Information

on

EPA's Parking Related Programs

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on
EPA Parking Related Programs

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Executive Summary

The Environmental Protection Agency is currently administering several regulatory programs involving parking facility supply and management to aid air pollution abatement. These programs are designed to work with other transit incentive measures to encourage high occupancy vehicle use (carpools, mass transit) in lieu of low occupancy vehicle use (one rider per car). The result of these programs will be reduced use of the private automobile in urban areas which in turn means reductions in vehicle miles traveled (VMT) and automobile emissions. A by-product of such developments will be conservation of energy and a more attractive and viable urban environment. The materials set forth in this package provide additional background information on the parking related programs.

Recently, the House of Representatives passed the Agricultural-Environmental and Consumer Protection Bill of 1975 which is now being considered by the Senate Appropriations Committee. Section 511 of this Bill would eliminate EPA's ability to administer the previously mentioned parking related programs. Consequently, enactment of section 511 would substantially impair the ability of some 24 metropolitan areas to achieve the Clean Air Act health-protection standards for carbon monoxide and photochemical oxidants and the ability of all State air pollution control programs to maintain compliance with the health standards, once they are met.

The programs specifically affected include: employer transit incentive plans, community parking management plans, on-street parking restrictions in various metropolitan areas, indirect source parking reviews, and air quality maintenance plans. The employer transit incentive program calls

upon public and private employers in some 15 metropolitan areas to formulate plans which encourage employees to use mass transportation and carpools. The parking management program which includes some 20 metropolitan areas specifies the need for review of the air quality impact of a new parking facility either on an individual basis or as a part of a community developed parking management plan. The indirect source review regulations are being implemented to assure that construction of new large parking facilities does not cause a localized carbon monoxide problem anywhere in the nation. Plans are also being developed on a national basis which rely in part on parking management to maintain air quality standards after they are achieved.

In view of the importance of EPA's parking related programs and the imminent consideration by the Senate of the Appropriations Bill, the background information provided in this package is oriented toward explaining the role of the parking programs, discussing various pieces of information relevant to current parking management actions, and discouraging the passage of section 511.

Tabs B and C of the following materials explain the role of EPA's parking programs. The letter from Administrator Train to Senator McGee (Tab B) emphasizes the importance of these programs, explains their character and urges the elimination of section 511. Tab C provides additional information on the parking oriented programs which includes brief descriptions of the relevant regulations, their implications and their mechanisms, as well as appropriate Federal Register Notices.

Tab D provides a discussion of the relationship between parking management and the use of the automobile or vehicle miles traveled. This study also reviews the relationship of parking programs to the overall transportation use trends of an area and the particular concepts of transportation control plan strategies. The paper specifically examines the parking/VMT relationship by: (1) a discussion of some theoretical models; (2) an analysis of traffic growth and parking space growth statistics; (3) an examination of actual experiences with parking management programs, both by individual employers and regional governmental units, and the resulting effects on VMT; and (4) a look at several urban areas' long-range parking plans.

Tab E sets forth a report on existing programs designed to minimize vehicle miles traveled. The report examines nearly 30 action programs developed by employers, universities, or cities which currently reduce low-occupancy use of the automobile. The programs, which involve parking facilities, are similar to the actions required by the EPA employer transit incentive plans and the VMT minimization option portion of the parking management review process.

Tab F specifies a variety of exemplary parking related actions which have resulted in significant energy savings.

Tab G focuses attention on the often-ignored costs of parking facilities. This section reviews the surprisingly high costs associated with land acquisition for parking spaces and construction of parking garages. The section discusses the high monetary and space expenditures per vehicle parked. The data illustrates the economic need to consider less expensive commuter transportation modes which require fewer parking spaces.

Tab H provides data on the costs of the modelling procedures which may be used to satisfy the requirements for the review of new parking facility air quality impacts. The modelling procedures are used for estimating either the impact of the facility on immediate vicinity carbon monoxide concentrations or areawide vehicle miles traveled. The section indicates that much of the information required for these modelling processes is, in many instances, collected in the normal course of facility planning regardless of the EPA regulations. The costs of completing the modelling procedures are shown to be minimal.

Tab I contains various letters, editorials, and news items which indicate public support of parking management related programs.

Tab J discusses a report on the impacts of EPA's transportation and parking related programs prepared by a California businessman's task force. The report claims the EPA programs will have disastrous impacts on the California economy. The analysis set forth in this section explains the numerous fallacies, invalid assumptions, and unfounded conclusions contained in the report. The most notorious of these assumptions involves the impact of requiring harsh gas rationing measures which the Environmental Protection Agency has repeatedly stated will not be implemented.

Tab K explains the results of the soon-to-be completed Harbridge House report on the economic impact of indirect source regulations. The discussion explains the assumptions used in this report, the applicability of the results and the general conclusions. The report generally concluded that the economic impact of the indirect source regulations on the average project will be minimal.

Tab L briefly discusses the status of state actions on indirect source and parking management programs. The discussion emphasizes the fact that a significant number of states have submitted indirect source plans to replace the federal indirect source regulations. The states who have submitted or who are about to submit plans are listed. The section also names the 10 cities which are in the process of developing parking management plans to replace the existing federal parking management regulations.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

October 3, 1974

OFFICE OF THE
ADMINISTRATOR

Dear Mr. Chairman:

As you requested, I am pleased to offer my comments on H.R. 16901, the Agriculture-Environmental and Consumer Protection Appropriation Bill of 1975, which is now before your Committee. Two points are of serious concern to me: section 511 of the bill itself and secondly, certain language in the House Report concerning EPA.

If enacted, section 511 would, in my judgment, significantly affect the ability of the Environmental Protection Agency to carry out its mandate under the Clean Air Act. Section 511 states:

> No part of any funds appropriated under this Act may be used by the Environmental Protection Agency to administer any program to tax, limit, or otherwise regulate parking facilities.

Enactment of section 511 would substantially impair the ability of some 24 metropolitan areas to achieve the Clean Air Act health-protection standards for carbon monoxide and photochemical oxidants. In addition, the ability of all State air pollution control programs to maintain compliance with the health standards, once they are met, would be greatly impaired.

The language of section 511 would affect the following programs: nationwide "indirect source" parking reviews, parking management programs in twenty cities with severe automobile pollution problems, on-street parking restrictions in various transportation control areas, employer transit use incentive plans being implemented in fifteen metropolitan areas, and air quality maintenance plans which are being formulated and adopted by the States to ensure maintenance of the national ambient air quality standards across the country. Each of these programs is complementary to measures

that EPA is taking, together with State and local governments, to expand mass transit service and carpool programs.

Under the Clean Air Act, which requires the establishment of such transportation measures as are needed to help meet and maintain the air quality standards, the Agency would be required to replace any parking-related measures eliminated by section 511 with new measures sufficient to meet the standards. However, the Agency has already included almost all available reasonable measures in severely polluted areas. Consequently, any replacement measures would likely be more controversial and less acceptable.

If enacted, section 511 would have a serious and adverse impact on air pollution control programs throughout the country. Such a measure in my judgment should be enacted only after the most careful deliberation and review by the appropriate Committees of Congress. No hearings were ever held on this section.

Section 511 is not simply a repetition of previously enacted language as the House report suggests, but rather goes far beyond the prohibition on parking charges contained in the recently enacted Energy Supply and Environmental Coordination Act of 1974. EPA has fully complied with that prohibition and, in fact, took action even prior to the final Congressional action.

As you know, the Administration has recommended to the Congress an amendment to the CAA which would give EPA needed flexibility in the administration of the transportation control plans. I feel confident that the appropriate Committees will be holding hearings on this proposal early next year.

It should be noted that section 511 would eliminate measures with significant energy conservation as well as health benefits. The parking regulations approved or promulgated by EPA should significantly reduce energy consumption by encouraging mass transit usage and carpooling. The importance of such parking measures has been recognized, for example, by John Sawhill, Administrator of the Federal Energy Administration, in his recent remarks before the Ninth Project Independence Hearing and elsewhere.

Because EPA's parking management measures have a number of important ramifications and have gained considerable momentum and support at the State and local levels, I have enclosed an attachment which describes the specific adverse effects that would follow from enactment of section 511. In view of these considerations, I urge you and your committee to eliminate section 511 from the bill.

I am also concerned by a section of House Report No. 93-1379. The paragraph, which does not refer to any specific section of H.R. 16901, is found on page 5 and reads in part as follows:

> The Committee considered recommending the following language in the bill relating to funds for the Environmental Protection Agency:
>
> > None of these funds are appropriated for the purpose of administering any program that reduces the supply or increases the cost of electricity or food to the consumer.
>
> However, the Committee agreed it would be best to include the language in the report at this time; and to rely on the Environmental Protection Agency to so modify its regulations and requirements as necessary to accomplish this directive . . . .

A literal interpretation of this language could call into question most of EPA's statutory authorities since a great number of our authorities are in some way related to the energy and food industries and have some impact direct or indirect upon supply and price.

For example, EPA regulations which impact upon the production of electricity include among others health related sulfur oxide particulate air standards; thermal and chemical effluent standards; and environmental regulations of off-shore oil production; the transportation of energy resources; and proposed authority over surface mining. EPA regulations which impact upon the production and distribution of food include among others pesticide regulations; water effluent guidelines on food-related industries; and environmental regulations affecting the production and transportation of natural gas and fertilizers.

should point out to the Committee that EPA in the process of development of our regulations does take into account both the projected economic and energy impacts, consistent, of course, with our statutory responsibility. In addition to our energy and economic assessments which occur as each regulation is being developed, we have undertaken two special, comprehensive efforts to review the economic and energy impacts of our programs. Both of these efforts are designed to calculate these impacts to insure that we are fully aware of all economic and energy impacts, particularly in light of the Nation's rapidly changing energy and economic situation.

I cannot believe that the language from the House report cited above was intended to diminish or negate the Agency's obligations under other statutes enacted by Congress or to cause a wholesale revision of our regulations and standards. I hope your Committee will carefully scrutinize this language and consider the effect, if any, it has or should have on EPA programs.

I greatly appreciate your consideration of these matters and I would be glad to discuss this situation with you at your convenience.

Sincerely yours,

Russell E. Train

Honorable Gale W. McGee, Chairman
Subcommittee on Agriculture, Environmental
and Consumer Protection
Committee on Appropriations
U.S. Senate
Washington, D.C. 20510

EFFECTS OF ENACTING SECTION 511 OF HR 16901

Role of Parking Controls in Clean Air Programs

In many areas, the combined impact of new automobile emission controls and stationary source controls will not be adequate to attain the health protection standards for the two primary automobile-related pollutants, carbon monoxide and photochemical oxidants. Consequently, it is necessary to provide certain measures which provide for the reduction and control of automobile use to minimize pollution impacts. Such measures take different forms to solve different problems. High localized carbon monoxide levels are caused by concentrated automobile use in and around large parking facilities. To prevent the creation of additional localized carbon monoxide problems, the "indirect source" parking facility review regulations provide for the careful designing of new parking facilities so as to avoid creation of high polluting congestion situations.

"Transportation control plans" in some 30 metropolitan areas require reductions in the amount of areawide vehicle miles traveled in order to help meet the air quality standard for both photochemical oxidants and carbon monoxide. The placement and the availability of parking facilities are important factors in determining whether or not transit or carpooling are used as transport modes and influence the vehicle miles traveled in the area. The parking management, employer transit incentive, and on-street parking programs contained in 24 of the transportation control plans are a vital element of the vehicle miles traveled reduction program. The placement of future parking facilities and their relationship to available transit facilities also influence the ability to maintain carbon monoxide and photochemical oxident air quality standards once they are achieved. The planning and the review of new parking facilities are, accordingly, important parts of the new air quality maintenance plans. .

Specific Impacts of Section 511

The impact of section 511 would be widespread. The following is a brief discussion of the effect of the legislation on current programs.

Indirect Source Parking Facility Review: Indirect source parking programs are implemented to ensure that construction of a new parking facility does not cause a localized carbon monoxide problem. Currently, EPA has promulgated national indirect source regulations for review of new facilities and some 26 states have adopted or are drafting indirect source programs to replace the Federal program, as EPA has encouraged them to do. Section 511 would eliminate the Federal indirect source parking review program and would seriously jeopardize existing and potential state programs. Under section 511, EPA could not implement the promulgated

program and its ability to approve state programs may be voided. Obviously, if the Federal program is voided, the impetus for states to adopt programs will be seriously diminished. Furthermore, since EPA funds are used by many states to implement approved programs, existing state programs (such as that in Florida) might also be diluted or eliminated.

Parking Management Regulations: Parking management regulations have been approved or promulgated for some 20 metropolitan areas as one of a variety of measures set forth in the transportation control plans to help reduce vehicle miles traveled. I have recently proposed amendments to the parking management regulations to provide additional flexibility and have decided to delay the effective date of the regulations from January 1, 1975 to June 30, 1975 so that the new flexibility will be available to all covered by the regulations. Several local areas such as San Francisco, San Diego, Los Angeles, Portland, and Seattle are developing local plans to replace our regulations. The Agency has recently granted $500,000 to several California cities to aid this process. Section 511, if enacted, would eliminate this program and discourage further local efforts in this area.

There are many examples of cities in both the United States and Europe, which manage parking to encourage or discourage the use of automobiles in various parts of the city. The experiences of these cities in limiting parking have shown that restricting the availability of parking spaces is an effective means for discouraging the unnecessary use of the single passenger automobile in order to encourage use of available mass transit and carpool options. These programs have improved air quality without adverse economic effects.

Miscellaneous Transportation Control Plan Parking Restrictions: Various on-street parking regulations and designated area parking controls which have been carefully formulated through coordinated local, state, and EPA efforts would be voided. Many of these programs are already underway.

Employer Transit Incentive Programs: These programs in 15 areas call upon private and public employers having a certain number of employees or parking spaces to formulate a plan which encourages employees to use mass transit or carpools. This very effective pollution prevention and energy conservation measure has been positively accepted by many companies. In Boston, some 700 employer incentive plans were voluntarily submitted. Minnesota Mining and Manufacturing Company has put into effect an exemplary employee van-pool program which will save 106,000 gallons of gasoline a year and substantially reduce vehicle miles traveled. Similarly, innovative plans have been implemented in response to EPA regulations by such companies as Bell Helicopter Company, John Hancock Insurance Company, and General Electric Company. Since the employer incentive programs are oriented

around employer parking facilities, they may also be covered under the section 511 prohibition.

Air Quality Maintenance Plans: The states are currently developing plans which will assure the maintenance of the air quality standards once they have been met. The indirect source review measures discussed above serve as a check for air quality maintenance on a localized scale and are an integral part of every air quality maintenance plan. Furthermore, review of new parking facilities will be necessary to maintain acceptable areawide carbon monoxide and oxidant levels by minimizing increases in vehicle miles traveled. This will be especially important in the mid-1980's after all vehicles are equipped with effective pollution control devices and the continued increases in the number of new vehicles begins to neutralize the impact of these devices. Section 511 would eliminate parking controls from maintenance plans and consequently make it extremely difficult to maintain healthy air.

Enforcement Implications: In view of the section 511 language which refers to the use by EPA of the authorized funds to administer any program related to parking facilities, the Agency might not be able to enforce the parking provisions of state plans which have been previously approved. Such a circumstance reduces the Agency's credibility and effectiveness.

Information on EPA
Parking Related Regulations

Attached is information on EPA's parking programs. The information includes relevant Federal Register notices and explanatory material of the programs. The material includes the following:

Indirect Source Review Program:

1. Brief on Indirect Source Review.
2. July 9, 1974 Federal Register promulgation.

Parking Management Program:

1. Brief on Parking Management.
2. August 22, 1974 Federal Register proposed amendments.

Employer Transit Incentive Program:

1. Brief on Employer Incentive Programs.
2. Sample Employer Incentive Programs.

Brief on Indirect Source Review

The purpose of this brief is to describe the regulations, requirements, procedures and review directed toward indirect source review (ISR). For further information concerning ISR see the July 9, 1974 Federal Register (39 FR 25292).

Addition of Indirect Source to State Implementation Plans

State Implementation Plans are required by Section 110 of the Clean Air Act to ensure attainment and maintenance of the ambient air quality standards, for the protection of the public health. As a result of the court ruling NRDC vs. EPA, 475 F 2 d 968 (D.C. Cir. 1973) finding that there had been insufficient determination of the adequacy of State Implementation Plans, the Administrator further reviewed the plans and determined that no State plan contained all of the measures necessary to assure maintenance of the standards.

In particular, the Administrator determined that all submitted State Implementation Plans were deficient in ensuring maintenance of the standards, especially for pollutants emitted largely by motor vehicles. To correct this deficiency, the Administrator determined that, in addition to the existing provisions for review of construction or modification of any stationary source of air pollution where emissions from that source would result in interference with the attainment or maintenance of a national standard (40 CFR 51.18), there should also be review of "indirect" sources of air pollution.

Indirect sources are facilities which do not themselves emit pollutants, but which attract increased motor vehicle activity and thereby may cause violation of an implementation plan's transportation control strategy or may prevent or interfere with the attainment or maintenance of an ambient air quality standard.

The regulations became effective July 1, 1974 and require a pre-construction review of parking lots associated with all facilities defined as indirect sources that begin construction on or after January 1, 1975.

In addition to the source-by-source review, the Administrator recognized that in the long run greater attention to the overall impact of growth on regional air quality is needed to fill the gaps left by a source-by-source review. Therefore, States are required to submit comprehensive air quality maintenance plans for designated areas by June, 1975, plans which contain strategies to ensure maintenance over the next ten year period.

Relationship of Indirect Source Review to Parking Management Review

The Environmental Protection Agency (EPA) has two regulations that affect owners and operators of proposed future parking facilities. These two regulations are: Indirect Source Regulations (40 CFR 52.22(b), 39 FR 25292 et seq., July 9, 1974), and Management of Parking Supply Regulations as set forth in original Transportation Control Plans and proposed for modification by amendments published in the Federal Register on August 22, 1974 (40 CFR 52, 39 FR 30440). The Indirect Source Regulations, except as they relate to highways and airports, are designed to

review proposed construction of new parking facilities anywhere in the nation for which construction commences after January 1, 1975 to prevent violation or exacerbation of an existing violation of carbon monoxide standards. The size cutoff for Indirect Source Review varies depending upon the location of the proposed facility (see Chart 1). Parking Management Regulations are limited to specific areas found to have serious violations of auto-related air quality standards and requiring transportation control plans. The regulations include both a review for localized carbon monoxide impact, similar to that required under Indirect Source Regulations, and a review of the impact of the proposed facility on area-wide oxidant and area-wide carbon monoxide levels through vehicle miles traveled.

Indirect Source Regulations do not apply to facilities which are subject to review under EPA-promulgated Parking Management Regulations. Accordingly, no single facility will be subject to more than one of these review requirements. Highways and airports in Parking Management areas will continue to be reviewed under the Indirect Source Regulations.

Definition of Indirect Source

An indirect source is a facility which does not directly emit pollutants for which a national air quality standard has been established, but one that attracts or may attract vehicles that cause automotive pollution. Indirect sources include, but are not limited to: (a) highways and roads; (b) airports; (c) general parking facilities, and parking facilities associated with such facilities as retail, commercial and industrial facilities; recreation, sports, amusements and entertainment complexes; office, apartment, condominiums and government buildings; and educational facilities.

Single family developments and urban renewal housing projects are not covered by these regulations. But, if an indirect source is a part of an urban renewal project that particular source is subject to the review processes. EPA encourages the review of redevelopment projects and industrial parks or planned communities even though the entire project may not be subject to the regulations. Approval of the project as a whole will allow the developer to proceed with the assurance that it can be completed as planned.

Size of Facilities Subject to Review

Only certain airports are subject to indirect source review. Specifically, those airports whose construction or modification is expected to result in 50,000 or more operations per year or use by 1,600,000 or more passengers per year within ten years of construction or modification.

The size of highways subject to review is dependent on whether the project lies within a Standard Metropolitan Statistical Area (SMSA) or not. SMSAs are areas designated by the Office of Management and Budget (OMB) where a combination of contiguous populations and cross jurisdictional commuting patterns exist in specifically high levels to justify concern about the long term maintenance of air quality. New highways within SMSAs which will have an annual traffic volume of 20,000 or more vehicles per day within 10 years of construction and modified highway construction which will increase average annual daily traffic volume by 10,000 or more vehicles per day within 10 years after modification are subject to review. New highway construction outside

an SMSA is not included for review under this regulation at this time.

New parking facilities subject to review within an SMSA are those with a parking area or associated parking area of 1,000 or more cars. Outside the SMSA, review is required for those new parking lots or associated parking areas with a capacity of 2,000 or more cars. Modified lots which increase parking capacity by 500 or more cars in the SMSA and 1,000 cars outside the SMSA are also subject to review (see Chart 1).

Pollutants Subject to Review

The purpose of the review process is to discover design features which could result in air quality violations and rectify the problem before construction begins. In the case of airports, the review will be for carbon monoxide, oxidants, and nitrogen dioxide. Parking facilities will be reviewed soley for carbon monoxide. The size of the construction or modification of the highway determines what pollutants are subject to review. New highways with an anticipated average daily traffic volume of 50,000 or more vehicles and modified highways with an anticipated average daily traffic volume of 25,000 or more vehicles are to be reviewed for both local and area impact considering carbon monoxide, nitrogen dioxide and photochemical oxidants (see Chart 1).

Indirect Source Review Guidelines

EPA has published Interim Guidelines for the Review of the Impact of Indirect Sources on Ambient Air Quality. As stated previously, an

indirect source is defined as a facility, building, structure, or installation which attracts or may attract mobile source activity (automobiles, etc.) that results in emissions of a pollutant for which there is a national standard.

The purpose of these guidelines is to provide a means of relating traffic design and operating variables to CO concentration at key locations. The derived relationships may then be used to determine whether the traffic design and operating features at the proposed source are sufficient to avoid interfering with attainment or maintenance of the National Ambient Air Quality Standards for carbon monoxide.

Data from monitoring indicates that in the vicinity of indirect sources, highest concentrations of CO occur near entrance/exit gates, nearby intersection approaches or in the vicinity of access roads. Therefore, the air quality impact analysis for indirect sources focuses on relationships between air quality and traffic design and operating parameters at these points.

Implementation Procedures

Indirect source review will be implemented through a permit program. To receive a permit of approval, an owner or operator of an indirect source must demonstrate that the facility will not cause or exacerbate a violation of any national ambient air quality standard for the designated pollutants. Such demonstration will be done by modeling for the proposed facility's impact on air quality. This modeling can be done by the applicant or by the reviewing agency based on data submitted by the applicant.

Presently, EPA is the reviewing agency for indirect sources except in Guam, Florida, and Alabama, which have Federally approved procedures limiting

the necessity of review by EPA. At present, a large number of additional states are in the process of submitting plans for Indirect Source Review. It is the Administrator's desire that State and/or local governments will take responsibility for this program. If a State has not officially requested delegation for the indirect source review procedures, the Administrator will entertain requests from local agencies. For more information regarding delegation, State and local governments should contact the appropriate EPA Regional Office.

It is expected with respect to airports and highways that the necessary technical data will be available in an Environmental Impact Statement (EIS) prepared pursuant to the National Environmental Policy Act (42 USC 4321). In such cases, all that is necessary to make application is a letter to the appropriate Regional Administrator from the initiating agency, accompanied by the EIS if not previously submitted, requesting permission to construct. If additional data is required, the Regional Office will notify the applicant within 20 days after receipt of request. If an EIS is not prepared, information showing location, principal roads and intersections, average daily traffic volume, etc., of the indirect source must be submitted. (For a complete list of information required, see July 9, 1974 Federal Register, page 25298).

Review Process

The review process is as follows (see Chart 2):

1. Receipt of Application and Determination of Completeness. Within twenty days of receipt of the application a determination as to completeness will be made. The Administrator will advise the applicant of any

deficiency in his application. If a deficiency exists, the applicant will be asked to supply additional information, and the date on which the additional material is received shall become the official application date.

2. Preliminary Determination of Approval. Within thirty days of receipt of the application, a preliminary determination of approval, disapproval, or conditional approval will be made. The application and preliminary determination will be posted in the Regional Office and in the area where the proposed facility is to be built. At the same time, a public notice will be issued.

3. Public Comment. Following the preliminary determination and public notice, a thirty-day period will be provided for public comment. Copies of the application and the preliminary determination will be sent to the officials and agencies (state and local air pollution offices, city and county executives, etc. in the region where the facility is proposed. At the close of this period, all comments will be made public. Public notification of the availability of these documents will be made through prominent advertisement in a major newspaper in the region. At the end of this comment period developers have ten days in which to respond to the public comments.

4. Final Determination. The final determination must be made within thrity days after the close of the comment period. The application will either be approved, disapproved, or conditionally approved. A conditional approval will be granted where modifications in construction, design or operation will improve characteristics of the proposed facility and are

necessary to satisfy the requirements of this regulation. A disapproval will be issued if it is found that no conceivable changes could be made sufficient to preclude a violation or worsen any existing violations in any part of the area.

5. All of the above time periods may be extended by no more than thirty days, or by such extensions as the Administrator and applicant may jointly agree to.

Upon approval, EPA will issue a permit. This permit will be valid throughout the construction period of the facility and therafter during its subsequent operation. If the construction or modification of the proposed facility has not begun within eighteen months after the approval, the permit becomes invalid. In order to begin construction after expiration of the permit, reapplication to EPA must be made. This permit refers only to national air quality standards, and does not exempt the applicant from meeting other state, local or Federal regulations and requirements. Further, such approvals are considered to be fully transferable between successive owners of property for which an approval is granted so long as the facility is constructed and/or modified in full accordance with the approved application and its conditions.

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ENVIRONMENTAL PROTECTION AGENCY

■

AIR PROGRAMS; APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

Review of Indirect Sources

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

Review of Indirect Sources

On February 25, 1974 (39 FR 7270), the Administrator of the Environmental Protection Agency (EPA) promulgated an indirect source review regulation (40 CFR 52.22(b)) to be incorporated into the Clean Air Act implementation plans of 52 states and territories. As a follow-up to that regulation, the Administrator is today taking the following actions:

(1) In the preamble to the February 25 promulgation, the Administrator noted that additional written comments would be accepted until April 1, 1974, and that where appropriate, revisions may be made to the regulation (39 FR 7276). Many interested persons submitted written comments. The Administrator has considered the comments and has determined that several amendments of a clarifying, procedural nature are warranted. These amendments are being published today.

(2) The Administrator will respond in this preamble to significant new general comments which were not dealt with in the February 25 preamble.

(3) The Administrator has noted that some confusion exists as to the intended scope and application of the regulation and as to other matters relating to interpretation of the regulation. An explanation responding to frequently-raised questions of interpretation is provided in this preamble and in a new Appendix A to Part 52.

(4) Further information is provided regarding procedures to be followed in conducting review under the regulation and regarding delegation of review responsibilities to state and/or local agencies.

NEW GENERAL COMMENTS

Because many general comments directed to the wisdom of the basic scheme of this regulation have already been addressed in the February 25 preamble, the Administrator does not feel it is necessary or helpful to respond to them again. Nevertheless, there are three points the Administrator would like to make in response to the new comments.

1. *The need for the regulation.* One major retailer submitted lengthy comments challenging the entire concept of indirect source review for shopping centers because the Administrator allegedly has not adequately established that such regulatory scheme is necessary to assure maintenance of the ambient standards for carbon monoxide. In an attempt to show that such a regulation is not necessary with regard to shopping centers, the retailer submitted two studies. One was an empirical study showing that after several days of monitoring at a shopping center, no violation of an ambient carbon monoxide standard was found. This study involved "grab bag" sampling at various locations over the entire shopping center parking lot, and emphasized averaging the sample values over all locations for each hour and over all hours for each location. Such an averaging procedure is inconsistent with the method in which the air quality standards are prescribed. Air quality values should be averaged for discrete one and eight hour periods at each location, not over all locations. Although the study includes some continuous monitoring, carbon monoxide concentrations were not monitored in close proximity to the most frequently used exit/entrance, the site where the highest concentration would be likely to occur. Moreover, the study confined itself to analysis of air quality on the site of the shopping center, whereas more significant impacts can be created at nearby intersections.

While it is true that a shopping center may be constructed such that there would be no reasonable receptor sites in the close proximity to the areas where the highest concentrations would be likely to occur, it is not appropriate to generalize that a source category does not have a significant impact on air quality without studying its impact at the points of highest concentration, including nearby intersections, and under the worst conditions.

The other study dealt largely with the impact of various types of shopping center developments on area-wide emission rates. Such analysis is irrelevant to the question of whether localized carbon monoxide problems can be caused by vehicles attracted to a shopping center. This study also indicates, through the use of predictive models, that by 1980 various types of shopping center developments would not cause carbon monoxide violations due to the effects of the Federal Motor Vehicle Control Program. A prediction of the impact of an indirect source on ambient air in 1980 is unresponsive to the problem at hand since ambient carbon monoxide standards are to be met under the Clean Air Act as expeditiously as practicable but not later than the statutory attainment date, which is in most cases 1975 and in no event later than 1977.

The Administrator has conducted a number of studies to determine the impact of various types of indirect sources on ambient air quality, including shopping centers[1,2] and sports stadia.[3] Even though the studies were conducted over a limited time period, the facilities were found to have a definite adverse impact on ambient carbon monoxide levels, and even to cause violations of the national standards. These results substantiate the need for procedures to review such sources prior to construction in order to protect the public health.

The Administrator has never contended that every indirect source subject to review will necessarily cause air quality violations. If such were the case, then the proper course of action would be to promulgate an absolute ban on further construction of such sources. Rather, the Administrator has determined that in certain circumstances indirect sources can create ambient violations or exacerbate existing violations. Even in circumstances where the construction of one source in an area might not create violations, the subsequent construction of one or more additional sources in the near vicinity could do so.

Since implementation plans under the Clean Air Act must contain measures to "insure" that the ambient standards will be attained and maintained, and since the Administrator has determined that indirect sources, singly or in combination, can cause violations of the standards, it is necessary for implementation plans to contain procedures for preconstruction review of such sources. The Administrator has confidence that the Federal Motor Vehicle Control Program being implemented pursuant to Title II of the Clean Air Act will continue to diminish the levels of ambient carbon monoxide. However, such reductions will not in the Administrator's judgment suffice to prevent ambient violations in the vicinity of indirect sources subject to the regulation for at least the next few years.

Some have questioned whether it is proper to promulgate this review regulation even in areas which now have no carbon monoxide problem. The relative cleanliness of a particular area's air is irrelevant to the question of whether indirect source review is necessary for that area, since a new indirect source (or several new sources) could easily convert almost pure air into air violating the public health standards. The primary purpose of the regulation is to assure maintenance of the ambient standards—to assure that no violations will occur where none now exist.

2. *Approval based solely on air quality factors.* A widespread misunderstanding of the purpose and effect of indirect source review is reflected in the following comment made by a national association:

> According to the indirect source regulations, design characteristics, location and timing of future development is being based solely on air quality factors. We feel that no single factor should be the sole determinant of land use planning decisions.

The indirect source regulation does not make air quality the "sole determinant" of land use planning decisions except in an area which is now totally free

[1] GCA Corporation, "Validation Study of an Approach for Evaluating the Impact of a Shopping Center on Ambient Carbon Monoxide Concentrations", Contract No. 68-02-1378, Task Order No. 2 for EPA (March 1974).

[2] Quality Assurance and Environmental Monitoring Laboratory, Field Monitoring and Instrument Branch, "Carbon Monoxide Measurements in Vicinity of Shopping Centers," RTI Report, Contract No. 68-02-0294, Task Order No. 3 for EPA, (April 1973).

[3] Bach, W. D., Crissman, B. W., Decker, C. E., Minear, J. W., Raspberry, P. P., and Tommerdahl, J. B.: "Carbon Monoxide Measurements in the Vicinity Of Sports Stadiums," RTI Report, Prepared for EPA Under Contract 68-02-1098, Task No. 1 (July 1973).

any zoning or other land-use regulations. As the Administrator explained in the February 25 preamble:

> should be emphasized • • • that the determination made pursuant to these regulations is only one necessary step among many other land-use measures already generally established (i.e., zoning approval, site plan approval, demolition and building permit approval, sewer tap-in approval, etc.) in order to assure that a specific facility will be designed and located in a manner not inconsistent with the public health, safety, and welfare. It is hoped that indirect source review will eventually be incorporated into comprehensive State and local land use planning processes so that social, economic, and air quality factors can be considered in an integrated manner. 39 FR 7274 (February 25, 1974).

The fact that one of many permits and approvals a facility must obtain before construction relates solely to air quality certainly does not make air quality "the sole determinant" of land use planning.

3. *Analysis Beyond One-Fourth Mile.* Additional comments indicated that the air quality impact of an indirect source should be examined at distances further than one-fourth mile from the source. It should be noted that the tests specified in subparagraphs (4) and (6) in no way restrict the Administrator as to the location of the air quality impact analysis. However, it is the Administrator's judgment that the major impact of most facilities with respect to carbon monoxide will be within one-fourth mile of the facility; accordingly, the detailed site data that must be submitted as part of each application is limited to the immediate vicinity of the indirect source. It is the Administrator's intent to require more comprehensive data pursuant to subparagraph (3)(i)(f) on a case-by-case basis, and to analyze the air quality impact at distances beyond one-fourth mile in cases where the facility might pose a threat to the air quality standards at such locations.

Explanation of Frequently-Raised Questions of Basic Interpretation. The purpose of the following discussion is to set forth certain basic interpretations of the regulation in order to clarify confusion reflected in public comments and questions. In addition, a new Appendix A to Part 52 is being published simultaneously with this rulemaking setting forth the substance of the following discussion in interpretative ruling form. As is true with any statute or regulation, it is impossible to answer definitively every conceivable question of interpretation or application which might arise in implementing the regulation. Just as courts frequently decline to decide certain issues until an actual situation presents a specific case or controversy before them, the Administrator believes that it would be unwise to answer every hypothetical question of interpretation or application raised in the comments because of the precedent that could be set based upon inadequate factual information. There are some questions of interpretation which will have to be resolved on a case-by-case basis in the process of implementing the regulation.

The explanation offered below relates to points so basic that if they were not clearly understood by the public and agencies implementing the regulation, serious mistakes in implementation might occur. One caveat should precede the discussion: The following is the Administrator's interpretation of his own regulation, 40 CFR 52.22(b). States which develop their own regulations which may be approved under 40 CFR 51.18 are not bound to interpret their regulations in the same manner, so long as their regulations operate to insure that ambient air quality standards will not be violated as a result of the construction of a new indirect source.

Most questions relate to the basic scope of the regulation, the type of indirect source which is subject to review, and the nature of the "associated parking area" concept. Since almost no comments or questions of interpretation were received regarding highways and airports, the following discussion, unless otherwise noted, deals with all other types of indirect sources.

The basic focus of the regulation is to review a new facility which will have an associated parking area of the requisite number of parking spaces. The list contained in 40 CFR 52.22(b)(1)(i) is merely a set of examples and should not be over-emphasized. The key to determining which facilities must be reviewed is in paragraph (b)(2), which requires review of "a new parking facility, or other new indirect source with an associated parking area" of the requisite size. Thus in every case, the most important factor will be to determine whether an "associated parking area" of the requisite size is to be "owned and/or operated in conjunction with" a facility.

An "associated parking area" is defined in paragraph (b)(1)(iii) as a "parking facility or facilities owned and/operated in conjunction with an indirect source." To be an "associated parking area" within the intent of the regulation, the area must be a separate and discrete localized facility associated with a particular indirect source. Thus, to clear up much confusion reflected in the written comments, an urban renewal area is not itself an indirect source subject to review under the regulation merely because within the entire area there may be more than 1,000 parking spaces. Rather, it is necessary to look at discrete parking facilities within the urban renewal area to determine what, if any, construction within the area will be subject to review under the regulation.

For example, assume that twelve blocks of a city are being reconstructed pursuant to a redevelopment plan. Within the twelve blocks, there is to be a municipal auditorium with 1,500 parking spaces underneath it, an apartment building with 500 parking spaces adjacent to it to serve the residents, a 1,200-space municipal parking garage, many townhouses with single or double private garages for the use of their owners, and 500 spaces for curb-side on-street parking.

If such twelve blocks were within an SMSA, the municipal auditorium and the municipal parking garage will each be subject to the regulation as a separate indirect source since each will have a separate and discrete associated parking area of 1,000 spaces or more. The redevelopment project itself is not an "indirect source" subject to review under the regulation, however, merely because it includes in the aggregate more than 1,000 spaces.

Thus, to answer another point which has caused confusion, the construction, 5 years later, of a new apartment building with an associated parking area of 600 cars within the urban renewal area will not by itself trigger review under the regulation. First, this is not a "modification" within the contemplation of paragraph (b)(2)(i)(b) since it is not a modification of an associated parking area but rather a new separate and discrete parking area. Second, this is not an increment under paragraph (b)(2)(iv) since it is not an increment to an existing "indirect source" within the contemplation of the regulation.

If 500 spaces are later added to the apartment's parking facility, then this is a modification to a particular facility which triggers review. Similarly, additional spaces added to such facility from time to time will be considered as increments to that facility within the contemplation of paragraph (b)(2)(iv).

The foregoing also applies to other large-scale developments such as industrial parks, new towns, and large subdivision developments. These types of developments are not in and of themselves indirect sources subject to review under the regulation, although in each case they may contain many indirect sources subject to review.

An understanding of this concept helps answer other questions raised in public comments. For instance, a question frequently posed is whether commencing construction of one facility within an urban renewal area before 1975 will exempt all future construction in the area from review. The answer is "no". The urban renewal area is not itself an indirect source; facilities within the area which have associated parking areas of the requisite size are. Thus construction of a second facility within the area after December 31, 1974, which is otherwise subject to review under the regulation will not be exempt merely because other facilities commenced pursuant to a common plan were exempt.

The reason the phrase "or facilities" is included in paragraph (b)(1)(iii) is to assure that mere physical barriers between parking areas serving a single indirect source will not operate to exclude from review what is in essence a discrete associated parking area for a single source. For instance, a shopping mall which is to be constructed with 500 parking spaces on the north side of the mall and 500 spaces on the south, even though the two parking "facilities" are physically separate and do not have connecting roads between them, will be considered to have an "associated parking area" of 1,000 spaces.

Several questions have been raised regarding the phrase "owned and/or oper-

in conjunction with an indirect ce" contained in paragraph (b)(1)

The use of the word "owned" does mean, as some who commented apently feared, that a parking lot a parer developer owns in Tallahassee will counted in determining the size of an ociated parking area in Peoria. The phrase is "in conjunction with," on is intended to convey an operaal test looking to whether a particuparking area serves a particular fay under a common scheme of owner and/or operation.

arking facilities which are fortuly constructed near an indirect source over which the owner or operator of source has no control, and which are constructed pursuant to an underking by which the facility will serve indirect source, will not be considan "associated parking area" of the rce. For instance, if a developer conds a shopping center with 600 parkspaces and a municipality erects a -space parking garage adjacent to the ter completely independent of the pping center development, there is not ngle, 1100-space associated parking within the contemplation of the regon. However, if such parking garage e constructed pursuant to an explicit or implied agreement with the shopcenter developer to serve the shopcenter, it would be considered part he center's "associated parking area." is not necessary for an "associated king area" to be directly contiguous to direct source to cause that source subject to review. For instance, a eloper could not avoid review by conding a large retail facility on one side the street with forty parking spaces ediately adjacent to it, and conecting a 960-space parking facility ss the street. All 1,000 spaces will be ted as an "associated parking area" in the contemplation of paragraph (1)(ii) since they are owned and/or ed in conjunction with a particular rect source. On the other hand, parkfacilities located across the street each other within an industrial park serve two separate indirect sources not constitute a single "associated king area."

any questions have arisen concern"phased" development. As noted e, a major area-wide development as an urban renewal project, an indstrial park, or a "new town" will not be indirect source itself but may instead ude several indirect sources sepely reviewable under the regulation. Responsive to many comments, two s about phased development should ome clear at this time:

) Applicants will be able, and in fact encouraged, to apply for approval of indirect sources within their phased lopments at the same time, so long the information required for the reing agency to perform an air quality ysis for each source can be ded. This will allow developers to d with major developments with a ser degree of certainty.

(2) Since a major area development is not in itself a discrete indirect source subject to review under the regulation, commencement of one phase of such development prior to 1975 will not operate to exempt subsequent indirect sources within such overall development plan which commence construction after December 31, 1974, from indirect source review.

One tangential issue which has been raised frequently relates to phased construction within a single indirect source subject to review under the regulation. For example, assume that a shopping center with a 3,000-space parking area is to have four major "anchor" department stores in addition to dozens of smaller retail and service establishments. The plan is to build the bulk of the shopping center initially, including all of the parking area, but for business reasons to withhold construction of two of the "anchor" stores for two or three years after the center first opens. The two questions which arise are: (1) If construction commences on the intial part of the center prior to 1975 will the subsequent construction of the two anchors trigger review for such two new stores? (2) Alternatively, will such subsequent construction mean that construction of the entire center is covered under the regulation under the theory that the construction which was commenced prior to 1975 was not "continuous"?

(1) The mere fact that two new stores are being added to the shopping center will not trigger indirect source review. The new construction is a modification to an existing indirect source (the shopping center with two "anchors" and 3,000 parking spaces), but modifications are not reviewed unless parking capacity is increased by 500 cars or more (1,000 cars or more in non-SMSA's). (2) The fact that the shopping center is not modified for two or three years after initial opening for business does not make the construction which commenced prior to 1975 non-"continuous" and therefore subject the entire project to indirect source review, because in essence a single indirect source (the shopping center with 3,000 parking spaces minus two anchors) was constructed in a continuous process which commenced prior to 1975.

Several persons questioned whether demolition is to be considered as "site clearance" as that term is used in the definitions of the phrases "to commence construction" and "to commence modification" in paragraph (b)(1) (v) and (vi). The Administrator considers demolition to be a form of site clearance. It is important to note, however, that the term "continuous" is crucial in the definition of these phrases. Demolition prior to 1975 will serve to exempt a project only where it is part of a continuous program of construction specifically designed for a particular indirect source. For example, where a developer demolished a structure on a particular site in 1973, then does no further physical site work until 1975, a source constructed on that site will not be exempt from review merely because the site clearance began in 1973.

Two points should be made regarding the "force majeure" (acts of God, strikes, etc.) language in paragraph (b)(1)(v). (1) The fact that construction failed to commence at all prior to 1975 because of "force majeure" reasons is irrelevant. Actual physical site work must commence in a continuous course before 1975 for the exemption to be valid. (2) Only breaks in construction attributable solely to the enumerated "force majeure" reasons will be considered in determining whether a project is exempt. For instance, if a site were demolished in 1973, then for business or other reasons, actual physical construction ceased, and a developer planned to commence continuous construction on the site in mid-1974 but was prevented from doing so until 1975 because of litigation, the source would not be exempted from review since factors other than the "force majeure" reasons played a role in rendering the construction noncontinuous.

Some comments urged that the basic coverage requirement set forth in paragraphs (b)(2)(i) and (ii) be amended to require that only those indirect sources for which a new associated parking area is constructed be subject to review. As the regulation is now written, an indirect source constructed on a presently existing associated parking area is subject to review as well.

Such an amendment would create unwarranted exemptions. One case would be that of a developer who has operated a large surface parking lot for several years, and then decides to construct an office building on part of the lot while retaining the remainder to serve as the parking lot for the building. Although the associated parking area would not be new, the office building should clearly be required to undergo pre-construction review as a new indirect source. Another example is the demolition of a large shopping center structure followed by the construction of a new shopping center on the same parcel of land using the same parking lot. In each case, it is reasonable to expect the developer to take air quality considerations into account in planning his basic design, and the construction will not be exempt from indirect source review.

A closely related matter which has drawn several questions is the status under the regulation of accidental destruction of an indirect source followed by new construction on the same parcel. Consistent with the foregoing line of reasoning, such construction would not be exempt from review. Again, the developer can fairly be expected to consider air quality in designing and planning for his new construction. New construction following destruction on a parcel would certainly be subject to more rigid building code requirements or zoning ordinances which had been enacted since the construction of the original improvements, and there is no reason to depart from this principle where a public health regulation is concerned.

Some have questioned whether a reviewing agency could use paragraph (b)

to specify that an approved indirect ...rce may be further modified without ...iew by adding more parking spaces ...n the number which triggers review ...der paragraphs (b)(2)(i)(b) and (b)(ii)(b). As discussed on February 25 ...FR 7276), the intent of this provi...n is to allow a reviewing agency to re...ce the number of new parking spaces ...t would trigger review for a particular ...irect source if it is determined that ...ch a minor modification could cause a ...lation of the national standards. Since ...is difficult to accurately predict the ...tent which the area surrounding a ...oposed facility will grow between the ...proval of its initial application and any ...sible modification, the Administrator ...es not consider it appropriate to allow ...ragraph (b)(10) to be used to liberalize ...e requirements of paragraphs (b)(2)(i)(b) and (b)(2)(ii)(b). Paragraph (b)(10) has been modified to clarify this ...int.

Several persons have questioned ...hether an indirect source approval is ...nsferable. The Administrator con...ders such approvals to be fully trans...rable between successive owners of the ...operty for which an approval is ...ued so long as the indirect source is ...nstructed and/or modified fully in ac...rdance with the approved application ...d all conditions thereto.

As alluded to before, it is not possible ...issue an interpretative ruling which ...ld answer precisely every question that ...ll arise in administering this regula...n. Many questions concerning whether ...that a facility is subject to review under ...e regulation will necessarily have to be ...swered on a case-by-case basis, with ...ose administering the regulation using ...eir sound discretion. In general, de...elopers should assume that devices used ...n an attempt to evade review will be ...rutinized carefully to determine ...hether a source actually subject to the ...gulation is commencing construction ...ithout the required approval. Those ...nducting review under the regulation ...ould resolve doubts and close cases in ...vor of coverage since the purpose of ...e regulation is to review all new and ...odified indirect sources except those ...early and specifically exempted. This ...proach best serves the dictates of the ...lean Air Act, which requires measures ...o "insure" the attainment and main...nance of the ambient standards.

The Administrator does not expect ...many evasion problems to arise in view of ...e significant risks developers and ...nders would be taking. In commencing ...onstruction of a facility subject to the ...egulation without securing the neces...ary approval, the developer would be ...bject to the heavy criminal penalties of ...ection 113 of the Clean Air Act. More...ver, further construction of the facility ...ould be enjoined and a facility for which ...onstruction had been completed could ...e shut down. Thus it is doubtful whether ...rudent lenders will fund projects unless ...ey are sure that a facility has either ...ceived indirect source approval or that ...one is needed.

In this regard, developers who plan to construct projects which they feel are exempt but which may be arguably subject to the regulation may apply for a determination of applicability ruling from EPA to achieve a greater degree of certainty in proceeding with their projects.

Such rulings should be requested in writing from the appropriate regional offices. Requests should fully recite the facts upon which the developer believes an exemption is based. In appropriate cases a ruling will be issued which will be carefully and strictly limited to the facts as understood by the agency. If construction commences in circumstances under which any material fact is at variance with those represented in the ruling request, or if a material fact were omitted from the request, then the ruling would be rendered inoperative. Applicants should be aware of section 113(c)(2) of the Clean Air Act, which provides that any person who knowingly falsifies information in any application required pursuant to the Act is subject to fine and/or imprisonment.

SPECIFIC CHANGES TO THE REGULATION

The following changes have been made as a result of public comment on the February 25, 1974, regulations.

1. *Phased development.* Paragraph (b)(2)(iv), which is intended to prevent circumvention of the regulation through numerous minor modifications, is amended below to allow each phase of a project to be constructed without the issuance of a separate permit as long as the entire project had received approval at the outset. In addition, the information to be submitted in support of an application [Paragraph (b)(3)] has been clarified with respect to phased development projects. The traffic conditions at the time each phase becomes operational must be submitted so that the Administrator can determine the project's air quality impact at any time during the development process. This determination is necessary since a facility might be acceptable upon completion at some extended future date (due to the effects of the Federal Motor Vehicle Control Program), yet could cause a violation of air quality standards at some intermediate stage of development.

2. *Basis for disapproval for violations of the carbon monoxide standard.* The Federal indirect source regulation has been promulgated to conform to the requirements of 40 CFR 51.18, which requires all state implementation plans to have indirect source review procedures to prevent construction which "will interfere with attainment or maintenance" of ambient standards. The Federal regulations proposed on October 30, 1973, provided that construction must be prevented where the indirect source would "prevent or interfere with the attainment or maintenance" of ambient standards. (Proposed 40 CFR 52.22(b)(4)(i)(b), 38 FR 29896.) Because some comments in response to the October 30 proposal reflected concern as to the precise meaning of the quoted phrase, the Administrator endeavored to state the test with more specificity in the final regulation (40 CFR 52.22(b)(4)(i)(b)–(c), 39 FR 7277).

Upon further analysis and consideration of comments, the Administrator has determined that the test for carbon monoxide violations can be stated more simply than in the February regulation and more in conformity with the requirements of the Clean Air Act and 40 CFR 51.18. Moreover, the new statement of the test more closely follows the intent of the October 30 proposal.

The new statement of the test requires disapproval of a facility which would either cause a new violation or exacerbate any existing violation of a carbon monoxide standard, in any portion of any air quality control region. The test as stated in the February regulation could have permitted temporary new violations of the carbon monoxide standard to be created until the specified attainment date. This would be inconsistent with the requirements of the Clean Air Act, which requires attainment of primary ambient standards "as expeditiously as practicable," not merely by the statutory deadline. To allow violations to be created or exacerbated by the construction of a new source is consistent neither with this mandate nor with 40 CFR 51.18, since to allow a new source to create new violations would "interfere" with the attainment of the standards as expeditiously as practicable.

3. *Basis for decisions involving photochemical oxidant and nitrogen dioxide.* On several previous occasions (38 FR 29893 at 29894 and 39 FR 7270 at 7272), the Administrator has expressed reservations concerning the adequacy of available analytical techniques to accurately analyze the impact of a specific indirect source on ambient air quality concentrations of photochemical oxidant and nitrogen dioxide. The application of the proportional modeling technique specified in the February 25 regulations becomes quite subjective when applied to the incremental air quality impact of a single facility or project. Since the proportional model assumes that air quality is proportional to emissions, the key to analyzing the air quality impact of a highway or airport focuses on the definition of baseline emissions. If the baseline emissions are those presently emitted on the proposed site, the predicted air quality increase would be extremely large. If the baseline emissions are those of the entire region, the predicted air quality increase would in most cases, be quite small. As a result of these problems, the Administrator has chosen to eliminate the exclusive use of the proportional model, and to base decisions involving oxidant and nitrogen dioxide on considerations to be published shortly as a new Appendix to Part 52. While the Administrator does not desire to base photochemical oxidant and nitrogen dioxide decisions exclusively on the proportional model on a national scale, states are not precluded from using such a model where they feel it is appropriate for their local needs and conditions.

Use of traffic flow characteristics highway decisions. As promulgated bruary 25, the regulations specified se of a diffusion model for analyzing the impact of highways on carbon xide air quality. In developing the flow characteristics discussed be- it became apparent that such cri- would be equally applicable for zing localized carbon monoxide ntrations in the vicinity of roads highway. Thus, the regulations are fied below to permit the use of such cteristics, with the option of using sion model if either the applicant Administrator deems appropriate.

Applicant's opportunity to respond blic comment. The regulations are ded to permit the applicant to re- in writing, within 10 days after ose of the public comment period, e comments submitted by the pub- e Administrator is required to con- such response in making his final on.

Permit conditions and penalties. omment indicated that the require- to "operate in accordance with the ation" in paragraph (b)(11) was sonable, since it could be construed quire the applicant to obtain per- on before changing store hours or minor operating practices which have been indicated in the applica- It was not the Administrator's in- to provide that any minor opera- l factor which could have no rea- le impact upon air quality be an ceable permit condition. Accord- the above-quoted phase has been ed from paragraph (b)(11). On the hand, in most cases there will be in operational factors which will be al to the air quality impact of an ect source. Accordingly, paragraph) is amended to permit the review- gency to specify that such operating ions will be enforceable permit tions.

s crucial to the effective operation indirect source program that the ing agency utilize the provisions of raph (b)(9) to specify any such op- g factor which could affect air y as a permit condition. Conditions must be considered on a routine will be:

requirement that the facility, or ncremental development phase, not ened for business prior to the date ied by the reviewing agency. Be- of the continuing emission reduc- ffected by the Federal Motor Ve- Control Program, the vehicle mix e date of expected opening (and ing average vehicle emission rate) be an important factor in deter- g whether air quality standards be violated.

Specification of the type and degree odification to the approved facility must be subject to review. Since the ation only requires review of modi- ns that result in addition of a spec- number of parking spaces, the re- g agency may also specify that structural or use changes which adversely impact air quality shall subject to review.

7. *Invalidation of approval.* Numerous comments were received indicating that in many cases, on-site construction would not commence within 18 months after receipt of approval as required under subparagraph (12). Accordingly, this period has been extended from 18 to 24 months. Subparagraph (12) still contains a provision allowing the Administrator to extend this time period upon a satisfactory showing that an extension is justified. Since the regulation has been modified to permit the applicant to request an extension at the time of initial application, this subparagraph should not introduce uncertainty for developers acting in good faith.

8. *Data to be submitted by the applicant.* Paragraph (b)(3) is amended to eliminate the requirement that an applicant submit the intermediate information, such as trip inducement and existing volumes, that are used to estimate future traffic volumes. As amended, paragraph (b)(10) requires submission of only that data needed to determine the traffic flow characteristics on which the Administrator will base his decision with respect to localized carbon monoxide concentrations. An additional parameter, vehicle capacity of major roads and intersection in the vicinity of the indirect source, is included since it is needed for determinations based upon traffic flow characteristic guidelines. Pursuant to paragraph (b)(3)(i)(i), the Administrator may request any additional information needed to check the accuracy of the estimates submitted by the applicant.

9. *Examples of traffic flow characteristics.* As indicated below, the Administrator is issuing guidelines setting forth traffic flow characteristics which may be used in determining localized carbon monoxide concentration. Consequently, the examples of traffic flow characteristics previously listed in paragraph (b)(4)(ii) are no longer necessary and have been deleted.

10. *Necessity for "on-site construction".* In order to clear up confusion, the phrase "on-site" has been added to the definitions of "to commence construction" and "to commence modification." This is entirely consistent with the Administrator's intent as reflected in the February 25 preamble at 39 FR 7273.

11. *Sources Subject to "Management of Parking Supply" Regulations.* "Management of parking supply" regulations have been promulgated by EPA as part of the transportation control plans in 19 regions. In order to eliminate confusion as to whether the indirect source regulation is applicable to a particular facility in areas where both regulations appear to be in effect, the indirect source regulation has been amended to state that in such areas, sources which would otherwise be required to undergo review under both regulations will be subject to review only under the management of parking supply regulation. Thus, applicants will not be required to apply for permits from EPA through two separate procedures. The parking management regulations will require facilities of the size subject to indirect source review to undergo carbon monoxide impact analysis similar to that required by the indirect source regulation in addition to other parking management review requirements.

It should be noted, however, that the parking management regulations will not exempt from review sources of the size covered by the indirect source regulation merely because a general construction contract had been executed for such a source. Such sources shall be exempt only if they have commenced on-site construction or modification on or before January 1, 1975. The management of parking supply regulations will soon be refined by EPA in the respects noted above.

12. *Basis for Decisions on Carbon Monoxide Impact.* Paragraph (b)(4)(ii) has been clarified to emphasize that there are a number of analytical techniques which may be acceptable for evaluating the concentration of carbon monoxide in the vicinity of indirect sources. As discussed below, the Administrator has developed and published traffic flow characteristic guidelines which will be one method which may be used. The use of such guidelines, however, is not a requirement of the regulation.

As explained in the preamble to the February promulgation at 39 FR 7275, these guidelines will have the beneficial effect of allowing developers to plan their facilities so as to maximize their chances for approval. Such guidelines will frequently be used by EPA in conducting review since they provide a rather simple and expeditious method in analyzing carbon monoxide impact. Nevertheless, it is expected that in many cases other methods, such as diffusion modeling, will have to be relied on in making the determination. For instance, where basic technical assumptions used in developing the guidelines are not appropriate in a certain area, the guidelines would not be used as the basis for deciding whether a permit may be granted. Instead, a diffusion model or other technique which more accurately takes account of the actual conditions at a particular site would have to be used.

13. *Minor clarification changes.* There have been several other minor drafting changes made for clarification purposes which do not change the scope or intent of the regulation.

ANALYTICAL TECHNIQUES FOR DETERMINING CARBON MONOXIDE CONCENTRATIONS

In the preamble to the February 25 promulgation, the Administrator indicated that he would publish guidelines setting forth traffic flow characteristics which may be used in analyzing the carbon monoxide impact of indirect sources. Accordingly, the Agency is publishing Guidelines for the Review of the Impact of Indirect Sources on Ambient Air Quality which specify the analytical techniques the Agency will frequently use in determining the air quality impact of an indirect source on localized carbon monoxide concentrations. (See discussion under #12 above.)

