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3M Oakdale/Lake Elmo Research/Office Park Final Environmental Impact Statement City of Oakdale

responsible agency:
The City of Oakdale
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oakdale, minnesota 55119

prepared by:
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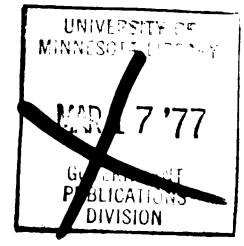
august, 1976



3M Oakdale/Lake Elmo Research/Office Park Final Environmental Impact Statement City of Oakdale

a supplement to the Draft E.I.S.

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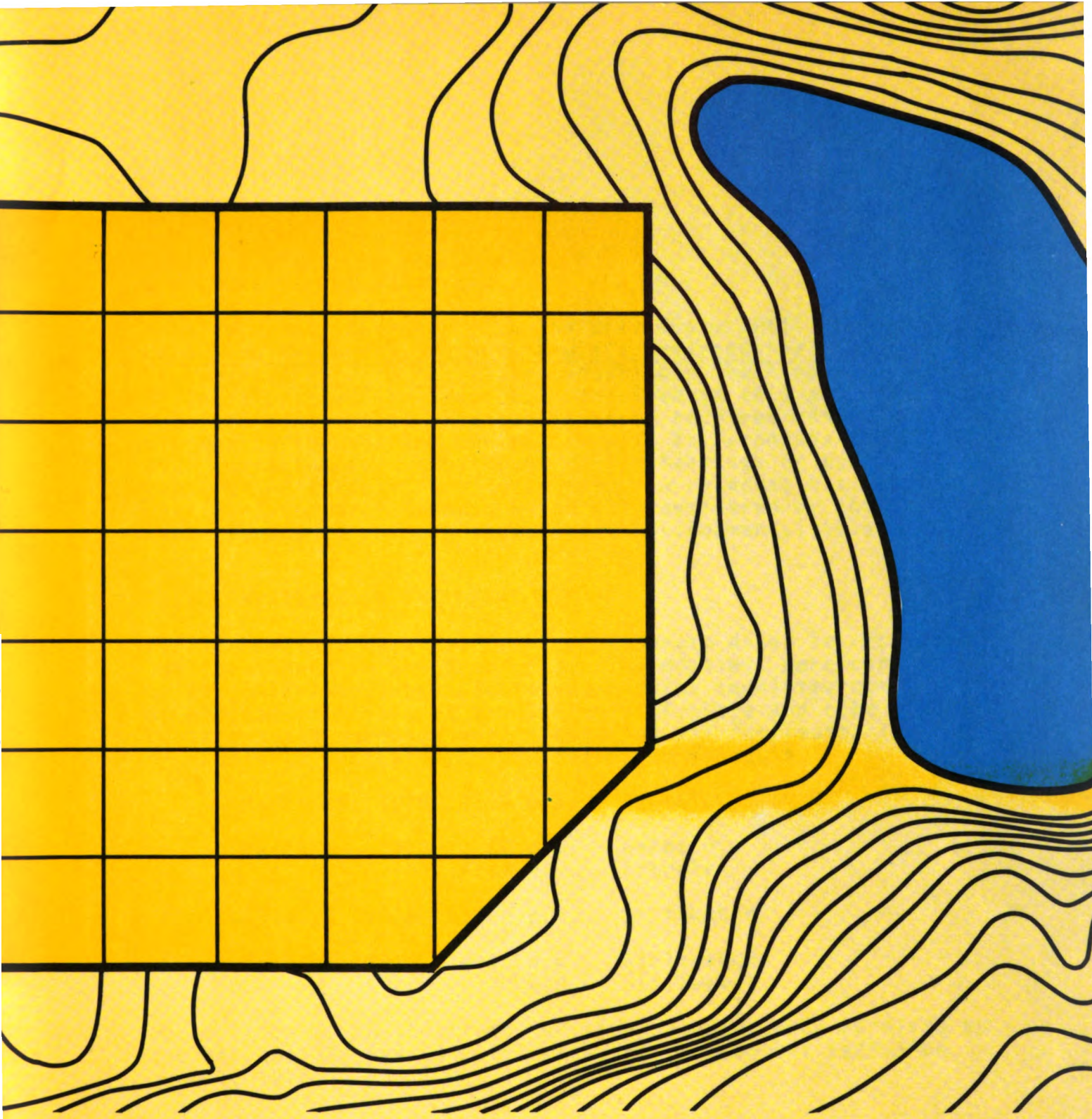


Introduction

INTRODUCTION

STRUCTURE OF THE FINAL EIS

This document, together with the previously published 3M Oakdale/Lake Elmo Research/Office Park Draft Environmental Impact Statement (February 23, 1976), constitute the Final EIS for the 3M Oakdale/Lake Elmo project. Contained in this document are the full texts of all written comments received on the Draft EIS during the hearing period, as well as responses to substantive comments made verbally at public hearings or submitted to the City of Oakdale in written form. A response has been developed for each comment which was considered by the Responsible Agency to raise a significant environmental issue.

PUBLIC HEARINGS ON THE DRAFT EIS

Public hearings were held on four separate dates to receive public comment on the Draft EIS. The meetings were conducted by the 3M Policy Input Committee, a joint committee comprised of elected officials of the Cities of Oakdale and Lake Elmo. Questions and comments were taken from all interested individuals or groups as indicated by the following schedule:

March 29, 1976	7:30 p.m.	Oakdale
March 30, 1976	1:00 p.m.	Oakdale
	7:30 p.m.	Oakdale
April 5, 1976	7:30 p.m.	Stillwater
April 6, 1976	9:30 a.m.	Stillwater
	7:30 p.m.	Stillwater

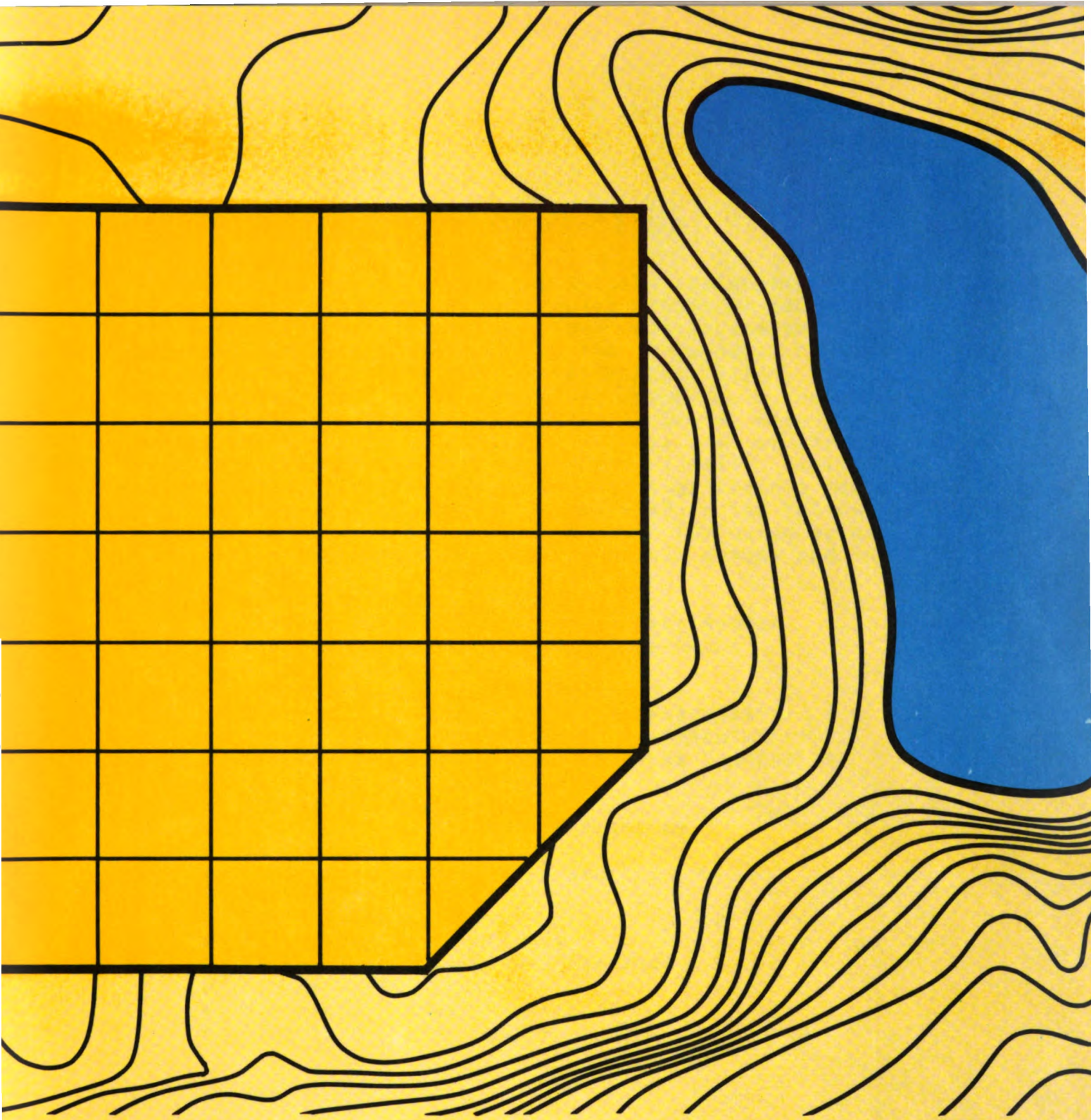
In addition to the hearings, written comments were received by the Responsible Agency until close of the comment period on June 1, 1976.

RECENT PROJECT MODIFICATIONS

An important modification in the initial construction and occupancy schedule of the Oakdale/Lake Elmo Research/Office Park was announced by the 3M Company after completion of the Draft EIS. As indicated in a 3M Company statement entered into the Draft EIS hearing record, the planned initial occupancy date for the site has been set back two years, to 1981. Similarly, initial

construction has been moved from 1977 to 1979. No further schedule modifications were announced, resulting in an unchanged, planned completion date of 1995, with the site accommodating a proposed 18,000 employees.

This change in project schedule was deemed to be relatively minor, and a new analysis of schedule-dependent impacts was not undertaken. The most important results of the schedule change are the impacts which were previously identified as occurring in 1980; these impacts are now eliminated or delayed. Further discussion of the effect of the new project schedule is included in the responses to Draft EIS comments. Especially affected are the areas of metropolitan growth policy, sanitary sewer, and air quality.



Comments Received on the Draft Environmental Impact Statement

COMMENTS RECEIVED ON THE DRAFT EIS

The following pages contain the written statements received from governmental agencies and interested groups or individuals during the Draft EIS comment period. Four written statements, by Dr. Robert M. Adams representing the 3M Company, by Kenneth Sovereign representing the Tri-Lakes Association, by Francis Pott representing the City of Lake Elmo, and by J. W. Johnson representing the City of Marine on St. Croix, were presented during the Draft EIS hearings. The remainder of the statements were submitted to the City of Oakdale by mail. Substantive issues raised verbally during the hearings are not reproduced in full in this section, but are summarized in the following response section of the Final EIS. The following pages contain the written statements of these agencies, groups and individuals:

- Robert M. Adams, 3M Company
- Kenneth Sovereign, Tri-Lakes Association
- Washington County Planning Department
- City of Lake Elmo
- Metropolitan Transit Commission
- Albert Quie, Congressional Representative
- Joseph Karth, Congressional Representative
- Minnesota-Wisconsin Boundary Area Commission
- St. Croix County, Wisconsin
- Brauer and Associates
- St. Paul Area Chamber of Commerce
- 3M Company
- Department of Natural Resources
- Metropolitan Council
- State Planning Agency
- Pollution Control Agency
- Valley Branch Watershed District
- Marine on St. Croix
- Minnesota Highway Department
- Minnesota Energy Agency

March 29, 1976

Dr. Robert M. Adams
Vice President, Research & Development
3M Company
Tartan High School
Oakdale, Minnesota

I appreciate this chance to speak briefly for 3M as public hearings begin on the Environmental Impact Statement draft describing our Company's long range plans for its property in Oakdale and Lake Elmo.

Our people have reviewed the draft, and we believe it properly describes the proposed site development. Some technical comments will be submitted separately in writing, but we feel the City of Oakdale and its consulting agency have done an excellent job of identifying and describing possible and foreseeable environmental impacts of the development. We recognize this was done on behalf also of Lake Elmo, Washington County, and indeed a lot of other metropolitan agencies, all of which contributed to the completeness of the draft. We thank you all.

We also know 3M contributed to the comprehensive and timely nature of this draft, inasmuch as we long ago hired 12 outside consulting firms to study the sensitive aspects of local planning needs. We shared the resulting information with other interested parties and we ourselves voluntarily initiated the process which will produce the Environmental Impact Statement as soon as possible.

As the 3M officer responsible for research and development, and as chairman of the Committee on Corporate Responsibility of 3M's Board of Directors, I can assure you that it is the Company's intention to continue acting responsibly on this matter, throughout the gradual, 20-year development of the site.

We recognize the future holds many variables beyond your control or ours, and 3M is prepared to be flexible in seeking the greatest public good. You are all certainly invited to remain in communication with 3M's in-house planning and design team so that we can realize the greatest benefit to all parties involved. The person to contact is Mr. John E. Rudquist in the 3M Architectural Engineering Department.

One variable--the business economy--already has led us to reconsider the development timetable spelled out in the Environmental Impact Statement draft. Current conditions indicate the original dates of 1977 for commencement of construction and 1979 for initial occupancy will be delayed somewhat, perhaps two years.

The record should show, of course, that 3M is a research-oriented, worldwide company of nearly 80,000 employees today. Most of our research and scientific people are concentrated in this area near headquarters.

We believe that 3M's survival and success depend largely upon our ability to come up with new and improved products and services that fill real human needs--in diverse fields such as health care, education, housing, transportation, safety, agriculture and so forth. To do this we need more of the kind of people who brought us to where we are today, and we need to equip them with necessary laboratory and service facilities.

That's why we need the proposed new laboratory and office development in Oakdale and Lake Elmo. We plan to call it 3M Carlton Park, in honor of the late Richard P. Carlton, a former company president who in 1921 was hired as 3M's first technical employee with a degree from an accredited college. He also directed much of the early quality control, research and development activity that made possible 3M's success in the 1920's, 30's, and 40's.

Our findings show that this area, 3M Carlton Park, will be a good place to grow.

Our employees tend to agree; and you will find that most of them are involved, contributing citizens, busy building their home communities as well as their 3M careers wherever in this area they happen to live. We have what may be the greatest concentration of corporate research talent between Chicago and the West Coast. But I know for a fact that some fine people are with us not only because they wanted to work with 3M, but because they value the opportunity to live in Minnesota, a part of the country that takes the quality of life seriously. We know that some of our own employees have concerns about the development.

That's part of the reason why 3M already has spent a lot of time and more than a million dollars--not counting land costs--to see that this proposed development is properly planned, with full attention to primary and secondary impacts. Never before in my recollection has 3M approached a new site with more care.

Many of you know that 3M's energy and resource conservation programs, our environmental controls and our innovative solutions to traffic problems have received national acclaim. The same technical competence that made them possible will continue to be directed toward making our presence in this new area one of positive impact.

We look forward to your further comments at these hearings, and we certainly look forward to becoming part of your community.

Thank you.

TRI-LAKES ASSOCIATION

POSITION STATEMENT

ON

3M/OAKDALE/LAKE ELMO RESEARCH OFFICE PARK DRAFT ENVIRONMENTAL IMPACT STATEMENT

I. INTRODUCTORY STATEMENT

The Tri-Lakes Association (TLA) was incorporated under the laws of Minnesota 1955 and has as its stated purpose to promote the social betterment and a close relationship among members of the community to develop the natural resources and beauty of the area.

The TLA has standing in these proceedings because of the proximity of its members' homes and the effect that the proposed action will have upon their daily lives. This statement is issued pursuant to MEQC, 26 Sub. 2(dd) of the Rules and Regulations of the Minnesota Environmental Quality Council.

Since its inception members of the TLA have been active in community and governmental affairs to preserve the quality of life which attracted the people to this area. They have encouraged the local governmental bodies to permit residential growth according to planning and zoning policies that have been tested in other well-planned communities. Members of the TLA aided in drafting the first Zoning ordinances for this area. Members have served continuously on the Planning and Zoning Commission, and since its inception TLA members have served on the Town Board and later on the City Council, and are presently active on the Parks and Recreation Board. Throughout the gradual transition from agricultural to residential, the interests of the people living in the TLA area have been paramount to those who chose to move into the area.

Over the last twenty-five years in which this area was developed, new residents have accepted the growth and planning principles adopted by our local government, but now we are faced with a major action by a giant company whose economic resources and political influence dwarf all efforts of the residents to have a continued residential growth of the area. The State Environmental Policy Act is the residents' only hope to mitigate the environmental impact of this proposed action.

The TLA does not take the position that the proposed action should be denied, but it is their position that the environmental impact upon the contiguous residential area has not been properly assessed by the Draft EIS in order to allow the decision-maker to make a determination on whether the environmental impact is too great on the area to permit the proposed action or to mitigate the environmental impact by selection of alternatives. It is evident by a detailed analysis of the Draft EIS that insufficient consideration was given to the environmental impact upon approximately 300 homes in the Tri-Lakes Area. It is, therefore, the position of the TLA that the Draft EIS is inadequate as it fails to give the necessary information to the decision-maker to assess and mitigate the impact upon the adjacent residential area.[1]

II. LEGAL STATUS OF THE EIS

The Draft EIS is required by Section 116D.04 of the State Environmental Policy Act. Subdivision 1(c) states that:

> "Where there is potential for significant environmental effects..... from any major private action of more than local significance, such action shall be preceded by a detailed statement prepared by the responsible agency on alternatives to the proposed action."

[1] On page 505 of EIS and on the list of organizations contracted, Tri-Lakes and other residential groups are not listed.

The intent of this requirement is that the EIS should present alternatives which will mitigate the impact upon the environment so that people and nature can exist in productive harmony.[2] The purpose of the EIS is to offer alternatives to facilitate policy choices to mitigate the environmental effects of the proposed action before the action is taken. The EIS, in several sections, fails to give alternatives for the decision-maker, and it further makes assumptions that are not supported by empirical data. This is not giving reliable information to the decision-maker.

The Draft EIS on page 497 lists four categories of alternatives none of which consider an alternative site that will not be contiguous to a residential area. It is the position of the TLA that these alternatives are inadequate and do not effectuate the purpose of the State Environmental Policy Act. The following analysis of the four alternatives will substantiate this position.

A. No Project - In consideration of this alternative, the EIS offers a summary of the 3M Company impacts that could occur under the "no project alternative".

This alternative should not consider 3M's impacts. Obviously"no project" would have impact upon 3M. This alternative does not even mention the environmental impact of"no project" as a competing interest. The purpose of the EIS is not to consider what impact the action will have on 3M but must consider the impact on human environment.

The EIS predetermines that the "no project" alternative would be undesirable because it inhibits 3M's growth and competitive position. This alternative does not have a legal status because it considered only the petitioners economic impact and disregards the significant environmental effects resulting from the proposed action as required by Section 116D.04 Sub. (1) of the Declaration of

[2]See 116D.02 Sub. (1).

State Environmental Policy Act.

The "no project" alternative must be reconsidered as to the impact upon the environment and not the impact upon the petitioner.

B. Alternative Uses of the Site - This section considered agriculture, industrial, commercial and residential uses of the site. In considering residential use, it concludes the environmental impact would be similar to that of the proposed 3M project. This conclusion is suspect because no thorough study has been made. A cost-benefit comparison is needed for each alternative used.

C. Project/Design/Configuration - This is not an alternative to the proposed action but is a consideration of the various project designs alternatives of the proposed action. A description of the proposed action should not be a major alternative.

D. Alternative Project Sites - This is not an alternative but a narration of why 3M selected this site. No other site was considered by the EIS except the central city. The selection of a site by 3M appears to have been solely for economic reasons without consideration of the environmental impact. 3M's selection does not make it necessarily environmentally sound. There are other areas not contiguous to a residential area that will have less impact on the environment than the one selected and will still meet all the stated requirements of 3M. South of Highway 212 and west of County Road 80 is one example. Cost to 3M of acquiring other land should not rule out consideration of alternative sites. 3M's economic considerations must be balanced with environmental considerations. Ownership of land is not a mandate to use it for the purposes for which it was acquired without consideration of other alternatives that may result in less impact. The erroneous conclusion of the Draft EIS is that once the fee owner decides that the land is proper for his use, the use of the land

is environmentally acceptable since it is in the fee owner's best interest. Therefore, it appears that the purpose of the Draft EIS is to justify a decision already made.

It is obvious from the analysis of alternatives that there is no balancing of values between this site and others in the wide open spaces near the present 3M Maplewood site. Therefore, it is evident that the decision-makers do not have all possible approaches to the problem in order to determine whether some other alternative site may meet the needs of the petitioner and have a lesser environmental impact on the people who live in the area.

III. ANALYSIS OF THE PRIMARY IMPACTS

In order for the EIS to be adequate, there must be vigorous explanation and objective evaluation of the alternative actions to be selected that might avoid some of the adverse environmental impacts of the proposed action.[3] The alternatives to reduce environmental effects should not be foreclosed prematurely by the EIS, but a range of alternatives should be offered, their environmental impacts assessed and be left to the decision-maker to decide which will have the least environmental impact, cost-benefit balance being considered. It is the position of TLA that the Draft EIS is conclusionary and inadequate according to the MEQC 31(f) in the following areas:[4]

Surface Water Management
Land Use
Air Quality
Roadway System
Water Supply

In each of these areas, the analysis of the alternatives is insufficient to permit an independent and objective comparative evaluation of alternatives

[3]See MEQC 31(6) Rule and Regulations of EQC (1974).
[4]Other areas are also inadequate but limited resources prevent a detailed analysis.

to the proposed action as to which has the least environmental impact. Information is insufficient to permit the decision-maker to make an intelligent determination, and therefore the purpose of the EIS is not effectuated.[5]

A. Surface Water Management - Although an analysis is made of the surface water management problem and what 3M's plans are to mitigate the run-off, no alternatives are presented. It is stated that more detailed data is needed to determine whether infiltration will decrease or increase (p. 63). It is further stated that interim controls are placed on other developers to prevent flooding of the lakes (p.58) and that perhaps water quality could be insured by placing the ponding discharge under PCA standards (p.62).

A status report without adequate data may cause a commitment of site to serious environmental problems if the project is allowed to proceed until further study is made. Further information on the range and magnitude of the risks involved in proceeding without further study of infiltration, volume of run off and water quality, should be specifically detailed to allow the decision-maker to determine what data is necessary before proceeding or whether the project should be denied until adequate information is provided.

Although EIS lists some restrictions to mitigate the surface water problem, there is an inadequate analysis of the impact if restrictions are not imposed to enable the decision-maker to make a determination whether such restrictions should be imposed. These restrictions are:

1. Delay the project until there is an outlet from the three lakes.
2. Reduce the size of the project.
3. To assure acceptable water quality and volume of pond run off, a 3M monitoring system could be required or PCA could be given jurisdiction.

A cost-benefit analysis of these restrictions should be made, and the impact of the project upon the lake levels should be considered if one or more of these

[5]See Environment Councils definition of inadequate EIS, MEQC 23(0),

restrictions are not imposed. It is, therefore, the position of the TLA that the final EIS should specifically show the impact of the project upon the lake levels and water quality in understandable language and show how each restriction will mitigate that impact, and thereby allow the decision-maker to select an alternative.

B. Land Use - This section totally fails to consider the environmental impact upon the adjacent residential areas. It places 3M's interest in a dominant position when compared to the needs of the residents of the community. Inaccuracies and inadequate justification for conclusions are abundant throughout this section. In its consideration for agricultural use it concludes that the land can no longer be used for agriculture because of high property tax (p. 102). Services demanded for residential use make the taxes too high but the tax revenue received from the 3M project makes the site acceptable (p.102). The only consideration given here for the site use is that which will give the greatest dollar value to the community. There is no balancing here of the dollar value versus the environmental impact on the community. As to economic considerations, no analysis is given of the possible devaluation of adjacent developed and undeveloped property as a result of the proposed action. The highest dollar value to the community may be an oil refinery servicing pipeline running through the area; however, on page 103 EIS recognized that this would not be compatible with the residential area, but it determines on page 104 that the 3M project is acceptable. There is no justification for this conclusion without a comparative analysis of the social-economic impact of the various site uses.

In discussing residential use, the Draft EIS at the outset takes a negative approach. The EIS states that homes will result in more services, higher property tax, water-run-off problems, etc., but fails to consider that

the 3M project will cause premature residential development with all its problems in a close proximity to site.[6] The community will then be subjected to the negative environmental impacts of the 3M project plus all the evils of a rapid residential development mentioned in the EIS. The peoples of the area and the local government have in the past faced all the cost-revenue complications of residential development by not permitting rapid development. The 3M development will result in a rapid growth both in residential and commercial areas, and the EIS fails to offer alternatives to mitigate cost-benefit effects of such growth. There is no analysis as to adequacy of the tax revenue to service requirements of the 3M project plus the rapid residential development caused by the proposed action.

The creation of a traffic problem for the area of from 2,000 to 3,100 dwelling units in residential development is pure conjecture without subsequent analysis of Zoning Regulations. The conclusion of the Draft EIS is that residential use will generate more trips than the 3M development - a project bias statement without foundation. It is not the function of the Draft EIS to merely conform with the law by developing statistics that support predetermined conclusions as to the use of the site. The purpose of EIS is to enable the decision-maker to determine what alternatives will have the least environmental impact and then make a cost-benefit analysis. In this Draft EIS economic considerations overshadow environmental considerations, and 3M's economic convenience is made paramount to residents' convenience. The TLA proposes that the alternatives in the final EIS explore fully a course of inquiry that will permit the decision-maker to determine an objective analysis of the alternatives and to communicate to the public the reasoning as to why this land use alternative was selected.

[6]It should also be noted here that in its conclusions the EIS made cost-revenue assumptions without supporting data. This is recognized in the secondary impact section but with inadequate analysis.

C. AIR QUALITY - In this primary impact no consideration was given to the effect of the proposed action upon the air quality in the residential area. There are no minimum degradation standards suggested; mitigation measures fail to list alternatives such as moving the project further south from the residential area, mitigating degradation of air quality by limiting the number of vehicles or limiting parking space as ways of controlling carbon monoxide pollution from vehicles. No analysis of the impact of air pollutants as result of laboratory activity has been given.

The Air Quality Impact section lacks information as to utility plant emissions of sulfur oxides and whether such emissions will exceed state standards when the project is completed. Also, missing from the statement are air movements and inversion characteristics of the area. No study has been made of carbon monoxide levels at the intersections. This should be considered with the Roadway Systems Impact.

The TLA takes the position that the decision-makers are entitled to more information as to air quality and that further alternatives for mitigation of air quality from all sources should be thoroughly analyzed in order that a determination can be made of the environmental impact on air quality of the proposed project.

D. ROADWAY SYSTEM - This section is predicated on the Metropolitan Council's policies which are tentative and advisory only.[7] The impact on the present roadway system must be assessed, not the future tentative plans of governmental bodies, but on conditions that are certain to occur.

The attainment of two persons per vehicle is not realistic. 1.54 is the best rate achieved at the present Maplewood site, accordingly the information provided for selection of alternatives is based upon unrealistic assumptions.

[7]Recent legislation may change the advisory position of the Metro Council. See HF 1530.

What 3M might do, such as enlarging the staggered work hour system and/or supporting transit programs, is environmentally very important to the Tri-Lakes residents. It is too important for "....might be the case....". The residents of this area deserve more than that.

Other alternatives to alleviate the TLA traffic problems should be listed and factual information should be supplied to the decision-maker so a proper determination can be made.

In an attempt to make the Roadway System acceptable, the Draft EIS presented alternatives that were based upon assumptions that may not be realized. TLA takes the position that road capacity analysis should be extended to reflect the trip generation characteristics as they currently exist on the Maplewood site.

E. WATER SUPPLY - The Draft EIS recognizes on page 134 that it is difficult to determine drawdown due to pumping at the 3M/Oakdale/Lake Elmo site when the well layout is not known. This must be known before alternatives can be selected.

The Draft EIS fails to relate the data on water supply to enable the decision-maker to select alternatives that will result in the least impact on the wells in the Tri-Lakes area. The TLA requests that this section be rewritten and alternatives as to the sources of water supply be specifically detailed so the effect of the project on the wells of the Tri-Lakes area can be assessed. If the ground-water alternative is selected what bedrock formation alternatives should be considered that would result in the least impact upon the wells in the Tri-Lakes area?

IV. ANALYSIS OF THE SECONDARY IMPACTS

As in the case of Primary Impacts, several deficiencies are noted in the Secondary Impact Section. The most obvious are listed below. However, further study would reveal other areas that would prevent the decision-maker from making an educated determination.

1. No Secondary Impacts are considered on the City of Lake Elmo in the event that the proposed project prematurely causes the sewers to be constructed.

2. The increase in capital expenditures as compared to revenues for the City of Lake Elmo caused by the project was not assessed.

3. A cost-benefit analysis on the Stillwater school system as a result of premature residential development has not been given. In this regard the school population projection of 1.04 per family is unrealistic in view of the Metropolitan Council's projection of 2.1, and the State of Minnesota projection of 1.9. The Draft EIS must address itself to more realistic school population figures in order for the decision-maker to properly assess the economic impact of the project upon the Stillwater school system.

SUMMARY

The TLA respectfully requests that the deficiencies herein noted be corrected and more specifically state:

1. That all assumptions be eliminated, and alternatives and information be presented on existing conditions and facts now available, and be presented in an understandable form to the reviewing public.

2. That reconsideration be given to the four alternatives listed on page 497, and that "no project alternative" be considered giving prime consideration to the environmental consequences rather than the economic impact upon the petitioner.

3. That a land use alternative within a close proximity to the proposed site and the 3M Maplewood site be explored as a mitigation of the environmental impact on the adjacent residential area.

4. That a full analysis of the alternatives be given for each primary impact.

5. That an alternative of reducing the size of the project be considered in view of some of the unresolved environmental impacts on the residential area.

This statement did not fully deal with secondary impacts since the inadequacies of the primary impacts were so time-consuming that a complete and detailed comment on secondary impacts had to be eliminated. Accordingly this list should not be considered complete.

Inasmuch as the Draft EIS is a superficial attempt to attain legal acceptance and is a perfunctory performance to maintain a preconceived decision as to the use of the site for the purpose for which it was purchased, TLA takes the position that another Draft EIS should be submitted, and an opportunity for public comment be afforded before a final EIS is presented.

For the Tri-Lakes Association
By Tri-Lakes 3M Committee

612/439-3220

Washington County

PLANNING DEPARTMENT

WASHINGTON COUNTY COURT HOUSE • 14900 61ST STREET NORTH
STILLWATER, MINNESOTA 55082

WILLIAM A. SCHWAB
COUNTY PLANNING COORDINATOR

Mayor Peter Graske
308 Grafton Ave N
St Paul, MN 55119
March 26, 1976

Dear Mayor Graske

At their monthly meeting on March 23, 1976, the Washington County Planning Advisory Commission members endorsed the County Planning Staff review of the 3-M Research Labs Environmental Impact Statement.

The Commission directed me to forward this review of the Impact Statement to you and requested that it be placed on record at the E.I.S. public hearings on March 29, 1976.

While my staff and I only discussed general areas of concern within the document with our Planning Commission, I encourage you, your Council, Staff, and Consultants to thoroughly answer the questions posed in this review concerning the E.I.S.

As has been our policy in the past, I think that this review is constructive in nature. My staff and I welcome the opportunity to work with you on this project and others in the future. Please feel free to contact me if there are questions.

Sincerely

William Schwab

William A Schwab
County Planning Coordinator

WAS/mlp

xc: Dennis Zylla, Don Hunt, Maynard Eider, Patrick O'Hara, Duane Grace

RECEIVED
MAR 29 1976
CITY OF OAKDALE

612/439-3220

Washington County

PLANNING DEPARTMENT

WASHINGTON COUNTY COURT HOUSE • 14900 61ST STREET NORTH
STILLWATER, MINNESOTA 55082

WILLIAM A. SCHWAB
COUNTY PLANNING COORDINATOR

TO: WASHINGTON COUNTY PLANNING COMMISSION

FROM: WILLIAM A SCHWAB, COUNTY PLANNING COORDINATOR

SUBJECT: 3M ENVIRONMENTAL IMPACT STATEMENT

DATE: MARCH 23, 1976

Attached is the detailed Staff review of the 3M Research Center Environmental Impact Statement. I hope the Staff review can be utilized to discuss the issues and prepare a Planning Commission response which can be forwarded to the City of Oakdale for its March 29 public hearing. This is an excellent opportunity to constructively point out problems and opportunities with the expected 3M developments and to assist the local communities in their reviews.

Generally, the Staff review mentions nine (9) critical issues which deserve more detailed study.

1. There will be a tremendous impact on the two communities in which the 3M Laboratory will be situated. Both Oakdale and Lake Elmo, as well as the State and County will be faced with millions of dollars of road construction and traffic improvement projects around the 3M site. Water use, sewage discharge and solid waste generation will be premature and at least doubled compared to what residential development would be on this site. Public services such as police and fire protection will be necessary for the 3M site and will have to be provided by these two communities.

   Conversely, these two communities will have the assurance of a well planned, staged project from which they can plan their services and costs. In addition, the 3M Lab will contribute an additional, combined 2.9 million dollars annually by 1995 to the property taxes of these communities.

   The questions these two communities must answer, based on the 3M E.I.S., are:

-Is the 3M Laboratory a distinct economic and social benefit to the community? Yes or No.

-Do we or will we have sufficient plans, programs, and operating procedures at the City level to handle this type of project and its related growth?

-Are we aware of the changes in land use that the 3M Labs could create? Are these beneficial to the community?

-Can the community afford this premature growth?

2. The 3M residential growth throughout the County will generally be within the Metropolitan Council's population projections. However, the preferred living areas of these 30,000 new 3M residents may be somewhat contrary to local and County plans in that rural areas will be highly impacted by residential development. Most rural communities do not have the services, staff, facilities, or planning to handle such growth. To protect each rural community's right to a rural atmosphere will require coordinated inter-community communication and planning.

3. The 3M Statement does not mention or project the costs of constructing new public facilities. In many communities, these costs will be over $6,500 per new residence.

4. The Staff estimates that public operating costs by 1995 will be much higher than current revenues, especially in developing communities such as Lake Elmo, Grant, West Lakeland, the 5 Community Area, Mahtomedi Area, and some communities along the St Croix. This is because these communities presently have very few public facilities and services, but will be forced to "gear-up" very rapidly. What this implies is much higher community taxes in these areas, unless each community can develop methods of retaining their present low density and rural type services.

5. From the cost of service studies it is apparent that the cost of new housing or at least the cost of operating a house will be expensive, especially in the developing areas. This high cost of housing will force low to moderate income families to live in higher density suburban areas such as portions of Oakdale, Western Lake Elmo, Maplewood, Eastern St Paul, Cottage Grove, and Woodbury.

6. The 3M Statement does not deal with the impact on County facilities and services. The cost of social services, libraries, parks, and roads

as well as general County operations will increase radically. This is especially true if the smaller, undeveloped communities continue to utilize or increase their reliance on County services.

7. District 834 School enrollment costs will rise significantly. Up to $~~74~~14,000,000 in new facilities will be necessary while western County school districts and Ramsey County Districts will be far below capacity.

8. Employment will increase significantly. Jobs with better wage schedules will be available and more money in existing County businesses will increase.

9. The 3M labs and its residential growth will be staged and somewhat more manageable to the local communities if they are prepared for it.

The challenge to the local communities and school districts, as well as the County is great, the growth has just barely begun. We all will have to begin to communicate and cooperate more fully and we will have to designate a "leadership" agency or organization. Communities throughout the County will find it necessary to do land use, capital improvement, and budgeting plans. Finally, through discussion, cooperation, and perhaps legislation, the roles of the County and its Planning Department to assist and coordinate with local communities must be strengthened.

dkr

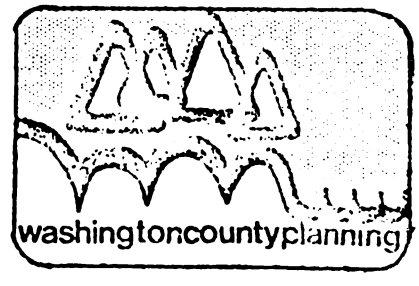
study report:

3m eis review

A. PRIMARY IMPACTS SURROUNDING SITE

B. SECONDARY IMPACTS THROUGHOUT WASHINGTON COUNTY

C. SCHOOL COSTS



primary impacts

TO: WASHINGTON COUNTY PLANNING COMMISSION

FROM: WASHINGTON COUNTY PLANNING DEPARTMENT

RE: ENVIRONMENTAL IMPACT STATEMENT REVIEW FOR THE 3M RESEARCH CENTER IN OAKDALE/ LAKE ELMO

DATE: MARCH 12, 1976

This is a review of the proposed 3M Research Center primary and secondary impacts as presented in the 3M Environmental Impact Statement coordinated by the City of Oakdale. On March 29, 1976 Oakdale, with the cooperation of Lake Elmo, will hold public hearings to gather responses from the local communities and citizens to the 3M project.

This Environmental Impact Statement and its review should provide the impetus for the County Planning Commission to study and discuss the issues as they relate to the 1976 Washington County Comprehensive Land Use Plan and Policies. By the 29th of March, the Planning Commission should endorse a response which can be forwarded to the City of Oakdale and other affected communities. One of the goals of County Planning has always been to assist the local communities and the County Commissioners, by constructively pointing out potential problems and opportunities and by suggesting methods or means of preparing for the future. This is an excellent opportunity.

THE PROPOSED PROJECT:

The 3M Company proposes to build a 14,000,000 square foot research laboratory on 563 acres in the cities of Oakdale and Lake Elmo (377 acres in Oakdale and 186 acres in Lake Elmo) primarily on the northeast corner of the intersection of Interstated 694 and State Highway 212. The site will include paved parking space for 9,000 cars. 3M hopes to generate no more than 5,400 vehicles/hour by car and van pooling and staging working hours.

By 1995, 45% of all 3M employees will live in Washington County. The 3M Oakdale research labs will employ 18,000 new employees. This project will add 36,000 new residents to Washington County (60,000 throughout the Metropolitan Area) and an additional 11,600 households to Washington County. The project would also generate an additional 5,000 jobs outside of 3M.

Peak sewage flow from the project would be over 9 m.g./d. by 1995 and peak water use would be between 8 and 10 million gallons per day. The proposed project would necessitate the extension of the W.O.N.E. sewer system temporarily and a more permanent sewer extension of the Cottage Grove/Woodbury lines and treatment facility.

Solid waste from all Metropolitan Area 3M facilities could be burned for heat production at the 3M Oakdale site. The solid waste not burnable combined with the remains from the central heating system would be over 10,000 tons annually by 1995.

Electricity and an on-site coal/oil central heating system will be the main modes of energy consumption on the site. Gas has been considered too scarce and expensive for such use.

STAFF COMMENTS ON THE PRIMARY IMPACTS OF THE PROPOSED PROJECT:

The comments made here are directed to the primary impact section of the Environmental Impact Statement - that portion of the statement that is directly related to the proposed development and construction activities within the site.

I Roads:

To get into the site, at least 3 entrances along Highway 212 will be needed. The first such entrance will be near County Road 80. If highway congestion continues to occur because of the 3M entrances, off ramps, and overpasses may be necessary. Who should pay for this? 3M suggests that a $3 million interchange at 40th - 45th Street on I-694 may alleviate the traffic congestion on 212, (page 201). Such an interchange, benefits 3M only. Who should pay for this? Highway 212 is limited to a capacity of 5,400 vehicles/hour. Yet, by 1980-85, the 3M site will have up to 9,000 cars on-site while 3M tries to attain its goal of car pooling and transit (2 people/car), (page 208). Will this 9,000 car impact force a premature ramping or interchange problem? Can adjacent commercial uses, if any appear, have adequate traffic circulation on 212 also?

The re-routing of 3M traffic away from residential streets in the Tri-Lakes Area may necessitate new local road building projects. It appears that this type of residential road construction would be caused by 3M and should, at least partially, be considered a part of the "internal circulation costs" incurred by 3M.

II Water:

Peak water use in 1995 will be 10.24 m.g./d. without company recycling and 8.06 m.g./d. with recycling. If Lake Elmo supplies the water, a Bonestroo report states that a well field and treatment facility capable of pumping 50 m.g./d. will have to be built with 14 m.g. of storage. Who will benefit most from this - 3M or the residents?

The residential development that could have existed on the 3M Site would have drawn 1 to 3 m.g./d. Therefore, the water use will be at least doubled by 3M. (page 127)

The pumping of well water by 3M from Lake Elmo will "result in an increase in pumping costs for the wells or a decrease in well capacity". Does this mean that if wells in the Tri-Lakes Area begin to fail, a central water system may be needed prematurely?

The 3M E.I.S. states that water pumped from the acquifer may increase low water or drought conditions on the Tri Lakes. What will happen to Eagle Point Lake and Lake Elmo? Would this affect the watershed plans?

On the other hand, 3M suggests that it would be of economic benefit to Oakdale, St Paul, and Lake Elmo water systems to have such a larger user on-line first because 3M would assist the communities with front end costs.

St Paul Water System may be a source of treated water. However, since the Level B Study has indicated that St Paul may have to augment its water reserves with either Mississippi River Water or St Croix River Water, it appears that a majority of the water for 3M may have to come from combined sources of St Paul, Oakdale, and Lake Elmo.

III Surface Water Discharge:

Page 55. Even if the 3M on-site settling ponds are used properly, and a minimum of run-off does occur, the quality of the run-off will be very poor. Eventually, some type of chemical or physical treatment of run-off may have to occur before the water leaves the 3M site. A majority of the run-off enters the Eagle Point Lake Watershed. Eagle Point Lake is eutrophic. What will the addition of added salts, nutrients, and oils do to the character of the lake and the wildlife surrounding it? How would the Watershed plan to store water in the lake be effected by this poor quality water?

IV Sanitary Sewers (page 159):

Sewage flow from the site will be 4.88 m.g./d. by 1995 or 5 times what a residential development would demand. It appears that 3M prefers a temporary sewage system which allows all sewage to flow to the north end of Eagle Point Lake and the entire 3M site as well as open up additional land along Stillwater Road. How can we insure that wastes do not drain into Eagle Point Lake either through mechanical failure or leakage? What assurance is there that a pumping station would not puncture the soil lining of Eagle Point Lake? If the 3M alternative sewage plan is adopted, would this open up too much additional land along County 6 prematurely? What will be placed in this sewer -- can 3M guarantee that toxic substances from the labs will not enter the treatment plant or that they will be treated on the site prior to entering the public sanitary sewer?

V Solid Wastes (page 168):

Solid waste from all Metropolitan Area 3M facilities could be burned for heat production at the 3M Oakdale Site. The solid waste which is not burnable combined with the remains from the central heating system would be over 10,000 tons annually by 1995. This is over 3 times the amount of solid waste produced by a residential development of comparable size. A joint Metro/County 2,000 acre foot solid waste disposal site has been talked of for many years. What would be the effect of 3M solid waste on the new disposal site? Should such a disposal site be located in proximity to the 3M project to eliminate or reduce additional hauling costs, traffic, and road wear?

VI Property Tax (page 287):

Projected 3M-Oakdale Research Lab Property Tax Revenue	Oakdale	School District 622	Lake Elmo	School District 834
1980:	228,900	640,800	23,600	102,100
1985:	477,200	1,336,100	343,100	1,486,400
1990:	1,252,900	3,508,200	485,900	2,105,700
1995:	2,377,200	6,656,100	576,800	2,499,500

The Environmental Impact Statement projects city maintenance and operating costs of services and facilities in and around the 3M Oakdale Center not to exceed 20% of the tax revenue. However, some projections are unclear including what type of fire and police protection will be necessary; how prematurely the cities will have to provide water and sewer to the area and what the expense of this will be; and what type of expenditures would be necessary to upgrade the road system with new turning lanes, interchanges, and residential roadway traffic deterrents.

In addition, it is ironic that District 622 should receive the bulk of the research lab tax revenues (used to reduce mill rates) when at present they have a surplus of classrooms and expect a surplus for the foreseeable future. Yet, Stillwater, District 834 is financially strapped; the larger amounts of tax relief will come after the major influx of school aged children has required capital improvements and new facilities.

VII Fire Protection (page 265):

3M suggests that fire protection either be internal or a contractural agreement be made with Lake Elmo so that 3M would purchase the fire protection equipment and Lake Elmo provide the operation and protection. Such an agreement may be premature in that Lake Elmo may have to establish a fire department too early simply to serve 3M. It is unclear where reserve water for fire fighting will come from.

VIII Compliance with Local Plans (page 292):

The 3M proposals are currently inconsistent with the Comprehensive Plan and Oakdale Zoning, and will require a rezoning and plan amendment.

The 3M proposals were placed on the current Lake Elmo City Plan as of 9/16/75. However, a new plan is currently in the works.

secondary impacts

STAFF COMMENTS ON SECONDARY IMPACTS:

The comments made here are directed to the secondary impact section of the Environmental Impact Statement - that portions of the statement that discusses indirect impacts such as housing demand, school enrollment, and general government costs throughout the eastern portion of the Metropolitan Area because of the proposed project.

Because of the scope and magnitude of the 3M Oakdale Statement, the Planning Staff has broken the secondary impacts section into impacts and comments on each group of local governments, as presented in the Environmental Impact Statement.

These groups or regions of growth within the County generally have similar growth and density characteristics. They are shown on the following map (page) and include:

1. Oakdale - Landfall
2. Central Washington County
3. The Stillwater Area
4. The St Croix River Area
5. South Washington County
6. The Mahtomedi - 5 Community Area
7. North Washington County
8. Denmark Township

Within each of these regions, the Planning Staff projected the amount and density of new growth derived from the 3M project. Using one of the only available public cost studies, Public Service Costs and Development, 1975, By the Wisconsin State Planning Agency, the Staff identified density patterns within each region including:

1. Suburban; densities of around 4 dwelling units per acre, paved streets, full service sewer and water, storm drainage systems, solid waste disposal systems, good schools and curriculum, neighborhood parks, libraries, central police and fire, and central government building with full staff.

2. Exurban; densities of 2-3 acres per lot, narrow blacktop or gravel road, on-site septic system and wells, no storm sewers, regular solid waste disposal or collections, good schools and curriculum, few neighborhood parks usually 10 acres or less, small libraries and book mobiles, central police and fire, small central government town hall with very few full time staff, use of consultants is common.

3. Outlying, free standing areas; densities in established communities of 3 houses per acre or less, blacktopped and curbed roads, public sewer and water, some storm sewers, good schools, regular solid waste collection, play ground and neighborhood parks, central libraries, police and fire, limited staff at central government center.

4. Rural; 3 to 5 acre lots and farms, use existing County paved and township gravel roads, on-site sewer and water, no storm sewers, contractor private hauling of solid waste, good schools but require expensive bus transportation, no local parks, book mobiles and small county branch libraries, County police, village contract fire service, minimal central government - town hall with few part time staff.

See Page 14, which illustrates these projected densities of 3M residents by 1995.

The projections of where 3M Oakdale employees will live is perhaps the most critical statistic generated in the entire statement. Living patterns for the new employees are based in part on the residential preferences of existing 3M employees. While this is probably the best means currently available to estimate future residential patterns, it does have some problems:

1. It is difficult to base residential housing preferences for new employees on the preferences or biases of the existing employees. These current employee preferences may be based upon inexpensive land, single family low densities, and desire for rural atmosphere. All of these factors could change drastically with any development in Washington County and may force employees (especially well paid employees) to seek more remote locations in the northeast or southeast portions of the County. St Croix County could also see even more growth than presently projected.

2. The lower to moderate income employees may find that the least expensive area to live is in a residential development near to or adjacent to the site. In effect, the wage structure could stratify the types of employees and the social structure of the County.

3. All growth projections, including County, Metro, State, and 3M cannot predict the cost of commuting. However, both the Metropolitan Council and the Washington County Transportation Policies speak of no new mass rail transit west of the I-694 - County 80 interchange and only limited bus service east of I-694 to the St Croix River and south to the Mississippi River. The low density plans of the communities and the Metro Council severely limit the use of any mode of transportation except that most expensive commuting machine, the car. The 3M Company may be able to nullify such expense through van or car pooling. But, is that the best solution for the general public and local communities? Are commuter subsidies really an inducement to move farther from the work center?

The Planning Staff has Iso prepared a cumulative statistics sheet of projections taken from the 3M Environmental Impact Statement. See Page 13 . Of particular importance on this page is the "revenue per residences." This is the tax revenue that new 3M residences in each community will generate.

On page 15 , the far right column indicates the County Planning Staff's best estimate of annual operating expenses by the community based on the influx of new 3M residences and the anticipated densities they will generate.

In general, it is easy to see that those annual operating expenses for 3M residences will be more than the tax revenue generated by them. This is particularly true in the communities which will develop immediately from rural into exurban or suburban areas. The new services necessary will simply over-burden the existing local governmental operating structure.

STAFF COMMENTS -- OAKDALE-LANDFALL (See Attached Chart and Map):

This region is composed of the cities of Oakdale and Landfall. The total Metro forecast for new housing from 1974-1995 is 7,450 new dwelling units. Of this, 1990 new residences will be derived from the new 3M project.

Both cities are within the urban service area and are prepared for higher density urban growth. In the future, based on commuter costs, more growth than presently projected may occur in Oakdale. The 3M E.I.S. does not include the costs of new facilities necessary to continue the growth and operations of these communities.

The staff estimates* that City road construction costs to serve the 1,900 new 3M residences in this second tier suburban area will be over 6.5 million dollars and city operating costs on this road system will exceed 94,500 annually.

City utilities, including water, sanitary and storm sewer, and solid waste collection for the new 3M residences could be as high as 5.9 million for new construction and 121,400 for annual city operating expenses.

City protection services including police and fire could exceed 230,000 dollars for new equipment and materials and over 256,000 dollars annually for operating expenses for the new 3M residences.

Park and Recreation construction costs could exceed $173,000 and annual operating expenses for the 3M residences would then be over $59,000.

General government construction costs in these cities would exceed $113,430 and general city operating costs for the 3M residences in Oakdale-Landfall could exceed 140,000 dollars annually.

Because the 3M salary schedule and commuting subsidies, the Oakdale-Landfall area may well become one of the new 3M lower and moderate income residence areas. Such low to moderate income employees generally do not or cannot buy or construct expensive housing capable of providing most of the taxes necessary to support public services. Basically, what this implies is low to moderate income housing of moderate to high densities such as condominiums, townhouses, duplexes, apartments, and highrises. Generally, this is consistent with the Oakdale City Plans. Yet, Oakdale will also have typical suburban growing pains of added roadway and protection services and governmental operating costs, simply because of 3M and the low to moderate income residences. Annual operating costs in Oakdale for new 3M residences alone could exceed $290/residence, one of the highest costs in the County.

Oakdale's population of 32,500 by year 2000 will need more County services, especially social, library, and road systems and may necessitate another County service center somewhere in Oakdale, Lake Elmo, or Woodbury.

STAFF COMMENTS -- CENTRAL WASHINGTON COUNTY:

Central Washington County, including Grant Township and the City of Lake Elmo, is projected to have an additional 6,000 dwelling units from 1974 to 1995. Of this total, 900 new residences will be derived from the new 3M project.

*Utilizing 1974 dollars from "Public Service Costs and Development" 1975 Wisconsin State Planning Office

About ½ of Lake Elmo is within the urban service area of the Metro Development Framework. The City of Lake Elmo Comprehensive Plan proposes to extend this service area to include up to 75% of the community, but at very low urban density of 2 units or less per acre. The costs of urban services in low density areas rise significantly.

Mainly because the Lake Elmo plan projects that the community will grow directly from a rural area into a suburban city, the City construction costs per residence will be the highest in the County at over 8,000/new 3M residence. Again, the 3M E.I.S. and the 3M employee housing preferences illustrate that Lake Elmo will be similar to Oakdale in type of 3M employee who resides in the community - namely, a larger percentage of the low to moderate income employees. It must be assumed from the Lake Elmo Comprehensive Plan, that the majority of this type of growth will occur on relatively inexpensive, single family residences in and around the 3M Laboratory - similar to the housing north of 3M center and the apartments to the southwest of the 3M center. The Lake Elmo plan is not prepared, at this time, to accept high density apartments, townhouse, condominiums, or other multi-family residences. Because Lake Elmo is not specifically planning for multi-family residences, it can be assumed that the existing high quality housing stock will see taxes rise substantially to meet the deficits incurred in the construction of low to moderate income single-family residences with densities of 2 units per acre or less.

Lake Elmo will also experience very high annual operating costs per 3M residence - the third highest in the County. This can be explained by the tremendous influx of people and the relatively low level of services and facilities available presently. The Lake Elmo City Comprehensive Plan does not clarify the capital improvements funding program or priorities nor does it itemize a community facilities plan.

While the 3M plan projects commercial uses adjacent to the south edge of the project, the Lake Elmo Plan does not project such uses. The Lake Elmo plan also does not recognize County 80 as anything more than a residential street.

To a large degree, how Lake Elmo controls its growth, manages its financial resources, and administers its services will effect the remainder of the central and southwestern portions of the County.

Grant Township will experience additional "exurban" growth - with a net density of 2½ acres/residential unit. Grant Township will not provide sanitary sewer, but may eventually find that if density plans are not decreased, centran urban water may be necessary in some areas. (Indian Hills Subdivision is a good example.) Because of the cost of urban services, varying slopes and soils, as well as perched water tables, the Township is considering a decrease in density to 5 to 10 acres per dwelling unit. More than any other township, (with the possible exception of Stillwater Township), a study of eventual level of services and a capital improvement program will be necessary to control the cost of growth. Even so, it is likely that Grant Township may become "exurban" in nature and may become the most expensive township to operate and live in, based on the 3M Impact Statement.

STAFF COMMENTS -- STILLWATER-STILLWATER TOWNSHIP-OAK PARK HEIGHTS:

Within the Stillwater area, the Metropolitan Council forecast for 1995 forecasts over 7,600 households. Of this, 2,890 new residences will be derived from the new 3M project. 3M projects an additional 1,000 housing units in this area beyond the Metropolitan forecasts because of the 3M project.

The Cities of Stillwater and Oak Park Heights are considered one outlying, free-standing community with sustained growth. Because this area does not provide all of the services found in an inner core community, nor does it cost as much per residence to operate, city construction costs for new 3M residences within the cities will be relatively low - around 6,500/residence. The operating costs also will be comparatively low - $209/new 3M residence. If the 3M residence preferences estimates are correct, the city must prepare more fully for the influx of people. Comprehensive Growth Plans and the Community Services Programs should be updated to give added direction to the public officials and city administrators. The cities may have to add professional staff such as a full time city engineer and planner. This is especially evident when reviewing the costs of new road and sewer construction in the city and township, over 10 million dollars and 7.9 million dollars respectively.

Because of the lack of home financing in recent years and the growth of F.H.A. housing, much of the 3M previous residence growth in the Stillwater area may have been due to convenient financing through Orrin Thompson's Development rather than community preference. If conventional financing again becomes available, more of the residential growth in the Stillwater area may be in smaller developments in sporadic locations throughout the city and township. To reduce public costs of development, both the City and Township will have to identify growth areas and encourage development within them.

3M estimates that over $300,000 in commercial-industrial support business could be done with Stillwater area companies by 1995. Clearly, if the opportunity exists, present companies may expand and new ones come into this area. It is imperative for this area to retain its few industrially zoned acres for such purposes and to encourage its development.

The Township will experience even more sporadic growth than the city, especially around lakes and along the river. Between 800 and 900 units would be built in the rural areas of the township. If both the township and county are really serious about saving those valuable agricultural areas, action will have to be taken now to develop methods of guiding growth to areas other than best farm soils. Existing subdivided or platted areas must be filled in before additional farm soils are subdivided.

The township will realize higher operating costs. By 1995, the Township population will be the sixth highest in the County. A five man town board will probably be essential and full time employees inevitable. While the township has been doing a commendable job of reviewing and planning its finances, the township will have to complete a more detailed plan of its projected community facilities and programs as well as a detailed land use plan.

STAFF COMMENTS -- ST CROIX COMMUNITIES:

This region includes some better prepared small communities and some which are beginning to prepare for growth. It also contains some communities which are apparently oblivious to the stimulated growth, and the costs of such growth.

The 3M Statement combined in this region a group of apples and oranges. There are fully developed communities such as Bayport, partially developed urban areas such as the 4 Community Area along the river, and developing rural areas such as Baytown, West Lakeland, and Afton. The commuter corridor, I-94, may be the major commonality among these communities, putting a major public cost emphasis on access and community road construction and maintenance.

Over 1,200 new 3M residences are projected for this area. The staff estimates that almost 50% of that growth will be in Baytown and West Lakeland Townships and the northern half of Afton. Baytown and Afton appear to recognize the growth problems and opportunities. Because of the low density planning and management in these non-sewered, yet highway impacted communities, the overall operating cost per 3M residence will be comparatively low. However, the construction and operating costs in the developing urban communities and West Lakeland Township will begin to climb as the development occurs.

Afton will be particularly suseptible to the more highly paid 3M employee or the 3M household with husband and wife working. Five acre subdivisions in the rural, commercial agricultural area may be the hardest growth to manage. Some method of preventing or discouraging 5 acre "hobby farms" from occurring on prime agricultural soils must be established. Both in West Lakeland and Afton, the introduction of many more "hobby farms" in the prime soils area will breed financial and social insecurity among that handful of full time farmers remaining in the area.

The 4 Community St Croix River Valley area is in the midst of a Comprehensive Planning Effort. It appears that the majority of new development will be away from the river along or below the bluffline 1 mile west of the river. Such development would also be limited by the lack of sewer and water as well as the desire to remain a rural town center in atmosphere and fiscal capabilities.

