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UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V

WATER DIVISION
230 S. DEARBORN ST.
CHICAGO, ILLINOIS 60604

OCTOBER, 1982

FINAL



**RESPONSIVENESS SUMMARY
FOR
PUBLIC MEETING AND WRITTEN COMMENTS
ON THE REPORT ON
COMBINED SEWER OVERFLOW FACILITIES PLANNING
FOR THE
DETROIT WATER AND SEWERAGE DEPARTMENT**

McNichols Combined Sewer Overflow Gates located in the City of Detroit, on the Rouge River. Shown during dry weather. Constructed in two segments of three barrels each. Barrels measure 9 feet, 3 inches square in the left segment, and 11 feet by 11 feet 9 inches in the right segment - each.

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OVERFLOW FACILITIES PLANNING
FOR THE
DETROIT WATER AND SEWERAGE DEPARTMENT

Prepared By
U.S. Environmental Protection Agency
Jim Novak, Project Manager

and

ESEI, inc.
Peter Swinick, Project Manager

October, 1982

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INTRODUCTION

INTRODUCTION

One of the major elements being covered by the Detroit Wastewater Final Facilities Plan was combined sewer overflow (CSO). An environmental impact statement (EIS) was prepared concurrently with facilities planning. A finding of the July 6, 1981 Federal District Court Order, was that the parties (DWSD, MDNR, and U.S. EPA) have agreed to suspend further CSO facilities planning, but that U.S. EPA and MDNR wish to reserve their rights to petition the court in the future for further relief on CSO control. CSO facilities planning was suspended June 25, 1981. This planning culminated with the preparation of the Alternative Facilities Interim Report (AFIR).

Since the AFIR was not comparable to a Final Facilities Plan and identified no alternative for implementation, there was technically no longer a need for the EIS to address CSO. There was, however, a need for a detailed overview of the planning that was completed. The Report on Combined Sewer Overflow Facilities Planning was generated in response to this need and had four major objectives:

- 1) To review and summarize the combined sewer overflow planning that was accomplished up to the time of suspension,
- 2) To evaluate water quality improvements estimated for the alternatives,
- 3) To independently evaluate the procedures used in facilities planning, and
- 4) To provide a basis from which a resumption of the CSO planning can proceed.

It should be noted that this document was not intended to explain or generate any decision or set any policy on the CSO planning. Its overall objective is to facilitate future CSO planning.

The CSO Report covered many technical and non-technical subjects which collectively brought planning accomplishments into focus. These subjects included:

Section 1 - An introduction describing the purpose and scope of the report,

Section 2 - An historical account of previous planning,

Section 3 - A description of the existing facilities,

Section 4 - A description of the sewer system transport model and the model generated CSO flows and loadings,

Section 5 - A description of the receiving water models, model outputs and model generated "existing" water quality estimates,

Section 6 - A description of the alternatives development procedure leading to the 25 CSO Alternatives plus the Future-No-Action and Existing Condition Alternatives. Also, the CSO site selection methodology and results are described.

Section 7 - A summary of water quality improvements estimated from modeling outputs.

Section 8 - A description of the facilities plan evaluation methodology used to rank the 25 CSO Alternatives and identify the "few best".

Section 9 - A summary of revisions made to the alternatives between publication of the Preliminary and Final AFIR's.

Section 10 - A critique of the evaluations and the findings of the AFIR.

Section 11 - Recommendations of the report (when CSO Facilities Planning resumes):

1. Alternatives for consideration should include, but not be limited to: maximization of system storage and best management practices; and transfer of flows from the Rouge River Basin to the Detroit River Basin.
2. Consider how to address CSO planning problems caused by upstream pollution sources. The procedure should include a detailed review of "208" data and all CSO planning data developed to date to redetermine if sewer overflows are a major problem in the Rouge River Basin. Coordination of present and future CSO planning from the headwaters to the mouth would also be desirable.
3. The concept of spending to the point where marginal benefits equal marginal costs ($dB/dC = 1$) may be unaffordable. Future CSO control planning should consider a spending level where the marginal benefits exceed the marginal costs ($dB/dC > 1$).

4. Several improvements at the System Control Center (SCC) will maximize the usage of in-line storage for CSO control.

These include:

- a) Verification of the in-line storage volumes and subsequent modification of procedures and equipment to ensure their utilization.
- b) Evaluation and refurbishment, where necessary, of the SCC computer system hardware and software to ensure proper collection, storage, and processing of sewer system operational data.
- c) Evaluation, cleaning, replacement (if necessary) and recalibration of all field sensors to ensure that accurate signals are being transmitted to the SCC computer.
- d) Development of a preventive maintenance program to increase reliability of the critical components of the SCC and the field sensors.

PUBLIC MEETING NOTIFICATION

PUBLIC MEETING NOTIFICATION

1. Notice of the Public Meeting was Published in:
 - A. Detroit News on 7/11/82
 - B. Detroit Free Press on 7/11/82
 - C. Local Newspapers on 7/19/82
2. Notice of the Public Meeting was mailed to 2700 interested parties on 6/21/82.
3. One photostatic copy of the Document was placed in each of ten Detroit area libraries on 6/22/82 and 6/23/82.
4. One original copy of the Document was placed in each of ten Detroit area libraries on 7/8/82.
5. Over 150 copies of the Document were distributed by request between 7/19/82 and 9/1/82.



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN ST
CHICAGO ILLINOIS 60604

REPLY TO ATTENTION OF
5WFI

NOTICE OF PUBLIC MEETING

Region V of the U. S. Environmental Protection Agency will hold a Public Meeting on Wednesday, July 21 at 7:30 p.m. at the Henry Ford Centennial Library Auditorium, 16301 Michigan Avenue, Dearborn, Michigan to discuss the Report on Combined Sewer Overflow Facilities Planning for the Detroit Water and Sewerage Department. This report was prepared to summarize and review all Combined Sewer Overflow (CSO) facilities planning to date and to provide a conceptual framework for CSO planning when it is resumed. Copies of this report are available for your inspection at the following locations:

Baldwin Public Library
351 Martin
Birmingham, Michigan 48021
Attn: Ms. Lee Tuttle

Wayne State University, Purdy Library
Room 130
Detroit, Michigan 48202
Attn: Dr. Vern Pings

Troy Public Library
510 W. Big Beaver Road
Troy, Michigan 48084
Attn: Mr. Joseph Howey

Bloomfield Public Library
1099 Lone Pine Road
Bloomfield Township, Michigan 48013
Attn: Mrs. Bamberger

Beacon Memorial Public Library
45 Vinewood
Wyandotte, Michigan 48192
Attn: Ms. Tinsley

Wayne Oakland Library Federation
33030 Van Born Road
Wayne, Michigan 48184
Attn: Ms. Dolores Hayden

Detroit Public Library, Main Library
5201 Woodward
Detroit, Michigan 48202
Attn: Mr. Dance

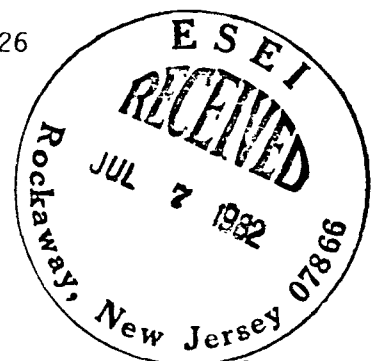
Detroit Public Library, Downtown
121 Gratiot
Detroit, Michigan
Attn: Mr. Dance

Henry Ford Centennial Library
16301 Michigan Avenue
Dearborn, Michigan 48126
Attn: Ms. Fran Delaney

SEMOG Library
800 Book Building
Detroit, Michigan 48226

Sincerely yours,

Charles H. Sutfin
Director, Water Division



If you would like a personal copy please fill in the information requested below, fold, staple, and mail (no postage is required if mailed in the United States).

Name _____

Street Address _____

City, State & Zip Code _____



COME TO EPA'S PUBLIC MEETING ON COMBINED SEWER OVERFLOW

**WEDNESDAY
JULY 21, 1982**

**at the
Henry Ford Centennial
Library Auditorium,
16301 Michigan Ave.
Dearborn, Michigan
7:30 p.m.**

**Come to a discussion of the findings
of the Combined Sewer Overflow
Report issued by EPA as part of the
Detroit Water and Sewerage
Department's facilities planning
work. For further information call
ESEI, inc.; 313-961-3940.**

**Please note: This meeting was
rescheduled from the previous date
of May 26, 1982.**

SUMMARY OF ISSUES RAISED

SUMMARY OF THE ISSUES RAISED
AT THE PUBLIC MEETING
ON THE
REPORT ON COMBINED SEWER OVERFLOW FACILITIES PLANNING
FOR THE DETROIT WATER AND SEWERAGE DEPARTMENT

The major issues raised by participants at the special meeting on the Report on Combined Sewer Overflow Facilities Planning for the Detroit Water and Sewerage Department are summarized below. The response of USEPA to these issues is also briefly summarized. A transcript of the meeting, including the presentation, all questions and all responses is included in a later section of this Responsiveness Summary.

Issue: Why was the recommendation of basin-wide planning made by the Citizen's Advisory Committee (CAC) omitted from the recommendations chapter of the report?

Response: The Report recommends coordination of all facilities planning work completed to date in the Rouge Basin (a coordinated approach). The USEPA, however, cannot dictate how the State of Michigan will conduct its water quality planning or how it will prioritize its projects. Thus, basin-wide planning is ultimately a state responsibility. Also, to implement basin-wide planning, some agency would have to be designated as the "grantee" and currently none of the participants, except the State, has authority over the entire basin.

Issue: Is the USEPA and the City of Detroit setting a precedent for future CSO planning by suspending work on the Detroit Facilities Plan?

Response: No precedent was being set. The Detroit Facilities Planning was suspended - not terminated - by the July 6, 1981 Federal Court Order. (For elaboration see Public Meeting Response by Novak on page 70.)

Issue: Wayne County had commissioned a study of the effects of CSO's on the Upper, Middle, and Lower Branches of the Rouge River. The preliminary findings indicate that background water quality can be improved. Can the DWSD Rouge River water quality models be rerun to simulate the impact of cleaner background water quality on the Rouge River alternatives for the Detroit area?

Response: One of the recommendations in the USEPA report was to integrate all of the information that has been generated by the facilities planners in the Rouge Basin.

Issue: Lake Erie has not improved since USEPA began to implement facilities planning and DWSD has not assisted in the lake's clean up.

Response: The USEPA has assisted DWSD to significantly reduce the amount of pollutants from the treatment plant to the Detroit River and thus ultimately to Lake Erie. In fact for the past year, for example, the treatment plant has been reporting an average concentration of phosphorus in the effluent below the 1.0 mg per liter limit in the permit.

Issue: Does the Report on Combined Sewer Overflows constitute official USEPA policy regarding CSO planning in Detroit?

Response: The document is not a policy statement but simply a summary and commentary on the facilities planning to date.

Issue: Shouldn't SEMCOG, as the regional planning agency, coordinate all water quality planning?

Response: SEMCOG reviews the facilities plans after they have been completed. SEMCOG is not in the position of directing facilities planning.

Issue: Is the report issued in final version at this time?

Response: The report is a final report, but a responsiveness summary (this summary) will be prepared to address all issues or questions raised at the public meeting or sent to USEPA.

Issue: There were serious omissions of data and references in the report, (Ph.D. or Master's Theses generated in conjunction with the water quality modeling).

Response: The Responsiveness Summary can be expanded. (Subsequently, a bibliography has been included in the Responsiveness Summary.)

Issue: The most serious water quality problem is in the Detroit River and not in the Rouge River as stated in the special report. Considering that there are 18 bathing beaches and 60 marinas downstream of the treatment plant, Lake Erie itself should be a major concern.

Response: The Responsiveness Summary will include any further elaborations and commentary that is contributed.

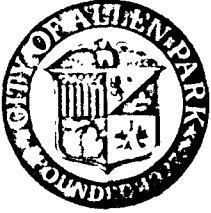
Issue: The City of Allen Park may be required to spend 60 - 100 million dollars for sewer separation, for the same water quality problems that USEPA is recommending that the City of Detroit take no action. The same methodology and conclusions should be applied to Allen Park as to Detroit.

Response: The Report on CSO does not recommend no action. Facilities planning was suspended and no conclusion on CSO was reached.

COMMENT LETTERS RECEIVED

COMMENT LETTERS RECEIVED

The following section is arranged to show the comment letters on the left side page and the response to individual comments directly to the right on the right side page.



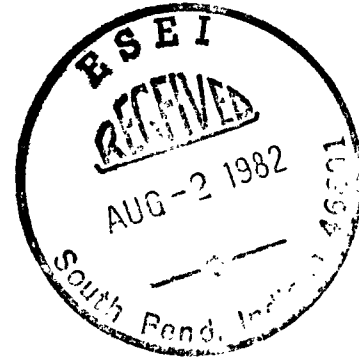
City of Allen Park

OFFICE OF THE MAYOR
FRANK J. LADA

16850 SOUTHFIELD ROAD
ALLEN PARK, MICHIGAN 48101

PHONE: 928-1400

July 20, 1982



U.S. Environmental Protection Agency
Office of Grants and Administration
Region 5
230 South Dearborn Street
Chicago, Illinois 60604

Re: Report on Combined Sewer Overflow Facilities
Planning for the Detroit Water and Sewerage
Department

Gentlemen:

The City of Allen Park appreciates the opportunity to comment on the "Report on Combined Sewer Overflow Facilities Planning for the Detroit Water and Sewerage". We have a special interest in this report for two reasons.

1. A portion of Allen Park is served by the Detroit system, and, therefore, our residents are affected by any changes in capital and O & M expenditures.

2. The remainder of Allen Park is served by a combined sewer system, for which a Facilities Plan has been prepared, coming to diametrically opposed conclusions to your report.

Our general comments on the above report are as follows:

1. The conclusion of the report, which is based on extensive modeling and analysis, indicates that little or no activity relative to combined sewer overflows is warranted at this time. Particularly, in regards to the Detroit River overflows. Allen Park agrees with this finding, generally, and has found, that using nearly the same methodology of analysis, that for a similar, but smaller, combined system in Allen Park that little or no action will result in the most reasonable solution there, also.

RESPONSE

1. As a point of clarification, the Report on CSO does recommend further evaluation of potential improvement to the System Control Center. No other activity is recommended at this time since facilities planning was suspended, but this in no way should be construed to be equivalent to a recommendation of No Action. On the contrary, a recommendation of the "No Action" alternative would require completion of the Facilities Plan as would the recommendation of any "Action" alternative.