These guidelines will be available for inspection and distribution at each Re-

l Office as well as the EPA Freedom formation Center, 401 M Street, Washington, D.C. 20460. As is true ny guidelines setting forth the cy's procedures or practices, EPA mes any relevant written comments ing to these guidelines at any time. ested persons may submit written nents to the Monitoring and Data ysis Division, Environmental Pro- on Agency, Research Triangle Park, 27711.

e main body of the Guidelines con- a simplified methodology which es certain key traffic flow charac- tics to local carbon monoxide entrations. Nine appendices are also ded for conducting a more complete ysis, if necessary, of the impact of ndirect source on ambient air qual- Seven of the appendices discuss hods for estimating emissions from different types of indirect sources, eighth discusses the use of dispersion dels which may be used in such an lysis as well as methods for estimat- background concentrations, and the h appendix provides a compilation of rect source monitoring studies. The delines also include a discussion of eral considerations for improving fic flow characteristics, thus minimiz- a facility's potential to contribute to olation of the national standards for on monoxide.

ADMINISTRATIVE PROCEDURES AND DELEGATION

ere the Administrator has not dele- the responsibility for implement- § 52.22(b) for indirect source review State or local agency, the implemen- on of the regulation will be the re- nsibility of the appropriate EPA Re- nal Administrator. A list of the States ered by each Regional Office and the ional Office addresses are set forth 52.16 of Part 52. Questions concern- the applicability of the regulation any other inquiries should be di- ted to the appropriate Regional Of- Application forms should be re- sted from the Regional Office and urned there for review. Since forms not be available immediately, early licants should contact the appro- ate Regional Office for interim advice cerning the format for application. se applicants wishing to submit the lts of diffusion modeling or other lytical technique in support of their lication are urged to contact the Re- nal Office first to discuss the appro- te input parameters and receptor s which are of critical interest.

With respect to highways and airports, s expected that all necessary techni- data will be available in an Environ- ntal Impact Statement (EIS) pre- ed pursuant to the National Environ- ntal Policy Act (42 U.S.C. 4321). In h cases, all that is necessary to make lication is a letter to the appropriate gional Administrator from the initiat- agency, accompanied by the EIS if reviously submitted, requesting per- on to construct. If additional data required, the Regional Office will notify the applicant within 20 days after receipt of the request.

Normally, the draft EIS for highway projects is prepared after the general corridor has been defined but before a specific location has been selected. A draft EIS is circulated on the various location alternatives and a public hearing is held on the EIS. Depending on the comments received, the State highway agency may decide to abandon the project due to its adverse environmental consequences, re-draft the EIS to contain additional alternatives, or issue the final EIS on the alternatives considered in the draft. Following the issuance of the final EIS, the State highway agency generally proceeds with the following steps leading to the eventual construction of the highway: selects preferred alternative; performs detailed highway design and development of specifications; holds design hearing; obtains approval and funding commitment from the Federal Highway Administration; acquires right-of-way land and appropriate easements; advertises for and analyzes bids; and awards construction contracts.

The application for approval under the indirect source regulations would normally be made as early in the above process as the necessary data are available, which would not be earlier than the location study phase. The highway agency may, of course, make application at any later phase prior to actual commencement of construction. Although the Administrator would prefer to consider only the selected alternative based on the final EIS, he will provide the highway agency with a decision on each of the alternatives specifically analyzed in the draft EIS. In addition, review based on the draft EIS coincides with EPA's present procedures for review and rating of EIS's. Although not required, the Administrator urges States or local agencies accepting delegation of these regulations to utilize administrative procedures similar to those outlined above.

The Administrator reiterates his desire to delegate the indirect source review procedures to States and/or local governments. States will soon be receiving communications from EPA's regional offices containing more details regarding delegation.

If a State agency has not officially requested delegation, the Administrator will entertain requests from local agencies. Local agencies may inquire about delegation procedures at the appropriate EPA Regional Offices. However, no delegation will be made directly to a local agency if a State agency has already received delegation. In addition to the guidance provided on February 25, 1974, as to what type of agency should receive delegation, the Administrator feels there are certain agencies which should not be delegated review responsibility where a conflict of interest could be created. For example, the Administrator will not delegate the indirect source review to agencies, such as State highway agencies, which are substantially responsible for originating projects subject to review under these regulations.

Since the amendments being published today are in response to public comments based upon the regulation published in February and review is to begin under the regulation immediately, the Administrator finds good cause not to subject the amendments to further public comment before finalization as such procedure would be unnecessary and impracticable. Appendix A is being promulgated in final form because interpretative rulings are exempt from the notice and public comment requirements of the Administrative Procedure Act. For the convenience of applicants, reviewing officials, and all other interested persons, the regulation is being reprinted in its entirety in its amended form. (Sections 110(a)(2)(B), 110(c), and 301(a) of the Clean Air Act, as amended (42 U.S.C. 1857c-5(a)(2)(B), 1857c-5(c), and 1857g(a)).)

Dated: June 28, 1974.

JOHN QUARLES,
Acting Administrator.

Part 52 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

In § 52.22, paragraph (b) is revised to read as follows:

§ 52.22 Maintenance of standards.

* * * * *

(b) *Regulation for review of new or modified indirect sources.*

(1) All terms used in this paragraph but not specifically defined below shall have the meaning given them in § 52.01 of this chapter.

(i) The term "indirect source" means a facility, building, structure, or installation which attracts or may attract mobile source activity that results in emissions of a pollutant for which there is a national standard. Such indirect sources include, but are not limited to:

(*a*) Highways and roads.

(*b*) Parking facilities.

(*c*) Retail, commercial and industrial facilities.

(*d*) Recreation, amusement, sports and entertainment facilities.

(*e*) Airports.

(*f*) Office and Government buildings.

(*g*) Apartment and condominium buildings.

(*h*) Education facilities.

(ii) The term "Administrator" means the Administrator of the Environmental Protection Agency or his designated agent.

(iii) The term "associated parking area" means a parking facility or facilities owned and/or operated in conjunction with an indirect source.

(iv) The term "aircraft operation" means an aircraft take-off or landing.

(v) The phrase "to commence construction" means to engage in a continuous program of on-site construction including site clearance, grading, dredging, or land filling specifically designed for an indirect source in preparation for the fabrication, erection, or installation

ie building components of the indi-
source. For the purpose of this para-
n, interruptions resulting from acts
od, strikes, litigation, or other mat-
beyond the control of the owner
be disregarded in determining
ner a construction or modification
ram is continuous.

i) The phrase "to commence modi-
ion" means to engage in a continu-
program of on-site modification, in-
ing site clearance, grading, dredging,
and filling in preparation for a spe-
modification of the indirect source.

ii) The term "highway section"
ns the development proposal of a
way of substantial length between
al termini (major crossroads, popu-
n centers, major traffic generators,
milar major highway control ele-
ts) as normally included in a single
ion study or multi-year highway
ovement program as set forth in 23
770.201 (38 FR 31677).

iii) The term "highway project"
ns all or a portion of a highway sec-
which would result in a specific con-
ction contract.

c) The term "Standard Metropoli-
Statistical Area (SMSA)" means
areas as designated by the U.S. Bu-
of the Budget in the following pub-
ion: "Standard Metropolitan Statis-
Area," issued in 1967, with subse-
t amendments.

) The requirements of this para-
h are applicable to the following:

) In an SMSA:

Any new parking facility, or other
indirect source with an associated
ing area, which has a new parking
city of 1,000 cars or more; or

) Any modified parking facility, or
modification of an associated park-
area, which increases parking ca-
ty by 500 cars or more; or

) Any new highway project with an
cipated average annual daily traffic
me of 20,000 or more vehicles per day
in ten years of construction; or

) Any modified highway project
h will increase average annual daily
ic volume by 10,000 or more vehicles
day within ten years after
lication.

) Outside an SMSA:

) Any new parking facility, or other
indirect source with an associated
ing area, which has a parking ca-
y of 2,000 cars or more; or

) Any modified parking facility, or
modification of an associated park-
area, which increases parking ca-
y by 1,000 cars or more.

) Any airport, the construction or
al modification program of which
pected to result in the following
ity within ten years of construction
odification:

New airport: 50,000 or more opera-
per year by regularly scheduled
arriers, or use by 1,600,000 or more
ngers per year.

Modified airport: Increase of
or more operations per year by
rly scheduled air carriers over the
ng volume of operations, or increase
of 1,600,000 or more passengers per year.

(iv) Where an indirect source is constructed or modified in increments which individually are not subject to review under this paragraph, and which are not part of a program of construction or modification in planned incremental phases approved by the Administrator, all such increments commenced after December 31, 1974, or after the latest approval hereunder, whichever date is most recent, shall be added together for determining the applicability of this paragraph.

(3) No owner or operator of an indirect source subject to this paragraph shall commence construction or modification of such source after December 31, 1974, without first obtaining approval from the Administrator. Application for approval to construct or modify shall be by means prescribed by the Administrator, and shall include a copy of any draft or final environmental impact statement which has been prepared pursuant to the National Environmental Policy Act (42 U.S.C. 4321). If not included in such environmental impact statement, the Administrator may request the following information:

(i) For all indirect sources subject to this paragraph, other than highway projects:

(a) The name and address of the applicant.

(b) A map showing the location of the site of indirect source and the topography of the area.

(c) A description of the proposed use of the site, including the normal hours of operation of the facility, and the general types of activities to be operated therein.

(d) A site plan showing the location of associated parking areas, points of motor vehicle ingress and egress to and from the site and its associated parking areas, and the location and height of buildings on the site.

(e) An identification of the principal roads, highways, and intersections that will be used by motor vehicles moving to or from the indirect source.

(f) An estimate, as of the first year after the date the indirect source will be substantially complete and operational, of the average daily traffic volumes, maximum traffic volumes for one-hour and eight-hour periods, and vehicle capacities of the principal roads, highways, and intersections identified pursuant to subdivision (i)(e) of this subparagraph located within one-fourth mile of all boundaries of the site:

(g) Availability of existing and projected mass transit to service the site.

(h) Where approval is sought for indirect sources to be constructed in incremental phases, the information required by this subparagraph (3) shall be submitted for each phase of the construction project.

(i) Any additional information or documentation that the Administrator deems necessary to determine the air quality impact of the indirect source, including the submission of measured air quality data at the proposed site prior to construction or modification.

(ii) For airports:

(a) An estimate of the average number and maximum number of aircraft operations per day by type of aircraft during the first, fifth and tenth years after the date of expected completion.

(b) A description of the commercial, industrial, residential and other development that the applicant expects will occur within three miles of the perimeter of the airport within the first five and the first ten years after the date of expected completion.

(c) Expected passenger loadings at the airport.

(d) The information required under subdivisions (i) (a) through (i) of this subparagraph.

(iii) For highway projects:

(a) A description of the average and maximum traffic volumes for one, eight, and 24-hour time period expected within 10 years of date of expected completion.

(b) An estimate of vehicle speeds for average and maximum traffic volume conditions and the vehicle capacity of the highway project.

(c) A map showing the location of the highway project, including the location of buildings along the right-of-way.

(d) A description of the general features of the highway project and associated right-of-way, including the approximate height of buildings adjacent to the highway.

(e) Any additional information or documentation that the Administrator deems necessary to determine the air quality impact of the indirect source, including the submission of measured air quality data at the proposed site prior to construction or modification.

(iv) For indirect sources other than airports and those highway projects subject to the provisions of paragraph (b)(6)(iii) of this section, the air quality monitoring requirements of paragraph (b)(3)(i)(i) of this section shall be limited to carbon monoxide, and shall be conducted for a period of not more than 14 days.

(4)(i) For indirect sources other than highway projects and airports, the Administrator shall not approve an application to construct or modify if he determines that the indirect source will:

(a) Cause a violation of the control strategy of any applicable state implementation plan; or

(b) Cause or exacerbate a violation of the national standards for carbon monoxide in any region or portion thereof.

(ii) The Administrator shall make the determination pursuant to paragraph (b)(4)(i)(b) of this section by evaluating the anticipated concentration of carbon monoxide at reasonable receptor or exposure sites which will be affected by the mobile source activity expected to be attracted by the indirect source. Such determination may be made by using traffic flow characteristic guidelines published by the Environmental Protection Agency which relate traffic demand and capacity considerations to ambient car-

monoxide impact, by use of appro- atmospheric diffusion models (ex- s of which are referenced in Ap- x 0 to Part 51 of this chapter), r by any other reliable analytic od. The applicant may (but need submit with his application, the re- of an appropriate diffusion model r any other reliable analytic od, along with the technical data information supporting such results. such results and supporting data itted by the applicant shall be con- ed by the Administrator in making etermination pursuant to paragraph 4) (i) (b) of this section.

(i) For airports subject to this graph, the Administrator shall base decision on the approval or disap- al of an application on the consid- ons to be published as an Appendix is Part.

) For highway projects and park- acilities specified under paragraph 2) of this section which are asso- d with airports, the requirements procedures specified in paragraphs 4) and (6) (i) and (ii) of this sec- shall be met.

(i) For all highway projects sub- o this paragraph, the Administra- hall not approve an application to ruct or modify if he determines that ndirect source will:

Cause a violation of the control egy of any applicable state imple- ation plan; or

Cause or exacerbate a violation of national standards for carbon xide in any region or portion of.

) The determination pursuant to graph (b) (6) (i) (b) of this section be made by evaluating the antic- d concentration of carbon monox- at reasonable receptor or exposure which will be affected by the mobile ce activity expected on the highway he ten year period following the ex- d date of completion according to procedures specified in paragraph 4) (ii) of this section.

i) For new highway projects sub- to this paragraph with an antici- d average daily traffic volume of 0 or more vehicles within ten years nstruction, or modifications to high- projects subject to this paragraph n will increase average daily traffic ne by 25,000 or more vehicles within ears after modification, the Admin- tor's decision on the approval or dis- oval of an application shall be based e considerations to be published as ppendix to this Part in addition to equirements of paragraph (b) (6) (i) is section.

The determination of the air qual- npact of a proposed indirect source easonable receptor or exposure sites" mean such locations where people t reasonably be exposed for time ds consistent with the national am- air quality standards for the pollut- specified for analysis pursuant to paragraph.

) (i) Within 20 days after receipt of pplication or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of paragraph (b) (8) (ii) of this section shall be the date on which all required information is received by the Administrator.

(ii) Within 30 days after receipt of a complete application, the Administrator shall;

(a) Make a preliminary determination whether the indirect source should be approved, approved with conditions in accordance with paragraphs (b) (9) or (10) of this section, or disapproved.

(b) Make available in at least one location in each region in which the proposed indirect source would be constructed, a copy of all materials submitted by the owner or operator, a copy of the Administrator's preliminary determination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(c) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed indirect source would be constructed, of the opportunity for written public comment on the information submitted by the owner or operator and the Administrator's preliminary determination on the approvability of the indirect source.

(iii) A copy of the notice required pursuant to this subparagraph shall be sent to the applicant and to officials and agencies having cognizance over the location where the indirect source will be situated, as follows: State and local air pollution control agencies, the chief executive of the city and county; any comprehensive regional land use planning agency; and for highways, any local board or committee charged with responsibility for activities in the conduct of the urban transportation planning process (3-C process) pursuant to 23 U.S.C. 134.

(iv) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in making his final decision on the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the indirect source would be located.

(v) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the application, and shall set forth his reasons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the indirect source would be located.

(vi) The Administrator may extend each of the time periods specified in paragraphs (b) (8) (ii), (iv), or (v) of this section by no more than 30 days, or such other period as agreed to by the applicant and the Administrator.

(9) (i) Whenever an indirect source as proposed by an owner or operator's application would not be permitted to be constructed for failure to meet the tests set forth pursuant to paragraphs (b) (4) (i), (b) (5) (i), or (b) (6) (i) and (iii) of this section, the Administrator may impose reasonable conditions on an approval related to the air quality aspects of the proposed indirect source so that such source, if constructed or modified in accordance with such conditions, could meet the tests set forth pursuant to paragraphs (b) (4) (i), (b) (5) (i), or (b) (6) (i) and (iii) of this section. Such conditions may include, but not be limited to:

(a) Binding commitments to roadway improvements or additional mass transit facilities to serve the indirect source secured by the owner or operator from governmental agencies having jurisdiction thereof;

(b) Binding commitments by the owner or operator to specific programs for mass transit incentives for the employees and patrons of the source; and

(c) Binding commitments by the owner or operator to construct, modify, or operate the indirect source in such a manner as may be necessary to achieve the traffic flow characteristics published by the Environmental Protection Agency pursuant to paragraph (b) (4) (ii) of this section.

(ii) The Administrator may specify that any items of information provided in an application for approval related to the operation of an indirect source which may affect the source's air quality impact shall be considered permit conditions.

(10) Notwithstanding the provisions relating to modified indirect sources contained in paragraph (b) (2) of this section, the Administrator may condition any approval by reducing the extent to which the indirect source may be further modified without resubmission for approval under this paragraph.

(11) Any owner or operator who fails to construct an indirect source in accordance with the application as approved by the Administrator; any owner or operator who fails to construct and operate an indirect source in accordance with conditions imposed by the Administrator under paragraph (b) (9); any owner or operator who modifies an indirect source in violation of conditions imposed by the Administrator under paragraph (b) (10); or any owner or operator of an indirect source subject to this paragraph who commences construction or modification thereof after December 31, 1974, without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act. Subsequent modification to an approved indirect source may be made without applying for permission

suant to this paragraph only where modification would not violate any tion imposed pursuant to paragraphs (8) (9) and (10) of this section would not be subject to the modification criteria set forth in paragraph (b) of this section.

(12) Approval to construct or modify ll become invalid if construction or ification is not commenced within months after receipt of such approval. e Administrator may extend such e period upon a satisfactory showing t an extension is justified. The applint may apply for such an extension the time of initial application or at y time thereafter.

(13) Approval to construct or modify ll not relieve any owner or operator the responsibility to comply with the trol strategy and all local, State and eral regulations which are part of applicable State implementation n.

(14) Where the Administrator deleges the responsibility for implementing procedures for conducting indirect rce review pursuant to this paraph to any agency, other than a real office of the Environmental Proion Agency, the following provisions ll apply:

(i) Where the agency designated is not air pollution control agency, such ncy shall consult with the appropate State or local air pollution con agency prior to making any deteration required by paragraphs (b)(4), or (6) of this section. Similarly, re the agency designated does not ve continuing responsibilities for land planning, such agency shall consult h the appropriate State or local land and transportation planning agency or to making any determination reed by paragraph (b)(9) of this secn.

(ii) The Administrator of the Environntal Protection Agency shall conduct indirect source review pursuant to s paragraph for any indirect source ned or operated by the United States vernment.

(iii) A copy of the notice required rsuant to paragraph (b)(8)(ii)(c) of s section shall be sent to the Adminrator through the appropriate Reonal Office.

(15) In any area in which a "maneement of parking supply" regulation ch has been promulgated by the Adnistrator is in effect, indirect sources ch are subject to review under the ms of such a regulation shall not be uired to seek review under this paraph but instead shall be required to k review pursuant to such management of parking supply regulation. For rposes of this paragraph, a "management of parking supply" regulation shall any regulation promulgated by the ministrator as part of a transportan control plan pursuant to the Clean Act which requires that any new or fied facility containing a given num of parking spaces shall receive a mit or other prior approval, issuance of which is to be conditioned on air quality considerations.

[NOTE: Interpretative rulings regarding the above paragraph are published in Appendix A to this Part.]

APPENDIX A—INTERPRETATIVE RULINGS FOR § 52.22(b)—REGULATION FOR REVIEW OF NEW OR MODIFIED INDIRECT SOURCES

The purpose of this appendix is to set forth certain basic interpretations of the regulation for the review of new or modified indirect sources in § 52.22(b). It is not possible to issue an interpretative ruling which will answer precisely every question that will come up in the administration of that regulation. Many questions concerning whether a facility is subject to review must necessarily be answered on a case-by-case basis. Those administering the indirect source regulation should resolve doubts and close cases in favor of review since the regulation's intent is to review all indirect sources except those clearly and specifically exempted.

Since cases may arise in which developers plan to construct projects which they feel are exempt but which may be arguably subject to the regulation, developers may apply for a determination of applicability ruling from EPA to achieve a greater degree of certainty in proceeding with their projects. Such rulings should be requested in writing from the appropriate regional offices. Requests should fully recite the facts upon which the developer believes the exemption is based. In appropriate cases a ruling will be issued which will be strictly limited to the facts as understood by the Agency. If construction commences in circumstances under which any material fact is at variance with those represented in the ruling request or if a material fact were omitted from the request, then the ruling would be rendered inoperative.

One caveat should precede these interpretative rulings: the following is the Administrator's interpretation of his own regulation, 40 CFR 52.22(b). States which develop their own regulations which may be approved under 40 CFR 51.18 are not bound to interpret their regulations in the same manner, so long as their regulations operate to insure that the national standards will not be violated as a result of the construction of a new indirect source.

(1) The basic focus of the regulation is to review a new facility which will have an associated parking area of the requisite number of parking spaces. The list contained in 40 CFR 52.22(b)(1)(i) is merely a set of examples and should not be overemphasized. The key to determining which facilities must be reviewed is in paragraph (b)(2), which requires review of "a new parking facility, or other new indirect source with an associated parking area" of the requisite size. Thus, in every case, the most important factor will be to determine whether an "associated parking area" of the requisite size is to be "owned and/or operated in conjunction with" a facility. To be an "associated parking area" within the intent of the regulation, the area must be a separate and discrete localized facility associated with a particular indirect source.

(2) A major area development, such as an urban renewal project, industrial park, new town, or large residential development, is not considered an indirect source itself. Rather, such a project may contain a number of indirect sources, some of which may require preconstruction review under the regulation. For example, assume that twelve blocks of a city within an SMSA are being reconstructed pursuant to a redevelopment plan and within the twelve blocks there is to be a municipal auditorium with 1,500 parking spaces underneath it, an apartment building with 300 parking spaces adjacent to it to serve its residents, a 1,200-space municipal parking garage, many townhouses with single or double private garages for the use of their owners, and 500 spaces for curbside on-street parking. The municipal auditorium and the municipal garage will each be subject to the regulation as a separate indirect source since each will have a separate and discrete associated parking area of 1,000 spaces or more. The redevelopment project itself is not an "indirect source" subject to review under the regulation, however, merely because it includes in the aggregate more than 1,000 spaces. The construction, 5 years later, of a new apartment building with an associated parking area of 600 cars within the urban renewal area will not trigger review under the regulation. First, this is not a modification of an associated parking area but rather a new separate and discrete parking area. Second, this is not an increment under § 52.22(b)(2)(iv) since it is not an addition to an existing "indirect source" within the contemplation of the regulation. On the other hand, if 500 spaces are later added to the apartment building's parking facility, this is a modification to a particular facility which triggers review. Similarly, additional spaces added to such facility from time to time will be considered as increments to that facility within the contemplation of § 52.22(b)(2)(iv).

(3) The phrase "or facilities" is included in § 52.22(b)(1)(iii) to assure that mere physical barriers between parking areas serving a single indirect source will not operate to exclude from review what is in essence a discrete associated parking area for a single source. For example, a shopping mall which is to be constructed with 500 parking spaces on the north side of the mall and 500 spaces on the south, even though the two parking "facilities" are physically separate and do not have connecting roads between them, will be considered to have an "associated parking area" of 1,000 spaces.

(4) The term "owned and/or operated in conjunction with" which is used to define an associated parking area is intended to convey an operational test as to whether a particular parking area serves a particular facility under a common scheme ownership and/or operation. Thus,

Two parking facilities owned by ame person which are located in ent areas of a city will not be con- ed a single associated parking area.

) Parking facilities which are for- usly constructed near an indirect e but over which the owner or tor of the source has no control, which are not constructed pursuant understanding by which the facility erve the indirect source, will not be dered an "associated parking area" e source. For example, if a developer ructs a shopping center with 600 ding spaces and a municipality erects 0-space parking garage adjacent to center completely independent of shopping center development, there ot a single 1100-space associated ing area within the contemplation e regulation. However, if such park- garage were constructed pursuant to xplicit or even implied agreement to the shopping center, it would be dered part of the center's "asso- d parking area."

) It is not necessary for an "as- ted parking area" to be directly con- ous to an indirect source to cause source to be subject to review. For nce, a developer could not avoid ew by constructing a large retail lity on one side of the street with rking spaces immediately adjacent it, and constructing a 960-space ding facility across the street. All 0 spaces would be treated as an "as- ted parking area" within the con- ation of § 52.22(b)(1)(iii) since are owned and/or operated in con- ction with a particular indirect rce. On the other hand, parking fa- ies located across the street from other which serve two sepa- indirect sources would not constitute gle "associated parking area."

) The following is a clarification of a ber of issues concerning the phased elopment of individual indirect rces and of major area developments, as an urban renewal project.

) In all cases applicants are allowed, in fact encouraged, to apply for ap- al of all phases of the project at same time, so long as all the informa- required for the reviewing agency to orm an air quality impact analysis ovided.

) Since a major area development is n itself a discrete indirect source sub- to review under the regulation, com- cement of construction of one phase ich development or of a single facil- within the development prior to 1975 not operate to exempt subsequent rect sources within such overall de- pment plan which commence con- ction after 1974.

ii) In the phased development of a le indirect source, if construction for initial phase commences prior to 5, additional phases would be con- red modifications or increments and would require review only by addition of the requisite number of parking spaces. For example, assume that a shopping center with a 3000-space parking area began construction prior to 1975 and was to have four major "anchor" department stores in addition to dozens of smaller retail and service establishments. The plan is to build the bulk of the shopping center in the first phase, including the entire parking area, and to build two of the "anchor" stores in the second phase some time after the center begins operation. Neither phase of construction of this shopping center would require indirect source review since the first phase of construction began prior to 1975, and the second phase did not provide for the addition of the requisite number of parking spaces.

(iv) Similarly, in the phased development of a single indirect source, a break in construction between phases would not make the construction which commenced prior to 1975 "noncontinuous" and therefore subject the entire project to indirect source review, because in essence a single source (the result of the first phase) was constructed in a continuous process which commenced prior to 1975. For example, neither phase of the shopping center discussed above would be subject to review simply because there was a break in construction between the distinct phases.

(v) In cases where applicants apply for approval of all phases of a project at the same time, the information required by § 52.22(b)(3) must be submitted for each phase of the development. It is necessary that the air quality analysis be performed for each phase as it opens and not merely for the last phase. For example, assume that analysis of a phased project indicated that operation of the facility following completion of the first phase would cause a violation of the national standards, but operation following completion of the following phases would not. Approval of the project would not be granted until essential design or operational changes were made to the first phase so that the national standards would not be violated.

(7) Demolition can be considered to be a form of "site clearance" as that term is used in the definitions of the phrases "to commence construction" and "to commence modification" in § 52.22(b)(1)(v) and (vi). It is important to note, however, that demolition prior to 1975 will serve to exempt a project only where it is part of a continuous program of construction specifically designed for a particular indirect source. Thus, where a developer demolishes a structure on a particular site in 1973, then does no further physical site work until 1975, a source constructed on that site will not be exempt from review merely because the site clearance began in 1973.

(8) The *force majeure* language in § 52.22(b)(1)(v) (acts of God, litigation, strikes, etc.) applies only in the determination of whether construction of an indirect source is "continuous." Thus,

(i) The fact that construction failed to commence at all prior to 1975 because of force majeure reasons is irrelevant. Actual physical site work must commence in a continuous course before 1975 for the exemption to be valid.

(ii) Only breaks in construction attributable solely to the enumerated force majeure reasons will be considered in determining whether a project is exempt. For example, assume a developer demolished a site in 1973 and for business or other reasons discontinued actual physical construction, then planned to commence continuous construction on the site in mid-1974 but was prevented from doing so until 1975 because of litigation. The source would not be exempted from review since factors other than the force majeure reasons played a role in rendering the construction non-continuous.

(9) Section 52.22(b)(2) requires review of "any new parking facility, or other new indirect source with an associated parking area." Thus, if either the parking facility or the indirect source with the associated parking area are new, an indirect source review would be necessary. For example, if a developer who has operated a large surface parking lot for several years decided to construct an office building on part of the lot while retaining the remainder to serve as the parking lot for the building, the project would be required to undergo preconstruction review as a new indirect source. Another example is the demolition or accidental destruction of an indirect source followed by the construction of similar facility on the same parcel of land using the same parking lot. Again this new indirect source would be required to undergo preconstruction review.

(10) Indirect source approvals are fully transferable between successive owners of the property for which an approval is granted so long as the indirect source is constructed and/or modified fully in accordance with the approved application and all conditions thereto.

(11) Section 52.22(b)(9) provides that the reviewing agency may specify any operating factor which could affect air quality as a condition to approval of the permit application. Conditions which must be considered when necessary to insure attainment and maintenance of the national standards are:

(i) A requirement that the facility, or any incremental development phase, not be opened for business prior to the date specified by the reviewing agency.

(ii) Specification of the type and degree of further modification that would be subject to another review. This may include specification of fewer parking spaces than required by § 52.22(b)(2) or specifying certain structural or use changes which may increase traffic associated with the indirect source.

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Parking Management Brief

The following paragraphs summarize the regulations, requirements and procedures under EPA's Parking Management review program. For a more detailed account of parking management see the original transportation control plans which contain the effective regulations, and see the August 22, 1974 Federal Register (29 FR 304401) which sets forth proposed amendments to these regulations.

Parking Management Areas

Parking management is a component of Transportation Control Plans designed to provide the necessary control of photochemical oxidants (smog) and carbon monoxide as required under the Clean Air Act for attainment of National Ambient Air Quality Standards (See Chart 1). The management of parking supply regulation requires explicit consideration of air quality impacts before construction of certain specified new parking facilities can proceed. The amendments proposed on August 22, 1974 provide clarifications and slight modifications necessary for their successful implementation as well as some additional approaches for VMT and CO impact analyses. The following areas have regulations for management of parking supply, covering new or modified facilities larger than the sizes stipulated:

Areas Covered by Parking Management	Size Restrictions
Alaska	
Fairbanks Area	10
Arizona	
Phoenix Area	250
Tucson Area	250

California

Fresno and San Joaquin Valley Area	250
Los Angeles Area	250
Sacramento Valley Area	250
San Diego Area	250
San Francisco Area	250

District of Columbia Interstate Area

Washington, D.C.	250
Maryland Suburbs	250
Virginia Suburbs	250

Maryland

Baltimore	250
(Suburbs of D.C. listed under D.C. Interstate)	

Massachusetts

Boston Area	250 (outside the core area)

New Jersey

Suburbs of New York City	250
New Jersey Suburbs of Philadelphia	250

Pennsylvania

Philadelphia Area	250
Pittsburgh Area	250

Texas

Houston	500

Virginia

(Suburbs of D.C. listed under D.C. Interstate)

For exact boundary locations of the above listed cities see the Transportation Control Plan for that State.

Four additional areas which have parking management regulations are not covered by the August proposed amendments. These are: Denver, Colorado;

Portland, Oregon; and Seattle and Spokane, Washington. These cities either are developing their own procedures or already have approved procedures which limits the need for EPA involvement as provided in the regulations.

In no city will parking facilities have to undergo review under both parking management and indirect source regulations. In the above areas, these requirements are combined into a single review under the parking management program; elsewhere parking facilities are covered by the indirect source review regulations. Appropriate application forms may be obtained from the EPA Regional Office in your area and returned to them for review. All questions concerning parking management should be directed to the appropriate Regional Office official listed on the attachment to this brief.

Purpose

The specific purpose of the parking management regulations is to 1) reduce the areawide growth in Vehicle Miles Traveled (VMT) so as to contribute to achievement of photochemical oxidant and/or carbon monoxide standards; and 2) assure that congestion associated with operation of a new parking facility does not cause or exacerbate a violation of carbon monoxide standards.

In order to reach these objectives procedures for pre-construction review of new facilities have been established. To receive approval an owner or operator of a parking facility must demonstrate that: 1) the proposed facility will not cause or exacerbate a violation of any national ambient air quality standard; and 2) the proposed facility will not violate the

vehicle miles travelled control strategy contained in the applicable transportation control plan.

Applicants who plan to construct new parking facilities or modify existing ones above the specified limits after January 1, 1975 must first comply with defined review procedures before a permit to construct may be issued.

Review Process

The review process is as follows (see Chart 2)

1. Receipt of application and determination of completeness. Within twenty days of receipt of the application a determination as to completeness will be made. The Administrator will advise the applicant of any deficiency in the application. If a deficiency exists, the applicant will be asked to supply additional information, and the date on which the additional material is received shall become the offical application date.

2. Preliminary Determination of Approval. Within thirty days of receipt of the application, a preliminary determination of approval, conditional approval or disapproval will be made. The application and preliminary determination will be posted in the regional office and in the area where the proposed facility is to be built.

3. Public Comment. Following the preliminary determination and public notice, a thirty day period will be provided for public comment. Copies of the application and the preliminary determination will be sent to the officials and agencies (state and local air pollution offices, city and county executives, etc.) in the region where the facility is proposed. At the close of the period, all comments will be made public. Public notification of the availability of

these documents will be made through a prominent advertisement in a major newspaper in the region. At the end of this comment period, developers will have ten days in which to respond to the comment.

4. Final Determination. The final determination must be made within thirty days after the close of the comment period. The application will be either approved, disapproved, or conditionally approved. A conditional approval will be granted where it is agreed that additional action will be taken such that the facility's impact on air quality is sufficiently minimized. A disapproval will be issued if it is found that the project is not compatible with efforts to meet the air quality objectives in the affected area.

5. Except where the applicant and Administrator agree, all of the above time periods may be extended no more than thirty days.

Upon approval, EPA will issue a permit. This permit will be valid throughout the construction period of the facility and thereafter during its subsequent operation. If the construction or modification of the proposed facility has not begun within eighteen months after the approval, the permit becomes invalid. In order to begin construction after expiration of the permit, reapplication to EPA must be made. This permit only refers to national air quality standards and does not exempt the applicant from meeting other state, local or Federal regulations and requirements. Further, such approvals are considered to be fully transferable between successive owners of property for which an approval is granted so long as the facility is constructed and/or modified in full accordance with the approved application and its conditions.

Review Techniques

It is the Administrator's desire that state and local governments will take responsibility for this program. This can be done in one of two ways. First, EPA can delegate its review and enforcement authority to state or local governmental bodies. The Administrator may approve a request for review and enforcement authority if the following conditions are met: a) any final action of the delegated must have binding legal authority in the jurisdiction of the proposed facility; b) the delegated agency must have legal authority to enforce its actions under the regulations or be willing to enforce such actions. A second method for delegation is for State and local governments to develop their own parking management plan which, after EPA approval, would replace the need for Federal or local action under the parking management regulations. State and local governments are encouraged to submit parking management plans for EPA approval at any time.

Until such delegation of approval has been made, the EPA Regional Offices will conduct a facility-by-facility parking review (see Chart 3). This review includes two different considerations: 1) demonstration of consistency with the area's VMT control strategy and 2) demonstration of noninterference with attainment and maintenance of the national carbon monoxide standards.

Under the existing regulations an applicant can select from two alternate methods to demonstrate consistency with the VMT control strategy. The first is certification that the proposed facility will result in a net decrease in VMT by its very nature (e.g., park-and-ride lots). Second, the applicant may quantify the vehicles miles traveled which will be associated with the new facility. Through modeling (origin and destination studies, gravity models, etc.) an applicant may show consistency with the VMT control strategy (that

highest parking cost-lowest parking supply alternative. Since a great number of automobiles would be left in these peripheral lots, further increases in area-wide VMT could be avoided.

Although broader in scope, this study is consistent with the university simulation and St. Mary's studies. Examined as a whole, these and similar studies[5] show that parking management actions, both by individual trip generators and governmental units, can decrease VMT. This effect can be maximized through area wide transportation policies which can provide alternative modes of travel.

THE NEED FOR A BALANCED TRANSPORTATION STRATEGY

In surveying these transportation models, it becomes evident that parking management means more than a quantitative decrease in parking supply. Studies such as the university simulation and the Los Angeles CBD models, in addition to studies of actual experiences such as the Pittsburgh parking strike discussed below, conclude that the addition of good public transit plays a vital role in decreasing VMT. Employer experience indicates that higher occupancy private transportation is also a vital element in getting employees to places of work without increasing parking. In short, it can be concluded that the availability of alternative modes is of great importance for the effectiveness of parking management in reducing VMT.

Carpools and other forms of private transit are examples of other modes which a person can choose. While specific models have not been developed to predict the effects of a decrease in parking supply on carpooling, vanpooling, etc., enough actual experience exists to demonstrate a definite relationship. Some of these experiences are documented in a

later section.

Public transit is another important alternative to increased amounts of parking space. The importance is shown by a survey conducted of motorists parking in central London.[6] They were asked the following question: "If it was impossible to find a parking place in Central London would you (a) use public transport; (b) use a taxi; (c) walk or bicycle; or (d) not make the journey?" The results are reported in Table 1:

Table 1

	Percentage of Responses
would use public transport	62
would use taxi	16
would walk or bicycle	5
would not make the journey	13
car essential	4
	100

Although carpooling was not an alternative offered, the results show that, significantly, 62 percent would switch to public transit. Only four percent replied that their journey was essential and could only be made by car. The survey indicates that public transport, if available, would be used.

Further indication that public transit can offset the need for additional parking space construction comes from a Baltimore study.[7] An analysis of the impact of 1985 Baltimore CBD parking space demands expected to result from the planned regional rapid transit system and recommended park-and-ride facilities in CBD fringe or outlying locations,

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ENVIRONMENTAL PROTECTION AGENCY

■

PARKING MANAGEMENT REGULATIONS

Proposed Rules

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 52]

[FRL 252-5]

APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

Proposed Amendments to Parking Management Regulations

Between November 6 and December 12, 1973, the Environmental Protection Agency, acting under court order, promulgated or approved transportation control plans for 30 major urban areas as part of the State Implementation Plans. These transportation plans are designed to help provide the necessary control of photochemical oxidants (smog) and carbon monoxide required under the Clean Air Act for attainment of National Ambient Air Quality Standards established to protect the public health and welfare. Many of these transportation control plans include a management of parking supply regulation which requires explicit consideration of air quality impacts before construction of certain specified new parking facilities can proceed. Today, the Administrator is proposing amendments to these regulations which provide clarifications and slight modifications necessary for their successful implementation.

The areas having management of parking supply regulations covered by these amendments include:

Alaska:
- Fairbanks Area

Arizona:
- Phoenix Area
- Tucson Area

California:
- Fresno and San Joaquin Valley Area
- Los Angeles Area
- Sacramento Valley Area
- San Diego Area
- San Francisco Area

District of Columbia Interstate Area:
- Washington, D.C.
- Maryland Suburbs
- Virginia Suburbs

Maryland:
- Baltimore Area
- (Suburbs of D.C. listed under D.C. Interstate)

Massachusetts:
- Boston Area

New Jersey:
- Suburbs of New York City
- New Jersey Suburbs of Philadelphia (Camden, Trenton)

Pennsylvania:
- Philadelphia Area
- Pittsburgh Area

Texas:
- Houston

Virginia:
- (Suburbs of D.C. listed under D.C. Interstate)

Four additional areas which have parking management regulations set forth either by the State or EPA are not covered by the amendments being proposed today. These include: Denver, Colorado; Portland, Oregon; and Seattle and Spokane, Washington. Parking management regulations for Denver and Portland are already included in approved State Implementation Plans. The proposed regulatory modifications do not apply to Seattle and Spokane because the State is actively developing its own procedures which, if approved, would remove the need for any EPA involvement (Section 39 FR 26, 167 (July 17, 1972)).

The original transportation control plans called for the management of parking supply regulations to become effective no later than January 1974. However, in December of 1973 the Emergency Energy bill passed by both Houses of the Congress granted the Administrator of the Environmental Protection Agency the authority to suspend the parking review requirements until January 1, 1975. Though the bill did not become law at that time, the Administrator regarded it as firm Congressional guidance on the parking management issue. Consequently, the Administrator deferred the effective date for implementation of these regulations until January 1, 1975. This action was taken on January 5, 1974 (39 FR 1848). The Energy Supply and Environmental Coordination Act of 1974 which was signed into law on June 22, 1974 (Pub. L. 93-319) retained the predecessor bill's language concerning the effective date of the management of parking supply regulations.

The Administrator is today taking three general actions to clarify and aid in the implementation of these regulations:

(1) This proposal provides additional clarification of the relationship between the management of parking supply and the indirect source regulations. The clarifications elaborate upon the revisions to the indirect source regulations set forth in the July 9, 1974 FEDERAL REGISTER (39 FR 25292). The July 9 REGISTER notices explained that in areas where a parking management regulation promulgated by EPA is in effect, review of applicable facilities will be performed under parking management regulations rather than under the indirect source regulations.

(2) In this notice of proposed rulemaking, the Administrator is proposing several amendments to the existing parking management regulations. The purpose of these amendments is to clarify possible ambiguities in the existing regulations, to encourage State and local administration of programs under these regulations, to provide greater flexibility to applicants, and to assure consistency between the procedural requirements of indirect source and parking management regulations.

(3) An appendix is also being proposed by the Administrator to provide guidelines for the conduct of parking facility review and to explain the potential function of a local areawide parking management plan. The appendix provides alternative methods for meeting the requirements of the existing regulations and specifies procedures to be followed by applicant and reviewer in complying with the federally promulgated review of new parking facilities.

The basic purpose of these proposed changes is to provide a clear picture of the new parking facility application requirements and the criteria by which an application under the management of parking supply regulations will be judged; to provide maximum possible flexibility to the potential owner/operator of a parking facility while not compromising the effectiveness of these parking review requirements in terms of air quality objectives; and to encourage local areas to develop their own parking management plans to replace the Federal review regulations. It is the Administrator's firm desire that local areas develop parking management plans consistent with their local problems and needs with respect to both air quality improvement and socioeconomic development. Such plans, if adequate, will be approved by the Administrator and replace the applicable Federal management of parking supply regulations. Metropolitan areas such as San Diego, Seattle, and Portland are already in the process of developing such regulations. The Administrator further feels that the changes proposed today will allow a potential applicant subject to the Federal requirements to select the approach most suitable to his demonstrating compliance of the original objectives of these methods will further aid in achievement of the original objectives of these regulations.

Philosophy of Parking Management. The management of parking supply regulations are part of a comprehensive transportation control program designed to minimize motor vehicle emissions in areas where these emissions now cause serious violations of National Ambient Air Quality Standards. In these areas, it has been determined that the air quality standards for carbon monoxide and photochemical oxidants (smog) cannot be achieved in compliance with the provisions of the Clean Air Act through the use of only stationary source and new automobile emission controls. In order to achieve the applicable standards, it is also necessary to develop and implement transportation controls which both reduce emissions from in-use vehicles on the road and reduce the vehicle miles traveled by the vehicles in the affected area. The controls set forth in the transportation plans to accomplish this task include parking management regulations, mass transit improvements, inspection and maintenance programs, carpool matching programs, exclusive bus and carpool lanes, employer incentive programs for the use of mass transit and the retrofit of older automobiles with emission control devices.

As part of the overall transportation control program, the purpose of the parking management regulations, which manages the development of new parking facilities, is twofold: (1) To reduce the areawide growth in VMT so as to contribute to the achievement of photochemical oxidant and/or carbon monoxide standards; and (2) to assure that congestion associated with the operation of a new parking facility does not cause or exacerbate a violation of carbon monoxide standards. Since the vast majority of

on monoxide and photochemical nt pollution in the transportation ol areas has been demonstrated to automotive origin, the need to mini- the rate of increase in vehicle miles led must be emphasized. Although sions per individual vehicle will vary lderably depending on model year, ntenance, speed, temperature and characteristics, for most vehicles r the initial warm up period the emis- s generated will be roughly propor- al to vehicle miles traveled (VMT). sequently, measures designed to re- e the vehicle miles traveled result in er pollution levels. To the extent that omobile usage in these areas is char- rized by low occupancy (one car, one er) trips and particularly where gh of this travel could be readily ab- bed by increased use of carpools and ss transit, the resulting automotive sions represent an avoidable con- ution to the area's pollution problem l a potential area for VMT reductions. orts to reduce the vehicle miles trav- l in an area, however, are continually tralized by growth in areawide travel ich usually leads to increased emis- ns and higher pollution levels. Thus, parking management strategy which n influence the rate of increase in an a's VMT complements other elements the transportation program such as ss transit improvement which are de- ned to provide alternatives to low oc- pancy vehicle usage and accordingly duce VMT.

At the present time, the vehicle miles veled in our urban areas continues to crease, in some areas at an annual rate up to eight percent. This compounds already serious problem and if allowed continue can completely negate imple- entation of other pollution control easures and defeat expeditious attain- ent of air quality standards. The causes r growth in VMT are complex but the incipal reasons can be briefly summar- ed here. The rising standard of living as brought the automobile within the each of most families and made multi- ar ownership a prevalent goal. The in- rease in automobile ownership has also een associated with an increase in sub- rban sprawl, a living pattern heavily ependent on the automobile and less asily served by mass transit. Conse- uently, transportation by automobile as increased relative to the use of other ransit modes, patterns of low occupancy utomobile usage have developed, and nany mass transit systems have been radually deteriorating as vehicle miles raveled have continued to increase.

The extremely rapid growth in the building of highways, parking lots, and other auto-related facilities has been both cause and consequence of the shift- ing transit patterns in our urban areas. At the same time that public transit sys- ems have been allowed to deteriorate, illions of tax dollars and private invest- nents have been poured into encourag- ng and providing the physical infra- structure for increased auto transit. This shift to an even-increasing reliance on the automobile and the accompanying growth in vehicle miles traveled has continued to result in further emissions of pollutants, as well as an ever-increasing use of energy and natural resources.

Though growth of new parking-related facilities does not in and of itself cause air pollution, it has been demonstrated that the supply of available parking at new facilities is a major factor influencing choice of transit mode. Other influential factors are: time, costs, comfort, and convenience. Due to the interrelationship of these factors and the importance of convenient, readily available parking, effective control and planning of future parking facilities can directly influence the rate of growth in low occupancy automobile use.

Furthermore, intelligent planning of parking facilities will greatly facilitate the use of high occupancy vehicles. The various programs to improve mass transit and encourage carpools will be complemented by appropriately located and designed parking facilities such as subway parking lots and suburban park-and-ride lots, environmentally-responsible decisions on the size of parking facilities at new commercial and industrial locations, and increased use of innovative employer incentive programs to encourage carpooling and mass transit ridership. As mass transit and carpool programs continue to expand and improve, new parking facilities should be designed to focus on providing convenient parking in areas unlikely ever to be served by mass transit, not to duplicate and compete with transit in areas where it is available.

The impact new parking facilities have on local carbon monoxide levels as well as areawide oxidant and carbon monoxide concentrations must also be considered. The induced traffic associated with a new parking facility could create an area of concentrated vehicle use which may cause or exacerbate a violation of the carbon monoxide standard in the immediate vicinity of the facility. Consequently, approval of new parking facilities covered by these regulations in the transportation control cities is subject to both a review considering the facility's impact on areawide vehicle miles traveled and a demonstration that operation of the proposed facility will not cause or aggravate a localized carbon monoxide problem.

Regulations Currently in Effect. Parking management regulations in their current form require that all new modified or parking facilities above a specified size in the aforementioned metropolitan areas, for which construction will commence after January 1, 1975, must undergo pre-construction review to receive approval to construct. The application submitted by the prospective owner or operator must demonstrate that:

(1) The proposed facility will not cause or exacerbate a violation of any national ambient air quality standard; and

(2) The proposed facility will not violate the vehicle miles traveled control strategy contained in the applicable transportation control plan.

The regulations provide a list of required information through which the applicant must demonstrate that the proposed facility will be in accord with the requirements listed above. The methodology included in these requirements involves a demonstration through quantitative modeling that there will be no local carbon monoxide air quality violation and similar computations to demonstrate compliance with areawide vehicles miles traveled reduction strategies. A special purpose facility, such as a park and ride lot may be approved as a result of a qualitative assessment which demonstrates that the facility inherently would result in a decrease in vehicle miles traveled and cause no carbon monoxide problems.

The current regulations are ambiguous on several points and provide the owner or operator of a proposed new parking facility with a limited amount of flexibility in the application process. The orginally promulgated regulations also fail to clearly state the Administrator's policy on local participation in the implementation of parking management programs. Consequently, this notice of proposed rule-making attempts to explain existing areas of ambiguity such as the relationship between indirect source regulations and parking management, proposes certain modifications to the regulations to facilitate implementation, introduces additional flexibility through a VMT minimization option and other alternatives set forth in a newly proposed appendix, clearly provides the alternative of developing and implementing a local parking management plan to replace the Federal facility-by-facility review regulations, and states the Administrators views concerning local participation.

Relationship of Indirect Source Review and Management of Parking Supply Regulations. The Environmental Protection Agency has two regulations which require that certain classes of proposed new parking facilities be approved by the Administrator prior to construction. These two regulations are: Indirect Source Regulations (40 CFR 52.22(b), 39 FR 25292 et seq., July 9, 1974), and Management of Parking Supply Regulations. The Indirect Source Regulations, except as they relate to highways and airports, are designed to review proposed construction of new parking facilities anywhere in the nation for which construction commences after January 1, 1975 to prevent violation or exacerbation of an existing violation of carbon monoxide standards. The size cutoff for Indirect Source Review varies depending upon the location of the proposed facility. Within Standard Metropolitan Statistical Areas (SMSA's), all new facilities with 1,000 or more parking spaces will require prior approval. Outside of the SMSA's only those proposed facilities with 2,000 or more spaces will require approval.

Parking Management Regulations are limited to specific areas found to have serious violations of autorelated air quality standards and requiring transportation control plans. These regulations include both a review for carbon monoxide impact, similar to that required under Indirect Source Regulations, and a review of the impact of the proposed facility on areawide oxidant levels through vehicle miles traveled. These regulations are generally applicable to all new facilities having a parking capacity of 250 or more motor vehicles.

As was stated in the July 9 FEDERAL REGISTER (39 FR 25296) the Indirect Source Regulations do not apply to facilities which are subject to review under EPA-promulgated Parking Management regulations. (See 40 CFR 52.22(b) (15), 39 FR 25300, July 9, 1974.) Accordingly, no single facility will be subject to more than one of these review requirements. It is incorrect to conclude, however, that the indirect source regulation has no applicability whatever in areas subject to Parking Management Regulations. Highways and airports in Parking Management areas will continue to be reviewed under the Indirect Source Regulations. In addition where residential developments are exempt from the Parking Management regulations, they will be reviewed pursuant to the terms of the Indirect Source Regulations. Moreover consistent with the Indirect Source Regulations, a facility for which a bona fide general construction contract is executed prior to January 1, 1975 (exempt from Parking Management Review), will be subject to Indirect Source Review if actual construction does not commence prior to that date, since the Indirect Source Regulation contains no "general contract" exemption.

Proposed Regulatory Clarifications. Today the Administrator is proposing a number of changes to the Parking Management regulations which should clarify the regulations' applicability, procedures for implementation, and specific review requirements. Some of the more significant changes include: Clarification of the parking facility definition; the review time schedule to be employed; the size of facilities subject to these regulations and alternative procedures for demonstrating consistency with VMT control strategies.

The Administrator has received some questions regarding the applicability of the parking management regulations as determined by the definition of "parking facility". Some have inquired about the regulation's applicability to large unpaved area in which vehicles are regularly parked. The Administrator believes that any area used to park 250 or more vehicles should be considered a parking facility subject to review under the Parking Management regulations. The intent of the current regulations is to include such areas. Accordingly the definition of "parking facility" is being changed to clarify this position.

The Administrator does not intend to construe the definition of "parking facility" as applying to facilities such as automobile sales lots in which vehicles are temporarily stored pending sale. If there is a question as to whether a proposed construction or modification would be subject to review, owners or operators of the proposed facility should contact the appropriate EPA Regional Office, or the local agency which has delegated review authority for Parking Management, for a determination of applicability.

Inasmuch as Parking Management review is incorporating provisions similar to those contained in the Indirect Source Review regulations, the procedures for implementing Parking Management review are being amended to be the same as those required for indirect source review, as recently amended in the FEDERAL REGISTER of July 9, 1974 (39 FR 25292). The basic review timetable that appears in most of the Parking Management regulations is not being changed. The principal changes involve adding the following provisions: (1) The reviewing agency must notify the applicant if any information required in the review is not submitted in the application; (2) the applicant is given the opportunity to respond in writing to comments submitted by the public; and (3) facilities for which on-site construction does not commence within 24 months after receipt of approval must undergo another review process to take into account changed conditions since the time of initial application. Extensions of this time period proceeding commencement of construction may be requested at any time, including at the time of initial application.

One of the more significant changes being made to the Parking Management regulations concerns the size of facilities to be reviewed. A number of factors have been taken into consideration in selection of appropriate parking lot size cutoffs (in terms of number of spaces) for Parking Management review. Such factors include: Specific air pollutant to be controlled, severity of the problem, technical resources available for review, and the whole range of air quality control strategies to be employed. As a consequence, the specific size of parking facilities subject to review varies from one Air Quality Control Region to the next. Subsequent to the promulgation of some of the initial regulations, the Administrator has determined that size cutoffs in certain areas needed to be modified and these modifications are proposed today.

Through the regulatory actions proposed today, the minimum size of a parking facility to be reviewed under these regulations will be no less than 250 spaces except in the case of Fairbanks, Alaska and where parking freezes are in effect. In the Northern Alaska Intrastate Region, the meteorological conditions peculiar to Fairbanks create the need to review annually nearly all new or modified parking facilities; accordingly none of the size thresholds in this particular plan has been changed. It is further proposed that in most cases the sections of the regulations now in effect for certain areas which require notification of the Administrator prior to construction of a facility having from 50 to 249 spaces be deleted. The Administrator has determined that in most cases it is presently not practical or productive to require that parking construction and modification involving less than 250 spaces be subject to review and approval pursuant to the Management of Parking Supply regulations. A similar determination has been made regarding the notification procedures.

The Administrator is also proposing to delete language from the California regulation regarding consideration of the social and economic impact of a facility as part of the criteria for approval. Essentially the same protection is contained in the alternatives set forth in today's proposal.

The proposed regulations also set forth alternative analytical procedures which may be used to meet the air quality and VMT control criteria. The outline of the proposed alternatives is contained in the appendix section to the proposed regulation. These alternatives provide the applicant with additional flexibility by providing a choice of methodologies to be used for compliance with the air quality and VMT reduction goals specified by these regulations. The VMT minimization procedures described below particularly highlight this flexibility.

Various other minor modifications not intended to affect the substance of this regulation have also been included for purposes of clarification. For the most part these changes deal with matters of procedure or are specific modifications unique to specific areas.

Proposed Appendix to Parking Management Regulations. The proposed appendix sets forth two basic approaches for achieving the goals of parking management. These are a facility-by-facility review and a Parking Management plan. Either the Federal government or the local government can directly implement facility-by-facility review of applicable parking structures. Due to the nature of the planning process, however, only the state or local area can adequately develop a comprehensive parking management plan. Such a plan can interrelate future parking growth with the transit and land-use plans and other unique needs of the community.

The Administrator believes that the ultimate result of these regulations should be the development by local areas of parking management plans to replace the Federal Regulations. It is therefore this Agency's policy that Federal Regulations on new parking facilities shall be applicable only until such time as approvable local parking management plans are developed and implemented. Accordingly, Appendix B sets forth a clear explanation of current requirements and alternative approaches for facility-by-facility review which can be used until such plans are developed as well as guidelines for formulation of these local Parking Management Plans. EPA Regional Offices will encourage and assist local area governments in development of these plans.

Facility-by-Facility Review. The inter-n facility-by-facility parking review idelines set forth in Appendix B are asically divided into methodologies to 1) demonstrate consistency with the rea's VMT control strategy and (2) emonstrate noninterference with at-ainment and maintenance of the na-ional carbon monoxide standards.

I. *Consistency with Vehicle Miles raveled (VMT) Control Strategy.* An pplicant can select from among three lternative methods to demonstrate con-istency with the VMT control strategy. These methods include: certification hat the proposed facility will result in net decrease in VMT by its very nature, uantification of the vehicle miles trav-led which will be associated with the ew facility, and demonstration that the roposed parking facility is both needed y the community and that all reason-ble measures are being taken to mini-nize the VMT associated with the pro-osed facility. By providing these three pproaches the Administrator feels that n adequate amount of flexibility is pro-vided to the applicant while not com-promising the goals of the regulation.

A. *Special Purpose VMT Reduction Facility*—Owners/operators of special purpose parking facilities specifically de-veloped to reduce VMT, such as park and ride lots, will not be required to develop detailed VMT generation models of the impact of their proposed facilities. The principal requirements for approval will be certification of the facility's purpose nd presentation of some means to assure hat the facility will not be used to serve some other function which might in-crease VMT.

B. *Modeling*—Where an applicant has available sufficient information regard-ing traffic patterns and prospective clien-tele, he can make relatively accurate pro-jections of VMT changes by the use of origin and destination studies, gravity models and similar studies. If no increase in VMT is indicated by these calculations and the reviewing agency concurs in the accuracy of these projections, then the applicant will be considered to have demonstrated consistency with the VMT control strategy.

C. *Employment of All Reasonable VMT Reduction Measures*—Where an applicant can demonstrate the need for the proposed parking facility based on community goals and inadequacy of other transit modes, a program may be submitted stipulating measures to be em-ployed to minimize the VMT impact of the proposed facility. If this plan can be shown to employ all reasonable measures to minimize the VMT impact, a precisely quantified VMT model will not be required.

