACTIVITY:

1. Obtain list from environmental, health, and sanitation departments.
2. Refine, verify, and update information on list.

MAJOR OBSTACLES: Incomplete, inaccurate, or outdated list.

MAJOR DECISIONS: Whether to use list or to recompile.

INPUT: Above list.

OUTPUT: Complete and accurate list of treatment plants and their characteristics.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 5 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN SLUDGE CHECKLIST INFORMATION FOR EACH SEWAGE TREATMENT PLANT

number 10507

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To gather as much technical data as possible (e.g., capacity, level and type of treatment, moisture) for consideration in RR study.

DESCRIPTION: Each plant is visited and critical operational data are taken for subsequent computation. It is essential to have all checklist data before proceeding with examining disposal options, technology, or other RR system parameters.

STEPS WITHIN THE ACTIVITY:

1. Obtain checklist of critical plant factors.
2. Visit each plant and compile data.
3. Examine, refine, and verify data.

MAJOR OBSTACLES: Inaccurate information from plant operators.

MAJOR DECISIONS: Comprehensiveness of information required.

INPUT: Checklist

OUTPUT: Completed lists of information.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: Plant Operators and MPE
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 0.2 weeks. Range = 0.1 to 1 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN SEPTIC TANK PUMPING DATA

number 10508

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To obtain all pertinent information on area septic materials quantities and disposal methods.

DESCRIPTION: Accuracy of sludge quantities requires a comprehensive understanding of all sludge generated, including septic tank pumpings. The quantity of septic materials and its disposal locations are critical to know in order to assess the feasibility of its inclusion in the RR system.

STEPS WITHIN THE ACTIVITY:

1. Obtain list of septic tank pumping companies.
2. Obtain quantity estimates of materials pumped by each.
3. Locate pumping companies' disposal sites.
4. Determine size, capacity, longevity, acceptability, and other key data.

MAJOR OBSTACLES: Unwillingness to provide data; reluctance to answer queries concerning septic tank pumping operations.

MAJOR DECISIONS: Comprehensiveness of data required.

INPUT: Listing of companies; listing of disposal sites.

OUTPUT: Understanding of entire area septic tank materials handling system.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: Area septic tank pumping operators, MPE
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE EXISTING AND FUTURE SLUDGE GENERATION AND DISPOSAL NEEDS

number 10509

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To analyze sludge needs, potential to deal with those needs, and the potential for inclusion of sludge in the RR system.

DESCRIPTION: The population data are combined with existing sludge management procedures, and an analysis is performed to determine what the alternatives are for current and future sludge handling.

STEPS WITHIN THE ACTIVITY:

1. Review existing sludge data and contemplate ways of handling current sludge in addition to the current methods.
2. Use standard methods of estimating sludge generation from existing quantities and population projections.
3. Determine present and future sludge management needs.
4. Determine current plans for the future and ability of those plans to handle the future sludge disposal needs.

MAJOR OBSTACLES: Inaccurate data.

MAJOR DECISIONS: Deciding on waste generation estimates.

INPUT: Sludge and septic tank pumping information of A 10506, A 10507, and A 10508; population information of A 10502.

OUTPUT: Identification of existing and future sludge needs, i.e., short report.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: EA-(L), MPE
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTIMATE MUNICIPAL WASTE GENERATION

number 10510

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To establish the base quantity considered for all computations, including plant sizing, economics, and transportation network.

DESCRIPTION: Municipal waste generally refers to residential, commercial, and light industrial wastes. There are a number of methods for determining the quantity. National averages or locally determined quantities from weighing and counting in the specific locality may be used. If a weighing facility has been in use, that is the best data available to start with.

STEPS WITHIN THE ACTIVITY:

1. Compile all previous weighing surveys, counting surveys, or other previous work aimed at quantifying the waste.
2. Using population data and the list of commercial establishments, estimate the appropriate quantities of waste (adjust for existing source separation programs).
3. Verify against operational records if they exist.
4. Adjust for recent population shifts, trends, and project future quantities.
5. Agree on reasonable number and hold for fluctuation computation in A 10512.

MAJOR OBSTACLES: Unrealistic quantities or projections; conflicting data from different sources; inability to rectify into a common number.

MAJOR DECISIONS: Estimated quantities for present and future solid waste generation.

INPUT: Previous surveys, studies, weighing data.

OUTPUT: Estimated present and future quantities of solid waste within the study area to be handled by the RR system.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PA, MPE, ZA
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: R11, R31, R65, previous studies.

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTIMATE INDUSTRIAL WASTE GENERATION

number 10511

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To compile a realistic estimate of the quantity and types of industrial wastes for inclusion (some or all) into the RR facility feedstock.

DESCRIPTION: The industrial waste generated can have a significant impact on the receipts of the RR facility in more industrialized areas. In rural or suburban areas, the impact can be much less. The types of industrial waste in the area are quantified and categorized to decide what percentage will find its way into the RR facility.

STEPS WITHIN THE ACTIVITY:

1. Compile all previous local industrial waste information.
2. Consult list of industries compiled in A 10501.
3. Estimate waste quantities using recognized estimating techniques employing SIC codes and estimates of tons/employee/year.
4. Test to see whether results are reasonable.
5. Spot check with plant managers of several key area industries (adjust for existing source separation programs).
6. Refine and hold for fluctuation computation.

MAJOR OBSTACLES: Incomplete or inaccurate lists; lack of cooperation by industry; poor previous estimating data.

MAJOR DECISIONS: Categorizing types of waste into on-site/off-site disposal and combustible/non-combustible.

INPUT: List of industries of A 10501; all previous industrial surveys.

OUTPUT: Complete current and future industrial waste quantity estimates.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: Some Local Industries
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.2 to 1 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: R65

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTIMATE SEASONAL FLUCTUATIONS OF SOLID WASTE

number 10512

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To know the seasonal fluctuations which will occur in order to size facilities and to estimate revenue fluctuations due to waste fluctuations.

DESCRIPTION: Solid waste generation varies widely, possibly ±20% from the average over the course of a year. The quantity fluctuation is estimated based on local experience, or national figures if there is little local record-keeping. The seasonal fluctuation will be a major factor in system economies in the future, and may have a variety of causes (i.e., growing seasons, winter lulls, spring and fall cleanup, tourist influx, school year).

STEPS WITHIN THE ACTIVITY:

1. Obtain local figures on daily, weekly, monthly fluctuations if available.
2. Adopt national trends if the above is not available.
3. Refine according to local conditions, e.g., dominant industry or university.
4. Check compatibility with major local waste generators or major collectors.

MAJOR OBSTACLES: No local data.

MAJOR DECISIONS: Data credibility, whether or not to perform a weighing survey at various times of the year.

INPUT: Generation output of A 10509, A 10510 and A 10511.

OUTPUT: Refined estimate of seasonal fluctuations in waste quantity and composition.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PA, MPE, plant operators
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.2 to 1 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: R31

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTIMATE FACILITY THROUGHPUT AND DISPOSAL QUANTITIES BY SITE

number 10513

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To obtain a thorough understanding of existing and potential solid waste logistical system.

DESCRIPTION: The existing logistical waste system will have a strong impact on the final configuration of the RR system. The existing components (e.g., transfer station location) must be thoroughly understood before they can be factored into the overall system or abandoned.

STEPS WITHIN THE ACTIVITY:

1. Gather all pertinent information on facilities (use outputs of A 10503 and A 10504).
2. Review, update, and verify.

MAJOR OBSTACLES: No data, unreliable or incomplete data.

MAJOR DECISIONS: Whether this step can be covered adequately with existing data or a supplemental weighing survey should be done.

INPUT: Previous studies, reports, and operating records (outputs of A 10503 and A 10504).

OUTPUT: Solid estimate of existing facilities' quantity throughput.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: MPE, Plant Operators
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 0.5 weeks. Range = 0.2 to 1 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PERFORM WEIGHING SURVEY (OPTIONAL)

number 10514

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To verify and increase confidence in estimates of solid waste quantity and fluctuation of the quantity.

DESCRIPTION: In areas where little operational data are available, it may be desirable to perform a weighing survey. Most useful would be a survey where weighing is done daily for at least one year, provided that no extreme condition such as a flood or storm occurs. Unfortunately, time and resources generally do not allow a full year weighing survey. If good data exist, a survey is optional. The municipality may want to perform spot surveys several times in one year.

STEPS WITHIN THE ACTIVITY:

1. Decide on intervals and times of the year when spot surveys will produce the most representative data.
2. Check scale rentals and other local measuring conditions.
3. Establish date, times, plants, sampling methods, and the result desired before starting.
4. Weigh vehicles in and out; note vehicle type, capacity, origin, and contained material.
5. Summarize and report.

MAJOR OBSTACLES: Bad weather, poor cooperation.

MAJOR DECISIONS: Whether to perform the survey at all; appropriate sampling times and length of sampling period.

INPUT: Information showing extent of existing data.

OUTPUT: Documented weighing data with assumptions and projections in a short internal report (10 pages plus data sheets).

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: MPE
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days. (per sample per site)

REFERENCES: R65

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTIMATE DISPOSED QUANTITIES FROM SURVEY BY SITE

number 10515

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To further the confidence level in quantity estimates. (This is contingent upon the performance of A 10514.)

DESCRIPTION: The results of the survey are incorporated into the original estimates of A 10510, A 10511, and A 10512, if a survey is taken to produce refined quantity waste estimates.

STEPS WITHIN THE ACTIVITY:

1. Review results of survey and waste generation estimates.
2. Adapt waste generation estimates to survey data.
3. Define, explain, and rectify major differences and observations.

MAJOR OBSTACLES: Survey inconclusive; data appears out of line with estimates.

MAJOR DECISIONS: Best incorporation of spot data into annual scenario.

INPUT: Survey data of A 10514.

OUTPUT: Estimates of waste types and quantities handled at each site.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PT
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: COMPARE ESTIMATES, DEVELOP CONSISTENT GENERATION AND DISPOSAL QUANTITIES

number 10516

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To conclude the estimates which will be used as the base number for the entire RR project.

DESCRIPTION: After all preliminary estimates and surveys have been conducted, it is necessary to compare the data, refine and decide on a final number. It is imperative to have quantity number finalized at this point because it is the basis for all calculations concerning size, cost, and revenues which will come later. The quantity extracted by existing source separation programs must be accounted for.

STEPS WITHIN THE ACTIVITY:

1. Review data, analyze, and adapt varying quantities to present the most accurate local quantity.
2. Prepare report and discuss with project team.
3. Discuss and revise report; assemble final estimates.
4. Decide on final quantity estimates for the entire region potentially involved in the RR system.

MAJOR OBSTACLES: Major discrepancy between the survey data and initial estimates.

MAJOR DECISIONS: Final adoption of the base quantity number.

INPUT: All estimates and survey data of A 10512, A 10513 and A 10515.

OUTPUT: Final estimate of solid waste quantities in the region.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PT, IA, Potential Member Municipalities
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PERFORM COMPOSITIONAL ANALYSIS TO SUPPORT MATERIALS, ENERGY, AND SOURCE SEPARATION STUDIES

number 10517

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To analyze the local refuse composition so that constituents are known; to estimate recoverables from both the RR facility and the source separation systems.

DESCRIPTION: Refuse composition is analyzed so that the quantities of each constituent are known and proper estimates of recoverable quantities can be made. The percentage of each component can impact on overall system economics, particularly in source separation systems. Compositional analyses can be done by local sampling or by using national averages. Local sampling should be done where, for example, a unique area may vary from the national average.

STEPS WITHIN THE ACTIVITY:

1. Compile all previous sampling results, if any.
2. Decide whether a unique situation, such as a dominant area industry or style of housing, warrants sampling the local material.
3. If necessary, conduct a refuse-sorting survey, dividing refuse into its major components.
4. Collect national averages or figures compiled in a similar region of the country.
5. Decide on the refuse composition most representative of the area taking into account the types and quantities of material extracted by existing source separation programs and effects of any pending source reduction programs.

MAJOR OBSTACLES: Poor data for the area where deviation from the national or regional averages is suspected to be great.

MAJOR DECISIONS: Whether to survey; how to adapt the national or regional figures.

INPUT: Previous reports, surveys, or national figures.

OUTPUT: Detailed compositional analysis.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: MPE, EA-(L), EA-(S), EPA
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 1 work days. (Does not include step 3, above)

REFERENCES: R11, R31, previous local reports

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTIMATE AVERAGE YEARLY COMPOSITION

number 10518

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To estimate a reasonable average composition for later computations of recoverable materials, including source separation, and combustible materials.

DESCRIPTION: The composition of refuse can vary with the season of the year and with individual communities, but for most purposes the average composition can be used for RR system computations. The key is to decide the most representative average annual composition and use that throughout in the feasibility study.

STEPS WITHIN THE ACTIVITY:

1. Review output of A 10517.
2. Review the national averages and adapt for local conditions.
3. Develop an average annual composition and use this throughout in the feasibility stage.

MAJOR OBSTACLES: Inaccurate previous local data; inaccuracies due to using national averages.

MAJOR DECISIONS: Final compositional average.

INPUT: Previous local work, output of A 10517, studies of national average waste composition.

OUTPUT: Final agreed-upon average annual composition.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PT
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 1 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: R11, R31, R65, R90

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTIMATE AVERAGE HEATING VALUE

number 10519

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Waste Stream

MASTER ACTIVITY MILESTONE: Consistent Generation, Disposal, and Recoverable Quantities, Projections, and Heating Value

PURPOSE: To present a reasonable estimate of the heating value of refuse as a solid basis for all subsequent computations.

DESCRIPTION: Heating value of the refuse is one of the most important numbers in the entire study. All computations for energy product, and hence revenues and system economics, hinge on the initial choice of heating value. The heating value can also be significantly influenced by season, community, and existing or planned source separation programs, and therefore, the average must be carefully chosen.

STEPS WITHIN THE ACTIVITY:

1. Compile all local and national data concerning the heating values (higher or lower) of solid fuels, for reference and background.
2. From average yearly compositional analysis (output of A 10518) and the heating values of the various components derive the average heating value of the refuse (taking into account the percent moisture as received).
3. Refine, verify, and agree upon the heating value. Use this constant value throughout the study, except that it may be adjusted later to account for new or expanded source separation and/or source reduction programs.

MAJOR OBSTACLES: Erroneous method of estimating.

MAJOR DECISIONS: The adopted heating value for this project.

INPUT: Composition data of A 10518; national and local heating value data.

OUTPUT: Agreed-upon heating value.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PT
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.2 to 1 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: R11, R22, R31, R65, R92

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN LIST OF FOSSIL FUEL USERS

number 10601

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To canvass the agencies which have a listing of all boilers in the area to get an idea of the types and sizes.

DESCRIPTION: A comprehensive listing of all fossil fuel users in the project area is necessary in order to perform the energy market analysis.

STEPS WITHIN THE ACTIVITY:

1. Contact local air quality regulatory agencies for boiler information.
2. Check local public health agency for any additional or supplementary information on area fossil fuel users.
3. Review and compile list into priority form.
4. Contact area fuel suppliers.

MAJOR OBSTACLES: Lists are not available. Lists are incomplete.

MAJOR DECISIONS: None

INPUT: None

OUTPUT: List of all fossil fuel users.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.2 to 2 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: CONDUCT TELEPHONE SURVEY (EXCEPT UTILITIES)

number 10602

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To verify information on forms, and begin a ranking of potential markets, based on size and initial interest.

DESCRIPTION: Contact all listed fossil fuel users by telephone.

STEPS WITHIN THE ACTIVITY: Extract or verify the following information:

1. Type and yearly quantity of fuel used.
2. Boiler capacity (Btu/hr).
3. Average daily consumption hours/day, days/week, weeks/year in operation.
4. Manufacture boiler.
5. Age of boiler.
6. Form energy is converted to (steam, hot water, other).
7. What the energy is used for (process, heating, electric).
8. Interest in RDF.

MAJOR OBSTACLES: Refusal to reveal requested information.

MAJOR DECISIONS: None

INPUT: List of all fossil fuel users.

OUTPUT: Current information on all fossil fuel users.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 0.5 weeks. Range = 0.2 to 1 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: R90, R93, R94, R97, R98, R99, R100

SAMPLE DOCUMENTS: SD 10602

ACTIVITY: IDENTIFY POTENTIAL MARKETS

number 10603

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To distill information to date showing potential markets for RR including priorities.

DESCRIPTION: The amount of energy in various forms which can be derived from the waste is determined as are the consumers who could use the energy. Risks associated with RDF markets should be recognized, since the uncertainties of an RDF system are greater. However, capital requirements of RDF systems may be significantly less since the boiler is in place and only the fuel is being prepared. Conversely the market security associated with electric and some steam projects will cost more in initial capital. These points are noted and documented when classifying potential markets.

STEPS WITHIN THE ACTIVITY:

1. From the preliminary technology analysis (MA 104) and the preliminary waste quantity and composition data (MA 103), determine how much energy can be derived from the waste for each form of energy.
2. Using these energy quantities in conjunction with the energy demands obtained by the telephone survey (A 10602), determine which energy consumers could utilize the energy derived from the waste.

MAJOR OBSTACLES: There are no potential energy markets. Energy markets may want lesser risk provided by steam or electricity and be reluctant to say they will use a higher risk type (RDF) which can be produced less expensively.

MAJOR DECISIONS; Which fossil fuel users are potential markets and which are not.

INPUT: Output of telephone survey; preliminary waste quantity and composition; preliminary technology analysis.

OUTPUT: List of potential energy markets.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 2 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: VISIT ALL POTENTIAL MARKETS

number 10604

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To see the physical plant, and get to know the individuals involved so that quantities, spacing and access are analyzed.

DESCRIPTION: Visit the principal potential markets to tour their facilities and look at the daily fuel consumed or steam charts. Record minimum, maximum, and average daily demand, steam temperature and pressure, feedwater temperature. Note any substantial changes with shift, weekend operations, and seasonal fluctuations. Also note site characteristics and plans for the future.

STEPS WITHIN THE ACTIVITY:

1. Complete worksheet for each facility visit.
2. Complete a site evaluation worksheet.
3. Seek plans or opportunities to cost share conversions from oil to coal/RDF.

MAJOR OBSTACLES: No cooperation on the part of potential markets.

MAJOR DECISIONS: Which potential markets to visit first; which individuals would be the most appropriate ones to conduct visits.

INPUT: List of potential markets (output of A 10603).

OUTPUT: Detailed information on potential energy markets.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: SD 10604

ACTIVITY: IDENTIFY VIABLE POTENTIAL MARKETS

number 10605

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To identify and designate the most viable of the potential markets in order to begin active pursuit of these markets for the recovery program.

DESCRIPTION: Viable energy markets are determined by: a) the details of the energy demand characteristics; b) the degree of interest of the various potential energy-from-waste users; c) the quantity and forms of energy which can be supplied from refuse; and d) the site characteristics. These parameters are listed, evaluated, compared and the most favorable constitute the list of viable energy markets.

STEPS WITHIN THE ACTIVITY:

1. Compare the potential energy from refuse supply with the market energy demand requirements.
2. Compare the site characteristics of the potential markets.
3. Estimate the likelihood that a firm contract will be signed.
4. Look (subjectively) at the trade-off between a firm steam, electric market versus a non-firm RDF market. Lay the ground work to quantify the cost impacts of a specific market that is firm and virtually guaranteed.
5. List viable energy markets.

MAJOR OBSTACLES: No potential energy markets are viable.

MAJOR DECISIONS: Identify potential viable energy markets.

INPUT: List and details of potential energy markets, quantity and forms of energy which can be derived from refuse. (Output of A 10603 and A 10604).
OUTPUT: List of viable potential energy markets.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: PLOT COMMODITY DEMAND

number 10606

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To determine the most desirable of the energy markets in terms of least difference between energy available from refuse and the market requirements.

DESCRIPTION: For each viable energy market, plot 4 graphs of how the demand for the energy commodity varies over time.

STEPS WITHIN THE ACTIVITY:

Plot graphs for:

1. Variations in hourly demand over 24 hours.
2. Variation in daily demand over 7 consecutive days.
3. Variation in weekly demand over 5 weeks.
4. Variation in monthly demand over 12 months.

MAJOR OBSTACLES: None

MAJOR DECISIONS: None

INPUT: Detailed information on all potential energy markets, list of viable potential energy markets (outputs of A 10604 and A 10605).
OUTPUT: Four graphs for each viable potential energy markets.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 2 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DEVELOP COMMODITY PRICING SCHEDULE

number 10607

PHASE: I, *Resource Recovery Feasibility Analysis*

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To relate the schedule and pricing to the local energy situation and the RR project.

DESCRIPTION: For each viable potential market develop a pricing formula for each possible energy form. The potential market is not asked to agree with this formula at this time. The formulae will be used in developing revenues for various alternatives.

STEPS WITHIN THE ACTIVITY:

1. Using the sample formula, develop a pricing formula for each possible energy form.
2. Develop pricing formulae for the viable potential energy markets.
3. Review and discuss internally for reasonableness and relevance to the markets.

MAJOR OBSTACLES: It may be difficult to explain that benefits have to be shared or it's unlikely that there will be a long term agreement for waste based energy.

MAJOR DECISIONS: Amount of discount to be offered.

INPUT: List of viable potential energy markets (output of A 10605), current fuel prices.
OUTPUT: Pricing formulae for each possible energy commodity deliverable to each viable potential energy market.
ROLES AND RESPONSIBILITIES:

1. Does Work: C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: R90, R93, R94, R100, R101, R102

SAMPLE DOCUMENTS: SD 10607

ACTIVITY: OBTAIN ENERGY MARKET LETTERS OF INTEREST

number

10608

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To document for the first time and to preliminarily assess the market interest in the project.

DESCRIPTION: Meet with each viable potential energy market and request a letter of interest by a corporate officer (preferably the president or chairman of the board).

STEPS WITHIN THE ACTIVITY:

1. Meet with the potential energy market to discuss interest in acquiring energy from a RR facility.
2. Explain the need for a letter of interest.
3. Request a letter of interest.

MAJOR OBSTACLES: No cooperation; change in policy.

MAJOR DECISIONS: The degree of commitment intended in the letter; how not to compromise future negotiations (ie; giving up the right to have an independent estimate made of the cost of handling RDF at users facility).

INPUT: List of viable potential energy markets.

OUTPUT: Letters of Interest.

ROLES AND RESPONSIBILITIES:

1. Does Work: C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 4 to 12 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: SD 10608

ACTIVITY: CONDUCT INTRODUCTORY MEETING WITH UTILITIES

number 10609

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To approach the local utilities and introduce the idea of the project, time frame, preliminary ideas, and that utilities are a potential energy market.

DESCRIPTION: The main objective of these meetings is to establish a policy of cooperation on the part of the utility.

STEPS WITHIN THE ACTIVITY:

1. Meet with each utility separately. An official who can establish policy should be present.
2. Indicate that its cooperation and input is being sought at the beginning of the study -- but no decisions have been made.
3. Agree to explore possible alternatives for the utility to act as a market for energy derived from the refuse.
4. Establish a meeting date for the technical staffs to explore these alternatives.
5. Contact PUC about the meetings; request their input and assistance; obtain background and advice on each utility; inform PUC of schedule and developments of meetings.

MAJOR OBSTACLES: Official not present; key technical staff not available; utility has no incentive to join program.

MAJOR DECISIONS: Agenda, appropriate representatives from the lead agency that should attend.

INPUT: List of fossil fuel users. (output of A 10601).

OUTPUT: Agreement to explore alternatives, time, date, and place of in-depth meeting.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, PM, PD, EO
2. Responsible: PD
3. Must be Consulted: PUC
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: CONDUCT IN-DEPTH MEETING(S) WITH UTILITIES

number 10610

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To understand technical constraints and requirements in the system and examine most applicable energy option.

DESCRIPTION: Each electrical generating station should be examined as a potential fuel or steam market, and the possibilities and technical problems discussed for each plant.

STEPS WITHIN THE ACTIVITY:

1. Examine boilers as potential fuel or steam recipients.
2. Map district heating systems.
3. Map optimum (substation) and other locations that are acceptable for inputting electricity into their network.
4. Obtain plans for new facilities and expansion of existing facilities.
5. Discuss operational or environmental constraints which may exist (e.g., air emissions, thermal stream pollution, location).

MAJOR OBSTACLES: No cooperation, skepticism toward the technology, no viable methods for the utility to act as an energy market can be identified.

MAJOR DECISIONS: Meeting agenda, and level of detail.

INPUT: Results of introductory meeting with utilities (output of A 10609).

OUTPUT: Viable methods for the utility to act as an energy market.

ROLES AND RESPONSIBILITIES:

1. Does Work: C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: PUC

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN LETTERS OF INTEREST FROM UTILITIES

number 10611

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To receive documentation indicating interest by the utility in the project or, by each letter of interest, to understand the position of the utility.

DESCRIPTION: Request a letter, signed by an official who can establish policy (preferably the president or chairman of the board) stating that the utility is interested in purchasing energy derived from refuse, and indicating the possible types of energy. Price range is not essential at this point, but would be desirable. This will depend on the posture of the individual project.

STEPS WITHIN THE ACTIVITY:

1. Meet with utility officer and technical people to discuss the findings of technical discussions.
2. Explain the need for letters of interest relative to project continuation and success.
3. Request letters of interest.

MAJOR OBSTACLES: No cooperation; change in policy.

MAJOR DECISIONS: None

INPUT: Written request for letters of interest.

OUTPUT: Letters of interest.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PD, EO
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified: PUC

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 4 to 12 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN COMMODITY DEMAND AND PRICING SCHEDULE FROM UTILITIES

number 10612

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Detailed Energy Market Analysis

MASTER ACTIVITY MILESTONE: Letters of Interest

PURPOSE: To obtain a preliminary idea of the price which is thought possible, particularly if no price is indicated in the letter of interest. The commodity demand and pricing schedule may also be used for verification.

DESCRIPTION: Meet with each utility and develop a commodity demand and pricing schedule which has the approval of an official who can establish policy.

STEPS WITHIN THE ACTIVITY:

1. If not performed previously, obtain a commodity and demand pricing schedule, already used by the utility.
2. Examine the schedule for its applicability to the project.
3. Hold for cost/revenue estimates during project alternatives.

MAJOR OBSTACLES: No cooperation; unreasonable pricing formula.

MAJOR DECISIONS: Reasonable range of pricing variation from schedule for estimating purposes.

INPUT: Result of in depth meeting(s) with utilities (output of A 10610).

OUTPUT: Detailed commodity demand and pricing schedules.

ROLES AND RESPONSIBILITIES:

1. Does Work: C
2. Responsible: PD
3. Must be Consulted: PM
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 5 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ANALYZE EXISTING DISPOSAL OPTIONS

number 107

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Fully Understood Current System Capabilities

PURPOSE: To examine the costs of existing facilities or readily obtainable facilities and their ability to continue in their current mode of operation, consistent with applicable environmental codes. These facilities may be landfills, incinerators, other processing technologies, current sludge disposal lagoons, spreading areas and other disposal facilities.

DESCRIPTION: This activity looks at all existing facilities, assesses their conditions, and analyzes whether or not they could be upgraded and the associated costs. The current system's strengths and shortcomings must be clearly understood, as well as the cost to rectify those facilities. A particular market may lend itself readily to retrofitting an incinerator, for example, or a landfill may be easily and inexpensively expanded. These considerations are analyzed completely.

MAJOR OBSTACLES: Poor data; public pressure to continue or discontinue an operation.

MAJOR DECISIONS: Credibility of existing data or emissions testing; parameters for calculations; level of detail; role of neighboring areas; validity of findings; whether sludge disposal facilities are sufficient in the long term, and co-disposal is therefore unnecessary.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PT
2. Must be Consulted or Notified: MPE, PD, EO, PT, other municipalities

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1.5 to 6 weeks.
2. Work Effort: Average = 19 work days.
3. Funding: $4,000

REFERENCES: R10, R11, R28, R45, R49, R82, R106, R109

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE FUTURE LANDFILL REQUIREMENTS

number 10701

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Existing Disposal Options

MASTER ACTIVITY MILESTONE: Fully Understood Current System Capabilities

PURPOSE: To understand the entirety of the landfill situation, since it will impact significantly on the viability of RR.

DESCRIPTION: Landfill data is obtained. Site visits should be conducted. All existing environmental reports and cost data are compiled and reviewed. Readily available tracts of land should also be reviewed and understood. Using generation data, cover requirements and other volume factors, the required landfill capacity is compared with the actual available landfill capacity.

STEPS WITHIN THE ACTIVITY:

1. Obtain and review all waste generation and facility cost data.
2. Decide on volumetric parameters such as density, cover material, settlement, and others, and estimate landfill volume requirements over the planning period (e.g., immediate, 5, 10, 20 years).
3. Identify continuing operational requirements (e.g., cover material impact, leachate management).
4. Recognize existing capacity limitations and the reasons for limitations.

MAJOR OBSTACLES: Poor data.

MAJOR DECISIONS: Parameters for calculations

INPUT: Generation output of A 10509 (sludge) and A 10510 (refuse).

OUTPUT: Future landfill volume relative to facility throughput requirements.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PT
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN DATA AND COSTS OF EXISTING FACILITIES

number 10702

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Existing Disposal Options

MASTER ACTIVITY MILESTONE: Fully Understood Current System Capabilities

PURPOSE: To obtain all pertinent existing data as a basis for analysis of the current system.

DESCRIPTION: All available information on existing systems must be compiled and made complete prior to beginning analysis of the system. Depending on the municipality involved, contact may be required with one or several agencies.

STEPS WITHIN THE ACTIVITY:

1. Review previous data obtained in INPUT below.
2. Identify the appropriate local agencies and departments who keep records on the existing facilities, such as DPW, or perhaps local health department, sanitary engineer's office, or individual plant operator.
3. Telephone screen.
4. Visit and obtain data; discuss and decide on completeness.
5. Define, obtain necessary supplements, and compile final data.
6. Review environmental acceptability of existing local facilities.

MAJOR OBSTACLES: Inaccurate, incomplete, or non-existent data.

MAJOR DECISIONS: Which data are useful.

INPUT: Prior studies and reports of A 10503; facility lists of A 10504 and A 10506; and septic tank pumping information of A 10508.
OUTPUT: Complete and dependable operational records.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: DPW; EA-(L); Health Dept.; Sanitary Engineer or Plant Operator
4. Must be Notified: PD, MPE

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: Previously obtained local data and reports.

SAMPLE DOCUMENTS: SD 10702a, SD 10702b.

ACTIVITY: EXAMINE CURRENT OPERATIONS AND PLANS OF NEIGHBORING AREAS

number 10703

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Existing Disposal Options

MASTER ACTIVITY MILESTONE: Fully Understood Current System Capabilities

PURPOSE: To identify and understand solid waste management plans of neighboring areas which may become significant to the project, especially if a RR facility may be available there.

DESCRIPTION: Neighboring areas are contacted and their plans are discussed. They may be planning a landfill or RR facility which may become an option, or they may be closing a facility and seeking alternatives. In both cases, their action can have significant impact on a RR program. Plans and activities must be known at all times.

STEPS WITHIN THE ACTIVITY:

1. Contact neighboring areas and discuss their current and planned facilities, including sludge handling.
2. Identify points of impact on the RR system.
3. Consider how the neighboring areas' activities may be factored into the program.
4. Explore mutually beneficial approaches.
5. Include or exclude the neighboring areas as appropriate.

MAJOR OBSTACLES: Neighboring area planning a rival system or major landfill but indecisive about outcome; major area wanting to enter RR systems, but politically indecisive.

MAJOR DECISIONS: Whether or not neighboring area should play any role in the phase-over period or current or future facility.

INPUT: Information from each neighboring area.

OUTPUT: Full understanding of current operations and the plans of neighboring areas, and its impact on the RR system.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: other municipalities, Regional PA
4. Must be Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ANALYZE EXISTING FACILITIES AND EXPANSION POTENTIAL

number 10704

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Existing Disposal Options

MASTER ACTIVITY MILESTONE: Fully Understood Current System Capabilities

PURPOSE: To analyze all pertinent aspects of the current system and to identify its potential for use as the future system.

DESCRIPTION: The cost, remaining life, and environmental impact of the existing facilities are analyzed to understand completely the utility of part or all of the current system. The second part of the analysis is to determine the ability to expand or upgrade current facilities, analyze the resultant capacity, estimate costs and the environmental impact of the facilities after expansion or upgrading. The existing source separation programs are analyzed and their expansion capabilities are determined in A 10804.

STEPS WITHIN THE ACTIVITY:

1. Review all pertinent data, project capacities, remaining life and current environmental impact, and capital and operating costs.
2. Analyze site-by-site capability for expansion, new life expected after expansion, and capital and operating costs of expanding the facilities, and operating the site after expansion. This applies to all processing facilities, shredders, incinerators, transfer stations, sludge disposal facilities.
3. Review funding plans, availability and constraints for each of the facilities and options.
4. Compare all results.

MAJOR OBSTACLES: Determination of upgrading and expansion potentials may dictate an extensive, detailed analysis of existing facilities, which would be another major effort.

MAJOR DECISIONS: If the level of detail envisioned in this one week long task is sufficient, or if another major study should be commissioned.

INPUT: Previous studies and records of A 10702; other pertinent estimating information.

OUTPUT: Complete environmental and economic scenario of existing facilities, both continuing as they are and upgraded.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: MPE, PT
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: DEFINE EXISTING DISPOSAL OPTIONS

number 10705

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Analyze Existing Disposal Options

MASTER ACTIVITY MILESTONE: Fully Understood Current System Capabilities

PURPOSE: To assemble the pertinent information, examine alternatives and describe the capabilities of the current system and its upgraded or expanded version.

DESCRIPTION: All data is compiled and reviewed and the options which really are available are defined. It is very important that the definition be precise, realistic, and its impact fully understood.

STEPS WITHIN THE ACTIVITY:

1. Review all work on existing and expanded facilities.
2. Recognize the plans of neighboring areas.
3. Factor 1 and 2 into a complete picture of solid waste management options, including refuse and sludge processing and disposal options.
4. Define and document the options.

MAJOR OBSTACLES: Lack of clear decisions or direction in neighboring areas on their facilities; lack of commitment to upgrade or close existing facilities.

MAJOR DECISIONS: Credibility and validity of findings; whether long-term sludge handling facilities are adequate, and therefore whether consideration of co-disposal is necessary.

INPUT: All analyses on existing facilities from A 10703 and A 10704.

OUTPUT: Ten page report outlining disposal options based on existing facilities which continue to serve their current functions.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PT
2. Responsible: PM
3. Must be Consulted: PT, MPE, other municipalities
4. Must be Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: R10

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN LIST OF POSSIBLE MARKETS

number 10801

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Material Market Analysis

MASTER ACTIVITY MILESTONE: Materials Market Report, Letters of Interest

PURPOSE: To include as many firms as possible in the initial survey so that later developments will not show that something was overlooked.

DESCRIPTION: From existing information, an effort is made to obtain a list of all (or as many as possible) companies who could reasonably be expected to be interested in purchasing post-consumer recovered materials.

STEPS WITHIN THE ACTIVITY:

1. Obtain list of steel, aluminum, paper and boxboard manufacturers. (Some local information on this topic has been in A 10501 and MA 103).
2. Obtain list of scrap metal dealers and potential glass markets.
3. Obtain list of existing source separation programs (some information on this topic has been obtained in A 10505 and MA 003)
4. Combine into master list of possible materials markets.

MAJOR OBSTACLES: Prior information incomplete.

MAJOR DECISIONS: Whether or not the list is reasonably complete and no major companies have been overlooked.

INPUT: Knowledge of local area, local telephone directories, output of A 10501, A 10505, and MA 003.
OUTPUT: Composite list of all companies in the area that could possibly be interested in purchasing materials recovered from refuse.
ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PT
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 0.5 weeks. Range = 0.2 to 1 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONDUCT MARKET SURVEY

number 10802

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Material Market Analysis

MASTER ACTIVITY MILESTONE: Materials Market Report, Letters of Interest

PURPOSE: To obtain preliminary data on the interest and requirements of the various identified firms to act as markets for recovered materials in order to identify those companies which are worth pursuing.

DESCRIPTION: A questionnaire is developed and distributed which solicits information on the technical, economic, and quantity requirements of each company with respect to it utilizing the post-consumer materials, as well as its interest in doing so.

STEPS WITHIN THE ACTIVITY:
1. Develop market questionnaires.
2. Conduct market survey either by mail, telephone, or both.
3. Compile, tabulate, and summarize the results.

MAJOR OBSTACLES: Poor or insufficient response; uncooperative or skeptical secondary materials firms.

MAJOR DECISIONS: Whether or not the survey questionnaire is complete and requests the necessary information.

INPUT: Output of A 10801.

OUTPUT: Tables and text summarizing results of the survey.

ROLES AND RESPONSIBILITIES:
1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: M
4. Must be Notified: PD

ESTIMATING DATA:
1. Duration: Average = 4 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: SD 10802

ACTIVITY: IDENTIFY POTENTIAL MARKETS

number 10803

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Material Markets Analysis

MASTER ACTIVITY MILESTONE: Materials Market Report, Letters of Interest

PURPOSE: To identify which companies could act as markets for recovered materials.

DESCRIPTION: From the results of the questionnaire developed and distributed in A 10902, the companies with the highest probability of acting as markets are determined (both from a technical and interest viewpoint). A small report summarizing the investigations, findings and conclusions is written.

STEPS WITHIN THE ACTIVITY:

1. From the survey results (output of A 10802) and the preliminary analysis of existing marketing activities (A 10804), identify potential markets for the various recovered materials from either a source separation or central separation system, or both.
2. Write a small report summarizing what was done and the results. The full list of firms contacted should be appended to the report. Market requirements, types of processing required, and possible price to be paid should be included. Final results of A 10804 should also be incorporated. The report will be adapted for inclusion in the Feasibility Analysis Report produced in MA 116.

MAJOR OBSTACLES: No markets; markets are poor or uncooperative.

MAJOR DECISIONS: Determination of companies which represent potential markets.

INPUT: Survey of A 10802.

OUTPUT: Brief (five page) report summarizing the material markets investigation.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 0.5 to 3 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ANALYZE EXISTING SOURCE SEPARATION PROGRAMS

number 10804

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Material Market Analysis

MASTER ACTIVITY MILESTONE: Materials Market Report, Letters of Interest

PURPOSE: To determine the interrelations between the local market conditions and existing (and expanded) source separation programs.

DESCRIPTION: The existing source separation programs and their markets are analyzed to determine the impact of expanding the existing program both on the programs and on the markets.

STEPS WITHIN THE ACTIVITY:

1. Determine service area, quantities recycled, percent participation, recovery efficiency, costs and revenues.
2. Determine problems, plans and capabilities for expansion of the existing programs taking into account the constraints of labor, service area, market limitations and costs.

MAJOR OBSTACLES: No existing or potential source separation program.

MAJOR DECISIONS: Method of determining costs, revenues and market impact of the existing source separation program.

INPUT: Pertinent outputs from MA 104, MA 105 and MA 108.

OUTPUT: Memorandum summarizing findings and analysis.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: -
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN MATERIAL MARKET LETTERS OF INTEREST

number 10805

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Material Market Analysis

MASTER ACTIVITY MILESTONE: Materials Market Report, Letters of Interest

PURPOSE: To provide preliminary documentation for identifying which firms, which technically could act as markets, are really interested in involving themselves in a RR program, thereby increasing the probability of having markets for the recovered materials.
DESCRIPTION: The companies that were identified as potential markets in A 10803 are solicited to provide letters of interest in order to act as a basis for proceeding further. The letters should be signed by a high corporate official.

STEPS WITHIN THE ACTIVITY:
1. Draft sample letter of interest.
2. Solicit letters of interest from the potential markets identified in A 10804, enclosing the sample letter.
3. Make follow-up telephone calls as necessary.
4. Receive and compile materials market letters of interest.

MAJOR OBSTACLES: Change of policy as the letter is passed from the staff level up to corporate level.

MAJOR DECISIONS: How detailed and how much commitment is required in a letter of interest.

INPUT: Outputs of A 10803 and A 10804.

OUTPUT: Letters of interest possibly stating preliminary requirements, minimum and maximum quantities and pricing formula.
ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PD
3. Must be Consulted: M
4. Must be Notified: EO

ESTIMATING DATA:
1. Duration: Average = 8 weeks. Range = 4 to 12 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: SD 10805

MASTER ACTIVITY: CONDUCT SOURCE SEPARATION FEASIBILITY

number 109

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Realistic System Configuration with Costs and Revenues

PURPOSE: To obtain a solid basis for deciding whether or not to pursue implementation of a source separation RR program.

DESCRIPTION: Collection practices are examined in detail, potential markets and their requirements are identified, system parameters are developed, and a realistic system configuration is developed with associated costs and revenues.

MAJOR OBSTACLES: Incomplete information on collection practices or market requirements.

MAJOR DECISIONS: Whether the system is feasible or not; whether system is to be separate curbside collection or self-haul to central collection points.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Must be Consulted or Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 7 weeks.
2. Work Effort: Average = 25 work days.
3. Funding: $6,000

REFERENCES: R2, R4, R5, R11, R25, R27, R29, R30, R31, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R64, R65, R66, R67, R68, R69, R108, R113

SAMPLE DOCUMENTS: NR

ACTIVITY: DEVELOP SYSTEM PARAMETERS AND LOGISTICS

number 10901

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Source Separation Feasibility

MASTER ACTIVITY MILESTONE: Realistic System Configuration with Costs and Revenues

PURPOSE: To postulate a source separation program which meets market requirements.

DESCRIPTION: If separate curbside collection is considered, then changes to existing collection practices and the cost impact of those changes are developed. Additionally, the transportation-to-disposal and disposal costs should be determined, since it might be possible to credit the program with the dollars saved. If central drop-off is considered, then general areas for the drop locations should be specified. From the market requirements and collection method, the need for a recycling center should be determined, and if found necessary, general areas should be designated for its location.

STEPS WITHIN THE ACTIVITY:

1. Decide whether the program is to be curbside collection or self-haul to central collection and storage locations. 2. If it is to be curbside collection, decide: a) whether it is to be mandated by ordinance or to be on a voluntary basis, b) frequency of collection of source separated materials, c) type(s) of collection vehicles. 3. Decide whether a recycling center is necessary or whether the recovered material can be transported directly to the market. 4. If a recycling center is necessary, decide: a) where it is to be located, b) whether it is to be staffed by employees or volunteers. 5. Decide on the type and extent of the publicity/public education campaign. 6. Decide on the percent participation and the percent recovery which can be expected.

MAJOR OBSTACLES: No markets; excessive number of alternatives.

MAJOR DECISIONS: Whether the program is to be curbside collection or self-haul.

INPUT: Pertinent outputs from MA 104, MA 105 and MA 108.

OUTPUT: Decision on all items in steps indicated above.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, C, IHS
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: SD 10901

ACTIVITY: DEVELOP COST AND REVENUE ESTIMATES

number 10902

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Conduct Source Separation Feasibility

MASTER ACTIVITY MILESTONE: Realistic System Configuration with Costs and Revenues

PURPOSE: To provide a basis for a political/public decision to proceed with or to terminate source separation.

DESCRIPTION: Utilizing the system configuration(s) and the collection and transportation costs developed in A 10901, and the disposal costs developed in MA 107, costs and revenues for the total system are developed.

STEPS WITHIN THE ACTIVITY:

1. Utilizing logistics developed in A 10901, the collection, transportation, storage, and handling costs, as well as the transportation and disposal savings (from MA 107) are developed.
2. Utilizing the quantities and composition developed in MA 105, adjusting for percent participation and percent recovery specified in A 10901 and the market prices developed in A 10803, develop revenues to be expected from the sale of recovered materials. Perform sensitivity analysis of revenues as a function of percent participation.
3. Develop a cost for the publicity/public education program specified in A 10901.
4. Write a report summarizing the system configuration(s) of possible source separation program(s) costs, revenues, and sensitivity to percent participation.

MAJOR OBSTACLES: No markets; little or unreliable data; little indication of potential success.

MAJOR DECISIONS: System configurations.

INPUT: Pertinent outputs from MA 104, MA 105 and MA 108.

OUTPUT: A draft report on the feasibility of a source separation program.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: SD 10902

ACTIVITY: DETERMINE WHETHER AIR QUALITY MONITORING IS REQUIRED PRIOR TO CONSTRUCTION

number 11001

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Preliminary Environmental Analysis

MASTER ACTIVITY MILESTONE: Environmental Constraints

PURPOSE: To determine the need for site-specific air monitoring for criteria pollutants.

DESCRIPTION: Existing air quality data and the existing state air monitoring network may be adequate to support the air quality reviews and impact assessment in some locations. In other cases, the cognizant regulatory agencies may require site-specific monitoring of certain pollutants, e.g., to provide one year of data prior to facility construction.

STEPS WITHIN THE ACTIVITY:

1. Obtain ambient air quality data (historic), descriptions of state monitoring network.
2. Obtain determination of air quality status (e.g., attainment, nonattainment; Class I, II, III) of area from regulatory agencies.
3. Review monitoring requirements in regulations, based on Steps 1 and 2, and determine site-specific requirements.

MAJOR OBSTACLES: Changing interpretations of regulatory requirements.

MAJOR DECISIONS: Whether or not the existing air monitoring network is adequate; whether or not site specific air monitoring is needed.

INPUT: Output from MA 103, and A 11201 and A 11202.

OUTPUT: Determination (preliminary) of need for air quality monitoring.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: EPA, EA-(S), EA-(L)
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ANALYZE CAPABILITIES OF THE VARIOUS TECHNOLOGIES TO MEET THE ENVIRONMENTAL REQUIREMENTS

number 11002

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Preliminary Environmental Analysis

MASTER ACTIVITY MILESTONE: Environmental Constraints

PURPOSE: To determine any project constraints based on environmental factors.

DESCRIPTION: Review, at a conceptual level, the air, water, noise, aesthetic and other impacts of alternative technologies. Focus on technology/site/market interrelationships to analyze any possible problem areas or constraints and to determine any potential environmental factors which might rule out certain combinations.

STEPS WITHIN THE ACTIVITY:

1. Conduct air analysis.
2. Conduct water use and effluent analyses.
3. Conduct noise analysis.
4. Conduct aesthetic and other analyses.
5. Summarize results pointing out potential problems which have been identified and requirements or strategies which can resolve the problems.

MAJOR OBSTACLES: Insufficient technical data for the technologies still under development.

MAJOR DECISIONS: Whether or not technologies can meet necessary requirements.

INPUT: Output from MA 103, MA 104, A 11201 and A 11202. Outputs from MA 106 and MA 109 could also be useful.

OUTPUT: Preliminary environmental evaluation and sets of constraints on system alternatives and sites (five to ten page report).

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: EA-(S), EA-(L), EPA
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 8 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ESTABLISH TRANSPORTATION ANALYSIS MODEL

number 111

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Selected Transportation Analysis Model and Data.

PURPOSE: To prepare for later analysis of RR system transportation costs and evaluation of alternative solutions. Transportation analysis can provide input to the determination of facility scale, technology, and site.

DESCRIPTION: Transportation modeling can range from a rough cost estimate of a likely solution calculated by hand to complex computer modeling, which can optimize the transportation configuration for a region and also identify the system technology, scale, and site which would best meet system objectives at the lowest cost. The extent of transportation analysis is dependent upon service region size, potential markets for recovered materials and energy, available facility sites, existing waste transportation and disposal arrangements, and the depth of analysis requested by interested citizen committees and representatives.

MAJOR OBSTACLES: Lack of commitment to the project on the part of service region members and, therefore, an indeterminate and constantly changing waste supply and region size; public objection to routes, methods, assumptions.

MAJOR DECISIONS: Extent of analysis desired for project and level of sophistication of the technique of analysis; identification of desired outputs (costs, transportation configurations, sensitivity analysis, economically preferred technology and scale).

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C with PT
2. Must be Consulted or Notified: DOT-(L), DPW, P, A/E

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 14 work days.
3. Funding: $3,500

REFERENCES: R17, R19, R20, R22, R23, R24, R28

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH CENTROIDS OF WASTE GENERATION

number 11101

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Establish Transportation Analysis Model

MASTER ACTIVITY MILESTONE: Selected Transportation Analysis Model and Data

PURPOSE: To facilitate measurement of the distance that the waste supply in a service region will be hauled to a transfer station or RR facility.

DESCRIPTION: Theoretical centroids of waste generation in the service region are identified in order to establish starting points for the measurement of waste haul distances. The centroids can be established in various ways, for example, they can be assigned throughout the service region according to population distribution, or they can be assigned to specific points within a community or communities such as town halls or existing landfill sites. If the centroids are being recorded on a map, it is useful to also record all potential destinations of the waste, i.e., all potential transfer station and RR facility sites.

STEPS WITHIN THE ACTIVITY:

1. Determine a method for assigning waste centroids which is equitable and appropriate for the region.
2. Select and list all centroid locations and record them on a map.
3. If computer modeling will be used in the analysis, number the centroids and sites in accordance with the requirements of the selected program.

MAJOR OBSTACLES: None

MAJOR DECISIONS: Where to locate centroids; what centroids should be included in service area for incorporation in transportation model.

INPUT: Output from MA 105 and MA 108, or maps illustrating population distribution.

OUTPUT: Location on map and list of waste centroids, list of expected waste tonnage from each centroid.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, OR PT
2. Responsible: PM
3. Must be Consulted:
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 1 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH TRANSPORTATION LINKAGES

number 11102

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Establish Transportation Analysis Model

MASTER ACTIVITY MILESTONE: Selected Transportation Analysis Model and Data.