2. We find it ironic and tragic that EPA is encouraging the expenditure of about \$60 million to \$100 million for sewer separation in Allen Park (about \$5,000 - \$8,500 per household with all its disruptive and destructive effects) while the sewer separation alternatives in the Detroit study area ranked amongst the poorest choices of the 25 evaluated. The cost of the highest ranking alternatives in the Detroit report are \$130-145 per capita. How can EPA/DNR justify the extreme disparate treatment to different portions of the same small City?

3. Allen Park believes that the basic recommendation, that when planning is resumed, that primary consideration be given to in-line storage and inter-basin transfers is appropriate. Allen Park would like to submit that similar finding should be applied to that portion of the City of Allen Park served by the Wayne County system.

4. Allen Park requests that the EPA/DNR consider these findings and bring uniformity to CSO planning in the southeastern Michigan area, or at least Allen Park, before \$60 million to \$100 million is wasted on sewer separation in Allen Park. We suggest that EPA/DNR take proper action to alleviate this serious discrepancy.

5. Allen Park agrees with the finding that there is a need to look at the overall collection and treatment system in detail before a conclusion can be reached. This was not done in the City of Allen Park and has led to erroneous conclusions.

Our specific comments on this report will be submitted in writing in the next few weeks.

Again, we appreciate this opportunity to comment and strongly urge EPA/DNR to act to bring about uniformity on CSO planning in southeastern Michigan, before a major misappropriation of public funds is made. Since it currently appears that

RESPONSE

2. A finding of the July 6, 1981 Federal District Court Order was that the parties (DWSD, MDNR, U.S. EPA) have agreed to suspend further CSO facilities planning, but that U.S. EPA and MDNR reserve their rights to petition the court in the future for further relief on CSO control.

The suspension of Detroit's CSO facilities planning effort was primarily due to the questionable status of future federal funds to construct CSO control facilities. Further expenditures for facilities planning would prove unwarranted if construction never occurred, or if it occurred years from now under different conditions. Under the present situation of limited funds, while it is still necessary to meet the requirements of the Clean Water Act, the project priority system mandated by the Act determines the allocation of funds within the State. At this time, CSO projects generally are not ranked high within the priority system. On the other hand, the decision to obligate funds for the Ecorse Creek project, of which Allen Park is part, was made under different (lesser) funding constraints. The funds have already been made available for the Ecorse Creek project, quite a different situation than an evaluation of planning in light of the December 1981 amendments to the Clean Water Act and corresponding regulations which means a general reduction in funds for CSO projects.

The "disruptive and destructive effects" of sewer separation is a factual determination to be made for each project.

The total cost for the Ecorse Creek project is approximately \$65 million, of which 75 percent or \$48.8 million is funded by a federal grant; 5 percent, or \$3.2 million by a state grant; and the remaining 20 percent, or \$13 million by apportionment among the four communities within the Ecorse Creek basin (Lincoln Park, Taylor, Dearborn Heights, and Allen Park).

3. The Ecorse Creek project has an approved facilities plan, construction in the other communities is substantially complete, and a Federal Court has ordered the grantee to complete the remainder of the project within Allen Park. Accordingly, non-final facilities planning in Detroit cannot be compared to the project in Allen Park.
4. See Response for Item 2.
5. The Allen Park project was evaluated in light of its role in solving the water pollution problem within the Ecorse Creek basin along with the other communities. Accordingly, the proposed project was to effect water pollution control as an overall system. The water quality improvements by completed work in the other communities cannot be realized until the full system is complete.

EPA/DNR intend to pursue the wasteful sewer separation project in Allen Park, we request that some indication be given now by these agencies that a rational policy will be pursued.

Yours truly,

A handwritten signature in dark ink, appearing to read "Frank J. Lada", with a long horizontal flourish extending to the right.

Frank J. Lada
Mayor for the City of Allen Park

cc: Mr. Richard Hindshon
Grants Administration
Department of Natural Resources

Mr. Charles N. Youngblood
Wayne County Drain Commissioner

Mr. John D. Dingell
Congressman of the 16th District

Mr. Valdaz Adamkus
U.S. Environmental Protection Agency
Region 5

Ms. Ann Gorsuch, Director
U.S. Environmental Protection Agency

Ms. Janis Bobrin
AWQB Coordinator
SEMOG

RESPONSE

Again, it should be noted that the federal district court has ordered the grantee and the City of Allen Park to complete the project in Allen Park.

Thank you for your comments.

Giffels/Black & Veatch

A Joint Venture

200 Renaissance Center, Suite 1220, Detroit, Michigan 48243 (313)259-5300

Detroit, Michigan
Facilities Plan



July 21, 1982
B&V Project 7889
GAI Project 78142
File A.1

Mr. Charles M. Beckham, Director
Detroit Water and Sewerage Department
Water Board Building
735 Randolph Street
Detroit, Michigan 48226

Re: DWSD Project CS-806
EIS Consultant Final Report
Group 14

Attention: Mr. John McGrail

Dear Mr. Beckham:

Attached are comments on the Environmental Consultant's audit of the combined sewer overflow studies conducted by the Joint Venture. The comments are intended to be constructive and we trust will be accepted as such by all parties concerned. We were surprised to receive on July 16 a bound copy of the CSO Report marked "Final". We trust this was an error and that these comments can be incorporated into the report.

In addition to the attached comments, we feel there are four primary points regarding the combined sewer overflow studies that should be made:

- o Had the facilities planning effort on combined sewer overflows not been stopped short of completion, it is likely that the "Future No Action" alternative would have been selected. This would have eliminated the need to try and pick up the work and continue planning at some future time when funds become available for construction.
- o The Environmental Consultant's report does not document the 1980 field data, which are available even if only in unanalyzed format. These were the most important field data of all, as they are vital for recalibration and verification of the several complex and interrelated system models.
- o Most importantly, the project was terminated before the user's manuals for the several complex modeling programs were written. Without this documentation, the immense amount of time and effort that went into modification and development of these specialized models is lost to the City and to the profession. At this point even the subconsultant, who had the major input into developing the models, would have some difficulty in reactivating them.

RESPONSE

The report on CSO is a final report, but as stated in the public meeting of July 21, 1982 - a responsiveness summary addressing meeting comments and written comments will be prepared and distributed.

When planning is completed, a selection will then be made.

The Environmental Consultant did not document the 1980 field data since it was not available to them. We agree that these data would be very valuable. We will be formally requesting the submittal of this data from the grantee.


The lack of documentation is also frustrating to the USEPA. One reason this report on CSO was completed, was to assess the status of the CSO facilities planning at the time of suspension.

July 21, 1982

- o The model programs and the massive amount of quantity and quality data entered into the computer data base has been stored on tape, a copy of which was delivered to DWSD at the termination of the project. Every effort should be made by the City to ensure that this data bank and the computer programs are not lost. Any continuing charge for storage would be minor compared to the cost and effort in reestablishing the programs and the data base.

We appreciate the opportunity to comment on the Environmental Consultant's summarizing report.

Very truly yours,


R. E. Filardi *for MJG*
Giffels/Black & Veatch
Project Manager

WEF/MJG/REF/lhj

cc: J. McGrail - DWSD
P. Swinnick - ESEI
G. Cottrell - G/B&V
C. Sutfin - EPA

RESPONSE

Agreed.

COMMENTS BY GIFFELS/BLACK & VEATCH

ON THE

"REPORT ON COMBINED OVERFLOW FACILITIES PLANNING FOR THE DWSD"

BY ESEI Inc.

June 1982

1. PAGE i, PARAGRAPH 1. The statement "Certain methodologies...seem inappropriate given the data and circumstances" is not supported by the report. The text of the CSO Report suggests alternatives but does not demonstrate or call any methodology inappropriate. We suggest a re-phrasing as follows: "Facilities planning results to date, plus the new or changed circumstances surrounding the subject matter, indicate that resumption of planning will probably involve different assumptions and, therefore, modified methodologies".

2. PAGE i, LIST OF CENTRAL DOCUMENTS. We recommend the addition of two reports: "Flow Management Report", May 1981 and "Existing Preliminary Treatment Complex Evaluation Report", April 1981.

3. PAGE ii, LAST PARAGRAPH. The phrase "very complex and difficult to understand" is suggested as a substitute for the word "confusing".

4. PAGE 1-1, PARAGRAPH 1. The phrase "... summarizes much of..." is suggested instead of "...is their summary of ...". The AFIR was originally only a progress report on some of the planning activities, and was never intended to provide full coverage of all the planning; witness the fact that modeling was not extensively covered. Some increase in scope was attempted when the Federal Court mandated that the planning process cease with the AFIR, but time and other constraints did not allow full coverage.

RESPONSE

The Summary of Comments on FFP Environmental Analysis by Parameter (Table 10-10, page 10-43) lists several FFP environmental analyses which were considered inappropriate for preliminary and/or final screening of alternatives. The reasons are also listed. This Table is supported by a complete discussion of the FFP Environmental Evaluation, Section 10.3, pages 10-33 to 10-42. For methodologies other than for environmental evaluation, we agree with your re-phrasing.

We accept this and these reports should be included on our list as 4d and 4e, respectively.

We agree.

We agree.

5. PAGE 1-1, LIST OF OBJECTIVES. Two more objectives are considered to be of prime importance and should be added:

"5. To provide documentation for all available water quality data.

6. To provide user's manuals for all of the water quality model programs developed and used in the Facilities Planning."

Full documentation of the data base should include the Spring 1980 monitoring data. It was crucial to model recalibration and would prove extremely useful to future planning. Project constraints caused DWSD to trade off full documentation and generation of water quality data in hard copy for other deliverables, but data are currently (and have been since project termination) available on magnetic tape at DWSD.

The recalibrated and verified models, which represent a substantial investment, would be very useful to future planners, who could immediately implement them if their use and basis were described in user's manuals. Project budget and schedule constraints also caused DWSD to trade off generation of user's manuals for other products. Although some documentation is available through Wayne State graduate student dissertations, this is not enough. Generation of user's manuals should proceed while the people involved are available, and they still have some recollection of the various programs.

6. PAGE 1-2, LAST PARAGRAPH. In line with Comment No. 4 above we suggest the following rephrasing:

- o "... AFIR became the final deliverable..." instead of " ... AFIR was the..."

RESPONSE

The four objectives listed on page 1-1 are specific to the subject CSO Report, June 1982. The two objectives you have listed are applicable to the Final Facilities Planning effort. These were never carried out, as you have stated, but we believe, would still be a worthwhile endeavor of the DWSD.

We agree.

- o "Early in 1981 the Federal District Court mandated that it was to serve as a stopping point..." instead of "It was mandated..., and was to serve as a stopping point...".

7. PAGE 3-2, PARAGRAPH 2. The last two sentences should be expanded to properly describe the current status of the NI-EA. We suggest the following: "A third major ...(NI-EA) is almost finished, with approximately 2500 ft more required to bring it into the DWWTP. A pump station would be required to allow it to convey suburban sanitary sewage and/or to transport and store combined sewage. However, work on both the interceptor and the pump station have been stopped by Court Order, with MDNR concurrence, because of the lack of construction grants funding."

8. PAGE 4-1, PARAGRAPH 1. The first statement, "The determination of CSO...rather than direct measurements" could be misinterpreted. We suggest: "Current CSO quantity and quality were ascertained through statistical analysis of direct measurements. The statistical characteristics and trends observed were incorporated into the models and utilized to estimate variation over time and under changed operational conditions." The latter phrasing expands on the actual sequence of analysis, which is standard practice, and which led up to the "CSO Quantity and Quality Report", whose tables and figures represent or were extrapolated from actual collected data.

9. PAGE 4-6, TABLE 4-1. Most of the Baby Creek East (BCE) watershed flows are received by the DRI through the Livernois, Morrel and other sewers, not by the O-NWI.

10. PAGE 4-25, PARAGRAPH 1. Field problems had nothing to do with the makeup of the calibration set. The six storms were selected from the available data because they provided the best representation of total

RESPONSE

We agree.

We agree.

We agree.

You are correct. This change should be noted.

system and receiving stream operation during storm conditions. The full 25 storm set was not used because it does not always overflow at all locations and, due to cost and logistic constraints, Detroit River receiving quality cruises were not scheduled for all events. It is suggested that the text be modified to "Of the 25 monitored storm events the six providing the best representation of storm conditions were selected for model calibration."

11. PAGE 4-26, PARAGRAPH 2. "...the 1980 data is unavailable." See Comment No. 5 above. No hard copy or documentation was generated due to project constraints, but the data was and is available on magnetic tape at DWSD, as part of the Water Quality Data Base. To fulfill the purpose of the CSO Report, both documentation and hard copy production should be provided.

12. PAGE 4-32, PARAGRAPH 3. We suggest that "While this provides... or by seasons" be modified to read "This provides information on any one mean value. To compare the amount of variation by river, season or among different parameters at the same site, the investigator must access the water quality management programs data base and perform the desired significance tests." The programs to operate on the data and the data themselves are on magnetic tape at DWSD. Some such tests were performed but the results were not included in the hard copy tabulations. The Joint Venture believes that direct interpretation of the statistical data is open to speculation, because of the complexity of the system.

13. PAGE 4-46, PARAGRAPH 2. The criteria cited as used for average year selection are not totally correct. They should be replaced by the ones provided on Page 6-1, last paragraph, of the CSO Report.

RESPONSE

This clarification is quite acceptable.

We agree.

14. PAGE 5-18, LAST PARAGRAPH. Current phrasing could be misinterpreted and thereby mislead the reader. The fact is that QUAL II was selected for dry weather flow, steady state condition simulation because stream flows and input are essentially constant during these conditions and because extreme flow variations do not happen at these times. RECEIV II was selected to model dynamic storm (extreme) conditions. We suggest rephrasing to read: "QUAL II was selected to model dry weather flow steady state conditions because it assumes essentially unvarying stream flows and input waste loads, conditions which accurately reflect dry weather periods. Extreme or dynamic conditions, such as those experienced under storm conditions, were simulated by another model, described in Section 5.3.2.2 below."

15. PAGE 5-24, LAST PARAGRAPH. The statement "The basic difference... water quality planning" could easily be misinterpreted. RECEIV II is specifically geared to model storm (high flow) conditions. It is the modified version of the SWMM Receiving Water Block, modifications that enhanced rather than detracted from its urban storm modeling role. We suggest that the text be modified to read: "The basic difference between SWMM Receiving Water block and RECEIV II is one of degree and flexibility; while both simulate storm (high flow) conditions associated with urban drainage problems, RECEIV II is better geared toward water quality planning."

16. PAGE 5-46, PARAGRAPHS 2 AND 3. It is correct that no sampling data were available for many (in lieu of most) of the 36 data points. Preliminary investigations of existing sources led us to believe these were sufficient and therefore no sampling was scheduled. When in fact some locations were found to have little or no data, in line with accepted and

RESPONSE

Your rephrasing is agreed with and should be considered as replacing the last paragraph of page 5-18.