Examples of reasonable measures to minimize VMT would include: various measures to encourage use of mass tran-sit, carpool locators and a carpool pri-ority system, rate schedules to discour-age all day parkers and dial-a-bus or chartered buses in areas not served by egularly scheduled mass transit.

The procedure to be followed by the applicant includes three phases:

1. Explanation of the need for the pro-posed parking facility which takes into consideration the overall interests of the community and the adequacy of existing and proposed mass transit. This shall in-clude a description of existing and pro-posed transit service as well as existing parking facilities.

2. Development of a plan employing all reasonable measures to minimize VMT.

3. Projection of new reduced parking space requirements based on effective op-eration of the plan described in step 2 above.

Appendix B stipulates certain VMT minimization measures which must be considered by the applicant in preparing the plan. Each such measure must be uti-lized, or an explanation provided as to why the measure is inappropriate or im-possible to use.

Demonstration of Non-interference with Attainment of Carbon Monoxide Standard. The original regulations did not define a methodology for dealing with the impact of new parking facilities on carbon monoxide concentrations in the immediate area. The appendix proposed today sets forth a methodology for dem-onstration that a facility does not cause or exacerbate a violation of carbon monoxide standard. This methodology varies depending upon the size of the proposed facility.

A. *Facilities having a capacity for 1,000 or more spaces*—These facilities are sub-ject to the same requirements as those facilities subject elsewhere to the In-direct Source Regulations. The applicant must demonstrate by means of the ap-propriate indirect source guidelines (Guidelines for the Review of the Impact of Indirect Sources on Ambient Air Quality," U.S. Environmental Protection Agency, OAQPS, July, 1974), a suitable diffusion model or other appropriate analytical technique that the traffic as-sociated with the proposed facility will not result in a violation of carbon mon-oxide standards. Any model submitted by the applicant must take into considera-tion current and projected traffic counts and background air quality.

B. *Facilities having capacity for less than 1,000 spaces*—Smaller facilities not elsewhere subject to Indirect Source Reg-ulations may not need the detailed mod-eling required of the larger structures. The Administrator has therefore deter-mined that additional measures should be made available for applications per-taining to these facilities. The three al-ternatives available to the applicant spec-ified in the appendix include: (1) Use of the appropriate Indirect Sources mod-eling scheme; (2) provision of acceptable air quality monitoring data to determine if modeling is necessary; or (3) submis-sion of some other appropriate informa-tion to demonstrate that a violation of the carbon monoxide standard will not result from operation of the facility.

The second alternative could be used by many smaller facilities to satisfy the carbon monoxide review requirements through presentation of acceptable air quality data to demonstrate that a viola-tion is not likely to occur. The Appendix proposed today states that if acceptable monitoring data are provided demon-strating that the worst carbon monoxide level adjacent to the proposed facility is less than 75 percent of the standard, the applicant could satisfy the local carbon monoxide impact requirements without completing a modelling study. The 75 percent figure is an approximate number which lacks an adequate technical basis and additional study is needed. The En-vironmental Protection Agency is under-taking further analysis of the carbon monoxide parking facility relationship in order to develop a correlation between the background carbon monoxide levels and the size of the parking facility which may cause a carbon monoxide problem. The Administrator invites comments on the formation of this correlation. Follow-ing the final modification and promulga-tion of this option, an owner or operator will be able to use air quality data which satisfied the requirements of this option as a basis for approval. However, if mon-itoring data indicate that a violation can reasonably be expected to occur, the ap-plicant will be required to comply with the modelling criteria discussed under subpart A.

The third alternative, demonstration that a carbon monoxide is unlikely to occur, is only applicable to a small num-ber of facilities which are located in areas clearly recognized as being in no danger of having carbon monoxide vio-lations now or in the foreseeable future.

Parking Management Plan. The ap-pendix sets forth guidelines for devel-opment of a parking management plan as one component of an area's overall plan for development which focuses on the interrelationships of transportation and land use and specifically describes the manner in which the growth, loca-tion and operation of parking related facilities are to be kept consistent with air quality standards. The parking man-agement plan (PMP) further must com-bine the "hot spot" carbon monoxide re-view and the areawide VMT review of individual facilities under a comprehen-sive plan, relating where appropriate to an Air Quality Maintenance Plan. This means that the plan can allow certain tradeoffs among different areas within its scope, and that the plan can include control measures that are not necessarily within the limited scope of a facility-by-facility review (such as zoning changes or changes in transit service).

This program is an option available only to state or local governments. The regulations provide that parking man-agement plans are to be submitted to EPA by such governments to replace the interim facility-by-facility review. Though EPA will work with states and local areas developing such plans, the Agency will not unilaterally prepare parking management plans.

Local Participation. The regulations as originally promulgated were somewhat ambiguous as to the role a local com-munity could play in implementing the facility-by-facility review or in develop-ing and implementing a parking man-agement plan. Parking facility review

an be implemented in three different ays:

(1) EPA Regional Offices can review pplicable proposed facilities,

(2) EPA can delegate to a state or ocal governmental body the authority nd responsibility to review applicable roposed facilities under these regulaons, and

(3) State or local governments can evelop a parking management plan for eir area, which upon approval would eplace the need for Federal or local acon under the facility-by-facility reew regulation. The proposed regulaons specifically state that these three ol of implementation are available. especially the Administrator's desire at state and local governmental enties be encouraged to submit local parkg Management Plans at any time, hich would replace the EPA promulated regulations whenever the local lan is approved and implemented.

A. *Local Delegation.* In the absence f an approved local comprehensive arking management plan, it is the Adinistrator's desire to delegate impleentation of the EPA promulgated parkg facility-by-facility review procedures State and/or local governmental enities. Accordingly the proposed regulaons provide that local governmental ntities—typically city or county govrnments, Councils of Governments, ocal air pollution control agencies, or egional planning agencies—may submit request to the Administrator to be deleated the authority to carry out the reew of facilities and enforcement under he EPA-promulgated regulations. The dministrator may determine the condiions under which such a request is approved. Two conditions which must be et are that: (1) Any final action taken y the delegated agency must have legal uthority so that its final actions will e legally binding in the jurisdiction in hich the proposed facility is to be loated, and (2) the agency must either ossess legal authority to enforce any inal actions, or be willing to enforce acions taken under the EPA promulgated egulation using authority delegated to y the Administrator.

B. *Local Parking Management Plans.* PA regards parking management ans as a means through which future arking growth can be correlated with ansit plans and the growth needs of e community. Such correlation is best erformed by local governments, through comprehensive planning approach to vironmental quality and development eeds.

The Administrator realizes that local overnments may prefer to implement locally devised comprehensive manageent plan instead of the facility-bycility review promulgated by EPA. In e proposed regulations local governents are encouraged to develop such ans. The Administrator will make ery effort to approve locally submitted ans which meet the objectives of the PA parking management plan regulations. In order for a local plan to receive approval, the local governmental entity submitting the plan must have legal authority to enforce compliance with its requirements. Accordingly, it is anticipated that a city or county government, Council of Governments, or in some cases a regional planning agency or local air pollution control agency, will be the local governmental entity submitting a comprehensive parking management plan.

In California, several localities have begun the process of preparing parking management plans which reflect local situations. EPA has executed an interagency agreement with the Urban Mass Transportation Administration in the Department of Transportation to provide one-time financial assistance to selected regional transportation agencies to develop these plans as part of their overall regional transportation plans.

These agencies include the Metropolitan Transportation Commission in the San Francisco Bay area; the Southern California Association of Governments in the Los Angeles area; the Maricopa Association of Governments in the greater Phoenix area; and the Comprehensive Planning Organization in the San Diego area. Local jurisdictions will participate in the effort through these regional entities. Both in California and Arizona the regional transportation planning process has been successful, and EPA is encouraging these efforts by incorporating the Parking Management Plans as an element of the regional transportation planning process in these areas.

Exemption for General Construction Contracts. In the preamble to the indirect source promulgation of July 9, 1974, EPA stated: "In general, developers should assume that devices used in an attempt to evade review will be scrutinized carefully to determine whether a source actually subject to the regulation is commencing construction without the required approval." This applies equally to the Management of Parking Supply regulations.

In particular, the Administrator cautions against abuse of the exemption for "construction or modification for which a general construction contract was finally executed by all appropriate parties on or before January 1, 1975" which is set forth in the Management of Parking Supply regulations. The intent of this exemption is to treat a developer who has entered into a bona fide agreement with a general contractor for construction in the immediate future as being in the same position under the regulation's "grandfather clause" as a developer who actually commences onsite construction prior to January 1, 1975. This exemption was included in the regulation under the assumption that the execution of a general construction contract is one of the very last steps taken before construction will consider any significant lapse of time between execution of a contract during 1974 and actual commencement of construction in 1975 as strong evidence that the contract may not be valid for purposes of the regulation's "grandfather clause."

It must be emphasized that the alternative procedures for demonstrating consistency with the VMT control strategies (such as presentation of a plan employing all reasonable measures to minimize VMT) and satisfying the local carbon monoxide criteria (the non-modelling options) are features only of this proposed amendment to the Environmental Protection Agency's regulations for the management of parking supply. The proposed options cannot be officially used to satisfy the requirements of this regulation until the proposal has been submitted to the public hearing and comment process, and subsequently promulgated. Proposed new facilities which require approval prior to the promulgation of the proposed amendments must comply with the more limited provisions of the existing regulations. In such cases, it will be necessary to provide information required under quantitative modelling procedures for carbon monoxide impact and similar computations (except for special purpose VMT reduction facilities such as park and ride lots) to demonstrate compliance with areawide vehicle miles traveled reduction strategies.

Owners or operators of all other proposed new facilities covered by these regulations, which do not require an approval/disapproval decision until after promulgation of the proposed regulation may begin developing applications in accordance with this proposal. Applications using proposed options cannot be officially submitted until this proposal has been promulgated. Environmental Protection Agency personnel will be available to aid owners or operators of proposed future parking facilities in developing applications which will meet the provisions of either the existing or proposed regulations.

The following portion of this notice includes the regulation changes proposed for the affected areas, and the proposed appendix. It should be noted that the regulation modifications for each state are presented twice; first as individual revisions and then as revisions incorporated in the context of the applicable state regulation. It is hoped that this format will assist the reader in more readily understanding the elements of this proposal.

Public hearings on this proposal will be held in the affected areas in the near future at times and places to be announced in local newspapers. These hearings will be held to both receive comment on the proposed amendments and to gather information on the status of local efforts to develop parking management plans. The Administrator is especially interested in the previous local actions which provide a foundation for parking management plan development and the areas in which the Federal government can assist the plan development process. Comments are also invited on the VMT minimization and carbon

rator or agency designated by him; owner or operator who modifies a king facility in violation of conditions posed by the Administrator or agency signated by him; or any owner or erator of a parking facility subject to is section who commences construction modification thereof on or after January 1, 1975, without applying for and eiving approval hereunder, shall be bject to the penalties specified under ction 113 of the Act and shall be considered in violation of an emission andard or limitation under section 304 the Act. Subsequent modification to approved parking facility may be ade without applying for permission ursuant to this section only where such odification would not violate any condition imposed pursuant to paragraph h) of this section and would not be subject to the modification criteria set forth n paragraph (c)(2) of this section.

Subpart NN—Pennsylvania

52.2040 [Amended]

122. In § 52.2040(a), subparagraph (1) s revised to read as follows:

(1) "Parking facility" (also called facility") means any off-street area or pace, lot, garage, building or structure, r combination or portion thereof, in or n which motor vehicles are parked.

123. In § 52.2040(a), subparagraphs 3) and (4) are revised to read as follows:

(3) The phrase "to commence construction" means to engage in a continuous program of on-site construction ncluding site clearance, grading, dredging, or land filling specifically designed for a parking facility in preparation for the fabrication, erection, or installation of the building components of the facility. For the purpose of this paragraph, interruptions resulting from acts of God, strikes, litigation, or other matters beyond the control of the owner shall be disregarded in determining whether a construction or modification program is continuous.

(4) The phrase "to commence modification" means to engage in a continuous program of on-site modification, including site clearance, grading, dredging, or land filling in preparation for a specific modification of the parking facility.

124. In § 52.2040(a) subparagraph (5) is deleted and subparagraph (6) is redesignated as subparagraph (5).

125. In § 52.2040(c), the first sentence is amended by inserting the words "on or" after the word "commenced."

126. In § 52.2040(c), (1) the number "50" is revised to read "250."

127. In § 52.2040(c), subparagraph (2) is revised to read as follows:

(2) Any parking facility that will be modified to increase parking capacity by 250 or more motor vehicles.

128. In § 52.2040(e), subparagraph (3) is added to read as follows:

(3) The methodology for the satisfying requirements of paragraphs (e)(1) and (e)(2) of this section is explained in Appendix B.

129. In § 52.2040, paragraph (g) is revised to read as follows:

(g) All applications under this section shall include the following information unless the applicant has received a waiver from the Administrator or agency approved by him."

130. In § 52.2040(g), subparagraph (8) is added to read as follows:

(8) For any parking facility having capacity for 1000 or more motor vehicles, certain additional information is required as is specified in Appendix B.

131. In § 52.2040, paragraph (h) is deleted.

132. In § 52.2040, paragraph (i) is redesignated as paragraph (h), and revised to read as follows:

(h) Each application shall be signed by the owner or operator of the facility, whose signature shall constitute an agreement that the facility shall be constructed and operated in accordance with the information submitted in the application. In addition, the Administrator may prescribe reasonable construction and operating conditions to any permit granted. Such conditions shall be agreed to in writing by the applicant before any permit is granted by the Administrator.

133. In § 52.2040, paragraph (j) is redesignated as paragraph (i) and revised to read as follows:

(i) (1) Within 20 days after receipt of an application or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of subparagraph (2) of this paragraph shall be the date on which the required information is received by the Administrator.

(2) Within 30 days after receipt of a complete application, the Administrator shall:

(i) Make a preliminary determination whether the parking facility should be approved, approved with conditions in accordance with paragraph (e) of this section, or disapproved.

(ii) Make available in at least one location in each region in which the proposed parking facility would be constructed, a copy of all materials submitted by the owner or operator, a copy of the Administrator's preliminary determination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(iii) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed parking facility would be constructed, of the opportunity for written public comment on the information submitted by the owner or operator and the Administrator's preliminary determination on the approvability of the facility.

(3) A copy of the notice required pursuant to this subparagraph shall be sent to the applicant and to officials and agencies having cognizance over the location where the parking facility will be situated, as follows: State and local air pollution control agencies; the chief executive of the city and county; and any comprehensive regional land use planning agency.

(4) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in making his final decision on the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(5) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the application, and shall set forth his reasons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(6) The Administrator may extend each of the time periods specified in subparagraphs (2), (4), or (5) of this paragraph by no more than 30 days, or such other period as agreed to by the applicant and the Administrator.

134. In § 52.2040, a new paragraph (j) is added to read as follows:

(j) Approval to construct or modify shall become invalid if construction or modification is not commenced within 24 months after receipt of such approval. The Administrator may extend such time period upon a satisfactory showing that an extension is justified. The applicant may apply for such an extension at the time of initial application or at any time thereafter.

135. In § 52.2040, paragraph (k) is added to read as follows:

(k)(1) A local governmental entity, local air pollution control agency, or regional planning agency may submit, at any time, a comprehensive parking management plan as an alternative to review of facilities under this section.

(2) The Administrator may approve such plan if he finds that:

(i) The governmental entity or agency submitting the plan has full and adequate legal authority to enforce compliance with its requirements.

(ii) The provisions of the plan are consistent with the substantive and procedural provisions of this section including Appendix B.

(iii) The plan has been adopted after a public hearing held in conformity with the requirements of § 51.4 of this chapter.

(3) Upon the effective date of any approved local comprehensive parking management plan, such plan shall replace all applicable portions of this section.

136. In § 52.2040, paragraph (l) is added to read as follows:

(l)(1) A local governmental entity, local air pollution control agency, or regional planning agency may, upon re-

action taken by such entity or cy, or that it is willing to enforce provisions of this section using ority delegated to it by the Admin- tor.

.. Demonstration that any final ac- taken by such governmental entity gency will be binding in the jurisdic- in which the proposed facility is ted.

.. Demonstration that the review will be consistent with the sub- tive and procedural provisions of section including Appendix B.

.. 52.86, paragraph (n) is added follows:

.. owner or operator who fails uct a parking facility in ac- with the application as ap- by the Administrator; any owner operator who fails to construct and rate a parking facility in accordance h conditions imposed by the Admin- ator or agency designed by him; any er or operator who modifies a park- facility in violation of conditions osed by the Administrator or agency ignated by him; or any owner or rator of a parking facility subject to section who commences construc- or modification thereof on or after uary 1, 1975, without applying for receiving approval hereunder, shall subject to the penalties specified ier section 113 of the Act and shall considered in violation of an emission ndard or limitation under section 304 the Act. Subsequent modification to approved parking facility may be de without applying for permission suant to this section only where such dification would not violate any con- on imposed pursuant to paragraph of this section and would not be sub- t to the modification criteria set forth paragraph (c)(2) of this section.

Subpart D—Arizona

2.139 [Amended]

3. In § 52.139(a), subparagraph (1) revised to read as follows:

1) "Parking facility" (also called cility") means any offstreet area or ce, lot, garage, building or structure, combination or portion thereof, in or which motor vehicles are parked.

4. In § 52.139(a), subparagraph (3), and (5) are deleted. New subpara- phs (3) and (4) are added to read as ows:

(3) The phrase "to commence con- uction" means to engage in a continu- s program of on-site construction in- ding site clearance, grading, dredging, land filling specifically designed for a rking facility in preparation for the rication, erection, or installation of e building components of the facility. r the purpose of this paragraph, erruptions resulting from acts of God, rikes, litigation, or other matters be- nd the control of the owner shall be sregarded in determining whether a nstruction or modification program is ntinuous.

(4) The phrase "to commence modi- ation" means to engage in a continu- ous program of on-site modification, in- cluding site clearance, grading, dredg- ing, or land filling in preparation for a specific modification of the parking facility.

15. In § 52.139, paragraph (b) is re- vised to read as follows:

(b) This section is applicable to Pima and Maricopa Counties.

16. In § 52.139(c), the first sentence is amended by inserting the words "on or" after the word "commenced."

17. In § 52.139(c)(1) the number "50" is revised to read "250."

18. In § 52.139(c)(2), the number "50" is revised to read "250".

19. In § 52.139(d), the following sen- tence is added at the end of the para- graph to read as follows:

This section does not apply to any parking facility constructed or operated with a residential buildings or buildings for the primary use of residents of such building(s), nor does it apply to any parking facility to be constructed by a religious organization and to be used solely for religious purposes (not includ- ing high schools and college-level education).

20. In § 52.139(e), subparagraph (3) is added to read as follows:

(3) The methodology for satisfying the requirements of paragraphs (e)(1) and (e)(2) of this section is explained in Appendix B.

21. In § 52.139 the existing paragraph (g) is deleted.

22. In § 52.139, paragraph (h) is re- designated as paragraph (g) and the first sentence is revised to read as follows:

(g) All applications under this section shall include the following information unless the applicant has received a waiver from the Administrator or agency approved by him.

23. In § 52.139(g), a new subparagraph (8) is added to read as follows:

(8) For any parking facility having capacity for 1000 or more motor vehicles, certain additional information is re- quired as is specified in Appendix B.

24. In § 52.139, a new paragraph (h) is added to read as follows:

(h) Approval to construct or modify under paragraphs (a) through (g) of this section shall become invalid if con- struction or modification is not com- menced within 24 months after receipt of such approval. The Administrator may extend such time period upon a satis- factory showing that an extension is justified. The applicant may apply for such an extension at the time of initial application or at any time thereafter.

25. In § 52.139 paragraph (i) is revised to read as follows:

(i) Each application shall be signed by the owner or operator of the facility whose signature shall constitute an agreement that the facility shall be con- structed and operated in accordance with the information submitted in the application. In addition, the Admini- strator may prescribe reasonable con- struction and operating conditions to any permit granted. Such conditions shall be agreed to in writing by the ap- plicant before any permit is granted by the Administrator.

26. In § 52.139, paragraph (j) is revised to read as follows:

(j)(1) Within 20 days after receipt of an application, or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the infor- mation submitted in support of the appli- cation. In the event of such a deficiency, the date of receipt of the application for the purpose of subparagraph (2) of this paragraph shall be the date on which the required information is received by the Administrator.

(2) Within 30 days after receipt of a complete application, the Administrator shall:

(i) Make a preliminary determination whether the parking facility should be approved, approved with conditions in accordance with paragraph (e) of this section, or disapproved.

(ii) Make available in at least one lo- cation in each region in which the pro- posed parking facility would be con- structed, a copy of all materials submit- ted by the owner or operator, a copy of the Administrator's preliminary deter- mination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(iii) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed parking facility would be con- structed, of the opportunity for written public comment on the information sub- mitted by the owner or operator and the Administrator's preliminary determina- tion on the approvability of the facility.

(3) A copy of the notice required pur- suant to this subparagraph shall be sent to the applicant and to officials and agen- cies having cognizance over the location where the parking facility will be sit- uated, as follows: State and local air pollution control agencies, the chief executive of the city and county; and any comprehensive regional land use plan- ning agency.

(4) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in making his final decision on the applica- tion. No later than 10 days after the close of the public comment period, the appli- cant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(5) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the application, and shall set forth his rea- sons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the park- ing facility would be located.

(6) The Administrator may extend each of the time periods specified in subparagraphs (3), (4), or (5) of this paragraph by no more than 30 days, or such other period as agreed to by the applicant and the Administrator.

27. In § 52.139, paragraph (k) is revised to read as follows:

(k)(1) A local governmental entity, local air pollution control agency, or regional planning agency may submit, at any time, a comprehensive parking management plan as an alternative to the review of facilities under this section.

(2) The Administrator may approve such plan if he finds that:

(i) The governmental entity or agency submitting the plan has full and adequate legal authority to enforce compliance with its requirements.

(ii) The provisions of the plan are consistent with the substantive and procedural provisions of this section including Appendix B.

(iii) The plan has been adopted after a public hearing held in conformity with the requirements of § 51.4 of this chapter.

(iv) The plan has been reviewed by the appropriate 3C transportation planning agency.

(3) Upon the effective date of any approved local comprehensive parking management plan, such plan shall replace all applicable portions of this section.

28. In § 52.139, paragraph (m) is added to read as follows:

(m)(1) A local governmental entity, local air pollution control agency, or regional planning agency may, upon request to the Administrator, be delegated the authority of the Administrator for purposes of carrying out the review of facilities and enforcement under this section.

(2) The Administrator may approve such a request if the following conditions are met:

(i) Demonstration by such governmental entity or agency that it currently possesses legal authority to enforce any final action taken by such entity or agency, or that it is willing to enforce the provisions of this section using authority delegated to it by the Administrator.

(ii) Demonstration that any final action taken by such governmental entity or agency will be binding in the jurisdiction in which the proposed facility is located.

(iii) Demonstration that the review process will be consistent with the substantive and procedural provisions of this section including Appendix B.

29. In § 52.139, paragraph (n) is added to read as follows:

(n) Any owner or operator who fails to construct a parking facility in accordance with the application as approved by the Administrator; any owner or operator who fails to construct and operate a parking facility in accordance with conditions imposed by the Administrator or agency designed by him; any owner or operator who modifies a parking facility in violation of conditions imposed by the Administrator or agency designated by him; or any owner or operator of a parking facility subject to this section who commences construction or modification thereof on or after January 1, 1975, without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act. Subsequent modification to an approved parking facility may be made without applying for permission pursuant to this section only where such modification would not violate any condition imposed pursuant to paragraph (i) of this section and would not be subject to the modification criteria set forth in paragraph (c)(2) of this section.

Subpart F—California

§ 52.251 [Amended]

30. In § 52.251(a), subparagraph (1) is revised to read as follows:

(1) "Parking facility" (also called "facility" means any off-street area of space, lot, garage, building or structure, or combinations or portion thereof, in or on which motor vehicles are parked.

31. In § 52.251(a), subparagraphs (3) and (4) are revised to read as follows:

(3) The phrase "to commence construction" means to engage in a continuous program of on-site construction including site clearance, grading, dredging, or land filling specifically designed for a parking facility in preparation for the fabrication, erection or installation of the building components of the facility. For the purpose of this paragraph, interruptions resulting from acts of God, strikes, litigation, or other matters beyond the control of the owner shall be disregarded in determining whether a construction or modification program is continuous.

(4) The phrase "to commence modification" means to engage in a continuous program of on-site modification, including site clearance, grading, dredging, or land filling in preparation for a specific modification of the parking facility.

32. In § 52.251(a), subparagraph (5) is deleted.

33. In § 52.251(c), the first sentence is amended by deleting the words "paragraphs (d) through (i) of" and by inserting the words "on or" after the word "commenced."

34. In § 52.251(e), the word "either" in the first sentence is deleted; subparagraphs (1) and (2) are deleted; subparagraph (3)(i) is redesignated as subparagraph (1); subparagraph (3)(ii) is redesignated subparagraph (2); a new subparagraph (3) is added to read as follows:

(3) Satisfaction of the requirements provided in Appendix B shall serve to fulfill all requirements of subparagraphs (e)(1) and (e)(2) of this section.

35. In § 52.251(f) subparagraph (10) is revised to read as follows:

(10) An estimate of the net change in VMT associated with the operation of the proposed facility.

36. In § 52.251(f) subparagraph (13) is added to read as follows:

(12) For any parking facility having capacity for 1000 or more motor vehicles, certain additional information is required as specified in Appendix B.

37. In § 52.251 paragraph (h) is revised to read as follows:

(h) Each application shall be signed by the owner or operator of the facility whose signature shall constitute an agreement that the facility shall be constructed and operated in accordance with the information submitted in the application. In addition, the Administrator may prescribe reasonable construction and operating conditions to any permit granted. Such conditions shall be agreed to in writing by the applicant before any permit is granted by the Administrator.

38. In § 52.251, paragraph (i) is revised to read as follows:

(i)(1) Within 20 days after receipt of an application, or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of subparagraph (2) shall be the date on which the required information is received by the Administrator.

(2) Within 30 days after receipt of a complete application, the Administrator shall:

(i) Make a preliminary determination whether the parking facility should be approved, approved with conditions in accordance with paragraph (e) of this section, or disapproved.

(ii) Make available in at least one location in each region in which the proposed parking facility would be constructed, a copy of all materials submitted by the owner or operator, a copy of the Administrator's preliminary determination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(iii) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed parking facility would be constructed, of the opportunity for written public comment on the information submitted by the owner or operator and the Administrator's preliminary determination in the approvability of the facility.

(3) A copy of the notice required pursuant to this subparagraph shall be sent to the applicant and to officials and agencies having cognizance over the location where the parking facility will be situated, as follows: state and local air pollution control agencies, the chief executive of the city and county; and any comprehensive regional land use planning agency.

(4) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in

making his final decision on the application. No later than 10 days after the close the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(5) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the application and shall set forth his reasons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(6) The Administrator may extend each of the time periods specified in subparagraphs (2), (4), or (5) of this paragraph by no more than 30 days, or such other period as agreed to by the applicant and the Administrator.

39. In § 52.251, paragraphs (j) and (k) are deleted.

40. In § 52.251, a new paragraph (j) is added to read as follows:

(j) Approval to construct or modify shall become invalid if construction or modification is not commenced within 24 months after receipt of such approval. The Administrator may extend such time period upon a satisfactory showing that an extension is justified. The applicant may apply for such an extension at the time of initial application or at any time thereafter.

41. In § 52.251, paragraph (l) is redesignated as paragraph (k) and revised to read as follows:

(k)(1) A local governmental entity, local air pollution control agency, or regional planing agency may submit, at any time, a comprehensive parking management plan as an alternative to the review of facilities under this section.

(2) The Administrator may approve such plan if he finds that:

(i) The governmental entity or agency submitting the plan has adequate legal authority to enforce compliance with its requirements.

(ii) The provisions of the plan are consistent with the substantive provisions of this section including Appendix B.

(iii) The plan has been adopted after a public hearing held in conformity with the requirements of § 51.4 of this chapter.

(iv) The provisions of the plan are consistent with the 3-C transportation plan for the area involved.

(3) Upon a date specified by the Administrator in his approval of a local comprehensive parking management plan, such plan shall replace all applicable portions of this section.

42. In § 52.251, a new paragraph (l) is added to read as follows:

(l)(1) A local governmental entity local air pollution control agency, or regional planning agency may, upon request to the Administrator, be delegated the authority of the Administrator for purposes of carrying out the review of facilities and enforcement under this section.

(2) The Administrator may approve such a request if the following conditions are met:

(i) Demonstration by such governmental entity or agency that it currently possesses legal authority to enforce any final action taken by such entity or agency using authority delegated to it by the Administrator.

(ii) Demonstration that any final action taken by such governmental entity or agency will be binding in the jurisdiction in which the proposed facility is located.

(iii) Demonstration that the review process will be consistent with the substantive and procedural provisions of this section including Appendix B.

43. In § 52.251 paragraph (m) the internal reference to paragraph (l) is revised to read paragraph (k); the referen to paragraph (k) is revised to read paragraph (j).

44. In § 52.251, paragraph (n) is added to read as follows:

(n) Any owner or operator who fails to construct a parking facility in accordance with the application as approved by the Administrator; any owner or operator who fails to construct and operate a parking facility in accordance with conditions imposed by the Administrator or agency designated by him; any owner or operator who modifies a parking facility in violation of conditions imposed by the Administrator or agency designated by him; or any owner or operator of a parking facility subject to this section who commences construction or modification thereof on or after January 1, 1975 without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act.

Subpart J—District of Columbia

§ 42.493 [Amended]

45. In § 52.493(a), subparagraph (1) is revised to read as follows:

(1) "Parking facility" (also called "facility") means any off-street area or space, lot, garage, building or structure, or combination or portion thereof, in or on which motor vehicles are parked.

46. In § 52.493(a), subparagraphs (3) and (4) are revised to read as follows:

(3) The phrase "to commence construction" means to engage in a continuous program of on-site construction including site clearance, grading, dredging, or land filling specifically designed for a parking facility in preparation for the fabrication, erection, or installation of the building components of the facility. For the purpose of this paragraph, interruptions resulting from acts of God, strikes, litigation, or other matters beyond the control of the owner shall be disregarded in determining whether a construction or modification program is continuous.

(4) The phrase "to commence modification" means to engage in a continuous program of on-site modification, including site clearance, grading, dredging, or land filling in preparation for a specific modification of the parking facility.

47. In § 52.493(a), subparagraph (5) is deleted.

48. In § 52.493(c), the first sentence is amended by inserting the words "on or" after the word "commenced."

49. In § 52.493(e), subparagraph (3) is added to read as follows:

(3) The methodology for satisfying the requirements of paragraphs (e)(1) and (e)(2) of this section is explained in Appendix B.

50. In § 52.493(f), the following phrase is added after the word "information": "unless the applicant has received a waiver from the Administrator or agency approved by him:"

51. In § 52.493(f), subparagraph (13) is added to read as follows:

(13) For any parking facility having capacity for 1000 or more motor vehicles, certain additional information is required as is specified in Appendix B.

52. In § 52.493 paragraph (g) is revised to read as follows:

(g) Each application shall be signed by the owner or operator of the facility whose signature shall constitute an agreement that the facility shall be constructed and operated in accordance with the information submitted in the application. In addition, the Administrator may prescribe reasonable construction and operating conditions to any permit granted. Such conditions shall be agreed to in writing by the applicant before any permit is granted by the Administrator.

53. In § 52.493, paragraph (h) is revised to read as follows:

(h)(1) Within 20 days after receipt of an application or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of subparagraph (2) of this paragraph shall be the date on which the required information is received by the Administrator.

(2) Within 30 days after receipt of a complete application, the Administrator shall:

(i) Make a preliminary determination whether the parking facility should be approved, approved with conditions in accordance with paragraph (e) of this section, or disapproved.

(ii) Make available in at least one location in each region in which the proposed parking facility would be constructed, a copy of all materials submitted by the owner or operator, a copy of the Administrator's preliminary determination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(iii) Notify the public, by prominent advertisement in a newspaper of general

ulation in each region in which the posed parking facility would be con- cted, of the opportunity for written lic comment on the information sub- ted by the owner or operator and the ministrator's preliminary determina- on the approvability of the facility.

3) A copy of the notice required pur- nt to this subparagraph shall be sent the applicant and to officials and ncies having cognizance over the loca- n where the parking facility will be hated, as follows: State and local air llution control agencies, the chief ex- itive of the city and county; and any nprehensive regional land use plan- ng agency.

4) Public comments submitted in iting within 30 days after the date h information is made available shall considered by the Administrator in king his final decision on the applica- n. No later than 10 days after the close the public comment period, the ap- icant may submit a written response to y comments submitted by the public. he Administrator shall consider the ap- licant's response in making his final cision. All comments shall be made ailable for public inspection in at least e location in the region in which the rking facility would be located.

(5) The Administrator shall take final tion on an application within 30 days ter the close of the public comment riod. The Administrator shall notify e applicant in writing of his approval, nditional approval, or denial of the plication, and shall set forth his rea- ns for conditional approval or denial. ch notification shall be made avail- ble for public inspection in at least one cation in the region in which the park- g facility would be located.

(6) The Administrator may extend ch of the time periods specified in bparagraphs (2), (4), or (5) of this aragraph by no more than 30 days, or ch other period as agreed to by the pplicant and the Administrator.

54. In § 52.493, paragraph (i) is added read as follows:

(i) Approval to construct or modify hall become invalid if construction or odification is not commenced within 4 months after receipt of such approval. The Administrator may extend such time eriod upon a satisfactory showing that n extension is justified. The applicant nay apply for such an extension at the ime of initial application or at any time hereafter.

55. In § 52.493, paragraph (j) is added o read as follows:

(j) (1) A local governmental entity, ocal air pollution control agency, or re- ional planning agency may submit, at ny time, a comprehensive parking man- gement plan as an alternative to the eview of facilities under this section.

(2) The Administrator may approve uch plan if he finds that:

(i) The governmental entity or gency submitting the plan has full and dequate legal authority to enforce com- liance with its requirements.

(ii) The provisions of the plan are consistent with the substantive and procedural provisions of this section including Appendix B.

(iii) The plan has been adopted after a public hearing held in conformity with the requirements of § 51.4 of this chapter.

(3) Upon the effective date of any approved local comprehensive parking management plan, such plan shall replace all applicable portions of this section.

56. In § 52.493, paragraph (k) is added to read as follows:

(k) (1) A local governmental entity, local air pollution control agency, or regional planning agency may, upon request to the Administrator, be delegated the authority of the Administrator for purposes of carrying out the review of facilities and enforcement under this section.

(2) The Administrator may approve such a request if the following conditions are met:

(i) Demonstration by such governmental entity or agency that it currently possesses legal authority to enforce any final action taken by such entity or agency, or that it is willing to enforce the provisions of this section using authority delegated to it by the Administrator.

(ii) Demonstration that any final action taken by such governmental entity or agency will be binding in the jurisdiction in which the proposed facility is located.

(iii) Demonstration that the review process will be consistent with the substantive and procedural provisions of this section including Appendix B.

57. In § 52.493, paragraph (l) is added to read as follows:

(l) Any owner or operator who fails to construct a parking facility in accordance with the application as approved by the Administrator; any owner or operator who fails to construct and operate a parking facility in accordance with conditions imposed by the Administrator or agency designed by him; any owner or operator who modifies a parking facility in violation of conditions imposed by the Administrator or agency designated by him; or any owner or operator of a parking facility subject to this section who commences construction or modification thereof on or after January 1, 1975, without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act. Subsequent modification to an approved parking facility may be made without applying for permission pursuant to this section only where such modification would not violate any condition imposed pursuant to paragraph (g) of this section and would not be subject to the modification criteria set forth in paragraph (c)(2) of this section.

Subpart V—Maryland

§ 52.1103 · [Amended]

58. In § 52.1103(a), subparagraph (1) is revised to read as follows:

(1) "Parking facility" (also called "facility") means any off-street area or space, lot, garage, building or structure, or combination or portion thereof, in or on which motor vehicles are parked.

59. In § 52.1103(a), subparagraphs (3) and (4) are revised to read as follows:

(3) The phrase "to commence construction" means to engage in a continuous program of on-site construction including site clearance, grading, dredging, or land filling specifically designed for a parking facility in preparation for the fabrication, erection, or installation of the building components of the facility. For the purpose of this paragraph, interruptions resulting from acts of God, strikes, litigation, or other matters beyond the control of the owner shall be disregarded in determining whether a construction or modification program is continuous.

(4) The phrase "to commence modification" means to engage in a continuous program of on-site modification, including site clearance, grading, dredging, or land filling in preparation for a specific modification of the parking facility.

60. In § 52.1103(a), subparagraph (5) is deleted.

61. In § 52.1103(c), the first sentence is amended by inserting the words "on or" after the word "commenced."

62. In § 52.1103(e), subparagraph (3) is added to read as follows:

(3) The methodology for satisfying the requirements of paragraphs (e)(1) and (e)(2) of this section is explained in Appendix B.

63. In § 52.1103(f), the following phrase is added after the word "information":

"; unless the applicant has received a waiver from the Administrator or agency approved by him:"

64. In § 52.1103(f), subparagraph (13) is added to read as follows:

(13) For any parking facility having capacity for 1000 or more vehicles, certain additional information is required as is specified in Appendix B.

65. In § 52.1103 paragraph (g) is revised to read as follows:

(g) Each application shall be signed by the owner or operator of the facility whose signature shall constitute an agreement that the facility shall be constructed and operated in accordance with the information submitted in the application. In addition, the Administrator may prescribe reasonable construction and operating conditions to any permit granted. Such conditions shall be agreed to in writing by the applicant before any permit is granted by the Administrator.

66. In § 52.1103, paragraph (h) is revised to read as follows:

(h)(1) Within 20 days after receipt of an application or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of subparagraph (2) of this paragraph shall be the date on which the required information is received by the Administrator.

Within 30 days after receipt of a lete application, the Administrator

Make a preliminary determination her the parking facility should be oved, approved with conditions in ulance with paragraph (e) of this on, or disapproved.

Make available in at least one ion in each region in which the pro- parking facility would be con- ted, a copy of all materials sub- d by the owner or operator, a copy e Administrator's preliminary deter- tion, and a copy or summary of materials, if any, considered by Administrator in making his prelim- determinations; and

Notify the public, by prominent rtisement in a newspaper of general lation in each region in which the osed parking facility would be con- ted, of the opportunity for written ic comment on the information sub- ed by the owner or operator and the inistrator's preliminary determina- on the approvability of the facility.

A copy of the notice required pur- t to this subparagraph shall be sent e applicant and to officials and agen- having cognisance over the location re the parking facility will be situ- , as follows: state and local air pol- n control agencies, the chief execu- of the city and county; and any prehensive regional land use planning cy.

Public comments submitted in g within 30 days after the date information is made available shall considered by the Administrator in ing his final decision on the applica-

No later than 10 days after the of the public comment period, the icant may submit a written response ny comments submitted by the pub- The Administrator shall consider the icant's response in making his final sion. All comments shall be made able for public inspection in at least location in the region in which the ing facility would be located.

The Administrator shall take final n on an application within 30 days the close of the public comment d. The Administrator shall notify applicant in writing of his approval, itional approval, or denial of the lication, and shall set forth his rea- for conditional approval or denial. notification shall be made available ublic inspection in at least one loca- in the region in which the parking ity would be located.

The Administrator may extend of the time periods specified in sub- graphs (2), (4), or (5) of this para- h by no more than 30 days, or such period as agreed to by the appli- and the Administrator.

In § 52.1103, paragraph (i) is added ad as follows:

Approval to construct or modify become invalid if construction or fication is not commenced within onths after receipt of such approval. Administrator may extend such period upon a satisfactory showing that an extension is justified. The applicant may apply for such an extension at the time of initial application or at any time thereafter.

68. In § 52.1103, paragraph (j) is added to read as follows:

(j)(1) A local governmental entity, local air pollution control agency, or regional planning agency may submit, at any time, a comprehensive parking management plan as an alternative to the review of facilities under this section.

(2) The Administrator may approve such plan if he finds that:

(i) The governmental entity or agency submitting the plan has full and adequate legal authority to enforce compliance with its requirements.

(ii) The provisions of the plan are consistent with the substantive and procedural provisions of this section including Appendix B.

(iii) The plan has been adopted after a public hearing held in conformity with the requirements of § 51.4 of this chapter.

(3) Upon the effective date of any approved local comprehensive parking management plan, such plan shall replace all applicable portions of this section.

69. In § 52.1103, paragraph (k) is added to read as follows:

(k) (1) A local governmental entity, local air pollution control agency, or regional planning agency may, upon request to the Administrator, be delegated the authority of the Administrator for purpose of carrying out the review of facilities and enforcement under this section.

(2) The Administrator may approve such a request if the following conditions are met:

(i) Demonstration by such governmental entity or agency that it currently possess legal authority to enforce any final action taken by such entity or agency, or that it is willing to enforce the provisions of this section using authority delegated to it by the Administrator.

(ii) Demonstration that any final action taken by such governmental entity or agency will be binding in the jurisdiction in which the proposed facility is located.

(iii) Demonstration that the review process will be consistent with the substantive and procedural provisions of this section including Appendix B.

70. In § 52.1103, paragraph (l) is added to read as follows:

(l) Any owner or operator who fails to construct a parking facility in accordance with the application as approved by the Administrator; any owner or operator who fails to construct and operate a parking facility in accordance with conditions imposed by the Administrator or agency designated by him; any owner or operator who modifies a parking facility in violation of conditions imposed by the Administrator or agency designated by him; or any owner or operator of a parking facility subject to this section who commences construction or modification thereof on or after January 1, 1975 without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act. Subsequent modification to an approved parking facility may be made without applying for permission pursuant to this section only where such modification would not violate any condition imposed pursuant to paragraph (g) of this section and would not be subject to the modification criteria set forth in paragraph (c)(2) of this section.

Subpart V—Maryland

§ 52.1111 [Amended]

71. In § 52.1111(a), subparagraph (1) is revised to read as follows:

(1) "Parking facility" (also called "facility") means any off-street area or space, lot, garage, building or structure, or combination or portion thereof, in or on which motor vehicles are parked.

72. In § 52.1111(a), subparagraphs (3), (4), and (5) are deleted and replaced by subparagraphs (3) and (4) to read as follows:

(3) The phrase "to commence construction" means to engage in a continuous program of on-site construction including site clearance, grading, dredging, or land filling specifically designed for a parking facility in preparation for the fabrication, erection, or installation of the building components of the facility. For the purpose of this paragraph, interruptions resulting from acts of God, strikes, litigation, or other matters beyond the control of the owner shall be disregarded in determining whether a construction or modification program is continuous.

(4) The phrase "to commence modification" means to engage in a continuous program of on-site modification, including site clearance, grading, dredging, or land filling in preparation for a specific modification of the parking facility.

73. In § 52.1111(c), the first sentence is amended by deleting the words "paragraphs (d) through (l) of" and by inserting the words "on or" after the word "commenced."

74. In § 52.1111(e), subparagraph (3) is added to read as follows:

(3) The methodology for satisfying the requirements of subparagraphs (e)(1) and (e)(2) of this section is explained in Appendix B.

75. In § 52.1111(f), subparagraph (12) is added to read as follows:

(12) For any parking facility having capacity for 1000 or more motor vehicles, certain additional information is required as is specified in Appendix B.

76. In § 52.1111 paragraph (h) is revised to read as follows:

(h) Each application shall be signed by the owner or operator of the facility whose signature shall constitute an agreement that the facility shall be constructed and operated in accordance with the information submitted in the application. In addition, the Administrator may prescribe reasonable construction and operating conditions to any permit granted. Such conditions shall be

reed to in writing by the applicant fore any permit is granted by the Administrator.

77. In § 52.1111, paragraph (i) is revised to read as follows:

(i)(1) Within 20 days after receipt of an application, or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of subparagraph (2) of this paragraph shall be the date on which the required information is received by the Administrator.

(2) Within 30 days after receipt of a complete application, the Administrator shall:

(i) Make a preliminary determination whether the parking facility should be approved, approved with conditions in accordance with paragraph (e) of this section, or disapproved.

(ii) Make available in at least one location in each region in which the proposed parking facility would be constructed, a copy of all materials submitted by the owner or operator, a copy of the Administrator's preliminary determination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(iii) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed parking facility would be constructed, of the opportunity for written public comment on the information submitted by the owner or operator and the Administrator's preliminary determination on the approvability of the facility.

(3) A copy of the notice required pursuant to this subparagraph shall be sent to the applicant and to officials and agencies having cognizance over the location where the parking facility will be situated, as follows state and local air pollution control agencies; the chief executive of the city and county; and any comprehensive regional land use planning agency.

(4) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in making his final decision on the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(5) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the application and shall set forth his reasons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(6) The Administrator may extend each of the time periods specified in subparagraphs (2), (4), or (5) of this paragraph by no more than 30 days, or such other period as agreed to by the applicant and the Administrator.

78. In § 52.1111 paragraphs (j) and (k) are revised as follows:

(j)(1) Approval to construct or modify shall become invalid if construction or modification is not commenced within 24 months after receipt of such approval. The Administrator may extend such time period upon a satisfactory showing that an extension is justified. The applicant may apply for such an extension at the time of initial application or at any time thereafter.

(k)(1) A local governmental entity, local air pollution control agency, or regional planning agency may submit, at any time, a comprehensive parking management plan as an alternative to the review of facilities under this section.

(2) The Administrator may approve such plan if he finds that:

(i) The governmental entity or agency submiting the plan has full and adequate legal authority to enforce compliance with its requirements.

(ii) The provisions of the plan are consistent with the substantive and procedural provisions of this section including Appendix B.

(iii) The plan has been adopted after a public hearing held in conformity with the requirements of § 51.4 of this chapter.

(3) Upon the effective date of any approved local comprehensive parking management plan, such plan shall replace all applicable portions of this section.

79. In § 52.1111, paragraph (l) is added to read as follows:

(l)(1) a Local governmental entity, local air pollution control agency or regional planning agency may, upon request to the Administrator, be delegated the authority of the Administrator for purposes of carrying out the review of facilities and enforcement under this section.

(2) The Administrator may approve such a request if the following conditions are met:

(i) Demonstration by such governmental entity or agency that it currently possesses legal authority to enforce any final action taken by such entity or agency, or that it is willing to enforce the provisions of this section using authority delegated to it by the Administrator.

(ii) Demonstration that any final action taken by such governmental entity or agency will be binding in the jurisdiction in which the proposed facility is located.

(iii) Demonstration that the review process will be consistent with the substantive and procedural provisions of this section including Appendix B.

80. In § 52.1111, paragraph (m) is added to read as follows:

(m) Any owner or operator who fails to construct a parking facility in accordance with the application as approved by the Administrator; any owner or operator who fails to construct and operate a parking facility in accordance with conditions imposed by the Administrator or agency designed by him; any owner or operator who modifies a parking facility in violation of conditions imposed by the Administrator or agency designated by him, or any owner or operator of a parking facility subject to this section who commences construction or modification thereof on or after January 1, 1975, without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act. Subsequent modification to an approved parking facility may be made without applying for permission pursuant to paragraph (h) of this section only where such modification would not violate any condition imposed pursuant to paragraph (c)(2) of this section.

Subpart W—Massachusetts

§§ 52.1128, 52.1135 and 52.1136 [Amended]

81. In § 52.1135(a), subparagraphs (1), (2), and (4) are deleted and replaced by new subparagraphs (1) and (2) to read as follows:

(1) The phrase "to commence construction" means to engage in a continuous program of on-site construction including site clearance, grading, dredging, or land filling specifically designed for a parking facility in preparation for the fabrication, erection, or installation of the building components of the facility. For the purpose of this paragraph, interruptions resulting from acts of God, strikes, litigation, or other matters beyond the control of the owner shall be disregarded in determining whether a construction or modification program is continuous.

(2) The phrase "to commence modification" means to engage in a continuous program of on-site modification, including site clearance, grading, dredging, or land filling in preparation for a specific modification of the parking facility.

82. In § 52.1135(a), subparagraphs (5) through (12) are redesignated as subparagraphs (3) through (10) respectively.

83. In § 52.1135(a), the newly redesignated subparagraph (3) is revised to read as follows:

(3) "Parking facility" means any off-street area or space, lot, garage, building or structure, or combination or portion thereof, in or on which motor vehicles are parked.

84. In § 52.1135(c), the internal references to subparagraph "(a)(6)" are revised to read "(a)(4)". In subparagraph (3), the internal reference to paragraphs "(h) and (k)" is revised to read "(r) and (u)."

85. In § 52.1135, paragraph (d) is revised to read as follows:

(d) The requirements of this section are applicable to the following parking facilities in the areas specified in paragraph (b) of this section, the construc-

on or modification of which is commenced on or after January 1, 1975.

(1) Within the freeze area, any new parking facility with parking capacity for 1 or more motor vehicles, or any parking facility that will be modified to increase parking capacity by 50 or more motor vehicles;

(2) Outside the freeze area, any new parking facility with parking capacity for 50 or more motor vehicles, or any parking facility that will be modified by 250 or more motor vehicles; and

(3) Any parking facility constructed or modified in increments which individually are not subject to review under this section, but which, when all such increments occurring since January 1, 1975, are added together, as a total would subject the facility to review under this section.

86. In § 52.1135, paragraphs (g), (h), (i), (j), (k), and (l) are redesignated as paragraphs (q), (r), (s), (t), (u), and (v), respectively. Paragraph (f) is redesignated as paragraph (g) and paragraph (e) is redesignated as paragraph (f). Internal paragraph references are revised as follows:

a. In § 52.1135 (r), "(k)" to "(u)".

b. In § 52.1135 (s), "(h)" to "(r)".

c. In § 52.1135 (t), "(h)" to "(r)" and "(i)" to "(s)".

d. In § 52.1135 (u), "(d) and (e)" to "(d), (e), and (f)".

87. In § 52.1135, a new paragraph (e) is added to read as follows:

(e) No person shall commence construction or modification of any facility subject to this section without first obtaining written approval from the Administrator or an agency designated by him; provided that this paragraph shall not apply to any proposed construction or modification for which a general construction contract was finally executed by all appropriate parties on or before January 1, 1975.

88. In § 52.1135, the newly redesignated paragraph (f) is revised as follows: The dates "August 15, 1973" are revised to read "October 15, 1973"; and the word "commercial" is inserted before the words "parking facility" and again before the words "existing facility" in the first sentence; the word "permit" is changed to "approval" in the first sentence; and the reference to paragraph "(d)" is revised to read paragraph "(e)".

89. In § 52.1135, the newly redesignated paragraph (g) is revised to read as follows:

(g) No approval to construct or modify a facility requiring the permit described in paragraph (d) of this section shall be granted unless the applicant shows to the satisfaction of the Administrator or an agency approved by him that:

(1) The design or operation of the facility will not cause a violation of the control strategy which is a part of the applicable implementation plan and will be consistent with the plan's VMT reduction goals.

(2) The emissions resulting from the design or operation of the facility will not prevent or interfere with the attainment or maintenance of any national ambient air quality standard at any time within 10 years from the date of application.

(3) Construction or modification of the facility will comply with the requirements of paragraphs (r) and (u) of this section.

(4) The methodology for satisfying the requirements of paragraph (g)(1) and (g)(2) of this section is explained in Appendix B.

90. In § 52.1135, a new paragraph (h) is added to read as follows:

(h) All applications for approval under this section shall include the following information unless the applicant has received a waiver from the Administrator or agency approved by him:

(1) Name and address of the applicant.

(2) Location and description of the parking facility.

(3) A proposed construction schedule.

(4) The normal hours of operation of the facility and the enterprises and activities that it serves.

(5) The total motor vehicle capacity before and after the construction or modification of the facility.

(6) The number of people using or engaging in enterprises or activities that the facility will serve on a daily basis and a peak hour basis.

(7) A projection of the geographic areas in the community from which people and motor vehicles will be drawn to the facility. Such projection shall include data concerning the availability of mass transit from such areas.

(8) An estimate of the average and peak hour vehicle trip generation rates, before and after construction or modification of the facility.

(9) An estimate of the effect of the facility on traffic pattern and flow.

(10) An estimate of the effect of the facility on total VMT for the air quality control region.

(11) An analysis of the effect of the facility on site and regional air quality, including a showing that the facility will be compatible with the applicable implementation plan, and that the facility will not cause any national air quality standard to be exceeded within 10 years from date of application. The Administrator may prescribe a standardized screening technique to be used in analyzing the effect of the facility on ambient air quality.

(12) In the event the facility contains employee parking spaces, the parking space/employee ratio that will occur as a result of construction or modification of the facility.

(13) Additional information, plans, specification, or documents as required by the Administrator.

(14) For any parking facility having capacity for 1000 or more motor vehicles, certain additional information is required as is specified in Appendix B.

91. In § 52.1135, a new paragraph (i) is added to read as follows:

(i) Each applicant shall be signed by the owner or operator of the facility, whose signature shall constitute an agreement that the facility shall be constructed or operated in accordance with the information submitted in the application. In addition, the Administrator may prescribe reasonable construction and operating conditions to any permit granted. Such conditions shall be agreed to in writing by the applicant before any permit is granted by the Administrator.

92. In § 52.1135, a new paragraph (j) is added to read as follows:

(j)(1) Within 20 days after receipt of an application, or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of subparagraph (2) of this paragraph shall be the date on which the required information is received by the Administrator.

(2) Within 30 days after receipt of a complete application, the Administrator shall:

(i) Make a preliminary determination whether the parking facility should be approved, approved with conditions in accordance with paragraph (f) of this section, or disapproved.

(ii) Make available in at least one location in each region in which the proposed parking facility would be constructed, a copy of the Administrator's preliminary determination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(iii) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed parking facility would be constructed, of the opportunity for written public comment on the information submitted by the owner or operator and the Administrator's preliminary determination on the approvability of the facility.

(3) A copy of the notice required pursuant to this subparagraph shall be sent to the applicant and to officials and agencies having cognizance over the location where the parking facility will be situated, as follows: State and local air pollution control agencies; the chief executive of the city and county; and any comprehensive regional land use planning agency.

(4) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in making his final decision on the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(5) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the

application, and shall set forth his reasons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(8) The Administrator may extend each of the time periods specified in subparagraphs (2), (4), or (5) of this paragraph by no more than 30 days, or such other period as agreed to by the applicant and the Administrator.

93. § 52.1135, a new paragraph (k) is added to read as follows:

(k) Approval to construct or modify shall become invalid if construction or modification is not commenced within 24 months after receipt of such approval. The Administrator may extend such time period upon a satisfactory showing that an extension is justified. The applicant may apply for such an extension at the time of initial application or at any time thereafter.

94. In § 52.1135, a new paragraph (l) is added to read as follows:

95. (1) A local governmental entity, local air pollution control agency, or regional planning agency may submit, at any time, a comprehensive parking management plan as an alternative to the review of facilities under this section.

(2) The Administrator may approve such plan if he finds that:

(i) The governmental entity or agency submitting the plan has full and adequate legal authority to enforce compliance with its requirements.

(ii) The provisions of the plan are consistent with the substantive and procedural provisions of this section including Appendix B.

(iii) The plan has been adopted after a public hearing held in conformity with the requirements of § 51.4 of this chapter.

(3) Upon the effective date of any approved local comprehensive parking management plan, such plan shall replace all applicable portions of this section.

96. In § 52.1135, a new paragraph (m) is added to read as follows:

(m)(1) A local governmental entity, local air pollution control agency, or regional planning agency may, upon request to the Administrator, be delegated the authority of the Administrator for purposes of carrying out the review of facilities and enforcement under this section.

(2) The Administrator may approve such a request if the following conditions are met:

(i) Demonstration by such governmental entity or agency that it currently possesses legal authority to enforce any final action taken by such entity or agency, or that it is willing to enforce the provisions of this section using authority delegated to it by the Administrator.

(ii) Demonstration that any final action taken by such governmental entity or agency will be binding in the jurisdiction in which the proposed facility is located.

(iii) Demonstration that the review process will be consistent with the substantive and procedural provisions of this section including Appendix B.

97. In § 52.1135 a new paragraph (n) is added to read as follows:

(n) Any owner or operator who fails to construct a parking facility in accordance with the application as approved by the Administrator; any owner or operator who fails to construct and operate a parking facility in accordance with conditions imposed by the Administrator or agency designated by him; any owner or operator who modifies a parking facility in violation of conditions imposed by the Administrator or agency designated by him; or any owner or operator of a parking facility subject to this section who commences construction or modification thereof on or after January 1, 1975, without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act. Subsequent modification to an approved parking facility may be made without applying for permission pursuant to this section only where such modification would not violate any condition imposed pursuant to paragraph (i) of this section and would not be subject to the modification criteria set forth in paragraph (d)(2) of this section.

98. In § 52.1135, paragraph (o) is added to read as follows:

(o) Outside the freeze area, for any new parking facility with parking capacity for 50 to 249 motor vehicles, any facility which will be modified to increase parking capacity by 50 or more motor vehicles, and any facility constructed or modified in increments which individually are not subject to review under this paragraph, but which, when all such increments occurring since January 1, 1975, are added together, as a total would subject the facility to review under this paragraph, no person shall commence construction or modification without first furnishing to the Administrator or any agency designated by him, the information required by paragraphs (h)(1) through (h)(5) of this section. No approval will be required unless the determination specified in paragraph (p) of this section is made.