Any 3M stimulated "exurban" development similar to past patterns of small lots, paved roads, and limited services with capital development costs of nearly 12 million dollars and annual operating costs of nearly one million dollars per 1,000 dwelling units respectively, is beyond the financial capabilities of these communities. Such development would also disagree strongly with the Metropolitan Council Development Framework Growth Management Plan as well as the County Land Use Plans.

The 3M Statement mentions the need for public planning coordination. The Communities along the river south of I-94 have begun that process and have found many things in common. The communities north of I-94 are more independent, especially centrally located West Lakeland Township, which has no plan, limited zoning or land use control, and little planning communication with adjacent communities. Any growth management planning done by Lake Elmo, Afton, Baytown, and Lakeland, may be in jeopardy if no coordination can be done with West Lakeland Township.

STAFF COMMENTS -- SOUTH WASHINGTON COUNTY:

While South Washington County will experience more 3M residential growth (3,700+) than any other region, it will be the one area within the County capable of managing the growth. This is especially true in Woodbury and Cottage Grove where the city officials and staff have planned for this type of growth for at least fifteen years.

The City plans for these two communities generally concur with both the County Plan and the Metropolitan Council Development Framework. The smaller communities along the Mississippi River have relatively limited growth potential and appear to have more of a challenge in maintaining and upgrading their existing communities.

Suburban extension growth is the 2nd most costly type of development which will be stimulated by the 3M site. The planning staff estimates that public facility construction costs will exceed 9.3 million dollars and annual operating expenditures will be over 1 million dollars per new 1,000 dwelling units, respectively. Roads and utilities alone may surpass 6.2 million dollars per new 1,000 dwelling units.

The South Washington County Suburban growth costs may be prematurely excelerated by outside forces. At present, both Woodbury and Cottage Grove can utilize the existing sanitary sewer network to serve new, adjacent development. However, because of the extreme usage put on the existing sewer network by 3M in Oakdale/Lake Elmo, the City of Lake Elmo may prematurely need the County Road 19 sewer interceptor. To allow Lake Elmo to utilize such an interceptor prematurely, may jeopardize the orderly west to east growth in Woodbury and Cottage Grove and allow suburban growth to prematurely leapfrog east of County 19 into what are considered prime agricultural areas by both cities, the county, and the Metropolitan Council.

Another government construction project which may prematurely stimulate additional growth in these two cities is the upgrading of north-south County Road 80 and County Road 19. Such extensions and upgrading should be tied into the staged growth programs of Woodbury and Cottage Grove.

County services in this most populated area of the County will undoubtedly have to be increased. Washington County should plan for staged extension of roads and libraries, as well as upgrading the facilities at the major County/Regional and County parks in the area. In addition, the 3M growth stimulus will necessitate more County housing and social services in this area. Perhaps now is the time to begin planning of a South Washington County Service Center. Coordination and communication with these communities will be necessary by the County. Such County facilities should be "meshed" in with the Cities' growth programs.

Residential growth within Denmark Township due to 3M will probably have a negligible effect on Township construction and operating costs especially since the township is committed to remaining a rural, low density area.

However, as in other low density areas, the 5 acre metes and bounds "hobby farm" may be the most inappropriate land subdivision. The Township still maintains the most active farming sector in the County. Most farmers in the township want to continue farming without residential interference. The soils are good to prime, for commercial agriculture. These 5 acre parcels should be guided into non agriculturally productive areas - usually woodlots or recreational land along the river.

Governmental facilities may play a large role in the stimulation of development in Denmark Township. County Road Systems should not be upgraded simply because of 3M residential growth. The installation of the County 19 sewer interceptor, if premature, could add to the speculative value of Denmark Township farmland.

STAFF COMMENTS -- MAHTOMEDI AREA (Dellwood, Birchwood, Pine Springs, Mahtomedi, and Willernie):

The five small communities surrounding the southeast shore of White Bear Lake can expect over 13,000 new residents by 1995 about 1,000 of which would be from the 3M site. By 1995 the population in this area will nearly double.

Currently, most of these 5 communities operate on very low city budgets. By doubling the number of residents, the costs of city services will increase much more than double. The Planning Staff estimates that new public construction will be nearly 2 million dollars and operating expenses $100,000 for the 300 new dwelling units.

With increased density and development, the need for more coordinated planning and joint services will become apparent. The communities of Dellwood and Pine Springs have community plans which speak of no sewer at least until 1995. The Metropolitan Council, on the other hand, foresees this area to be within the urban service area - which implies that central sewer will be necessary. While sewer is available in portions of the area, all of the communities will be affected by such a demand for housing and land. Increased densities may occur which would lead to sewering older, established areas of the community.

As mentioned earlier, only Dellwood and Pine Springs have made their future land use plans or intentions available. There will be a need for full time professional coordination of planning and administration among all of these communities, especially as it relates to water, sewer, and road systems. Because there has been little concensus within this area as to what the future goals will be, there has also been very little County facility planning in this area. And, the 3M Impact Statement does not address the impact on County facilities and services based on this area's growth. However, more intensive facility planning on the part of the County is inevitable.

NORTH WASHINGTON COUNTY (Hugo, Forest Lake, Forest Lake Township, New Scandia Township, May Township, and Marine on St Croix):

3M growth in the North Washington County Area will reach 550 residences by 1995. The Planning Staff estimates that about 40% of this growth will occur in Forest Lake City and Township. The public construction cost of Forest Lake Development is estimated at over 2.4 million dollars while the remainder of the region can be developed at less than 1.1 million dollars.

better coordination and a full time administrative staff may be necessary in the Forest Lake area, especially on the shoreland of Forest Lake itself. This residential growth should be planned. A joint comprehensive land use plan should be completed by the township and the city. In addition, the city should be completing a community facilities study to determine the extent to which township citizens can continue to utilize city facilities without overburdening them.

Hugo is the only community which has adopted and administers a current Comprehensive Land Use Plan. This county may only need additional part-time administrative services to carry out their plans. There appears to be a need for public recreational access to the major lakes in the northwest corner of the County. This is especially true along Forest Lake and the smaller lakes in Hugo. Because funding is limited and demand is high, the County may have to provide park facilities in this area.

In Hugo, and the rural townships in this study region, the major pattern of residential growth may continue to be the 5 acre metes and bounds tract. Such development can be detrimental to these communities if indiscriminately placed on existing roads and active, good farming soils. The individual communities and the County must determine the future impacts of such development and provide methods of guiding this potential growth into best suited areas where public costs can be minimized.

Growth along the St Croix River and lakes is inevitable. The communities along these shorelands may experience additional operating costs in this area, especially as it relates to roads.

WASHINGTON COUNTY FACILITIES:

The 3M E.I.S. Statement is not very conclusive when explaining the impact the 3M Research Center, its new residents, and traffic will have on County facilities. In fact, no mention is made of the impact on County agencies, social services, taxes, facilities, and its coordinating role if any.

The cost of upgrading County Road 80 from Cottage Grove to Highway 96 (page 410) has not been discussed at length nor has the impact on the various communities of such a road. The County Highway Engineer should probably speak to these issues.

State Highway 212 including its extension and upgrading east into Stillwater and the re-routing, turn lanes, or ramping necessary for 3M access should also be discussed in detail. By improving the road, will traffic volumes increase drastically?

County Road 14 is proposed to become a minor arterial by 1990. This road would stimulate traffic and development between Oak Park Heights - Bayport and the 3M site.

No mention is made of the County Library System and the potential overburdening of current facilities or construction of new facilities. The Planning Staff estimates that for each new 1,000 dwelling units generated by 3M, the County can expect to provide $80,000 - $100,000 in facilities costs and between $18,000 - $24,000 in annual operating costs. For the 11,600 new 3M residences in Washington County, this would add nearly 1 million dollars for the construction of libraries by 1995 and over 200,000 annually for operating costs.

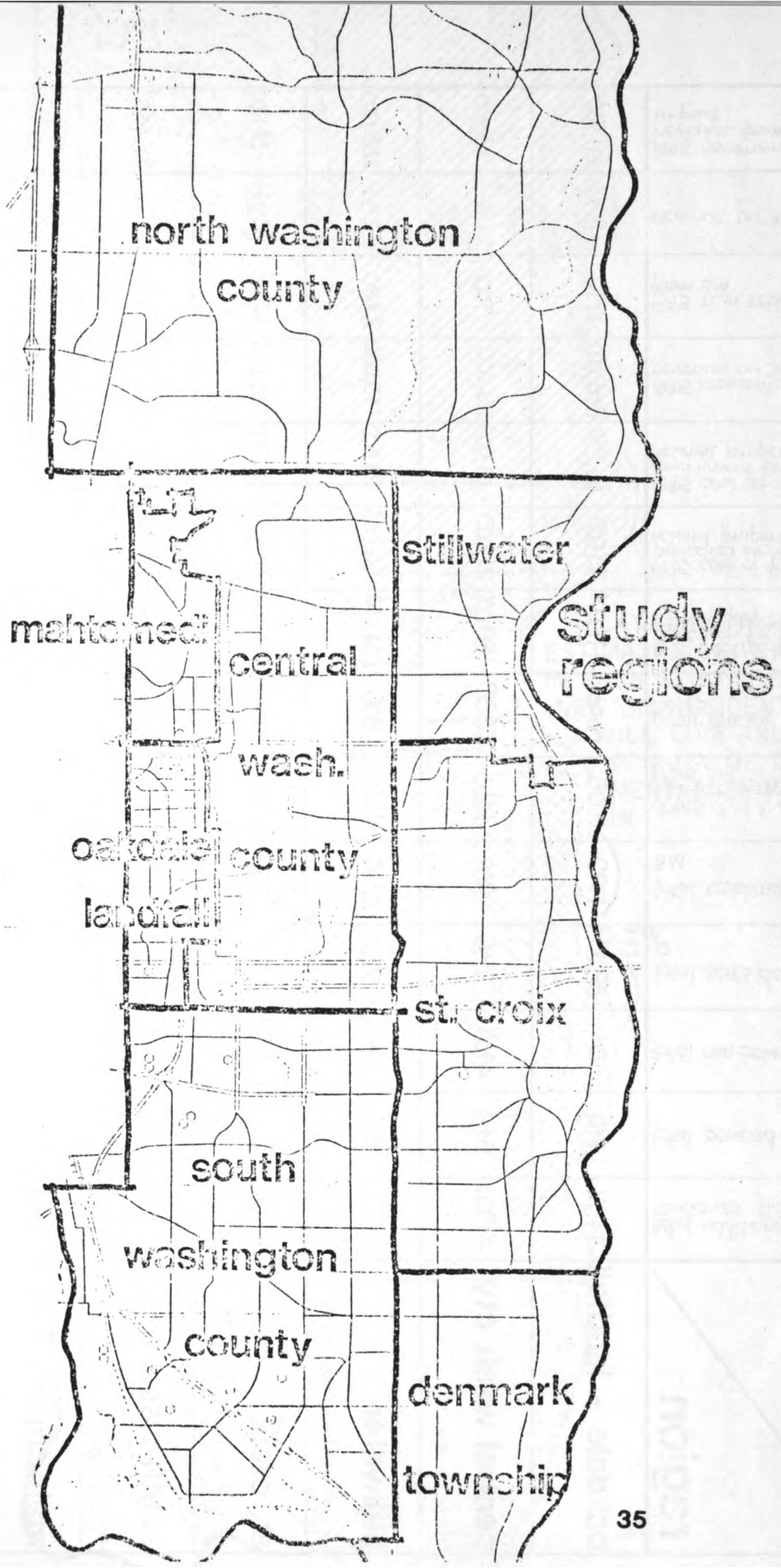
According to the 3M statement, County-wide parklands which currently meet or exceed the County minimum standards would have to be increased by at least 600 acres to serve the new 3M population. The Planning Staff estimates that depending on the type of parkland retained in public ownership, the cost of obtaining such land could range from 1.5 to 3 million dollars. No Planning Staff estimate of operational costs is available.

It has been estimated that the new 3M population will necessitate the addition of 214 hospital beds. No recommendation is given on which, if any, public agency should construct such a structure.

The cost of expanding existing County services to serve the population has not been projected. However, if the existing general government budget of the County is 6.5 million for 103,000 people, the addition of over 30,000 people would surely increase general County operating costs to between 8 and 10 million dollars annually. A clearer explanation of these costs should be given by the County Coordinator and the 3M E.I.S.

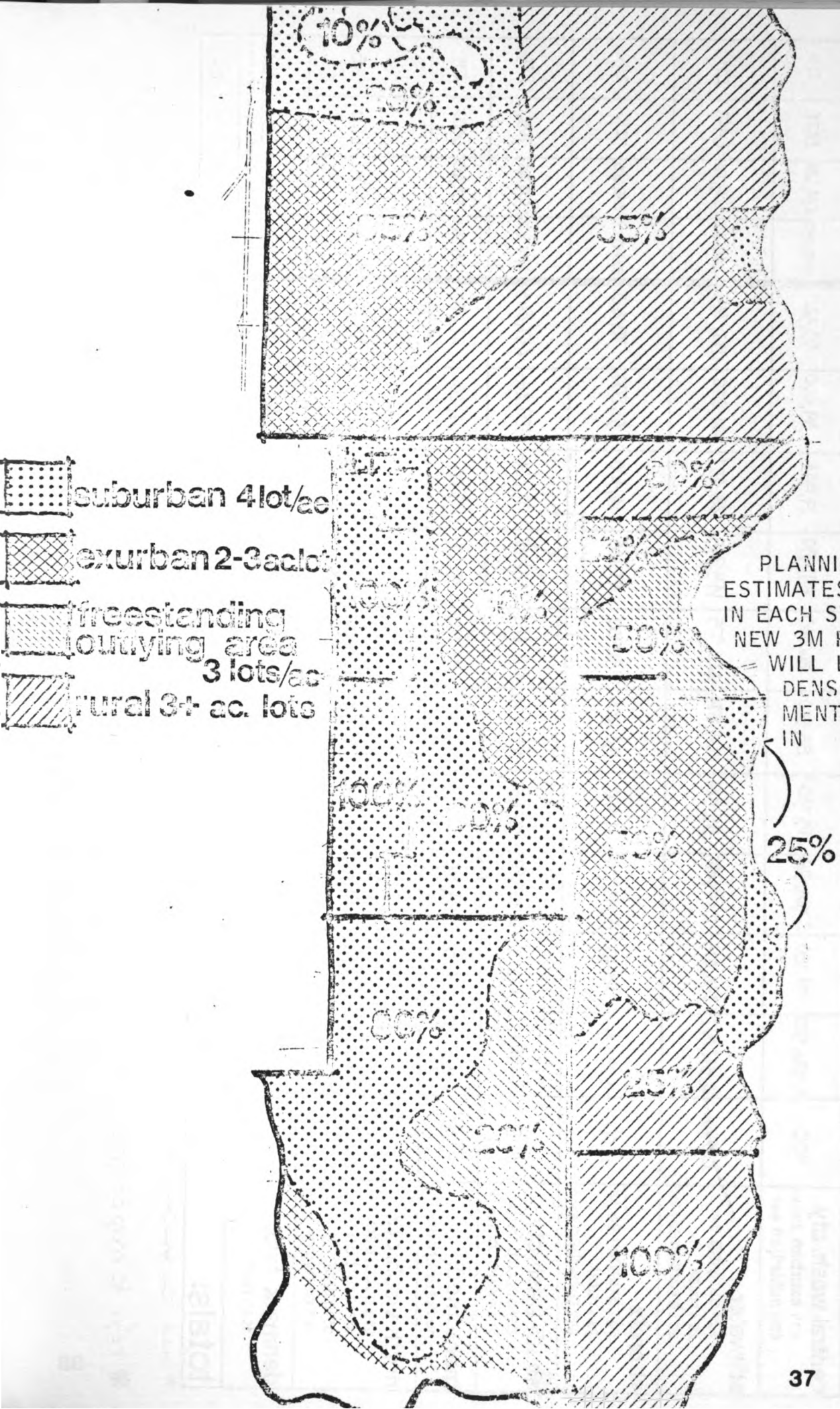
Because of the increased need for community coordination and planning, the role that Washington County can play should be explained thoroughly. The 3M statement does not include such detail. However, it is clear that Washington County and local communities must:

A. Begin to communicate and cooperate more fully - some agency must take a leadership role.
B. Complete community land use plans.
C. Begin planning for local internal financing through capital improvements planning and programming.
D. Determine what the role of Washington County and its Planning Department will be in this growth process.


north washington
county
stillwater
study
regions
central
wash.
county
st. croix
south
washington
county
denmark
township

3m gis estimates

region	total additional residences 1974-1995	total sewered acres	total non-sewered acres	total acres developed	total residences from 3M	acres used by addition of residences from 3M	commercial farm acres	1995 cost of police protection for 3M related property	1995 cost of fire protection for 3M related property	1995 cost of general government for 3M related property	1995 residential tax revenue on 3M houses	1995 new residences from 3M	revenue per residence	1995 commercial tax revenue from 3M impact
oakdale - landfall	7450	1570	-0-	3820	1990	1005	none	171,000	40,500	56,750	834,000	1990	419	291,900
central wash. cty. point, lake elmo	4990	835	4900	7230	900	1460	2880	89,000	21,000	29,500	121,000	900	134	34,800
stillwater stillwater, stillwater twp., oak park heights	4770	995	2450	5080	2890	4020	6800	257,000	56,000	78,500	735,000	2890	254	288,000
st. croix bayport, baytown, west lakeland communities	1990	115	7850	8785	1200	5625	3100	129,000	30,500	42,750	305,000	1200	254	54,900
south wash. cty. woodbury, cottage grove, st. paul park, newport, grey cloud	20,010	4150	500	10,640	3770	2015	11,100	374,000	88,400	124,000	1,142,000	3770	303	412,600
mahtomedi mahtomedi, dellwood, willernie, pine springs, birchwood	2530	495	-0-	1210	300	145	none	29,000	7,000	9,750	63,000	300	210	32,700
north wash. cty. marine, inwa, forest lake, forest lake twp, scandia twp, new scandia twp.	2950	210	10,100	11,305	550	2100	n/a	49,000	11,600	16,250	121,000	550	220	24,000
denmark twp.	140	-0-	700	755	20	105	6200	2,000	500	750	2,000	20	100	-0-


10%
35%
suburban 4lot/ac
exurban 2-3aclot
freestanding outlying area 3 lots/ac
rural 3+ ac. lots
PLANNING STAFF ESTIMATES OF WHERE IN EACH STUDY REGION NEW 3M RESIDENTS WILL LIVE AND IN W DENSITY OF DEVELO MENT THEY WILL LI IN
30%
25%
100%

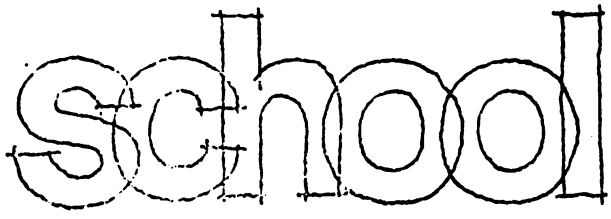
planning staff estimates*

3m induced capital improvement and annual operating costs

region* and where 3M employees will live	1995 new residences from 3M	road construction costs	road maintenance costs	utility construction costs	utility maintenance costs	protective services (police & fire)	corrective services (police & fire)	park and recreation construction costs	park and recreation operating costs	general government operating costs	general government operating costs	community costs & operating expenses			
oakdale-landfall suburban 4ac	1990	6,507,300	93,530	5,934,330	25,870	230,840	256,000	173,150	59,700	113,[illegible]	145,250	2,923,[illegible]	5[illegible],500	6[illegible]7	[illegible]
central wash. cty. 40% exurban 2ac lot 60% suburban 4ac	900	4,576,520	54,180	2,509,560	15,300	85,320	86,940	59,520	19,944	39,060	58,320	[illegible]70,340	254,684	8077	[illegible]
stillwater 50% outlying 3ac 30% rural 20% exurban 2ac lot	2890	10,347,067	132,073	7,948,495	33,524	365,874	223,975	145,945	38,437	104,040	177,735	[illegible]311,42[illegible]	605,744	6543	209
st croix 50% exurban 2ac lot 25% rural 25% suburban 4ac	1200	5,293,500	59,400	3,143,100	17,700	138,600	81,900	47,100	14,400	37,800	70,200	3,660,[illegible]00	243,600	7216	223
south wash. cty. 80% suburban 4ac 20% exurban 2ac lot	3770	14,784,432	193,778	10,865,894	56,550	397,358	425,256	288,782	97,266	189,254	257,863	[illegible]6,525,[illegible]2	1,030,718	7036	273
mahtomedi 100% suburban	300	981,000	14,100	893,000	3900	34,800	38,700	26,100	9000	17,100	21,600	1,952,000	87,300	6506	291
north wash. cty. 20% suburban 35% exurban 35% rural 10% outlying	550	2,073,014	23,994	1,451,538	6616	72,576	35,262	21,075	6293	17,797	31,626	3,635,800	103,791	6610	189
denmark twp. 100% rural	20	26,380	260	49,740	-0-	1400	9100	-0-	-0-	460	1080	80,[illegible]80	2300	4049	115
												county wide totals		county wide avers.	
totals:	11,620	44,589,213	571,315	32,765,657	159,460	1,329,568	1,148,993	761,712	245,040	578,941	761,709	77,905,091	2,886,591	6831	245

* based on "Fiscal Service Costs and Development", Wisconsin State Planning Office 1973.

* refer to map on page.


school

costs

SCHOOL COSTS:

It is clear from the 3M E.I.S. that while school capacity is available to the west of the project site, the area to the east (District 834) does have some over-capacity problems. (See School Chart #1)

3M assumes only .90 to 1.2 school age children/household but by 1995, the ranges have dropped to .75 to 1.04 children/household, while the Metropolitan Council and the State Population projections continue to say that Washington County will have one of the youngest and most rapidly growing populations in the Metropolitan Area with a 2.1 and 1.9 children/family ratio, respectively.

While 3M acknowledges it will place heavy demands on existing school facilities, it does not look at the cost of expanding those facilities to accomodate 3M children nor does 3M suggest who should pay for such an expansion.

It appears that the placement of the 3M facility in any other location nearer the central Twin City Center would better utilize all existing public facilities, but especially schools.

3M suggests reorganizing the school district boundaries to mitigate the problesm. If new schools are required, these new facilities themselves begin to stimulate residential growth around them. It is illogical to build new schools with all of the vacancies just to the west of the project area.

3M housing location projections are based on the current location of 3M employees and their desires. The location of these new employees may be very different from the original employees. Such a different projection may completely overload public facilities in some areas beyond the financial and physical capabilities to respond.

School District 834 may be one of those areas. The Staff estimates* that by 1995, over 14 million dollars will have to be spent if new school facilities must be built to accomodate the 3M population in District 834. By 1995, in access of 4 million dollars annually will be needed for operating costs in this district. (See School Chart #3).

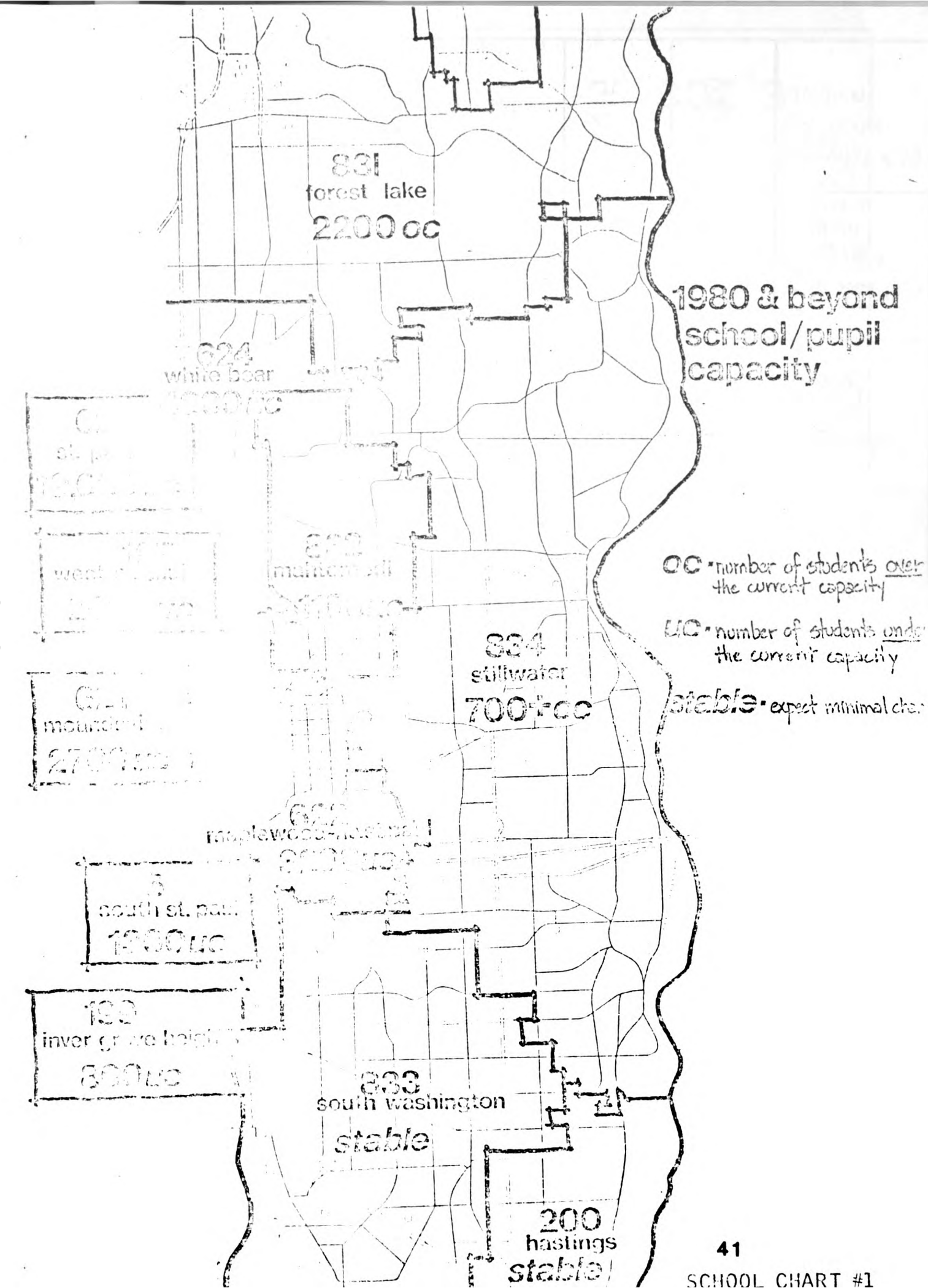
The 3M Environmental Impact Statement suggests that District 834 may receive over 4.6 million dollars in taxes annually from new 3M residences by 1995. (See School Chart #2). This would barely cover operating costs. However, in addition, the district would receive commercial taxes from 3M related business of 1.7 million dollars. District 834 will have to rely on outside state aid for additional revenue necessary to build the school system up.

Some clarification in the documentation of 3M generated commercial-industrial school tax revenues is needed. On Page 285, the statement projects that by 1995, School District 622 (Maplewood) will receive over 6.6 million dollars in property tax revenue from the 3M Laboratory alone. District 834 would receive 2.5 million dollars.

Later, on Page 478, the total (in year 1995?) school tax revenue from the 3M labs and related commercial-industrial development is projected to be only 1.17 million dollars for District 622 and 1.76 million dollars for District 834.

Evidently, the figures on Page 471, 478, and 479 are exclusive of the 3M Lab site school tax revenue.

*Utilizing 1974 dollars from "Public Service Costs and Development" 1975. Wisconsin State Planning Office.



SCHOOL CHART #1

school districts		1995 tax revenue from 3M residences	1995 tax revenue from 3M industrial and commercial	1995 state aid	school district operating expense	estimated 1920 3M school children	estimated 1995 3M school children
hastings	200	292,000	86,000	315,000	381,000	30	340
maplewood north st. paul	622	3,712,000	1,177,700	2,419,000	2,929,000	165	2615
white bear	624	1,994,000	708,600	1,184,000	1,434,000	115	1280
forest lake	831	466,000	92,600	361,000	437,000	30	390
mahtomedi	832	587,000	259,000	416,000	504,000	40	450
south washington	833	2,584,000	933,400	3,279,000	3,970,000	245	3545
stillwater	834	4,688,000	1,761,100	3,954,000	4,788,000	265	4275

SCHOOL CHART #2

planning staff estimates of
3m induced school costs

region (# students in district 834)	1995 new residences from 3M	district 834 construction costs cummulative to 1995	district 834 annual operating costs by 1995	district 834 commercial-industrial tax revenue 1995	district 834 residential tax revenue from 3M residences
oakdale-landfall (0)	1990 (0)	-0-	-0-		
south washington county (60)	900 (540)	1,470,420	402,840		
stillwater (100)	2890 (2890)	7,869,470	2,155,940		
st croix (100)	1200 (1200)	3,267,600	895,200		
south washington (15)	3220 (516lo)	1,541,218	422,236		
lakeland	300 (0)	-0-	-0-		
north washington county (33)	550 (182)	495,586	135,772		
denmark township (0)	20 (0)	-0-	-0-		
totals		14,644,294	4,011,988	1,761,100	4,688,000

Presented to Policy Input Comm
4-6-76 PM by Councilman F. Pitt
City of Lake Elmo

CITY OF LAKE ELMO ENVIRONMENTAL IMPACT STATEMENT REVIEW

DESCRIPTION OF THE ACTION

By way of background, the total 3M Oakdale/Lake Elmo site is 563.84 acres in area, of which 186.63 acres lie within Lake Elmo. The 3M Company is proposing to construct a research/office facility on this total site over a fifteen to twenty year period. By the end of this period, it is anticipated that 18,000 persons will be employed on the site.

Under the anticipated staging of the proposed action, Lake Elmo will most likely be directly affected during each of the five construction stages, thereby necessitating a more or less constant involvement with 3M over the next roughly 20 years. Primary attention throughout this period will, however, shift between building construction and transportation improvements.

If the present 3M growth rate of 8 percent per year is maintained, the initial phase of the Central Utility Plant, which will be located totally within Lake Elmo, will most likely be constructed during the Stage I Building Construction. This plant will be subsequently expanded in proportionate increments during the following construction stages to accommodate the demands generated by additional building construction. The only portion of the actual research facility to be located within Lake Elmo will likely be constructed during Stage II (roughly 1981-1983). Although initial access questions will be confronted during Stages I and II, major planning and implementation for highway upgrading of access and egress points will occur during Stages III and IV, and to a more limited extent, Stage V. In that most access is expected to be provided from T.H. 212 within and/or on the border of Lake Elmo, as well as from proposed County Road 80 (new County Road 13) traffic generation data will be of primary significance and importance to the City in evaluating both the acceptability of the action and the adequacy of the EIS.

PRIMARY IMPACTS

Surface Water Management

The EIS has recognized the surface water runoff problems of the Tri-Lakes area and has attempted to respond to the rigid requirements of the Valley Branch Watershed District. The proposed ponding systems and treatment facilities appear to be a very honest attempt to satisfy the Watershed District. However, Lake Elmo does consider surface water management a high priority community concern, most especially within the Tri-Lakes area, and is presently developing a critically needed drainage plan. Therefore, it should be noted that the proposed holding ponds are located over areas where bedrock is closest to the surface. In this regard, Lake Elmo is concerned that proper protection is made against this groundwater storage seeping through porous bedrock and contaminating shallow wells.

Visual Quality

An extensive evaluation of the site's visibility was conducted. This study showed that much of the 3M site and buildings are and will continue to be visible from Lake Elmo. Of special concern to Lake Elmo will be a high degree of project visibility from the Lake Elmo Regional Park and other high areas in the northwest quadrant of the City. The 175 foot high boiler stacks and overhead electric lines will surely be visible and possibly this is unmitigatible. Peripheral screening with trees and shrubs is proposed and should make a handsome attempt to buffer the 3M developments, especially from close range viewing. However, the City is concerned that maximum building heights be such that they do not compromise the ability of this screening to protect adjacent development, notedly existing residential development.

Land Use

The EIS states that the most significant impact on existing land use features will be the loss of agricultural land and the resulting change in the rural character of the site. As noted on page 100 of the Draft EIS, "The proposed use constitutes a permanent and irretrievable commitment of the land." However, the proposed Lake Elmo Comprehensive Plan assumes urbanization of designated portions of the community within the foreseeable future (prior to 1990) and moreover, specifically accommodates the proposed 3M research facility. Therefore, from a land use point of view, the EIS should state that Lake Elmo has already determined the general acceptability of the 3M facility.

Water Supply

Four possible water systems are mentioned in the EIS (Oakdale, Lake Elmo, St. Paul and wells). All four alternatives will involve as much as 10.24 million gallons of water per day. If the Lake Elmo alternative were pursued, it should be noted that the presently proposed water system for the City could readily supply the 3M site due to its centralized water supply, treatment, etc.

The City does raise a question as to the accuracy of Map 23 on page 133 entitled "Zone of Well influence" and requests that the data presented be verified.

Sanitary Sewer

Although the EIS raises a number of the sewer-related issues which exist relative to Lake Elmo, the statement does not point out that Lake Elmo presently lacks an approved Comprehensive Sewer Plan. The EIS further fails to point out that Lake Elmo is seeking to resolve its sewer-related problems and has gone on record supporting Facilities Plan Alternate 3 as put forth in the Lake Elmo - Tri Lakes Interceptor, Facilities Plan. This alternate would have the capability of meeting 3M's sewer service needs.

Energy

The use of coal as an energy source is proposed to some extent. If used to its maximum, the quantity of coal delivered and stored on-site is substantial. While the tonage of coal is discussed, the height of stored coal is not mentioned. This is of interest due to its potential visibility and 3M's ability to transfer and sprinkle it to avoid fumigative dust. The use of solid waste or coal as an energy source will generate noise and possibly wind born particulates in the handling and transfer. The effects of coal delivery is not discussed other than it would be by railroad. The unloading of an undetermined, but potentially large quantity of coal for the central utility plant will potentially increase rail traffic and generate handling facilities which could have effects which are worthy of further mention.

Roadway System

The EIS states on page 180 that "The number of vehicle trips to the 3M Oakdale/ Lake Elmo site during the peak hour is highly sensitive to the vehicle occupancy and percent peak hour arrival factors." Moreover, it is stated that "substantial changes in travel patterns will be needed to achieve the 1995 projected vehicle occupancy (2 passengers/vehicle) and percent peak hour arrival factors (60%)."

While the two passengers per vehicle goal is considered admirable, several concerns must be noted in this regard. First, the 3M site is located on the current urban/rural fringe of the Metropolitan Area. Although substantial urbanization is expected to occur in areas adjacent to the site over the next 20 years, the acknowledged plans of Lake Elmo, as well as numerous other communities, within the impact area call for the retention in certain portions of the community of a semi-rural, open character. Considering a generally lower density suburban, semi-rural development pattern, the potential likelihood for achieving the projected 2.0 occupancy per vehicle is thereby decreased. Moreover, it has been acknowledged that substantial efforts were required to increase vehicle occupancy from 1.24 to 1.54 between 1970 and 1974. The EIS suggests only that expanded efforts in support of existing programs will be utilized to increase occupancy to the 2.0 figure. The EIS fails to point out the extent of the impact on the transportation system, if vehicle occupancy as well as peak hour arrival goals are not met. Any increase in projected vehicle trips would obviously have a greater negative impact on the proper operation of the transportation system.

In consideration of 3M's impacts on the local roadway system and more specifically, the existing Tri-Lakes residential area, the EIS offers five local roadway alternatives. These alternatives vary in their ability to mitigate any potential negative impacts on the Tri-Lakes area. Although the EIS need not point out a preferred alternative, Lake Elmo favors those alternatives which would maximize protection for the Tri-Lakes area. Furthermore, the City requests that 3M properly provide for the continuance of local traffic along Ideal Avenue through bridging the interface of Ideal Avenue with 3M, if necessary. In addition, in that the EIS indicates that the majority of 3M-related traffic will utilize I-694, the City strongly favors direct access from the freeway to accommodate major ingress and egress from the site. The City thus favors the construction of an interchange at 40th or 45th Street to reduce the traffic impact on the local roadway system.

Air Quality

Several aspects of the proposed 3M development will have significant environmental effects on air quality. Details which are not yet determined will be critical.

Fumigative Dust - As previously mentioned, the use of coal and solid wastes will generate fumigative dust. This source of air pollution is only briefly mentioned (on page 243) and is probably serious enough to cause concern to downwind residential areas.

Vehicle Emissions - Assuming "worst" conditions, but using 2.0 persons/vehicle, vehicle emissions are generally projected to exceed Minnesota standards for hydrocarbons and nitrogen oxide in the immediate area (up to 300 meters) of roadways. Related to specific locations, critical carbon monoxide levels will be exceeded by 1980 at the Ideal Avenue and Highway 212 intersection.

Utility Plant Emissions - Although choices about energy sources cannot be made at this time, some generalizations about boiler stack emissions have been stated. By 1995, sulfur oxide concentrations will probably exceed state standards under the "worst" conditions. If coal and/or solid waste is used, sulfur dioxide violations can also be expected. The only mitigating measures mentioned would be to increase the height of each boiler's stack above the 175 foot height now proposed.

Missing from the EIS and of some importance to area residents, is any discussion on wind patterns in general and the dispersion patterns of air pollutants originating from the 3M Oakdale/Lake Elmo site in particular.

Noise

Three aspects of the project will generate significant levels of noise.

Construction Noise - The residential area abutting the 3M site on its northeast boundary will experience construction noise levels which probably will exceed state standards during each construction period.

Vehicular Noise - Noise levels will be greatly increased due to the increased traffic levels along all major access roads. Conflicts between high noise levels and land uses will occur in Lake Elmo along Highway 212, Ideal and future County Road 80 where residential or open space land uses are planned. Occupancy rates below the 2.0 persons/vehicle will increase noise levels proportionately.

Central Utility Plant Noise - As mentioned under "Energy" and "Air Quality" the Central Utility Plant's future energy sources cannot be precisely determined at this time. A primary dependence on coal will increase the ambient noise level in the areas adjacent to the Utility Plant more than other energy sources. This noise increase will be due to the transportation of coal by trail, unloading, and on-site movements of heavy equipment for handling coal. Trucking of solid wastes will also generate noise in the Utility Plant area, but at a lesser degree. Quantitative evaluation of potential noise levels from the utility plant area were not provided.

Public Health and Safety

The EIS covers Public Health and Safety in a very brief fashion. Although water supply alternatives to meet fire protection needs are discussed under Water Supply, no where are the potential capital expenditure impacts (construction of a water system, purchase of fire equipment, construction of new fire stations, etc.) on Lake Elmo discussed.

Economic Growth

The EIS states on page 276 that no adverse economic impacts are expected to occur. After explaining the benefits to the area relative to 3M's operating expenditures, it should also be noted that some economic conditions will be affected, i.e., those uses for which the site is presently used, notably agriculture. Thus, the increase in operating expenditures by 3M should be offset by the economic loss experienced by existing land uses of the Oakdale/Lake Elmo Site.

Tax Revenues

A 1980 estimated value of $10,000 per acre was employed in the computation of tax revenues, which raises two questions:

- This may be an over-valuation of land value, leading to a over-statement of tax revenues received by Lake Elmo. Although the EIS notes that "value estimates were based on commercial land prices exhibited on similar properties..." (p. 283), it would be interesting to examine the comparables used in arriving at the $10,000 figure. That is, comparison of location (intense urban development, suburban, or rural), site size (ten, 100, or 500 acre parcels), length of present usage of property (short or long term), etc. All of these factors will affect land values.

- What will be the associated impact upon surrounding land uses based upon this $10,000 per acre valuation? Valuation of commercial/industrial land area will not, in theory, directly dictate land prices on, for example, residential or agricultural land uses, since the basis for valuations must be the history of prices paid for parcels with similar land uses. However, valuations (and correspondingly, taxes) on surrounding parcels can increase due to the construction of the 3M development based on increased pressures for associated housing and commercial development. This trend is more likely to occur if surrounding land offers the appropriate zoning, availability of sewer/water connections, good access to 3M, etc. City policies, therefore, will play an important role in the potentially affected valuations of parcels surrounding the 3M development.

Property tax revenues to Lake Elmo will undoubtedly increase substantially due to the 3M development. The amount of this increase, however, is difficult to ascertain for the following reasons:

- The possible inflation of land valuation as explained above;

- The percentage of developed:undeveloped land area in Lake Elmo may affect the average land valuation;

- The actual amount of 3M development occurring in Lake Elmo will affect revenues if full development of the site is not realized.

Costs to Lake Elmo were estimated based upon the highest cost per employee ratio exhibited at the 3M Center. Based on this analysis, the proposed development was considered to be relatively low cost in terms of municipal services. Several factors affect the basis of this comparison of municipal service costs:

- Technological advances may reduce the number of persons necessary to operate the new facility when compared to the 3M Center. Each employee reduction realized will result in an $18 reduction to municipal costs according to the formula employed, while some municipal costs (road improvements, maintenance, police/fire protection, etc.) will remain fixed.

- The level of present services offered by Lake Elmo cannot be equated to pre-3M services offered by Maplewood, since Lake Elmo is offering essentially a non-urban level of municipal services. That is, no comparison has been made of reserve services of the two communities prior to 3M development. Moreover, the EIS does not recognize the cost factors of any additional capital expenditures necessitated by the proposed development, such as public roads, fire fighting equipment, substations, sewer facilities, water supplies, etc. Such costs will naturally have an impact upon the net tax revenues received by Lake Elmo, and should be addressed.

- Costs of servicing the site were assumed to be distributed between Oakdale and Lake Elmo on the basis of tax base contribution, which may not be the case. In fact, it would be quite difficult to assign these costs on a tax base contributing basis due to the potential disparity of costs to be borne by the two communities with respect to actual revenues received.

Table 56 (Oakdale/Lake Elmo Site Cost/Revenue Summary), page 287, shows an interesting trend, notwithstanding the questions to some assumptions raised previously in this review section. Net revenues show a decrease from 98 percent of total revenues in 1980 to 82 percent in 1995 for Lake Elmo, while Oakdale's ratio remains relatively constant at 91 percent. The longer-term implications of this trend should be closely scrutinized, especially in relation to the potential impact of any changes to assumptions raised previously. A graphic example of the cost/revenue summary as represented by Table 56 follows.

SECONDARY IMPACTS

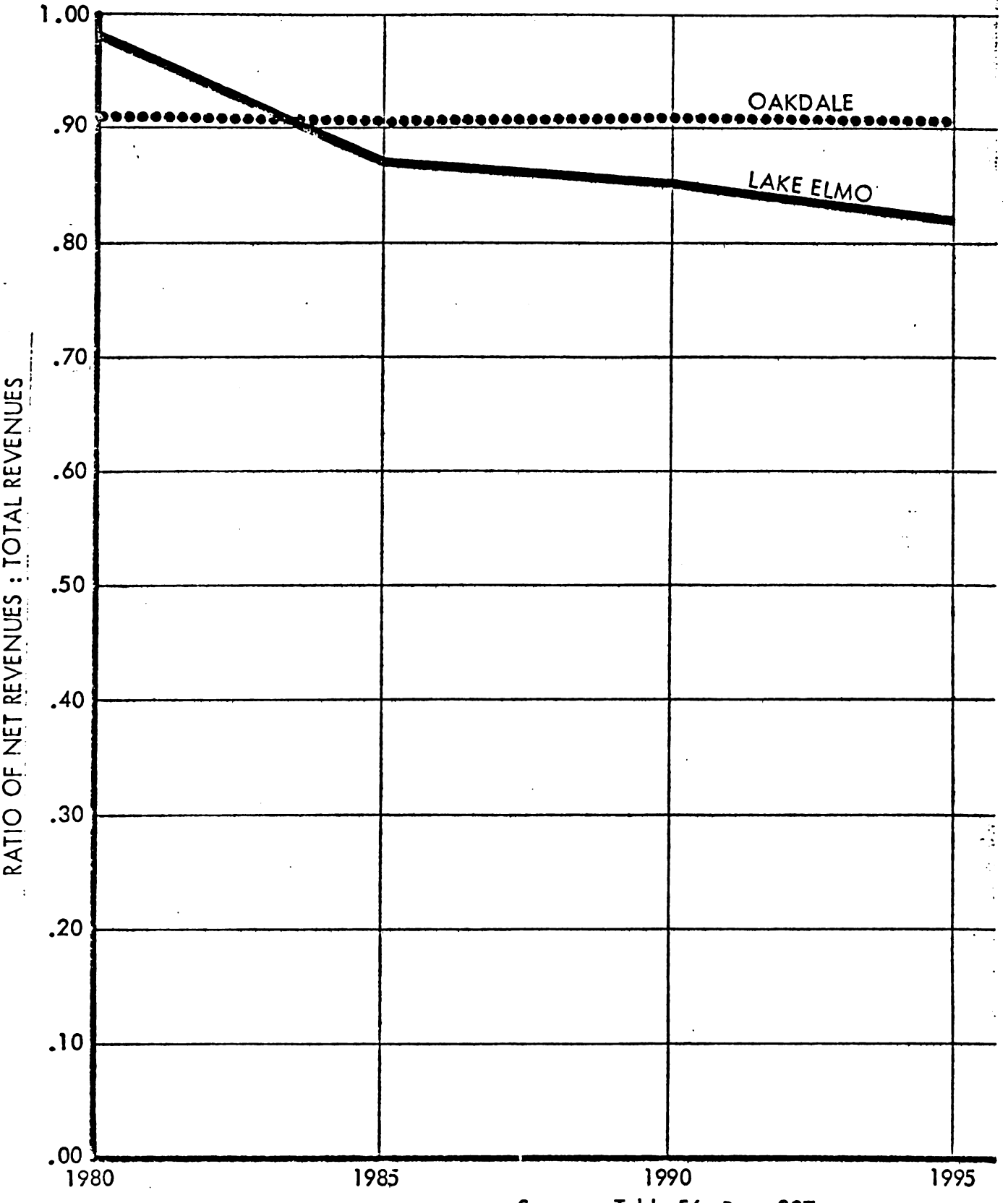
Residential Distribution of 3M Employees

The assumption that the distance to work variable is the only consideration to residential employee distributions is inaccurate. Even if it were accurate, the five mile distance between the 3M Center and the proposed site would presumably shift the focus of the residential distribution pattern five miles east, all other things being equal, directly affecting potential population growth in Lake Elmo. However, the EIS states that distribution trends will be similar to those experienced by the 3M Center.

The EIS states that "the analysis of the Secondary Impacts of the proposed 3M Oakdale/Lake Elmo site development depends almost in its entirety on where the new employees are likely to live." (p. 305) However, given the availability of residential land within Lake Elmo which has been designated by the City for development within the foreseeable future (prior to 1990), the EIS fails to acknowledge the potential of local governmental policies influencing and hence facilitating significant residential construction in Lake Elmo.

An item of particular importance to Lake Elmo and one which will be reflected throughout the secondary impacts section, is the placement of Lake Elmo and Grant Township within the same impact region. The major problem encountered in considering these two communities together is their differing development status under the Metropolitan Council Development Framework. More specifically, Grant Township lies outside the Urban Service Area boundary, while Lake Elmo in part is within the boundary. Therefore, it would be assumed that induced development would not only be greater in Lake Elmo, but of a substantially different character than that occurring in Grant Township.

RATIOS OF NET REVENUES (AFTER CITY EXPENSES) TO
TOTAL PROJECTED 3M TAX REVENUES RECEIVED
(Lake Elmo, Oakdale)



Source: Table 56, Page 287

Population

The EIS indicates that population pressures between 1974 and 1980 in Lake Elmo will be somewhat greater than projected under the Metropolitan Council Development Framework. Therefore, the EIS should address early or initial public facility impacts, notedly capital expenditures, that will have to be borne by Lake Elmo in providing for those additional households projected to locate in the City in the short-range period up to 1980. It should be noted that later sections of the EIS fail to address this potential impact.

Employment

The EIS states, on page 329, that according to the analysis of 3M related employment projections for Region 2, "...the (Metropolitan Council) employment estimates for 1985 and 1990 are inadequate to cover 3M related and existing employment, and leave no excess for other employment growth to occur." This could have a substantial impact on Lake Elmo in view of proposed Dayton-Hudson plans to build a diversified center in the community, possibly within this time period. Even the shift in employment from Region 2 to Region 1 (as illustrated in Table 78) would not completely mitigate this impact.

Land Use

The EIS has included the Lake Elmo Development Guide, preliminary plan, prepared in August, 1974 as illustrative of the City's long-range development plans. While not substantially different from the Development Framework included in the proposed Lake Elmo Comprehensive Plan (December 1975), this earlier plan does vary from current plans in areas immediately adjacent to the 3M site. Specifically, all land areas abutting the site have been designated for single family residential use at a density (with public sewer) of approximately 2 to 4 units per acre. The EIS should note that Lake Elmo has considered this residential land use as appropriate in that the 3M facility has been characterized as a research/office "park", with highly landscaped grounds, thereby screening the "park" from adjacent development. However, the EIS in fact fails to highlight the large amounts of land available for development in Lake Elmo in proximity to the 3M site, and the potential for development pressures to occur within Lake Elmo beyond the levels of the Metropolitan Council Development Framework, at least in the short-range.

Sanitary Sewer

While the EIS notes that population pressures in Lake Elmo in the short-range will exceed Metropolitan Council Development Framework projections, the statement questions whether these pressures will materialize prior to 1980 based upon Metropolitan Council sewer policy. However, the EIS does suggest that the 3M project could result in requiring earlier scheduling of sewer improvements in other "accelerated growth" areas, namely Stillwater and Bayport. The EIS should therefore address in greater detail the potential impacts on Lake Elmo over the short-range period up to 1980.

Solid Waste

Under the "worst" alternative, 58 acre feet per year of land fill will be generated by 1995. This quantity may not be large, but the availability of land fill areas in Oakdale/Lake Elmo or Washington County is not mentioned. This would be helpful to understand the significance of the stated figure. (An acre-foot is a unit of volume one acre in area, about 208 feet square, and one foot deep.)

Roadway System

The EIS states that since only Regions 2 (which includes Lake Elmo), 3 and 4 would experience growth in excess of the Metropolitan Council Development Framework forecasts, the analysis of secondary impacts focuses on these regions. However, the EIS further states that "Growth in Region 2 is expected to be greater than Development Framework forecasts in 1980, but will be in accordance with those forecasts in future years." (p. 414) Therefore, the EIS does not anticipate any roadway network impacts for Region 2. In this regard, the EIS fails to point out that since Region 2 is largely rural, semi-rural in character today, short-range growth pressures could very likely have a significant impact on the area.

Housing

The EIS indicates that "the availability of housing at an affordable price can be the most important determinant that influences residential patterns (p. 425)." This statement, if true, may be in conflict with the assumptions employed in assessing the residential distribution of employees, where 3M Center historical data and a preference poll were used as basis points.

The EIS also reports that 76 percent of all 3M Center families live in single family homes, and assumes that this preference differential will continue. The document goes on to hedge against this assumption, stating that housing costs have been rising faster than incomes, denoting a lessening ability to purchase single family houses and an increasing need for multi-family unit construction. If these assumptions are granted,

it is interesting to note that the document also assumes, in the Tax Revenues Section (Secondary Impacts), that all new families will purchase $44,000 units and qualify for a homestead credit, implying single family unit ownership. The two assumptions are in direct conflict.

The analysis further assumes that a homeowner can afford to purchase a house costing 2.5 times his annual family income. The Tax Revenue Section (Secondary Impacts) shows an average family income for 3M related employees of $16,840, with an affordable home valued (on average) at $44,000. The cost:income ratio in this case is 2.6. Under any case, the assumptions utilized may prove inadequate due to rising costs of other goods and services, etc. which families must purchase, therefore pushing the income multiplier closer to 2.25. If costs of single family housing thus remain the same, a lower percentage of 3M related families will be able to purchase such a unit, forcing up the demand for multi-family units. An increased demand for high density, apartment type units would most definitely have an impact on Lake Elmo's housing situation, especially over the short-range. The EIS, however, fails to note any such impact.

Education

The analysis presented points to the fact that the proposed 3M development will add significantly to enrollment capacity problems already being experienced in the Stillwater District (#834). The most significant statement is shown in Table 108, where the EIS concludes that 3M related and induced enrollments will account for 54 percent of the present capacity of the Stillwater District. The EIS also computes the impact of the 3M development upon the Maplewood District to be significant (3M related and induced school population will constitute 19 percent of present enrollment capacities by 1995); however, the District presently contains under-utilized space and is not expected to be negatively affected.

The mitigation measures suggested for alleviating the overcrowding conditions in the Stillwater District contain only one realistic long term solution: construction of a new high school. Since this solution to a present problem has failed a bond issue referendum on three occasions in as many years, it might be reasonable to expect similar results in the immediate future. However, since the problem of over-crowding has been at least partially eliminated by the four-day week, and since 3M related and induced school population will severely impact the existing school plant capacities, it would seem appropriate that 3M be more directly involved in mitigation measures, if only for improving employer-employee relationships.

Tax Revenues

Municipal residential growth-related tax revenues were computed on assumptions that the average fair market value per unit will be $44,000.00, and all units will receive a homestead tax credit. If the $44,000 unit is realistic, many 3M related families will have a somewhat difficult time affording such a unit. Page 465 notes that a 3M family income will average $16,480 annually, resulting in a ratio of cost of housing to income of 2.61 ($44,000 : $16,840). The standard rule of thumb of not buying a home of a value of more than 2.5 times the annual family income will be a factor here, especially since increasing interest rates, utility costs and maintenance costs will make this 2.5 rule even more difficult to achieve. The following example illustrates this point. Monthly after-tax income of a family of four earning $16,840 annually will be $1,057, while monthly principal and interest payments on a $44,000 unit (assuming 10 percent down, 25 year maturity, 9 percent interest rate) will be $332.23. Assuming a total mill rate of 110 mills, taxes on a $44,000 unit will approximate $1,480, less the maximum homestead credit of $475, netting a direct tax cost of $1,000 or $83.33 per month. Adequate insurance on such a dwelling approximates a cost of $200 annually, or $16.50 monthly. Thus total monthly principal, interest, tax and insurance payments for a $44,000 unit under the assumptions listed above are $432.16, which accounts for 41 percent of net monthly income after taxes (disposable income). The Bureau of Labor Statistics has also estimated monthly expenditures for a family of four on an intermediate budget to be $255 for food, $85 for transportation, $87 for clothing, $76 for personal and medical care, $63 for other family consumption and $50 for other items. The results of the above mentioned expenses for a four member family are exhibited below.

Monthly Disposable Income		$1,057.00
Principal, Interest payments	$332.33	
Tax, Insurance payments	$ 99.83	
Total Direct Housing Costs		$ 432.16
Food Consumption	$255.00	
Transportation	$ 85.00	
Clothing	$ 87.00	
Personal, Medical Care	$ 76.00	
Other Family Consumption	$ 63.00	
Other Items	$ 50.00	
Total Family Consumption		$ 616.00
Net Income remaining for savings, education, entertainment, home maintenance and repairs		$ 8.84

Since the above example shows the average income/average housing value do not relate, it may be assumed that either: (1) more 3M related families will continue to live in/move to areas where existing homes may be somewhat cheaper; (2) the average unit value must be decreased; (3) apartment rental units will be provided. All three alternatives will

reduce the tax revenues experienced by the impact area. Reasons for tax revenue reductions under Options 1 and 2 are self-explanatory, while under Option 3, it is assumed that the average market valuation per unit would be $25,000 (including land costs); at a 43 percent assessed valuation rate, a mill rate of 110 mills, and the 40 percent fiscal disparities limitation, the net tax realized on an apartment unit will approximate $700, compared to the $1,480 (including homestead credit) experienced with an owner-occupied $44,000 unit. Expected residential tax revenues from 3M related families should thus be recomputed.

Municipal costs in the EIS have been related to services only, and do not include capital expenditures. Additionally, a per capita assessment was made for new residents throughout the impact area, irrespective of current levels of municipal service. Although such analysis may be warranted for the entire impact area due to its size, a more detailed analysis of the affects upon Lake Elmo's situation should be undertaken especially with respect to capital expenditure impacts.

The last statement made in this section relevant to mitigation measures (p. 481) is worth repeating here:

> "...the cost of initial provision of infrastructure was not included. This can be quite expensive on a per household basis (up to $10,900 in a low-density rural area).[1] As with police and fire protection -- and even school district transportation costs -- the cost of providing sewers, roads and utilities varies with the density of development and the development pattern. Municipalities can in some ways regulate anticipated costs by preparing land use plans, capital improvement programs and sewer plans."

Mitigation measures, which can only partially alleviate any problems inflicted by the 3M development, must be employed by municipalities affected, according to this statement. 3M should also share in any mitigation measures.

[1] Metropolitan Council Memorandum, "Cost of Providing Public Services to New Residential Development", October 30, 1973.

RECOMMENDATIONS

ACCEPTABILITY OF THE ACTION

While numerous comments and concerns have been raised under the primary impacts section of the preceding review, many of these points can be viewed as points for discussion/resolution in the preparation of any actual development agreement between the City and 3M. Based upon the issue analysis made on the proposed 3M development which indicated its substantial conformity with those community goals and policies applicable to the development (MPR, July 1975), as well as the City's amendment to its 1967 Comprehensive Plan to accommodate 3M and the presently proposed Comprehensive Plan, it can be concluded that the proposed action is acceptable to Lake Elmo.

ADEQUACY OF THE EIS

The EIS as presently drafted exhibits several notable deficiencies, primarily with respect to the secondary impacts section. In this regard, the central assumption on residential distribution has been disputed. Directly related to this problem is the lack of direct reference to Lake Elmo throughout the secondary impacts section. Therefore, the City of Lake Elmo strongly emphasizes the need for the EIS to be expanded to include a more thorough evaluation of the potential impacts on Lake Elmo if 3M were developed.