We agree with your modification.

We could not confirm that sampling data were available for most of the 36 data points, although two staff members spent a day in the Black and Veatch library searching. We do not question that accepted methods were used to derive missing data, but we did wish to call attention to the fact that sampling data was not the basis of the majority of the 36 data points.

standard practice for similar cases, we assumed values satisfying observed upstream and/or downstream steady state conditions. We suggest insertion of a phrase in the CSO Report indicating the procedure used to be accepted practice.

17. PAGE 5-57, PARAGRAPH 3. To reflect the circumstances more accurately we suggest that the statement "As with the Rouge River model, these...contained certain errors..." be rephrased to read "As with the Rouge River model, in order to meet a stringent deadline, Detroit River model outputs were distributed as they became available, without the benefit of the analysis normally performed before release. Review indicated the need for changes and modifications, requiring output to be corrected in updates."

18. PAGE 8-8, PARAGRAPH 1. In the AFIR report (see Page 1-11), based on project data and analytical results, the JV recommended that the FNA be included with the "few best" for future analysis. This decision was based on the observation that only minimal incremental benefits accrued from increased control, a conclusion only made possible by the analytical effort up to that date. The statement "Although the FNA..., no assessment was made of whether any alternative should be chosen over the FNA alternative." neglects to mention that selection of one preferred alternative was always scheduled for the last planning phase, which the JV was not allowed to perform. There is the strong possibility that the FNA alternative would have been recommended. We therefore suggest that the text be changed to: "Although the FNA alternative was used to calculate benefits and costs of the 25 specific control alternatives, the planning process was halted by

RESPONSE

We agree with this clarification.

We agree with this restatement.

Court Order before assessment was made of whether any alternative should be chosen over the FNA alternative."

19. PAGE 8-14, PARAGRAPH 2. Three issues require clarification. First, the revised cost figures were not available until mid-May, but the results and the support calculations were made available to DWSD at the project end as part of the back-up calculations; anyone could have accessed them. The JV suggests the note be deleted altogether or modified to reflect cost figure availability.

Secondly, the FNA was not suddenly assigned a substantial cost; the May AFIR included a cost within 12% of the final figure. The reasons for the cost were amply discussed with DWSD and the EIS consultant and are clearly explained in the (final) June AFIR. The sentence "Also, a substantial cost...zero." should be deleted.

Finally, the JV internally reiterated not only the cost/benefit analysis, but the total screening and ranking, and saw no reason to change the report since the same "few best" alternatives resulted. This is further explained in Comment No. 20 below. The statement "However, the facility planner did not..." would better reflect what happened if rephrased as follows: "An internal revision of all the alternative screening and ranking, including the cost/benefit analysis, did not modify the alternatives included in the few best."

20. PAGES 9-1, PARAGRAPH 1 AND 9-2, PARAGRAPH 2. The costs of the FNA was not radically changed (see Comment No. 19 above); thus the statement "The cost of the FNA alternative also was radically changed," on Page 9-1 should be deleted. Paragraph 2 of Page 9-2 should also be deleted; it

RESPONSE

The EIS Consultant verbally requested the revised cost data twice and was told that it was not available. The matter was not pursued further.

Although the May AFIR did include a cost for the FNA, the costs the EIS Consultant analyzed were obtained in February of 1981 and in this cost data FNA was assigned a cost of zero. Since the February cost data are presented in Tables 8-3 and 8-4, the reader should be forewarned that the costs were later modified. We agree that the assignment of costs to the FNA was amply discussed and we do not disagree with the decision to make such an assignment.

We agree.

apparently results from a misunderstanding. The costs attributed to the FNA alternative result from items considered as "givens", such as the NI-EA and Pump Station No. 2. This affected all the alternatives in like manner, making the FNA cost a base cost. The benefit cost computations were redone, but were unaffected by this cost increase, since the basis is the difference in cost between an alternative and the FNA. The cost difference was only affected by the changes in storage and treatment shown on Table 9-1, and not by the FNA cost.

As noted in Comment No. 19 above, the facilities planner did engage in the rescreening and reranking of the alternatives with the revised costs and conditions. The matter was not pursued officially because the same "few best" alternatives resulted, confirming a prior sensitivity analysis. While modeling indicated that the reduction of excess storage and the elimination of unused treatment modules did not affect water quality, it still affected related elements such as cost, disruption to the environment, etc. The rescreened and ranked alternatives mostly maintained their relative positions with respect to these factors, but the difference between these and other alternatives was less marked. The few alternatives that did change rank did not change enough to be included in the "few best". Thus the statement on Page 9-1, "These revisions were not used..." should read: "The Facility Planner reevaluated the cost/benefit, environmental, implementability, technical, and economic analyses with these incorporated revisions; the same "few best" alternatives resulted, confirming prior sensitivity analyses."

RESPONSE

We agree. The CSO Report should make the reader fully aware of the rescreening and reranking.

21. PAGE 10-1, PARAGRAPH 1. The circumstances mentioned in "The subject areas covered...without regard to the circumstances..." are an integral part of (in many cases the sole reason for) the subject areas. While objective critique certainly requires that the circumstances be excluded, more explanation is necessary to do them justice to the subject area and avoid misrepresentation of the facts and issues. We suggest inserting the following sentence before the above quoted statement. "The reader should also understand that these circumstances are an integral part, of the planning techniques used and, in many cases, are the sole reason for them."

22. PAGE 10-3, SECTION 10.1.1.1, REACTION RATES. While it is true that the rates were not supported by field data, the JV had indicated that it considered setting these rates equal to zero reasonable because of the rapid travel time in the Rouge River. Flow reaches the Detroit River in a matter of hours, rendering any effect of the rates negligible.

As mentioned in Comment No. 5 above, although some calibration and verification documentation is available, the absence of complete documentation and user's manuals was a conscious DWSD trade-off. We recommend it be carried out as soon as possible, enabling a reassessment of the CSO Report comments with regard to calibration/verification and related issues.

23. PAGE 10-7, PARAGRAPH 1 AND 10-8, PARAGRAPH 2. See Comment No. 22 with respect to calibration/verification. Furthermore, no claim was ever made by the modelers of absolute numbers at the current planning stage; the models were only intended to differentiate relative effects. The small observed difference was interpreted by the modelers as having no significant difference between the alternatives or between the alternatives and FNA. This should be brought out in the CSO Report.

RESPONSE

Agreed.

We agree that lack of complete documentation and users manuals makes interpretation of the models and the supporting data difficult, however, your recommendation is more appropriately directed to your former client, DWSD.

Agreed.

24. PAGE 10-17, PARAGRAPH 2 AND PAGE 10-19, PARAGRAPH 2. See Comments No. 18 and No. 23. The JV interpretation was that only minimal differences exist between the alternatives and the FNA, a conclusion shared by the CSO Report.

25. PAGE 10-20, PARAGRAPHS 2 AND 3. The authors of the CSO Report were able to suggest redefinition of the optimal point after they observed the results of current definition analysis. In like manner the CSO Report suggestion to use $dB/dC = \text{maximum}$ could be questioned. With this differentiation, the public decides whether to spend more money or less, rather than the more basic question of should any money be spent at all? The AFIR addresses this by recommending that FNA be considered as one of the "few best", and therefore that it be subject to a future analysis that could result in its selection as the preferred alternative.

A rough calculation and re-ranking, using the CSO Report's alternate strategy ranking for cost/benefit, along with the rankings of the other categories (implementation, environment, etc.), still produced the same "few best". The JV suggests modification of Section 10.2.2 - Optimization, to reflect these comments.

26. PAGE 10-29, PARAGRAPH 1. The assumption that society values the benefits of pollution in direct proportion to cost was not made in a vacuum. It was recognized as one value system within the context that other societal values would be reflected and adequately weighted in the other ranking categories. Other value systems were in fact accounted for. The JV suggests rewriting of Section 10.2.3, Value Systems, to reflect the above comments.

RESPONSE

Agreed.

Agreed. This conclusion should be stated more clearly in the CSO Report.

The CSO Report does not suggest that value system employed by the Facilities Planner was made in a vacuum. In fact, without knowing the results of the cost benefit analysis, the chosen value system was the most logical choice. We simply wish to point out that other value systems exist, which could lead to the selection of different alternatives.

27. PAGE 11-1, PARAGRAPH 2. The DWSD, EPA and the EIS consultant were all knowledgeable about the assumptions referred to as questionable, and either accepted them or did not question them. The statement "Facilities planning...now appear questionable" should be modified as follows: "Results to date, coupled with changed project related circumstances, require a change of assumptions before resumption of planning activities."

RESPONSE

Agreed.

Thank you for your comments.



Wayne State University
College of Engineering

Department of Chemical and
Metallurgical Engineering
Detroit, Michigan 48202

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July 29, 1982

WATER DIVISION

Mr. James Novak
USEPA Water Section
Environment Impact Section
12th Floor
230 South Dearborn St.
Chicago, IL 60604



Dear Mr. Novak:

As a practicing professional in the area of water resources, I have reviewed the EPA Region V Final Report on Combined Sewer Overflow Facilities Planning for the Detroit Water and Sewerage Department. I attended the public meeting held on July 21, 1982 and commented on the report. I wish to add the following written comments to the Responsiveness Report which I understand will go to all recipients of the Final Report as well as all future requestors of that report.

The major purpose of the CSO report was to facilitate the resumption of the CSO facilities planning in Detroit. As it stands, the document does not accomplish that objective as it omits references to all professional papers and Wayne State University thesis and dissertations which are in the public domain and which were intended to document specific portions of the work. Not only were the references omitted, but the work was apparently not reviewed and many statements made in the report are therefore misleading or incorrect. An Auxilliary Bibliography is attached to correct this oversight of thousands of pages of detailed results, data and interpretation.

With respect to the recommendations, the oversights could significantly change a number of conclusions; a quantitative assessment of the impact is beyond the scope of this critique. Recommendation 11.1 is questionable as it is based upon ESEI's inability to find all the Rouge River initialization data that was used. The MDNR 73 survey alone lists more data than that published in Table 5.5. 11.2 should be revised to indicate that substantial additional quantities of data exist in the present study.

The impact of the CSO's upon the Detroit River should be reviewed again, as the ESEI study did not address the entire river and new marinas and canals with total body contact recreation will be added to the river. The report should have addressed the environmental impact of the existing and future no action conditions. The Chemical Engineering Department of Wayne State University should be noted to have been a major subconsultant to the Joint Venture and a considerable resource of information.

RESPONSE

We appreciate your bibliography which should be very helpful to present and future planners.

The EIS Consultant made numerous requests for the initialization data to Black & Veatch and to USA. All of the information supplied by these two sources was used. If you possessed additional information, it would be of great value to future planners.

Table 5.5 lists the arithmetic means of STORET data and not the individual samples. Therefore you are correct in saying that the MDNR 73 survey contains more pieces of data than are displayed in Table 5.5.

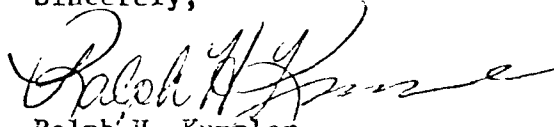
The scope of study did not include the entire Detroit River or Lake Erie. Future basin wide planning should certainly cover the impacts of alternatives on a larger area than was analyzed for this study.

We agree that the Chemical Engineering Department of Wayne State University should be noted as a major subconsultant, and we apologize for this omission.

Mr. J. Novak
Page 2
July 29, 1982

There are many additional technical issues raised by the report which are definitively answered in the attached bibliography. I would be pleased to make copies of those papers available in their entirety for the Responsiveness Summary, if desired.

Sincerely,



Ralph H. Kummel
Chairman

RESPONSE

Thank you for your comments.

AUXILIARY BIBLIOGRAPHY FOR RIVER MODELING ON THE
DETROIT SECTION 201 FINAL FACILITIES PLAN

Alternate Facilities Interim Report, Giffels/Black and Veatch, Report on the Detroit Section 201 Study, June 1981.

Anderson, H.M., "A Dynamic Simulation Model for Wastewater Renovation Systems," Doctor of Philosophy Dissertation, under R.H. Kummeler and R.V. Edwards, Department of Chemical Engineering, Wayne State University, Detroit, Michigan, 1981.

Anderson, H.M., "Combined Sewer Overflow Modeling: STPSIM2, A Dynamic Model of the Wastewater Treatment Plant," Symposium on Section 201 Planning; Modeling for Combined Sewer Overflow Abatement, Paper 7d, 91st National AIChE Meeting, Detroit, Michigan, August, 1981.

Anderson, J.A., C.D. Harlow and J. Baranec, "Combined Sewer Overflow Modeling in Detroit 201 Study Using SWMM," Symposium on Section 201 Planning; Modeling for Combined Sewer Overflow Abatement, Paper 7c, 91st National AIChE Meeting, Detroit, Michigan, August, 1981.

Anderson, J.A., C.D. Harlow, J. Baranec and H.M. Anderson, "Combined Sewer Overflow Modeling in the Detroit 201 Study using SWMM," Proceedings of the USEPA (SWMM) Stormwater Management Model User's Meeting, January 19-20, 1981, Austin, Texas.

El Sharkawy, Alaa, "Water Quality Modeling for One-Dimensional Rivers," Master's Thesis under R.H. Kummeler, Department of Chemical Engineering, Wayne State University, Detroit, Michigan, 1981.

El Sharkawy, Alaa and Esmail Jamshidi, "A Comparison of an Analytical, One Dimensional River Simulation with Numerical River Models," Symposium on Section 201 Planning; Modeling for Combined Sewer Overflow Abatement, Paper 8d, 91st National AIChE Meeting, Detroit, Michigan, August, 1981.

Filardi, Raul and Barbara Harvey-Brayton, "CSO Control Alternatives Analysis," Symposium on Section 201 Planning; Modeling for Combined Sewer Overflow Abatement, Paper 8f, 91st National AIChE Meeting, Detroit, Michigan, August, 1981.

Giffels/Black & Veatch, Segmented Facilities Plan prepared under Section 201 Facilities Planning Grant for the Detroit Water and Sewerage Department, January 31, 1978.

Graham, Malaise, J., "Field Data Collection for Calibration of Models," Symposium on Section 201 Planning; Modeling for Combined Sewer Overflow Abatement, Paper 7b, 91st National AIChE Meeting, Detroit, Michigan, August 1981.

Harlow, C.D., E. Jamshidi, R.H. Kummeler, J.G. Frith and J.A. Anderson, "One Dimensional Water Quality Models for Dynamic, Small Rivers: The Rouge River," Proceedings of the USEPA (SWMM) Stormwater Management Model User's Meeting, January 19-20, 1981, Austin, Texas.