PURPOSE: To create a network connecting all waste sources and intermediate and final haul destinations.

DESCRIPTION: In order to determine the costs of alternative regional transportation configurations, all feasible and politically acceptable routes for waste haul in a region must be identified. Depending upon region size and the number and location of potential transfer and processing sites, the number of alternative routes from each waste source will vary.

STEPS WITHIN THE ACTIVITY:

1. On a map which has all waste centroids, potential transfer station sites, and potential facility sites indicated, trace the links that will connect each centroid with each of its potential destinations. A link should span the distance from one intersection to another along a roadway. A link should be numbered on each end (node numbers).
2. Obtain input from DPW and public on acceptable routing.

MAJOR OBSTACLES: None

MAJOR DECISIONS: Number of alternatives that will be examined.

INPUT: Output from A 11101, A 11201, A 11202 and MA 108; detailed road map of service region.
OUTPUT: Map which illustrates links and documentation of the node numbers at each end of each link (for identification).
ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, or PT
2. Responsible: PM
3. Must be Consulted: P, DPW
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH AVERAGE TRAVEL TIMES FOR LINKS

number 11103

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Establish Transportation Analysis Model

MASTER ACTIVITY MILESTONE: Selected Transportation Analysis Model and Data.

PURPOSE: Preparation of the determination of travel times over different routes from each waste centroid.

DESCRIPTION: Using rate assumptions for each type of roadway, the time to travel along each link in a route will be added together to determine the total travel time along that route.

STEPS WITHIN THE ACTIVITY:

1. Measure the distance on the map for each link.
2. Convert the scaled measurement to miles or kilometers.
3. Using an average speed assumption for each type of road, compute the time required to travel over each link.
4. Make time allowances for entrance and exit from highways.
5. Record node numbers which identify each link and the computed travel time.

MAJOR OBSTACLES: Unreliable or unacceptable travel time data.

MAJOR DECISIONS: Determination of accurate speed assumptions.

INPUT: Output from A 11102, speed assumptions for each road to be traveled (or if available, DPW time estimates for travel along the roadways may be used).
OUTPUT: List of travel times for each link that was established in A 11102.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, or PT
2. Responsible: PM
3. Must be Consulted: P
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: R17, R19, R22, R23, R24

SAMPLE DOCUMENTS: NR

ACTIVITY: DEFINE CALCULATION METHOD

number 11104

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Establish Transportation Analysis Model

MASTER ACTIVITY MILESTONE: Selected Transportation Analysis Model and Data

PURPOSE: To determine the method by which transportation costs and alternatives will be examined.

DESCRIPTION: Based on the complexity of the region under study and the number of transportation alternatives, an approach to the study of transportation must be devised. The method will, to some extent, determine the form in which all data should be collected and tabulated. The method should reflect the desired depth of analysis and, therefore, should be selected only after careful consideration of the questions that must be answered by the analysis.

STEPS WITHIN THE ACTIVITY:

1. Determine the amount of money that will be budgeted for the activity.
2. Determine the questions that will be addressed in the analysis.
3. Decide whether computer modeling seems appropriate or whether all required analysis can be performed by hand.
4. If computer modeling is desired, obtain access to a computer and acquire necessary programs.
5. Document the approach that will be taken to perform the transportation analysis.
6. Determine all data requirements for performance of the calculations.

MAJOR OBSTACLES: Disagreement among project team members as to how to proceed with transportation analysis.

MAJOR DECISIONS: Extent of study, computer modeling vs. hand calculation.

INPUT: Output from MA 105, MA 106, A 11201 and A 11202; input from communities about the questions they would like to have addressed.
OUTPUT: A planned method which specifies its objectives and the methods by which the objectives will be met.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, or PT
2. Responsible: PM
3. Must be Consulted: P
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH COST FUNCTIONS FOR PACKER TRUCK HAUL, TRANSFER TRAILER HAUL, PROCESSING, AND DISPOSAL

number 11105

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Establish Transportation Analysis Model

MASTER ACTIVITY MILESTONE: Selected Transportation Analysis Model and Data

PURPOSE: To obtain up-to-date and accurate cost estimates for waste haul and processing in the region in question and establish functions that correspond to the chosen methodology.

DESCRIPTION: Cost functions and estimates must be established as the basis for all calculations in transportation analysis. This involves a survey of the costs incurred by similar RR projects and by present haul and disposal practices.

STEPS WITHIN THE ACTIVITY:

1. Contact A/E firms, private companies, communities, etc., and tabulate data on haul, processing, and disposal costs.
2. Plot data and derive functions for capital and O&M costs for transfer stations, mini-transfer stations, and RR facilities (alternative technologies). Including RR facility cost functions is optional.
3. Determine appropriate estimates for landfill and processing costs per ton.
4. Determine haul costs per ton-minute for haul in packer trucks and in transfer vehicles.
5. Incorporate these costs and functions into the computer program that is used or document them for use in noncomputer analysis.

MAJOR OBSTACLES: Lack of available and consistent data.

MAJOR DECISIONS: Cost assumptions which will be used in the analysis.

INPUT: Output from MA 104, MA 107, MA 108 and MA 109. Cost data experienced A/E firms, private companies, communities in the service region.
OUTPUT: Accurate average costs and cost functions for waste haul, processing, and disposal.
ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, or PT
2. Responsible: PM
3. Must be Consulted: A/E, DPW
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: SOLICIT NEW SITE NOMINATIONS AND OBTAIN SITE CHECKLIST INFORMATION

number 11201

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Preliminary Site Analysis

MASTER ACTIVITY MILESTONE: Sites Preliminarily Designated

PURPOSE: To solicit and receive new site nominations and to perform a preliminary review of their potential utilization.

DESCRIPTION: In addition to known or previously designated or offered sites, it is necessary to solicit further sites, in order to broaden the base of available sites. The basic checklist analysis is then performed. The sites may be solicited by advertisement, word of mouth, discussion with local realtors, or through independent offerers.

STEPS WITHIN THE ACTIVITY:

1. Solicit and obtain indications of new sites approximating the necessary sizes for different functions.
2. Identify the sites and obtain checklist information on each.
3. Begin to evaluate which sites are reasonable and which are totally unattainable.
4. Complete and compile all checklist information on each site.

MAJOR OBSTACLES: No sites; poor or inaccurate information on sites.

MAJOR DECISIONS: Cutoff date for candidate sites; whether or not to put owners on notice because of potential price gouging.

INPUT: New sites, unknown previously; output of MA 111.

OUTPUT: All new sites identified, located, and checklisted.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: Suppliers of sites' information; Owners
4. Must be Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN EXISTING AND POTENTIAL SITE CHECKLIST INFORMATION

number 11202

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Preliminary Site Analysis

MASTER ACTIVITY MILESTONE: Sites Preliminarily Designated

PURPOSE: To obtain information on all existing and initially known potential sites.

DESCRIPTION: Using previously prepared site checklist, all sites previously known or considered as possibilities are located on a map. As much preliminary information as possible is compiled from all sources previously contacted.

STEPS WITHIN THE ACTIVITY:

1. Compile and review existing siting data.
2. Devise or adapt checklist with all major parameters such as location, access, condition, aesthetics, utility, current use, and potential for the particular purpose (e.g., RR facility, landfill, etc.).
3. Contact appropriate parties to gather site information.

MAJOR OBSTACLES: No sites; no site information; no internal cooperation.

MAJOR DECISIONS: Which sites to screen after a cursory review of the sites that may be available.

INPUT: Prior studies (A 10503); output of A 10504, A 10703, A 10704; letters from interested parties; indications from other parties previously interviewed concerning potential sites.

OUTPUT: Completed checklist on existing and currently known potential sites.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: MPE, DOT-(L), Private Property Offerors
4. Must be Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 3 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CATEGORIZE SITES REGARDING SUITABILITY

number 11203

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Preliminary Site Analysis

MASTER ACTIVITY MILESTONE: Sites Preliminarily Designated

PURPOSE: To categorize sites into various levels of suitability and to contemplate utility for other purposes.

DESCRIPTION: The sites indicated are sorted into suitable, limited, and unsuitable categories for all possible uses, including RR plant site, transfer stations, residue landfills, buffer zones, or future market locations, if applicable. This sorting allows early elimination of poor sites and early concentration on more promising sites.

STEPS WITHIN THE ACTIVITY:

1. Review checklist data on all sites, contemplate alternate uses for each site, then classify as suitable, limited, or unsuitable.
2. Consider environmental (developed concurrently in MA 110) and public reaction aspects.

MAJOR OBSTACLES: Poor or incomplete site information; disagreement among project team on suitability of a site.

MAJOR DECISIONS: Method and criteria used in sorting the sites.

INPUT: All sites indicated in A 11201 and A 11202.

OUTPUT: Sites indicated according to suitability for various purposes.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: PT
4. Must be Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: RANK HIGHER POTENTIAL SITES

number 11204

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Preliminary Site Analysis

MASTER ACTIVITY MILESTONE: Sites Preliminarily Designated

PURPOSE: To rank sites in order of potential for specific uses germane to the RR system.

DESCRIPTION: Old and new sites have been named, identified, located, and information about them has been gathered. The sites have been segregated by use and have been designated as suitable, of limited suitability, or unsuitable. In this step they are ranked and incorporated in that order into the feasibility analysis, where they will figure strongly in transportation, alternatives and recommendations.

STEPS WITHIN THE ACTIVITY:
1. Review all sites and information gathered thus far.
2. Formulate pertinent ranking criteria, including environmental (developed concurrently in MA 110).
3. Rank according to category, site use, and ranking criteria.
4. Indicate top sites for first consideration in the RR system analysis.

MAJOR OBSTACLES: No sites to rank; inconclusive ranking; lack of internal agreement; untimely or inaccurate leaks to media concerning the sites.

MAJOR DECISIONS: Method and criteria used to rank the sites.

INPUT: Site categories of A 11203; ranking criteria.

OUTPUT: All sites ranked according to intended use.

ROLES AND RESPONSIBILITIES:
1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: DOT-(L)
4. Must be Notified: PD

ESTIMATING DATA:
1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM FINANCIAL, LEGAL, AND INSTITUTIONAL ANALYSIS

number 113

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Understanding of Constraints, Risks, Need for Legislation, Options

PURPOSE: To understand all constraints, issues, and risks facing the RR program so that options can be formulated.

DESCRIPTION: Each RR project will have unique financing, legal, and institutional constraints which must be recognized and addressed. This master activity identifies all those issues, recognizes the constraints and analyzes the options available for structuring the program.

MAJOR OBSTACLES: Information and analysis unclear or inconclusive.

MAJOR DECISIONS: Which constraints should be changed, which should remain and be worked around; what are the options if the constraints are not changed.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C, FA
2. Must be Consulted or Notified: IB, BC, LC

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 3 to 12 weeks.
2. Work Effort: Average = 31 work days.
3. Funding: $8,000

REFERENCES: R2, R5, R6, R8, R10, R11, R20, R55, R58, R76, R77, R110, R114

SAMPLE DOCUMENTS: NR

ACTIVITY: IDENTIFY OPTIONS FOR ROLES, RESPONSIBILITIES: PROCUREMENT, LEGAL, AND FINANCIAL OPTIONS

number 11301

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Financial, Legal, and Institutional Analysis

MASTER ACTIVITY MILESTONE: Understanding of Constraints, Risks, Need for Legislation, Options

PURPOSE: To identify organizations which will be involved in facility implementation and operation, and associated legal and financing issues, options, and constraints.

DESCRIPTION: The organizations who could participate in the project subsequent to the feasibility study are identified, the roles and responsibilities that each could fulfill are noted. Legal and procurement issues and constraints involving each are surfaced and discussed. Financial options for each and their impact and constraints are also indicated and discussed. This includes consideration of ownership, operation and relationship with energy customer.

STEPS WITHIN THE ACTIVITY:

1. Identify all required roles and responsibilities, and the entities who could fill those roles and responsibilities.
2. Identify and discuss legal issues for each entity which will impact on the project.
3. Identify for each entity financing options, their applicability, constraints, and impact on the community.

MAJOR OBSTACLES: Legal and financial options require in-depth study beyond that envisioned in the feasibility study.

MAJOR DECISIONS: Options of roles and responsibilities; legal issues of impact; financial options of impact.

INPUT: Previous study; understanding of municipal enabling legislation; financial position of municipality; ability to assume debt and risks.

OUTPUT: Fully identified options for roles, responsibilities, legal issues and financing options.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM, FA
2. Responsible: PM
3. Must be Consulted: MPE, DP, DF, LD, LC
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DEFINE RISKS ASSOCIATED WITH RESOURCE RECOVERY

number 11302

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Financial, Legal, and Institutional Analysis

MASTER ACTIVITY MILESTONE: Understanding of Constraints, Risks, Need for Legislation, Options

PURPOSE: To define the risks which are inherent in RR projects, and to understand their implications in formulating alternatives.

DESCRIPTION: The risks associated with RR are extensive. They must be identified and well understood. The major risks to be borne are: continuous operation & maintenance of the facility; loss of revenues due to decreased waste supply (reduced tipping fee); loss of revenues due to less commodity produced from reduced waste supplied; changes in composition of the waste over the years particularly from source reduction measures; loss of an industrial market; and various risks in construction and operation of the facility.

STEPS WITHIN THE ACTIVITY:

1. Identify risks.
2. Analyze the implications of each in the long and short term.
3. If a multijurisdictional project, analyze the risks associated with the project and the member municipalities.

MAJOR OBSTACLES: Risks unclear, or compounded by local laws; all risks not well understood by municipality.

MAJOR DECISIONS: When all risks have been adequately identified, defined and understood.

INPUT: Previous projects; experience; local laws governing contractual exposure, if applicable.
OUTPUT: Project listed, defined, and understood.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, FA
2. Responsible: PM
3. Must be Consulted: DP, PT
4. Must be Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 3 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: R8

SAMPLE DOCUMENTS: NR

ACTIVITY: IDENTIFY FUNDING SOURCES AND CONSTRAINTS

number 11303

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Financial, Legal, and Institutional Analysis

MASTER ACTIVITY MILESTONE: Understanding of Constraints, Risks, Need for Legislation Options

PURPOSE: To identify all potential sources of funding; the levels of funding from each; bylaws; and funding requirements from each source.

DESCRIPTION: Funding of RR projects may be provided from a variety of sources including municipalities, regional commissions, State Authorities, State financing corporations, State Departments, multimunicipal authorities, and in some cases various Federal Departments and Agencies, and private contractors. These funding sources are identified so that they may be added into the analysis of alternatives in MA 114.

STEPS WITHIN THE ACTIVITY:

1. Compile all previous study and report work on sources of funding.
2. Identify and examine all possible sources of funding for the specific municipality.
3. Review and analyze the conditions under which all funding, including possible grants, is issued.
4. Identify the viable sources of funding and recognize constraints.

MAJOR OBSTACLES: Lack of cooperation by funding authority; incomplete understanding of funding requirements.

MAJOR DECISIONS: Which funding is possible and at what levels.

INPUT: Previous studies; other locally funded projects; recent bond counsel opinions on other municipal projects.

OUTPUT: Funding sources identified; constraints understood.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, FA (optional)
2. Responsible: PM
3. Must be Consulted: all possible funding authorities, DF, MPE, PT
4. Must be Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: R5

SAMPLE DOCUMENTS: NR

ACTIVITY: EXAMINE EXISTING WASTE SUPPLY STATUS

number 11304

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Financial, Legal, and Institutional Analysis

MASTER ACTIVITY MILESTONE: Understanding of Constraints, Risks, Need for Legislation, Options

PURPOSE: To identify and review existing legislation to understand its scope, range, and the constraints currently imposed by legislation.

DESCRIPTION: The legislation is examined thoroughly to understand its constraints and establish if there is a need for more satisfactory control of the refuse supply, or that it is subject to interpretation and has not been tested in court, or that the legislation is comprehensive and acceptable.

STEPS WITHIN THE ACTIVITY:

1. Identify and obtain the legislation and any interpretations of the legislation which apply to refuse supply control. Check the term of the contract allowance and conditions for contracting for waste supply.
2. Examine its applicability to a RR program.
3. Determine whether the current legislation is adequate, and consider whether the area geography, rate structure or other in-place revenue systems make the legislation acceptable.
4. Obtain Financial Agency, investment banking and bond counsel opinions concerning the acceptability of existing legislation in bond community.
5. Identify and document all constraints.

MAJOR OBSTACLES: Legislation unclear; existing rate system potentially contestable; legislation tied to another function such as wastewater treatment.

MAJOR DECISIONS: Whether scope of legislation is adequate; whether legislation can address a RR program.

INPUT: Existing legislation with related opinions, interpretations and current application.

OUTPUT: Recognition of existing legislation, its enabling powers and constraints.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PT, BC, FA, LD
2. Responsible: PM
3. Must be Consulted:
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: EXAMINE EXISTING WASTE CONTRACTING CAPABILITY

number 11305

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Financial, Legal, and Institutional Analysis

MASTER ACTIVITY MILESTONE: Understanding of Constraints, Risks, Need for Legislation, Options

PURPOSE: To examine existing waste contracting capability and the implications for a RR system.

DESCRIPTION: The existing legislation concerning the contracting capabilities of the entities which will supply the waste to the RR system is examined to determine restrictions, constraints, and need for change. Local laws, ordinances, and contracts are examined to determine the impact on the source separation program (MA 109). Needed changes and modifications are determined.

STEPS WITHIN THE ACTIVITY:

1. Review legislation as it applies to the waste contracting capability and understand the restrictions it places on the contracts.
2. Understand enabling qualities and constraints relating to RR.
3. Obtain all existing local laws and ordinances and contracts for waste collection, delivery or processing service.
4. Review for terms, conditions, constraints, specific needs and other pertinent information.

MAJOR OBSTACLES: All legislation in all municipalities not available; contracts unclear or obscure; no consensus on contract meaning.

MAJOR DECISIONS: Which legislation is representative and which is not; whether certain contracts fulfill the intent of the legislation under which they are written.

INPUT: The contracts; legislation review of A 11304.

OUTPUT: Full understanding of existing contracts and the advantages and disadvantages of each.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, LC
2. Responsible: PM
3. Must be Consulted: LD, PD, DPW in municipalities, MPE
4. Must be Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: R5

SAMPLE DOCUMENTS: NR

ACTIVITY: ANALYZE RISK ASSIGNMENT FOR EACH OPTION

number 11306

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Financial, Legal, and Institutional Analysis

MASTER ACTIVITY MILESTONE: Understanding of Constraints, Risks, Need for Legislation, Options

PURPOSE: To assess the risk assignment options resulting from all the previous tasks.

DESCRIPTION: The assignment of risks is a major part of any RR system, and will shape the alternatives and recommended system. In this task all risk assignments are analyzed for the reasonable system options, with note being made of the contribution of each part of the current procurement, funding, legal, and institutional constraints now in place in the municipality.

STEPS WITHIN THE ACTIVITY:

1. Compile all previous information. Assume a plausible distribution of risks and determine the implications of each.
2. Relate risks to specific items in legislation, contracts, procurement method, roles, responsibilities, and other existing components of the local solid waste management picture.
3. Recognize collective and synergistic effects of all the above parameters.

MAJOR OBSTACLES: Information unclear or obscure; clearly identified need for a test case with inadequate time to perform it.

MAJOR DECISIONS: Risks and causes inherent in existing system.

INPUT: Procurement, risks, roles, responsibilities, funding, legislation, and contracts of A 11301 - A 11305.
OUTPUT: Various scenarios for assigning risks.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, LC
2. Responsible: PM
3. Must be Consulted: LA, MPE
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: R5

SAMPLE DOCUMENTS: NR

ACTIVITY: SUMMARIZE OPTIONS, NEEDED LEGISLATION, CONSTRAINTS AND RISKS

number 11307

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Perform Financing, Legal, and Institutional Analysis

MASTER ACTIVITY MILESTONE: Understanding of Constraints, Risks, Need for Legislation, Options

PURPOSE: To decide on the options available and the implications of each so that they can be factored into the alternatives and recommendations.

DESCRIPTION: The options, needed legislation, constraints, and risks should be summarized in a short report for presentation to the project team, review and discussion of the risks and constraints on the program. This summary may become part of the final report.

STEPS WITHIN THE ACTIVITY:

1. Compile all work in MA 113, summarize options.
2. Report on the needs, constraints, and risks.
3. Discuss alternatives, risk impact, and ways of rectifying remaining issues.
4. Submit to project team; obtain review.

MAJOR OBSTACLES: Information unclear or inconclusive.

MAJOR DECISIONS: Which constraints should be changed, which should remain and be worked around, what are the options if the constraints are not changed.

INPUT: All MA 113 prior to this.

OUTPUT: Complete understanding and summary of the options, legislation, constraints, and risks.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: R5, all material assembled for this A prior to the summary.

SAMPLE DOCUMENTS: NR

ACTIVITY: FORMULATE TECHNOLOGICAL ALTERNATIVES

number 11401

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Develop Project Alternatives

MASTER ACTIVITY MILESTONE: Development of Best Project Alternatives

PURPOSE: To specify alternatives which are possible from a technical viewpoint within the technical constraints.

DESCRIPTION: The technological alternatives are the basis of the system on which the entire program is built. Technological refers to the location and sizing of all physical plants which comprise the RR system, such as new or modified collection trucks, transfer stations, materials preparation, recovery or processing centers, sludge drying plants, the energy recovery plant, its configuration, residual and backup landfill, and any other major component of the system.

STEPS WITHIN THE ACTIVITY:

1. Based on all information including participating municipalities, solid waste generation (including sewage sludge), sites, markets, source separation program configuration, transportation, and environmental concerns, establish all alternatives which appear reasonable.
2. Eliminate all except the best two to six possible alternatives, unless one plan is clearly superior. Record the rationale used for eliminating plans.
3. Coordinate this selection with the cost analysis, particularly where sludge co-utilization or source separation may be a strong factor.
4. Refine the mix of technologies which in various ways will satisfy the needs and desires of the community.

MAJOR OBSTACLES: Alternatives formulated are not responsive to community needs; excessive number of alternatives result in unwieldy analysis.

MAJOR DECISIONS: The number of alternatives, which contain the spectrum of technology mixes, to address adequately the needs of the community.

INPUT: All project information not related to financial, legal, and institutional analysis, i.e., outputs MA 103 - MA 112, inclusive.
OUTPUT: Not more than six most desirable technological alternatives.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: PT, MPE, EA-(L), EA-(S), EPA
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: Previous reports on technologies and operating histories.

SAMPLE DOCUMENTS: NR

ACTIVITY: DEVELOP COSTS FOR EACH ALTERNATIVE

number 11402

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Develop Project Alternatives

MASTER ACTIVITY MILESTONE: Development of Best Project Alternatives

PURPOSE: To provide the economic information for comparison of alternatives which will lead to the selection of a recommended course of action.

DESCRIPTION: The recommended plan and alternative very often will be based on life cycle cost. Even if the community is willing to pay a higher cost for a particular service or environmental benefit, the costs will comprise the most important piece of information. The cost analysis is developed for each alternative. Examination of the costs will often indicate a basic pattern around which alternatives are structured. The cost analysis is concurrent with the analysis of technological alternatives, risks, and transportation.

STEPS WITHIN THE ACTIVITY:

1. Examine technological alternatives and perform capital, operating and life cycle costs of each.
2. Incorporate transportation and risk assignment information to account for modifications in the cost picture due to factors like equity participation by contractor or other financing possibilities.
3. Recognize all possible funding sources, like PL 92-500 funding for RR projects built around sludge disposal requirements.
4. Reiterate costs and refashion alternatives as required.

MAJOR OBSTACLES: Cost analysis incomplete; excessive alternatives.

MAJOR DECISIONS: Extent of detail of line items in the cost analysis sufficient for feasibility purposes.

INPUT: (all concurrently) Outputs of A 11401, A 11403, and A 11404, as well as MA 103 - MA 112, inclusive.
OUTPUT: Complete capital, operating, financing and life cycle cost for each alternative.
ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: DF, MPE, PD
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ANALYZE REGIONALIZATION AND TRANSPORTATION

number 11403

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Develop Project Alternatives

MASTER ACTIVITY MILESTONE: Development of Best Project Alternatives

PURPOSE: For each alternative, to: a) determine the effect on and sensitivity to economies of scale; b) examine effect of variations of sites; c) create at least one reasonable transportation scenario including transfer station sites, if required.

DESCRIPTION: The alternative plans may vary significantly if there are wide fluctuations in the region considered. It may be necessary to incorporate the reasonable variations in the size of the region, since the RR facility size will vary the cost, as will the transportation network required to support the larger size facility. The region and transportation network may also dictate the need for several smaller scale facilities distributed throughout a region. This analysis assists in setting up for decisions later.

STEPS WITHIN THE ACTIVITY:

1. Continue coordination with potential member municipalities.
2. Analyze the costs for variations in the system configuration based on the inclusion of municipalities which seem most reasonable.
3. Modify alternatives to suit the boundaries specified for each option.

MAJOR OBSTACLES: Unclear regional boundaries; lack of any commitment or interest on the part of potential municipalities.

MAJOR DECISIONS: Which municipalities to include in the analysis; if the decrease in cost due to economies of scale offsets the increased transport.

INPUT: Transportation model of MA 111.

OUTPUT: Regional transportation cost impacts.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: DOT-(L), DOT-(S), DP
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 4 weeks.
2. Work Effort: Average = 6 work days.

REFERENCES: R22, R23

SAMPLE DOCUMENTS: NR

ACTIVITY: DEVELOP PREFERRED FINANCIAL AND INSTITUTIONAL ARRANGEMENTS FOR EACH ALTERNATIVE

number 11405

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Develop Project Alternatives

MASTER ACTIVITY MILESTONE: Development of Best Project Alternatives

PURPOSE: To provide the financial, institutional, and risk assignment information to be used in MA 116 for comparison of alternatives and selection of a recommended course of action.

DESCRIPTION: Various financial, institutional, and risk assignments are developed and compared. The most favorable, yet realistic option is selected for each alternative. There may be several which will work, but one or two preferred configurations should be selected.

STEPS WITHIN THE ACTIVITY:

1. Review previous institutional and risk allocation work.
2. Assess the implications of each institutional configuration and understand how the configuration impacts on each of the technological alternatives.
3. Develop the preferred configuration for each alternative, and the rationale for each.
4. Summarize.

MAJOR OBSTACLES: No preference; misunderstanding the implications of the allocation.

MAJOR DECISIONS: Preferred institutional, legal, financial, and risk configuration for each alternative.

INPUT: Institutional, legal, financial output of MA 113; risk assessment of A 11404.

OUTPUT: Preferred legal, financial, institutional, and risk arrangements for each alternative.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: LD, MPE
4. Must be Notified: EO, PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: R8

SAMPLE DOCUMENTS: NR

ACTIVITY: SUMMARIZE RESULTS

number 11406

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Develop Project Alternatives

MASTER ACTIVITY MILESTONE: Development of Best Project Alternatives

PURPOSE: To document the alternatives, advantages, disadvantages, complexities, nuances, and implications of each in preparation for selecting a recommended course of action and defending that recommendation.

DESCRIPTION: All of the foregoing work in MA 114 is designed to compile the information from the feasibility study into the most logical, reasonable, and attainable alternatives. The results must then be summarized and presented in a short report to be a section of the Feasibility Study. Further development into a recommended course of action is performed in MA 116.

STEPS WITHIN THE ACTIVITY:

1. Review all previous work in MA 114.
2. Formulate the method of presentation of all data which will illustrate the technology, markets, waste supply strategy, environmental parameters, source separation aspects, legal, institutional, and risk configurations.
3. Present the data in a summary format, including graphs, tables, and charts for ready understanding.

MAJOR OBSTACLES: Information summary incomplete or too detailed and unwieldy; summary not easily understood by other than those working on it.

MAJOR DECISIONS: Format of presentation and extent of detail in summary.

INPUT: All work performed in MA 114, i.e., A 11401 - A 11405, inclusive.

OUTPUT: Several-page summary of the most reasonable project alternatives.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: PT, MPE, LD
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 8 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ESTABLISH POLITICAL/PUBLIC DECISION PROCESS

number 115

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Decision to Proceed, Postpone or Terminate

PURPOSE: To set up the process, which will be compatible with the public information process, by which decisions will be made and adhered to. There is usually an established protocol in municipalities for approaching key individuals and organizations which will be party to the decision (a concurrence list).

DESCRIPTION: This task relies on precedent, protocol, imagination, and interface with the public decision process in order to elicit a binding decision on the part of the municipality. The ongoing public information process is factored into the decision, as well as the decision of the elected officials.

MAJOR OBSTACLES: Not observing protocol, incomplete information, no clear path established for decision.

MAJOR DECISIONS: Protocol required; mechanism for proceeding.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PD, PT
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 5 work days.
3. Funding: $1,000

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH ORDERED BRIEFING LIST

number 11501

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Establish Political/Public Decision Process

MASTER ACTIVITY MILESTONE: Decision to Proceed, Postpone, or Terminate

PURPOSE: To set up an orderly procedure by which the decision process will be executed, and will incorporate public participation.

DESCRIPTION: An ordered briefing list for the logistics of briefings, level of detail of information, interface with public information process, and other key action items in presenting material to decision makers and to the public is developed.

STEPS WITHIN THE ACTIVITY:

1. List decision makers, affected parties, and interested parties.
2. Decide on the format of material to be presented and context.
3. Establish the order for briefings according to protocol updated from MA 101.
4. Decide the time and type of meeting arrangements most appropriate.
5. Prepare preliminary outlines for key meetings.
6. Develop concurrence list.

MAJOR OBSTACLES: Disagreement on protocol, or on public information release.

MAJOR DECISIONS: Format of information for presentation.

INPUT: Previous public information system; consideration of procedures for briefings given during Phase I.

OUTPUT: Established order for release and type of decision information to be released.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PT, IHS, C
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified: -

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: Previous preparations for decision in that municipality, particularly on solid waste related matters.

SAMPLE DOCUMENTS: NR

ACTIVITY: RANK ALTERNATIVES

number 11601

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Develop Recommendations And Report

MASTER ACTIVITY MILESTONE: Draft Feasibility Analysis Report, Final Feasibility Analysis Report with Recommendations and Action Plan Adopted by PT

PURPOSE: To establish an order of preference among the alternatives which is consistent with the goals, policy, and guidelines set down in MA 101.

DESCRIPTION: The method for determining the order of preference of the alternatives is developed and used.

STEPS WITHIN THE ACTIVITY:

1. Develop the method for ranking the alternatives. All the considerations and their relative order of importance set down in the policy goals and guidelines should be taken into account.
2. The method is applied to all the alternatives developed in MA 114 and the order of preference is determined.

MAJOR OBSTACLES: The project team disagrees on ranking method.

MAJOR DECISIONS: Determination of the ranking method; whether or not it reflects the wishes of the community.

INPUT: The alternatives developed in MA 114.

OUTPUT: An established order of preference for the alternatives being considered.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PD
3. Must be Consulted: PT
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 0.5 weeks. Range = 0.2 to 1 weeks.
2. Work Effort: Average = 9 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: FORMULATE PRELIMINARY RECOMMENDATIONS

number 11602

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Develop Recommendations And Report

MASTER ACTIVITY MILESTONE: Draft Feasibility Analysis Report, Final Feasibility Analysis Report with Recommendations and Action Plan Adopted by PT

PURPOSE: To define the project being recommended and to outline the major actions necessary to bring it to fruition.

DESCRIPTION: The preferred alternative from A 11601 is described in detail and the actions and budget necessary for the next phase are developed and described. A draft Feasibility Analysis is written which explains, describes, and presents all the data and analysis from this and all previous activities.

STEPS WITHIN THE ACTIVITY:

1. Using the preferred alternative as a basis, an action plan is developed which includes all the major steps necessary to establish it (including legal, financial, institutional) and a time-task chart.
2. A draft Feasibility Analysis report is assembled in its entirety, documenting all the previous work performed during this phase and including the results of Step 1 above.

MAJOR OBSTACLES: Disagreement on recommendations.

MAJOR DECISIONS: Whether or not the preferred alternative and action plan is acceptable to the community.

INPUT: The preferred alternative developed in A 11601.

OUTPUT: Draft Feasibility Analysis report.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 8 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONDUCT REVIEW AND INCORPORATE COMMENTS BY PROJECT TEAM

number 11603

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Develop Recommendations and Report

MASTER ACTIVITY MILESTONE: Draft Feasibility Analysis Report, Final Feasibility Analysis Report with Recommendations and Action Plan Adopted by PT

PURPOSE: To ensure that the recommendations come as close as possible to reflecting the wishes of the community as they are perceived by the entire PT.

DESCRIPTION: A meeting is called to present formally the report and results to the project team who then reviews the report. A second meeting is called to develop a consensus of revisions.

STEPS WITHIN THE ACTIVITY:

1. Present and distribute the draft report to the project team.
2. Receive comments and develop consensus of comments, changes, additions, and deletions.
3. Incorporate revisions and finalize the report.

MAJOR OBSTACLES: Project team unable to reach a consensus.

MAJOR DECISIONS: Whether or not certain project team comments are serious or have the validity to include.

INPUT: The draft Feasibility Analysis report developed in A 11602.

OUTPUT: The final Feasibility Analysis report.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, PM, IHS, C
2. Responsible: PD
3. Must be Consulted:
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 13 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN PROJECT TEAM ADOPTION

number 11604

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Develop Recommendations And Report

MASTER ACTIVITY MILESTONE: Draft Feasibility Analysis Report, Final Feasibility Analysis Report with Recommendations and Action Plan Adopted by PT

PURPOSE: To elicit from the project team that the best possible combination of parameters has been combined into the recommended plan to give greater credibility to the report before it is presented to the elected officials and the public.

DESCRIPTION: The final Feasibility Analysis report is presented to the project team. After they have assured themselves that it truly reflects the consensus developed in A 11604, it formally adopts the report, recommendations, and action plan.

STEPS WITHIN THE ACTIVITY:

1. Present final Feasibility Analysis.
2. Discuss the report for final refinements and minor changes to the report.
3. Project team formally adopts the report.

MAJOR OBSTACLES: Project team balks at some aspect of change after A 11603.

MAJOR DECISIONS: Whether or not the consensus of the project team has been incorporated correctly.

INPUT: The final Feasibility Analysis report developed in A 11603.

OUTPUT: Project team acceptance and adoption of the final Feasibility Analysis report.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PD
3. Must be Consulted: PT (individually prior to final meeting)
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1.5 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 8 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: OBTAIN POLITICAL/PUBLIC DECISION TO PROCEED

number 117

PHASE: I, Resource Recovery Feasibility Analysis

MILESTONE: Decision to Proceed, Postpone or Terminate

PURPOSE: To present information, obtain feedback and elicit a conscious decision from all participants in the decision process, using criteria established in MA 115 to decide when the overriding factor or consensus has been realized.

DESCRIPTION: All decisions to proceed with, postpone or terminate a RR project are made consciously by the public decision process. There are many sublevels of decision which must be factored in before the decision reaches the public and political realm. Then a consensus or majority opinion is reached, based on input of the project team, wherein the future of the project is clearly decided.

MAJOR OBSTACLES: Undue delay; lack of high level commitment or disagreement; major opposition to the project in key member municipalities.

MAJOR DECISIONS: To proceed with, postpone or terminate the project; whether or not to proceed with co-disposal; whether or not to proceed with source separation; the amount of money appropriated for the next phase.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO
2. Must be Consulted or Notified: IA, PT

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 3 to 16 weeks.
2. Work Effort: Average = 15 work days.
3. Funding: $3000

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONDUCT APPROPRIATE BRIEFINGS

number 11701

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Obtain Political/Public Decision to Proceed

MASTER ACTIVITY MILESTONE: Decision to Proceed, Postpone or Terminate

PURPOSE: To advise all critical agencies in a carefully ordered protocol of the findings and recommendations of the feasibility study.

DESCRIPTION: The best means of rapid information dissemination is through use of briefings. Using the decision path criteria developed in MA 115 and the feasibility study, briefings are given to appropriate individuals with coordinated press releases.

STEPS WITHIN THE ACTIVITY:

1. Review the decision path and the results of the feasibility analysis.
2. Brief groups in the following order, all within a short time frame:
   a) Elected officials
   b) Appointed officials
   c) Other governing bodies (e.g., multi-jurisdictional project)
   d) The Press
   e) Interested citizen or market groups

   The order should be as determined locally by project manager.

MAJOR OBSTACLES: Missed protocol; incomplete or conflicting information given to different groups.

MAJOR DECISIONS: Type and level of technical detail and supporting information to prepare for the presentation.

INPUT: Decision path (MA 115) and project alternatives and recommendations (MA 114 and MA 116, respectively).
OUTPUT: Fully informed decision makers and public.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, PM
2. Responsible: PD
3. Must be Consulted: EO's
4. Must be Notified: all interested or affected groups

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN FEEDBACK AND BRIEF AS NECESSARY

number 11702

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Obtain Political/Public Decision to Proceed

MASTER ACTIVITY MILESTONE: Decision to Proceed, Postpone or Terminate

PURPOSE: To ascertain that all participants in the decision process are fully armed with the necessary information to make a decision.

DESCRIPTION: After initial briefings, there will invariably be requests for more information or additional briefings before different levels of government and members of the community. Feedback in the form of letters of support is sought, or opinions concerning the decision. Any additional briefings or explanations are performed herein.

STEPS WITHIN THE ACTIVITY:

1. Solicit and receive letters of support or opinions on the decision.
2. Provide additional briefings and backup information to involved agency requesting it.
3. Ascertain that all involved agencies have been provided with adequate decision information.
4. Factor all feedback information into a composite form for key decision makers.

MAJOR OBSTACLES: Major opposition to the project.

MAJOR DECISIONS: Presentation format for various groups.

INPUT: Phase I information to date.

OUTPUT: All participants in the decision process fully informed and ready to make a decision.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, PM, participating municipalities
2. Responsible: PD
3. Must be Consulted: EO's
4. Must be Notified: IA's

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 8 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: Previous samples of effective presentations, obtained locally from PM.

ACTIVITY: PROCEED WITH DECISION

number 11703

PHASE: I, Resource Recovery Feasibility Analysis

MASTER ACTIVITY: Obtain Political/Public Decision to Proceed

MASTER ACTIVITY MILESTONE: Decision to Proceed, Postpone or Terminate

PURPOSE: To render the key decision on continuation of the project.

DESCRIPTION: Upon reaching this activity, all information has been disseminated, and reactions received. A conscious decision should be made on the future of the RR project, and should include appropriate funding to go on to the next phase if this is appropriate. In addition, a decision should be made regarding the integration of a source separation program if the decision is to proceed with a RR system.

STEPS WITHIN THE ACTIVITY:

1. Observe the local decision custom (e.g., public meeting agenda item; referendum or local custom)
2. Review in the meeting the budget required for Phase II funding (RR and source separation).
3. If the decision is to proceed, consider the funding appropriation for the next phase.

MAJOR OBSTACLES: Undue delay by decision makers.

MAJOR DECISIONS: See output.

INPUT: All report information and feedback compiled to this point.

OUTPUT: Two distinct decisions to proceed, postpone or terminate the RR project and the source separation program; appropriated budget for Phase II.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO
2. Responsible: EO
3. Must be Consulted: all IA
4. Must be Notified: IG, IA, P

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 5 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM DETAILED SOURCE SEPARATION FEASIBILITY

number SS1

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Feasibility Report; Decision to Proceed or Terminate

PURPOSE: To refine the market requirements, system configuration and the estimates of percent participation, percent recovery, costs, and revenues.

DESCRIPTION: A project team is formed; in-house staff is committed; consultants are hired; if necessary a public opinion poll may be conducted (dependent on size of municipality) to establish the level of participation; separation and collection procedures are defined; quantity estimates of recovered materials are derived, based on the percent participation obtained from the public opinion poll; market requirements and prices are obtained; institutional and legal requirements are defined; and system configuration, costs, and revenues are established.

MAJOR OBSTACLES: Unclear work scopes; low interest by elected officials; unqualified or uncommitted individuals; unreasonable quantities or collection practices; unclear existing laws; disagreement over facts presented; excessive delays.

MAJOR DECISIONS: Political/public decisions to proceed with source separation program.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, PM, IHS, C, LC
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 29 weeks. Range = 16 to 61 weeks.
2. Work Effort: Average = 102 work days.
3. Funding: $25,000

REFERENCES: R2, R4, R5, R11, R25, R27, R29, R31, R37, R38, R39, R41, R42, R43, R44, R45, R64, R65, R66, R67, R68, R69, R106, R108, R113

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH SOURCE SEPARATION PROJECT TEAM

number SS101

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Perform Detailed Source Separation Feasibility

MASTER ACTIVITY MILESTONE: Feasibility Report; Decision to Proceed or Terminate

PURPOSE: To involve all interested and affected parties in the planning process.

DESCRIPTION: The project director and project manager utilize their knowledge of the local area to select and solicit members for the project team.

STEPS WITHIN THE ACTIVITY:

1. Establish project director (may already be known).
2. Establish project manager (may already be known).
3. Identify organizations to be solicited for membership in the source separation project team.
4. Solicit members.
5. Establish source separation project team; assign responsibilities to each member.
6. Collect background information (i.e., existing source separation programs, previous studies).
7. Develop policy, goals, and guidelines.

MAJOR OBSTACLES: No qualified individuals; low level of interest.

MAJOR DECISIONS: If source separation is integrated into a larger system, whether the project director and project manager should be the same as for the large scale project; or whether to select new individuals for this job; choice of those individuals

INPUT: Local area knowledge.

OUTPUT: Established project team for source separation.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO for PM and PD, if non-existent; PD and PM if already on board.
2. Responsible: EO
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 12 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: SECURE REQUIRED RESOURCES

number SS102

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Perform Detailed Source Separation Feasibility

MASTER ACTIVITY MILESTONE: Feasibility Report; Decision to Proceed or Terminate

PURPOSE: To obtain and commit the expertise necessary for performing the tasks and developing the project.

DESCRIPTION: The project scope is defined and allocated to in-house staff and consultants. In-house staff is committed, or hired and committed, and consultants are hired, if necessary. Selection may follow the format used previously in consultant selection (MA 102) or the local customary method.

STEPS WITHIN THE ACTIVITY:

1. Establish scope of work for the project.
2. Establish scopes of work for in-house staff and consultants.
3. Secure commitments from in-house staff.
4. Select and hire consultants, if necessary.

MAJOR OBSTACLES: Scopes unclear; insufficient interest or commitment by the elected officials.

MAJOR DECISIONS: Work split between in-house staff and consultant, if any; commitment needed from in-house staff; choice of consultant.

INPUT: In-house staff made available; consultant experienced in source separation programs.

OUTPUT: Secured resources.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 3 to 8 weeks.
2. Work Effort: Average = 12 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN MARKET REQUIREMENTS AND PRICES

number SS103

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Perform Detailed Source Separation Feasibility

MASTER ACTIVITY MILESTONE: Feasibility Report; Decision to Proceed or Terminate

PURPOSE: To develop logistics, requirements, and price schedules for the recovered materials.

DESCRIPTION: If a Phase I Feasibility Analysis has been completed, then this activity was performed as MA 108 (the information may have to be updated depending on the amount of time which has elapsed). If a Feasibility Analysis has not been performed, then the steps in this activity are the same as in A 10801 - A 10805. If market requirements dictate the need for sites (e.g., paper must be baled, cans must be crushed), they are identified.

STEPS WITHIN THE ACTIVITY:

1. See A 10801 - A 10805.
2. Identify any sites required by the results obtained above.

MAJOR OBSTACLES: Markets cannot be found, or are too distant to be considered; requirements are very strigent; price is exceptionally low.

MAJOR DECISIONS: Sites; decisions of MA 108 i.e., whether or not the entire list of markets is reasonably complete and whether or not the survey questionnaire is complete and requests the necessary information.

INPUT: Output of MA 108 i.e., letters of interest stating preliminary requirements, quantities and pricing formula.

OUTPUT: Known market; market needs: identified sites.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS or C
2. Responsible: PM
3. Must be Consulted: Potential M
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTIMATE QUANTITIES OF RECOVERED MATERIALS

number SS104

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Perform Detailed Source Separation Feasibility

MASTER ACTIVITY MILESTONE: Feasibility Report; Decision to Proceed or Terminate

PURPOSE: To develop realistic quantity estimates which are used to determine revenues and collection requirements.

DESCRIPTION: If a Phase I Feasibility Analysis has not been completed, then the pertinent portions of MA 105 should now be performed. If a Feasibility Analysis has been completed, the output of MA 105 is used. Utilizing the quantity estimates of recoverable materials derived from the compositional analysis and gross quantity disposed, adjustments are made to take into account service area, percent participation, and recovery efficiencies.

STEPS WITHIN THE ACTIVITY:

1. Perform pertinent portions of MA 105 or obtain the output of previously performed MA 105.
2. Using the estimates of the gross quantities of each material generated which is to be recovered, make adjustments to take into account the service area (what percentage of the community can potentially be involved), percent participation (what percent of the potential will actually be realized), and normally experienced recovery efficiencies (if seven newspapers are bought each week, how many are bundled separately).
3. Conduct a sensitivity analysis at three levels of participation (e.g., 20%, 40% and 60% public participation) to indicate the level of participation necessary for a viable project.
4. Conduct public survey (optional) to obtain perspective on percent recoverable.

MAJOR OBSTACLES:

Quantity estimates unreasonable; sensitivity analysis shows excessively high level of participation needed to make the project viable.

MAJOR DECISIONS: Quantities assumed for computation.

INPUT: Outputs of MA 105.

OUTPUT: Clearly established quantity scenarios and assumptions.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted:
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DEFINE INSTITUTIONAL AND LEGAL REQUIREMENTS

number SS105

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Perform Detailed Source Separation Feasibility

MASTER ACTIVITY MILESTONE: Feasibility Report; Decision to Proceed or Terminate

PURPOSE: To establish the impact of existing requirements, necessary changes and additions.

DESCRIPTION: Existing laws and ordinances may place constraints on types of enforcement and on changes to existing contracts. These constraints are identified, and the method for removing any conflicts is developed.

STEPS WITHIN THE ACTIVITY:

1. Examine existing laws and ordinances to identify constraints.
2. Identify conflicts with the envisioned program.
3. Either modify the envisioned program or outline changes or additions to the laws and ordinances so that the conflicts are removed.

MAJOR OBSTACLES: Existing laws or ordinances unclear.

MAJOR DECISIONS: Which conflicts should be changed; which should remain and be worked around.

INPUT: Output of MA 005 and MA 113 concerning source separation and institutional requirements.
OUTPUT: Summary of several pages defining legal and institutional constraints.

ROLES AND RESPONSIBILITIES:

1. Does Work: LC, IHS, C
2. Responsible: PM
3. Must be Consulted: -
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DEFINE SEPARATION AND COLLECTION PROCEDURES

number SS106

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Perform Detailed Source Separation Feasibility

MASTER ACTIVITY MILESTONE: Feasibility Report; Decision to Proceed or Terminate

PURPOSE: To develop a program consistent with the anticipated needs and desires of the eventual participants.

DESCRIPTION: Based upon the market requirements and the project manager's best estimates of participation either of two options is pursued: a) Changes in existing collection practices are proposed which are realistic from the collection agencies' viewpoint, or b) central drop-off sites are specified.

STEPS WITHIN THE ACTIVITY:

1. Review and develop system parameters (see A 10901) which are consistent with the results.
2. If curbside collection is being considered, then obtain current detailed data on existing collection practices, including existing or planned source separation programs (or use output from A 10901) and develop realistic changes to the existing collection system which satisfy the parameters (specify sites if any are required).
3. If central drop-off location(s) are being considered, then specify the sites, the agency responsible for transportation to the markets, and the agency responsible for site maintenance.

MAJOR OBSTACLES: Program appears inconsistent with current collection practices.

MAJOR DECISIONS: Changes in collection practices, sites.

INPUT: Outputs of A 10901 and A SS103 concerning feasibility and market requirements.

OUTPUT: Details of separation and collection procedures, service area for source separation.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PM
3. Must be Consulted: DPW or department performing collection, EA-(L)
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 5 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH SYSTEM CONFIGURATION, COSTS, AND REVENUES

number SS107

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Perform Detailed Source Separation Feasibility

MASTER ACTIVITY MILESTONE: Feasibility Report; Decision to Proceed or Terminate

PURPOSE: To provide a basis for the political/public decision to proceed with or terminate source separation.

DESCRIPTION: The system parameters developed in the sensitivity analysis, the realistic changes which could be made to existing collection practices, the market requirements and logistics of transporting to the market(s), and the legal and institutional requirements and constraints are combined into a preferred system configuration along with costs and revenues. A report documenting the above is written and adopted by the project team and prepared for submission to the decision makers in A SS108.

STEPS WITHIN THE ACTIVITY:

1. Review the results of A SS101 - A SS106.
2. Develop the system configuration.
3. Develop system costs (coordinating with the collection agency) and revenues (based on market requirements and prices and percent participation).
4. Draft and circulate report to project team for comment.
5. Finalize and obtain adoption of the report by the project team.
6. Develop budget to be adopted by elected officials for next phase.

MAJOR OBSTACLES: Major disagreement over facts as presented, or over the configuration presented.

MAJOR DECISIONS: The most appropriate system configuration.

INPUT: Output of A SS101 - A SS106.

OUTPUT: Completed system configuration

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: -
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DEFINE PROGRAM

number SS201

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Develop Source Separation Program

MASTER ACTIVITY MILESTONE: Laws, Ordinances, Changes to Contracts, and Budgets Ready for Adoption

PURPOSE: To specify the required detail for a program which is consistent with the details and intent of the political/public decision.