Metropolitan Transit Commission
330 Metro Square Saint Paul Minnesota 55101 612/227-7343

April 7, 1976

Mr. Dennis S. Zylla
City Administrator
City of Oakdale
1584 Hadley Avenue North
Oakdale, Minnesota 55119

Re: 3M/Oakdale/Lake Elmo Research/Office Park
Draft Environmental Impact Statement
City of Oakdale

Dear Mr. Zylla:

We have reviewed the Draft Environmental Impact Statement for the 3M/Oakdale/Lake Elmo Research/Office Park with regard to transit items. We find that those items relating to transit seem in order and will be compatible with our current project in the area -- the St. Paul East/Central Washington County Route-Ridership Improvement Project. The development of this Research/Office Park will be considered in the recommendations of the route-ridership improvement project.

Sincerely,

Camille D. Andre
Chief Administrator

CDA/JGH/khf

ALBERT H. QUIE
1st District, Minnesota

COMMITTEES:
EDUCATION AND LABOR
STANDARDS OF OFFICIAL CONDUCT

WASHINGTON OFFICE:
2182 Rayburn House Office Building
202-225-2271

Congress of the United States
House of Representatives
Washington, D.C. 20515

COUNTIES:
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OLMSTED

DISTRICT OFFICES:
436 First National Bank Building
Rochester, Minnesota 55901
507-288-2384

520 Federal Building
Fort Snelling
St. Paul, Minnesota 55111
612-725-3680

April 28, 1976

The Honorable Peter Graske
Mayor, City of Oakdale
Chairman, EIS Policy Committee
Oakdale City Hall
Oakdale, Minnesota 55119

Dear Mayor Graske:

I recently received a copy of the Draft Environmental Impact Statement on the proposed 3M Research/Office Park which would be located in Washington County.

The EIS is impressive and appears to be a thorough report of what the area could expect with the gradual development of the 3M complex over the next 20-25 years. The considerable thought and effort that has gone into the planning for this complex by the Oakdale community and other communities involved is evident in the amount of information which has been compiled in the EIS.

It is good to know that this project is being given careful and competent consideration and investigation. It has the potential for improving the local economy by creating many new jobs through anticipated housing and commercial development of the area. The planning that is necessary for this to progress smoothly cannot be underestimated. It is gratifying to know that the public, private business and government are working together to develop this project in a way which will benefit everyone.

With every good wish, I am

Sincerely yours,

ALBERT H. QUIE
Member of Congress

AHQ/spa

JOSEPH E. KARTH
4TH DISTRICT, MINNESOTA

2408 RAYBURN HOUSE OFFICE BUILDING
CAPITOL 5-6631

ROBERT E. HESS
ADMINISTRATIVE ASSISTANT

DISTRICT OFFICE:
ROOM 544
FEDERAL BUILDING AND U.S. COURT HOUSE
316 NORTH ROBERT STREET
SAINT PAUL, MINNESOTA 55101
(612) 725-7869

Congress of the United States
House of Representatives
Washington, D.C. 20515

HOUSE COMMITTEE ON
WAYS AND MEANS

SUBCOMMITTEES:
TRADE
SOCIAL SECURITY
PUBLIC ASSISTANCE

April 30, 1976

The Honorable Peter Graske
Mayor, City of Oakdale
Chairman, EIS Policy Committee
Oakdale City Hall
Oakdale, Minnesota 55119

Dear Mayor Graske:

For several days I have been reviewing the Environmental Impact Statement on the planned 3-M Company facility to be located in your community area.

Frankly, I'm impressed by the exhaustiveness of the study. My only conclusion is that it would be a tragedy for the entire labor market area involved, if for superficial, academic or for other alleged negatives, the project should not be approved.

For whatever it is worth, the proposed complex has my heartiest endorsement.

Sincerely,

Joseph E. Karth
Member of Congress

JEK:pw

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MAY 3 1976
CITY OF OAKDALE

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619 SECOND STREET, HUDSON, WISCONSIN 54016
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Reply
File

May 3, 1976

Mr. Dennis S. Zylla
City Administrator
City of Oakdale
1584 Hadley Avenue North
Oakdale, Minnesota 55119

Dear Mr. Zylla:

The Minnesota-Wisconsin Boundary Area Commission has reviewed the Draft Environmental Impact Statement for the proposed 3M Research/Office Park and offer the following comments for your consideration.

1. The section on alternative sites should be expanded to include some consideration of how the other sites which were looked at in the past may affect the pattern of growth in the Lower St. Croix National Scenic Riverway District.

2. It should be pointed out in the statement that if the project proceeds as planned, local governments will have to maintain their identified planned development patterns. It will require that local units of government will have to develop a strong bond of cooperation not only between themselves but also with the Metropolitan Council and other responsible agencies.

3. In developing the intensive type of planning and growth control coordination, the local units will especially need assistance from the Metropolitan Council in terms of financial and technical aid. Perhaps it would be reasonable to suggest that the Metropolitan Council, in distributing the 1,150,000 dollars of planning grant aid to local units of government, might consider the percentage of projected growth in Washington County with the total projected growth for the Metro Area as the basic criteria for distributing the grant money. Certainly, areas such as Washington County, where low density growth has been encouraged at all levels of government, should be given special consideration for financial assistance in order to maintain the level of planning and enforcement needed to uphold the objectives of land use already decided upon and still accommodate the amount of growth that might be anticipated by projects such as this.

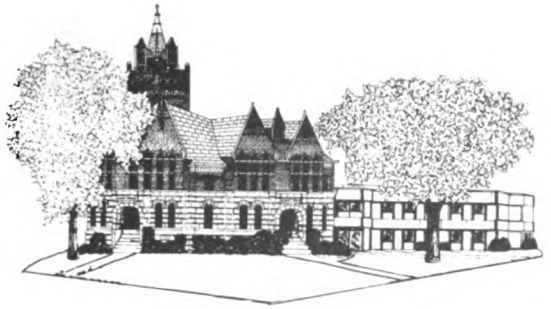
Very truly yours,

Stephen C. Kartak

Stephen C. Kartak, Associate Director

SCK:rmb

RECEIVED
MAY
CITY OF OAKDALE



ST. CROIX COUNTY
WISCONSIN

PLANNING OFFICE 386-5581 Ex. 28
COURTHOUSE HUDSON 54016

Mr. Jerome Leyendecker
City Clerk
City of Oakdale, City Hall
1584 Hadley Ave. N.
St. Paul, MN 55119

Dear Mr. Leyendecker:

There follows a staff review of the 3M Research Center Environmental Impact Statement. The comments included herein are for your consideration in order to formulate recommendations for inclusion in the final impact statement. These recommendations then will be transmitted to the City of Oakdale as the official response of St. Croix County. The environmental impact process gives the county a timely opportunity to affect changes in a major development which will have significant impacts on our county.

The environmental impact statement defines two areas of impact: primary impacts which "are characterized by those effects which could result from the construction and operation of the 3M research/office park. These impacts are directly related to the location, size, configuration, and internal elements of the 3M Oakdale/Lake Elmo site as well as to the 3M Company development plans and proposals for construction." Secondary impacts which are "characterized by those effects which could result from the use of eastern Twin Cities Metropolitan Area by 3M employees and an induced, associated population. These impacts are largely caused by independent, personal decisions by the employees and the associated population. These impacts are dependent for the most part on residential location choices." (EIS, pp. 1-2).

Since the most important impacts for St. Croix County are in the latter category, "secondary impacts," the greatest share of comments will be directed to those impacts.

1. (P. 164) It is stated that "the design and equipment of the Central Utility Plan should be studied to maximize the use of solid waste as an energy source." It is strongly recommended that this be studied, especially the cost/benefits of using solid waste in place of coal or oil. If possible 3M should consider contracts with outside municipalities for additional solid waste to meet is energy needs.

2. (P. 305) It is stated ". . . urban redevelopment in St. Paul and the development of a mass transit system which would serve the eastern portion of the Seven County Metropolitan Area, probably will not occur in time or to a sufficient degree to greatly influence the living pattern trends [of 3M employees] by 1990." Already there exists a proposal for provision of mass transit from Hudson and River Falls to St. Paul. It is very possible that some form of mass transit may be in operation well before 1990. If this is the case, it would work as an added incentive for people to live in outlying areas, ie: St. Croix County.

3. (P. 320) It is stated that " . . . on the average, approximately one job would site households. This factor (0.20) would prevail primarily in the regions where current urban services are not extensive." It is stated (p. 321) that 1,510 additional households will result from the 3M Oakdale/Lake Elmo Facility in Wisconsin. It is further stated "most 3M-related growth would probably occur in Hudson and North Hudson." (P. 350). It must be noted that the local communities will be required to bear the additional public service and school demands created by the additional people without the benefits of 3M tax base. Communities in Wisconsin will receive no direct tax benefit from the 3M facility.

4. (P. 322) it is projected that total additional employment resulting from the 3M Oakdale/Lake Elmo Facility would be 5,200 people in Wisconsin by 1995. This estimate fails to take into account several factors which could raise in actuality the numbers of people moving to Wisconsin: possibility of mass transit serving Hudson and River Falls, improvement of I-94 between Afton and I-694, rising land costs around the 3M site, the relatively high incomes of 3M employees, and the projected expansion of the present 3M Research Center.

5. (P. 402) In addition to Stillwater and Bayport, Hudson will definitely be affected by the growth generated by the 3M project. Although Hudson is presently near capacity for its sewage treatment system if additional capacity is constructed, 3M employees will utilize added capacity more rapidly than would occur under normal growth conditions.

6. If growth occurs at the 3M complex as projected, a considerable strain will be placed on the Hudson school system. This need

for additional physical plant and capital facilities will be borne by the community without any direct tax benefit from 3M. (P. 444). There is failure to suggest any mitigating conditions which might help resolve this coming problem for the Hudson Area.

These comments have not taken into account the benefits that will be received by the new research facilities. There is time to prepare for this anticipated growth. We, the county, cities, villages, and townships, must cooperate to assure that actions of one unit are in harmony with those of the other.

Sincerely yours,

Richard E. Thompson

Richard E. Thompson
St. Croix County Planner

RET/mlt

May 10, 1976

Mr. Dennis S. Zylla, City Administrator
City of Oakdale
1584 Hadley Ave. N.
Oakdale, Minnesota 55119

Mr. Zylla:

We understand that as the responsible agency for the 3M Oakdale-Lake Elmo Site EIS, the city of Oakdale will receive and process comments on the draft EIS. We request that the city send us a copy of the comments, if possible, when these are available.

Our interest centers on the Belwin Outdoor Education Laboratory at Afton, for whom we are studying the impacts of various water management alternatives within the lower portion of the Valley Branch Watershed. The need for relief from flooding in the tri-lakes area, to which the 3M site would contribute runoff, is well known to us. The consequences of structural implementation of the watershed management plan, should sizable, long term flows of unknown quality be routed through the Belwin site on Valley Branch, will be of great concern to our client, hence our request.

We would also invite any questions you may have regarding our interest in the EIS as it affects the Valley Branch Watershed Management Plan.

BRAUER & ASSOCIATES, INC.

Donald G. Brauer, P.E.
President

mt

cc Tom Erickson

BRAUER & ASSOCIATES, INC. ☐ 6440 FLYING CLOUD DRIVE, EDEN PRAIRIE, MINNESOTA 55343 ☐ (612) 941-1660

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OF COMMERCE
SUITE THREE HUNDRED
THE OSBORN BUILDING
SAINT PAUL, MINNESOTA
55102 • PHONE: 222-5561

May 12, 1976

Mayor Peter Graske, Chairman
EIS Policy Input Committee
Oakdale City Hall
1548 Hadley Avenue North
Oakdale, Minnesota 55119

Dear Chairman Graske and Committee Members:

Attached to this letter are the Saint Paul Chamber's comments on the Environmental Quality Council prepared for 3M Company's proposed Oakdale/Lake Elmo development.

We believe that these comments will be a beneficial addition to the record and would hope that they are included in the record for the consideration of those who will make decisions based on it.

Cordially yours,

AMOS MARTIN, CCE
Executive Vice President

ja

Enclosure

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MAY 13 1976
CITY OF OAKDALE

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May 12, 1976

Mayor Peter Graske, Chairman
EIS Policy Input Committee
Oakdale City Hall
1548 Hadley Avenue North
Oakdale, Minnesota 55119

Dear Chairman Graske and Committee Members:

As Executive Vice President of the Saint Paul Area Chamber of Commerce, I wish to address the following comments on behalf of the Chamber to the matter of the proposed 3M Company Oakdale/Lake Elmo development and to the Environmental Impact Statement (EIS) prepared for that proposed development.

The EIS prepared for the 3M Oakdale/Lake Elmo development addresses the negative environmental, social and economic impacts of the proposed development, as law requires it to do. These negative impacts are well-recognized, having been examined in depth by the EIS and in subsequent testimony received by this Committee in public hearing. These impacts are not to be denied, nor should they be ignored. Such knowledge is essential for proper planning of strategies to mitigate those impacts if the determination is made that the project is positive in its net effect and worthy of approval.

We are of the opinion, however, that the positive impacts on the community have not been fully recognized or discussed by the EIS. My comments are directed to a partial fulfillment of that end.

The negative impacts of the proposed development are quite localized and can be quantified relatively easily, but, as is often the case, the positive

impacts occur system-wide and defy accurate measurement. Although not readily quantifiable, we believe that they should at least be noted for the record.

These positive impacts include not only employment for our citizens, but a significant impact on unemployment, as unemployment causes its own secondary problems such as an increase in crime, human suffering and public cost. These benefits have not been adequately discussed. The increased investment and jobs will not only increase property tax revenues in the eastern portion of the metropolitan area, but because of our fiscal disparities law, will increase them throughout the area. They will also generate increased income taxes which will flow back to each municipality through state aids. This positive impact has not, to our knowledge, been examined. The manifold benefits of retaining our highly-trained graduates locally rather than forcing them to seek employment elsewhere have not been adequately investigated or explained. Conversely, the damage that a "no development" decision could do to both our ability to attract new investment and our ability to encourage other local firms to expand locally has not been recognized.

The foregoing is not a criticism of the EIS, as the factors named above are not required by law in such a report. We believe, however, that knowledge of these factors and others like them are necessary to achieve a sound decision based on the best interests of all our citizens.

It is imperative that the decision on this proposal be made with full consideration of all of the factors which go into the high quality of life of which the Twin Cities is so proud. The preservation of rural areas within the metropolitan area is, perhaps, such a factor. The ability of an area to provide jobs for its citizens is certainly a factor.

While we realize that today we place a higher emphasis on recreational amenities than ever before in our history due to our high standard of living and high quality of life, we must recognize that such amenities are made possible entirely by employment opportunities.

The Chamber is concerned about job opportunities for Minnesotans and we think that everyone in the State should be equally concerned. Since the 1973 Legislative Session, the Chamber has been advocating the establishment of an interim commission to study Minnesota's job climate and to develop recommendations for its improvement. This action was based on a 1972 survey conducted by the Chamber's Business Climate Task Force of business attitudes and a study of future job requirements. It showed that we would need to create at least 300,000 new jobs in the next decade. This figure is based on past growth, estimates of the number of students entering the job market, and estimates of the number of women expected to enter the job market. Minnesota did an excellent job of creating 350,000 new jobs in the non-agricultural sector between the years 1962 and 1972. However, it will take a major effort to meet the future need for job opportunities. The Task Force concluded that "only economic growth can provide adequate job opportunities for all Minnesotans."

A recent State Planning Agency staff report shows a need for 107,000 new jobs between 1975-1980; 110,000 new jobs between 1980-1985; and 90,000 new jobs between 1985-1990. This totals to 307,000 new jobs needed in the next 15 years. We are not speaking here of bringing immigrants to Minnesota -- we need these jobs for our own young people and our unemployed.

Achievement of this employment goal will be neither automatic nor easy. We must compete with other states and even countries for the investment dollars which create jobs. To provide the 20,000 or more new jobs needed each

...n will require a multi-billion investment from the private sector, and Minnesota must be very concerned that we receive our share. Discouraging a major investment, which has relatively minimal adverse impacts, would not reflect such a concern for our future.

I have gained rather broad experience in the field of industrial and business development in my 23 years of Chamber work. Among other things, I have been a member of the American Industrial Development Council for 22 years, have twice worked as an officer and staff director of local industrial development foundations, and have been personally involved in location search situations with hundreds of major business and industrial firms. Every metropolitan area in the nation understands the positive social and economic impacts attendant to the introduction of a new business to their community, and most have active programs to encourage such investment. Communities everywhere recognize that employment growth and tax base growth is necessary to support a growing labor force.

Although the introduction of a new industry to an area receives much attention, investment of this type is relatively insignificant in the growth of the employment base of the Twin Cities and most other metropolitan areas. An April, 1973, report of the Metropolitan Council shows that 94.6% of all industrial growth in the Twin Cities metropolitan area came from expansion of existing industry. The future of our employment base lies not from without, but from within, and we had better be very much concerned about how local industry feels about expansion in Minnesota.

From my experience with business executives in this and other communities, I have come to realize that the decisions made by business executives to either expand, remain or locate in a community are based on two distinct factors:

(a) Facts that are known to be true; such as taxes, zoning, utility rates and regulations, governmental regulations and governmental commitment (determination to work cooperatively with the business community in providing job opportunities).

(b) Facts, procedures, restrictions or community and governmental attitudes which business executives believe to be the case.

Whether true or false, these factors affect the decision. Whether the decision to locate, expand or remain in Minnesota is based on fact or belief doesn't really change the outcome. If the decision is to locate elsewhere, Minnesota has lost those potential jobs, taxes and investments, and the cost of the amenities for remaining Minnesotans will reach unreasonable proportions. We simply cannot meet the increasing demands for social services without taxpaying commercial and manufacturing firms and taxpaying citizens gainfully employed.

Creating more government and public service jobs is not the answer, although that is one of the few categories of employment that is increasing in Minnesota. The answer is to provide more private enterprise jobs by taxpaying corporations hiring more employees who also become taxpayers.

This development is especially valuable, in that it would provide the types of private sector jobs which will employ the many thousands of graduates of our trade and professional schools, colleges and graduate schools. In many cases, the Minnesota taxpayer has footed the bill for expensive subsidized education for our young people only to lose them to areas that can provide the type of professional jobs which we cannot. These highly-educated young people represent a tremendous public educational investment which is uniquely productive if fully utilized. Often, the potential of these young people is

either partially wasted or exported. The research center proposed by 3M would allow them the arena for that development; development which would benefit the entire community and would trigger additional development.

A further advantage of the project is that it will provide thousands of construction jobs and will have a multi-million dollar impact on existing businesses, all staged over a 20 to 25 year period, which will help stabilize both of these rather volatile sectors of the economy.

It should be noted from the EIS that the impact of goods and services purchased in Saint Paul at the current 3M Center in Maplewood totalled $29 million from January, 1974, to September, 1974. Purchases from Saint Paul in the proposed Carlton Center are projected at $70.3 million per year by 1995.

The question of a possible Saint Paul downtown location for 3M's research facility has been advanced. From a purely social point of view, a downtown location might be envisioned to have some merits. From the point of view of the advantages to the Company, the desirability of a downtown location begins to fade. Our organization, quite naturally, would be pleased to have the 3M Company locate in Saint Paul or Ramsey County. But, we must respect the fact that economic considerations must be most important in any decision on the location of a facility.

Also important, are physical considerations. We must recognize the fact that Saint Paul does not have available the several hundred acres that a project of this size requires. It has been difficult enough to provide land for the comparatively small expansion by West Publishing Company and other similar expansion proposals in Saint Paul.

It should be noted that sufficient acreage was not available in Saint

[illegible] when the present 3M Center was located in Maplewood some 20 years ago.

If a location is not economically or physically feasible, a company must look or locate elsewhere; and applying that to 3M, we could very well lose this project.

The 3M Company has indicated that the design concessions which must be made to allow development in the downtown would seriously impair the efficient and productive functioning of this facility. Additionally, even the social advantages disappear under scrutiny. Representatives of the Chamber have met with 3M executives to discuss the development as it regards downtown. It has been concluded that downtown simply cannot accommodate a development of the scope proposed by the 3M Company. Present levels of vehicular use have already over-loaded our transportation network and caused air pollution downtown. Even substantially increasing the vehicle occupancy rates, which 3M hopes to achieve at Oakdale/Lake Elmo, would probably not avert these problems. In any proposal of this magnitude, there must be environmental considerations. We believe these considerations can be better addressed at the proposed location than in a central city location.

Tax base aside, any major development of this type in the Saint Paul area, even outside of Saint Paul proper, will have a very positive impact on Saint Paul's economy. It would be nice if Saint Paul could also benefit through the direct increase in tax base, but the development situation is such that a facility such as is proposed by 3M cannot economically be placed in the center city.

The efficient and productive operation of the facility is foremost in our eyes -- without that, 3M, a company which depends almost exclusively on

research and development for its growth, might find its growth slowed and its potential limited. In view of the metropolitan area's need for the vigorous growth of major employers, such as 3M, such a compromise might well work to the ultimate disadvantage of all. Although the Chamber supports, and is working toward the continued redevelopment and intensive use of downtown and other areas in Saint Paul, we do not believe that such a change in plans would be in the best interests of either Saint Paul or the 3M Company.

It should also be realized that changing the location to any other point on the Saint Paul side of the metropolitan area would likely cause nearly equivalent residential development in Washington County. The only alternative, then, if the eastern side of the metropolitan area is to remain totally unchanged, is for the Saint Paul area to totally forgo 18,000 highly professional jobs. In view of the past, present and future growth of our labor force, this is a sacrifice which we believe would be unwarranted.

3M has shown an almost incomparable corporate responsiveness in the presentation of this proposal to the needs and desires of the metropolitan area of which they are a part. The amount of planning and cooperation which 3M has displayed in proposing this development, the recognition which they have made in the proposal that other groups, organizations, and individuals should have as much input as possible, and the appreciation which 3M has shown for the Metropolitan Council's role in metropolitan planning should be recognized and commended. Although forced to work within strict limits of practicality as all private enterprise must, they have attempted to meet the concerns of all involved.

It might well be noted at this point that it would have been easy enough for 3M to announce a small proposal initially, then reveal each

expansion as it became necessary. Instead they chose the course of revealing the long-term plan so that the metropolitan area might better plan to accommodate it. We commend the public-spiritedness inherent in the course of action chosen by 3M. It would indeed be unfortunate if the Company should be penalized for their considerate actions.

From an industrial development point of view, the proposed 3M Oakdale/Lake Elmo proposal is near ideal. It will generate a tremendous private investment in the community, an investment which will directly or indirectly benefit almost every member of the Twin Cities population. It will help stabilize the construction and labor markets in the area through staged development, it will ultimately provide some 18,000 sorely-needed jobs to absorb a portion of our growing labor force and it will annually inject a significant payroll into the metropolitan economy. Any metropolitan area in the nation would be elated to be chosen as the site of exactly the same development that is now in question.

I also know that many communities are wooing 3M facilities -- including this one. While the proposal may not be totally perfect from a community planning point of view, we believe that it is in the best interests of the metropolitan area, Saint Paul, and the economy of the State of Minnesota for our decision makers to do everything possible to allow one of our foremost corporate citizens to complete a project which is necessary to their very survival.

We urge, therefore, the expedient approval of the proposed Oakdale/Lake Elmo project.

Sincerely,

AMOS MARTIN, CCE
Executive Vice President

jm

GENERAL OFFICES • 3M CENTER • SAINT PAUL, MINNESOTA 55101 • TEL. (612) 733-1110

May 17, 1976

Subject: Comments on 3M Oakdale/Lake Elmo Research/Office Park Draft Environmental Impact Statement

Certified Mail

Mr. Dennis S. Zylla
City Administrator
City of Oakdale
1584 Hadley Avenue North
Oakdale, MN 55119

Dear Mr. Zylla:

Minnesota Mining and Manufacturing Company (3M Company) has reviewed the 3M Oakdale/Lake Elmo Research/Office Park Draft Environmental Impact Statement (EIS). As a result of this review, 3M has determined that the Draft EIS properly describes the proposed 3M development.

3M commends the cities of Lake Elmo and Oakdale and the consulting firm of Bather, Ringrose, Wolsfeld, Inc., for working together with affected communities, counties, regional authorities and state agencies to identify and describe impacts that could possibly result from the proposed development of the 3M Oakdale/Lake Elmo site (recently named Carlton Park).

It is apparent from reading the Draft EIS that the City of Oakdale, through its consultant Bather-Ringrose-Wolsfeld, Inc., (BRW) has reevaluated and, in many cases, revised much of the information that was obtained by 3M Company and its consultants during the project planning process. It is also apparent that BRW has carried out extensive investigations of its own that have resulted in the presentation of considerably more information and analyses than had been compiled before the time when the City of Oakdale was designated as the

Responsible Agency. The City of Oakdale and BRW are to be commended for their conscientious efforts to produce a complete and informative document.

3M Company does wish to submit some comments on the Draft EIS to insure that the Final EIS contains all the latest and most accurate information available. These comments are attached for inclusion into the record of the public hearings held recently on the Draft EIS.

3M Company appreciates having had this opportunity to comment on the Draft EIS.

Please feel free to contact me if the City of Oakdale requires any further information from 3M Company relative to the preparation of the Final EIS.

Sincerely yours,

John S. Hunter, III

John S. Hunter, III, PE
Senior Environmental Engineer

JSH/mab

CC: Don Hunt, BRW

3M Company Comments on

3M Oakdale/Lake Elmo Research/Office Park

Draft Environmental Impact Statement

3M Company decided at the very outset of the planning process for the development of this site that all environmental factors - physical, social, and economic - should be taken into account in all phases of project planning and site development. To this end, 3M retained a group of twelve consulting firms to prepare a long range development plan for the site. This group of consultants was retained because of their reputations in such areas as energy conservation, architecture, transportation, and environmental analysis and planning. An overriding consideration in the selection of this team of consultants was their familiarity with local conditions and attitudes and local governmental policies and regulations.

Environmental concerns have had a profound influence on the results of the planning process to date. Environmental concerns have actually established the scope and size of the development and where structures and open space should be located on the site. Environmental analysis of preliminary project plans resulted in the reduction in the number of employees anticipated to be employed at the site downward to 18,000 persons, approximately 30 percent below the employee population originally considered for the site. In addition, the actual locations for structures and open space on the site were determined through the consideration of both on-site and off-site environmental factors that were plotted on an environmental constraint map.

It should also be noted that all aspects of this planning effort by a private corporation have been carried out as a public process. Throughout the planning process, 3M and its consultants have conferred with local community, district, county, regional and state agency officials to solicit their input as to project concerns and requirements. Two meetings were held by 3M Company (with invitations to participate being mailed directly to the homes of all residents of record of Oakdale and Lake Elmo) to provide local residents with information as to how the planning process was proceeding and to solicit input from the public. In addition, as soon as the basic project planning information was available, 3M and its consultants prepared an Environmental Assessment asking the Minnesota Environmental Quality Council to initiate formal public evaluation of the proposed development through the EIS process.

Consideration of environmental factors by 3M and the public will not end with the completion of the EIS process. It will be a continuing integral part of all existing and future planning activities throughout all phases of the projected 20-year development of the site. 3M is committed to cooperate with the public to arrive at appropriate responses to concerns that will be mutually beneficial to all concerned parties. 3M is also committed to

complying with all applicable environmental rules and regulations. In addition, it should also be realized that public approvals will be required for almost all aspects of the step by step development of the site.

Relative to 3M's commitment to the continuing consideration of environmental concerns, it is important to note that 3M's plans for the long range development of this site have purposely been made quite adaptable to a variety of alternative courses of action. For example, it is planned that the boilers at the central utility plant will be designed to utilize a variety of fuels such as fuel oil, coal, and solid waste. Provisions have also been made for the utilization of solar energy on the site. Transporation systems are another example. Land area has been set aside for a mass transit terminal in the event mass transit becomes available in the area. Also, sufficient land has been set aside on 3M property at all proposed traffic access points to permit the construction of any type of an intersection that may be prescribed by applicable regulatory and administrative government agencies. This type of adaptability has been incorporated into the long range development plan for the site in recognition of the fact that 3M Carlton Park will be a gradual, long term development and that the future holds many variables beyond anyone's control that must be taken into account during each stage of development. The adaptability of 3M's plans will allow the project to continually adjust to environmental concerns and requirements as they arise.

3M has welcomed the opportunity afforded by the EIS process to further interact with the public and public agencies concerning the development of 3M Carlton Park. In order that the most informative EIS as possible could be prepared, 3M has provided the City of Oakdale with all the information that has been collected and generated by 3M and its consultants as a result of the site development planning process. This has included information describing the project itself and possible impacts that could result. 3M has also responded to all inquiries by the City of Oakdale and its consultants for additional information. 3M feels it has the responsibility to ensure that all the information in the Draft EIS accurately describes the proposed project and potential impacts in order that the EIS can provide the most complete and accurate information available to decision makers who wish to consult this document. 3M believes the Draft EIS does a commendable job of meeting these objectives. There are a few technicalities, however, that 3M wishes to call to your attention relative to the content of the Draft EIS. These are listed in the comments that follow:

General — It is apparent that the Draft EIS has been directed at identifying negative environmental impacts. Information concerning positive impacts is presented in the Draft EIS but it is rarely identified as such. The Draft EIS often

refers to positive impacts only as impacts having no adverse environmental effects. An example can be found on page 262 where the orderly creation of 18,000 new stable jobs at the site would have no negative impact. Another example appears on page 330 where it is stated that the creation of jobs to serve the needs of 3M families would have no adverse effect.

One of the basic purposes of an EIS is to provide information to affected parties and agencies to assist them in making informed decisions. A rational decision must of necessity be based on a consideration of both the positive and negative consequences of the action being considered. The examples just cited demonstrate that the Draft EIS does not always adequately identify the positive aspects of the proposed development. An effort should be made to identify positive impacts in the Final EIS.

Title Page. This page should show the date the EIS was prepared.

pgs. 1, 9, & 293 As quoted from page 305, "The analysis of the secondary impacts of the proposed 3M Oakdale/Lake Elmo site development depends almost in its entirety on where the new employees are likely to live. It should be pointed out that the maintenance of the projected 3M Company growth rate will play a large role in determining the time at which impacts are likely to occur. These two factors--projected living patterns and projected growth rate--are the two major assumptions upon which the secondary impact analysis is built. The 3M Company growth rate will to a large extent be controlled by national and international economic conditions; residential patterns will be controlled by the availability of housing and the relative desirability of different areas for residential use by future employees."

The importance of this statement relative to secondary impacts cannot be overemphasized. Those parts of this statement pertaining to 3M Company growth rate are also very significant relative to primary impacts.

It is 3M Company's opinion that because this information is so important to placing the whole EIS into perspective, it should be presented in the Introduction and incorporated into the opening narrative of the Primary Impacts and Secondary Impacts sections of the EIS.

p. 25 Top of page, 4th line

The Central Utility Plant will always be connected to the 3M building located north of T.H. 212, not ultimately connected as stated at the top of page 25 of the Draft EIS.

p. 26 Stage IV and Stage V are currently planned to consist of approximately 2,500,000 square feet of floor space, not 2,000,000 (see page D 1.8 of 3M Company Proposed Research/Office Park Oakdale/Lake Elmo Site Environmental Report dated October, 1975).

p. 28 Item 8

This item should be restated as follows: "Employee Stores: provide an outlet store for employees to purchase 3M merchandise."

p. 30 Line 9

The word "assess" should be "access".

p. 32 Paragraph 6

As stated, truck docks and storage space will be provided at each major building increment. There will not be a site central shipping and receiving area south of T.H. 212 near the Central Utility Plant. Facilities will be provided in this area for receiving and storage of maintenance supplies and bulk materials such as fuel.

p. 33 Item 1, Natural Gas/Propane Gas

The standby gas system will only be provided if required.

p. 33 Item 3, Chiller Units

The two basic types of chiller units being considered are absorption chillers and turbine drive centrifugal chillers.

p. 33 Item 4

The word "componeents" should be "components".

p. 34 Item 8

The central control facility will provide for utility systems monitoring as well as control.

p. 40 Paragraphs 3 and 4

The interconnecting materials handling system between the 3M buildings located north of T.H. 212 and the Central Utility Plant will not be constructed in conjunction with additions to the Central Utility Plant. It will be constructed at the time the first stage of the Central Utility Plant is being constructed.

p. 40 Paragraph 4

The tunnel under T.H. 212 will house several utility distribution lines. It will be so constructed that it can accommodate rubber tired vehicles for distributing maintenance personnel, equipment and supplies.

p. 40 Paragraph 4

There will not be a site central shipping and receiving area south of T.H. 212 near the Central Utility Plant. Facilities will be provided in this area for the receiving and storage of maintenance supplies and bulk materials such as fuel.

p. 41 Paragraph 4

As stated on page 243, sprinkling of the coal as it is being handled will only be done when necessary to control fugitive dust.

p. 41 The section on solid waste handling should be prefaced by the statement "If solid waste is used as a fuel, ..." This would be consistent with the statements contained in Item 3 on the top of page 33 and the second paragraph on page 164.

p. 63 Lines 13-15

Irrigation will only be provided for Refined Landscape areas. No irrigation will be provided for the Open Grassland Landscape areas containing natural grasses and used to separate parking areas from wooded areas.

p. 98 Paragraph 4

Ideal Avenue North is County Road 15, not County Road 18.

p. 159 Figure 5

It should be noted whether the time scale is based on daylight savings time or not. Also, it would seem likely that the 12MN electrical usages should be the same on the left and right margins of the figure.

p. 163 The zeros in Table II are not related to oil burning capability of the boilers so the footnote on the bottom of page 163 has no meaning and should be deleted.

p. 164 Paragraph 3

The 3M Company is considering the use of intermittant pilots for the boilers as a fuel conservation measure.

p. [illegible] Map 37

It is not readily apparent on Map 37 that Ideal Avenue would be severed just south of 38th Street North as a part of Local Roadway Alternative 5.

pgs. 225 & 225 The reference to U.S. 212 should be to Minnesota T.H. 212.

pgs. 226, 227, & 232 The traffic light in Lane 8X on Figure 10, page 227, represents a hypothetical situation that will not be realized during the actual site development. The expected maximum traffic volume shown in Table 32, page 232, of 225 vph (PM-hr) is not great enough to justify the installation of a traffic light. A free right turn would be consistent with current practice at 3M Center.

Changing Lane 8X to a free right turn would change the carbon monoxide (CO) analysis tabulation on page 232. Making this correction in the tabulation should show that the one-hour CO standard of 30 ppm at Receptor C will not be exceeded in 1980. Therefore, there would be no locations where the existing standards should be exceeded at any time during the useful life of the site.

In addition, the Minnesota Pollution Control Agency indirect source permitting program would not allow the development of the site in such a way that a violation of the standard could possibly occur.

p. 242 Table 41

The pollutant SO should be SO_2.

p. 249 Paragraph 3

It should be emphasized that the noise exposure suggested by Map 40 on page 251 is not likely to occur because it is not realistic to assume that all the construction equipment listed will ever be operating simultaneously. Also, noise exposures anywhere approaching those suggested by Map 40 could only occur as a result of excavation or rough grading operations which only amount to a small portion of the total construction time of any Phase of the development. In addition, Map 40 is a combination of the noise exposures expected to occur during the construction of all stages of the project. The noise exposure for any specific location at any specific point in time is highly dependent upon the proximity of the project stage that is under construction at that time. Most areas will only be subjected to a potentially significant noise exposure during the construction of one of the five stages of development, not during all five as could possibly be construed by a superficial examination of Map 40.

p. 258 Construction Period

It is stated that construction employment at the site will range from 278 to 1,025 workers. This should be qualified to read 278 to 1,025 workers in any given month.

p. 274 Oakdale Greenway

Reference to Alternative B1 should be Alternative B2 and reference to Alternative B2 should be Alternative B1.

p. 292 Paragraph 1 in Local Plans section

Although the Draft EIS mentions that the City of Oakdale is currently considering the Guide Plan amendment request by the 3M Company to allow the research/office facility, the Draft EIS does not state that the City of Oakdale Planning Commission has prepared such an amendment and has recommended to the Oakdale City Council that the amendment be approved. In addition, this amendment has been submitted by the City of Oakdale to Metropolitan Council for review and comment.

p. 298 Paragraph 1

In the Minnesota portions of the impact area, the percentage of all employees decreased (not "increased") from 83.5 percent to 83.0 percent between 1970 and 1974.

p. 358 Paragraph 3

It should be noted that development along the St. Croix River bluffs (which are a part of the designated St. Croix National Scenic Riverway) is controlled by the Minnesota-Wisconsin Boundary Area Commission.

p. 405 It is stated in the mitigation measures section for secondary energy impacts that "There is very little that can be done at the community level to lessen the projected energy requirements of the 3M-related population". This is really not a true statement as 3M is already beginning to implement an employee and stockholder energy conservation education program for energy conservation in the home.

[illegible] The reference to Table 124 in the paragraph on School District Costs should be to Table 123.

p. 137 Map 52

The boundary between Independent School Districts 622 and 834 through that portion of the 3M site north of T.H. 212 is Ideal Avenue and not the eastern boundary of the site as shown on Map 52.

p. 501 While it is true that federal regulations will require the preparation of a Spill Prevention Control and Countermeasure (SPCC) plan for the fuel oil handling and storage facilities, such plans are not required to be filed with the federal government as stated in the Draft EIS.

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES
CENTENNIAL OFFICE BUILDING • ST. PAUL, MINNESOTA • 55155

May 17, 1976

Dennis S. Zylla
City Administrator
1584 Hadley Avenue North
Oakdale, Minnesota 55119

Re: 3M Environmental Impact Statement

Dear Mr. Zylla:

Attached are the comments of the Department of Natural Resources on the Draft Environmental Impact Statement for the 3M Oakdale-Lake Elmo Research and Office Park. The comments have been compiled from the reviews of our Divisions of Fish and Wildlife, Parks and Recreation, Forestry, and Waters, and by our Metro Region Personnel. Please accept these comments as written testimony on the Draft EIS and enter them into the record of the March and April public hearings.

Thank you.

Sincerely,

Janet E. Chichester

Janet E. Chichester
Environmental Planner

JEC:al
Attachment
cc: Don Hunt, Bather, Ringrose, & Wolsfeld
John Hunter, 3M
Bill Schwab, Washington
John Boland, Metropolitan Council
Kenneth Sovereign, Tri-Lakes Association
Maynard Eder, Lake Elmo
EQC Technical Committee

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MAY 24 1976
CITY OAKDALE

AN EQUAL OPPORTUNITY EMPLOYER

DEPARTMENT OF NATURAL RESOURCES

Comments on 3M Draft EIS, Oakdale-Lake Elmo Research and Office Park

Washington County

The above EIS has been reviewed by the Divisions of Fish and Wildlife, Forestry, Parks and Recreation, Waters, and by the Regional Personnel. The following comments were compiled from that review.

1) The project will cause some environmental degradation regardless of how well it is planned, but the EIS proposals for pond development, revegetation of the project site, water quality control, and safety measures for coal and fuel oil storage will help some of the problems. However, the following concerns should be given careful consideration.

   a) The development of ponds for water storage, settling basins, and 3M facility use would be enhanced by designing them so that aquatic vegetation could be promoted. This would increase water filtration in addition to providing wildlife habitat, particularly for waterfowl. A buffer strip of natural vegetation around the ponds and wetlands would further benefit aesthetics and wildlife. It would be desirable to leave existing permanent wetlands in their present state and increase the water capacity of some of the temporary wetlands.

   b) The two marshes located south of T.H. 212 and east of the 3M project site (Sec. 16, SE¼) should be left in their natural state and any drainage from the 3M site should by-pass these wetlands, unless the by-pass would adversely offset water levels of the wetlands. Although 3M will skim the surface water of the holding ponds prior to discharge, either the Watershed District or 3M should set up a water quality monitoring program before project development is started.

   c) Since much of the site is presently in agricultural use, there is little initial impact from a woodlands or forestry standpoint. However, revegetation of the project site should not be done for aesthetic purposes only, but should give serious consideration to wildlife species that will utilize available habitat. Although increased human activity will discourage use by the more timid or wide-ranging wildlife species, selective revegetation along with wetland development could provide a good diversity of wildlife habitat.

   d) On-site ponding areas may experience pollution from fertilizer phosphates leaching from the planned grassy area. As manicured grassy areas present a rather impervious surface, the use of the prairie grasses and wildflowers planned for some of the site could be expanded. Wild grass systems allow greater percolation into the subsoil and would decrease excess runoff, chemical leaching, and excessive siltation into the holding ponds.

   e) The use of parking ramps should be considered in lieu of parking lots to decrease the amount of impervious surface.

f) Storage areas for coal and fuel oil should be constructed to prevent runoff pollutants from reaching any of the wetlands or the storm drainage system.

2) Revegetation was mentioned above in regard to the holding ponds and wildlife habitat. However, there are other factors to consider when planning revegetation.

a) The woodland landscape suggested in the EIS should be started as soon as possible. Any woodlands presently on the site should be preserved wherever possible. The suggestion to use peripheral areas for a woodland landscape is a good plan, but the use of State nursery stock may conflict with State tree planting laws. The district forester can be contacted on this matter.

b) Page 52 indicates the woodland suitability for Adolph silty loam as black spruce. However, this area is really too far south to accommodate black spruce and should be listed as suitable for tamarack.

c) Prior to planting, the suitable tree types should be evaluated for their ability to co-exist, especially in close proximity, and for their hardiness in Minnesota's climate. The vegetative community to be established must not be evaluated on biomass alone; diversity is the key to success.

d) The district forester has suggested that the woodland vegetated areas be considered for environmental education programs due to their proximity to area schools.

e) Does map 15 reflect the actual amount of interior woodlands that will be present in designated parking areas, or will parking needs cause elimination of vegetation indicated on the map? Again, the use of multi-story parking ramps would mitigate this impact.

f) Where vegetation is removed, care should be taken in disposal to prevent disease from entering the area.

3) The design and capacity of primary and secondary ponding areas appear to be consistent with the Valley Branch Watershed District's Overall Plan for runoff control. However, beyond the issue of the ponds, there are some overall water resource and system comments that deserve mention.

a) The Draft EIS notes a peak water supply requirement of 8.06 million gallons per day with recycling and 10.24 mgd without recycling. We would urge that recycling be utilized whenever possible.

The combined on-site yields of the Prairie du Chien/Jordan and Mt. Simon/Hinckley aquifers is approximately 8.7 mgd with no removal of water from storage. Additional ground water supplies could be purchased from communities such as Oakdale and/or Lake Elmo. It appears that a suitable water supply for on-site requirements can be insured although it precludes use of that water for other purposes. In this regard, specific documentation of groundwater supplies and alternatives must consider the preclusion of water to other uses.

b) In light of the high water problems on many metropolitan area lakes, it is crucially important to consider the effects of a major development like this one on the area's water system or hydrologic regime. The regional hydrologist has expressed concern that the long-term development (including secondary development) should not adversely affect lake levels throughout the Valley Creek Watershed District. This means that 3M must achieve a careful balance with on-site water management. The project must not contribute to excessive runoff which may cause high-water problems; at the same time, the site must not put so much water into storage that too little runoff goes off the site to replenish the lake or groundwater supplies.

c) Another concern regarding the area's overall water resources is wastewater treatment. Metropolitan Council has published a Waste Management Development Guide/Policy. There seem to be discrepancies between the 3M plans and the wastewater system plans. The capacity of the area's treatment system is currently exceeded, and any further requirements will only increase the treatment burden. This increase in effluent burden could impact the area's water quality and other resources. The regional hydrologist has expressed particular concern for the Battle Creek area.

There is also a conflict with the 1973 Metropolitan Wastewater Disposal System plan for Washington County. In that document, the 3M site is listed as medium density. 3M will produce approximately five times the effluent of a residential development. Will this cause a need for new plans to be developed, and if not, are the existing proposals capable of handling this large amount of wastewater?

4) Regarding transportation, there is some question on the adequacy of roads as planned in the EIS. Will the 3M development necessitate increasing the capacity of the area's major trunk highways? All possible measures for reducing the number of vehicles entering the area should be employed. Use of bicycles and walkways should be encouraged. Any increases in traffic over design capacity will have effects on the quality of stormwater runoff, air, and road access by residents.

5) Plans for construction on sites 7 and 8 should be included in the overall development plan. Will these areas in fact remain as parkland, or do future plans call for some type of development? Any designated parks should be confirmed by inclusion in planning documents of concerned municipalities.

6) In light of the fact that 3M is at the forefront of technological advances, it seems that many innovative energy conservation measures could be utilized in project development. Although these issues are really the province of another agency, we feel they deserve mention, as natural resources are indeed affected by all parameters of an action, particularly in a large development on a previously non-developed site.

a) For example, savings in hot water heating through on-tap point heaters, use of solar stills, methane generation from sludge, and other energy conservation measures would greatly reduce the impact of 3M's project on primary natural resources, i.e., by reducing the area of impervious surfaces.

7) The last major area of comment that we feel deserves further discussion is that of "alternatives", particularly alternative locations.

a) With four pages given to a discussion of alternatives in a document of over 500 pages, there is a weighting of the amount and type of information presented in favor of the development at one location.

b) The EIS notes that a central city alternative site would "impose severe environmental penalties such as relocation problems and severe traffic congestion." However, there is an inadequate discussion of the significant beneficial impacts which may result from a central city alternative, such as:

   1) Elimination of primary adverse impacts associated with development of 536 acres of rural land for a research-industrial complex.

   2) Elimination of secondary adverse impacts associated with housing and service construction involving thousands of acres of rural area including public waters, a National Scenic Riverway, excellent wildlife and fisheries habitat, and valuable agricultural land.

c) The section on "short-term uses of the environment versus the maintenance of long-term productivity" does not include the environmental impact of predictable increased future development of the area if the action is implemented. Would the cumulative impact of the 3M plant, plus stimulated housing and service construction, preclude future use of valuable public waters and agricultural lands, beyond the immediate site, with net adverse effects on long-term productivity of the region?

Thank you for the opportunity to comment on the Draft EIS. We will be looking forward to receiving the Final EIS.

291-6359
00 Metro Square Building, 7th Street and Robert Street, Saint Paul, Minnesota 55101 Area 612.

Mr. Dennis Zylla, Administrator
City of Oakdale
1584 Hadley Avenue North
St. Paul, Minnesota 55119

RE: Draft Environmental Impact Statement (EIS)
3M Oakdale/Lake Elmo Research/Office Park
Metropolitan Council Referral File No. 3354

Dear Mr. Zylla:

At its meeting of May 13, 1976, the Metropolitan Council considered the attached report of its Physical Development Committee on the 3M Oakdale/Lake Elmo Research/Office Park Draft EIS. The Council voted to approve the report and forward it to you as its official comments and recommendations on the EIS.

Thank you.

Sincerely,

METROPOLITAN COUNCIL

John Boland
Chairman

JB:emp
Attachment

cc: James Barton, Metropolitan Council Staff

An Agency Created to Coordinate the Planning and Development of the Twin Cities Metropolitan Area Comprising:
Anoka County ○ Carver County ○ Dakota County ○ Hennepin County ○ Ramsey County ○ Scott County ○ Washington County

Business Item B-10
For Release: 4:00 p.m.
May 13, 1976

METROPOLITAN COUNCIL
300 Metro Square Building, Saint Paul, Minnesota 55101

REPORT OF THE PHYSICAL DEVELOPMENT COMMITTEE
Referral Report No. 76-819

May 13, 1976

MEMORANDUM

TO: Metropolitan Council

SUBJECT: Submittal of Metropolitan Council Review of the 3M Draft EIS to the City of Oakdale - Metropolitan Council Referral File No. 3354 (Metropolitan Council District 14)

At its meeting of May 13, 1976, the Physical Development Committee will consider the attached review of the 3M Oakdale/Lake Elmo Draft Environmental Impact Statement. A verbal report will be given regarding the committee's action.

RECOMMENDATION

That the Metropolitan Council approve the attached report subject to the recommendation of the Physical Development Committee and transmit it to the City of Oakdale as its official comment and recommendation on the 3M Oakdale/ Lake Elmo Draft Environmental Impact Statement.

Respectfully submitted,

Robert L. Hoffman, Chairman

METROPOLITAN COUNCIL
300 Metro Square Building, Saint Paul, Minnesota 55101

May 13, 1976

MEMORANDUM

TO: Physical Development Committee

FROM: Jim Barton

SUBJECT: Submittal of Metropolitan Council Review of the 3M Draft EIS to the City of Oakdale

The staff memorandum dated May 7, 1976, regarding the review of the 3M Oakdale/Lake Elmo facility will need to be acted upon today by the Physical Development Committee and the Metropolitan Council in order that the comments can be included as part of the public hearing record prior to May 24, the closing date. Inclusion in the hearing record is necessary if the final EIS is to address Council concerns raised.

This memorandum is the first in a series of three reports dealing with the proposed 3M facility and deals primarily with the remaining metropolitan issues and areas of concern which need to be addressed further when the final EIS is prepared. Because of the pending deadline for the submittal of comments and the number of committee agenda items needing consideration, only the first report is being submitted at this time. The remaining two reports will be submitted for review as part of the Washington County, Oakdale and Lake Elmo Comprehensive Plan reviews scheduled for the Physical Development Committee meeting on May 27.

Please note that the attached comments from the City of Oakdale and BRW, the consultant retained to prepare the EIS, are in response to a previous staff memorandum and issues statement reviewed April 29 by the Physical Development Committee. These comments were forwarded at the request of the city since a representative is unable to be present at today's meeting.

JEB:im
Attach.

METROPOLITAN COUNCIL
300 Metro Square Building, Saint Paul, Minnesota 55101

May 7, 1976

MEMORANDUM

TO: Physical Development Committee

FROM: Jim Barton (Coordinator)

STAFF CONTRIBUTORS: Karl Burandt, Marcel Jouseau, Connie Kozlak, Trudy McFall, Peggy Reichert, Ray Thron

SUBJECT: Review of 3M/Oakdale/Lake Elmo Research/Office Park Draft Environmental Impact Statement
Metropolitan Council Referral File No. 3354

INTRODUCTION

To facilitate the review of the Draft 3M EIS, staff comments have been divided into three sections: 1) based on the review of the EIS document, an identification of remaining issues and areas of concern which need to be addressed further; 2) implications of the proposed 3M facility to Metropolitan Development Framework policies, plans and programs; and 3) required actions on the part of the Metropolitan Council and local units of government in order to accommodate the 3M development.

Part I of the review will be the basis for Council comments regarding the Draft 3M EIS and, after appropriate action by the Metropolitan Council, will be forwarded to the City of Oakdale for inclusion in the 3M Oakdale/Lake Elmo EIS public hearing record.

After the public hearing phase is completed, the final Environmental Impact Statement must be prepared and filed with the EQC no later than 30 days after the date the public hearing record is closed. After submittal of a final EIS, the EQC will initiate its review process which can take the following forms:

1) The EQC accepts the final EIS for review:

   a) That after review the final EIS is found to be inadequate and additional material is required;

   b) That after review of the final EIS, EQC finds the statement acceptable.

2) EQC chooses not to review the final EIS which constitutes acceptance of the EIS.

BACKGROUND

On July 31, 1975, the Minnesota Environmental Quality Council (EQC) took action to formally require the preparation of an Environmental Impact Statement for the 3M Company Research/Office Park to be located within the municipalities of Oakdale and Lake Elmo.

In response to the EQC direction, both municipalities entered into a joint powers agreement with the City of Oakdale being designated as the responsible agency. Within 120 days after the receipt of EQC's notice, a Draft Environmental Impact Statement (EIS) was prepared and submitted to EQC.

As part of the EQC resolution requiring the preparation of the EIS, the Metropolitan Council was given a specific charge during the course of preparing the Draft EIS;

1) That the Metropolitan Council through its staff advise the City of Oakdale prior to the preparation of the EIS of those issues of metropolitan impact which should be addressed; and

2) That the City of Oakdale request and receive technical and staff assistance as may be needed from the staff of the Metropolitan Council and provide material for review on an ongoing basis; and

3) That the staff of the Metropolitan Council, by means of its usual procedures, review the Draft EIS before its submittal to EQC; and further

4) That the staff of the Metropolitan Council indicate to the EQC that metropolitan impacts of the project have been addressed and any inconsistencies with the Metropolitan Council's Development Guide have been identified.

Council staff in August 1975 prepared and submitted an issues statement identifying areas of metropolitan concern. By December preliminary draft copies of the EIS were received and subsequently reviewed by staff,and comments regarding additions made to address the issues previously identified were submitted to EQC. During the course of preparing the Draft EIS, the City of Oakdale's consultant was given available Council data applicable to the study.

PROJECT DESCRIPTION

The proposed 3M Research/Office Park when completed will occupy a 564-acre site located approximately in the northeast quadrant of the T.H. 212 and Interstate I-694 interchange. The site is situated such that a third of the acreage extends into the City of Lake Elmo, and the remaining two-thirds located in the City of Oakdale.

The 3M Oakdale/Lake Elmo site is an expansion of research and office facilities presently located at the 3M Center in Maplewood. When completed by 1995 the proposed facility is expected to employ approximately 18,000 persons, and in terms of total employment will be equal to the 3M Center. Initial occupancy was scheduled for 1979 and has recently been revised to 1981. With the recent revisions to the scheduling of the project, it is unclear at this point whether or not the original estimate of 18,000 employees by 1995 is still being adhered to or will be revised.

Once completed by 1995-2000, the facility will contain 10.9 million square feet to be built in five stages. The initial stage will contain between .3 and 1.5 million square feet with additional square footage added in approximately 2.0 million square foot increments staged approximately three years apart.

Once completed the facility will contain 10.9 million square feet with sufficient parking area to accommodate 9,000 vehicles. Total construction cost is approximately $500 million, and during the construction period the EIS estimates that construction-related employment will range from a low of 278 workers to a high of 1,025 workers during the peak construction period expected to occur between 1988-1993.

The EIS also estimates that when completed annual purchases for supplies and services will total approximately $216 million (1974 dollars) within the metropolitan area. Other tangible benefits derived from the facility are the projected significant increases to the tax base of both municipalities. The City of Oakdale is estimated to receive an increase of $159 million by 1995 and Lake Elmo will increase by $64 million. The EIS further asserts that revenues derived from the increased valuation can offset the cost of providing additional municipal services to the 3M Research/Office Park. As the result of the 3M facility and induced growth that can be anticipated from the development of such an employment center, investments to expand existing services and facilities will be required by the Metropolitan Council, local units of government and certain schools in order to accommodate and efficiently manage the growth.

Site Selection

The 3M Oakdale/Lake Elmo site is located approximately five miles northeast of the present 3M Center and linked together by the two interstate routes of I-694 and I-94.

3M's site selection process began in 1964 when it was determined after evaluating future employment, population and space needs that the 3M Center could not accommodate the projected growth since vacant contiguous land was not available for purchase. Based on forecasted land demand and constraints to expansion at the 3M Center, a search was initiated for a noncontiguous site. During the ensuing year twenty-five potential sites were selected for evaluation utilizing the following criteria:

1) Proximity to 3M Center.

2) Employee residential distribution.

3) Transportation network accessibility and capacity.

4) Land availability.

5) Size of expansion site and relative lack of physical constraints.

6) Reasonable land costs.

7) Existing or future availability of sewer and water services.

By applying these criteria and limiting the site selected to within a twenty-five mile radius of the 3M Center, the list of potential sites was narrowed to ten. The remaining ten sites were evaluated further, and in May of 1965 the 3M Company Board of Directors chose the Oakdale/Lake Elmo site and authorized its acquisition. This task was completed over a 46-month period and by March 1969 purchase of the site was completed.

In May 1974 acquisition of the site was announced by the Board of Directors and a consultant was retained to prepare the planning analysis and environmental assessment.

ORGANIZATION OF THE EIS

The basic approach used in preparing the Draft EIS was to separate at the outset the 3M Oakdale/Lake Elmo site-related impacts into two categories of primary and secondary impacts.

Primary Impacts "are characterized by those effects which could result from the construction and operation of the 3M Research/Office Park. These impacts are directly related to the location, size, configuration and internal elements of the 3M Oakdale/Lake Elmo site as well as to the 3M Company development plan and proposal for construction."

Secondary Impacts "are characterized by those effects which could result from the use of the eastern Twin Cities Metropolitan Area by 3M employees and the associated population. These impacts are largely caused by independent personal decisions by the employees and the associated population."

The EIS document is divided into nine chapters with each chapter corresponding to the area of information as required content of Draft EIS defined by EQC rules and regulations. The major areas of information are listed:

- DESCRIPTION OF THE PROPOSED ACTIONS
- PRIMARY IMPACTS
- SECONDARY IMPACTS
- IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES
- SHORT-TERM USES OF THE ENVIRONMENT VERSUS THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY
- ALTERNATIVES TO THE PROPOSED ACTION. FOUR CATEGORIES OF ALTERNATIVES ARE IDENTIFIED AND EVALUATED:

  1. No Project - The effect of not allowing the 3M Research/Office Park to be constructed as proposed.
  2. Alternative Uses of the Site - The effects of utilizing the site for a use other than the proposed 3M project.
  3. Project Design/Configuration - The effects of various project design alternatives.
  4. Alternative Project Sites - The decisions surrounding the choice of the Oakdale/Lake Elmo site by the 3M Company.

- IMPACT ON STATE GOVERNMENT OF ANY FEDERAL CONTROLS ASSOCIATED WITH THE PROPOSED ACTION
- MULTI-STATE RESPONSIBILITIES
- ORGANIZATIONS AND PERSONS CONSULTED

SCOPE OF REVIEW

The objective of the staff review of the EIS has been to identify areas of conflict with adopted Metropolitan Development Framework policies, plans and programs. The initial staff review of the preliminary Draft EIS was used as a basis for final review noting where applicable the revisions made in response to initial issues raised.