Harlow, C.D. and J. Frith, "Numerical Water Quality Models for One Dimensional Rivers," Symposium on Section 201 Planning; Modeling for Combined Sewer Overflow Abatement, Paper 8a, 91st National AIChE Meeting, Detroit, Michigan, August 1981.

Harlow, C. and R. Kummeler, Detroit Water and Sewerage Department Wastewater Treatment Plant Flow Analysis for 1974-1979, Report to Black and Veatch, February 1980.

Harvey-Brayton, Barbara L. and Raul E. Filardi, "Combined Sewer Overflow Abatement Alternative Development," Symposium on Section 201 Planning; Modeling for Combined Sewer Overflow Abatement, Paper 7a, 91st National AIChE Meeting, Detroit, Michigan, August 1981.

International Joint Commission Great Lakes Water Quality Board, Surveillance Subcommittee Reports Appendix B for 1975, 1976, 1977, 1978 and 1980, available from the International Joint Commission, 100 Ouelette Street, Windsor, Ontario, Canada.

Jamshidi, E., A. El Sharkawy, R.H. Kummeler and C. Harlow, "An Analytical Model for a Dynamic, One Dimensional River with Axial Dispersion and Chemical Reaction," 2nd World Congress of Chemical Engineering, Montreal, October 1981.

Kummeler, R.H., J.G. Frith and C-S. Liang, Final Report on the Planning Level Model Sensitivity Analysis, Task 1232.1, May 25, 1981.

Kummeler, R.H., G. Roginski, C-S. Liang, S. Winkler and J. A. Anderson, "Two Dimensional Water Quality Models for Dynamic, Large Rivers: The Detroit River," Proceedings of the USEPA (SWMM) Stormwater Management Model User's Meeting, January 19-20, 1981, Austin, Texas.

Kummeler, R.H., J.G. Frith, L-S. Liang and J.A. Anderson, "Uncertainty Analysis in Stormwater and Water Quality Modelling," Proceedings of the SWMM Users Group Meeting, USEPA and McMaster University, Hamilton, Ontario, Canada, September, 1981.

Lake Erie Report: A Plan for Water Pollution Control, U.S. Department of the Interior, Federal Water Pollution Control Administration, Great Lakes Region, 1968.

Liang, Chein-Sung, "Use of Multispectral Remote Sensing Data to Predict the Turbulent Diffusion Coefficient in the Detroit River," Master's Thesis under R.H. Kummeler, Department of Chemical Engineering, Wayne State University, Detroit, Michigan, 1981.

Liang, Chein-Sung, S. Winkler and R.H. Kummeler, "A Guassian Plume Model of a Two Dimensional River," Symposium on Section 201 Planning; Modeling for Combined Sewer Overflow Abatement, Paper 8d, 91st National AIChE Meeting, Detroit, Michigan, August 1981.

Michigan Water Resources Commission, Bureau of Water Management, Department of Natural Resources, "Rouge River Basin: General Water Quality Survey and Stormwater Survey, June-September, 1973, March 1974.

Roginski, Gregory T., "A Finite Difference Model of Pollutant Concentrations in the Detroit River from Combined Sewer Overflows," Doctor of Philosophy Dissertation under R.H. Jummler, Department of Chemical Engineering, Wayne State University, Detroit, Michigan, 1981.

Roginski, G. and R.H. Kummler, "A finite Difference Model of a Two Dimensional River," Symposium on Section 201 Planning; Modeling for Combined Sewer Overflow Abatement, Paper 8c, 91st National AIChE Meeting, Detroit, Michigan, August 1981.

Roginski, G., C-S. Liang, S. Winkler and R.H. Kummler, "Simulation of Pollutant Concentrations in the Detroit River," 2nd World Congress of Chemical Engineering, Montreal, October 1981.

Upmeyer, D.W., G. Roginski and R.H. Kummler, "Impacts of Detroit's CSO Discharges on the Detroit River," 54th Annual Water Pollution Control Federation Conference, October 1981, Detroit.

Upmeyer, D.W., "The Alternative Analysis Procedure," Symposium on Section 201 Planning; Modeling for Combined Sewer Overflow Abatement, Paper 8e, 91st National AIChE Meeting, Detroit, Michigan, August 1981.

PUBLIC MEETING TRANSCRIPT

Edited Transcript of Public Meeting Held Wednesday, July 21, 1982 on the "Report on Combined Sewer Overflow Facilities Planning for the Detroit Water and Sewerage Department"

Representing the DWSD - Mr. John McGrail
Representing ESEI - Mr. David Vance
- Mr. Peter Swinick
- Mr. James Williamson
Representing USEPA - Mr. James Novak

Mr. Novak

Why did we do this report on CSO? During the facilities planning one of the elements being covered was Combined Sewer Overflow (CSO). That planning (CSO) was suspended rather abruptly. While the planning was proceeding, there was a concurrent Environmental Impact Statement (EIS) but since the planning on Combined Sewer Overflow was halted, there was technically no need for the USEPA's EIS to address Combined Sewer Overflow. At that time, however, the agency did not have a detailed overview of what was done. Therefore, this report was generated and had the following four objectives.

- To review and summarize the Combined Sewer Overflow planning that was accomplished to date.
- To evaluate quality improvements associated with the alternatives that were determined in facilities planning.
- To independently evaluate the procedures used in facilities planning, and
- Most importantly, to provide some basis from which a resumption of CSO planning can proceed.

I should make something very clear, that this is by no means any kind of decision document. It was put together for the previously mentioned reasons and is intended primarily to facilitate subsequent planning.

Mr. Swinick

We've handed out two things already. Two dozen CSO reports were distributed first come first serve and we are already out of those. There were about 150 of them mailed out to individuals who requested them. It should have been about 10 days

ago and most people should have gotten those already although I just got word that they haven't been received. That was the five hundred page report that was up here that has a greenish cover on it. We still have about 100 copies of those available if any one would like a copy and does not have one or does not expect to get one in the mail. For anybody who did write, you should get one within the next 2 days or 3 days if they haven't already been received. If anybody would like a copy, either Region V USEPA or ESEI can get you one. Everyone of the Citizens Advisory Committee should have gotten one. But the place to write to is ESEI, you can write to my attention, Peter Swinick, 1 Bank Street, Rockaway, New Jersey 07866. We should be able to get it out in a few days.

The second package that was handed out is really an outline of today's presentation and since we are trying to limit questions until after the meeting, if you have a question, just jot it down and this way we can remember and call all those questions together later. We are going to try to present about 45 minutes worth of information and then open it up for questions. Try to make it short and sweet. I'm going to start with the history of planning for upgrading of sewage treatment. I'm not going to go too far back, only to 1966. And then I'm going to turn it over to Dave Vance who's going to talk about the work that was done by the facilities planners and the review done by ESEI and the USEPA.

In 1966 the State of Michigan and the City of Detroit came to an agreement to limit discharges into the Detroit River. At that time, limits were set for those discharges and Detroit during that time tried to meet those limits. Between 1966 and 1972 the City met those limits and didn't meet those limits in an inconsistent fashion. In the early 1970's, studies came out of places like the International Joint Commission and some of the universities around Lake Erie citing the City's publicly owned treatment plant and many other sources that were major pollutants of the lake. This, combined with the entrance of the federal government into regulating the waste water discharges in 1972 with the passage of the Federal Water Pollution Control Act, required the City of Detroit, USEPA and the State of Michigan to put their heads together; forced the meeting of the minds if you will; to try and solve the problems that were occurring in the City. In 1974 MDNR, which is the Department of Natural Resources, USEPA and the City agreed to an orderly progression of study and upgrading of the treatment plant. They started an upgrading process, phosphorus removal was initiated or at least the construction was initiated and studies were begun on the upgrading of secondary treatment. Also in 1974, MDNR issued an interim permit for the wastewater treatment plant to operate, again setting up some standards for discharge requirements. In 1975, a plan was presented to MDNR and the agencies on how to meet upgraded standards. The plan was reviewed by the agencies and in certain areas it was deemed inadequate to document the need of the federal funding. In 1976, two things happened; first the interim permit was revoked due to continued violations of the standards that were set up and a moratorium was declared by MDNR on new connections to the systems. No new collectors

were suppose to be built and no more home or industries were suppose to be connected to the system. The moritorium was later suspended and dropped when the City, MDNR and the USEPA again agreed to a schedule to study and upgrade the treatment plant and try to find solutions to the problems, very complex problems because of the size and complexity of the treatment facilities. It was also agreed to develop a facility plan which has come to be known as the Segmented Facility Plan but at the time was called the Overview Plan with an Environmental Assessment. In 1976 it was agreed by those parties to complete a facility plan by August, 1977 and that facilities plan was suppose to study upgrading to secondary treatment levels. DWSD also agreed to meet secondary treatment standards by December of 1979. They also agreed to study the Combined Sewer Overflow problem which was thought to be a major contributor of pollution to Lake Erie and the Detroit River. In 1976, the Overview Plan with Environmental Assessment was started, and it was completed in June of 1977, on time and on schedule. The document studied the Combined Sewer Overflow problem and recommended the construction of a West Arm Interceptor which was designed to carry sanitary sewage and follow a route along the Rouge River. It was designed to separate the system carrying pure sanitary sewage down to the treatment plant, leaving the existing system mostly unmodified to handle storm water runoff. That report was then reviewed by MDNR and the USEPA. The review, published in the Environmental Impact Statement on the Overview Plan and Environmental Assessment, determined that the data presented was inadequate to justify the expenditure of federal dollars on a West Arm Interceptor. In other words, there wasn't enough information to make a decision to spend that much money to separate the sewers and stop or eliminate to a great extent the Combined Sewer Overflows on the Rouge River. Thus, although the Overview Plan with the Environmental Assessment was completed, it became a Segmented Facilities Plan because things were to be studied further. The Combined Sewer Overflow problems on the Rouge River and the Detroit River were not solved in 1976. And that more or less brings us to the start of this program as we know it and are concluding here today. In 1977, the need for a final facilities plan or for further study on a couple of selected elements (one of which as the Combined Sewer Overflow problem) was recognized and was initiated into a final facilities planning document. That kicked off this process. I will now turn the meeting over to Dave Vance who will tell us the technical details of what happened.

Mr. Vance

Peter gave you an idea of what the segmented facilities plan did. I'll start now by recapping the Final Facilities Plan. We'll start with the problem definition on the Final Facilities Planning process. The papers you have in front of you go along with the slides and will help you. The slides will help you write down your notes so you don't forget when you have questions. The goal of this portion of the Final Facilities Planning effort was intended to see if CSO in the immediate Detroit area was a serious problem. If so, how much of a problem and, if it was a

problem, what alternatives could you give them to correct Combined Sewer Overflow problems into the Rouge River? Other questions concerning the treatment plant and other things were not covered in this particular facilities planning effort that we wrote a report on here today, such as incinerator improvement, upgrading the treatment plant for solid handling or site selection for solids disposal. Those items and others were covered in separate reports. Before we begin in our evaluation of that planning process and our recommendations, I want to spend a few minutes going over the Detroit system and the methodology the facilities planners used in order to better evaluate our recommendations and evaluations. The Detroit system is composed of about 3500 miles of combined sewer and, as Peter said, it means that one sewer handles most of the storm water runoff, domestic and industrial waste. The next slide shows the nature of the combined sewer system showing both the runoff rain and the family sewage going into the same pipe. The next slide shows a complete combined sewer system, including a river. Notice that again the runoff goes into the same pipe as the industrial and domestic waste and comes down here by various size sewers into an interceptor which parallels the river. There is an outfall here, a place where overflows go into the river without being treated. These combined sewers were originally constructed to prevent basement flooding, street and parking lot flooding. However, in the past twenty years they've become far less popular because of the water pollution associated with such a system. An interceptor, shown in this slide, is a major sewer whose purpose is to intercept the flow of tributary areas before they transport it on to the treatment plant. The next slide should show the major interceptors in the Detroit area. The Oakwood Northwest Interceptor parallels the Rouge River. It runs this way. The Detroit River Interceptor is the other very large one, which follows the Detroit River and goes up this way. The North Interceptor, West Arm being referred to in discussions, would approximately parallel this Oakwood Northwest Interceptor along the Rouge River and East Arm Interceptor, now unconnected generally parallels the Detroit River Interceptor. Those are the four major interceptors you'll hear people talk about. The West Arm does not exist and the East Arm is about 90% complete. The treatment plant is located near the mouth of the Rouge River right where all these interceptors come together. The treatment plant is one of the largest in the country handling more than 800 million gallons of waste per day so it's very large. These slides should give you an idea of the facility. For those of you who haven't seen it up close, these slides just give you an idea of what a treatment plant looks like. We're not going into detailed processes tonight. That's not our purpose.

The wastewater which doesn't make it to the treatment plant is overflowed into the Rouge River and Detroit Rivers. That happens along the Detroit Interceptor and Oakwood Northwest Interceptor. This slide shows, and your packet will show it more clearly, the 49 locations of the CSO sites in the immediate Detroit area, within the City of Detroit and along the Detroit River. The next slide shows the locations of the Rouge River Combined Sewer Overflow sites. Again, these are not all

the sites on the Rouge River, just the ones within the immediate Detroit area. There are 30 of those along the Rouge River. There are also two more outfalls from the plants itself. Combined Sewer Outfalls vary in size. Some are quite large as indicated by this slide and the next slide. Those are very large, about 10 feet square or more; or they may be small as indicated here. They come in all different sizes. Now, needless to say, the impact of such a large overflow may have very harmful effects on water quality and on any recreation. To give you a feel for the impact it may have, we'll show you the width of the Rouge River at a location of where one of those very large interceptors is. Now the river at this point may be 15 to 20 feet wide and about 18 inches deep, and you saw the size of the outfall. Combined sewage coming out from the outfall can totally dominate the river at that point. There's no contest. For other CSO's that are smaller or where the river is bigger, the effect would not be so great. It's just interesting to know how small the river is at places where there are very, very large outfalls. It's important to realize here and as you read the document that the study we are talking about tonight focused on the impact of CSO on only a portion of the Detroit River and Rouge River. For instance, the entire Rouge River basin is shown by the outline. Now you can see how big the basin is, being of course the area where all the water flows into the Rouge River. Keep in mind how large that area is, how far out it goes. Of this basin, the Detroit Water and Sewage District's service area includes maybe one third of that area. Of course, the Rouge River basin is a very much wider area. Most of this area is served by combined sewers. Those are the colored-in areas here. Now for purposes of this study, the planning area for which the plans were developed was defined as the immediate Detroit area shown by the color. So out of all that we started with, out of the basin down to the total DWSD service area, we now have a planning area defined as just this area. For planning purposes this area was further divided into two watersheds, the Rouge River watershed and the Detroit River watershed. Those were further subdivided into subwatersheds. Those were even further divided. All this was done with a detailed analysis of the rainfall, the runoff and the sewer system characteristics. It covered such a big area that the only way to handle the problem is to start breaking into smaller components. It gives you just a flavor as to how that process went.