DESCRIPTION: The political/public decisions made in A SS108 are used as a guide to specify all aspects of the program.

STEPS WITHIN THE ACTIVITY:

1. Specify all the system parameters (see A 10901).
2. Specify the changes to be made in the existing collection practices and marketing transportation logistics.
3. Specify legal and institutional constraints, changes and additions to be made.
4. Specify publicity/public education program to be instituted.
5. Develop costs and revenues.

MAJOR OBSTACLES: Political/public decisions were ambiguous or inconsistent.

MAJOR DECISIONS: Interpretation of intent of the political/public decisions.

INPUT: Output of A SS108.

OUTPUT: A three to ten page report specifying all the details to date, if different from the report of A SS107.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 5 weeks.
2. Work Effort: Average = 8 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: TEST PROGRAM (CONDITIONAL)

number SS202

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Develop Source Separation Program

MASTER ACTIVITY MILESTONE: Laws, Ordinances, Changes to Contracts, and Budgets Ready for Adoption

PURPOSE: To provide additional data for use in establishing the expected level of participation, quantities of recovered materials, costs, and revenues.

DESCRIPTION: The program is established on a trial basis in a representative location, adjustments are made as necessary, data are taken and summarized. This activity is recommended for jurisdictions of 75,000 or greater population; it is considered optional for those under 75,000 as a general rule.

STEPS WITHIN THE ACTIVITY:

1. Select a representative collection route (for separate collection) or a representative central drop-off location.
2. Rent or loan any necessary equipment.
3. Institute publicity/public education program along route or surrounding the drop-off location.
4. Run the test for a period of 2-4 weeks, keeping accurate and complete records.
5. Take a representative sample of the recovered materials to market; obtain market decision of whether or not it meets their desired requirements.
6. If necessary, develop and institute changes, allow time for the changed system to reach equilibrium.
7. Summarize the results including quantities and costs.

MAJOR OBSTACLES: Inability to agree on a representative area.

MAJOR DECISIONS: The collection route or drop locations which are representative of the community if changes will improve the program; exactly what changes to institute and their effectiveness.

INPUT: Output of A SS201 concerning program definition.

OUTPUT: Five to ten page report summarizing results and costs.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, DPW, IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 4 to 10 weeks.
2. Work Effort: Average = 25 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN MARKET LETTERS OF INTENT

number SS203

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Develop Source Separation Program

MASTER ACTIVITY MILESTONE: Laws, Ordinances, Changes to Contracts, and Budgets Ready for Adoption

PURPOSE: To provide a substantial basis for estimating revenues.

DESCRIPTION: Representative recovered material from the Test Program (A SS202) is brought to the various markets identified in A SS105, and letters of intent are solicited.

STEPS WITHIN THE ACTIVITY:

1. Obtain representative samples of recovered material from the test program, if appropriate.
2. Transmit above samples to the appropriate markets identified in A SS105.
3. In the transmittal letter, solicit letters of intent based on that material and ask that they specify in the letter whether they will pick up the material or, if it is to be delivered, whether they will load or unload the material, whether it is to be baled, tied, or loose, the price (or price range), at what location, and in what condition (e.g., baled and loaded).

MAJOR OBSTACLES: No markets; delayed or unsatisfactory responses.

MAJOR DECISIONS: Whether or not the wording of the letter of intent is sufficient, whether requirements can be met; whether or not to pursue final contract.

INPUT: Requests for letters of intent.

OUTPUT: Letters of intent.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PD
3. Must be Consulted: --
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 10 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: SD SS203

ACTIVITY: DEVELOP INSTITUTIONAL AND LEGAL MECHANISMS

number SS204

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Develop Source Separation Program

MASTER ACTIVITY MILESTONE: Laws, Ordinances, Changes to Contracts, and Budgets Ready for Adoption

PURPOSE: To prepare for adoption and execution of the source separation program.

DESCRIPTION: If any laws, ordinances, administrative rules are to be changed or enacted, or collection contracts changed or entered into, the exact wording and format are developed so that they are ready for adoption or enactment. Market contracts and bid documents are also developed. If laws or ordinances cannot be changed, a strategy for continuing with the program via a different route is established.

STEPS WITHIN THE ACTIVITY:

1. Review output of A SS201 to define what is required.
2. Develop required changes and additions.
3. Obtain the status of any pending source reduction legislation.

MAJOR OBSTACLES: Mechanism appears out of reach, or not achievable before a deadline set by the markets.

MAJOR DECISIONS: Whether to pursue changes to laws or ordinances or to establish the alternate mechanism.

INPUT: The changes and additions to be made as specified in the output of A SS201.

OUTPUT: New or modified documents ready for adoption or enactment, including changes to existing collection contracts.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, DP, LC
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: --

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 4 to 10 weeks.
2. Work Effort: Average = 8 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DEVELOP PUBLICITY/PUBLIC EDUCATION PROGRAM

number SS205

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Develop Source Separation Program

MASTER ACTIVITY MILESTONE: Laws, Ordinances, Changes to Contracts, and Budgets Ready for Adoption

PURPOSE: To prepare for adoption and execution of the source separation program.

DESCRIPTION: All aspects (i.e., newsletters, handbills, TV, radio and newspaper announcements) of the publicity/public education program are developed and specified including responsibilities, format, and budgets. (Note: This activity may already have been essentially completed for source separation in MA 101, MA 115. If not, this activity should be conducted).

STEPS WITHIN THE ACTIVITY:

1. Specify all the elements of the program, including which governmental organization is to carry them out and how the program is to be coordinated.
2. In conjunction with those governmental organizations, develop budgets and funding sources, and samples for each element.
3. Discuss continuing public education needs even after the program is established; discuss duration, schedule and level of effort required.

MAJOR OBSTACLES: Inadequate budget appropriations; disagreement over responsibilities or format.

MAJOR DECISIONS: Size and type of program and overall budget to make the program effective.

INPUT: The publicity/public education program as specified in the output of A SS201.

OUTPUT: A small report outlining the program, defining responsibilities, staffing and budgets and including any samples as an appendix.

ROLES AND RESPONSIBILITIES:

1. Does Work: C for PR, PM
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: --

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 5 to 12 weeks.
2. Work Effort: Average = 16 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: UPDATE COSTS

number SS206

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Develop Source Separation Program

MASTER ACTIVITY MILESTONE: Laws, Ordinances, Changes to Contracts, and Budgets Ready for Adoption

PURPOSE: To provide a basis for the political/public decision to proceed or terminate with source separation.

DESCRIPTION: Collection, transportation, handling, publicity, administration, and management costs and revenues (from marketing materials and disposal savings) are updated as required. A report documenting the above and recommending a course of action is written for and adopted by the project team. Any recommended laws, ordinances, changes to contracts, and changes to budgets should be included in an appendix.

STEPS WITHIN THE ACTIVITY:
1. Utilizing the finalized collection procedures developed in the test program, calculate (in conjunction with the collection agency) the collection, transportation, storage, and handling costs necessary to meet the market requirements as well as the transportation and disposal savings. 2. Utilizing the quantities and percent participation derived from the test program (if conducted), extrapolate the quantities of recovered materials expected from the full program. From these quantities and the prices quoted in the market letters of intent, derive the expected revenues. 3. From the budgets developed in A SS205 develop overall publicity, administration, and management costs. 4. Draft a report summarizing the above and circulate to project team for comments. 5. Finalize report and obtain adoption by the project team. 6. Develop budget for next phase, if project looks as if it will move ahead.

MAJOR OBSTACLES: Lack of cooperation from participating entities; unreliable previous test results.

MAJOR DECISIONS: Recommendations resulting from cost update.

INPUT: Outputs of A SS201 - A SS205.

OUTPUT: A report documenting the findings, analysis and recommendations for the developed source separation program.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, PM, IHS, C
2. Responsible: PD
3. Must be Consulted: --
4. Must be Notified: --

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 15 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN POLITICAL/PUBLIC DECISION TO PROCEED

number SS207

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Develop Source Separation Program

MASTER ACTIVITY MILESTONE: Laws, Ordinances, Changes to Contracts, and Budgets Ready for Adoption

PURPOSE: To involve all participants and effected parties in the decision process, so that a full conscious endorsement of the decision is made.

DESCRIPTION: Briefings are held, information is presented, feedback is received, and a decision is obtained either to proceed or terminate.

STEPS WITHIN THE ACTIVITY:

1. Review decision path.
2. Brief groups in the order established by local conditions.
3. Solicit letters of support from involved agencies providing additional briefings and information as necessary.
4. Factor all feedback information into a composite form for key decision makers.
5. Observe local decision customs and obtain decision to proceed or terminate.

MAJOR OBSTACLES: Undue delay on decision; no decision.

MAJOR DECISIONS: To proceed or terminate.

INPUT: Output of A SS206.

OUTPUT: Decision to proceed or terminate; adopted laws and ordinances; approved changes to budgets and contracts; administrative directives.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, PT
2. Responsible: EO
3. Must be Consulted:
4. Must be Notified: P, media

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 4 to 12 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: EXECUTE PROGRAM

number SS3

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Operating Program

PURPOSE: To commence operation of the source separation program in accordance with the Political/Public Decision To Proceed (A SS207).

DESCRIPTION: Facilities are constructed, equipment is purchased, program is publicized, contracts and ordinances are enforced, contracts on recovered material are signed after bids have been received all as described and decided on during the Political/Public Decision To Proceed (A SS207).

MAJOR OBSTACLES: Equipment lead time is excessive.

MAJOR DECISIONS: Contractor selection and contract terms; size, type and operational parameters of the facilities.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Must be Consulted or Notified: PD, EO, AO

ESTIMATING DATA:

1. Duration: Average = 16 weeks. Range = 8 to 28 weeks.
2. Work Effort: Average = 40 work days.
3. Funding: $8,000

REFERENCES: R108, R113

SAMPLE DOCUMENTS: NR

ACTIVITY: DEFINE PROJECT AND TASKS

number 20101

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Define Project

MASTER ACTIVITY MILESTONE: Preliminary Project Cost and Program Budget Estimates

PURPOSE: To state the project configuration as it stands as a result of the decision of MA 117 and to plan the course of action for Phase II.

DESCRIPTION: As a result of the decision of MA 117, the apparent project may be slightly or significantly altered. Project participants take this opportunity to regroup, observe the project as it stands, review goals and objectives and be ready to move ahead. Major elements to be addressed in the procurement planning phase are identified and their priorities are defined.

STEPS WITHIN THE ACTIVITY:

1. Enumerate all steps to be undertaken in the procurement planning phase.
2. Develop a project schedule and refined budget for completion of activities.
3. Determine the roles and responsibilities of the participants.
4. Conduct periodic (one-week duration) weighing surveys* over a period of one year to determine yearly fluctuations in waste generation if not previously performed in A 10514 or existing operational data is unreliable. The continuation and frequency of the weighing survey is at the discretion of the project manager.

MAJOR OBSTACLES: Project completely changed. Goals, objectives and new project tasks obscured by decision of MA 117.

MAJOR DECISIONS: Steps to be undertaken and the roles and responsibilities of the participants; whether or not additional weighing surveys are necessary.

INPUT: Output from Phase I.

OUTPUT: A brief summary report outlining tasks, responsibilities and project schedule, and a program budget estimate.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, PT, C, PD
2. Responsible: PD
3. Must be Consulted: IB, BC
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

*Weighing function not included in this estimating data; this activity included at the discretion of the project manager.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DEVELOP PRELIMINARY PROJECT COST ESTIMATE

number 20102

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Define Project

MASTER ACTIVITY MILESTONE: Preliminary Project Cost and Program Budget Estimates

PURPOSE: To revise the project cost estimate performed in Phase I based on any changes to the project made during the political/public decision process of MA 117. (May be unnecessary.)

DESCRIPTION: The project is defined in light of the results of the political/public decision, changes are made to assumptions (if applicable) and a new cost analysis is performed.

STEPS WITHIN THE ACTIVITY:

1. Reach agreement on assumptions to be used in estimating costs (e.g., energy, labor cost escalators).
2. Define project (i.e., sites, facilities, size, transportation network, quantity of waste taking into account any new or expanded source separation programs).
3. Develop cost estimates.

MAJOR OBSTACLES: Disagreement on cost estimate assumptions; major policy changes resulting from MA 117 requiring new data.

MAJOR DECISIONS: Configuration of new recommended approach and alternatives to be estimated, if different from recommendation of MA 116.

INPUT: Output from MA 114.

OUTPUT: Phase II project cost estimates.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: NR
4. Must be Notified: PT

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: R27, R28

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: DRAFT ENVIRONMENTAL ASSESSMENT AND DETERMINE SITE PRIORITIES

number 202

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To identify potential environmental impacts of the proposed project and to estimate costs associated with resolving these impacts; to evaluate and establish the priorities of nominated system sites; and to write a draft environmental assessment report for use during the process of securing sites (MA 203).

DESCRIPTION: The environmental impacts of the project are identified in quantitative and qualitative terms for the areas of air and water quality, zoning and land use, traffic, historical significance, and aesthetics. The associated effect of resolving these impacts on project economics is estimated. Nominated sites are ranked based on the above impact analysis and a draft environmental assessment report is prepared.

MAJOR OBSTACLES: Existing environmental regulations prohibit construction; cost to resolve impacts of project is excessive.

MAJOR DECISIONS: Quantification of impacts; procedure to rank sites; the amount of detail required based on project parameters, local conditions, and State (and possibly Federal) requirements.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, PT, PD, C
2. Must be Consulted or Notified: Local Historical Society, ZA, Planning Comm., DOT (L), EA-(L), EA-(S), EPA, Local Bldg. Comm., EO

ESTIMATING DATA:

1. Duration: Average = 11 weeks. Range = 7 to 18 weeks.
2. Work Effort: Average = 72 work days.
3. Funding:

REFERENCES: R2, R4, R6, R70, R71, R72, R78, R79, R102, R103, R104, R106

SAMPLE DOCUMENTS: NR

ACTIVITY: PERFORM PRELIMINARY ARCHAEOLOGICAL AND HISTORICAL CHECK

number 20201

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Draft Environmental Assessment And Determine Site Priorities

MASTER ACTIVITY MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To determine whether site(s) is an historical landmark or has unique archaeological characteristics.

DESCRIPTION: Contact historical and/or archaeological society(s) for site(s) check.

STEPS WITHIN THE ACTIVITY:

1. Walk the site(s) to identify unique features.
2. Question local historical and/or archaeological society(s) as to the importance of the site(s).

MAJOR OBSTACLES: Site access not available; former site use prevents clear determination.

MAJOR DECISIONS: Classification of site(s).

INPUT: Output from MA 112 regarding preliminary site analysis.

OUTPUT: Written statement from the historical and/or archaeological society(s) on the importance of the site(s).

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: P
3. Must be Consulted: Local historical and/or archaeological society(s).
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE ZONING AND LAND USE

number 20202

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Draft Environmental Assessment And Determine Site Priorities
MASTER ACTIVITY MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To determine whether site(s) is properly zoned for a RR facility, transfer station or landfill, and to determine planned land use.

DESCRIPTION: All facilities contemplated for a RR system (including the RR plant, transfer stations, repair facilities, landfills, and equipment storage, if required) must be placed on tracts of land with proper zoning; surrounding land use can also affect placement of a site. Zoning changes and variances may be required, and should be identified as early as possible.

STEPS WITHIN THE ACTIVITY:
1. Contact zoning agency to determine present and proposed zoning of site(s) and adjacent areas.
2. Contact local Planning Commission to determine present and proposed future land use of site(s) and adjacent areas.

MAJOR OBSTACLES: Site(s) not zoned for RR system.

MAJOR DECISIONS: None, information gathering.

INPUT: Output from MA 112.

OUTPUT: Written statements from zoning and planning agencies on present and proposed future site zoning and land use.
ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: ZA, PA, PD
4. Must be Notified:

ESTIMATING DATA:
1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: R47

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE TRAFFIC IMPACT

number 20203

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Draft Environmental Assessment And Determine Site Priorities

MASTER ACTIVITY MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To identify potential traffic problems resulting from the operation of the proposed RR system.

DESCRIPTION: An analytical assessment of the traffic impact is made, as are estimates of the increase in traffic on highways, secondary roads, access roads. Identify potential queuing problems, noise, and roadweight limits. Impacts are for the RR facility(s), transfer station(s), and backup landfill(s).

STEPS WITHIN THE ACTIVITY:

1. Estimate the number and size of vehicles arriving and departing from the RR facility(s), transfer station(s), and backup landfill(s) on an hourly basis.
2. Identify likely truck routes.
3. Estimate increase in traffic flow on highways, secondary roads, and access roads. Identify parking areas.
4. Estimate increase in traffic noise levels. Identify problem areas.
5. Estimate queuing problems at the facilities and impact on access roads.
6. Identify new road construction to alleviate potential traffic problems.

MAJOR OBSTACLES: Inaccurate estimates; unrealistic routing.

MAJOR DECISIONS: Determination of how serious traffic impacts will be.

INPUT: Output from A 20103, MA 111 and MA 112 regarding transportation and site analyses.

OUTPUT: Statement of potential traffic impacts and possible new road construction to alleviate problems.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: Local Highway Department, EA-(L)
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1.5 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE EXISTING AIR QUALITY AND IMPACT

number 20204

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Draft Environmental Assessment And Determine Site Priorities

MASTER ACTIVITY MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To assess the present air quality situation and to identify the potential impact of different RR technologies.

DESCRIPTION: Preliminary air quality modeling is performed to determine potential impacts. This requires estimating pollutant emissions from the RR facility for different RR technologies.

STEPS WITHIN THE ACTIVITY:

1. Contact the local agency with air pollution control responsibilities, and confirm present air quality (See A 10303).
2. Identify key receptors.
3. Investigate potential air emission trade-offs if site is in a nonattainment area.
4. Contact the Federal Aviation Agency to determine stack height restrictions.
5. Estimate maximum 24-hour and yearly average emissions for RR facility. Consider different technologies.
6. Run PTMAX, PTDIS, or PTNTP air quality models (discuss with regional EPA office) and estimate pollutant concentrations around the RR facility.
7. Identify major potential impacts as a function of RR technology.

MAJOR OBSTACLES: Insufficient or invalid data; disagreement among regulatory agencies over requirements or interpretations of codes.

MAJOR DECISIONS: Choice of model most appropriate to the area.

INPUT: Output from A 10303 and MA 112.

OUTPUT: Identification of major air quality impacts at each site.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: EA-(L), EA-(S), EPA
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 5 weeks.
2. Work Effort: Average = 13 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE WATER DEMAND AND DISCHARGE IMPACTS

number 20205

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Draft Environmental Assessment And Determine Site Priorities
MASTER ACTIVITY MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To estimate water use and wastewater disposal requirements for the proposed RR system.

DESCRIPTION: Many RR technologies have a high water requirement. Certain sites may have inadequate water supplies available. Likewise, wastewater may be disposed of in sewers at some sites with minimal treatment, whereas other sites may not have sewer access and extensive treatment may be required before discharging.

STEPS WITHIN THE ACTIVITY:
1. Review output from A 10304.
2. Determine potential water availability and quality on or near the site.
3. Estimate water requirements for different RR technologies. Identify problem areas.
4. Estimate the quantity and quality of wastewater to be disposed of at each facility.
5. Determine the method of waste water discharge and the additional treatment requirements to meet regulations for a RR facility, a transfer station, or a backup landfill.

MAJOR OBSTACLES: Insufficient data on water (surface or ground) available; needs of other users not now existing, but planning to be on line simultaneously with RR plant, not considered.
MAJOR DECISIONS: Identification of wastewater treatment requirements.

INPUT: Output from A 10304 regarding local water use and effluent restrictions.
OUTPUT: Listing of water use and wastewater treatment requirements at each site for different RR technologies.
ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: EA-(L), EA-(S), EPA
4. Must be Notified: PD

ESTIMATING DATA:
1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE AESTHETIC REQUIREMENTS

number 20206

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Draft Environmental Assessment And Determine Site Priorities

MASTER ACTIVITY MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To determine whether there are local restrictions on the physical appearance of the RR facility or RR system.

DESCRIPTION: Some cities may have restrictions on facility appearance such as building color, landscaping, stack height, distance from roadway, buffer zone, and fencing.

STEPS WITHIN THE ACTIVITY:

1. Contact local building commission and/or zoning agency to determine requirements.
2. Identify requirements noted above under description.

MAJOR OBSTACLES: Requirements unclear or subject to change by adjacent land user at some later time; inability to gain firm commitment from appropriate local authority.

MAJOR DECISIONS: Which criteria apply based on adjacent land use intention.

INPUT: Output from MA 112 regarding site analysis.

OUTPUT: Written statement from local authority on aesthetic requirements and restrictions.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM
2. Responsible: PM
3. Must be Consulted: BPD or ZA
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE IMPACTS ON PROJECT ECONOMICS

number 20207

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Draft Environmental Assessment And Determine Site Priorities
MASTER ACTIVITY MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To determine how the cost of environmental control measures at each site impact on project economics.

DESCRIPTION: Certain sites and/or technologies may be eliminated because of environmental restrictions. Additional costly environmental control measures may be required at some sites to meet regulations. The cost of these measures is considered in this activity. Items to be considered may be new road construction, additional air pollution control equipment, and extensive construction cleanup. (Depending on the probable approach, the project manager may wish to consider preliminary subsurface investigations, which will expand the time and cost of this activity.)

STEPS WITHIN THE ACTIVITY:
1. Identify sites with impact problems.
2. Identify methods of removing or reducing problems at each site for different technologies.
3. Estimate the incremental cost to resolve problems.
4. Discuss with project team.

MAJOR OBSTACLES: Disagreement among members of the project team on level of impacts.

MAJOR DECISIONS: Whether or not the proposed method for resolving problems will actually solve the problems.

INPUT: Output from A 20201 - A 20206.

OUTPUT: Incremental cost of resolving major problem impacts.

ROLES AND RESPONSIBILITIES:
1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PT
4. Must be Notified:

ESTIMATING DATA:
1. Duration: Average = 3 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE SITE PRIORITIES

number 20208

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Draft Environmental Assessment And Determine Site Priorities

MASTER ACTIVITY MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To rank the nominated sites in order of preference according to technical and politically acceptable parameters.

DESCRIPTION: The most technically acceptable site(s), but not necessarily most politically acceptable, is determined based on the quantitative assessments of A 20201 - A 20207. Certain key elected officials should assist the project team and the consultants in ranking the sites.

STEPS WITHIN THE ACTIVITY:

1. Develop the criteria and method to rank sites.
2. Assemble the site information data.
3. Rank the sites.
4. Review the selected sites with elected officials and obtain feedback.
5. Revise the site ranking, if necessary.

MAJOR OBSTACLES: Good sites from a technical standpoint conflict with politically acceptable areas.

MAJOR DECISIONS: Criteria and method to rank sites.

INPUT: Output from A 20201 - A 20207.

OUTPUT: Listing of sites in order of preference.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, PT, C
2. Responsible: PD
3. Must be Consulted: EO, EA-(L), EA-(S)
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: R47

SAMPLE DOCUMENTS: NR

ACTIVITY: PRODUCE DRAFT ENVIRONMENTAL ASSESSMENT WITH RECOMMENDED SITES

number 20209

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Draft Environmental Assessment And Determine Site Priorities

MASTER ACTIVITY MILESTONE: Complete Draft Environmental Assessment

PURPOSE: To compile information obtained in A 20201 - A 20208 into one comprehensive document.

DESCRIPTION: An environmental assessment report is prepared on the proposed project. The report will be available to the public and elected officials for review and comment in MA 203.

STEPS WITHIN THE ACTIVITY:

1. Complete information from A 20201 - A 20208.
2. Write report.
3. Circulate to project team for comment.
4. Incorporate comments of project team and finalize draft report.

MAJOR OBSTACLES: Inadequate data for proper assessment; disagreement between regulatory agencies over requirements or interpretations of codes or test data.

MAJOR DECISIONS: Contents and level of detail required in assessment.

INPUT: Outputs from A 20201- A 20208.

OUTPUT: Draft environmental assessment report.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM, PT
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 4 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PRESENT DRAFT ENVIRONMENTAL ASSESSMENT TO ELECTED OFFICIALS AND COMMUNITY GROUPS

number 20301

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Secure Sites

MASTER ACTIVITY MILESTONE: Obtain Public Acceptance of Site(s), Obtain Option to Acquire Site(s)

PURPOSE: To inform elected officials and community groups of the potential site(s) and the project impacts and to gain support for specific sites.

DESCRIPTION: Meetings are held with elected officials and local community groups to discuss the environmental assessment report. Support for site(s) is obtained. Elected officials or their representatives contact land owners to establish interest in selling their property and its cost.

STEPS WITHIN THE ACTIVITY:

1. Hold separate meetings with elected officials of each participating community and present draft environmental assessment. Establish elected official interest in offering hometown site. Discuss the economic incentive for a hometown site.
2. Have elected officials contact owner of site property to determine interest in selling the land and the price.
3. Have elected official meet with local community groups to review the project and hand out environmental assessment.
4. Have the consultant meet with the elected official and community groups to present results of the environmental assessment.
5. Perform additional environmental analyses, if required.

MAJOR OBSTACLES: Elected officials not willing to offer any site(s), particularly for back-up landfill, major environmental problem or major public opposition.

MAJOR DECISIONS: Acceptance of draft environmental assessment by elected officials and community groups; agreement on site(s) for resource recovery facility, transfer station(s) and back-up landfill(s).

INPUT: Output from A 20209.

OUTPUT: Acceptance of draft environmental assessment by elected officials and community groups and the responsible local environmental agency.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, PM, PD
2. Responsible: C, PD
3. Must be Consulted: EO, Local Community Groups, EA-(L), EA-(S)
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 14 work days.

REFERENCES: R2, R4, R6, R70, R71, R72

SAMPLE DOCUMENTS: NR

ACTIVITY: HOLD PUBLIC MEETINGS

number 20302

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Secure Sites

MASTER ACTIVITY MILESTONE: Obtain Public Acceptance of Site(s), Obtain Option to Acquire Site(s)

PURPOSE: To gain public support of the project and to resolve concerns over the environmental effects of the RR facility.

DESCRIPTION: Public meetings are held in each of the participating communities. The project director reviews the project scope, the economics, and the environmental impacts. Elected officials give support.

STEPS WITHIN THE ACTIVITY:

1. Meet with elected officials to plan a public meeting
2. Advertise the meeting in the local newspaper.
3. Prepare a presentation.
4. Hold the meeting.

MAJOR OBSTACLES: Very strong public resistance to facility siting; meeting disorderly or inconclusive.

MAJOR DECISIONS: Public approval or disapproval of project and sites.

INPUT: Output from A 20301, A 20101, A 20102, and A 20103.

OUTPUT: Knowledge of public position on the project.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, C
2. Responsible: PD, C
3. Must be Consulted: EO
4. Must be Notified: P, media

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 5 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN ZONING AND OPTIONS ON SITES

number 20303

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Secure Sites

MASTER ACTIVITY MILESTONE: Obtain Public Acceptance of Site(s), Obtain Option to Acquire Site(s)

PURPOSE: To obtain purchase options on sites.

DESCRIPTION: Terms and conditions for the purchase of the site(s) from the owners is established, and a conditional purchase agreement is obtained, if required. (In some cases the site or sites may be municipally owned and this activity is unnecessary.)

STEPS WITHIN THE ACTIVITY:

1. Elected officials, project director, and consultants meet with property owner to discuss the purchase of the site.
2. Obtain permission from the property owner to conduct additional site evaluations and conduct them if necessary (i.e., soil borings).
3. Obtain site approval from permitting agency.
4. Obtain zoning changes if required; obtain final zoning status.
5. Negotiate the selling price and terms of option contract.
6. Select desired sites.
7. Prepare land purchase option contracts.
8. Sign contracts or begin eminent domain acquisition procedures.

MAJOR OBSTACLES: Landowner's unwillingness to sell; prohibitive zoning status.

MAJOR DECISIONS: Price willing to pay for site property; decision to pursue eminent domain procedures if necessary.

INPUT: Output from MA 112 and MA 202.

OUTPUT: Site purchase options signed.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, PD, C, LD, PM
2. Responsible: PD
3. Must be Consulted: EA-(L), ZA
4. Must be Notified: IB, BC

ESTIMATING DATA:

1. Duration: Average = 12 weeks. Range = 8 to 52 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: UPDATE PROJECT DEFINITION AND COSTS

number 204

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Project Costs

PURPOSE: To estimate project costs more accurately based on secured site(s), to develop strategies for removing any institutional barriers to the envisioned project configuration and to present them to the elected officials if major changes (in the project or in the elected officials) have developed since the previous presentation.

This MA may be reduced in scope if no significant changes have been made to the project during MA 203.

DESCRIPTION: Facility costs are refined based on the amount of waste estimated (taking into account existing, expanding, or new source separation programs) and the preliminary agreements with the energy and materials markets obtained in Phase I. Previously calculated (A 20102) transportation costs are revised if necessary and incorporated to estimate tipping fees and life cycle costs for the different procurement approaches.

Detailed strategies are developed for removing any institutional barriers which block the preferred configuration, and furthering waste supply and market commitments. These strategies have been outlined in Phase I and MA 201. Any changes caused by developments between then and now are made and additional details are added as necessary. These strategies are pursued in MA 206, MA 205 and MA 207, respectively.

MAJOR OBSTACLES: Unreliable market and waste stream data; major policy or personnel changes.

MAJOR DECISIONS: Whether or not to perform this master activity if the preferred site(s) has been obtained. However, if the site(s) actually obtained is in a significantly different location than the one sought, this master activity may involve major restructuring of the project configuration.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, PT, IHS, C
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 20 work days.
3. Funding: $5,000

REFERENCES: R2, R3, R5, R17, R19, R20, R22, R23, R111

SAMPLE DOCUMENTS: NR

ACTIVITY: REDEFINE PROJECT PARAMETERS

number 20401

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Update Project Definition and Costs

MASTER ACTIVITY MILESTONE: *Project Costs*

PURPOSE: To define project configuration based on secured site(s) and environmental considerations. (May be unnecessary if preferred site(s) was secured.)

DESCRIPTION: Adjust the conclusions and decisions made to date as necessary to suit the site(s) on which options have been obtained (A 20303), and the measures developed to mitigate possible deleterious environmental effects. The institutional requirements are determined and the strategy for removing barriers to the envisioned project arrangement is set (to be pursued in MA 206).

STEPS WITHIN THE ACTIVITY:

1. Restate:
   - markets
   - facility and disposal sites
   - wasteshed boundaries and waste quantity
   - acceptable technologies
2. Establish detailed strategies for performing MA 205, MA 206 and MA 207.

MAJOR OBSTACLES: Insufficient or unreliable data; major policy changes; inability of a municipality to guarantee its waste.

MAJOR DECISIONS: Project adjustments based on obtained sites.

INPUT: Output from MA 201, 202, and 203

OUTPUT: Statement on project scope; statement on strategies for performing MA 205, 206, and 207.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: UPDATE PROJECT COST ESTIMATE

number 20402

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Update Project Definition and Costs

MASTER ACTIVITY MILESTONE: Project Costs

PURPOSE: To update facility costs based on secured site(s) and environmental considerations. (May be unnecessary.)

DESCRIPTION: A cost estimate is developed based on the redefined project (output of A 20401).

STEPS WITHIN THE ACTIVITY:

1. Update transportation network.
2. Update material and energy revenue projections.
3. Update facility capacity (taking into account source separation programs and capital and operating costs).
4. Determine the tipping fee and life cycle costs for different procurement approaches.

MAJOR OBSTACLES: Major information changes; unreliable data.

MAJOR DECISIONS: Determination of cost estimate assumptions and parameters to be included.

INPUT: Output from MA 201.

OUTPUT: Tipping fee and life cycle cost estimates for different procurement approaches.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PD
3. Must be Consulted: EO, BC, IB
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: SET ENERGY MARKET PRIORITIES

number 20701

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Market Commitments

MASTER ACTIVITY MILESTONE: Letters of Intent

PURPOSE: To list the energy markets in order of desirability, based on the technical, economic, and interest parameters.

DESCRIPTION: With the preliminary evaluation of energy markets completed and the preferred facility site secured, the energy market that can be served by the site must be identified more firmly in the order of interest and desirability.

STEPS WITHIN THE ACTIVITY:

1. Based on the facility site selection, the most appropriate energy market in terms of location and energy requirements is identified.
2. The order in which the markets are beneficial to the project as primary, secondary and backup are noted based on a quick review of the criteria and needs.

MAJOR OBSTACLES: Disagreement among the project team on the method of ranking the markets.

MAJOR DECISIONS: Selection of the best one or two markets with which to pursue negotiations.

INPUT: Outputs from MA 106, MA 203 and MA 204.

OUTPUT: Name(s) of selected energy markets with which to pursue negotiations.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM, with PT
2. Responsible: PD
3. Must be Consulted:
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.2 to 1.5 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONFIRM ENERGY REQUIREMENTS AND NEEDS

number 20702

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Market Commitments

MASTER ACTIVITY MILESTONE: Letters of Intent

PURPOSE: To reestablish the market requirements, needs, and the intent and desire of the market to participate in the minds of the project team and the market.

DESCRIPTION: Meet with energy market to determine energy purchase requirements and needs. Establish responsibility and need for standby fossil fuel backup system and determine what capital costs will be paid by the market.

STEPS WITHIN THE ACTIVITY:

1. Confirm detailed energy use profile (MA 106) of the market.
2. Confirm present unit energy cost (fuel, capital, O&M) of the market.
3. Determine the type, quantity, and quality of the fuel the market is willing to purchase.
4. Establish system backup responsibility.
5. Establish capital cost responsibility.

MAJOR OBSTACLES: Inaccurate, incomplete or misleading data.

MAJOR DECISIONS: System back-up responsibility; capital cost responsibility; amount of energy the market is willing to purchase.

INPUT: Output from MA 104 and MA 106.

OUTPUT: Sufficient information to prepare a letter of intent (and a draft energy contract if it is decided to develop one).

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PD
3. Must be Consulted: M, U
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 6 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE DRAFT ENERGY CONTRACT(S)

number 20703

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Market Commitments

MASTER ACTIVITY MILESTONE: Letters of Intent

PURPOSE: To document all the items which will be critical to the major participants in a draft form for review and discussion; the draft contract also adds credibility to the project.

DESCRIPTION: A draft energy contract is drawn up which includes an energy pricing formula, delivery and usage requirements, penalty clauses, force majeure, and contract termination clauses.

STEPS WITHIN THE ACTIVITY:

1. Develop a preliminary energy pricing formula with lead agency and market agreement.
2. Prepare a draft energy contract.

MAJOR OBSTACLES: Failure to reach an agreement between the lead agency and market on the general terms and conditions and price, if appropriate.

MAJOR DECISIONS: Whether or not to develop a draft contract at this time; the preliminary price and whether to include price at all; who drafts contract; whether lead agency staff should work with market staff on drafting contract.

INPUT: Energy requirement and need data from A 20702, MA 106, MA 113 and MA 116.

OUTPUT: Draft energy contract (if it was decided to develop one).

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PT, IHS, C, LD
2. Responsible: PD
3. Must be Consulted: M, U, PUC
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 4 to 8 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: SD 10607

ACTIVITY: REVIEW ENERGY CONTRACT(S)

number 20704

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Market Commitments

MASTER ACTIVITY MILESTONE: Letters of Intent

PURPOSE: To review the draft contract and agree on the critical items which must be included.

DESCRIPTION: The draft energy contract(s) is reviewed by legal and bond counsel for the lead agency and by the markets legal counsel. Changes are made as necessary and agreement by both parties is obtained.

STEPS WITHIN THE ACTIVITY:

1. Lead agency and market attorneys review contract and modify, if necessary.
2. Approval of contract obtained from the project director or elected official for the lead agency, and the president or chairman of the board for the market.

MAJOR OBSTACLES: Unwillingness of market to commit itself to a draft contract. (May take the form of endless reviews and changes.)

MAJOR DECISIONS: Whether to pursue a long-term contract for energy; whether to use a detailed draft contract, or an outline or sample agreement.

INPUT: Draft contract (output of A 20703).

OUTPUT: Approval by lead agency and market officials of the draft contract (if developed).

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, LD, M, IHS, C, U, PM
2. Responsible: PD, LD, M, U
3. Must be Consulted: PUC, IB, BC
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 5 weeks. Range = 4 to 8 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN LETTERS OF INTENT

number 20705

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Market Commitments

MASTER ACTIVITY MILESTONE: Letters of Intent

PURPOSE: To document the market's endorsement of the project (and the draft contract, if developed) and to indicate a willingness to participate further.

DESCRIPTION: A letter of intent to purchase energy (possibly under a long-term contract at a tentative price) is obtained from the market. The letter endorses the draft contract (if developed) and is sought at this time to be factored into the decisions of MA 209, concerning risk assignment. Whether or not the market is solid enough for the project to continue, and what types of risks the market conditions represent is essential information. The key requirement is that the market treat the letter of intent as a binding document (even though it might not be) and obtain all the necessary internal sign-offs and approvals.

STEPS WITHIN THE ACTIVITY:

1. Draft letter of intent for approval by the market.
2. Request letter of intent from the market via a cover letter on the draft.
3. Discuss subsequently as required.
4. Obtain market letter of intent which may include price, and may also endorse the draft contract (if developed).

MAJOR OBSTACLES: Disagreement over details in the letter of intent.

MAJOR DECISIONS: Whether or not the energy market will provide a letter of intent; whether price should be included in the letter of intent.

INPUT: Current data on energy market(s) (output of A 20702); approved draft contract (output of A 20704), if developed.

OUTPUT: Letter of Intent

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, C, M
2. Responsible: PD
3. Must be Consulted:
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: SD 20705

ACTIVITY: RECONTACT INTERESTED MATERIALS MARKETS

number 20706

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Market Commitments

MASTER ACTIVITY MILESTONE: Letters of Intent

PURPOSE: To reestablish contact with potential materials markets, inform of the current project status, and ready them for further commitment in the project.

DESCRIPTION: Materials markets that submitted letters of interest are recontacted and informed of project progress, status and direction as a result of MA 202, MA 203 and MA 204.

STEPS WITHIN THE ACTIVITY:

1. Contact markets that submitted letters of interest in MA 108. Check if any new potential markets have developed since MA 108 was performed.
2. Discuss project status.
3. Discuss need for furthering the commitment, and its impact on proceeding further.
4. Coordinate with MA 203, if a source separation program is integrated into a larger scale program, so that the same market is not contacted twice for related items.

MAJOR OBSTACLES: None

MAJOR DECISIONS: None

INPUT: Letters of interest of MA 108.

OUTPUT: List of interested markets.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM
2. Responsible: PM
3. Must be Consulted:
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 0.5 weeks. Range = 0.25 to 1 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONFIRM MATERIAL AVAILABILITY AND MARKET REQUIREMENTS **number** 20707

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Market Commitments

MASTER ACTIVITY MILESTONE: Letters of Intent

PURPOSE: To proceed one step farther with materials markets requirements, and to define more exactly their needs and requirements for input to draft contract.

DESCRIPTION: Establish sufficient information on materials market specifications, quantity the market is willing to purchase and delivery arrangement.

STEPS WITHIN THE ACTIVITY:

1. Review data on quantity and quality of materials potentially recoverable.
2. Reconfirm recoverable quantity and specifications of the materials the market(s) is willing to purchase.
3. Provide the potential buyer with sample materials from existing facilities (if possible).
4. Determine storage and delivery requirements.

MAJOR OBSTACLES: Insufficient data on quantity and quality of potentially recoverable materials.

MAJOR DECISIONS: Determining realistic recoverable material quantity and quality estimates.

INPUT: Output from MA 105, MA 205 and market requirements.

OUTPUT: Necessary data to prepare letter of intent (and draft contract, if it is decided to develop one).

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PT, IHS, C
2. Responsible: PM
3. Must be Consulted: M
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 6 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE DRAFT CONTRACT

number 20708

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Market Commitments

MASTER ACTIVITY MILESTONE: Letter of Intent

PURPOSE: To prepare a draft contract for materials purchase so that terms, conditions, and rough prices are known.

DESCRIPTION: Determine price, specifications, and delivery requirements for materials and prepare a draft contract for materials.

STEPS WITHIN THE ACTIVITY:

1. Establish a material price and escalation clause.
2. Establish the length of contract.
3. Produce a draft contract with material quantity and specifications.

MAJOR OBSTACLES: Failure to reach agreement between the lead agency and the market(s) on the general terms and conditions, specifications, and price, if appropriate.

MAJOR DECISIONS: Whether or not to develop a draft contract at this time; determining an acceptable price and quality of the product.

INPUT: Data for draft contract from A 20707; additional market opinions.

OUTPUT: Draft material market contract (if it was decided to develop one).

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C, LD
2. Responsible: PD
3. Must be Consulted: M
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 3 to 5 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW MATERIALS CONTRACT

number 20709

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Market Commitments

MASTER ACTIVITY MILESTONE: Letters of Intent

PURPOSE: To review the draft contract for agreement in principle and in detail.

DESCRIPTION: Draft recovered materials contract is reviewed by legal and bond counsel for the lead agency and by the markets legal council. Changes are made as necessary and agreement by both parties is obtained.

STEPS WITHIN THE ACTIVITY:

1. Lead agency and market attorneys review contract(s) and modify as required.
2. Approval of contract(s) is obtained from the project director or elected official for the lead agency, and the president or chairman of the board for the market.

MAJOR OBSTACLES: Unwillingness of the market to commit itself to a draft contract.

MAJOR DECISIONS: Decision to include materials recovery in project scope.

INPUT: Draft materials market contract (output of A 20708).

OUTPUT: Approval by the lead agency and market(s) of the draft contract (if developed).

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, LD, M, IHS, C, PM
2. Responsible: PD, LD
3. Must be Consulted: IA, EO
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 4 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN LETTERS OF INTENT

number 20710

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Market Commitments

MASTER ACTIVITY MILESTONE: Letters of Intent

PURPOSE: To document the market(s) endorsement of the project (and the draft contract, if developed) and to indicate a willingness to participate further.

DESCRIPTION: A letter of intent to purchase materials (possibly including a stated period of time and a stated price with escalators) is obtained from each materials market. Reference should be made to the draft contract, if one has been developed. The key requirement is that the market treat the letter of intent as a binding document (even though it might not be) and obtain all the necessary internal sign-offs and approvals.

STEPS WITHIN THE ACTIVITY:

1. Draft letter of intent for approval by the market(s).
2. Request letter of intent from the market(s) via a cover letter on the draft.
3. Follow up the request with telephone calls, meetings, briefings and discussion as necessary.
4. Obtain market(s) letter(s) of intent which may include length of contract, price and may also endorse the draft contract (if developed).

MAJOR OBSTACLES: Disagreement over details in the letter of intent.

MAJOR DECISIONS: Whether or not the materials market(s) should be solicited for a letter of intent; whether price should be included in the letter of intent.

INPUT: Current data on materials market(s) (output of A 20707).

OUTPUT: Letters of Intent.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM, M
2. Responsible: PD
3. Must be Consulted: M
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: SD 20710

MASTER ACTIVITY: UPDATE PROJECT DEFINITION AND COSTS

number 208

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Determine Project Costs

PURPOSE: To update project cost estimates based on secured sites, further commitments from waste suppliers and markets and the decisions and options from the selection of technology(s), risk assignment, procurement and financing approaches developed concurrently during MA 209.

DESCRIPTION: Facility costs are refined based on secured sites, the amount of waste committed (taking into account source separation) and the preliminary agreements with the energy and materials markets. Previously calculated (MA 201 and MA 204) transportation costs continue to be incorporated to estimate tipping fee and life cycle costs. This master activity is performed in conjunction with MA 209 and adjusted accordingly.

MAJOR OBSTACLES: Disagreement on the facts are presented; disagreements on the method of analyzing the costs.

MAJOR DECISIONS: Whether or not to perform this master activity, since if very little change in the project has occurred during MA 205, MA 206 and MA 207, the results of either MA 201 or MA 204 may be used.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, PT, IHS, C
2. Must be Consulted or Notified: EO, M, AO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 6.5 weeks.
2. Work Effort: Average = 22 work days.
3. Funding: $6,000

REFERENCES: R2, R3, R5, R17, R19, R20, R22, R23, R111

SAMPLE DOCUMENTS: NR

ACTIVITY: REDEFINE PROJECT PARAMETERS

number 20801

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Update Project Definition and Costs

MASTER ACTIVITY MILESTONE: Determine Project Costs

PURPOSE: To define project configuration based on secured sites, environmental considerations, and further commitments from waste suppliers and markets.

DESCRIPTION: Restatement of conclusion and decisions made to date in Phase II, adjusting the output of MA 204 as necessary to suit results obtained from MA 205, MA 206 and MA 207, and the decisions being made concurrently in MA 209.

STEPS WITHIN THE ACTIVITY:

1. Restate:
   - markets
   - wasteshed boundaries and waste quantity
   - facility and disposal sites
   - acceptable technologies (from MA 209)
   - transportation network

MAJOR OBSTACLES: Disagreement on the facts as presented.

MAJOR DECISIONS: Project adjustments based on developments of MA 205, MA 206, MA 207 and MA 209.

INPUT: Results of Phase II to date, concurrent decisions from MA 209.

OUTPUT: Statement of project.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PM
3. Must be Consulted:
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 0.2 weeks. Range = 0.1 to 0.5 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: UPDATE PROJECT COST ESTIMATE

number 20802

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Update Project Definition and Costs

MASTER ACTIVITY MILESTONE: Determine Project Costs

PURPOSE: To update project costs based on redefined project configuration taking into account secured sites, environmental considerations, and further commitments from waste suppliers and markets.

DESCRIPTION: A cost estimate is developed based on the redefined project (output of A 20801).

STEPS WITHIN THE ACTIVITY:

1. Update facility capacity taking into account source separation programs and capital and operating costs.
2. Update material and energy revenue projections.
3. Update transportation network and costs.
4. Determine the tipping fee and life cycle costs for procurement approaches and risk structures being determined in MA 209.

MAJOR OBSTACLES: Disagreement on the method of analyzing the costs.

MAJOR DECISIONS: Cost estimate assumptions and method.

INPUT: Output of A 20801, MA 201 and MA 204.

OUTPUT: Tipping fee and life cycle cost estimates for project configuration(s).

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PD
3. Must be Consulted:
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: SUMMARIZE PROJECT COSTS AND INCORPORATE INTO MA 209 REPORT

number 20803

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Update Project Definition And Costs

MASTER ACTIVITY MILESTONE: Determine Project Costs

PURPOSE: To document project configuration and costs.

DESCRIPTION: Capital, operating and life cycle costs are documented and summarized for the project configuration developed in A 20801 and 20802, as modified by MA 209. The results are incorporated into the report being written at the end of MA 209.

STEPS WITHIN THE ACTIVITY:

1. Tabulate and graph costs.
2. Write narrative explaining costs.
3. Incorporate as a section of the report being written in A 20906.

MAJOR OBSTACLES: None.

MAJOR DECISIONS: None.

INPUT: Outputs of A 20801 and A 20802.

OUTPUT: Section of report A 20906.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PM
3. Must be Consulted:
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW STATE-OF-THE-ART

number 20901

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Select Technology(s), Risk Assignment, Procurement and Financing Approach; Write Report.

MASTER ACTIVITY MILESTONE: Report Stating Selected Technology(s), Procurement and Financing Approach, and Risk Assignment.

PURPOSE: To summarize the advantages and disadvantages of various RR technologies based on operating history, technical performance, and specific project limitations.

DESCRIPTION: Identification of RR technologies that are compatible with the markets and site(s), stating the technology performance history and the pros and cons of each for the particular application.

STEPS WITHIN THE ACTIVITY:

1. Identify the technologies that are compatible with markets and site(s).
2. Investigate and summarize the present status of the technology; update MA 104 (Conduct Technology Analysis).
3. Perform a comparative analysis among technologies based on such factors as capital and operating cost, operating history, and adaptability.

MAJOR OBSTACLES: Disagreements on the facts as presented.

MAJOR DECISIONS: Criteria for comparing technologies; validity of system performance data.

INPUT: Technology literature review, RR plant visits; output from all of Phase II to date.

OUTPUT: Technical comparison of compatible technologies.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD, PM
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 8 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: SELECT MOST PROBABLE TECHNOLOGY(S)

number 20902

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Select Technology(s), Risk Assignment, Procurement and Financing Approach; Write Report

MASTER ACTIVITY MILESTONE: Report Stating Selected Technology(s), Procurement and Financing Approach, and Risk Assignment.

PURPOSE: To formally select the most appropriate RR technology(s) for the project.

DESCRIPTION: The project team evaluates the state-of-the-art review (A 20901) and selects an appropriate RR technology(s).

STEPS WITHIN THE ACTIVITY:

1. Review state-of-the-art assessment.
2. Trips to appropriate operational facilities are made as necessary.
3. Discuss the technologies with investment banker and bond counsel.
4. Select the most appropriate technology(s) to implement.

MAJOR OBSTACLES: Disagreement on the facts as presented; lack of consensus on the most appropriate technology(s).

MAJOR DECISIONS: Selection of most appropriate technology(s).

INPUT: Output from A 20901.

OUTPUT: Formal selection of RR technology(s).