99. In § 52.1135, paragraph (p) is added to read as follows:

(p) If the Administrator, or an agency designated by him, determines, and gives prominent public notice of such determination, that construction of parking facilities having parking capacity for 50 to 249 motor vehicles outside the freeze area, or modification of parking facilities to parking capacity for 50 or more motor vehicles outside the freeze area, in any geographical subdivision of the areas specified in paragraph (b) of this section, is having or is likely to have a significant detrimental effect on the control strategies in this transportation control plan or on air quality, he may require approval by him, pursuant to the procedures in paragraphs (e) through (k) of this section prior to construction or modification of any such facilities in such a subdivision. The Administrator shall approve an application unless he determines that the facility to be constructed would either in itself or when viewed as part of a pattern of development have a significant adverse impact on the applicable transportation control strategy.

100. In § 52.1135, the newly redesignated paragraph (s) is amended by adding subparagraph (5) to read as follows:

(5) Commencing January 1, 1976, each employer shall annually report to the Administrator the number of employees within his facility(ies), the number of employee parking spaces he provides, and the ratio of parking spaces to employees.

101. In § 52.1128(b), (4), the following phrase is inserted after the words "from Fresh Pond": "to Porter Square, from Porter Square along the Cambridge City Limits"

102. In § 52.1136 as amended on January 15, 1974, (39 FR 1848), the first sentence in paragraph (b) is amended by inserting the word "commercial" before the words "parking facility".

103. In § 52.1136 as amended on January 15, 1974, (39 FR 1848), the first sentence in paragraph (c) is amended by inserting the word "commercial" before the words "parking facility".

104. In § 52.1136 as amended on January 15, 1974, (39 FR 1848), the first sentence in paragraph (d) is amended by inserting the word "commercial" before the words "parking facility".

105. In § 52.1136 as amended on January 15, 1974, (39 FR 1848), a new paragraph (e) is added to read as follows:

(e) Exemptions to this regulation shall be granted to residential parking facilities, as defined in subparagraph (a)(5) of Section 52.1135.

106. In § 52.1136 as amended on January 15, 1974, (39 FR 1848), a new paragraph (f) is added to read as follows:

(f) The City of Boston or any political subdivision or administrative bodies having jurisdiction over any off-street commercial parking facilities within the core area shall submit to the Administrator prior to December 31, 1974, a detailed compliance schedule indicating the steps it will take to enforce the parking reduction required by this section. Such schedule shall include as a minimum the following:

(1) Designation of one or more agencies responsible for the administration and enforcement of the program; and

(2) the procedures by which the designated agency will enforce the prohibition provided for in paragraph (c) of this section.

Subpart FF—New Jersey

§ 52.1588 [Amended]

107. In § 52.1588(a), subparagraph (2) is revised to read as follows:

(2) "Parking facility" (also called "facility") means any off-street area or space, lot, garage, building or structure, or combination or portion thereof, in or on which motor vehicles are parked.

)8. In § 52.1588(a), subparagraph (4) (5) are revised to read as follows:

) The phrase "to commence con- ction" means to engage in a contin- s program of on-site construction in- ling site clearance, grading, dredging, and filling specifically designed for arking facility in preparation for the ication, erection or installation of the ding components of the facility. For purpose of this paragraph, interrup- ns resulting from acts of God, strikes, gation, or other matters beyond the ıtrol of the owner shall be disregarded ietermining whether a construction or dification program is continuous.

5) The phrase "to commence modifi- ion" means to engage in a continuous gram of on-site modification, in- ding site clearance, grading, dredging, land filling in preparation for a spe- c modification of the parking facil-

09. In § 52.1588(a) subparagraph 6 is eted.

10. In § 52.1588(c), the first sentence amended by inserting the words "on after the word "commenced."

dministrator or an agency designated him that the facility will be used for esidential parking only."

111. In § 52.1588(c), (1) the number)0" is revised to read "250."

112. In § 52.1588(c), subparagraph (2) revised to read as follows:

(2) Any existing parking facility that ll be modified to increase parking pacity by 250 or more motor vehicles, ıd

113. In § 52.1588(e), subparagraph) is added to read as follows:

(3) The methodology for satisfying e requirements of subparagraphs (e)) and (e)(2) of this section, are ex- ained in Appendix B.

114. In § 52.1588, paragraph (g) is re- sed to read as follows:

(g) All applications under this section ıall include the following information lless the applicant has received a aiver from the Administrator or agency pproved by him:

115. In § 52.1588(g), subparagraph (8) s added to to read as follows:

(8) For any parking facility having apacity for 1000 or more motor vehicles, ertain additional information is re- uired as is specified in Appendix B.

116. In § 52.1588, paragraph (h) is evised to read as follows:

(h) Each application shall be signed y the owner or operator of the facility whose signature shall constitute an greement that the facility shall be con- tructed and operated in accordance with he information submitted in the appli- ation. In addition, the Administrator ıay prescribe reasonable construction nd operating conditions to any permit ranted. Such conditions shall be agreed) in writing by the applicant before any ermit is granted by the Administrator.

117. In § 52.1588, paragraph (i) is evised to read as follows:

(i)(1) Within 20 days after receipt of an application or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of subparagraph (2) of this paragraph shall be the date on which the required information is received by the Administrator.

(2) Within 30 days after receipt of a complete application, the Administrator shall:

(i) Make a preliminary determination whether the parking facility should be approved, approved with conditions in accordance with paragraph (e) of this section, or disapproved.

(ii) Make available in at least one location in each region in which the proposed parking facility would be constructed, a copy of all materials submitted by the owner or operator, a copy of the Administrator's preliminary determination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(iii) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed parking facility would be constructed, of the opportunity for written public comment on the information submitted by the owner or operator and the Administrator's preliminary determination on the approvability of the facility.

(3) A copy of the notice required pursuant to this subparagraph shall be sent to the applicant and to officials and agencies having cognizance over the location where the parking facility will be situated, as follows: state and local air pollution control agencies; the chief executive of the city and county; and any comprehensive regional land use planning agency.

(4) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in making his final decision on the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(5) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the application, and shall set forth his reasons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(6) The Administrator may extend each of the time periods specified in subparagraphs (2), (4), or (5) of this paragraph by no more than 30 days, or such other period as agreed to by the applicant and the Administrator.

118. In § 52.1588, paragraph (j) is added to read as follows:

(j) Approval to construct or modify shall become invalid if construction or modification is not commenced within 24 months after receipt of such approval. The Administrator may extend such time period upon a satisfactory showing that an extension is justified. The applicant may apply for such an extension at the time of initial application or at any time thereafter.

119. In § 52.1588, paragraph (k) is added to read as follows:

(k)(1) A local governmental entity, local air pollution control agency, or regional planning agency may submit, at any time, a comprehensive parking management plan as an alternative to the review of facilities under this section.

(2) The Administrator may approve such plan if he finds that:

(i) The governmental entity or agency submitting the plan has full and adequate legal authority to enforce compliance with its requirements.

(ii) The provisions of the plan are consistent with the substantive and procedural provisions of this section including Appendix B.

(iii) The plan has been adopted after a public hearing held in conformity with the requirements of § 51.4 of this chapter.

(3) Upon the effective date of any approved local comprehensive parking management plan, such plan shall replace all applicable portions of this section.

120. In § 52.1588, paragraph (l) is added to read as follows:

(l)(1) A local governmental entity, local air pollution control agency, or regional planning agency may, upon request to the Administrator, be delegated the authority of the Administrator for purposes of carrying out the review of facilities and enforcement under this section.

(2) The Administrator may approve such a request if the following conditions are met:

(i) Demonstration by such governmental entity or agency that it currently possesses legal authority to enforce any final action taken by such entity or agency, or that it is willing to enforce the provisions of this section using authority delegated to it by the Administrator.

(ii) Demonstration that any final action taken by such governmental entity or agency will be binding in the jurisdiction in which the proposed facility is located.

(iii) Demonstration that the review process will be consistent with the substantive and procedural provisions of this section including Appendix B.

121. In § 52.1588, paragraph (m) is added to read as follows:

(m) Any owner or operator who fails to construct a parking facility in accordance with the application as approved by the Administrator, any owner or operator who fails to construct and operate a parking facility in accordance with conditions imposed by the Admin-

'strator or agency designated by him; any owner or operator who modifies a parking facility in violation of conditions imposed by the Administrator or agency designated by him; or any owner or operator of a parking facility subject to this section who commences construction or modification thereof on or after January 1, 1975, without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act. Subsequent modification to an approved parking facility may be made without applying for permission pursuant to this section only where such modification would not violate any condition imposed pursuant to paragraph (h) of this section and would not be subject to the modification criteria set forth in paragraph (c)(2) of this section.

Subpart NN—Pennsylvania

§ 52.2040 [Amended]

122. In § 52.2040(a), subparagraph (1) is revised to read as follows:

(1) "Parking facility" (also called "facility") means any off-street area or space, lot, garage, building or structure, or combination or portion thereof, in or on which motor vehicles are parked.

123. In § 52.2040(a), subparagraphs (3) and (4) are revised to read as follows:

(3) The phrase "to commence construction" means to engage in a continuous program of on-site construction including site clearance, grading, dredging, or land filling specifically designed for a parking facility in preparation for the fabrication, erection, or installation of the building components of the facility. For the purpose of this paragraph, interruptions resulting from acts of God, strikes, litigation, or other matters beyond the control of the owner shall be disregarded in determining whether a construction or modification program is continuous.

(4) The phrase "to commence modification" means to engage in a continuous program of on-site modification, including site clearance, grading, dredging, or land filling in preparation for a specific modification of the parking facility.

124. In § 52.2040(a) subparagraph (5) is deleted and subparagraph (6) is redesignated as subparagraph (5).

125. In § 52.2040(c), the first sentence is amended by inserting the words "on or" after the word "commenced."

126. In § 52.2040(c), (1) the number "50" is revised to read "250."

127. In § 52.2040(c), subparagraph (2) is revised to read as follows:

(2) Any parking facility that will be modified to increase parking capacity by 250 or more motor vehicles.

128. In § 52.2040(e), subparagraph (3) is added to read as follows:

(3) The methodology for the satisfying requirements of paragraphs (e)(1) and (e)(2) of this section is explained in Appendix B.

129. In § 52.2040, paragraph (g) is revised to read as follows:

(g) All applications under this section shall include the following information unless the applicant has received a waiver from the Administrator or agency approved by him."

130. In § 52.2040(g), subparagraph (8) is added to read as follows:

(8) For any parking facility having capacity for 1000 or more motor vehicles, certain additional information is required as is specified in Appendix B.

131. In § 52.2040, paragraph (h) is deleted.

132. In § 52.2040, paragraph (i) is redesignated as paragraph (h), and revised to read as follows:

(h) Each application shall be signed by the owner or operator of the facility, whose signature shall constitute an agreement that the facility shall be constructed and operated in accordance with the information submitted in the application. In addition, the Administrator may prescribe reasonable construction and operating conditions to any permit granted. Such conditions shall be agreed to in writing by the applicant before any permit is granted by the Administrator.

133. In § 52.2040, paragraph (j) is redesignated as paragraph (i) and revised to read as follows:

(i) (1) Within 20 days after receipt of an application or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of subparagraph (2) of this paragraph shall be the date on which the required information is received by the Administrator.

(2) Within 30 days after receipt of a complete application, the Administrator shall:

(i) Make a preliminary determination whether the parking facility should be approved, approved with conditions in accordance with paragraph (e) of this section, or disapproved.

(ii) Make available in at least one location in each region in which the proposed parking facility would be constructed, a copy of all materials submitted by the owner or operator, a copy of the Administrator's preliminary determination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(iii) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed parking facility would be constructed, of the opportunity for written public comment on the information submitted by the owner or operator and the Administrator's preliminary determination on the approvability of the facility.

(3) A copy of the notice required pursuant to this subparagraph shall be sent to the applicant and to officials and agencies having cognizance over the location where the parking facility will be situated, as follows: State and local air pollution control agencies; the chief executive of the city and county; and any comprehensive regional land use planning agency.

(4) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in making his final decision on the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(5) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the application, and shall set forth his reasons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(6) The Administrator may extend each of the time periods specified in subparagraphs (2), (4), or (5) of this paragraph by no more than 30 days, or such other period as agreed to by the applicant and the Administrator.

134. In § 52.2040, a new paragraph (j) is added to read as follows:

(j) Approval to construct or modify shall become invalid if construction or modification is not commenced within 24 months after receipt of such approval. The Administrator may extend such time period upon a satisfactory showing that an extension is justified. The applicant may apply for such an extension at the time of initial application or at any time thereafter.

135. In § 52.2040, paragraph (k) is added to read as follows:

(k)(1) A local governmental entity, local air pollution control agency, or regional planning agency may submit, at any time, a comprehensive parking management plan as an alternative to review of facilities under this section.

(2) The Administrator may approve such plan if he finds that:

(i) The governmental entity or agency submitting the plan has full and adequate legal authority to enforce compliance with its requirements.

(ii) The provisions of the plan are consistent with the substantive and procedural provisions of this section including Appendix B.

(iii) The plan has been adopted after a public hearing held in conformity with the requirements of § 51.4 of this chapter.

(3) Upon the effective date of any approved local comprehensive parking management plan, such plan shall replace all applicable portions of this section.

136. In § 52.2040, paragraph (l) is added to read as follows:

(l)(1) A local governmental entity, local air pollution control agency, or regional planning agency may, upon re-

iest to the Administrator, be delegated ie authority of the Administrator for irposes of carrying out the review of cilities and enforcement under this ction.

(2) The Administrator may approve ich a request if the following conditions e met:

(i) Demonstration by such governental entity or agency that it currently ssesses legal authority to enforce any al action taken by such entity or gency, or that it is willing to enforce ie provisions of this section using auiority delegated to it by the Adminisator.

(ii) Demonstration that any final acon taken by such governmental entity r agency will be binding in the jurisdicon in which the proposed facility is ocated.

(iii) Demonstration that the review rocess will be consistent with the subtantive and procedural provisions of this ection including Appendix B.

137. In § 52.2040, paragraph (m) is ided to read as follows:

(m) Any owner or operator who fails construct a parking facility in accordice with the application as approved by ie Administrator; any owner or opera-. who fails to construct and operate parking facility in accordance with contions imposed by the Administrator or gency designated by him; or any owner operator who modifies a parking facily in violation of conditions imposed by ie Administrator or agency designated y him; or any operator of a parking fality subject to this section who comences construction or modification ereof on or after January 1, 1975, withit applying for and receiving approval ereunder, shall be subject to the penities specified under section 113 of the ct and shall be considered in violation an emission standard or limitation nder section 304 of the Act. Subsequent odification to an approved parking fality may be made without applying for ermission pursuant to this section only here such modification would not viite any condition imposed pursuant to aragraph (h) of this section and would ot be subject to the modification criteria et forth in paragraph (c)(2) of this ection.

Subpart SS—Texas

52.2295 [Amended]

138. In § 52.2295(a), subparagraph) is revised to read as follows:

(1) "Parking facility" (also called acility") means any off-street area or ace, lot, garage, building or structure, combination or portion thereof, in or which motor vehicles are parked.

139. In § 52.2295(a), subparagraphs) and (4) are revised to read as follws:

(3) The phrase "to commence conuction" means to engage in a conuous program of on-site construction cluding site clearance, grading, dredg, or land filling specifically designed r a parking facility in preparation for e fabrication, erection, or installation of the building components of the facility. For the purpose of this paragraph, interruptions resulting from acts of God, strikes, litigation, or other matters beyond the control of the owner shall be disregarded in determining whether a construction or modification program is continuous.

(4) The phrase "to commence modification" means to engage in a continuous program of on-site modification, including site clearance, grading, dredging, or land filling in preparation for a specific modification of the parking facility.

140. In § 52.2295(a), subparagraph (5) is deleted.

141. In § 52.2295(c), the first sentence is amended by inserting the words "on or" after the word "commenced."

142. In § 52.2295(e), subparagraph (3) is added to read as follows:

(3) The methodology for satisfying the requirements of paragraphs (e)(1) and (e)(2) of this section is explained in Appendix B.

143. In § 52.2295(f), the following phrase is added after the word "information":

"unless the applicant has received a waiver from the Administrator or agency approved by him:"

144. In § 52.2295(f), subparagraph (13) is added to read as follows:

(13) For any parking facility having capacity for 1000 or more motor vehicles, certain additional information is required as is specified in Appendix B.

145. In § 52.2295 paragraph (g) is revised to read as follows:

(g) Each application shall be signed by the owner or operator of the facility whose signature shall constitute an agreement that the facility shall be constructed and operated in accordance with the information submitted in the application. In addition, the Administrator may prescribe reasonable construction and operation conditions to any permit granted. Such conditions shall be agreed to in writing by the applicant before any permit is granted by the Administrator.

146. In § 52.2295, paragraphs (h), (i), (j), and (k) are deleted and replaced by a new paragraph (h) to read as follows:

(h)(1) Within 20 days after receipt of an application, or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the information submitted in support of the application. In the event of such a deficiency, the date of receipt of the application for the purpose of subparagraph (2) of this paragraph shall be the date on which the required information is received by the Administrator.

(2) Within 30 days after receipt of a complete application, the Administrator shall:

(i) Make a preliminary determination whether the parking facility should be approved, approved with conditions in accordance with paragraph (e) of this section, or disapproved.

(ii) Make available in at least one location in each region in which the proposed parking facility would be constructed, a copy of all materials submitted by the owner or operator, a copy of the Administrator's preliminary determination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and

(iii) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed parking facility would be constructed, of the opportunity for written public comment of the information submitted by the owner or operator and the Administrator's preliminary determination on the approvability of the facility.

(3) A copy of the notice required pursuant to this subparagraph shall be sent to the applicant and to officials and agencies having cognizance of the location where the parking facility will be situated, as follows: State and local air pollution control agencies; the chief executive of the city and county; and any comprehensive regional land use planning agency.

(4) Public comments submitted in writing within 30 days after the date such information is made available shall be considered by the Administrator in making his final decision on the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making his final decision. All comments shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(5) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the application, and shall set forth his reasons for conditional approval or denial. Such notification shall be made available for public inspection in at least one location in the region in which the parking facility would be located.

(6) The Administrator may extend each of the time periods specified in subparagraphs (2), (4), or (5) of this paragraph by no more than 30 days, or such other period as agreed to by the applicant and the Administrator.

147. In § 52.2295, a new paragraph (i) is added to read as follows:

(i) Approval to construct or modify shall become invalid if construction or modification is not commenced within 24 months after receipt of such approval. The Administrator may extend such a time period upon a satisfactory showing that an extension is justified. The applicant may apply for such an extension at the time of initial application or at any time thereafter.

148. In § 52.2295, a new paragraph (j) is added as follows:

(j)(1) A local governmental entity, local air pollution control agency, or regional planning agency may, upon request to the Administrator, be delegated

ne authority of the Administrator for ne purposes of carrying out the review f facilities and enforcement under this ection.

(2) The Administrator may approve uch a request if the following condi- ions are met:

(i) Demonstration by such govern- nental entity or agency that it cur- ently possesses legal authority to en- orce any final action taken by such en- ity or agency, or that it is willing to nforce the provisions of this section ising authority delegated to it by the dministrator.

(ii) Demonstration that any final ction taken by such governmental entity r agency will be binding in the juris- liction in which the proposed facility is ocated.

(iii) Demonstration that the review rocess will be consistent with the sub- tantive and procedural provisions of this ection including Appendix B.

149. In § 52.2295, paragraph (l) is re- designated as paragraph (k) revised to read as follows:

(k)(1) A local governmental entity, local air pollution control agency, or re- gional planning agency may submit, at any time, a comprehensive parking man- agement plan as an alternative to the review of facilities under this section.

(2) The Administrator may approve such plan if he finds that:

(i) The governmental entity or agency submitting the plan has full and ade- quate legal authority to enforce compli- nce with its requirements.

(ii) The provisions of the plan are onsistent with the substantive and pro- edural provisions of this section includ- ng Appendix B.

(iii) The plan has been adopted after public hearing held in conformity with he requirements of § 51.4 of this chapter.

(3) Upon the effective date of any pproved local comprehensive parking nanagement plan, such plan shall re- place all applicable portions of this section.

150. In § 52.2295, a new paragraph (l) is added to read as follows:

(l) Any owner or operator who fails to construct a parking facility in ac- cordance with the application as ap- proved by the Administrator; any owner or operator who fails to construct and operate a parking facility in accordance with conditions imposed by the Admin- istrator or agency designated by him; any owner or operator who modifies a parking facility in violation of conditions imposed by the Administrator or agency designated by him; or any owner or operator of a parking facility subject to this section who commences construc- tion or modification thereof on or after January 1, 1975, without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act. Subsequent modification to an approved parking facility may be made without applying for permission pursuant to this section only where such modification would not violate any condi- tion imposed pursuant to paragraph (9) of this section and would not be subject to the modification criteria set forth in paragraph (c)(2) of this section.

Subpart VV—Virginia

§ 52.2443 [Amended]

151. In § 52.2443(a), subparagraph (1) is revised to read as follows:

(1) "Parking facility" (also called "facility") means any off-street area or space, lot, garage, building or structure, or combination or portion thereof, in or on which motor vehicles are parked.

152. In § 52.2443(a), subparagraphs (3) and (4) are revised to read as follows:

(3) The phrase "to commence con- struction" means to engage in a con- tinuous program of on-site construction including site clearance, grading, dredg- ing, or land filling specifically designed for a parking facility in preparation for the fabrication, erection, or installa- tion of the building components of the facility. For the purpose of this para- graph, interruptions resulting from acts of God, strikes, litigation, or other mat- ters beyond the control of the owner shall be disregarded in determining whether a construction or modification program is continuous.

(4) The phrase "to commence modifi- cation" means to engage in a continuous program of on-site modification in- cluding site clearance, grading, dredg- ging, or land filling in preparation for a specific modification of the parking facility.

153. In § 52.2443(a), subparagraph (5) is deleted.

154. In § 52.2443(c), the first sentence is amended by inserting the words "on or" after the word "commenced."

155. In § 52.2443, paragraph (g) is revised to read as follows:

(g) Each application shall be signed by the owner or operator of the facility, whose signature shall constitute an agreement that the facility shall be con- structed and operated in accordance with the information submitted in the application. In addition the Administra- tor may prescribe reasonable construc- tion and operating conditions to any per- mit granted. Such conditions shall be agreed to in writing by the applicant be- fore any permit is granted by the Ad- ministrator.

156. In § 52.2443(f), the following phrase is added after the word "infor- mation":

"unless the applicant has received a waiver from the Administrator or agency approved by him"

157. In § 52.2443(f), subparagraph (13) is added to read as follows:

(13) For any parking facility having capacity for 1000 or more motor vehicles, certain additional information is re- quired as is specified in Appendix B.

158. In § 52.2443, paragraph (h) is re- vised to read as follows:

(h)(1) Within 20 days after receipt of an application, or addition thereto, the Administrator shall advise the owner or operator of any deficiency in the infor- mation submitted in support of the ap- plication. In the event of such a defi- ciency, the date of receipt of the appli- cation for the purpose of subparagraph (2) of this paragraph shall be the date on which the required information is re- ceived by the Administrator.

(2) Within 30 days after receipt of a complete application, the Administrator shall:

(i) Make a preliminary determination whether the parking facility should be approved, with conditions in accordance with paragraph (e) of this section, or disapproved.

(ii) Make available in at least one lo- cation in each region in which the pro- posed parking facility would be con- structed, a copy of all materials sub- mitted by the owner or operator, a copy of the Administrator's preliminary deter- mination, and a copy or summary of other materials, if any, considered by the Administrator in making his preliminary determination; and.

(iii) Notify the public, by prominent advertisement in a newspaper of general circulation in each region in which the proposed parking facility would be con- structed, of the opportunity for written public comment on the information sub- mitted by the owner or operator and the Administrator's preliminary determina- tion on the approvability of the facility.

(3) A copy of the notice required pur- suant to this subparagraph shall be sent to the applicant and to officials and agen- cies; having cognizance over the location where the parking facility will be situ- ated, as follows: State and local air pol- lution control agencies the chief execu- tive of the city and county; and any comprehensive regional land use plan- ning agency.

(4) Public comments submited in writ- ing within 30 days after the date such information is made available shall be considered by the Administrator in mak- ing his final decision on the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the appli- cant's response in making his final deci- sion. All comments shall be made avail- able for public inspection in at least one location in the region in which the park- ing facility would be located.

(5) The Administrator shall take final action on an application within 30 days after the close of the public comment period. The Administrator shall notify the applicant in writing of his approval, conditional approval, or denial of the ap- plication, and shall set forth his reasons for conditional approval or denial. Such notifications shall be made available for public inspection in at least one location in the region in which the parking facil- ity would be located.

(6) The Administrator may extend each of the time periods specified in sub- paragraphs (2), (4), or (5) of this para- graph by no more than 30 days, or such other period as agreed to by the appli- cant and the Administrator.

9. In § 52.2443, paragraph (i) is ed to read as follows:

Approval to construct or modify l become invalid if construction or lification is not commenced within 24 ths after receipt of such approval. Administrator may extend such time od upon a satisfactory showing that extension is justified. The applicant apply for such an extension at the of initial application or at any time eafter.

0. In § 52.2443, paragraph (j) is ed to read as follows:

(1) A local governmental entity, l air pollution control agency, or re- nal planning agency may submit, at time, a comprehensive parking man- ent plan as an alternative to the w of facilities under this section.

) The Administrator may approve plan if he finds that:

) The governmental entity or agency nitting the plan has full and ade- e legal authority to enforce compli- with its requirements.

) The provisions of the plan are istent with the substantive and pro- ral provisions of this section includ- Appendix B.

(i) The plan has been adopted after ublic hearing held in conformity with requirements of § 51.4 of this pter.

3) Upon the effective date of any roved local comprehensive parking nagement plan, such plan shall re- e all applicable portions of this ion.

61. In § 52.2443, paragraph (k) is led to read as follows:

k) (1) A local governmental entity, al air pollution control agency, or ional planning agency may, upon re- st to the Administrator, be delegated authority of the Administrator for rposes of carrying out the review of ilities and enforcement under this tion.

(2) The Administrator may approve h a request if the following conditions met:

(i) Demonstration by such govern- ntal entity or agency that it currently ssesses legal authority to enforce any al action taken by such entity or ency, or that it is willing to enforce e provisions of this section using au- ority delegated to it by the Adminis- ator.

(ii) Demonstration that any final tion taken by such governmental tity or agency will be binding in the risdiction in which the proposed cility is located.

(iii) Demonstration that the review ocess will be consistent with the sub- antive and procedural provisions of is section including Appendix B.

162. In § 52.2443, paragraph (l) is ded to read as follows:

(1) Any owner or operator who fails construct a parking facility in accord- ce with the application as approved by e Administrator; any owner or oper- or who fails to construct and operate a parking facility in accordance with conditions imposed by the Administrator or agency designated by him; any owner or operator who modifies a parking facility in violation of conditions imposed by the Administrator or agency designated by him; or any owner or operator of a parking facility subject to this section who commences construction or modification thereof on or after January 1, 1975, without applying for and receiving approval hereunder, shall be subject to the penalties specified under section 113 of the Act and shall be considered in violation of an emission standard or limitation under section 304 of the Act. Subsequent modification to an approved parking facility may be made without applying for permission pursuant to this section only where such modification would not violate any condition imposed pursuant to paragraph (g) of this section and would not be subject to the modification criteria set forth in paragraph (c) (2) of this section.

APPENDIX B—PROCEDURES FOR DETERMINING CONSISTENCY WITH THE VEHICLE MILES TRAVELED AND AIR QUALITY GOALS OF THE PARKING MANAGEMENT REGULATIONS

1. *General.* This appendix sets forth procedures for demonstrating satisfactory compliance with the Regulations for the Management of Parking Supply contained in various transportation control plans.

These regulations provide two alternative approaches to satisfy the requirement of parking management review: (1) Facility-by-facility review and (2) preparation and implementation of a Parking Management Plan. The Federal regulations specifically provide for facility-by-facility review of all new parking facilities above a specified size both to ensure compliance with air quality standards and to ensure minimization of vehicle miles traveled (VMT). This facility-by-facility review regulation is to be administered by the Environmental Protection Agency or by an appropriate state or local agency which has been delegated this responsibility. Although this regulation has been Federally promulgated, it is the Administrator's intent to delegate implementation of facility-by-facility review to appropriate state or local agencies wherever possible.

The regulations also envision development by state or local government agencies of Parking Management Plans, which when approved by the Environmental Protection Agency and implemented by the appropriate state or local agencies will replace the facility by facility review procedures. A Parking Management Plan is a comprehensive plan for managing the parking supply of an area consistent with air quality standards as well as other land use and transportation considerations. As such, the plan will incorporate consideration of the relationship of an individual parking facility to an overall plan for future parking development in the area. Through this approach tradeoffs can be made within the review area, and parking facility development can be designed to complement changes in zoning regulations and transit service. The Environmental Protection Agency prefers and encourages the Parking Management Plan option due to its inherent flexibility, its ability to reflect local goals, and its direct integration into overall transportation and land use planning processes. Until parking management plans are developed by state or local agencies and approved by the Environmental Protection Agency however, facility-by-facility review will be in effect. This appendix outlines both the procedures to be followed under facility-by-facility review and the considerations to be utilized in developing a Parking Management Plan.

2. *Facility-by-Facility Review.* Facility by facility review includes an analysis of a facility's impact on both areawide vehicle miles traveled and local carbon monoxide concentrations. Each of these requirements includes several alternative procedures which can be used to demonstrate fulfillment of the provisions of this regulation.

The review requirements for analyzing the impact on vehicle miles traveled can be satisfied in any of three ways: (1) By certification that the facility is specifically designed to promote high occupancy vehicle use, (2) by modeling to demonstrate that there will be no net increase in vehicle miles traveled, or (3) by justification of the need for the proposed parking facility together with measures to minimize vehicle miles traveled. The applicant can select whichever technique is most appropriate to his specific circumstances.

The specific review required for carbon monoxide impact varies according to the size of the facility. Facilities having a capacity of 1000 vehicles or more must satisfy the procedures for parking-related facilities set forth in Indirect Source Regulations which are presented in the FEDERAL REGISTER of July 9, 1974 (39 F.R. 25292). Facilities having a capacity of fewer than 1000 spaces, but more than the minimum specified under these regulations, can satisfy the carbon monoxide requirements through any of three procedures: (1) By modeling the carbon monoxide impact in accordance with the referenced Indirect Source procedures; (2) by providing acceptable monitoring data which indicates that the worst existing carbon monoxide level immediately adjacent to the proposed facility is less than 75% of the carbon monoxide standard; or (3) by demonstrating to the Administrator's satisfaction that no carbon monoxide standard violation will result due to the size and location of the proposed facility. Again the applicant can select whichever technique is most appropriate to his specific circumstances.

A. *Impact on Vehicle Miles Traveled.* The first requirement under the facility-by-facility review is that all proposed facilities subject to this review shall provide adequate information to demon-

ate that operation of the proposed ility will be consistent with the need minimize vehicle miles traveled as set h in the applicable transportation trol plan. Such consistency must be nonstrated by use of one of the three rnatives below. It should be emphaed that proposed facilities need only sfy the requirements of one of these ee alternatives.

(i) *Alternative 1: Special Purpose ilities Specifically Designed for VMT luction.* This alternative is to be ited to special purpose facilities deoped as an integral component of proams specifically designed to reduce TT. Examples of such facilities are rk and ride lots developed in conjuncn with transit improvements and carl programs. The application must ovide the following kinds of informan:

1. The type of mass transit service to provided, if any.
2. Special arrangements for carpools.
3. The parking fee schedule.
4. Measures to avoid use of the facility auxiliary parking by adjacent enterises.

(ii) *Alternative 2: Modeling.* This ernative is applicable to prospective ners/operators of proposed facilities r which precise information exists or n be developed regarding the locations d travel patterns of potential facility ers.

Approval of a proposed facility shall contingent upon provision of quantitive analysis demonstrating that opation of the facility will not result in net increase in the vehicle miles aveled in the transportation control an area subject to this review. The nalysis shall consider such items as the ip origin and location of vehicles using e proposed parking facility and shall nclude employee origin studies for work tes, market analysis for shopping locaons, and similar studies for other uses. The techniques used for these studies ust conform with generally accepted ansportation planning practices. Exmples of such analyses include:

1. For a work site relocating within n urban area, an analysis of residence cations and mode usage showing that wer vehicle miles of travel will be enerated to access the new site.
2. For shopping facilities, a market nalysis illustrating that expected users ill have shorter trips than to presently vailable facilities, and that longer trips om established areas will not result a net increase in vehicle miles traved. The mode of travel used for access ust be considered in these studies, hich may be based on an analysis of xisting customers for current operaons.

Additional sources providing informaon on transportation planning and affic estimating techniques include:

(1) *Latent Demand for Urban Transortation.* Carnegie-Mellon University, ransportation Research Institute. Study 1 New Systems of Urban Transportaon. Report to the U.S. Department of Housing and Urban Development. Pittsburgh, Pennsylvania: 1968.

(2) *Patterns of Car Ownership, Trip Generation and Trip Sharing in Urbanized Areas.* Prepared for the U.S. Department of Transportation, Bureau of Public Roads. New Haven, Connecticut: Wilbur Smith and Associates, June 1968.

(3) *Transportation and Parking for Tomorrow's Cities.* Prepared for the Automobile Manufacturer's Association. New Haven, Connecticut: Wilbur Smith and Associates, 1966.

(4) *Modal Split: Documentation of Nine Methods for Estimating Transit Usage.* U.S. Department of Transportation, Federal Highway Administration, Office of Highway Planning. Washington, D.C.: U.S. Government Printing Office, October 1970.

(5) *Traffic Engineering Handbook.* Edited by John E. Baerwald. 3rd Edition. Institute of Traffic Engineers. Washington, D.C., 1965.

All necessary studies, surveys, and market analyses required to determine the effect on VMT will be the responsibility of the applicant who must provide the data source, methodology, and calculations used in supplying the following information:

1. The number of people using or engaging in any enterprises or activities that the facility will serve on a daily basis and a peak hour basis. This should include estimated total daily person trips to the enterprises served by all modes of travel, by mass transit, by walking or bicycle and by automobile.
2. An estimate of the total daily auto trips as well as average and peak hour vehicle trip generation rates, before and after construction or modification of the facility.
3. A projection of the geographic areas in the community from which people and motor vehicles will be drawn to the facility. Such projection shall include data concerning the availability of mass transit from such areas. Describe existing and proposed routes, levels, and times of service of public transit within a quarter mile radius of the facility.
4. An estimate (in terms of change in vehicle miles traveled) of the effect of the facility on total VMT for the air quality control region. This should include an estimate of the mean distance traveled for users of the enterprises and activities served by the facility based on information provided in 2 and 3 above.
5. Additional information, plans, specification, or documents determined to be necessary by the Administrator.

Example. The following example is provided as an illustration of an applicant having adequate information to comply with the requirements of this alternative. This example is provided solely for the purpose of demonstrating the evaluation process to be used in reviewing applications and the conclusion reached is valid only under this narrow set of circumstances.

An insurance company with 550 employees intends to relocate and wishes to provide parking for 300 employee cars and some visitors' cars at its new location. Origin studies based on maps derived from employee records indicate that the average employee now lives 7.15 miles from the current office. Road travel studies for this area indicate road distance at 1.40 times the straight line distance giving an approximate average round trip commuting distance of 20 miles. Similar origin studies for the new destination show that the average round trip commuting distance for the new facility will be 15 miles. Surveys of employees' transit habits indicate the modal split for commuting to existing facilities, and similar studies and projections are used to predict the modal split for employee access to the new facility.

A summary of the findings of the origin destination study and the modal split survey are illustrated in the following Table I. Inasmuch as the new vehicle miles traveled figure is not greater than that associated with the replaced facility, the facility proposed by this applicant would be approvable under this alternative.

TABLE I.—*Comparison of Vehicle Miles Traveled Associated with Existing and New Facility*

Mode	Modal split		Per capita VMT	Total VMT	Parking spaces
	Percent	Number of employees			
Existing facility (average round trip distance, 20 miles)					
Walk	3	17	0	0	0
Bicycle	2	11	0	0	0
Mass transit	35	192	3	576	0
Carpool	30	[1] 165	[2] 8	1,320	47
Single occupancy	30	165	20	3,300	165
Total	100	550		5,196	212
New facility (average round trip distance, 15 miles)					
Walk	1	5	0	0	0
Bicycle	2	11	0	0	0
Mass transit	22	121	3	363	0
Carpool	30	165	6	990	47
Single occupancy	45	248	15	3,720	248
Total	100	550		5,073	295

[1] Average carpool occupancy for this firm was 3.5 employees.
[2] Average commuter trip by carpool was 40% of the single occupancy per capita VMT.
[3] In this situation, mass transportation is assumed not to be as readily available as in the original location.

iii) *Alternative 3: Minimization of icle Miles Traveled (VMT).*

ider this alternative a proposed fa- y will be approved if it can be dem- trated by the applicant that the ility will serve the community's wel- e and that all reasonable measures employed to minimize the new fa- ty's impact on vehicle miles traveled. iasically the steps to be followed by rospective applicant selecting this al- native are as follows:

. Justification of the need for the posed parking facility which takes o consideration the best interests of community and the adequacy of ex- ng and proposed mass transit. This ll include a description of existing proposed transit service as well as sting parking facilities. (Certification any mass transit inadequacy by ap- priate local officials may be required.)

. Development of a specific program minimize the VMT impact of the pro- sed facility.

3. Estimation of the reduction in re- ired spaces to be achieved through plementation of the VMT reduction ogram.

4. Application for a permit to con- uct the facility.

The program to minimize the vehicle les traveled associated with the facility ould generally discourage low occu- ncy use of automobiles and promote of carpools and mass transit. This be accomplished through a variety specific measures expressly designed minimize the vehicle miles traveled ociated with use of the proposed fa- ty. The specific mix of measures to be ployed will vary depending upon the rticular circumstances affecting the ility; however, in each case all rea- iable measures must be employed. nenever special circumstances or re- cement measures indicate that a par- ular measure is not reasonable for plementation as a VMT minimization ion, the applicant must provide a de- led justification to this effect.

Table II lists measures which must be nsidered for inclusion in any proposed ility's program for minimization of hicle miles traveled. Facilities are di- ied as to type according to five cate- ries. In general, the purpose of pro- ling parking facility categories has en to recognize individual circum- nces and provide special treatment for ecial purpose facilities. However, it is clearly recognized that many parking facilities may involve overlaps in the categories listed above. For example, a shopping center parking lot may well be used by both customers and employees of the enterprises located in the shopping center. In such cases, VMT reduction measures from both of the applicable categories will be required, and the applicant must provide sufficient information to describe user categories, VMT minimization measures considered, measures to be implemented, and justification for the omission of any applicable measure which the applicant considers inappropriate or unreasonable.

The basic categories are:

(1) *Residential*—Parking facilities to be utilized exclusively by residents of the associated apartment or condominium or their guests, and the immediate staff of the residential complex. Those parking facilities which employ measures sufficient to control residential uses and to exclude customers, clients, employees or students from other enterprises can be considered to fall solely within this category. Otherwise the requirements for additional categories shall apply.

(2) *Customer/Client*—Parking facilities to be used by customers and clients of specific commercial facilities or offices. Only those facilities which employ measures sufficient to exclude or limit use by all day parkers such as employees and students can be considered within this specific category otherwise the requirements for employee parking shall also apply. These circumstances would be applicable to parking facilities provided for shopping centers, professional buildings, restaurants or similar enterprises or some combination.

(3) *Employee*—Parking facilities to be used primarily by all day parkers such as employees and students. For purposes of this regulation an all day parker is anyone who parks at the same location for six or more hours. However, this category is not intended to apply to residential parkers or intermittent users of facilities such as stadiums, clubs, theaters, churches, or recreational facilities. Examples of such facilities would include but not be limited to: university parking facilities for students and staff and employee parking facilities associated with factories, warehouses, offices and commercial enterprises.

(4) *Recreation/Intermittent Use*—Parking facilities to be used by patrons of theaters, churches, clubs, auditoriums, sport stadiums, recreational facilities and similar establishments not normally used on a daily basis during the work day. Only those parking facilities which employ measures sufficient to exclude shoppers, clients, employees or students of other enterprises can be considered within this specific category; otherwise the requirements for these additional categories shall also apply.

(5) *Multi-Purpose*—Parking facilities operated as commercial enterprises for use by the general public rather than to serve the patrons or employees of a specific business. An example of such a facility would be any public or private parking lot or garage intended for use by the patrons and employees of many enterprises within walking distance of the parking facility. Such parking facilities normally would not require identification and the users may well include all types of parking facility users including residents, students, employees, customers and clients.

The measures listed are not intended to be all-inclusive. Additional measures not listed may be appropriate depending on the specific circumstances associated with a proposed facility. Such additional measures may be used by the applicant to augment or serve as justification for nonemployment of one of the specified measures if such measures have the equivalent effect and are approved by the Administrator. In any case, measures enumerated for the facility in question must receive full consideration and must be included in the facility's program to minimize vehicle miles traveled except where it has been demonstrated to the Administrator's satisfaction that certain specific measures are not justified in a particular instance. All listed measures will be deemed applicable except where such demonstration has been provided and approved by the Administrator. The need for including certain measures on the list may be preempted by inclusion of other listed measures (for example, shopping facilities already well served by mass transit may not need to provide private bus service). Such tradeoffs must be clearly specified and explored. In all cases the substantive provisions of the vast majority of measures listed in Table II must be included in the program to minimize the impact on vehicle miles traveled in order to obtain approval of the proposed facility. Examples of programs employing these VMT minimization measures are included at the end of this section.

TABLE II.—*Vehicle Miles Traveled Minimization Measures*

	Residential	Customer/client	Employee	Recreation and intermittent use	Independent multi-purpose
asures to restrict usage:					
(a) Assigned spaces and/or decals	×		×		×
(b) Limited operating hours		×		×	×
(c) Parking fees and/or flat rate hourly per charges or other rates favoring short term parking		×			×
(d) Ticket validation		×			×
(e) Posting of parking restriction/towing or fines for violators	×	×			
asures to encourage mass transit usage:					
(a) Locating near existing mass transit and/or providing or coordinating with the transit agency to provide: 1. adequate levels of transit service, 2. protected comfortable shelters at transit stops, 3. covered walk-ways to transit stops	×	×	×	×	×
(b) Publicity for mass transit usage including prominent display of mass transit schedules, maps, etc.	×	×	×	×	×
(c) Delivery service for customers' packages		×			
(d) Subscription to dial-a-ride service	×	×	×	×	×
(e) Private bus service provided by area businesses		×	×		
(f) Locator for mini-bus pool	×		×	×	
(g) Full or partial payment of transit fare		×	×	×	
(h) Provision of company vehicles for carpool commuting			×		
(i) Provision of company or chartered vehicles connecting with public transit lines or other park and ride facilities	×	×	×	×	
(j) Adapting company hours to be more compatible with bus schedules		×	×		

Table Continued on Back Cover

EXAMPLES OF VMT MINIMIZATION PROGRAMS

ɔe following examples are provided ustration of VMT minimization pro- n to be undertaken by applicant for ous types of parking facilities. These nples are provided for the purpose of ification and any approval contin- upon use of these measures would dely applicable to the narrow range rcumstances affecting these partic- facilities.

ɪployee Parking. An electronics as- ly plant located in a suburban por- of an area covered under parking agement regulations is now under- expansion and proposes to increase xisting parking capacity by more 250 spaces to provide parking for employees. The location of the plant is instance precludes the provision egularly scheduled public transit ce. However, this constraint has not ented this company from providing r positive inducements for the use of VMT type transportation. The com- has coordinated with local transit icies to ensure sufficient mass transit eak hours along transit routes near plant location and has also coordi- d work hours with transit schedules to assure minimum travel time for loyees. Buses will be chartered by the pany to provide connecting service nearby public transit. Convenient, fortable and well lit waiting areas be provided both at the factory and earby transfer points for the benefit nployees using these transit services. ddition, the company will purchase vans and lease them to employee ps desiring to use them for commut- rom areas not served by mass transit. Maps, schedules and publicity for mass transit, carpools and van-pools will be prominently displayed in all employee gathering places. Furthermore, all current and new employees will receive from the personnel office a packet of information containing the names of the ten employees living nearest to their own homes, maps and schedules for the appropriate mass transit route from their home to the plant and a detailed explanation of all applicable regulations pertaining to the operation of the parking facilities.

Maintenance of this parking facility incorporates several features designed to minimize VMT including the following provisions: (1) parking spaces closest to the building's entrances will be restricted for the use of carpools only (2) commercial rates will be charged for use of all non-carpool parking spaces (3) lockers and protected storage areas will be provided for bicycle users.

Residential Parking: A residential parking facility has been proposed for an urban renewal area which, when completed, will include stores, office buildings, and apartments. The application specifies that usage will be restricted to residents by installing automatic card-operated gate controls at the entrances and exits of the facility. Card keys will be issued to residents only and a commercial fee will be charged separately from the apartment rent.

Coordination with the local transit authority has been made to assure that a bus stop will be provided in the same block as the apartment complex and the builders of the parking facility will provide a covered walkway from the apartment entrance to an enclosed waiting area at the bus stop. In addition to the regularly scheduled public mass transit service, the developers, together with area merchants, have also proposed the use of a dial-a-ride minibus system which will be particularly valuable for the aged and handicapped. Maps, schedules and publicity for both bus systems will be prominently displayed and all residents will be encouraged to submit their names and commuting patterns for use in developing a carpool locating system.

Curb ramps will be provided at all intersections to facilitate use of bicycles and wheel chairs. In addition, readily accessible protected storage areas will be provided for bicycles. To encourage walking for short trips a pedestrian overpass will also be provided between the apartment complex and a shopping area currently separated by a heavily traveled road.

Recreation/Intermittent Use: Developers of a new sports stadium located in the suburbs of a large metropolitan area have devised a program to minimize the VMT impact of the proposed parking facility to accompany the sports stadium. It includes measures to encourage patrons to use buses, carpools, and other low VMT type transit, and in addition makes use of part of the parking facility during the day-time as a park-and-ride lot for commuters. Extensive coordination with the transit authority has assured that extra buses will be provided during game times.

Due to the isolated nature of the sports facility (at least ½ mile from stores, offices, and other employers), it has not been necessary to employ special measures to restrict usage to the patrons of the facility.

In general the aggregate parking fees will in all cases be sufficient to cover the cost of the parking facility. The proposed fee for non-carpool cars during the game is to be $2.00, although this may later be increased. In no case is the cost of admission tickets to subsidize the cost of parking, and package deals including the price of admission and a parking ticket will not be featured at this facility.

The use of carpools for spectators at sports events is encouraged by the following kinds of provisions: Sixty percent of the parking spaces are reserved for cars having four or more occupants. These spaces are the ones closest to the entrances and exits of the coliseum. This fact is advertised by prominently-posted signs and enforced by guards directing traffic at the entrances to the special "car pool" areas. Parking for carpools is provided at one-half the price of regular parking, and there is prominently displayed publicity for carpools including carpool locator maps showing name, phone number, and location of those desiring to share rides to future games.

Measures to encourage use of mass transit have been detailed, and include a number of significant items. In addition to regularly-scheduled bus service, extra buses are provided during the evening games. Charter bus arrangement for groups is publicized, as are maps, schedules, and notices about the advantages of taking the bus to the

ne. Bus tickets may be included as t of the purchase price of an admis- ticket, and private bus lanes within facility assure users that they will e unimpeded service right up to the rance. Once discharged at the sta- m entrance, the rider finds secure iting areas with covered walk ways necting loading and discharge areas exits and entrances.

For those users of the stadium who ght choose to walk or travel by bicycle, her measures are provided. Bicycle cks are located in sheltered guarded cations and bicycle paths are separated om the highways for motor vehicles. idewalks are well designed, and there an overpass allowing cyclists and edestrians to cross without getting into otor vehicle traffic.

In addition to the VMT reduction easures specifically aimed at the atrons of the coliseum, the parking cility will also be operated so as to re- ice vehicle miles traveled by the area's ommuters. During the daytime, when orts activities are not scheduled, the arking facility will serve as a park-and- de lot for commuter bus lines and for rpools. To accommodate this function omfortable waiting areas, mass transit ublicity, including maps and schedules, nd a carpool locator showing names, hone numbers, and destinations of hose desiring to share rides will be pro- ided. In no case will the fee for using park-and-ride lot be greater than one- alf the cost of a space for a sports fan.

Commercial/Multipurpose: The pro- osed parking facility is to be a munici- al parking garage, located in the down- own commercial district of a major city. In general, in order to discourage all day parkers, the following measures will also e included: First, only 20% of the spaces are to be available before 9:30 a.m. Parking fees will not be subsidized and will increase hourly to favor the short term parker.

In order to promote usage of buses, from the point of parking to other destinations, the facility is located along major north-south and east-west subway and bus routes, including minibuses to adjacent stores and offices. There are prominent displays of mass transit publicity, including maps and schedules. Additionally, protected comfortable waiting areas for mass transit, with covered walkways to landing and discharge areas, are provided as well as storage lockers for packages.

Carpools will also be promoted in a variety of ways. A carpool publicity campaign and a locator (including names, phone numbers, homes, and destinations of people desiring to share rides) are to be prominently displayed. Priority spaces are provided for drivers of cars with four or more occupants. These spaces are closest to the entrances and exits of the parking garage. Furthermore, parking fees for carpools are only 75% of the normal daily rate.

The facility will also provide some service for bicycle riders and pedestrians. Guarded sheltered bicycle racks are located within the facility. All curbs adjacent to the facility have ramps for bicycles and wheelchairs, and convenient sidewalks are provided throughout the facility.

Customer/Client Parking. The following VMT minimization program accompanies a proposed parking lot for a new suburban shopping center. The proposed parking facility is to be utilized by both customers and clients of the shopping center enterprises, as well as some employees of the shopping center.

The shopping center is connected by regularly scheduled bus routes both to the downtown area and to neighboring suburbs. One-half of the roundtrip fare is paid by merchants, with proof of purchase at the stores. Also, a dial-a-bus minibus system is provided within a five mile radius of the center, and half of the round trip cost is paid by the shopping center enterprises with proof of purchase. A delivery service is provided for any bulky packages which might prove inconvenient for the customer using the bus. Furthermore, mass transit publicity including maps and schedules prominently posted is displayed throughout the shopping center, and there are protected comfortable shelters for those awaiting buses as well as covered walkways from the shopping center to bus waiting areas.

Priority parking for cars with two or more occupants is provided in space closest to the stores. Also, a carpool publicity campaign, with a locator including names, phone numbers, and residences of potential users, is a consistent priority of the shopping center's publicity efforts.

For those who walk or cycle to the shopping center, there are overpasses and underpasses to provide safer and more convenient access. Guarded sheltered bike racks are provided, and bicycle and foot paths separated from roadways are also available. Additionally, lockers are provided for these customers, and they can take advantage of the delivery system for bulky items.

To further encourage mass transit and carpool use by employees to enterprises located in the shopping center, special employee parking facilities are provided separately from the customer/client facilities. All employees are directed to park only in the employee area and to enforce this provision, all other parking is closed until 9:30 a.m. In addition, all other suitable measures for employee parking facilities are to be utilized for this special employee parking area. Such measures include: free bus tokens to employees; coordinating employee hours with bus schedules; providing each employee with a list of other shopping center employees working similar hours and living in the same vicinity; and the use of shopping center cars or vans for carpools.

B. *Impact on Local Carbon Monoxide Concentrations.* The second requirement under the Federally promulgated facility-by-facility review procedures involves analysis of the local carbon monoxide impact. In order to receive approval under this portion of the review procedure the applicant must demonstrate that operation of the proposed facility will not cause or exacerbate a violation of the national carbon monoxide standards. The procedures for demonstrating a facility's impact vary according to the size of a proposed facility.

(i) *Parking Facilities Having Capacity for 1,000 or More Motor Vehicles.* Parking facilities having a capacity of more than 1,000 motor vehicles or being modified to increase capacity by 500 or more motor vehicles shall demonstrate through the use of a quantitative analysis that the design or operation of the facility will not result in a violation of carbon monoxide standards. Applicants may provide the required demonstration through the use of the methodology specified in the Environmental Protection Agency's Guidelines for the Review of the Impact of Indirect Sources on Ambient Air Quality or through the use of some other acceptable air quality diffusion model. If the applicant follows the appropriate methodology specified for review of indirect sources, he may either complete the modeling procedure and submit the data and results or simply submit the data for the Agency's modeling calculations. Necessary supporting data also must be provided to the extent indicated on the application form. The following types of general background information will also be required for all proposed facilities in this category.

(a) A map showing the location of the site of the facility including the topography of the area.

(b) A description of the proposed use of the site, including the normal hours of operation of the facility, and the general types of activities to be operated therein.

(c) A site plan showing the location of associated parking areas, points of motor vehicle ingress and egress to and from the site and its associated parking areas, and the location and height of buildings on the site.

(d) An identification of the principal roads, highways, and intersections that will be used by motor vehicles moving to or from the parking facility.

(e) An estimate, as of the first year after the date the parking facility will be substantially complete and operational, of the average traffic volumes, maximum traffic volumes for one-hour and eight-hour periods, and vehicle capacities of the principal roads, highways, and intersections identified in item (i)(d) above located within one-fourth mile of all boundaries of the site.

(f) Availability of existing and projected mass transit to service the site.

(ii) *Parking Facilities having a capacity for fewer than 1,000 motor vehicles.* Parking facilities subject to this review having a capacity for fewer than 1,000 vehicles, or involving modification of a facility to increase capacity by less than 500 motor vehicles shall satisfy the requirements for analyzing the carbon monoxide impact in any one of the following three ways:

Alternative 1. Modeling to demonstrate that operation of the facility will not

or exacerbate a violation of car-
monoxide standards. These require-
can be satisfied by following the
dures set forth in B(1) above.

ernative 2. Provide acceptable monit-
g data which indicates that the
existing carbon monoxide level im-
ately adjacent to the proposed fa-
is less than 75% of the carbon
xide standard. The monitoring shall
nducted for a period of 2 weeks, and
'e seasonally adjusted by the Ad-
trator to account for more adverse
or meteorological conditions. The
toring instrumentatin and the loca-
of the sampling instrument shall be
oved by the Administrator.

ernative 3. Demonstrate to the Ad-
trator's satisfaction that no carbon
oxide standard violation will result
to the size and location of the pro-
d facility. This alternative will be
ted to a small number of facilities in
s clearly recognized as being in no
ger of having carbon monoxide viola-
s now or in the foreseeable future.

Parking Management Plans. The
nd alternative approach for satisfy-
the requirement of parking manage-
t review calls for the development by
affected local jurisdictions of a Park-
Management Plan. A Parking Man-
nent Plan is a comprehensive plan
the control of the development of fu-
parking facilities in the affected
ropolitan area in relationship to ex-
ng parking resources and the present
projected transportation system.
a plan would have the same basic
ctive as the facility-by-facility re-
w procedures: to consider and at-
pt to minimize the effects of new
king facilities on areawide vehicle
es traveled and to assure that the
or vehicle traffic associated with these
lities does not cause or exacerbate a
ation of air quality standards.

lthough a Parking Management Plan
y take many forms dependent on the
ds and resources of an area, all plans
have certain features in common.
ey will all be long range locally
eloped plans which emphasize people
es traveled rather than vehicle miles
veled. All parking management plans
l respond to how the city wants to
w and consider the interrelationships
transportation, land-use, and air
ality. This can be accomplished by a
neral scheme for the placement of new
rking facilities in association with
ns for transit and land use develop-
nt. This scheme will be created in such
ay as to be consistent with the VMT
nimization and air quality objectives
ted above. Each proposed new facility
l then be reviewed to determine
ether it is in compliance with the
rking management plan's pattern for
ure parking facility development
roughout the area.

The Environmental Protection Agency
finitely prefers the development of a
rking Management Plan over the Fed-
ally promulgated facility by facility ap-
oach. EPA feels that since the plan
proach relies on the participation of
local officials in the plan development and implementation process it can more successfully reflect the needs and concerns of the community. As long as the plan provides for the considerations outlined under the facility-by-facility review requirements, a great deal of flexibility in the plan's form and processes is possible. Due to the myriad of local considerations which must be integrated into development of such a plan the Environmental Protection Agency has neither the capability nor intention to unilaterally develop such plans.

In general, an acceptable Parking Management Plan would have several specific advantages over the more limited facility-by-facility review. Once a plan is established, less effort would be needed to review each individual application. Prospective developers would have a better understanding of the type of development that would be found acceptable by the reviewing agency. Local zoning and transit plans not incorporated in facility-by-facility review could be incorporated in the parking management plan. Consideration of replacement of existing parking spaces in different locations within the area covered by the plan could be permitted, and tradeoffs allowed. The plan's requirements and projections could be better coordinated with an applicable Air Quality Maintenance Plan for the area. Finally, by complementing long range land use and transportation planning, such a plan would be more effective in achieving air quality goals for the entire Air Quality Control Region.