The facilities planners then developed alternatives to reduce the volume of Combined Sewer Overflow. Five control options or methods of controlling that Combined Sewer Overflow were examined to reduce pollution. These were: inline storage, which is utilizing the inherent storage capacity of very large interceptors; off-line storage, which usually means the construction of storage tanks below ground to hold the wastewater until the treatment plant can handle it; increased treatment capacity either at the treatment plant or by building remote treatment units wherever you needed them; sewer separation, which was discussed earlier; and best management practices such as street sweeping, sewer flushing or some of the others.

These five control options were used to develop specific control alternatives. The five control options were examined over four levels of pollution control (i.e. 20, 40, 60 and 75%) and two location systems (i.e. 1 facility/basin or 1 facility/2 or more basins), to produce 25 specific control alternatives. So facility planners looked at various levels of control from very little to as much as possible. They looked at locating facilities in different areas. They looked at the different control options, and tried out a combination of those to see what turned out to be a superior specific control alternative. There were some duplications so we end up with about 25. There are two special cases that did not come directly out of that process that are important. The Future No Action case that you'll see abbreviated FNA, Future No Action, which assumed that all the improvements already under construction were finished. And Existing Conditions, which you may see abbreviated EC, which represented the facilities as they existed in 1979. The Future No Action alternative was far more important because all the alternatives had to be compared to something. That base is the Future No Action. Now there is a slight difference between what we've used as that Future No Action and what will come to be in a year or two. But when you look at the actual data, it doesn't end up making much difference. So, the Future No Action alternative can be used as a base to compare other alternatives to.

Once the specific control alternatives had been developed, they were evaluated in five different categories. First was the cost benefit category, second was the environmental analysis, third the implementability, fourth technical and fifth economic. There had to be some way to evaluate alternatives so it was broken down into these five categories and these five categories were weighted by a complex process. You can see by the chart the categories have just about equal importance. Before the cost benefit analysis or the environmental analysis can be performed, the actual impact of the alternatives on the water quality had to be determined. The only way to do that is to model water quality changes. After you know what the water quality is (the place where you begin to model) you have to know what the flow is up there. You need to know the quality and quantities of the Combined Sewer Overflows coming into it. As well as any other discharges coming into it. You need various streamflow characteristics. So for purposes of this study, facility planners had four headwater locations here near Inkster, near Garden City, up here near Farmington and right over the line here in Southfield. Each of these points here are where the model had to start off. So those are our four headwater locations. I'll come back to that later.

The water quality model was used to predict concentrations of different parameters. Some of the parameters in one model are represented here. Each parameter or variable is used to gauge impact of pollution on a certain beneficial use. That beneficial use may be wildlife protection, it may be recreation, or drinking water supply; and there are a number of others. All of these parameters are used to determine suitability of the water quality for the designated beneficial use.

Dissolved oxygen is used to measure the beneficial use of propagation and maintenance of fish. Fecal coliform is a measure of the potential for recreation. After each alternative has been modeled, the data (concentrations) were then used for cost/benefit analysis and environmental analysis. Cost/benefit analysis is a tool which is used to measure efficiency of the alternative. It measures how much more benefit that last dollar bill will achieve. For instance, here we have three cases, each with an equal cost. Here this same amount of cost going from this point brings this much benefit. Up here, this same amount of cost from this point brings this much benefit; a smaller amount than down here. Up here, the difference is quite clear, the same amount of cost brings a smaller amount of benefit. For any project, there comes a certain point where you can spend more and get less benefit than the last increment of expenditure. The facility planner defined benefit as the improvement over the Future No Action case divided by the maximum possible improvement. Now this definition is right below. What this basically means is that benefit is measured with percent improvement toward the maximum possible; towards the best you can do in that part of the river. That will be determined by looking at the results of the alternative and using those that did the best as maximum. Since the facility planners chose a control level range to encompass all the total control of CSO, you can identify the best one by looking and use that to determine the maximum improvement. The difference between the Future No Action alternative and the best alternative is the maximum possible you can improve the water quality.

The environmental analysis has the same importance as the cost/benefit analysis. In the environmental analysis the impact of each alternative was examined in 6 areas. Each of these six areas had many, many sub-categories. It became quite detailed and complex. You can see by this chart here that the water environment was rated as most important followed by biological. The alternatives were also evaluated for technical considerations and economic considerations. Most of our time was spent on the two that are most important; the cost/benefit and environmental analyses.

After alternatives were ranked in each of these five categories, rankings were combined to produce the few best alternatives. Eight few best of the original 25 were produced. Of these eight few best, the top three were Alternative #10, which maximized potential inline storage through using inflatable dams making better use of the space in those very large interceptors. That came out to look like it might be the most preferred. Next was Alternative #9 which was increasing treatment capacity at the plant itself via small amounts. Third was Alternative #2 using potential inline storage but not to the extent that alternative #10 did. The Report goes into great detail on these three alternatives as well as the other alternatives for anyone who is interested in pursuing the details.

It was originally intended to subject these few best alternatives, these top eight, to a more detailed evaluation. This detailed evaluation would have included detailed modeling, detailed costing or cost/benefit analysis, and detailed environmental analysis. So view this as a result of the first cut, not the final word just the first cut. It was intended to provide further analysis to select the best alternative instead of just the few best. However, about this time the facilities plan was halted. And now we will turn for a moment to Jim and John to explain why facilities planning was halted.

Mr. Novak

There was an ongoing consent judgement that had date requirements in it. It was obvious that some of the dates could not be met. That meant that an amended consent judgement had to be developed. At the same time, there were fiscal problems in the State and the DNR. The DNR, Michigan Department of Natural Resources, expressed a desire to reduce the amount of dollars being expended on planning for Detroit at this time. The preliminary information (from facilities planning) showed that there is a minimal improvement in water quality in both Detroit and the Rouge River; that was the initial indication. As far as the agency perspective, we were undergoing a change in administration and a change in our administrator. There was an uncertainty of funds. All these factors contributed to the findings of the July 6, 1981 Federal Court Order to suspend CSO facilities planning.

Mr. McGrail

As you might imagine, Detroit sees it a bit differently. The facility planning work began way back in 1975 or 1976 and produced the segmented facility plan in early winter 1978. January 1978 was when it was published. Now the way Detroit has historically considered the two facility plans, the segmented and then the final facility plans, is one building upon the other. That is the segmented facilities plan looked to a large extent at the entire needs of the department but ended up considering mostly the dry weather needs; the sludge handling related to dry weather needs, etc. In fact it has become the cornerstone of our modern wastewater capital improvements program. Many of the projects that appear today in Step 3 (in the construction phases) can be traced quite readily back to the segmented facilities plan. The second phase of facility planning came, as Pete indicated, when EPA felt that there wasn't sufficient analysis to warrant plunging forward on the West Arm, on CSO control and on other facets of the wastewater program. So consequently we embarked on the final facilities planning program. Now, originally, back in August 1980 there was a grant application prepared which would have finished the facility planning program. The total cost of facilities planning work would have been in excess of \$22 million; just the planning. Now consider that for \$28 million we're building two 300 foot diameter clarifiers and with

justification MDNR said, for that kind of money we could build concrete rather than paper. It was a convincing and compelling argument in so far as DNR was concerned. The Director was a little less tenuous about that, but there was feeling within the Department that perhaps we have planned enough. As Jim pointed out, by February of 1981 we were beginning to get preliminary modeling outputs that suggested that water quality improvement on both rivers; the Rouge and Detroit; was not that significant. Indeed, even given the highest level of CSO control we still would not have brought the rivers into compliance with dry weather standards. In other words, to bring them into compliance, we would have had to change the law to allow for wet weather standards. Then perhaps we would have complied. Because the water quality conditions would not significantly improve the dry weather standard, we could not encourage the development of full body contact recreation. And if someone in the audience could explain to me what partial body contact recreation is, I'd be glad to know. It seems to me that either you're all wet or you're not. The fact of the matter is and I must admit it came out in many of the interagency meetings, that there was a certain weariness on the part of the department in terms of further facility planning. In fact that weariness not only ended in the termination of final facilities planning but it also ended up in the elimination of a lot of other Step 1 work as many of those in the audience can testify to. Also, a lot of termination of Step 2 work as a matter of fact. It seemed to get easy after a while. You dump one facility planning program and you can dump 2 and 3 others and it gets fun. You find yourself accomplishing something. Now I'd like to return the presentation to Dave Vance.

Mr. Vance

Now we've given you an idea of what went into facilities planning and why it was halted. For our evaluation tonight we are going to confine our comments to two very important areas, water quality modeling and the cost/benefit analysis. The water quality results, as John mentioned, are very interesting and begin to answer one of the original questions of the study. We want to know, "why the CSO's are a problem particularly in the Rouge River? What is the CSO contribution to water quality problems? and What can be done about it?" Now the water quality modeling results give us some ideas, give us some direction on how to answer those questions. The water quality modeling results indicate that water quality is a problem in the Rouge River. Dissolved oxygen, fecal coliform and phosphorus all show significant hours of violation of the state's standards. Now when you look at this, this column has the standards set by the state. Here we have the average concentration and over here the hours of violation. Now look at those hours of violation. The Rouge River was modeled for 6600 hours; 9 months, 24 hours a day. That comes to a total of 6600, the most hours you could have. You can see that phosphorus is very nearly a unanimous winner. 6584 violates almost all the possible hours and you can see this here.

Unfortunately, as John said the alternatives provide only modest improvement in the water quality. Notice here the unresponsiveness of both the hours of violation in fecal coliform and dissolved oxygen to the reduction in CSO volume. Now, the alternatives can physically reduce the amount of CSO that goes into the river, and this gives you an idea of how much. Remember our base is the Future No Action here in this column. That's what we have if we don't do anything. So you can see, as the alternatives go this way, the control gets a little better. Until here you've reduced the CSO volume quite substantially compared to what it was in the FNA alternative. These lines which indicate the hours of violation, don't drop accordingly. Alternative 19 shows the most improvement. It reduced the CSO by 80% but only reduces the hours of violation by 17% for dissolved oxygen and 56% for fecal coliform. This still leaves 1809 hours of violation for fecal coliform. This is what the best alternative can do. Alternative 19 has a capital cost of 578 million dollars, that's half a billion dollars, so its a very expensive alternative and disappointing in performance. There are less expensive alternatives which result in lower benefits as you might imagine. Alternative 10 is a very efficient alternative and was listed by facility planners as perhaps the most desirable at this tentative first cut stage. Alternative 10 reduces combined sewer overflow volume by 24%, reduces the DO violations by 11% and reduces the hours of fecal coliform violations by 8%. This costs only \$8.2 million. So for \$8 million, you can get a more efficient alternative but unfortunately it still doesn't do much. We're only talking about 10% improvement for 8 million dollars still leaving many hours of violation of fecal coliform and dissolved oxygen. Now at this point, you should be wondering why even the best alternative, Alternative 19 at half a billion dollars, doesn't substantially improve the water quality. If you can spend \$578 million why don't you get more for it. Well, the answer appears to lie in the background water quality, the incoming water quality. Even if DWSD were to eliminate all its overflows on the Rouge River, the fecal coliform counts might not improve enough to substantially reduce hours of violation. During wet weather there are numerous other overflows on the lower, middle and upper branches, contributing to the main Rouge and the upper Rouge itself. Other communities have combined sewer overflow. Thus during wet weather you might expect that the water quality wouldn't be that good. Communities of Dearborn, Inkster, Garden City, Farmington and Southfield all contribute combined sewer overflow to the Rouge River.

The alternatives performed better for the Detroit River than the Rouge River. You can see that with the CSO volume up here there is great variability in the amount of CSO. Some alternatives do control quite a bit of it and you do get some real reductions compared to the Future No Action in fecal coliform concentrations brought about by the alternatives. Alternative 12 achieves the highest water quality in the Detroit River by reducing overflow 76%. The hours of violation for fecal coliform are reduced by 54% by this alternative. Quality doesn't change very much. Alternative 12 for the Detroit River has a capital cost of \$229 million.

Having presented a summary of these water quality modeling results, we will now turn our attention for the last few minutes to the components of the model that produced these results. The combined sewer overflow study addressed many detailed questions and provided many insights into the problems produced by DWSD and the USEPA. We're not going to go into all those questions tonight; they're far too complex and would take a long time. What we are going to do tonight is take one of those we feel would be especially important. And that's the issue of initialization data, (data used to describe incoming water quality). It is important not just because it's an academic study but because those of you who are concerned about water quality in this area should keep it in mind when facility planning is resumed.

In the Rouge River there are four headwaters location, again at the end of the blue model portion. Now facilities planners used monthly average, dry weather concentration for each parameter and each of those headwaters to start the model. Given enough other information you can generally tell what the water quality is along here. But at each starting point you've got to tell the model what to start with. The model was set up so that it needed a concentration for each month. They didn't want one for each day, that would have been far too difficult. And a year wasn't really enough. So we started with one concentration per month for each of those parameters at each of those points. So for dissolved oxygen for the month of April you need a concentration here, here, and here and so on. Now since the model is to run for 9 months and there are four headwaters to model, you need a total of 36 average concentrations to start up the model for each of the parameters; nine months times the 4 headwaters. Now ideally, of course, there would be data; actual sample data which you could use to get these initializing concentrations. However, that might not be expected to exist in reality and it didn't. Often times in water quality modeling, the modelers are forced to rely on some of their own judgement to fill in points that just don't exist in sample data. Unfortunately in this case of the 36 average concentrations required, for dissolved oxygen, fecal coliform, and phosphorus, the existing data gathered by others in the past and stored in a retrieval system supplied concentrations for only 5 of the 36 necessary points. Which is 5 out of 36. The other 31 had to be supplied with the best engineering judgement. In the case of other water quality parameters, it was even less encouraging because there was only 1 sample, and that wasn't even an average. That was just one sample, of the 36 that were necessary. So although some estimates are always necessary and are expected in water modeling, it was unfortunate in this case that there was not more data available with which to initialize the model. Now fortunately for the most important parameter, dissolved oxygen, facilities planners undertook a very extensive sampling campaign to get good data of dissolved oxygen. They spent 31 days at various locations and collected quite a bit of data on dissolved oxygen. So for dissolved oxygen there is a high degree of certainty in the accuracy of the initialized input data. For the other parameters, unfortunately, there weren't very many dry weather samples to be used to start up the model. Now, it needs to be understood at this point that the modeling was developed at this

stage to rank alternatives relative to one another, not to predict absolute or actual water quality. To decide how much better or worse Alternative 5 might be than Alternative 1, is an example. For that purpose, extensive use of best engineering judgement is all right because once the model is calibrated and the methodology is down correctly, it won't make much difference what values you start with, the rankings can still come out the same. Alternative 19 will be better than Alternative 11, no matter what you started with. The difficulty comes in trying to use the data to describe the actual water quality. For that purpose, the extent of these engineering judgements prohibits us from placing much confidence in the results of the water quality model. It's important to keep in mind the different purpose the model was developed for. Remember also that it was originally intended in the next stage, the detailed stage, to do more detailed analysis, and perhaps at the end of that be able to predict absolute water quality. At the stage the process was stopped, the information was not sufficient except dissolved oxygen, to predict with high confidence the input data to initialize the model.