METROPOLITAN DEVELOPMENT FRAMEWORK

Primary Impacts - The EIS has identified Metropolitan Development Framework policies within a "governmental policies" section. This section discusses the primary impacts of the proposed 3M facility to selected Metropolitan Development Framework policies. Although some significant policy issues were identified and addressed, the format of identifying specific policies should be expanded to include other equally important Metropolitan Development Framework policies.

To facilitate addressing these policies, it is recommended that they be grouped and discussed by specific area. Each policy area could contain a listing of the most applicable Council policies followed by a discussion of its relevancy to the proposed facility. Based on the kinds of policies included in the EIS, the following categories appear appropriate.

- Establishment of an Urban/Rural Service Area.
- Orderly provision of urban services.
- Regional economy.
- Location of employment centers.

Establishment of an Urban/Rural Service Area

The Metropolitan Development Framework Policy 1 states that the metropolitan areas should consist of an Urban Service Area and Rural Service Area. Provision of metropolitan system capacity and urban services will only be provided in the urban service area.

The proposed facility is located totally within the 1981-1990 Urban Service Area, an area designated for needed expansion of metropolitan services and facilities. It should be stressed in the EIS that final delineation of this urban service area will be determined through the preparation of a local comprehensive plan and sewer policy plan. Meanwhile, until such action is taken, the Council would apply the present service areas as defined by the Development Framework Guide chapter (Metropolitan Development Framework Policy 13). The Urban Service Area defined in the Development Framework includes enough land to accommodate this employment and related population growth.

The promotion of orderly development within the Urban Service Area is addressed by Metropolitan Development Framework Policy 10 which calls for the orderly, efficient and economic expansion of metropolitan systems. Since the proposed 3M facility is located adjacent to the 1975-1980 service area boundary and will be staged over a 15-year period, the EIS should discuss the coordination that will be necessary.

Metropolitan Development Framework Policy 5 states that land uses should be determined by the availability of urban services and that land uses should not impair the functioning of vital natural resources. Urban services can be provided to serve the facility by the City of Oakdale; however, the EIS should elaborate as to how these urban services will be provided by the City of Lake Elmo--particularly since Lake Elmo is presently rural with limited services available. An expansion of these services will be largely dependent upon availability of sewer service. The provision of such service will be competing with other system needs such as priority given to reinvestment in metropolitan systems serving existing development. The EIS should address this contingency that once the first stage of the 3M Oakdale/Lake Elmo facility is completed, the timing of the subsequent four steps will be dependent on the availability of metropolitan system capacity and the City of Oakdale to provide all the urban services needed.

Regional Economy

The 3M EIS should address the fact that the 3M Oakdale/Lake Elmo facility is highly supportive of Metropolitan Development Framework Policy #6 which calls for the region to maintain a diversified economy by retaining growing industries.

Location of Employment Centers

In addition to the policies mentioned, other policies provide a general guidance for the location of employment within the metropolitan area. Metropolitan Development Framework Policies 8 and 3 call for the strengthening of employment and services within the metro centers. The EIS discusses the possibility of a central city location for the 3M facility but states that such a location would not be a viable option since it would not meet 3M's site requirements. Based on discussions with 3M representatives, one of the research functions of this facility is to develop and test pilot manufacturing systems, a process requiring large unobstructed floor spaces on one level to afford maximum flexibility. The EIS should address this criterion and its relative importance to the selection of the present site. The clustering of employment centers is also encouraged by Council policy and the EIS should consider ways of meeting this objective.

Local Plans

The EIS states that the comprehensive plans of the cities of Lake Elmo and Oakdale will have to be amended. Current zoning must also be revised to reflect the comprehensive plan amendments. Based on interim and/or final alternatives selected to provide sewer service to the site, the presently adopted sewer plans of Oakdale and Lake Elmo will also need to be revised to reflect the changes to the local comprehensive plans and metropolitan sewer system plans. The Council must therefore clarify its position on providing metropolitan sewer service to the site.

Mitigation Measures

This section of the EIS should be expanded to adequately identify those actions that will be necessary on the part of the Metropolitan Council to accommodate the 3M Oakdale/Lake Elmo facility. These actions are summarized as follows:

1976-1980: Metro Systems

Sewers:

a. Preparation of facilities study to define and recommend alternatives for the extension of additional sewer service to the City of Oakdale and to the City of Lake Elmo.

b. Once an alternative is selected, amend the sewer policy plan to include the selected facility alignment and timing.

c. Include facilities in future MWCC development programs by the late 1970's or early 1980's as determined by sewer service need.

Transportation:

It is anticipated that funds will need to be expended by the Minnesota Highway Department along T.H. 212 in order to provide access to the first stage of development. The EIS should give some indication of the timing for these improvements. Amendments to the transportation policy plan may also be needed to include needed improvements to existing transportation system.

1976-1980: Development Framework

The timing of the initial stage of the 3M facility should be revised in the EIS to reflect the postponement of the occupancy date to 1981. This timing is consistent with indicated additions to the Urban Service Area for 1981-1990. However, final staging within the 1981-1990 Urban Service Area will need to be further defined based on development need documented by local comprehensive plans and consistent with the availability of sewer service and other metropolitan system capacities that will be quantified and forwarded to the cities of Oakdale and Lake Elmo by July of 1977.

1981-1995: Development Framework

Since the Development Framework is scheduled to be reviewed every four years and the 3M Oakdale/Lake Elmo facility will be staged between 1981-1995, the EIS should more fully discuss the opportunity being provided to monitor the impact of this facility on Development Framework policies and systems.

Secondary Impacts

The EIS has indicated that based on the analysis of induced development resulting from construction of the 3M facility, three subareas within the study area have been identified as exceeding Development Framework population forecasts. One of these subareas, Lake Elmo and Grant Township, will only exceed the forecasts between 1976-1980 while the remaining areas, Stillwater and the lower St. Croix communities, will consistently exceed Development Framework forecasts throughout the forecasting period used (1975-1990).

In preparing Development Framework forecasts for this area, the EIS acknowledged that construction of the 3M facility was anticipated and reflected in the preparation of the forecasts.

Within the "governmental policies" of the secondary impacts section, the EIS should clarify the statement of "not in compliance with metropolitan policy." The concern is not necessarily a disparity in population forecasts but rather that one area, the City of Stillwater, will require metropolitan investments to expand sewer service earlier than originally anticipated. The lower St. Croix communities on the other hand provide limited municipal services and are within the rural service area.

METROPOLITAN SYSTEMS

SEWERS

Primary Impacts - The EIS presents alternative alignments as outlined in the Lake Elmo-Tri Lakes Interceptor Facilities Plan and concludes that interim service can be provided through the WONE interceptor until 1980. These alternatives are adequately documented and provide an indication of how the 3M facility and the cities of Oakdale and Lake Elmo can receive additional sewer capacity. However, in order to evaluate these alternatives at the metropolitan level, the area of study must be expanded to include Woodbury and Cottage Grove.

To place the alternatives already discussed in a proper perspective, the EIS should also include a brief discussion of alternatives available to expand metropolitan sewer service to Oakdale, Lake Elmo, Woodbury and Cottage Grove.

1. Already extensively documented, alternatives of providing interim service (4-9 year period) to the site and surrounding area. The EIS should address the limitations of capacity in the metropolitan system from the WONE interceptor to the metropolitan wastewater treatment plant.

2. Construction of the Cottage Grove interceptor through Woodbury to Lake Elmo.

3. The construction of a gravity system west to the metropolitan wastewater treatment plant serving Oakdale, Lake Elmo and portions of Woodbury.

4. The construction of an interceptor down the Valley Branch Watershed to a new treatment plant on the St. Croix sometime after 1990.

The relationship between these alternatives are defined by the Development Framework forecasted demand for developable land and the resultant need for extension of sewer service. Finally, delineation of the urban service area is not the responsibility of the EIS to determine; however, recognition of the consequences of these alternatives shall be included.

Finally, based on flow projections given, the EIS should include the revised date of occupancy of 1981 and its effect on extending the capacity of the WONE interceptor until 1986. This 1986 estimate is based on the assumption that the flows given in the EIS do not reflect conservation of cooling water.

TRANSPORTATION

There are three sections of the EIS that deal directly with transportation elements. The first section, description of the proposed action, deals with the 3M site and internal circulation. The second section, Primary Impacts, has two subsections that deal with Roadway Systems and Transit Services. The third section deals with secondary impacts.

Principal access to the 3M site will be provided by T.H. 212, a minor arterial in the Metropolitan Functional Classification System and the proposed at-grade intersections are consistent with this function. The site access points from 212 are not clearly identified in this EIS. It is important that these be defined since proper spacing of access points can minimize turning movement problems and preserve the traffic carrying capacity of T.H. 212.

A discussion relative to staging of building construction with the necessary roadway improvements should be included for each phase of the project. This staging of construction should also relate to the plans of agencies responsible for these improvements.

Primary Impacts - The primary impacts discussed in the EIS recognize most of the Metropolitan Council's future priorities for transportation facilities in the area. It is acknowledged that County Road 80 will be upgraded and T.H. 212 will not. However, there is no mention of the construction of I-94 which could affect 3M travel patterns since there will be an interchange with upgraded C.R. 80.

In the section on roadway systems, analysis has been done on both the capability of the regional system to accommodate 3M traffic and the impact of 3M traffic on local roadways. Analysis was done primarily on the peak-hour traffic (although there is one map showing 3M's share of the total 1995 ADT) using 3M data for employee work trips and Bather, Ringrose and Wolsfeld's (consultants for the City of Oakdale) "System Planning and Analysis Study of the Greater St. Paul Area" for non-3M volumes. This BRW data is the best currently available using an updated regional highway network and the Development Framework. However, it should be noted that this is an interim forecast which will eventually be replaced by the zone level forecasts. BRW did a range of forecasts for different vehicle occupancies. Since Metropolitan Council transportation policies are aimed at making optimum use of existing facilities, including increasing vehicle occupancy, it is appropriate that this EIS used the BRW forecasts which assume an occupancy of 1.6 for non-3M trips.

There is some discussion on how various auto occupancy rates will affect the number of 3M trips. However, detailed analysis was only performed under the assumption of two occupants per vehicle and 5,400 peak-hour vehicle trips. This assumption of two occupants/vehicle seems realistic, given 3M's past success and aggressive promotion to increase occupancy. However, the impacts of not achieving this vehicle occupancy rate should be discussed.

Capacity analysis was performed on the regional roadway system within eight miles of the 3M site during peak hour. Eight potential problem areas were identified. Five of these were more than one mile from the site. At these five areas 3M traffic comprised less than 4 percent of the total traffic, and capacity problems would exist even without the 3M traffic. The three capacity problem areas near the 3M site where the congestion is caused primarily by 3M traffic were analyzed in detail--I-694 between T.H. 212 and T.H. 36, the intersection of T.H. 212 and I-694 and the western access to the 3M site off T.H. 212.

The EIS indicates there are five possible mitigation measures for these peak-hour capacity problems. Two measures (construct a new interchange on I-694 and upgrade T.H. 212 and/or I-694) involve increasing roadway capacity. The other three measures involve decreasing vehicular demand (traffic management techniques by 3M, reduce employment at the site and restrict future development in the area). There are no costs given for these measures except the estimate of $3 million for a new interchange on I-694 and $1.5 million for other system improvements. It is unclear in the discussion of the construction measures "upgrade T.H. 212 and/or I-694" what the cost and impact would be of each of the individual improvements. Certain of the proposals

appear to have more priority than others. For instance, the need for an additional lane on I-694 between T.H. 212 and T.H. 36 is not well documented. The cost and staging of any improvements required to handle 3M demand should be detailed. The advantages and disadvantages of each measure are discussed, but no preference is expressed. The 3M EIS does acknowledge the probability that a new interchange on I-694 and 40th Street is remote.

The discussion of traffic management strategies to mitigate the problem of access at the western entrance from 212 is insufficient. Such strategies in and of themselves could possibly solve the entire problem. One obvious example is to assign a specific entrance along with a parking space which would minimize both access and circulation congestion in reaching parking. Entire lots could be connected to a single entrance by temporary traffic control devices used only in peak periods. One such lot (the best and most convenient) could be reserved exclusively for van and car pools).

There is no discussion on use of other existing facilities to mitigate peak-hour congestion problems. For instance, it appears that the role of the Minnehaha Avenue/694 interchange located approximately two miles south on I-694 was not considered in this analysis.

The Metropolitan Council should favor the measures that decrease vehicular demand over those that increase capacity since the philosophy of the Transportation Policy Plan emphasizes making optimum use of existing facilities.

In the initial review of the preliminary draft of the EIS, more detailed data was requested on the timing and costs of public improvements to relieve primary impacts. It appears that the EIS assumes that public funding will be available for all improvements to public roadways needed to support the site. From the regional perspective we are continually aware of the assumption by the public and private sectors alike that highway dollars will always be available--particularly such cases where major improvements of $1 million or more usually require federal participation. The Transportation Policy Plan has placed a high priority on completion of the metro highway (principal and intermediate arterials) and transit system. Any improvements to the minor arterial system such as T.H. 212 which will be competing for the same funds will have to be reviewed in light of this priority.

In regard to the issue of 3M traffic on the local roadway system, Policy 15 of the Transportation Policy Plan states that "Neighborhoods should be planned and designed to limit or discourage through traffic." Five alternatives are presented to minimize this impact; the pros and cons of each alternative are given but there are no costs estimated and no preference is expressed. This information should be included.

AIRPORTS

Although not addressed in the EIS, it is not anticipated that the construction of the 3M Oakdale/Lake Elmo facility will have a significant impact on the future operations of the Lake Elmo Airport. Presently, the 3M corporate fleet is based at the St. Paul Airport which has adequate facilities to meet future needs of 3M and other corporations which rely on corporate aircraft to meet their internal transportation needs. 3M has indicated their intent to continue their aviation operations at St. Paul Downtown Airport. They have expressed no desire for future services to be provided for their operations at the Lake Elmo Airport. Secondary impacts would be difficult to quantify since insufficient data is provided in the EIS relative to locational impact of the induced population in Lake Elmo and resulting in potential increase in general aviation traffic that can be attributed to the 3M facility.

REGIONAL PARKS

Two existing regional parks located within the EIS study area will be impacted by the 3M Oakdale/Lake Elmo facility. These parks are the Lake Elmo Park Reserve and the South Washington County Park Reserve (Cottage Grove Ravine). The Council has approved the Washington County Regional Park Master Plan which establishes the size and boundaries of these two facilities. Initial acquisition of these sites has occurred with further acquisitions forthcoming. Since the approved boundaries of the South Washington County Park Reserve are somewhat less than the projected Master Plan boundaries, further expansion is therefore possible.

The construction of the 3M Oakdale/Lake Elmo facility will have an impact on these parks. How extensive of an impact and mitigating measures necessary will be determined by the design and staging of the facility and the determination of local and regional facilities needed to service the site.

Primary Impacts - Since the proposed 3M facility is located at the upper reaches of the Valley Branch Watershed and is directly upstream from the Lake Elmo Park Reserve, intensive development on the site will increase surface water runoff in excess of normal flows. The EIS does state that all runoff in excess of historical flows will be retained on site as required by the Valley Branch Watershed District. However, water quality of the runoff may become a problem according to the EIS and may require the development of methods for treatment prior to leaving the site. The EIS has noted that the Eagle Point Lake located within the Lake Elmo Park Reserve has already experienced significant degradation of the water quality. Drainage of runoff from the 3M Oakdale/Lake Elmo facility may worsen this condition. Because the 3M Oakdale/Lake Elmo facility will be constructed in five stages, the EIS should clarify if special means of treating water runoff are required at the initial stages or prior to construction of certain later stages.

The EIS discusses four alternatives to providing sewer service to the site. Two of these alternatives will require the construction of certain portions of the facility within the Washington County Park Reserve. When discussing these alternatives, the EIS should identify the possible impacts of constructing such a facility within a preserve and, that if constructed, certain mitigating measures should be taken to minimize these impacts.

Secondary Impacts - The Cottage Grove Ravine may be impacted depending on final alignment of the Cottage Grove interceptor needed to provide additional sewer capacity for a 1980-1990 development period.

HOUSING

In the preliminary staff review two major housing questions were raised. They were: 1) primary - the impact of the proposed 3M site on the Council's policy of reinvestment in older developed areas; and 2) secondary - the impact of the proposed 3M site on housing choice for low and moderate income persons.

The choice of a site on the fringes of the Urban Service Area of the metropolitan area as opposed to the location of a site within or adjacent to the City of St. Paul may over time have a significant impact on the City of St. Paul. The EIS statement as presented seems to recognize this fact. It cites evidence that in 1970 a third of the employees of the 3M complex in Maplewood lived in the City of St. Paul. It projects that by 1995 the combined employment of Maplewood and the Lake Elmo site would result in a total of 13 percent of the employees living in St. Paul. This is the combined figure for both the Maplewood and Lake Elmo sites.

Although this is a significant decrease in the percentage of total employment, the total number of employees during this same period will almost double from 2553 in 1970 to 4900 by 1995. This decrease in the total percentage employed residing in St. Paul would tend to indicate that the 3M Oakdale/Lake Elmo facility would shift 3M residential employment distribution further east.

The EIS in the discussion of 3M employment distribution has referred to a technical report on 3M employees which was used as a partial basis for its forecasts, historical trends and residential preferences. The assumptions, surveys and other data that were used should be included within the EIS in order that local units of government and the Metropolitan Council will benefit from this data when formulating a specific course of action(s) needed to address this situation.

Although largely middle income, the EIS does note that a substantial number of prospective 3M employees can be expected to be unable to afford the cost of housing in the Lake Elmo site. The lower income needs will create a demand in close proximity to the 3M Oakdale/Lake Elmo facility. The EIS should discuss housing programs that will need to be initiated which take full advantage of both subsidized and multi-family housing.

The EIS does, however, in the revised version recognize that local governments and 3M will have to undertake a number of housing activities to mitigate the potentially exclusionary impact of the 3M project. The programs or mitigating activities are, however, quite general and do not suggest how specific activities or subsidized housing goals can be developed by these communities.

ENVIRONMENTAL

Primary Impacts

1. Surface Water Management:

   The EIS provides an indication of how site runoff will be managed by stating that the volume and rate of flow of runoff cannot be increased over the existing runoff. The relationship between existing volumes of runoff to the various offsite drainage areas should be elaborated upon to give an indication of the runoff volume limits to be imposed on the site and how these fit with the drainageway's natural capacity that will receive this runoff.

   The site in its natural state drains mostly in various drainage areas off site. It appears according to the illustration indicating proposed pond locations that all the runoff allowed off the site may be discharged to a stream at one point. If this is the case, then the EIS should discuss the impact of concentrating the allowable runoff to one discharge point on the channel size and geometry, flooding potential, aquatic biota and water quality.

2. Water Supply:

   The EIS generally analyzes the impact of a 3M-owned well field to supply the water demands for the development. However, the information presented is lacking in two aspects:

   a. The method for estimating the zone of well influence is not cited or referenced; thus, no statement can be made regarding the reasonableness of the description of the zone of influence.

   b. The estimated zone of well influence on the ground water is arrived at using the average daily water use

and not the daily peak use which is normally used can be misleading since on-site wells, if this option is used, will pump at a constant rate with peak demand met by an on-site storage system. This aspect of the use of on-site wells should be addressed.

Since no decision (by 3M) regarding a choice of the water supply system has been made and the purpose of an EIS is to disclose the impact of various alternatives, it would be well to analyze the impact on the systems for Lake Elmo or Oakdale if 3M decided to rely on either of these systems for supplying its water needs. Of particular interest would be the economic impact on each of the municipalities.

3. Solid Waste Management and Resource Recovery:

The EIS indicates that 3M is proceeding to evaluate and study the possibility of "firing" coal and/or solid waste in the first stage of 3M's development plan. This effort should be encouraged and it is recommended that 3M staff keep Council staff apprised of the study effort.

The 3M Company should consider in its study efforts on using solid waste as a fuel, whether it will have the capabilities to "directly fire" the refuse or whether it will be using a "refuse derived fuel" (RDF). In a situation where a RDF may be used, the possibility exists that a RDF could be supplied by an outside contractor. Also, to be seriously considered is the possibility of using solid waste as a sole fuel source through 1995, eliminating entirely the use of fuel oils, coal and natural gases except for specific research purposes. The 3M Company should investigate the potential supply sources for obtaining solid waste in addition to its own internal supply source. A potential supply source of solid waste from contiguous municipalities should be investigated. The study effort should also be coordinated with the Washington County Engineering and Planning Department so that the use of solid waste will be consistent with the Washington County Solid Waste Plan.

4. Air Quality:

The major anticipated air quality impact of the proposed 3M development comes from emissions from the central utility facility and from vehicular emissions from traffic generated by the development.

The EIS indicates that under worst-case meteorological conditions there would be a violation of air quality standards for sulfur dioxide by 1995 if the facility were fueled by coal and solid waste. The facility may actually use any one of four fuel sources. Sulfur dioxide emission computations and modeling for ambient concentrations should be performed for each potential fuel source for the central utilities plant.

Because of the magnitude of traffic generated by the 3M development, it is likely that an indirect source permit will be required by the Minnesota Pollution Control Agency. Such permits are required for facilities which may generate secondary activity such as vehicular traffic which emits pollutants for which there are air quality standards. According to the EIS, in 1980 carbon monoxide levels due to vehicular traffic will exceed air quality standards in the vicinity of one of the major interchanges serving the development. This would be the case if average auto occupancy was two people per car and if 60 percent of travel occurred during the "rush hour" period. The concentrations of carbon monoxide would be higher if these goals were not met. The EIS should indicate at what stage of development the concentrations of carbon monoxide caused by 3M-generated traffic would become critical if auto occupancy were lower, or if more people traveled during the rush hour.

The 3M EIS should include an assessment on the impacts and violations as directly related to the permitting requirements of state (namely MPCA) and federal (namely USEPA) agencies. Specifically, the 3M EIS should respond to the capability of complying with significant deterioration regulations as they now exist and as proposed by new federal legislation. Inasmuch as air quality violations were noted in the EIS, air quality modeling for alternative operations should be provided in order to identify measures necessary to eliminate violations of the ambient air quality standards and to comply with proposed regulations. Alternative operations include changes in traffic volume, type of fuel used and changes in the amount of stack emissions. The EIS, as presently written, includes air quality modeling for only one operational scheme.

It is fairly certain that permits would not be issued for construction unless mitigating measures were in fact adopted to prevent any violation of state and federal regulations.

Secondary Impacts

Surface Water Management:

While it would be extremely difficult to estimate the impact of the 3M Oakdale/Lake Elmo project induced growth on each individual lake and stream in the study area, it should be possible to derive some general conclusions regarding the impacts of the 3M-related development on need for improvements in each watershed such as the Valley Branch. Of uppermost importance is the distribution of development with respect to its location within each watershed (concentration of development at the head of the watershed versus at the bottom) and its impact on the timing and sizing of watershed-wide drainage improvements.

city of oakdale, minnesota
1584 hadley avenue north / 55119

May 7, 1976

Mr. Robert Hoffman, Chairman
Physical Development Committee
Metropolitan Council
300 Metro Square Building
St. Paul, MN 55101

Dear Mr. Hoffman:

The City of Oakdale was prepared to make a statement concerning the proposed 3M development in Oakdale, at the May 6, 1976 Physical Development Committee meeting. In addition, specific comments on the Metropolitan Council staff review of the 3M Draft Environmental Impact Statement (EIS) were to be provided through the city planner.

Since the discussion of 3M has been moved from the May 6th meeting to the May 13th meeting, I will be unable to present any verbal comments, due to a prior commitment. Accordingly, the City has received permission to incorporate our comments (enclosed) with the staff information mailed prior to the May 13th meeting.

The City Council asks that the City's information be included in the record of the meeting.

Thank you.

Sincerely,

CITY OF OAKDALE

Dennis S. Zylla

Dennis S. Zylla
City Administrator

DSZ:cr
Enc.
cc: Opal Petersen
James Barton

city of oakdale, minnesota
1584 hadley avenue north / 55119

NAME: Dennis S. Zylla

POSITION: City Administrator - City of Oakdale

DATE: May 6, 1976

I appear before you today to relate certain concerns of the City of Oakdale regarding the proposed 3M development in Oakdale and Lake Elmo. The concerns surface as a result of the staff memorandum to the Physical Development Committee dated April 26, 1976, on the proposed 3M development Draft Environmental Impact Statement. Since then I have met with your staff and found some of the concerns to be illfounded, but feel that the views of the City should be made known to the Committee.

The 3M Oakdale/Lake Elmo development is a proposal. As such, given the extensive reviews to which it is undergoing, no final decisions have been made. The City Council believes, however, that maximum flexibility should be available to them to analyze the project. Accordingly, the Council is concerned that misinterpretations of either the Development Framework or of the 3M Draft EIS are used to inappropriately restrict 3M from becoming a reality, if so determined by the City Council to be in conformance to City, Metro Council, and State policies.

Furthermore, the City Council is concerned that given limited Metro systems dollars, that the East Side receive their share, if policy makers determine that they want to see development in their communities. Frequently capital investment has been channeled west and south of the core cities, as evidenced by the bulge in the urban service area. Wealth has also been located west and south. Downtown Minneapolis has been stronger in economy and cultural activities than downtown St. Paul. And yet are there not implications, both social and economic, of the growth moving disproportionately out from both core cities? The City Council believes that 3M, or like development, will serve to balance the economy of the region and strengthen St. Paul.

People frequently ask where's Oakdale? They make the assumption that the City is far removed from the downtown and rural (poorly planned with few urban services). Today I drove from Oakdale to this meeting. From our south corporate limit to the parking

lot across the street is 5.5 miles, driven in eight minutes. The City has an extensive highway system and has six to seven urban services (not four to five). See Figure 13 Development Framework. The entire City does not have sewer capacity but is scheduled to between 1980-1990.

The City Council is concerned that persons are becoming overwhelmed by the magitude of the 3M proposal, forgetting that the project is to be built out to the year 2000. In actuality a maximum of 1,500,000 square feet of space will be constructed by 1984 to serve approximately 2,844 employees. For comparison 3M Buildings 235 and 236 located on T.H. 120 contain about 1,000,000 square feet.

The Development Framework is needed, and goals and policies must be adopted to implement that framework. However, it is important to remember the overall general basis for the framework: 1) to maintain the high quality of life for the region and 2) to accommodate projected growth rationally and economically. Efforts should be made to encourage 3M type developments not find reasons not to. Negativism seems to be vogue.

From purely selfish reasons, Oakdale could find reasons to support the 3M development. We do have the second lowest commercial/industrial valuation per capita, low overall assessed valuation per capita, and a modest service level. The Council is, however, looking beyond 3M by my appearance before you today, as should be obvious from my prior remarks.

The City Council wants to be sure that the 3M proposal does not become the issue but rather that it is understood that the proposed 3M development is already part of the Development Framework and the issue is merely how and when to provide metro systems, particularly sewer, to serve that development. It might become necessary, due to Metro Council system extension delays, for 3M to delay their development program, but the Metro Council by the Development Framework seems to be committed to provide sanitary sewer no later than 1990. 3M may find interim capacity into the mid-80's in existing interceptors. The point is that 3M will not be allowed to overload any systems, but neither should systems be forestalled or designed to preclude 3M or other development on the East Side. Given that 3M is part of the Development Framework, the central theme of the Sewers policy should be adhered to "to provide sewer coincidental to the Development Framework".

In the last staff memorandum of April 26, 1976, the analysis reflected that the proposed 3M development was not consistent with several policies of the Development Framework. It is the City's contention that all inconsistency occurs because 3M is not within the current urban service area, but in the 1980-1990 area of planned urbanization. Yet 3M's initial occupancy is not until 1981, a date when metro systems could conceivably expect to be provided. Moreover, sewer capacity is available in an Oakdale interceptor on an interim basis to 1985-1986.

The 3M location does conform to a Development Framework goal of locating office parks near the freeway system or other major highways (Development Framework page 6 5.c). Oakdale is now a participant in a transit study for future bus improvements, many of which should be implemented by 1981.

Using the Development Framework criteria for determining the urban service area, a case could be made for all of Oakdale to be in it by 1980, if sewer were available. It is the wish of the Oakdale City Council for the Metro Council to provide sewer service to the entire City as determined by need. That would seem to indicate a need closer to 1980 than 1990.

In closing, I would like to add that while Oakdale is far from downtown St. Paul in some persons' minds, Oakdale is not rural but well planned. The City has a Comprehensive Plan, 1995 Transportation Plan, Water Plan, Sewer Plan, Surface Water Management Plan, and is completing a Pedway-Bideway Plan and Lighting Plan, all since 1973. While the City Council does not give cursory review to development proposals, neither do they wish to see good healthy development for the City or region denied unless found clearly unacceptable in terms of the Development Framework and city plans.

BRW

PLANNING/TRANSPORTATION/ENGINEERING/ARCHITECTURE

May 6, 1976

TO: Metropolitan Council Staff and Physical Development Committee

FROM: Bather, Ringrose, Wolsfeld, Inc. acting for the City of Oakdale

SUBJECT: Clarification of Statements Made in Staff Memorandum to the Physical Development Committee, Summary Review of 3M Oakdale/Lake Elmo Research/Office Park Draft Environmental Impact Statement, April 29, 1976

In review of the preliminary Metropolitan Council staff comments on the 3M Draft EIS, several statements have come to our attention which deserve clarification. To facilitate the Council review, we have noted the following six major items.

1. METROPOLITAN DEVELOPMENT FRAMEWORK, Primary Impacts, Page 1:

"The proposed facility is not consistent with Metropolitan Development Framework policies which call for intensive development to be located within the MUSA."

CLARIFICATION: The EIS found the project to be generally consistent with the Development Framework Metropolitan Urban Service Area. The site is proposed by 3M for initial occupation in 1981, and this conforms with the general project area inclusion in the MUSA in the 1980-1990 period. As the detailed staging of the MUSA is not known at this time, it is not possible to conclude that the project is inconsistent with the Development Framework.

BATHER, RINGROSE, WOLSFELD, INC. 7101 YORK AVENUE SOUTH EDINA, MINNESOTA 55435 PHONE 612/831-2300

2. TRANSPORTATION, Primary Impacts, Page 3:

"Peak-hour traffic flows generated by the 3M Oakdale/Lake Elmo facility at the 10,000 employee level will require improvements to increase metropolitan system capacities" and "to increase capacity of the metropolitan system will require an investment of approximately $5 million over the next 10-15 years."

CLARIFICATION: The EIS did not conclude that $5 million in roadway improvements would definitely be necessary to mitigate the potential over capacity problems. Rather, increasing roadway capacities were only a part of the measures suggested on pages 204-210 of the EIS. Just as important in averting potential problems are a range of programs for decreasing vehicular travel demand, including 3M traffic management. A combination of techniques would minimize the need for roadway capacity improvements.

3. TRANSPORTATION, Primary Impacts, Page 3:

"The EIS is not clear on what 3M's public transit needs may be."

CLARIFICATION: The 3M EIS states on page 216 that "Since the 3M Oakdale/Lake Elmo site is on the fringe of the Urban Service Area, it is expected that regular public transit services would play a minor role in transporting persons to the site. Therefore, to achieve the projected increase in vehicle occupancy, it would be highly important for 3M to establish strong commitments to transit programs, such as those presently operating at the 3M Center (Commute-A-Van and Ride-Guide Carpooling)."

4. REGIONAL PARKS, Primary Impacts, Page 3:

"Intensive development of the 3M site will create additional runoff into the Lake Elmo Regional Park Reserve."

CLARIFICATION: As discussed on pages 60-62 of the EIS, the Valley Branch Watershed District has

imposed rigid runoff requirements on future 3M site development, such that future runoff volumes and rates will be no greater than under existing, pre-development conditions. The 3M proposal responded to these requirements with a surface water management plan which conceptually meets the Watershed District guidelines. Thus, there should be no increase in runoff volume or rates due to 3M site development.

5. REGIONAL PARKS, Primary Impacts, Page 3:

"A proposed alternative sewer system favored by the EIS will bisect the Lake Elmo Reserve."

CLARIFICATION: As an information disclosure document, the EIS does not recommend any alternative courses of action. Rather, it predicts the environmental effects of possible alternatives.

6. ENVIRONMENTAL, Primary Impacts, Water Supply, Page 5:

"No analysis of the impact on the Cities of Oakdale and Lake Elmo water systems has been provided."

CLARIFICATION: The EIS discusses the impact of 3M utilization of the Oakdale and Lake Elmo water systems on pages 127-140. Using the Oakdale system as an example, it was stated that 3M use would result in "an overall acceleration of well construction, plus a possible need for additional community wells" (p.127). In terms of additional 3M groundwater withdrawal, the EIS found that "Drawdowns will be greater near to the concentrated well fields, but in no case should be greater than to the top elevation of the Prairie du Chien-Jordan Aquifer" (p.132). Considering economic impact of 3M municipal water use, it was found that, "Should 3M decide to utilize the water supplies from one of the three Cities discussed in this report, there will be significant economic benefit to that town" (p.140).

STATE OF MINNESOTA

STATE PLANNING AGENCY
100 CAPITOL SQUARE BUILDING
550 CEDAR STREET
ST. PAUL, 55101

May 24, 1976

Dennis S. Zylla
City Administrator/Clerk
City of Oakdale
1584 Hadley Avenue North
Oakdale, Minnesota 55119

RE: 3M Draft EIS Comments

Dear Mr. Zylla:

The Draft Environmental Impact Statement on the 3M research office park has been reviewed by the Environmental Planning Division of the State Planning Agency. The attached comments are submitted for your consideration.

Sincerely,

Nancy I Onkka

Nancy I. Onkka
Environmental Planner

NIO/dh

Enc.

cc: Don Hunt, BRW

"AN EQUAL OPPORTUNITY EMPLOYER"

rec'd 5/24/76
D. Z.

ooo

STATE OF MINNESOTA

DEPARTMENT State Planning Agency/Environmental Planning Division

Office Memorandum

TO : Dennis Zylla
City Administrator, City of Oakdale

DATE: 5/24/76

FROM : Environmental Planning Division staff
State Planning Agency

PHONE:

SUBJECT: Comments on 3M Research Office Park Draft EIS - Secondary Impacts

Compatibility with local goals

The related and induced development from the 3M facility will cause a major change in land use in the impact area regions identified in Table 58. Is this urbanization compatible with the goals of the local units as shown in their comprehensive plans and zoning ordinances? Do the plans and ordinances reflect a desire for such growth?

Interaction of 3M in secondary growth process

How will 3M work with the local units of government to help minimize adverse impact from the secondary growth? Several possibilities for beneficial co-operation exist. These include counseling employees on where to locate, providing readily available technical assistance to local units, participating in local committees/task forces working to revise existing controls, tabulating information on where early-stage employees locate and informing local units of revisions in estimates for locations of later-stage employees, etc.

Secondary impacts related to construction

The secondary impacts of the increased need for housing, commercial/service establishments and governmental services to handle construction workers should be discussed. How many workers will be required for the various stages? How many will probably move to the 17 region impact area? Where and when will the greatest impacts be? It is apparent that problems may occur if local units are not alerted to this more immediate relocation.

Relationships to other developments

The Environmental Impact Statement should point out major known developments that will occur in that area (eg. Dayton-Hudson's commercial/industrial development, etc).

Metropolitan Planning Act

The Environmental Impact Statement should briefly discuss the implications of the recently enacted Metropolitan Planning Act, particularly any schedules established by the Metropolitan Council for its implementation.

Secondary Impacts

1. Population estimates. As pointed out on pages 293 and 305, the secondary impacts of the 3M facility will depend mostly on the residential distribution of the related and induced population growth. However, the provision of better housing, roadways, governmental services, etc, may induce unrelated development to settle in the 17 region impact area in greater numbers or earlier than anticipated.

   We do expect that local units with high-amenity areas (shorelands, St. Croix River, woodlands, more rural areas) would be attractive to the well-paid 3M employee and receive more population growth than the Draft EIS estimates indicate, although it would be difficult to project any figures for this.

   How much will the opening of I-94 (at either of its two alternate locations) change the residential patterns predicted, particularly if the staging is delayed beyond 1995 (p. 298)?

   Location of this new related and induced growth within the regions is extremely difficult to estimate. It is also extremely important, because the location and timing of the growth will affect the impact on the natural resources as well as the type, level, and cost of services needed. Factors such as availability of buildable lots, rural atmosphere, nearness to lakes and other high amenity areas, access to work, and land costs will influence location within regions. Each local unit will have to identify those areas most susceptible to development and decide what revisions to existing controls will be needed to minimize potential problems. What steps have been taken to inform local units of this?

2. Surface Water Management. Pages 371-373 discuss impacts of the increased urbanization on the impact area's surface waters. Without a map of the surface waters and watershed/drainage areas, it is difficult to anticipate where future problems will occur. This information should be included. As a high-amenity area, shoreland areas will certainly attract residential development, with associated impacts on surface waters. Similarly, the presence of many lakes in certain regions will make location in shoreland areas more probable for commercial/industrial growth, as well as residential growth.

Those surface waters with existing problems (high or increasing water levels, rapid entrophication, water quality problems, etc.) should be identified, and the impact of the potential urbanization on these waters indicated.

3. Transit Services. The development of transit services in the impact areas could reduce traffic and energy use, and slow the demand for new/upgraded roadways. Does Map 38 (p. 213) show all the transit services available to the impact area? If not, please indicate the other services. Does the MTC plan to increase transit services to the area in the future? Does the MTC Regional Express Bus Network Study, if completed, recommend increased services?

   The effect of these services should be discussed under mitigative measures for energy (p. 405) and roadways (p. 417).

4. Solid Waste. Table 93 (p. 407) estimates the solid waste to be generated by 3M related households. The impact of this amount of solid waste on the capacity of the existing and planned landfills is unclear. This information should be added. When would the Metropolitan Council's Guide Plan for solid waste disposal become effective?

   Will the 3M facility utilize solid waste from the surrounding communities in its resource recovery system, if this option is chosen? This possibility should be discussed under mitigative measures for solid waste impacts.

5. Noise. Another mitigative measure for noise impacts should be noted in the Draft EIS. Noise sensitive areas (residential developments, wildlife sanctuaries, hospitals, parks, etc.) can be separated from noise operating areas (highways, etc.) when zoning districts and plans are established. Such prior planning can reduce the need for costly noise barriers.

6. Housing. Mitigative measures for providing low to moderate income housing include the encouragement of PUDs, which provide for a range of housing types (p. 434). How many of the communities have PUD ordinances?

7. School aids. The description of school aid distribution on page 467 and the computation of school aid figures on pages 480, 476, and 472 may need correction. These new computations may require reassessment of the fiscal impacts of the increased school enrollment.

   It is our understanding that the amount of school aids is based upon the state-set school aid figure minus the ability of the district to pay schooling costs. As

the wealth of the district increases, the school aids generally decrease. Commercial, industrial and residential tax bases are included in this wealth; on pages 472 and 476, are these items double counted when the school district revenues are estimated?

The amount of school aid per pupil unit has been set by the 1975 Legislature to be $900/pupil unit for 1975-76 and the $960/pupil unit for 1976-77. Different schooling levels have different pupil unit values - elementary (1/2 unit), junior high (1 unit), senior high (1.4 unit); this reflects the varying schooling costs for each level. Were these varying levels included in the school aid computations?

For example, Stillwater School District #834 will have an estimated 3M - induced school enrollment of 4275 in 1975 (p. 448). Associated school aids for these students are estimated to be $3,954,000 (p. 480), or apparently 4275 x $925. Increased school district taxes from the 3M-related commercial, industrial and residential growth are estimated on p. 477-488. On page 476, the revenue to the school district for 1995 is stated as $10 million - apprently the $3,954,000 from school aids plus the $4,688,000 due to increased residential development tax revenue and $1,761,100 due to increased commercial/industrial development tax revenue.

For more detailed information on school aid computations, we suggest that you check with Walter Harvey, Director of the State Aids, Statistics and Research Section, Administrative Management/Legislative Relations, Department of Education (296-4427).

8. Municipal costs. The cost of the initial provision of public service infrastructure is not discussed in the Draft EIS, yet this can require extremely large public investments. Basic information on the cost per household for various development densities and service levels would alert local units to costly growth patterns that may be preventable.

   Also, a listing of the services that might be required of local units would help them anticipate possible service demands. We would like to point out that the demand for this public investment often occurs prior to receipt of any increased tax revenues from the additional growth, causing cash flow problems and increased taxes. Has this been pointed out to the local units?

9. Governmental Policies. The severity of any secondary impact depends upon the ability of the local unit of government to cope with the growth. Prior notice of possible growth, contained in the growth estimates in the Draft EIS, does permit the local units to plan in advance for the growth and thereby revise local

controls to minimize adverse effects.

The existence of types of controls (capital improvement programs, erosion control measures, comprehensive plans, zoning ordinances, etc.) that adequately reflect the local unit's resource situation is one indication of the local unit's ability to cope. The Draft EIS does survey the local units for presence of several kinds of controls, although an assessment of their adequacy is probably beyond the scope of this document. Three important control measures were not surveyed: septic tank controls/ sanitary ordinances, subdivision controls, and PUD ordinances. All three are important tools in managing growth to minimize problems. Which communities do not have these controls?

Adoption/revision and implementation of necessary controls will take both time and money. Will there be enough time for this to occur before the growth begins? Which areas might experience time problems? Costs for such efforts will accrue before any increases tax revenues from the growth are received. Which areas might have particular problems paying for this? Will 3M give technical help to assist in this planning and implementation?

Two recently enacted mitigative measures should be pointed out in the Draft EIS. The first is the technical assistance available from the Metropolitan Council through the requirements of the Metropolitan Planning Act. The second is the financial assistance available to local units from the Metropolitan Council through the Land Use Planning Grants Act.

Irreversible and Irretrievable Commitments of Resources

The estimate of land consumption by 3M related growth on page 493 (15,000 acres) conflicts with the estimates in the land consumption summaries in each region on pages 337-350, which show a total of 24,400 acres.

Although land will be the major resource irreversibly impacted, other resources will also be impacted, particularly water (quality and quantity). This should be discussed in this section.

Alternatives

Another alternative exists and should be considered - namely, two or more plants at two or more sites. This would permit partial location on the more expensive St. Paul - Minneapolis land, with resultant tax benefits to these cities, lessening of relocation/urban growth to the east, lessening of environmental impacts, etc., and might be in better agreement with Metropolitan Council and local policies. This alternative would perhaps be less expensive to 3M than loca-

ting the total facility in the St. Paul - Minneapolis area and also require less investment of public funds for new services.

Minnesota Pollution Control Agency

July 7, 1976

Mr. Dennis Zylla
City Administrator
City of Oakdale
1584 Hadley Avenue North
Oakdale, Minnesota 55119

Dear Mr. Zylla:

Attached you will find our comments on the Draft EIS for the proposed 3M Oakdale/Lake Elmo Research Office Park project. Although the document is fairly comprehensive and acknowledges the interrelationship of various aspects of the development and the environment, the document is deficient in several areas. These are identified in the comments attached. An important Agency concern is the limited extent to which alternatives were discussed (i.e., site, fuels, transportation).

The negative primary and secondary impacts associated with the proposed site are extensive (see comments of the Washington County Planning Department, March 23, 1976, the Metropolitan Council, January 9, 1975, the Tri Lakes Association, April 12, 1976, and attached comments). Without benefit of alternative site discussion, one might infer that a central city location offers the potential of mitigating measures and, in some cases, elimination of negative impacts associated with the Oakdale/Lake Elmo site. For example, the existing transit network could serve a major portion of employee work trips if a central city location were chosen. This would result in reduced impact of vehicles affecting air quality, noise, and the need for highway improvement. Utilization of existing services, facilities and work force (i.e., sewer, water usage, schools, housing, low income and minority segments of the population) could be employed.

The Minnesota Environmental Policy Act requires consideration of prudent and feasible alternatives to the proposed action. The environmental impact statement process is a tool for protection of the state's environment and, therefore, the impact statement documents must discuss alternatives for various aspects of the proposed action and comparative impacts. This information is

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CITY OF OAKDALE

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Mr. Dennis Zylla
City Administrator, Oakdale

necessary for the issuance of permits by the Agencies responsible for fulfilling their statutory obligations under MEPA.

It is the Agency's opinion that the Draft EIS on the 3M Oakdale/ Lake Elmo Research Office Park is deficient in its discussion of prudent and feasible alternatives as well as the impacts identified in our specific comments attached.

Sincerely,

Peter L. Gove
Executive Director

PLG:eis

Attachment

cc: EQC, Mary Sullivan
Will Shapira, P.R., 3M
Jerry Schaller, 3M, Wash.DC

Minnesota Pollution Control Agency Comments
on
3M's Proposed Oakdale/Lake Elmo Research Office Park
Draft Environmental Impact Statement

Revised July 1, 1976

The proposed 3M Oakdale/Lake Elmo Research Office Park project will ultimately employ 18,000 with associated population increases and increased demand on services. In view of the magnitude of this project, the Draft EIS inadequately addressed the impacts on the environment of the following areas.

WATER QUALITY

Hazardous Wastes: The EIS should discuss in detail the storage, transportation, disposal and generation of all hazardous wastes resulting from the facility. The same should be accomplished for hazardous materials, such as fuels, raw products or components, by-products, etc.

Liquid Wastes: The EIS should discuss the nature and strength of all liquid wastes to be discharged to the Metropolitan Waste Control Commission facilities and other immediate facilities. There is serious concern over the induced and actual growth due to the 3M center being located in an outlying area with regards to sewage capacity. Capacity of the Cottage Grove treatment plant is currently being exceeded. No sewer extensions are being granted in that area because of the lack of sufficient capacity of the present treatment works. The MWCC facilities are rapidly reaching capacity. Development of rural areas, inducing greater urban sprawl, endangers the quality of the ground water as a result of dependence of on-site sewage disposal (septic systems). Detailed discussion of the utilization of on-site sewage disposal and mitigating measures employed to prevent degradation of ground water quality is needed.

Hydrology: There are potential impacts to the local hydrology by increasing runoff from impervious surfaces. Historically, problems have existed with maintaining lake levels in Washington County. There seems to be a cyclic high water condition that should be investigated before any changes affecting the hydrology of the area are made.

AIR QUALITY

The EIS predicts that ambient air quality standards for hydrocarbons, oxides of nitrogen, carbon monoxide and sulfur dioxide would be violated at various times by motor vehicle traffic and utility plant emissions.

Revised July 1, 1976
Comments on 3M Oakdale/Lake Elmo Proposal

Monitoring: No ambient monitoring data has been collected on site. For a project of this size, this is a serious deficiency, especially when violations are forecast.

Sulfur Dioxide: We are concerned that the plume from the Allan S. King plant, when trapped under a nighttime inversion, may spread out and touch ground in the vicinity of the site. This may cause elevated levels of SO_2, which together with 3M's utility plant emissions, may cause violations of SO_2 standards before the projected violation in 1995. Those violations would also be more frequent and more severe than otherwise projected.

Utility Plant: Note again that the projected violation of SO_2 standards is from the emissions of 3M's plant alone. In reality the surrounding development would add to the SO_2 levels. Residential space heating emissions should have been added to the estimates according to the residential land use forecasts. The effect of this would be to raise the predicted concentrations of SO_2. The Minnesota Pollution Control Agency would not grant permits to a facility which would cause a violation of Ambient Air Quality Standards, even if the emissions from the facility are within the allowable emission limits. Mitigating measures will have to be adopted to avoid violations of ambient air quality standards.

Trace elements including heavy metals and fluorides which would be emitted from the utility plant were not discussed. The discussion should include an analysis of the coal which would likely be used as fuel and an estimate or analysis of the solid waste which would be fired (i.e., will PCBs be released upon incineration?).

Emissions of oxides of nitrogen from the utility plant boiler were not discussed. There are regulatory restrictions of NO_x emissions for boiler(s) of greater than two hundred fifty million input BTUs.

The MPCA's Division of Air Quality will require information on the utility boilers including the flue gas ACFM, particulate and SO_2 emissions, stack height, stack exit diameter, ambient air and exhaust gas exit velocity for permit issuance.

The discussion on mitigating measures mentioned increased stack height; however, possible impacts of this measure on visibility, aesthetics and airplane safety were not discussed.

Another mitigating measure that was mentioned was stricter regulations for the entire metropolitan area. It is highly unlikely that the MPCA would revise its sulfur limits and impose these costs on all fuel users so as to allow 3M to expand to its desired levels. There is insufficient information about this mitigating measure to allow a reasoned decision.

A third alternative mitigating measure discussed was decreasing the size of the development. The DEIS lacks figures on the reduction necessary to meet standards and the associated impacts of such a reduction.

The DEIS failed to consider the possibility of installing flue gas desulfurization equipment and associated impacts.

The visibility of cooling towers and utility stacks was not adequately discussed. The visibility of steam plumes from the cooling towers and their potential to produce fog and impair highway safety was not discussed.

Coal Pile: The existing literature is sufficient to make estimates of the amount of fugitive dust emitted from the coal pile. These estimates should be made.

The DEIS failed to discuss the effectiveness of the watering that was proposed to minimize fugitive dust. Another alternative that should be discussed is total enclosure of stored coal in silos.

Construction Emissions: Existing literature also enables the prediction of emissions of fugitive dust and the effectiveness of mitigating measures. Predictions should be made.

Vehicle Emissions: Macro-scale highway emission estimates indicate that violations of the standards for oxides of nitrogen and hydrocarbons would occur under worst case dispersion conditions. This analysis did not include the NO_x emissions from the utility plant.

The DEIS should discuss the implications of high NO_x and HC emissions on oxidant levels. The impacts of the emissions and secondary pollutants on human beings and plants should be discussed. The MPCA sampling has shown highly elevated levels of ozone downwind from the metropolitan area. This ozone is formed in a photochemical reaction involving NO_x and hydrocarbons. Since motor vehicle traffic is the primary source of hydrocarbons and a substantial source of NO_x, 3M's high level of automobile use induced by the project is not to be taken lightly.

Although violation of the NO_x standard is highly unlikely, the MPCA takes issue with the EIS when it states that specific mitigation measures are not necessary. The DEIS (page 244) states that only a portion of the traffic would be attributable to 3M. The DEIS does not adequately consider and discuss the impact of the 3M project on stimulating further development in the area. Indirectly, as well as directly 3M will be responsible for a significant portion of the traffic.

Carbon Monoxide: Predictions of localized carbon monoxide emissions have used a 30 percent cold-start factor for the p.m. peak period. The MPCA anticipates that nearly all of the site traffic

leaving the facility in the p.m. peak period would be operating in a cold-start mode. The correction factor should thus be closer to 5.9 rather than the 2.76 used. Making this change causes violations to be predicted at west entrance A in 1990 and 1995, west entrance B in 1995, Ideal Avenue in 1980, 1985, 1990 and 1995.

Page 244 of the Draft EIS concludes that the CO problem occurs under "worst" case assumptions only and will go away in a few years as soon as vehicles are cleaned up. First, the model used is not a "worst" case model. The model presumes atmospheric stability Class "D" which is the most frequent condition encountered in the Twin Cities, not the worst. The model also presumes low wind speeds which may be quite frequent, depending upon local topography. As pointed out, the cold-start factor used appears to be unreasonably low with a consequent under estimate of the size of the problem. Those portions of the highway network which were identified as having a capacity problem, namely I-694 and T.H. 212 interchange, should also be analyzed for the micro scale CO impacts since there is a high probability of violations there.

The predictions of localized CO violations also presume that the Federal Motor Vehicle Emission Control Program will stay on its current statutory timetable. Indications are that clean-up of autos to the statutory limits will likely be delayed up to five years. The result would be more severe, more frequent violations over a wider area.

The cold-start factors suggested in the model itself may be substantially conservative when applied to future years. This is because the ratio of cold-start emissions to average emissions has been increasing as average emissions have dropped.

The predictions of localized CO problems are based on the assumptions of a 2.0 persons per vehicle occupancy rate and a 60 percent peak hour arrival factor. Both of these assumptions seem optimistic despite the major accomplishment 3M Company has made in the area of employee transportation. The CO problem will be even worse if they are not attained. Hours adjacent to the peak hour ought to be investigated for the possibility of additional violations. The calculations for the eight-hour average should be re-examined with a more appropriate cold-start factor and, in light of the staggered work hours, an individual hour-by-hour average applied with a sliding eight-hour "window" and the meteorological persistence factor to determine eight-hour averages.

Alternatives: The high occupancy factor and staggered work hours pretty well exhaust the mitigating measures available at this site. Public transit is expected to play a "minor" role (EIS, page 216) in transporting 3M employees. This is a direct result of a fringe location which puts 3M outside the present transit network. 3M's excellent past record in regard to employee transportation is to be

applauded. The projected violations of CO standards can not be permitted. Alternatives or additional mitigating measures need to be examined. Alternatives that come to mind are reducing the size of the development, which has certain disadvantages for 3M; relocating the site such that public transit can play a significant role in employee transportation, or to arrange for mass transit service perhaps with the assistance of the Metropolitan Transit Commission. This project will ultimately employ 18,000 people. If you multiply this figure by 3 (average family size), the resulting population figure seems to suggest benefits from a mass transit service. It is our opinion that a conscientious analysis of these alternatives should be made. The combination of 3M's aggressive promotion of para-transit systems combined with greater transit service might enable the development densities that 3M desires without jeopardizing air quality standards.

NOISE

Table 44 shows substantial reductions in noise from the roadway with distance. The noise prediction models appropriate for highways (line source models) do not indicate 6-8 dBA reduction per doubling of distance as shown in Table 44 but rather show only a 3 dBA reduction. This appears to indicate a serious methodological flaw, and we cannot accept the results as having any validity at this time. The MPCA staff believes that noise levels will be significantly higher than predicted and is willing to review the noise modeling with the preparer of the Draft EIS in order to correct methodological errors.

Highway noise estimates were prepared for the peak traffic hour. However, this is often not the noisiest hour of the day. Highway noise is highly dependent upon vehicle speed. During peak hours the vehicle speed is usually lowest. Consequently other hours adjacent to the peak hours should be analyzed for noise impact. With respect to truck noise, trucks passing the receptors occur as a random event of high noise levels--this gives the high L_{10} levels. Autos provide the bulk of the noise occurrence which is reflected in the L_{50} levels. Traffic induced by 3M and indirectly induced through the associated development of the area would be responsible for the frequently encountered noisy conditions. 3M would not be responsible for the "peaks" or L_{10} levels except as they may be caused by garbage trucks delivering solid waste fuel. The EIS should be clarified to reflect this.

ALTERNATIVE SITES

The DEIS focuses on the Oakdale/Lake Elmo site. Alternative sites are dismissed from the discussion of impacts because the alternatives did not meet 3M criteria. Alternative site decisions for the project should have been discussed in greater detail, along with criteria established by 3M Company in making the decision. The environmental impact statement process is designed to assist the decision-making

process; full discussion of alternatives and sites and their associated impacts would fulfill the intent of the process.

Highways: There is concern over the change in status of T.H.212 from that proposed in the Transportation Policy Plan of the Metropolitan Council. At-grade intersections are elements of the arterial plans for T.H. 212. If there is a plan to upgrade T.H. 212 to freeway status, associated land uses along T.H. 212 will be impacted. As land uses were not designed to conform to freeway conditions, the upgrading of T.H. 212 will have major impacts.

Contiguous Residents: There seems to be a lack of information on the impact that this project will have on the residents in the adjacent area and how they feel about the impact this project will have on their "neighborhood," the aesthetics of the area and the related social and environmental conditions.

ENERGY

The possibilities of energy alternatives, such as solar energy, were not adequately discussed. Large commercial and industrial users of energy especially should take a leadership role regarding utilization of various forms of energy sources. Natural gas is going to be cut off from major users within three years and sulfur dioxide limits are rapidly being approached in the metropolitan area. It is the opinion of the Agency that energy sources, other than the proposed fuel, be evaluated as to their feasibility by all major users if we are to avoid competition for the last available increments of SO_2 and particulates.

May 28, 1976

The Honorable H. A. Vogel
and City Council
1584 Hadley Avenue North
Oakdale, Minnesota 55119

Re: 3M/Oakdale/Lake Elmo/Research Office Park
Draft Environmental Impact Statement
City of Oakdale

Dear Mayor Vogel and Council Members:

The Board of Managers of the Valley Branch Watershed District have reviewed the Draft Environmental Impact Statement (EIS) prepared for this proposed development which is located within the District. We consider the document to be quite comprehensive, pointing to a number of concerns which can affect water resources at the site and in other portions of the Watershed District. We feel the document adequately identifies potential problems which must be addressed in detailed study prior to implementation of the project.

Following are the items of particular concern to the Watershed District which are identified in the Draft EIS.

1. Control of erosion and sediment on the site during construction and on a permanent basis.

2. Adequate provisions for temporary and permanent storage of runoff on the site during and following construction, and implementation of best available water quality management techniques for the site. The District has communicated with 3M Company relative to criteria for quantitative control of runoff. However, to date, this planning has been conceptual. Detailed design and implementation of the concepts are of vital concern to the District.

3. The effect of the proposed development on ground water in the vicinity of the site and in other portions of the District is of great concern. As identified under the Water Supply section of Primary Impacts, deep well pumping can alter seepage rates from surface waters, thereby creating low water level problems in lakes within the District. Of primary concern would be the nearby Tri-Lakes area. This matter will require additional investigation prior to implementation of the project.

4. The effect of the proposed project on land use is discussed in both Primary and Secondary Impacts. Our concern with the Primary Impacts on the site relate to the effect on runoff rates, volumes and quality, as noted above. However, Secondary Impacts including accelerated land development in other portions of the Watershed District are also of concern due to the typical effects of urbanization on runoff in those areas. This may affect the timing of other improvements related to water management in the District.