A Parking Management Plan, although representing a different approach, still provides for the same considerations and objectives as the facility-by-facility review. An acceptable Parking Management Plan must contain procedures for the review of a new facility's effect on local carbon monoxide concentrations and assure that there will be no violation or exacerbation of violations of carbon monoxide standards. This requirement may be met through a carbon monoxide review process similar to that now required under the facility-by-facility review. The plan must also provide for a minimization of vehicle miles traveled consistent with that obtained through the facility-by-facility review. This can be accomplished through a variety of methods such as: a freeze on growth of new parking facilities in certain specified areas; a policy providing for only replacement of facilities so as to maintain a constant total supply of parking for the area; an allocation system which provides that only a certain limited increase in parking may take place each year, consistent with the vehicle miles traveled minimization considerations; a policy which encourages new parking facilities which complement mass transit and encourage carpools while discouraging those which compete with mass transit; and a policy for land use development patterns which integrates considerations for minimizing vehicle miles traveled into parking and other land use decisions. Illustrations of some of these optional approaches are provided at the end of this section. In light of the similarity of the requirement for a Parking Management Plan and those under facility-by-facility review and the insights to be gained through implementation of a facility-by-facility review process, a local government may find it beneficial to use the facility-by-facility review process as an initial stage in its development of a Parking Management Plan. This procedure, however, is not required and a local jurisdiction is encouraged to move to development of a plan as soon as possible.

In developing a comprehensive parking management plan which meets the requirements of this regulation, the local government or planning agency may find it useful to consider the following questions:

1. What are existing VMT growth rates?
2. What will be the effects of an unconstrained increase in VMT on air quality, energy land use, and the local economy and social concerns?
3. What measures are available to reduce potential VMT increase?
4. What contribution can management of parking supply realistically be expected to make in minimizing increases in vehicle miles traveled?
5. What land use and transportation decisions must be made to implement effective use of parking supply management?
6. How can these decisions be implemented?

In order to fulfill the specific requirements of the Management of Parking Supply regulation the agency applying for approval of a parking management plan must demonstrate to the satisfaction of the Administrator that the plan will control construction of the area's future parking facilities so as to minimize vehicle miles traveled and to prevent a new facility from causing or exacerbating a violation of the National Air Quality Standards. In order for the Administrator to make this determination at least the following information must be provided:

1. Inventory of existing parking facilities by type, location and capacity.
2. Inventory of average daily vehicle miles traveled.
3. Current annual growth rate in net new parking spaces and vehicle miles traveled.
4. Applicable zoning and other land use regulations in the affected areas, including any proposed or adopted amendments necessary to achieve the goals of the plan.
5. Criteria for evaluating new parking facilities.
6. Description of the evaluation and approval process.
7. Mechanisms for enforcing any decisions made during the evaluation and approval process.
8. Amount and general location of new parking spaces to be permitted.
9. Method of allocation of new parking spaces.
10. Description of interrelationships of the criteria in the proposed plan with other local transportation and land use goals.
11. Description of the relationships between the various agencies charged with responsibility for implementing this plan.

Description of the procedures to be loyed in processing applications for new ing facilities.

Provision of information concerning vehicle miles traveled reduction to be ved through the use of this plan.

Documentation that a public hearing been held on this plan and summary of principal comments.

Description of the plan's procedures ssuring that the operating of any new ing facilities will not cause a violation acerbation of a violation of local carmonoxide standards. Such procedures be equivalent to the requirements set under the facility-by-facility review edures.

Additional information may be reed by the Administrator upon or shortter final submission of this plan for apal.

amples of Directions in Parking agement Plans. The following exles are provided to serve as illustraof the wide variety of possible direcs to be followed in the development Parking Management Plans. The ific details of any plan and even the of plan selected would depend upon interests and configuration of the ictions involved.

ective Parking Freeze. A plan for olling parking space growth which ly is in effect in parts of Boston and le is to establish a freeze on all new esidential parking spaces in cerareas. As some parking spaces are ced by new buildings, tradeoffs can ovided allowing that same number aces to be reallocated to another g. Similarly, several small lots may nsolidated into one large one which ated at a mass transit terminal and serves area merchants. However, h these cases no net increase in g spaces is permitted.

cified Graduated Increases. A varof the "freeze" approach to parkanagement is to expand the control area and allow a small graduated increase in parking spaces. The annual amount of new parking spaces to be permitted would be determined by reference to the current average VMT growth rate and desired reduction. Under this approach, mass transit improvements, VMT reduction programs and parking space allocations would have to be sufficiently coordinated to assure that the jointly agreed upon parking space rate of increase is not exceeded.

Use of Monthly Quotas. A further variation of the gradual increase approach would call for the establishment of monthly quotas in new parking spaces based on required minimization. Applicants for the limited number of new parking space permits could then be judged based on predetermined and published criteria. Such criteria could include such diverse elements as community need, proximity of mass transit, financial per space contribution to mass transit, VMT impact and efforts made to minimize VMT. Depending upon the specific needs and interests of a given metropolitan area, a limited number of permits for new non-residential parking spaces could also be sold as a mass transit revenue support measure with price determined so as to achieve the desired reduction.

Parking Spaces and Zoning. A city having a clearly defined and well accepted comprehensive transportation and land use plan may choose to zone various areas of the city to allow only certain categories of new parking. For example, major transportation corridors of the city could be restricted so as to exclude new parking facilities except for residential parking and facilities specifically developed as park and ride lots. Other areas located several blocks distant from existing and proposed high frequency mass transit service could permit new parking facilities for customers and clients as well as residents, but no new employee parking facilities. (Parking for residents only can be controlled by issuing color coded stickers to residents and customer parking can also be controlled through operating hours and pricing policies.) Similarly areas located still further from transit lines could allow some new employee parking with priority given to carpools.

Maximum Space Zoning. Other metropolitan areas may not desire to fix their land use and transportation patterns quite as rigidly at this time. These areas may elect to use a form of parking space zoning that sets maximum rather than minimum numbers of spaces to be provided. Instead of requiring that a certain category of office building provide at least 3 spaces per 1,000 sq. ft. of gross leasable floor area, the locality could require that no more than 3 spaces per 1,000 sq. ft. be provided.

Maximum allowable spaces for various categories of buildings would be established so as to achieve the desired reduction in parking space growth rate. These maximum limits would, of course, reflect the availability of mass transit and the maximum allowable number of spaces for any category of enterprise could be determined in advance. Given the enterprise, its size and location, both the administering agency and the prospective developer could readily determine the maximum number of spaces to be permitted.

Local governments in all affected areas are encouraged to submit proposals for local Parking Management Plans as soon as possible. At that time specific arrangements for transition from facility-by-facility review to a Parking Management Plan can be developed and coordinated.

[FR Doc.74-18908 Filed 8-21-74;8:45 am]

PAGE 3

COVER A

	Residential	Customer/ Client	Employee	Recreation & Intermittent Use	Independent Multi-purpose
3. Measures To Encourage Carpooling					
a) carpool locator	x	x	x	x	x
b) carpool publicity campaign	x	x	x	x	x
c) restricted priority spaces for carpoolers only	x	x	x	x	x
d) designated protected pickup and discharge areas		x	x	x	
e) reduced rates for carpools			x		x
f) use of company cars for carpooling			x		x
4. Measures To Encourage Use of Bicycles					
a) protected bicycle racks and storage areas	x	x	x	x	x
b) bicycle paths, and lanes	x	x	x	x	x
c) shower and locker facilities			x		
5. Measures To Encourage Walking					
a) lighted and protected paths and sidewalks	x	x	x	x	x
b) ground security patrol	x	x	x	x	x
c) overpass, underpass and other grade separations	x	x	x	x	x
6. General					
a) Use of commercial rates or other pricing policies	x	x	x	x	x
b) daytime use of parking facilities as park and ride lots	x			x	

ERRATA

The effective date for compliance with the parking management regulations has been postponed to June 30, 1975. A notice of postponement appeared in the Federal Register on October 15, 1974.

The effective date for indirect source review remains January 1, 1975.

tion of food or feed, or food or feed packaging materials.[1]

(e) *Well injection.* (1) No pesticide, pesticide-related waste, pesticide container, or residue from a pesticide container shall be disposed of by well injection unless the person(s) proposing to undertake such disposal first receives approval from the appropriate State agency, demonstrates that he has exhausted all reasonable alternative methods of disposal and finds them unsatisfactory in terms of environmental considerations, submits to the Regional Administrator in the Region where the well is to be located the recommended data requirements which accompany ADS #5 (FEDERAL REGISTER, Vol. 39, No. 69, April 9, 1974), and obtains the approval of the Regional Administrator for the proposed well injection. Included in these information requirements are:

(i) The location and design of the injection well;

(ii) The type and amount of pesticide to be injected;

(iii) The results of pre-injection tests made to predict the fate of materials injected;

(iv) Provisions for monitoring the operation and the effects on the environment;

(v) Provisions for plugging injection wells when abandoned;

(vi) Contingency provisions for coping with injection well failures;

(2) If spills from storage containers, or from the injection operation, occur, disposers are warned of their potential liability and penalties which may be imposed under Section 311 of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500).

(3) If at any time after approval of an application for the well injection of a pesticide there is additional information regarding adverse effects on the environment, such information shall be submitted to the aforementioned Regional Administrator.

[FR Doc. 74-23836 Filed 10-11-74;8:45 am]

[1] Department of Transportation has proposed hazardous materials transportation regulations (FEDERAL REGISTER, January 24, 1974, Vol. 39, No. 17) that would prohibit the mixed shipment of highly toxic pesticides and food or feed, and the transfer of any pesticide to food or feed may render such food or feed adulterated under the meaning of the Federal Food, Drug and Cosmetic Act.

[40 CFR Part 52]

[FRL 279-6]

APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

Parking Management Regulations, Postponement of Compliance Date

In the August 22, 1974, FEDERAL REGISTER (39 FR 30440) the Environmental Protection Agency proposed amendments to the parking management regulations for eighteen areas. The effective date for compliance with these regulations was set for January 1, 1975.

Planning and organization to implement the regulations is proceeding. However, in order to provide more adequate time for successful implementation of the combined regulations and amendments, the compliance date for the parking management regulations and amendments is hereby changed to June 30, 1975. This will also allow time for adjustments made necessary by any changes adopted as a result of the various local hearings being held during this month in affected areas on the August 22, 1974, proposals.

The Administrator intends to take final action on the proposed amendments after completion of all public hearings scheduled for the affected areas, and after receipt of written comments. A notice of the dates and locations of these hearings appeared in the FEDERAL REGISTER on September 23, 1974 (39 FR 34070), with a minor correction on September 27 (39 FR 34671). At that time the period for written comment was extended to October 31, 1974.

The new compliance date only concerns the parking management regulations, and does not pertain to the indirect source regulations, which include requirements for reviews of certain parking facilities, which were published in the FEDERAL REGISTER on July 9, 1974 (39 FR 25292). The compliance date for implementation of the indirect source regulations remains January 1, 1975. These indirect source regulations are effective nationwide including all areas which would have been subject to the parking management regulations.

(Sections 110(c) and 301(a) of the Clean Air Act, (42 U.S.C. 1857c-5(c) and 1857(g)))

Dated: October 8, 1974.

RUSSELL E. TRAIN,
Administrator.

In Part 52 of Chapter I, Title 40, of the Code of Federal Regulations, the date "January 1, 1975," is amended to "June 30, 1975," in the following sections:

1. Subpart C—Alaska, § 52.86;
2. Subpart D—Arizona, § 52.139;
3. Subpart F—California, § 52.251;
4. Subpart J—District of Columbia, § 52.493;
5. Subpart V—Maryland, § 52.1103 and § 52.1111;
6. Subpart W—Massachusetts, § 52.-1128, § 52.1135 and § 52.1136;
7. Subpart FF—New Jersey, § 52.1588;
8. Subpart NN—Pennsylvania, § 52.-2040;
9. Subpart SS—Texas, § 52.2295; and
10. Subpart VV—Virginia, § 52.2443.

[FR Doc.74-23837 Filed 10-11-74;8:45 am]

FEDERAL POWER COMMISSION

[18 CFR Parts 2, 154]

[Docket No. R-478]

NATURAL GAS PRODUCED FROM WELLS COMMENCED BEFORE JANUARY 1, 1973

Just and Reasonable Rates; Notice of Extension of Time

OCTOBER 8, 1974.

On September 30, 1974, a group of producer respondents in the above-designated matter, respresented by Phillips Petroleum Company, filed a motion to extend the dates fixed by notice issued September 12, 1974, and published in the FEDERAL REGISTER at 39 FR 34304, for filing comments and reply comments regarding this rulemaking.

We have concluded that it is in the public interest to grant this extension to assure the most complete evaluation of this matter. Therefore, the dates for filing comments and reply comments are extended to and including November 18, 1974 and December 16, 1974, respectively.

By direction of the Commission.

KENNETH F. PLUMB,
Secretary.

[FR Doc.74-23830 Filed 10-11-74;8:45 am]

WATER RESOURCES COUNCIL

[18 CFR Part 701]

FREEDOM OF INFORMATION

Proposed Policy on Disclosure of Records

Notice is hereby given that the Water Resources Council, under the authority of 5 U.S.C. 552 and 42 U.S.C. 1962d-1, proposes to add a new Subpart D to Part 701 of Chapter VI, Title 18 of the Code of Federal Regulations, as set forth below.

This new Subpart D to Part 701 describes the availability to the public of records of the Water Resources Council pursuant to the Freedom of Information Act, 5 U.S.C. 552.

This Subpart states the Council's policy of the fullest possible disclosure of records consistent with those obligations of confidentiality and administrative necessities which are recognized by the Act. In regard both to the information that is available to the public and to the sources from which it may be obtained this Subpart supplements existing procedures and does not replace or restrict them. The normal channels through which information has regularly been made available to the public will continue to be accessible.

This Subpart is intended to be consistent with, but separate from, the public participation provisions of the Council's principles and standards (38 FR 174, Sept. 10, 1973) and subsequent implementing procedures.

Interested persons are invited to submit written comments, suggestions or objections regarding this proposal to the Director, Water Resources Council, 2120 L Street, NW., Washington, D.C. 20037, on or before November 14, 1974.

Dated: October 7, 1974.

WARREN D. FAIRCHILD,
Director,
Water Resources Council.

It is proposed to amend Part 701 of Chapter VI, Title 18 of the Code of Federal Regulations by adding a new Subpart D set forth below:

Subpart D—Availability of Information

Sec.
701.200 Statement of policy.

Preliminary Report:

Relationship Between Parking Management and Vehicle Miles Traveled

INTRODUCTION

The Environmental Protection Agency has approved or promulgated transportation control plans for some thirty metropolitan areas. In these areas, the health related air quality standards cannot be achieved by a combination of stationary source controls (i.e., power plants, gasoline service stations) and emission controls on new motor vehicles. Consequently, transportation plans are required which include inspection and maintenance programs, retrofit emission control strategies and/or strategies designed to reduce the vehicle miles traveled, and thus pollutant emissions, in the affected area. The vast majority of the plans require overall reductions in current levels of vehicle miles traveled (VMT), or a decrease in projected VMT increases which are expected to occur.

Strategies to reduce VMT include such measures as carpool programs, employer affirmative action programs, mass transit improvements, and parking management programs. This latter strategy - parking management - is in effect in twenty metropolitan areas to help both in the achievement and the maintenance of the ambient air standards. Proper parking lot planning involving such factors as placement, size, design, and usage can contribute to reductions in the projected VMT that would occur from construction of the facility.

An examination of urban growth trends demonstrates that the automobile has become a major factor, if not the dominant factor, in the expansion of American cities in this century. Also evident are the complex interrelationships that exist between automobile usage and automobile support facilities. Freeways, city streets and intersections, gasoline service stations, and parking lots occupy a significant percentage

of the landscape of any large American city. For example, parking spaces alone occupy approximately 25 percent of downtown land space in our cities. Use of the automobile has demanded that those facilities be built, but the consequences of low occupancy automobile transportation in the major cities have been negative in many aspects. Now the problems of pollution, energy consumption, and urban congestion and sprawl make it imperative that a closer and more empirical analysis be done on some of these interrelationships.

The EPA parking management regulations and proposed amendments to these regulations are designed to affect one such interrelationship, that of parking supply and VMT. Generally, the proposed amendments require that new or modified parking facilities over 250 spaces which are constructed after June 30, 1975 must undergo a pre-construction review to demonstrate that: (1) the proposed facility will not cause or exacerbate a violation of any national ambient air quality standard; and (2) the proposed facility will not violate the vehicle miles traveled control strategy in the applicable transportation control plan.

Under the requirement that there be no violations of the VMT transportation control strategy, an applicant can choose one of several options to comply. He can demonstrate that his facility inherently reduces VMT. A park-and-ride lot is one example. If this is inapplicable, he can do comprehensive modelling to demonstrate that his particular facility does in fact reduce VMT. For example, an employer moving his plant closer to the center of density of his employees' homes would be able to demonstrate VMT

reductions. If neither of the first two options is applicable, the applicant must undertake certain measures to minimize the impact of any VMT increases caused by the facility. Measures include carpool and mass transit programs.

The proposed amendments to the regulations make clear EPA's desire that state and local governments take over the responsibility for the parking management program. This can be done in one of two ways. First, EPA can delegate its review and enforcement authority to state or localgovernmental bodies. The Administrator may approve a request for review and enforcement authority if the following conditions are met: a) any final action of the delegated agency must have binding legal authority in the jurisdiction of the proposed facility; b) the delegated agency must have legal authority to enforce its actions under the regulations or be willing to enforce such actions. A second method for delegation is for state and local governments to develop their own parking management plan which, after EPA approval, would replace the need for Federal or local action under the parking management regulations. Already, some cities such as San Diego, Portland, and Seattle are actively developing comprehensive plans.

The EPA's parking management program for reviewing new parking lot construction so as to avoid localized carbon monoxide problems and reduce or minimize VMT growth in urban areas provides a flexible and incremental approach which should contribute to a return to healthful air in our heavily polluted cities. The program cannot be examined in isolation. Rather, it should be looked at as part of an overall transportation control

strategy designed to bring about less reliance upon single-occupancy vehicular commuting, and at the same time making available other more efficient means of transportation. Use of carpools, private mass transportation (buspools and vanpools), public mass transportation, and bicycles can provide realistic alternatives to low-occupancy automobile usage.

By encouraging the use of higher occupancy transportation modes, carefully chosen parking controls should, with properly region-tailored implementation, move transportation services toward optimality in catering to the diverse and conflicting needs of a particular urban region. As such, proper parking management can help make America's total transportation system less polluting and more energy efficient.

The purpose of this paper is to provide a better understanding of the relationship between parking supply and VMT. This will be accomplished by 1) a discussion of some theoretical models; 2) an analysis of traffic growth and parking space growth statistics; 3) an examination of actual experiences with parking management programs, both by individual employers and regional governmental units, and the resulting effects on VMT; 4) a look at several urban areas' long range parking plans.

Many studies have documented how parking costs can be used as a tool to affect VMT or model choices. However, to date, little has been written on the parking supply - VMT relationship. This is not surprising since the generally abundant parking supply of the past has resulted in the availability of parking being taken for granted. Accordingly, parking management as a means to improve air quality and/or more effectively order urban growth, is a relatively new concept.

TRIP DECISION MAKING AND PARKING MANAGEMENT

It is self evident that a person does not begin a trip without knowledge of costs and possible inconveniences. Parking availability and other factors such as gasoline availability and cost, parking cost, traffic congestion, and existing alternative modes of transportation all enter into his trip decision-making. Studies of several of these factors show a causal relationship to trip decision-making.[1]

One such study which has evaluated parking supply alternatives involves the development of a simulation model.[2] A model was built to evaluate alternative access systems to a typical university medium-sized city based on composite data from sixteen metropolitan area transportation planning studies. Parking supply was one of the alternatives tested. The study found that the addition of free shuttle service from a remote parking lot and the elimination of on-street parking produced a fifty percent decrease in auto trips. Conversely, the provision of unlimited, free on-site parking resulted in a forty-five percent decrease in the existing number of simulated transit trips. Although the university simulation does not consider alternatives to the transit and shuttle modes, such as student and faculty carpooling, the study indicates that parking supply controls

tend to significantly decrease vehicular travel and increase transit ridership.

Another study, which concluded that parking supply management for an individual trip generator will decrease VMT, was undertaken for the St. Mary's Hospital parking garage in San Francisco.[3] Methodology based on a 1968 survey of the Hospital's trip generation characteristics and Bay Area Transportation Study modal split curves was used to determine the changes in traffic volume due to varying parking policies. Assuming no new off-street parking lots were constructed around St. Mary's, a five percent increase in transit patronage and reduced vehicle trips were projected. While this model did not look at several alternatives, its conclusions suggest that parking supply changes have an impact on the amount of VMT generated by individual facilities.

In addition, other studies have developed parking models which explicitly evaluate the effect of parking costs and supply on a wider area. An example of such a model has been developed for the central business district of Los Angeles.[4] Parking supply, demand, cost and facility location were variables in the Los Angeles parking model which was calibrated on the basis of behavioral data from parking and employee surveys. Estimating that parking demand would greatly exceed supply by 1980 and that market processes would force average parking prices to nearly double in the downtown area, the study recommended excess demand be absorbed by designating peripheral parking lots and providing personal rapid transit service from the lots to center city locations. The study concludes that maximum usage of the recommended peripheral lots will be obtained in the

is, no increase in areawide VMT). In order to use this alternative, a great deal of detailed information and analysis is generally required.

A third alternative method has been set forth in proposed amendments to these regulations. This alternative, referred to as the VMT minimization method, provides for satisfactory compliance if the applicant can demonstrate that the proposed parking facility is both needed by the community and that all reasonable measures are being taken to minimize the VMT associated with the proposed facility. Such measures include carpool locators, carpool parking priority systems and dial-a-bus. A table of these measures is set forth in the proposed amendments.

In order to show non-interference with attainment of carbon monoxide standards for facilities having a capacity for 1,000 or more spaces, an applicant must demonstrate through a suitable diffusion model or other appropriate analytical techniques that such violations will not occur. This is equivalent to indirect source review elsewhere. Under the proposed amendments smaller facilities (1,000 spaces or less) may not need the detailed modeling required of the larger structure. Although those applicants with smaller facilities may use the appropriate indirect source modeling scheme as described above, the proposed amendments provide two other possible approaches. The applicant may provide acceptable air quality monitoring data to demonstrate that modeling is not necessary; or he may submit other appropriate information to demonstrate that a violation of the carbon monoxide standard will not result from operation of the facility.

As stated previously, state and local governments have the option of developing a parking management plan (PMP). This plan focuses on the interrelationships of transportation and new parking facilities and specifically describes the manner in which the location, operation and increase in the number of parking related facilities are to be kept consistent with air quality throughout the area. The parking management plan is not as limited in scope as facility-by-facility review. It can include such control measures as zoning changes and improvements in mass transit services. Thus, the plan allows certain tradeoffs among different areas within its scope and among different control measures. It is through parking management plans that greatest state and local participation is possible, and the agency wishes to encourage the development of such plans to replace the Federal regulations. Several areas including San Diego, Los Angeles, Portland and Seattle have already begun such plans.

For further information and a more detailed description of the existing as well as proposed regulations and requirements see the Federal Registers setting forth the original transportation plans and the August 22, 1974 Federal Register (39FR30440) on Proposed Amendments to Parking Management Regulations.

Guidance

Over time, as applications are received and reviewed, EPA intends to develop a precedent reporting system that will aid applicants in anticipating what the agency considers adequate in meeting the requirements of the different alternatives.

In addition to the precedent reporting system which will be available on a continuing basis as soon as applications are processed, EPA encourages an active and open line of communications between applicants and the Agency before formal submittal of an application. These preliminary consultations are designed to: 1) give specific guidance on such issues as the most appropriate and effective choice of methodologies for an individual project; and 2) resolve, by use of example, any uncertainty in the developer's mind as to what is meant by the different requirements.

EPA will accept applications under the existing promulgated regulations, which require Indirect Source modeling for CO impact and compliance with VMT strategy by either extensive analytic and technical modeling to show no net increase in VMT, or demonstrating that the proposed facility is designed for high occupancy vehicle use (i.e., park-and-ride lots).

If an owner or operator of a proposed facility wants to take advantage of the proposed alternative options for CO and/or VMT, he may submit a preliminary application to EPA. Although the preliminary application can not be formally accepted or reviewed until final promulgation of the amendments, EPA staff will make themselves available for guidance and consultation on application development.

The programs' possible money savings aspects for employees is also a point worthy of emphasis. Transportation is one of the few areas where personal spending habits can be cut. Unlike food costs where outlays are largely fixed, commuting costs can in many cases be reduced if employers and employees cooperate to create an effective program. The spending costs of owning and operating a private vehicle make a carpool program, for example, increasingly attractive as a cost savings device. Employer subsidized mass transit can offer the same employee savings.

EMPLOYER INCENTIVE PROGRAM MEASURES

The following list of measures are those which an employer should consider for inclusion in his program. Consideration, not necessarily adoption, of all the measures is required. The chart is not intended to be inclusive and employers are encouraged to develop novel techniques. An employer program should include measures from all three main areas in order to give a balanced plan. After an employer submits a plan, the guidelines and this chart will be used by the regional office in the evaluation of the submittal. If the program is declared inadequate, the regional office will make suggestions, after consultation with the employer, as to what additional measures would make the program acceptable. If the employer claims that additional measures are not feasible, EPA will require detailed documentation as to why each measure listed on the chart cannot be implemented.

I. Carpool Measures

- Carpool publicity and promotion campaign
- Carpool locator: manual or computer
- Follow-up and updating of carpool matches
- Reduced parking fees for carpools
- Preferential carpool treatment for parking and exiting

II. Mass Transit Programs

- Publicity and promotion campaign
- Shuttle service to and from transit stops
- Negotiation with transit authorities for rescheduling and rerouting
- Subsidized tokens and transit passes
- Charter buses and shuttle service from outlying points
- Vanpool systems

III. Miscellaneous

- Commercial rate or higher parking fees
- Reduced number of parking spaces
- Reduced and/or controlled on-street parking
- Bicycle promotion: lanes, racks, lockers
- Walking promotion: lighted paths, security patrols, overpasses

Sample Employer Incentive Regulation

§ 52.2052 Employer's provision for mass transit priority incentives.

(a) Definitions:

(1) "Philadelphia CBD" means the area within the City of Philadelphia, Pennsylvania, bounded by, but not including, Vine Street, South Street, the Schuylkill River, and the Delaware River.

(2) "Employee parking space" means any parking space reserved or provided by an employer for the use of his employees.

(b) This section is applicable in the Southwest Pennsylvania Intrastate AQCR, and in the Philadelphia CBD of the Pennsylvania portion of the Metropolitan Philadelphia Interstate AQCR (the Regions).

(c) Each employer in the Regions who maintains more than 700 employee parking spaces shall, on or before February 1, 1974, submit to the Administrator an adequate transit incentive program designed to encourage the use of mass transit and discourage the use of single-passenger automobiles by his employees. This program may contain provisions for signed to encourage the use of mass transit, reductions in the number of employee parking spaces, surcharges on the use of such spaces by employees, provision of special charter buses or other modes of mass transit for the use of employees, preferential parking, and other benefits to employees who travel to work by carpool, and or any other measures acceptable to the Administrator. By April 1, 1974, the Administrator shall approve such program for each employer if he finds it to be adequate, and shall disapprove it if he finds it not to be adequate. Notice of such approval or disapproval will be published in Subpart NN of this part.

(d) In order to be approvable by the Administrator, such program shall contain procedures whereby the employer will supply the Administrator with semi-annual certified reports which shall show, at a minimum the following information:

(1) The number of employees at each of the employer's facilities within the Regions on October 15, 1973, and as of the date of the report.

(2) The number of free and non-free employee parking spaces provided by the employer at each such employment facility on October 15, 1973, and as of the date of the report.

(3) The number of employees regularly commuting to and from work by private automobile, carpool, and mass transit at each such employment facility on October 15, 1973, and as of the date of the report.

(4) Such other information as the Administrator may prescribe.

(e) If, after the Administrator has approved a transit incentive program, the employer fails to submit any reports in full compliance with paragraph (d) of this section, or if the Administrator finds that any such report has been intentionally falsified, or if the Administrator determines that the program is not in operation or is not providing adequate incentives for employee use of carpools and mass transit, the Administrator [illegible]

(f) By April 1, 1974, the Administrator shall prescribe a transit incentive program for each employer to whom paragraph (c) of this section is applicable if such employer has not submitted a program. By June 1, 1974, the Administrator shall prescribe a transit incentive program for each employer to whom paragraph (c) of this section is applicable if the program submitted is not adequate. Within 2 months after any revocation pursuant to paragraph (e) of this section, the Administrator shall prescribe a transit incentive program for the affected employer. Any program prescribed by the Administrator shall be published in Subpart NN of this part.

(g) Each employer in the Regions who maintains more than 70 employee parking spaces shall, on or before February 1, 1975, submit to the Administrator an adequate transit incentive program conforming to the requirements of paragraphs (c) and (d) of this section, except that in paragraph (d), the reference date for reports shall be October 15, 1974, rather than October 15, 1973. Each such program shall be subject to approval or disapproval by the Administrator by April 1, 1975. Each such program, when approved, shall be subject to revocation as provided in paragraph (e) of this section.

(h) By April 1, 1975, the Administrator shall prescribe a transit incentive program for each employer to which paragraph (g) of this section is applicable if such employer has not submitted a program. By June 1, 1975, the Administrator shall prescribe a transit incentive program for each employer to which paragraph (g) of this section is applicable if the program submitted is not adequate.

Within 2 months after any revocation of any program of any employer pursuant to paragraph (e) of this section, the Administrator shall prescribe a transit incentive program for the affected employer. Any program prescribed by the Administrator shall be published in Subpart NN of Part 52, Title 40, Code of Federal Regulations.

indicated that these developments will reduce the need for more long-term CBD parking spaces by some 13,000 spaces, or 31%, and will reduce the need for added short-term spaces by about 3,500 or 20%. It is clear that the reason Baltimore will require fewer parking spaces in 1985 is that there will be a transportation alternative. Attitudinal studies, such as the one conducted in London and those used in formulating the Los Angeles CBD study and the Baltimore study show that people are willing to utilize these alternatives.

Another parking management strategy is the use of peripheral parking lots which act as collecting points for single occupancy vehicles and starting points for higher occupancy vehicles. This strategy has considerable potential as a VMT reduction measure. For example, one Los Angeles study estimates that 10 to 15 percent of the estimated parking supply needs for 1980 could be successfully provided at the periphery, assuming suitable parking costs policies.[8] The park-n-ride strategy has met with considerable success due to the fact that it offers the commuter or downtown shopper freely available fringe parking tied into carpool or mass transit service. This combination has proved quite attractive to the individual driver faced with costly and often scarce CBD parking lots. The principle working for park-n-ride lots is the same, i.e., people will drive to where parking is available. In this case, however, ample parking can be used to actually decrease VMT.

The provision of peripheral parking lots for park-n-ride commuters has met with considerable success in Minneapolis, where the city has designated 33 lots which are served by buses.[9] These

park-n-ride sites vary in size from church parking lots to major shopping center facilities. Implemented in conjunction with other transportation control strategies such as expanded bus service and freeway surveillance, the peripheral lots are saving an estimated 18,000 VMT and 1,400 gallons of gasoline daily. This high rate of growth in usage indicates that peripheral parking programs are a potentially effective strategy to reduce VMT and increase transit usage in some urban areas.

As part of an overall transit program, the Lindenwold Hi-Speed Rail Line which serves the Philadelphia city center, provides six suburban fringe parking lots located in a New Jersey commuting corridor. It has been estimated that this rapid transit line has displaced nearly 29 million VMT per year.[10] Park-n-ride facilities have also been successful in urban corridors in cities such as Boston, Cleveland, Ft. Worth, New York City and Chicago.

It must be kept in mind that parking management techniques are intended to encourage carpooling or other modes of transportation rather than to discourage initiation of the trip altogether. From this perspective, it is evident that reductions of VMT through parking management can be best accomplished as part of a balanced policy of more restrictive parking measures combined with the support of measures such as better public transit and carpooling incentives. Just as it would not be successful to implement parking controls without providing attractive alternative transportation modes, a unilateral policy of improving public transit alone may not succeed in halting the current trend of increased auto commuting. The two policies--management of parking supply and increased availability of multiple occupancy programs--should be pursued together.

THE DEMONSTRATED CAUSAL RELATIONSHIP BETWEEN PARKING SUPPLY GROWTH AND VMT

There has been experience both on the macro (regional) and micro (individual parking facilities) levels that demonstrates the relationship between VMT and parking supply. Many individual employers have reduced work-commuting VMT because further parking supply increases were either not feasible or were rejected for other reasons, thereby necessitating the increased use of carpools and mass transit. On a regional scale, cities such as Pittsburgh, London, England, and Marseilles, France have experienced decreased VMT as a result of parking restrictions.

Regional:

Existing historical information illustrates a correlation between VMT and parking supply. Study data taken in 1956 and 1968 on traffic volumes into the central business district (CBD) and parking spaces per 1,000 population in urbanized areas provide an opportunity to compare VMT growth with increased availability of parking supply.[11] All of the city groups in the study (cities of over 50,000 were classified into five groups by population) showed an increase of parking spaces per 1,000 population except the groups of cities of over one million. Urban areas in the 100 to 250 thousand range had the greatest change (from 33.2 to 48.5 spaces per 1,000 or a nearly 50% increase). This group also experienced the greatest increase in traffic volumes, up nearly 30 percent. The larger cities (over one million) on the other hand, had the largest decrease in traffic volumes into the CBD (from 66 to 49 trips per 1,000 population). These cities, where problems of congestion arose at the earliest and have become the most severe, were also the only cities as a group to have a decrease in parking spaces per 1,000.

The strong correlation between increased parking supply and increased VMT does not in itself, however, indicate the existence or direction of a causal relationship. The data shows that the two variables change together. Although this alone cannot prove that increased parking supply causes additional VMT, it is self evident the two factors are related. Specifically, it can be postulated that increased parking spaces were a factor in increased VMT figures. This conclusion recognizes that VMT itself has induced parking supply growth.

Support for this thesis came from an examination of situations where parking supply has for some reason been significantly reduced. In those cases, VMT does not remain constant. In fact, significant VMT reductions have been found to occur under such conditions.

The most significant urban wide example of the VMT/parking space relationship in the United States comes from Pittsburgh where, in August, 1972, a parking attendant strike caused the closing of 80 percent of the parking spaces in the city.[12] Despite the fact that the strike only lasted three days during a summer vacation period, the observed impact was significant. Peak period traffic into the CBD declines 25 percent with most commuters switching to transit. According to a local newspaper, "The big news...was what didn't happen -- the predicted traffic chaos. We've been far worse off in the morning after a snow. There was no flood of cars driving back and forth by wives taking husbands to work. Neither absenteeism nor tardiness in downtown offices were greater than usual..."[13]

Illustrative of the principle that commuters will switch to available alternative modes of transportation when parking supply is limited are statistics on bus ridership accumulated during the strike period. The city bus lines ran additional buses to accommodate the anticipated demand. Bus ridership for the three days of the strike and the corresponding days of the preceding and succeeding weeks is given in the table below:

Table 2[14]

Transit Ridership During Pittsburgh Parking Strike (In Thousands)

	Week Prior	Strike Week	Week After
Tuesday	279	309	283
Wednesday	286	303	283
Thursday	292	317	291

Of particular note is the fact that bus ridership nearly declined to pre-strike levels immediately after the strike when parking supply was once again at an optimal level. These figures suggest that a disincentive such as restricted parking supply is an important factor in inducing a modal split. While actual carpool surveys were not taken, it can be assumed that there was considerable carpooling since work attendance was normal and the bus ridership figures did not increase sufficiently to account for all work trips.

Non-work trips normally made to downtown were also reduced by the strike. Local retail merchants reported a sales drop of 6 to 8 percent. Parking management programs would make incentives to short duration parking possible so as to avoid such a result.

Movie theatre patronage was cut to less than half the normal rate due to the lack of nighttime parking. Unlike a parking strike, parking management would, of course, allow sufficient parking supply for after work-hour activities.

While most parking was closed, 800 city and 600 privately-owned parking spaces remained available through the strike. Interestingly enough, however, these "remained half empty during much of the strike period." While part of this unfilled capacity might be attributed to lack of citizen information (i.e., they thought all the lots were closed), nevertheless, a parking study concluded "This...indicates that commuters and shoppers, faced with a shortage of downtown parking, tend to change mode or suppress their trip, rather than spend time in search of scarce parking spaces."[15] This counters the frequently expressed argument that parking management will actually increase VMT because people will drive around looking for scarce spaces. The Pittsburgh experience and attitudinal studies indicate that people will switch transportation modes rather than waste time searching for parking spaces.

An example of planned parking management resulting in a reduction in VMT comes from Europe where an experimental ten-day total ban on parking was instituted in a section of Marseilles, France resulted in a 40% reduction in carbon monoxide concentration.[16] Despite drive-through traffic of autos, taxis, and buses, the parking ban showed a striking effect on downtown pollution. Six miles of additional bus lanes and free transit service lured commuters from their cars. While no percentage VMT reduction figures are available, the direct CO/VMT relationship means that significant VMT reductions did take place in the urban area.

Another example comes from London where total available CBD parking spaces declined slightly from 1962 (before the greater London Council's parking policy had been developed) to 1972.[17] Trends in evening peak period traffic

over the past 20 years were investigated on a representative road network in London. The data shows that the rate of growth has fallen from about 7 percent per year to zero since 1964. Employment in the area during this period has remained virtually constant. A study of this data has concluded that "[t]his reduction can be attributed largely to parking control."

Individual Employers:

The experience of many employees shows that commuters are willing to abandon their single occupancy work commuting under parking shortage conditions. For example, the National Aeronautics and Space Administration, faced with a shortage of parking for employees in Washington, D.C., began in 1964 to allocate their limited parking supply to employees who were members of organized carpools. Automobiles driven for commuting purposes at NASA have maintained an occupancy rate of 3.85 employees per car.[18] One year ago the Government Employees Insurance Company, faced with a parking space shortage, began giving guaranteed parking to carpools with three or more members. With 394 places now reserved for carpools, GEICO's one-year old policy keeps over 800 cars away from work.[19] The Pentagon, unable to expand its limited parking supply, has required carpool membership, with priority for close-in parking given to carpools with high occupancy.[20]

To alleviate the immense parking problem faced by its employees in New Haven, Connecticut, Southern New England Bell similarly began a program of guaranteed parking to carpools.[21] Due to an occupancy rate of 4.25, the company estimates 720 cars are not driven to work due to the program. One of the most ambitious company programs carried out in the face of parking shortages is the 3M Corporation's

Commute-a-Van Program where over 60 vans of 12 passengers each are now in operation.[22] In addition, a carpool program is also operating. As a result of the two programs, over 3,000 employees (40% of the company work force) ride to work in some type of multiple occupancy vehicle. 3M estimates that their program saves 1.4 million VMT and 108,300 gallons of gas annually. In all of these cases, which represent a few typical examples of employer programs throughout the country, lack of available parking supply is the predominant reason for the increased carpooling and vanpooling, and consequent decrease in VMT.

An examination of the data used for two 1971 Los Angeles studies also links parking supply shortages with lower VMT. One study involved a survey of CBD office employees.[23] Another was conducted to examine the travel characteristics of 6,000 City Hall and Water and Power employees whose work destination was just outside the CBD in an area with a parking shortage.[24] Survey results showed that fewer CBD employees, where parking was more abundant, were carpool members or riders than were city employees.[25]

Similarly, situations involving ample parking show the other side of the equation: automobile usage is promoted by readily available parking. Suburban shopping centers and many employment facilities are prime examples. Empirical support comes from a London study where it was "proved conclusively that where employees have been moved from a building with low parking provision to one with high provision, there has been a significant increase in automobile use for commuting

purposes..."[26] And, significantly, this occurred despite a high level of transit service in the area. This latter fact shows again that good transit service alone may be an insufficient inducement to bring about a modal switch without the further inducement of a parking management policy.

PARKING DURATION AND VMT

The fact that commuter parking tends to be long term (i.e., from morning to evening peak hours) while other types of parking, such as shopping, recreational or business parking, tend to be short duration, has a significant impact on VMT generation and parking management policies.

It appears that for normal urban regions 30-50% of the trips made into the CBD are work-oriented, 30-40% non-work, and 20-30% other trips with no parking need.[27] A study of CBD parking characteristics shows that work trips have had the greatest percentage change over the years.[28] The average increase in work-related trips to the CBD in all the city groups tested was 45% from 1956 to 1968. The most dramatic increase occurred in those cities between 500,000 and 1,000,000 where the proportion of work trips increased from 22% in 1956 to 46% in 1968. The only group showing no increase was the cities of over 1,000,000 where the proportion remained constant at 41%. Only in the very largest cities where such problems became acute earliest has a beginning apparently been made in bringing these trends under control.

Since traffic volumes into the CBD have increased in cities generally, except for those cities over one million, it became clear that commuters have been, to a greater extent than other groups, responsible for the growth of VMT in American cities. Additionally, because of the long duration of work trip parking, the actual available parking supply for other types of trips may have decreased. The appeal and proliferation of large suburban shopping centers does, to a certain extent, reflect the non-availability of CBD parking for shoppers.

A simple contraction of parking supply may set parking on a first-come first-served basis, possibly resulting in commuters taking even a larger percentage of the available spaces than they now demand, and causing economic hardship for the CBD. One solution which has been used in England is to keep parking facilities closed until 9:30 a.m. in order to exclude commuters.[29] This strategy is also a part of the Boston transportation control plan.[30] Straight hourly rates with no reduced daily rates would have a similar effect.

If significant numbers of commuters are induced to join carpools or use public transit, there may be an effect on other drivers who contribute to VMT. Because fewer commuter vehicles would be on the road, traffic congestion would decrease. Drive through traffic may possibly increase as persons take advantage of free roadspace.

Decreased congestion would have an important beneficial effect on public transit. Transit service would presumably be faster. Many attitudinal surveys have reached the conclusion that commuting time is a very important factor in modal choice. Recently, a

Knoxville, Tennessee modal split analysis showed that faster transit service was a significant inducement for new riders.[31] People were willing to pay double the normal fare for true express service.

If commuter parking is restricted, then short-term parkers may be expected to do more business in the CBD, thereby improving the CBD economic status. But since several short-duration parkers can utilize one formerly commuter space, there may be a potential for an increase in downtown VMT. Areawide, however, there will be an offsetting decrease in VMT if trips to the CBD are taken in place of trips to suburban shopping centers. In addition, the potential for a VMT increase relates only to the commercial parking facilities serving a mix of long and short-term parkers, rather than the shopping center or employer parking facilities. Also, the impact of improved transit service should counteract any tendency to increase VMT. Due to the above factors, EPA feels that any VMT increases associated with short duration CBD parking should be outweighed by areawide VMT decreases. If evidence to the contrary appears, EPA will reassess its strategy in this regard. One potential counteracting measure would be to hold short duration CBD parking at a constant level.

MUNICIPAL ACTION ON PARKING MANAGEMENT

Several cities have already integrated the supply of parking into the total transportation and land use scheme on the assumption that contracted parking supply will reduce VMT. In London for example

zoning regulations place a ceiling on the maximum number of parking spaces that can be provided in new office developments.[32] The new maximum is often less than the former minimum required number of spaces in that city.

One report states, "The policy adopted in Liverpool and other British cities is to limit parking capacity so as to keep the volume of traffic within the economic capacity of the road network."[33] The Bavarian Interior Ministry is considering an alteration of existing building ordinances so that communities may limit construction of parking garages within central city areas.[34]

The Highway Plan for Glascow, Scotland, now being implemented, involves a restraint on entry to the CBD.[35] Control may be exercised by setting a limit to the number of parking spaces to be provided, the charges to be made for parking, and the times when certain spaces may be opened and closed. The long-range plan calls for 27,000 parking spaces in 1990 against an expected demand of 65,000. Similarly, in Leicester, England, a ceiling of 22,500 parking spaces has been established.[36] This contrasts with an expected demand for 67,000 spaces.

American cities also have begun to act. The New York City Planning Commission in order to relieve street congestion has attempted to restrict new parking garage construction in midtown Manhattan.[37] In Denver, planners have undertaken an extensive land use and transportation planning study which explicitly recognizes the potential effects of parking quantity and cost measures on urban development.[38] Parking policy has been applied in the process of alternative land development and transportation plan testing and final plan selection. Computer simulation of this approach indicates potential for accomplishing the identified urban development objectives.

[illegible], Los Angeles, San Francisco, and San Diego are now actively planning to curb parking lot growth in order to reduce VMT and thereby improve air quality.

CONCLUSION

Available studies, actual experiences, and logic all point toward a definite VMT-parking management relationship. It seems clear that proper parking management, when coupled with improvements in high occupancy transportation (carpools, vanpools, mass transit), can be an effective tool to help bring about decreases in heretofore unchecked areawide VMT increases. Perhaps the best evidence of the reasonableness and acceptability of parking management as an air pollution abatement measure is the various American and European cities that have or are in the process of developing such plans. The benefits occurring include cleaner air, better planned and orderly urban growth, and significant energy savings.

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28. See note 11.

29. London Transport Executive, A Generalized Automobile Parking Policy to Encourage Increased Use of Public Transit by Commuters, Report No. DOT-OS-10192, Department of Transportation, July, 1972.

30. 38 Federal Register 30960.

31. See note 19.

32. See note 29.

33. See note 6.

34. See note 6.

35. J. Amour, "Parking Objectives in Glasgow," British Parking Authority Seminar, May, 1971.

36. See note 6.

37. See note 6.

38. See note 5 article by R.E. Jackson.

A Report on Vehicle Miles Traveled Minimization Programs

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Introduction*

As part of its transportation control programs, the Environmental Protection Agency has promulgated parking management regulations for twenty metropolitan areas. Generally, the August 22, 1974 proposed amendments to the existing parking management regulations (39 FR 30440) require that an applicant seeking to build a new or modified parking lot over 250 spaces demonstrate: (1) that there will not be a localized carbon monoxide problem and (2) either the facility will decrease vehicle miles traveled (VMT) or that VMT increase will be minimized through a positive program designed to reduce single occupancy travel to the facility.

The purpose of this paper is to demonstrate the reasonableness of the VMT minimization option contained in the August 22, 1974 proposals. This will be accomplished not by theoretical arguments but by a documentation of actual in-use programs from all parts of the country which reduce vehicle miles traveled. The very existence of the programs is proof that VMT minimization efforts are a feasible, realistic method to help in achieving the goal of healthful air. The number of cities, employers, or groups undertaking programs of this type grows daily and the examples included herein represent but a sample of the existing VMT minimization type efforts.

Various industries and cities around the country have developed and put into operation programs that range from carpooling and vanpooling to shuttle buses and express bus systems. The large degree of success is due

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*Much of the information for this paper has been supplied by the Federal Highway Administration.

in part to the development of a program tailored to fit a particular city's or industry's needs. One conclusion that can be drawn from an examination of the various programs is the relative ease with which these programs can be made successful when high level management or top city officials lend their support. The impressive resources, both financial and human, present in private industry makes that sector an especially valuable reservoir of creative new ideas.

Information on the various types of programs, including cost and ridership figures, was compiled through telephone interviews with appropriate officials and company personnel. Every effort was made to obtain the most recent and accurate details. The following contains a summary of the types of measures being instituted.

Carpools:

Carpool programs are designed to utilize the enormous reserve of unused seating capacity in automobiles. The programs can be organized and put into effect at a very nominal cost and in a very short period of time and result in immediate VMT reductions. The types of programs include area-wide computer programs, employer computer programs and hand-matching and grid map programs.

Some groups supply information and perform the matching free of cost. Also, the Federal Highway Administration will supply demonstration money to urban areas for the purpose of establishing a carpool program. Even if a private employer chooses to establish and fund his own carpool program,

the amount of money spent on developing a program is minimal and can be deducted as a business expense.

Vanpools:

Vanpooling is becoming an exceedingly fast-growing commuter-transport system. Many companies see it as an attractive alternative to the choice between 4-6 passenger automobiles or 40 passenger buses. An initial investment of $5,000-$6,500 per van is needed, but this can be amortized over a period of years. This investment cost plus all of the operating and maintenance costs can be covered by a reasonable commuter's fare. Companies now employing this system are breaking even or running at a profit. The Minnesota Mining and Manufacturing program, for example, even returns a substantial profit to the driver, despite the fact that $29.00 a month is the highest fare any rider pays.

Shuttle Buses and Express Buses:

Many employers are using passenger buses as a method of reducing employee single occupancy automobile commuting. Shuttle buses may be public transit buses or may be smaller versions and may be equipped with comfort features such as carpeting, comfortable seats and tinted glass. The operation costs can be covered by commuter fares.

Other firms are securing express bus service for their employees in a number of ways. Subscription arrangements, guaranteed fares, and subsidization are some of the methods being utilized. For example, Atlantic Richfield, in cooperation with the Southern California Rapid Transit District, has developed

subscription bus routes and guarantees a certain number of bus riders. In addition, the company pays a direct monthly subsidy (covering one-half to one-third the monthly bus fare) to those employees who take the bus.

Park-and-Ride Lots:

Municipal governments as well as employers are successfully using park-and-ride lots as a VMT minimization strategy. These lots, by their nature, reduce vehicular travel and, when tied into efficient mass or rapid transit service, provide a means to improve air quality, save energy, and reduce congestion. Often capital investment is not needed since church and shopping centers provide free satellite parking. GEICO of Bethesda, Maryland, for example, makes use of free shopping center parking lots to run shuttle buses to its facility.

Many municipalities such as Minneapolis, Chicago, New York, and Boston are finding that park-and-ride lots provide a desirable alternative to uncontrolled parking lot growth. The success of these lots has already guaranteed their inclusion in long-range planning.

Boeing Company : Seattle, Washington

Boeing, with 52,000 employees at five sites in the Seattle, Washington metropolitan area, has encouraged carpools for its employees for years. Organized efforts date back to the '40s and continued to some degree until January 1974 when a major new campaign was waged to conserve fuel. During these years when employment varied from 34,000 to 105,000 employees, Boeing offered incentives such as reserved parking areas and flexible hours for carpoolers. The January 24, 1974, issue of the Boeing News was devoted largely to ride sharing and the overall transportation problems facing the Nation. Reaction to the issue was believed to have stimulated the excellent response to a carpool survey card included in each payroll envelope.. Of the 29,000 respondents over 20,000 were interested in carpooling while approximately 6,000 had alternate preferences for commuting.

The computer carpool matching program designed by Boeing utilizes the zip code system. Rather than giving each applicant a computer listing of potential carpoolers, Boeing established 115 "Share the Ride" centers on the Plant billboards. These information centers were located within easy access to all employees. At these "Share the Ride" centers all employees at the site are listed by zip code and time of arrival. The beauty of Boeing's zip code matching is that employees can check adjacent zip codes for the best match.

Summary statistics are:

-- Carpoolers now total 19,000 an increase of 3,400

-- 3.4 employees ride in each carpool, an increase of .7

-- 1,315 employees now use public transportation, an increase of 235

-- 38,273 cars now are used for commuting, a decrease of 3,824

-- 1.38 employees ride per car, an increase of .12

-- Six charter buses operate between Seattle and another plant in Evert, Washington, 60 miles away

NASA: Washington, D. C.

The NASA complex in Washington, D. C. is an excellent example of a successful carpool system developed at a nominal cost. There are 1,600 employees at this government agency and 1,015 of them are involved in carpooling. A major motivating factor is the very critical parking shortage in the area in which the complex is located. In 1964 NASA decided to help its employees by organizing a carpool matching program. The response was amazing as is demonstrated by the number of actual participants.

Presently, NASA has a total of 265 operating carpools. These carpools consist of seven that are 6-person carpools, 76 that are 5-person, 90 that are 4-person, 49 that are 3-person, and 40 that are 2-person. The average number of persons per car in these carpools is 3.83. An incentive used for large carpools is the attainment of a favorable parking space. An added incentive to their program is the $2.50 per month charge for the government's parking facilities compared to surrounding parking area's charge of $45 per month. Not only are these commuters saving themselves money but they are significantly decreasing the VMT that this complex previously generated.

Jantzen, Inc.

In April 1973, Jantzen, Inc., in the apparel industry, decided to make an effort towards reducing pollution. Realizing there was little or no direct industrial pollution from its facilities, the thrust was established to aid employees in forming carpools at all Jantzen facilities. At each site, the Jantzen supervisors distributed and collected carpool data forms resulting in an 80 percent response. With 3,360 employees at seven sites in four states, carpools increased by an estimated 30 percent. Currently 45 percent of all employees carpool. The employment at these sites varies. For example, 48 percent of the 207 employees in Los Angeles, and 35 percent of the 1,568 employees in Portland, Oregon, are carpooling. In July, 1974, 90 percent of all new carpools were still operating.

The company believes that the individual's self-motivation is the key to success. Their objective is to make it convenient for volunteers who are interested in carpooling to get together. Excellent matching services were provided along with posters for bulletin boards, a few buttons and a pamphlet entitled, "What's All This Talk About Carpooling". Jantzen used a map board with pins representing residential location of employees instead of computer listings as many locations had only a few hundred employees. Because of plentiful parking, incentives such as preferential locations were not established.

The Pentagon: Washington, D.C.

The Pentagon, in Washington, D.C., with 25,000 employees has consistently suffered from a parking shortage. Formerly, spaces were issued according to rank and grade with no priority for carpools. Even so, due to the huge parking lots (some requiring a 12-minute walk to the building), informal carpooling occured as commuters carpooled with high ranking officials to obtain the "close in" parking advantage.

The first priority parking lot for carpools was established in December, 1970. In December 1973, to optimize the use of the 10,000 plus parking spaces and reduce congestion, and energy consumption, 18,000 employees participated in computerized carpool matching. The computer lists were distributed in March 1974, along with information on obtaining a "close in" space for carpools of three plus. The program was an instant success with nearly 4,000 permits issued in the first three months. In order to keep the program continuing, all transferees to the area are given a two-week temporary permit to allow them to join a car pool or make mass transit arrangements.

As of June 1974, 4,962 registered carpools with an average of 2.6 persons have taken over 2,000 cars off the highways. With many empty parking spaces, parking on curbs and access streets was eliminated. This was all accomplished at a slight (undetermined) cost to the government.

In addition to the carpooling activities, there are about 20-22 buspools in operation and about 8,000 conventional bus riders.

Prudential of Boston: Boston, Massachusetts

Prudential Insurance Company in Boston provides free parking to employees who carpool in groups of three or more while others pay the normal parking fee of $3.00 per day. Approximately, 44 percent of Prudential's employees (1,400) are presently in carpools. This number entails 591 people riding in 252 car pools with the average of three people per/car.

John Hancock Insurance Company: Boston, Massachusetts

The John Hancock Insurance Company of Boston has launched a successful program to reduce the number of vehicle miles traveled by their employees in work trip commuting. They began their initial program for carpoolers by advertising in their company publication which is published weekly. The company allows space for classified ads listing riders wanted, carpools available within the company, and also carpool openings with two other cooperating companies. If an employee does not receive a newspaper response, another avenue open to him is a computer listing of every employee's township residence.

With the company encouraging commuter carpool programs and making them readily available to those employees who wish to participate, the program has met with a favorable response. Out of a total employment of 6,500, there are approximately 525 carpool drivers, 1,125 carpool riders and 325 carpool driver/riders. This brings the total number of carpool participants to approximately 2,000 with an average of 2.5 persons per car.

This company has also set up a special division of personnel called the "commuter services unit", to help with any arrangements or problems a commuter may have. Through this department a commuter may secure a pre-paid pass for the use of the bus/subway system of Boston. The John Hancock Company takes the initiative to buy these tickets at a discount from the mass transit authority, and then distributes them to its employees. The cost of the tickets is later taken from the employee's paycheck. Over 1,000 employees secure their ticket through the company in this manner.

This company has also arranged for the use of five peripheral parking areas outside of Boston. Shopping centers and churches allow free use of their lots. Bus routes have been changed so that there are mass transit stops at the peripheral lots.

Southern New England Telephone: New Haven, Conneticut

Southern New England Telephone developed a car pool system in December, 1973 in order to help alleviate the immense parking problem faced by company workers in New Haven. They began their program through advertising in the company weekly, "The Telephone Times" and with posters on bulletin boards. Then carpool application forms were passed out and workers took the remaining steps to form carpools. The response was amazing; the only incentive given was a guaranteed parking space to members of carpools (Previously, workers had to arrive one hour early in order to secure one of a limited number of parking spaces). In the George Street parking facility in New Haven, there are presently 160 carpool spaces with an average of 4.5 persons per car. In the Wall Street parking facility there are forty spaces reserved for members of carpools with an average of three persons per car. This has eliminated approximately 720 cars that had previously been driven to work.

Another program developed by Southern New England Telephone is that of a charter bus system. Presently, there are eight charter buses running at the cost of 20-30 dollars a month for the commuter. This is an approximate savings of one hundred dollars a month for the bus rider who previously had to drive into work and pay for parking. The commuter fees cover the cost of renting and operating the bus which is about 75-100 dollars per/day. There are various pick-up points in order to save time which would be wasted in door to door service. The company intends to further expand the system in the future, and presently

is cooperating with smaller companies in the area in arranging for these employees to utilize the bus service also.