The other area of comment tonight is the cost/benefit analysis. Although the definition of benefit is quite reasonable, the alternatives did not produce sufficiently different water quality results to permit meaningful calculations of benefit. As it turned out, this definition did not allow a very good idea of the alternative. Look at how the numerator and the denominator are calculated in the definition of benefit. The denominator is the difference between the concentration in the Future No Action and the concentration of the best alternative and that makes up the maximum possible improvement of the river in terms of quality.

Now we'll look at these differences in that slide, also included in your packet. Looking at these differences, we can see that only for fecal coliform is this difference greater than 10%. Here's the concentration for the Future No Action, and here's the best alternative. Subtracting those two gives you the difference. Now how great is that difference compared to Future No Action. In most cases, the difference turned out to be very small. Now the small difference is not only a problem itself, because it's so small you're not quite sure how much faith to put in it, but it masks the meaning of benefit value itself. Consider a case where the denominator is 4%. If the particular alternative offered an improvement of 2%, and the next slide will show this, the benefit would be calculated as 50%. So let's say the denominator was 4%, the numerator was 2%, the benefit turns out to be 50%. Now as you're reading the report if you just opened to this page you might think a 50% improvement is quite sensational. That's quite good unless you realize that it was based on just a 2% difference. Such a small difference may not even be statistically different. Now again, for simply ranking alternatives this system will work.

The other important point that needs to be considered about evaluating the cost/benefit analysis is that of choosing which project or which level of spending is the most desirable. We mention this tonight because this is a tactic that's going to concern all of us, not only in this project, but in the future when government or any one else wants to spend money. The question though is, "How far should they go?" When the project is driving, you're basically in favor of how much should you spend. Should you buy a cadillac or an electric powered car. Just how far should you go? In cost/benefit analysis, you move up this curve you get less and less benefit for each additional dollar you invest. That's the way most things work. The question to be answered then is where along the curve do you want to stop. Traditionally in economics, resources have been assumed to be unlimited, and if that's the case and if both benefit and cost are in the same terms (dollars) then you usually want to stop spending money at a point some where about right in here. Up to that point, you were getting more than \$1 benefit for each additional \$1 it cost. Maybe you spent \$1 and you got an additional \$3 in benefits. You were doing real well. Then some point, in here, you spend the next \$1 and you get \$1 back. Beyond that you spend \$1 but you get less than \$1 in benefit back. So the logical place to stop is where that additional benefit equals the additional cost. That is a traditional stopping point.

However, when there are scarce resources as we face today, the question we should all ask ourselves in the future is "might it be better, if we still have the scarce resources, to choose a point some place down here where we clearly get more than \$1 worth of benefits for the dollar it costs?" Now you don't want to take that to an extreme because if the curve looks like this, you'll never get off the ground. You'll stay right down here at the origin. But some place in between here and the origin is a place future facility planners might want to consider targeting for their level of spending for the project, not carrying all the way to the point where you only get \$1 worth of benefits for the last dollar it costs, but, stopping at some point where you get \$2 or \$3 of benefits for the last \$1 it costs. As you might expect the method of trying to maximize additional benefits for the last dollar you spend and the method used by facility planners produces different results. You're going to select different alternatives based just on cost/benefit analysis. So it's not just an academic point, it will produce different results for you.

That concludes our most important comments like I say, in your documents you'll find these more fully explained, we simplified a great deal tonight. You'll find these subjects fully explained as well as many other topics which we did not have time to touch on tonight.

Mr. Swinick

The final chapter in any study, of course, is recommendations and that's what I want to cover briefly. It's Chapter 11 in the volume. It's four pages long. Before I get into specific recommendations, let me set the background. This is a USEPA document and USEPA works within a specific system. It was given a situation where facilities had been suspended. It was given a situation where there were basically no recommendations from the grantee, the City of Detroit to the USEPA on what to do about the combined sewer overflow. The City provided an interim report which was supposed to identify the few best alternatives. It didn't choose any alternative for funding. As such and because of its role, the USEPA had basically no request to act upon. So this document doesn't recommend a combined sewer overflow action alternative. The document as stated by David and Jim Novak before, is the USEPA's attempt to briefly review and summarize the efforts that have been made to date. The report also raises some questions and suggests areas where further information may assist greatly in the future evaluations.

There are four major areas on Chapter 11. The first is alternatives for evaluation. Because of many uncertainties, the evaluation of alternatives in the future should not be limited to the few best that were chosen in the Alternatives Facilities Interim Report as it is known. Those uncertainties include the use of the North Interceptor East Arm, the size of pump station #2 which is the pump station that would connect the North Interceptor East Arm to the existing treatment plant. (It's not as yet known what size that would be or what would be done with that interceptor.) Also, uncertain is the participation by communities within the DWSD system. That's quite a hot issue right now and that will affect alternatives in terms of their size and flexibility of the DWSD system to handle flow in the future. Thus, when all of that is settled and when facilities planning is resumed, it is recommended that the development of alternatives take those new situations into consideration.

The second area is in the area of modeling considerations. As Dave just explained, there is some unresponsiveness in the alternatives. The report concludes that this should be analyzed to determine how to structure the future analysis to avoid this problem.

In the area of benefit analysis, it is recommended that rather than using a single point on the curve to choose the optimum alternative, (be that the area where one more dollar of expenditure gets you one more dollar worth of benefit or the area where the technician would say that the change in benefit compared to the change in cost is maximized), that somewhere between those two points on the curve is the area where one would consider potentially funding an alternative that would deal with Combined Sewer Overflow problems.

The fourth area is systems control and this is the area where there is quite a bit of discussion. There are four major areas under systems control: operating philosophy; computer systems; instrumentation survey; and a preventative maintenance program which are discussed in the recommendations section. Given the circumstances where we have basically a hold on combined sewer overflow planning, the system control center presently provides the best opportunity to maximize the ability of the treatment plant, interceptors and collection system, to reduce combined sewer overflow pollution. The existing system should be utilized to its maximum capacity. The system holds opportunities to do that. To start, an explanation and a further evaluation of the operating philosophy of the entire system should be presented. Also, verification of the potential storage volumes, that have been reported, within the system would be helpful. In terms of the computer system itself, it has been reported that the computer system currently doesn't reliably perform its function all the time, and that major components such as the central processing unit, memory and disc drive are also unreliable. It has been recommended that they be reevaluated and if they are unreliable, then those findings should be presented to the agencies. In addition, it has been stated that the software program which has been built into the system, that takes in information from the various sensors, was developed some time ago, and that it has been modified maybe on an annual basis, and that an overhaul of that entire software program might result in considerable benefit to the system. Documentation of this situation should be presented. An instrumentation survey might be required since it has also been reported, although we don't have significant data to back up these details, that the sensors in the field might not be operating properly. There is not thorough documentation regarding the status of level sensors in the interceptors and proximity sensors. It is, therefore, recommended that a thorough survey of that equipment be done to determine: what the remaining sensor life might be; how sensors might be protected from damage (what procedures might be necessary), and whether to replace or upgrade those devices to help maximize the system's ability to store combined sewage and minimize overflow. The final recommendation was a preventative maintenance program consisting of all the elements that I just described. These together would be designed to minimize the reported quick erosion of the sensor reliability and provide a method whereby the City can minimize combined sewer overflow problems by efficiently using the facilities that it has in place with a minimal amount of capital expenditure.

Those then, are the recommendations of this CSO report.

Mr. Novak

And keep in mind these are recommendations. Since facilities planning was suspended on CSO, it is the best we can offer at this time. Now I guess it would be a good time to open it up for questions, if anybody has any questions.

Mr. Dean Elworth - (City Engineer, Dearborn)

We were told by EPA we were not in compliance with PL 92-500, that we should clean up our overflow. We applied for a permit to discharge into the Rouge River our combined sewer overflow and we were told that by a certain date, we have to submit a plan on how to comply with EPA standards, which was plainly speaking to have fishable, swimmable waters. We hired a firm, completed our plan, submitted it to MDNR where it's been sitting. Why did we waste our time doing it? What are the standards now? Is someone going to come and pick up our mayor and council and throw him in Jackson because we haven't complied with those standards and violating permit? What are we doing?

Mr. Novak

First of all, I wish there was a representative from the State at this time to answer your questions. As far as how you completed Step 1, I don't know where you are on the priority list and the possibility of getting funding. But in exploring the problems within the U.S. or just the problems within this State, just the higher priority projects are the ones that go forward. As far as the standards of the State, the standards to meet, there is and will be a continuing program to permit discharges we refer to the NPDES permit program. There is no more Step 1 and Step 2 funding per se, as of the latest amendments to the construction grants program. But there is funding for construction and combined sewer overflow is eligible for funding through fiscal year 1984 and then in fiscal year 1985 there is a set aside which is under the discretion of the governor which would take care of those projects which would no longer be eligible. Combined sewer overflows are in that category. If the State determines that a particular problem is such that it is of high priority, then that project will go forward.

Mr. Elworth

I realize that, but does this decision mean that you're going to amend or reduce your standards and requirements. We're in the same boat you guys (City of Detroit) are, we can't do anything with combined sewer overflow before anybody else does.

Mr. McGrail

The standards of course are set by DNR. They have to be more or less consistent with what EPA desires or at least as stringent. But generally they are set by DNR. The problem we have, the problem that you have, is that if you have one CSO a year during a low flow period which is perfectly possible; a July thunderstorm during a low flow period; you're going to have contamination of the streams, or violation of the water quality standards. So you never, with CSO, so long as you still have CSO, are you going to be able to control the quality of the stream. That's a fact. So you're running up into a catch-22 situation. We propose facilities that we know are doomed to a modest level of failure at the instant that they're put into operation.

Now in a situation like this you have to play the part of cheshire cat. You have to ask the question where you want to go depends on what you want to do. If the City of Dearborn feels that water quality and the public good will be preserved by improving the Rouge River, installing the CSO control facilities, I think that has to be said as a high agenda item. You have to essentially go to the State and demand money for it. On the other hand, you might say, "Look, if you're not going to do anything, you're going to put it so low on the priority list that you'll never get funded, then why not just tell us to go away and don't waste your time." Essentially, that's what we ended up doing. That's about all I can say. Go to the State and demand money or demand to get off the priority list.

Mr. Elworth

Nobody is going to spend that kind of money if nobody else does.

Mr. McGrail

I agree. Absolutely!

Mr. Novak

I don't know how to really address your problem. It has to do with the prioritizing of projects based on the limited amount of dollars. I think that it is going away from the report on the CSO which was the purpose of this meeting. I appreciate your concern.

Mr. Makinerny - Resident (City of Dearborn)

From the City of Dearborn. Just as a point of information, the suspension of the facilities planner, what's the date that that happened, approximately?

Mr. McGrail

DWSD officially terminated Giffels/Black & Veatch - a joint venture, the facilities planning consultant on June 25, 1981. I think that's right. Some people in the audience might remember that. But somewhere right around that date, June 25, 1981. Now the decision to terminate on or about that date came a good deal earlier than June 25, 1981.

Mr. Kevin Tourneur - (Southeast Michigan Council of Governments)

Just to clarify a point, we should understand the USEPA and the City of Detroit are not setting a precedent for CSO planning within a region by suspending their work or their future plans, etc.

Mr. Novak

That is correct, there has been no decision to terminate the planning. It was a matter of suspension. (The Federal District Court decided to suspend CSO planning). I again disagree with John on some of the major reasons why the planning was terminated, but if you look at the total dollars at this time that would be required to complete planning for construction, with capital costs esti-

mated over a billion dollars in the more costly alternatives, it is questionable if those dollars will be available in the near future. A good question would be, "Why spend the dollars to complete the planning portion now when we aren't sure that the dollars will be available in the future for construction?" That kind of picks up on the earlier question, perhaps one of the reasons why CSO planning was suspended.

Mr. Swinick

Let me interject, I think that's a fairly critical point. The law is on the books, the Water Pollution Act has been amended by the Clean Water Act and then amended again this past year. Fishable, swimmable waters is still the intent of the Congress. The State still sets standards, the EPA still funds combined sewer overflow planning. In the City of Detroit's case, it has been suspended, not stopped. A decision hasn't been made to quit and not do it again. It's just been suspended because of circumstances.

Mr. Kevin Tourneur

There's a number of other projects currently being worked on, and studied within the region that are considering abatement alternatives and it's important to know where they should focus their efforts.

Mr. Ken Bonner - (Wayne County Department of Public Works)

To add to what the gentlemen from SEMCOG just said, one of the problems you indicated for being unable to improve the main branch is because of the background water quality of the branches. We are undertaking, we have just completed essentially, the study of those three branches. Looking at some 63 CSO sites on the three branches, our Alternatives indicate that we can improve the background water quality and it would seem most unfortunate if you could not pick up on the improved background water quality and rerun your model with those improvements built in to finally get a coordinated study. This study has been proceeding apparently concurrent with yours but never together.

Mr. Novak

The study that has been going on has been a facilities planning study. This is just the review of the work that was done. We are aware that there have been many efforts to coordinate the facilities planning in this area. That is also one of the recommendations in this report, to make sure that you have a combined look, so you have a better idea of the quality of the water upstream, and a basis for validation of the models.

Ms. Mary Richardson - (League of Women's Voters, Citizen Advisory Committee - DWSD)
Was there anything put in there about the recommendations that came through from the Combined Sewer Overflow Committee on DWSD? Were those incorporated in there?

Mr. Novak

There is. I think the best person to answer that would be Peter Swinick because he most intimately worked with them. But there is the section on public participation recommendations.

Mr. Swinick

It's fair to say that the recommendations of the CAC were considered in detail. As you know, we have a very good "give and take" between the Citizens Advisory Committee and the consultants, the City and USEPA. Are you speaking of something specific that you feel is missing?

Ms. Richardson

Yes, coordinated approach that was right on from the very beginning for the need for a coordinated approach and the fact that this is a piece meal approach to split off DWSD, our feeling on that committee was right from the beginning to split off from to put DWSD through that kind of thing when it's just a portion of the total watershed and that's the same thing we're telling them that the Rouge Valley sewer service area.