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, PT, IHS, C
2. Responsible: PD
3. Must be Consulted: IB
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DEFINE RISKS

number 20903

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Select Technology(s), Risk Assignment, Procurement and Financing Approach; Write Report
MASTER ACTIVITY MILESTONE: Report Stating Selected Technology(s), Procurement and Financing Approach, and Risk Assignment.
PURPOSE: To state project risks for different procurement and financing approaches based on analysis of institutional constraints.

DESCRIPTION: An analysis of different public risk postures and the associated financing impact and implications it performed. Risks are based on the results of MA 201, MA 204, MA 205, MA 206, and MA 207.

STEPS WITHIN THE ACTIVITY:
1. Review output of master activities.
2. Define risk areas such as waste stream control and guaranteed tonnage, facility capacity, ownership, operation, procurement approach, and market security in terms of economic impact on disposal cost and capital debt exposure (performed concurrently with MA 208).
3. Consult with investment banker and bond counsel on risk analysis.
4. Identify problems resulting from various risk postures.
5. Present results to project team.

MAJOR OBSTACLES: Disagreement on the facts as presented.

MAJOR DECISIONS: Method used to quantify risks in terms of economic impact.

INPUT: Output from MA 201, MA 204, MA 205, MA 206, and MA 207.

OUTPUT: Identification and economic quantification of project risks.

ROLES AND RESPONSIBILITIES:
1. Does Work: PM, IHS, C
2. Responsible: PD
3. Must be Consulted: IB, BC
4. Must be Notified:

ESTIMATING DATA:
1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH PROCUREMENT AND FINANCING APPROACH

number 20904

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Select Technology(s), Risk Assignment, Procurement and Financing Approach; Write Report.

MASTER ACTIVITY MILESTONE: Report Stating Selected Technology(s), Procurement and Financing Approach, and Risk Assignment.

PURPOSE: To obtain the preferred procurement and financing approach for the project.

DESCRIPTION: The risks and financial implications of the various procurement and financing options are evaluated. Based on advice from the investment banker and bond counsel, a particular procurement and financing approach is selected and risks are assigned.

STEPS WITHIN THE ACTIVITY:

1. Establish preference regarding public/private ownership and/or operation of the RR system.
2. Review the risk analysis for impact on procurement and financial options. Incorporate technological risks from A 20902.
3. Review procurement and financing constraints.
4. Consult with investment banker and bond counsel.
5. Select procurement approach.
6. Select financing approach.
7. Assign risks.

MAJOR OBSTACLES: Lack of consensus on financing and procurement approach and/or assignment of risks.

MAJOR DECISIONS: Which procurement and financing approach to select.

INPUT: Output from A 20902, A 20903, and MA 206.

OUTPUT: Decision on procurement and financing approach.

ROLES AND RESPONSIBILITIES:

1. Does Work: IB, PD, PM, IHS, C
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE REPORT

number 20905

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Select Technology(s), Risk Assignment, Procurement and Financing Approach; Write Report.
MASTER ACTIVITY MILESTONE: Report Stating Selected Technology(s), Procurement and Financing Approach, and Risk Assignment.
PURPOSE: To document decisions on preferred technology, procurement and financing approach, risk assignment, and costs.

DESCRIPTION: Prepare a report summarizing the decisions made in MA 209 and MA 208. The report is used as a basis and backup for presentations during the Political/Public Decision To Proceed (MA 210) and it includes an action plan and budget for the next phase.

STEPS WITHIN THE ACTIVITY:

1. Review analysis and decisions made in MA 209.
2. Write report.
3. Develop an action plan and budget for the next phase.
4. Incorporate cost analysis from MA 208.
5. Project team reviews and comments on report.
6. Project team comments are incorporated.
7. Project team adopts report.

MAJOR OBSTACLES: Lack of consensus regarding action plan and budget for next phase.

MAJOR DECISIONS: Tasks to be included in action plan; the budget for next phase.

INPUT: Output from A 20901 - A 20905.

OUTPUT: Report summarizing MA 209, including project cost summary from MA 208, and an action plan and budget for the next phase.
ROLES AND RESPONSIBILITIES:

1. Does Work: PT, IHS, C
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 8 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: OBTAIN POLITICAL/PUBLIC DECISION TO PROCEED

number 210

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Letters Of Support And Endorsement, Appropriated Budget For Next Phase, Adopted Resolution To Proceed

PURPOSE: To obtain an official decision to proceed with the project as defined in Phase II from all involved agencies.

DESCRIPTION: A proposed project scope has been developed by the project team with the cooperation of some elected officials. However, in this master activity, all participating elected officials formally accept the project structure, and then make a decision to proceed to Phase III. While elected officials may agree with the project, they should get public reaction and support before they make a decision to proceed. Part of the activity is for the elected officials of both the lead agency and any participating communities to come to a conscious decision to endorse the project, to so state the support, and to demonstrate their commitment by resolution to appropriate the required funds budgeted for Phase III in MA 209.

MAJOR OBSTACLES: Elected officials decide to terminate project in present scope.

MAJOR DECISIONS: Whether or not to proceed with the project structure, risk assignment, and procurement and financing approach.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, IHS, C, EO
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 12 weeks. Range = 4 to 20 weeks.
2. Work Effort: Average = 38 work days.
3. Funding: $10,000

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONDUCT BRIEFINGS TO ELECTED OFFICIALS

number 21001

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Obtain Political/Public Decision To Proceed

MASTER ACTIVITY MILESTONE: Letters Of Support And Endorsement, Appropriated Budget For Next Phase, Adopted Resolution To Proceed

PURPOSE: To brief elected officials on project scope, economics, and proposed procurement, financing and risk approaches.

DESCRIPTION: Briefings are made to elected officials informing them of the project structure. Some of them were involved in developing the project, but now they all must review the project and reach a consensus. (A 21001 - A 21005 are conducted according to the sequence and protocol set in MA 101 and MA 115 and used in MA 117 and throughout the project).

STEPS WITHIN THE ACTIVITY:

1. Prepare briefing to elected officials; preview with key officials as developed.
2. Arrange media coverage for briefing.
3. Hold the briefing - present the project scope and budget for Phase III work.
4. Obtain feedback.
5. Obtain verbal agreement from elected officials on project structure, and on budget for Phase III work.

MAJOR OBSTACLES: Elected officials want major revisions in project structure.

MAJOR DECISIONS: How the project team should respond if project revisions are requested by elected officials.

INPUT: Output from A 20906, MA 117 and MA 204.

OUTPUT: Agreement on project structure by the elected officials.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PD, IHS, C
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONDUCT BRIEFINGS TO GOVERNING BODIES

number 21002

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Obtain Political/Public Decision To Proceed

MASTER ACTIVITY MILESTONE: Letters Of Support And Endorsement, Appropriated Budget For Next Phase, Adopted Resolution To Proceed

PURPOSE: To provide information to the official governmental bodies which will make the decision to proceed.

DESCRIPTION: This activity is an extension of the previous one and moves the project close to the decision point by having the presentation during an official meeting(s) of the elected officials. (This activity is conducted according to sequence set in MA 101 and MA 115, used in MA 117 and throughout project).

STEPS WITHIN THE ACTIVITY:

1. Prepare presentation.
2. Arrange meetings with media coverage, if different from A 21001.
3. Hold briefings, answer questions.
4. Obtain feedback and verbal project endorsement.

MAJOR OBSTACLES: Public disagreement with facts as presented.

MAJOR DECISIONS: What information to present in the briefing.

INPUT: Output from A 20906.

OUTPUT: Written and verbal project endorsement.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PD, IHS, C, EO
2. Responsible: PD, EO
3. Must be Consulted:
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONDUCT BRIEFINGS TO MEDIA

number 21003

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Obtain Political/Public Decision To Proceed

MASTER ACTIVITY MILESTONE: Letters Of Support And Endorsement, Appropriated Budget For Next Phase, Adopted Resolution To Proceed

PURPOSE: To inform press of proposed project scope so that accurate information can be transmitted to the public through the electronic and print media.

DESCRIPTION: A meeting is set up with the local newspapers and television to release information on the project scope and structure (A 21001 - A 21005 are conducted according to the sequence and protocol set in MA 101, MA 115 and used in MA 117, and throughout the project).

STEPS WITHIN THE ACTIVITY:

1. The project team meets to discuss information to be released to the press.
2. Briefing is prepared including press release and fact sheet.
3. Briefer selected.
4. A meeting is held with press, and pertinent details, facts and findings are outlined.

MAJOR OBSTACLES: Disagreement with facts as presented.

MAJOR DECISIONS: What information should be released to the press.

INPUT: Report and conclusions from report of A 20906.

OUTPUT: Meeting with press followed by the publication of articles on the project.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, PD, EO, C
2. Responsible: PD
3. Must be Consulted: EO, AO of other jurisdictions.
4. Must be Notified: Press

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = .5 to 2 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONDUCT BRIEFINGS TO INTERESTED CITIZEN GROUPS

number 21004

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Obtain Political/Public Decision To Proceed

MASTER ACTIVITY MILESTONE: Letters Of Support And Endorsement, Appropriated Budget For Next Phase, Adopted Resolution To Proceed

PURPOSE: To gain project support from local citizen groups.

DESCRIPTION: Hold a briefing with citizen groups to present the project structure and environmental impacts and obtain feedback on their interest and concerns. Citizens have been contacted for their input throughout the project (MA 117, MA 203). Their ideas have been incorporated in the project where feasible. This briefing is to present the final project structure and to obtain support.

STEPS WITHIN THE ACTIVITY:

1. Prepare briefing.
2. Arrange media coverage.
3. Hold briefing.
4. Obtain feedback.
5. Obtain support.

MAJOR OBSTACLES: Disagreement with facts as presented.

MAJOR DECISIONS: What information to present in the briefing; how to field objections and deal with them.

INPUT: Output from A 20906, A 20209, A 21002, A 21003.

OUTPUT: Support from citizen groups.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PD, IHS, C, EO
2. Responsible: PD
3. Must be Consulted: PT
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONDUCT BRIEFINGS TO PUBLIC

number 21005

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Obtain Political/Public Decision To Proceed

MASTER ACTIVITY MILESTONE: Letters Of Support And Endorsement, Appropriated Budget For Next Phase, Adopted Resolution To Proceed

PURPOSE: To inform public of the proposed RR project and its associated economic and environmental impacts, and address concerns of specific segments of the public who may be affected by project (e.g. sites, rate setting, other problems).

DESCRIPTION: Public meetings are advertised and held. The history of the project, direction, accomplishments and barriers are reviewed, as well as the status of the project and the need for public support to proceed. Questions and comments are solicited.

STEPS WITHIN THE ACTIVITY:

1. Prepare briefing, advertise meetings.
2. Arrange media coverage of briefing.
3. Hold briefing.

MAJOR OBSTACLES: Disagreement with facts as presented.

MAJOR DECISIONS: Whether or not a separate public briefing in addition to others is required; what information to present to the public.

INPUT: Output from A 20906 and A 11705, and coordination with A 21001 - A 21004 as useful.

OUTPUT: Project support from the general public.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, PM, IHS, C
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified: P

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN FEEDBACK, LETTERS OF SUPPORT AND ENDORSEMENT

number 21006

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Obtain Political/Public Decision To Proceed

MASTER ACTIVITY MILESTONE: Letters Of Support And Endorsement, Appropriated Budget For Next Phase, Adopted Resolution To Proceed

PURPOSE: To obtain formal support of the project from state, county and local government officials and citizen groups as a basis for decision which will advance the project into Phase III.

DESCRIPTION: Letters of project support are requested, and an outline of the necessary ingredients of the letter is developed.

STEPS WITHIN THE ACTIVITY:

1. Project director requests letter of support, and follow up to assure some response.
2. Letters of support received, recorded and compiled.
3. Letters are summarized and readied for presentation of decision.

MAJOR OBSTACLES: Elected officials will not supply a letter of support.

MAJOR DECISIONS: Agreement of participants to submit letter of support, and the language thereof.

INPUT: Output from A 11702, A 11703 and A 11704.

OUTPUT: Letters of support from local, county and state officials.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, C
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 1 to 6 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: SD 21006

MASTER ACTIVITY: ESTABLISH ADMINISTRATIVE FRAMEWORK (TURNKEY)

number 301

PHASE: III, Resource Recovery System Procurement

MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule the Procurement Process

PURPOSE: To identify and secure commitments from the public and private organizational resources necessary to carry out the procurement process and to structure and schedule this process so as to accommodate the required inputs.

DESCRIPTION: During Phase II, the elected officials have selected or created a lead agency for Phase III. This agency now reviews the project status and then determines and obtains commitments from the project team participants, hires consultants, establishes and maintains liaison with involved agencies, plans for public and industry involvement, and outlines the approach for soliciting and evaluating proposals from private industry (some or all of this may already be established and does not have to be repeated).

MAJOR OBSTACLES: Insufficient personnel or funding; in-fighting among agencies; weak commitments from key political and agency personnel.

MAJOR DECISIONS: Selection of lead agency and key personnel; composition of the project team for Phase III; selection of consultants; plans for public and industry involvement; procurement plan and schedule.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, LA, C, PT
2. Must be Consulted or Notified: EO, IA, M, IG, P

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 5 to 19 weeks.
2. Work Effort: Average = 38 work days.
3. Funding: $10,000

REFERENCES: R2, R6, R9, R12

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW PROJECT TEAM

number 30101

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Turnkey)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To apprise project team members of their responsibilities in this phase of the program, and to solicit new members as necessary.

DESCRIPTION: This activity provides a review of the existing project team for the capabilities necessary for Phase III. Suggested Capabilities: solid waste management, economic analysis, major systems procurement, environmental assessment and regulation, civil engineering, legal counseling, public finance.

STEPS WITHIN THE ACTIVITY:

1. Review the project team for the presence of the necessary inputs.
2. Identify areas of need and solicit public and/or private inputs to fulfill.
3. Review roles and responsibilities -- assign new areas.
4. Conduct a review of consultant's capability and decide whether additional consulting assistance is advisable. If so, the needs are so noted, and A 30104 becomes necessary. If not, A 30104 is unnecessary and is skipped.

MAJOR OBSTACLES: Difficulty in maintaining the active involvement of existing members if project team grows too large.

MAJOR DECISIONS: Whether or not there are desirable additions to the project team over and above those already established; how are such additions best provided; whether further consulting assistance is required.

INPUT: Existing team members, A 10103 - A 10105.

OUTPUT: Project team for Phase III.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with assistance from PT, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: FURTHER LIAISON WITH OTHER PUBLIC AGENCIES

number 30102

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Turnkey)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep other agencies informed as to progress on the project.

DESCRIPTION: A framework for cooperation between the lead agency and contacts with affected and involved agencies not represented on the project team is developed and maintained. The lead agency and the project team should identify those agencies, apprise them of the project status, determine their involvement with the project, and provide updates at regular intervals throughout the procurement phase.

STEPS WITHIN THE ACTIVITY:

1. Identify agencies with potential interest in the project.
2. Correspond with the agency director, provide a project status report, request that the director or key staff member serve as project contact.
3. Maintain liaison through regular updates.

MAJOR OBSTACLES: No agency interest.

MAJOR DECISIONS: With which of the agencies contacted should a regular liaison be maintained.

INPUT: Previous contacts from Phases I and II.

OUTPUT: List of agency contacts to be provided with project updates at regular intervals.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, EO maintain contact; LA with assistance from PT, C
2. Responsible: PD
3. Must be Consulted: AO, MPE, EA-(S), EA-(L)
4. Must be Notified: IA: directors - staff contacts.

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: FURTHER LIAISON WITH POLITICAL PROCESS

number 30103

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Turnkey)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep elected officials informed on progress of the project.

DESCRIPTION: Key elected officials at local and State level are identified, apprised of the project background and status, and provided with periodic updates.

STEPS WITHIN THE ACTIVITY:

1. Identify elected officials and staff who should be kept informed of the project.
2. Establish contact and provide information on the background and status of the project, according to protocol of MA 101, MA 117 and MA 210.
3. Maintain contact with periodic updates and by responding to requests for information initiated by the contact.

MAJOR OBSTACLES: None

MAJOR DECISIONS: Who should be kept informed; continued previous protocol.

INPUT: Suggestions from the project team; request from interested elected officials.

OUTPUT: List of persons and organizations to be kept informed of project developments.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with support from PT
2. Responsible: PD with support from PM and PT
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: RETAIN CONSULTANT(S) (OPTIONAL)

number 30104

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Turnkey)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To retain consultant(s) to assist in the project if required.

DESCRIPTION: Consultant(s) should be retained to assist in the preparation of proposal solicitations, evaluations of proposals, negotiations of contracts, financing, and other procurement and implementation activities.

STEPS WITHIN THE ACTIVITY:

1. Solicit suggestions and advertise for additional consultant(s), if necessary.
2. Receive qualifications and invite qualified firms to present a suggested approach.
3. Contact references and previous clients.
4. Evaluate new firm(s), make selection, negotiate contract(s); negotiate and renew contract with existing firms who will continue on the project, if necessary.

MAJOR OBSTACLES: Constraints on procuring services.

MAJOR DECISIONS: Whether or not additional consulting support is needed; selection of consulting firm(s).

INPUT: References from other RR projects; MA 102.

OUTPUT: Firm(s) for procurement phase hired.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with support from PT
2. Responsible: PM
3. Must be Consulted: IA
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 6 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH LIAISON WITH SPECIFIC PERMIT AGENCIES

number 30105

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Turnkey)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities of Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep Permit Agencies informed and involved; to renew contacts in agencies if excessive time has elapsed in MA 210.

DESCRIPTION: A complete list of the agencies involved in approving siting, construction and operating permits should be developed and, for each agency, a contact identified. The agencies should be informed of the background and status of the project and requested to provide a list of potential permit requirements. In many cases, the contacts in individual agencies are already known from previous phases.

STEPS WITHIN THE ACTIVITY:

1. Develop a list of all permit agencies with potential involvement in the project. Note previous contacts.
2. Contact agency administrators. Inform them of the project status and review the list of potential permit requirements from each agency.
3. Identify a key staff member from each agency to provide ongoing project liaison.
4. Maintain contact with periodic updates and requests for information.

MAJOR OBSTACLES: Confusion concerning permit requirements and agency responsibilities for the RR project which may not have been settled previously.

MAJOR DECISIONS: What agencies are to have permit responsibilities for the project; whether new liaison or continued liaison with agency from previously is required.

INPUT: Permit requirements from DPW, and MA 103 and MA 202.

OUTPUT: List of permit agencies and major permit requirements for the project; contact with the agencies.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with assistance from PT, EA-(S), EA-(L), C, DPW
2. Responsible: PD
3. Must be Consulted: Agencies involved in permit process for the project.
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONTINUE PROCESS FOR PUBLIC INVOLVEMENT

number 30106

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Turnkey)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule the Procurement Process

PURPOSE: To keep public informed.

DESCRIPTION: Public information meetings, citizen participation in proposal evaluations, referenda concerning project acceptance and interaction with interest groups are all potential components of the procurement process. The legal and political needs of these activities should be assessed and appropriate mechanisms devised. Liaison with the press and with key citizens and interest groups should be established. Responsibilities for public involvement activities should be clearly defined within the project in many cases, precedents for this process exist from MA 101, MA 201, MA 204, MA 210 and ongoing activities.

STEPS WITHIN THE ACTIVITY:

1. Discuss the need for public information and involvement with elected officials and with others experienced in siting and constructing public projects.
2. From discussions, develop strategies for meeting these needs.
3. Determine project team roles for public information involvement, and structure citizen input, if required.
4. Maintain liaison with press, key individuals, and interest groups; support citizen involvement.

MAJOR OBSTACLES: Inexperience of project team in dealing with public.

MAJOR DECISIONS: What the public information and involvement needs are; what kind of role the public should play in the procurement process.

INPUT: Assessment of needs provided by elected officials; examples of public involvement in other projects, and in other phases of this project.

OUTPUT: Plan for public information and involvement during the procurement process.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with assistance from EO, C, PT
2. Responsible: PM, PD
3. Must be Consulted: EO
4. Must be Notified: IG

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE MARKET INVOLVEMENT IN PROCUREMENT

number 30107

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Turnkey)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep market(s) informed and involved.

DESCRIPTION: Determine the information required from the contemplated energy market and the potential for their involvement in the evaluation of proposals. The major energy market may desire to be part of the project team, if not already included, and may wish to be part of the RFQ/RFP evaluation team. In many cases, this may have been decided in Phases I or II.

STEPS WITHIN THE ACTIVITY:

1. Determine the desirability and nature of the markets involvement in proposal evaluations.
2. Establish market participation and obtain their commitment for time and participation, if appropriate.

MAJOR OBSTACLES: Market(s) refuses to cooperate.

MAJOR DECISIONS: Whether or not there is a need for market involvement in the proposal evaluation.

INPUT: Output of MA 106 and MA 207.

OUTPUT: Decision of energy market involvement.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA, C
2. Responsible: PD
3. Must be Consulted: U, M
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE PARAMETERS

number 30201

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Turnkey)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To determine the categories of information that match the specific project and should be included in the RFP.

DESCRIPTION: There are no standard RFP's; the contents of each must match the goals of each specific project. The categories of information (either to be described by the sponsor or to be requested of the proposer) are determined in advance of the actual writing. In the case of co-disposal, the project determined in MA 116, MA 201, MA 209 and MA 210 is used as technical input for the RFP. The impact of an existing source separation project is factored in. The RFP notes that preliminary design of MA 307 in support of MA 324 and MA 325 will require funding, and the RFP or draft contracts should indicate the source.

STEPS WITHIN THE ACTIVITY:

1. Review project definition and RFP checklist.
2. Ascertain that the outline addresses technical, environmental, managerial, economic and financial aspects.
3. Ascertain that special technical considerations like market constraints, co-disposal, and source separation (from Phases I and II) are well-documented and well understood.
4. Decide whether to update waste quantity or sludge quantities (co-disposal). If so, update.
5. Also ascertain that information on site conditions (including subsurface data, if available), markets and letters of intent, waste supply, and outline of the financial plan are included in the RFP.
6. Write the RFP outline.

MAJOR OBSTACLES: Disagreements about procurement concepts, roles, and level of detail required.

MAJOR DECISIONS: Items to include on RFP; the source of funding required in MA 307 (preliminary design) for environmental assessment and permit acquisition of MA 304 and MA 306, respectively.

INPUT: Decisions from MA 208, MA 209 and MA 210.

OUTPUT: Outline of RFP.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C, LC
2. Responsible: PD
3. Must be Consulted: NR
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: RFP checklist in R6

ACTIVITY: ADVISE POTENTIAL CONTRACTORS

number 30202

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Turnkey)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To communicate to system contractors that an RFQ or RFP is being developed.

DESCRIPTION: A brief summary statement of the project should be issued to the major system contractors and to the solid waste communication network (journals, newsletters, EPA, U.S. Department of Energy, etc.) that an RFQ or RFP is in the offing. The statement should include the type of system, the form of financing, capacity, and approximate time of RFQ or RFP issuance. It should state that interested companies write the lead agency requesting receipt of the documents. At least three weeks should be allowed for complete distribution of the announcement.

STEPS WITHIN THE ACTIVITY:

1. Summarize project. Issue statement via selected mailout or other appropriate means so that potential system can be explained.
2. Identify potential contractors, establish and continue communications channels with those identified.

MAJOR OBSTACLES: None

MAJOR DECISIONS: Which aspects of the communication network should be used; agreement upon system description, financing and procurement language to be used in RFQ/RFP.

INPUT: Decisions from MA 208 and MA 209.

OUTPUT: Announcement of project and receipt of letters of interest from companies.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM
2. Responsible: PD
3. Must be Consulted:
4. Must be Notified: LA, IA

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE RFQ AND EVALUATION CRITERIA (OPTIONAL)

number 30203

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Turnkey)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To produce the document which will be used to qualify contractors for receipt of an RFP.

DESCRIPTION: The RFQ requests the submission of company qualifications in a formal evaluation procedure designed to limit the recipients of the RFP. Use of an RFQ facilitates proposal evaluation, saves unqualified proposers money and effort, and encourages complete responses from the qualified proposers. The evaluation criteria is predetermined and issued with the RFQ to indicate the type of response required. The RFQ also contains a draft copy of the RFP to inform the potential responder fully of the nature and extent of the project. Some jurisdictions however, may not allow the use of an RFQ (refer to MA 113, MA 114, MA 209, and A 30204.)

STEPS WITHIN THE ACTIVITY:

1. Draft RFQ and evaluation criteria.
2. Review drafts with the project team.
3. Incorporate project team comments and finalize RFQ.

MAJOR OBSTACLES: Contracting regulations which do not allow use of the RFQ to limit issuance of RFP.

MAJOR DECISIONS: Whether to issue RFQ, or to issue RFP to all interested companies.

INPUT: Results of MA 113, MA 114, MA 209 and A 30204.

OUTPUT: RFQ and evaluation criteria.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C
2. Responsible: PM
3. Must be Consulted: LC
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: PREPARE DRAFT RFP AND DRAFT CONTRACT

number 30204

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Turnkey)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To produce a draft RFP and draft contract for review and consideration by potential contractors.

DESCRIPTION: The turnkey procurement, similar to full service, invites potential contractors to comment on the RFP. This dialogue enables proposing firms to assist the lead agency in developing a project which is consistent with their capabilities and established procedures for the sake of efficiency, economy, and cooperation. A draft contract is included to fully apprise the contractors of the responsibilities intended for the successful proposer. The RFP indicates that the eventual contractor may be required to provide preliminary design and detailed design data in support of MA 304 and MA 306.

STEPS WITHIN THE ACTIVITY:

1. Delegate writing tasks to members of four administrative areas, if desired (refer to MA 301): technical, management, economics and financing, and environmental.
2. Refer to RFP outline (A 30201).
3. Draft RFP and distribute internally for review.
4. Draft contract and submit to lead or bond counsel for review.
5. Revise documents and submit to project director for approval.

MAJOR OBSTACLES: Insufficient time to develop completely all four administrative areas; disagreement over form and/or content.

MAJOR DECISIONS: Whether to include draft contract, level of detail of draft contract.

INPUT: A 30201, MA 304 and MA 306.

OUTPUT: Draft RFP and draft contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C, LC
2. Responsible: PM
3. Must be Consulted: PD, IA
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 4 to 12 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ISSUE RFQ WITH DRAFT RFP (OPTIONAL)

number 30205

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Turnkey)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To distribute RFQ to interested companies.

DESCRIPTION: The RFQ's are issued with adequate time allowed for response by all interested companies (2 - 3 weeks). The list of companies results from a previous announcement (A 30202). The RFQ specifies the submission location and deadline, and the requirements for a bond. A statement describing the treatment of confidential or proprietary information is included.

STEPS WITHIN THE ACTIVITY:

1. Determine the date and location of the receipt of responses.
2. Determine the desired bond.
3. Review and issue RFQ.

MAJOR OBSTACLES: Major policy changes on the part of the lead agency or markets.

MAJOR DECISIONS: Date and location of response submission; bond requirements.

INPUT: List of interested companies from A 30202.

OUTPUT: Distributed RFQ.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 4 to 8 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: EVALUATE RFQ RESPONSES AND QUALIFY COMPANIES (OPTIONAL)

number 30206

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Turnkey)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To determine which of the responding companies are qualified for receipt of an RFP.

DESCRIPTION: Evaluation of company qualifications need not be as detailed as the proposal evaluations, but it cannot be arbitrary and should produce sufficient justification for the elimination of proposers. A rating scheme may be used to ensure that all factors are considered, and relative weights may be assigned the more important categories. The evaluation team should be representative of the four principal areas (technical, environmental, management, and economics and financing) and the evaluation criteria issued with the RFQ should be used. All responses should be logged in and their location recorded.

STEPS WITHIN THE ACTIVITY:

1. Create rating scheme.
2. Organize evaluation team (if possible, before receipt of responses).
3. Receive and log in responses.
4. Perform evaluation.
5. Select qualified companies.
6. Inform selected companies.
7. Inform nonselected companies and explain reasons.

MAJOR OBSTACLES: Insufficient criteria leading to unclear justification for elimination.

MAJOR DECISIONS: Acceptability of late responses; acceptability of incomplete responses.

INPUT: Responses to RFQ; evaluation criteria.

OUTPUT: List of qualified companies.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: Responding Companies.

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 5 weeks.
2. Work Effort: Average = 25 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: MEET WITH COMPANIES

number 30207

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Turnkey)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To discuss project and draft RFP with qualified companies.

DESCRIPTION: Due to the complexity of RR projects, it is advantageous to solicit comments from the prospective proposers concerning the contents and organization of the RFP. This dialogue serves to resolve ambiguities and to tailor the RFP to the systems under consideration.

STEPS WITHIN THE ACTIVITY:

1. Inform qualified companies (or all interested companies) of their selection and of the time and place of the meeting.
2. Ensure the presence of representatives from the various agencies to answer questions concerning the scope of the project.
3. Transcribe the entire meeting for later reference when revising the RFP.

MAJOR OBSTACLES: Appropriate representatives unable or unwilling to attend meeting; few participating proposers.

MAJOR DECISIONS: Who should attend the meeting and its organization.

INPUT: Output of either A 30206 or A 30202.

OUTPUT: Transcript of proceedings.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: LA, IA, C, LC

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: FINALIZE RFP

number 30208

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Turnkey)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To produce the RFP in its final form.

DESCRIPTION: The comments gathered during the company meeting are evaluated for acceptability and incorporated as revisions in the RFP.

STEPS WITHIN THE ACTIVITY:

1. Review transcript of meeting and summarize comments.
2. Discuss and evaluate comments.
3. Revise and review the RFP.
4. Final RFP is reviewed by project director and presented to elected officials, if appropriate.

MAJOR OBSTACLES: Disagreement over final content of RFP.

MAJOR DECISIONS: Acceptability of received comments for RFP revision.

INPUT: Output from A 30207.

OUTPUT: Final RFP and draft contract

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

MASTER ACTIVITY: ACQUIRE CONTRACTOR (TURNKEY)

number 303

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Contract

PURPOSE: To engage the services of a contractor to carry out the project as defined in the RFP.

DESCRIPTION: The contractor is selected following an extensive evaluation of proposals and is contracted following either a sequential or simultaneous negotiation procedure. The contract negotiations actually begin upon receipt of proposals and are continued through proposer presentations until it is decided either that one company is superior or that further elaboration is required with a limited number of them. After selection of a preferred proposer, a second proposer should be selected as an alternate in the event of unforeseen difficulties with the preferred contractor. A key consideration is the responsiveness of the proposals to the RFP; no further negotiation is needed if a proposer meets all the requirements of the RFP and the proposed system is acceptable according to the principal criteria.

MAJOR OBSTACLES: Partially-responsive proposals; nonacceptability of certain proposal elements.

MAJOR DECISIONS: Evaluation and ranking of proposals; sequential or simultaneous negotiations; final form of contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C, LC
2. Must be Consulted or Notified: PD, IA, P, EO

ESTIMATING DATA:

1. Duration: Average = 55 weeks. Range = 26 to 136 weeks.
2. Work Effort: Average = 300 work days.
3. Funding: $90,000

REFERENCES: R5, R6, R7, R8, R31, R32, R59

SAMPLE DOCUMENTS: NR

ACTIVITY: ISSUE RFP

number 30301

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Contractor (Turnkey)

MASTER ACTIVITY MILESTONE: Signed Contract

PURPOSE: To distribute RFP to interested companies.

DESCRIPTION: The final RFP (A 30208) is issued either to prequalified firms (A 30206) or to all interested companies. At least three months is required for adequate proposal preparation and submission; a four-month period is preferable.

STEPS WITHIN THE ACTIVITY:

1. Determine date and location of responses.
2. Determine the bonding requirements.
3. Issue the RFP, placing advertisement in the media as required by law or local custom.

MAJOR OBSTACLES: Disagreement over bonding requirements; insufficient time to allow 3-4 month response period.

MAJOR DECISIONS: Date and location of the proposal submission; bond requirements.

INPUT: Output of either A 30206 or A 30202.

OUTPUT: RFP issued, advertised, and distributed.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 18 weeks. Range = 9 to 21 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: IMA

ACTIVITY: REVIEW AND SUMMARIZE PROPOSALS

number 30302

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Contractor (Turnkey)

MASTER ACTIVITY MILESTONE: Signed Contract

PURPOSE: To present the critical elements of each proposal in summary and comparative forms.

DESCRIPTION: The proposals are reviewed by the evaluation team and summarized in four parts: technical, management, economic and financial, and environmental. Incomplete responses are noted and preliminary calculations undertaken for comparison. Preliminary net user fees should be identified at this time and the significant factors affecting them are delineated. The proposals should be logged in and their locations known throughout the process, since many different individuals may be involved on the evaluation team.

STEPS WITHIN THE ACTIVITY:
1. Log in the proposals.
2. Distribute to the evaluation team.
3. Review, summarize, and make appropriate calculations.
4. Print and distribute the summary sheets.
5. Meet and discuss results internally among evaluation team and decide on appropriate additional information needed, if any.
6. Print additional information desired of the proposers.

MAJOR OBSTACLES: Partially-responsive proposals.

MAJOR DECISIONS: Acceptability of late proposals; acceptability of partially-responsive proposals.

INPUT: Proposals

OUTPUT: Summary sheets; preliminary evaluation sheets; questions for proposers.

ROLES AND RESPONSIBILITIES:
1. Does Work: IHS, PT, C, IB, BC, LD, LC, M (if appropriate)
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: LA, EO

ESTIMATING DATA:
1. Duration: Average = 3 weeks. Range = 2 to 4 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: SD 32302

ACTIVITY: INTERVIEW PROPOSERS

number 30303

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Contractor (Turnkey)

MASTER ACTIVITY MILESTONE: Signed Contract

PURPOSE: To request additional information from the proposers concerning proposals and to initiate contract negotiations.

DESCRIPTION: The proposers are invited to make presentations before the project team and to respond to questions concerning their proposals. This is, in fact, simultaneous negotiation before the ranking of proposals has been accomplished. Ambiguities and omissions of the proposals should be resolved during this activity.

STEPS WITHIN THE ACTIVITY:

1. Inform companies of the time and place of the meeting.
2. Ensure the presence of representatives of appropriate agencies.
3. Meet with the proposers.
4. Document answers to the questions for later consideration in the overall evaluation.

MAJOR OBSTACLES: Nonresponsiveness of proposers.

MAJOR DECISIONS: Who should attend the presentations.

INPUT: Output of A 30302.

OUTPUT: Sheet listing clarifications of omissions and ambiguities in proposals.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C, LC, IHS
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: LA, IA

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: EVALUATE PROPOSALS

number 30304

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Contractor (Turnkey)

MASTER ACTIVITY MILESTONE: Signed Contract

PURPOSE: To determine which proposals meet the goals of the project and to rank them in the order of preference.

DESCRIPTION: Two decisions should be made during proposal evaluations: 1) which proposals meet the project goals and; 2) their order of preference. The proposals are evaluated according to the previously determined criteria by the evaluation team. Usually simple numeric rating schemes are used to provide a mechanism for quantifying differences among proposals. If the evaluations are to be released publicly, they should be accompanied by statements about proposal strengths and weaknesses because numeric ratings tend to simplify factors of critical significance.

STEPS WITHIN THE ACTIVITY:

1. Incorporate the results of company meeting in proposals.
2. Determine the acceptability of proposals.
3. Rank the proposals.
4. Document justification for decisions.
5. Present the results and reasons for the outcome to the elected officials.

MAJOR OBSTACLES: Unresolved ambiguities of proposals.

MAJOR DECISIONS: Acceptability of the proposals; ranking of the proposals.

INPUT: Output from A 30302 and A 30303.

OUTPUT: Ranked list of acceptable proposals.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PT, C
2. Responsible: PM
3. Must be Consulted: PD, BC, LC, LD
4. Must be Notified: EO, IA, P

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 4 to 8 weeks.
2. Work Effort: Average = 80 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: SD 32302

ACTIVITY: NEGOTIATE CONTRACT

number 30305

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Contractor (Turnkey)

MASTER ACTIVITY MILESTONE: Signed Contract

PURPOSE: To secure the services of a contractor in a binding manner.

DESCRIPTION: Final contract negotiations can begin once a preferred proposer has been selected. The project team should not dismiss the other proposers from consideration until the contract has been successfully negotiated and signed with the preferred firm. Simultaneous negotiations are carried out until the exact position of each proposer is known or until a clearly superior proposal emerges from those firms submitting proposals consistent with the goals of the project. In the event the project team is unsatisfied with all the proposals, consideration is given to reissuing the RFP.

STEPS WITHIN THE ACTIVITY:

1. Maintain simultaneous negotiations.
2. Determine preferred proposer and alternate.
3. Initiate final negotiation and inform the other proposers.
4. Complete negotiations or suspend them and go to an alternate firm.
5. Sign contract.

MAJOR OBSTACLES: Proposer will not sign a contract based on commitments made in proposal.

MAJOR DECISIONS: Choosing the final proposer and alternate; which items are negotiable; whether to sign with the first-choice firm or to negotiate with alternate.

INPUT: Output from A 30304.

OUTPUT: Signed contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, C, LC
2. Responsible: PD
3. Must be Consulted: PT, IA
4. Must be Notified: P, EO

ESTIMATING DATA:

1. Duration: Average = 26 weeks. Range = 10 to 100 weeks.
2. Work Effort: Average = 165 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: CONDUCT BRIEFINGS AND SOLICIT COMMITMENTS

number 20501

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Waste Supply Commitments

MASTER ACTIVITY MILESTONE: Resolutions of Intent or Interest

PURPOSE: To brief the interested or affected communities regarding the need for waste, its use in the system, dependence of the program on a secure waste supply, and to obtain resolutions of interest or intent.

DESCRIPTION: The lead agency conducts briefings before elected officials, key appointed officials, and public groups in the municipalities who are to become participants in the program. If letters of interest have already been received, it may be wise to solicit stronger commitments at this time. Also, the site hearings and acquisition may take excessive time, and these briefings serve to regroup, bring everyone up to date, get everyone moving in unison again after the long lapse during site selection and acquisition.

STEPS WITHIN THE ACTIVITY:

1. Review the briefing list of MA 117 (update as necessary).
2. Select key individuals who can generate resolutions on behalf of the municipalities, and key industrial individuals who may commit waste from industry.
3. Contact and brief private haulers; solicit their help and commitment of waste.
4. Give update briefing, explain project status and needs, factor in sludge request and source separation needs, solicit resolutions of support, interest or intent from municipalities.

MAJOR OBSTACLES: Bitterness over site selection; low interest by municipalities.

MAJOR DECISIONS: Time, place, number, format of briefings and who should participate.

INPUT: Site selection and decision of MA 203 and MA 204.

OUTPUT: Completed briefings; formal solicitations of resolutions of interest or intent.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PT, PM, PD or EO, depending on situation.
2. Responsible: PM
3. Must be Consulted: IG, P, AO, key individuals (community or business)
4. Must be Notified: IA

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 5 to 20 weeks.
2. Work Effort: Average = 50 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN COMMITMENTS

number 20502

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Strengthen Waste Supply Commitments

MASTER ACTIVITY MILESTONE: Resolutions of Intent or Interest

PURPOSE: To receive commitments from potential participants in the form of letters of intent, resolutions of intent or other appropriate means.

DESCRIPTION: Letters of intent are requested to indicate the number and commitment of participating communities. Participating communities must decide whether additional waste control measures are needed for commercial/industrial waste and the necessary tonnage, and if so needed, what approach will be taken to enact these measures. The decided upon approach is then carried out.

STEPS WITHIN THE ACTIVITY:

1. Follow request for resolutions or letters of intent from participating communities with phone calls and additional briefings or meetings.
2. Follow request for letters of intent from commercial/industrial generators not included in other jurisdictions with phone calls and additional meetings or briefings.
3. Discuss with investment banker and bond counsel the extent of commitment advisable at this time.
4. Discuss risks of project and community committees or authorities which may be employed to effect acceptable risk or obviate the need for new legislation.

MAJOR OBSTACLES: Refusal to commit themselves further or to cooperate on the part of the local communities; poor follow-up; not enough explanation given during follow-up period.

MAJOR DECISIONS: The extent of commitment necessary; wording of commitment (must be determined locally); need for commitment from the private sector.

INPUT: Output from A 20501 and A 20502.

OUTPUT: An updated statement of commitment of waste supply by the municipal, commercial and industrial suppliers of waste.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PT, EO
2. Responsible: EO
3. Must be Consulted: BC, IB
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 5 to 20 weeks.
2. Work Effort: Average = 30 work days.

REFERENCES: Local and state laws for waste stream control.

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: STRUCTURE RISKS TO RESOLVE INSTITUTIONAL PROBLEMS

number 206

PHASE: II, Resource Recovery Procurement Planning

MILESTONE: Resolved Institutional and Risk Arrangements

PURPOSE: To structure risks according to the favored scenarios of MA 113, MA 114, MA 117, MA 201 and MA 204 and to seek the legislative action or the community action in attempting to effect the favored scenario. The legislative changes and community action will dictate the risk structure. If attempts at those changes or actions are successful, the scenario stands are structured. If attempts at those changes or actions are unsuccessful, the results are incorporated to prepare a favored scenario for risks, or perhaps to determine the only possible course of action open to the community.

DESCRIPTION: MA 113, MA 114, MA 117, MA 201 and MA 204 already have stated the desired project posture. In so doing, contracting constraints as well as financing, procurement, and energy sales constraints were identified, and the course of action which should be pursued to rectify unwanted constraints was identified. In some cases the course was modified legislation; in other cases the decision was to work with the legal mechanism in place. This activity pursues the legislative changes indicated. If the legislation is partly or wholly unsuccessful, this master activity incorporates the results of the legislative process, and sets a course of action for risk assignment. One arrangement or several different institutional arrangements are constructed which will result in that desired risk posture. The results of this activity are then factored into the overall project position of MA 209. If no legislative changes are required, and the method for proceeding is not altered by MA 205, the project definition of MA 204 holds unamended.

MAJOR OBSTACLES: Identified legislation deemed unnecessary in subcommittee hearings; insufficient vote to pass; risk scenario acceptable to elected officials cannot be structured; disagreement on desirable institutional arrangements within project team.

MAJOR DECISIONS: If appropriate legislation was identified, how to draft the legislation; if defeated, whether to return next session or just work around the problem; the mix of institutional arrangements which should result in an acceptable risk posture.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM, LD, LC, PD
2. Must be Consulted or Notified: MPE, DP, PC, IB, U, EA-(L), EA-(S)

ESTIMATING DATA:

1. Duration: Average = 25 weeks. Range = 12 to 52 weeks.
2. Work Effort: Average = 100 work days.
3. Funding: $30,000

REFERENCES: R4, R10, R14, R15, R20, R21, R27, R55, R59, R65

SAMPLE DOCUMENTS: NR

ACTIVITY: SEEK LEGISLATIVE CHANGES AND RESOLVE

number 20601

PHASE: II, Resource Recovery Procurement Planning

MASTER ACTIVITY: Structure Risks to Resolve Institutional Problems

MASTER ACTIVITY MILESTONE: Resolved Institutional and Risk Arrangements

PURPOSE: To seek legislative changes which have been identified as desirable in order to implement the project, to analyze the result of the attempted changes, to consider concurrent activities (MA 205) and to resolve possible approaches.

DESCRIPTION: As a result of the project definition of MA 201 and redefinition (if required) of MA 204, this activity actually pursues the previously identified needed legislation in the areas of financing, procurement, contracting and energy sale. The work is coordinated with MA 205, because risk sharing often impacts on the acceptability of the project to the waste suppliers. Another point is that in MA 205, community-initiated actions to resolve certain conflicts without new legislation are undertaken, such as a committee or authority with certain powers allowed by current legislation.

STEPS WITHIN THE ACTIVITY:

1. If legislative changes were identified in MA 113, MA 114, MA 117, MA 201, or MA 204, discuss the needed changes, and suggest legislation.
2. Proceed with hearings and passage of new legislation.
3. If passed, structure new risk assignment picture.
4. If defeated consider whether to return again for passage. If yes, repeat steps 2 and 3. If no, resolve the items that cannot be changed by constructing a set of risk alternatives designed to work around the barrier which the legislation failed to change.
5. Coordinate with MA 205, since many community activities related to waste supply will impact on the risk posture.

MAJOR OBSTACLES: Legislation deemed unnecessary in subcommittee hearings, or receives insufficient vote to pass; risk scenario acceptable to elected officials cannot be structured.

MAJOR DECISIONS: What legislation, if any, to draft and attempt to pass; whether to return again for changes, or step back and work with the results.

INPUT: Project definition of MA 204; possible legislation from MA 113, MA 114, MA 201 and MA 204.

OUTPUT: Lead Agency resigned to what can and cannot be done concerning risks and contracts.

ROLES AND RESPONSIBILITIES:

1. Does Work: LD, LC, PM, IHS, C
2. Responsible: PD
3. Must be Consulted: MPE, DP, BC, IB, U, EA-(L), EA-(S)
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 22 weeks. Range = 10 to 48 weeks.
2. Work Effort: Average = 90 work days.

REFERENCES: R6, R10, R15, R20, R55, R59, local laws and ordinances concerning revenue bonds, procurements, contracting, environmental barriers and restrictions.

SAMPLE DOCUMENTS: NR

ACTIVITY: ASSESS REGULATORY AND PUBLIC INFORMATION NEEDS

number 30401

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Turnkey)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To determine the requirements of all environmental agencies and public interest groups so that time is not lost later through oversight or retracing of steps.

DESCRIPTION: The agency requiring the assessment should ascertain that all facets are being addressed by the assessment, including air, water, noise, aesthetics, and safety, as well as the concerns of the local public interest groups.

STEPS WITHIN THE ACTIVITY:

1. Based on experience and the outcome of MA 002, MA 103, MA 110 and MA 202, identify the potential types of information sought.
2. Consider the needs of the regulatory agency for information required in permits and required by the public over and above permits.

MAJOR OBSTACLES: Poor assessment of needs.

MAJOR DECISIONS: Priorities of dealing with needs.

INPUT: Environmental information gathered in MA 002, MA 103, MA 110, and MA 202.

OUTPUT: List and understanding of needs.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C or CR
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: FURTHER LIAISON WITH REGULATORY AGENCIES AND POLITICAL PROCESS

number 30402

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Turnkey)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To re-establish communication and a working arrangement with regulatory agencies and to reintroduce the elected officials to the environmental requirements.

DESCRIPTION: After the Phase II decision process and in conjunction with obtaining permits, it is necessary for the lead agency and other involved parties to re-establish liaison with regulatory agencies whose input into the assessment may be critical, and with the elected officials who will be involved in public interface concerning the assessment.

STEPS WITHIN THE ACTIVITY:

1. List all regulatory agencies and interest groups involved.
2. Either call or visit each representative and discuss the project status, assessment requirements, and anticipated work methods and needs.
3. Solicit opinions and preferences, particularly where agencies are also involved in permitting (i.e., coordinate with MA 306 and use contacts re-established in A 30105).
4. In co-disposal projects where partial funding may be available from EPA, under Public Law 92-500, liaison should be continued with all of the potentially involved EPA branches.

MAJOR OBSTACLES: Overlooking key agency; not observing protocol.

MAJOR DECISIONS: Whether or not to directly involve turnkey contractor; subjects for discussion with each agency.

INPUT: Agencies identified in MA 103, MA 110, MA 202, MA 301 and MA 306.

OUTPUT: Renewed contact and understanding; involvement of contractor, if appropriate.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, PM, CR
2. Responsible: PD
3. Must be Consulted: EO, IA, EA-(L), EA-(S), EPA, BPD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE RESEARCH AND ANALYSIS SCOPE

number 30403

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Turnkey)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To decide critical parameters which should be addressed in order to have a complete assessment.

DESCRIPTION: The project should have a clearly defined role regarding research depth and level of analysis required. In this activity the assessment work is actually outlined, and tasks are listed and assigned. Necessary resources are also identified if different from those already committed to the project.

STEPS WITHIN THE ACTIVITY:

1. Establish the depth and level of analysis required.
2. Consider permit work in MA 306 in conjunction with this step.
3. Discuss needs with affected agencies concerning the type of information required.
4. Document the specific requirements of the agencies in advance of assessment preparation and obtain agreement.

MAJOR OBSTACLES: Lack of specific requirements.

MAJOR DECISIONS: The exact scope with agreement by the regulatory agencies and possibly EPA.

INPUT: Output of MA 103, MA 110 and MA 202, and developments in MA 306.

OUTPUT: Known scope of performing the assessment.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EPA, EA-(S), EA-(L)

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ALLOCATE AND PERFORM TASKS

number 30404

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Turnkey)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To assign tasks and conduct the actual environmental analysis.

DESCRIPTION: After scope and research requirements are known, the material should be used to make computations and evaluations concerning all the possible environmental impacts. This activity involves about 80% of the assessment work. The contractor may be required or requested to perform the assessment or at least provide necessary detailed data, if not already in the proposal (see MA 307).

STEPS WITHIN THE ACTIVITY:

1. Draft report Table of Contents.
2. Assign work tasks to individuals (internal to the organization preparing the assessment).
3. Compute effluent loadings on air, water, and intake treatment requirements.
4. Evaluate aesthetics, architecture, and other environmental considerations.
5. Prepare charts, tables, and graphs of the resultant work.

MAJOR OBSTACLES: Necessary data unavailable.

MAJOR DECISIONS: The methods used to analyze and compute the environmental impacts; whether or not the available data is sufficient.

INPUT: Analytical requirements of A 30403; output of MA 110 and MA 202.