The Board of Managers feels the Draft Environmental Impact Statement adequately identifies the impacts and concerns related to water resources in the District. Possible mitigating measures for adverse impacts are discussed in conceptual terms. It is our opinion that adverse impacts relating to increased quantities of runoff can be mitigated by detailed planning on the site. Also, the quality of runoff leaving the site can be managed to some degree. However, the potential serious effect of lowering lake levels within the District due to deep well pumping, requires considerable additional analysis prior to selection of this alternative for water supply.

The Board of Managers appreciates the opportunity to comment upon this document. We look forward to continued coordination with you in the future.

Sincerely,

Robert N. Rosas, sb

Robert N. Rosas, Secretary
Board of Managers
VALLEY BRANCH WATERSHED DISTRICT

RNR/sb

cc: Minnesota Environmental Quality Council
City of Lake Elmo
Washington County Planning Commission
Department of Natural Resources
3M Company - Al Lehman
Bather, Ringrose, Wolsfeld

Village of

Marine on St. Croix

WASHINGTON COUNTY, MINNESOTA
55047

April 15, 1976

City of Oakdale
1584 Hadley Avenue North
Oakdale, Minnesota 55119

Gentlemen:

Thank you for the opportunity to make my presentation the evening of April 6th. The following is my written statement.

My name is Mayor Jim Johnson. My address is Marine on St. Croix, MN 55047. I speak in behalf of the City of Marine on St. Croix, which is incidentally, the site of the first industry in Minnesota. We have no record of any "impacting" statement being filed on the timbering of the St. Croix Valley.

Marine is one of the cities "impacted" by the 3M/Oakdale/Lake Elmo Research/Office Park Draft EIS.

As a point of reference, I am currently a Commissioner of the Minnesota-Wisconsin Boundary Area Commission and the former secretary of the St. Croix Intergovernmental Conference. I have had an opportunity to review a number of EIS's.

I must give the Bather-Ringrose-Wolsfeld (BRW) effort a rather mixed review.

We, in Washington County have had an opportunity to read the report prepared by Washington County Planners Dennis Welch and Dick Meunich. This excellent work highlights some major areas of concern and in order to eliminate redundance, I will not mention those items.

My remarks will be confined to the comments under "Alternative Project Sites".

It should be noted that I am a 12-year employee of 3M.

I was not consulted either in my role as a 3M employee or as Mayor of an impacted area; nor do I consider it necessary to have been consulted until this point. I acknowledge the EIS process and feel it answers the needs of cities who are small like ours and yet have a point they feel needs to be made.

Rec'd 4/16/76

I was raised in St. Paul, down the alley from the home of the predecessor of 3M's R&D Vice President, Dr. Bob Adams, who has spoken to you earlier.

I delivered papers to the house of Mr. Busch, the legendary Vice President of Sales who along with Mr. McKnight made 3M a household name.

I was raised in a St. Paul that throbbed with the excitement of a growing 3M. 3M was St. Paul; and, for many, St. Paul was 3M.

And then we heard of the "fights" 3M was having over the taxing powers of the City of St. Paul and the move to Maplewood became the reality of the fifties and the sixties.

And today, St. Paul is effectively just a postal address for the 3M Center, which in 1976 is the vortex of Progress for Maplewood, Minnesota.

The urban fringe has caught up with the "Center" and today, the once-country location of 3M Center overlooks numerous roadhouses, MacDonald's, Arbey's, Kentucky Fried Chicken,...and in the very shadow of the building in which I work the grand monument to the mobile society --- the Sun Ray Shopping Center...complete with what has to be the largest sign in the Twin Cities area "announcing" its presence.

(When driving Assistant Secretary of the Interior John Larson to the airport after viewing the St. Croix River, he remarked to me about this sign --- "does that really have to be that big?" I just shook my head.)

And now, another leap-frogging is proposed and while it might have seemed to make some sense in the 60's to the 3M Board, it makes little or no sense in the late 70's. It makes no sense because Shakey's Pizza and "Lakeside" restaurants and Kentucky Fried Chickens have nothing to do with the beautiful land of Washington County.

But we hear that this is controlled growth, and yet this growth will continue the process of draining the real, if not the original, home of 3M, St. Paul.

The new 3M facility calls for costly Duplication in Washington County of services already provided for and not being fully utilized in the City of St. Paul.

This is not responsible in today's world of reducing expenses and "inventory" levels, a problem 3M has had itself.

It is common to hear the complaints of the problems in the money markets ("raising money", if you will have it). And yet, reflect on the bonding and subsequent increase in interest rates required for the estimated $2 billion of investment that will be required prematurely, before Washington County is ready, if in fact it ever has to be.

Last Thursday, our own Senator Humphrey, in talking about revitalizing America's declining cities cited the "official neglect of Urban America" by the Administration.

3M's failure to fully examine the urban alternatives in today's world of energy shortages, decreasing inner city school populations,...its failure to critically examine the alternatives to moving back to the urban core may be just as "neglectful"!

St. Paul is a jewel of a City. It has fostered many leaders. It deserves to live again. In a word, 3M and St. Paul deserve one another.

Alternatives, such as the Riverview Industrial Park with its sewer and services already in, in my judgment, satisfy the criteria stated on page 10 of the draft.

They deserve a much longer written discussion. The "short shrift" given these alternatives (pages 499 and 500) is inadequate. Indeed, carnivores sighted once in the last ten years received more comment than the key issue, alternative sites.

Gentlemen, your mail and my mail over the last years has been filled with the discussions and reports labeled "Development Framework". It looks like it makes good sense for the Metro Area. It should make good sense for 3M.

Alternatives such as the Riverview Industrial Park should be given the most critical of examinations. And, indeed, rather than draining St. Paul, 3M should take the forefront in adopting a policy of urban conservation, revitalizing St. Paul. That, in the final analysis would be best for 3M, their employees and the Twin Cities Area in general.

And, about Marine,...we have some 540 great citizens. The Metro Council feels that 500 people is a good target for the year 2000. I don't know who is going to leave. I'm not; but I would guess we feel that 500 people is pretty good target, too.

Sincerely yours,

J. W. Johnson, Mayor

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
ST. PAUL, MINN. 55155

June 1, 1976

Mr. Dennis Zylla
City Administrator, Oakdale
1584 Hadley Avenue North
Oakdale, Minnesota 55119

In reply refer to: 319
Review and Comments on the
3M/Oakdale/Lake Elmo
Research/Office Park
Draft Environmental Impact Statement

Dear Mr. Zylla:

Enclosed is one copy of the Department of Highways "Review and Comments on the 3M/Oakdale/Lake Elmo Research/Office Park Draft Environmental Impact Statement? dated June 1, 1976. Hopefully these comments are meaningful in the evaluation of this proposal.

Sincerely,

Kermit K. McRae
for
C.E. Burrill
Assistant Commissioner
Metro Region

Enclosure:

RECEIVED
JUN 1 1976
CITY OF OAKDALE

REVIEW AND COMMENTS ON THE 3M / OAKDALE / LAKE ELMO RESEARCH / OFFICE PARK (CARLTON PARK) DRAFT ENVIRONMENTAL IMPACT STATEMENT CITY OF OAKDALE BY THE MINNESOTA HIGHWAY DEPARTMENT

JUNE 1, 1976

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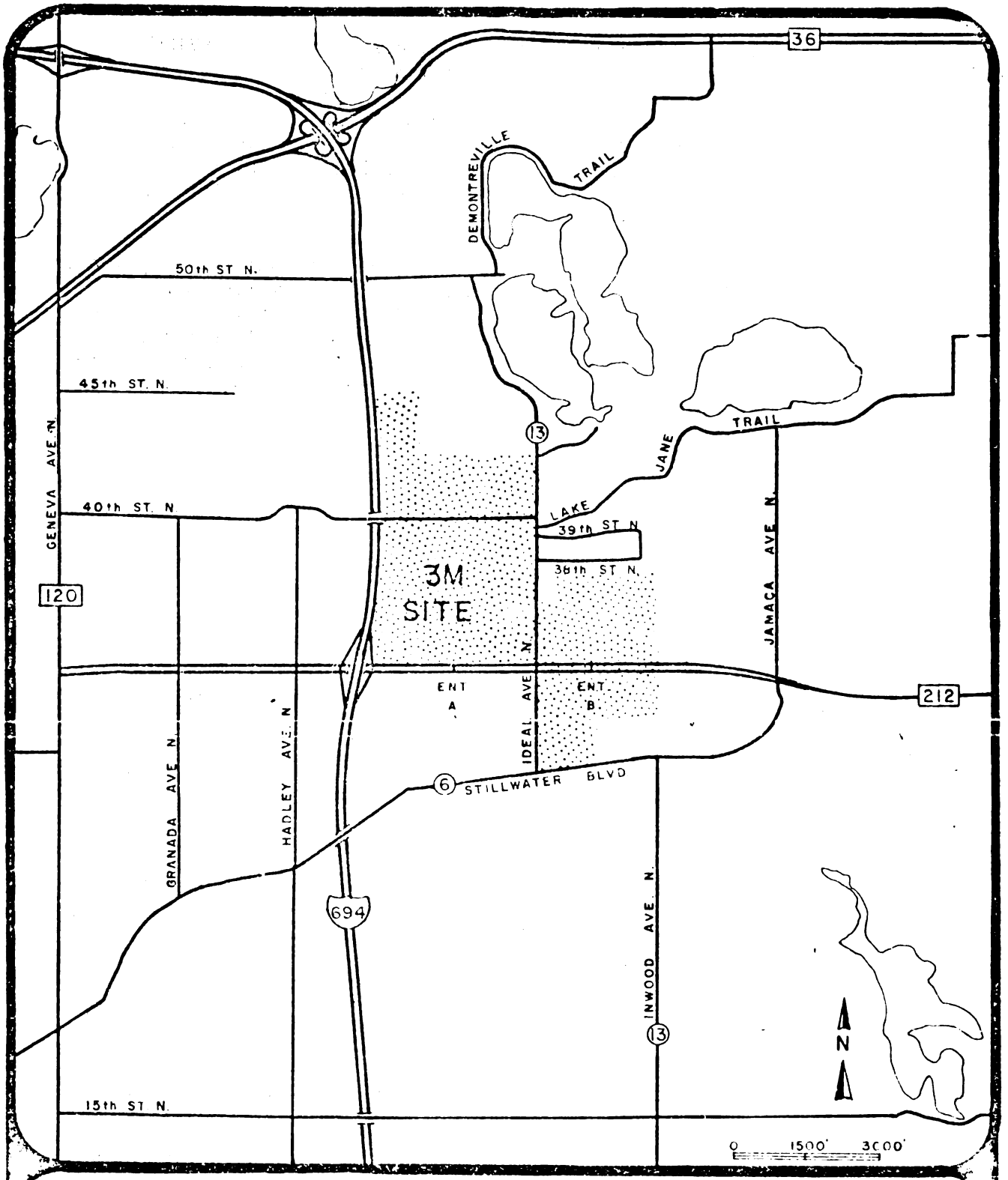


INTRODUCTION

During the past two years, 3M has been developing plans for implementation of an additional research and office park to be located on a 563-acre site in the northeast quadrant of I-694 and Trunk Highway 212. The Minnesota Highway Department, on various occasions during these studies, has been asked to comment on various aspects of the proposal. Planning for this site has now reached the state at which the City of Oakdale, acting as lead agency, has prepared a Draft Environmental Impact Statement for review and comment.

REVIEW PROCESS

The 509-page Draft Environmental Impact Statement (DEIS) documents the primary and secondary impacts of the site proposed to house 18,000 employees by the year 1995. Because the proposed project carries with it several implications regarding transportation and Minnesota Highway Department (MHD) operation, a special review of the Draft was undertaken. A Project Review Team was established to undertake this coordinated effort. This Team consisted of the following areas:

Transportation Planning
Socio-Economic
Noise-Air
Hydraulics - Water Quality
Right of Way
Traffic Engineering
Geometric Design
Project Review Management

Acquisition of the 563-acre site was initiated in 1964 after application of seven criteria to 25 sites within 12 miles of the 3M Center.

DESCRIPTION OF THE PROPOSED ACTION

The development of the 3M site is proposed to occur in five stages.

development plan

Stage I for 1,500,000 square feet for occupancy 1979-1982 requires a site entrance from Trunk Highway 212 at Ideal Avenue with only minor upgrading.

Stage II for 2,000,000 square feet for occupancy 1983-1986 will require access from Trunk Highway 212 or County Road 80 in 1983.

Stage III for 2,000,000 square feet for occupancy 1987-1989 will require additional access from Trunk Highway 212. Highway planning (design) must be firm by 1984 for compatible scheduling.

Stage IV for 2,000,000 square feet for occupancy 1990-1992 requires highway design completed by 1988.

Stage V for 2,000,000 square feet for occupancy 1993-1995 requires all highway access be completed or underway.

Vehicular access is expected to be served from TH 212 and extension of County Road 80. Transportation demands assume 18,000 employees, vehicle occupancy 2.00 and a 60% peak hour factor. Fortieth Street may be relocated.

vehicular access

Internal distribution is via one-way peripheral on-site road and other two-way roads. Transit via bus is compatible. Vehicle storage will be provided for 9,000 cars (reinforcing the vehicle occupancy rate of 2.00) in 700-car increments. *internal site characteristics*

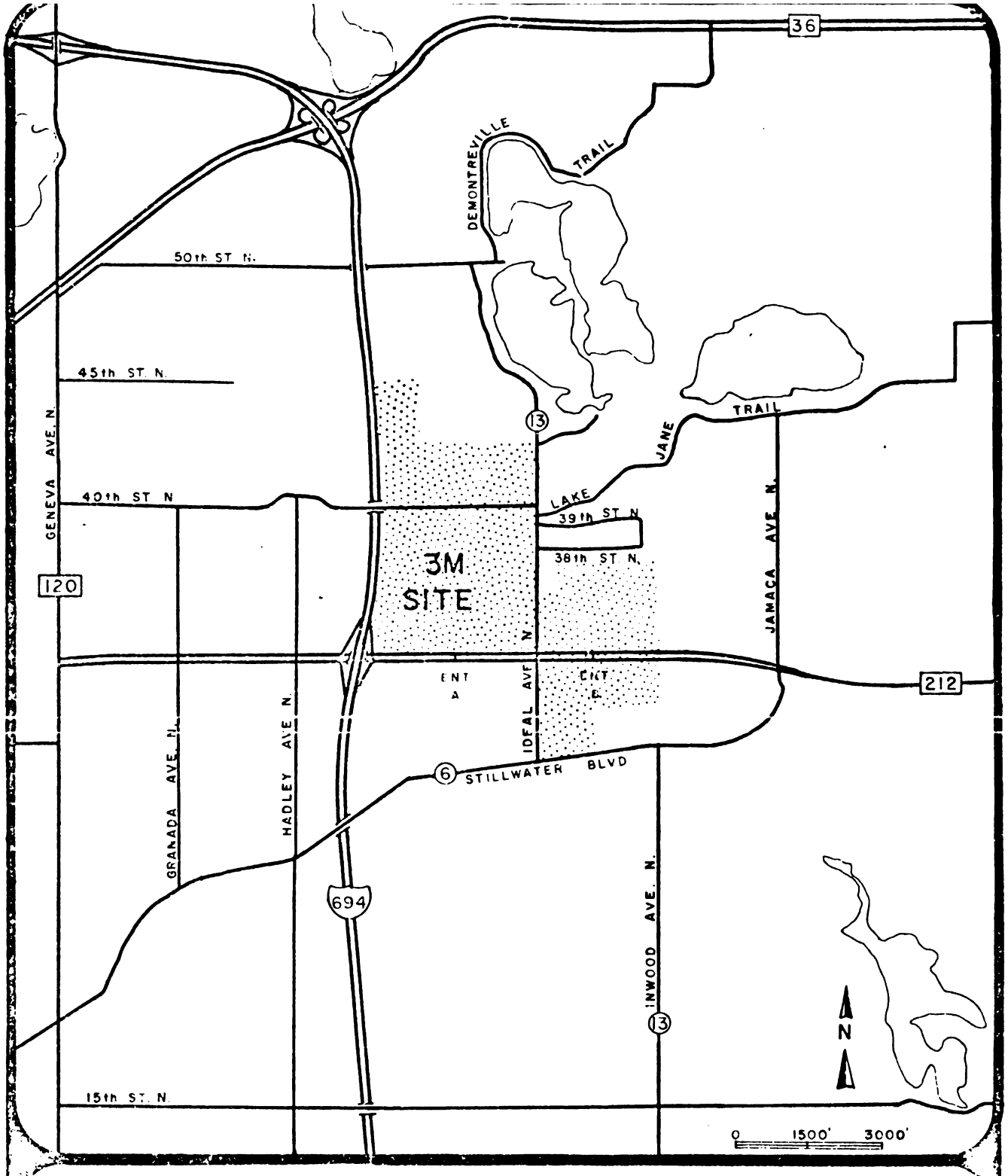
Pedestrian, materials, and fuel systems are conceptually described.

Central utility plant components south of TH 212 are described.

Water supply alternates and sewage disposal system alternates include a possible lift station and force main along TH 212.

Storm water handling system is perpetuated to maintain existing conditions (location, rate, quantity) as requested by the Valley Branch Watershed District.

System construction and operation indicate that a utility tunnel would be required under TH 212.



SUMMARY & CONCLUSIONS OF REVIEW & COMMENT ON 3M DRAFT E.I.S.

Sediment deposition should be minimized in highway ditches, drainage structures or ponding areas. Minnesota Highway Department (MHD) approval is required for any site grading on highway right of way.

TOPOGRAPHY AND GEOLOGY/SOILS p. 8

Available storage capacity in MHD ponding area at northeast corner of I-694 and 40th Street should be corrected.

MHD approval will be required to outlet drainage system into highway ditch or pond.

SURFACE WATER MANAGEMENT p. 8

3M site development requires acquisition of MHD interest in an access road.

LAND USE p. 8

Utilities may use MHD right of way pursuant to permit requirements.

PRIVATE UTILITIES p. 8

MHD will circulate draft regulations for energy requirements for street, highway and parking lot lighting in the near future. A Public Hearing will be held before adoption.

ENERGY p. 8

TRAFFIC NOISE p. 9

Existing noise levels along I-694 exceed $L_{10}75$ dBA at residential sites.

existing noise levels

Future noise levels for I-694 are reported 3 to 4 dBA low in the Draft EIS. Sensitive land uses should be clarified.

future highway noise

MHD only proposes abatement for existing residential uses where reasonable and feasible. Future development adjacent to traffic noise areas should be compatible or provide on-site abatement. MHD does not recognize resurfacing of pavements as a noise abatement measure.

highway noise abatement program

PRIMARY AND SECONDARY ROADWAY SYSTEMS IMPACT

The future role and function of TH 212 has gradually lessened to the appropriate designation of Minor Arterial. With reduced importance, at-grade intersections and slower speeds are permitted.

the role of TH 212 p. 9

The traffic generation assumptions and traffic forecasts are reasonable and adequate. The employee arrival times require a considerable spread of start times to achieve a 60% peak-hour factor. This arrival split is somewhat in conflict with an increase in vehicle occupancy.

traffic generation assumptions p. 12

I-694 will be utilized by a significant number of 3M employees during the peak periods (Figure 1). A four-lane beltway (I-694) will be congested: level of service 'F' and 'E'. A six-lane beltway will operate better: level of service 'C-D'. Severe congestion, level of service 'F', will occur at the on- and off-ramps at TH 212 under peak hour conditions. Another interchange with I-694 serving the site will relieve the TH 212 interchange.

future traffic data: 1995 p. 13

TH 212 will have severe congestion, level of service 'E-F', and traffic signal operation will be ineffective without additional access from I-694 to the 3M site.

Severe congestion, level of service 'E', is expected on I-694 north of TH 36 unless 6 lanes are provided.

secondary impacts on the near roadway system p. 17

Access to TH 36 east of I-694 will be difficult. Signals will reduce capacity of through movements. TH 36 west of I-694 appears adequate.

Weaving problems are likely at the TH 36/I-694 interchange and the northwest loop will be near capacity: level of service 'D'.

The I-694/I-94 interchange may experience weaving and congestion problems.

TH 212 west of I-694 is adequate. 3M site development does not contribute significantly to the need for upgrading TH 120.

The present 3M Center has more diverse accessibility and, thus, less problem spots than that proposed for 3M Oakdale/Lake Elmo.

present 3M Center access vs. proposed access to 3M Oakdale/Lake Elmo p. 18

In order to protect the traffic carrying capability and integrity of the I-694 beltway, another interchange should be planned and considered to accommodate the 3M site traffic. There is appropriate space between TH 212 and TH 36 to safely accommodate another interchange north of 40th Street. A standard diamond design is suggested for better operations and overall safety characteristics. Cooperative study by the City is urged together with appropriate staging.

interchange addition pros and cons p. 19

Five alternate concepts are displayed and briefly discussed as possible community streets that may interchange with I-694:

community street system considerations p. 20

- 45th Street as a Collector between Ideal Avenue (CSAH 13) and TH 120.
- 45th Street as a Collector between Ideal Avenue (CSAH 13) and 10th Avenue/7th Avenue in North St. Paul.
- 45th Street as a Collector between Ideal Avenue (CSAH 13) and Hadley; Hadley and Ideal Avenues as supporting Collectors.
- 40th Street as a Collector or Minor Arterial between Ideal Avenue (CSAH 13) and TH 120.
- 50th Street as a Collector.

The Lake Elmo Comprehensive Plan and Oakdale Transportation Plan have been reviewed for transportation needs and compatibility in relation to the 3M proposal. The north-south Minor Arterial east of I-694 that has been indicated in past local planning was not reflected in the Draft EIS.

other comments on the community street system p. 32

Many major traffic-attracting developments desire costly roadway improvements beyond the capacity of public funds to provide. Funding of such improvements should consider:

funding pressures for urban highway improvements p. 32

- Consistency with Metropolitan Council policies
- Availability of all public funds
- Consistency of technical information
- Level of service (congestion) toleration, depending on transit alternates
- Statewide goals.

If an additional interchange is provided on I-694, its need stems from intense development beyond the control of MHD and should be financed primarily by others.

cost participation considerations p. 34

Revisions at interchanges between two State Trunk Highways will usually be the responsibility of MHD (I-694/TH 36, I-694/TH 212, I-694/I-94).

Facilities (lanes, signals, etc.) to provide efficient site access from TH 212 should be financed by other than MHD.

Additional lanes on I-694 may be needed sooner with the 3M development but may be considered the primary responsibility of MHD.

The above reflects the general fiscal responsibility of MHD but does not suggest that funding will be available to provide roadway facilities when desired or needed.

Induced development is likely to occur along TH 212. Existing and future access must be carefully evaluated, controlled and adjusted consistent with sound traffic safety and operational considerations.

entrances along TH 212 p. 34

City land use controls must be cognizant of appropriate traffic considerations. Changing, closing and opening additional access to TH 212 is briefly discussed.

The 3M DEIS noted that there would likely be capacity problems at various places on the roadway system (pp. 183-196). Analysis has found the existing trunk highways (including I-694, TH 212) to be inadequate from a capacity standpoint.

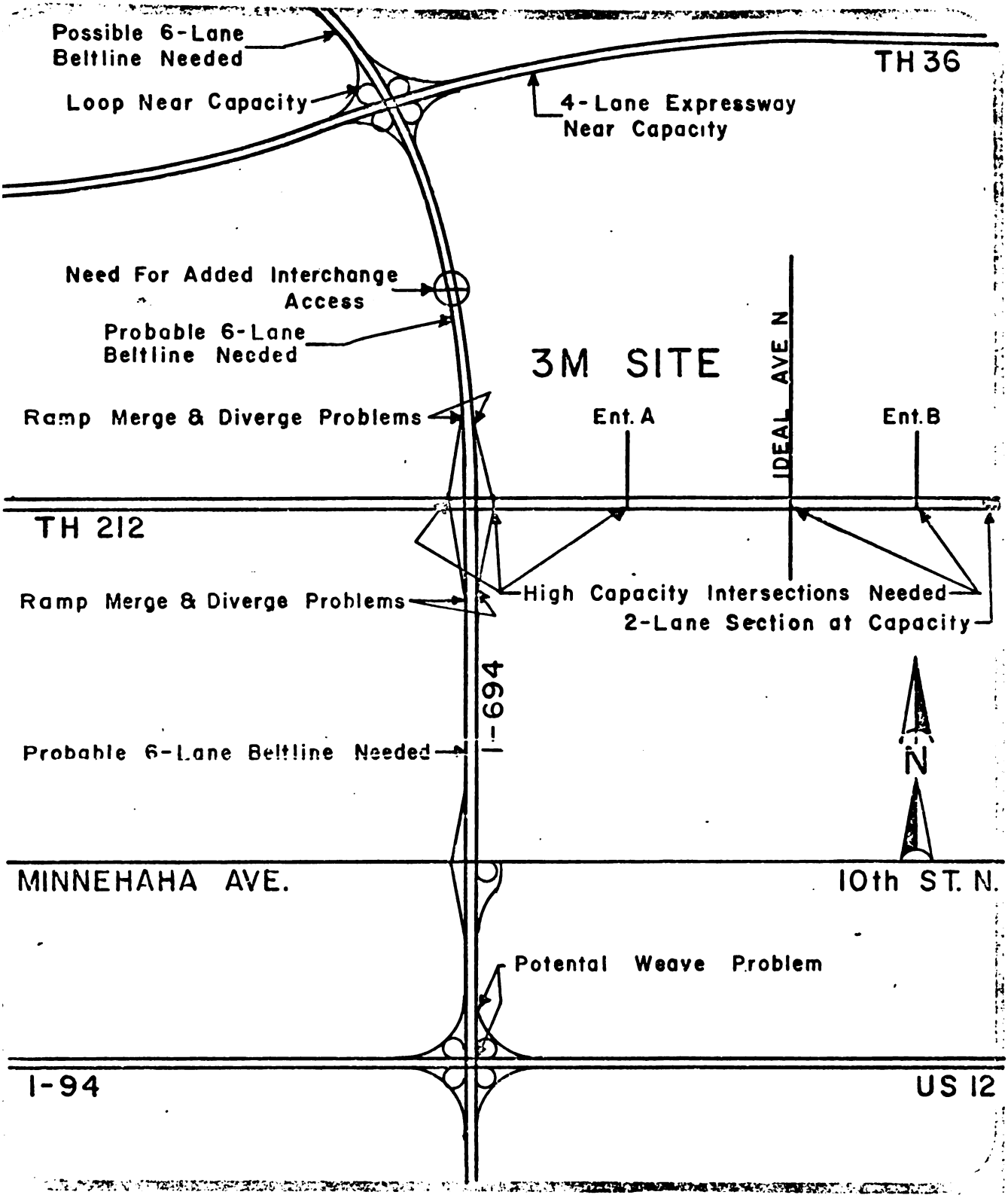
The following sketch summarizes MHD findings insofar as likely traffic problems in 1995 if the indicated demand volumes do occur. The most severe problems would be at the TH 212 interchange, on I-694 north of TH 212 and at the intersections along TH 212.

In the first stages, increased capacity at the TH 212 interchange will be needed along with high capacity entrances to the 3M site from TH 212. Later, another interchange north of TH 212 will probably be needed along with a six-lane beltline between TH 36 and TH 212. Later still, a six-lane beltline will probably be needed south of TH 212 and north of TH 36 as well. Capacity problems will also then probably be occurring on TH 36 east of I-694, on TH 212 east of County Road 80, and at the I-94 interchange.

MHD does not expect to fund the high capacity intersections needed from TH 212 serving the 3M site.

MHD expects funding for a possible interchange on I-694 to be provided primarily by others.

MHD cannot commit any fiscal resources at this time or offer any assurance that roadway requirements usually MHD's responsibility will be provided by 1995...or consistent with development of traffic growth.



SUMMARY OF 1995 CAPACITY PROBLEMS

AREAS OF REVIEW AND COMMENT

TOPIC	3M DEIS PAGE REFERENCE	PAGE
TOPOGRAPHY AND GEOLOGY / SOILS	45 - 54	8
SURFACE WATER MANAGEMENT	55 - 65	8
LAND USE	97 - 104	8
PRIVATE UTILITIES	105 - 111	8
ENERGY	155 - 167	8
TRAFFIC NOISE	246 - 255	9
PRIMARY & SECONDARY ROADWAY SYSTEMS IMPACTS	175 - 210 409 - 417	9

DETAILED
REVIEW & COMMENT
ON
3M / DRAFT E.I.S.

Erosion during site grading and construction will be inevitable. *Sediment deposition should be controlled on the site to prevent sedimentation in highway ditches, drainage structures or ponding areas.*

TOPOGRAPHY AND GEOLOGY/SOILS (p. 45-54)

The Minnesota Highway Department (MHD) acquired a ponding area in the northeast corner of Interstate (I) 694 and 40th Street to accommodate I-694 runoff. The existing storage capacities indicated on Map 11 (p. 56) assume that this ponding area is dry. *The highway pond has not been dry since it was constructed and has overflowed the past three years. Available storage is much less than the 30 acre-feet indicated.*

SURFACE WATER MANAGEMENT (p. 55-65)

The highway culverts and drainage structures are designed to accommodate a relatively short duration 50-year rainfall from an undeveloped watershed. The runoff rate of a short duration 100-year storm can be quite high, even from an undeveloped area. Some flooding would be expected from a 100-year event. *Permits or agreements will be required to outlet a surface drainage system into a highway ditch or pond.*

The State of Minnesota holds a fee interest in the I-694 and Trunk Highway (TH) 212 rights of way including the 6.11 acre ponding area northeast of I-694 and 40th Street. Access is fully controlled along I-694.

LAND USE (p. 97-104)

Access is also controlled along TH 212 with entrances allowed only at specific designated locations. The first entrance east of I-694 on the north side of TH 212 serves a public road running north approximately 500 feet to the center of Section 17, T29N, R21W. This road right of way was acquired in fee and is 60 feet wide and being 30 feet on each side of the Section line. The road was installed to serve property that would have otherwise been landlocked by the construction of I-694 and TH 212. This road is currently under the jurisdiction of the MHD and is entirely within the designated 3M site. *Disposition of this public right of way can be accomplished pursuant to reconveyance procedure as set forth in Minnesota Statutes 161.44 and would involve compensation for its current fair market value.*

The Draft Environmental Impact Statement (DEIS) identifies the need for several private utilities to serve the site. *Utility facilities for gas, electricity, telephone, water, sewer, etc., may be located on or across highway right of way pursuant to Minnesota Statute 161.45 and Department of Highways Regulation Number 33. Utility plans must be submitted with the application for permits; special provisions designated by the MHD during construction must be followed; a bond or certified check is required until satisfactory installation is completed; maintenance must be accomplished in a safely prescribed manner; and the utility must relocate at its own expense should highway improvements so require.*

PRIVATE UTILITIES (p. 105-111)

In relationship to energy needs and policies, the DEIS documents current legislation being implemented by various levels of government. *The Minnesota Highway Department has prepared draft regulations and guidelines for maximum energy use for street, highway, and parking lot lighting. These guidelines will be the subject of a Public Hearing within the next few months before official adoption.*

ENERGY (p. 155-167)

TRAFFIC
NOISE

Existing noise levels along I-694 exceed L1075 dBA at residential sites. Three residential areas; mobile home park near 50th Street North, and the residences north of Stillwater Road on each side of the freeway, have ambient noise levels of L1077 dBA and L1075 dBA respectively. These areas are included in this Department's abatement program and are scheduled for 1977 construction.

existing noise levels (p. 246)

Future noise levels (Table 44) for I-694 are 3 to 4 dBA low. The other roadways are within ± 1/2 dBA compared to our computer prediction program for 117/144. Accordingly, Map 41 reflects these low noise levels incorrectly along I-694. The L1070 dBA noise level (using traffic per Table 43) contour would be located at 350 feet from the nearest roadway without shielding.

future highway noise (p. 250)

Several land uses shown on Map 41 are questionable, especially the west side of I-694 between TH 212 and 40th Street North. Land use is industrial (MHD) and agricultural (turkey farm).

Pursuant to State legislation (Minnesota Statute 1974, Section 161.125), MHD has a program underway to abate undesirable noise situations for existing adjacent residential property. This program contemplates 90% Federal Aid Interstate funding and thus must comply with Federal Aid Program Manual (FHPM) 7.7.3 (effective May 24, 1976).

highway noise abatement program

Incompatible land uses, such as residential, that occur after May 24, 1976, are not eligible for abatement with Federal Aid funds. Emerging land uses adjacent to known noise sources, such as major roadways or freeways, must develop their site under these conditions. Public funds cannot be expected to perpetually abate noise. The development should provide the abatement or have designs and uses compatible with the known noise situation.

Abatement of Highway noise cannot be expected from MHD other than those currently existing residential areas planned for treatment.

Resurfacing of pavements is stated as one method of noise reduction (p. 254). The MHD does not consider resurfacing of highways a noise abatement measure:

1. Very little reduction occurs (2-3 dBA).

2. Reflective cracking of bituminous overlays usually occurs within one season and noise levels increase.

3. Resurfacing does not help the predominant highway noise source—trucks.

PRIMARY &
SECONDARY
ROADWAY SYSTEMS
IMPACTS
(p. 175-210
p. 409-417)

The inplace 4-lane divided, 3-mile long segment of TH 212 was planned during the development of the Interstate System in the Metropolitan Area (1956-1965). It was planned as a route from Stillwater to and through St. Paul to accommodate

the role of TH 212

the forecasted growth and travel desires for the eastern area of St. Paul and emerging suburbs. Travel desire demands indicated (and still do) that a freeway/expressway facility would be needed to accommodate future traffic between I-694 and I-35E (at the Arch-Pennsylvania Interchange).

The design, right of way acquisition, and construction of TH 212, in 1969, concurrent with the construction of I-694, represents only a segment in this longer route. The status of TH 212 as a continuous route to St. Paul has now changed.

The proposed 3M facility in Oakdale/Lake Elmo highlights the issue of the proper role (i.e., function) of TH 212 in Washington County and eastern Ramsey County in light of current conditions. For the past five years or so, a position on this issue has been evolving in many sectors. That position is reflected in the functional classification of Minor Arterial that was assigned to TH 212 in 1975 by the Transportation Planning Program (TPP), the 3C transportation planning organization for the Twin Cities Metropolitan Area, and by the Metropolitan Council. The functional classification is about midway in the hierarchy of the roadway functional classification system that includes (top to bottom): Principal Arterial, Intermediate Arterial, Minor Arterial, Collector Street, and Local Street.

The functional classification assigned to TH 212 is important because the functional classification puts limits on the design of TH 212. For example, the classification of Minor Arterial would normally preclude interchanges except at intersections with roadways of higher classifications (i.e., Principal Arterials and Intermediate Arterials). Thus, as a Minor Arterial, TH 212 would only have interchanges at I-694 (inplace) and I-35E (if ever extended that far). Also, Minor Arterials should be expected to have at-grade intersections at public roads and some private entrances, such as proposed by 3M for site access.

The reasons why TH 212 has emerged as a Minor Arterial can be summarized as follows:

1. The technical literature in the field of transportation planning recommends freeway/expressway spacing of 4 to 6 miles for suburban population densities. As presently located, TH 212, east of Century Avenue (TH 120) is about 3.3 miles north of I-94 and is about 1.5 to 2.7 miles south of TH 36 before TH 212 begins its swing toward Stillwater. Thus, TH 36, being 6 miles from I-94 (if on present TH 12), is more properly located for a freeway/expressway than TH 212. There are other compelling reasons why TH 36 is favored as a freeway/expressway over TH 212, including the following:

   a. TH 36 presently provides a high-type, high-capacity, continuous route from almost the Wisconsin border across Washington and Ramsey Counties to connect into TH 280 and I-35W, a distance of about 20 miles. In contrast, TH 212 has very limited continuity.

   b. TH 36 east of I-694 is a natural extension of the east-west portion of I-694. Thus, additional system continuity is provided.

   c. The basic right of way is already available for converting TH 36 east of TH 61 into a freeway. In contrast, a considerable amount of right of way would have to be purchased to upgrade TH 212 to freeway or

expressway design standards. Given financial constraints, the availability of a considerable amount of the necessary TH 36 right of way makes TH 36 a more implementable project.

d. TH 36 has been given a higher functional classification than TH 212, Intermediate Arterial, by the TPP and the Metropolitan Council.

2. With limited funds available for trunk highway construction, we doubt whether funds would be available for the construction of TH 212 as a freeway in St. Paul. Without the St. Paul link of new TH 212, the upgrading of TH 212 to a higher functional classification does not seem logical.

3. The opposition by significant segments of the citizenry to TH 212 as a freeway through the east side of St. Paul makes this project doubtful. Thus, as noted in #2, the upgrading of TH 212 to a freeway does not seem probable.

4. Other governmental units and agencies also envision TH 212 as a Minor Arterial. Besides the TPP and Metropolitan Council, the Lake Elmo Comprehensive Plan (December 1975) and the Oakdale 1995 Transportation Plan (June 1974) both show TH 212 as a Minor Arterial. It seems fair to note that these municipal views were probably not reached independently, but reflect, to a degree, the views of MHD, the TPP, and the Metropolitan Council.

There are, however, reasons why consideration should be given to a higher functional class for TH 212 and thus have it built to freeway or expressway design standards. These reasons include:

1. System 14 forecasts in the past have indicated that travel demand will exceed existing capacity in the TH 212 corridor in St. Paul in the period of 1990 and beyond. However, it should be noted that this situation is not unique to this corridor.

2. The Northeast Area Transportation Study in Ramsey County, a study of a 5-mile by 6-mile area a few miles northwest of the proposed 3M site, revealed that parts of TH 36, west of TH 61 would be overloaded even with TH 36 upgraded to a freeway. This study went on to suggest that some relief from this congestion could be obtained by an upgraded TH 212 through the east side of St. Paul.

3. For the past few years, the City of St. Paul has been trying to generate interest in a comprehensive planning study of the east side of St. Paul and adjacent suburbs. This study would address a variety of issues including the provision of adequate roadway facilities for east-west travel. It is possible that a concensus could emerge from such a study that would permit a new TH 212 to be given a higher functional classification and thus a higher design type. However, this comprehensive study does not seem to be getting off the ground.

4. Generally, major roadway spacing should be closer when population densities increase, including daytime densities like workplaces. This general guideline for system planning suggests that the increase in daytime population densities represented by the proposed 3M facility might justify a higher functional class for TH 212.

Weighing the pros and cons of this issue has led to the conclusion that the functional classification of Minor Arterial is the proper one given the current socio-political situation in St. Paul and the current funds available for roadway construction. If this is the improper functional classification, now would appear to be the proper time to take steps to have it changed. As major design decisions are made regarding access to the proposed 3M site from TH 212, the die is being cast. While the decision is probably reversible, as a community street system is developed in the area and as urban development begins to take place, the cost and disruption becomes significantly larger to reverse that decision.

traffic generation assumptions

The DEIS bases its analysis of the 3M site primary and secondary impact on the roadway system on several traffic generation assumptions. The key assumptions have been reviewed and the following conclusions reached.

1. Reasonableness of total traffic demand volumes.

   Discussions with Bather, Ringrose, Wolsfield, Inc. (BRW), have confirmed, to our satisfaction, that the technical procedures utilized to develop the basic traffic forecasts are reasonable and logical (BRW System 16/3M).

2. Reasonableness of 2.0 vehicle occupancy rate.

   Statistically, it would appear possible and probable that the 3M Center could achieve a vehicle occupancy of 2.0 by 1995. 3M increased vehicle occupancy by 5.6% a year from 1970 to 1974. From 1974 to 1995 would require an increase in occupancy of 1.25% per year. From 1970 to 1995 requires an increase in occupancy of 1.9% per year.

3. Reasonableness of 60% peak hour factor.

   Again, the reduction could be said to be statistically feasible. If 3M were to have only three different starting times, they probably could not have two begin in the same hour and expect to achieve the goal; i.e., one-half hour increments in starting times would require at least five or six start times with a fairly equal distribution of employees starting at each time.

   The employee arrival split is somewhat in conflict with an increase in vehicle occupancy as it restricts the size of the potential pool for van pooling.

4. Consideration of "induced development" near 3M site.

   Related adjacent development is included in the traffic forecasting method. The analysis done by 3M, National Biocentric, and BRW is satisfactory. It appears the various consultants have carefully and adequately analyzed the population and employment forecasts of the Metropolitan Council. Sufficient development is anticipated in Washington County in the next 20 to 25 years to account for 3M and other unrelated development in the vicinity of the 3M Research/Office Park.

5. *Reasonableness of the distribution of 3M employee residences.*

It is unlikely that all of the employees will be able to reside where they desire as indicated on p. 182. However, the employees' residences will undoubtedly be scattered throughout the Metropolitan Area. The analysis of population siting conducted by 3M, National Biocentric and BRW adequately addresses the spatial distribution of population.

Figure I illustrates that, north of TH 212, 3M traffic bound for (a.m.) or leaving (p.m.) the new Center is about 1/3 of the total traffic volume concurrent with the heavy flow direction (southbound in the a.m. and northbound in the p.m.). South of TH 212, 3M peak hour traffic is about 1/2 of the total volume but in the direction of the lighter flow.

future traffic data analysis (1995)

1. I-694 Level of Service Checks.

   a. Across all lanes

   Calculations indicate that a four-lane beltline will operate at level of service 'F' (V/C=1.05) north of the TH 212 Interchange and level of service 'E' (V/C=0.79) south of the TH 212 Interchange and will thus be inadequate (assuming demand volumes will be reached and congestion will not be tolerated).

   3M traffic for the Lake Elmo Research/Office Park makes up roughly one lane of demand both north and south of TH 212. However, north of TH 212, the heavy 3M volume is in the same direction as heavy non-3M volumes (SB-AM, NB-PM). South of TH 212, 3M traffic peaks run opposite to the non-3M peak flow direction.

   A six-lane beltline will adequately handle 1995 volumes at level of service mid-D or better. The six-lane section is particularly needed north of TH 212 (or 40th-45th if an interchange is provided there).

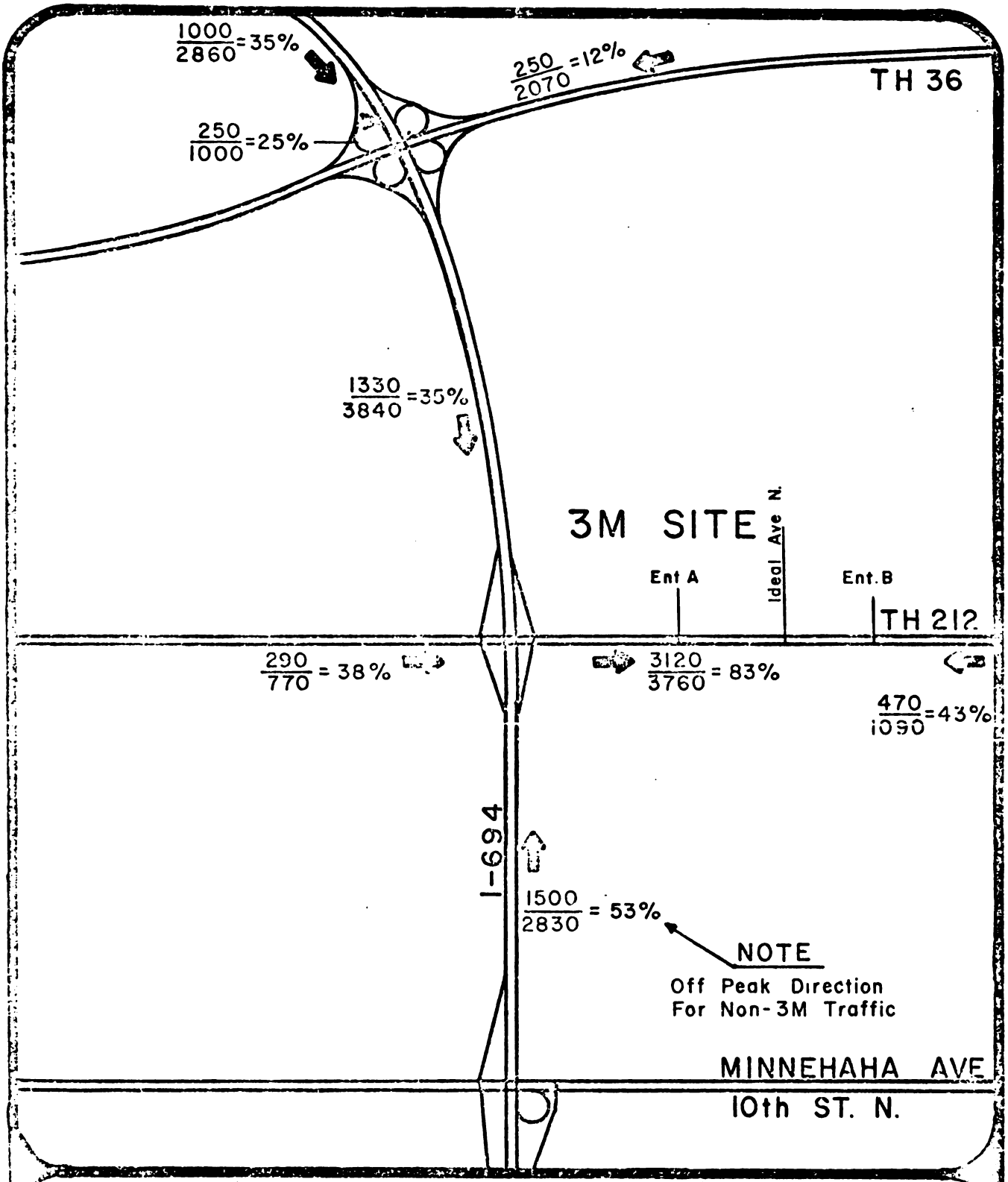
   b. Merges and Diverges.

   The on- and off-ramp volumes with only the TH 212 interchange provided indicate that level of service 'F' would occur in lane one (right through lane) in the following directions and hours with a 4-lane facility:

   AM NB off-ramp
   AM SB off-ramp
   PM NB on-ramp
   PM SB on-ramp

   With a six-lane freeway, the above levels of service would be 'E' rather than 'F' since lane one through volumes are reduced. However, these volumes still represent severe problems for normal off- or on-ramp designs.

   These overloads indicate the need to either provide a higher capacity interchange at TH 212 or to provide another interchange further north. With an interchange at 40th or 45th, these problems would be relieved—level of service 'D' would be the lowest lane one condition.



3M TRAFFIC AS % OF TOTAL TRAFFIC

1995 AM PEAK HOUR

FIGURE 1

c. Weave Between 40th — TH 212 Interchanges

If an interchange were to be provided at 40th Street, a folded diamond to the north would probably be necessary to maximize weaving distance. About 2,000 feet of weaving distance would be available based on preliminary design concepts. Level of service checks for a ramp weaving section indicate level of service 'C' would occur if two lanes plus auxiliary lanes are provided in each direction. For 1995 volumes, it does not appear that a weaving problem will exist provided that at least a six-lane section is available.

2. TH 212 At-Grade Intersection Level of Service.

The 1995 demand volumes (AM) were used to check levels of service at the west ramps and east ramps at TH 212 and I-694, the 3M Entrance A, Ideal Avenue, and 3M Entrance B.

a. Capacity and operation analysis.

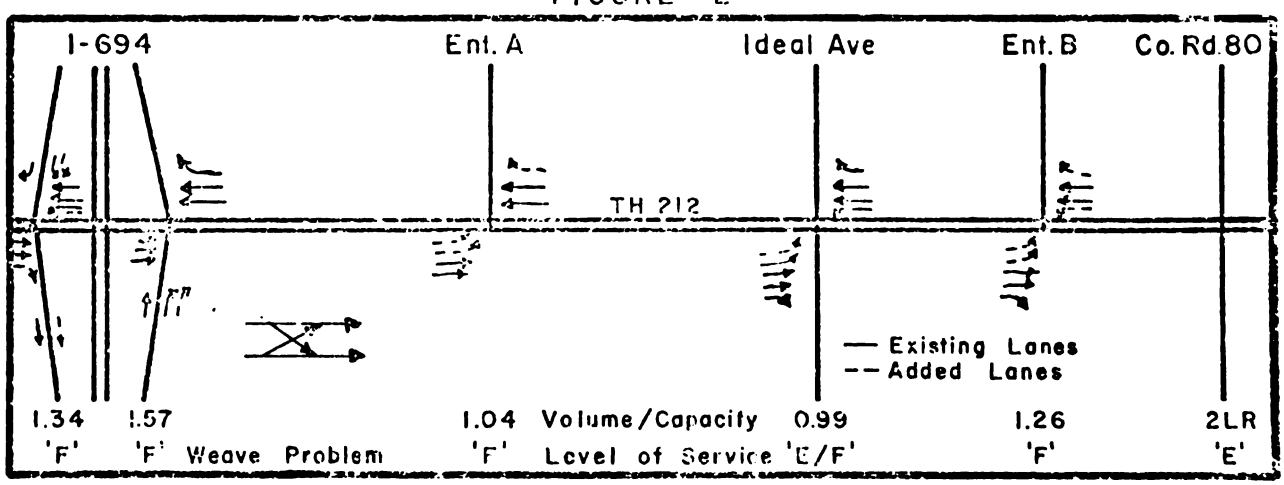
Geometrics were assumed which tended to maximize capacity along TH 212 and at the ramp terminals. Double left turns were assumed at all locations where high left turn volumes were forecast. *If only one interchange is provided, it appears that all of the above intersections will be near or above capacity in the AM rush hour (V/C-0.99-1.57).*

There also appears to be a weaving problem between the east ramp intersection and Entrance A. Double right turns under signal control at the northbound off-ramp terminal will help reduce this problem to some extent.

In addition, the peak hour single direction volumes on TH 212 between the west ramp intersection and Ideal Avenue are very high (2540-3760 vph) thus indicating a probable need for a third lane in each direction.

The sketch below (Fig. 2) visually shows the above results. Dashed arrows represent added lanes above those which are now available on TH 212.

FIGURE 2



The above simply points out that more elaborate designs at the TH 212 interchange and also along TH 212 proper will be necessary if the demand volumes are to be served and if another interchange north of TH 212 is not provided.

b. Signalization Operation.

It is assumed that the intersections (west ramp, east ramp, Entrance A, County Road 13, and Entrance B) would all be signalized and that some form of signal coordination was required.

It is readily apparent that all intersections are at or above capacity. Therefore, the maximum length signal cycle of 150 seconds was used for signal coordination studies. Dual left and right turns were assumed at several locations.

Because of the high volume of westbound through traffic (over 1,000 vehicles), it was assumed progressive westbound movement was necessary since interference with this flow is only at the signalized intersections and the necessary allotment of "green time" at any intersection allow only a 33-second progressive through movement. This through movement will not accommodate the entire desired through movement and about 25% of the vehicles will stop several times.

A southbound off-ramp movement of 1,680 left turns in the AM rush hour is anticipated. To accommodate the maximum number of each signal cycle, the progressive movement through the interchange must be modified. Southbound left turns at the west ramp receive an eastbound green light at the east ramp in order to prevent backups and permit maximum intersection use. This change in coordination interrupts westbound through movement and virtually requires all left turns from westbound TH 212 and southbound I-694 to store in the left turn lane. This, in turn, creates storage problems and could cause the east ramp to become blocked.

The east ramp intersection has a projected 1,530 northbound right turns. Since many of these are destined for 3M, they must weave to make a left turn at one of the next three intersections. The only practical means of permitting this heavy weave is to stop other eastbound traffic which, in turn, requires the right turn traffic to be under control of the traffic signal at the ramp. This will require dual right turns and will create some weaving problems caused by motorists being in the wrong right turn lane.

Similar operational problems exist at virtually every intersection and methods designed to increase capacity at one intersection generally have a detrimental effect on the adjacent road section. As an example, if the westbound and southbound left turn storage problem at the west I-694 ramps were decreased due to use of a double left turn concept, problems of merging two lanes to one on a ramp and of merging heavier volumes into southbound I-694 are created.

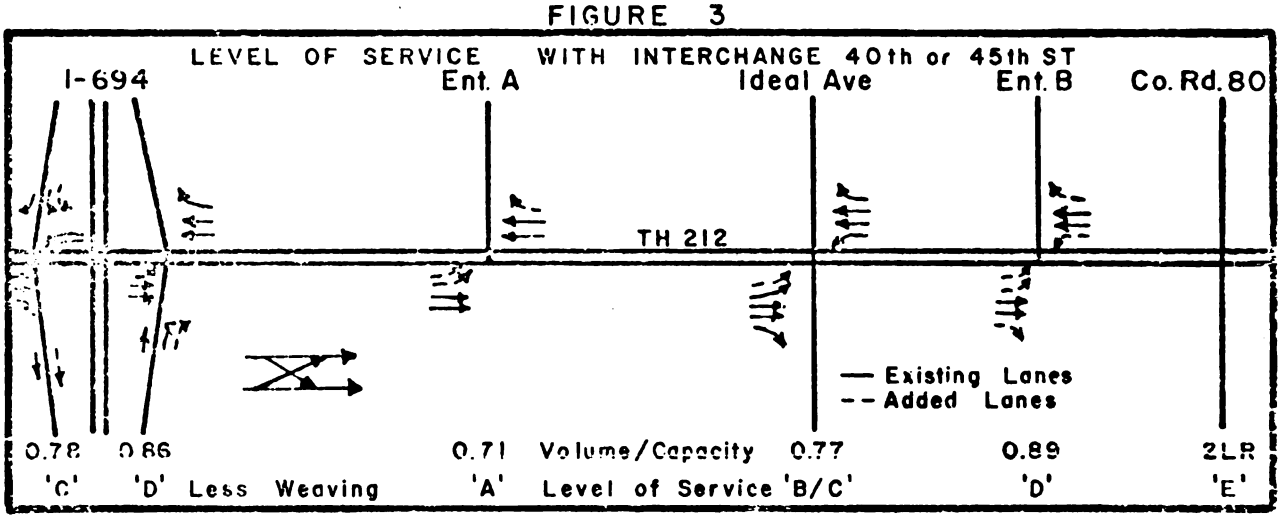
Forecasts of the exact arrival rates of vehicles at a specific intersection were unavailable. However, according to 3M Center Travel Characteristics published in November 1974, 4,794 vehicles arrive at 3M (Maplewood) in the peak AM hour. Six-minute time period volumes

in that hour vary from 213 to 902. Nineteen percent of the vehicles arrive in 10% of the time, and 60% of the vehicles arrive in only 40% of the total peak hour time. If these peaking characteristics are true of the Oakdale facility, problems of capacity and operations will substantially increase.

c. Intersection Operation with Additional Interchange at 40th or 45th Street.

In the event that another interchange is provided at 40th Street or 45th Street, the above geometric improvements would operate at good levels of service as the sketch (Fig. 3) below shows.

FIGURE 3



This sketch also shows that the above geometrics are not a case of "overdesign" even with a 40th or 45th Street interchange added. Single rather than double left turn lanes at Entrance A and Ideal Avenue would serve volumes at level of service 'D'. A single free-flow right turn lane at the southeast quadrant off-ramp would also suffice capacity-wise, but there might be weaving problems between this ramp and Entrance A. We would advise against the free-flow right turn lane now inplace for this reason.

Checks were made as to whether two entrances (Entrance A and Ideal Avenue) would suffice for 3M capacity if an interchange is provided at 40th or 45th. Entrance A could operate at level of service 'C/D' provided left and right turns from TH 212 to this entrance could occur simultaneously. Ideal Avenue could operate at level of service 'D'. Double left turns would have to be provided at both entrances.

secondary impacts on the near roadway system

The large volume of traffic expected to generated by the 3M site can have ramifications beyond the immediate site area. The 3M DEIS discusses some of those far beyond the site but does not consider certain others 2-4 miles distant.

1. I-694 and TH 36.

Traffic volume data was requested from BRW for the TH 36 and I-694 interchange both to look at the interchange proper and the cross route lane requirements. *It appears that volumes north of TH 36 on I-694 may require a six-lane beltline.* 3M traffic is over 1/3 of the total in the AM peak hour. Level of service 'E' appears likely with 2,860 vehicles per hour expected in the AM southbound. These volumes are similar to those south of TH 212 where level of service 'E' was noted.

TH 36 appears to be adequate as a 4-lane expressway west of TH 36. However, east of TH 36 volumes of 2,070 vph in one direction may cause problems if signalization at points east becomes necessary (e.g., County Road 80). If signals are not warranted, access to TH 36 will be very difficult for local residents.

The interchange proper has relatively low ramp volumes with the exception of the northwest quadrant loop where 1,000 vph may cause some capacity problems (a loop can handle, at most, 1,200 vph). The loop has about 25% 3M (Oakdale site) traffic. There is a rather short weaving section on I-694 between the northwest and southwest quadrant loops. The northwest loop is also on an upgrade making weaving problems more likely. Level of service is expected to be 'D'.

2. I-694 and I-94.

Another external location checked was the cloverleaf at I-94 and I-694. Here, complete volume information was not available so a weaving analysis was not possible. However, 3M (Oakdale site) traffic in the southeast quadrant loop is 560 vph. If non-3M traffic is added to this, a very high loop volume will probably result. This heavy loop movement will conflict with a heavy off-loop (northwest quadrant) movement to the present 3M Center in the morning rush hour. Weaving with potential problems will exist as a result. *Cloverleaf re-design to incorporate collector/distributor roads might be necessary although definite analysis is not possible with available traffic data. (It should be noted that the I-94 traffic analysis indicated this interchange would have a capacity problem also.)*

3. TH 120 and TH 212.

The TH 120 and TH 212 intersection was also briefly reviewed for 3M impact. Since only about 290 vph (5% of total) arrive from that direction, the 4-lane expressway will be quite adequate. *TH 120 does need upgrading according to other studies. The 3M Oakdale site probably won't be a prime contributor to this need, however.*

present 3M Center access vs. proposed access for 3M Oakdale/Lake Elmo Site

Study has uncovered a large number of capacity problems based on technical analysis of levels of service. However, perhaps a more striking method of illustrating the possible future problems is to compare the present 3M Center to the Proposed Oakdale/Lake Elmo Site in terms of access.