Southern New England Telephone has been so successful in their bus and carpool programs that they are contemplating the idea of vanpooling. Future plant construction by the corporation will experiment with significantly less parking space/employee ratios to further encourage carpooling and bus chartering. These ratios will be adjusted to take into account the type of employees working within the facilities. For example, telephone installers and operators would require proportionately more parking spaces due to the irregular working hours.

Atlantic Richfield Company: Los Angeles, California

Atlantic Richfield Corporation, in cooperation with the Southern California Rapid Transit District, has developed subscription bus routes in order to help alleviate traffic congestion and the pollution problem in the Los Angeles area. Out of the approximately 1,600 employees at this office, 425 ride buses to work. Atlantic Richfield provides a financial incentive for them to do this. The company covers $15 per month of transportation fees for each employee who is riding the bus into work. This leaves the remaining fee of $30-45 (depending upon the distance traveled) to be paid by the commuter. The company ends up paying about $6,400 a month in transportation fee reimbursements.

The Rapid Transit District is involved in a guaranteed fare program with Atlantic Richfield. The guarantee consists of a minimal number of 35 riders on each bus. If the minimum is not met the company is responsible for the fares not paid. Approximately $5-6,000 maximum per year is paid to RTD by Atlantic Richfield. Because of increased ridership, this fee should be significantly reduced in the future.

This company also has developed an extensive car pool system, using a hand-matching approach. There are 175 participating car pools with an average of over three people per car. The incentive for these car-poolers is free parking. Free parking for carpoolers results in an approximate $1,000 per month revenue loss to the company.

Atlantic Richfield has also made these programs readily available to any of its subsidiaries. The programs have become a corporate effort to reduce VMT. The corporation has made a positive commitment to these programs and is willing to insure that the programs continue by means of monetary support.

GEICO: Bethesda, Maryland

In a Washington, D.C. suburb, Government Employees Insurance Company (GEICO) with 3,900 employees, and only 1,000 parking spaces faced a parking shortage in 1972. Zoning was denied for the construction of additional parking facilities. GEICO's solution was to establish priority parking spaces for carpools of three or more, provide a carpool matching service, and a buspool program. As a result, over 343 parking permits serving 1,036 employees were issued, raising the overall average auto occupancy to around two persons per car, 40 percent above the typical occupancy. Eight free buspools, serving 300 people, were established for GEICO employees. At three shopping centers the management approved fringe parking areas for the bus riders use. Another 200 employees ride GEICO subsidized buses from more distant origins. With an estimated 500 employees traveling on regularly scheduled buses over half of all employees now "share-a-ride". GEICO management, elated over the corporate headquarters program has distributed a "How-to-do-it" package to regional offices. Two of these have sponsored their first carpool campaigns.

Freightliner, Inc.: Portland, Oregon

Freightliner has an express bus arrangement with Trimet, the Portland Mass Transit Authority, consisting of three bus runs. The express buses make a maximum of three stops. The cost of the program is paid for by the participants. This express system also involves a park-and-ride program which is arranged cooperatively between Trimet and Freightliner. Parking lots at various locations are used at no charge. In return the parking arrangements provide publicity and perhaps some added business to the donors. Approximately 120 people participate in this program daily and Freightliner has arranged for additional buses to be added in the event of an overflow developing. Freightliner also encourages employee participation by having the bus tickets sold once a week within the company's confines and by allowing the employees time off in order to secure their tickets. The result of this effort is a savings of an estimated 74,000 gallons of gasoline per year by those express bus riders.

A car pool program was also initiated at Freightliner. A car pool survey taken among the employees received a favorable response. Out of a total employment of 2,500 persons 215 carpools were established involving more than 650 employees (approximately 3.25 people per/car). Over a year's period, these pooled rides represent an estimated savings of 370,000 gallons of gasoline.

Aerospace Corporation and Air Force SAMSO Installation: El Segundo, California

The 3,700 employees at Aerospace Corporation, in El Segundo, California, participate in a joint ride-sharing program with the 2,100 employees at the Air Force's Space and Missle Systems Organization (SAMSO installation). This ride-sharing concept began in June 1972 for Aerospace employees who were transferred from San Bernardino to El Segundo, California, 80 miles away. Rather than relocate their residences a "charter" bus was initiated. It was so successful that it served as a model for establishing other routes. What started as a commuter service for transferees has now grown into eight buses carrying approximately 250 employees.

Upgraded from standard transit buses, these comfortable buses are outfitted with air conditioning, reclining seats, coffee service and music. For each rider the trip means from one to two hours a day for reading, relaxing or just quiet conversation (and even work!). While cutting air pollution, it is estimated that these buses save 250,000 gallons of gasoline annually.

The buses were initiated by individual groups of employees and are run as bus clubs. Various charter companies provide buses with the average weekly fare of $8 to $12. Because of the frequent business trips of the riders, commitment to weekly or monthly use is not required and rebates are given. Employees of nearby companies are permitted to use these buses. The bus clubs are completely self sustaining with no guarantee by the employers. However, the company aid in soliciting members for the bus clubs has been vital to their success.

A fully computerized carpool matching system was developed and initiated at SAMSO Aerospace. A total of 1,226 employees were processed in the initial January 1974 run. New and revised applications are updated and added to the master file weekly. The data base now includes 2,200 employees. A follow-up survey found that approximately 60 percent of those participating in the program had actually joined a carpool. A later survey found about 15 percent left their carpools. Prime reasons were that someone had moved or work hours or jobs had changed.

The cost of developing and using the computer matching program and the telephone survey to get the program going was relatively minor. The labor involved included a month of a programmer's time to modify, check out and to put into operation the computer program, and a month for other technical and administrative tasks involved in the effort. The direct costs were $1,530 for computer time in processing and key punching the 1,325 applications, and for reproducing and distributing mass application blanks and instructions to approximately 6,000 personnel.

These costs can be viewed in a number of different ways. If only the direct costs are included, the values range from $0.26 per employee (in relation to total employment) to $1.71 per car pooler. If all labor costs are included, these figures would be somewhat greater, ranging from approximately $2 per employee to $13 per car pooler.

The average VMT trip length for those forming car pools was 16.2 miles one way compared to 12.8 miles of overall employee population. This concludes that the car pools were being formed generally for longer distances. The total VMT saved per day was calculated to be 9,900 miles one way. Using a figure of 230 working days per year, this would mean a savings of a total round trip VMT of 4.55 million miles which is equivalent to 13 percent of the total VMT generated by employees at the facility. Since approximately 900 people were car pooling and the average occupancy was three people per car a total of 600 cars were removed from rush hour traffic. This involved a savings of 300,000 gallons of gasoline annually and a reduction of 50 tons of pollutants into the air.

The 600 car reduction would eliminate the parking space requirement of four acres, which is a potential savings of over $1 million in land and constructions costs for the employer. There are also cost benefits for the individual car poolers. In addition to lower insurance rates, each member will expend 5,000 fewer miles in not driving a vehicle to work daily. Using a figure of $.06 per mile for mileage dependent auto costs, this amounts to a savings of $300.00 per year for each individual.

3M Company: St. Paul, Minnesota

The 3M Company in St. Paul, Minnesota, established a "commute-a-van" pilot program in April 1973 with six 12-passenger vans. By August 1974 the well-received program expanded to 64 vans in St. Paul and one at the 3M location in Los Angeles. With as many as 1,000 people on waiting lists, continued expansion of the program at 3M installations is assured. As vans become available, the fleet will be expanded to 75 serving about 10 percent of St. Paul employees. With 3M's experience serving as an excellent model, at least 9 companies are known to have started vanpooling programs.

The 3M Company headquarters, a large suburban industrial complex, includes administrative, laboratory and limited production facilities. Currently, 3M Center consists of 17 buildings with approximately 9,000 employees on some 400 acres. Anticipated 1980 employment is 16,000. Because of somewhat limited access, congestion near 3M Center has existed for several years in addition to the perplexing challenge of accommodating future growth. Since the center is auto oriented, the conventional solution meant additional highways. But it was realized that the public's ability and willingness to support additional highway capacity was becoming exhausted.

The 3M Company established an adhoc committee composed of representatives of the following departments: engineering, transportation, insurance, legal, office administration, public relations and employee relations to develop an operations guide for the pilot program. The program outlined a system where the operators would be permanent 3M

personnel. Vehicles would be purchased and supplied by 3M. The fares would cover full amortization and operating costs of the vans. Priority parking would be made available.

Benefits to 3M:

-- reduced congestion at 3M installations

-- reduced demand for parking

-- reduced capital expenditures for auto related facilities

-- more efficient use of land at 3M installations

-- self-sustaining operation

-- easy to terminate if proved unsuccessful

Benefits to Users:

-- save money

-- reduced risks and tension of commuting

-- free up car for use by family members thereby increasing their mobility and social-economic opportunities

-- high level of door to door service

Benefits to Non-Users:

-- reduction in congestion and parking demand in and around 3M installations

Benefits to General Public:

-- reduced congestion on streets and highways

-- reduced land use for auto related facilities

-- positive effect on the environment - less air and noise pollution

-- the most energy efficient commuter mode

In the pilot program, six areas exhibiting slightly different trip characteristics were selected. The number of employees residing in these areas range from 67 to 277 with distances varying from 5 to 32 miles respectively. In January 1973, a special employee survey was conducted to determine interest in each of the selected pilot areas. In one area, 12 miles from the 3M Center, 50 of the 178 persons applied for the use of the van.

The pilot pools consisted of the "Pool Coordinators" or drivers and a minimum of eight paying passengers, with at least one backup driver. The drivers must have chaufeurs licenses and are carefully screened to determine reliability. Drivers are responsible for the vans and ride free in return for driving and collecting monthly fares. Monthly fares, figured on a "break even" basis of eight riders, range from $19.50 to $39 depending on distance. As an incentive to the pool coordinator to keep the van full, the driver pockets the fare of the 10, 11, and 12th riders.

Possibly the best indication of the program's acceptance is its fabulous growth and continued acceptance. In April 1974, 80 percent of the 437 vanpoolers returned questionnaires on the program. 91 percent of the participants expressed a desire to continue using the commute-a-van for commuting. The convenience level of the vans scored amazingly high as exactly 80 percent of the respondents found the vanpool more convenient than their former method of commuting.

By any measure the 3M commute-a-van program has been an outstanding success. The average van carries 11.36 persons for a monthly fare of $23.72 and a round trip distance of 49 miles. The shift to vans saves an estimated 1.4 million vehicle miles of travel and 108,300 gallons of gas per year. The vanpool project reduced the size of a planned 3M parking ramp from 1,500 to 775 spaces saving 2-1/2 million dollars. In addition, carpooling employees have expanded three-fold to approximately 3,000 since the energy crisis began. Overall, 40 percent of all employees are participating in ride sharing, certainly one of the highest in the country.

COMMUTE-A-VAN COST CALCULATIONS

I. Fixed costs of Commute-A-Van vehicle

Cost of Vehicle	$4891.00
Immediate Depreciation	121.00
Cost for Depreciation purposes	$4770.00

1.	Depreciation over 48 months		$ 99.00/month
2.	Insurance $480/year		40.00/month
3.	One-time fixed costs — 1st year		
	Sales Tax	$196.00	
	Tires	121.00	
	License	83.00	
	2nd — 4th years		
	License (average)	201.00	
	Total	$601.00	12.52/month
4.	Cost/month for 48 Months		$ 151.52/month
5.	Estimated Value of Vehicle after 48 months is $1800. or		$ 37.50/month
6.	Monthly fixed cost to be received by User Income (4 minus 5)		$ 114.02/month or $1368.24/Year
7.	Yearly Fixed Cost used for Fare Calculation purposes		$1400.00/Year or $ 117.00/Month Fixed Cost/Vehicle

II. Operating Costs for Commute-A-Van Vehicle

1.	Gasoline: $.36/gal. @ 9 miles/gal.	$ .04/mile
2.	Oil Change, filter & lubrication at 3000 mile intervals @ $7.25/each time	.0024/mile
3.	Other Maintenance	.01/mile
4.	Tires — cost for life of vehicle	.01/mile
5.	Total Operating Cost	$ .0624/mile

For Fare Calculation purposes and personal mileage charges $.07/mile was used

III. Fare Calculation

Step 1	Daily round trip distance
Step 2.	Miles per year (250 days times above mileage)
Step 3	Fixed Cost per mile ($1400. divided by miles/year)
Step 4	Operating Cost per mile ($.07/mile)
Step 5	Total Cost per mile (3 plus 4)
Step 6	Cost per day (cost/mile times daily mileage)
Step 7	Cost per person per day (cost day divided by 8)
Step 8	Cost per person per month (21 times cost/day/person)

General Mills, Inc.: Minneapolis, Minnesota

Following 3M's example, General Mills, Inc., in neighboring Minneapolis launched a pilot commuter van program among its 1,800 employees. Begun in January 1974, with five vans, the program doubled in just three months. In order to lower fares in some areas and maximize use of the vans, arrangements have been made to use a van for shuttle service between buildings during the day. Free transportation is available to commuter van passengers for doctor appointments and emergencies. The vans are used for these purposes by employees with a chauffeur's driver's license while company cars are provided for other passengers. The drivers of the vans are also permitted to drive the vans home and use them at their disposal at the cost of seven cents a mile. (The driver during the week gets a free ride for his services) and also receives the fares from the 10th and 11th passengers.

As of September 1974, the company's van pooling program consists of 12 vans that transport about 8% of the employees at the main office. The vans cost nine cents a mile in operating costs but this is covered by the commuters' fares - which range from $12.60 - $33.00 a month depending on the distance travelled. These vans are 12-passenger vans purchased at the initial investment of $6,100. The monthly fares cover the capital investment and operating costs.

In addition to the van program, reserved parking close to the building for carpools of three or more is offered to more than 50 carpools transporting over 180 employees. More requests for reserved parking assignments are continuously made as new carpools are formed with the aid of a "Pool It" ride board from which employees find others to pool with.

GENERAL MILLS

FARE CALCULATION

1. Monthly mileage = daily round-trip mileage x 21 days (average number of working days per month)

2. Fixed cost per mile = $113.00 (monthly fixed cost) ÷ monthly mileage.

3. Operating cost per mile = $.09

4. Total cost per mile = #2 + #3.

5. Total cost per month = total cost per mile x monthly mileage.

6. Cost per person per month = total cost per month ÷ 8 passengers.

7. Cost per person per day = #6 ÷ 21 working days.

GENERAL MILLS

FIXED AND OPERATING COSTS OF VANS IN PILOT PROGRAM

Fixed Costs

Capital Cost of Van		$5,372.68 *
- Depreciation (over 4 years)		5,157.77
Net Book Value		214.91
Salvage Value (after 4 years)		1,800.00
	Profit	$1,585.09

Annual Costs:		
Depreciation		$1,289.44
Insurance		360.00
Licensing		
Vehicle license + title fees	$58.50	
Class B drivers' licenses	33.00	
		91.50
		1,740.94
	Profit	$ 396.27
Annual Fixed Cost		$1,344.67
Monthly Fixed Cost		$ 112.06

For fare calculation purposes = $113.00/month.

Note: Above figures do not include cost of capital, as it is being absorbed by company.

Operating Costs

Gasoline ($.54/gal. @ 9 miles/gal.)	.060
Oil change, lubrication and filter every 3,000 miles @ $12	.004
Other maintenance:	
1st servicing - 12,000 miles (annual mileage - 12,000 miles)	.008
Tires: $50/tire x 3 = $150	.013
(2 tires - 12,000 miles = $100/year;	
2 tires - 7,000 = $50/year)	
Snow tires - $60/tire, good for 2 years.	.005
Operating Cost =	.090/mile

* Figures based on purchase price as of 7/1/73.

Texas Instruments: Dallas, Texas

A major Texas Instruments Company complex in Dallas, Texas, which employs in excess of 20,000 people, initiated a comprehensive ride sharing program in the fall of 1973. The program was designed to meet the Environmental Protection Agency's (EPA) transportation requirements for the region. The regulations state that employers with 1,000 or more employees in one location and who maintain more than 700 employee parking spaces must provide incentives to encourage employees either to ride to work in carpools or ride buses. While EPA regulations apply to only four company facilities, the corporate policy is to aid all "domestic sites" in pooling program. The effort is viewed as a corporate moral commitment to locate the best commuting opportunities for employees in order to conserve energy and reduce air pollution.

With a carpool matching effort and parking priorities for three or more persons per car or a "full car" such as a two-seater sports car carrying two people, the average occupancy increased from 1.20 in October 1973 to 1.64 in April 1974. A pilot TRANS-I-VAN program started in March 1974, with five vans, and is similar to the 3M Company operation. An additional five vans were added in July, 1974. In addition, seven new express bus routes provide exclusive service to Texas Instruments with another three bus routes under discussion. Texas Instruments determines the routes, stops and times and guarantees the Dallas Transit Authority 40 paid riders for a trial two-week period to start the buses.

Tektronix: Portland, Oregon

Tektronix operates a shuttle bus system to transport employees to different parts of their hugh complex which is located outside of the City of Portland, Oregon. This company has two 12-passenger vans which operate 12 hours a day, with drivers working a four-hour shift. The management of Tektronix has found this system to be both a convenient and economical way to move people throughout the 18 miles of plant area. The vans transport about 100 people a day giving to them quick door-to-door service and enabling inner-plant business to proceed more efficiently.

The total operating costs including gas, tires and the leasing of the vans is $130.00 per day. The company finances this operation and has found it to cause a reduction of travel expenditures. Previously, the company had been paying employees 12 cents a mile for inter-plant travel. Also, the company is saving money by a reduction of wasted time. The van system is much more convenient and efficient in transporting employees to and from buildings. In the time it takes the van to get an employee to one place from another, previously the employee would have just made it to his car (which could have been parked up to 1/4 mile away) to begin his trip. The employee at the same time is saving money on gas, eliminating wear on his vehicle, avoiding the inconvenience of driving.

Another alternative to the shuttle buses offered by Tektronix is that of a "company bike." A number of bicycles were purchased by Tektronix for the employees' use. Bike paths were set up throughout the company's campus - like setting, in order to get to the various

buildings. Also, bike racks were installed at each building of the complex to provide secure parking spaces for the bikes. The employees find this program to be a healthy and relaxing way to travel.

Tektronix also has an agreement set up with the mass transit system of Portland. They supply an express bus to the company in conjunction with a park-and-ride program. Church and city parking lots are used for this purpose and usually at no charge. Metro is actually in charge of coordinating the program, but the company encourages employee cooperation. The cost of the bus system to the commuter is about 40 cents per trip which is approximately equal to the cost of driving his own car.

Tektronix also has a car pool program which was first started by a computer matching system. As a result of the matching that occurred, there are presently 900 carpools with over 2,000 passengers (including the drivers) taking part. The remaining employees of the 10,000 total population get to work using various forms of transportation. Sixty two percent of the total 10,000 population are still driving their own cars to work. Twenty percent of the workers are involved in carpooling. Six and one half percent of the people utilize mass transit. Five percent of the employees ride their bikes to work, usually along state financed bike paths. Three and one half percent of the people ride motorcycles and park them in the spacial parking areas supplied by Tektronix. This leaves the remaining three percent of the population who utilize their feet and walk to work.

Georgetown University: Washington, D.C.

Georgetown University put into effect a transit program during September, 1974. This type of program was necessitated due to traffic congestion, the lack of available parking space, and the shortage of dorm rooms. Four shuttle buses transport students to and from school and to the surrounding vicinity. The buses were bought at the cost of $23,000 each which the university expects to pay off within six years. This cost is considerably cheaper than securing land in the Georgetown area and building a parking lot.

A fee of 25 cents is charged for each student ride. This fee enables the university to break even in operating costs. During the week approximately 1,200 students a day utilize this service. The service is run on a part time basis on weekends.

Georgetown University is a member of a consortium of universities in the Washington, D.C. area. If this program proves to be successful, the other consortium schools will most likely adopt a similar program.

University of North Carolina: Chapel Hill, North Carolina

The University of North Carolina at Chapel Hill launched a pilot program in a cooperative bus system with the town of Chapel Hill on August 1, 1974. The idea was conceived by the townspeople and the University administration in order to eliminate the problem of traffic congestion in both the town and on campus. The program began with an advertising program utilizing both newspaper and radio for this purpose. Both the newspaper and radio cooperated in giving free advertising when requested by the bus system authorities.

The University subsidizes the system by guaranteeing the transit system a total of $300,000 in bus passes. The University in turn sells these passes to the students at the cost of $72 per year including parking. Parking facilities were secured at the airport and University Mall which are on opposite sides of the town. The students park their cars at these areas and catch a bus to campus. The buses run every six minutes.

On the first day of operation this system carried a total of 1,466 people to and from school. Now, it averages 11,000 people during the week and 3,000 on weekends. The University hopes the system will expand to carry more of the 25,000 town and 14,000 University population. The bus system is trying to attract increased ridership by launching a massive advertising program in the near future.

The bus system consists of 22 older buses that have caused some maintenance problems. The 25 cents in town and 15 cents on campus

fares do not cover the operation costs for the first year of operation. The University expects a deficit of $50,000 the first year.

The bus system is already growing after only a few months of operation. Over-crowded buses and people always waiting at bus stops are just a few indications of the support behind this program. The system has helped to eliminate some of the problems of traffic congestion and has received widespread community support.

University of Washington: Seattle, Washington

The University of Washington has a cooperative agreement with Seattle's mass transit authority whereby buses are provided to help transport students to and from the campus. This program is designed to alter the traffic problem in and around the university.

At present, there are five bus routes which transport about 2,700 students a day. This compares with a total student population of 34,000. The buses operate 22 1/2 hours each weekday but no service is provided on weekends. The highest level of service is provided during the 8-11 a.m. peak period.

The transit offers two types of service for the students. The first is the neighborhood residential service which picks up students living within a five-mile radius of the campus. Another system is the express collector service which takes care of persons living outside the five-mile radius. Free park-and-ride lots are supplied by the city, the Elks Lodge, and various churches. Free bus transfers are given to students using this service.

The bus routes are operated at a cost of approximately $1,100 per day. This cost includes the rental fee, driver salaries, gas, insurance, and maintenance. Approximately 60 percent of these costs are covered by the student fares, with the university paying the other 40 percent. The university desires to expand the transit system but is limited by budgetary constraints.

Combus: Los Angeles, California

Combus is a commuter-based bus system in the Los Angeles area. It is the largest operator in the Los Angeles area of commuter transportation. It is basically run as a private utility and is regulated by the Public Utilities Commission which approves all routes and fares. The procedure is for a company to submit a route request and a proposed fare rate, both of which are then subject to approval.

The system operates a total of 47 buses and carries approximately 2,400 commuters daily. The cost for the commuter is approximately $11-$14 a week depending on the distance traveled. Professional drivers are hired by Combus, and the buses are used for charter purposes in between the commuter runs. The "off-hours" chartering business provides sufficient revenue to maintain a high quality bus system during commuter hours.

Combus also operates a mini-bus system in supplementing its normal bus routes. Presently, there are seven mini-buses operating. These buses hold 12-17 passengers and are also regulated by the PUC. The buses are driven by specially licensed passengers who in return get to ride free. The drivers are also allowed to take the buses home and use them for free personal use. The other passengers are permitted use of the bus on weekends at an approximate cost of 12 cents per mile. Adequate insurance coverage is regulated by the PUC. The initial capital investment of this program was $6,500-11,000 per bus and the company is running at a profit.

Combus was faced with the problem of attracting people out of their private automobiles and has succeeded in their task by offering conveniences such as top-grade service, air conditioning and reclining seats. Its success has been achieved without the advantage of priority treatment such as bus lanes. Priority treatment would even further increase the attractiveness of the bus system.

Reston Commuter Bus, Inc.: Reston, Virginia

In 1968 the Reston Community Association set up a commuter express bus system from Reston, Virginia to Washington, D.C. in order to provide easier access to the downtown and to alleviate traffic congestion. In that year a committee was organized to charter a bus and determine the schedule, picking routes and destination points for the buspools.

The program was an immediate success and by 1971 it became evident that a separate organization was necessary due to the size and scope of service. Consequently, Reston Commuter Bus was incorporated under the laws of Virginia, It is a non-profit organization run by a volunteer Board of Directors and 11 volunteer officers.

In 1973 permission was obtained to use the Dulles Airport Access Road. Since the Dulles Airport Access Road splits the Reston community into two sectors, buses having collected passengers each morning in each sector meet at the Dulles ramps to exchange passengers and pool those with common destination. This, in effect, means that the buses act as two kinds of buspools: local circulation buspools and line haul express buspools. Operating in groups of two or three buses, they provide collection/distribution service. After rendezvousing at the Dulles ramps where passengers change on the basis of destination, they begin a line haul express function to employment hubs in Washington, D.C. In the evening the process is reversed at a point in Rosslyn, Virginia, just outside Washington, D.C. The exchanges are performed at both the Dulles ramps and Rosslyn in just a few minutes.

The buses are chartered from the Washington, D.C. transit authority, METRO, and are used in normal transit service during non-rush hours. Presently, 25 morning buses and 23 evening buses are operating. During the energy crisis 2,400 people (1,200 each way) rode the buses each day. Approximately 2,000 people now participate.

The cost of the bus is $57.09 per run. The standard fare is $140 per commuter each way with the purchase of a ten pack booklet. (If cash is paid, the cost is $1.75). The fare to the CIA is $1.20 because it is a shorter distance.

The Reston experience proves what interested and dedicated communities can do in a unique situation. The program has become a permanent and viable community service. The bus system is both more convenient and cheaper than single-occupancy automobile commuting, and many commuters choose it instead of facing the tensions of rush hour traffic.

Westport, Connecticut

Westport, Connecticut is a suburban community outside of New York City that has rediscovered the bus as a means of transportation. A fleet of eight luxurious small buses began regularly scheduled trips throughout Westport and the surrounding vicinity in August of this year. The number of riders increased from 1,300 on the first day of operation to 2,254 in the following week and presently the 16-seat buses are filled most of the time.

The buses were bought with a $302,000 grant from the Federal Urban Mass Transit Administration and the Connecticut Department of Transportation. The operating costs are estimated to be 250,000 per year. A single bus ride costs 50 cents; a total of $110,000 in fares is expected the first year. This will leave a $140,000 deficit which is to be shared equally by the state and the town of Westport.

A fleet of eight comfortable Mercedes-Benz buses were purchased in order to induce people out of their cars and into the buses. The buses have large picture windows, air conditioning, low pollution diesel engines, and padded bucket seats.

The buses go into the countryside along seven routes in the early morning and evening hours bringing commuters into the railroad station. Then during the day the routes are changed to bring residents every 35 minutes to the main shopping areas, the beach, and recreational and cultural centers. The residents of this community are, in effect, spared the inconvenience of driving.

Initially, there were strong fears that such a mass-transit system would fail in a suburb designed for the specific use of the automobile, but these fears have proven unfounded. It seems people are ready to abandon their automobiles if an alternative economical, efficient and convenient system is offered.

Minneapolis, Minnesota

The city of Minneapolis has established approximately 35 park-and-ride lots to serve and augment its bus system. 17 of the lots are along the Interstate 35W corridor, a main expressway into the city. Several churches and shopping centers allow free use of their parking lots. Approximately 5-700 commuters use the lots daily. An estimated 18,000 VMT and 1,400 gallons of gasoline are saved every day by the program. The program is expected to expand in the future.

The city has also established contra-flow bus lanes on two of the main downtown streets. The lanes have been successful and free of any accident problems. In addition, a downtown mall limited to only bus and pedestrian traffic has been inexistence for several years. Finally, several ramp meters which provide priority access for buses have been installed.

Knoxville, Tennessee

Starting months before the energy crunch of Fall 1973, the city of Knoxville, Knoxville Transit Authority, various homeowner's associations and the University of Tennessee, and major employers all pioneered a comprehensive urbanwide pooling program. Encompassing all forms of available ride sharing, the emphasis is on the optimum use of each vehicle type, i.e., cars, vans, and buses.

This urbanwide carpooling program was not viewed as a reaction to the energy crisis but as a positive response for urban transportation needs involving: (a) declining transit ridership and rapidly increasing transit deficits; (b) increasing peak hour traffic congestion; (c) increasing numbers of peripheral activity centers, shopping centers, and industrial parks.

The car/buspool concept was, therefore, viewed as a low-cost method of identifying commuter demands to allow a more effective scheduling of buses to generate higher load factors and multiple peak hour trips through selective scheduling, promotion and selling. It was also intended to generate alternatives for areas which cannot economically support traditional transit service.

Knoxville's ride sharing achievements are largely the result of an all volunteer effort operating on a shoestring budget. By the end of the energy crisis, 12,000 employees at 12 firms received carpool matching lists, hundreds of carpools were established, a vanpool pilot program was initiated and nine new express bus routes were established.

In September 1974, the second phase of Knoxville's ride-sharing program was going from a volunteer program to a Federally funded campaign.

Preliminary findings of the first phase suggest:

(a) In Knoxville where transit has very low utilization, the importance of carpooling cannot be overemphasized.

(b) The car/bus pool matching program can increase carpooling by five percent of the work force with little other effort than a good carpool matching service.

(c) The car/bus pool matching program is very effective predictor of express bus service and can accurately predict who will ride for a direct marketing approach. Riders readily pay double fare for genuine express service.

(d) Firms do not visualize the actual cost of commuter associated expenses for land, parking lots, multiple shift work schedules, and uneconomical expansion of parking facilities.

(e) Highly visable radio or TV carpool programs are less effective because of the lack of association between respondents.

(f) A highly committed individual in each firm is essential for the success of a program.

(g) Employer vanpools or charter buses are very appealing to many businesses.

(h) A successful program should probably consist of a strong promotional and training program directed to the employer plus a strong appeal to the employees so that pooling implies benefits instead of imposition.

(i) The propensity of employees of a given firm to live in the same neighborhood appears to be far greater than expected. This may have major implications for transportation planning and schedulings.

Extensive cooperation and marketing (bus demand established from carpool matching data) between TVA, suburban employers, Levi Strauss and Camel Manufacturing, the transit authority, University of Tennessee, employees and home owners associations resulted in nine new express bus routes. These genuine express bus runs virtually equal the door to door travel time of a privately driven automobile. With only 3 or 4 pick-up stops at fringe parking areas (churches and shopping centers) the buses travel express to a single employment destination (one major stop) arriving 10 minutes before work. This enables fast trips for the commuters and quick turnaround for the buses.

During the summer of 1974, all nine new premium fare buspools were carrying more riders than in March. In addition, TVA added two special charter buses to serve overtime employees. These buses cover full operating costs as riders pay premium fares of $.50 and $.60 for premium fast service as compared with $.30 for conventional locals. There is standing room only on most buses, some with 10-16 standees. The fast service results in standing less than 20 minutes.

In April, 1974, TVA signed a two year lease with Hertz Car for six vans. The TVA credit union handled the leasing and insurance arrangements for the six vans to eliminate any question that TVA was providing transportation for some employees.

The door to door service costs $23 per month for a 40-mile round trip or less than four cents per passenger mile. This is based on 10 paying passengers. Continuous patronage for 11 months will entitle a passenger to one free month. The employees pay monthly either through payroll deduction or by check. The driver rides free and has the personal use of the van for seven cents per mile. In identifying the potential areas for vans, the carpool matching survey was invaluable. The selected driver is responsible to recruit a group of 10 persons using lists provided by TVA and through other available sources. During the day between commuter trips, the vans are available for subleasing to charitable organizations at a minimum charge.

Overall, TVA has increased their employees ride sharing from 30 to 50 percent. To continue this program, a permanent full time position of transportation coordinator has been established to aid all TVA employment centers.

Substantial support for the comprehensive Knoxville program has been forthcoming from Mayor Kyle C. Testerman who stated, "Substantial evidence has been gathered that the car/buspool plan can do more to save energy, reduce congestion and pollution, reduce parking problems, and increase access to the downtown area than any other program which we might be able to implement within the city. The car/buspool system is also working to reduce the tax burden caused by a previously ineffective mass transit system as well as providing a fast and reliable method for getting to work. Frankly, our bus system for the first time has become consumer oriented."

Omaha, Nebraska

In Omaha, Nebraska, a program labeled Energy Conservation Carpool Operation (ECCO) was conceived by an energy committee of Northern Natural Gas Company. After receiving company approval for use of its comupter, Northern's energy committee, which included two Jaycees, obtained full support of the Omaha Jaycees. In September 1973, ECCO became an authorized Omaha Jaycee project.

The main goal of the Omaha Jaycees is to make data available to commuters to aid carpool formation and increase ridership of mass transit, thereby, reducing commuter energy consumption and street congestion. Vital to the success of the effort, a promotional campaign was launched (although limited in scope so as not to swamp the volunteer effort) at both the public and company levels. The active support and aid of key business and public personalities was obtained and the ECCO promotion was coordinated with Metro Area Transit expansion and development. The Jaycees contacted companies, explained the details of ECCO program and enlisted their participation. Upon a company's involvement, an effective program of training was launched to guide their program.

To keep all informed as ECCO progressed letters were written to all employers, the mayor and governor. This minimized the need to fully explain the objective and progress of the ECCO program as each new client entered the program. It also served to act as a form of promotion to the employer. Their cooperation is vigorously solicited especially for participating employers and considered absolutely necessary to the success of the program.

By April 1974, the success and popularity of ECCO was evident as 130 companies had completed surveying their employees. Of the 1,190 Northern employees who received the questionnaire, 65 percent returned the completed form. This subsequently led to the formation of 130 more carpools bringing the total number to 281. While parking is not critical at Northern, emergency car kits were offered as an incentive.

Union Pacific Railroad had over a 75 percent return from its 5,000 employees, and the company is investigating the adoption of this ECCO format for some of its other locations. Mutual of Omaha, an insurance company with about 3,600 employees, began its own carpool promotion in early 1973. Through the use of attractive incentives - preferred parking, free breakfasts, and drawings - more than 1,000 employees were already commuting by carpools when ECCO started. The company has worked hard to encourage the smaller businesses in its immediate area to participate in pooling programs. It made its data processing and key-punching services available to them, and now matches the employees from these 29 concerns with its own employees.

As of May 1974, approximately 15,000 of a potential 27,000 employees, mostly in downtown Omaha, had submitted data forms to ECCO. The return rates of some larger firms exceeded 80 percent, with smaller firms slightly behind. A high participation rate on returning data forms is critical as it increases the probability of locating partners within reasonable proximity. The goal of an expanded ECCO program (federally funded) to be in full operation in the fall 1974 will be to contact each of the 917 companies employing 25 or more persons, for a total of 147,000 employees.

As of September 1974, the ECCO project was turned over to the Metro Area Transit which received federal funding for the task. The project's name was changed to Metro Area Carpool the the goal is to establish carpooling as a permanent transportation alternative. To achieve this goal, Metro Area Carpool goes into the various companies and train people from personnel to take charge of keeping the system updated. Each company is checked once a week for any additions or deletions from the master list, thus keeping the program accurate and effective.

Metro Area Carpool plans to re-contact some of the companies who showed a favorable response to ECCO's project. it will attempt to re-survey 5 or 6 companies in the downtown Omaha area in order to determine the extent and success of the carpool programs.

Connecticut Statewide Efforts

In 1972, the Connecticut Department of Transportation (DOT) developed a UNIVAC computer program for carpool matching and provides carpool matching services to any public or private employer in the State who desires to participate.

Initially, over 7,000 employees from 45 State agencies in Hartford submitted date forms for matching. Subsequently, over 1,000 employees ride in carpools, most parking in spaces reserved for carpools with three or more. Joining the spirit of Connecticut DOT in conserving energy, about 100 companies from across the State also sponsored programs. With around 80 percent to 90 percent of the employees participating, some 70,000 questionnaires were returned by the first 31 firms.

In addition, Connecticut DOT has an accelerated statewide construction program for carpool commuter parking lots located primarily at key highway intersections. As of July 1974, 8 permanent lots, which are paved, landscaped and illuminated and 62 new gravel-covered temporary facilities have been constructed. "Even though the energy crisis appears to have subsided, our carpool commuter lots are holding their own and in many instances are experiencing increased usage," said State Transportation Commissioner Joseph B. Burns.

Examples of Reductions in Energy Use and Vehicle Miles Traveled From Parking Related Programs

Inducing people to switch to carpooling and mass transit results in significant gasoline and vehicle miles traveled savings. This also translates directly to improved air quality. The following examples are representative of the possible gains that can be achieved in both VMT reduction and fuel economy by implementing VMT minimization programs. The costs of such programs relative to the benefits gained are minimal. And the comparative ease of implementing effective programs demonstrates that there is a high degree of potential applicability nationwide.

- 3M Company: St. Paul, Minnesota

The company estimates that their vanpooling program saves approximately 110,000 gallons of gasoline each year. This translates to about 1.4 million vehicle miles saved annually. In addition, 350 less parking spaces are now needed.

- Aerospace Corporation: El Segundo, California

The corporation estimates that their carpool program saves over 300,000 gallons of gasoline per year and a reduction of 50 tons of pollutants. A daily estimated savings of 20,000 vehicle miles traveled or a yearly VMT savings of 4 million (230 working days per year) results from the program.

In addition, over 250,000 gallons of gasoline are saved annually by their bus program.

- Southern New England Telephone Company: New Haven, Connecticut

Their buspool program saves 350,000 gallons of gasoline annually while their carpool system saves approximately 215,000 gallons of gasoline annually and takes some 500 cars off of the highway daily.

- Freightliner, Inc.: Portland, Oregon

Its carpool program results in an annual gasoline savings of 370,000 gallons or 4.8 million miles. In addition, the bus program contributes another savings of 74,000 gallons of gasoline each year.

- Minneapolis, Minnesota

A new and expanding park-and-ride lot system already reduces VMT by 18,000 miles every work day, thereby saving 1,400 gallons of gasoline daily.

- Boston, Massachusetts Transportation Control Plan

Implementation of the promulgated control measures which include an extensive employer transit incentive program would result in a savings of approximately 110 million gallons of gasoline each year.

Parking Investment Costs

The attached report contains an analysis of the investment costs associated with the construction of a parking facility. In order to reflect such costs accurately, the report sets forth a categorization of parking facilities based upon their intended uses. The categorization is the same as the EPA categorization contained in the August 22, 1974 proposed amendments to the parking management regulations.

Each of the five usage categories has been further subsivided on the basis of actual facility design characteristics. This detailed breakdown is necessary in order to treat the many variables (i.e., space efficiencies, land costs, amortization and interest rates) associated with the construction of parking facility.

Due to the many possible types of parking facilities which can be constructed at a particular location and the wide variations in land values (i.e., from less than $2 per square foot to greater than $50 per square foot), any estimate of the total cost of a particular type and size parking facility must cover a broad dollar range.

The following table illustrates the very large capital expenditures involved in the erection of a parking facility. The figures reflect land acquisition costs, which vary considerably, and construction costs, which generally average about $400 per parking space. The figures represent initial cash costs and do not include amortization costs, investment finance charges, and taxes. Thus, the figures are lower than actual costs to a developer.

TABLE I

Use Category	Number of Parking Spaces	Cost Range Per Facility (millions)	Cost Per Car Space
Residential Parking Facility	250	$0.4 - $1.9	$1625 - $7500
Customer/Client Parking Facility	1000	$4.9 - $7.5	$4875 - $7500
Employee Parking Facility	500	$0.7 - $2.5	$1350 - $5000
Recreation & Intermittant Parking Facility	2000	$3.3 - $8.6	$1625 - $4280
Independent Multi-Use Parking Facility	750	$2.8 - $6.0	$3750 - $8040

PARKING
INVESTMENT COSTS

by

EPA CATEGORIES OF USE

and by

TYPES OF CONSTRUCTION

PARKING

INVESTMENT COSTS

by

EPA CATEGORIES OF USE

and by

TYPES OF CONSTRUCTION

The numbering system in this report is that the first digit goes to:

EPA CATEGORIES OF USE:

1. Residential parking
2. Customer/client parking
3. Employee parking
4. Recreation and Intermittent Use
5. Independent multi-purpose parking

The lettering system is that the second digit with Capital letters representing Self-service operation and lower case letters representing attendant parking operation.

A. Surface parking
B. Basement parking
C. Underground parking
D. Concrete parking decks
E. Steel frame parking decks.

*Wherever appropriate to avoid repetition reference is made to applicable Tables in another section.

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B. Basement Parking

C. Underground Parking

D. Concrete Parking Decks

E. Steel Frame Parking Decks

2. Customer/Client Parking Facilities

A. Surface Parking

D. Concrete Parking Decks

C. Steel Framed Parking Decks

3. Employee Parking Facilities

A. Surface Parking Facilities

B. Basement Parking Facilities

C. Parking Decks

4. Recreation/Intermittent Parking Facilities

5. Independent/Multipurpose Parking Facilities

a. Surface Parking - attendant operation

A. Surface Parking - Self Service

b. Basement Parking - Attendant Operation

B. Basement Parking - Self Service Operation

C. Underground Parking - Self Service

D. Concrete Parking Decks - Self Service

d. Concrete Parking Decks - Attendant Operation

E. Steel Framed Parking Decks - Self Service

1

EPA TYPE I PARKING PATRONAGE

RESIDENTIAL PARKING FACILITIES

TYPE PATRONAGE

1. Residential. Parking facilities to be utilized exclusively by residents, their guests and the immediate staff of the residential complex (e.g., parking facilities associated with apartment complexes, condominiums, townhouses, etc.). Only those parking facilities which employ measures sufficient to exclude customers, clients, employees or students of other enterprises can be considered within this category; otherwise, the facility will be considered also to be associated with such other categories.

TYPE PARKING CONSTRUCTION

A. Surface Parking
B. Basement Facilities
C. Underground Garage
D. Reinforced Concrete Parking Decks
E. Steel Framed Parking Decks

1

RESIDENTIAL

EPA TYPE I - RESIDENTIAL PARKING FACILITIES

The residential type of parking service is operated for exclusive use by residents of the associated apartment or condominium or their guests, and the immediate staff of the residential complex. Such facilities to be classified as residential parking facilities must employ control measures which will assure such use. Residential parking accommodations are generally provided in the following five types of construction:

A. Surface parking
B. Basement facilities
C. Underground garage
D. Multifloor reinforced concrete garage
E. Multifloor steel framed parking decks.

Each of the above types of construction have their own characteristic car space efficiencies, construction costs, occupied land areas and rates of amortization, all of which affect the monthly finance charges. The amortization tables have been prepared for representative useful life periods and rates of interest. It should be noted; however, that it is not uncommon for some large residential building complexes to use several of the above types of parking. In such event, the analysis of costs may be broken down according to type of construction because this technique will more accurately reflect the investment costs involved in providing the parking service.

Parking facilities which serve residential type patronage as defined in the Parking Management Regulations (Federal Register August 22, 1974) are generally laid out to provide each stall with direct access to an unobstructed aisleway. The developer's choice of type parking construction to be used depends upon site size, shape, topography and various other factors.

Occasionally due to unusual circumstances in some residential parking facilities it is necessary to park cars two cars deep which requires an attendant to be on hand to move cars. In the tables which follow in this Section the system used to identify each is when the first digit is "1" this designates "Residential parking use" (EPA Category #1). The second is an alphabetic letter A through E to identify the type of construction as per the above five categories. The third is a digit which relates to the type of cost figure (i.e., whether it is the amortization costs, the taxes and interest or the car space rental cost.

1A

RESIDENTIAL SURFACE

A. RESIDENTIAL SURFACE PARKING (TYPE IA)

Space Efficiency Parking lots for residential developments generally require 250 to 400 square feet per car space, and average about 350 square feet per car space.

Investment Cost. The cost to build a parking lot to serve a residential building complex, including paving, construction of entrances-exits, wheel stops, striping, lighting, and landscaping generally ranges between $300 and $500 per car space, averaging about $400 at today's prices. The breakdown of this cost is as follows:

COMPONENTS OF COST-SURFACE PARKING

ITEM	COST PER CAR SPACE
Clearing, grading, drainage, paving	$250
Entrance-Exit and curb cut	55
Striping and wheel stops	20
Fencing	12
Landscaping	8
Lighting	45
Attendant Booth (Prefab)	10
Total construction cost per car space	$400

Monthly Amortization Costs. Parking lot improvements are generally amortized over a ten-year period. Calculations of monthly amortization costs at ten-year useful life for representative car space costs at interest rates ranging between six percent and nine percent are shown in the following table:

TABLE I A-1 MONTHLY AMORTIZATION COSTS PER CAR SPACE

Interest Rate	Investment Per Car Space $200	$300	$400	$500
6% 10 yr.	$2.23	$3.34	$4.45	$5.56
7%	2.33	3.49	4.65	5.81
8%	2.43	3.64	4.86	6.07
9%	2.54	3.81	5.07	6.34

Land Value of residential building complexes generally range between $2 per square foot and $5 per square foot and space efficiency ranges between 250 and 400 square feet per car space. The average space efficiency is 350 square feet per car space

1A

RESIDENTIAL O SURFACE

LAND I A-2 LAND INVESTMENT/SPACE (RESIDENTIAL LOTS)

LAND AREA/SPACE	SQUARE FOOT LAND VALUES $2	$3	$4	$5
250 Square feet	$500	$750	$1000	$1250
300	600	900	1200	1500
350	700	1050	1400	1750
400	800	1200	1600	2000

1A

RESIDENTIAL SURFACE

Monthly Interest and Taxes on Land as Per Table I A-2 (above)

Assuming that 11 percent annual interest on the dollar values as shown in TABLE I A-2 will represent an adequate rental for the land occupied by each car space and also cover the real estate taxes (interest on investment plus taxes) as shown, the monthly "rental" costs values in TABLE I A-2 are projected to be the following amounts.

TABLE I A-3 MONTHLY LAND RENT PER CAR SPACE (RESIDENTIAL LOTS)

LAND AREA/SPACE	SQUARE FOOT LAND VALUES $2	$3	$4	$5
250 Square feet	4.58	6.87	9.16	11.46
300	5.50	8.25	11.00	13.75
350	6.41	9.62	12.83	16.04
400	7.33	11.00	14.66	18.33

Monthly Amortization of Construction Plus Land Rent

If we were to amortize construction cost of $400 per car space over a ten year period at seven percent (see Table I A-1) and add to this the land rental based upon a space efficiency of 350 square feet per car space for the land values shown in Table I A-3, then the monthly costs per car space of providing the residential parking facility would be as follows:

TABLE I A-4 MONTHLY CAR SPACE RENTAL (RESIDENTIAL LOTS) (LAND AND IMPROVEMENTS)

ITEM	$2 Land	$3 Land	$4 Land	$5 Land
Table IA-1 Amort. $400 constr.@7% 10 yrs.	4.65	4.65	4.65	4.65
Table I A-3 Monthly Land Costs @ 350 sq ft (Land & Tax)	6.41	9.62	12.83	16.04
Total Monthly Rental Cost Per car space	11.06	14.27	17.48	20.69

In the same manner as shown in Table I A-4 various combinations of values for estimating the monthly rental cost for amortizing the parking lot construction (Table I A-1) and for estimating interest and taxes on land (Table I A-3) may be projected for any combination of values to obtain the estimated overall monthly cost per car space for a given parking facility.

Indoor Parking is Costly but Sometimes Necessary at large residential complex developments. This type facility is much more costly to provide than surface parking because of construction costs. Each type of indoor parking facility has its own construction cost characteristic which will be set forth in the following sections: B - Basement Parking; C-Underground parking; D-Concrete parking decks; E-Steel Framed structures.

B. RESIDENTIAL BASEMENT PARKING FACILITIES (TYPE I B) are substantially more costly than outdoor parking lots, but they also involve shorter walking distances and provide a greater convenience and protection for the apartment dweller.

Space Efficiency. Basement parking facilities have car space efficiencies in the range of 300 to 600 square feet per car space and they average about 450 square feet per car space. These lower car space efficiencies are due to adverse column spacing which is of necessity based upon the design requirements of the prime building use, the need for larger columns in the basement to support the structure above, the loss of space taken by ventilation equipment, the provision of elevator service to the apartments above, and space losses due to other design requirements. The construction costs must also include costly excavation, sprinklers, the provision of ventilation drainage and waterproofing. These losses cause poor space efficiency.

Investment Costs. As result of poor car space efficiency and the higher cost of underground construction the investment cost per car space for basement parking ranges between $4,000 and $5,500 per car space but averages about $5,000 per car space at today's prices. However, it should be noted that in 1970 construction costs for this type of facility was about $4,000 per car space. In terms of monthly carrying charges, with interest at seven percent and a 30-year amortization, the monthly cost of this type facility would be $33.27 per car space at today's construction costs.

Monthly Amortization Costs presented in the Table below are calculations for representative investment costs for basement parking facilities over a 30-year amortization period at various rates of interest.

TABLE IB-1 MONTHLY AMORTIZATION COSTS (RESIDENTIAL BASEMENTS)

Interest Rate	INVESTMENT COST PER CAR SPACE/MONTH						
	$4,000	$4,500	$5,000	$5,500	$6,000	$6,500	$7,000
6% 30 yr	$23.99	$26.98	$29.98	$32.98	$35.98	$38.98	$41.97
7%	26.62	29.94	33.27	36.60	39.92	43.25	46.58
8%	29.36	33.02	36.69	40.36	44.03	47.70	51.37
9%	32.19	36.21	40.24	44.26	48.28	52.31	56.33

Land Cost Per Car Space for basement parking is normally regarded as being carried by the residential apartments directly above which are the prime users. In any event, this would be an arbitrary figure as decided by the management. Therefore, we show in Table I-B-2 the cost per car space per month based upon a real estate tax of $4 per $100 assessed at 60% of construction cost.

1B

RESIDENTIAL BASEMENT

(Tax/Car Space/Month Based Upon 4% Ann. Tax on 60% Value)

TABLE I B-2 MONTHLY REAL ESTATE TAXES/SP ON CONSTRUCTION COSTS

	Investment Cost Per Car Space						
	$4,000	$4,500	$5,000	$5,500	$6,000	$6,500	$7,000
% tax on 60% value	$8.00	$9100	$10.00	$11.00	$12.00	$13.00	$14.00

Rental per Car Space per Month based upon amortizing construction cost in equal monthly payments at seven percent over 30 years (See Table I B-1) plus real estate taxes at four percent per $100 on 60% of construction costs as shown in Table I B-2.

TABLE 1B-3

MONTHLY RENTAL COST PER CAR SPACE

	Investment Cost Per Car Space						
	$4,000	$4,500	$5,000	$5,500	$6,000	$6,500	$7,000
Amort 30yr @7%	$26.62	$29.94	$33.27	$36.60	$35.98	$38.98	$41.97
4% Tax on 60% value	8.00	9.00	10.00	11.00	12.00	13.00	14.00
Rental on use of land	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Mo. Rent per car space	$34.62	$38.94	$43.27	$47.60	$47.98	$51.98	$55.97

Attendant Operation. In some residential parking garages the floor layout and operational needs for service and/or optimizing the car space use there may be justification for the use of attendant operation.* In such cases the car space efficiency may be substantially improved over the above cited averages for self-service operation but this gain is usually at a heavy cost in manpower wages and skilled management which would about wipe out the gain in space efficiency.

*Because the column spacing is designed to efficiently serve the functions of the building use above. This generally results in parking space efficiency in the basement.

RESIDENTIAL UNDERGROUND

C. RESIDENTIAL UNDERGROUND PARKING (TYPE I C) for residential building complexes is often constructed under plazas, as well as under recreation facilities and landscaped areas. Such facilities can provide all weather protection for walking between various buildings of the complex as well as between the covered parking facility and motorist's destination.

The Space Efficiency in underground facilities is generally better than in basement parking facilities for the reason that column spacing is designed to efficiently serve the needs of a single purpose structure. As result, the space efficiency is in the range of 300 to 450 square feet per car and the average is about 400 square feet per car space.

Investment Costs. Due to the load bearing roof, the need for ventilation, automatic sprinklers, the costs of excavation and waterproofing, the range of costs of underground parking facilities at today's prices is from $5,000 to $9,000 at today's costs and the average is approximately $7,500 per car space. However, in 1970 this average was about $5,000.

Monthly Amortization Costs Calculations for representative investment costs for underground garages over a 40-year amortization period at various rates of interest are presented below:

TABLE I C-1 MONTHLY AMORTIZATION COSTS (Construction Only)

INTEREST RATE	$5,000	$6,000	$7,000	$7,500	$8,000	$9,000
6% 40 yr	$27.52	$33.02	$38.52	$41.27	$44.02	$49.52
7%	31.08	37.29	43.51	46.61	49.52	55.93
8%	34.77	41.72	48.68	52.15	55.63	62.58
9%	38.52	46.29	54.00	57.86	61.71	69.43

Land Cost Per Car Space for underground parking in connection with residential building complexes is usually considered as part of the overall development since a major objective in going into costly underground construction is to preserve the surface for recreational or scenic values. Since underground parking construction generally costs about double the cost of an efficiently designed and constructed multi-level open deck parking structure, the opportunity for surface use for landscape treatment and recreational use does have value which can justify free land rent to the underground garage. In any event, the land rent, if any, is a management decision. Therefore, the monthly rent per car space based upon construction costs only for underground parking would be approximately as shown in Table I C-1. However, to this figure should be added an amount to cover taxes on the underground garage. For this purpose it can be assumed that $4 per hundred dollars at valuation at 60% of the construction cost would approximate this cost. Table I C-2 shows the monthly tax cost per car space as calculated on this basis.

TABLE I C-2 MONTHLY REAL ESTATE TAXES/SP ON CONSTRUCTION COST

	INVESTMENT COST PER CAR SPACE					
	$5,000	$6,000	$7,000	$7,500	$8,000	$9,000
Monthly Tax @ 4%/100 on 60% cost of constr.	$10.00	$12.00	$14.00	$15.00	$16.00	$18.00

Rental Cost Per Car Space Per Month based upon amortization construction costs in equal monthly payments at 7% over ten years (see Table I C-1) plus real estate taxes at four percent per $100 valuation based upon 60% construction cost as shown on Table I C-2. The monthly rental costs are calculated as follows:

TABLE I C-3 MONTHLY RENTAL PER CAR SPACE

	$5,000	$6,000	$7,000	$7,500	$8,000	$9,000
40 year amortization @ 7%(see Table 1C-1)	$31.08	$37.29	$43.51	$46.61	$49.52	$55.93
Bldg. Tax/sp (1C-2)	10.00	12.00	14.00	15.00	16.00	18.00
Monthly rental/ car space	$41.08	$49.29	$57.51	$61.61	$65.52	$73.93

In the above example it is assumed that there is no rental charge for the occupied ground. In all five types residential parking (ABCDE) above no allowance has been made for profit from parking service. It is also to be noted that there may be a few instances where attendant service is used in order to get more parking capacity, but in such cases the gains in space efficiency are wiped out by increased labor costs.

RESIDENTIAL CONCRETE DECK

D. RESIDENTIAL MULTI-FLOOR ABOVE GROUND GARAGE (TYPE I D) A single purpose parking structure, designed for self-service to serve the resident's parking use and constructed of reinforced concrete has often been the developer's choice when the site was small and the parking capacity requirements were large. Generally these facilities have been open deck structures which have been provided with an attractive facade to harmonize with its surroundings. It is to be noted that the Building Codes of some cities may not permit this type of construction and that others sometimes restrict the building height to six levels above ground. (Limited by height to which ladders from fire trucks can effectively fight a fire without dragging hoses up the stairwells.)

Space Efficiency of self-service garages of this type is in the range of 300 to 450 square feet per car space and they average about 400 square feet per car space. When clear span column spacing is used they can achieve a saving of 25 or more square feet per car space over the conventional designs which are generally based upon three-car bays. The column-free modular widths have the advantage also of providing a flexibility which will allow the garage to adjust to changes in car sizes which can be expected to occur during the useful life of the structure.

Investment Costs. Open deck parking structures eliminate the need for ventilation equipment and sprinklers and thereby make a substantial saving in construction costs over underground garages. By designing for use of low ceiling heights which eliminate the possible use of the facilities by trucks, the live load is limited to passenger cars permitting construction for lighter floor loads and hence lower construction costs. Aside from gaining lower construction costs through reduced clearance heights, the ramp grades are also made more satisfactory to the patrons due to lower floor to floor heights. The range of costs of reinforced concrete garages at today's construction costs is from $2,500 to $5,000 and the average is about $4,000 per car space. But in 1970 this cost figure was $3,000.

Monthly Amortization Costs Calculations of monthly carrying charges for representative investment costs for above ground reinforced concrete open deck garages designed for single purpose (parking) use based upon a 40-year amortization period at various rates of interest are as follows:

TABLE I D-1 MONTHLY AMORTIZATION COSTS

INTEREST RATE	INVESTMENT COST PER CAR SPACE					
	$2,500	$3,000	$3,500	$4,000	$4,500	$5,000
6% 40 yr	$13.76	$16.51	$19.26	$22.01	$24.76	$27.52
7%	15.54	18.65	21.76	24.86	27.97	31.08
8%	17.39	20.86	24.34	27.82	31.29	34.77
9%	19.29	23.15	27.00	30.86	34.72	38.57

RESIDENTIAL CONCRETE DECK

Land Cost Per Car Space is a function of the number of storage floor. In most cases, with this type facility, the ground area per car space is approximately 80 square feet. The following table of car space values is based upon the usual land values for residential development and story heights of three to six levels of parking.