OUTPUT: Computations, tables, charts, rationale, and background for the draft report.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C or CR
2. Responsible: PM
3. Must be Consulted: Affected agencies
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 12 weeks. Range = 4 to 24 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DRAFT REPORT AND ISSUE FOR REVIEW

number 30405

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Turnkey)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To issue report and receive reactions, in order to finalize assessment.

DESCRIPTION: About 80% of the assessment preparation work was done in the previous step. Remaining is the writing to tie the work together and the presentation of material in report format. The draft report is issued for review, and comments are received in anticipation of the final document. This task could be delayed due to public hearing requirements, major objection, or other substantial disagreement.

STEPS WITHIN THE ACTIVITY:

1. Draft the outline of chapters using the Table of Contents and computations from A 30404 and 30702.
2. Discuss internally.
3. Write draft report.
4. Review internally, modify, and finalize draft report.
5. Issue notification of draft report.
6. Make draft reports available to the regulatory agencies and the public.
7. Receive and compile comments.

MAJOR OBSTACLES: Incomplete analysis; important issues overlooked.

MAJOR DECISIONS: Form of document; need for hearings.

INPUT: All output from A 30404 and A 30702 (performed in conjunction with A 30404).

OUTPUT: Draft environmental assessment with comments received.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 5 to 30 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: REVISE DRAFT AND ISSUE FINAL REPORT

number 30406

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Turnkey)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To complete requirements and issue a responsive assessment.

DESCRIPTION: All comments received are reviewed and considered. Appropriate comments are incorporated into the main body of the report. The results are reviewed and approved by the issuing agency. When approval is received, the document is made available to interested parties.

STEPS WITHIN THE ACTIVITY:

1. Incorporate comments into the draft report; finalize graphics.
2. Retype and review internally.
3. Finalize changes.
4. Submit for review and obtain approval.
5. Print and issue to regulatory agencies and the public.

MAJOR OBSTACLES: Disagreement with the facts as presented; conflicting comments.

MAJOR DECISIONS: Which comments to incorporate and in what form.

INPUT: Draft report and comments received from A 30405.

OUTPUT: Final Environmental Assessment

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 4 to 16 weeks.
2. Work Effort: Average = 30 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE WASTE SUPPLY CONTRACTS (TURNKEY)

number 305

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Waste Supply Contracts

PURPOSE: To develop final agreements between the lead agency and communities for the supply of waste. This is the key agreement between the lead agency and the communities which identifies the service to be provided, the risks to be borne by either party, and the method of compensation to reflect such service and related risks. If a co-disposal project is being pursued, proper commitments of sewage sludge are also pursued.

SPECIAL NOTE: In the case of a single municipality or single long-term controlling agent, this master activity may be omitted or substantially reduced in scope.

DESCRIPTION: The communities and the lead agency will negotiate a contract for the supply of waste, whose revenues will partially offset the costs and act as security for financing. Provisions for existing or future source separation programs; transportation costs; separate industrial/commercial wastes; and previously committed host community incentives are considered for inclusion in these agreements as appropriate. Bond and other counsel, depending on the form of financing, will review the legality and efficacy of the document, at which time it must be approved by each participating community, which may involve a substantial educational effort. If a co-disposal project is being pursued, the commitment of sewage sludge and septic wastes (treated as appropriate) is sought for inclusion in the system. In the case of a single municipality or single controlling agent, the waste supply may be readily available without specific community contracts, and this task is virtually unnecessary.

MAJOR OBSTACLES: Convincing community decision-makers who have not been directly involved in contract negotiations of provisions, e.g., 20-year term, tonnage and guarantees (if required).

MAJOR DECISIONS: What risk posture to take on industrial/commercial waste; whether to take a hard or soft negotiating posture on draft contracts; what risks the lead agency should take and what risks the communities should take.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD assisted by negotiator, IHS, C, LC, FA
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 24 weeks. Range = 16 to 168 weeks.
2. Work Effort: Average = 240 work days.
3. Funding: $65,000

REFERENCES: R2, R4, R8, R11, R27, R30, R31, R64, R65, R66, R67, R68, R69, R85

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE DRAFT CONTRACT(S)

number 30501

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Waste Supply Contracts (Turnkey)

MASTER ACTIVITY MILESTONE: Signed Waste Supply Contracts

PURPOSE: To establish an initial bargaining position.

DESCRIPTION: An initial bargaining posture is established prior to negotiation. The draft contract establishes the lead agency posture on the service to be provided, the risks to be borne, and the method of compensation in addition to traditional language on default, termination and other pertinent contract terms. For sewage sludge, general condition and percent solids should be agreed to, as well as commitments between municipal authorities which are equivalent to contracts. In the event the owner/operator of the facility is the same entity providing waste supply, no contract is necessary.

STEPS WITHIN THE ACTIVITY:

1. Preparation of draft contract by legal, financial, and technical consultants.
2. In co-disposal systems, also develop contract(s) for sludge with appropriate agencies.
3. Incorporating provisions for transportation costs and quantity adjustments due to existing or future source separation programs.
4. Include previously agreed upon funding incentives in host community's contract (if applicable).
5. Draft contracts for individual industrial/commercial accounts.
6. Review and approval of community representatives (if appropriate).

MAJOR OBSTACLES: Disagreement on major contract terms.

MAJOR DECISIONS: What posture to take on industrial/commercial waste; how rigid a posture to take on the contract.

INPUT: Output from MA 105, MA 202, MA 205, MA 313 and MA 314.

OUTPUT: Draft contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, LC, FA
2. Responsible: PD
3. Must be Consulted: EO, PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 12 weeks.
2. Work Effort: Average = 120 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: NEGOTIATE CONTRACT(S)

number 30502

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Waste Supply Contract (Turnkey)

MASTER ACTIVITY MILESTONE: Signed Waste Supply Contracts

PURPOSE: To agree on acceptable contract terms with communities, industrial/commercial accounts, sludge generators, and other appropriate system members.

DESCRIPTION: In a multi-community or regional situation, certain communities (or a county or state agency) may negotiate a contract on behalf of all the communities in the region to be served. In other cases, each contract may have to be negotiated separately. Where community participation is voluntary, gaining acceptance of the contract is necessary. In a single community situation, which does not require separate industrial/commercial contracts, and the project is not co-disposal, this activity is unnecessary.

STEPS WITHIN THE ACTIVITY:

1. Secure negotiation team(s).
2. Conduct technical analysis of the implications of alternative risk postures.
3. Conduct negotiation sessions (hold caucuses to review risk posture).
4. Conduct technical sessions to work out details of agreed-upon risk posture.

MAJOR OBSTACLES: Parties unable to reach agreement.

MAJOR DECISIONS: Allocation and acceptance of risks.

INPUT: Output of A 31501, MA 204, MA 205, MA 206, MA 313 and MA 314.

OUTPUT: Waste supply contracts.

ROLES AND RESPONSIBILITIES:

1. Does Work: Negotiator, PD, LC, FA, LD, C, LC for each community.
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 4 to 52 weeks.
2. Work Effort: Average = 100 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: OBTAIN COMMUNITY APPROVAL

number 30503

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Waste Supply Contracts (Turnkey)

MASTER ACTIVITY MILESTONE: Signed Waste Supply Contracts

PURPOSE: To obtain signed waste supply contracts via political/public decision(s).

DESCRIPTION: The negotiated contracts are presented to the elected officials for signature.

STEPS WITHIN THE ACTIVITY:

1. Conduct briefings to elected officials and interest groups.
2. Obtain approval by the legislative and executive bodies of each jurisdiction.

MAJOR OBSTACLES: Negotiated terms deemed unacceptable.

MAJOR DECISIONS: Whether or not to agree to the negotiated contract terms.

INPUT: Negotiated contracts (output of A 30502).

OUTPUT: Approved and signed waste supply contracts.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, PT, LD
2. Responsible: EO
3. Must be Consulted:
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 104 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: COMPLETE LISTING OF APPLICABLE PERMITS

number 30601

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Turnkey)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To avoid overlooking any of the numerous permits which may be required.

DESCRIPTION: Previously completed lists of required permits may be outdated or incomplete. It is advantageous to review and compile a complete list.

STEPS WITHIN THE ACTIVITY:

1. Gather and review existing lists of required permits.
2. Determine if any additional permits are required by talking to all concerned agencies. One agency will generally be able to indicate who the others might be. Agencies can indicate if any recent changes in law or rules and regulations have been made.

MAJOR OBSTACLES: Incomplete list from an agency.

MAJOR DECISIONS: Which agencies should be contacted.

INPUT: Previous lists; new information solicited by telephone.

OUTPUT: Completed list of required permits.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM, CR
2. Responsible: PM
3. Must be Consulted: Various agencies, one leading to another
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 2 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW REQUIREMENTS

number 30602

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Turnkey)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To identify the requirements of the permits; to screen only those which should be secured prior to construction.

DESCRIPTION: After material has been compiled, the permits which are required prior to construction are identified and a priority is placed on the order in which they should be sought. Often, these requirements have been known from Phase II work, but this activity provides a comprehensive review and check.

STEPS WITHIN THE ACTIVITY:

1. Review the permit applications to determine both technical and scheduling requirements.
2. Set priorities on those which should be secured before construction and which are addressed by preliminary design of MA 307.
3. Determine necessary lead times for permit review.

MAJOR OBSTACLES: Insufficient time to schedule first those permits of highest priority; unclear permit requirements.

MAJOR DECISIONS: Which permits should be applied for at this time; priority of permit application submission.

INPUT: List of all possible permits from A 30601.

OUTPUT: List of permits which will be pursued; list of requirements for each; and anticipated schedule for submitting and receiving permits.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, CR
2. Responsible: PM
3. Must be Consulted: Agencies requiring permits
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH PERMIT RESPONSIBILITY

number 30603

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Turnkey)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To establish who will be responsible for applying for permits, which agency will issue the permit, and what the parameters for the permit will be.

DESCRIPTION: At the outset the individual responsible for preparing permit applications, obtaining the required signatures and other approvals is designated. Other designations are: who will be the agency's representative; who will gather additional information and give and receive missing details.

STEPS WITHIN THE ACTIVITY:

1. Identify individuals in the lead and involved agencies and the turnkey contractor who are critical to the permit process.
2. Obtain commitments for participation.
3. Reach an understanding of the requirements of each permit.

MAJOR OBSTACLES: No commitment from necessary participants.

MAJOR DECISIONS: Identification of critical personnel in the permit process.

INPUT: Results of review of A 30602.

OUTPUT: Individuals identified and committed to work.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM
2. Responsible: PD
3. Must be Consulted: C, CR and participating agency representative
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PERFORM NECESSARY ANALYSIS

number 30604

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Turnkey)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To produce and organize technical and institutional details as required for the permits.

DESCRIPTION: Analysis based on the proposal (and the contractor's preliminary design) is necessary for some permits. After analysis, the information is suited to the format required by the application.

STEPS WITHIN THE ACTIVITY:

1. Identify needed information for each required permit early.
2. Perform any necessary analysis and produce the information in the form required for the permit.
3. Check with agencies to see whether information is of the type desired.
4. Ready the information for permit application to suit the individual permit requirements.

MAJOR OBSTACLES: Permit requirements unclear.

MAJOR DECISIONS: Extent of work required to satisfy permits; whether or not design modifications are necessary to meet the permit requirements; type and method of analysis.

INPUT: Permit requirements.

OUTPUT: All information gathered and readied for permit application.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, CR
2. Responsible: PM
3. Must be Consulted: IA
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 3 to 8 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: COMPLETE AND SUBMIT APPLICATIONS

number 30605

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Turnkey)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To prepare applications for permits and submit them to appropriate agencies.

DESCRIPTION: Using output from A 30604, the applications for permits are completed; appropriate signatures and seals are obtained; and the permits are submitted to the appropriate agencies.

STEPS WITHIN THE ACTIVITY:

1. Complete information on permit application. Check and review for completeness. Append backup data and calculations as necessary.
2. Obtain signatures of key individuals.
3. Submit permit applications according to local custom.

MAJOR OBSTACLES: Permit application requirements unclear.

MAJOR DECISIONS: None

INPUT: All information prepared in A 30604.

OUTPUT: Completed and signed permit applications.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, CR
2. Responsible: PM
3. Must be Consulted: EO
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 4 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: SUPPORT APPLICATION PROCESS

number 30606

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Turnkey)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To provide additional information to facilitate review by the agency issuing the permits.

DESCRIPTION: When the application is submitted, certain information may require expansion or clarification. Items may have been omitted. This activity is necessary to see the application through the review process.

STEPS WITHIN THE ACTIVITY:

1. Receive comments and questions from reviewers.
2. Prepare and submit material in support of adequate response.
3. Reiterate as necessary to obtain permits.

MAJOR OBSTACLES: Information not acceptable to reviewer.

MAJOR DECISIONS: Whether or not comments require design modifications to be made for an adequate response.

INPUT: Comments and questions from reviewers.

OUTPUT: Answers to reviewer's questions; necessary, permits secured.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, CR
2. Responsible: PM
3. Must be Consulted: IA, EA-(L) or EA-(S), LA
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 12 weeks. Range = 5 to 19 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: PERFORM PRELIMINARY DESIGN (TURNKEY) (Performed in Conjunction with Master Activity 306)

number 307

PHASE: III, Resource Recovery System Procurement

MILESTONE: Technical Information For Permits (MA 306) and Environmental Assessment (MA 304)

PURPOSE: To produce technical information from the turnkey contractor for preconstruction permits which are pursued for the purposes stated in MA 306; to assure that the proposal (and the contractor's preliminary design) meets the permit requirements of MA 306 and the environmental requirements of MA 304.

DESCRIPTION: Certain major preconstruction permits, such as air quality or water quality (e.g., for cooling water) may require additional technical data for evaluation by the regulatory agencies. Other examples of potential permit requirements are zoning approvals contingent on landscape architecture or solid waste facility permits requiring rodent and odor control details. Any preliminary design work in support of meeting permit requirements is performed as part of this master activity.

MAJOR OBSTACLES: Design not meeting code; interface with permitting agency poorly conducted; misunderstanding of permit requirements; lack of clarity on funding source.

MAJOR DECISIONS: Level of effort required to support permit submittals; level of detail of design work; source of funds to perform enough of the design to support MA 304 and MA 306.

ROLES AND RESPONSIBILITIES:

1. Does Work: CR with PM
2. Must be Consulted or Notified: EA-(L)

ESTIMATING DATA:

1. Duration: Average = 20 weeks. Range = 13 to 34 weeks.
2. Work Effort: Average = 60 work days.
3. Funding: $15,000

REFERENCES: See locally obtained air, water, and zoning laws and codes.

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW PERMIT REQUIREMENTS

number 30701

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Preliminary Design (Turnkey)

MASTER ACTIVITY MILESTONE: Technical Information For Permits (MA 306) and Environmental Assessment (MA 304)

PURPOSE: To identify the permit requirements which will require data and analysis beyond the information included in the contractor's proposal.

DESCRIPTION: Permit requirements are reviewed concurrently during this activity and A 30602 to ascertain the latest requirements. Complete familiarity with all requirements is necessary in order to ascertain what data and analysis will be needed when applying for the permits.

STEPS WITHIN THE ACTIVITY:

1. Review major required permits as determined in A 30601, particularly air, water, aesthetics.
2. Determine technical requirements.
3. Determine the data and analysis necessary to meet the technical requirements.

MAJOR OBSTACLES: Lack of coordination of information obtained from different permitting agencies.

MAJOR DECISIONS: The type, depth, and amount of detail necessary to meet permit requirements.

INPUT: Agency permit information from A 30601; information developed currently during A 30602.

OUTPUT: List of required data and analysis for each permit.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, CR, C, PM
2. Responsible: CR
3. Must be Consulted: EA-(L), ZA, BPD
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: Local permit requirements from EA-(S), EA-(L), and local BPD.

SAMPLE DOCUMENTS: NR

ACTIVITY: UPDATE PLANT TECHNICAL PARAMETERS

number 30702

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Preliminary Design (Turnkey)

MASTER ACTIVITY MILESTONE: Technical Information For Permits (MA 306) and Environmental Assessment (MA 304)

PURPOSE: To provide data and analysis required for permits and environmental assessments; to update and modify plant parameters as necessary for meeting permit and other environmental requirements.

DESCRIPTION: Layouts and equipment specifications are used to supply required permit or environmental assessment information. If it is found that the requirements cause modifications to the proposal, the changes are documented and become part of the contractor's proposal (in some cases this may require formal submission and approval as an addendum to the proposal).

STEPS WITHIN THE ACTIVITY:

1. Understand permit and environmental assessment requirements thoroughly.
2. Review proposal (and in-house information) and produce the data and analysis necessary to support the permits and environmental assessment.
3. Perform preliminary design to support technical update (if necessary).
4. Document changes to proposal (if necessary) and submit to lead agency.

MAJOR OBSTACLES: Data and analysis requirements unclear.

MAJOR DECISIONS: Whether or not modifications to the proposal are required; what are the least cost modifications required for permits.

INPUT: Permit requirements (output of A 30701); environmental assessment requirements (A 30403); design proposed in MA 303 (Acquire Contractor).

OUTPUT: Technical information for permits and environmental assessment; documented changes to proposal (if necessary).

ROLES AND RESPONSIBILITIES:

1. Does Work: CR
2. Responsible: PM
3. Must be Consulted: EA-(L), BPD
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: Local Codes

SAMPLE DOCUMENTS: NR

ACTIVITY: PROVIDE PERMIT SUPPORT

number 30703

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Preliminary Design (Turnkey)

MASTER ACTIVITY MILESTONE: Technical Information For Permits (MA 306) and Environmental Assessment (MA 304)

PURPOSE: To facilitate the processing of preconstruction permits.

DESCRIPTION: MA 306 outlines the procedure for certain permit applications. After applications are submitted, support is required (A 30606); this activity provides contractor support to A 30606.

STEPS WITHIN THE ACTIVITY:

1. Review and respond to requests for more information from the reviewing agency for permits, e.g., facility size, processing, and emission rates.
2. Modify configuration and compute system parameters (if necessary).
3. Submit to agency.
4. Repeat as necessary to satisfy permits.

MAJOR OBSTACLES: Changing regulations, budget constraints, excessive review time.

MAJOR DECISIONS: None

INPUT: Response from agencies seeking further information.

OUTPUT: Satisfied permit requirements.

ROLES AND RESPONSIBILITIES:

1. Does Work: CR
2. Responsible: PM
3. Must be Consulted: EA-(L), BPD
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 8 to 14 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ESTABLISH ADMINISTRATIVE FRAMEWORK (A/E)

number 311

PHASE: III, Resource Recovery System Procurement

MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule the Procurement Process

PURPOSE: To identify and secure commitments from the public and private organizational resources necessary to carry out the procurement process and to structure and schedule this process so as to accommodate the required inputs.

DESCRIPTION: During Phase II the elected officials have selected or created a lead agency for Phase III. This agency now reviews the project status and then determines and obtains commitments from the project team participants, hires consultants, establishes and maintains liaison with involved agencies, plans for public and industry involvement, and outlines the approach for soliciting and evaluating proposals from private industry (some or all of this may already be established and does not have to be repeated).

MAJOR OBSTACLES: Insufficient personnel or funding; in-fighting among agencies; weak commitments from key political and agency personnel.

MAJOR DECISIONS: Selection of lead agency and key personnel; composition of the project team for Phase III; selection of consultants; plan for public involvement; procurement plan and schedule.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, LA, C, PT
2. Must be Consulted or Notified: EO, IA, M, IG, P

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 5 to 19 weeks.
2. Work Effort: Average = 38 work days.
3. Funding: $10,000

REFERENCES: R2, R6, R9, R12

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW PROJECT TEAM

number 31101

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (A/E)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To apprise members of project team of their responsibilities in this phase of the program, and to solicit new members as necessary.

DESCRIPTION: This activity provides a review of the existing project team for the capabilities necessary for Phase III. Suggested capabilities: solid waste management, economic analysis, major systems procurement, environmental assessment and regulation, civil engineering, legal counsel, public finance.

STEPS WITHIN THE ACTIVITY:

1. Review the project team for the presence of the necessary inputs.
2. Identify areas of need and solicit public and/or private inputs to fulfill.
3. Review roles and responsibilities -- assign new areas.
4. Conduct a review of consultant's capability and decide whether additional consulting assistance is advisable. If so, the needs are so noted and A 31104 becomes necessary. If not, A 31104 is unnecessary and is skipped.

MAJOR OBSTACLES: Difficulty in maintaining the active involvement of existing members if project team grows too large.

MAJOR DECISIONS: Are there desirable additions to the project team over and above those already established; how are such additions best provided; whether further consulting assistance is required.

INPUT: Existing team members, A 10103 - A 10105.

OUTPUT: Project team for Phase III.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with assistance from PT, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: FURTHER LIAISON WITH OTHER PUBLIC AGENCIES

number 31102

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (A/E)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep other agencies informed as to progress on the project.

DESCRIPTION: A framework for cooperation between the lead agency and contacts with affected and involved agencies not represented on the project team is developed and maintained. The lead agency and project team should identify those agencies, apprise them of the project status, determine their involvement with the project, and provide updates at regular intervals throughout the procurement phase.

STEPS WITHIN THE ACTIVITY:

1. Identify agencies with potential interest in the project.
2. Correspond with the agency director, provide a project status report, request that the director or key staff member serve as project contact.
3. Maintain liaison through regular updates.

MAJOR OBSTACLES: No agency interest.

MAJOR DECISIONS: With which of the agencies contacted should a regular liaison be maintained.

INPUT: Previous contacts from Phases I and II.

OUTPUT: List of agency contacts to be provided with project updates at regular intervals.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, EO maintain contact: LA with assistance from PT, C
2. Responsible: PD
3. Must be Consulted: AO, MPE, EA-(S), EA-(L)
4. Must be Notified: Involve P agencies: directors - staff contacts.

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: FURTHER LIAISON WITH POLITICAL PROCESS

number 31103

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (A/E)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep elected officials informed on progress of the project.

DESCRIPTION: Key elected officials at local and State level are identified, apprised of the project background and status, and provided with periodic updates.

STEPS WITHIN THE ACTIVITY:

1. Identify elected officials and staff who should be kept informed of the project.
2. Establish contact and provide information on the background and status of the project, according to protocol of MA 101, MA 117, MA 210.
3. Maintain contact with periodic updates and by responding to requests for information initiated by the contact.

MAJOR OBSTACLES: None.

MAJOR DECISIONS: Who should be kept informed; continued previous protocol.

INPUT: Suggestions from the project team; request from interested parties.

OUTPUT: List of persons and organizations to be kept informed of project developments.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with support from PT
2. Responsible: PD with support from PM and PT
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: RETAIN CONSULTANT(S) (OPTIONAL)

number 31104

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (A/E)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To retain consultant(s) to assist in the project if required.

DESCRIPTION: If the project team of A 32101 has deemed further consulting capability to be necessary to assist in project development and/or design, they are now retained according to the procedure of MA 102.

STEPS WITHIN THE ACTIVITY:

1. Solicit suggestions and advertise for additional consultant(s), if necessary.
2. Receive qualifications and invite qualified firms to present a suggested approach.
3. Contact references and previous clients.
4. Evaluate new firm(s), make selection, negotiate contract(s); negotiate and renew contracts with existing firms who will continue on the project if necessary.

MAJOR OBSTACLES: Constraints on procuring services.

MAJOR DECISIONS: Whether or not additional consulting support is needed. selection of consulting firm(s).

INPUT: References from other RR projects; MA 102.

OUTPUT: Firm(s) for procurement phase hired.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with support from PT
2. Responsible: PM
3. Must be Consulted: IA
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 6 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

LIAISON WITH SPECIFIC PERMIT AGENCIES

number

31105

PHASE: III, Resources Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (A/E)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep Permit Agencies informed and involved; to review contacts in agencies if excessive time has elapsed in MA 210.

DESCRIPTION: A complete list of the agencies involved in approving siting, construction and operating permits should be developed and, for each agency, a contact identified. The agencies should be informed of the background and status of the project and requested to provide a list of potential permit requirements. In many cases the contacts in individual agencies are already known from previous phases.

STEPS WITHIN THE ACTIVITY:

1. Develop a list of all permit agencies with potential involvement in the project. Note previous contacts.
2. Contact agency administrators. Inform them of the project status and review the list of potential permit requirements from each agency.
3. Identify a key staff member from each agency to provide ongoing project liaison.
4. Maintain contact with periodic updates and requests for information.

MAJOR OBSTACLES: Confusion concerning permit requirements and agency responsibilities for the RR project which may not have been settled previously.

MAJOR DECISIONS: What agencies are to have permit responsibilities for the project; whether new liaison or continued liaison in agency from previously is required.

INPUT: Permit requirements from DPW, MA 103 and MA 202.

OUTPUT: List of permit agencies and major permit requirements for the project; contact with the agencies.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with assistance from PT, EA-(S), EA-(L), C, DPW
2. Responsible: PD
3. Must be Consulted: Agencies involved in permit process for the project.
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONTINUE PROCESS FOR PUBLIC INVOLVEMENT

number 31106

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (A/E)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule the Procurement Process

PURPOSE: To keep public informed.

DESCRIPTION: Public information meetings, citizen participation in proposal evaluations, referenda concerning project acceptance and interaction with interest groups are all potential components of the procurement process. The legal and political needs of these activities should be assessed and appropriate mechanisms devised. Liaison with the press and with key citizens and interest groups should be established. Responsibilities for public involvement activities should be clearly defined within the project. In many cases precedents for this process exist from MA 101, MA 201, MA 204 and MA 210, and ongoing activities.

STEPS WITHIN THE ACTIVITY:

1. Discuss the need for public information and involvement with elected officials and with others experienced in siting and constructing public projects.
2. From discussions, develop strategies for meeting these needs.
3. Determine project team roles for public information involvement, and structure citizen input, if required.
4. Maintain liaison with press, key individuals, and interest groups; support citizen involvement.

MAJOR OBSTACLES: Inexperience of project team in dealing with public; lack of cooperation by elected officials.

MAJOR DECISIONS: What the public information and involvement needs are; what kind of role the public should play in the procurement process.

INPUT: Assessment of needs provided by elected officials; examples of public involvement in other projects and in prior phases of this project.

OUTPUT: Plan for public information and involvement during the procurement process.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with assistance from EO, C, PT
2. Responsible: PM, PD
3. Must be Consulted: EO
4. Must be Notified: IG

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE MARKET INVOLVEMENT IN PROCUREMENT

number 31107

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (A/E)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep market(s) informed and involved.

DESCRIPTION: Determine the information required from the contemplated energy markets and the potential for their involvement in the evaluation of proposals. The major energy market may desire to be part of the project team, if not already included. In many cases this may have been decided in Phase I and II.

STEPS WITHIN THE ACTIVITY:

1. Determine the desirability and nature of the market(s) involvement in procurement.
2. Establish market participation and obtain their commitment for time and participation, if appropriate.

MAJOR OBSTACLES: Market(s) refuse to cooperate.

MAJOR DECISIONS: Whether or not there is a need for market involvement in procurement.

INPUT: Output of MA 106 and MA 207.

OUTPUT: Decision on market involvement.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA, C
2. Responsible: PD
3. Must be Consulted: U, M
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: SECURE EXPERIENCED A/E CAPABILITIES

number 31201

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Preliminary Design (A/E)

MASTER ACTIVITY MILESTONE: Complete Preliminary Plans, Draft Specifications, and Cost Estimates

PURPOSE: To obtain the required design expertise.

DESCRIPTION: A consulting engineer with adequate previous experience is required to design the RR facility using this procurement approach. If not already identified and selected, the design engineer should now be selected.

STEPS WITHIN THE ACTIVITY:

1. See MA 311 for selection of consultants.
2. Use same procedure therein to select A/E if not previously done.
3. Negotiate scope of work and sign contract.

MAJOR OBSTACLES: Lack of funding.

MAJOR DECISIONS: To terminate previous A/E; selection of new A/E.

INPUT: Output of MA 311.

OUTPUT: Signed contract for design.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, PT
2. Responsible: PM
3. Must be Consulted: DP, LD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: R2

SAMPLE DOCUMENTS: Any prior contract for A/E services in the municipality.

ACTIVITY: START UP PROJECT DESIGN

number 31202

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Preliminary Design (A/E)

MASTER ACTIVITY MILESTONE: Complete Preliminary Plans, Draft Specifications, and Cost Estimates

PURPOSE: To acquire the information and familiarity with the project details in order to commence preliminary design.

DESCRIPTION: Associated with every complex design job is an associated project startup, when teams are set in motion and all data are gathered for design computations and drawings. Affected agencies are contacted, job-specific communication channels effected, and countless other specified tasks performed before the design actually begins to proceed smoothly. It may be necessary to update waste quantities, taking into account source separation programs and new, expanded or upgraded sewage treatment plants (for co-disposal projects).

STEPS WITHIN THE ACTIVITY:

1. Acquire latest data from prior studies and monitoring points.
2. Prepare and issue plans and specs for subsurface investigation, if required.
3. Receive bids, select, and sign contract with drilling contractor.
4. Contact all affected agencies and obtain pre-design requirements.
5. Organize project groups and in-house scheduling information.
6. Commence design.

MAJOR OBSTACLES: Inadequate staff; poor liaison contacts; delay in approval of subcontracts; lack of clear goals.

MAJOR DECISIONS: Whether subsurface data are required; type of subcontracts to use; interface with project team.

INPUT: Contract scope of work; previous data and computations; all information on sites, easements, market requirements, and similar support information.
OUTPUT: Clear teams, schedules, and communication channels established.

ROLES AND RESPONSIBILITIES:

1. Does Work: A/E
2. Responsible: A/E, PM
3. Must be Consulted: PUC, DOT, EPA, EA-(L), CH, U, M, DPW, DP
4. Must be Notified: EO, P

ESTIMATING DATA:

1. Duration: Average = 26 weeks* Range = 20 to 32 weeks.
2. Work Effort: Average = 2,560 work days.

*Includes A 31202 - A 31206.

REFERENCES: Previous design work done by the firm in conjunction with experience of the PM.

SAMPLE DOCUMENTS: NR

ACTIVITY: SCREEN ENVIRONMENTAL REQUIREMENTS, ADDRESS ISSUES

number 31203

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Preliminary Design (A/E)

MASTER ACTIVITY MILESTONE: Complete Preliminary Plans, Draft Specifications, and Cost Estimates

PURPOSE: To incorporate into the design the solutions and mitigations to environmental impacts of the project.

DESCRIPTION: The design is directly affected by the emissions code -- either Federal or local -- specifying water and air emissions, noise, and safety requirements in the plant. The environmental restrictions screened earlier should be reviewed again, and those restrictions factored into preliminary configuration choices.

STEPS WITHIN THE ACTIVITY:

1. Obtain prior environmental and safety information.
2. Note issues having a bearing on design configuration.
3. Clarify needs with concerned agency (e.g., EPA, local air pollution control agency).
4. Address issues and determine how the design will solve them.
5. Integrate into facility design.

MAJOR OBSTACLES: Changing environmental codes; unclear design target.

MAJOR DECISIONS: Equipment configuration to satisfy needs (e.g., quench water treatment).

INPUT: Previous environmental screening; assistance from agencies.

OUTPUT: Clear understanding of equipment configuration needed for compliance with all environmental codes.

ROLES AND RESPONSIBILITIES:

1. Does Work: A/E
2. Responsible: A/E, PM
3. Must be Consulted: EPA, EA-(L)
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 26 weeks* Range = 20 to 32 weeks.
2. Work Effort: Average = 2,560 work days.

*Includes A 31202 - A 31206.

REFERENCES: Clean Air Act, as amended, 1977 Safe Drinking Water Act, Air and Water Pollution Code Rules and Regulations, OSHA.

SAMPLE DOCUMENTS: NR

ACTIVITY: SPECIFY EMISSIONS

number 31204

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Preliminary Design (A/E)

MASTER ACTIVITY MILESTONE: Complete Preliminary Plans, Draft Specifications and Cost Estimates

PURPOSE: To ensure that these critical aspects are addressed during the preliminary design.

DESCRIPTION: This task results directly from the previous task and is geared at preparation of the environmental requirements and design configuration for the environmentally-related permitting procedure which follows.

STEPS WITHIN THE ACTIVITY:

1. Analyze emissions requirements and configuration so that the plant will produce emissions and effluents within codes.
2. List emission and effluent concentrations expected from the plant.
3. Relate to receiving waters and ambient air conditions, noise, safety, and aesthetic requirements.

MAJOR OBSTACLES: Changing codes; inability to meet codes.

MAJOR DECISIONS: Level of treatment required to meet or exceed code requirements.

INPUT: Environmental requirements and conditions from A 31203.

OUTPUT: All expected effluents and environmental considerations for the public hearing process.

ROLES AND RESPONSIBILITIES:

1. Does Work: A/E
2. Responsible: A/E, PM
3. Must be Consulted: EPA, EA-(L)
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 26 weeks.* Range = 20 to 32 weeks.
2. Work Effort: Average = 2,560 work days.

*Includes A 31202 - A 31206.

REFERENCES: OSHA, Clean Air Act, Safe Drinking Water Act, Toxic Substances Act, Clean Water Act, State or Local Pollution Code Requirements.

SAMPLE DOCUMENTS: NR

ACTIVITY: PRODUCE CONCEPTUAL DESIGN

number 31205

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Preliminary Design (A/E)

MASTER ACTIVITY MILESTONE: Complete Preliminary Plans, Draft Specifications, and Cost Estimates

PURPOSE: To perform the preliminary design and produce the necessary details and documentation.

DESCRIPTION: Conceptual design includes general plant sizing, equipment configuration, process train requirements, processing capabilities, design computations, drawings and specifications equal to 40% of the total detailed design effort.

STEPS WITHIN THE ACTIVITY:

1. Prepare initial layout drawings, plans, sections, and elevations.
2. Perform design computations.
3. Prepare outline specifications.
4. Prepare preliminary information for permitting requirements.
5. Interface with concerned or affected agencies.
6. Contact and evaluate equipment manufacturers and equipment.
7. Coordinate and consolidate design package.

MAJOR OBSTACLES: Inability to cause preliminary operational characteristics to be consistent with regulatory requirements.

MAJOR DECISIONS: Equipment design and configuration; physical plant, and general layout.

INPUT: All previous computations and design data.

OUTPUT: Full conceptual plans; major design computations; outline specifications.

ROLES AND RESPONSIBILITIES:

1. Does Work: A/E
2. Responsible: A/E, PM
3. Must be Consulted: All concerned regulatory agencies, equipment manufacturers.
4. Must be Notified: EO, PD

ESTIMATING DATA:

1. Duration: Average = 26 weeks* Range = 20 to 32 weeks.
2. Work Effort: Average = 2,560 work days.

*Includes A 31202 - A 31206.

REFERENCES: Previous conceptual design documents, both in the C firm and in the municipal files.

SAMPLE DOCUMENTS: NR

ACTIVITY: PERFORM PRELIMINARY ENGINEER'S COST ESTIMATE

number 31206

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Preliminary Design (A/E)

MASTER ACTIVITY MILESTONE: Complete Preliminary Plans, Draft Specifications, and Cost Estimates

PURPOSE: To obtain a refined cost estimate of the project.

DESCRIPTION: Accompanying every design should be a cost estimate, which is as nearly complete or as accurate as the level of study or design detail. Preliminary design should enable an engineer's estimate to be accurate within 15% of the estimate resulting from detailed design.

STEPS WITHIN THE ACTIVITY:

1. Complete preliminary design.
2. Perform standard engineering cost analysis.

MAJOR OBSTACLES: None.

MAJOR DECISIONS: None.

INPUT: Preliminary design.

OUTPUT: Engineer's preliminary estimate.

ROLES AND RESPONSIBILITIES:

1. Does Work: A/E
2. Responsible: A/E
3. Must be Consulted: PM
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 26 weeks.* Range = 20 to 32 weeks.
2. Work Effort: Average = 2,560 work days.

*Includes A 31202 - A 31206.

REFERENCES: Previous estimate.

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE PRECONSTRUCTION PERMITS (A/E)

number 313

PHASE: III, Resource Recovery System Procurement

MILESTONE: Necessary Permits Secured

PURPOSE: To secure necessary permits such as air quality, NPDES, construction, operation, and highway permits where required, before extensive design is performed; to assure the financial community that the project is indeed viable, and to assure communities and markets that the project is viable.

DESCRIPTION: Depending on local requirements, various types of permits may need to be secured for the project to have a reasonable probability of success. Some of the permits are contingent upon an acceptable site location, plan, expected emissions and effluents. The permits are issued.

MAJOR OBSTACLES: Design problem; renewed public opposition.

MAJOR DECISIONS: Conceptual design; which permits should be pursued earliest.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, A/E, PM, and possibly C
2. Must be Consulted or Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 26 weeks. Range = 12.5 to 38 weeks.
2. Work Effort: Average = 90 work days.
3. Funding: $25,000

REFERENCES: Local permit information.

SAMPLE DOCUMENTS: NR

ACTIVITY: COMPLETE LISTING OF APPLICABLE PERMITS

number 31301

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (A/E)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To avoid overlooking any of the numerous permits which may be required.

DESCRIPTION: Previously completed lists of activities may be outdated or incomplete. It is advantageous to compile a complete list as early as possible.

STEPS WITHIN THE ACTIVITY:

1. Gather and review existing lists.
2. Obtain additional permits required by talking to all concerned agencies. One agency will generally be able to indicate who the others might be. Agencies can indicate if any recent changes in laws, rules, or regulations have been made.

MAJOR OBSTACLES: Incomplete list from an agency.

MAJOR DECISIONS: Which agencies to re-contact regarding permit information.

INPUT: Previous lists (output of A 31105); new information solicited by telephone.
OUTPUT: Completed list of required permits.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, A/E, C, PM
2. Responsible: PM
3. Must be Consulted: Various agencies, one leading to another.
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW REQUIREMENTS

number 31302

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (A/E)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To identify the requirements of permits in order to screen only those which should be completed immediately.

DESCRIPTION: After material has been compiled, the permits required earliest are identified and a priority is placed on the order in which they should be sought. Often these requirements have been known from Phase II work, but this activity provides a comprehensive review and check.

STEPS WITHIN THE ACTIVITY:

1. Review the permit applications to determine both technical and scheduling requirements.
2. Set priorities on those which should be done before construction and which were addressed by the preliminary design of MA 312.
3. Determine necessary lead times for permit review.

MAJOR OBSTACLES: Requirements not clear.

MAJOR DECISIONS: Priority of permit application submission.

INPUT: List of all possible permits from A 31301.

OUTPUT: List of permits which will be pursued, when to pursue, and anticipated schedule for receiving permits.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, A/E or C
2. Responsible: PM
3. Must be Consulted: Agencies requiring permits
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH PERMIT RESPONSIBILITY

number 31303

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (A/E)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To establish who will be responsible for applying for permits, which agency will issue the permit, and what the parameters for the permit will be.

DESCRIPTION: At the outset the individual responsible for preparing permit applications, obtaining the required signatures, and other approvals is designated. Other designations are: who will be the agency's representative; who will gather additional information and give and receive missing details.

STEPS WITHIN THE ACTIVITY:

1. Identify individuals in respective agencies and in-house who are critical to the process.
2. Obtain commitments for participation.
3. Reach an understanding of the requirements of each.

MAJOR OBSTACLES: No real time or effort commitment from necessary participants.

MAJOR DECISIONS: Identification of key personnel in permit process.

INPUT: Results of review of A 31302.

OUTPUT: Individuals identified and committed to work.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM
2. Responsible: PD
3. Must be Consulted: A/E, C, and participating agency representative
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PERFORM NECESSARY ANALYSIS

number 31304

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (A/E)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To produce and organize technical and institutional detail as required for permits.

DESCRIPTION: Analysis and modification of preliminary design may be necessary for some permits. After the material is identified, it should be suited to the format required by the application.

STEPS WITHIN THE ACTIVITY:

1. Identify needed information for each required permit as early as possible.
2. Produce the information in the form required for the permit.
3. Check with agencies to see whether information is of the general type desired.
4. Ready the information for permit applications to suit the required permit.

MAJOR OBSTACLES: Design incompatible with permit requirements.

MAJOR DECISIONS: Extent of work required to satisfy permits.

INPUT: Permit requirements.

OUTPUT: All information gathered and readied for permit application.

ROLES AND RESPONSIBILITIES:

1. Does Work: A/E
2. Responsible: PM
3. Must be Consulted: IA
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 48 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: COMPLETE AND SUBMIT APPLICATIONS

number 31305

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (A/E)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To prepare applications for permits and submit them to appropriate agencies.

DESCRIPTION: Using output from A 31304, the applications for permits are completed; appropriate signatures and seals are obtained; and the permits are submitted to the appropriate agencies.

STEPS WITHIN THE ACTIVITY:

1. Compile information in permit application. Check and review for completeness.
2. Obtain signatures of key individuals.
3. Submit permit applications according to local custom.

MAJOR OBSTACLES: Incomplete permit information; permit requirements unclear.

MAJOR DECISIONS: None

INPUT: All information prepared in A 31304.

OUTPUT: Completed and signed permit applications.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, A/E, C
2. Responsible: PM
3. Must be Consulted: EO's
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 3 to 8 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ASSESS REGULATORY AND PUBLIC INFORMATION NEEDS

number 31401

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (A/E)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To determine the requirements of all environmental agencies and public interest groups so that time is not lost later through oversight or retracing of steps.

DESCRIPTION: The agency requiring the assessment should ascertain that all facets are being addressed by the assessment, including air, water, noise, aesthetics, and safety, as well as the concerns of the local public interest groups.

STEPS WITHIN THE ACTIVITY:

1. Based on experience and the outcome of MA 002, MA 103, MA 110 and MA 202 identify the potential types of information sought.
2. Consider the needs of the regulatory agency for the information required in the permits and required by the public over and above permits.

MAJOR OBSTACLES: Poor assessment of needs.

MAJOR DECISIONS: Priorities of dealing with needs.

INPUT: Environmental information gathered in MA 002, MA 103. MA 110 and MA 202.

OUTPUT: List and understanding of needs.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: FURTHER LIAISON WITH REGULATORY AGENCIES AND POLITICAL PROCESS

number 31402

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (A/E)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To reestablish communication and a working arrangement with the regulatory agencies and to reintroduce the elected officials to the environmental requirements.

DESCRIPTION: After the Phase II decision process and in conjunction with obtaining permits, it is necessary for the lead agency and other involved parties to reestablish liaison with regulatory agencies whose input into the assessment may be critical, and the elected officials who will be involved in public interface concerning the assessment.

STEPS WITHIN THE ACTIVITY:

1. List all regulatory agencies and interest groups.
2. Either call or visit each representative to discuss the project status, assessment requirements, and anticipated work methods and needs.
3. Solicit opinions and preferences, particularly where agencies are also involved in permitting (i.e., coordinate with MA 313, and use contacts established in A 31105).
4. In co-disposal projects liaison should be continued with all potentially involved branches of EPA, especially where partial funding may be available under Public Law 92-500.

MAJOR OBSTACLES: Overlooking key agency; not observing protocol.

MAJOR DECISIONS: Subjects for discussion with each agency.

INPUT: Agencies identified in MA 110, MA 202 and MA 313.

OUTPUT: Renewed contact and understanding.

ROLES AND RESPONSIBILITIES:

1. Does Work: A/E, C, PM
2. Responsible: PM
3. Must be Consulted: EO, Agencies, EA-(L), EA-(S), EPA, BPD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE RESEARCH AND ANALYSIS SCOPE

number 31403

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (A/E)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To decide critical parameters which should be addressed in order to have a complete assessment.

DESCRIPTION: The project should have a clearly defined role regarding research depth and level of analysis required. This is the activity wherein the assessment work is actually outlined, and tasks are listed and assigned. Necessary resources are also identified, if different from those already committed to the project.

STEPS WITHIN THE ACTIVITY:

1. Establish the depth and level of analysis required.
2. Consider the permit work of MA 313 in scope.
3. Discuss needs with affected agencies concerning the type of information required.
4. Document the specific requirements of the agencies in advance of assessment preparation and obtain agreement.

MAJOR OBSTACLES: Lack of specific requirements.

MAJOR DECISIONS: The exact scope, with agreement by the regulatory agencies and possibly EPA.

INPUT: Output of MA 103, MA 110, MA 202 and developments in MA 313.

OUTPUT: Known scope of performing the assessment.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, A/E
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: Agencies noted above

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ALLOCATE AND PERFORM TASKS

number 31404

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (A/E)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To assign tasks and conduct the actual environmental analysis.

DESCRIPTION: After scope and research requirements are known, the material should be used to make computations and evaluations concerning all the possible environmental impacts. This activity involves about 80% of the assessment work.

STEPS WITHIN THE ACTIVITY:

1. Draft report Table of Contents.
2. Assign work tasks to individuals (internal to the organization preparing the assessment).
3. Compute effluent loadings on air, water, and intake treatment requirements.
4. Evaluate aesthetics, architecture, and other environmental considerations.
5. Prepare charts, tables, and graphs of the resultant work.

MAJOR OBSTACLES: Necessary data unavailable.

MAJOR DECISIONS: The methods used to analyze and compute the environmental impacts; whether or not the available data is sufficient.

INPUT: Analytical requirements of A 31403, output of MA 110 and MA 202.

OUTPUT: Computations, tables, charts, rationale, and background for the draft report.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, A/E or C
2. Responsible: PM
3. Must be Consulted: Affected agencies
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 12 weeks. Range = 4 to 24 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DRAFT REPORT AND ISSUE FOR REVIEW

number 31405

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (A/E)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To issue report and receive reactions, in order to finalize assessment.

DESCRIPTION: About 80% of the assessment preparation work was done in the previous step. Remaining is the writing to tie the work together and the presentation of material in report format. The draft report is issued for review, and comments are received in anticipation of the final document. This task could be delayed due to public hearing requirements, major objections, or other substantial disagreements.

STEPS WITHIN THE ACTIVITY:

1. Draft the outline of chapters using the Table of Contents and computations from A 31404.
2. Discuss internally.
3. Write draft report.
4. Review internally, modify, and finalize draft report.
5. Issue notification of draft report.
6. Make draft reports available to the regulatory agencies and the public.
7. Receive and compile comments.

MAJOR OBSTACLES: Incomplete analysis; important issues overlooked.

MAJOR DECISIONS: Form of document; need for hearings.

INPUT: All output from A 31404.

OUTPUT: Draft environmental assessment with comments received.

ROLES AND RESPONSIBILITIES:

1. Does Work: A/E or C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 5 to 30 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: REVISE DRAFT AND ISSUE FINAL REPORT

number 31406

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (A/E)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To complete requirements and issue a responsive assessment.

DESCRIPTION: All comments received are reviewed and considered. Appropriate comments are incorporated into the main body of the report. The results are reviewed and approved by the issuing agency. When approval is received, the document is made available to interested parties.

STEPS WITHIN THE ACTIVITY:

1. Incorporate comments into the draft report; finalize graphics.
2. Retype and review internally.
3. Finalize changes.
4. Submit for review and obtain approval.
5. Print and issue to regulatory agencies and the public.

MAJOR OBSTACLES: Disagreement with facts as presented; conflicting comments.

MAJOR DECISIONS: Which comments to incorporate and in what form.

INPUT: Draft report and comments received from A 31405.

OUTPUT: Final Environmental Assessment

ROLES AND RESPONSIBILITIES:

1. Does Work: A/E or C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 4 to 16 weeks.
2. Work Effort: Average = 30 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE WASTE SUPPLY CONTRACTS (A/E)

number 315

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Waste Supply Contracts

PURPOSE: To develop final agreements between the lead agency and communities for the supply of waste. This is the key agreement between the lead agency and the communities which identifies the service to be provided, the risks to be borne by either party, and the method of compensation to reflect such service and related risks. If a co-disposal project is being pursued, proper commitments of sewage sludge are also pursued.

SPECIAL NOTE: In the case of a single municipality or single long-term controlling agent, this master activity may be omitted or substantially reduced in scope.

DESCRIPTION: The communities and the lead agency will negotiate a contract for the supply of waste, whose revenues will partially offset the costs and act as security for financing. Provisions for existing or future source separation programs; transportation costs; separate industrial/commercial wastes; and previously committed host community incentives are considered for inclusion in these agreements as appropriate. Bond and other counsel, depending on the form of financing, will review the legality and efficiency of the document, at which time it must be approved by each participating community, which may involve a substantial educational effort. If a co-disposal project is being pursued, the commitment of sewage sludge and septic wastes (treated as appropriate) is sought for inclusion in the system. In the case of a single municipality or single controlling agent, the waste supply may be readily available without specific community contracts, and this task is virtually unnecessary.

MAJOR OBSTACLES: Convincing community decision-makers who have not been directly involved in contract negotiations of provisions, e.g., 20-year term, tonnage and guarantees (if required).

MAJOR DECISIONS: What risk posture to take on industrial/commercial waste; whether to take a hard or soft negotiating posture on draft contracts; what risks the lead agency should take and what risks the communities should take.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD assisted by negotiator, IHS, C, LC, FA
2. Must be Consulted or Notified: EO

ESTIMATING DATA:

1. Duration: Average = 24 weeks. Range = 16 to 168 weeks.
2. Work Effort: Average = 240 work days.
3. Funding: $65,000

REFERENCES: R2, R4, R6, R8, R11, R27, R29, R30, R31, R64, R65, R67, R68, R69, R87

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE DRAFT CONTRACT(S)

number 31501

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Waste Supply Contracts (A/E)

MASTER ACTIVITY MILESTONE: Signed Waste Supply Contracts

PURPOSE: To establish an initial bargaining position.