Mr. Swinick

Can you touch upon basin planning? - John/Jim

Ms. Richardson

You need basin wide planning on something like this. This was a strong recommendation of the CAC. I don't see how you can do it any other way. And you left another big fat hole in there, its storm water management apart from the combined sewer overflow and its structural consideration you're thinking about having it (storage) in a floodplain area and if you don't control the storm water or have some plan for that coming in, you're going to be in wet water more ways than one.

Mr. Novak

The recommendation of the report is to coordinate the effort of facilities planning that is going on, to use the information that is developed so that you get an approach which is taking into account other planning done in the area. Facilities planning requirements require you to look at the effect of whatever action you're doing on the receiving stream. But in looking at the effect of what you're doing on the receiving stream, you have to take into account the effect on other things, other facilities, other discharges, to the streams. So it should be a coordinated effort that way. As far as the basin approach, that would best be left to the State to propose as a project to go ahead if its presumed to be the high priority. It would not be appropriate for the DWSD to get into the planning of all stretches of the Rouge and Detroit Rivers to do facilities planning for areas which are outside of their service area. To get information from these areas, yes, but to do the facilities planning for these areas would be inappropriate.

Ms. Richardson

You're dumping your responsibilities right here.

Mr. McGrail

Mary, we recognize that there is a problem with the lack of coordinated approaches. Between, for example, Wayne County and Oakland County and ourselves.

Ms. Richardson

That intercounty coordinating committee hasn't worked out at all.

Mr. McGrail

The so-called Act 200 committee has come to some reasonable conclusions on the subject which sort of indirectly relates to CSO. For example, Oakland County, the Evergreen-Farmington District of Oakland County, wanted service through the Department's sewer system. Well, as you know, the Hubbell and Southfield sewers are strained under wet weather conditions, they've been strained for years. In fact, the West Arm Interceptor was partly to relieve those two sewers. Take the dry weather flow out. Well, we're not going to have the West Arm. But we still have the relief problems in the Hubbell and Southfield sewers and the CSO to go with it. One of the approaches that we are considering now is to divert flows from the Hubbell Southfield system over to the First Hamilton relief sewer which is quite a large sewer but relatively unutilized. Now, what that will do is provide adequate service for Evergreen-Farmington but at the same time it relieves the Oakwood Northwest Interceptor system sort of indirectly. If we can relieve the Oakwood Northwest Interceptor all the way down the line, down towards the plant, we also will be able to relieve some of the combined sewer overflow problem. But that's an example of a coordinated effort because what that will require is the connection of a linkage between the Hubbell-Southfield and the First Hamilton. Money from that will come from Oakland County. Oakland County may see it a little differently, but it's a question of negotiation. The fact of the matter remains that this is an example of regional cooperation. Now that also provides some benefit to Wayne County, because Wayne County has some, we have some capacity problems in the face of Wayne County. If we could relieve the Oakwood Northwest Interceptors, then Wayne County would have more spaces in the system which would also be relieved.

Ms. Richardson

But historically speaking from the League's standpoint, Detroit and Wayne County haven't even talked to each other which is not very good from the citizens' standpoint. Everybody gets shortchanged on that. I didn't know whether this was a meeting, whether we could make a recommendation, that some group could be able to do that for the citizens, because everything has come to an impasse up till now. I do think that the facilities planning has opened up the process so that we got a real good start on getting something going and I hate to see that go down the drain. Speaking of drains. Either through SEMCOG or particularly on the Rouge or

a beefed-up Rouge watershed council get some coordination. There are things going right now. Maybe you could get talking together again but I know it's a problem but I think it deserves something more than having these things just pulled out from the shelf and not being handled any further because some of these things could be addressed.

Mr. Swinick

I think your point is very, very well taken. It runs into a very interesting situation in that its one of the few situations across the country that I know of where the problems extend into many many jurisdictions, three counties, you have such a large utility agency that still doesn't cover the whole area.

You also have situations where the federal law, the construction grants program, doesn't necessarily lend itself easily to solving the problem either. Because, to fund it under what we knew as Step 1, requires a grantee or an agency, and there doesn't seem to be any convenient agency around to fund it under. That leaves other sections of the law, and as Jim said, it appears to be best left in the hands of the State to make the decision on. Maybe a basin-wide planning analysis needs to be done, but that's not something that the federal agency can recommend formally. It's really a state decision. Maybe they can talk in the back room with the State on it.

Ms. Richardson

But where do our recommendations go? They don't go to the EPA, do they go to the State? Does EPA want a copy of this? It used to be a public hearing on what you did. Now is this the whole thing?

Mr. Swinick

Well, one subtlety, this is not a public hearing, this is a meeting. (Audience breaks out in hysterical laughter) I knew I shouldn't have said that. Somebody had to say it and I guess I was the goat. That's another one of those little federal regulations. They mean different things. Jim that's a question for you. How to they get that recommendation to the state? Copy you?

Mr. Novak

Okay, you're talking about a basin-wide approach.

Ms. Richardson

Any river that needs it.

Mr. Novak

The State has the responsibility for water quality within the confines of a basin. So your recommendation should go to the State agency. As far as your input into the public participation program, the concept of the basin wide study didn't

make it into the final document. Coordinated facilities planning, reemphasized that it needs to be done, was included. Basin-wide planning itself was not recommended because of the limitation that was alluded to before about the need for a singular grantee to take on that responsibility. The "coordinated effort, working together" type of approach is necessary or a lot of money will be spent in a direction where we're only dealing with pieces and parts and not the whole. So that recommendation, the concept of that part of your recommendation, was put into the report.

Mr. John Chascsa - (Lake Erie Clean-Up Committee)

Talked about solving problems at a local level, claimed no benefit from EPA involvement and wants DWSD to assist in clean up of Lake Erie.

Mr. Novak

The concept of looking at these things locally as opposed to the regional concept illustrates a philosophical change or redirection nationally. Initially, when the program started from a EPA perspective, one looked at the megopolis. You look at the large project because there was an economy of scale, you built one plant to take the waste of the surrounding communities, and that plant, by building it larger, is going to have a lower unit cost. That was the philosophy at that time, but that has changed. There has been a redirection or reemphasis. The great example of that is when you look at your rural or almost rural communities where the emphasis today is on innovative and alternative methods of treating waste. It gets back to on-site systems, mound systems, cluster systems, cluster-mound systems. It's a redirection of how to solve problems. You have to identify the problem, you have to define the problem and you have to look at reasonable solutions to address it. So from an agency perspective, we have contributed on the Detroit project. We've provided money, we've done an environmental impact statement on the segmented facilities plan, we were doing one on the final facilities plan. We have provided input throughout. Our input on the EIS has changed and redirected the planning for Detroit and has limited expenditures. We can go into cost savings in dollars saved by not doing some construction. There has been quite a bit of benefit derived from our participation.

You're talking about Lake Erie clean up? There has been a remarkable reduction and I don't have numbers in front of me and I'm not a number quoter anyway. But there's been a remarkable reduction in the amount of phosphorus, which was originally attributed to the wastewater treatment plant, which now is treated because the plant has been providing secondary treatment since June of last year. The limit in the permit is 1 milligram per liter and from, this is off the top of my head, from looking in the past monitoring reports for the year, it's averaging somewhere in the neighborhood of .6, .5. So there have been improvements. While the goal of our agency is pure water, you have to work at it over a time, with the limited

amount of dollars that are available and you have to do it by prioritizing and approaching the problems the best way you can. I don't mean to jump back at you or anything like that but it's just that there have been improvements. This is the system that we have now, this is what we're trying to work with and we're doing the best we can.

Mr. Chascsa

I'm not up here to pick an argument with anybody. But I am very disappointed, very disgusted. Since 1962 when Jerry Reeves made the statement that we would want the people in Detroit to put diapers on ducks before they flew over our part of the community in Lake Erie and I have to tell him to try some of the samples that I presented at the first conference in 1962. Drink the sample water. For all of the specialists to taste the water and use it for anything to dampen their hair, but they wouldn't even do that and the water was supposedly cleaner than it was in the past 40 years. You're having the same problem now on the Rouge River and the only solution is for the industries to treat their own waste. You can't take all the waste and put it together and expect Detroit to be able to take care of it. Because I don't believe that's a matrix plant. If it's a matrix system you may be able to do it. You would have to have the facilities to do it. It might cost a little bit more money, but it would be something that would be workable. If each industry took care of their own waste, and I know this can be done, because Detroit Diesel did it. They were dumping in the Rouge River and we contacted Detroit Diesel plant and we suggested different things to them. They put in treatment and they were a very good neighbor in that part of the Rouge River. They cleaned up their water and put in better water than you can find in the Rouge River.

Mr. Novak

You're opening up a lot of questions, things like pretreatment requirements, and other areas which are really going beyond the intent of this meeting.

Mr. Chascsa

I realize that, but if you intend to clean up anything or to make it any easier to clean up, this is what will have to be done. You can't just push it off on the taxpayers. The taxpayers are the people that are going to pay the bill and try to pay it. Some of them will probably do without their cup of tea. I'm sorry that I'm not in better condition because I had a heart attack. But I certainly thought that I would hear something encouraging that would make me feel a heck of a lot better than I have been feeling in the past three years. I know that this can be done. I've seen it happen. I've seen the lake clean up. I've seen the time when I couldn't eat the fish out of the lake and today I'm not afraid to eat them, because they do taste like fish not like fish full of dirt and oil or something and they don't smell bad. But anyway I thank you for the opportunity to get a little bit off my chest. But I have some pamphlets here if you would like to take it with you. You'll find them quite interesting.

Mr. Cruz

(For the record, Kenneth B. Cruz representing the City of Allen Park)

Mayor Latta asked me to read this statement into record and also submit it as an exhibit of this meeting. The City appreciates the opportunity to comment on this report. We've got a special interest in this report for two reasons. First a portion of Allen Park is served by the Detroit System. Therefore our residents are affected by these changes in capital and O&M expenditures. Secondly, the City is served by a combined sewer system for which a facilities plan has been prepared, which comes to diametrically opposed conclusions to your report. Our general comments are as follows: First, the conclusion of the report which is based on modeling and analysis indicates that little or no activity relative to CSO is warranted at this time, particularly in regards to the Detroit River overflows. The City of Allen Park agrees with this finding in general and has found that using the same methodology of analysis that for a similar but a smaller combined system in Allen Park that little or no action would result in the most reasonable solution there. Second, we find it ironic and tragic that the EPA is encouraging the expenditure of approximately \$60 to \$100 million for sewer separation in Allen Park, which comes to about \$5,000 - \$8,500 per household with all its disruptive effects, while sewer separation alternatives in the Detroit study ranked among the poorest choices of the 25 evaluated. The costs of the highest ranking alternatives in the Detroit report are \$130 to \$145 per capita. How can EPA and DNR justify the extreme disparate treatment to the different portions of the same small city. We of the City of Allen Park believe that the basic recommendation when planning is resumed, that primary consideration be given to inline storage and interbasin transfer is appropriate. Allen Park would like to submit that this similar finding should be applied to that part of the City of Allen Park served by the Wayne County system. Allen Park's request that the EPA and DNR consider these findings and bring uniformity to CSO planning in the Southeastern Michigan or at least to the City of Allen Park, before \$60 to \$100 million dollars are wasted on sewer separation. We suggest that EPA and DNR take proper action to alleviate this serious discrepancy. Finally, Allen Park agrees with the findings that there is a need to look at the overall collection and treatment system in detail before a conclusion should be reached. This was not done to the City of Allen Park which has led to erroneous conclusions.

Our more specific comments will be submitted in writing in the next few weeks on this report. Again we appreciate the opportunity to comment and we urge the EPA again to act on bringing uniformity to CSO planning in Southeastern Michigan before a major misappropriation of public funds is made. As it currently appears, EPA and DNR intend to pursue a wasteful sewer separation project in Allen Park. We request some indication from these agencies on these comments and their policies.

Mr. Novak

The effects of concerns that are raised are really very difficult to handle one by one at this time. That will best be handled in the responsiveness summary. As far as consistency on how the citizens of Allen Park are treated, since you're talking about a portion of Allen Park being served by Detroit versus the remainder of Allen Park by another grantee, in the planning there is a cost effectiveness analysis which determines the most cost-effective way of addressing the problems in an area as defined within the facilities plan. I am not familiar with the planning effort going on in Allen Park. Again, your comments will be addressed in the responsiveness summary as would your subsequent followup comments if they're received in a reasonable amount of time.

Mr. Robert Pierce - (Consulting Engineer, Black & Veatch)

I just want to be sure we thoroughly understand the EPA position which evidently is distributed here as a final document and has been received by the public some 10 days ago. Does this actually constitute the official EPA policy regarding combined sewer overflow planning in Detroit in conjunction to the planning process?

Mr. Novak

First of all, it's not really policy. It's just a recapitulation of planning that was done with our concerns about that planning. In other words, a way of approaching the problem when it is picked again, and some areas that we think should be looked at a little differently. Again, this is not a decision document. It is a comment on planning that was suspended abruptly, so that we know what was done and we know limitations, how good, how bad the product was and where we can go when we pick it up again. That was the intent and why the report was generated.

Mr. Rama Cherukuri - (Consulting Engineer, Rama Rao & Alfred, Inc.)

(Paraphrased) - Isn't SEMCOG the regional planning agency, and shouldn't all planning be coordinated through them?

Mr. Novak

Facilities plans are reviewed by SEMCOG's A-95 review board. (The A-95 review process was recently revoked by Executive Order 12372. SEMCOG's Water Quality Board does review facility plans for consistency with the State Water Quality Management Plan.) That is, after facilities plans have been generated. As far as the input into processes, it comes after the fact. It would be better if the system was set up such that before the plans were generated there were some overall coordination which is part of the problem that has plagued this project, too. Yes, they are responsible for review of sewerage planning in this area. They're not in the position of directing the planning. The overall water quality responsibility relies with the State.

Mr. Cherukuri

The law does not say what time they should become involved?

Mr. Novak

It does, it specifies when A-95 review takes place. (The A-95 review process was recently revoked, but U.S. EPA Region V is developing a regional policy for consistency with the State Water Quality Management Plan.) Reality is that the planning conceptionally should have been statewide, then regionwide and then countrywide. Realistically the way the program has developed is at a specific facility level, working up the wrong way. Let me explain the way the system had worked and generated. When the program started, the problems were identified. There was a priority put on the problems. The planning was started. But realistically, the State should have identified the problems and then should have looked at them from the State to the region, then to facilities planning. Unfortunately, it is not the way things have generally gone.

Ms. Richardson

I hope I made it clear, I have served on the CAC for both studies. We got some really good information out of both of those studies and if they could just get that coordinated we'd be definitely along the way for getting cleaner water.