The present 3M Center has 16 access points including some direct slip ramp access from I-94 westbound and two local access interchanges from I-94. The future site would have more traffic coming from the freeway, but only one freeway interchange and also less site access

points. Figure 4 illustrates this comparison and highlights why there may be capacity problems. The consultant also noted some capacity problems in the 3M DEIS.

FIGURE 4

3M SITE ACCESS COMPARISONS

COMPARISON MEASURE	EXISTING 3M CENTER	PROPOSED OAKDALE/LAKE ELMO SITE
EMPLOYMENT	9,500	18,000
AM PEAK HOUR VEHICLES	4,700 vph	5,400 vph
PERCENT FROM FREEWAY	45% (I-94)	53% (I-694)
NUMBER FROM FREEWAY	2,160 vph	2,860 vph
DIRECT SITE ACCESS	Yes	No
LOCAL ACCESS INTERCHANGES	2 + Slip Ramp	1
BASIC ACCESS	4-Sided	3-Sided
PERCENT USING ANY ONE INTERCHANGE	Less than 33%	60%
ACCESS TO PUBLIC ROADS	16	6 (Excluding Fuel storage area)

interchange addition pros and cons

Given the capacity problems which might occur along I-694 and on TH 212 if demand volumes do occur, interchange options as one way of relieving the above problems if and when they begin to occur were investigated.

The existing interchange average spacing on I-694 from I-35E to Lower Afton Road is 1.5 miles. On either side of TH 212, the interchange spacings are 2.2 miles (north) and 2.4 miles (south). These figures compare to:

1.1 Mile Interstate average (I-35E, I-35W, I-494, I-694 and I-94)

0.83 Miles Interstate average - urban area

1.6 Miles Interstate average - rural area (rural in the 7-county area, that is)

It is apparent that the 2.2 mile spacing north of TH 212 is:

- considerably above the beltline spacing in this area.
- double the overall Interstate average.
- more than twice the urban average for Interstates.

Since this section of the beltline will be well within the Metropolitan Urban Services Area, the Metropolitan Council's one-mile minimum spacing applies. This minimum is a guideline which should normally be followed but which can be reduced if the safety of the roadway is not compromised.

From the above, it appears that an added interchange would not violate past spacing practices, it might violate Metropolitan Council spacing policies, depending on the location and weaving situation. Weaving calculations indicate a problem should not exist in 1995 if a 6-lane freeway section is inplace.

There are various other criteria and issues to consider also. Rather than discuss them individually, Figure 5 has been developed to subjectively display them for various interchange alternatives including the "No-Build".

Further discussion about interchange locations is contained in the section Community Street System Considerations.

If 3M vehicular demand is to be served, the MHD has identified the need for the installation of another interchange with I-694 between TH 212 and TH 36 to protect the traffic carrying capability and integrity of the Interstate (I-694) beltway.

The MHD's main concerns are for efficient operations of such an added interchange and safety, both along the Interstate and the cross street, and, therefore, favor a standard diamond design with sufficient weaving distances from TH 212. This would result in a location north of 40th Street, probably 45th.

The MHD also recognizes that some undesirable local conditions may result, regardless of interchange location, and urges continuous cooperative planning with local units of government to:

- *conduct appropriate study to review alternate locations and designs;*
- *select an interchange site and design soon so local development changes can be guided;*
- *reserve necessary lands needed through local land use controls or acquisition;*
- *stage interchange construction to:*
  (1) avoid congestion and operation problems on I-694 and TH 212,
  (2) avoid premature placement that may induce development and/or undesirable travel characteristics (less vehicle occupancy, more auto dependency);
- *minimize expenditure of public funds through cooperative planning and controls.*

The Department is interested in community street systems for the following reasons:

community street system considerations

1. As an emerging Department of Transportation, we are interested in encouraging the development of a sound roadway system, including those roadways that are not on the Trunk Highway System.

CRITERIA	ALTS: "DO NOTHING"	DIAMOND AT 45TH*	FOLDED DIAMOND AT 40TH*	ENLARGE 212 INTERCHANGE
FUNCTIONAL CLASSIFICATION	Principal Arterial (Oakdale) Minor Arterial (Metro Council)	NO ROAD - PROBABLY LESS THAN MINOR ARTERIAL	MINOR ARTERIAL (OAKDALE) COLLECTOR (METRO. COUNCIL)	PRINCIPAL ARTERIAL (OAKDALE) MINOR ARTERIAL (METPO. COUNCIL)
METROPOLITAN COUNCIL SPACING GUIDELINES	OK	OK (1.1 Mi.)	0.6 Mi. - Special Design for Weaving Problems	OK (2.2 Mi.)
LOCAL TRANSPORTATION PLANS	?	Lake Elmo wants more 3M access north of TH 212	Oakdale shows access need	?
INTERCHANGE CAPACITY	CONGESTED	OK	OK Weave?	TH 212 overloads I-694 Merge and diverge problems
ROUTE CONTINUITY	NOT APPLICABLE	No road inplace--begins 1 Mi. west	Good westerly, goes 1-1/2 Mi. to east	NOT APPLICABLE
PROPOSED LAND USE	NOT APPLICABLE	Low density residential, public west	Low to moderate density residential, some public to west	NOT APPLICABLE
RESIDENTIAL IMPACT	Relieves impact on 40th or 45th	Provides access to lakes area Existing street to west is primarily residential	A few homes north of 40th west of I-694	Relieves impact on 40th or 45th
ACCESS TO MAJOR TRAFFIC GENERATORS	CONGESTED	GOOD	GOOD	TH 212 CONGESTED
CONSTRUCTION FEASIBILITY AND COST	Minimal	Standard Design	Folded Diamond design to north required	Depends on extent--may be quite large
SPECIAL EFFECTS	Tends to limit site development	New road required in Oakdale	Is bike route now (country view)	May limit site development
SAFETY	Overloads imply safety problems	Standard design; low accident rate	Non-standard design; higher rate than diamond	Possible safety problems

* Would include minor improvements to TH 212 Interchange.

INTERCHANGE ISSUE

FIGURE 5

2. An inadequate community street system could force shorter trips onto the Principal Arterials (e.g., I-694) and Intermediate Arterials (e.g., TH 36) that desirably should be on the lower classes (e.g., Minor Arterials, Collectors) of roadways. An inadequate community street system could encourage travel on local streets that are not designed to handle significant volumes or through areas in which there could be considerable adverse impact.

3. If any interchange is added to I-694, it should connect with an adequate community street system so as to take maximum advantage of the public investment in such an interchange.

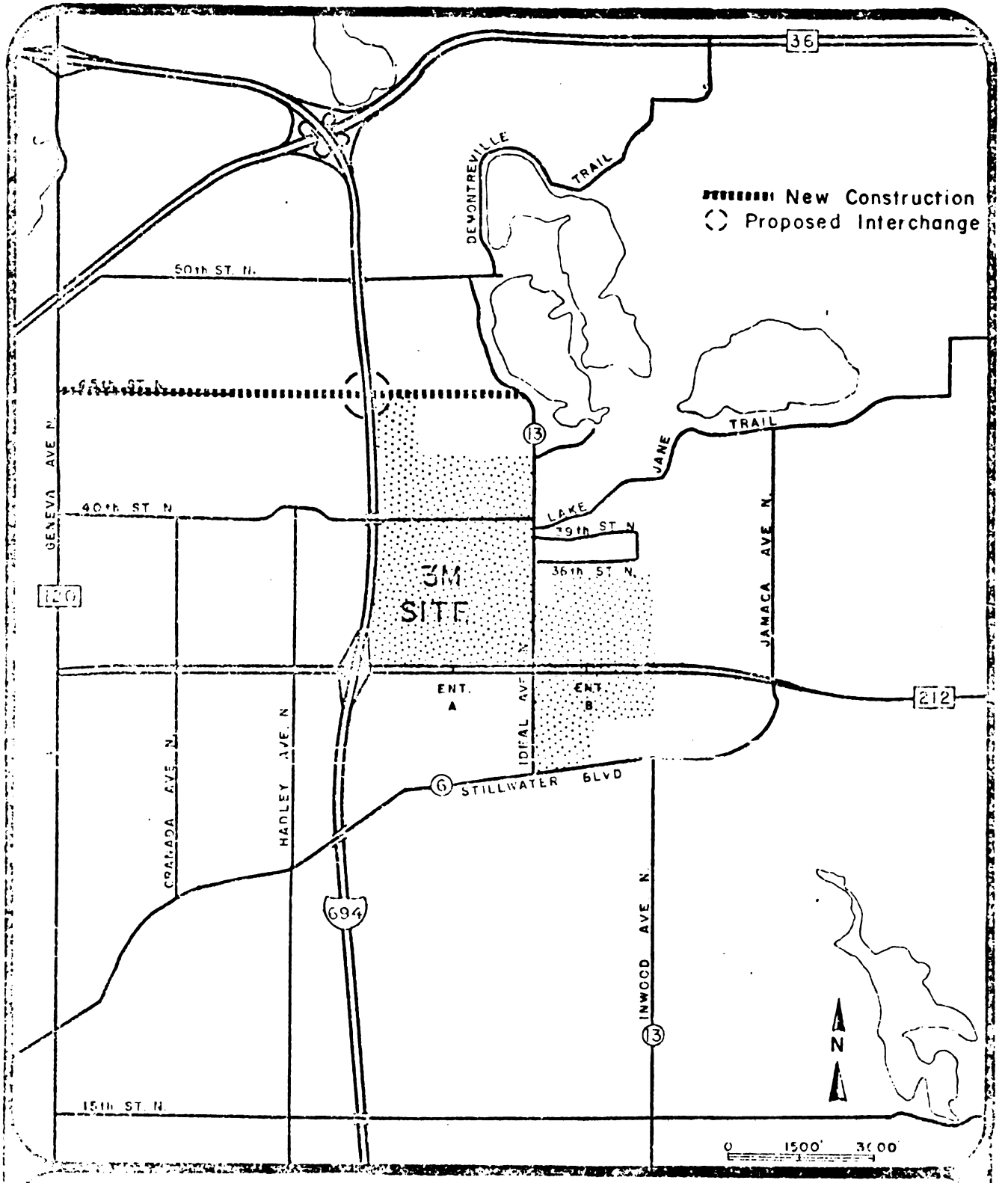
Previous analysis has indicated a need for another interchange on I-694 to serve the proposed 3M facility to relieve the anticipated overloading of the I-694/TH 212 interchange. Forty-fifth Street has been indicated as the best place for such an interchange, from the Highway Department's viewpoint.

As suggested in #3 and #2 above, the community street system should be an important consideration in determining where any interchange is added to I-694.

It should be noted that the Metropolitan Council's Transportation Policy Plan indicates that only Minor Arterials or higher class roadways can interchange with Principal Arterials like I-694. There is considerable wisdom in this criteria, but it may be desirable to relax this criteria in special cases. Access to a large traffic generator like 3M might very well be such a special case.

There appear to be five alternative community street systems to serve an additional interchange on I-694 between TH 212 and TH 36. Some are more viable alternatives than others. All alternatives envision the following streets as Collector Streets or possibly a few, if they can qualify, as Minor Arterials: 50th Street (= Washington County Road 68 = Old Demontreville Road), 40th Street (= South Avenue in North St. Paul = Ramsey County Road B), Hadley Avenue and relocated Washington County State Aid Highway (CSAH) 13.

What follows is an overview of the alternatives, a listing of benefits and disadvantages of each alternative as they pertain to an interchange on I-694.



ALTERNATE 1

45th Street as desirably a Minor Arterial but more likely as a Collector interchanging with I-694. Under Alternative 1 45th Street would be a Collector and built to appropriate design standards from CSAH 13 to TH 120.

1. 45th Street as Collector from CSAH 13 to TH 120 and interchanging with I-694.

   a. As one of the longer east-west local streets in this part of Oakdale, 45th Street has about three blocks of homes fronting directly onto it. This argues against it as a Collector.

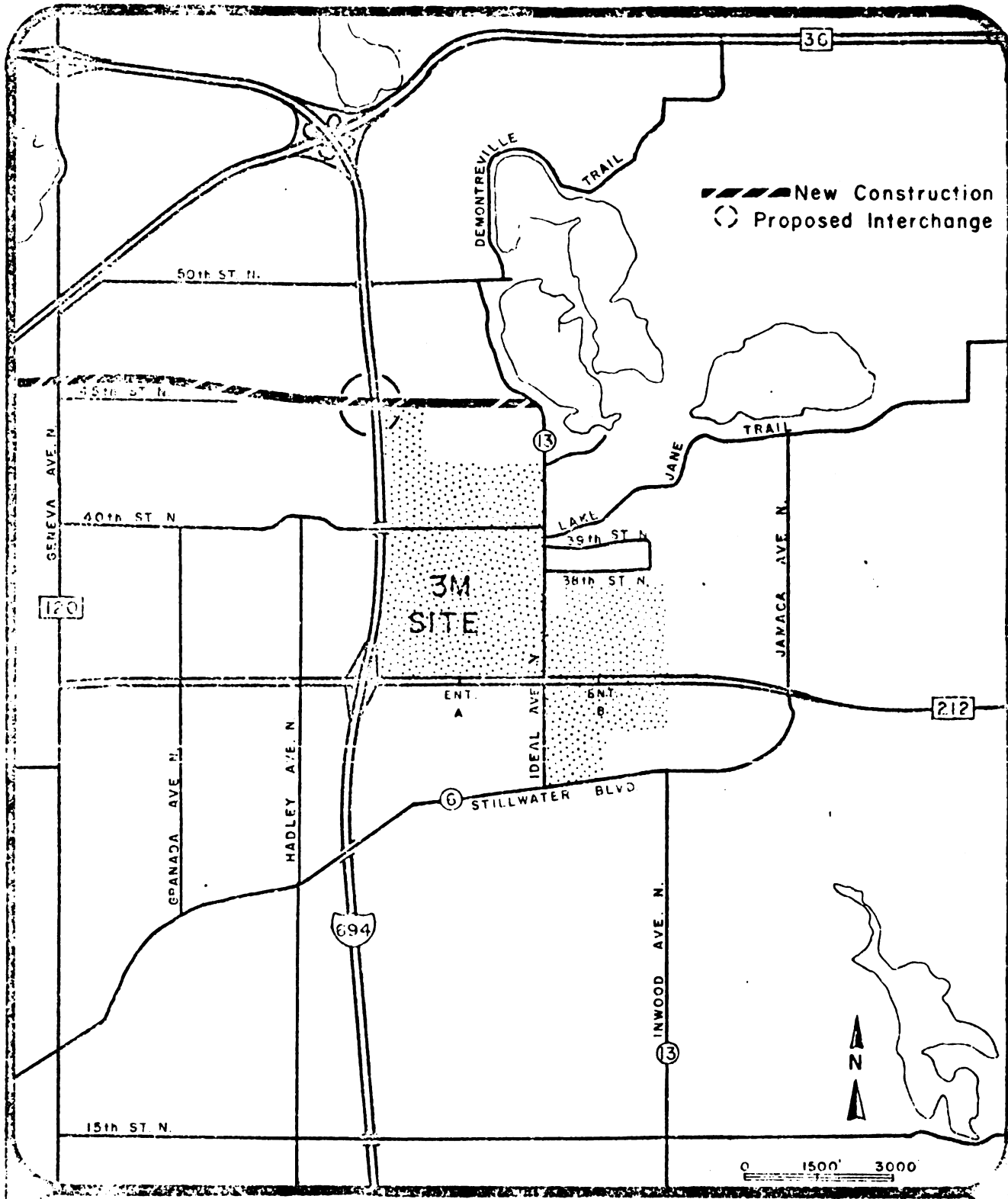
   b. 45th Street does not line up with any logical continuation of itself (9th Ave.) in North St. Paul. Thus another disadvantage.

   c. The Oakdale Transportation Plan (June, 1974) (P.44, Figure 16) shows 45th Street as a Collector from Granada Avenue westward to TH 120. But interestingly does not extend the Collector status to Hadley Avenue and beyond.

   d. The Lake Elmo Comprehensive Plan (December, 1975) does not show 45th Street as either a Minor Arterial or Collector.

   e. A diamond interchange at 45th Street would have good safety and other operational features.

   f. An interchange at 45th Street would provide good access to the 3M site, but not as good as an interchange at 40th Street.



ALTERNATE 2

Same as Alternative 1 except some distance west of Hadley Avenue it would be aligned along approximately 46th Street and then connect into 10th Avenue in North St. Paul and thence into 7th Avenue. 7th Avenue is currently a collector in the TPP Plan. The intersection of 10th Avenue and 7th Avenue, would be reconstructed to provide a continuous Collector Street from CSAH 13 in Lake Elmo, westward to an interchange with I-694 and on to 7th Avenue in North St. Paul.

2. 45th Street interchanging with I-694 and as a Collector running from CSAH 13 westward and, west of Hadley Avenue, on an alignment north of 45th Street to connect into 10th Avenue and thence 7th Avenue in North St. Paul.

   a. By being on a new alignment this alternative would avoid some of the disadvantages of #1a. However some homes would still front onto it along 46th Street and 10th Avenue.

   b. By connecting into 10th Avenue and 7th Avenue this alternative would provide some east-west system continuity. This alternative might appeal to North St. Paul by providing better access to their downtown area. However, the narrow width and diagonal parking along 7th Avenue in the North St. Paul downtown area hinders through traffic movement. The Oakdale Transportation Plan listed "relationship to downtown North St. Paul" as a "transportation issue" (p. 20) but did not appear to address in their plan.

   c. The Oakdale Transportation Plan (June, 1974) (p.44, Figure 16) shows 45th Street as a Collector from Granada Avenue westward to TH 120. But interestingly does not extend the Collector status to Hadley Avenue and beyond. A new alignment for 45th Street might be better location for a Collector than existing 45th Street for reasons noted in #1a and #2a.

   d. The Lake Elmo Comprehensive Plan (December, 1975) does not show 45th Street as either a Minor Arterial or Collector.

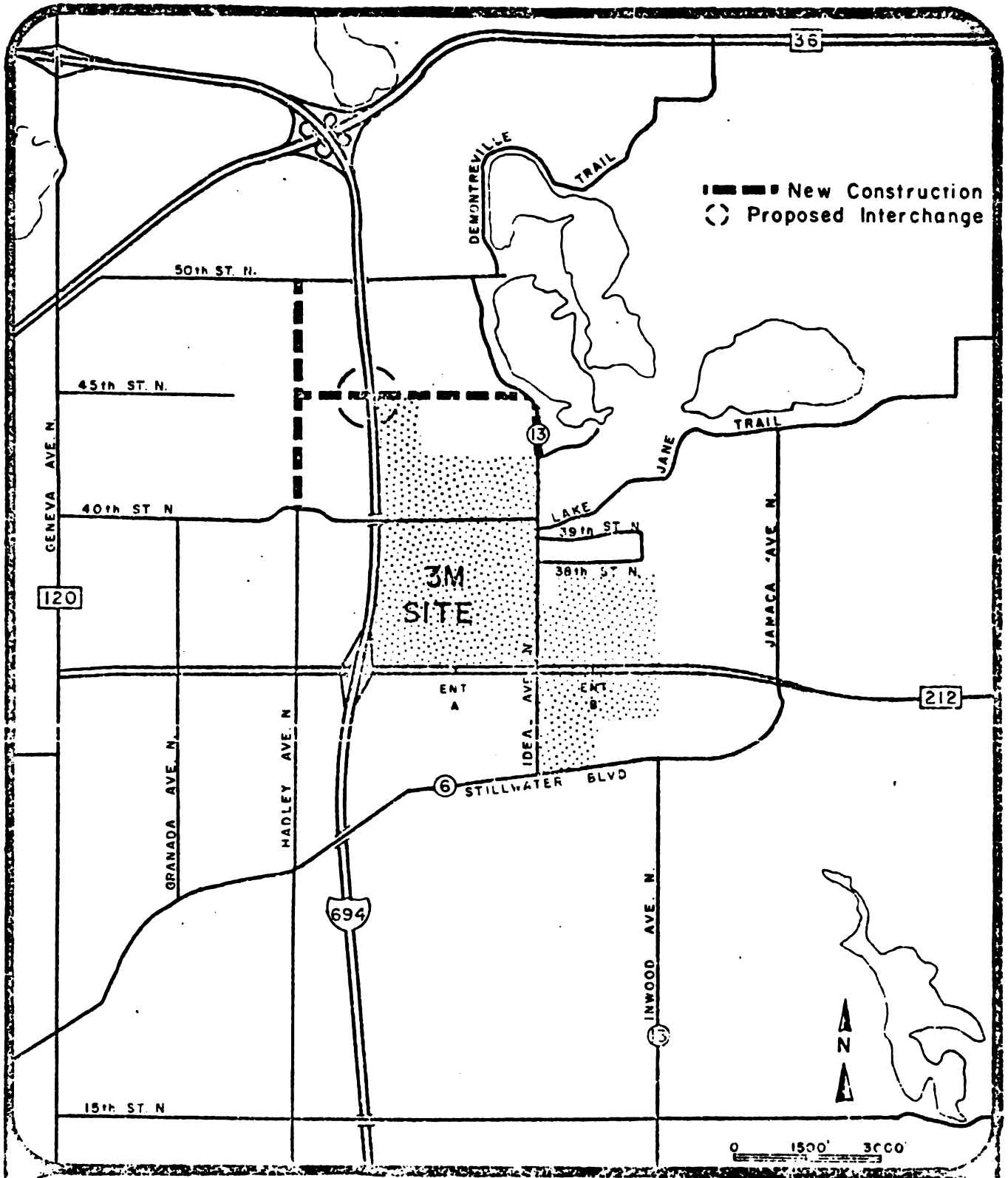
   e. A diamond interchange at 45th Street would have good safety and other operational features.

   f. An interchange at 45th Street would provide good access to the 3M site, but not as good as an interchange at 40th Street.

   g. Soil conditions might present some construction problems for the proposed relocated portion between Hadley Avenue and TH 120.

   h. Approach grades to existing TH 120 would need changes for Collector status.

   i. A right-angle intersection at 46th Avenue (= 10th Ave.) and TH 120 would have operational advantages over the present skew intersection TH 120 and 7th Avenue (which would remain, but be de-emphasized).



ALTERNATE 3

Same as Alternative 1 except 45th Street would only be a Collector east of Hadley Avenue. Traffic going farther west would use 40th Street or 50th Street. Under this alternative an interchange distributor street system shaped like an "H" would result with 45th Street being the east-west crossroute interchanging with I-694. Hadley Avenue and CSAH 13 would be the "vertical" routes in the "H".

3. 45th Street interchanging with I-694 and Collector status between CSAH 13 and Hadley Avenue.

   a. Would avoid disadvantages of #1a by cul-de-sacing 45th Street west of Hadley Avenue.

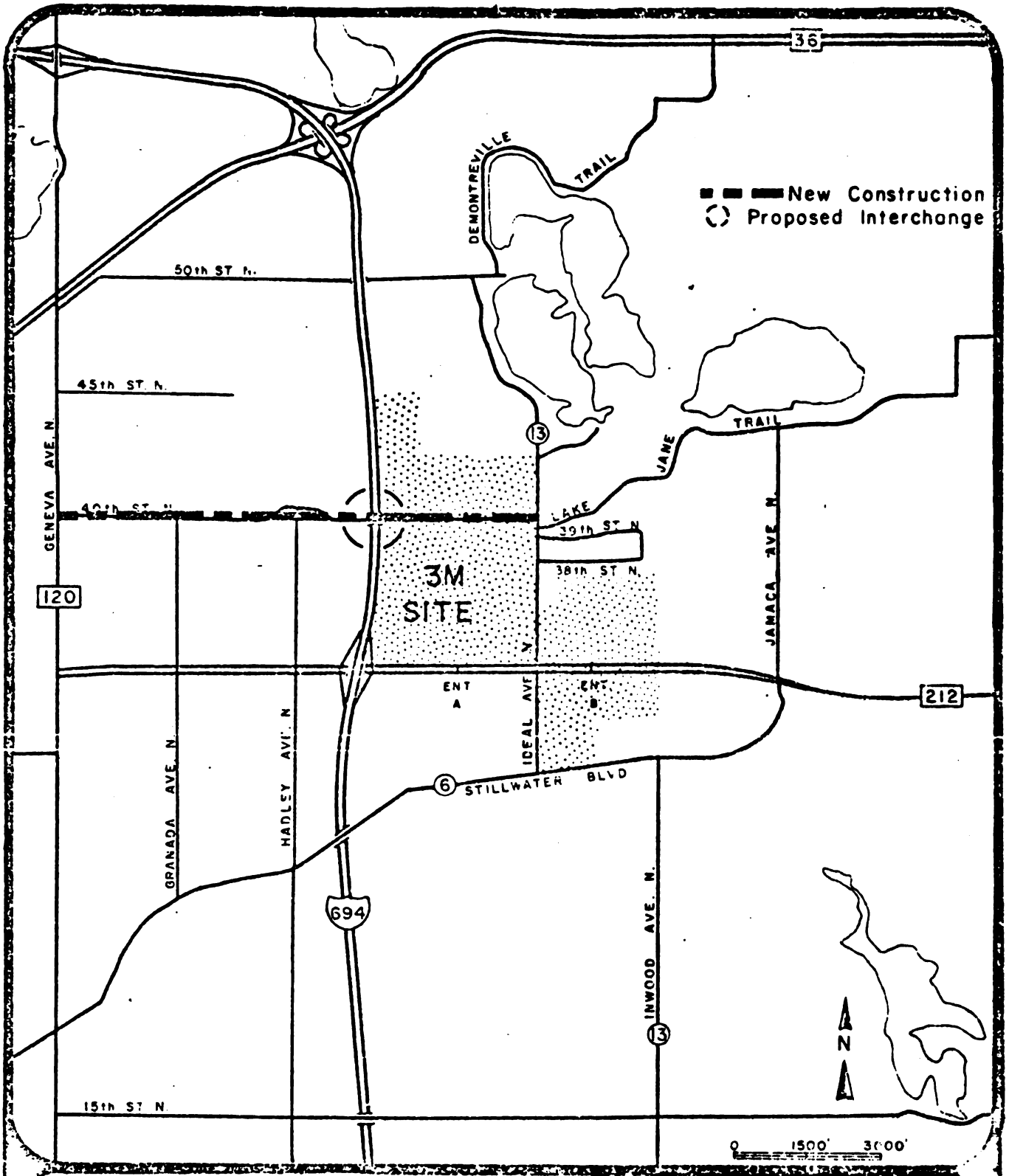
   b. This alternative would lack system continuity as it would "T" into CSAH 13 and Hadley Avenue. Trips going west of Hadley would have to "jog" over to 40th Street or 50th Street with possible resulting traffic operational problems (eg. bottleneck, lost drivers, etc.).

   c. Inconsistent with Oakdale Transportation Plan. See #1c.

   d. The Lake Elmo Comprehensive Plan (December, 1975) does not show 45th Street as either a Minor Arterial or Collector.

   e. A diamond interchange at 45th Street would have good safety and other operational features.

   f. An interchange at 45th Street would provide good access to the 3M site, but not as good as an interchange at 40th Street.



ALTERNATE 4

40th Street as a Collector Street or possibly Minor Arterial, interchanging with I-694. 40th Street currently is a Collector from CSAH 13 to TH 120 and beyond in the TPP Plan and The Oakdale Transportation Plan.

4. 40th Street interchanging with I-694 and as Collector from CSAH 13 to TH 120 and beyond.

   a. Between I-694 and TH 120, this alternative would have the lesser impact on single-family homes along it than any of the other alternatives. The apartments adjacent to 40th Street by TH 120 are some distance from 40th Street and have their own parking space. The townhouses near Hadley are oriented towards their site rather than towards 40th Street. West of TH 120 the homes fronting directly onto County Road B (=40th St. - South Ave.) would be adversely affected, although their distance from the I-694 interchange suggests longer east-west trips would take TH 36 or TH 212/Holloway Avenue.

   b. 40th Street and County Road B (=South Avenue) together provide the best system continuity of the alternatives. The 40th Street-County Road B Collector classification extends from CSAH 13 westward to TH 61, a distance of about 5 1/2 miles.

   c. Both TPP Plan and the Oakdale Transportation Plan show 40th Street as a Collector.

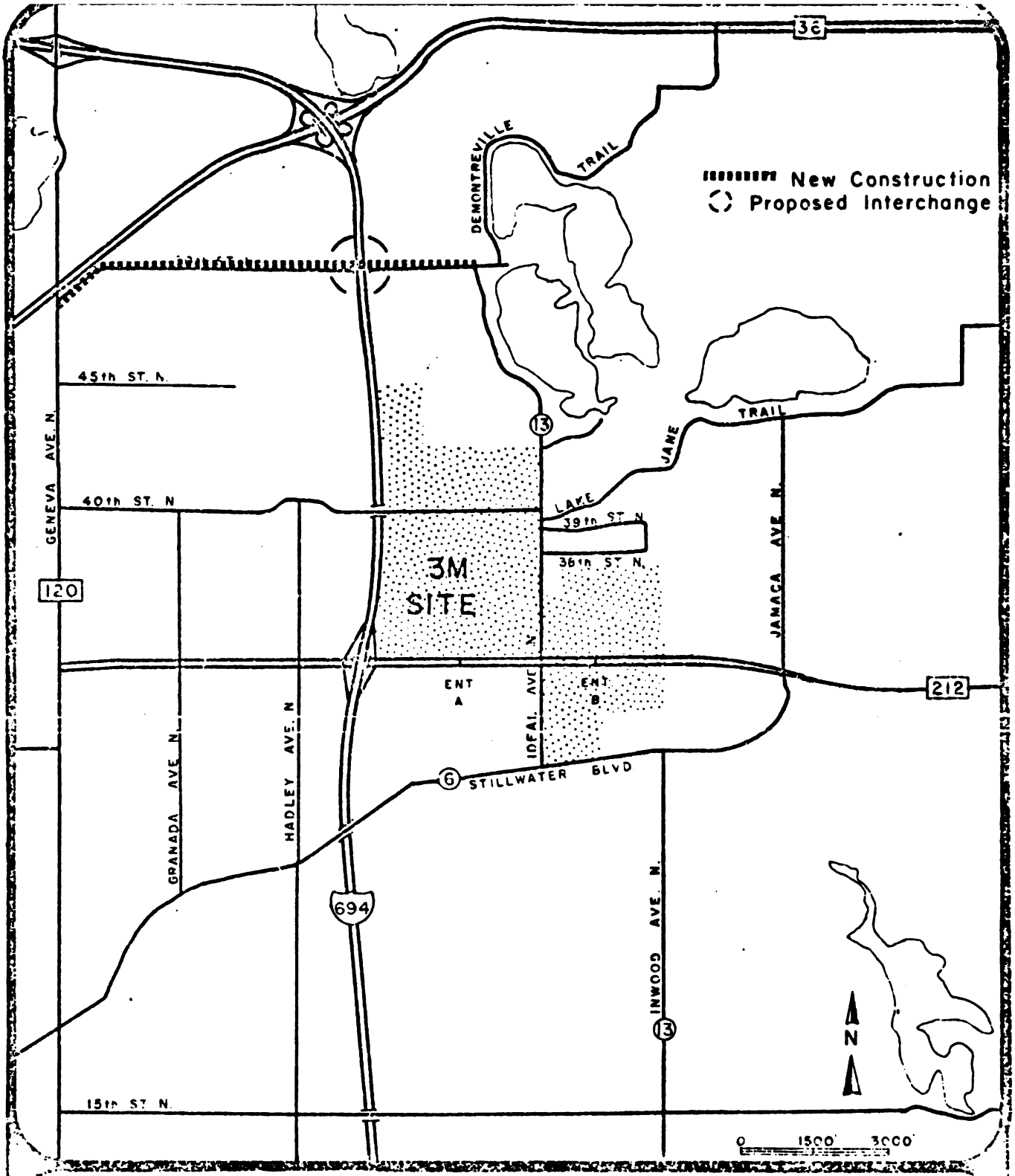
   d. The Lake Elmo Comprehensive Plan shows 40th Street as a Minor Arterial.

   e. Only 0.6 mile separates 40th Street from TH 212 along I-694 and necessitates a folded-diamond interchange, which has some operational and safety disadvantages.

   f. An interchange at 40th Street would provide very good access to the 3M site. In addition it appears good access could be provided to the Tri Lakes area with a minimum of interference from 3M traffic except during the peak traffic periods.

   g. Presently 40th Street provides greater pavement width between Hadley Avenue and TH 120 than the other alternatives. R/W width available for widening to 50 feet or so.

   h. 40th Street presently is inplace from CSAH 13 westward, with a bridge over I-694, to TH 120 and beyond.



ALTERNATE 5

50th Street as a Collector Street interchanging with I-694.

5. 50th Street as a Collector Street interchanging with I-694.

   a. A few blocks of homes and an elementary school fronting onto 50th Street weigh against this alternative.

   b. Currently provides limited system continuity - only from CSAH 13 to TH 120. Also see 'g' below.

   c. The TPP Plan and the Oakdale Transportation Plan both show 50th Street as Collector from CSAH 13 to TH 120.

   d. Shown as Minor Arterial in Lake Elmo Comprehensive Plan.

   e. An interchange at this location on I-694 would only be 0.6 mile from one at TH 36 with attendant operational and safety problems.

   f. An interchange at I-694 and 50th Street would be quite remote from the big traffic generation of 3M.

   g. 50th Street as a Collector poses some design problems at the future interchange of TH 36 and TH 120. The Oakdale Transportation Plan (p.36, figure 13) proposed one solution: a split diamond paired with TH 120.

   h. A 50th Street interchange with I-694 would have a limited tributary area given its closeness to TH 36, especially at TH 120. However, it would provide local access to the area around the freeway-to-freeway interchange of I-694 and TH 36, especially if TH 36 is upgraded to a freeway.

   i. An interchange at 50th Street would provide the option of adding an interchange at 40th Street if two interchanges are deemed necessary on I-694 between TH 212 and TH 120.

This discussion of alternative community street systems offers some factors to consider in determining the location of any additional interchange on I-694 between TH 212 and TH 36. As discussion goes on, the local officials may want to explore some of the alternatives.

other comments on the community street system

The Lake Elmo Comprehensive Plan (December 1975) and the Oakdale Transportation Plan (June 1974), in relation to the proposed 3M facility was reviewed. The Oakdale Plan was formulated before the 3M proposal in Lake Elmo and Oakdale became known.

In general, major street spacing (i.e., Collector Streets and above) should reflect trip production densities. For example, higher trip production densities such as at the proposed 3M facility suggest closer major street spacing. The two city plans and the 3M DEIS were selectively reviewed from this perspective. The Oakdale Plan proposed a new north-south Minor Arterial that generally parallels and meanders between I-694 and CSAH 13/County Road 80. This proposed route runs northward from TH 12 (I-94), crosses TH 212 at Ideal Avenue (CSAH 13), and then swings away from CSAH 13 towards the northwest at 40th Street and bypasses the residential area around Tri-Lakes on the west. The Lake Elmo Comprehensive Plan proposes a similar concept, although its transportation system plan (p. 43) is more conceptual and is more circuitous. Both plans would maintain existing CSAH 13 as a Collector Street north of 40th Street. We understand Washington County also sees the need for such a new north-south roadway. It is noteworthy that the 3M DEIS did not consider this alternative when it evaluated the impact of the 3M facility on the local roadways system (pp. 194-204). It strikes us as strange and inconsistent that Oakdale would propose such a route under conditions of much lower density (0 to 8 dwelling units per acre), but would not consider it when a big traffic generator for, as an example, 3M is proposed. *Oakdale should resolve this question when revising or implementing their planning.*

funding pressures for urban highway improvements

The proposed 3M facility and other similar large-scale developments (e.g., regional shopping centers, etc.) pose major issues. Many of these developments require and/or strongly desire substantial and costly roadway improvements. For example, the Northeast Area Transportation Study recommended substantial improvements in the vicinity of I-694 and White Bear Avenue to serve the Maplewood Mall and intense adjacent development that would cost approximately $6 million. A study for Burnsville by Barton-Aschman Associates called for substantial improvements in access to I-35E and I-35W to serve the future Homart (Sears) regional shopping center and adjacent development in the general vicinity of CSAH 42. The proposed Dayton-Hudson-Muir regional shopping center at I-494 and Afton Road may well result in requests for improved access. In a similar vein, the Dayton-Hudson development in Eagan will likely result in pressures for large-scale roadway improvements. In District Five, substantial roadway improvements are called for to serve the Eden Prairie Center and related development near the junction of I-494, TH 169 and TH 5. The total cost of these improvements will likely far exceed the public funds available to construct them. The issue arises as to which of these projects is funded. It seems prudent to consider many factors in situations where major improvements are recommended on existing freeways and expressways of those who (i.e., Metropolitan Council, TAB and TAC) apportion FAU funds.

Considerations in the development of such policies could include:

1. Metropolitan Council policies as spelled out in the Metropolitan Development Guide. The following chapters of the Guide are expecially noteworthy:

   - Development Framework
   - Transportation Policy Plan

2. Funds available for roadway improvements including limitations on their use.

   - Federal Aid Interstate (FAI)
   - Federal Aid Primary - Urban Extensions (FAP-X)
   - Federal Aid Urban (FAU)
   - Trunk Highway (TH)
   - County State Aid Funds (CSAH)
   - Local Funds

3. Consistency in the determination of need for roadway facilities.

   Peak-hour traffic forecasts are a prime basis for recommending the size and type of roadway facility that is needed. In forecasting traffic for a new development (e.g., regional shopping center, etc.), there is a range of values to select from in determining the values of the factors that go into estimating the final peak-hour forecast (e.g., traffic generation rates, peak-hour traffic as a proportion of daily traffic, forecast year, modal split, etc.). The values selected should be reasonable and consistent with one another and metropolitan-wide values. For example, a consultant for an individual developer or city may select traffic forecasts that are on the high side of a range to properly highlight the significant traffic impact of a facility. Others may select values on the low side. Consistency is needed between individual traffic forecasts so that individual projects are on a comparable basis.

4. What level of service should be provided?

   A related question is: Should a policy of providing enough capacity to meet the forecasted peak-hour traffic demand be followed? Current funding levels may prevent this. Should some metropolitan routes (e.g., Principal Arterials) be given preference in this regard? Should certain conditions (e.g., poor air quality, high accident rate) dictate a different policy for critical locations? Should certain areas of the Metropolitan Area receive preference in the expenditure of roadway improvement funds? For example, should areas with a high level of transit service be given a lower priority for roadway improvements than areas with no or a low level of transit service? And would it be desirable to link such a policy with policies that would provide funds for transit priority (e.g., bus priority at metered ramps, exclusive bus lanes, bus pre-emption of signals, etc.) in high level transit areas?

5. Statewide goals should be considered.

   For example, should routes to outstate Minnesota, and thus providing a necessary economic link, be given preference over routes that are only metropolitan or sub-metropolitan in scope?

1. Additional Interchange on I-694

cost participation considerations

Previous analysis has noted the need for an additional interchange on I-694 between TH 212 and TH 36 to serve the proposed 3M facility. This situation raises the question of who should pay for such an interchange. Highway Department Directive 5-106 (January 1973) addresses this issue. Section 5-106.6 of that Directive states that the State's share of the interchange construction costs could range from 0 to 100 percent depending upon the degree to which the local governmental agency is responsible for the change that necessitates the interchange. More specifically, Item 11 (P. 5-106D) of that Section indicates that "If an interchange is requested after the construction of the Trunk Highway, to accommodate a new road or street crossing not previously committed, the new facility should be paid for largely with local funds." The rationale for such a policy is contained in Item 1 of Section 5-106.4, General Discussion, in which it is noted, in part: "...In many cases, local benefits warrant substantial contributions toward the cost from land owners and developers." It notes that the local governments' benefits can include an increased tax base and payrolls for their citizens. In the case of the proposed 3M facility, if Directive 5-106 is applied strictly, the maximum State participation would be 10 percent since the cities affected (Oakdale and Lake Elmo) would change their comprehensive plans if the 3M facility became a reality from a much less intense use (e.g., residential) to an intense use (i.e., office park).

2. Interchange Improvements at I-694 and TH 212, I-694 and TH 36, I-694 and I-94

Directive 5-106 notes (p.5-106E) that an interchange of two trunk highways "will usually have to be paid for 100 percent by the State", although noting for an example, that local action creating new generators of traffic close to the intersection may justify local participation.

3. Improvements on TH 212 Adjacent to 3M Site (e.g., turn lanes, signals, etc.)

We are not aware of any written MHD policy on cost participation in such situations. However, it would seem prudent to ask for total local and/or 3M participation that gives direct access to their 3M site.

4. Improvements on I-694 (added lanes)

Current traffic forecasts for highway systems in the Metropolitan Area for year 2000, assuming Metropolitan Council population and employement projections, indicate many highway deficiences. Included is the apparent need for 6-lane beltway for I-694 and I-494. The 3M site and related development may accentuate this need or result in such a need somewhat earlier than may occur otherwise. Nonetheless, such increased capacity additions are primarily the responsiblity of the State and no local funding is anticipated.

This suggested cost participation will have to compete with other State and Metropolitan projects for the available funding: Federal, State, County and/or local. It also does not suggest that funding will be available to construct or stage improvements when they are needed, but does reflect the responsibility for State and local sharing.

The suggested 3M entrances have been spaced to provide an even distribution of traffic flow and to provide for eventual traffic signals that can be interconnected for efficient movement of traffic along TH 212.

entrances along TH 212

With such a major employment center, related development is anticipated along TH 212. Induced employment near the site is expected to be 30% of the 3M employment (p. 320) thus other major trip attractions can be expected that will require entrances to TH 212.

Therefore, spacing for all entrances should be regulated now to balance the through traffic usage with the intense development anticipated along TH 212.

Access is regulated now, but may not be consistent with sound traffic policies that will be needed. Changes and spacing of future access must be a cooperative venture between MHD and the municipality or agency that controls land uses.

Existing access to TH 212 is shown on the District's Right of Way Map. West of I-694, access to TH 212 is only allowed at Hadley Avenue, Granada Avenue and TH 120. The following situations are likely to occur:

1. Relocating an access opening within the same ownership parcel.

   Access relocation is usually initiated at the request of the owner for reasons of site development. If such change does not cause traffic operational or safety problems, MHD prepares a Governor's Deed changing the access opening for a fee of $500. This fee may be waived if the change in access is initiated by MHD for traffic conditions.

2. Closing an incompatible access.

   Since access to a public road is a benefit accruing to the value of the property, a change or elimination of access is considered compensible. The degree of compensation depends on an appraisal usually reflecting the "before" and "after" value of the property.

   Isolation of a property through closing access may result in substantial damages, probably approaching the value of the land. This may be mitigated to some extent by construction of frontage roads or access roads.

   Careful planning by both the MHD and City is required for locating frontage/access roads and timing.

3. Opening an access to a parcel.

   Opening an access is a unique and highly discouraged practice. The access rights are a legal interest in the adjacent property and initially acquired or controlled by MHD to protect the safety and integrity of the highway.

   However, since the function of TH 212 has been changed from a freeway/expressway to a Minor Arterial, more direct land access can be tolerated with slower speeds and proper traffic management (signals, entrance spacing, etc.). Nevertheless, additional access usually accrues to the benefit of the adjacent property and the controlling road authority should be so compensated. In addition, approval of such an additional access should be obtained from the local municipality, possibly also from the Metropolitan Council, and is a requirement of the Federal Highway Administration because of their past monetary contribution to the construction of the route.

   There are few definite procedures established for granting additional access, but thorough study and time-consuming processing is expected.

MINNESOTA ENERGY AGENCY
740 American Center Building, 160 East Kellogg Boulevard
St. Paul, Minnesota 55101 612-296-5120

June 3, 1976

Mr. Dennis S. Zylla
City Administrator
1584 Hadley Avenue South
Oakdale, Minnesota 55119

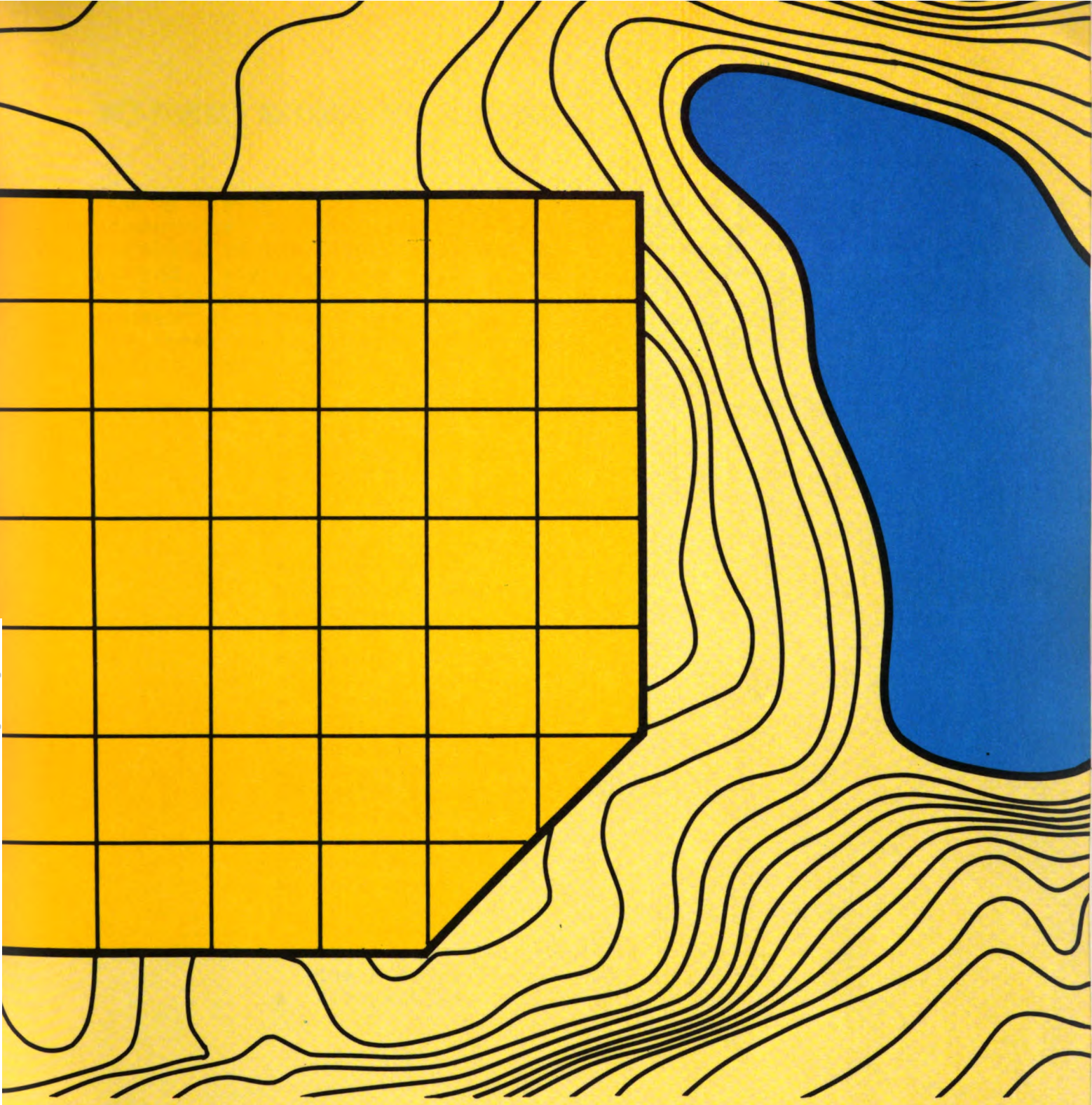
Dear Mr. Zylla:

The Energy Agency has reviewed the draft environmental impact statement on the 3M/Oakdale/Lake Elmo/research office park.

The proposer has devoted considerable attention to energy conservation in the design of buildings and the central utility plant discussed in the technical reports B-1, Building and Energy Use and C-1, Central Utility Plant and Site Distribution. Life-cycle cost analysis is included throughout to weigh the higher capital cost of energy conservation measures with energy savings over the long-term. The Agency encourages these conservation measures, especially the use of ample insulation, energy recovery from exhaust, and selective application of illumination, ventilation and heating/cooling to minimize waste.

The choice of fuels to fire the boilers recognizes the restricted supply of fuel oil and natural gas. The eventual use of solid waste as fuel is an enterprising approach to the problems of energy production and waste disposal. Plans for the use of solid waste should be coordinated with Metropolitan Council's on-going study of pyrolysis. The incorporation of solar collectors should be considered as the technology develops further.

The Agency is very concerned about the energy costs of transportation for the proposal. The company's serious committment to the commuter van program is commendable. However, van and bus service may be more difficult to provide to a more dispersed work force at the outskirts of the metropolitan area. The alternative of different sites should be discussed in greater detail in the EIS. Perhaps the search for sites should not have been limited to the area within 12 miles of the 3M Center. The EIS predicts little travel between the 3M Center and the proposed research/office park, A close site would minimize displacement of those 3M employees now working at the 3M Center who will be transferred



Response to Comments Received

RESPONSES TO COMMENTS RECEIVED

The following section contains restatements of significant environmental issues raised during public hearings or submitted directly to the City of Oakdale during the Draft EIS review period. The source of each comment is identified according to the agencies or groups which contributed it. Each restated comment is followed by a response by the responsible agency. The comments and responses are organized into the following topics, similar to the Draft EIS:

- Residential Distribution of 3M Employees
- Population
- Employment
- Land Use
- Surface Water Management
- Vegetation
- Visual Quality
- Water Supply
- Sanitary Sewer
- Energy
- Solid Waste
- Roadway System
- Transit Services
- Air Quality
- Noise
- Housing
- Education
- Public Health and Safety
- Recreation
- Economic Growth
- Tax Revenues
- Governmental Policies
- Irreversible and Irretrievable Commitments of Resources
- Short Term Uses of the Environment versus the Maintenance of Long Term Productivity
- Alternatives to the Proposed Project

RESIDENTIAL DISTRIBUTION OF EMPLOYEES

Comment 1 The distribution of 3M employee households was based on the current location of 3M employees. The location of new employee households may be drastically different.

(Washington County Planning Department)

Response: The Draft EIS explained that the projected distribution of 3M employee households was based on ten factors, of which the current distribution was only one. The other nine factors include:

1) Metropolitan Council Population and Household Forecasts for the Seven County Metropolitan Area in 1980 and 1990.

2) Metropolitan Council Developmental Policies for the Seven County Metropolitan Area.

3) Existing and proposed urban services to communities within the study area.

4) Prevailing attitudes among citizens and officials residing in communities within the study area concerning development of their region.

5) Existing and proposed development controls for various communities.

6) Existing and proposed housing developments, commercial activities, parks and school capacities for the study area.

7) Amount of land available for residential use in each region of the study area.

8) Distance from and access to the 3M Center and Oakdale/Lake Elmo site from each study area region.

9) Residential area type preferences and the likelihood of moving to preferred areas as expressed by 3M Center employees in response to the National Biocentric Survey.

TABLE 126

EXISTING AND PROJECTED RESIDENTIAL DISTRIBUTION PERCENTAGES FOR BOTH 3M SITES, BY COUNTY

COUNTY	PERCENT OF ALL EMPLOYEES ACTUAL 1970	1975	PROJECTED* 1980	1985	1990
Washington County	19%	25%	36%	41%	45%
Ramsey County Suburbs	24%	23%	20%	19%	18%
St. Paul	33%	29%	21%	17%	13%
Dakota County (Part)	6%	6%	6%	7%	7%
Pierce and St. Croix Counties in Wisconsin	7%	6%	7%	7%	7%
Total Study Area	89%	89%	90%	91%	91%

*Percentages are based on total number of anticipated 3M Center and Oakdale/Lake Elmo site employees. All percentages are rounded to nearest whole number.

Source: Technical Report E1: Employee Data, 3M Company, June, 1975.

The expected distribution in the future barely resembles the current residential distribution. Tables 59 and 60 on pages 300 and 302 of the Draft EIS show how the distribution is expected to change over time. Table 59, which is reprinted here as Table 126, shows that the most significant changes in the distribution of employees are anticipated to occur in St. Paul and Washington County. St. Paul was the place of residence of 33 percent of all employees in 1970, but at full development it will be the home of only 13 percent. Washington County was the residence of 19 percent in 1970, but will be the home of 45 percent of all 3M employees at full development. The distribution of employees is therefore anticipated to be shifted eastward.

The projected distribution of 3M employees is not necessarily what will actually occur in the impact area by 1995. The distribution is one of many that could potentially occur, depending on the events that take place before full development of the site. For example, it is possible for more growth to occur in St. Paul if efforts to revitalize marginal areas are successful or if home-buying incentives (such as lower taxes) are provided, or if public transportation were available to the site. Also it is possible to retard growth in areas such as Stillwater by refusing an expansion of urban services. Changes in attitudes and desires are likely to occur during the next twenty years, as are changes in development controls and growth policies.

Comment 2 A proposal has been made for the provision of mass transit from Hudson and River Falls to St. Paul. If the system were in operation before 1990, it would provide incentive for people to live in outlying areas.

(St. Croix County)

Response: If such a system were operable prior to full development of the site, it could very well provide an impetus for more residential growth in Wisconsin. The amount of new growth associated with the Oakdale/Lake Elmo site would depend on mass transit routes and also the schedule for its implementation. For

example, if the system were in operation by 1985 it could be considered an important factor in the amount of growth projected in Wisconsin. If it were not in operation until the early 1990's, it could prove to be relatively unimportant in influencing residential growth patterns.

The Metropolitan Council's draft Transportation Chapter (dated October, 1975) of the Metropolitan Development Guide does not, however, recognize any transit corridor extending from St. Paul to Wisconsin.

Comment 3 The EIS states that the residential distribution of 3M Oakdale/Lake Elmo site employees will be similar to that of the 3M Center. The five mile distance between the sites would presumably shift the focus of the residential pattern five miles east.

(City of Lake Elmo)

Response: The focus of the residential pattern exhibited at the 3M Center has been shifting away from St. Paul toward Washington County. Table 59 of the Draft EIS (page 300) shows that in 1970, 33 percent of all 3M employees lived in St. Paul but that by 1974, this proportion dropped to 29 percent. During the same time period, the percentage living in Washington County rose from 19 to 25 percent. From this it can be assumed that future 3M Center employees as well as Oakdale/Lake Elmo site employees will have a greater tendency to move into Washington County communities.

Because of this, and because the 3M Company expects to transfer employees between the sites, the simultaneous distribution was considered adequate.

Comment 4 Given the availability of residential land which has been designated for development in Lake Elmo prior to 1990, the EIS fails to acknowledge the potential of local governmental policies influencing significant residential construction in Lake Elmo.

(City of Lake Elmo)

Response: As was mentioned in Comment 1, the amount of land available for residential use was a factor in determining the projected distribution of employees.

However, also considered were attitudes among citizens and local officials regarding development; existing and proposed development controls (i.e., local government policies); and existing and proposed housing developments, commercial activities, parks, and school capacities. Page 301 of the Draft EIS discusses the expected distribution of employees in Region 2:

> "Some historic residential patterns and preferences of 3M Center employees, when projected to the future, show trends for 3M Center and Oakdale/Lake Elmo site employees that are counter to Metropolitan Council forecasts. It was for these regions that particular attention was paid to local developmental policies, controls and attitudes as well as to urban services and amount of land available for development. Central Washington County (Region 2) is a region where not only the proportion but also the number of 3M Center employees decreased between 1970 and 1974. However, total population increased by 1,943 persons during that same time period, and the Metropolitan Council household forecasts show almost 4,000 new households in that region between 1970 and 1990 (1,529 in 1970, 5,510 in 1990). The decrease in proportion of 3M employees was primarily due to movement from Cimarron and is not expected to continue. During the 1974-1980 time period the Interstate I-94 controversy will most probably be resolved and developments proposed for the southern end of this region subsequently initiated. Plans for the region include a large regional park, and a strong desire exists among present residents to retain the rural character of at least some areas. Consideration of all these factors leads to a projected recovery of the 1970 proportion of employees (2%) by 1980 and a small but steady rise thereafter."

Comment 5 How much will the opening of I-94 (at either of its two alternate locations) change the residential patterns predicted, particularly if the staging is delayed beyond 1995?

(State Planning Agency)

Response: The completion of I-94 between St. Paul and Wisconsin was assumed in the forecasts and should therefore not alter the projected distribution of employees. A slower rate of site development could, however, cause shifts in the projected distribution. If staging is delayed, other major developments may already have occurred in the Washington County area and general population trends will have had the opportunity to influence the distribution of 3M employees. Coupled with improved access caused by the completion of I-94, this could very well cause eastward shifts in the projected distribution of employees.

Comment 6 The EIS refers to a technical report that was used in the residential distribution of employees. The assumptions, surveys and other data that were used should be included in the EIS.

(Metropolitan Council)

Response: The 3M travel survey and residential preference survey questionnaires are reproduced here as Figures 12 and 13. The results of the surveys can be obtained from the 3M Company.

For Office Use Only

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15

1974 3M Center Employee Questionnaire

As part of an assessment of the impact of the 3M Center on surrounding communities, we need information concerning 3M employees. You have been randomly selected to answer this questionnaire concerning your family, your home and your community activities. We request your cooperation in carefully answering the following questions. The first set (Questions 1-8) is directed toward finding out about you and your family and what involvement you have in the community. In the second set (Questions 9-14) we are trying to find information about where you lived before you went to work at the 3M Center. The final set of questions (Questions 15-21) is concerned with your present home and with your residential location preference.

Boxes Are For Official Use Only

Questions 1-8 relate to you, your family and your activities. We will utilize this information to aid in evaluating socio-economic aspects of the impacts 3M Center employees have on the communities in which they live.