DESCRIPTION: An initial bargaining posture is established prior to negotiation. The draft contract establishes the lead agency posture on the service to be provided, the risks to be borne, and the method of compensation in addition to traditional language on default, termination and other pertinent contract terms. For sewage sludge, general condition and percent solids should be agreed to, as well as commitments between municipal authorities which are equivalent to contracts. In the event the owner/operator of the facility is the same entity providing waste supply, no contract is necessary.

STEPS WITHIN THE ACTIVITY:

1. Preparation of draft contract by legal, financial, and technical consultants.
2. In co-disposal systems, also develop contract(s) for sludge with appropriate agencies.
3. Incorporate provisions for transportation costs and quantity adjustments due to existing or future source separation programs.
4. Include previously agreed funding incentives in host community's contract (if applicable).
5. Draft contracts for individual industrial/commercial accounts.
6. Review and approval of community representatives (if appropriate).

MAJOR OBSTACLES: Disagreement on major contract terms.

MAJOR DECISIONS: What posture to take on industrial/commercial waste; how rigid a posture to take on the contract.

INPUT: Output from MA 105, MA 202, MA 205, MA 313 and MA 314.

OUTPUT: Draft contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, LC, FA
2. Responsible: PD
3. Must be Consulted: EO, PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 12 weeks.
2. Work Effort: Average = 120 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: NEGOTIATE CONTRACT(S)

number 31502

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Waste Supply Contracts (A/E)

MASTER ACTIVITY MILESTONE: Signed Waste Supply Contracts

PURPOSE: To agree on acceptable contract terms with communities, industrial commercial accounts, sludge generators, and other appropriate system members.

DESCRIPTION: In a multi-community or regional situation, certain communities (or a county or state agency) may negotiate a contract on behalf of all the communities in the region to be served. In other cases, each contract may have to be negotiated separately. Where community participation is voluntary, gaining acceptance of the contract is necessary. In a single community situation, which does not require separate industrial/commercial contracts, and the project is not co-disposal, this activity is unnecessary.

STEPS WITHIN THE ACTIVITY:

1. Secure negotiation team(s).
2. Conduct technical analysis of the implications of alternative risk postures.
3. Conduct negotiation sessions (hold caucuses to review risk posture).
4. Conduct technical sessions to work out details of agreed-upon risk posture.

MAJOR OBSTACLES: Parties unable to reach agreement.

MAJOR DECISIONS: Allocation and acceptance of risks.

INPUT: Output of A 31501, MA 204, MA 205, MA 206, MA 313 and MA 314.

OUTPUT: Waste supply contracts.

ROLES AND RESPONSIBILITIES:

1. Does Work: Negotiator, PD, LC, FA, LD, C, legal counsel for each community.
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 4 to 52 weeks.
2. Work Effort: Average = 100 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: OBTAIN COMMUNITY APPROVAL

number 31503

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Waste Supply Contracts (A/E)

MASTER ACTIVITY MILESTONE: Signed Waste Supply Contracts

PURPOSE: To obtain signed waste supply contracts via political/public decision(s).

DESCRIPTION: The negotiated contracts are presented to the elected officials for signature.

STEPS WITHIN THE ACTIVITY:

1. Conduct briefings to elected officials and interest groups.
2. Obtain approval by the legislative and executive bodies of each jurisdiction.

MAJOR OBSTACLES: Negotiated terms deemed unacceptable.

MAJOR DECISIONS: Whether or not to agree to the negotiated contract terms.

INPUT: Negotiated contracts (output of A 31502).

OUTPUT: Approved and signed waste supply contracts.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, PT, LD
2. Responsible: EO
3. Must be Consulted:
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 104 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: COMPLETE DESIGN PLANS, SPECIFICATIONS AND ENGINEER'S ESTIMATE

number 31601

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Design And Contractor (A/E)

MASTER ACTIVITY MILESTONE: Signed Construction Contract(s)

PURPOSE: To obtain complete design, specifications, contract documents, and engineer's cost estimate.

DESCRIPTION: The preliminary design was conceptual and covered approximately 40% of the work; this task completes the detailed design by completing the remaining 60% of the design work.

STEPS WITHIN THE ACTIVITY:

1. Review conceptual design; modify and improve.
2. Commence final design; ready structural, mechanical, electrical, plumbing, HVAC drawings and specifications for construction.
3. Sign and seal drawings.
4. Produce final specifications and bid documents.
5. Complete engineer's estimate and submit to municipality.

MAJOR OBSTACLES: Equipment purchase and material fabricating schedule.

MAJOR DECISIONS: Configuration to provide adequate redundancy and plant availability.

INPUT: Conceptual design drawings and specifications; subsurface information; any modifications from MA 313 and MA 314.
OUTPUT: Drawings and specifications signed and sealed.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, A/E
2. Responsible: PM
3. Must be Consulted: MPE
4. Must be Notified: DP

ESTIMATING DATA:

1. Duration: Average = 30 weeks. Range = 20 to 38 weeks.
2. Work Effort: Average = 3850 work days.

REFERENCES: Previous work by the qualified A/E firms.

SAMPLE DOCUMENTS: Previous designs of similar facilities plans and specifications.

ACTIVITY: SECURE CONSTRUCTION PERMITS

number 31602

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Design And Contractor (A/E)

MASTER ACTIVITY MILESTONE: Signed Construction Contract(s)

PURPOSE: To obtain necessary construction permits which have not been previously obtained and have not been made the contractors responsibility.

DESCRIPTION: New facilities often require the approval of various departments, such as the municipal professional engineer, buildings and inspections or other licensing departments. This activity addresses permits which require complete design information and therefore could not be applied for prior to completion of A 31601.

STEPS WITHIN THE ACTIVITY:

1. Review A 31301 and previous construction jobs in the municipality.
2. Identify construction permit requirements, which are different from pre-construction permits.
3. Apply for permits with appropriate design and specification backup material.
4. Discuss and revise with reviewer; make permit revisions.
5. Receive permits to proceed.

MAJOR OBSTACLES: Incomplete or inadequate submission of application of supporting information.

MAJOR DECISIONS: Design configuration decisions to satisfy all permit requirements.

INPUT: All design information developed to date dealing with permit requirements.

OUTPUT: Completed applications with sufficient supporting material; required permits.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, A/E
2. Responsible: PD
3. Must be Consulted: Agencies from whom permits are desired.
4. Must be Notified: Other municipal departments affected by the permits.

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 7 to 16 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: Must be supplied by host municipality or appropriate agency within municipality.

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW AND APPROVE DESIGN

number 31603

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Design and Contractor (A/E)

MASTER ACTIVITY MILESTONE: Signed Construction Contract(s)

PURPOSE: To document the acceptance of the design by the lead agency.

DESCRIPTION: Public work design projects generally incorporate a review by the lead agency. In RR projects, the review will be conducted by a Sanitation or Sanitary Engineering Department, or by an engineer on retainer to an authority. The design is reviewed and accepted by the responsible department.

STEPS WITHIN THE ACTIVITY:

1. Receive plans and specifications.
2. Review and comment; have revisions made, if required.
3. Stamp approval.

MAJOR OBSTACLES: Incomplete or unacceptable design.

MAJOR DECISIONS: Whether design is adequate for desired function and meets all requirements.

INPUT: Final design plans and specifications.

OUTPUT: Plans and specifications approved for distribution.

ROLES AND RESPONSIBILITIES:

1. Does Work: MPE
2. Responsible: MPE
3. Must be Consulted: Other departments affected (public works, water, etc.)
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 15 weeks.
2. Work Effort: Average = 120 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ADVERTISE FOR CONSTRUCTION BIDS

number 31604

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Design and Contractor (A/E)

MASTER ACTIVITY MILESTONE: Signed Construction Contract(s)

PURPOSE: To publicly notify contractors of the project, where the bid documents can be obtained, and the date that the bids are due.

DESCRIPTION: Standard design, bid-construction contracts require advertisement in the press, according to local custom.

STEPS WITHIN THE ACTIVITY:

1. Prepare advertisement, check with legal and procurement departments for inclusion of all necessary public advertisement information.
2. Develop list of publications where advertisement will be placed noting cost and lead time of each.
3. Check time requirements for bidders response (Local and State laws, EPA rules and regulations if co-disposal project).
4. Place advertisements.

MAJOR OBSTACLES: Usually none.

MAJOR DECISIONS: Level of detail required in advertisement; publications to advertise in; length of time for bidders to respond.

INPUT: Front pages of specifications.

OUTPUT: Bid advertisement from procurement department appearing in press.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: NR
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: Previous competitive bid advertisements.

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE BIDS

number 31605

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Design and Contractor (A/E)

MASTER ACTIVITY MILESTONE: Signed Construction Contract(s)

PURPOSE: To develop cost bids based on a detailed review and analysis of the plans, specifications, and bid documents.

DESCRIPTION: Since the contractors will prepare their bids for submission, this activity requires little activity on the part of the municipality or its consultants. (This sheet reflects only support effort by municipal agents, not contractor effort, in preparing the bid.)

STEPS WITHIN THE ACTIVITY:

1. Contractors prepare bids and submit questions in writing.
2. Addenda, if required, are prepared and distributed.
3. Contractors complete bid preparation.

MAJOR OBSTACLES: Extensive addenda preparation.

MAJOR DECISIONS: Items requiring addenda preparation.

INPUT: Complete planned specifications.

OUTPUT: Bids prepared by contractors ready for submission.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, A/E
2. Responsible: PM
3. Must be Consulted: Affected Departments
4. Must be Notified: DP

ESTIMATING DATA:

1. Duration: Average = 12 weeks. Range = 8 to 20 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: Prior municipal bids.

SAMPLE DOCUMENTS: NR

ACTIVITY: RECEIVE AND REVIEW BIDS

number 31606

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Design and Contractor (A/E)

MASTER ACTIVITY MILESTONE: Signed Construction Contract(s)

PURPOSE: To formally accept bids, to publicly record them, and to analyze them for conformance with the plans, specifications, and bid documents.

DESCRIPTION: Most municipalities have precedents for low bid procedures. Bids are received, opened, and read aloud. Bids are then reviewed by the consultants and the municipal engineer for conformance with the plans and specifications.

STEPS WITHIN THE ACTIVITY:

1. Receive bids according to local procedures; open and read aloud at specified time, date and place.
2. Review for conformance with plans and specifications.
3. Submit to legal department for surety contracts review and reference check.
4. Summarize findings, prepare recommendations.

MAJOR OBSTACLES: All unresponsive bids - unlikely with good design.

MAJOR DECISIONS: To accept or reject low bidder.

INPUT: Submitted bids.

OUTPUT: Completed bid review.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: LC
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 12 weeks. Range = 8 to 16 weeks.
2. Work Effort: Average = 80 work days.

REFERENCES: In-house bid review - report.

SAMPLE DOCUMENTS: NR

ACTIVITY: SELECT BIDDER AND SIGN CONTRACT

number 31607

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Design and Contractor (A/E)

MASTER ACTIVITY MILESTONE: Signed Construction Contract(s)

PURPOSE: To acquire contractor(s).

DESCRIPTION: Bidder selection and contract signing are traditionally performed according to local custom.

STEPS WITHIN THE ACTIVITY:

1. Present bid review and recommendation to elected officials.
2. Receive approval to proceed, dependent on financing.
3. Obtain appropriate signatures from officials of lead agency and contractor(s) to execute contract(s).

MAJOR OBSTACLES: Impasse in some contract term, or no approval by elected officials.

MAJOR DECISIONS: Final selection of contractor(s).

INPUT: Reviewed contract and technical and legal recommendations.

OUTPUT: Signed construction contract(s).

ROLES AND RESPONSIBILITIES:

1. Does Work: Officials (company and municipal)
2. Responsible: PM
3. Must be Consulted: LD
4. Must be Notified: P, if required.

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 2 to 10 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: Previous municipal contract signings.

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE MARKET CONTRACTS (A/E)

number 317

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Energy (And Materials) Market Contracts

PURPOSE: To develop final agreements by conversion of preliminary commitments or letters of intent obtained during Phases I and II into contractually binding documents between the lead agency and the buyer(s) of energy (and materials).

DESCRIPTION: The lead agency will negotiate and secure contracts for the sale of energy and materials. Revenues from such contracts will partially offset the cost of RR. Negotiations for the sale of energy to utilities should include liaison with the PUC. In the case of RDF production, final contracts may not be deemed necessary at this time, depending on the amount of risk which the lead agency (and possibly the communities in a multi-jurisdictional project) is willing to bear. For materials recovery it may be desirable to wait for the facility to become operational before contracting for the sale of the product.

MAJOR OBSTACLES: Little monetary incentive for a utility to enter into an energy contract; excessive redundancy or penalty requirements by energy market.

MAJOR DECISIONS: What level of compensation is appropriate; what risks should be borne by the lead agency; what risks should be borne by the market; whether or not to seek materials market contract(s).

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, IHS, C, LC
2. Must be Consulted or Notified: EO, PUC in case of U

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 20 weeks.
2. Work Effort: Average = 20 work days.
3. Funding: $7,000 (Highly variable depending on the level of detail obtained in MA 207 and new developments thereafter)

REFERENCES: R1, R4, R8, R15, R16, R20, R85

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE FINANCING PLAN

number 31801

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Financing (A/E)

MASTER ACTIVITY MILESTONE: Receipt of Funds

PURPOSE: To develop details associated with financing the project.

DESCRIPTION: This activity identifies the proposed method of financing the project and the cash flow requirements based upon the construction schedule.

STEPS WITHIN THE ACTIVITY:

1. Investment banker prepares financing plan (may have an independent engineering feasibility study performed).
2. Bond counsel prepares bond resolutions.
3. Project director approves financing plan and bond resolution.
4. The elected officials approve financing plan and bond resolution.

MAJOR OBSTACLES: Debt ceiling ramifications.

MAJOR DECISIONS: Type, details, and timing of bond issue.

INPUT: Output from MA 113, MA 209, and MA 210.

OUTPUT: Approved detailed financing plan and bond resolution.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, IB, BC
2. Responsible: PD
3. Must be Consulted: EO, C
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 3 to 6 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: MARKET BONDS

number 31802

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Financing (A/E)

MASTER ACTIVITY MILESTONE: Receipt of Funds

PURPOSE: To obtain debt financing for the project.

DESCRIPTION: Complete all necessary documentation, secure all necessary approvals, and market the bonds.

STEPS WITHIN THE ACTIVITY:

1. Secure the approvals of State financing authority (if applicable).
2. Rating Agency review.
3. Market the bonds.

MAJOR OBSTACLES: Poor municipal credit rating.

MAJOR DECISIONS: Timing of bond issue.

INPUT: Output from A 31801.

OUTPUT: Receipt of funds.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PD, IB, BC
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 8 to 20 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ESTABLISH ADMINISTRATIVE FRAMEWORK (FULL SERVICE)

number 321

PHASE: III, Resource Recovery System Procurement

MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule the Procurement Process

PURPOSE: To identify and secure commitments from the public and private organizational resources necessary to carry out the procurement process and to structure and schedule this process so as to accommodate the required inputs.

DESCRIPTION: During Phase II the elected officials have selected or created a lead agency for Phase III. This agency now reviews the project status and then determines and obtains commitments from the project team participants, hires consultants, establishes and maintains liaison with involved agencies, plans for public and industry involvement, and outlines the approach for soliciting and evaluating proposals from private industry (some or all of this may already be established and does not have to be repeated).

MAJOR OBSTACLES: Insufficient personnel or funding; in-fighting among agencies; weak commitments from key political and agency personnel.

MAJOR DECISIONS: Selection of lead agency and key personnel; composition of the project team for Phase III; selection of consultants; plans for public involvement; procurement plan and schedule.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, LA, C, PT
2. Must be Consulted or Notified: EO, IA, M, IG, P

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 5 to 19 weeks.
2. Work Effort: Average = 38 work days.
3. Funding: $10,000

REFERENCES: R2, R6, R9, R12

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW PROJECT TEAM

number 32101

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Full Service)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To apprise project team members of their responsibilities in this phase of the program, and to solicit new members as necessary.

DESCRIPTION: This activity provides a review of the existing project team for the capabilities necessary for Phase III. Suggested capabilities: solid waste management, economic analysis, major systems procurement, environmental assessment and regulation, civil engineering, legal counsel, public finance.

STEPS WITHIN THE ACTIVITY:

1. Review the project team for the presence of the necessary inputs.
2. Identify areas of need and solicit public and/or private inputs to fulfill those needs.
3. Review roles and responsibilities -- assign new areas.
4. After project team is established, it conducts a review of consultant's capability and decides whether additional consulting assistance is advisable. If so, the needs are so noted, and A 32104 becomes necessary. If not, A 32104 is unnecessary and is skipped.

MAJOR OBSTACLES: Difficulty in maintaining the active involvement of existing members if project team grows too large.

MAJOR DECISIONS: Whether or not there are desirable additions to the project team over and above those already established; how are such additions best provided; whether further consulting assistance is required.

INPUT: Existing team members, A 10103 - A 10105.

OUTPUT: Project team for Phase III.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with assistance from PT, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: FURTHER LIAISON WITH OTHER PUBLIC AGENCIES

number 32102

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Full Service)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep other agencies informed as to progress on the project.

DESCRIPTION: A framework for cooperation between the lead agency and contacts with affected and involved agencies not represented on the project team is developed and maintained. They should identify those agencies, apprise them of the project status, determine their involvement with the project, and provide updates at regular intervals throughout the procurement.

STEPS WITHIN THE ACTIVITY:

1. Identify agencies with potential interest in the project.
2. Correspond with the agency director: provide a project status report; request that the director or key staff member serve as project contact.
3. Maintain liaison through regular updates.

MAJOR OBSTACLES: No agency interest.

MAJOR DECISIONS: With which of the agencies contacted should a regular liaison be maintained.

INPUT: Previous contacts from Phases I and II

OUTPUT: List of agency contacts to be provided with project updates at regular intervals.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, EO maintain contact: LA with assistance from PT, C
2. Responsible: LA
3. Must be Consulted: AO, MPE, EA-(S), EA-(L)
4. Must be Notified: IA: directors - staff contacts.

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 2 weeks.
2. Work Effort: Average = 2 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: FURTHER LIAISON WITH POLITICAL PROCESS

number 32103

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Full Service)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep elected officials informed on progress of the project.

DESCRIPTION: Key elected officials at local and State level are identified, apprised of the project background and status, and provided with periodic updates.

STEPS WITHIN THE ACTIVITY:

1. Identify elected officials and staff who should be kept informed of the project.
2. Establish contact and provide information on the background and status of the project, according to protocol of MA 101, MA 117 and MA 210.
3. Maintain contact with periodic updates and by responding to requests for information initiated by the contact.

MAJOR OBSTACLES: None.

MAJOR DECISIONS: Who should be kept informed, continued previous protocol.

INPUT: Suggestions from the project team; requests from interested elected officials.

OUTPUT: List of persons and organizations to be kept informed of project developments.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with support from PT
2. Responsible: PD with support from PM and PT
3. Must be Consulted: EO
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: RETAIN CONSULTANT(S) (OPTIONAL)

number 32104

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Full Service)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To retain consultant(s) to assist in the project if required.

DESCRIPTION: Consultant(s) should be retained to assist in the preparation of proposal solicitations, evaluations of proposals, negotiations of contracts, financing, and other procurement and implementation activities.

STEPS WITHIN THE ACTIVITY:

1. Solicit suggestions and advertise for additional consultant(s), if necessary.
2. Receive qualifications and invite qualified firms to present a suggested approach.
3. Contact references and previous clients.
4. Evaluate new firm(s), make selection, negotiate contract(s); negotiate and renew contracts with existing firms who will continue on the project, if necessary.

MAJOR OBSTACLES: Constraints on procuring services.

MAJOR DECISIONS: Whether or not additional consulting support is needed; selection of consulting firm(s).

INPUT: References from other RR projects; MA 102.

OUTPUT: Firm(s) for procurement phase hired.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with support from PT
2. Responsible: PM
3. Must be Consulted: IA
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 1 to 6 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS:

ACTIVITY: ESTABLISH LIAISON WITH SPECIFIC PERMIT AGENCIES

number 32105

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Full Service)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities of Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep Permit Agencies informed and involved; to renew contacts in agencies if excessive time has elapsed in MA 210.

DESCRIPTION: A complete list of the agencies involved in approving siting, construction and operating permits should be developed and, for each agency, a contact identified. The agencies should be informed of the background and status of the project and requested to provide a list of potential permit requirements. In many cases, the contacts in individual agencies are already known from previous phases.

STEPS WITHIN THE ACTIVITY:

1. Develop a list of all permit agencies with potential involvement in the project. Note previous contacts.
2. Contact agency administrators. Inform them of the project status and review the list of potential permit requirements from each agency.
3. Identify a key staff member from each agency to provide ongoing project liaison.
4. Maintain contact with periodic updates and requests for information.

MAJOR OBSTACLES: Confusion concerning permit requirements and agency responsibilities for the RR project which may not have been settled previously.

MAJOR DECISIONS: What agencies are to have permit responsibilities for the project; whether new liaison or continued liaison in agency from previously is required.

INPUT: Permit requirements from DPW, MA 103 and MA 202.

OUTPUT: List of permit agencies and major permit requirements for the project; contact with the agencies.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with assistance from PT, EA-(S), EA-(L), C, DPW
2. Responsible: PD
3. Must be Consulted: Agencies involved in permit process for the project.
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: CONTINUE PROCESS FOR PUBLIC INVOLVEMENT

number 32106

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Full Service)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants: Structure and Schedule the Procurement Process

PURPOSE: To keep public informed.

DESCRIPTION: Public information meetings, citizen participation in proposal evaluations, referenda concerning project acceptance and interaction with interest groups are all potential components of the procurement process. The legal and political needs of these activities should be assessed and appropriate mechanisms devised. Liaison with the press and with key citizens and interest groups should be established. Responsibilities for public involvement activities should be clearly defined within the project. In many cases, precedents for this process exist from MA 101, MA 201, MA 204, MA 210 and ongoing activities.

STEPS WITHIN THE ACTIVITY:

1. Discuss the need for public information and involvement with elected officials and with others experienced in siting and constructing public projects.
2. From discussions, develop strategies for meeting these needs.
3. Determine project team roles for public information involvement, and structure citizen input, if required.
4. Maintain liaison with press, key individuals, and interest groups; support citizen involvement.

MAJOR OBSTACLES: Inexperience of project team dealing with public; lack of cooperation by elected officials.

MAJOR DECISIONS: What the public information and involvement needs are; what kind of role the public should play in the procurement process.

INPUT: Assessment of needs provided by elected officials; public examples of involvement in other projects and in previous phases of this project.

OUTPUT: Plan for public information and involvement during the procurement process.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA with assistance from EO, C, PT
2. Responsible: PM, PD
3. Must be Consulted: EO
4. Must be Notified: IG

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 4 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE MARKET INVOLVEMENT IN PROCUREMENT

number 32107

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Establish Administrative Framework (Full Service)

MASTER ACTIVITY MILESTONE: Establish Roles and Responsibilities for Procurement Participants; Structure and Schedule Procurement Process

PURPOSE: To keep market(s) informed and involved.

DESCRIPTION: Determine the information required from the contemplated energy market and the potential for their involvement in the evaluation of proposals. The major energy market may desire to be part of the project team, if not already included, and may wish to be part of the RFQ/RFP evaluation team. In many cases, this may have been decided in Phases I or II.

STEPS WITHIN THE ACTIVITY:

1. Determine the desirability and nature of market involvement in proposal evaluations.
2. Establish market participation and obtain their commitment for time and participation, if appropriate.

MAJOR OBSTACLES: Market(s) refuse to cooperate.

MAJOR DECISIONS: Whether or not there is a need for market involvement in the proposal evaluation.

INPUT: Output of MA 106 and MA 207.

OUTPUT: Decision on energy market involvement.

ROLES AND RESPONSIBILITIES:

1. Does Work: LA, C
2. Responsible: PD
3. Must be Consulted: U, M
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE PARAMETERS

number

32201

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Full Service)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To determine the categories of information that match the specific project and should be included in the RFP.

DESCRIPTION: There are no standard RFP's; the contents of each match the goals of each specific project. The categories of information (either to be described by the sponsor or to be requested of the proposer) are determined in advance of the actual writing. In the case of co-disposal, the project determined in MA 116, MA 201, MA 209 and MA 210 is used as technical input for the RFP. The impact of an existing source separation project is factored in. The RFP notes that the preliminary design of MA 328 in support of MA 324 and MA 325 requires funding, and the RFP or draft contracts should indicate the source.

STEPS WITHIN THE ACTIVITY:

1. Review the project definition and RFP checklist.
2. Ascertain that the outline addresses technical, environmental, managerial, economic and financial aspects.
3. Ascertain that special technical considerations like market constraints, co-disposal, source separation (from Phases I and II), are well documented and well understood.
4. Decide whether to update waste quantity (to account for source separation) or sludge quantities (co-disposal). If so, update.
5. In addition to the above major categories, ascertain that information on site and site conditions (including subsurface data), market letters of intent, waste supply, and an outline of the financial plan are included in the RFP.
6. Write the RFP outline.

MAJOR OBSTACLES: Disagreement about procurement concepts, roles, and level of detail required.

MAJOR DECISIONS: Items to include in RFP; the source of funding required in MA 328 (preliminary design) for permit acquisition and environmental assessment of MA 325 and MA 324, respectively.

INPUT: Decisions from MA 208, MA 209 and MA 210.

OUTPUT: Outline of RFP.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C, LC
2. Responsible: PD
3. Must be Consulted: NR
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: RFP checklist in R6

ACTIVITY: ADVISE POTENTIAL CONTRACTORS

number 32202

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Full Service)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To communicate to system contractors that an RFQ or RFP is being developed.

DESCRIPTION: A brief summary statement of the project is issued to the major system contractors and to the solid waste communication network (journals, newsletters, EPA, U.S. Department of Energy, etc.) stating an RFQ or RFP is in the offing. The statement should include the type of system, the form of financing, capacity, and approximate time of RFQ or RFP issuance. It should state that interested companies write the project manager requesting receipt of the documents. At least three weeks should be allowed for complete distribution of the announcement.

STEPS WITHIN THE ACTIVITY:

1. Summarize project. Issue statement via selected mailout or other appropriate means so that potential system can be explained.
2. Identify potential contractors; establish and continue communications channels with those identified.

MAJOR OBSTACLES: None

MAJOR DECISIONS: Which aspects of the communication network should be used; agreement upon system description, financing and procurement language to be used in RFQ/RFP.

INPUT: Decisions from MA 208 and MA 209.

OUTPUT: Announcement of project and receipt of letters of interest from companies.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified: LA, IA

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE RFQ AND EVALUATION CRITERIA (OPTIONAL)

number 32203

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Full Service)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To produce the document which will be used to qualify contractors for receipt of an RFP.

DESCRIPTION: The RFQ requests the submission of company qualifications in a formal evaluation procedure designed to limit the recipients of the RFP. Use of an RFQ facilitates proposal evaluation, saves unqualified proposers money and effort, and encourages complete responses from qualified proposers. Evaluation criteria is predetermined and issued with the RFQ to indicate the type of response required. The RFQ also contains a draft copy of the RFP to inform the potential responder of the nature and of the project, and to solicit their comments. Some jurisdictions, however, may not allow the use of an RFQ (refer to MA 113 and MA 206).

STEPS WITHIN THE ACTIVITY:

1. Draft RFQ and evaluation criteria.
2. Review drafts with project team
3. Incorporate project team comments and finalize RFQ.

MAJOR OBSTACLES: Contracting regulations which do not allow use of the RFQ to limit issuance of RFP.

MAJOR DECISIONS: Whether to issue RFQ, or to issue RFP to all interested companies.

INPUT: Results of MA 113, MA 114, MA 209 and A 32204.

OUTPUT: RFQ and evaluation criteria.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C
2. Responsible: PM
3. Must be Consulted: LC
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: PREPARE DRAFT RFP AND DRAFT CONTRACT

number 32204

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Full Service)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To produce a draft RFP and draft contract for review and consideration by potential contractors.

DESCRIPTION: The full service procurement should invite potential contractors to comment on the RFP. This dialogue enables proposing firms to assist in the development of a project which is consistent with their capabilities. A draft contract should be included to appraise the contractors of the responsibilities intended for the successful proposer. The RFP indicates that the eventual contractor is required to provide preliminary design and detailed design data in support of MA 324 and MA 325. Lead agency expectations of the contractor are written at this time.

STEPS WITHIN THE ACTIVITY:

1. Delegate writing tasks to members of four administrative areas, if desired (refer to MA 321): technical, management, economics and financing, and environmental.
2. Refer to RFP outline (A 32201).
3. Draft RFP and distribute internally for review.
4. Draft contract and submit to lead and bond counsel for review.
5. Revise documents and submit to the project director and elected officials for approval.

MAJOR OBSTACLES: Insufficient time to develop completely all four administrative areas; disagreement over form and/or content.

MAJOR DECISIONS: Whether to include draft contract; level of detail of draft contract.

INPUT: A 32201, MA 324 and MA 325.

OUTPUT: Draft RFP and draft contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C, LC
2. Responsible: PM
3. Must be Consulted: PD, IA, EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 4 to 12 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: ISSUE RFQ WITH DRAFT RFP (OPTIONAL)

number 32205

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Full Service)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To distribute RFQ to interested companies.

DESCRIPTION: The RFQ is issued with adequate time allowed for response by all interested companies (2 - 3 weeks). The list of companies results from a previous announcement (A 32202). The RFQ specifies the submission location and deadline and the requirements for a bond. A statement describing the treatment of confidential or proprietary information is included.

STEPS WITHIN THE ACTIVITY:
1. Determine the date and location of the receipt of responses.
2. Determine the desired bond.
3. Review and issue RFQ.

MAJOR OBSTACLES: Major policy changes on the part of the lead agency or market.

MAJOR DECISIONS: Date and location of response submission; bond requirements.

INPUT: List of interested companies from A 32202.

OUTPUT: Distributed RFQ.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:
1. Duration: Average = 6 weeks. Range = 4 to 8 weeks.
2. Work Effort: Average = 3 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: EVALUATE RFQ RESPONSES AND QUALIFY COMPANIES (OPTIONAL)

number 32206

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Full Service)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To determine which of the responding companies are qualified for receipt of an RFP.

DESCRIPTION: The evaluation of company qualifications need not be as detailed as the proposal evaluations, but it cannot be arbitrary and should produce sufficient justification for the elimination of proposers. A rating scheme may be used to ensure that all factors are considered, and relative weights may be assigned the more important categories. The evaluation team should be representative of the four principal areas (technical, environment, management, and economics and financing), and the evaluation criteria issued with the RFQ should be used. All responses should be logged in and their locations recorded.

STEPS WITHIN THE ACTIVITY:

1. Create a rating scheme.
2. Organize evaluation team (if possible, organize before receipt of responses).
3. Receive and log in responses.
4. Perform evaluation.
5. Select qualified companies.
6. Inform selected companies.
7. Inform nonselected companies and explain reasons.

MAJOR OBSTACLES: Insufficient criteria leading to unclear justification for elimination.

MAJOR DECISIONS: Acceptability of late responses; acceptability of incomplete responses; rating criteria.

INPUT: Responses to RFQ; evaluation criteria.

OUTPUT: List of qualified companies.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: Responding Companies

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 5 weeks.
2. Work Effort: Average = 25 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: MEET WITH COMPANIES

number 32207

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Full Service)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To discuss project and draft RFP with qualified companies.

DESCRIPTION: Due to the complexity of RR projects, it is advantageous to solicit comments from the prospective proposers concerning the contents and organization of the RFP. This dialogue serves to resolve ambiguities and to tailor the RFP to the systems under consideration.

STEPS WITHIN THE ACTIVITY:

1. Inform qualified companies (or all interested companies) of their selection and of the time and place of the meeting.
2. Ensure the presence of representatives from the appropriate agencies to answer questions concerning the scope and structure of the project.
3. Transcribe the entire meeting for later reference when revising the RFP.

MAJOR OBSTACLES: Appropriate representatives unable or unwilling to attend meeting; few participating proposers.

MAJOR DECISIONS: Who should attend the meeting and its organization.

INPUT: Output of either A 32206 or A32202.

OUTPUT: Transcript of proceedings.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: LA, IA, C, LC

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: FINALIZE RFP

number 32208

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Produce RFP (Full Service)

MASTER ACTIVITY MILESTONE: RFP and Draft Contract

PURPOSE: To produce the RFP in its final form.

DESCRIPTION: The comments gathered during the meeting with companies (A 32207) are evaluated for acceptability and incorporated as revisions in the final RFP.

STEPS WITHIN THE ACTIVITY:

1. Review transcript of meeting and summarize comments.
2. Comments are discussed and evaluated.
3. RFP is revised and reviewed internally.
4. Final RFP is reviewed by the project director and presented to the elected officials, if appropriate.

MAJOR OBSTACLES: Disagreement over final content of RFP.

MAJOR DECISIONS: Acceptability of received comments for RFP revision.

INPUT: Output from A 32207.

OUTPUT: Final RFP and draft contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 6 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

MASTER ACTIVITY: ACQUIRE CONTRACTOR (FULL SERVICE)

number 323

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Contract

PURPOSE: To engage the services of a contractor to carry out the project as defined in the RFP.

DESCRIPTION: The contractor is selected following an extensive evaluation of proposals and is contracted following either a sequential or simultaneous negotiation procedure. The contract negotiations actually begin upon receipt of proposals and are continued through proposer presentations until it is decided either that one company is superior or that further elaboration is required with a limited number of them. After selection of a preferred proposer, a second proposer should be selected as an alternate in the event of unforeseen difficulties with the preferred contractor. A key consideration is the responiveness of the proposals to the RFP. Further negotiations are needed even if a proposer meets all the requirements of the RFP and the proposed system is acceptable according to the principal criteria, since detailed contractual language will have to be agreed to by all parties to the transaction.

MAJOR OBSTACLES: Partially-responsive proposals; nonacceptability of certain proposal elements.

MAJOR DECISIONS: Evaluation and ranking of proposals, sequential or simultaneous negotiations, final form of contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PT, C, LC
2. Must be Consulted or Notified: PD, IA, P, EO

ESTIMATING DATA:

1. Duration: Average = 55 weeks. Range = 26 to 136 weeks.
2. Work Effort: Average = 300 work days.
3. Funding: $90,000

REFERENCES: R5, R6, R7, R8, R31, R32, R59

SAMPLE DOCUMENTS: SD 32302

ACTIVITY: ISSUE RFP

number 32301

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Contractor (Full Service)

MASTER ACTIVITY MILESTONE: Signed Contract

PURPOSE: To distribute RFP to interested companies.

DESCRIPTION: The final RFP (A 32208) is issued either to prequalified firms (A 32206) or to all interested companies (A 32202). At least three months is required for adequate proposal preparation and submission; a four month period is preferable.

STEPS WITHIN THE ACTIVITY:
1. Determine date and location of receipt of responses.
2. Determine the bonding requirements.
3. Issue the RFP, placing advertisement in media as required by law or local custom.

MAJOR OBSTACLES: Disagreement over bonding requirements; insufficient time to allow 3-4 month response period.

MAJOR DECISIONS: Date and location of the proposal submission; bond requirements.

INPUT: Output of either A 32206 or A 32202.

OUTPUT: RFP issued, advertised, and distributed.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: NR

ESTIMATING DATA:
1. Duration: Average = 18 weeks. Range = 9 to 21 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: IMA

ACTIVITY: REVIEW AND SUMMARIZE PROPOSALS

number 32302

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Contractor (Full Service)

MASTER ACTIVITY MILESTONE: Signed Contract

PURPOSE: To present the critical elements of each proposal in summary and comparative forms.

DESCRIPTION: The proposals are reviewed by the evaluation team and summarized in four parts: technical, management, economic and financial, and environmental. Incomplete responses are noted and preliminary calculations undertaken for comparison. Preliminary net user fees are identified at this time and the significant factors affecting them delineated. The proposals are logged in and their locations known throughout the process, since many different individuals on the evaluation team may be involved.

STEPS WITHIN THE ACTIVITY:
1. Log in the proposals.
2. Distribute to the evaluation team.
3. Review, summarize, and make appropriate calculations.
4. Print and distribute the summary sheets.
5. Meet and discuss results internally among evaluation team and decide on appropriate additional information needed, if any.
6. Print additional information desired of the proposers.

MAJOR OBSTACLES: Partially-responsive proposals.

MAJOR DECISIONS: Acceptability of late proposals; acceptability of partially-responsive proposals.

INPUT: Proposals

OUTPUT: 1. Summary Sheets; 2. Preliminary Evaluation Sheets; 3. Questions for Proposers.

ROLES AND RESPONSIBILITIES:
1. Does Work: IHS, PT, C, IB, BC, LD, LC, M (if appropriate)
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: LA, EO

ESTIMATING DATA:
1. Duration: Average = 3 weeks. Range = 2 to 4 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: SD 32302

ACTIVITY: INTERVIEW PROPOSERS

number 32303

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Contractor (Full Service)

MASTER ACTIVITY MILESTONE: Signed Contract

PURPOSE: To request additional information from the proposers concerning proposals and to initiate contract negotiations.

DESCRIPTION: The proposers are invited to make presentations before the project team and to respond to questions concerning their proposals. This is, in fact, simultaneous negotiation before the ranking of proposals has been accomplished. Ambiguities and omissions of the proposals should be resolved during this activity.

STEPS WITHIN THE ACTIVITY:

1. Inform companies of the time and place of the meeting.
2. Ensure the presence of representatives of appropriate agencies.
3. Meet with the proposers.
4. Document answers to the questions for later consideration in the overall evaluation.

MAJOR OBSTACLES: Nonresponsiveness of proposers.

MAJOR DECISIONS: Who should attend the presentations.

INPUT: Output of A 32302.

OUTPUT: Sheet listing clarification of omissions and ambiguities in proposals.

ROLES AND RESPONSIBILITIES:

1. Does Work: PT, C, LC, IHS
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: LA, IA

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: EVALUATE PROPOSALS

number 32304

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Contractor (Full Service)

MASTER ACTIVITY MILESTONE: Signed Contract

PURPOSE: To determine which proposals meet the goals of the project and to rank them in the order of preference.

DESCRIPTION: Two decisions should be made during proposal evaluation: 1) which proposals meet the project goals and; 2) their order of preference. The proposals are evaluated according to the previously determined criteria by the evaluation team. Usually simple numeric rating schemes are used to provide a mechanism for quantifying differences among proposals. If the evaluations are to be released publicly, they should be accompanied by statements about proposal strengths and weaknesses because numeric ratings tend to simplify factors of critical significance.

STEPS WITHIN THE ACTIVITY:

1. Incorporate the resulting written responses from meetings with companies as addenda to the proposals.
2. Determine the acceptability of proposals.
3. Rank the proposals.
4. Document justification for decisions.
5. Present the results and reasons for the outcome to the elected officials.

MAJOR OBSTACLES: Unresolved ambiguities of proposals.

MAJOR DECISIONS: Acceptability of the proposals; ranking of the proposals.

INPUT: Output from A 32302 and A 32303.

OUTPUT: Ranked list of acceptable proposals.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PT
2. Responsible: PM
3. Must be Consulted: PD, BC, LC, LD
4. Must be Notified: EO, IA, P

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 4 to 8 weeks.
2. Work Effort: Average = 80 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: SD 32302

ACTIVITY: NEGOTIATE CONTRACT

number 32305

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Contract (Full Service)

MASTER ACTIVITY MILESTONE: Signed Contract

PURPOSE: To secure the services of a contractor in a binding manner.

DESCRIPTION: Final contract negotiations can begin once a preferred proposer has been selected. The project team should not dismiss the other proposers from consideration until the contract has been successfully negotiated and signed with the preferred firm. Simultaneous negotiations are carried out until the exact position of each proposer is known or until a clearly superior proposal emerges from those firms submitting proposals consistent with the goals of the project. In the event the project team is unsatisfied with all the proposals, consideration should be given to reissuing the RFP.

STEPS WITHIN THE ACTIVITY:

1. Maintain simultaneous negotiation.
2. Determine preferred proposer and alternate.
3. Initiate final negotiation and inform the other proposers.
4. Complete negotiations or suspend them and go to an alternate firm.
5. Sign contract.

MAJOR OBSTACLES: Proposer will not sign a contract based on commitments made in proposal.

MAJOR DECISIONS: Choosing the final proposer and alternate; which items are negotiable; deciding to sign with the first-choice firm or to negotiate with alternate.

INPUT: Output from A 32304.

OUTPUT: Signed contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM, C, LC
2. Responsible: PD
3. Must be Consulted: PT, IA
4. Must be Notified: P, EO

ESTIMATING DATA:

1. Duration: Average = 26 weeks. Range = 10 to 100 weeks.
2. Work Effort: Average = 165 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: ASSESS REGULATORY AND PUBLIC INFORMATION NEEDS

number 32401

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Full Service)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To determine the requirements of all environmental agencies and public interest groups so that time is not lost later through oversight or retracing of steps.

DESCRIPTION: The agency requiring the assessment should ascertain that all facets are being addressed by the assessment, including air, water, noise, aesthetics, and safety, as well as the concern of the local interest groups.

STEPS WITHIN THE ACTIVITY:

1. Based on experience and the outcome of MA 002, MA 103, MA 110 and MA 202, identify potential types of information sought.
2. Consider the needs of the regulatory agency for information required in permits and required by the public over and above permits.

MAJOR OBSTACLES: Poor assessment of needs.

MAJOR DECISIONS: Priorities of dealing with needs.

INPUT: Environmental information gathered in MA 002, MA 103, MA 110 and MA 202.

OUTPUT: List and understanding of needs.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C or CR
2. Responsible: PM
3. Must be Consulted: PD, IG
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 0.5 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: FURTHER LIAISON WITH REGULATORY AGENCIES AND POLITICAL PROCESS

number 32402

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Full Service)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To re-establish communication and a working arrangement with regulatory agencies and to reintroduce the elected officials to the environmental requirements.

DESCRIPTION: After the Phase II decision process and in conjunction with obtaining permits, it is necessary for the lead agency and other involved parties to re-establish liaison with regulatory agencies whose input into the assessment may be critical, and for the elected officials who will be involved in public interface concerning the assessment.

STEPS WITHIN THE ACTIVITY:

1. List all regulatory agencies and interest groups involved.
2. Either call or visit each representative and discuss the project status, assessment requirements, and anticipated work methods and needs.
3. Solicit opinions and preferences, particularly where agencies are also involved in permitting (i.e., coordinate with MA 325 and use contacts established again in A 32105).
4. In co-disposal projects, where partial funding may be available from EPA under Public Law 92-500, liaison should be continued with all branches of EPA potentially involved.

MAJOR OBSTACLES: Overlooking key agency; not observing protocol.

MAJOR DECISIONS: Whether or not to directly involve the full service contractor; subjects for discussion with each.

INPUT: Agencies identified in MA 103, MA 110, MA 202, MA 321 and MA 325.

OUTPUT: Renewed contact and understanding; involvement of contractor, if appropriate.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, PM, CR
2. Responsible: PD
3. Must be Consulted: EO, IA, EA-(L), EA-(S), EPA, BPD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: DETERMINE RESEARCH AND ANALYSIS SCOPE

number 32403

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Full Service)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To decide critical parameters which should be addressed in order to have a complete assessment.

DESCRIPTION: The project should have a clearly defined role regarding the research depth and the level of analysis required. In this activity the assessment work is actually outlined and tasks are listed and assigned. Necessary resources are also identified if different from those already committed to the project.

STEPS WITHIN THE ACTIVITY:

1. Establish the depth and level of analysis required.
2. Consider permit work of MA 325 in conjunction with this step.
3. Discuss needs with affected agencies concerning the type of information required.
4. Document the specific requirements of the agencies in advance of assessment preparation and obtain agreement.

MAJOR OBSTACLES: Lack of specific requirements.

MAJOR DECISIONS: The exact scope with agreement by the regulatory agencies and possibly EPA.

INPUT: Output of MA 103, MA 110, MA 202 and developments in MA 325.

OUTPUT: Known scope of performing the assessment.

ROLES AND RESPONSIBILITIES:

1. Does Work: C, IHS, CR
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EA-(L), EA-(S), EPA

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ALLOCATE AND PERFORM TASKS

number 32404

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Full Service)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To assign tasks and conduct the actual environmental analysis.

DESCRIPTION: After scope and research requirements are known, the material is used to make computations and evaluations concerning all the possible environmental impacts. This activity involves about 80% of the assessment work. The contractor may be required to perform the assessment, or at least provide necessary detailed data, if not already in the proposal (see MA 328).

STEPS WITHIN THE ACTIVITY:

1. Draft report Table of Contents.
2. Assign work tasks to individuals (internal to the organization preparing the assessment).
3. Compute effluent loadings on air, water, and intake treatment requirements.
4. Evaluate aesthetics, architecture, and other environmental considerations.
5. Prepare charts, tables, and graphs of the resultant work.

MAJOR OBSTACLES: Necessary data unavailable.

MAJOR DECISIONS: The methods used to analyze and compute the environmental impacts; whether or not the available data is sufficient.

INPUT: Analytical requirements of A 32403; output of MA 110 and MA 202.

OUTPUT: Computations, tables, charts, rationale, and background for the draft report.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, or CR
2. Responsible: PM
3. Must be Consulted: Affected agencies
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 12 weeks. Range = 4 to 24 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: DRAFT REPORT AND ISSUE FOR REVIEW

number 32405

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Full Service)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To issue report and receive reactions, in order to finalize assessment.

DESCRIPTION: About 80% of the assessment preparation work was done in the previous step. Remaining is the writing to tie the work together and the presentation of material in report format. The draft report is issued for review, and comments are received in anticipation of the final document. This task could be delayed due to public hearing requirements, major objection, or other substantial disagreement.

STEPS WITHIN THE ACTIVITY:

1. Draft the outline of chapters using the Table of Contents and computations from A 32404 and A 32802.
2. Discuss internally.
3. Write draft report.
4. Review internally, modify, and finalize draft report.
5. Issue notification of draft report.
6. Make draft reports available to the regulatory agencies and the public.
7. Receive and compile comments.

MAJOR OBSTACLES: Incomplete analysis; contractor refuses to supply data and/or analysis; important environmental issues overlooked.

MAJOR DECISIONS: Form of document; need for hearings.

INPUT: All output from A 32404 and A 32802 (performed in conjunction with A 32404).

OUTPUT: Draft environmental assessment with comments received.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 5 to 30 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: REVISE DRAFT AND ISSUE FINAL REPORT

number 32406

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Environmental Assessment (Full Service)

MASTER ACTIVITY MILESTONE: Environmental Assessment Accepted by Environmental Agencies

PURPOSE: To complete requirements and issue a responsive assessment.

DESCRIPTION: All comments received are reviewed and considered. Appropriate comments are incorporated into the main body of the report. The results are reviewed and approved by the issuing agency. When approval is received, the document is made available to interested parties.

STEPS WITHIN THE ACTIVITY:

1. Incorporate comments into the draft report; finalize graphics.
2. Retype and review internally.
3. Finalize changes.
4. Submit for review and obtain approval.
5. Print and issue to regulatory agencies and the public.

MAJOR OBSTACLES: Disagreement with the facts as presented; conflicting comments.

MAJOR DECISIONS: Which comments to incorporate and in what form.

INPUT: Draft report and comments received from A 32405.

OUTPUT: Final Environmental Assessment.

ROLES AND RESPONSIBILITIES:

1. Does Work: C
2. Responsible: PM
3. Must be Consulted: PD
4. Must be Notified: EO

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 4 to 16 weeks.
2. Work Effort: Average = 30 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE PRECONSTRUCTION PERMITS (FULL SERVICE)

number 325

PHASE: III, Resource Recovery System Procurement

MILESTONE: Necessary Permits Secured

PURPOSE: To secure necessary permits such as air quality, NPDES, construction, operation, and highway permits where required, before extensive design is performed, principally to assure the lead agency; the contractor (if contractor equity is involved); the financial community (if case revenue bond financing is anticipated); the market(s); participating communities and the public that the project is viable and will meet all regulatory requirements.

DESCRIPTION: Depending on State and local requirements, various types of permits may need to be secured prior to final design and construction for the project to have a reasonable probability of success. Some of the permits are contingent upon an acceptable site plan, expected emissions and effluents. The permits are issued. The master activity is performed in conjunction with MA 328, since meeting permit requirements may cause modifications to the contractor's proposed design. The permit applicant will be either the lead agency or the full service contractor, depending on the type of financing employed and the contractual arrangements of the project.

MAJOR OBSTACLES: Permit requirements unclear; incomplete list of permits; renewed public opposition.

MAJOR DECISIONS: Which agencies should be contacted; which permits should be applied for during this master activity; whether or not design modifications are necessary to meet the permit requirements; whether the lead agency or the full service contractor should be the applicant for the permits.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, PM, C, with CR assistance
2. Must be Consulted or Notified: PD, EO

ESTIMATING DATA:

1. Duration: Average = 26 weeks. Range = 11 to 39 weeks.
2. Work Effort: Average = 90 work days.
3. Funding: $25,000

REFERENCES: Local permit information

SAMPLE DOCUMENTS: NR

ACTIVITY: COMPLETE LISTING OF APPLICABLE PERMITS

number 32501

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Full Service)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To avoid overlooking any of the numerous permits which may be required.

DESCRIPTION: Previously completed lists of required permits may be outdated or incomplete. It is advantageous to review and compile a complete list.