TABLE I D-2 LAND INVESTMENT/SPACE

LAND AREA SPACE	SQUARE FOOT LAND VALUES $2	$3	$4	$5
60 square feet	$120	$180	$240	$300
80 square feet	160	240	320	400
100 square feet	200	300	400	500
120 square feet	240	360	480	600

Monthly Interest and Taxes on Land. Assuming that 11 percent annual interest on the dollar values for land as shown in Table I D-2 will represent an adequate rental for the ground area per car space and will also cover real estate taxes on the land, we compute the following monthly costs per car space for monthly interest and taxes on the ground occupied per car space.

TABLE I D-3 MONTHLY LAND RENT PER CAR SPACE

LAND AREA/SPACE	$2 Land	$3 Land	$4 Land	$5 Land
60 square feet	$1.10	$1.65	$2.20	$2.75
80 square feet	1.47	2.20	2.93	3.66
100 square feet	1.83	2.75	3.66	4.58
120 square feet	2.20	3.30	4.40	5.50

Total Monthly Rental Cost (Amortization of construction plus land). Table I D-1 provides the monthly amoritzation costs of construction for representative car space costs in reinforced concrete residential parking structures at representative interest rates. Table I D-3 shows the monthly costs for the use of the land at various land values and occupied ground areas per car space. We present in Table I D-4 the monthly cost per car space based upon a 40-year amortization of the structure at seven percent. The taxes on the structure are estimated at $4 per $100 based on 60% valuation on construction cost. The interest and taxes on the land are based upon 80 square feet of ground area per car space, on land valued at $5 per square foot assuming 11 percent interest will be adequate to cover interest and taxes on the land. (See Table I D-3 for this figure.) Thus, in the manner shown in Table I D-4 which is for an average situation, a similar estimate may be made for any combination of circumstances.

1D

RESIDENTIAL CONCRETE DECK

TABLE I D-4

CONCRETE PARKING DECK FOR RESIDENTIAL USE

(TOTAL MONTHLY RENT PER CAR SPACE)
CONSTRUCTION COST PER CAR SPACE (CONCRETE)

ITEM	$2,500	$3,000	$3,500	$4,000	$4,500	$5,000
40-year amortization @ 7%/mo/sp	$15.54	$18.65	$21.76	$24.86	$27.97	$31.08
*Tax on struc/sp/mo	5.00	6.00	7.00	8.00	9.00	10.00
**Land Tax & Rent/sp/mo ($5 land)80 sq.ft./sp	3.66	3.66	3.66	3.66	3.66	3.66
Total Monthly Rent	$24.20	$28.31	$32.42	$36.52	$40.63	$44.74

*From Table 2D-1 page 18

** (Table 1D-3)

E. RESIDENTIAL STEEL FRAMED PARKING DECKS (Type I E) There are a number of structures in which, for reasons of construction economy and/or speedy construction, or other reasons, a developer may choose to use steel framed open deck parking construction and provide it with some form of attractive screening for the facade.

Space Efficiency. Such functional structures can achieve an improved space efficiency. The range is about 250 to 400 square feet for each car space and the average space efficiency is about 375 square feet per car space.

Investment Cost. Due to improve space efficiency and the use of exposed steel construction (instead of encasement in concrete, but sometimes provided with asbestos covering to provide better fire resistance) there can be a substantial saving in construction cost. However, due to the fact that demolition accomplished more easily for site clearance, the amortization period should be shortened. The range of construction costs for steel framed parking decks suitable for residential type of parking is $1,750 to $3,500 per car space at today's construction costs. In 1970 the average cost was in the range of $1,250 to $2,500 depending upon the austerity of the design.

Monthly Amortization Costs. Calculations for representative investment costs for steel framed garages over a 25-year amortization period at various rates of interest are presented as follows:

TABLE I E-1 MONTHLY AMORTIZATION COSTS

INTEREST RATE	INVESTMENT COST PER CAR SPACE/MONTH				
	$1750	$2,000	$2,500	$3,000	$3,500
6% 25 years	11.28	$12.89	$16.11	$19.33	$22.56
7%	12.37	14.14	17.67	21.21	24.74
8%	13.51	15.44	19.30	23.16	27.02
9%	14.69	16.79	20.98	25.18	29.38

Land Cost Per Car Space. The average occupancy of ground area per car space is directly related to the number of parking levels. On the average, assuming five parking levels, the occupied land area is about 70 square feet per car space. Therefore, on this basis the investment cost per car space in land for representative building heights is as follows:

TABLE I E-2 LAND INVESTMENT/SPACE

LAND AREA/SPACE	SQUARE FOOT LAND VALUES			
	$2	$3	$4	$5
70	$140	$210	$280	$350
80	160	240	320	400
90	180	270	360	450
100	200	300	400	500

RESIDENTIAL STEEL DECK

Monthly Land Rent is based upon interest and taxes on the land which we have assumed to be 70 square feet of land area per car space at $5 per square foot. An interest rate of 11 percent to cover interest on land occupied by each car space and also the taxes on that land. The following Table I E-3 shows the monthly rental of land on this basis for representative square foot land values and for representative average land areas per car space.

TABLE I E-3 MONTHLY LAND RENT PER CAR SPACE

LAND AREA/SPACE	$2 Land	$3 Land	$4 Land	$5 Land
70 square feet	$1.28	$1.92	$2.51	$3.21
80 square feet	1.47	2.20	2.85	3.66
90 square feet	1.65	2.48	3.30	3.96
100 square feet	1.83	2.75	3.66	4.58

In Table I E-4 it has been assumed as a case example that land rental was based upon 70 square feet of land area is occupied by each car space and that the structure was built on land costing $5 per square foot. From Table I E-3 (above) this element of cost would be $3.21 per car space per month and is thus entered in line three of Table I E-4.

Real Estate Tax on the parking structure per month is calculated to be $4 per $100 based upon 60% valuation of the construction cost. These respective costs are shown on the second line of Table I E-4.

Total Monthly Rental Cost. The three components of rental cost, other than profit, are amortization of construction cost plus taxes and rental of the land, plus taxes on the parking structure. Interest and taxes on the land are based upon an assumed average of 70 square feet of ground area per car space and land is valued at $5 per square foot as shown on line three of the following Table I E-4.

STEEL DECK FOR RESIDENTIAL USE

TABLE I E-4 TOTAL MONTHLY RENT PER CAR SPACE

	INVESTMENT PER CAR SPACE			
ITEM	$2,000	$2,500	$3,000	$3,500
25 year amortization @ 7%/space	$14.14	$17.67	$21.21	$24.74
Taxes on structure/space	4.00	5.00	6.00	7.00
* Land rent and tax/space	3.21	3.21	3.21	3.21
Total Monthly Rent	$21.35	$25.88	$30.42	$34.95

*(11% per yr. on 70 sq.ft. occupied land area (see Table 1E-2 above or Table 5e-3 on page 46))

2

EPA TYPE 2 PARKING PATRONAGE

CUSTOMER/CLIENT PARKING PATRONAGE

TYPE PATRONAGE

2. Customer/Client. Parking facilities to be used by customers and clients of specific commercial or public facilities or officers (e.g., parking facilities provided for shopping centers, professional buildings, restaurants, hospitals, etc.). Only those facilities which employ measures sufficient to exclude or limit use by all day parkers such as employees and students can be considered within this category.

TYPE CONSTRUCTION

A. Surface Parking
B. Basement Parking
C. Underground Parking
D. Reinforced Concrete Parking Decks
E. Steel Framed Parking Decks

2

EPA-2 CUSTOMER-CLIENT (TYPE 2 USE). Parking facilities constructed for use of customers and clients of retail stores, professional and office buildings, public establishments, hotels, hospitals, restaurants are generally provided in the following types of construction:

A. Surface parking
B. Basement parking
C. Underground parking
D. Concrete parking decks
E. Steel frame parking decks.

These five types of facilities will almost invariably be designed for self service operation for three good reasons:

1. To most efficiently accommodate the high rates of turnover.
2. To keep manpower operational expenses to a minimum.
3. To avoid having a bailee-bailor relationship which is inherent with attendant parking service. Any parking system which requires that the keys be left in the car automatically makes the parking operator legally responsible for any loss or damage to the car or its contents while in his care.

Occasionally some businesses which provide the land and improvements for customer parking seek to get around this legal responsibility by leasing out the operation to a private operator. In such cases, due to high land value of the site and also the desire to pick up additional parking revenue from night parking etc., the parking operator may elect to take out liability insurance and go to attendant parking operation to improve space utilization. However, if this is done,the operation would automatically fall into the EPA Independent/Multipurpose category #5 and by this change in type of patronage the appropriate investment cost tables in Section 5 of this report would therefore apply to rental cost.

2A CUSTOMER/CLIENT SURFACE PARKING (TYPE 2A)

Space Efficiency for customer/client parking facilities will generally be in the range of 300 to 450 square foot per car space. It is to be noted, however, that many shopping centers provide liberal stalls, aisles, circulation and distributor raodways as well as such special amenities as porte cocheres and liberal landscaping which may substantially reduce the overall space efficiency of the parking area. It is not unusual for a shopping center to allocate over 500 square feet per car space when the space allocation takes into account the entire area allocated to automobile access parking and landscaping.

Investment Cost. Business establishments which provide customer parking facilities are generally willing to spend substantial amounts on parking improvements in order to create an inviting impression upon the motorist patron. As result, the range of construction costs per car space for surface parking may range from $300 to $900 per car space. The tables which follow take into account the special need for amenities and larger car space allocations and more costly improvements in customer/client parking facilities.

It is not unusual for the more successful companies to, as a matter of policy, decide to provide costly customer parking amenities and for them to elect to write-off the construction costs at a low rate of interest. Provision has been made for such procedure in the table which follows:

TABLE 2 A-1 CUSTOMER/CLIENT PARKING INVESTMENT COSTS
MONTHLY AMORTIZATION CONSTRUCTION COSTS/CAR SPACE
Amortization 10 years - Surface Parking
INVESTMENT PER CAR SPACE

Interest Rate	$300	$400	$500	$600	$700	$800	$900
4% 10 yr	$3.04	$4.05	$5.07	$6.08	$7.09	$8.10	$9.12
5	3.19	4.25	5.31	6.37	7.43	8.49	9.55
6	3.34	4.45	5.56	6.66	7.77	8.88	9.99
7	3.49	4.65	5.81	6.97	8.13	9.29	10.45
8	3.64	4.86	6.07	7.28	8.49	9.77	10.92
9	3.81	5.07	6.34	7.60	8.87	10.14	11.40

Land Investment Costs. Customer/Client parking facilities provided by retail stores, office buildings, public buildings, professional buildings, hospitals, motels, shopping centers, etc. occupy land which varys widely in cost. In the table which follows provision has been made for this wide range in square foot land costs.

TABLE 2 A-2 CUSTOMER/CLIENT LAND COSTS
LAND INVESTMENT PER CAR SPACE

Land Area/Space	Square Foot Land Values $2	$5	$10	$15	$20
300	$600	$1,500	$3,000	$4,500	$6,000
350	700	1,750	3,500	5,250	7,000
400	800	2,000	4,000	6,000	8,000
450	900	2,250	4,500	6,750	9,000
500	1,000	2,500	5,000	7,500	10,000

Monthly Interest and Taxes on Land Costs Shown in Table 2 A-2.

It is assumed that 11 percent annual interest on the values shown in the above table of investment per car space will produce an adequate rental return for the developer and also cover the land tax. The calculations shown in Table 2 A-3 were made on the basis for the rental costs as shown above. It should be noted; however, that high land value sites are often leased out by the owner at low rental for surface parking as a temporary use with a special cancellation clause which will enable him to take possession with short notice if he has an opportunity to develop the site to a higher use.

TABLE 2 A-3 CUSTOMER/CLIENT MONTHLY LAND RENTAL/SPACE
LAND RENTAL COST PER CAR SPACE PER MONTH

Land Area/Space	Square Foot Land Costs $2	$5	$10	$15	$20
300	$5.50	$13.73	$27.50	$41.25	$55.00
350	6.41	16.64	33.08	48.13	62.50
400	7.33	18.33	36.66	55.00	73.33
450	8.25	20.63	41.25	61.88	82.50
500	9.17	22.96	45.83	68.75	91.66

Monthly Rental cost is comprised of two components: (1) amortization of the construction cost; (2) rental value of the land. In the case example illustrated by Table 2 A-4 it has been assumed that construction costs range from $300 to $900 per car space and that they are amortized in ten years at five percent and that ten dollars per square foot land is utilized by a layout which only achieves a car space efficiency of 450 square feet. From the table above, it will be seen that if a space efficiency of 300 square feet per car space could be achieved then the rent per car space would be reduced by $13.75. The use of a lower land value site would make further substantial reductions.

2 A, B & C CUSTOMER PARKING { SURFACE / BASEMENT / UNDERGROUND

TABLE 2 A-4 CUSTOMER/CLIENT LOT
SAMPLE MONTHLY RENT PER CAR SPACE

Rent Item	Construction Cost Per Car Space						
	$300	$400	$500	$600	$700	$800	$900
Amortize 10 yr @5%	$3.19	$4.25	$5.31	$6.37	$7.43	$8.49	$9.55
$10 land @450 sqft/sp	41.25	41.25	41.25	41.25	41.25	41.25	41.25
Rent per space/mo	44.44	45.50	46.56	47.62	48.68	49.74	50.80

The Economic Justification of Providing Customer Parking lies in the continuance of existing patronage and from the attraction of NEW customers by the provision of parking convenience. Department stores normally achieve an average turnover of 4 1/2 times per day and good management should make periodic checks which relate parking use to the jingle of the cash register. Bank parking facilities can usually achieve a turnover of from 10 to 15 times per day.

2 B CUSTOMER/CLIENT BASEMENT PARKING using self service is sometimes used. In such case Section 1B (pages 5 and 6 for residential basement parking would apply.

2 D CUSTOMER/CLIENT UNDERGROUND GARAGES might be used. In such case Section 1C (pages 7 and 8) would be used.

2D

CUSTOMER CONCRETE DECK

2 CUSTOMER/CLIENT CONCRETE PARKING DECKS (TYPE 2D) Multi-floor parking decks which are provided for customer/clients are normally designed and operated as park and lock facilities.

Space Efficiency is 300 to 450 square feet per car space The average space efficiency is 400 square feet per car space.

Investment Per Car Space. The range in construction cost is from $2,500 to $5,000 and the average cost at today's prices is $4,000 per car space. Because such facilities are financed and developed as a service to customers, patrons or clients of a successful business enterprise, the amortization period and interest rate are management decisions which vary according to that Company's financial situation. Under average conditions the amortization would be 25 years at about six percent. If we assume a $4,000 cost per car space, the cost (equal monthly payments) would be $25.78. See Table 5 D-1 which gives the monthly cost for construction costs ranging from $2,500 to $5,000 per car space for amortization periods of 20 to 40 years at interest rates of five percent to nine percent.

Taxes on Building are generally estimated at four percent on 60 percent of the construction cost. It is to be noted that both the tax rate and the method used by the local assessor's office vary from city to city. Table 2 B-1 shows the calculations on the basis of 4 percent on 60 percent valuation.

TABLE 2 D-1 TAX ON BUILDING
REAL ESTATE TAXES ON BUILDING PER CAR SPACE PER MONTH

	Construction Costs Per Car Space					
	$2,500	$3,000	$3,500	$4,000	$4,500	$5,000
Tax/Month on Building	$5.00	$6.00	$7.00	$8.00	$9.00	$10.00

Land Cost Per Car Space for Customer/client multi-deck parking facilities according to the square foot land values and according to the number of parking levels. Most parking decks developed for this type patronage range between three and six stories in height. The average is four decks. However, there are several exceptions which go to nine stories.

Cost Per Car Space Example. Assuming that a four-story parking stucture occupies a site 130 feet by 272 feet and has a total capacity of 404 cars, then it would have an average space efficiency of 360 square feet per car space. This figure is arrived at by calculation of the ground area at 35,360 square feet and multiplying by four to arrive at a total floor area of 141,440 square feet. If the total stall capacity is 392 cars, then the average space efficiency for the garage is 360 square feet per car space. Then the occupied ground area per car space for the four deck structure is 90 square feet.

2D

CUSTOMER ○ CONCRETE DECK

Table for Finding the Land Investment Cost for the occupied ground area per car space is presented in Section 5. Here Table 5 D-3 provides for the full range of land costs occupied ground area per car space. This table gives the ground area cost per car space for occupied fround areas, ranging from 50 to 150 square feet with land values ranging from $5 to $50 per square foot. Thus, to use Table 5 D-3 with the above example of 90 square feet of occupied ground are per car space on land valued at $15 per square foot we find the land cost to be $1350 per car space.

Land Rental Cost Per Car Space Per Month can be estimated at 11 percent per year per car space value as presented in Table 5 D-4. The 11 percent figure would include a reasonable return on the investment in land and also real estate tax on the land calculated on a car space basis. (See Table 5 D-4 which covers monthly RENTAL COSTS of the full range of car space allocations from 50 to 150 square feet per car space on land values ranging from $5 to $50 per square foot.)

Total Monthly Rental Cost. Customer/client parking facilities are generally not intended to yield a profit. Their prime purpose is to attract and hold patrons for the associated businesses or professions which generate automobile patronage for the parking facility. Thus, the monthly cost of providing this service is comprised of amortization of the construction cost plus taxes on land and building plus the cost of carrying the investment in land. Table 2D-2 presents a case example of the use of the various tables to arrive at the monthly rental cost per car space. In this example the assumptions were: a 20 year amortization at 5 percent with a parking structure averaging 90 square feet using land valued at $15 per square foot. Table 5 D-1 provides the monthly amoritzation costs shown in line one of the table below. Table 2 D-1 provides the taxes per month per car space on the building. Table 5-D-4 (Page 40) provides the $12.38 monthly cost figure for the $15 per square foot land which averages 90 square feet per car space.

TABLE 2 D-2 MONTHLY RENTAL COST
CUSTOMER/CLIENT PARKING DECK

	Construction Cost Per Car Space					
Item	$2,500	$3,000	$3,500	$4,000	$4,500	$5,000
20 yr amortization @5%	$16.50	$19.80	$23.10	$25.40	$29.70	$33.00
Taxes on structure/sp	5.00	6.00	7.00	8.00	9.00	10.00
Int.& Taxes on land/sp	12.38	12.38	12.38	12.38	12.38	12.38
Monthly Rental Cost	$33.88	$38.18	$42.48	$46.78	$51.08	$55.38

2E

CUSTOMER ⊙ STEEL DECK

EPA 2 E CUSTOMER/CLIENT STEEL FRAMED PARKING DECKS (TYPE 2E)
For reasons of construction economy, and speed of erection a developer may choose to use steel framed construction. This type construction can be provided with cast stone panels which can meet any special requirements for an attractive facade. This type construction has been used on parking structures for motels, apartment complexes, shopping centers, and various other generators of parking demand.

Space Efficiency. The range of space efficiency is 275 to 450 square feet per car space. The average space efficiency is 375.

Investment Cost. The construction cost per car space ranges between $1,750 and $3,500 depending upon the austerity of the design. The table of amortization costs ranging from $1,750 to $3,500 at interest rates of from 5 percent to 9 percent gives the full range of values follows:

CUSTOMER O STEEL DECK

TABLE 2 E-1 MONTHLY AMORTIZATION COSTS
STEEL FRAMED DECKS AT VARIOUS
INTEREST RATES - TIME PERIODS - CONSTRUCTION COSTS/SPACE

Percent	Period of Amortization	Construction Cost Per Car Space $1,750	$2,000	$2,250	$2,500	$2,750	$3,000	$3,500
5%	20 year	$11.55	$13.20	$14.85	$16.50	$18.50	$19.80	$23.10
	25 year	10.24	11.70	13.16	14.62	16.08	17.54	20.47
	30 year	9.40	10.74	12.08	13.43	14.77	16.11	18.79
	35 year	8.84	10.10	11.36	12.62	13.88	15.15	17.67
	40 year	8.44	9.65	10.68	12.06	13.27	14.47	16.88
6%	20 year	12.54	14.33	16.12	17.92	19.71	21.50	25.08
	25 year	11.28	12.89	14.50	16.11	17.72	19.33	22.56
	30 year	10.50	12.00	13.49	14.99	16.49	17.99	20.99
	35 year	9.98	11.41	12.83	14.26	15.69	17.11	19.96
	40 year	9.63	11.01	12.38	13.76	15.14	16.51	19.26
7%	20 year	13.57	15.51	17.45	19.39	21.32	23.26	27.14
	25 year	12.37	14.14	15.90	17.67	19.44	21.21	24.74
	30 year	11.64	13.31	14.97	16.64	18.30	19.96	23.19
	35 year	11.18	12.78	14.38	15.98	17.57	19.17	22.36
	40 year	10.88	12.43	13.98	15.54	17.90	18.65	21.76
8%	20 year	14.64	16.73	18.82	20.92	23.00	25.10	29.28
	25 year	13.51	15.44	17.37	19.30	21.23	23.16	27.02
	30 year	12.84	14.68	16.51	18.35	20.18	22.02	25.69
	35 year	12.43	14.21	15.98	17.76	19.53	21.31	24.86
	40 year	12.17	13.91	15.65	17.39	19.12	20.86	24.34
9%	20 year	15.75	18.00	20.24	22.50	24.74	27.00	31.50
	25 year	14.69	16.78	18.88	20.98	23.08	25.18	29.38
	30 year	14.08	16.09	18.10	20.12	22.13	24.14	28.17
	35 year	13.72	15.68	17.64	19.60	21.56	23.52	27.44
	40 year	13.50	15.43	17.36	19.29	21.21	23.15	27.00

Taxes on Building vary from city-to-city. Table 2 E-2 is based upon a 4 percent tax rate using a 60 percent of first cost valuation. This table shows the normal range of steel frame construction costs per car space.

TABLE 2 E-2 TAXES ON BUILDING
REAL ESTATE TAXES ON PARKING DECK PER SPACE PER MONTH

	Construction Costs Per Car Space $1,750	$2,000	$2,250	$2,500	$2,750	$3,000	$3,500
Tax On Building	$3.50	$4.00	$4.50	$5.00	$5.50	$6.00	$7.00

CUSTOMER O STEEL DECK

Land Cost Per Car Space for customer/client parking varies widely between downtown locations for Department Stores which generally occupy high land value locations and motels or outlying shopping centers. In some situations such as University Campus sites or hospitals, the land is already owned and consequently this element of cost may be regarded by the Accountants as having zero cost. However, in the usual situation the land must be acquired and/or is carried on the books at a set figure. In such cases it is necessary to allocate the land cost per car space. The method for doing this, together with a case example is presented in Section 2 D on page 18.

A table for finding the land investment cost for various areas of occupied land per car space at various square foot costs is presented in Section 5 of this report. See Table 5 D-3 for dollar costs per space. In the case example for customer/client steel framed parking deck presented at the end of this Section we have assumed $10 per square foot land and a six-deck structure which was designed to provide 586 car spaces for an average space efficiency of 360 square feet per car space or 60 square feet of occupied ground area per car space. By mental calculations it is obvious that 60 square feet of occupied land area at $10 per square foot is $600. However, just to illustrate the use of the table for interpolation of odd values between those values given in the table, we refer now to Table 5 D-3. Here we find that the calculations for the 60 square foot area are not shown, but that the calculations for $10 land at 50 square feet shows $500 value per space and that the 70 square foot value is $700. Therefore, the halfway in-between figure of 60 square feet is $600.

Land Rental Cost Per Car Space Per Month may be valued in various ways. The calculations of monthly land rent shown in Table 5 D-4 are based upon 11 percent interest per year on the dollar values given in Table 5 D-3 for the occupied land area per space. This 11 percent figure represents a reasonable return on the investment in land, and also is intended to cover the assessed real estate taxes on the land. Table 5 D-4 shows that the monthly rental cost per car space for 50 square feet of occupied land is $4.58 and that for 70 square feet of occupied land area the car space rental value is $6.42. Therefore, by interpolation, the 60 square feet ground area per car space would be halfway between which is $5.50 per car space per month.

Total Monthly Rental Cost. It is assumed by the provision of the customer/client parking probably means that at best the facilities are not intended to yield a profit, although under some circumstances they do. The three components of rental cost are (1) amortization of construction costs, (2) taxes on land and building, and (3) land rental costs. As noted previously, some parking developments such as campus parking and hospitals which building the facilities do not

charge the facility with land rental or land taxes.

In the example given in Table 2 E-3 it is assumed that the steel framed parking deck which is provided for customers/clients cost $2,750 per car space which will be amortized in 25 years at 8 percent and that the project is developed on land valued at $10 per square foot. As a case example it is assumed that the structure as designed would have six parking decks, averaging 360 square feet per car space and occupying 60 square feet of ground area per car space.

Thus, by using Table 2 E-1 we find the values shown in line one of the following Table. By reference to table 2 E-2 we find the values as shown in line two of the table below. By reference to table 5 D-4 we can interpolate the 60 square foot land area per car space as being $5.50 and entering this figure on line three of the case example shown in the table below.*

TABLE 2 E-3 TOTAL MONTHLY RENT

	Construction Cost Per Car Space						
	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000	$3,500
Amortize 25 yr @ 8%	$13.51	$15.44	$17.37	$19.30	$21.23	$23.16	$27.02
** Taxes on structure	3.50	4.00	4.50	5.00	5.50	6.00	7.00
* Land rent	5.50	5.50	5.50	5.50	5.50	5.50	5.50
Total Monthly rental/sp	22.51	24.94	27.37	30.80	32.23	34.66	39.52

** Therefore, if we were to assume a $2,750 construction cost per car space at 60 square feet of occupied land area the rental would be $32.23 per car space per month. However, if this were a campus facility on land for which no rental is charged against the project the monthly carrying charge would be $26.73 per car space.

Customer/Client Parking Involving A Fee. There are many situations where a business establishment seeks to achieve maximum turnover of its associated parking facility or where it seeks to improve the space efficiency through use of parking attendants, the usual practice is to use posted rates with a limited amount of free time for validated tickets. Such use of posted rates for non-validated tickets and/or fee for parking time in excess of the free prescribed free time allowance would automatically invite parking use by the general public which would appear by definition to become Classification 5 (Independent/Multi-purpose parking facility). In such event the applicable investment costs of attendant parking (5a) or the self service costs of 5A would apply.

* Bldg. Tax @ 4% on 60% cost

3

EPA TYPE 3 PARKING PATRONAGE

EMPLOYEE PARKING FACILITIES

TYPE PATRONAGE

3. Employee: Parking facilities to be used primarily by all day parkers such as employees and students. For purposes of EPA application an all-day parker is anyone who parks at the same location for six or more hours. However, this category is not intended to apply to residential parkers or transient users of facilities. Examples of employee facilities include university parking facilities for students and staff and employee facilities associated with factories, warehouses, offices and commercial enterprises.

TYPE CONSTRUCTION

A. Surface Parking Lots
B. Basement Parking
E. Steel Frame Parking Decks

3A

EMPLOYEE SURFACE

EPA 3 EMPLOYEE PARKING FACILITIES (TYPE 3 USE) are mostly provided in surface parking facilities and they almost invariably use park and lock operation. Aside from the fact that this is the most economical way to provide such facilities there is an insurance angle which encourages such self service operation. The courts have consistently ruled that with possession of the keys to a car also goes control of the car. Therefore, to require the key to be left in the car, the operator of the parking facility therefore assumes a bailee-bailor relationship which makes him legally responsible for any loss and/or damage to the car and its contents.

This situation raises a particular problem for hospitals and for industrial plants which operate in shifts. The hospital problem is particularly acute at the 3 PM change of shifts for nurses. Since the departing day shift nurses must remain on duty an extra 5 to 20 minutes to brief their evening shift counterparts of any special problem with individual patients; as result, there is usually about a 50 percent overload for a 15 to 20 minute period at the 3 PM change of shifts. It is particularly important for the safety of the evening shift nurses that they have convenient, close-in well lighted parking when they go to their cars at 11 PM. The industrial plant change of shifts only involves a minor overload problem at change of shifts which management can alleviate by staggering the working hours. The usual run of the mill type of industrial parking facilities are generally constructed at the least possible cost and consequently have little or no landscape treatment or amenities for the users. There are, however, many modern industrial parks and major industries which invest substantial sums for landscape treatment and amenities for their parking areas. Allowance should be made for this fact in using the respective investment tables.

In other respects employee parking is quite similar to residential parking. Both types of parking have the unique feature that since the individual drivers know the other cars and their drivers because they live or work together, the cars can be parked in tighter accommodations. For example, the parking facilities can, if need be, use stall widths of 8 1/2 instead of 9 foot and 90 degree parking modules of 58 feet instead of 63 etc. As result, it is quite possible to achieve space efficiencies of 300 square feet per car space and construction costs of $300 per car space.

Therefore, the car space costs shown for Residential surface parking lots in Tables 1 A-1, 1 A-2 and 1 A-3 would apply to Employee parking costs. However, for the average employee parking facility based upon monthly car space costs as shown in those tables it is suggested that a $300 per car space construction cost be used for average situations and that the space efficiency of 300 square feet per car space be used. The following example uses

these assumptions.

TABLE 3 A-1 EMPLOYEE SURFACE PARKING
EXAMPLE MONTHLY RENTAL PER CAR SPACE (EMPLOYEE LOTS)

Item	Square Foot Land Values			
	$2 Land	$3 Land	$4 Land	$5 Land
Amort.$300 construction @ 7% 10 yr Table 1A-1	$3.49	$3.49	$3.49	$3.49
Land & Tax/mo @11% 300 sq. ft.Table 1A3	5.50	8.25	11.00	13.75
Rental Cost/Space/Mo	$8.99	$11.74	$14.49	$17.24

In the same manner as above, various other combinations of value may be used for estimating monthly costs of land and improvements to provide this employee parking accommodation.

3B

EMPLOYEE BASEMENT

3 B EMPLOYEE BASEMENT PARKING FACILITIES (TYPE 3 B) There are many instances in which Employee parking is provided in the basement areas of office buildings. Quite frequently such space is required by the local Zoning Code.

When the layout and operation of the employee parking is such that each car has direct access to an unobstructed aisle then the cost characteristics as set forth in Section 1B (Residential Basement Parking) will prevail. However, in many situations, the buildings which provide basement parking permit cars to double and triple park when the employees know one another's cars and their arrival and departure times are known. In some cases this practice is not only known but is condoned by providing one of the building maintenance men to assist in this practice. There is a fire hazard involved here as well as other risks including a risk from the practice of leaving keys in the car. Since this practice is against public safety no cost estimates will be provided.

Another situation which is quite common is where an office building allocates a certain percentage of the space (no assigned stalls) then uses the balance of the space for commercial parking operation. In such situations attendant parking is used and during the peaks (11 am to 3 pm) the aisleways are frequently loaded. The practice of commercial operation in connection with providing employee parking has proved profitable. Otherwise, so many office building developers would NOT be building basement parking into their buildings in areas where there are NO zoning requirements for parking.

There are also a few situations in which the employee work hours of starting and ending the day are identical and prompt. In some of such cases the cars are parked 2, 3 and even 4 cars deep, and other cars are locked. This, of course, is on the assumption that all employees will depart promptly and that those parked on the front 2 or 3 rows will make particular effort to be prompt at check-out time in order not to block in their fellow workers parked behind them. This type of parking is very unusual. In some cases the keys are left on a keyboard in the guard's office.

3 E EMPLOYEE PARKING DECKS (TYPE 3E) In the usual situation, employee multifloor parking structures are strictly functional and are designed for self service operation. The space efficiency is generally about 300 per car space. The construction costs may be held about $2,500 per car space at today's cost. The contractor may choose reinforced concrete, lift slab, prestressed, precast concrete or exposed steel to hold costs down.

The amortization period for the construction cost is generally about 25 years and the interest rate charged against the project is about 5 percent.

The occupied land area is in the range of 70 to 100 square feet per car space and the land value is low since the structure is generally on company owned property. However, in the case example given below we shall assume 70 square feet of occupied land per car space at a rental cost of $2 per square foot. See table 2 E-1 for amortization, Table 2 E-2 for tax on building and Table 1 E-3 for land rent.

TABLE 3 C-1 EMPLOYEE PARKING DECKS

	Construction Cost Per Car Space			
	$1,750	$2,000	$2,250	$2,500
Amortization 25 yr @ 5%	$10.24	$11.70	$13.16	$14.62
Taxes on structure	3.50	4.00	4.50	5.00
Land Rent and tax	1.28	1.28	1.28	1.28
Total monthly rent/sp	$15.02	$16.98	$18.94	$20.90

EPA TYPE 4 PARKING PATRONAGE

RECREATION/INTERMITTENT USE PARKING FACILITIES

TYPE PATRONAGE

4. Recreation/Intermittent Use. Parking facilities to be used by patrons of theaters, churches, clubs, auditoriums, sport stadiums, ski resorts, marinas and other recreational facilities and similar establishments not normally used on a daily basis during the work day. Only those parking facilities which employ control measures sufficient to exclude shoppers, clients, employees or students of other enterprises can be considered within this category; otherwide, the facility will be considered also to be associated other categories of use.

TYPE CONSTRUCTION

Mostly Surface Parking

Occasionally Multi-Deck concrete or steel

(Similar costs to Residential Type 1 D and 1E)

4

RECREATION & INTERMITTENT USE

EPA 4 RECREATION/INTERMITTENT USE (TYPE 4 USE) The cost of providing parking facilities to be used by patrons of theaters, churches, clubs, auditoriums, sport stadiums, ski resorts, marinas and other recreational facilities are quite similar to those of Residential Parking facilities. Practically all parking facilities serving this category of use are surface parking lots. Occasionally clubs, auditoriums and sport stadiums use one of the four other types of parking construction as listed under Residential Parking. The rental cost components as shown in the tablses for each of these five types of construction as appropriate may be applied to arrive at the cost figures for EPA Category: "Recreation/Intermittent Use."

Various methods of operation are used ranging in manpower use from attendant operation to supervised parking (collection and flagged into stalls) to self service.

5

EPA TYPE 5 PARKING PATRONAGE

INDEPENDENT/MULTI-PURPOSE PARKING FACILITIES

FOR GENERAL PUBLIC

TYPE PATRONAGE

5. Independent/Multi-Purpose. Parking facilities to be operated as commercial enterprises for use by the general public rather than to serve the clients or employees of a specific business. An example of such a facility would be any public or private parking lot or garage intended for use by the patrons and employees of many enterprises within walking distance of the parking facility. Such parking facilities normally would not require identification and the users may well include all types of parking facility users including residents, students, employees, customers and clients.

TYPE CONSTRUCTION

A. Surface Parking
B. Basement Parking
C. Underground Garage
D. Concrete Parking Deck
E. Steel Framed Decks

5A

MULTI-PURPOSE PARKING

EPA 5 INDEPENDENT AND MULTIPURPOSE USE. This category of parking facility includes all parking facilities available to the general public for a fee, a validation stamp, or a monthly contract and with or without in-and-out privileges. It includes all such facilities whether operated by the owner, a parking operator or any public agency.

Such facilities, available to the General Public involve the whole range of parking design types to be found in any of the ten Regions of USA. While there may exist 100 or more basic design types and a half dozen or so basic construction methods there exists only about eight basic types of parking facility each having their own distinctive economic characteristics which substantially differ from the others. They are as follows:

A. Surface Parking
B. Basement Parking
C. Underground Parking
D. Reinforced Concrete Parking Decks
E. Steel Framed Parking Decks.
F. Integral Parking
G. Airrights Parking
H. Mechanical Parking.

In addition to the types of design it is to be noted that in parking facilities available to the general public for a fee that there are also two distinctly different types of parking operation: (1) attendant operation in which cars are double parked, triple parked and in some cases solid-mass-parked during peak loads which depend largely upon the attendant's skill in the proper placement of cars as they enter to avoid excessive "car jockeying" when they depart; (2) self-service operation in which the patron parks his own in a stall having direct access to an unobstructed aisle. The former uses manpower to achieve maximum car space efficiency (i.e., since the average car now on the streets and highways of USA cover an area of 120 square feet, the objective is to approach this figure as closely as practical. The latter (self-service) seeks to reduce the use of manpower operating staff on the parking facility to a minimum by providing more area per car space and thus permit the motorist to perform his own park and unpark maneuver. In this way manpower is used by management to reduce investment cost per car space. Economic investment plays a major role in both types of operation. It is therefore necessary to treat surface parking (type A) and basement parking (type E) for both types of operation since new facilities continue to use both types of layout. However, due to the continuing upward spiral

ATTENDANT OPERATION

of attendant wages during the past 40 years, practically all new designs based on the five other types of parking facility are now being constructed as self-service operation. Therefore, in the following paragraphs, Types A and D facilities will be treated for both attendant and self-service operation. The other six types will be treated as self-service operations only.

a. SURFACE PARKING represents well over half of all off street parking capacity in USA.

(1) Attendant Operated Facilities

Space Efficiency. The great majority of commercial parking lots use attendant operation. Space efficiency in attendant operated parking lots ranges from 150 to 225 square feet per space. An efficiently operated lot in the core area of the Central Business District can operate at maximum capacity on an average of 190 square feet per car space. However, to cover average conditions in USA we shall use the figure of 200 square feet per car space with the following calculations.

INVESTMENT COST to pave, stripe, provide the required barriers, signs, curb cuts, driveways, lighting and attendant booth on an average commercial downtown parking lot having about 80 spaces will average approximately $300 per car space at today's prices.

MONTHLY AMORTIZATION COSTS. Parking lot improvements are generally amortized over the term of the lease, with the operator being allowed to sell or remove those improvements which are not anchored in the event that the lease is not renewed. A reasonable amortization period for the total improvements may therefore be assumed to be 7 1/2 years. Calculations of monthly amortization costs at 7 1/2 years of useful life for representative car space improvement costs at interest rates ranging between 6 and 9 percent are shown on the following table:

SURFACE PARKING - ATTENDANT OPERATION

TABLE 5a-1 MONTHLY AMORTIZATION COSTS PER CAR SPACE
(Assume 7 1/2 year useful life due to leasehold write-off)

Interest Rate	Investment Per Car Space $200	$300	$400	$500
6% 7 1/2 years	$2.78	$4.13	$5.66	$6.94
7%	2.85	4.32	5.75	7.18
8%	2.98	4.44	5.95	7.43
9%	3.08	4.62	6.15	7.69

MULTI PURPOSE PARKING SURFACE

ATTENDANT OPERATION

Land Values of downtown properties range widely. Based upon an average of 200 square feet per car space the usual values run as shown in the following table:

TABLE 5a-2 SURFACE PARKING - ATTENDANT OPERATION
LAND INVESTMENT/SPACE
SQUARE FOOT VALUES

LAND AREA/SPACE	$5	$10	$20	$30	$40
175 Square feet	$875	$1,750	$3,500	$5,250	$7,000
200	1,000	2,000	4,000	6,000	8,000
225	1,125	2,250	4,500	6,750	9,000
250	1,250	2,500	5,000	7,500	10,000

Monthly Interest and Taxes on Land as Per Table 5 A-2
Assuming an 11 percent annual interest on the dollar values as shown in Table 5 a-2 above will represent adequate rental and real estate taxes on the land, the monthly land rental per car space would be as follows:

TABLE 5 a-3 MONTHLY LAND RENT PER CAR SPACE *
SURFACE PARKING - ATTENDANT OPERATION
SQUARE FOOT LAND VALUES

LAND AREA/CAR SPACE	$5	$10	$20	$30	$40
175 Square feet	$8.02	$16.04	$32.01	$47.91	$64.17
200	9.17	18.33	36.66	55.00	73.33
225	10.31	20.63	41.25	61.87	82.50
250	11.46	22.92	45.83	68.75	91.66

(11% per yr On Land Values per Space (as shown in 5a-2)

Monthly Amortization of Construction Plus Taxes and Rent. IF we were to amortize the improvement cost at $300 per car space in equal monthly payments over a 7 1/2 year period at seven percent (see Table 5a-1) and add this to the land rental based upon a space efficiency of 200 square feet per car space, then the total monthly rental cost for the downtown public (transient) parking lot would be as follows:

TABLE 5 a-4 MONTHLY CAR SPACE RENTAL
(LAND AND IMPROVEMENTS)
SURFACE PARKING - ATTENDANT OPERATION

ITEM	$5 Land	$10 Land	$20 Land	$30 Land	$40 Land
Amort $300 @7% 7 1/2 yr	$4.32	$4.32	$4.32	$4.32	$4.32
Interest & taxes on Land (Table 5a-3)	9.17	18.33	36.66	55.00	73.33
Total Mo Cost/ Car space	$13.49	$22.65	$40.98	$59.32	$77.65

In the same manner as in Table 5a-4 (above) various combinations of values for estimating the monthly rental may be projected for any combination of values or square foot space efficiencies for attendant operated public pay parking lots.

MULTI-PURPOSE PARKING © SURFACE
SELF SERVICE

5(A) SURFACE PUBLIC PARKING SELF SERVICE OPERATION. The majority of pay facilities using self service operation are owned and operated by Governmental Agencies. This type of operation involves various types of revenue control systems ranging from cashier operation to automated controls such as parking meter, card-key, etc.

Space Efficiency for this type facility in downtown commercial areas generally range from 250 square feet per car space to 400 square feet per car space. The average is about 300 square feet per car space.

Investment Cost to pave, stripe, provide required fencing, signs, curb cuts, driveways, lighting and control equipment will range between $400 and $600 and average about $500 at today's prices.

Monthly Amortization Costs. This type of parking facility generally uses a ten year amortization period for the improvements. Calculations for 10-year amortization in equal monthly payments for representative car space improvement costs at interest rates ranging between six and nine percent are shown on the following table:

TABLE 5(A)-1 MONTHLY AMORTIZATION COSTS PER CAR SPACE
(Assume 10 year Useful Life)

	INVESTMENT COST PER CAR SPACE				
Interest Rate	$400	$450	$500	$550	$600
6% 10 years	$4.45	$5.00	$5.56	$6.10	$6.66
7%	4.65	5.23	5.81	6.39	7.55
8%	4.86	5.46	6.07	6.67	7.28
9%	5.07	5.70	6.34	6.97	7.60

Land Values for public parking lot facilities which uses surface parking generally range between $5 and $25 per square foot because this type of operation is not generally used in "hot spot" locations.

TABLE 5(A)-2 LAND INVESTMENT/CAR SPACE

	SQUARE FOOT VALUES				
AREA/CAR SPACE	$5	$10	$15	$20	$25
250 Square feet	1,250	2,500	3,750	5,000	6,250
300	1,500	3,000	4,500	6,000	7,500
350	1,750	3,500	5,250	7,000	8,750
400	2,000	4,000	6,000	8,000	10,000

Monthly Interest and Taxes on Land as Per Table 5(A)-2
Assuming an 11 percent annual interest on the dollar values as shown in Table 5(A)-2 above will represent adequate rental and real estate taxes on the land, the monthly land rental per car space would be as follows:

5A

MULTI-PURPOSE @ SURFACE

SELF SERVICE OPERATION

TABLE 5(A)-3

SURFACE PARKING - ATTENDANT OPERATION

MONTHLY LAND RENT PER CAR SPACE
SQUARE FOOT LAND VALUES

LAND AREA/SPACE	$5	$10	$15	$20	$25
250 sq.ft.	$11.46	$22.92	$34.37	$45.84	$57.29
300	13.75	27.50	41.25	55.00	68.75
350	16.04	32.08	48.12	64.17	80.21
400	18.33	36.66	55.00	73.33	91.66

Monthly Amortization of Construction Plus Land Rent. If we were to amortize the improvement at $500 per car space in equal monthly payments over a ten year period at seven percent (see Table (A)-1) and add this to the land rental based upon a space efficiency of 300 square feet per car space, then the total monthly rental cost for the pay public parking lot operated on a self service basis would be as follows:

TABLE 5(A)-4 MONTHLY CAR SPACE RENTAL
(LAND AND IMPROVEMENTS

ITEM	$5 Land	$10 Land	$15 Land	$20 Land	$25 Land
Amort Improve @ 7% 10 yr	$5.81	$5.81	$5.81	$5.81	$5.81
Interest & Tax (land)	13.75	27.50	41.25	55.00	68.75
Total monthly cost/ space	$19.56	$33.31	$47.06	$60.81	$74.56

In the same manner as in Table 5(A)-4 (above) various combinations of values may be used for estimating the monthly rental for any combination of values of square foot space efficiencies for attendant operated public pay parking lots.

5B

MULTI-PURPOSE PARKING @ BASEMENT
SELF SERVICE

MULTIPURPOSE BASEMENT PARKING (Type 5B) We shall assume that for this type of parking (Public Pay Parking) will be in facilities in which reasonable space efficiencies can be achieved due to the fact that the column spacing for requirements of the building above are reasonably compatible with parking layout requirements for double parking of cars using attendant operation. However, our tables for space efficiency will also provide for practical conditions of comparatively poor parking space efficiency.* Generally these parking facilities range between one and four basement levels with two or three levels being the more common. It is to be noted that in some cities underground construction may be costly due to the problem of high water table while in others the costly problem of rock excavation may cause unusually high square foot construction costs. The space losses due to ventilation equipment, basement elevator lobbies, thicker columns, etc., on the other hand cut back parking space efficiency.

Space Efficiency. Under practical conditions it can be assumed that even with attendants, double and triple parking cars in basement facilities that column sizes, spacing and ramp access will achieve at best a range of 250 to 500 square feet and average about 350 square feet per car space with attendant parking. Self service will average about 450

Investment Costs per car space should normally be in the range of $4,000 to $7,000 per car space and average about $5,000 per car space, and the useful life can be assumed to be 30 years. Therefore, the tables as presented in Section 1B (Residential basement parking facilities) seem to cover the investment costs except for one additional element of cost for which some allowance should be made. In view of the fact that the basement parking is operated as a commercial enterprise, the owner rightfully should expect a rental return from the use of this space. This additional element, namely profit, should be added to the payments for interest on investment and taxes which were provided for merely at cost in Tables I B-1, I B-2 and I B-3. Except for rental value of the land, and for profit. the tables and examples given in Section 1B would apply here.

Accordingly, the yield from parking use, in addition to merely covering investment cost of that portion of the building which is devoted to parking should also be expected to pay some share for the occupied ground area plus a fair profit return on the investment costs of creating these facilities. It is not unreasonable for the owner to expect this figure to approximate 30 percent of the gross parking revenues unless he, the owner, achieves some substantial indirect benefits from such parking use. It is also to be noted that the parking management would also be required to pay all costs of operating these facilities out of the gross parking revenues.

*Because the column spacing is designed to efficiently serve the functions of the building above. This generall results in parking space efficiency in the basement.

5C

MULTI-PURPOSE PARKING UNDERGROUND GARAGE

SELF SERVICE & ATTENDANT OPERATION

MULTIPURPOSE UNDERGROUND PARKING FACILITIES (Type 5 C) Most of all underground garages are designed for self service operation due to the fact that they invariably have a large capacity and the further fact that the cost of maintaining a large enough operating staff to satisfactorily handle all peak load situations would be very costly and probably result in slow service. In one such garage where both attendant and self service is offered to the public, 85 percent of the patrons choose self service parking.

Space Efficiency. Where public pay parking is provided in underground facilities the space efficiency ranges between 350 and 500 square feet per car space. The average space efficiency for self service is 400 square feet per car space. In the case of attendant parking the average space efficiency might possibly be 300 square feet per car space.

Investment Cost can vary widely due to soil conditions, topography, and other special conditions existing at the site. At today's construction costs, the range is between $5,000 and $9,000 per car space with the average being about $7,500 per car space. The monthly amortization costs calculated at seven percent, 40 years would be approximately the same as for residential underground parking as shown in Table I C-1 (this figure is listed as the first item in Table 5 C-3 on next page).

Land Cost in the case of underground public parking for a fee, whether constructed on public or private ground, a charge for the occupied ground use should be made. This amount may vary according to location and also allowance can be made for the fact that the surface can be put to other use. Indeed, the air rights above can be put to other commercial use so long as the column spacing and footings of the garage are suitable for such use. Such a project was accomplished under an urban renewal project in downtown Fresno. Table 5 C-1 shows square foot land values ranging from $2 to $10. Translation of ground area costs into land cost per car space depends upon the average space efficiency achieved in the design and also upon the number of parking levels. The normal number of underground parking levels range between three and five floors. On this basis the occupied ground area per car space would usually range between 70 and 160 square feet per car space. This would cover the range for both attendant and self service. For representative sites for either type of service the land investment per car space would be:

UNDERGROUND GARAGE.

TABLE 5 C-1 LAND INVESTMENT COST/CAR SPACE/MONTH
GROUND AREA PER CAR SPACE IN SQUARE FEET

LAND VALUE	70	80	90	100	110	120	140	160
$2 Land	$140	$160	$180	$200	$220	$240	$280	$320
$4 Land	280	320	360	400	440	480	560	640
$5 Land	350	400	450	500	550	600	700	800
$6 Land	420	480	540	600	660	720	840	960
$8 Land	560	640	720	800	880	960	1120	1280
$10 Land	700	800	900	1000	1100	1200	1400	1600

MULTI-PURPOSE PARKING UNDERGROUND GARAGE

SELF SERVICE & ATTENDANT OPERATION

Land Rental Cost Per Car Space Per Month can be estimated at 11 percent per year per car space value (as presented in Table 5 C-1) which figure would include a return on the land cost plus tax on the land. The calculations on this basis for the monthly car space land rental values are presented in the following table.

UNDERGROUND GARAGE

TABLE 5 C-2 LAND RENTAL COST/CAR SPACE/MONTH

	GROUND AREA PER CAR SPACE IN SQUARE FEET							
Land Value	70	80	90	100	110	120	140	160
$2 Land	$1.28	$1.47	$1.66	$1.83	$2.01	$2.20	$2.57	$2.93
$4 Land	2.57	3.02	3.30	3.66	4.03	4.40	5.13	5.87
$5 Land	3.21	3.66	4.12	4.58	5.04	5.50	6.42	7.33
$6 Land	3.85	4.40	4.95	5.50	6.05	6.60	7.70	8.80
$8 Land	5.13	5.87	6.60	7.33	8.07	8.80	10.27	11.73
$10 Land	6.42	7.33	8.25	9.17	10.08	11.00	12.83	14.66

Monthly Rental Cost Per Car Space for Multipurpose underground garages (Type 5 C) operated as public pay facilities would normally have these components of rental cost:

1. Amortization of construction cost assumed at 7 percent over a 40 year useful life.

2. Tax on building estimated to be 4 percent per year on 60% of first cost.

3. Rent and taxes on land estimated at 11 percent of land having $5/ square foot value.

To this figure should be added a profit for the risk capital.* Other projections can be made from these tables to fit other combinations of space efficiency (a function of design) and other land values and construction costs. It should be noted; however, that the optimum number of parking levels in an underground garage is usually four and that the average ground area per car space is about 90 square feet.

UNDERGROUND GARAGE

TABLE 5 C-3 RENTAL - SAMPLE MONTHLY RENT/CAR SPACE FOR VARIOUS CONSTRUCTION COSTS

	CONSTRUCTION COST PER CAR SPACE					
Rent Item	$5,000	$6,000	$7,000	$7,500	$8,000	$9,000
Amortize Constr. 40 yr @ 7%	$31.08	$37.29	$43.51	$46.61	$65.52	$73.93
Tax on Bldg, 60% @ 4%/yr/sp	10.00	12.00	14.00	15.00	16.00	18.00
Rent $5 Land & Tax @ 11% yr	4.12	4.12	4.12	4.12	4.12	4.12
Total Monthly Rent/Space	$45.20	$53.41	$61.63	$65.73	$85.64	$96.05

* To the above totals must be added a profit for the developer's risk capital.

5D

MULTI-PURPOSE PARKING @ CONCRETE DECK

SELF SERVICE

MULTIPURPOSE PARKING DECKS (Type 5 D) Reinforced concrete parking decks of various types of construction (poured in place, prestressed, precast, and left slab) are the dominant types of free standing, above ground parking garages now in service. Prior to 1953 most such construction was designed for attendant parking operation. Self service multifloor parking operations were first pioneered by several Customer/Client parking developers in 1937, but it was not until 1955 that this type of parking service began to move ahead. The swing to the dominant role for self service operation was due to rapidly rising wages for parking attendants, the emerging development of Municipal parking facilities, and also the strong preference of motorists for this type of service. Today, developers do not use designs based upon attendant parking unless the site dimensions are such that there is no other way.

However, since there remain a good number of attendant parking garages still in use we shall include discussion and tables on both types of design. It must be remembered; however, that in terms of investment and rental costs that the garages designed for attendant operation are substantially lower cost than is self service operation, simply because manpower labor is used as a means to reduce the investment cost. Thus, the attendant operation must use highly skilled management and as result the rental yield is usually about 50 percent of the gross revenues. In self service facilities the tendency is toward minimizing the labor cost through automation techniques and the rental yield is usually 75 percent or more of the gross revenues. Thus, for a given site, when the design alternatives are weighed, the overwhelming preference is for the design based upon self service operation. In the discussion which follows "5 D" is used for self service operation and "5d" is used to identify the designs based upon attendant operation.

5 D Multipurpose Parking Decks SELF SERVICE

Average Space Efficiency of this type garage is calculated on the basis of ground area occupied by the garage multiplied by the number of storage floors and divided by the number of parking stalls. The range of space efficiencies is the same as for residential parking decks (1 D) namely 300 to 450 square feet and the average is 375 square feet per car space.

Investment Cost per car space at today's cost in multifloor parking decks range from $2500 to $5000 and now average about $4000 per car space. Since the amortization period and rate of interest depends upon whether the developer is a private investor or public agency and other factors, the following Table presents the amortization costs in equal monthly payments for various rates of interest, periods of amortization and construction costs per car space.

5D

MULTI-PURPOSE PARKING ⊙ CONCRETE DECKS

TABLE 5 D-1 MONTHLY AMORTIZATION COSTS
CONCRETE GARAGES AT VARIOUS
INTEREST RATES - TIME PERIODS - CONSTRUCTION COSTS/SPACE

Percent	Period of Amortization	CONSTRUCTION COST PER CAR SPACE $2,500	$3,000	$3,500	$4,000	$4,500	$5,000
5%	20 year	$16.50	$19.80	$23.10	$26.40	$29.70	$33.00
	25 year	14.62	17.54	20.47	23.39	26.31	29.23
	30 year	13.43	16.11	18.79	21.48	24.16	26.85
	35 year	12.62	15.15	17.67	20.19	22.72	25.24
	40 year	12.06	14.47	16.88	19.29	21.70	24.11
6%	20 year	17.92	21.50	25.08	28.66	32.24	35.83
	25 year	16.11	19.33	22.56	25.78	29.00	32.22
	30 year	14.99	17.99	20.99	23.99	26.98	29.98
	35 year	14.26	17.11	19.96	22.81	25.66	28.51
	40 year	13.76	16.51	19.26	22.01	24.76	27.52
7%	20 year	19.39	23.26	27.14	31.02	34.89	38.77
	25 year	17.67	21.21	24.74	28.28	31.81	35.34
	30 Year	16.64	19.96	23.19	26.62	29.94	32.27
	35 year	15.98	19.17	22.36	25.56	28.75	31.95
	40 year	15.54	18.65	21.76	24.86	27.97	31.08
8%	20 year	20.92	25.10	29.28	33.46	37.46	41.83
	25 year	19.30	23.16	27.02	30.88	37.74	38.60
	30 year	18.35	22.02	25.69	29.36	33.02	26.69
	35 year	17.76	21.31	24.86	28.42	31.97	35.52
	40 year	17.39	20.86	24.34	27.82	31.29	34.77
9%	20 year	22.50	27.00	31.50	35.99	40.49	49.99
	25 year	20.98	25.18	29.38	33.57	37.77	41.96
	30 year	20.12	24.14	28.17	32.19	36.21	40.24
	35 year	19.60	23.52	27.44	31.36	35.28	39.76
	40 year	19.29	23.15	27.00	30.86	34.72	38.57

5D

MULTI-PURPOSE PARKING @ CONCRETE DECKS

SELF SERVICE

Taxes on Building are estimated to be four percent per year on 60% of the first cost. Assuming the range of construction costs is $2,500 to $5,000 we have the following monthly tax costs per car space:

TABLE 5 D-2

REAL ESTATE TAXES ON BUILDING PER CAR SPACE PER MONTH

	CONSTRUCTION COSTS PER CAR SPACE					
	$2,500	$3,000	$3,500	$4,000	$4,500	$5,000
Tax on Building	$5.00	$6.00	$7.00	$8.00	$9.00	$10.00

Land Cost per Car Space for multipurpose parking facilities vary widely according to the number of parking levels and land values vary widely between "fringe" and "hot spot" locations. Multifloor parking structures range from double deckers to 12 stories but the great majority range between four and eight. In order to cover most of the situations Table 5 D-3 provide a spread from 50 to 150 square feet per car size. In order to accommodate the wide range in land values in various size cities Table 5 D-3 covers from $5 to $40 per square foot land.

TABLE 5 D-3

LAND INVESTMENT COST PER CAR SPACE PER MONTH

Land Value	GROUND AREA PER CAR SPACE IN SQUARE FEET					
	50	70	90	110	130	150
$5	$250	$350	$450	$550	$650	$750
10	500	700	900	1100	1300	1500
15	750	1050	I350	1650	1950	2250
20	1000	1400	1800	2200	2600	3000
25	1250	1750	2250	2750	3250	3750
30	1500	2100	2700	3300	3900	4500
40	2000	2800	3600	4400	5200	6000
50	2500	3500	4500	5500	6500	7500

Land Rental Cost Per Car Space Per Month can be estimated at 11 percent per year per car space value as presented in Table 5 D-3. The 11 percent figure would include both a modest return on the land and cover the real estate tax on the land. The calculations on the basis for the monthly land rental per car space are presented in the following table.