Mr. Bheam - (DWSD)

How does this report differ from the Facilities Interim Report put out by another consultant for the Department for the City of Giffels/Black & Veatch-joint venture?

Mr. Novak

The interim report put out by Giffels/Black & Veatch was just as inferred by the title, an interim report. It looked at and identified problems, looked at water quality of different alternatives and it got down to a reasonable number, but it didn't do the last reiteration and go into the detail necessary to complete facilities planning on CSO. There was an ongoing environmental impact statement, and we had intended to have combined sewer overflow included in the environmental impact statement. Since the facilities planning was suspended on combined sewer overflow, we would have no document in which to include this. We invested time and money in EIS process. Since the facilities planning was suspended, we as an agency could review the AFIR (Alternate Facilities Interim Report), but we wanted to evaluate it technically and we wanted to see where we were at, so that when CSO finally was picked up again, we would know where to go. This report does reference throughout the work done by Giffels/Black & Veatch. It doesn't redo their work, but it provides an audit type of approach and it makes suggestions and provides some guidance for our future work. It's not intended to be a decision document as was said before, but it provides a critique and some basis to proceed. Our agency, and I hope Detroit, feels a little more comfortable in the work that was done and we have a good idea of how useful the information is and where we can go from there. That was the intent.

Dr. Ralph Kummeler - (Wayne State University)

Is this report issued in its final version at this time?

Mr. Novak

I don't want to give you a bureaucratic answer, like the difference between a public meeting, public hearing, and suspended and terminating and things like that. There are different meanings. This is a bastard report.....(Laughter).

Dr. Kummner

Yes, I believe we've stated that for the record.

Mr. Novak

.....Meaning a non-standard report. The requirement for this report does not fall into any nice little neat category. There are public participation requirements for both facilities planning and environmental impact statement. There is a hearing requirement at the end of the EIS process. There are public meeting requirements throughout the process. There is public input provided through Citizens Advisory Committee. This, today, is a meeting on this report which does appear in final form. What will be prepared subsequent to this meeting and which will address comments received within a reasonable amount of time is the responsiveness summary. The responsiveness summary will address all comments. This report does not fall into a category of an EIS, it doesn't carry the weight to the decision makers that an EIS would. It doesn't carry the weight of facility plan. It is just a recommendation and it's to be used as a tool and nothing else.

Dr. Kummner

There are serious omissions in terms of data that was taken that was not addressed in this report. For example, Wayne State University is not mentioned as a subcontractor despite the fact that we generated over 1,000 pages (2 PhD dissertations and two master theses) and also put together some dozen or 20 technical reports in the professional literature. I've submitted a list of omitted references which bear heavily on the findings in this report.

Mr. Novak

Was this information made available to EIS consultants in preparation of this document?

Dr. Kummner

No one's ever asked for it. It is saddening to see that the report was done in the absence of substantial amounts of information that was gathered by the original contractors.

Mr. Novak

Do you disagree with any of the recommendations as outlined in this presentation?

Dr. Kummner

Yes.

Mr. Novak

Specifically, which things do you disagree with?

Dr. Kummeler

There are a number of them. We have put them in writing already and I can still do so.

Mr. Swinick

I think it fair to say that a responsiveness summary will be created on this report. It's not the intention to redo the entire volume with the responsiveness summary attached. But there is no problem if in answering questions the responsiveness summary has to go into significant detail and be 150 or 300 pages long. That won't be the first time. So all questions and comments, new data that wasn't provided previously or 1,000 pages of information that's on a computer disc that never got printed out should be submitted if it bears on this report! Whatever it is it can be included if we are made aware of it. If we can get the comments, the questions, the information provided to us, it will be incorporated within in the document. And if it is that significant and there are resulting major changes in recommendations, then that can be done within the responsiveness summary as well.

Dr. Kummeler

One of the major points of information that probably should be said here is in relation to what the gentlemen spoke of Lake Erie. Of the problems in the Detroit River, all of the numbers that you quoted deal only with a small fraction of the Detroit River and there was a lot more of that river that flows down to Lake Erie and which was being modelled, and those calculations are available, and were not presented in the bar charts that you presented. The impression that we gain from your report is that there are not significant problems in the Detroit River. I think that there are crucial problems on the Detroit River. The impact of CSO certainly deals more specifically with the Detroit River because there is nothing else there to be a major factor. CSO is a major problem by itself and when the Mayor dedicates parks, plans come out for part or full exposure depending where you fall out of your canoe or you dabble with your hand on the outside in that area some 1,000 feet below Leib (overflow discharge) I think you have to take that seriously. When you plan a marina, it's not going to be real easy to convince the kids not to hop off the back of the boat after a rain storm. And, there will be serious health problems that will be associated with the future development of the City. I think that will be another problem for development along the Detroit River. Of course, no one mentioned the some 18 bathing beaches down river with some 60 marinas, down river which are all impacted by what we do up here. None of that was mentioned in your analysis. But again if you read Dr. Razinski's dissertation, you will see some of the information that pertains to the entire river.

Mr. Swinick

I thank you for that and I do hope that when the questions and the comments and the data does come in that everyone recognizes that this report is not going to pick up where the interim report left off. At that it is again a summary of what occurred. It is not a decision document to pick and choose a combined sewer overflow alternative, and to fund one. It is a rehash, a summary of that background information, and we'll be happy to receive more of it then we have had in the past. Thank you.

Mr. Steve Oden - (East Lansing)

I'd like to get a definition of the amount of rainfall which constitutes wet weather?

Mr. Vance

I think the Rouge River, for the wet weather conditions, it was assumed - because the flow would carry pollutants out in about 24 hours from the planning area, (the model planning portion) that essentially for the 6600 hours (April - December) that it was continually a mixed state of wet and dry weather. While earlier there might have been attempts to separate dry weather out from wet weather in the Rouge River, as far as running the model goes, I think that in the end it was assumed that wet weather would always be masking the dry weather. So as far as running the model for the Rouge River, it was assumed basically to be in mixed state. The Detroit River was a different story. I don't remember right off hand how many hours might have been used. Maybe someone from Black & Veatch can help me. 1634 wet weather hours out of a potential 6600 for the nine months. For purposes of the initializing data, if that's what you're referring to, I think at least as we checked the data that they used, that the dry weather data was defined as for those periods where it did not rain for at least 24 hours before hand. And most often the data went well beyond that to 48 or 72 hours of no previous rainfall if it was to be counted as dry weather.

Mr. Oden

Some of the data I have read seemed to indicate that after a couple of tenths of an inch of rain, real problems existed. And it seems to me that this system shouldn't have been designed to carry only a couple of tenths of inches of rain.

Mr. McGrail

Unless I'm mistaken you have to decide what constitutes a rainfall of measurable significance. In Detroit area you have pretty much distributed rain throughout the year, or distributed precipitation. There was a figure arrived at that constituted the beginning of a wet weather condition and I think it was like .0095 inches of rain an hour. Something of that nature.

Mr. Devanso (DWSD)

I don't know John, but a couple of tenths of an inch of rain is a significant amount of rain. If a quarter of inch of rain falls and you have a catch basin area of 140 square miles, if you just consider a runoff factor of just 50%, you start multiplying out the number of gallons coming into the sewer system, a quarter of an inch of rain or even a tenth of an inch of rain is very, very significant. The system is designed to take (drain) 1.95 inches per hour. That was based on the rainfall curve from all the way up through the 1940's when those design curves were established. But let's say a tenth of an inch of rain over this area would be a significant amount of rain. And you have 70 some overflow points, which means that you have 70 some drainage districts. And some of those are very small. If you go back and look at some of the data that was done a number of years ago, some drain districts hardly every overflow. They were way over-built and other ones will tip at the drop of a hat. What we established way back in the early 70's was that the system fell within the textbook analysis; they overflow 2% of the time, but some overflow a lot more than 2% and some are a lot less.

Mr. Oden

Does the City of Detroit have a plan for requiring site retention of drainage on new large projects such as parking lots, shopping malls?

Mr. McGrail

Let me say this. I suppose that they do. However, as you well know, there isn't a great deal of large construction going on. I do know for a fact that the new Cadillac facility auto assembly plant, it's up in the controversial Pole town area, has some storm attenuation facilities associated with that. Of course, that's 465 acres of virtually all paved territory which at one time probably had a run-off coefficient of 50%. But in that facility they do have some storm water attenuation. Basically, I think it's just parking lots and roof retention, but insofar as the rest of the city is concerned, there isn't a lot of brand new major construction going on in the city. There is no attempt to go back and correct. For example, we don't eliminate obvious inflow sources such as the footing drains around buildings, we just live with them because there is no functional purpose for removal since it flows into the same system anyway.

Mr. Steve Williams - (Consulting Engineer, Williams & Works)

In reading the Alternatives Facilities Interim Report, another aspect of the problem which may help address this gentleman's questions is that the Alternative Facilities Interim Report states that there's relatively little difference in quality between urban storm runoff and combined sewer overflow. Some of the effected stream quality parameters may not be from the combined sewer overflow but the urban storm runoff.

Mr. Novak

If there aren't any more questions, I'll close the meeting. I thank you all for your comments and for coming. Does anybody know where the signup sheet is? If anyone wants a copy of the document let us check your name off and we'll get you one within a week. Thank you again.

LIST OF PUBLIC MEETING ATTENDEES

Name	Address	Would like responsiveness summary	
		Yes	No
ALFONSO RENDIFO	HUBBELL, RUTH E CLARK, INC 2323 FRANKLIN RD P.O. Box 824 Bloomfield Hills, MI. 48313	✓	
Ivan Hodgson	Detroit taxpayer		✓
Gerald Benskey	Hubbell, Ruth & Clark Inc 2323 Franklin Road P.O. Box 824 Bloomfield Hills, MI. 48313	✓	
M/M JOHN CHASCSA	3568 BREWSTER RD., DEARBORN MI 48120, LAKE ERIE CLEANUP COMMITTEE	✓	
TIMOTHY CORE	2040 BIDDLE. APT. 7 - WYANDOTTE, MI. 48192		
ROBERT K. ST. CLAIR	WADB, TRIM & ASSOCIATES, INC 25185 GODDARD TAYLOR, MI 48180	✓	
W.R. DRYNIN	INC Great Lakes Regional Office 100 Ouellette Ave Windsor, Ontario N9A1T3	✓	
Charles McLaughlin	22580 Colgate Farmington 48024	✓	
Wilfred Lowe	Harrison Water Dept 38151 - 38151 - CLEVELAND	✓	
George Moore	McClemens mch 48045 Land Use Commission Women's Conference & Concerns 1308 Broadway - Tosin Bldg. Detroit, Michigan 48226	✓	

Name	Address	Would like responsiveness summary	
		Yes	No
RAMA RAO V. CHERUKURI PE	18447 W. 8 Mile Rd DETROIT, MI 48219	X	
GOPAL ROY	9811 YORKSHIRE DETROIT MI 48224	X	
Harriet Greenwood	484 W. Goldengate Detroit, MI 48203	X	
MICHAEL E. CARLSON	484 W. GOLDENGATE ST DETROIT, MI 48203	X	
DEAN ELWART	4500 MAPLE AVE (TOWN HALL WESTING) DEARBORN, MICH. 48124	X	
HENRY LYBECK	13600 OAK PARK BLVD OAK PARK MICH. 48237	X	
THOMAS BIASSELL	31555 ELEVEN MILE RD FARMINGTON HILLS, M. 48018	X	
PETER McINERNEY	CITY OF DEARBORN TOWN HALL 13615 MICHIGAN AVE DEARBORN, MICH 48126	X	
ELIZ THURDEN	DETROIT NEWS 615 LAFAYETTE DETROIT, MI. 48231	X	
Robert B. Pearce	13321 LUDLOW HUNTINGWOODS MI. 48607		X
MICHAEL SELAK	10628 NOTTINGHAM DETROIT, MI. 48224	*	
David Upmeyer	600 Washington Rd Grosse Pointe, Mich		

Name

Address

Would like responsiveness
summary

IGNACE ZAJAC

9160 Thaddeus Detroit, M. 48209

Yes

(No)

DOOTHY ZAJAC

" " " "

LARRY CHAPMAN

20477 Olympia Lst
48210

(Yes)

A.C. DAVANZO

735 RANDOLPH DET 48226

(Yes)

Ralph H. KUMMLER

Wayne STATE U.

DETROIT MI 48202

(Yes)

Edna Williams

116 W. OTTAWA

EAST LANSING, MI 48133

(Yes)

GILBERT A. RICE

2355 FRANKLIN RD

FLOOMFIELD HILLS, MI 48018

(Yes)

U.S. Forest W. White Service
Steve O'Don

1405 South Harrison

East Lansing, Mich 48823

(Yes)

LIE THARDON
(DETROIT NEWS)

615 W. LAFAYETTE

DETROIT, MI 48231

(Yes)

STEVE WILLIAMS

615 GERSWOLD

DETROIT MI 48226

(Yes)

KENNETH D. KRUSE

7000 Roosevelt

Allen Park, Mich.
48101

(Yes)

PAUL YAU

PUBLIC WORKS DEPT.

CITY OF WINDSOR

ONT.

(Yes)

John B. Forsyth

1565 Chesham Place

Detroit, MI 48207

(Yes)

DAVID BRODY

24424 W. McNichols

P.O. Box 19310

Detroit MI 48219

(Yes)

Name

Address

Would like responsiveness
summary

Yes

No

Arthur Schrage

Pete Horn & Bogue Inc
17000 12 Mile Rd
Southfield, Mich 48076

✓

A.W. LUCKHAM

WAYNE COUNTY ROAD DIVISION
415 CLIFFORD
DETROIT, MI 48226

✓

James H. H. H. H. H.

DETROIT MI 48226
3341 E. LARNED
DETROIT MI 48207

YES

HALLMS:

RHEEM R. KOTHUR

1411 E. LARNED #103
DETROIT; MI 48207

✓

WILLIAM L. UCHER

3401 ORCHARDALE
MONTICELLO, MI 48161

YES

Ken H. T. T. T. T.

SEMCOG
800 Bank Building
Detroit, Michigan

YES

Ken Berra

Wayne County Dept
of Public Works
900 W. Lafayette
Detroit, Mich 48226

YES

Lee Bridge, Executive Director

Range River Watershed Council
9501 Henry Ave
Livonia, Mich 48150

YES

Liz Maury Dean
Weather Twp1807 N. Elizabeth
Dearborn, MI 48128

No

Name

Address

Would like responsiveness
summary

Mary E Richardson 1741 N. Muldred
Barabara, Wis. 48128

Yes ☒

No ☐

~~Barabara~~ C.A.C. for LUST &
RRV S Area