STEPS WITHIN THE ACTIVITY:

1. Gather and review existing lists of required permits.
2. Determine if any additional permits are required by talking to all concerned agencies. One agency will generally be able to indicate who the others might be. Agencies can indicate if any recent changes to law or rules and regulations have been made.

MAJOR OBSTACLES: Incomplete list from an agency.

MAJOR DECISIONS: Which agencies should be contacted.

INPUT: Previous lists, new information solicited by telephone.

OUTPUT: Completed list of required permits.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PM, CR
2. Responsible: PM
3. Must be Consulted: Various agencies, one leading to another
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 1 weeks. Range = 1 to 2 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW REQUIREMENTS

number 32502

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Full Service)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To identify the requirements of the permits; to screen only those which should be secured prior to construction.

DESCRIPTION: After material has been compiled, the permits which are required prior to construction are identified and a priority is placed on the order in which they should be sought. Often these requirements have been known from Phase II work, but this activity provides a comprehensive review and check.

STEPS WITHIN THE ACTIVITY:

1. Review the permit applications to determine both technical and scheduling requirements.
2. Set priorities on those which should be secured before construction and which were addressed by preliminary design of MA 328.
3. Determine necessary lead times for permit review.

MAJOR OBSTACLES: Insufficient time to schedule first those permits of highest priority; unclear permit requirements.

MAJOR DECISIONS: Which permits should be applied for at this time; priority of permit application submission.

INPUT: List of all possible permits from A 32501.

OUTPUT: List of permits which will be pursued; list of requirements of each; and anticipated schedule for submitting and receiving permits.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, CR
2. Responsible: PM
3. Must be Consulted: Agencies requiring permits
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: ESTABLISH PERMIT RESPONSIBILITY

number 32503

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Full Service)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To establish who will be responsible for applying for permits, which agency will issue the permit, and what the parameters for the permit will be.

DESCRIPTION: At the outset the individual responsible for preparing permit applications, obtaining the required signatures, and other approvals is designated. Other designations are: who will be the agency's representative; who will gather additional information and give and receive missing details.

STEPS WITHIN THE ACTIVITY:

1. Identify individuals in the lead and involved agencies and the full service contractor who are critical to the permit process.
2. Obtain commitments for participation.
3. Reach an understanding of the requirements of each permit.

MAJOR OBSTACLES: No commitment from necessary participants.

MAJOR DECISIONS: Identification of critical personnel in the permit process.

INPUT: Results of review of A 32502.

OUTPUT: Individuals identified and committed to work.

ROLES AND RESPONSIBILITIES:

1. Does Work: PM
2. Responsible: PD
3. Must be Consulted: CR, C, and participating agency representative
4. Must be Notified: NR

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 3 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PERFORM NECESSARY ANALYSIS

number 32504

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Full Service)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To produce and organize technical and institutional details as required for the permits.

DESCRIPTION: Analysis based on the proposal (and the contractor's preliminary design) is necessary for some permits. After analysis, the information is adapted to the format required by the application.

STEPS WITHIN THE ACTIVITY:

1. Identify needed information for each required permit as early as possible.
2. Perform any necessary analysis and produce the information in the form required for the permit.
3. Check with agencies to see whether information is of the type desired.
4. Ready the information for permit application to suit the individual permit requirements.

MAJOR OBSTACLES: Permit requirements unclear.

MAJOR DECISIONS: Extent of work required to satisfy permits; whether or not design modifications are necessary to meet the permit requirements; type and method of analysis.

INPUT: Permit requirements.

OUTPUT: All information gathered and readied for permit application.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, CR
2. Responsible: PM
3. Must be Consulted: IA
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 6 weeks. Range = 3 to 8 weeks.
2. Work Effort: Average = 40 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: COMPLETE AND SUBMIT APPLICATIONS

number 32505

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Preconstruction Permits (Full Service)

MASTER ACTIVITY MILESTONE: Necessary Permits Secured

PURPOSE: To prepare applications for permits and submit them to appropriate agencies.

DESCRIPTION: Using output from A 32504, the applications for permits are completed; appropriate signatures and seals are obtained; and the permits are submitted to the appropriate agencies.

STEPS WITHIN THE ACTIVITY:

1. Complete information on permit application. Check and review for completeness. Append backup data and calculations as necessary.
2. Obtain signatures of key individuals.
3. Submit permit applications according to local custom.

MAJOR OBSTACLES: Permit application requirements unclear.

MAJOR DECISIONS: None

INPUT: All information prepared in A 32504.

OUTPUT: Completed and signed permit applications.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, CR
2. Responsible: PM
3. Must be Consulted: EO
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 3 weeks. Range = 2 to 4 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE DRAFT CONTRACT(S)

number 32601

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Waste Supply Contracts (Full Service)

MASTER ACTIVITY MILESTONE: Signed Waste Supply Contracts

PURPOSE: To establish an initial bargaining position.

DESCRIPTION: An initial bargaining posture is established prior to negotiation. The draft contract establishes the posture on the service to be provided, the risks to be borne, and the method of compensation in addition to traditional language of default, termination and other pertinent contract terms. For sewage sludge, general conditions and percent solids should be agreed to, as well as commitments between municipal authorities which are equivalent to contracts.

STEPS WITHIN THE ACTIVITY:

1. Preparation of draft contract by legal, financial, and technical consultants.
2. In co-disposal systems, also develop contract(s) for sludge with appropriate agencies.
3. Incorporating provisions for transportation costs and quantity adjustments due to existing or future source separation programs.
4. Include previously agreed funding incentives in host community's contract (if applicable).
5. Draft contracts for individual industrial/commercial accounts.
6. Review and approval of community representatives (if appropriate).

MAJOR OBSTACLES: Disagreement on major contract terms.

MAJOR DECISIONS: What posture to take on industrial/commercial waste; how rigid a posture to take on the contract.

INPUT: Output from MA 105, MA 202, MA 205, MA 209, MA 210, and MA 323.

OUTPUT: Draft contract.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, LC, FA, CR
2. Responsible: PD
3. Must be Consulted: EO, PD
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 12 weeks.
2. Work Effort: Average = 120 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: NEGOTIATE CONTRACT(S)

number 32602

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Waste Supply Contract (Full Service)

MASTER ACTIVITY MILESTONE: Signed Waste Supply Contracts

PURPOSE: To agree on acceptable contract terms with communities, industrial/commercial accounts, sludge generators, and other appropriate system members.

DESCRIPTION: In a multi-community or regional situation, certain communities (or a county or State agency) may negotiate a contract on behalf of all the communities in the region to be served. In other cases, each contract may have to be negotiated separately. Where community participation is voluntary, gaining acceptance of the contract is necessary. In a single community situation, which does not require separate industrial/commercial contracts, and the project is not co-disposal, this activity is virtually unnecessary unless the lead agency is to contract with the full service contractor.

STEPS WITHIN THE ACTIVITY:

1. Secure negotiation team(s).
2. Conduct technical analysis of the implications of alternative risk postures.
3. Conduct negotiation sessions (hold caucuses to review risk posture).
4. Conduct technical sessions to work out details of agreed-upon risk posture.

MAJOR OBSTACLES: Parties unable to reach agreement.

MAJOR DECISIONS: Allocation and acceptance of risks.

INPUT: Output of A 31501, MA 204, MA 205, MA 206, MA 210 and MA 323.

OUTPUT: Waste supply contracts.

ROLES AND RESPONSIBILITIES:

1. Does Work: Negotiator, PD, LC, FA, LD, C, LC for each community; CR
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 4 to 52 weeks.
2. Work Effort: Average = 100 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: IMA

ACTIVITY: OBTAIN COMMUNITY APPROVAL

number 32603

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Waste Supply Contracts (Full Service)

MASTER ACTIVITY MILESTONE: Signed Waste Supply Contracts

PURPOSE: To obtain signed waste supply contracts via political/public decision(s).

DESCRIPTION: The negotiated contracts are presented to the elected officials for signature.

STEPS WITHIN THE ACTIVITY:

1. Conduct briefings to elected officials and public interest groups.
2. Obtain approval by the legislative and executive bodies of each jurisdiction.

MAJOR OBSTACLES: Negotiated terms deemed unacceptable.

MAJOR DECISIONS: Whether or not to agree to the negotiated contract terms.

INPUT: Negotiated contracts (output of A 30502).

OUTPUT: Approved and signed waste supply contracts.

ROLES AND RESPONSIBILITIES:

1. Does Work: EO, PT, LD, CR
2. Responsible: EO
3. Must be Consulted:
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 104 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: ACQUIRE MARKET CONTRACTS (FULL SERVICE)

number 327

PHASE: III, Resource Recovery System Procurement

MILESTONE: Signed Energy (And Materials) Market Contracts

PURPOSE: To develop final agreements by conversion of preliminary commitments or letters of intent obtained during Phases I and II into contractually binding documents between the lead agency or the full service contractor and the buyer(s) of energy (and materials).

DESCRIPTION: The lead agency or the full service contractor (depending upon the contractual agreements arrived at in MA 323) will negotiate and secure contracts for sale of energy and materials. Revenues from such contracts will partially offset the cost of RR. Negotiations for the sale of energy to utilities should include liaison with the PUC. In the case of RDF production, final contracts may not be deemed necessary at this time, depending on the amount of risk which the lead agency or the full service contractor (and possibly the communities in a multi-jurisdictional project) is willing to bear. For materials recovery it may be desirable to wait for the facility to become operational before contracting for the sale of the product.

MAJOR OBSTACLES: Little monetary incentive for a utility to enter into an energy contract; excessive redundancy or penalty requirements by energy market.

MAJOR DECISIONS: What level of compensation is appropriate; what risks should be borne by the lead agency; what risks should be borne by the market; whether or not to seek materials market contract(s).

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, IHS, C, LC
2. Must be Consulted or Notified: EO, PUC in case of U

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 20 weeks.
2. Work Effort: Average = 20 work days.
3. Funding: $7,000 (Highly variable depending on the level of detail obtained in MA 207 and new developments thereafter)

REFERENCES: R1, R4, R8, R15, R16, R20, R85

SAMPLE DOCUMENTS: NR

ACTIVITY: REVIEW PERMIT REQUIREMENTS

number 32801

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Preliminary Design (Full Service)

MASTER ACTIVITY MILESTONE: Technical Information For Permits (MA 325) and Environmental Assessment (MA 324)

PURPOSE: To identify the permit requirements which will require data and analysis beyond the information included in the contractor's proposal.

DESCRIPTION: Permit requirements are reviewed concurrently during this activity and A 32502 to ascertain the latest requirements. Complete familiarity with all requirements is necessary in order to ascertain what data and analysis will be needed when applying for the permits.

STEPS WITHIN THE ACTIVITY:

1. Review major required permits as determined in A 32501, particularly air, water, aesthetics.
2. Determine technical requirements.
3. Determine the data and analysis necessary to meet the technical requirements.

MAJOR OBSTACLES: Lack of coordination of information obtained from different permitting agencies.

MAJOR DECISIONS: The type, depth, and amount of detail necessary to meet permit requirements.

INPUT: Agency permit information from A 32501; information developed currently during A 32502.
OUTPUT: List of required data and analysis for each permit.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, CR, C, PM
2. Responsible: CR
3. Must be Consulted: EA-(L), ZA, BPD
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: Local permit requirements from EA-(S), EA-(L), and local bpd.

SAMPLE DOCUMENTS: NR

ACTIVITY: UPDATE PLANT TECHNICAL PARAMETERS

number 32802

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Preliminary Design (Full Service)

MASTER ACTIVITY MILESTONE: Technical Information For Permits (MA 325) and Environmental Assessment (MA 324)

PURPOSE: To provide data and analysis required for permits and environmental assessments; to update and modify plant parameters as necessary for meeting permit and other environmental requirements.

DESCRIPTION: Layouts and equipment specifications are used to supply required permit or environmental assessment information. If it is found that the requirements cause modifications to the proposal, the changes are documented and become part of the contractor's proposal (in some cases this may require formal submission and approval as an addendum to the proposal).

STEPS WITHIN THE ACTIVITY:

1. Understand permit and environmental assessment requirements thoroughly.
2. Review proposal (and in-house information) and produce the data and analysis necessary to support the permits and environmental assessment.
3. Perform preliminary design to support technical update (if necessary).
4. Document changes to proposal (if necessary) and submit to lead agency.

MAJOR OBSTACLES: Data and analysis requirements unclear.

MAJOR DECISIONS: Whether or not modifications to the proposal are required; what are the least cost modifications required for permits.

INPUT: Permit requirements (output of A 32801); environmental assessment requirements (A 32403) design proposed in MA 323 (Acquire Contractor).
OUTPUT: Technical information for permits and environmental assessment; documented changes to proposal (if necessary).
ROLES AND RESPONSIBILITIES:

1. Does Work: CR
2. Responsible: PM
3. Must be Consulted: EA-(L), BPD
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 2 to 8 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: Local Codes

SAMPLE DOCUMENTS: NR

ACTIVITY: PROVIDE PERMIT SUPPORT

number 32803

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Preliminary Design (Full Service)

MASTER ACTIVITY MILESTONE: Technical Information For Permits (MA 325) and Environmental Assessment (MA 324)

PURPOSE: To facilitate the processing of preconstruction permits.

DESCRIPTION: MA 325 outlines the procedure for certain permit applications. After applications are submitted, support is required (A 32506); this activity provides contractor support to A 32506.

STEPS WITHIN THE ACTIVITY:

1. Review and respond to requests for more information from the reviewing agency for permits, e.g., facility size, processing, and emission rates.
2. Modify configuration and compute system parameters (if necessary).
3. Submit to agency.
4. Repeat as necessary to satisfy permits.

MAJOR OBSTACLES: Changing regulations, budget constraints, excessive review time.

MAJOR DECISIONS: None

INPUT: Response from agencies seeking further information.

OUTPUT: Satisfied permit requirements.

ROLES AND RESPONSIBILITIES:

1. Does Work: CR
2. Responsible: PM
3. Must be Consulted: EA-(L), BPD
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 8 to 14 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

ACTIVITY: FINALIZE PERMITTED CONFIGURATION

number 32804

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Perform Preliminary Design (Full Service)

MASTER ACTIVITY MILESTONE: Technical Information For Permits (MA 325) and Environmental Assessment (MA 324)

PURPOSE: To place proposal in a ready configuration for detailed design.

DESCRIPTION: After permit and environmental assessment support is complete and the required configuration has been identified, the preliminary design is finalized in this activity to await financing and the commencement of final design. If A 32803 did not produce significant changes from A 32802, then this activity may not have to be performed.

STEPS WITHIN THE ACTIVITY:

1. Review and organize permit support work.
2. Produce final preliminary layouts and major equipment configuration.
3. Document changes to proposal and submit to lead agency (in some cases this may require formal submission and approval as an addendum to the proposal.

MAJOR OBSTACLES: None.

MAJOR DECISIONS: Amount of effort for final preliminary work.

INPUT: Material completed for permit support.

OUTPUT: Documented changes to proposal (if necessary).

ROLES AND RESPONSIBILITIES:

1. Does Work: CR
2. Responsible: CR, PM
3. Must be Consulted: PD, EO
4. Must be Notified: PD

ESTIMATING DATA:

1. Duration: Average = 2 weeks. Range = 1 to 4 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: NR

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE FINANCING (FULL SERVICE)

number 329

PHASE: III, Resource Recovery System Procurement

MILESTONE: Receipt of Funds

PURPOSE: To secure capital for the construction of the RR and related facilities; to choose one or some combination of a number of financing alternatives that provides capital at the lowest cost consistent with the level of risk that a public jurisdiction is willing to take.

DESCRIPTION: A number of financing options exist, including partial loans and grants, municipal general obligation bonds, municipal revenue bonds, 100% corporate financing, 100% tax-exempt revenue bond financing, or leveraged financing using a mix of equity and tax-exempt revenue bonds. Equity participation can provide lowest cost financing based upon current tax laws, but also is the most complex to implement. In some situations, the method of financing may be supported by loan guarantees. Any or all of these methods may be used depending on the size and locale of the project. The more complex approach of leveraged financing is illustrated in A 32902 and A 32903. Other approaches can also be used.

MAJOR OBSTACLES: Need IRS approval on a project-by-project basis in the case of a private tax-exempt bond issue.

MAJOR DECISIONS: Type of financing to pursue; establishment and approval of local financing authority for tax-exempt bonds; timing of bond issue.

ROLES AND RESPONSIBILITIES:

1. Does Work: IB*
2. Must be Consulted or Notified: EO, PD, LC, C, FA, BC

*Work of IB, BC, feasibility study engineer and equity counsel derived directly from the project charged.

ESTIMATING DATA:

1. Duration: Average = 38 weeks. Range = 28 to 60 weeks.
2. Work Effort: Average = 100 work days.
3. Funding: $25,000

REFERENCES: R5

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE FINANCING PLAN

number 32901

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Financing (Full Service)

MASTER ACTIVITY MILESTONE: Receipt of Funds

PURPOSE: To develop details associated with financing the project.

DESCRIPTION: In a privately designed, constructed, operated, and financed facility, the secured contractor will arrange the financing through the most appropriate instruments. In a privately designed, constructed and operated facility that is financed with public money, the lead agency will arrange the financing in the appropriate manner. This activity identifies the proposed method of financing the project, mix of funds from different sources, and impact on the cost of money and schedule.

STEPS WITHIN THE ACTIVITY:

1. The contractor secures an investment banker, if not already part of proposal team (for privately financed projects).
2. The investment banker prepares a detailed financing plan (either for the contractor or for the lead agency, depending on whether the project is privately or publicly financed).
3. Bond counsel prepares bond resolution (for publicly financed projects).
4. The project director approves the plan (and bond resolution, if applicable).
5. The elected officials approve financing plan (and bond resolution, if applicable).

MAJOR OBSTACLES: Elected official disagreement with financing plan.

MAJOR DECISIONS: Which financing method is preferred; who should bear the financing risk; who will be the ultimate owner at the conclusion of the bonding period.

INPUT: Output from MA 113, MA 209, MA 322.

OUTPUT: Approved detailed financing plan; approved bond resolution (for publicly financed projects).

ROLES AND RESPONSIBILITIES:

1. Does Work: IB, BC
2. Responsible: CR
3. Must be Consulted: PD, EO, FA, C, LC, Local Financing Authority (if established)
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 10 weeks.
2. Work Effort: Average = 15 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN DEBT FINANCING

number 32902

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Financing (Full Service)

MASTER ACTIVITY MILESTONE: Receipt of Funds

PURPOSE: To develop bond resolution for tax-exempt industrial development or pollution control revenue bonds required by the contractor's financing plan (if these bonds are not required then this activity is not performed).

DESCRIPTION: Tax-exempt revenue bonds of either industrial development or pollution control variety may be an important component of low-cost project financing. Most States have enabling legislation permitting local or State jurisdictions to issue such bonds for the desired public purposes. Local jurisdictions which have not previously issued these types of bonds acquire considerable education, particularly in view of the relatively large amount of capital usually required for a RR system.

STEPS WITHIN THE ACTIVITY: If a bond sale is contemplated as part or all of the contractor's financing plan:

1. Local revenue bonding Authority officials approve the financing plan.
2. Bond Counsel prepares bond resolution.
3. Bond resolution approved by Authority.

Co-disposal projects may incorporate partial construction grant funding for the sludge treatment aspects of the facility. The complexities of ownership increase and are to be resolved on a project-by-project basis through IRS rulings.

MAJOR OBSTACLES: Understanding, particularly by community(s), of the implications of this method of financing; desire for additional rewards or incentives.

MAJOR DECISIONS: Type, details, and timing of bond issue.

INPUT: Outputs from A 32901.

OUTPUT: Approved bond resolution.

ROLES AND RESPONSIBILITIES:

1. Does Work: LC, BC, IB, LD
2. Responsible: Authority or LA
3. Must be Consulted: PD, EO, C, FA
4. Must be Notified: DP

ESTIMATING DATA:

1. Duration: Average = 15 weeks. Range = 10 to 30 weeks.
2. Work Effort: Average = 50 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: OBTAIN EQUITY FINANCING

number 32903

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Financing (Full Service)

MASTER ACTIVITY MILESTONE: Receipt of Funds

PURPOSE: To obtain equity required for the contractor's financing plan (if equity is not required, then this activity is not performed).

DESCRIPTION: Equity participation, either through the contractor or a third party, levers important tax benefits (e.g., investment tax credit or accelerated depreciation), which can be returned to participating communities in the form of lower effective financing costs.

STEPS WITHIN THE ACTIVITY:

For Contractor Equity:
1. Contractor commits equity.

For Third Party Equity:
1. Select equity counsel.
2. Prepare offering circular.
3. Offer to third party equity participants.
4. Equity commitments.

MAJOR OBSTACLES: IRS approval of leveraged financing arrangement.

MAJOR DECISIONS: Ownership at the end of the bond financing period.

INPUT: Waste supply contracts (MA 326), market contracts (MA 327), construction and operating agreements (MA 323).
OUTPUT: Equity commitment letters.

ROLES AND RESPONSIBILITIES:

1. Does Work: IB, Equity Counsel
2. Responsible: CR
3. Must be Consulted: PD, EO, LC, C, FA, LD, BC
4. Must be Notified: BP

ESTIMATING DATA:
1. Duration: Average = 10 weeks. Range = 8 to 16 weeks.
2. Work Effort: Average = 5 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: Previous examples of effective offering circulars obtained locally from IB.

ACTIVITY: ESTABLISH PROJECT FEASIBILITY

number 32904

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Financing (Full Service)

MASTER ACTIVITY MILESTONE: Receipt of Funds

PURPOSE: To establish independent engineering feasibility of the project for offering.

DESCRIPTION: An independent engineering evaluation of the project's technical and economic feasibility is often necessary to satisfy prospective bond holders.

STEPS WITHIN THE ACTIVITY:

1. Select engineering consultant.
2. Prepare feasibility study, examining all managerial, technical, environmental, economic and financial aspects of the proposed project.

MAJOR OBSTACLES: Insufficient time to conduct feasibility study; project delays resulting from questions raised.

MAJOR DECISIONS: Consultant selection.

INPUT: Analyses of waste supply (MA 325), markets (MA 326), contractor proposals and contracts (MA 323).
OUTPUT: Publication of Feasibility Report.

ROLES AND RESPONSIBILITIES:

1. Does Work: Engineering C
2. Responsible: IB
3. Must be Consulted: PD, EO, C, FA
4. Must be Notified: DP

ESTIMATING DATA:

1. Duration: Average = 15 weeks. Range = 10 to 20 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: R2, R3, R5, R6, R8, R10, R11, R15, R20, R25, R27, R29, R30, R31, R33, R34, R35, R38, R39, R40, R55, R65

SAMPLE DOCUMENTS: NR

ACTIVITY: MARKET BONDS

number 32905

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Financing (Full Service)

MASTER ACTIVITY MILESTONE: Receipt of Funds

PURPOSE: To obtain debt financing for the project.

DESCRIPTION: Complete all necessary documentation, secure all necessary approvals, and market the bonds.

STEPS WITHIN THE ACTIVITY:

1. Finalize documents as applicable
   - lease
   - bond
   - participation agreement
   - construction agreement
   - service agreement
2. Secure the approvals of local/State financing authority.
3. IRS approval.
4. Rating Agency review.
5. Market bonds.

MAJOR OBSTACLES: IRS approval, poor credit rating.

MAJOR DECISIONS: Timing of bond issue.

INPUT: Output from A 32902, A 32903, and A 32904.

OUTPUT: Receipt of funds.

ROLES AND RESPONSIBILITIES:

1. Does Work: IB, BC, FA
2. Responsible: CR
3. Must be Consulted: PD, EO, FA, C
4. Must be Notified: DP

ESTIMATING DATA:

1. Duration: Average = 15 weeks. Range = 12 to 20 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: NEGOTIATE MARKET CONTRACTS

number 30801

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Acquire Market Contracts (Turnkey)

MASTER ACTIVITY MILESTONE: Signed Energy (And Materials) Market Contracts

PURPOSE: To negotiate agreement between the lead agency and the market(s) on terms and conditions for purchase and sale of energy; to reduce the risk of the RR project by obtaining long-term energy market contracts.

DESCRIPTION: Pricing formulae and risk allocation can become extremely complex, involving such items as: base load, time of day pricing, economic dispatch penalties, fuel price discount, guaranteeing a minimum energy supply, specifying a maximum energy supply, specifying load following requirements, connection costs (ie: transmission lines, substation, steam and condensate lines, boiler retrofit), and penalties or losses due to system failure. Material markets are left to local option - whether to seek contracts now or after the plant is built.

STEPS WITHIN THE ACTIVITY:

1. Analysis of prevailing energy costs to customers.
2. Preparation of initial bargaining posture.
3. If the market is a utility, check PUC requirements for filing and/or approval. It may be desirable to maintain liaison with PUC during negotiations, and possibly even have them attend negotiating sessions.
4. Negotiation of the energy market contract(s).
5. Decide whether or not to pursue materials market contracts at this time. The letter of intent from MA 207 will affect this decision. Existing materials contracts for source separation programs may be useful if materials contracts are sought.

MAJOR OBSTACLES: Excessive redundancy or penalty requirements by energy market.

MAJOR DECISIONS: Acceptance of a final agreement by all parties to the negotiations; whether to seek materials market contract(s).

INPUT: Output from MA 106 and MA 204.

OUTPUT: Signed energy (and materials) market contracts.

ROLES AND RESPONSIBILITIES:

1. Does Work: IHS, C, PD, LC
2. Responsible: PD
3. Must be Consulted: EO, PUC (if appropriate)
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 8 weeks. Range = 6 to 20 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

MASTER ACTIVITY: SECURE FINANCING (TURNKEY)

number 309

PHASE: III, Resource Recovery System Procurement

MILESTONE: Receipt of Funds

PURPOSE: To secure capital for the construction of RR and related facilities.

DESCRIPTION: There are basically two financing methods available when a governmental organization owns the facility. General obligation bond financing is the method often used for financing publicly-operated projects and places the faith and credit of the sponsoring jurisdiction behind the project. Municipal revenue bond financing pledges the project revenues to guarantee the debt, thus shifting some of the risk from the owner to the user (if they are one and the same, there is no substantial difference between the two methods). Some States offer umbrella bond sales for obtaining a lower interest rate. The risks, however, usually remain with the local government. State or Federal aid in the form of grants, loans or loan guarantees may also be available; however, since the terms and conditions of these vary with State and project, they are not discussed here; the exact method of financing is project and locale specific.

MAJOR OBSTACLES: General obligation debt ceiling may prevent high capital cost projects from being financed.

MAJOR DECISIONS: Type, details, and timing of bond issue.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, IB, BC
2. Must be Consulted or Notified: PD, EO, C

ESTIMATING DATA:

1. Duration: Average = 14 weeks. Range = 11 to 26 weeks.
2. Work Effort: Average = 30 work days.
3. Funding: $10,000

REFERENCES: R5, R8, R34, R50, R52, R53, R55, R58, R110

SAMPLE DOCUMENTS: NR

ACTIVITY: PREPARE FINANCING PLAN

number 30901

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Financing (Turnkey)

MASTER ACTIVITY MILESTONE: Receipt of Funds

PURPOSE: To develop the details associated with financing the project.

DESCRIPTION: This activity identifies the proposed method of financing the project and the cash flow requirements based upon the construction schedule.

STEPS WITHIN THE ACTIVITY:

1. Investment banker prepares financing plan (may have independent engineering feasibility study performed).
2. Bond counsel prepares bond resolution.
3. Project director approves financing plan and resolution.
4. Elected officials approve financing plan and bond resolution.

MAJOR OBSTACLES: Debt ceiling ramifications.

MAJOR DECISIONS: Type, details, and timing of bond issue.

INPUT: Output from MA 113, MA 209 and MA 210.

OUTPUT: Approved detailed financing plan and bond resolution.

ROLES AND RESPONSIBILITIES:

1. Does Work: IB, BC
2. Responsible: PD
3. Must be Consulted: EO, C
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 4 weeks. Range = 3 to 6 weeks.
2. Work Effort: Average = 20 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

ACTIVITY: MARKET BONDS

number 30902

PHASE: III, Resource Recovery System Procurement

MASTER ACTIVITY: Secure Financing (Turnkey)

MASTER ACTIVITY MILESTONE: Receipt of Funds

PURPOSE: To obtain debt financing for the project.

DESCRIPTION: Complete all necessary documentation, secure all necessary approvals, market the bonds.

STEPS WITHIN THE ACTIVITY:

1. Secure the approval of State financing authority (if applicable).
2. Rating Agency review.
3. Market the bonds.

MAJOR OBSTACLES: Poor municipal credit rating.

MAJOR DECISIONS: Timing of bond issue.

INPUT: Output from A 30901.

OUTPUT: Receipt of funds.

ROLES AND RESPONSIBILITIES:

1. Does Work: PD, IB, BC
2. Responsible: PD
3. Must be Consulted: EO
4. Must be Notified:

ESTIMATING DATA:

1. Duration: Average = 10 weeks. Range = 8 to 20 weeks.
2. Work Effort: Average = 10 work days.

REFERENCES: IMA

SAMPLE DOCUMENTS: NR

RESOURCE RECOVERY MANAGEMENT MODEL
ABBREVIATIONS

A	Activity
A/E	Architect/Engineer
AO	Appointed Official
BC	Bond Counsel
BPD	Building and Permits Department
C	Consultant(s)
CH	Clearing House
CR	Contractor(s)
DF	Department of Finance (municipal comptroller's function)
DOT-(F)	Department of Transportation, Federal
DOT-(S)	Department of Transportation, State
DOT-(L)	Department of Transportation, Local
DP	Department of Procurement or Purchasing
DPW	Department of Public Works
EA-(S)	Environmental Agency, State
EA-(L)	Environmental Agency, Local
EO	Elected Officials
EPA	U.S. Environmental Protection Agency
FA	Financial Advisor
IA	Involved Agency(s)
IB	Investment Banker(s)
IG	Interest Groups
IHS	In-House Staff
IMA	Included in Master Activity
IRS	Internal Revenue Service
LA	Lead Agency
LC	Legal Consultant
LD	Legal Department
LOI	Letter of Intent
M	Market(s)
MA	Master Activity
MPE	Municipal Professional Engineer (responsible Chief Engineer
NR	Not Required
O&M	Operating and Maintenance
P	Public (usually local)
PA	Public Agency(s)
PD	Project Director (overall project responsibility)
PM	Project Manager (daily project management; reports to PD)
PR	Public Relations
PT	Project Team
PUC	Public Utilities Commission
R	Reference
RDF	Refuse Derived Fuel
RFP	Request for Proposals
RFQ	Request for Qualifications
RR	Resource Recovery
SD	Sample Document
SS	Support Staff
SWA	Solid Waste Authority
U	Utility(s)
ZA	Zoning Agency

RESOURCE RECOVERY MANAGEMENT MODEL
ABBREVIATIONS

A	Activity
A/E	Architect/Engineer
AO	Appointed Official
BC	Bond Counsel
BPD	Building and Permits Department
C	Consultant(s)
CH	Clearing House
CR	Contractor(s)
DF	Department of Finance (municipal comptroller's function)
DOT-(F)	Department of Transportation, Federal
DOT-(S)	Department of Transportation, State
DOT-(L)	Department of Transportation, Local
DP	Department of Procurement or Purchasing
DPW	Department of Public Works
EA-(S)	Environmental Agency, State
EA-(L)	Environmental Agency, Local
EO	Elected Officials
EPA	U.S. Environmental Protection Agency
FA	Financial Advisor
IA	Involved Agency(s)
IB	Investment Banker(s)
IG	Interest Groups
IHS	In-House Staff
IMA	Included in Master Activity
IRS	Internal Revenue Service
LA	Lead Agency
LC	Legal Consultant
LD	Legal Department
LOI	Letter of Intent
M	Market(s)
MA	Master Activity
MPE	Municipal Professional Engineer (responsible Chief Engineer
NR	Not Required
O&M	Operating and Maintenance
P	Public (usually local)
PA	Public Agency(s)
PD	Project Director (overall project responsibility)
PM	Project Manager (daily project management; reports to PD)
PR	Public Relations
PT	Project Team
PUC	Public Utilities Commission
R	Reference
RDF	Refuse Derived Fuel
RFP	Request for Proposals
RFQ	Request for Qualifications
RR	Resource Recovery
SD	Sample Document
SS	Support Staff
SWA	Solid Waste Authority
U	Utility(s)
ZA	Zoning Agency

RESOURCE RECOVERY MANAGEMENT MODEL
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E-38's efforts are devoted to "the development of methods of test, specifications, recommended practices and nomenclature, the promotion of knowledge, and stimulation of research relating to material and energy resources recoverable or potentially recoverable from waste ... waste for resource recovery is ... defined as that portion of waste which is collected from industrial, commercial, or household sources destined for disposal facilities ..."

Full committee meetings are held twice a year; subcommittee meetings are held more often. Draft reports of findings may be available.

E-38 Subcommittees

E38.01 Energy; E38.02 Ferrous Metals; E38.03 Nonferrous Metals; E38.04 Paper and Paperboard Products; E38.05 Glass; E38.06 Construction Materials; E38.06.01 Waste Glass in Ceramic Construction Materials; E38.06.02 Slags in Construction Materials; E38.07 Health and Safety Aspects of Resource Recovery; E38.08 Processing Equipment and Unit Operations; E38.92 Research; E38.93 Nomenclature, Definitions and Editorial; E38.94 Long-Range Planning.

NOTE TO USER

Documents referred to in the Resource Recovery Management Model are listed in this section. Many of the documents are readily available to the user from the Environmental Protection Agency and other sources as noted.

To order EPA publications, send request to:

Solid Waste Information
U.S. Environmental Protection Agency
46 West St. Clair Street
Cincinnati, Ohio 45268

To order NTIS reports, send request to:

National Technical Information Service
U.S. Department of Commerce
5258 Port Royal Road
Springfield, Virginia 22161

A complete listing of Available Information Materials on solid waste management is available upon request from:

U.S. Environmental Protection Agency
Office of Solid Waste
26 West St. Clair Street
Cincinnati, Ohio 45268

SAMPLE DOCUMENTS LISTING

SD 10602	Telephone Survey Boiler Questionnaire
SD 10604	Sample Worksheet for Energy Market Visit
SD 10607	Steam Pricing Analysis
SD 10608	Industrial Energy Market Letter of Interest
SD 10702a	Landfill Site Data Sheet
SD 10702b	Existing Disposal Sites Information Checklist
SD 10802	Preliminary Questionnaire - Markets for Materials in Solid Waste
SD 10805	Materials Market Letter of Interest
SD 10901	Sample Collection Practices Survey
SD 10902	Source Separation Program Cost Analysis
SD SS103	Semi-Rural Source Separation Opinion Poll Questionnaire
SD SS203	Sample Letter of Intent for Materials
SD 20501	Waste Supply Letter of Intent
SD 20705	Energy Market LOI
SD 20710	Materials Market LOI
SD 21006	Letter of Support
SD 32302	RFP Evaluation/Proposal Evaluation Criteria

SAMPLE DOCUMENT 10602

TELEPHONE SURVEY BOILER QUESTIONNAIRE

Name of Firm:

Address:

Company Contact Representative

Telephone Number

	Boilers Nominal Capacity (Btu/hr)	Steam Use (process elec, heat)	Remaining Life	Operation (hr/day)	Fuel (type, quan)	Boiler Type (package, Stoker-fed)
a.						
b.						
c.						
d.						
e.						

Status of Interest in RDF

1. Have you ever had any experience with or have you ever considered the use of waste-based solid fuel in your boilers?

2. Would you be willing to enter into discussions with potential fuel producers for the use of refuse fuel in your boiler system?

SAMPLE DOCUMENT 10604

SAMPLE WORKSHEET FOR ENERGY MARKET VISIT

1. Plant Operation
   a. Shifts per Day:
   b. Days per Week:
   c. Vacation Shutdown:
2. Time of
   a. Plant Startup:
   b. Plant Shutdown:
3. Boilers
   a. Number:
   b. Age:
4. Boilers per shift
   a. Winter:
   b. Summer:
5. Boiler efficiencies:
6. Steam Uses Conditions:
   a.
   b.
   c.
   d.
   e.
7. Typical Boiler Steaming Rates (lb/hr):
   January
   April
   July
   October
8. Weekend Steam Use:
   Saturday Sunday
9. Fuel Type:
   Cost:
   Monthly Consumption 19__:
10. Steam Cost based on Fuel Cost Only ($/MM Btu)
11. Steam Cost including capital and operating and maintenance costs ($/MM Btu)

SAMPLE DOCUMENT 10604

WORKSHEET FOR ENERGY MARKET VISIT

12. Expansion:
    a. Plans for (over the next 15 years):

    b. Estimated impact on steam requirements:

13. Willingness to sign a steam contract for ___ years with the steam price tied to the price of the lowest commercially available fuel.

14. Interest in the operation of resource recovery plant.

15. Preferred Backup System:

    a. own power plant

    b. incinerator facility equipped oil-fired boilers

16. Would there be any economic loss if the steam supply to the process was interrupted for up to 2 hours? If so, what is the potential dollar loss and why?

17. Modifications necessary if RDF were used:

    a. Air pollution controls:

    b. Ash handling:

    c. Storage Space:

    d. How fired:

18. Is there any company land available within a one-mile radius that could be used for an incinerator facility?

SAMPLE DOCUMENT 10607

STEAM PRICING ANALYSIS

Fuel Displacement Cost: No. 6 Fuel Oil

Assumptions:
1. **Gallon of oil has 150,000 BTU**
2. **42 gallons of oil per barrel**
3. **Cost figures are for 1000 lbm of steam**

$$\text{Cost} = \left(\frac{1000}{\varepsilon}\right) * \left(\frac{1}{150{,}000}\right) * \left(\frac{1}{42}\right) * S * \Delta h$$

$$= \left(\frac{1000}{150{,}000}\right) * \left(\frac{1}{42}\right) * \left(\frac{\Delta h * S}{\varepsilon}\right)$$

$$\text{Cost} = \left(\frac{1}{6300}\right) * \left(\frac{\Delta h * S}{\varepsilon}\right)$$

where Δh = **enthalpy rise of feedwater to boiler exit steam BTU/lbm**

S = **cost of No. 6 fuel oil \$/barrel**

ε = **boiler efficiency**

For boiler efficiency of 85% $\varepsilon = 0.85$

and \$13 per barrel of fuel oil $S = 13$ **\$/barrel**

$$\text{Cost} = \left(\frac{15.294}{6300}\right) \Delta h$$

The formula must consider:

1. Peak Load
2. Off-Peak Load
3. Waste Generated
4. Minimum energy production (RDF needed)
5. Minimum energy demand (Btu needed)
6. Put or Pay Clause?
7. Base or Peak Loading
8. Steam or Electricity
9. Guarantees, reliability
10. Revenues to community

Cost to energy markets → based on fossil fuel replacement alone or w/capacity credits

SAMPLE DOCUMENT 10608

INDUSTRIAL ENERGY MARKET LETTER OF INTEREST

Dear Mr.

I have reviewed your letter of October 23 and would like to reaffirm comments that I have made to you verbally at our past meetings.

Obviously, the Company would be interested in purchasing low-cost steam for our heating and processing requirements. However, no final decision to go this route would be arrived at until after a complete cost analysis is made of what it would mean for us to maintain our existing plant to furnish the balance of steam above your generating capability and also after arriving at a true economical figure for the cost of steam.

I might comment that your 10% discount seems low; without a good engineering calculation on losses, we could probably lose that much in the old steam lines delivering from your new proposed plant to us.

Your proposal for a 15-year contract is obviously too long. It far exceeds any long-range forecasts that we prepare for our business needs. Therefore, a much shorter contract with renegotiable clauses would be required.

I will conclude by saying yes, the Company does have an interest in your proposal provided it is economically feasible and is capable of meeting our requirements on a continuous basis.

Very truly yours,

SAMPLE DOCUMENT 10702a

Landfill Site Data Sheet

A. Placement
   1. Location:
   2. Total Area:
   3. Owners:
   4. Present Use of Land:
   5. City Zone District:
   6. Adjacent Land Uses, Zones, etc.:
   7. Restrictions and Setbacks:
   8. Historical and Archaeological Significance:
   9. Proximity to Population and Refuse Centers:

B. Site
   1. Accessibility:
   2. Topography:
   3. Soil Classification:
   4. Availability of Cover:
   5. Surface Drainage:
   6. Groundwater Supply:
   7. Existing Utilities:

C. Site as Landfill
   1. Usable area:
   2. Type of operation:
   3. Capacity:
   4. Life:
   5. Land use after Development

D. Environmental Concerns of Site
   1. General Landfill Nuisances:
   2. Visual Pollution:
   3. Groundwater Pollution:
   4. Surface Drainage Works:
   5. Destruction of Natural Resources:
   6. Displacement:

SAMPLE DOCUMENT 10702a

Landfill Site Data Sheet

D. Environmental Concerns of Site (continued)

7. Other Environmental Concerns:
8. Safety:
9. Objections by Owners and Adjacent Owners:
10. Objections by Public, Community Organizations, etc.:

E. Site Operations

1. Access Road:
2. Facilities:
3. Utilities:
4. Drainage System:
5. Leachate Control System:

F. Costs/Ton Refuse

SAMPLE DOCUMENT 10702 b

EXISTING DISPOSAL SITES INFORMATION CHECKLIST

1. Name and Title of Person Completing Checklist _____

_____

2. Name of Site _____

3. Location _____

4. Type of Facility _____

5. Is site visible from paved road _____

6. Type of access road? _____

7. Condition of access road? _____

8. Are there any signs posted indicating fees or hours of operations? _____

_____

9. Any attempt at landscaping? _____

10. Any fencing? _____

11. Any fire protection facilities? _____

12. Any observation wells to detect possible ground water contamination? _____

13. Is there any record of ground water pollution at this site? _____

14. Any drainage ditches? _____

15. If so, do they appear to be adequate? _____

16. Any scales for weighing refuse? _____

17. Any treatment facilities for contaminated surface water? _____

18. Any sanitary facilities or first aid equipment for operators? _____

_____

SAMPLE DOCUMENT 10702 b

EXISTING DISPOSAL SITES INFORMATION CHECKLIST

19. Age of facility? _____

20. Expected life? _____

21. Describe method of operation? _____

_____

_____

22. Describe general appearance of site? _____

23. Area of facility _____

24. Height above original ground _____

25. Height below original ground _____

26. Is refuse face covered daily? _____ Weekly? _____ Monthly? _____

27. Is there any difficulty with fires? _____

28. What is the average height of a lift? _____

or the average depth of fill? _____

29. What collectors use your site? _____

_____

30. Comments _____

_____

_____

_____

_____

_____

SAMPLE DOCUMENT 10802

PRELIMINARY QUESTIONNAIRE

Salvage Markets for Materials In Solid Waste

Name of Organization: _____

Address: _____

_____

Telephone Number: _____/_____
Area Code

Name Of Person Completing Questionnaire: _____

---

1. Type of Industry: _____
2. Principal Products: _____
3. Indicate the potential use for the following recyclable materials (TPY):
   a. Newsprint _____
   b. Corrugated _____
   c. Other paper wastes (specify) _____
   d. Ferrous metals (specify) _____
   e. Aluminum _____
   f. Other non-ferrous metals _____
   g. Glass _____
   h. Textiles _____
   i. Rubber _____
   j. Plastics _____
   k. Incinerator residues _____
   l. Organics _____
4. Give specifications of desired secondary materials -
   a. Quality of Paper: _____
   b. Grade of scrap metal: _____
   c. Acceptable degree of impurities in metals (specify): _____

      _____
   d. Color of glass: _____
   e. Is removal of metal rings on bottles required? _____
   f. Must textiles be separated by type? _____
   g. Other _____
5. What are the minimum and maximum quantities (if any) of secondary materials required? _____

SAMPLE DOCUMENT 10802

6. What preparatory processing of secondary materials is required?
   a. Shredding _____
   b. Baling _____
   c. Crushing of Glass _____
   d. Separation By Color _____
   e. Washing _____
   f. Dewatering _____
   g. Other _____

7. Give specifications of the types of storage containers to be used (if any):

   _____

8. Is delivery of materials necessary, or can pickup be arranged? _____

   _____

9. What is the anticipated price of the secondary materials ($/ton)? _____

10. What are the contractual agreements for the purchase of these materials? (Long term/short term) _____

    _____

11. Describe previous experience in use of materials derived from municipal solid waste. _____

    _____

    _____

    _____

12. Additional Comments: _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

SAMPLE DOCUMENT 10802

Questionnaire For

Potential Markets for Materials Recovered from Solid Waste

1. Name of Organization: _____
2. Address: _____

   _____
3. Telephone Number: _____ / _____
   Area Code
4. Name and Title of Person Completing Form: _____

---

5. Type of Industry: _____
6. Briefly summarize your firm's principal operations including products and services: _____

   _____

   _____

   _____

   _____
7. Describe prior and current experience with material recycling:

   _____

   _____

   _____

   _____

   _____

---

8. Circle the recycled material(s) your firm is interested in and enter the minimum and maximum estimated quantities you would consider contracting for under "normal" market conditions:

		MINIMUM Tons/Year	MAXIMUM Tons/Year
a.	Newsprint	_____	_____
b.	Corrugated	_____	_____
c.	Other wastepaper (specify) _____	_____	_____
d.	Ferrous metals	_____	_____
e.	Aluminum	_____	_____
f.	Other non-ferrous metals (specify)_____	_____	_____
g.	Glass	_____	_____
h.	Plastics	_____	_____
i.	Rubber	_____	_____
j.	Wood	_____	_____
k.	Compost	_____	_____
l.	Incinerator residue (specify) _____	_____	_____
m.	Other (specify) _____	_____	_____

SAMPLE DOCUMENT 10802

9. Target specifications have been drafted by the National Center for Resource Recovery (NCRR) for several of these recoverables (see attached). What alterations or additions if any, would you make in these preliminary drafts to specify material suitable for your processes? If NCRR specifications are not provided for the material(s) you are interested in, detail your own requirements (e.g., grade, size, form, cleanliness, color, chemical composition, density, moisture content). Use back of page where necessary.

10. Briefly describe how you would use this recycled material and any process changes that would be required:

11. Indicate your material transport requirements (e.g., acceptable modes of transportation, feasible receiving points);

12. Indicate special handling requirements:

13. What type of contractual agreement would you consider entering into for the purchase of materials? (Include duration):

SAMPLE DOCUMENT 10802

14. What method(s) would you consider for determining contract prices? (e.g., fixed price for the duration of contract, or purchase price as a fixed or floating percentage of scrap commodity quotations from a trade publication or journal, etc.):

_____

_____

_____

_____

15. Indicate an approximate floor price or long-term average (F.O.B. a specific location) that you would consider paying for recycled material(s):

_____

_____

16. If supplied with sufficiently conclusive data concerning the quantity and quality of recovered material(s) would you furnish either a non-obligatory "LETTER OF INTENT TO PURCHASE" such material(s) or an "EXPRESSION OF INTEREST" in same? YES_____ NO_____

Remarks : _____

_____

_____

_____

17. Describe any changes you anticipate in your future raw material supply, operating procedures or capacities, or market prospects that could possibly affect your interest in, or demand for recycled materials:

_____

_____

_____

_____

18. Describe the hypothetical likelihood, if any, of local market displacement resulting from either your specific acceptance of recyclables or the potential marketing of recovered materials at large in the Philadelphia region:

_____

_____

_____

_____

_____

- (USE BACKSIDE FOR ADDITIONAL COMMENTS) -

SAMPLE DOCUMENT 10802

TARGET SPECIFICATIONS INDEX

Target Specification No. 1 - Recovered Newsprint

Target Specification No. 2 - Recovered Old Corrugated Boxes

Target Specification No. 3 - Can Bundles—Ferrous Scrap for Steel Making

Target Specification No. 4 - Cans for Precipitation Iron

Target Specification No. 5 - Cans for Detinning

Target Specification No. 6 - Ferrous Scrap for Blast Furnace Feed

Target Specification No. 7 - Aluminum Scrap Reuse in Wrought Alloys

Target Specification No. 8 - Possible Aluminum Scrap Reuse in Cast and Secondary Alloy Products

Target Specification No. 9 - Other Non Ferrous Metals

Target Specification No. 10 - Cullet Use in Container Manufacture

Target Specification No. 11 - Inorganic Fines

Target Specification No. 12 - Glass Fines for Brick Manufacture

SAMPLE DOCUMENT 10805

MATERIALS MARKET LETTER OF INTEREST

Dear Mr.

We are interested in purchasing aluminum and mixed heavy nonferrous metals that proposes to recover from the Resource Recovery Project.

Depending on the capacity of the facility, we understand aluminum quantities recovered annually would range from approximately 1000 to 3000 tons per year, and the mixed heavy nonferrous metals would range from approximately 400 to 1000 tons per year.

Based on present market conditions and analysis of the product samples and compositions we examined, we would value the aluminum at approximately $ .22 to $ .23 a pound (or 100% old sheet and cast), and the mixed nonferrous at approximately $ .235 to $ .24 (or 50% #2 copper). Prices are F.O.B. your plant, American Metal Market, date of shipment.

My firm would be interested in a long-term contract for a dependable supply of these materials. The terms and conditions of this agreemen would be determined near the time the facility comes on line.

We must call to your attention the fact that by the time you are ready to produce this material, markets for your by-product may change drastically.

Thank you for your consideration.

Sincerely

SAMPLE DOCUMENT 10805

MATERIALS MARKET LETTER OF INTEREST

Dear

The Company would like to express its' intent to purchase recovered wastepaper from the City if it conforms to appropriate standards.