16 ☐

1. Are you married?
   _____1 Yes
   _____2 No

17 ☐

2. Is your spouse employed? (check one)
   _____1 No
   _____2 Yes, full time at 3M
   _____3 Yes, part time at 3M
   _____4 Yes, full time, not at 3M
   _____5 Yes, part time, not at 3M
   _____6 I am not married

18 19 ☐☐

3. How many children do you have?
   _____

4. Please indicate how many of your children presently attend each of the following:

   20-21 Pre-school _____ 26-27 Senior high school _____ 32-33 Graduate school _____

   22-23 Elementary grades _____ 28-29 Vocational or trade school _____ 34-35 Professional training (such as law, medicine, etc.) _____

   24-25 Junior high school _____ 30-31 College (undergraduate) _____ 36-37 Other (Specify _____)

38 39 ☐☐

5. How many of your children presently attend private elementary, junior high, or senior high schools?
   _____

6. Please check each type of training which you have received.

	Completed		Attended	
High school	40 ☐	____	45 ☐	____
Vocational or trade school	41 ☐	____	46 ☐	____
College (undergraduate)	42 ☐	____	47 ☐	____
Graduate school	43 ☐	____	48 ☐	____
Professional training (law, medicine, etc.)	44 ☐	____	49 ☐	____
Other (Specify _____)				

50 51 ☐☐

7. Approximately how many hours per week do you devote to all types of community activities (such as school board, PTA, Scouts, political organizations, League of Women Voters, civic clubs, national guard, participation in organized sports, participation in church-related activities, etc.)?
   _____
   (hours per week)

52 53 ☐☐

8. Approximately how many hours per week does your spouse devote to these types of activities?
   _____
   (hours per week)

Questions 9-14 relate to your first permanent assignment to the 3M Center in Maplewood. If you have worked at the 3M Center, left for any reason and then returned, please limit your response to the first assignment.

54 55 ☐☐

9. During what year did you first go to work at the 3M Center in Maplewood?
   19____
   (year)

Figure 12

56 57 58 59 60
☐☐☐☐☐ 10. Where did you live just prior to being employed at the 3M Center?

Street or RFD No.

City State Zip Code

61
☐ 11. How long had you lived at the address given in Question 10 before you went to work at the 3M Center? (Check one)

_____1 Less than 6 mo.
_____2 6 mo. - 1 year
_____3 2-4 years
_____4 5-9 years
_____5 10-19 years
_____6 20 years or more

62
☐ 12. What type of housing was it? (Check one)

_____1 Single family home
_____2 Mobile home, Movilla
_____3 Duplex
_____4 Apartment building
_____5 Town house or condominimum
_____6 Other (Specify _____)

63
☐ 13. Did you own your home at that time?

_____1 Yes, I owned or was buying my home
_____2 No

64 65
☐☐ 14. How many times have you moved since living at the address given in Question 10?

_____

Questions 15-17 concern the type of area in which you live and the type of area you would prefer if you could find suitable housing.

66
☐ 15. In what type area do you presently live? (check one)

_____1 Urban (St. Paul, Minneapolis)
_____2 Suburban (Maplewood, Roseville, Wayzata, etc.)
_____3 Small city or village outside the suburban ring (Lake Elmo, Stillwater, Hudson, Wisc., etc.)
_____4 Rural
_____5 Other (Specify _____)

67
☐ 16. Would you prefer to live in another type of area if suitable housing were available? (check one)

_____1 Yes, I would prefer to live in an urban area
_____2 Yes, I would prefer to live in a suburban area
_____3 Yes, I would prefer to live in a small city or village outside the suburban ring.
_____4 Yes, I would prefer to live in a rural area
_____5 No, I like the type area I live in
_____6 Other (Specify _____)

68
☐ 17. If you continue to work at the 3M Center, will you likely move to the type of area that you prefer within the next 5 years?

_____1 Yes
_____2 No
_____3 I like the type area I live in

Questions 18-21 relate to your present address. If you have changed residence since you first went to work at the 3M Center, please answer these questions. If you have not, skip the rest of the questionnaire.

69 70
☐☐ 18. When did you move from the address given in response to Question 10?

19 ____
(year)

71 72
☐☐ 19. When did you move to your present residence?

19 ____
(year)

73
☐ 20. In what type housing do you now live? (check one)

_____1 Single family home
_____2 Mobile home, Movilla
_____3 Duplex
_____4 Apartment building
_____5 Town house or condominim
_____6 Other (Specify _____)

74
☐ 21. Do you own your present home?

_____1 Yes, I own or am buying my home
_____2 No

Figure 12 (continued)

1 2 3
0 3 5
Deck
4 5 6 7 8 9
5519
Sample No.

1974
EMPLOYEE HOME-WORK TRAVEL SURVEY

TO ALL 3M CENTER EMPLOYEES:

In order to plan proper transportation facilities for the 3M Center, we need to learn about your travel habits. A similar survey was conducted in 1970 and was very successful through everyone's cooperation. We need this data again so that we may keep our data file current. You can help by providing the answers to the following questions.

This survey is being conducted in cooperation with the Twin Cities Area Transportation Planning Program. Please note, the answers to questions 2 and 9 are purely optional. All replies will be kept confidential. Thanks for your help.

1. My home address is: (For Official Use Only) 10 11 12 13 14
   _____ Street or R.F.D. No.
   _____ City State Zip Code

*2. The number of vehicles owned in the household where I live is_____. 15 16

3. The type of dwelling I live in is (circle only one) 17 18
   1. Single family
   2. Two family building
   3. Apartment (more than two families)

4. My sex is (circle one) 19
   1. female
   2. male

5. My age is_____. 20 21

6. My marital status is (circle one) 22 23
   1. unmarried
   2. married

7. The number of persons in my family and residing in my household is_____. 24 25

8. My job would be classified as (circle only one) 26 27
   1. Production; 3. Office; 5. Supervision;
   2. Management; 4. Laboratory

*9. My family's income class is (circle one) 28 29
   1. Under $8,000
   2. $8,000-$14,999
   3. $15,000 or more

FOLD AND RETURN TO YOUR SUPERVISOR

For Official Use Only

10. On my way to work today, I left home at _____: _____A.M., P.M. 30 31 32 33

11. I arrived at work at_____: _____A.M., P.M. 34 35 36 37

12. I got to work by (circle only one) 38 39
   1. Driving car
   2. Riding bus
   3. Walking
   4. Riding in car pool
   5. Dropped off at work
   6. 3M Commute-A-Van
   7. Bicycle
   8. Motorcycle, motorbike, etc.

13. I work in 3M Building No._____ 40 41 42

14. Yesterday, I left work at_____: _____ A.M., P.M. 43 44 45 46

15. I arrived at my next destination by approximately_____:_____A.M., P.M. 47 48 49 50

16. If you did not go directly home, where was your next destination?
   _____ Street or R.F.D. No. 51 52 53 54 55
   _____ City State Zip Code

PLEASE REFER TO ATTACHED MAP OF 3M CENTER FOR THE FOLLOWING QUESTIONS

17. By which entrance point did you enter 3M Center this morning? (circle one) 56 57
   1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15.

18. By which exit point did you leave 3M Center yesterday? (circle one) 58 59
   2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.

*Information requested by the Twin Cities Area Transportation Planning Program. Answering of these questions is optional.

RETURN COMPLETED FORM TO YOUR SUPERVISOR.

Figure 13

POPULATION

Comment 1 The additive effect of construction workers on secondary impacts should be discussed. How many workers will be required for each of the various stages of construction? How many construction workers will be likely to move into each impact area?

(State Planning Agency)

Response: The number of construction workers needed for each stage of construction cannot be estimated at this time. However, some estimate of the number of construction workers needed for a "peak" six year period of construction has been made. This estimate is found on page 258 of the Draft E.I.S. During this peak period of 1988 to 1993, over half of the total building construction will start. In addition to that, finish work on the second stage and related facilities will be accomplished.

As the discussion on pages 258-259 indicates, the majority of the construction workers employed on the project during the peak construction period will be skilled tradesmen. Many tradesmen travel great distances across the metropolitan area each day to get to their place of employment. The reason for such commuting is that although construction projects can go on for years, the amount of time a given trade spends on the site can usually be measured in weeks or months. As the location of construction sites for which their employers have contracts can vary widely, it is simply not convenient or economical for tradesmen to move near their place of employment. A similar situation occurs with laborers. Even though they may work on a given project longer than tradesmen, the duration of their employment is not sufficiently long for them to justify relocating to the project area.

Thus, in forecasting residential locations for construction workers, nearness to a construction site is not a major determinant. For this reason it is not likely that the 3M project will provide an unusual attraction which will cause construction workers to relocate to the 17 impact area regions beyond that which would otherwise be expected.

Comment 2 — 3M induced growth will have impacts of varying degrees on the ability of local units to handle its related development. What steps have been taken to inform local units of government of the problems they may face as a result of the 3M project being implemented?

(State Planning Agency)

Response: This comment highlights the primary purpose of the Environmental Impact Statement process: to alert the public and decision-making bodies as to the potential problems they may encounter as a result of the project at hand. As part of this information process, a copy of the Draft EIS was sent to over fifty local governments in the eastern metropolitan area.

Comment 3 — The Draft EIS does not adequately discuss short-term impacts regarding the influx of population (temporary and permanent).

(Pollution Control Agency)

Response: The only temporary population increases that could occur as a result of the 3M project would be those related to construction workers. As was pointed out on page 258 of the Draft EIS, peak construction is not expected to occur until the period between 1988 and 1993 when the maximum number of construction workers on the site will be 1,025. There appears to be a sufficient supply of construction labor in the Twin Cities area from which the 3M Company can draw. Because the company expects to use local labor, it is not anticipated that population influxes will occur solely because of the need for construction workers at the site (see Comment 1).

Permanent population influxes will occur as a result of the 3M Oakdale/Lake Elmo site employees, their families and a support population. Table 72 of the Draft EIS (page 322) shows that the 17 regions of the impact area can expect a population that totals 3,535 (or 1,290 households) by 1980 and 18,095 (or 5,610 households) by 1985. There may very well be communities within the impact area that are unable to accommodate the projected amount of growth within the next ten years without encountering detrimental impacts.

With the exception of Regions 2, 3 and 4, the project's short term secondary growth falls within the Metropolitan Council's population forecasts. Assessing each community's ability to accept its share of growth was considered to be beyond the scope of the Draft EIS. The secondary impacts sections do, however, try to point out some of the needs associated with this population.

Comment 4 The Environmental Impact Statement should point out major known developments that will occur in the area.

(State Planning Agency)

Response: Several large private developments have been proposed for Washington County in addition to the 3M project. The following summaries represent the current status of these proposals.

a) Dayton Hudson Properties proposed to construct a major diversified center providing a combination of office and industrial space, residences, educational facilities and a hotel. The original project site in the southern part of Lake Elmo has been abandoned; the new site is located in the northeast corner of the I-694 interchange with County Road 16 (Lower Afton Road). The new Dayton-Hudson project is on the site of the once-proposed Eastown regional shopping center. There is no known schedule for the project.

b) Colby Lake is a Planned Unit Development in central Woodbury. It will ultimately accommodate 9,200 dwelling units, an industrial park, commercial center, educational facility, open space and recreational areas. This is an active project, currently anticipated to be completed in the early 1980's. The project is awaiting sewer service.

c) Washington Central Plaza, proposed as a commercial center with some office space, will be located on 800 acres along T.H. 12. No schedule for development has been announced.

EMPLOYMENT

Comment 1 The Draft EIS does not adequately address the positive impact of the orderly creation of 18,000 new, stable jobs in a basically rural area where there are few jobs.

(St. Paul Area Chamber of Commerce, 3M Company, Public Hearings)

Response: Although the projected employment at the 3M Oakdale/Lake Elmo site is a small percentage of the projected total Twin Cities metropolitan area employment, it does comprise a significant portion of that new employment projected to occur in the 17 impact area regions. This significance is exemplified by projections for Washington County which show direct employment at the 3M Oakdale/Lake Elmo site to account for approximately 30 percent of all employment growth in the county between 1980 and 1995.

The direct employment by 3M is augmented by the number of construction related jobs created by construction of the new 3M facilities as well as the new homes required by 3M employees and the structures needed to house ancillary service industries required to support the 3M employees' domestic needs. Future employment at the service industries in the impact area will also be, in part, due to the requirements of the 3M related population.

All these factors combined demonstrate a substantial contribution to future employment as the result of this project. Increased employment reduces the public cost of unemployment and provides substantial benefits by increasing the tax base (both income and property) and by increasing cash flow through added purchasing power. Alternately, a "no project" decision would result in the loss of these potential benefits to the future of the impact area.

Comment 2 Because of its nature, this project will encourage highly trained graduates to remain in the area. The benefits of this have not been adequately discussed.

(St. Paul Area Chamber of Commerce)

Response: Because this project is to house research activities of a highly technical nature, it will employ substantial numbers of highly skilled individuals. The projections on page 262 of the Draft EIS show that the bulk of those employed at the Oakdale/ Lake Elmo site will be laboratory, supervisory, or management personnel. Many of these employees will be graduate or post-graduate degree holders.

Because of their training, these people--when educated by Minnesota schools--represent substantial investments by Minnesota residents through university and college subsidy programs. The 3M project provides an increased opportunity for these people to find employment in Minnesota, and thus provide a return on the State's investment. Economic returns on this investment would include the taxes they will pay on their generally high salaries, and their purchases. Further, a more highly educated population has historically been associated with an increased quality of life over the national average. Thus, retaining the highly educated would result in social and economic benefits to the Twin Cities metropolitan area, and Minnesota in general.

If the project were not realized, the impact of lost employment opportunity would result in many of these highly skilled individuals seeking employment in other states or countries with the attendant lost return on investment in their education.

Comment 3 The number of 3M employees projected to live in Wisconsin by 1995 fails to take into account the possibility of mass transit serving Hudson and River Falls, the improvement of I-94 between I-694 and Afton, rising land costs around the 3M site, the relatively high incomes of 3M employees, and expansion of the 3M Research Center.

(St. Croix County)

Response: The projections were based on a technique that examined the proportion (or share) of all 3M

employees living in each impact area region in 1970 and 1974. In order to project the share living in each region in future years, the trend established between 1970 and 1974 was adjusted by factors which would be known to shift the proportion up or down, relative to all other regions. The factors are discussed on pages 295 and 298 of the Draft EIS.

Comment 2 of the section on the residential distribution of employees addresses the potential effect a mass transit system might have on the number of 3M employees likely to live in Wisconsin. The completion of the segment of I-94 between Afton and I-694 was assumed in the forecasts; it was felt that with I-94 completed, western Wisconsin areas would become more attractive for 3M employees in the 1980's. Whereas six percent of all 3M employees lived in the Wisconsin region in 1974, the projected share for future years is seven percent.

The relatively high income structure of 3M employees was not directly considered in the residential distribution procedure. If the spatial distribution of income in 1974 is representative of future years, family incomes over $15,000 will be more pronounced than average in a band of suburbs extending from New Brighton to Stillwater. The 1974 travel survey showed that a higher than average percentage of 3M families in Wisconsin had incomes ranging from $8,000 to $15,000.

The expansion of the 3M Center in Maplewood was only considered to a limited extent. Table 61 on page 303 shows the projected number of employees for both sites by impact area region. To complete a secondary impact analysis of the employees of the 3M Center was assumed to be beyond the purpose of the Environmental Impact Statement for the construction of the Oakdale/Lake Elmo facility.

LAND USE

Comment 1 How do residents of areas adjacent to the project site " . . . feel about the impact this project will have on their neighborhood, the aesthetics of the area, and the related social and environmental conditions?"

(Pollution Control Agency)

Response: The Tri-Lakes Association represents the residents of the areas adjacent to the site. This organization's opinions are part of the comments received on the Draft E.I.S., and have been reprinted in full as part of this document.

Comment 2 No consideration was given to what secondary impacts would be sustained by the City of Lake Elmo should the project cause premature construction of sewer.

(Tri-Lakes Association)

Response: Premature construction of sewers in that area is not likely as the project will not change the Metropolitan Waste Control Commission's projected sewer construction through 1980-1990.

Comment 3 Will the 3M alternate sewage plan cause premature development of land along County Road 6?

(Washington County Planning Department)

Response: The Draft E.I.S. discusses four options which would provide the 3M Oakdale/Lake Elmo site with sanitary sewer service. None of these options are 3M proposals, but rather they are those of the Metropolitan Waste Control Commission (M.W.C.C.). The proposed 3M project is not projected to require any changes in the M.W.C.C. construction schedule, regardless of which alternate is selected by the commission. Since the 3M project will not require the M.W.C.C. schedule to be hastened, the question then becomes: "Will the M.W.C.C. sewer construction schedule cause premature development of land along County Road 6?" This question is more appropriately addressed in the environmental analysis of that schedule.

Comment 4 Surface parking may not be the best use of the land for parking cars. Is any provision of parking ramps being considered?

(Public Hearings)

Response: The surface parking shown on maps and discussed on page 39 of the Draft E.I.S. was presented by 3M in an effort to show a "worst case" situation. The decision of ramp versus surface parking facilities has not yet been decided by 3M. This decision is not anticipated to be made until after some of the proposed buildings have been erected. It is more probable that parking will be accommodated by a mixture of ramp and surface facilities rather than by one or the other.

Comment 5 The proposed Lake Elmo Comprehensive Plan (December, 1975) varies from that shown on map 46, page 356 of the Draft E.I.S. It should be noted that in light of the proposed plan, the large amounts of open land proximal the 3M site in Lake Elmo could be subject to development pressures beyond the levels of the Metropolitan Council Development Framework.

(City of Lake Elmo, Tri-Lakes Association)

Response: At the time the above cited map was being printed, the proposed Lake Elmo Comprehensive Plan was undergoing review. As of this writing, the plan has not yet been officially adopted by Lake Elmo. For these reasons it seems to remain inappropriate to include unofficial policy in this document. However, because of the plan's apparent immediacy, some discussion is in order at this time as to the impact on it resulting from the 3M Project.

In comparing map 46 from the draft E.I.S. and the proposed Lake Elmo Comprehensive Plan, the most striking difference is the change in planned land use immediately surrounding the 3M project site. Map 46 shows the land around the 3M site as primarily single family residential with some areas of industrial, commercial, and high density residential immediately adjacent the site. The

proposed Lake Elmo Comprehensive Plan replaced the commercial, industrial, and high density uses with single family residential. In comparing these plans with Lake Elmo's proposed (sanitary sewer) Staging Plan the concern for development pressure becomes apparent. It is possible that the 3M induced population may cause development pressure in the area immediately adjacent to the 3M Oakdale/Lake Elmo Site before urban services can be provided to it--specifically, sanitary sewer which is scheduled for 1985-1990.

It should be pointed out that the Metropolitan Council's current Development Framework is based on population projections which include the 3M induced populations. For this reason, Lake Elmo as a whole should not be subject to development pressures beyond the levels of the Development Framework. Thus, the actual level of development pressure for the whole of Lake Elmo should not be a concern. Assuming Lake Elmo's consultants have allowed for growth according to the Metropolitan Council's current projections in developing their Comprehensive Plan, there should be adequate amounts of developable land within Lake Elmo to accommodate 3M related growth.

The concern for where this growth will occur within Lake Elmo, however, is genuine. There may indeed be pressure to develop lands adjacent the 3M site ahead of schedule. The City of Lake Elmo has several controls which it can exercise to direct growth to desired areas in accordance with its Staging Plan, thus completely mitigating this impact. These controls include the issuance of building and use permits, as well as enforcement of zoning regulations.

Comment 6 Will 3M's use of Lake Elmo Airport for corporate flights create a need for its expansion?

(Public Hearing)

Response: 3M will not be using the Lake Elmo Airport for corporate flights. 3M will tontinue to use regularly scheduled flights at the Twin Cities International Airport and their unscheduled corporate flights from the St. Paul Downtown Airport (Holman Field). Thus the Lake Elmo Airport will not require expansion as a result of the 3M project.

Comment 7 The land use section (primary impacts) fails to consider the environmental impact of the 3M project on adjacent residential areas.

(Tri-Lakes Association)

Response: Changing the land use on the 3M site from agriculture to a research/office park will most definitely affect nearby residential areas. The impacts were brought out in many sections of the Draft EIS; for example, surface water management (pages 55-65), water supply (pages 132-136), sanitary sewer (pages 143-153), roadway system (pages 194-204), and noise (pages 249-255). However, the new Lake Elmo comprehensive plan finds the proposed 3M research/office facility compatible with residential use and has designated areas immediately adjacent to the site for that use.

Comment 8 No analysis is given of possible devaluation of property adjacent to the 3M site.

(Tri-Lakes Association)

Response: No data could be found that support the conclusion that land values will decrease in proximity to the site.

Comment 9 The land use section discussing alternative uses of the site creates a traffic problem under residential use; development of between 2,000 and 3,100 dwelling units is pure conjecture without an analysis of zoning regulations.

(Tri-Lakes Association)

Response: The development of between 2,000 and 3,100 dwelling units on the site was not based on zoning regulations but on the land use plans of Oakdale and of Lake Elmo (which has since been revised).

SURFACE WATER MANAGEMENT

Comment 1 It appears according to the illustration of the proposed pond locations that all the run-off allowed off the site may be discharged to a stream at one point. If this is the case then the E.I.S. should discuss the impact of concentrating the allowable run-off to one discharge point on the channel size and geometry, flooding potential, aquatic biota and water quality.

(Metropolitan Council)

Response: The 3M Company in initial discussions with the Valley Branch Watershed District had indicated that they would desire to store all water on site to use in their cooling towers and other on site uses. The Valley Branch Watershed District had very great concerns about maintaining the existing off site drainage patterns and the existing streams which are fed by run-off from the site. In order to help maintain the status quo as much as possible the Valley Branch Watershed District imposed the restrictions that the sub-drainage boundaries on the site be left intact as much as possible and that all natural outlets from the site will be retained as much as possible as to location and to discharges. Therefore, the Valley Branch Watershed District has not only put restrictions on the maximum rates at which water can be discharged from the site but they also have general control over the location of these discharges and, in effect, the minimum amounts of water which must be discharged from the site to maintain the existing hydraulic conditions in the area.

Map 13, Page 61 may have mislead the reader to believe the retention ponds are interconnected to discharge at a common point from pond number six. The storm water is not directed to pond six to discharge off the site; rather, the water which is to be retained on site may be directed to pond six which is adjacent to the utility plant to be utilized as process water, cooling, etc.

Comment 2 The Minnesota Highway Department pond as shown on Map 11 shows 30 acre-feet of available storage. This would assume the pond is dry and the pond has not been dry since it was constructed and has overflowed the past three years.

(Minnesota Highway Department)

Response: It was recognized that the initial intent of the Minnesota Highway pond was to dissipate storm water primarily through infiltration. Unfortunately, the anticipated rate of infiltration has not been maintained due to siltation or other reasons. Insomuch as this pond stores water from the I-694 highway area, it is assumed to contain many contaminants, such as salt and oil. Consequently this pond will not be interconnected to the other storm water ponds on the site. Also, based on the projected development schedule it does not appear that the Lake Olson sub-drainage area of the site will be disturbed for 10 to 15 years. Assuming this schedule remains, drainage concepts for the entire Lake Olson area, including the Minnesota Highway Department pond, will have developed to a much higher degree than what presently exists. The currently filled volume of the MHD pond was not utilized for site run-off storage in the drainage plan.

Comment 3 While it would be extremely difficult to estimate the impact of the project induced growth on each stream in the study area, some general conclusions should be drawn with respect to development at the head of the Watershed versus development at the bottom.

(Metropolitan Council)

Response: It is the general concensus of planners that land development at the bottom of a Watershed area is desirable and has many hydraulic advantages as to developing at the head of a Watershed. Development at the bottom of the Watershed will allow the hydraulic improvements necessary to maintain the desired flow characteristics of the drainage channel and the sizing of these improvements will take into consideration future development further up the Watershed area. Development at the head of a Watershed prior to development at the bottom will tend to increase run-off through existing channels further down in the Watershed and cause flow volumes greater than existing which the present channels are unable to handle, thus causing flooding, erosion, or other related problems.

The other consideration of the upstream/downstream question is sanitary sewer related, especially the location of the 3M site at the head of the Valley Branch Watershed and the new sanitary sewer District 7. Development at the head of the Watershed generally requires the entire interceptor system to be

constructed early in development; whereas growth from the bottom upwards provides the ability to construct the interceptor system in stages as growth requires. Drainage basin relationships in the impact area are shown in Map 54.

Comment 4 The E.I.S. analyzes the storm water management plan assuming the Valley Branch Watershed restrictions are enforced. To better relate to the magnitude of the project that impact should be described if no restrictions were imposed and then explain how the restrictions would mitigate these impacts.

(Metropolitan Council and Tri-Lakes Association)

Response: The increase in volume of storm water run-off expected from the placement of impervious surfaces on the site resulting from a four hour 100-year frequency storm is summarized on Page 62 of the Draft E.I.S. This data is included in the summary table on the top of the page under the heading "Temporary Storage".

Calculation as to the possible increase in flow rate off the site if no controls are supplied have not been carried out. Such calculations are not necessary because the involvement of the Valley Branch Watershed District in this project precludes any possibility 3M could proceed with site development without providing appropriate controls for storm water run-off. The results of calculations for determining allowable run-off flow rates are summarized in the table on the top of Page 62 of the Draft E.I.S.

It should be noted that the allowable flow rates have been based on a one hour 10-year storm, not a short duration 100-year storm as suggested by the Valley Branch Watershed District. The effect of this action by 3M is a reduction in the allowable flow rate of approximately 35 percent. The reduced flow rates are being used by 3M because 3M believes that these are the flow rates normally expected by local residents. (See the fourth paragraph on Page 60 of the Draft E.I.S.)

Comment 5 The E.I.S. discusses impacts of increased urbanization on the impact area's surface waters. As a high-amenity area, shoreland areas will certainly attract residential development, with associated impacts on surface waters. Similarly, the presence of many lakes in certain regions will make location in shoreland areas more probable for commercial/industrial growth, as well as residential growth. Those surface waters with existing problems

(high or increasing water levels, rapid entrophication, water quality problems, etc.) should be identified and the impact on these waters indicated.

(State Planning Agency)

Response: A map developed by the Metropolitan Council showing the lakes and Watershed Districts in the Metropolitan Area has been included in this report to help give the reader a better overview of the general drainage in the study area. A partial list of lakes with existing problems, be they high water problems or water quality problems, was obtained from the DNR and is listed below.

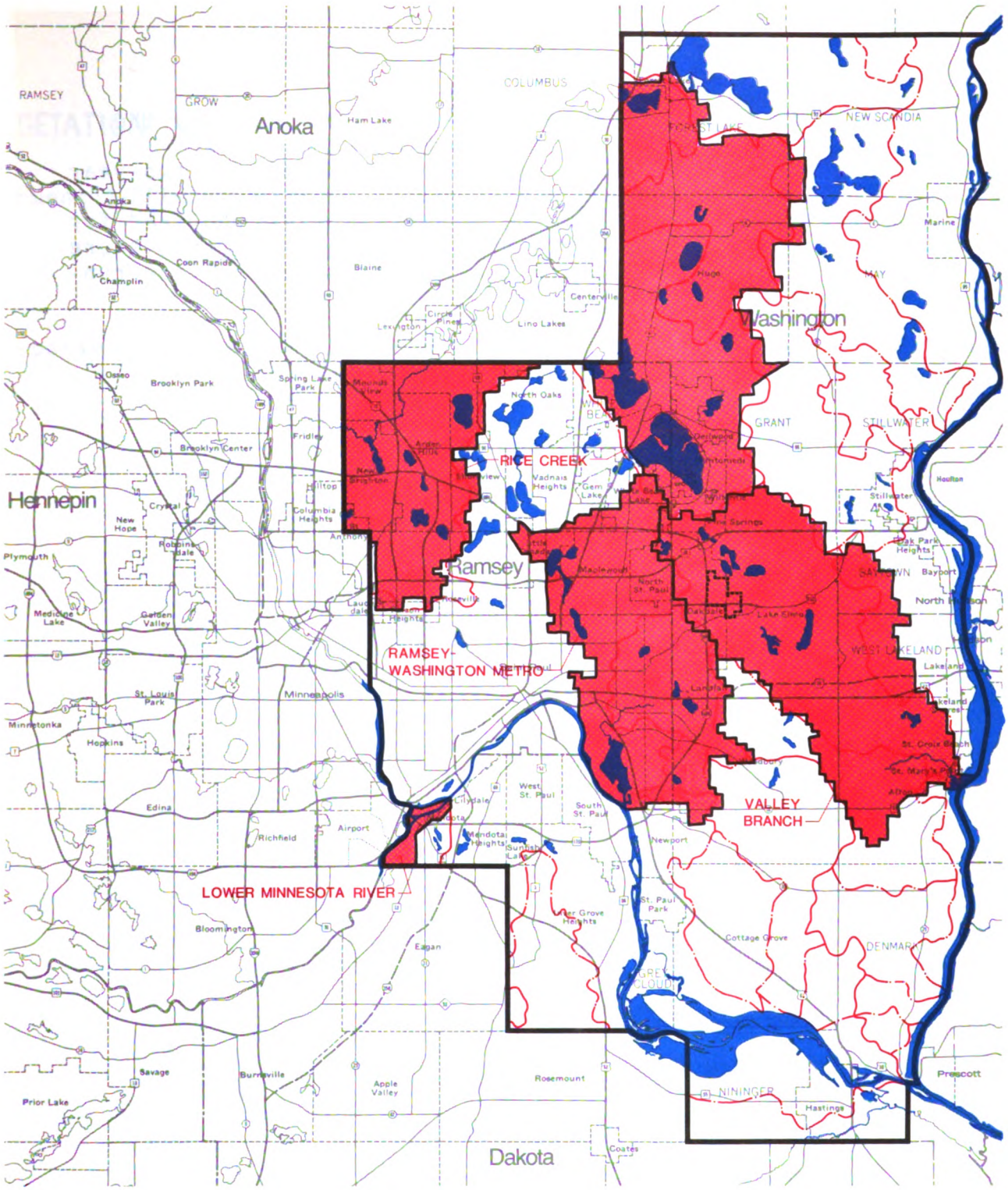
Tri Lakes
Eagle Point Lake
Sunfish Lake
Lake Elmo
Tanner's Lake
Battle Creek Lake
Little Horseshoe Lake
Long Lake (Stillwater)
Big Carnalian Lake
Little Carnalian Lake
Sunset Lake (Hugo)
Horseshoe Lake (Hugo)
Big Marine Lake

Development in the drainage area of these lakes will generally accentuate the existing problems, unless careful stormwater planning is practiced.

Comment 6 It appears that even if 3M on-site settling ponds are used properly and a minimum of run-off does occur, the quality of run-off will be potentially very poor. A majority of the run-off enters the Eagle Point Lake Watershed. Eagle Point Lake is eutrophic. What will the addition of added salts, nutrients and oils do to the character of the lake and the wildlife surrounding it? How would the Watershed plan to store water in the lake be affected by this poor quality water? The E.I.S. should clarify if special means of treating water run-off are required at initial stages or prior to construction of certain later stages.

(Washington County, Metropolitan Council)

Response: Even after settling in retention ponds, site run-off will contain pollutants which will adversely affect the



Primary Watershed

Secondary Watershed

Tertiary Watershed

Watershed District Boundary & Area

North

Scale

0 1 2 3 4 5 Miles

0 1 2 3 4 5 6 7 8 Kilometers

3M Proposed Research/Office Park Environmental Impact Statement

prepared for
The City of Oakdale
by
Bather-Ringrose-Wolsfeld, Inc.
7101 York Avenue South, Edina, Minnesota 55435 (612) 831-2300

Watersheds & Watershed Districts

MAP 54

quality of nearby water bodies. As required by the Federal Water Quality Amendments of 1973, the Metropolitan Council has recently initiated a two-year Section 208 Areawide Water Study. This study will determine what treatment, if any, will be required for surface run-off. Until this study is completed, there are no guidelines or responsibilities for surface run-off treatment.

VEGETATION

Comment 1 Will parking needs reduce the actual quantity of vegetation designated as interior woodland below that level shown on Map 15?

(Minnesota Department of Natural Resources)

Response: As stated on page 38 of the Draft E.I.S., the interi woodland landscape is intended to serve the function of providing shade for parked vehicles. In this light, the vegetation configurations shown on Map 15 can be taken as only conceptual. The actual configuration of tree masses would probably be more uniform and dispersed than the blocks shown on Map 15 in order to more adequately fulfill the intended function.

The relative density of shade trees used in the inte woodland is dependent upon 3M's construction budgets and on the level of review for applicable building a use permits in Oakdale and Lake Elmo.

VISUAL QUALITY

Comment 1 — The potential visibility of the cooling towers and coal piles at the Central Utility Plant was not adequately discussed.

(City of Lake Elmo, Minnesota Pollution Control Agency)

Response: In researching a response to this comment, 3M Company engineers were asked to quantify and dimension the cooling towers and fuel storage requirements. The below list of fuel storage facilities descriptions was provided by 3M. (It should be noted that the description for each type of fuel assumes that all of the utility plant's fuel will be of that type, thus constituting a worst case situation for each fuel. In reality, the total fuel needs will be supplied by a combination of all three fuel types).

- Coal - If it is assumed all fuel for the Central Utility Plant will be coal in 1995, then four coal piles will be required. Each pile with a base of 90 ft. by 90 ft. and a height of 45 ft. The piles would likely be arranged so as to require a 90 ft. by 360 ft. total base area.

- Oil - If it is assumed all fuel for the Central Utility Plant will be oil in 1995, then four storage tanks will be needed. Each tank would be 45 ft. in diameter and 45 ft. high. Further, the four tanks would be surrounded by an earthen dike approximately 140 ft. wide by 500 ft. long.

- Solid Waste - If all solid waste produced by 3M is used to fuel the Central Utility Plant, then a single pile would be required. The pile would have a square base measuring 100 ft. on a side, and with a height of 35 ft. It should be noted that the height given assumes a partial bury of the pile below the surrounding grade.

Of the above three fuel types, coal and solid waste are stored in pyramidal forms. This means that only about 1/3 to 1/4 of their total visual mass will be visible above the site's proposed vegetation buffer

when viewed from off-site areas. On the other hand, the oil tanks will tend to display about 1/2 of their visual mass above the buffer line due to their cylindrical form. Thus the oil tanks will tend to be more visible than the coal and solid waste piles.

For the purposes of visibility analysis the oil tanks were selected as a "worst case" example in modeling the Central Utility Plant. In addition to fuel storage, cooling towers must also be considered. The Central Utility Plant will likely have ten cooling towers each approximately 35 ft. high and 35 to 40 ft. in diameter. A visibility analysis was conducted by manual techniques to determine the off-site visibility of the above described cooling towers and oil tanks. The following summary of that analysis is based on the "major viewpoint" reference system employed in the Draft EIS (pages 83 to 95, and Map 19):

- General. Because both the cooling towers and oil tanks are substantially shorter than the average proposed building mass, the buildings will completely screen the tanks and towers from viewpoints north of the buildings. Since the Stage I and II buildings will provide the most screening, this screening will be effective by about 1983. It should be noted that the buildings will also prevent the towers and tanks from being silhouetted against the sky when viewed from points south of the site. Furthermore, 3M's proposed vegetation buffer will screen the lower portions of the Central Utility Plant (C.U.P.) elements from all viewpoints.

- Interstate Highway 694. The C.U.P. elements will not be visible from this highway except that 3,000 ft. segment including and south of the I-694 - T.H. 212 interchange.

- Minnesota T.H. 212. The C.U.P. elements will be most visible from this highway. The characteristics of visibility will be very similar to those described for site buildings in relation to this highway on page 92 of the Draft EIS. The visibility of the C.U.P. elements will be confined to a shorter segment of T.H. 212 than that for the buildings because of the shorter nature of the C.U.P. elements themselves.

- Minnesota T.H. 36. The C.U.P. elements will not be visible from this highway as they will be totally screened by State I and II buildings.

- Lake Elmo Park Reserve. Existing views from the park to the site will include much of the upper portions of the C.U.P. elements. The lower portions will be masked by the proposed woodland areas. In addition, some portions of the park reserve which do not currently have views of the site will have views of the future C.U.P. elements. Such areas of the park will tend to be those which border those portions that are currently exposed to views of the site. Large portions of the park's interior will tend to remain without views of the C.U.P. elements due to the surrounding topography and vegetation.

- Minnesota Parks and Recreation Countryview Bicycle Trail. The C.U.P. elements will not be visible from the trail as the Stage I and II building masses will completely screen potential views to the C.U.P. elements from the trail.

  Mitigation measures to reduce visibility of the C.U.P. elements are the same as those discussed on pages 94 and 95 of the Draft EIS.

Comment 2 The visibility of the Central Utility Plant smoke stacks was not adequately discussed.

(Minnesota Pollution Control Agency)

Response: The project calls for five 175 foot tall smoke stacks to be ultimately constructed in the Central Utility Plant area. A visibility analysis was conducted by manual techniques to determine the off-site visibility of the smoke stacks. For analysis purposes, five 175 foot stacks were assumed, at a spacing of 150 feet, and in a line parallel and adjacent to T.H. 212. The following summary of that analysis is based on the "major viewpoint" reference system employed in the Draft EIS (pages 83-95, and Map 19):

- General. Because of their size, the smoke stacks cannot be effectively screened from view through mitigation screening on the 3M site. The only effective screens are trees,

buildings or topographic features located between the stacks and the observer which function to cut off the observer's perspective of the smoke stacks.

- Interstate 694. Views of the stacks will be available from this highway between and including its intersections with Stillwater Boulevard North and T.H. 36. Views of the stacks will not be available from 694 north of the T.H. 36 intersection, nor will they be available south of the Stillwater Boulevard intersection.

- Minnesota T.H. 212. Views of the stacks will be available from this highway for at least six miles in either direction from the stacks. Suitable topographic data was not available to permit visibility analysis beyond this distance.

- Minnesota T.H. 36. Views of the stacks will be available at the T.H. 36/I-694 interchange, and easterly along T.H. 36 from a point directly north of the midpoint of Lake Jane. Views of the stacks will not be available from that segment of T.H. 36 west of the I-694 interchange, nor will they be available from an approximate 1-mile segment of T.H. 36 immediately east of the I-694 interchange.

- Lake Elmo Park Reserve. Views of the stacks will be available from all areas of the Reserve except the approximate southeast quarter of the park. The stacks will not be visible from most parts of Lake Elmo or from an approximately 1,000 feet radius around the lake. Views of the stacks will also not be available from the portions of the Reserve immediately south of Lake Elmo. However, many portions of Eagle Point Lake will have views of the stacks.

- Minnesota Parks and Recreation Countryview Bicycle Trail. Nearly all portions of the trail within at least 6 miles of the stacks will sustain views of the stacks. The exception to this is the segment of the trail which proceeds north of the 3M site around the west and north side of Lake Olson and Lake DeMontreville. This segment has sufficient tree cover to cut off views of the stacks until the trail joins the alignment of T.H. 36 to the north.

WATER SUPPLY

Comment 1 Since no decision (by 3M) regarding a choice of a water supply system has been made and the purpose of an E.I.S. is to disclose the impact of various alternatives, it would be well to analyze the impact on the systems for Lake Elmo or Oakdale if 3M decides to rely on either of these systems for supplying its water needs. Of particular interest would be the economic impact on each of the municipalities. If Lake Elmo supplies water, a well field, treatment facility, and storage facilities will have to be built. Who will benefit most from this - 3M or the residents?

(Washington County, Metropolitan Council)

Response: It appears that the best system from the basis of cost for 3M would be the installation and operation of their own well field. However, this would create an area of very concentrated pumping which might be detrimental to adjacent wells. This means that although 3M may pay a higher cost, they may wish to purchase their water from one of the three communities.

Although an economic analysis was not done for each of the alternatives it is generally considered advantageous to a water department to have large scale water users. This would be especially true with 3M as they have indicated they would provide their own fire protection. This would give the community the advantage of having a large consumer maximizing the use of the City's facilities without having the obligation of providing additional supply and storage facilities which would be required for fire protection.

If Lake Elmo initiated its water supply system, a user such as 3M would be advantageous as this would allow the City to sell considerable amounts of water early in the development of the system. However, due to the lack of municipal sewer and the fact that Lake Elmo's population is fairly scattered, it may be premature to assume Lake Elmo water would be available to 3M in the near future. Initially a Lake Elmo system would possibly be more beneficial to 3M than other users, however, as the system expands and more users are connected, the system will benefit financially from a large user such as 3M.

The St. Paul system could feasibly supply the 3M site only if the City of Maplewood would change from a retail supply arrangement to a wholesale supply arrangement. It appears that Maplewood will remain a retail user in which case St. Paul could not supply 3M without constructing additional storage facilities which does not appear to be feasible.

Use of the Oakdale water system to supply 3M requirements would offer an opportunity to get maximum use from an existing system. As the City of Oakdale would not be required to commit capital for additional supply and storage facilities related to fire protection, it appears that the sale of water to 3M would be economically desirable for the City. Large water users without large daily fluctuations or fire demands allows maximum utilization of wells and storage.

Studies of the Oakdale and Lake Elmo systems did not include the investigation of the aquifer source or any drawdown effects of these municipal systems.

Comment 2 The pumping of well water by 3M from Lake Elmo will "result in an increase in pumping costs for the wells or a decrease in well capacity". Does this mean that if wells in the Tri-Lakes Area begin to fail, a central water system may be needed prematurely?

(Washington County)

Response: No. What is meant is that when potentiometric levels in existing wells are lowered, the cost to remove water becomes greater. Either the water has to be lifted a greater distance with the same pumps, resulting in a decrease in pumping capacity; or a larger pump unit has to be installed at additional costs to create the same capacity. Wells in the Prairie du Chien/Jordan aquifer will not "go dry".

Comment 3 The E.I.S. generally analyzes the impact of a 3M-owned well field to supply the water demands for the development. However, the information presented is lacking in two aspects:

A. The method for estimating the zone of well influence is not cited or referenced, thus, no statement can be made regarding the reasonableness of the description of the zone of influence.

B. The estimated zone of well influence on the ground water is arrived at using the average daily water use.

(Metropolitan Council)

Response: The method used for estimating the zone of well influence is based on "Groundwater and Seepage" by M.E. Harr, McGraw-Hill, New York, 1962.

The average daily water requirements at full development were used in estimating well influence. It was also assumed that all water would be drawn from the Prairie du Chien/Jordan although at least some of the wells will be in the Hinckley/Mount Simon aquifer. As a final design for a well field has not been done by 3M nor has any study been done on production rates versus storage volumes to offset peak demands, or the number of wells in each aquifer, nor have any test wells been drilled and observed, it was felt that a sophisticated analysis could not be done as too many assumptions would have to be made. It was felt that the analysis done would approach a normal worst case situation and is a good indicator of possible effects.

Comment 4 The Draft E.I.S. recognizes on Page 134 that it is difficult to determine drawdown due to pumping at the 3M/Oakdale/Lake Elmo site when the well layout is not known. This must be known before alternatives can be selected.

(Tri-Lakes Association)

Response: It is not the charge of the E.I.S. to design the ultimate water system for the 3M Company. The E.I.S. has identified the impacts due to pumping from the site and if this alternative is preferred by 3M then further investigations can be conducted as design considerations are encountered.

Comment 5 The Draft E.I.S. fails to relate the data on water supply to enable the decision-maker to select alternatives that will result in the least impact on the wells in the Tri-Lakes area. The TLA requests that this section be rewritten and alternatives as to the sources of water supply be specifically detailed so the effect of the project on the wells of the Tri-Lakes area can be assessed. If the ground water alternative is selected what bedrock formation alternatives should

be considered that would result in the least impact upon the wells in the Tri-Lakes area?

(Tri-Lakes Association)

Response: A detailed analysis of drawdown effects in the Tri-Lakes area due to the existing and future Oakdale water system or future Lake Elmo system is beyond the scope of this E.I.S. The alternate with the the least impact on the Tri-Lakes area wells would be the use of St. Paul water. The use of Oakdale water would probably have little effect. However, this cannot be analyzed as future well locations or well/storage relations are not known. The Lake Elmo alternate has not been analyzed for drawdown effect but could have a big effect on Tri-Lakes' wells due to the high pumpage rates and its proximity to the underground valley. However, when Lake Elmo develops a water system, the Tri-Lakes would probably go on municipal water fairly early.

If the site ground water alternative is selected the least effect would result if wells were developed in the Hinckley/Mount Simon aquifer. Local wells are either located in the glacial draft or in the Prairie du Chien/Jordan and there is almost no transfer between this aquifer and the Hinckley/Mount Simon. As further demands dictate wells would be developed in the Prairie du Chien/Jordan and, depending on phasing, municipal water may be available prior to that time.

SANITARY SEWERS

Comment 1 It appears that 3M prefers a temporary sewer system which allows all sewage to the north end of Eagle Point Lake and then be pumped along Stillwater Road. How can we insure the wastes do not drain into Eagle Point Lake either through mechanical failure or leakage? Also, what assurance is there that a pumping station would not puncture the soil lining of Eagle Point Lake?

(Washington County)

Response: For the purpose of responding to these comments it will be assumed that the Metropolitan Waste Control Commission will own and operate the lift station referred to in the vicinity of Eagle Point Lake. Presently the Metropolitan Waste Control Commission owns and operates approximately 35 lift stations and 400 miles of interceptor sewer. These facilities serve approximately 5000 miles of locally owned sewer mains with numerous lift stations included in the local systems. It can only be assumed the high engineering standards maintained in the past by the Metropolitan Waste Control Commission will be adherred to for any design related to servicing this area. Minimum safety requirements with regard to lift stations generally consist of alarm systems which transmit to a central panel any pump failures, electrical failures, high water problems, or other mechanical failures in the system. Also, there is generally gas or diesel power generators to maintain pump station operation during times of electrical power failure.

Comment 2 The nature and strength of all the liquid wastes to be discharged to the Metropolitan Waste Control Commission's facilities, and other immediate facilities, should be stated with special attention given to the nature and disposal procedure of hazardous wastes.

(Washington County and Pollution Control Agency)

Response: As this is intended to be a research center, the nature of the waste water cannot be predetermined but it can be assumed it will be similar to the existing 3M Center and is as follows:

TABLE 127

Parameter	Expected Range of Concentration (mg/1)	Expected Average Concentration (mg/1)
COD	65 - 230	120
TSS	15 - 175	45
pH	6.7 - 10.5 pH Units	---

The above information is based on the analytical results from 24-hour composite samples taken once per month at 3M Center for the thirteen month period of April, 1975 through April, 1976.

Standard 3M Company operating procedures require that any department possessing a toxic or hazardous material requiring disposal to contact the 3M toxic and hazardous waste disposal coordinator for assistance. The disposal coordinator obtains such information as the name of the material, its existing physical state, types and sizes of containers being used to store the material, location of the material, quantity of material, name of person responsible for the control of the material, and any other information deemed appropriate for the material of interest. The disposal coordinator then consults the literature to determine the physical, chemical, safety, legal and environmental factors that must be considered in determining the proper disposal procedure to be used. Based on the information supplied by the operating department possessing the material, the information obtained from the literature, and professional experience and judgment, the disposal coordinator makes a determination as to what disposal procedure would be the most appropriate. Ultimate disposal may be either discharged to a waste water treatment plant, burial at a landfill, or incineration at the 3M Chemolite waste material incinerator. When appropriate, the coordinator prescribes procedures to treat the waste material before it is disposed. As the disposal method for each material is determined on a case by case basis, it is not possible to generalize as to the selection of the disposal method.

Actual disposal may be carried out either by the department possessing the material or by 3M waste disposal personnel depending upon the capabilities of the personnel involved.

Comment 3 There is a conflict with the 1973 Metropolitan Waste Disposal System Plan for Washington County. In that document the 3M site is listed as medium density. As shown, 3M will produce approximately 5 times the effluent of a residential development. Will this cause a need for new plans to be developed and if not are the existing proposals capable of handling this large amount of waste water?

(Department of Natural Resources)

Response: The 1973 Washington County Plan was completed prior to the announcement of 3M to develop the Oakdale-Lake Elmo site. Subsequent to that announcement the Metropolitan Waste Control Commission completed in 1975 the Lake Elmo Tri-Lakes Interceptor Facilities Plan Preliminary Draft. This plan did include the requirements of 3M. Also, in the Metropolitan Waste Control Commission Development Program 1977-1981 and also included in the 1976 budget are provisions for a Facilities Planning Study for Cottage Grove, Woodbury, and Lake Elmo. This study is a part of the EPA process to determine the most efficient orderly expansion of the Metropolitan facilities to accommodate future growth in these areas.

Comment 4 Add alternatives to local sewer service and include estimated costs per lot for municipal sewer service.

(Public Hearing)

Response: The responsibility of providing local sewer collection throughout the municipality is solely the responsibility of the municipality. The location, timing, and financing of such improvements are governed by local Council policy. All costs assessed for local sewer service are assessed solely by methods determined by the local City Councils. Any information regarding the timing or probable costs of municipal sewage to a specific area can only be obtained through the affected local body.

Comment 5 Will 3M's use of the W.O.N.E. preclude its use for other development?

(Public Hearing)

Response: In the development of the service life of the interim services that can be provided through the W.O.N.E., the normal growth, as projected by Oakdale's comprehensive sewer plan, was built into future normal

requirements of the W.O.N.E. interceptor system. The sewage requirements of 3M and of the existing Tri-Lakes population was then added to the normal anticipated growth of the flow in the W.O.N.E. interceptor. Therefore, utilization of the excess capacity of the W.O.N.E. by the 3M Company does not preclude normal growth from occurring in the W.O.N.E. interceptor service area. However, should another major development be proposed outside of the W.O.N.E. service area requesting the utilization of the same reserve capacity, then these two developments could be competing for the same reserve capacity. In either case, reserve capacity within the W.O.N.E. should be reserved for the normal growth that is expected to occur in the W.O.N.E. interceptor service area.

Comment 6 The E.I.S. extensively documents alternatives of providing interim service; the same effort should be given in addressing alternatives available to expand permanent Metropolitan sewer facilities to Oakdale, Lake Elmo, Woodbury, and Cottage Grove. Alternatives may be construction of the Cottage Grove interceptor through Woodbury to Lake Elmo as briefly described in the E.I.S.; construction of a gravity system west to the Metropolitan waste water treatment plant to serve Oakdale, Lake Elmo and portions of Woodbury; or construction of an interceptor down the Valley Branch Watershed to a new treatment plant in the St. Croix sometime after 1990.

(Metropolitan Council)

Response: It is not the charge of an E.I.S. to prepare (201) Facilities Planning Studies as required by the E.P.A. This responsibility in the Twin City area has been designated to the Metropolitan Waste Control Commission. The 1976 budget of the Metropolitan Waste Control Commission does include provisions for Step 1 of the E.P.A. process, which is a Facilities Planning Study for Cottage Grove, Woodbury, and Lake Elmo and is described as Project 76-14. The purpose of a Facilities Planning Study is to determine the most efficient orderly expansion of metropolitan facilities to accommodate future growth. The E.I.S. has discussed the timing of any permanent Metropolitan facilities proposed to serve the area. The Facility Planning Study would determine the most cost effective method to serve the area of Woodbury, Oakdale and Lake Elmo including the proposed project site.

ENERGY

Comment 1 The possibilities of energy alternatives, such as solar energy, were not adequately discussed. Large commercial and industrial users of energy especially should take a leadership role regarding utilization of various forms of energy sources. Natural gas is going to be cut off from major users within three years and sulfur dioxide limits are rapidly being approached in the metropolitan area. It is the opinion of the Agency that energy sources, other than the proposed fuel, be evaluated as to their feasibility by all major users if we are to avoid competition for the last available increments of SO_2 and particulates.

(Minnesota Pollution Control Agency)

Response: The proposers of this action have in the past shown their leadership in new technological advances and have also shown this concern in this present proposal. In the development of the proposed energy concepts many alternatives were considered. The use of wind as an energy source was reviewed but current technology of equipment available makes a detailed analysis of its applications unfeasible at this time. Available solar technology in the use of solar energy to generate electricity by photo-voltaic cells or thermal processes does not make this a viable alternative at this time. However, research and development in this area is on-going and this method could have practical future applications. Solar energy analysis indicates that there is sufficient radiation in the St. Paul area and equipment is sufficiently developed to consider the use of the solar energy for thermal purposes. However, investigation by 3M shows that at present this is not a cost effective alternative but this may become cost effective in later phases of construction and could be utilized at that time. Also, 3M, through its consultants, have spent many manhours analyzing the various site service and distribution systems.

In addition to the central utility plan recommendations and site distribution recommendations, preliminary investigation and research by 3M consultants have established the following list of architectural design standards related solely to energy conservation:

A. Mass the individual structures with as many walls as possible common to adjacent structures. Contiguous building elements (megastructures, i.e., interconnected structures), therefore, are preferable to separate, isolated elements (campus style planning).

B. The ratio of window area to wall area should be kept to a minimum particularly at north and west exposures (approximately 15% $\pm$).

C. Windows are best located along south facades to take maximum advantage of the winter sun for heating.

D. Glass should be minimized on north facades. Windowless north walls are a desirable objective, with interior spaces against the north wall devoted to circulation, storage areas, lobbies and generally non-critical areas so as to act as a buffer against the north winds.

E. A building configuration which is zigzagged along the east and west facades will allow for a minimization of winter wind effects if glazing is kept primarily to the south facing exposure of the zigzag. This would further allow for greater opportunity to utilize the sun in the winter for heating. Shading in the summer should be facilitated.

F. Designing the buildings for one or two floors positioned below grade will conserve energy, especially if the north, west and east facing facades are below grade or protected with earth berms.

G. Light wells and atriums would permit utilization of daylight for illumination while imposing a minimum heating and cooling load on the HVAC system. Wind effects and heat loss through conduction are minimized in the winter and excessive solar heat gain controlled in the summer.

H. Deciduous and coniferous trees, existing or new, would provide solar control in the summer on the structures and reduce heat loss in winter by cutting down on wind impingement at glazed surfaces.

I. Insulation should be located on the exterior surfaces of the building envelope where possible.

J. The U value of walls and roofs should be limited to 0.10 in winter.

K. With heavily insulated walls and roof, there is little value in dark coloration except to increase absorptivity in winter, but more importantly, light colors on reflective surfaces can be used to reduce heat gain in the summer.

L. Buildings could be massed so that one building increment can provide shade on glazed surfaces of adjacent building increments.

M. Any operable sash should be heavily gasketed with tight closing, locking devices to reduce infiltration.

N. Avoid thermal bridges through exterior surfaces.

O. Provide textured finishes to external surfaces to increase external film coefficiency.

P. If sloping roofs are used, they should face south for greatest heat gain benefit in the winter.

Q. Heat loss from windows should be reduced by double or triple glazing. Avoid the use of frames that form a thermal bridge.

R. Locate rooms with high process heat gain (laboratories), against outside surfaces that have the highest exposure loss.

S. Consider open office planning to allow excess heat from interior spaces to transfer to perimeter spaces which have a heat loss. Open planning allows more effective use of lighting fixtures. The reduced area of partitioned walls decreases the light absorption.

T. Infiltration air should be reduced by:

    1. Using impermeable exterior surface materials.
    2. Providing all external doors with weather stripping.

3. Locating building entrances on the downwind side and providing wind breaks.
4. Providing all entrances with vestibules; where vestibules are not used, provide revolving doors.
5. Providing vestibules with self-closing weather-stripped doors to isolate them from adjacent stairwells, escalators and elevator shafts.
6. Locating ventilation louvers on the downwind side of buildings and providing wind breaks.

U. Provide wind protection with the use of fins and recesses at any exposed surface wherever practical.

V. Electric lighting should be designed with luminaire patterns, photo cells and switching arranged so that lighting nearest windows can be shut off when daylight is available.

W. Reduce heat gains through windows by shading them from direct sun (April through October).

X. Take advantage of natural daylight within buildings and reduce electrical energy consumption by locating windows high in the wall (this eliminates direct sunlight yet reflects light into occupied spaces) and provide shades to eliminate direct sunlight which reduces glare effect on occupants.

Y. Solar control devices are most effective when located externally.

Z. Roof sprays or roof ponds are desirable to reduce solar heat gain in the summer, especially in those buildings having high internal heat gains from equipment or process.

AA Protect insulation from moisture originating outdoors, because insulation volume decreases when wet. Use insulation with low water absorption and one which dries out quickly and regains its original thermal performance after being wet.

BB Rooms should be grouped in such a manner so that the same ventilation air can be used more than once, by operating in cascade through spaces in decreasing order of priority; i.e., office to corridor to storage to toilet.

CC Locate spaces of related functions adjacent to each other on the same floor to reduce the use of or need for escalators or elevators.

DD Spaces frequented by the general public should be located on the ground floor to reduce elevator and escalator use.

EE Processes that have temperature and humidity requirements different from normal physiological needs should be grouped together and served by one common system.

FF Judicious use should be made of reflective surfaces such as sloping white ceilings to enhance the effect of natural lighting and increase the yearly energy saved.

SOLID WASTE

Comment 1 With solid waste being utilized as fuel at the proposed 3M development, solid waste generation is still approximately three times the amount of solid waste which would be produced by a residential development of a comparable site. What are the available landfill areas in Washington County and what would be the effect of 3M's solid waste on these sites, or a joint Metro/ County 2000 acre/ft. solid waste disposal site which has been talked about for a number of years? Also when would the Metropolitan Council's guide plan for solid waste disposal become effective?

(Washington County, Lake Elmo, State Planning Agency)

Response: In 1974 the Twin City Metropolitan Area generated approximately 3.5 million tons of solid waste. Of this amount approximately 54% were mixed residential, commercial and industrial wastes. The balance consisted of bulky, ferrous scrap, demolition material, sewage and water treatment sludges, tree wastes, and discarded auto and truck tires. The 1974 residential/commercial solid waste generation of Washington County only was approximately 56,300 tons. Washington County at present has no landfill capacity and disposal of Washington County waste is taking place in other Metropolitan and Wisconsin landfill operations. By 1990 it is anticipated the Washington County residential/ commercial solid waste generation It will be approximately 121,400 tons annually. Washington County is presently looking at various alternative landfill disposal sites and the possibility of establishing a transfer station in Washington County. has not yet been determined whether or not Washington County will establish another landfill disposal area or a transfer station or if a landfill is desired or the location of a landfill; it is impossible to analyze impacts on a situation upon which no firm decision or proposals have been made.