5D

MULTI-PURPOSE PARKING ○ CONCRETE DECK
SELF SERVICE

TABLE 5 D-4
MULTIPURPOSE STRUCTURES
LAND RENTAL COST PER CAR SPACE PER MONTH

Land Value	GROUND AREA PER CAR SPACE IN SQUARE FEET 50	70	90	110	130	150
$5 sq.ft.	$2.29	$3.21	$4.13	$5.04	$5.96	$6.88
10	4.58	6.42	8.25	10.08	10.83	13.75
15	6.88	9.62	12.38	15.13	17.88	20.63
20	9.17	12.83	16.50	20.17	23.83	27.50
25	11.46	16.00	20.63	25.21	29.79	34.38
30	13.75	19.25	24.75	30.25	35.75	41.25
40	18.33	25.66	33.00	40.33	47.61	55.00
50	22.92	32.08	41.25	50.42	59.58	68.75

Monthly Rental Cost Per Car Space for multipurpose reinforced concrete parking structures (Type 5 D) would normally have these components of cost:

1. Amortization of construction cost
2. Tax on building
3. Rent and taxes on land
4. Profit for venture capital

In the example provided in Table 5 D-5 an average situation has been taken. However, since the circumstances surrounding each parking project vary widely the accompanying tables are intended to enable one to make a reasonable estimate of rental for any combination of circumstances. In the examples provided in Table 5 D-5 the construction cost amortized over a 40 year period at seven percent show the monthly rental per car space per month. See Table 5 D-1 for the wide range of situations which might be encountered in any specific situation. In the tax on the Building we have assumed a four percent yearly tax on a 60% valuation of construction costs as shown in Table 5 D-2 but any other method of projecting this cost may be used. In the land rental calculations we have assumed that the investment in land was $15 per square foot. We have also assumed that a land rental yield of 11 percent per year would be sufficient to cover real estate taxes and an acceptable rental yield on the land. Table 5 D-3 shows the full range of per car space land investment costs for structures of various heights and space efficiencies normally encountered. Table 5 D-4 converts these car space costs to monthly rental on the assumption that 11 percent annual yield on Table 5 D-3 figures will be a sufficient land rental return to cover the investment cost and also taxes on the land. However, any other formula may be used for specific situations which might be encountered. Table 5 D-5 which follows puts the above named elements of cost together.

5D

MULTI-PURPOSE PARKING ○ CONCRETE DECK

SELF SERVICE

Line one comes from Table 5D-1 (page 38) 40 years @ 7%.
Line two comes from Table 5D-2 (page 39) 4% ann tax on 60% valuation
Line three comes from Table 5D-4 (page 40) 11% interest on occupied ground area per car space to cover land use and tax on land.

TABLE 5 D-5

SAMPLE MONTHLY RENT/CAR SPACE FOR VARIOUS CONSTRUCTION COSTS

SELF SERVICE CONCRETE DECKS CONSTRUCTION COST PER CAR SPACE

Rent Item	$2,500	$3,000	$3,500	$4,000	$4,500	$5,000
Amortize 40 yr @ 7%	$15.54	$18.65	$21.76	$24.86	$27.97	$31.08
Tax on Bldg/car sp	5.00	6.00	7.00	8.00	9.00	10.00
$15 land @ 70 sq. ft.	9.62	9.62	9.62	9.62	9.62	9.62
Rent/sp before profit	$30.16	$34.27	$38.38	$42.48	$46.59	$50.70

Profit: To this total must be added an amount which will yield the developer a fair profit for the risks involved.

MULTI-PURPOSE PARKING CONCRETE DECK
ATTENDANT OPERATION

5d MULTIPURPOSE PARKING DECKS - ATTENDANT OPERATION

Average Space Efficiency of reinforced concrete attendant operated garages is calculated on the basis of ground area occupied by the garage multiplied by the number of storage floors and divided by the total number of parking stalls. The range of space efficiencies for attendant operated parking garages is approximately 200 to 300 square feet per car space and the average is generally 250 square feet per car space.

Investment Cost Per Car Space at today's cost in attendant operated multifloor parking decks range from $1,750 per car space to $2,500 per car space and average about $3,000 per car space at today's costs. It is to be noted that the 1970 construction costs for attendant operated garages was about $1,750 per car space. The developers who would design multifloor parking structures for attendant operation would be very few in number and those who do would be prudent enough to design them with floor layout and ramp system that would be capable of being converted to self-service operation at some future date during the useful life of the structure. Because of the risks involved in such a single purpose building the developer would probably use an amortization period of 25 years as shown in the following table.

TABLE 5 d-1 ATTENDANT OPERATED DECK

MONTHLY AMORTIZATION COSTS PER CAR SPACE

Interest Rate	Investment Per car Space					
	$1,750	$2,000	$2,250	$2,500	$2,750	$3000
6% 25 years	$11.28	$12.89	$14.50	$16.11	$17.71	$19.33
7%	12.37	14.14	15.90	17.67	19.44	21.21
8%	13.50	15.44	17.37	19.30	21.23	23.16
9%	14.69	16.79	18.88	20.98	23.08	25.18

Taxes on Building are estimated to be four percent per year based upon 60 percent of the construction cost. Assuming the range of construction costs is $1,750 to $3,000.

TABLE 5 d-2 ATTENDANT OPERATED DECK

REAL ESTATE TAXES ON BUILDING PER CAR SPACE

	Construction Cost Per Car Space					
	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000
Tax on building 4% ann. tax on 60% valuation	$3.50	$4.00	$4.50	$5.00	$5.50	$6.00

MULTI-PURPOSE PARKING O CONCRETE DECK ATTENDANT OPERATION

Land Cost Per Car Space for multipurpose parking facilities vary widely, according to the number of parking levels and also according to the land values. Multifloor attendant operated parking structures in "hot spot" locations usually must go high in order to justify the use of high land value. The normal range of parking levels which can be expected in the future attendant operated parking structures is 6 to 10 parking levels, with an average structure having eight levels. The occupied ground area per car space will range between 25 and 55 per square foot per car space.

TABLE d-3 CONCRETE DECK ATTENDANT OPERATION
LAND INVESTMENT PER CAR SPACE
OCCUPIED GROUND AREA PER CAR SPACE
(IN SQUARE FEET)

Land Value	25 sq.ft	30sqft	35 sqft	40sqft	45sqft	50sqft	55sqft
$5	$125	$150	$175	$200	$225	$250	$275
10	250	300	350	400	450	500	550
15	375	450	525	600	675	750	825
20	500	600	700	800	900	1000	1100
25	625	750	875	1000	1125	1250	1375
30	750	900	1050	1200	1350	1500	1650
40	1000	1200	1400	1600	1800	2000	2200
50	1250	1500	1750	2000	2250	2500	2750

Land Rental Cost Per Car Space Per Month can be estimated at 11 percent per year per car space according to the values presented in table 5 d-2 above. In this approach, the 11 percent figure would include both a modest return on the land and would cover real estate tax on the land. If the developer should expect a higher return on the land, then this percentage would be increased above that shown in the following table which is based upon 11 percent.

TABLE 5 d-3 CONCRETE STRUCTURE (ATTENDANT OPERATION
MULTIPURPOSE ATTENDANT OPERATED STRUCTURES
LAND RENTAL COST PER CAR SPACE PER MONTH

Sq. Ft. Land Value	Occupied Ground Area Per Car Space (In Square Feet) 25	30	35	40	45	50	55
$5	$1.15	$1.38	$1.61	$1.83	$2.06	$2.29	$2.52
10	2.29	2.75	3.21	3.67	4.13	4.58	5.04
15	3.44	4.13	4.81	5.50	6.18	6.88	7.56
20	4.58	5.50	6.42	7.33	8.25	9.17	10.08
25	5.73	6.88	8.02	9.17	10.31	11.46	12.60
30	6.88	8.25	9.62	11.00	12.38	13.75	15.13
40	9.17	11.00	12.83	14.66	16.50	18.33	20.17
50	11.46	13.75	16.00	18.33	20.63	22.99	25.21

5d

MULTI-PURPOSE PARKING ⬡ CONCRETE DECK

ATTENDANT OPERATION

Monthly Rental Cost Per Car Space for multipurpose reinforced concrete parking structures when designed and operated for attendant parking in cities of various sizes and geographical areas of USA have a wide range of building costs per car space and also a wide range of land costs. The same comments as were made for self-service garages following Table 5 D-4 would also apply here. However, in the case example used in Table 5 d-5 which follows a 25 year amortization period and $25 land with 40 square feet per car space has been assumed.

TABLE 5 d -5 ATTENDANT OPERATED MULTIPURPOSE CONCRETE DECK

SAMPLE MONTHLY RENT/CAR SPACE FOR VARIOUS CONSTRUCTION COSTS

Rent Item	Construction Cost Per Car Space					
	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000
Amortize 25 yr @ 7%	$12.37	$14.14	$15.90	$17.67	$19.44	$21.21
Tax on Bldg/car space	3.50	4.00	4.50	5.00	5.50	6.00
$25 land @ 40 sq.ft.	9.17	9.17	9.17	9.17	9.17	9.17
Rent/sp before profit	$25.04	$27.31	$29.57	$31.84	$34.11	$36.38

Profit. To this total must be adden amount which will yield the developer a fair profit for the risks involved.

5 E STEEL FRAMED MULTIPURPOSE PARKING DECKS (TYPE 5E)

In multipurpose steel framed parking facilities, the great majority of such facilities are designed to use self service operation. The general comments which were made in Section 1 D (Residential-Steel Framed Parking Decks) also apply here. However, there are certain respects in which multipurpose Steel Deck facilities designed for commercial parking use differ from the Residential Type. These differences lie primarily in (1) higher land cost; (2) in less costly construction; and (3) the requirement for a profit from the venture which must be produced primarily by the net yield from parking charges.

Space Efficiency ranges from 250 to 400 square feet per car space and averages about 350.

Investment Cost ranges from $1,750 to $3,000 and averages about $2,000 at today's construction costs for multipurpose steel parking structures.

Monthly Amortization Costs. Calculations for amortization at equal monthly payments over a 25 year period for the full range of costs per car space at interest rates of from six to nine percent are shown in the following Table.

TABLE 5 E-1 MONTHLY AMORITZATION COSTS - STEEL DECK

Interest Rate	Investment Cost Per Car Space/Month						
	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000	$3,500
6% 25 years	$11.28	$12.89	$14.50	$16.11	$17.71	$19.33	
7%	12.37	14.14	15.90	17.67	19.44	21.21	
8%	13.50	15.44	17.37	19.30	21.33	23.16	

Land Cost Per Car Space. Some multipurpose steel framed structures go to nine stories and the land upon which they are constructed ranges from $5 to $50 per square foot. Table 5 E-2 shows the calculations for land investment per car space.

TABLE 5 E-2 LAND INVESTMENT/SPACE
LAND INVESTMENT PER CAR SPACE

Sq. Ft. Land Value	OCCUPIED GROUND AREA PER CAR SPACE IN SQUARE FEET						
	40	50	60	70	80	90	100
$5 sq.ft.	200	250	300	350	400	450	500
10	400	500	600	700	800	900	1000
15	600	750	900	1050	1200	1350	1500
20	800	1000	1200	1400	1600	1800	2000
25	1000	1250	1500	1750	2000	2250	2500
30	1200	1500	1800	2100	2400	2700	3000
40	1600	2000	2400	2800	3200	3600	4000
50	2000	2500	3000	3500	4000	4500	5000

MULTI-PURPOSE PARKING & STEEL DECK
SELF SERVICE

Monthly Land Rent. An interest rate of 11 percent is assumed to be sufficient to cover the interest on land occupied by each car space and also cover taxes on that allocation of land area. The following table of monthly land rental per car space is based upon the values shown in Table 5 e-2 as shown above.

TABLE 5 E-3 STEEL FRAMED MULTIPURPOSE
MULTIPURPOSE SELF SERVICE STRUCTURE
LAND RENTAL COST PER CAR SPACE PER MONTH

Sq. Ft. Land Value	Occupied Ground Area Per Car Space (in Sq.Ft. 40	50	60	70	80	90	100
$5 sq.ft.	$1.83	$2.29	$2.75	$3.21	$3.67	$4.13	$4.58
10	3.67	4.58	5.50	6.42	7.33	8.25	9.17
15	5.50	6.88	8.25	9.62	11.00	12.38	13.75
20	7.33	9.17	11.00	12.83	14.66	16.50	18.33
25	9.17	11.46	13.75	16.00	18.33	20.63	22.99
30	11.00	13.75	16.50	19.25	22.00	24.75	27.50
40	14.66	18.33	22.00	25.66	29.33	33.00	36.66
50	18.33	22.89	27.50	32.08	36.66	41.25	45.83

Tax on Parking Structure per month is calculated on the basis of $4 per $100 assessed value based upon 60 percent valuation of the construction cost.

TABLE 5 E-4 STEEL FRAME TAX/MONTH

	Construction Cost $1,750	$2,000	$2,250	$2,500	$2,750	$3,000
Monthly Tax on Structure	$3.50	$4.00	$4.50	$5.00	$5.50	$6.00

Total Monthly Rental Cost of multipurpose steel framed parking structure is composed of three components plus one additional component, namely profit, which is a variable and is dependent upon the objectives of the developer who undertakes the project. Presented in Table 5 E-5 are the three components for a representative case example. Here it is assumed that the structure will be amortized in 25 years at 7 percent and that the project is developed on land valued at $25 per square foot and that the structure as designed, averages 60 square feet of occupied ground area per car space.

TABLE 5 E-5 MULTIPURPOSE SELF SERVICE STEEL FRAMED
SAMPLE MONTHLY RENT PER CAR SPACE FOR VARIOUS CONSTRUCTION COSTS

Rent Item	Construction cost Per Car Space $1,750	$2,000	$2,250	$2,500	$2,750	$3,000
Amortize 25 yr @ 7%	$12.37	$14.14	$15.90	$17.67	$19.44	$21.21
Tax on Bldg/car space	3.50	4.00	4.50	5.00	5.50	6.00
$25 land @ 60 sq.ft.	13.75	13.75	13.75	13.75	13.75	13.75
Rent/space before Profit	$29.62	$31.89	$34.15	$36.42	$38.69	$40.96

Profit: To the above totals must be added an amount which will yield the developer a fair profit for the risks involved.

Quantitative Modelling Costs Associated With EPA Parking Regulations

Indirect source regulations were promulgated on July 9, 1974 (39 Federal Register 25292) and will become effective nationwide on January 1, 1975. After that date, new parking facilities with more than 1,000 spaces and modified facilities with more than 500 spaces must undergo preconstruction review to ensure that there will not be any localized carbon monoxide violations.

Parking management regulations were promulgated for some 20 metropolitan areas in late 1973. On August 22, 1974 amendments to the parking management regulations were proposed (39 Federal Register 30440). Generally, the regulations and proposed amendments require that new or modified parking facilities over 250 spaces undergo a preconstruction review to ensure that (1) there will be no localized carbon monoxide violations, and (2) the new facility will be consistent with the VMT control strategy in the existing transportation control plan. In parking management areas, indirect source review will be integrated into the parking management review.

Under indirect source regulations, a proposed facility must be subject to a carbon monoxide modelling process in order to determine whether a possible violation would occur if the facility was built. Under the parking management regulations, carbon monoxide modelling is one of the options available to a developer to determine the facilitiy's impact on carbon monoxide concentrations. A developer may also choose to undertake VMT modelling as one method of satisfying the VMT requirement in the parking management regulations.

Carbon Monoxide Modelling Process:

The modelling process for determining carbon monoxide impact involves two basic steps: (1) the gathering of monitoring and other needed information, and (2) the applying of the information to technical guidelines such as those provided by EPA or the use of this information in a privately developed, site-specific model. The technical guidelines are based on general assumption concerning meteorological conditions and roadway situations. If the owner or operator of a proposed facility decides to only gather the necessary data and submit it for application to the general guidelines, the costs for the process would range from $3,000 to $10,000. These costs would vary according to the amount of data previously gathered for environmental impact statement or general planning purposes.

On the other hand, if an owner or operator of a proposed facility both gathers his own information and develops and uses a site-specific model, the costs for the process might range from $30,000 to $45,000. The variation in these costs would again be primarily influenced by the amount of base information and model relevant data which has previously been made available. The size and nature of a proposed facility makes little difference for cost purposes.

Case studies based on hypothetical assumptions have been completed which demonstrate the range of review process cost estimates. The following chart illustrates the review process costs for six projects and compares the costs to overall project costs.

	Total Project Costs Without ISR	Costs of Modelling Process	Percent Increase in Project Cost
Office;50 acres;one million sq.ft. gross leasible	$31,400,000	$45,000	.1
Regional Shopping Center; urban area;(developer had already done some traffic analysis for his own design objectives)	$37,200,000	$35,000	.09
Office, Commercial and Residential Complex; urban area	$114,000,000	$40,000	.03
Office and Commercial Development;2 million sq.ft.;(EIS was already required)	$27,800,000	$5,000	.02
Office Park;suburban area;1.5 million sq.ft.	$24,800,000	$5,000	.02
Shopping Center;suburban area	$13,900,000	$10,000	.07

The above figures indicate that, on a percentage basis, both front-end and total costs are quite minimal. Front-end costs will vary from developer to developer. A front-end cost is money that a developer invests out of his own pocket before he receives a loan. Because the cost of the indirect source modelling process is a front-end cost, it will reflect a somewhat higher percentage of the initial investment. However, a developer can be expected to include these costs in a loan package once a project receives a permit and thereby amortize the costs. Thus, the true impact of the indirect source modelling process can be estimated as a percentage of his total project cots, amortized over the period of the loan.

It must be emphasized that no time penalty costs should be associated with the indirect source modelling process. The developer is expected to incorporate modelling into his normal scheme of development and make a timely application. Routinely, a developer makes many applications such as a zoning, utility, and safety permit. A delay in submitting those applications will, of course, delay commencement of construction and result in additional costs. The indirect source permits are no different.

VMT Modelling:

The proposed amendments to the parking management regulations contain three available options which a developer may use to ensure that the proposed parking facility is consistent with the VMT control strategy in the applicable transportation control plan. One of the options available is for the developer to undertake quantitative modelling which demonstrates whether or not construction of the facility will cause a reduction in VMT.

The costs involved will vary somewhat according to the size and location of the facility. As with indirect source review, the amount of available data (number of daily trips, average trip length, etc.) will also influence the final cost figures. Generally, $5,000-$50,000 is the amount of money that will be necessary.

The following four hypothetical cases illustrate the information gathering process and the costs involved:

Case #1: Proposed Community Shopping Center

Step 1. Information is obtained by a sample survey. For the community shopping center, the basic economic feasibility analysis indicates that the primary service area will be within a 2-mile radius of the proposed center. A sample of 100 randomly chosen households is asked to complete a form recording their automobile shopping trips and destination on a single weekday. Using this data, the average daily shopping trip rate is determined.

Level-of-effort 1/2 man-day per household = 50 days

Step 2. In order to analyze the choice of destination a gravity model technique is to be used. To achieve this a "network" is developed representing the highway system servicing the shopping center market area and roads leading to all locations of competing facilities are identified in the sample survey.

Coding Level-of-effort 5 man-days

Step 3. Using standard FHWA procedures the "gravity model" parameters are calibrated, yielding a set of travel time resistance functions known as "f-factors"

Level-of-effort 5 man-days plus 5 minutes IBM 370 c.p.u. time

Step 4. The "trip generation" rate as determined in the sample is used to estimate the total number of daily shopping trips made by residents of the new centers market area. This number represents trip "productions." The size of the new center (in terms of employees and floor space or some such) is used to estimate "attractions." The "gravity model" is now applied for two cases (1) with the new center in the system and (2) without the new center. The output of the "gravity model" is a matrix of trips from residential areas to shopping areas. For each case, with and without the new center, the appropriate trip matrix is assigned to the highway netwok and the total vehicle-miles of travel summarized.

Level-of-effort 10 man-days
10 minutes IBM 370 c.p.u. time or equivalent

Summary Case I:

Item	Man-Days	Computer Time (IBM 370/155 or Equivalent)
1.	50	
2.	5	
3.	5	10 minutes
4:	5	10 minutes
	65 man-days	20 minutes

Approximate Labor Cost @ $145/day	$ 9,425
Computer @ $100/Hour	330
Miscellaneous	500
Total Approximate Cost	$10,255
Say	$10,500

Case 2: Proposed Regional Shopping Center; 2000 parking spaces.

Data on trip rates and gravity model "f-factor" is available from an established transportation planning agency and no survey is required. Only steps 3 and 4 of Case I are required, but an addition 5 man-days to gather data is included in the estimate.

Labor Cost 15 Days @ $145	$2,174
Computer & Miscellaneous (As Above)	830
Total	$3,004
Say	$3,000

The basic techniques will be similar to those used for the smaller center, but due to the size of the market area approximately twice the effort will be required for all tasks.

Therefore:

Cost for Analysis Including Survey	$21,000
Cost for Analysis Excluding Survey	6,000

Case 3: Individual Employer; 550 employees

1. Consider the example given on Page 30459 of the Federal Register of August 22, 1974 (40 CFR Part 52) for an insurance company with 550 employees which intends to relocate. A brief description of the analysis technique is contained in the cited reference. The level-of-effort would be approximately

a.	Employee Survey	10 man-days
b.	Survey Analysis	10 man-days
c.	Travel Distance Analysis	10 man-days
	Total	30 man-days @ $145/day = $4,350 Say about $4,500

2. This example can be extended to the case where the new location does not offer comparalbe transit facilities. In this case, the employees would also be questioned on their mode of travel to work at the new location. Analysis of this data would raise the cost of the project to about $5,500.

Case 4: Complex Development

The most intricate and costly VMT modeling will be required for a complex mixed use center. Consider the following proposed development:

- Shopping Facilities - 500,000 square feet gross floor area
- Office Facilities - 1,500 employees, 500 of one known client. Remainder yet uncommitted
- Residential - 1,500 dwelling units.

For a large development such as this each element would have to be treated separately with allowance for the interaction of the separate units (i.e., the potential for increased walk trips due to concentrated development).

The shopping element can be treated as described above for the large regional center.

The office facilities must be treated in two parts. For the 500 employees of the committed client the methods described above for an individual employer are applicable. For the unrented space a "gravity model" analysis similar to that described for shopping centers would be required. A set of "f-factors" for work travel will need to be developed and an analysis made of population or labor force distribution in the effected portion of the region. Examination of trip length frequency distributions can be used to define the region which must be examined. Much of the data on population will be available from local planning commissions. Work trip "f-factors" may be developed either by a small scale survey, from data gathered from employees of the committed employer or from the local planning agency.

A gravity model analysis with and without the proposed office facilities will yield tables of person movements. Depending on the scale of transit services a mode-choice analysis may be required to develop tables of automobile trips to the site.

For the residential units an examination of trip generation rates, trip length data and mode split characteristics from similar type developments can be used to forecast VMT impact. This information may be obtained either from a local planning agency or by a survey of a similar area.

The level-of-effort estimate presented below assumes that basic data for the residential analysis can be obtained from an established planning agency.

Shopping Facility (See Above)	$21,000
Committed Office Space (See Above)	4,500
Uncommitted Office Space	
a. Gather data	
b. Implement network	
c. Gravity model analysis	
d. VMT analysis	
Cost as similar to shopping center	10,500

Residential

a. Gather data	
b. Implement network (no cost, use b. above)	
c. Gravity model analysis	
d. Mode split analysis	
e. VMT analysis	
Cost is similar to shopping center	10,500
Total Approximate Cost	$46,500
Assume Cost At About	$50,000

Public Support for Parking Management

The following collection of editorials, speeches, and letters is illustrative of existing support for parking controls in general and EPA's parking management regulations in particular. While vociferous opposition to EPA's parking management programs has been forthcoming from various parking and development interests, the attached material demonstrates that support for the parking management concept does exist. This support arises from a recognition of the potential benefits associated with various types of parking management - air quality improvements, energy conservation, transit improvements, ordered urban growth.

Included are statements from the Secretary of Transportation and the Administrator of the Federal Energy Administration, both of which reference the use of parking limitations as a tool for energy conservation and impetus for use of mass transit.

Editorials opposing any Congressional action that will cut off EPA funds to administer or regulate parking programs have appeared in the New York Times and the Washington Post. Other editorials in the Boston Globe, the San Antonio Express, and the Chicago Today all express support for some type of control over parking and specifically mention the resulting air quality and energy conservation benefits.

Transp. Control

REGION I

Boston Globe (no date)

Gentlemen, the idea IS fewer cars

What it amounts to is this.

Boston business leaders, as portrayed by their official spokesmen, don't give a damn about cleaning up Greater Boston's poisoned air.

Somehow they feel it can be done with mirrors.

The Environmental Protection Agency has asked business to cut back 25 percent on company parking spaces so that fewer automobiles will enter and operate in the metropolitan area.

The agency also has asked for a three-hour street parking ban — 7 a.m. to 10 a.m. — in Boston and Cambridge to reduce auto commuter volume in those cities.

The reason is simple. Carbon monoxide kills and maims. It comes from cars. And carbon monoxide levels in Boston and Cambridge have at times gone three times higher than that considered safe to health.

Further, the levels are continuing to rise and spread.

It has already been found in New York City that one can sit inside; repeat, inside; a street level restaurant and get a poisonous carbon monoxide cocktail free of charge along with the meal.

But Boston business, some of which must be about the most reactionary to change anywhere in the Western world, persists in feeling that if our streets are not jammed with double-parked cars and backed-up trucks, their business will disappear.

The retail trade in particular has yelled for more garages and against pedestrian malls for years, although it can be proved in a score of other world cities that cutting down on cars and giving the shopper a little space and greenery has not hurt business.

And that is the most asinine statement of all. They'll get to work, you can bet your weekly paycheck on that, and no one is pretending that there won't be some inconvenience.

But don't these business spokesmen know there is a shortage of oil, that we will run out of gas again, that we may have difficulty heating homes, that industry needs cheaper oil, that blackouts and brownouts will reoccur?

The whole idea, gentlemen, as well as for health reasons, is to get people out of cars and into mass transit, to save fuel, conserve energy, improve air quality and increase liveability.

For sure mass transit isn't enjoying its finest hour at the moment; General Motors saw to that a long time ago, but it will only improve when the needs of the people demand that it does and Congress already has acceded to such demands and will again.

And in their antagonism business spokesmen have failed to acknowledge that "hardship exceptions" will be granted employees unable to find a car pool or use mass transit.

The behavior of academics these past few weeks has been even more disgraceful, highlighted by the reaction of President Asa S. Knowles of Northeastern to an EPA proposal to include universities in the 25 percent parking space cut.

Knowles and hip-shooting spokesmen from Harvard and MIT claim a parking lot cut would threaten them with economic disaster, which, with a world-wide energy crisis feeding crippling inflation and a full-scale depression, seems a classic case of parochial overstatement.

Furthermore, it has been made clear that students would be granted the same hardship exceptions as everyone else.

If anyone should be aware of the need to contain the energy-burning, health-destroying effects of the automobile one would feel it should be the university community..

The issue is no longer one of just clean air but of energy conservation as well.

Jon Morris is associate editor of The Globe.

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Transp Cont

Cars and contamination

BOSTON GLOBE 10-14-74

Boston will be the first of 38 cities across the country to come up to an enforcement deadline of June 1 for reducing pollution caused by automobile emissions under the 1970 Clean Air Act. And, with only nine months to go, critics of strict parking regulations designed to reduce car travel are now attacking a more flexible approach aimed at easing the burden on working people by including students in the parking restrictions.

This is patently absurd. If the workers can be required to leave their cars at home, join car pools or make use of public transportation, there is no reason why healthy young highschoolers and college students cannot do the same. If they live in remote suburbs, as Northeastern University's president Asa Knowles argues, they can drive to parking lots in Quincy and Revere and Riverside and take the MBTA to school. And they can certainly do it as easily as industrial employees.

The automobile emission control program, drawn up by the Environmental Protection Agency in June 1973 when Massachusetts failed to prepare a plan of its own, was not intended to be sacred. But the EPA has been greeted by resounding silence in its requests for positive suggestions from industry and local trade associations.

Instead there has been a massive outcry centering chiefly on the proposal that employers should reduce company parking spaces by 25 percent in order to help reduce the number of single-passenger commuter cars contributing to our increasingly befouled air.

And there was some justification for the criticism. Growing companies would be treated the same as firms that were shrinking. Suburban businesses where little public transportation was available faced the same requirements as inner city businesses. And companies that provided employee parking were to be "penalized" while firms that left their employees to find parking for themselves bore no responsibility for reducing commuter travel. In the original plan, students who make up a major part of the commuting public were left untouched. Now this has changed and the outcry has escalated.

That seems to us unfair. This is the country's first official effort at getting Americans out of their automobiles. And adjusting the plan to eliminate inequities makes sense so long as the ultimate standards of clean air are not abandoned.

One basic problem is that most Americans do not feel personally threatened by air pollution, despite growing statistics to the contrary. Another is that alternatives for getting to work, and to colleges, are not yet competitive with the automobile.

Mass transportation within Route 495, the area covered by the auto emissions control plan, is inadequate. Only two of the five planned transit extensions have scheduled completion dates and the money for a $100 million program to upgrade commuter rail service is not yet in hand.

Car pooling is inconvenient. And bicycling to work in this cold climate is impossible. Yet during last year's energy crisis commuters did find alternative means of transportation and were getting used to it. And in the process bus service improved. It may take a similar crunch with increased traffic jams and soaring gas prices, to turn the tide of public sentiment again.

But the fact is that, right now, automobile emissions make up 98 percent of the carbon monoxide in the air downtown and 50 percent of the hydrocarbons that pollute the air in the entire region. Despite the new anti-pollution devices, initial findings of the EPA show that carbon monoxide levels at Kenmore Square increased by at least 43 percent between 1969 and 1972.

Cars are the major villain in producing this lethal smog and the EPA is absolutely right in pressing the issue. Bending the regulations to include student commuters is a natural and positive effort to make the solution workable.

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San Antonio Express

EDITORIALS

Rupert Murdoch
Chairman

Charles O. Kilpatrick
Editor and Publisher

Better Buses Alone Won't Mean Fewer Cars

"If competitive, convenient mass transit is provided, it will be used and cause substantial shifts away from autos."

Roger Strelow of the U.S. Environmental Protection Agency offered this assertion here this week as if it were a statement of fact. Our feeling is that it is only an affirmation of faith since it has certainly never been tried.

Cars waste space. They waste fuel. They waste the very air we breathe. But they are still first in the hearts of our countrymen.

The government can subsidize buses and trains until it is blue in the face and red in the budget. It can pad the seats, expand the routes and keep the fares down. But by themselves, we don't think these measures can do much more than maintain transit's share of commuter traffic, currently less than 10 per cent.

If governmnent really wants to slow down the flow of cars into congested cities, it will have to make tougher decisions involving more than mere dollars. Expansion of freeway systems will have to be curtailed. Parking lot construction will have to be restricted. Cars may have to be denied access to some portions of the cities.

More cars need more roads, which encourage still more cars. Forceful measures like these are the only way to stop the cycle. But what will it mean for downtown San Antonio?

The road men bend to the irresistible circular logic of the automobile. Keep building the roads, they say, or the inner city will die.

We say they are wrong. We say that when the freeway system is allowed to become unattractive to all the drivers who want to use it, those drivers will switch to transit — if they want to get downtown badly enough.

Whether downtown San Antonio is worth getting to, after all, depends much less on the ease of access than it does on the quality of work and play that are available here. To whom do we look to improve those things? Surely not the builders of roads.

San Antonio contains the seeds of a vital, attractive central city. It need not submit to the tyranny of the automobile in order to fulfill its promise. That is OUR affirmation of faith.

11-23-73 Chgo Today Region 5

Halfway measure on parking

ONE PROBLEM with anti-pollution regulation is that it is outnumbered by opposing considerations. On one side it is countered by fears about the energy shortage; on the other it collides with economics. The Federal Environmental Protection Agency, in its plan to clean up Chicago's air thru traffic regulation, avoided any conflict with energy problems—but ran smack into complaints from the business community.

The original plan was to ban parking on both sides of two-way streets and limit it to one side of one-way streets; the former provision was dropped in the face of protests. As it is, the proposed rule—to take effect next Sept. 30—will restrict parking to one side only of key one-way streets: Dearborn, Clark, Randolph, Washington, Madison, Monroe, Adams, and Jackson.

The only fault we can find with this is that it's a half-way measure. Why not ban parking on all Loop streets, except for clear emergencies and specific construction or delivery purposes? The answer to businessmen's objections isn't unrestricted parking—it's cheap, efficient mass transportation, which is a separate issue.

Even the limited ban proposed by the EPA will present problems. Businessmen with payrolls want ready access to banks, for example, without having to park some distance away and mingle with crowds.

In spite of these objections, cutting parking in half on these busy streets seems a relatively painless way of achieving the environmental goal: Reducing carbon monoxide in Chicago's air by 50 per cent in mid-1975. And further restriction of downtown parking—possibly the use of strict time limits—might become feasible as mass transit improves and businessmen see the value of an attractive, pollution-free shopping environment.

The EPA's proposed rule is only a half-step toward this ideal, but it's in exactly the right direction.

Tribune Content

EPA

Different Environmental Hazard

W.Post OCT 4 1974

THE HOUSE Appropriations Committee recently approved a bill that would severely limit the powers of the Environmental Protection Agency. The committee's bill would undo parts of the original acts that created EPA. Apparently, some of the committee members now find EPA not to their liking; one of those most offended by the agency's mandate to control or eliminate pollution is Rep. Jamie L. Whitten (D-Miss.). As chairman of the appropriations subcommittee on agriculture, environmental and consumer protection, he reported the bill and its accompanying report with directives against EPA.

The agency, for example, would be directed to stop programs that might raise the cost of food or electricity. Thus, if there is a repeat outbreak of the contamination that occurred recently in the poultry flocks of Mr. Whitten's home state, EPA could do nothing because the added costs of destroying the poisonous birds would be passed to the consumer. Much the same principle would apply to a power company under orders to install anti-pollution devices. The committee would let the pollution continue on the pretext of keeping down the electricity costs. Never mind the untallied costs that would have to be borne by the local community in the threats to its health and environment. Another shackling of EPA involves the cut-off of funds for any EPA programs that would decrease pollution or encourage mass transit by taxing or limiting city parking.

That such a piece of regressive legislation is the inspiration of Mr. Whitten is no surprise. His record of opposition to socially useful bills is well-known, and he has tried similar gambits in the past. The bill that he now backs would limit the powers of EPA exactly at a time when the agency is reaching a level of maturity needed to carry out the will of Congress. Every effort should be made on the House floor either to eliminate or amend the provisions that shackle EPA. Failing that, the Senate would still have an opportunity to act. Either way, Mr. Whitten's efforts deserve to be treated like the environmental hazard they are.

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N.Y.T. 10-7-74

EP13

Hamstringing E.P.A.

Environmentalists were dismayed when Representative George Mahon of Texas, chairman of the House Appropriations Committee, had the bad judgment to assign environmental agencies to an agriculture subcommittee headed by Representative Jamie L. Whitten, Mississippi Democrat. Representative Whitten is well known for his opposition to anything that interferes with profits-as-usual down on the farm or in business.

It now develops that Representative Whitten's solicitude extends to inner-city traffic jams and the poisonous, health-damaging smogs they help generate. He and his subcommittee colleagues have written into this year's appropriation bill for the Environmental Protection Agency a ban on the use of any funds to enforce its proposed air pollution regulations with regard to traffic congestion in cities and the building of additional parking garages.

The Whitten subcommittee also directs E.P.A. to halt any program that might result in a rise in the cost of food or electricity. This edict reflects a campaign being waged by less responsible elements of the business community to use the general inflation problem as an excuse for stopping any clean-up of the environment.

Congress must not let E.P.A. be hamstrung by these onerous restrictions. It is also time that House Democrats, most of whom pay at least lip service to the cause of clean air and clean water, begin calling Representatives Mahon and Whitten to account for these destructive games played in the back rooms of the Capitol.

Ideas
P.O. Box 30169
Los Angeles, CA 10960

Gentlemen:

The answer to air pollution from motor vehicles is simple - perhaps too simple. The problem is worse in perhaps a dozen major cities. Yet not long ago, Pittsburgh had a perfect example of what could be done, and very simply too.

Last spring, Pittsburgh had a parking attendant strike, complete with pickets. For several weeks, parking in the city was almost nonexistant. People had to use public transit. It did a land office business. Traffic moved faster than it had in years. Morning and evening rush hour traffic jams disappeared. The air pollution index dropped dramatically.

Yet the lesson was completely lost on everyone. Within a month after the strike, the extra buses were dropped, and those left were again half empty. Traffic jams and air pollution were back to normal.

The lesson? Why spend 30 billion dollars (EPA's estimate) over the next four years (including 3 billion extra gallons of gasoline) to reduce air pollution and yet gain only a fraction (14% CO, 6.6% HC and 7.5% NOx) in the worst areas, the central cities? The answer is much simpler. Close the parking lots and use the land for buildings and parks. Eliminate all day parking, and limit parking garages to four hour occupancy for those who must come into town on errands. If necessary, provide parking in the suburbs at mass transit terminals.

This will force people to use mass transportation. Service will become more frequent. Operating deficits will decrease and perhaps even disappear. But more important, air pollution control can be concentrated where it is needed most; and one of our most valuable resources, petroleum, will be conserved for future generations to enjoy.

Very truly yours,

N H Eckler

N. H. Eckler

cc: Sen. Hugh Scott
Sen. Richard Schweiker
Repr. John Heinz III
Mayor Peter Flaherty

BROOKHOLLOW CORPORATION
EXECUTIVE OFFICES, 8100 CENTERLER FREEWAY • DALLAS, TEXAS 75247 • (214) 637-3100

October 4, 1974

RECEIVED
OCT 7 1974
EPA REGION VI

Mr. Arthur W. Busch
Regional Administrator, Region VI
U.S. Environmental Protection Agency
1600 Patterson, Suite 1100
Dallas, Texas 75215

Dear Arthur:

It was a pleasure to have met you at the Southwest Regional Real Estate conference at SMU this past weekend. I now have a firsthand appreciation for the work in which you are involved.

It seems to me that you have quite a challenge ahead. When looking at the positive effects the land use control regulations might have, the results could be most beneficial for the entire Southwest region.

Our company, Brookhollow Corporation, is one of the pioneers of conscientious real estate development in the Southwest. Twenty years ago, Brookhollow was the first to employ what is now commonly known as "Protective Covenants." Protective covenants establish green belt areas, minimum parking space ratios, and, in effect, all the things that are now standard operating procedures for industrial and business parks.

Many people pay "lip service" to environmental quality, but very few put their money where their mouth is. Brookhollow has the track record that stands up for its convictions. Enclosed please find a partial list of the environmental awards Brookhollow has received on a national, state, and local basis. Our company received the most environmental awards for land developers during 1973 and 1974.

I am very interested in what you are doing and I look forward to visiting with you and getting a firsthand view of your course of action with the indirect source regulations as well as reviewing the courses which will be offered in the future.

Sincerely,

Carlos E. Fonts
Executive Vice President

CEF/cb

Enclosure

The following are excerpted statements given by various government officials with reference to the use of parking limitations.

John C. Sawhill, former Administrator of the Federal Energy Administration, stated on September 17, 1974 in a speech to the American Automobile Association:

"Up to this point, the Federal government has not included auto 'disincentives' in its urban transportation policies, except as they relate to EPA's Transportation Control Plan. But such disincentives -- coupled with improved public transit -- are critical to inducing Americans to use their cars less and to use public transit more."

"I believe disincentives for city parking can be particularly important. Although Congress has prohibited the Federal government from imposing surcharges, and I think they made a mistake in taking this action, other ways of discouraging parking must be considered."

Claude Brinegar, Secretary of Transportation, in a speech to the Society of Automotive Engineers on August 14, 1974, stated:

"We will develop -- and encourage local areas to implement -- various incentive systems to force more efficient vehicular usage of our existing streets and highways. A necessary part of such an approach is to see that the automobile does, in fact, pay its share of all the costs that it imposes on the cities. This could mean stiff parking --- For some cities, it might even mean banning or severely limiting automobile access to the central core."

Dear John:

Thank you for your letter of September 24, 1974 regarding the effects of implementing the Clean Air Act in California. As you suggested, the Environmental Protection Agency is evaluating the draft report, which was recently released by the task force established by Governor Reagan, on the effects that implementation of the Clean Air Act would have on California.

Preliminary review has shown that the report greatly exaggerates the socio-economic impacts of implementing the Clean Air Act. The draft report considers the "worst case" situation rather than the realistic situation and, therefore, is misleading.

A major economic impact noted in the report - that 3.4 million people in the South Coast Air Basin, 80% of the total work force, will be without access to their places of work - is based solely on the implementation of a gasoline limitation. This impact should realistically be totally disregarded. Since the gasoline limitation would be an unreasonable burden on the people of the South Coast Air Basin, that limitation would not be imposed and the predicted impact would not occur. As I have stated on several occasions, this Agency would not enforce severe gasoline limitation and has requested amendments to the Clean Air Act to remove the necessity for such a burden.

The report's calculation of the economic impacts of EPA's review of indirect sources predicts an unrealistic scenario. In calculating the loss of 100,000 jobs annually, the report assumes that 100 percent of all indirect source applications would be denied permits. Since 100 percent disapproval or anything close to it would not occur, the statistics used in the report are incorrect. In most cases, EPA's response to applications for permits will be to require design and/or location changes rather than denial of a permit. In general, these changes should not alter significantly the rate of return on capital invested.

In compiling statistics on the impact of EPA parking regulations, the report greatly overestimates the number of facilities which are to be reviewed. Under the amendments to the parking management regulations, as proposed in the Federal Register on August 22, 1974, the smallest parking

lot size to be reviewed in California would have a capacity of 250 cars. The report incorrectly assumes that any lot over 50 spaces would be subject to the Federal regulations. From the statistics included in the report, the number of parking lots having between 50 and 249 spaces comprise over 75 percent of the new lots built in California in 1973 and have incorrectly been included in the report's computations.

The report makes no mention of the economic benefits of the air pollution control program in terms of jobs and income generated. Jobs are created to: research air pollution problems and solutions to these problems; administer control programs at all levels of government; monitor air quality; and construct and maintain efficient mass transportation systems, among other things. Although these figures would be difficult to estimate on a state or regional level, they would further reduce, if not totally compensate for, any detrimental economic impacts of the EPA programs. While pollution control regulations may have some effect on the California economy, this effect should be small enough so that it would be dwarfed by the effects of other factors such as fiscal and monetary policy and the business cycle.

The report not only erroneously calculates the predicted impacts, but also fails to take into account the socio-economic impact of the severe health effects anticipated as a result of failing to implement sufficient air pollution control programs. While the costs of air pollution are difficult to estimate, they include: (1) hospital, doctor, and medicine expenses; (2) reduced productivity; (3) reduced yield of horticultural agriculture and forest products; and (4) increased materials and equipment, all of which are inflationary costs.

A cursory review of the report has shown that the number and magnitude of errors it contains demand a more detailed, in-depth study. We will continue to take a more careful look at the California task force report as we analyze the economic impacts of EPA's air pollution control regulations and weigh those impacts against the damages caused by air pollution to the public health and welfare.

Sincerely yours,

Russell E. Train
The Administrator

Honorable John V. Tunney
United States Senate
Washington, D. C. 20510

A Summary and Analysis of the Harbridge House Report on Indirect Source Regulations

I. Introduction.

The purpose of this summary is to: (1) highlight the economic findings of the Harbridge House Report, The Economic and Land Use Impact of Regulations to Review New Indirect Sources of Air Pollution Prior to Construction; and (2) to discuss some of the assumptions and methodology Harbridge House uses to estimate the potential costs associated with the Indirect Source Regulations.

The Harbridge House report identifies the potential range of costs associated with indirect source review (ISR) regulations, and assesses the impact of these costs on developers. This is accomplished through an examination of six existing development projects. However, because of the limited number of cases examined, this report should not be interpreted as a conclusive study. Additional studies are being undertaken to provide a more extensive sample base from which to draw more definitive conclusions.

II. Conclusions of Report.

Harbridge House identifies three types of potential costs associated with ISR: (1) data acquisition and application preparation costs; (2) time-related delay costs; and (3) physical design change costs. Based on the cases examined, the report concludes that, generally, both the application and time delay costs represent a small percentage of the total project costs and would have an insignificant impact on the developer's ability to achieve an acceptable rate of return on his project (see Table I).

In contrast, the report concludes that, when physical design changes are required, there may be significant increases in project costs in absolute dollar amounts. However, the report also demonstrates that it is not these absolute dollar amounts that determine the financial viability of a project;

rather, the crucial factor is how these dollar costs, as a proportion of total costs, impact the developer's rate of return. This is illustrated in five of the six cases analyzed where the increase in project costs associated with the design changes did not prevent the developer from achieving a desirable rate of return (see Table 1).

Another finding evident from the report is the need for developers to anticipate ISR in their initial planning stages, thereby assuring a timely ISR review and avoiding any potential ISR delay costs.

In sum, Harbridge House concludes that, even in the context of today's uncertain economic climate, ISR-related costs would not present a major obstacle to the development industry.

III. Summary of Economic Impact Results.

The Harbridge House report reviews the estimated costs related to the indirect source review procedures for six case studies. The case studies include two office space facilities, two shopping centers, and two mixed development projects which include residential, commercial and office-type facilities. In each of the case studies, ISR review associated costs for data acquisition, air quality, data analysis or modelling, application processing, possible project delay costs, project design costs, and interim financing costs are considered. Tables I and II summarize the estimated costs resulting from these considerations for each case.

Table I summarizes the effect of the ISR process on total project costs for these six cases. A comparison is made of project costs both with and without ISR, as well as the percentage cost effect on the projects. Finally,

figures are given which show the developer's return on investment without ISR and with ISR. As the table demonstrates, the percentage increase in project costs due to ISR was less than 1 percent in four of the six cases. In the other two cases, ISR resulted in project cost increases of 5 percent and 21 percent for reasons which are explained below. In all but one case, Table I demonstrates that ISR had little impact on the developer's ability to achieve a substantial rate of return.

Table II contains a detailed breakdown of the total project costs listed in Table I. The first cost encountered by a developer is data acquisition and application preparation expenses which may include costs associated with traffic analysis, air quality monitoring, air quality analysis using EPA technical guidelines and/or diffusion modelling, and application preparation. For the six case studies, Harbridge House estimated that these costs range from $3,000 to $45,000, depending on the methodology used to project air quality. This cost element accounts for less than 0.1 percent of total project costs in all six cases. This expense represents only 10 to 15 percent of the developer's front-end money used to initiate the projects.

A second possible cost in the process is associated with review period delays. This cost might result if a developer does not properly anticipate ISR requirements in the initial planning stages of a project and thus delays the project. In such circumstances, a developer must finance inflation costs such as those on materials that must be purchased at a later-than-planned date, and opportunity costs. Table II shows the rather significant economic consequences if delays do occur.

If a proposed facility appears likely to violate the carbon monoxide standard, a third cost involves physical design changes. These design changes include such options as traffic network improvements, and mass transit and other traffic decreasing alternatives (e.g., staggered workhours and carpooling). The effects of these costs vary depending on the nature of the development and the severity of the potential location. As Table II demonstrates, costs can vary considerably.

The final cost shown on the table is for interim financing. Interim financing is a loan that a developer may arrange to help minimize the initial impact of design change costs. Interest rates on this kind of mid-term loan tend to be higher than for the longer term loans used to finance the total cost of a project. The costs associated with interim financing combined with the design change costs are the principal sources of indirect source review costs.

As Table II demonstrates, the effects of design change costs are likely to be greatest for shopping centers (see Project B and F). In Project F, design changes and interim financing would increase project costs by 21 percent. With an 8 percent rent increase or with some public funding of design changes, the project would be able to proceed as planned.

A breakdown of the 21 percent increase reveals that the actual design change expense accounts for only 9 percent of project costs. The remaining 12 percent is due to the unusually high cost of interim financing. In this case, the interim finance cost accounts for 67 percent of total design change costs. This is in marked contrast with the remaining five projects where the interim financing costs range from only 3 to 10 percent of the total

design costs.

The great impact that design change costs have had on Project B are due to several circumstances. First, Project B had a marginal rate of return even without ISR (see Table I, rate of return Project B before ISR). Second, Project B was located in a heavily congested urban area that was prone to carbon monoxide violations. Although the immediate area around the project is well served by mass transit, 60 percent of the shopping center's trade was from commuter automobile trips by persons living outside the vicinity, thereby exacerbating the carbon monoxide problem. Harbridge House notes, however, that the development could be built if it were oriented to serve the local community which has good transit service.

IV. Analysis of Assumptions and Methodology.

The conclusions of the study support EPA's contention that ISR will not present a threat to the economic health of the development industry, despite the fact that certain cost estimates in the case studies were based on assumptions that factored in "worst-case" contingencies. Because some of the Harbrdige House cost estimates are based on certain assumptions not reflecting the typical situation, ISR-related cost estimates are likely to be higher than what the majority of developers would experience.

A. Data Acquisition, Modelling, and Application Costs.

The modelling process for determining carbon monoxide impact involves two basic steps: (1) the gathering of monitoring and other needed information, and (2) the applying of the information to technical guidelines such as those provided by EPA or the use of this information in a privately developed, site-specific model. The technical guidelines are based on general assumptions

concerning meteorological conditions and roadway situations. If the owner or operator of a proposed facility decides to only gather the necessary data and submit it for application to the general guidelines, the costs for the process would range from $3,000 to $10,000. These costs would vary according to the amount of data previously gathered for environmental impact statement or general planning purposes.

On the other hand, if an owner or operator of a proposed facility both gathers his own information and develops and uses a site-specific model, the costs for the process might range from $30,000 to $45,000. The variation in these costs would again be primarily influenced by the amount of base information and model relevant data which has previously been made available. The size and nature of a proposed facility makes little difference for cost purposes.

While the Harbridge House study results generally support these cost ranges, the methodology used in the study assumes that owners of large perspective sources would opt for a more complete modelling analysis rather than initiate design changes based on the simple EPA screening technique. Consequently, the study assumes an initial cost of $45,000 for all projects and reduces this amount when the circumstances of the specific case studies indicate the use of less than the total modelling process. This technique implies that $45,000 is the norm and lesser costs are the exception. EPA does not expect a complete modelling analysis to be necessary in the majority of cases. Consequently, the Agency estimates that $10,000 represents a more typical direct cost to the applicant in the indirect source review.

B. Time-Related Delay Costs.

The Harbridge House report points out that the costs sustained by a developer as the result of delays caused by the review process could be much greater than the cost associated with full scale modelling. In each case study analyzed, Harbridge House assumes a 90-day review delay. However, EPA expects the indirect source review procedure to be integrated with other required permit procedures so that the applications can be processed without delay, as rapidly as possible. In emphasizing the need for timely review, EPA has stressed the importance of preliminary consultation with developers, so that a developer may anticipate the ISR requirements and plan for them in his initial planning process.

It is possible that in the initial stages of ISR implementation some developers may experience some transitional delay costs. This would occur only in those cases where a developer is in advanced stages of planning for a major facility, and thus, is unable to benefit from early integration with the ISR process. In the Harbridge House report, however, each case includes a delay cost that should only be associated with the transitional process. Thus, the report includes an additional cost which would not be part of the developer's costs in most cases.

C. Physical Design Change Costs.

Some of Harbridge House's design change cost estimates are subject to variation depending on certain key assumptions. Two examples of such

cost assumptions are how much a developer may have already integrated improved design into his facility and how much of the design change costs he must assume. It is reasonable to assume that the developer may find it in his best interest to ease traffic flow into and out of a facility. Developers, of course, realize the advantages of improved access to their facilities and as a result are already incorporating provisions for traffic analysis and improved design. Accordingly, design change costs resulting solely from ISR requirements may prove to be the exception.

In addition, the developer may not have to bear the sole burden of design change costs. In particular, a community may, in many cases, agree to subsidize or share the costs of street or roadway redesign and reconstruction. Such circumstances are likely to occur if a community desires the service or tax base to be provided by the proposed facility.

While the report does address a range of possible cost variations in a sensitivity analysis, the main body of the report reflects the higher cost options. As the previous discussion indicates, there are other less costly options that must be kept in mind when considering the ISR impact.

V. Federal/State Indirect Source Regulations.

Several states have already adopted indirect source regulations and others are in the process of developing their own regulations to replace the Federal procedures. In many cases, the state regulations are significantly different from the Federal regulations. The Harbridge House report does not

explain in great detail these differences. The dissimilarities primarily pertain to the application requirements, the length of ISR review, and the size of facilities subject to review. In forming analogies between the operation of Federal and existing state regulations, these differences must be carefully considered.

Long-Term Impact (in llions of dollars)

	Office Park		Shopping Center		Mixed Use	
	Project A	Project E	Project B	Project F	Project C	Project D
Total Project Cost:						
a. Without ISR	31.4	24.8	37.2	13.7	27.8	114
b. With ISR and No Delay f/	31.4 d/	25.0	38.9	16.6	27.8	116
Percent Increase in Project Cost:						
a. With ISR and No Delay	0.1	0.7	5	21 e/	0.02	1
Return on Investment						
a. Without ISR	19.1	21	14	30	12.8	-3.9 b/
b. With ISR and No Delay	19	20.2	12	24.7 c/	12.8	-4.2 b/

a/ Source: Harbridge House. Assumes developer pays all costs, 12 percent annual inflation.

b/ Project D is financed as a tax shelter.

c/ With 8 percent increase in rents.

d/ The lack of difference between rows a and b is due to round off.

e/ Without including almost two million dollars of interim financing costs, this figure would be only 9 percent. It is unclear from the report exactly why financing charges are so high, accounting for approximately 67 percent of the total design change costs, when all other projects have interim financing that accounts for only 2.5 to 9.4 percent of the total design change costs. The rate of return, however, still is large and ISR would, therefore, not present a real financial threat to the viability of Project F.

f/ No delay means that the time period for application review could be incorporated into the developer's planning process, such that construction of the project is not deferred due to the review.

Cost Element	Office Park		Shopping Center		Mixed Use	
	Project A	Project E	Project B	Project F	Project C	Project D
Data and Application	3 to 45 b/	5	35	10	5	40
Review Process With No Delay	0	0	0	0	0	0
Review Process With a 90-Day Delay c/	260	863	833	260	600	774
Physical Design Changes	0	155	1550 d/	940	0	1440 e/
Interim Financing for Design Changes	0	19	100	1950	0	150

a/ Source: 6 case studies, Harbridge House.

b/ Harbridge House analysed Project A assuming maximum application cost of $45,000. However, if the EPA technical guidelines were applied, data acquisition and application costs would only amount to $3,000.

c/ This figure is included to indicate what may be a transitional cost for some developers at the initial stages of ISR implementation. Certain developers may already be in advanced stages of the planning process at the January 1, 1975 deadline and, thus, may experience some delays at the beginning of ISR program. It is expected that the majority of applicants who properly plan for ISR in their initial planning stages will experience no delay.

d/ This project might have been re-oriented to service the local community exclusively. This would substantially reduce design changes necessitated by ISR.

e/ Project D is financed as a tax shelter.

Present Status of State Actions on Indirect Source and Parking Management Programs

The Environmental Protection Agency (EPA) is currently working with affected states and localities to establish state and/or local regulations which would replace the Federal regulations for indirect source and parking management reviews.

Indirect source review plans are required for all areas of the United States. At this time, 16 states and two territories have submitted indirect source regulations for approval by EPA. Six plans have been approved, three plans have been disapproved, and nine plans are pending. In addition, several other states are preparing to submit their regulations to EPA for approval; still other states intend to adopt the Federal regulations.

Although the Federal indirect source regulations do not become effective until January 1, 1975, some state regulations are effective at an earlier date. Consequently, some states have already begun implementing indirect source review plans. The following table summarizes the approval status of state indirect source plans:

IS Plans Approved by EPA	IS Plans Disapproved by EPA	Pending Plan Approvals or Imminent Plan Submissions	
Alabama	Maine	Connecticut	Washington
Florida	New York	Idaho	Colorado
Kentucky	Virginia	Nebraska	Delaware
N. Carolina		Nevada	District of Columbia
Guam		New Hampshire	Georgia
Virgin Islands		Oregon	Minnesota
		Vermont	
		W. Virginia	

Parking management regulations are to take effect in some 20 metropolitan areas on June 30, 1975. Already, several localities are actively developing comprehensive parking management plans to replace the Federal regulations. Other areas are in the initial stages of developing local plans and additional areas have expressed an interest in developing such plans. The following table summarizes the status of parking management plans:

Comprehensive Plan Development	Beginning Plan Development
Portland	Philadelphia
Seattle	Washington, D. C.
Los Angeles	Boston
San Francisco	
San Diego	
Sacramento	
Fresno	

EPA expects a significant amount of additional local plan development prior to the June 30, 1975 effective date for the parking management regulations