After reviewing your Target Specification No. 1, we feel that the water solubles and organic solubles should be considered as subheadings of the total outthrow content. Thus, in order to conform to our particular needs, it must read:

Outthrows: Less than 2 percent of acceptable paper, any combination of water solubles and organic solubles exceeding 2% shall be rejectable.

This definition is more in line with the Paper Stock Standards and Practices Circular PS-70 which defines outthrows as "all papers that are so manufactured or treated or are in such a form as to be unsuitable for consumption as the grade specified".

In addition, the acceptance of 1500# bales exceeds the size of our current pulp batch and 850 to 1000 pound bales are more agreeable.

As to the pricing, we would require that pricing be linked to an independent index such as "The Yellow Sheet" Official Board Markets for No. 1 news.

Our offering would be $2 per ton higher than this price or in the sheet, $27 per ton F.O.B. your yard.

Our minimum consumption would be 1500 tons per year and our maximum approximately 5000 tons per year.

In addition, the minimum consumption cannot be a fixed number but must in any contract be linked to our production schedule. Thus, in the winter over Christmas and New Years, the plant will be closed for about 8 weeks and no paper would be purchased during that time.

Regards,

SAMPLE DOCUMENT 10805

MATERIALS MARKET LETTER OF INTEREST

Dear Mr.

I am interested in purchasing aluminum and mixed heavy nonferrous metals that proposes to recover from the resource recovery project.

Depending on the capacity of the facility, I understand aluminum quantities recovered annually would range from approximately 1000 to 3000 tons per year, and the mixed heavy nonferrous metals would range from approximately 400 to 1000 tons per year.

Based on present market conditions and analysis of the product samples and compositions I examined, I would value the aluminum at approximately 100% old sheet and cast, and the mixed nonferrous at approximately 50% #2 copper. Prices are F.O.B. your plant.

My firm would be interested in a long-term contract for a dependable supply of these materials. The terms and conditions of this aggreement would be determined near the time the facility comes on line.

Sincerely yours,

SAMPLE DOCUMENT 10805

MATERIALS MARKET LETTER OF INTEREST

Dear Mr.

This letter is in response to Mr. inquiry of December 18, 1978, requesting an expression of interest in the estimated 1400 to 2800 tons of aluminum product per year expected to be recovered from the subject community's resource recovery system.

Company actively supports the concept of resource recovery. We have negotiated several long-term contracts to purchase aluminum from resource recovery facilities and are actively seeking others. We would be happy to pursue this with you when you are ready. However, we do not believe that pro forma letters of interest really address the marketing potential of recovered aluminum.

I am enclosing copies of specifications for aluminum recovered from municipal refuse for your information and for inclusion in discussions that could be held at a later date.

Please advise when you feel such discussions can be started.

Sincerely,

SAMPLE DOCUMENT 10805

MATERIALS MARKET LETTER OF INTEREST

STANDARD SPECIFICATION FOR ALUMINUM

RECOVERED FROM MIXED MUNICIPAL REFUSE

GRADE A

The scrap aluminum in mixed municipal refuse must be separated from all other materials. If the material is reclaimed using dry processing following thermal treatment of the refuse, it must be baled to a density of 15-25 pounds per cubic foot. If the aluminum is separated from raw refuse or if wet processing techniques are used to separate the aluminum, the aluminum must be shredded or dried prior to baling. The shredded material must pass over a U. S. Standard 12 mesh screen to reduce fines (dust, dirt, sand, paint, etc.). Fines must not exceed three percent (3%) of gross weight. The finished product must be baled to a density of 15-25 lbs./ft.^{3} Alternatively, dry shredded material may be shipped loose if it has a density of 15-25 lbs/ft.^{3} Analyses will be on the melt of a total shipment.

Each shipment shall yield after melting a total net weight of at least 85 percent (85%) of the gross weight of aluminum scrap received and shall contain by chemical analysis the following maximum elements.

ELEMENT	MAXIMUM WEIGHT PERCENT
Si	.30
Fe	.60
Cu	.25
Mn	1.25
Mg	2.0
Cr	.10
Ni	.05
Zn	.25
Ti	.05
Bi	.02
Pb	.02
Sn	.02
Others - Each	.04
Others - Total	.12
Al	remainder

SAMPLE DOCUMENT 10805

MATERIALS MARKET LETTER OF INTEREST

STANDARD SPECIFICATION FOR ALUMINUM RECOVERED FROM MIXED MUNICIPAL REFUSE

GRADE B

The scrap aluminum in mixed municipal refuse must be separated from all other materials. If the material is reclaimed using dry processing following thermal treatment of the refuse, it must be baled to a density of 15-25 pounds per cubic foot. If the aluminum is separated from raw refuse or if wet processing techniques are used to separate the aluminum, the aluminum must be shredded or dried prior to baling. The shredded material must pass over a U. S. Standard 12 mesh screen to reduce fines (dust, dirt, sand, paint, etc.). Fines must not exceed three percent (3%) of gross weight. The finished product must be baled to a density of 15-25 lbs./ft.^{3} Alternatively, dry shredded material may be shipped loose if it has a density of 15-25 lbs./ft.^{3} Analyses will be on the melt of a total shipment.

Each shipment shall yield after melting a total net weight of at least 85 percent (85%) of the gross weight of aluminum scrap received and shall contain by chemical analysis the following maximum elements.

ELEMENT	MAXIMUM WEIGHT PERCENT
Si	.5
Fe	1.0
Cu	1.0
Mn	1.25
Mg	2.0
Cr	.3
Ni	.3
Zn	1.0
Ti	.05
Bi	.3
Pb	.3
Sn	.3
Others - Each	.05
Others - Total	.15
Al	remainder

SAMPLE DOCUMENT 10901

SAMPLE
COLLECTION PRACTICES SURVEY

Date_____

1. Municipality_____

2. Name of person(s) assisting in completing form

Name	Title	Date

3. What governmental department is responsible for administration, operation and regulation of the refuse collection system?_____

_____

_____

4. Delineate the municipality served_____

_____

_____

5. Who performs the refuse collection operation?

Public agency?_____

Contract collector?_____

Franchised collector?_____

Private scavenger?_____

Your own trucks?_____

SAMPLE DOCUMENT 10901

How many collectors serve your collection area?_____

_____

_____

6. Does your collection and/or disposal system involve any other municipality or franchise area?

Collection_____

_____

Disposal_____

_____

a) Is there a capital budget for refuse collection_____

and disposal _____facilities?

Is copy available?_____

b) If no budget, what is the revenue source?_____

c) What is the charge per ton or per load for disposal of refuse?

_____

_____

d) What is monthly cost: Collection

per capita? _____

per household? _____

per business? _____

e) How are funds collected?

As a property tax?_____

As a special assessment?_____

Paid directly to collector?_____

SAMPLE DOCUMENT 10901

f) What is overall tax rate per $1,000?_____

Is assessment at present value or at other basis?_____

_____

If other, what is percent of present value?_____

_____

g) What is tax rate for refuse operations?_____

_____

7. a) If collection is by municipal contract (including franchise) is the contract on a lump sum or unit price basis?_____

_____

b) If unit price, what is the rate?_____

c) Are contracts (including franchises) publicly bid?_____

_____

If not, how are collector selection and rates arrived at?

_____

_____

_____

d) For how many years is the present contract?_____

Ending - Month_____Year_____

e) What provisions are there for escalation if number of pickups increases during life of contract?_____

_____

f) For how long has the collection area been subject to a contract?

_____

SAMPLE DOCUMENT 10901

g) How many prior contracts has present collector held for this area?

_____

_____

h) How many collectors serve the municipality?

1. Residential_____

_____

2. Business_____

_____

i) Does municipal contract or franchise include commercial_____

_____and industrial_____sources?

j) Are collectors required to obtain licenses or permits, and if so, what is the fee?

_____

8. How often is refuse collected?_____

9. a) Is the collection area divided into two or more districts with only one district being collected each day?_____

_____

b) How many districts?_____

c) Is there a map of existing collection districts and routes?

_____

d) How many routes are there per district?_____

_____area?:_____

_____

SAMPLE DOCUMENT 10901

e) How many miles per route?

1. Residential_____

2. Commercial _____

3. Industrial _____

f) How many pickups per route?_____

_____

g) How many routes per day does a truck cover?_____

_____

h) How many loads per day does a truck take to the disposal site?

_____

_____

i) How many miles from the center of the collection area to the disposal site?

_____

_____

j) What are the collection and disposal hours?_____

_____

k) Describe any night routes in the area: Residential_____

_____

Commercial_____

_____

_____

l) Do any adverse effects on traffic density result from refuse collection:

_____

SAMPLE DOCUMENT 10901

10. a) How many trucks are used in the area?_____

	Number	Crew	Load Volume	Load Weight	Total Wt. Hauled per Day	Truck Replacement Cost
b) Rear loading packers						
c) Front loading packers						

d) Detachable Container_____

e) Other(typ.)_____

f) Number and types of standby trucks?_____

_____

g) What is the average age of the packers?_____

_____

h) How often must packers be replaced?_____

_____

11. Collection service of the types noted is provided to the following number of:

	Mixed Refuse	Garbage	Rubbish	Bulk Residue	Cost or Contract Rate
a. Private Homes					
b. Apartment Houses					

SAMPLE DOCUMENT 10901

	Mixed Refuse	Garbage	Rubbish	Bulk Residue	Cost of Contract Rate
c) Food Stores					
d) Restaurants					
e) Schools & Institutions					
f) Other Stores, offices and com'l places					
g) Hospitals					
h) Industries & Others					

12. a) Where do you dispose of collected refuse? _____

_____

_____

b) Who owns the disposal site? _____

_____

c) Who operates the disposal site? _____

_____

d) Is there a charge for disposal of refuse? _____

_____

e) What is the charge? _____

_____

_____

SAMPLE DOCUMENT 10901

f) Type or method of disposal?_____

_____

_____

g) What are disposal site operating hours?_____

_____

_____

h) What limitations are imposed on disposal site selection by reason of:

Zoning_____

_____

Health Department_____

_____

Local Populace Opposition_____

_____

i) Are there any local ordinances regarding collection and/or disposal of refuse?

_____

_____

_____

j) Is garbage required to be wrapped in paper or plastic bags?

_____

SAMPLE DOCUMENT 10901

13. What disposal facilities does the community (use) (have) for:

	Type of Facility	Location	Capacity
a) Garbage	_____	_____	_____
b) Rubbish	_____	_____	_____
c) Mixed Refuse	_____	_____	_____
d) Bulk	_____	_____	_____
e) Incinerator Residue	_____	_____	_____

14. Do any private citizens take refuse to the disposal facility?___

a) How many?_____

b) What type of refuse?_____

c) When do they take it?_____

d) Why do they take it?_____

_____

e) Are they charged at the site for disposal?_____

15. a) Who collects abandoned autos?_____

_____

b) Where are they taken?_____

_____

c) How are they disposed of?_____

_____

_____

SAMPLE DOCUMENT 10901

16. Is any of the material you collect precompacted?

Commercial_____

Residential_____

17. What do you pay your drivers?_____

Helpers?_____

18. What are vehicle speeds on haul routes? Congested areas_____

_____Open road_____

Interstate_____

19. Do you consider your present collection system to be the best type for your community? Please give your comments.

_____

_____

_____

_____

_____

_____

_____

20. How does the present collection system fail to meet the community's needs?

_____

_____

_____

_____

_____

Source Separation Program Cost Analysis

Recycling Collection Vehicles Requirements

		Community A	Community B	Community C
1.	Population (1978)			
2.	Homes			
3.	Participation			
4.	Recycle Trucks			
5.	Collection Days / week			
6.	Homes picked up or collected / day/truck			

Two Community Study

		Community 1	Community 2
1.	Homes picked up or collected / day/truck		
2.	% participation assumed		
3.	Homes on route / day/truck		
4.	People/home		
5.	People on route / day/truck		
6.	Population (1981)		
7.	Truck days		
8.	Trucks		
9.	Collection days/week		

Source Separation Program Cost Analysis

Recycling Curbside Collection Costs

	Community 1 $/yr.	Community 2 $/yr.
Capital Cost (1978)		
Equipment[1]		
Building		
Annual Capital Cost		
Operating Cost[2]		
Personnel Salaries[3]		
Fringe Benefits[4]		
Administration & Supplies		
Maintenance		
Fuel & Oil		
Annual Operating Cost		
Total Annual Cost		

[1] Community 1: 2-20 yd^3 Packers $30,000 each (1978), amortized for 5 years at 6% interest.
Community 2: 1-20 yd^3 Packer, $30,000 (1978), amortized for 5 years at 6% interest.

[2] Costs are based on present collection cost data.

[3] Community 1: 2 crews with 3 men per crew plus one maintenance man.
Community 2: 1 crew with 3 men.

[4] Community 1: 26% of salaries
Community 2: 17.4% of salaries.

Recycled Materials Revenue

Residential Waste Generation (1978)

Community 1: 9,580 tpy

Community 2: 4,960 tpy

	Recycled Materials							
	Community 1				Community 2			
	Glass	Cans	Newspaper	Total	Glass	Cans	Newspaper	Total
Fraction in waste stream, %	17.2	6.7	6.3		17.2	6.7	6.3	
Amount in waste stream, tpy	1,650	640	600		850	330	310	
Amount recycled, tpy (50% participation)	825	320	300	1,445	425	165	155	745
Reduction in waste stream, %				15%				15%
Amount collected/ day at 260 days/ yr., tpd	3.2	1.2	1.2	5.6	1.6	0.6	0.6	2.8
Annual Revenues[1], $/yr.	13,200	3,200	9,000	25,400	6,800	1,650	4,650	13,100

[1] Market 1 Quote:- Glass, separated - $16/ton (9/78) - Cans rolled - $10/ton (9/78)

[2] Market 2 Quote:- Newspapers, baled - $30/ton annual average (1978)

Source Separation Program Cost Analysis

Recycling Center Capital Cost (1978)

Capital Costs	Costs $
Building, 50' x 50', including concrete slab, superstructure, office, bath, doors, lighting.	
Site work, tree clearing, stripping loam, cut to subgrade.	
Utilities brought to site.	
Roadways and paving (12" gravel, 4" crushed gravel, 3-1/2" bituminous)	
Signs	
Fencing and Landscaping	
Equipment (Installed)	
Electronic Truck Scale with Pit	
Baler	
Can Roller	
Skid-Loader - 3/4 cu. yd. bucket with pallet fork attachment	
Subtotal	
Engineering and Contingency (15%)	
Financing	
Total Capital Cost	

Source Separation Program Cost Analysis

Recycling Center Annual Cost (1978)

Capital Cost	Annual Amount $/yr.
Skid-Loader[1]	
All Other Capital Items[2]	
Annual Capital Cost	
Operating Cost	
Personnel Salaries	
Plant Supervisor ($12,000)	
Loader Operator ($8,500)	
Laborer ($7,500)	
Fringe Benefits (25% of salaries)	
Utilities (water, electric, telephone)	
Maintenance - Parts & Materials	
Fuel & Oil (Skid Loader)	
Annual Operating Cost	
Total Annual Cost	

[1] Amortized for 5 years at 6% interest.

[2] Amortized for 15 years at 6% interest.

Source Separation Program Cost Analysis

Total Recycling Program Annual Cost
Two Community Study

Revenues	Annual Amount, $/yr.
Materials Credits	
Disposal Credits	
Total Revenues	
Expenses	
Collection Costs	
Recycling Center Operation	
Total Expenses	
Net Loss	

SAMPLE DOCUMENT SS103

SEMI-RURAL

SOURCE SEPARATION OPINION POLL QUESTIONNAIRE

		YES	NO
1.	Would you voluntarily store newspapers separately from your household garbage and tie them in bundles to be collected on a designated day of the week?	_____	_____
2.	Would you voluntarily separate all-aluminum cans and put them in bags for a separate collection?	_____	_____
3.	Would you voluntarily separate all other cans and put them in bags for a separate collection?	_____	_____
4.	Would you voluntarily clean and separate glass bottles and jars by color, (removing lables and any metal from the glass), and put them in bags to be collected on a specific day of the week?	_____	_____
5.	If you answered "yes" to any of the above four questions, please answer the following concerning the collection of the materials.		
6.	Would you deliver the bundles or bags to a specific location in your town?	_____	_____
7.	Are you willing to have the Public Works Department pick up the materials regularly,		
	a) if it costs slightly more?	_____	_____
	b) if it costs slightly less?	_____	_____
8.	Rather than having separation on a voluntary basis, do you think it would be more effective to require separation by local ordinance?	_____	_____

9. Further comments:

_____

_____

_____

NAME: (Optional) _____

ADDRESS: (Optional) _____

SAMPLE DOCUMENT SS203

SAMPLE LETTER OF INTENT TO BID FOR THE PURCHASE OF MATERIALS RECOVERED FROM SOLID WASTE

Whereas, the _____ Corporation (hereinafter called the CORPORATION) endorses resource recovery from municipal solid waste as a means toward a cleaner environment and preservation of natural resources, and

Whereas, the CORPORATION recognizes the need to develop firm expressions of intent to purchase materials or energy products recovered from waste within known financial parameters as part of the planning process for a new endeavor such as this, and

Whereas, _____ (hereinafter called the DEVELOPMENT AGENCY), is evaluating the prospects of substituting resource recovery for its traditional means of solid waste disposal, and

Whereas, the DEVELOPMENT AGENCY recognizes the need to establish financial data for the determination of the economic feasibility of processing up to _____ tons per day of municipal solid waste to produce up to _____ tons per day of _____ (hereinafter known as the PRODUCT) in a form usable and acceptable to the CORPORATION according to the Specifications attached in this Agreement and made part hereof.

(a) It will be a firm bid for five (5) years offering an Exchange Price either fixed or related to a commodity quote, and if the Exchange Price is not fixed, it will offer a Floor Price which will not fall during the term of the contract.

(b-1) If the Exchange Price to be paid by the CORPORATION is to be a fixed dollar amount per unit of product, f.o.b. the recovery facility (or the CORPORATION'S plant - choose one), the bid shall not be less than _____ per ton.

OR

(b-2) If the Exchange Price is to be used on a commodity quote, the monthly Exchange Price shall relate to the quotation at the close of that month for _____ _____ (the same or the appropriate

SAMPLE DOCUMENT SS203

analogous commodity and location) as published in the last issue of that month of _____ (fill in source of quote) using the (mid-range or highside, or lowside choose one) of the quotes, f.o.b. the recovery facility (or the CORPORATION's plant - choose one).

If the Exchange Price is to be bid in terms of a percentage of the quoted price, the Exchange Price shall not be bid at less than _____ percentage of appropriate quote as defined above. (Fill in percentage).

(c) If the Exchange Price is not fixed, a Floor Price will be bid which will not be below $_____ per ton f.o.b. (fill in dollar amount) the recovery facility (or CORPORATION'S plant - choose one).

(d) The CORPORATION shall retain the right to reject any material delivered which does not meet Specifications. Such rejection will be at the expense of the resource recovery plant.

(e) The bid will be subject to force majeur.

(f) It will be noted the Additional Conditions of the CORPORATIONS covering general terms and conditions of purchase, acceptance delivery, arbitration, weights, and downgrading not explicitly covered in this Letter of Intent or by reference, will be negotiated according to good business practices and include such additional conditions as are attached to this Agreement and made a part hereof.

'g) This Advance Letter of Intent to bid is null and void if during the period between its execution and the actual bid or negotiated contract the CORPORATION'S plant ceases operation or no longer has a use for this or equivalent grade of recovered PRODUCT. The DEVELOPMENT AGENCY shall further recognize that a clause similar to this shall be incorporated in the actual bid when made or contract when signed.

(h) This Advance Letter of Intent may be assigned by the DEVELOPMENT AGENCY.

SAMPLE DOCUMENT SS203

THEREFORE, in consideration of the fact that the legal authority to sell recovered products may rest upon a requirement to advertise for the purchase of such products, it is mutually agreed between the CORPORATION and the DEVELOPMENT AGENCY that:

I. The CORPORATION, as an expression of its support of the municipal solid waste recovery program, agrees to:

(1) offer herein a firm commitment to bid for the purchase of the recovered PRODUCT at prices not less than those entered here should the DEVELOPMENT AGENCY be required or decide to effect a competitive procurement, and

(2) agree that if public bidding is not necessary and not the course chosen by the DEVELOPMENT AGENCY then the conditions of this Letter of Intent may be considered as a bona fide offer to purchase the recovered PRODUCT at prices not less than those recovered here.

(3) respond should a bid be required with a bona fide offer to purchase which will include the following:

II. The DEVELOPMENT AGENCY agrees:

(1) to see that the recovery plant establishes specification assurance procedures for the recovered PRODUCT, using good industrial quality control practices in recognition of the CORPORATION'S Use technology as practices in their plant, so as to produce and offer the recovered PRODUCT for sale in a form and to the required Specification, useable in the plant with minimum alterations to present processing technology and business practices, and

(2) to require, should a contract be effected as a result of the Advance Letter of Intent, that the PRODUCT be delivered to the CORPORATION according to conditions and prices determined herein and not diverted to a spot market which may on occasion be higher than the Exchange Price determined by the pricing relationship set forth here or as modified by the Contract.

SAMPLE DOCUMENT SS203

(3) that should the CORPORATION'S plant, as specified herein, become saturated in its ability to handle the recovered PRODUCT as a result of other Letters of Intent issued by the CORPORATION being converted into firm contracts for delivery and purchase prior to effecting such arrangements as a result of this commitment, the provisions of this Advance Letter of Intent become null and void.

The CORPORATION will communicate to the DEVELOPMENT AGENCY that information about its use technology and business practices which the CORPORATION at its sole discretion shall consider necessary so as to assure receipt of the recovered material in form and cleanliness necessary for use by the CORPORATION. Such communication shall be on a nonconfidential basis, unless otherwise subject to a confidentiality agreement.

This Advance Letter of Intent shall become null and void on _____ unless effected into a contractual relationship or mutually extended by both the CORPORATION and DEVELOPMENT AGENCY.

Witnessed by: DEVELOPMENT AGENCY

_____ By: _____

_____ CORPORATION

Witnessed by:

_____ _____

_____ _____

SAMPLE DOCUMENT 20501

WASTE SUPPLY LETTER OF INTEREST

Dear Mr.

The Board in the Town realize that the cost to tax payers of disposing of refuse using landfills, whether municipal or commercial, has risen and may continue to do so, due to stricter environmental regulations.

The construction of a regional resource recovery facility appears to be a reasonable way to provide this necessary public service. The approach as outlined in the Request For Proposals would meet the needs of our community.

We will participate through the in selection of a contractor and negotiation of a contract. We reserve the right to approve any long term commitment by future action of

Sincerely,

SAMPLE DOCUMENT 20501

WASTE SUPPLY LETTER OF INTEREST

Dear Mr.

The Board in conjunction with the appropriate boards in Town, has monitored the work of the Council. We are in general agreement with the purpose and intent of the Council's plans.

The construction of a regional resource recovery facility appears to be a reasonable way to provide this necessary public service. The approach as outlined in the Request for Proposals would appear to be appropriate to meet these needs.

It is the intent of the Town, subject to the necessary final conditions of agreement and legal authorizations, to continue to participate with the RRC in the selection of a contractor and the negotiation of a contract. We reserve the right of the Town , to approve any long-term commitment in this project.

Sincerely,

SAMPLE DOCUMENT 20705

ENERGY MARKET LOI

ENERGY MARKET SPECIFICATIONS COMPANY

The following items outline the assumptions to be used by interested contractors for the energv market definition. They have been reviewed by the Technical Committee and Company. All the specifications and assumptions presented herein will be subject to final negotiation between and the selected contractor. However, these specifications and assumptions are expected to form the basis for the contract.

The basic specifications and assumptions are:

1. Steam will be supplied to at a minimum of 650 psig and 750°F. Higher conditions will be accepted.

2. The steam quality must be suitable for continuous turbine operation.

3. will supply heated makeup water (at approximately 170°F municipal water supply quality) and condensate for the refuse plant steam generation output. The return will be about 90 percent heated makeup water and 10 percent condensate return.

4. will purchase all the steam produced by the resource recovery plant, 24 hours per day, 365 days per year.

5. Since total steam requirements are greater than the refuse plant capability requiring steam plant operation by backup capability to the refuse plant steam output will be provided by However, a quantity of steam must be guaranteed to on an annual basis. Bidders will be asked to include this minimum guarantee as part of their bid package but subject to final negotiation.

6. will deliver, and the contractor expected to accept, liquid wastes with established fuel values and burning characteristics as fuel for the refuse. Approximately 40,000 gallons per month will be supplied. Credit for fuel value will be expected.

SAMPLE DOCUMENT 20705
ENERGY MARKET LOI

7. will purchase the steam at a price established pursuant to a negotiated contract. The value of the steam will be based upon the fuel displacement cost for the steam less the equivalent fuel cost of the heat in the returned makeup water and condensate. From this value a 10 percent discount will be taken.

   - Fuel cost based upon No. 6 fuel oil with 2.2% sulfur content as delivered to Monsanto.
   - Steam based upon 650 psig, 750°F or higher conditions.
   - Returned make-up water and condensate at 170°F. An average municipal water temperature of 48°F will be used as the base.

8. For the purposes of the RFP, a value of $2.60 per thousand pounds of steam will be used.

9. Escalation of the value of steam would be based upon the average of the changes in the posted New York cargo prices for No. 6 (2.2% sulfur) fuel oil and the area consumer price index or the change in the posted fuel price, whichever is lower. The adjustment would be made on an annual basis using the values of the indices at the time of the contract execution as the base.

10. will own and install all necessary piping systems on property. The contractor will be responsible for all other construction. The attached sketch shows the approximate tie-in point for the steam line and will require the installation of approximately 4,000 feet of steam line and other piping by the contractor.

SAMPLE DOCUMENT 20710

MATERIALS MARKET LOI

Dear Mr.

In follow up to your letter of please consider this formal letter of intent to purchase ferrous metals recovered from your Philadelphia project when and if your project ever comes to fruition.

The following will answer your outline of questions:

A. does intend to bid on and purchase the recovered ferrous which conforms to meeting our specifications for your Philadelphia project.

B. material specifications are as follows:

- Ferrous can metal will <u>not</u> be incinerated
- Ferrous density 20 to 24 pounds per cubic foot
- Tramp content 5% or less by weight
- Ferrous is not to be balled so that liquid chemicals can reach 95% of the steels surface.
- Particle size is to be 85% equal to or less than 4" and no more than 20% of being less than 1 1/2" nominal

C. It is intent to purchase all quantities of ferrous metals available which we understand you estimate at 75,000 net tons per year.

D. would provide a floor price in the range of to per Gross Ton F.O.B. your recovery site. Pricing for the recovered ferrous metal would be on the basis of a percent of the Dealer Bundle price as quoted in Iron Age Magazine for the Philadelphia Market at time of bidding, F.O.B. your recovery site.

E. desires a ten (10) year contract or longer for the recovered ferrous metals.

If we can be of any further service in this matter, please advise.

Very truly yours,

SAMPLE DOCUMENT 20710

MATERIALS MARKET LOI

Dear Mr.

We are happy to indicate our interest in the purchase of the ferrous and nonferrous metals to be recovered from municipal solid waste in the area.

Our specifications for the light ferrous and aluminum fractions are attached. The quantity of each which we are able to purchase will vary according to the quality and according to other purchase committments but we would expect to be able to purchase up to 25,000 gross tons of light ferrous scrap and up to 4,000,000 pounds of aluminum scrap.

Freight rates from for the light ferrous scrap are about per gross ton to and for the aluminum the rate would be on the order of one cent per pound.

We would price the light ferrous scrap as a percentage of #1 Dealer Bundles in the Chicago Market as published in Iron Age. Aluminum would be priced on the basis of Old Aluminum Sheet price as quoted in the American Metal Market.

We hope this information is of use to you. Please call on me if I can be of further assistance.

Sincerely,

SPECIFICATION FOR LIGHT FERROUS SCRAP RECOVERED

FROM MIXED MUNICIPAL WASTE

This specification applies to light ferrous scrap magnetically recovered from shredded, non-incinerated municipal waste. It is predominantly steel can scrap with some amount of miscellaneous ferrous materials; but specifically excludes shredded or unshredded heavy ferrous scrap such as appliances, castings, etc. The scrap is expected to be partially flattened and distorted due to prior shredding operations; however, the material is not to be wadded and balled to the extent that chemical detinning is infeasible.

The scrap should be substantially free of loose paper, plastic, rags, and other non-metallic inclusions. All loose contamination as well as dirt, organic matter and paint and lacquer coatings will be removed in the detinning process. All such processing losses will be deducted from the delivered weight of the scrap and only recoverable metal content will be paid for.

SAMPLE DOCUMENT 21006

LETTER OF SUPPORT

Dear Mr.

The Town wishes to participate in planning for the construction of a regional facility for the disposal of solid wastes and supports the Request for Proposals being issued by the Regional Resource Recovery Committee.

The costs of disposal of rubbish and garbage are rising. Regional resource recovery systems appear to present an economically efficient and environmentally sound alternative to traditional methods of solid waste disposal. For this reason it is in this town's interest to work with neighboring communities to provide this public service.

The Town supports the concept of a regional resource recovery project which is to be designed, constructed and operated by private enterprise, if such proves to be feasible.

The Town reserves the right to approve any long-term commitment in this project.

Sincerely,

SAMPLE DOCUMENT 21006

LETTER OF SUPPORT

Dear Mr.

The City of would consider the proposed Resource Recovery Energy Plant provided that the following conditions are met:

(1) That an equitable tax arrangement is agreed upon;

(2) That refuse disposal trucks from other cities and towns restrain from using city streets;

(3) That the City of find the final design acceptable; and

(4) That the City of find acceptable the final location and development plans of the facility.

Assuming that meets these terms and conditions, the City agrees to negotiate with for the disposal of the municipality's waste. Also, the City understands that may find it necessary to temporarily store the residue from plant production upon the site. The City will agree to this, assuming that the following conditions are met:

(1) All residue shall be out of public view;
(2) All residue shall be inert; and
(3) Proper precautions must be taken to protect residents from any odor or blowing ash.

Sincerely yours,

SAMPLE DOCUMENT 32302

RFP EVALUATION

PROPOSAL EVALUATION CRITERIA

The proposal requirements are described in detail on pages 39 through 52 (Section VII) of the Request for Proposals (RFP). The proposals will be evaluated overall based on evaluations by specialized task groups in four areas:

- technical (Process Design Proposal, Vol. 2)
- environmental (Environmental Impact Data, Vol. 3)
- economics/finance/risk (Cost and Pricing Proposal, Vol. 4)
- management/qualifications (Qualifications and Management Plan, Vol. 5).

An Executive Summary (Vol. 1) summarizes each proposal.

Worksheets are provided, separately for each task group, to guide those involved in the evaluation process. Comments, anticipated problem areas in each proposal, and questions to be formally addressed to each proposer, will be compiled from the completed worksheets.

The evaluation criteria are listed on pages 54 through 56 of the RFP, and are defined below. These criteria, with minor modifications, are those specified and ranked in relative importance (prime, moderate, and lower) by the Resource Recovery Council, the Bureau of Solid Waste Disposal, and The consultant.

SAMPLE DOCUMENT 32302

RFP EVALUATION

TECHNICAL

Process operating experience is evaluated based on the demonstrated history of successful commercial operation of a process or technology in resource recovery. The state-of-the-art in resource recovery technology is considered in relation to the proposed process.

Equipment/unit process adequacy and reliability refer to the extent to which equipment items and collections of equipment items (process lines) utilize acceptable components and designs, and are judged of sufficient capacities to meet or exceed the throughput requirements of the RFP. The emphasis here is on major components such as shredders, air classifiers, and combustion units.

System integration addresses the coherency of the total system, its ability to process the anticipated waste flows. Weak points in the system will be identified along with potential improvements, based on process flow sheets showing the material balance.

Contingency capabilities and system availability refer to storage capacity, scheduled and unscheduled downtime, redundancy, and overall system availability. Availability, in the last analysis, is the proportion of time the facility can process refuse without resorting to emergency landfill.

Adaptability of the system will be evaluated with respect to changes in refuse composition, refuse quantities, market conditions, source separation and reduction practices, technology, and regulations.

Technical reliability of markets for energy and materials refers to the closeness of the match between the proposed facility's recovered products and market specifications.

Capacity expansion capability covers provisions in the site and process layout, and system design, to enable future processing of higher throughput rates with a minimum of additional capital investment

SAMPLE DOCUMENT 32302

RFP EVALUATION

- Operating and maintenance plans will be evalulated for completeness. The maintenance schedule, in particular, is important to examine in detail.

The ability to process sewage sludge and household septage will also be a factor in the technical evaluation. Experience in co-disposal of refuse and sludge, as well as technical design factors, must be considered.

RFP EVALUATION

ENVIRONMENT

The examination of air quality includes emissions, control provisions, and impacts at both the proposed facility site and market locations, as applicable. Stack emissions include particulates, sulfur dioxide, nitrogen oxides, carbon monoxide, hydrocarbons, hydrogen chloride, and metals. Fugitive dust and odor are also included. The Massachusetts standard is that particulate emissions from an "incinerator" not exceed 0.05 grains per dry standard cubic foot, corrected to 12 percent CO_2. Location in an area that does not exceed ambient air quality standards may require installation of "Lowest Achievable Emission Rate" (LAER), estimated to be approximately 0.03 to 0.04 gr/SCF @ 12 percent CO_2.

The water quality evaluation addresses the nature and quantities of effluents, control and treatment measures, and impacts. Thermal effluents are not acceptable. Significant wastewater discharges require a National Pollution Discharge Elimination System (NPDES) permit.

In the assessment of noise impacts, major facility noise sources, control measures, and traffic volumes will be considered. The Massachusetts requirement is that the projected noise level (dBA) at the property bound or nearest (potentially) inhabited building, not exceed 10 dBA above the background noise level. The projection is that level which is not exceeded 90 percent of the time (the L_{90} level), while the background level is that which is exceeded 90 percent of the time (the L_{10} level). In this determination, trucking onto and off-site are considered "necessary" and therefore excluded. For environmental assessment purposes, however, community noise levels are examined both for the facility alone and for the facility plus truck traffic. The "A-weighted" decibal scale (dBA) reflects, approximately, human

perception of noise. Additionally, emission of "pure tones," such as shrill, piercing sounds, is prohibited.

Traffic impacts are based on traffic handling on the site and effects, other than noise, on the surrounding area.

Overall material and energy conservation aspects of the proposal will be evaluated in terms of the material and energy balances, and the extent of recovery.

Safety and health effects will be assessed, both for employees and visitors and for the general public. This will include, for example, provisions for shredder explosions, vector and vermin control, and fire safety provisions.

The residual products will be characterizied in terms of quantity and quality, and residue-related impacts will be estimated. Fly and bottom ash, and fuel preparation residuals, will be analyzed for ash content, percent combustibles, and metals content.

Aesthetics will be evaluated by considering site design, architectural features, views from surrounding areas, and the impact on (harmony with) the natural environment.

RFP EVALUATION

ECONOMICS/FINANCE/RISK

The "bottom line" figure in the economic evaluation is the net tipping fee, which is the amortized capital cost plus operating and maintenance costs less shared revenues, often expressed on a dollars-per-ton basis. The costs provided by the proposers will be put on a comparable basis, where appropriate, to provide a fair evaluation.

The range and stability of the tipping fee will be examined through a sensitivity analysis of such factors as interest rates, escalation rates, refuse tonnage projections, delays in startup date, and revenue assumptions. The effects on life cycle cost will be determined and presented to the evaluation participants by MITRE with the aid of a computerized economic/financial model.

It is important to check the reasonableness of the costs presented in the proposals. Employment assumptions, maintenance expenses, fixed and variable operating expenses, and capital replacement assumptions are included. Any apparent omissions and cost items that are significantly out of line will be noted.

The proposed cost control program is to be judged in terms of its likely effectiveness.

The revenue sharing formula relates to the percent of energy or materials revenues that are returned to the communities and thereby serve to lower the net tipping fee. Revenue sharing is an element in project risk allocation, and the extent to which a firm is willing to share is one indication of the firm's confidence in its process.

The allocation of economic risk among project participants, particularly between the contractor and the communities, forms the basis for the long-term contracts. The proposer's positions on the various provisions of the draft contract in the RFP are examined here. Key risk areas include commercial tonnage commitments and the

treatment of tonnage overages and shortfalls, cost escalation during negotiation and construction, and Force Majeure (e.g., "Acts of God") situations.

The proposed financial plan is a key ingredient in the evaluation which will be focused on to an increasing extent as the project proceeds. Elements to be considered include the contractor's share of equity, methods for providing this share, methods for providing non-private investment, the anticipated interest rate, and corporate financial strength. The financing plan has a direct bearing on the tipping fee, as well as on the success factor for the project as a whole.

The extent of market commitments, for both energy and materials, is important to project economics and financeability. The level of commitment will be evaluated on the basis of whether signed contracts or letters of intent are presented, and on their strength. Of interest are product prices and quantities, product specifications, and the duration and terms of the agreement.

The implications of the proposed cost escalation formulae will be examined, to the extent they differ from those in the RFP.

Financial reporting and auditing procedures are to be evaluated for acceptability and any anticipated problems noted.

SAMPLE DOCUMENT 32302

RFP EVALUATION

MANAGEMENT/QUALIFICATIONS

Part of this component of the evaluation was covered earlier in the project during the formal review of qualifications. Proposers are not required to resubmit in their proposals all of the background information previously supplied in response to the Request for Qualifications. The following aspects will be reviewed or covered in greater detail during the proposal evaluation process.

The level of corporate commitment refers to the backing of the proposal by the parent company of the proposed prime contractor. The proposal should be submitted by a corporate executive officer.

The responsiveness of the proposal is evaluated based on compliance with RFP conditions.

The experience and qualifications of the proposed management and operating personnel will be reviewed.

A plan for site (utilities plan), plant, and market development is required in the proposal.

Other criteria to be considered are materials handling and marketing capabilities of the firm; the proposed construction schedule, to be evaluated for reasonableness; the architectural renderings presented, the qualifications and experience of an architect registered in Massachusetts, and the percent of the project cost earmarked for the aesthetic aspects of architectural design; and capabilities of the firm related to transport and storage of refuse and residue.

SAMPLE DOCUMENT 32302

RFP EVALUATION

PROPOSAL EVALUATION WORKSHEETS

FOR THE

RESOURCE RECOVERY SYSTEM

TECHNICAL

Evaluated by_____

Date_____

Proposal (Name of Firm)_____

Option (Site/Scale)_____

SAMPLE DOCUMENT 32302

RFP EVALUATION

TECHNICAL

_____

	Acceptability*	Comments** (Data/Problems/Questions)
Price Importance		
Process Operating Experience • State-of-the-art	_____	
Equipment/Unit Process Adequacy and Reliability • } major components • } • } major components	_____	
System Integration • Process flow sheet/ materials balance	_____	
Contingency Capabilities/ System Availability • Storage capacity • Scheduled and unscheduled downtime • Redundancy • Overall availability	_____	
Moderate Importance		
Adaptability • Refuse composition and volume • Market conditions • Compatibility with source separation/reduction • Technological advances • Regulatory changes	_____	

*A = acceptable
P = some problems
U = unacceptable

**Use additional sheets if necessary

SAMPLE DOCUMENT 32302

RFP EVALUATION

TECHNICAL (continued)

	Accepta-bility	Comments (Data/Problems/Questions)
Technical Reliability of Markets	_____	
Capacity Expansion Capability	_____	
Lower Importance		
Operating & Maintenance Plans	_____	
Ability to Process Sewage Sludge and Septage	_____	

ummary of technical weaknesses

SAMPLE DOCUMENT 32302

RFP EVALUATION

TECHNICAL (continued)

Summary of technical strengths

Sources of data if not from proposal (phone calls, visits, etc.)

SAMPLE DOCUMENT 32302

RFP EVALUATION

PROPOSAL EVALUATION WORKSHEETS

FOR THE

RESOURCE RECOVERY SYSTEM

ENVIRONMENTAL

Evaluated by_____

Date_____

Proposal (Name of Firm)_____

Option (Site/Scale)_____

SAMPLE DOCUMENT 32302

RFP EVALUATION

ENVIRONMENTAL _____

	Acceptability*	Comments** (Data/Problems/Questions)
Prime Importance		
Air Quality	_____	
• Regulatory compliance		
• Stack emissions (Particulates, SO_2, NO_x, CO, HC, HCl, metals)		
• Dust/Odor/Other		
• Control measures		
• Impacts		
Water Quality	_____	
• Regulatory compliance		
• Effluents		
• Control measures		
• Impacts		
Noise	_____	
• Regulatory compliance		
• Major noise sources		
• Control measures		
• Community noise impact (facility and trucking at site)		
Traffic Impacts	_____	
• Traffic handling at site		
• Impacts (other than noise) on the area		

*A = acceptable
P = some problems
U = unacceptable

**Use additional sheets as necessary

SAMPLE DOCUMENT 32302

RFP EVALUATION

ENVIRONMENTAL (continued)

	Acceptability	Comments (Data/Problems/Questions)
Moderate Importance		
Resource Conservation and Energy Balance • Energy balance • Materials balance	_____	
Safety and Health • Employee/visitor health and safety • Public health concerns	_____	
Lower Importance		
Quality and Quantity of Residue • Quantity • Composition • Residue-related impacts	_____	
Aesthetics • Site design and architectural features • View from surrounding area • Impact on natural environment	_____	

mmary of major environmental weaknesses

ENVIRONMENTAL (concluded)

Summary of major environmental strengths

Summary of data if not from proposal (phone calls, visits, etc.)

SAMPLE DOCUMENT 32302

RFP EVALUATION

PROPOSAL EVALUATION WORKSHEETS

FOR THE

RESOURCE RECOVERY SYSTEM

ECONOMICS/FINANCE/RISK

Evaluated by_____

Date_____

Proposal (Name of Firm)_____

Option (Site/Scale)_____

SAMPLE DOCUMENT 32302

RFP EVALUATION

ECONOMICS/FINANCE/RISK _____

	Acceptability*	Comments** (Data/Problems/Questions)
Prime Importance		
Net Tipping Fee • Adjusted to put proposals on a comparable basis • Transportation cost implications noted for proposals involving alternative sites	_____	
Range and Stability of Tipping Fee • Sensitivity analysis • Life-cycle cost • Effects of inflation/escalation	_____	
Reasonableness of Cost Estimates • Employment projections • Maintenance expenses • Operating expenses • Capital equipment replacement • Other/completeness	_____	
Cost Control Program • Description and likely effectiveness	_____	

*A = acceptable
P = some problems
U = unacceptable

**Use additional sheets as necessary

RFP EVALUATION

ECONOMICS/FINANCE/RISK (continued)

	Acceptability	Comments (Data/Problems/Questions)
Revenue Sharing	_____	
• Energy		
• Materials		
• Departure from RFP Formula		
Allocation of Economic Risk (other than revenue sharing)	_____	
• Commercial tonnage commitments		
• Cost escalation through start-up		
• Force majeure		
• } other key contractual issues		
•		
•		
Financial Plan	_____	
• Contractor's share of equity		
• Methods for providing contractor's share		
• Methods for providing non-private investment		
Anticipated interest rate		
Corporate capabilities		
- net worth vs. total backlog		
- ability to raise capital/bond rating		
- ability to meet normal financial contingencies		

SAMPLE DOCUMENT 32302

RFP EVALUATION

ECONOMICS/FINANCE/RISK (continued)

	Acceptability	Comments (Data/Problems/Questions)
Extent of Market Commitment • Energy • Materials • Strength of anticipated market agreements - price - quantity - duration	_____	
Moderate Importance Cost Escalation Formula • Departures from RFP formula • Implications	_____	
Lower Importance Financial Reporting and Auditing Procedures • Description	_____	

Summary of economic/financial/risk weaknesses

SAMPLE DOCUMENT 32302

RFP EVALUATION

ECONOMICS/FINANCE/RISK (concluded)

Summary of economic/financial/risk strengths

Sources of data if not from proposal (phone calls, visits, etc.)

PROPOSAL EVALUATION WORKSHEETS

FOR THE

RESOURCE RECOVERY SYSTEM

MANAGEMENT/QUALIFICATIONS

Evaluated by_____

Date_____

Proposal (Name of Firm)_____

Option (Site/Scale)_____

SAMPLE DOCUMENT 32302

RFP EVALUATION

MANAGEMENT/QUALIFICATIONS

	Accepta-bility*	Comments** (Data/Problems/Questions)
rime Importance		
Previous Experience and Performance • Resource recovery projects • Other major facilities	_____	
Project Management Capability • Prime contractor role • Engineering design • Construction • Transportation (if applicable) • Shake-down and long-term operation	_____	
Soundness of Financing ?ackage • Basis for financing approach • Corporate commitment to and understanding of proposed financing arrangement	_____	
ualifications of those nvolved in Market Commitents	_____	

_____

- acceptable
  some problems
  unacceptable

** Use additional sheets as necessary

MANAGEMENT/QUALIFICATIONS (continued)

	Acceptability	Comments (Data/Problems/Questions)
Moderate Importance		
Level of Corporate Commitment • Parent company backing of overall proposal	_____	
Compliance with RFP Conditions • Responsiveness of proposal	_____	
Experience and Qualification of Proposed Management and Operating Personnel	_____	
Utilities Plan	_____	
Materials Handling and Marketing Capabilities	_____	
Lower Importance		
Construction Schedule	_____	
Architectual Treatment	_____	

RFP EVALUATION

MANAGEMENT/QUALIFICATIONS (concluded)

	Accepta-bility	Comments (Data/Problems/Questions)
Capabilities Related to Transport and Storage of Refuse	_____	

ummary of management/qualifications weaknesses

mmary of management/qualifications strengths

urces of data if not from proposal (phone calls, visits, etc.)

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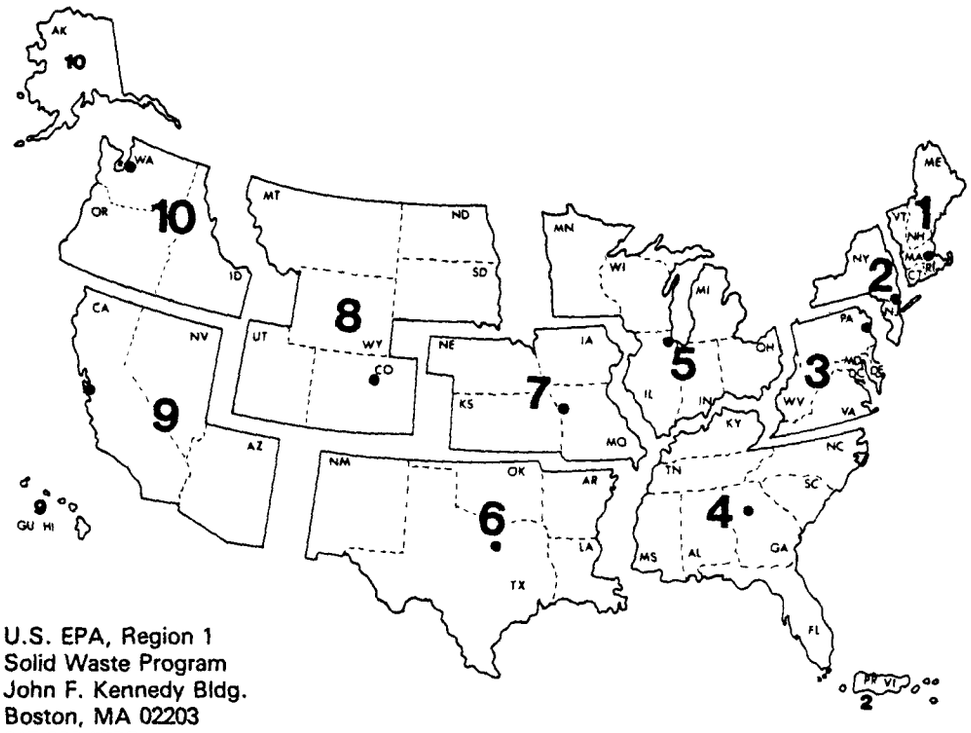
EPA REGIONS



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Solid Waste Program
John F. Kennedy Bldg.
Boston, MA 02203
617-223-5775

U.S. EPA, Region 2
Solid Waste Section
26 Federal Plaza
New York, NY 10007
212-264-0503

U.S. EPA, Region 3
Solid Waste Program
6th and Walnut Sts.
Philadelphia, PA 19106
215-597-9377

U.S. EPA, Region 4
Solid Waste Program
345 Courtland St., N.E.
Altanta, GA 30308
404-881-3016

U.S. EPA, Region 5
Solid Waste Program
230 South Dearborn St.
Chicago, IL 60604
312-353-2197

U.S. EPA, Region 6
Solid Waste Section
1201 Elm St.
Dallas, TX 75270
214-767-2734

U.S. EPA, Region 7
Solid Waste Section
1735 Baltimore Ave.
Kansas City, MO 64108
816-374-3307

U.S. EPA, Region 8
Solid Waste Section
1860 Lincoln St.
Denver, CO 80295
303-837-2221

U.S. EPA, Region 9
Solid Waste Program
215 Fremont St.
San Francisco, CA 94105
415-556-4606

U.S. EPA, Region 10
Solid Waste Program
1200 6th Ave.
Seattle, WA 98101
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Region 5, Library (PL-12J)
77 West Jackson Boulevard, 12th Floor
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