It is estimated by 3M that in the year 1982 when solid waste recovery will become operative in their proposed utilities plant, other 3M facilities will be contributing over 12,000 tons per year as fuel to this plant. In lieu of disposing of this material at the proposed plant, these 12,000 tons would be disposed of through other Metropolitan facilities. In 1995 other

off-site 3M facilities would be contributing over 24,000 tons annually as fuel supplements to the Oakdale-Lake Elmo site. If these 24,000 tons were not utilized at the Oakdale-Lake Elmo site as fuel supplements they would be required to be disposed of through other Metropolitan disposal facilities. Therefore, with the utilization of solid wastes as a fuel supplement in the proposed Lake Elmo-Oakdale site it can be seen that in 1995 total disposal requirements will be only 9,621 tons from the Lake Elmo site. This amount is less than what will be required by other 3M facilities which could contribute solid waste as fuel supplements to the site in 1982 and the net effect on solid waste in developing this site will be not an increase of over 9,000 tons requiring disposal in 1995 but a reduction from 24,000 tons from other facilities to the 9,621 tons produced at the 3M site.

The Minnesota Legislature has directed the Metropolitan Council to complete by October 1, 1976, various portions of a guide plan policy relating to the review of proposed resource recovery operations. The same legislation directs the Metropolitan Council to complete the solid waste guide plan for the Metropolitan Area prior to July 1st, 1978, and it is anticipated by Council staff that the guide plan will be completed prior to that date.

ROADWAY SYSTEM

Comment 1 — By 1980-85, 3M will have up to 9,000 cars on-site. Will this 9,000 car impact force a premature ramping or interchange problem?

(Washington County)

Response: 3M does not plan to have 9,000 cars on-site in 1980-1985. Personnel on the site would consist of two groups; 3M employees and construction employees. The expected number of employee vehicles on the site is 800 in 1980 and 3,300 in 1985. The peak construction employment, reached in 1988, is estimated to be 915. The vehicle occupancy for construction employee vehicles is uncertain. If one person per vehicle is assumed, there would be 915 construction employee vehicles during the years of peak construction employment.

Comment 2 — The EIS does not discuss the rate of development in enough detail. The 3M project will have an immediate, major impact due to traffic (18,000 vehicle trips per day).

(Pollution Central Agency)

Response: The EIS lists the projected employment at the site for each year from 1979 to 1995 in Table 47, page 261. Table 19, page 181 shows the trip generation characteristics at the 3M Center for 1970 and 1974 and the 3M goals for 1995. If the vehicle occupancy rate is assumed to hold constant from 1974 to 1985 and then to increase in a straight-line rate to 2.0 in 1995 the employee work trips would be as follows:

1980	1,600 Vehicle trips per day
1985	6,600 Vehicle trips per day
1990	12,200 Vehicle trips per day
1995	18,000 Vehicle trips per day

Comment 3 What are the impacts if 3M goals for vehicle occupancy and peak hour arrivals are not met?

(Lake Elmo, Metropolitan Council, Tri-Lakes Association)

Response: Pages 180, 1981 and 1982 provide information that demonstrate:

1) the importance of 3M's goals on vehicle occupancy and percent peak hour traffic and

2) the amount of traffic that would be generated if these goals are not met. If these goals are not met and problems occur, the potential solutions would be the defined mitigation measures. In this situation the mitigation measures likely would have to be applied earlier and more extensively.

Comment 4 State Highway 212 including its extension and upgrading east into Stillwater and the re-routings, turn lanes, or ramping necessary for 3M access should be discussed in detail.

(Washington County)

Response: Traffic forecasts for 1995, Map 30 in the EIS, show that 1,570 3M daily work trips would use T.H. 212 east of County Road 80. This traffic volume could be handled without extensive upgrading of T.H. 212 east of the 3M site. Improvements to T.H. 212 between I-694 and County Road 80 are discussed in the section on mitigation measures, page 207-208. The extent of the improvements that would be required depends upon the nature and extent of other mitigating actions.

Comment 5 The need for an additional lane on I-694 between T.H. 212 and T.H. 36 is not well documented.

(Metropolitan Council)

Response: Page 194 in the EIS indicates that the projected 1995 peak hour volume for I-694 between T.H. 212 and T.H. 36 is 3,840 vehicles, compared to a design capacity of 3,140 vehicles. An additional lane on this segment of I-694, which would increase the capacity to 4,600 vehicles per hour, is one potential solution to resolve this deficiency.

Comment 6 There is no mention of the construction of I-94.

(Metropolitan Council)

Response: The EIS, on page 183, states that non-3M traffic volumes were derived from a study conducted by BRW for the Minnesota Highway Department. The highway network used in this study included I-94 from St. Paul to the Wisconsin state line.

Comment 7 There is no discussion on the use of other existing facilities to mitigate peak-hour congestion problems, for instance, the Minnehaha Avenue/I-694 interchange.

(Metropolitan Council)

Response: The Minnehaha Avenue/I-694 interchange and the connections it provides to the regional roadway system were included in the traffic analysis.

Comment 8 Another interchange on I-694 should be planned and considered to accommodate 3M site traffic. This interchange would relieve the T.H. 212 interchange and would reduce congestion on T.H. 212.

(Minnesota Highway Department)

Response: A new interchange on I-694 between T.H. 212 and T.H. 36 is listed as one of the five possible mitigation measures in the EIS. Discussion of this measure is found on pages 206 and 207. BRW agrees that a significant number of 3M trips would use a new interchange near the north side of the 3M site thus greatly reducing the load on T.H. 212 and the T.H. 212/I-694 interchange.

Comment 9 The north-south Minor Arterial east of I-694 that has been indicated in past local planning was not reflected in the Draft EIS.

(Minnesota Highway Department)

Response: The transportation planning efforts of Oakdale and Lake Elmo were considered in developing the future roadway network and traffic forecasts for the EIS. The Oakdale Transportation Plan, which includes a new north-south minor arterial east of I-694, was prepared just one month after 3M announced acquisition of the Oakdale/Lake Elmo site. As 3M plans have

become more clearly defined, it has been recognized that development of the 3M site would require changes to the proposed new north-south minor arterial. One idea offering particular potential would be to replace this route with new County Road 80.

Comment 10 Would any future developments adjacent to the 3M site have adequate traffic circulation on T.H. 212?

(Washington County)

Response: The trip forecasts used in the EIS capacity analyses included two elements; 3M trips and non-3M trips. The non-3M trips were derived from a study conducted by BRW for the Minnesota Highway Department. This study developed travel forecasts based upon Metropolitan Council predictions for growth in the Metropolitan area (these predictions include significant growth in Oakdale and Lake Elmo). On T.H. 212 east of I-694 the 1995 forecast is 27,600 vehicles per day. Of this number, 10,400 (38%) are 3M trips and 17,200 (62%) are non-3M trips. Adequate traffic capacity on T.H. 212 will be available for both 3M and non-3M traffic if proper mitigation measures, as defined in the EIS, are implemented.

Comment 11 A four-lane beltway (I-694) will be congested: level of service 'F' and 'E'. A six-lane beltway will operate better.

(Minnesota Highway Department)

Response: The EIS indicates that I-694 would be congested. On page 194 it is stated that the projected peak hour volume on I-694 between T.H. 212 and T.H. 36 would exceed capacity by 22 percent. As used in the EIS capacity implies level of Service D.

Comment 13 Severe congestion, level of service 'E', is expected on I-694 north of T.H. 36 unless six lanes are provided.

(Minnesota Highway Department)

Response: Traffic forecasts are shown on Maps 29 and 30 of the EIS. The 1995 average daily traffic on I-694 north of T.H. 36 is 33,000 vehicles. Using appropriate peak hour directional distribution factors, it is estimated that the peak hour volume in one direction would be 2,860 vehicles. The existing four lane freeway has a capacity of 3,140 vehicles per hour at level of service 'D'.

Comment 14 Access to T.H. 36 east of I-694 will be difficult.

(Minnesota Highway Department)

Response: Some difficulty will be encountered by traffic attempting to enter T.H. 36 from side roads east of I-694. The 3M contribution to the total trip forecast at this location is only 830 trips per day. This is less than 3% of the total trips forecast.

Comment 16 The I-694/I-94 interchange may experience weaving and congestion problems.

(Minnesota Highway Department)

Response: Present interchange may not be able to accommodate future traffic loads. 3M would contribute some portion of this future traffic; however, the traffic volumes forecast indicate capacity problems could occur without 3M traffic.

Comment 17 By improving T.H. 212 will traffic volumes increase drastically?

(Washington County)

Response: The EIS does not suggest improving T.H. 212 east of County Road 80 or west of I-694. The EIS does discuss some improvements on T.H. 212 between I-694 and County Road 80 as a possible mitigation measure. These measures are suggested as a means of improving access into the 3M site and to enable others to use T.H. 212 without undue interference from 3M traffic. These measures are not expected to cause T.H. 212 to attract a significant number of new trips.

Comment 18 There is some question on the adequacy of the roads as planned in the EIS.

(Department of Natural Resources)

Response: Preparation of the EIS did not involve developing plans for a roadway system. The impact of the proposed 3M development upon the existing roadway system was analyzed and some problems were found. Possible actions for mitigating these problems were suggested.

Comment 19 Will the 3M development necessitate increasing the capacity of the area's major trunk highways?

(Department of Natural Resources)

Response: The EIS discusses five possible mitigating measures for transportation problems on pages 209-210. Of these five measures, two involve increasing roadway capacities.

Comment 20 What is the cost of each of the individual improvements discussed in the mitigation measures "upgrade T.H. 212 and/or I-694?"

(Metropolitan Council)

Response: Estimates of the costs for upgrading T.H. 212 and I-694 are as follows:

- I-694 $1,100,000

  Construct one lane on each roadway from T.H. 212 to T.H. 36. Costs are for grading, drainage and surfacing. It is assumed no bridge work would be required at the 40th Street bridge. The 50th Street bridge would need to be widened.

- T.H. 212 $700,000.

  Construct one lane on each roadway from I-694 to County Road 80. Construct turn lanes and install traffic signals at 3M entrances, Ideal Avenue and County Road 80.

- T.H. 212/I-694 Interchange $300,000.

  Construct one lane on each roadway through the interchange area. Construct turn lanes and install traffic signals at ramp intersection on T.H. 212. Widen ramps as necessary to increase capacity.

Comment 21 What is the staging of the improvements required to handle 3M demand?

(Metropolitan Council)

Response: Staging is addressed on page 206, where it is stated that mitigation measures will be needed when employment reaches 10,000 persons, which would occur about 1990. More specific staging cannot be determined until a program for mitigation measures is developed.

Comment 22 Who should pay for the roadway improvements needed to accommodate 3M traffic demand?

(Washington County)

Response: No assumptions are made in the EIS about the source of funds for possible roadway improvements.

Funding for these projects would be established through negotiation between the involved governmental agencies and private parties. The negotiations would be based upon governmental polices in force at the time, the availability of funds, and other factors that typically effect the funding of other public works projects. The Minnesota Highway Department has commented in detail on their possible responsibility for these projects. They do not suggest that funding will be available when desired or needed.

Comment 23 The EIS assumes that public funding will be available for all improvements to public roadways needed to support the site.

(Metropolitan Council)

Response: See response to Comment 22.

Comment 24 It is not readily apparent on Map 37 that Ideal Avenue would be severed just south of 38th Street North as a part of Local Roadway Alternative 5.

(3M)

Response: Map 37, Local Roadway Alternate 5 was intended to show that Ideal Avenue is severed south of 38th Street North. As stated on page 204, Alternative 5 completely separates the 3M circulation system from the local roadway system.

Comment 25 No cost estimates are given nor preferences expressed for the five local roadway alternatives.

(Metropolitan Council)

Response: Choice of an alternative depends largely on the preferences of local residents and governmental agencies. The alternatives were developed for the EIS to give opportunity for local review and expressions of preference.

Cost estimates were not prepared for the five alternative for the following reasons:

- To develop meaningful comparative cost estimates would require more detailed study of new road locations than the concepts illustrated in the EIS.
- Many of the new roadways would be on 3M property and would function as part of the 3M circulation system. Part or all of the costs for those roads would be the responsibility of 3M.
- Construction costs will not be a key element of the local roadway issue until after local agencies and residents, have expressed their preferences regarding alternatives. At that time more detailed engineering studies, including cost estimating, can be conducted to determine feasibility.

Comment 26 Other alternatives to alleviate the Tri-Lakes area traffic problems should be listed and factual information should be supplied to the decision-makers.

(Tri-Lakes Association)

Response: The EIS presents five alternatives for local roadways. These several alternatives employ a number of possible concepts developed for solving the local roadways issues. The intent of the alternatives is to illustrate the basic options regarding access (3M and the Tri-Lakes area) and regarding separation of 3M and Tri-Lakes traffic. In the future other specific alternatives may be developed.

Comment 27 The discussion of traffic management strategies to mitigate the problem of access at the western entrance from T.H. 212 is insufficient. Strategies, such as entrance assignments, could possibly solve the entire problem. A specific entrance and parking space could be assigned to minimize both access and circulation congestion. Entire lots could be connected to a single entrance by temporary traffic control devices.

(Metropolitan Council)

Response: In the morning peak hour, 3,120 vehicles are forecast to turn left from T.H. 212 onto the 3M site. Assigning those equally to four entrances would not "solve the entire problem" because 800 vehicles could not turn left through heavy opposing through traffic without adequate turning lanes and signalization. For instance, a single left turn lane, with a separate green indication, would have a capacity of approximately 600 vehicles per hour with a green time of 50%. To assume more than 50% of the green time would be available for one phase of a three phase cycle would not be realistic.

As shown on the 3M Long Range Development Plan, Map 32, in the EIS, 67% of the candidate building area would be most directly served by the western entrance. If employees desiring to use this entrance were forced to use entrances further east, many would need to circulate through the site to the western parking areas. This would greatly increase circulatory traffic volumes and traffic conflicts at intersections on the south circulation roads. Entrance assignment would require strict enforcement. It is questionable whether 3M could gain state approval to use "temporary traffic control devices" on T.H. 212.

Comment 28 The EIS fails to point out that since Region 2 is largely rural, semi-rural in character today, short-range growth pressures could never likely have a significant impact on the area.

(Lake Elmo)

Response: The Metropolitan Council is forecasting considerable growth, in addition to the 3M development, to occur in Region 2. Some short-range growth pressures are likely to occur even without 3M. Growth attributable to 3M will cause some of these growth pressures to occur in different places and at different times than would otherwise happen.

TRANSIT SERVICES

Comment 1 — Does Map 38 (p. 213) show all the transit services available to the impact area?

(State Planning Agency)

Response: Yes, Map 38 shows all existing public transit services within a 3 to 4 mile radius of the 3M Oakdale/Lake Elmo site.

Comment 2 — Should additional public transit services be provided to the 3M Oakdale/Lake Elmo site in the future?

(Washington County Planning Department, State Planning Agency, and State Pollution Control Agency)

Response: The Metropolitan Council's policy that "The major transit and highway investments should be concentrated within the Urban Service Area" (p. 212) indicates that public transit services to the proposed site likely will continue to be limited. A 10-year transit service improvement plan for an area encompassing the proposed site will be prepared through the St. Paul East Route-Ridership Improvement Project, which presently is being conducted (p.215). The current Regional Express Bus Network Study primarily is oriented at developing an express bus program to meet existing travel needs; therefore, this study is not expected to have much impact on the proposed 3M development.

Based on these characteristics, it is expected (p. 216) that 3M transit programs, such as car pooling, van pooling, and subscription service, will be the primary means of controlling automobile trips to the site. Major programs of these types would have to be implemented to achieve the projected 1995 vehicle occupancy of 2.0 employees per vehicle.

AIR QUALITY

Comment 1 — No ambient monitoring data has been collected on site.

(Minnesota Pollution Control Agency)

Response: Ambient air monitoring was conducted at the 3M Oakdate/Lake Elmo site for carbon monoxide. The monitoring began on July 7, 1976 and concluded on July 23, 1976. The location of the monitoring station is shown on Map 55.

The results of the monitoring program are summarized below:

- The maximum 1-hour concentration of carbon monoxide was measured to be 5.5 ppm.
- The maximum 8-hour concentration of carbon monoxide was measured to be 5.19 ppm.
- The maximum CO concentration occurred early in the morning between 2:00 A.M. and 4:00 A.M. for NW winds during an inversion situation.
- For normal weather conditions the maximum concentration of carbon monoxide occurs at around 8:00 A.M. The evening concentration peak, if any, does not usually occur before 7:00 P.M.
- Morning CO concentrations are always higher than evening concentrations.
- The traffic on Highways 694 and 212 accounts for a maximum of 1 ppm of carbon monoxide at the sampling site during the morning peak hour.
- The most critical wind directions for the 3M Oakdale/Lake Elmo site are winds coming out of SW, W and NW. These winds carry large quantities of carbon monoxide from the Minneapolis - St. Paul urban area to the site during limited mixing conditions.

Comment 2 — Additional discussion of wind patterns and inversion characteristics in the vicinity of the site should be included in the EIS.

(Lake Elmo Public Hearings, Tri-Lakes Association)

Response: As a result of the ambient air monitoring that was done and from a review of previously collected data in the region, the following informational comments are made.

Regional atmospheric stability is represented by the following tabulation which shows seasonal and annual wind distribution by six pasquill stability classes as obtained from the National Oceanic and Atmospheric Administration's "Star" program based upon eight observations per day over a four year period from January, 1967 through December, 1971.

STABILITY CLASSIFICATION	ANNUAL % OF TIME	ANNUAL WIND RANGE, MPH	SEASONAL,% OF TIME DEC., JAN. FEB.	MAR., APR. MAY	JUNE, JULY, AUG.	SEPT., OCT., NOV.
			MINNEAPOLIS			
A	0.2	0 - 6	0.0	0.2	0.7	0.0
B	3.4	0 - 10	0.5	3.8	0.7	1.7
C	9.4	0 - 21+	4.5	9.5	16.7	6.5
D	61.5	0 - 21+	72.5	64.2	47.1	62.5
E	11.4	4 - 10	10.9	10.2	10.9	13.5
F	14.1	0 - 6	11.5	12.0	17.0	15.8
	100.0					

Data obtained from NSP's Environmental Monitoring and Ecological Studies Program for the Allen S. King Generating Plant, 1973 Annual Report indicated that in 1973 the following wind patterns occurred.

Wind Out of the	% of Time	Maximum Wind Speed (m.p.h.)
N	9.5	19+
NE	10.5	19+
E	6.0	19+
SE	18.0	19+
S	13.5	19+
SW	14.5	19+
W	5.0	13+
NW	20.0	19+
Calm	3.0	0

The air monitoring conducted on the site also indicated that the most critical wind directions for the 3M Oakdale/Lake Elmo site are winds coming out of the SW, W, and NW. These winds carry large quantities of CO and other pollutants to the site from the Minneapolis-St. Paul urban center during limited mixing conditions.

Comment 3 Additional detail on the coal handling operation and the fugitive dust generated by such activities is needed.

(Lake Elmo, Minnesota Pollution Control Agency, Public Hearings)

Response: The coal will be stored in the area lying between the railroad tracks and the utility plant as shown in Map 55. The pile area is estimated to be approximately 0.75 acres and the total amount of coal which will be processed annually is approximately 222,670 tons.

The emission rate of coal dust from the coal piles is the sum of the dust generated by coal unloading and the dust which is reentrained by wind erosion. Using emission rates recommended by Midwest Research Institute, the coal unloading will generate approximately 0.1 pound of dust per ton of coal per year, which results in an emission rate of 0.33 gm/sec. Coal dust reentrainment will be about 0.4 ton of dust per acre per year which represents approximately 0.01 gm/sec. The total coal dust emission rate from the piles is thus 0.34 gm/sec.

A CDM computer dispersion model was used to calculate the annual geometric mean ground-level concentration of coal dust. The meteorological data, as published by the Environmental Protection Agency for the Twin Cities area, was used in these calculations. The dispersion model resulted in negligible annual ground-level concentrations of less than 5 microgm/cu. meter at all of the receptors shown in Map 55.

In addition, a short-term, ground-level coal dust concentration was calculated for good mixing conditions, stability class B and a wind speed of 2 meters/sec. out of the northwest for Receptor 12. A ten-minute, ground-level concentration of less than 75 microgm/cu. meter was computed which is probably the maximum short-term concentration of coal dust which will occur on the property line. The corresponding 24-hour average will be approximately 32 microgm/cu. meter.

Comment 4 Predictions of construction fugitive dust emissions should be made.

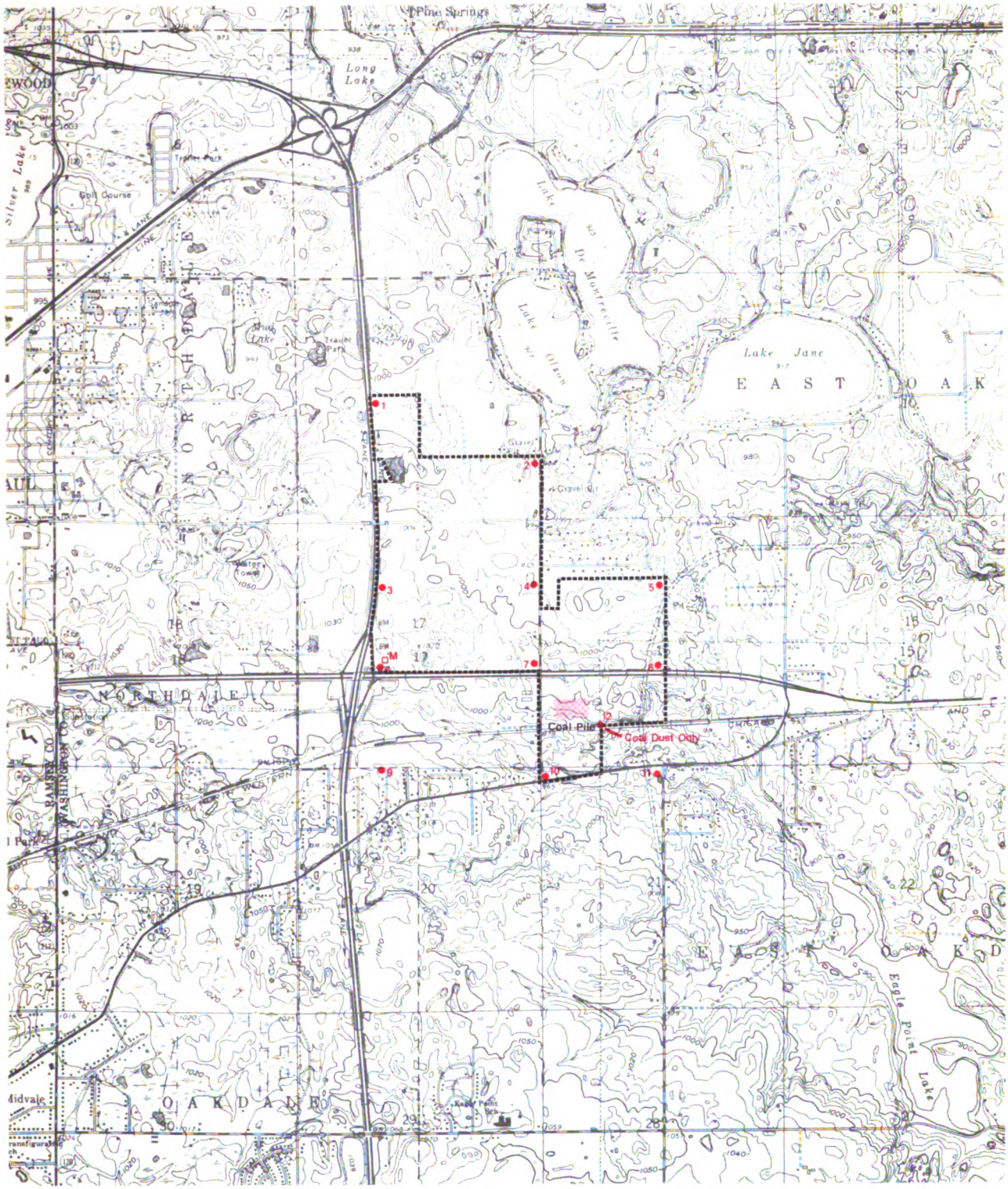
(Minnesota Pollution Control Agency)

Response: The construction of the 3M's Oakdale/Lake Elmo facilities will be accomplished in five stages with no significant overlap between the individual construction stages anticipated. The construction activities will result in the generation of fugitive dust during site grading and excavation.

It is estimated that the size of the construction areas in any construction phase will not involve more than 45 acres of land. It is recommended by Midwest Research Institute to calculate the total emission rate of fugitive dust from heavy construction activities using an emission factor of 1.2 tons of dust per acre per month. It is anticipated that the construction activities will last approximately 6 months per year. The emission rate of the fugitive dust for the annual average calculations is then 9.4 gm/sec.

The dispersion of the construction fugitive dust was also evaluated using a computer dispersion model. The meterological assumptions are the same as those used for the coal dust dispersion model as published by the Environmental Protection Agency for the Twin Cities area. The size of the construction site was assumed to be 1000 ft by 2000 ft. The annual average ground-level concentrations resulting from this model are summarized in Table 128 for the receptor locations shown on Map 55.

When compared to the suspended particulate standard of 60 microgm/cu. meter (annual geometric mean), the predicted ground-level concentrations are acceptable. This conclusion is also supported by the fact that the construction dust is not a permanent situation.



Monitoring Station

Receptors

North

Scale

0 1000 2000 3000 Feet

0 250 500 1000 Meters

3M Proposed Research/Office Park
Environmental Impact Statement

prepared for
The City of Oakdale
by
Bather-Ringrose-Wolsfeld, Inc.
7101 York Avenue South, Edina, Minnesota 55435 (612) 831-2300

Coal Pile & Receptor Locations

MAP 55

TABLE 128

GROUND LEVEL CONSTRUCTION DUST CONCENTRATIONS AT SELECTED RECEPTOR LOCATIONS

RECEPTOR NUMBER *	ANNUAL CONCENTRATION MICROGM/CU. METER
1	3.5
2	6.7
3	2.8
4	19.9
5	0.9
6	2.2
7	14.6
8	13.3
9	1.2
10	4.3
11	4.1

* See Map 55 for location of receptors

Comment 5 No analysis of the air quality impact of laboratory activities was presented.

(Tri-Lakes Association)

Response: The Draft EIS indicates that no detailed information relative to future research activities exists. The assurances that no harmful pollutants will be emitted are identified on Page 243 of the Draft EIS.

Comment 6 Macro-scale highway emission estimates indicate that violations of the standards for oxides of nitrogen and hydrocarbons would occur under worst case dispersion conditions. This analysis did not include the NO_x emissions from the utility plant.

(Minnesota Pollution Control Agency)

Response: Tables 26 and 27 in the Draft EIS contain an error. The vertical dispersion coefficient in Table 26 for 100 meters for the "worst condition" should be 2.3 instead of the indicated 1.3. This alters the corresponding values in Table 27. Table 129 presents a revised Table 27. Violations for HC and NO_x still exist under this worst case assumption. Adding the estimated maximum NO_x emission from the utility plant (7 microgm/cu. meter) does not significantly change any of the reported NO_x concentrations.

The predicted violations under worst case assumptions are not considered to be realistic estimates of typical future conditions. Since stability Class F occurs less than 15% of the time and wind speeds can range from 0 to over 2.5 meters per second (1 meter per second is assumed in the analysis) this worst condition is estimated to occur approximately 5% of the time.

TABLE 129

HOURLY POLLUTANT CONCENTRATIONS (Micro gms/M^3) DOWNWIND OF ROADWAY

Facility	Year	Pollutant	Typical Condition 100m	300m	1000m	Worst Condition 100m	300m	1000m
I-694	1980	CO - 1-Hr.	401	158	61	1828	751	300
		CO - 8-Hr.	250	98	38	1142	469	188
		HC - 3-Hr.	61	24	9	279*	115	46
		NO_x- Ann.	50	20	8	228*	94	37
	1985	CO - 1-Hr.	263	103	40	1199	492	197
		CO - 8-Hr.	164	65	25	749	308	123
		HC - 3-Hr.	40	16	6	181*	74	30
		NO_x- Ann.	43	17	7	197*	81	32
	1990	CO - 1-Hr.	232	91	35	1060	435	174
		CO - 8-Hr.	145	57	22	662	272	109
		HC - 3-Hr.	34	13	5	157	64	26
		NO_x- Ann.	44	17	7	201*	83	33
	1995	CO - 1-Hr.	275	108	42	1256	516	206
		CO - 8-Hr.	172	68	26	785	322	129
		HC - 3-Hr.	41	16	8	185*	76	30
		NO_x- Ann.	52	21	8	239*	98	39
U.S. 212	1980	CO - 1-Hr.	312	123	47	1423	584	234
		CO - 8-Hr.	195	77	30	890	365	146
		HC - 3-Hr.	42	16	6	191*	78	31
		NO_x- Ann.	26	10	4	119*	49	20
	1985	CO - 1-Hr.	225	89	34	1028	422	169
		CO - 8-Hr.	141	55	21	643	264	106
		HC - 3-Hr.	30	12	5	136	56	22
		NO_x- Ann.	25	10	4	113*	47	19
	1990	CO - 1-Hr.	210	83	32	961	395	158
		CO - 8-Hr.	132	52	20	601	247	99
		HC - 3-Hr.	27	11	4	124	51	20
		NO_x- Ann.	27	11	4	123*	50	20
	1995	CO - 1-Hr.	258	101	39	1177	484	193
		CO - 8-Hr.	161	63	25	736	302	121
		HC - 3-Hr.	33	13	5	153	63	25
		NO_x- Ann.	33	13	5	150*	62	25

*Would exceed existing Minnesota Ambient Air Ouality Standards under worst case assumptions (see Table 21) and between 100 meters and 300 meters downwind from edge of roadway.

SOURCE: Computed from methods suggested by Turner, D. Bruce, in Workbook of Atmospheric Dispersion Estimates, U.S. Department of Health, Education, and Welfare, 1969.

Comment 7 The draft EIS should discuss the implications of the high NO_x and HC emissions on oxidant levels and their impact upon animal and plant life.

(Minnesota Pollution Control Agency)

Response: Photochemical oxidants are formed as a result of photochemical reactions between oxides of nitrogen and hydrocarbons in the presence of sunlight. Such oxidants include ozone, hygrogen peroxide, and others. Numerous studies have indicated that the effects of ozone can range from the drying of mucus membranes at low concentrations to pulmonary congestion and hemorrhage at higher concentrations. Also substantial injury to vegetation has been observed in California and is suspected to be a contributing factor to the decline of various species of trees throughout the nation.

Comment 8 Although violation of the NO_x standard is highly unlikely, the MPCA takes issue with the EIS when it states that specific mitigation measures are not necessary. The draft EIS states that only a portion of the traffic would be attributable to 3M. The authors seem to have forgotten the tremendous impact of the 3M project on stimulating further development in the area. Indirectly, as well as directly, 3M will be responsible for a significant portion of the traffic.

(Minnesota Pollution Control Agency)

Response: Possible mitigation measures include greater levels of ride sharing or an overall reduction in the size of the development. (See Comment 17 for more detail).

The percent of traffic attributable to 3M has been calculated and summarized below.

	Daily	Peak Hour
I-694	11% (3M)	26% (3M)
U.S. 212	38% (3M)	63% (3M)

The conclusion of the draft EIS is that violation of the NO_x standard is highly unlikely and that a portion of the traffic around the site is attributable to 3M. This seems to be compatible with the conclusion of the MPCA.

Comment 9 No study has been made of CO levels at intersections.

(Tri-Lakes Association)

Response: Both the Draft EIS (pages 226-239) and the responses to the comments to the Draft EIS contain extensive analyses of CO concentrations at critical intersections.

Comment 10 The traffic signal control shown for Lane 8X (Figure 10, page 227) would not occur in the actual development. A free right turn would be provided instead.

(3M Company)

Response: The percent of green time to signal cycle time (G/C) assumed for Lane 8X does not necessarily imply that the lane would be physically controlled by a traffic signal. The analysis requires that an "equivalent" G/C be assumed in order to estimate the percent of time that vehicles in Lane 8X could enter the U.S. 212 traffic stream without stopping. Such conditions would exist when U.S. 212 traffic was stopped for a red light and when gaps in the U.S. 212 traffic stream were sufficiently large for vehicles in Lane 8X to merge into. When the U.S. 212 traffic stream is operating at peak loads it is very likely that vehicles in Lane 8X would yield the right of way to U.S. 212 traffic for a certain proportion of the time.

The proportion of time that Lane 8X traffic would be able to access U.S. 212 during peak periods is based upon judgement. Thus if the free right turn lane (Lane 8X) is given sufficient merging length and a relatively flat curvature, a higher "equivalent" G/C would be justified. Consequently, the analysis of CO concentrations at selected receptor locations has been modified to reflect a higher "equivalent" G/C for Lane 8X. The new G/C value is taken to be 0.80 which still allows for 20% stoppages of Lane 8X traffic during peak periods.

Comment 11 The cold start correction factors used for the analysis of CO at selected receptor locations are too low.

(Minnesota Pollution Control Agency)

Response: Revised cold start correction factors have been incorporated into the CO analysis. The traffic analysis indicated that 55% to 60% of the vehicles using the two access points to the site during the peak hours are attributable to 3M (See Comment 8). All 3M vehicles are assumed to be operating in a cold start condition during the afternoon peak hours.

Comment 12 The prediction of CO concentrations assume that the Federal Motor Vehicle Emission Control Program will stay on its current implementation schedule. Indications are that the implementation of emission controls will be delayed which should be accounted for in the analysis.

(Minnesota Pollution Control Agency)

Response: Revised factors were obtained from the MPCA which reflect the anticipated delay in the implementation of the Federal Motor Vehicle Emission Control Program. These have been incorporated into the analysis of CO concentrations at the selected receptor locations.

Tables 130, 131, 132, 133, 134 and 135 contained revised calculations for Tables 28, 29, 32, 33, 34 and 35 of the Draft EIS. These tables incorporate the modifications discussed in Comments 10, 11, and 12. The receptor locations B and D (Page 227, Draft EIS) have been eliminated from the analysis at the suggestion of the MPCA. Receptors A and C, located on the property line, are the most critical locations.

TABLE 130
CARBON MONOXIDE CONCENTRATIONS - WEST ENTRANCE A - 1990

Lane No.	Position Relative to Signal	G/C Ratio AM/PM	Cruise Speed	Volumes (vph)			Distance to Receptor (M)	CO Concentration @ 10m (ppm)			Relative CO conc. beyond 10 m	Unadjusted CO @ Receptor (ppm)		
				AM-Hr.	PM-Hr.	8-Hr.		AM-Hr.	PM-Hr.	8-Hr.		AM-Hr.	PM-Hr.	8-Hr.
1	Down	--	30	285	1000	215	23	1.3	5.2	1.0	0.60	.8	3.1	.6
2	Down	--	30	285	1000	215	27	1.3	5.2	1.0	0.55	.7	2.9	.6
3	Down	--	30	285	1000	215	31	1.3	5.2	1.0	0.49	.6	2.5	.5
4	Up	.54/	--	525	0	105	49	8.4	--	0	0.23	1.9	--	0
5	Up	.54/	--	525	0	105	53	8.4	--	0	0.21	1.8	--	0
6	Up	.90/.66	--	975	430	315	57	6.7	5.4	2.0	0.20	1.3	1.1	.4
7	Up	.90/.66	--	975	425	315	60	6.7	5.4	2.0	0.19	1.3	1.0	.4
8	Up	.54/.46	--	0	1050	210	8	--	18.8	3.9	1.08	--	20.3	4.2
9	Up	/.24	--	0	300	60	12	--	10.9	2.6	0.92	--	10.0	2.4
10	Down	--	30	675	0	135	15	3.7	--	0	0.83	3.1	--	0
11	Down	--	30	675	0	135	19	3.7	--	0	0.72	2.7	--	0

Unadjusted CO Levels (ppm)	14.2	40.9	9.1
8-Hr. Persistence Factor (0.6)			5.5
Cold Start Correction Factors ($0^{o}F$)			
AM: 10% - 1.5	21.3		
PM: 60% - 4.7		192.2	
8-Hr: 20% - 2.1			11.6
Background CO Levels (ppm)			
1-Hr: 5.5 AM/0.0PM	26.8	192.2	
8-Hr: 5.2			16.8
Data Year Factor 0.3	8.0	57.7	5.0
State Standard (ppm)	30	30	9

TABLE 131
CARBON MONOXIDE CONCENTRATIONS - WEST ENTRANCE A - 1995

Lane No.	Position Relative to Signal	G/C Ratio AM/PM	Cruise Speed	Volumes (vph)			Distance to Receptor (M)	CO Concentration @ 10m (ppm)			Relative CO conc. beyond 10 m	Unadjusted CO @ Receptor (ppm)		
				AM-Hr.	PM-Hr.	8-Hr.		AM-Hr.	PM-Hr.	8-Hr.		AM-Hr.	PM-Hr.	8-Hr.
1	Down	--	30	370	1290	245	23	1.9	6.6	1.2	0.60	1.1	4.0	.7
2	Down	--	30	370	1290	245	27	1.9	6.6	1.2	0.55	1.0	3.6	.7
3	Down	--	30	370	1290	245	31	1.9	6.6	1.2	0.49	.9	3.2	.6
4	Up	.54/	--	610	0	120	49	9.5	--	2.3	0.23	2.2	--	.5
5	Up	.54/	--	610	0	120	53	9.5	--	2.3	0.21	2.0	--	.5
6	Up	.90/.66	--	1325	550	370	57	10.1	6.5	2.4	0.20	2.0	1.3	.5
7	Up	.90/.66	--	1325	550	370	60	10.1	6.5	2.4	0.19	1.9	1.2	.5
8	Up	.54/.46	--	0	1220	240	8	--	24.0	4.5	1.08	--	25.9	4.9
9	Up	/.24	--	0	360	70	12	--	11.8	2.8	0.92	--	10.9	2.6
10	Down	--	30	790	0	160	15	4.1	--	0	0.83	3.4	--	0
11	Down	--	30	790	0	160	19	4.1	--	0	0.72	3.0	--	0
											Unadjusted CO Levels (ppm)	17.5	50.1	11.5
											8-Hr. Persistence Factor (0.6)			6.9
											Cold Start Correction Factors (0^{o}F)			
											AM: 10% - 1.5	26.3		
											PM: 60% - 4.7		235.5	
											8-Hr: 20% - 2.1			14.5
											Background CO Levels (ppm)			
											1-Hr: 5.5 AM/0.0 PM	31.8	235.5	
											8-Hr: 5.2			19.7
											Data Year Factor (0.3)	9.5	70.6	5.9
											State Standard (ppm)	30.	30.	9.

TABLE 132
CARBON MONOXIDE CONCENTRATIONS - IDEAL AVENUE C - 1980

Lane No.	Position Relative to Signal	G/C Ratio AM/PM	Cruise Speed	Volumes (vph)			Distance to Receptor (M)	CO Concentration @ 10m (ppm)			Relative CO conc. beyond 10 m	Unadjusted CO @ Receptor (ppm)		
				AM-Hr.	PM-Hr.	8-Hr.		AM-Hr.	PM-Hr.	8-Hr.		AM-Hr.	PM-Hr.	8-Hr.
1	Down	--	30	220	285	145	23	1.1	1.3	0	0.60	.7	.8	0
2	Down	--	30	220	285	145	27	1.1	1.3	0	0.55	.6	.7	0
3	Down	--	30	220	285	145	31	1.1	1.3	0	0.49	.5	.6	0
4	Up	.25/.15	--	225	40	45	49	8.0	2.0	1.6	0.23	1.8	.5	.4
5	Up	.25/.15	--	225	40	45	53	8.0	2.0	1.6	0.21	1.7	.4	.3
6	Up	.65/.60	--	200	290	130	57	2.6	4.5	1.7	0.20	.5	.9	.3
7	Up	.65/.60	--	200	290	130	60	2.6	4.5	1.7	0.19	.5	.9	.3
8X	Up	.80/.80	--	40	225	45	4	0	1.7	0	1.26	0	2.1	0
8	Up	.50/.45	--	40	225	45	8	0	5.0	1.0	1.08	0	5.4	1.1
9	Up	.25/.30	--	10	230	45	12	0	7.6	1.7	0.92	0	7.0	1.6
10	Down	--	30	340	45	70	15	1.1	0	0	0.83	0.9	0	0
11	Down	--	30	340	45	70	19	1.1	0	0	0.72	0.8	0	0
											Unadjusted CO Levels (ppm)	8.0	23.5	5.3
											8-Hr. Persistence Factor (0.6)			3.2
											Cold Start Correction Factors (0^{o}F)			
											AM: 10% - 1.5	12.0		
											PM: 55% - 4.4		84.9	
											8-Hr: 20% - 2.1			5.0
											Background CO Levels (ppm)			
											1-Hr: 5.5 AM/0.0 PM	17.5	84.9	
											8-Hr: 5.2			10.2
											Data Year Factor (0.5)	8.8	42.5	5.1
											State Standard (ppm)	30.	30.	9.

TABLE 133
CARBON MONOXIDE CONCENTRATIONS - IDEAL AVENUE C - 1985

Lane No.	Position Relative to Signal	G/C Ratio AM/PM	Cruise Speed	Volumes (vph)			Distance to Receptor (M)	CO Concentration @ 10m (ppm)			Relative CO conc. beyond 10 m	Unadjusted CO @ Receptor (ppm)		
				AM-Hr.	PM-Hr.	8-Hr.		AM-Hr.	PM-Hr.	8-Hr.		AM-Hr.	PM-Hr.	8-Hr.
1	Down	--	30	265	635	180	23	1.2	3.3	0	0.60	.7	2.0	0
2	Down	--	30	265	635	180	27	1.2	3.3	0	0.55	.7	1.8	0
3	Down	--	30	265	635	180	31	1.2	3.3	0	0.49	.6	1.6	0
4	Up	.27/.15	--	370	50	75	49	10.1	2.4	2.5	0.23	2.3	.6	.6
5	Up	.27/.15	--	370	50	75	53	10.1	2.4	2.5	0.21	2.1	.5	.5
6	Up	.65/.54	--	585	350	235	57	7.2	6.0	3.0	0.20	1.4	1.2	.6
7	Up	.65/.54	--	585	350	235	60	7.2	6.0	3.0	0.19	1.4	1.1	.6
8X	Up	.80/.80	--	50	370	75	4	0	2.8	0	1.26	0	3.5	0
8	Up	.52/.51	--	50	370	75	8	1.0	6.9	1.5	1.08	1.1	7.5	1.6
9	Up	.25/.36	--	10	250	50	12	0	6.9	1.6	0.92	0	6.4	1.5
10	Down	--	30	495	55	100	15	2.5	0	0	0.83	2.1	0	0
11	Down	--	30	495	55	100	19	2.5	0	0	0.72	1.8	0	0
								Unadjusted CO Levels				14.2	26.2	5.4
								8-Hr. Persistence Factor (0.6)						3.2
								Cold Start Correction Factors (0^{o}F)						
								AM: 10% - 1.5				21.3		
								PM: 55% - 4.4					115.3	
								8-Hr: 20% - 2.1						6.7
								Background CO Levels (ppm)						
								1Hr: 5.5 AM/0.0 PM				26.8	115.3	
								8-Hr: 5.2						11.9
								Data Year Factor (0.4)				10.7	46.1	4.8
								State Standard (ppm)				30.	30.	9.

TABLE 134
CARBON MONOXIDE CONCENTRATIONS - IDEAL AVENUE C - 1990

Lane No.	Position Relative to Signal	G/C Ratio AM/PM	Cruise Speed	Volumes (vph)			Distance to Receptor	CO Concentration @ 10m (ppm)			Relative CO conc. beyond 10 m	Unadjusted CO @ Receptor (ppm)		
				AM-Hr.	PM-Hr.	8-Hr.	(M)	AM-Hr.	PM-Hr.	8-Hr.		AM-Hr.	PM-Hr.	8-Hr.
1	Down	--	30	415	650	240	23	2.1	3.4	1.1	0.60	1.3	2.0	.7
2	Down	--	30	415	650	240	27	2.1	3.4	1.1	0.55	1.2	1.9	.6
3	Down	--	30	415	650	240	31	2.1	3.4	1.1	0.49	1.0	1.7	.5
4	Up	.27/.15	--	310	55	65	49	10.0	2.2	2.4	0.23	2.3	.5	.6
5	Up	.27/.15	--	310	55	65	53	10.0	2.2	2.4	0.21	2.1	.5	.5
6	Up	.65/.54	--	665	570	380	57	8.0	8.8	5.0	0.20	1.6	1.8	1.0
7	Up	.65/.54	--	665	570	380	60	8.0	8.8	5.0	0.19	1.5	1.7	1.0
8X	Up	.80/.80	--	55	310	63	4	0	2.1	0	1.26	0	2.6	0
8	Up	.52/.51	--	55	310	62	8	1.0	6.0	1.1	1.08	1.4	6.5	1.2
9	Up	.25/.36	--	10	440	75	12	1.0	10.0	2.3	0.92	0.9	9.2	2.1
10	Down	--	30	530	65	105	15	2.7	0	0	0.83	2.2	0	0
11	Down	--	30	530	65	105	19	2.7	0	0	0.72	1.9	0	0

Unadjusted CO Levels (ppm)	17.4	28.4	8.2
8-Hr. Persistence Factor (0.6)			4.9
Cold Start Correction Factors ($0^{o}F$)			
AM: 10% - 1.5	26.1		
PM: 55% - 4.4		125.0	
8-Hr: 20% - 2.1			10.3
Background CO Levels (ppm)			
1-Hr: 5.5 AM/0.0 PM	31.6	125.0	
8-Hr: 5.2			15.5
Data Year Factor (0.3)	9.5	37.5	4.7
State Standard (ppm)	30.	30.	9.

TABLE 135
CARBON MONOXIDE CONCENTRATIONS - IDEAL AVENUE C - 1995

Lane No.	Position Relative to Signal	G/C Ratio AM/PM	Cruise Speed	Volumes (vph)			Distance to Receptor	CO Concentration @ 10m (ppm)			Relative CO conc. beyond 10 m	Unadjusted CO @ Receptor (ppm)		
				AM-Hr.	PM-Hr.	8-Hr.	(M)	AM-Hr.	PM-Hr.	8-Hr.		AM-Hr.	PM-Hr.	8-Hr.
1	Down	--	30	490	885	305	23	2.5	4.4	1.4	0.60	1.5	2.6	.8
2	Down	--	30	490	885	305	27	2.5	4.4	1.4	0.55	1.4	2.4	.8
3	Down	--	30	490	885	305	31	2.5	4.4	1.4	0.49	1.2	2.2	.7
4	Up	.32/.15	--	390	65	80	49	10.0	3.2	2.5	0.23	2.3	.7	.6
5	Up	.32/.15	--	390	65	80	53	10.0	3.2	2.5	0.21	2.1	.7	.5
6	Up	.75/.56	--	940	670	445	57	9.0	10.0	4.4	0.20	1.8	2.0	.9
7	Up	.75/.56	--	940	670	445	60	9.0	10.0	4.4	0.19	1.7	1.9	.8
8X	Up	.80/.80	--	65	390	80	4	0	3.0	0	1.26	0	3.8	0
8	Up	.47/.49	--	65	390	80	8	1.7	7.5	2.1	1.08	1.8	8.1	2.3
9	Up	.15/.34	--	20	510	100	12	1.0	10.2	3.0	0.92	0.9	9.4	2.8
10	Down	--	30	645	75	130	15	3.2	0	0	0.83	2.7	0	0
11	Down	--	30	645	75	130	19	3.2	0	0	0.72	2.3	0	0
								Unadjusted CO Levels (ppm)				19.7	33.8	10.2
								8-Hr. Persistence Factor (0.6)						6.1
								Cold Start Corrector Factors (0^{o}F)						
								AM: 10% - 1.5				29.6		
								PM: 55% - 4.4					148.7	
								8-Hr: 20% - 2.1						12.9
								Background CO Levels (ppm)						
								1-Hr: 5.5 AM/0.0 PM				35.1	148.7	
								8-Hr: 5.2						18.1
								Data Year Factor (0.3)				10.5	44.6	5.4
								State Standard (ppm)				30	30	9

Comment 13 The draft EIS states that the analytical assumptions relative to the computed CO concentrations at the selected receptor locations are "worst case" assumptions. This is not true for the assumptions relating to atmospheric stability and wind speeds.

(Minnesota Pollution Control Agency)

Response: The reference to "worst case"assumptions is, perhaps, an overstatement. However, the point being made is that the assumptions used in the analysis of localized CO concentrations are "conservative" and tend to predict higher concentrations of CO than would be expected under so called "normal" conditions. This is a reflection of the statement made in the Introduction of GUIDELINES FOR AIR QUALITY MAINTENANCE PLANNING AND ANALYSIS, Volume 9, "Evaluating Indirect Sources", pages 2 and 3:

> "For these reasons, a conservative screening procedure is presented in these guidelines. When no problem in meeting the standards is found using this procedure, it may be used as a basis for granting permission to construct. If a potential problem is identified, the option for doing a more complete analysis should be presented to the applicant."

Comment 14 Those portions of the highway network which were identified as having a capacity problem, namely the I-694 and U.S. 212 interchange, should also be analyzed for CO impacts.

(Minnesota Pollution Control Agency)

Response: A preliminary review of the I-694 and U.S. 212 interchange was made and it was concluded that no detailed calculations of 1-hour and 8-hour CO concentrations were necessary. This decision is based upon two factors:

- The R/W adjacent to the critical intersection is approximately 100 feet or more than 30 meters. As a result, the nearest receptor location would be considerably farther away from the traffic stream than at the entrances analyzed where distances to the receptor were as small as 10 meters.

- Cold start correction factors would not be a factor in the vicinity of the interchange since nearly all vehicles would have sufficient time to warm up prior to reaching the interchange. Even at the entrance drives, CO concentrations do not exceed standards when the cold start factor is removed.

Comment 15 Hours adjacent to the peak hour should be investigated to determine if additional violations will occur.

(Minnesota Pollution Control Agency)

Response: A review of the traffic forecasts indicates that the hours adjacent to the peak hour could potentially carry up to a maximum of 1/3 of the peak hour traffic demand or 20% of the total vehicle arrivals. Based upon this data the maximum 1-hour CO concentration is estimated to be 24 ppm which is less than the 1-hour standard of 30 ppm.

Comment 16 CO concentrations are predicted based upon two persons per vehicle and a 60% peak hour arrival factor. The implications of not meeting these goals should be discussed.

(Minnesota Pollution Control Agency, Metropolitan Council)

Response: The traffic analysis was conducted based upon a progressive increase towards two persons per vehicle and a progressive decrease in peak hour arrivals. Only at full development do these assumptions occur. If these goals are not met roadway capacity will be utilized at an earlier date and the predicted CO concentrations will occur earlier than 1995.

It is unlikely that the 1995 1-hour CO concentrations will ever be higher than the predicted values because the entrance drives are operating at capacity. Thus, even with fewer people per vehicle and a higher vehicular demand in the peak hour, the number of vehicles which can be accommodated in one hour is limited. Eight hour CO concentrations would be higher than the predicted values, however, no violation of the eight-hour standards are predicted even accounting for this factor.

Comment 17 Alternative operational schemes should be investigated in light of the predicted air quality violations. Data relative to the impact of decreasing the size of the development should be provided.

(Minnesota Pollution Control Agency, Metropolitan Council; Tri-Lakes Association)

Response: In order to estimate the reduced size of development which would not result in air quality violations (assuming that all other site conditions remained unchanged) PM peak hour CO concentrations were estimated for varying proportions of the forecasted traffic volumes. It was determined that a site development of approximately 50% to 60% of the currently proposed development would satisfy all air quality standards.

Comment 18 A discussion should be included which addresses trace elements (such as heavy metals and flourides) which would be emitted from the utility plant. Also an analysis of the coal and solid wastes to be used should be presented.

(Minnesota Pollution Control Agency)

Response: In order to estimate trace element emissions from the burning of coal, the MPCA staff has suggested that the coal presently being burned at 3M's Chemolite plant be considered as the most likely candidate coal for use at the proposed 3M research and office complex.

Copies of laboratory analysis reports on the coal presently being used at 3M's Chemolite plant are attached as figures 14, 15 and 16.

A further analysis of possible trace element emissions was made by reviewing information on analyses of various coal ashes, as published by R. F. Abernethy, M. J. Peterson, and H. B. Gibson, "Spectrochemical Analyses of Coal Ash for Trace Elements, Bureau of Mines, Report No. 7281". The results of the analyses of Eastern, Interior and Western States coals are described in this report. The trace metal of primary concern is berillium. The highest berillium content is an ash of Western coals which amounts to 0.1467 percent by weight of ash. The Western coal has about four times higher berillium content than Interior States coals and about twice the content of Eastern States coals.

Using the 0.1467 percent value and the 1995 coal consumption of the utility boilers of 89066 lb/hr at 10 percent ash content, and a flyash control equipment collection efficiency of 98 percent, the total emission rate of berillium from the boilers will be approximately 0.003 gm/sec. This value is about 850,000 times smaller than the emission rate of sulfur dioxide. Therefore, the ground-level concentrations calculated for SO_2 can be divided by 850,000 to obtain an approximate concentration of berillium at ground level.

At this time, no regulation exists on berillium emission from power plants or boilers. The OSHA threshold value is 2 microgm/cu meter and EPA studies have shown that concentrations of berillium within 0.01 microgm/cu meter to 0.1 microgm/cu meter can be hazardous to health, if an individual is exposed to these concentrations for a long period of time. Since the approximate concentration of berillium is expected to be 0.000715 microgm/cu. meter (10 min. ave.), the operation of the utility plant should not result if any health hazard.

Emissions from the burning of solid wastes are evaluated based upon information from tests conducted with municipal boilers, at temperatures above 600^{o}C and up (the 3M boilers will probably operate at approximately 1000^{o}C), essentially complete oxidation takes place with the carbon compounds present burning to carbon dioxide and water. The one notable exception is the formation of HCL when the plastic polyvinyl chloride (PVC) is present.

The emission rate of HCL from the burning of PVC in the site refuse can be estimated as approximately 7 pounds per ton of refuse from the following assumptions:

- The refuse contains approximately 1.5% PVC by weight (about six times that found in municipal refuse),
- The chlorine content of PVC is approximately 45 percent, and
- All the chlorine present goes into the formation of HCL.

Knowing that the 3M refuse has a BTU content of approximately 10,200 BTU per pound (Page D-2.1 of Technical Report C1, central utility plant and site distribution), the emission rate for HCL for the case when the only fuel being burned is refuse would be approximately 0.7 pounds HCL per million BTU boiler input.

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 220 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 · AREA CODE 312 726-0434

PLEASE ADDRESS ALL CORRESPONDENCE TO:
10775 EAST 51st AVE., DENVER, COLO. 80239

OFFICE TEL. (303) 373-4772

FUEL DYNAMICS
P. O. Box 308
Oswega, Kansas 67356

Nov. 17, 1975

Crowburg #13
Black Diamond

Sample Identification
by

Kind of sample reported to us	Coal
Sample taken at	xxxxx
Sample taken by	
Date Sampled	xxxxx
Date Received	11-7-75

Analysis report no. 72-37512

PROXIMATE ANALYSIS

	As received	Dry basis
% Moisture		
% Ash		
% Volatile		
% Fixed Carbo		
Btu		
% Sulfur		

ULTIMATE ANALYSIS

	As received	Dry basis
% Moisture	12.28	xxxxx
% Carbon	64.55	73.59
% Hydrogen	4.12	4.70
% Nitrogen	1.35	1.54
% Chlorine	0.01	0.01
% Sulfur	0.44	0.50
% Ash	10.11	11.52
% Oxygen (diff)	7.14	8.14
	100.00	100.00

SULFUR FORMS

	As received	Dry basi
% Pyritic Sulfur	xxxxx	xxxxx
% Sulfate Sulfur	xxxxx	xxxxx
% Organic Sulfur (Diff)	xxxxx	xxxxx
% Total Sulfur	xxxxx	xxxxx

FUSION TEMPERATURE OF ASH

	Reducing	Oxidizing
Initial Deformation		
Softening (H=W)		
Softening (H=1/2W)		
Fluid		

HARDGROVE GRINDABILITY INDEX = 62.8 at 4.44 % Moisture

% EQUILIBRIUM MOISTURE = xxxxx

FREE SWELLING INDEX = xxxxx

LWT/pf

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
L.W. TAYLOR, Western Division Manager

Figure 14.

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 630 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 · AREA CODE 312 720-0434

PLEASE ADDRESS ALL CORRESPONDENCE TO:
10775 EAST 51st AVE., DENVER, COLO. 80239

OFFICE TEL. (303) 373-4772

Sept. 12, 1975

RECEIVED
NOV - 7 1975

Sample Identification
by

Kind of sample reported to us	Coal
Sample taken at	Black Diamond Mine
Sample taken by	
Date Sampled	xxxxx
Date Received	8-20-75

Analysis report no. 72-35264 Page 2

MINERAL ANALYSIS OF ASH	% Wt. Ignited Basis
Phos. pentoxide, P_2O_5	0.24
Silica, SiO_2	53.28
Ferric oxide, Fe_2O_3	4.59
Alumina, Al_2O_3	27.60
Titania, TiO_2	1.26
Lime, CaO	2.86
Magnesia, MgO	1.94
Sulfur trioxide, SO_3	2.67
Potassium oxide, K_2O	4.00
Sodium oxide, Na_2O	0.96
Undetermined	0.60
	100.00

Alkalies as Na_2O, DCB = 0.14

SILICA VALUE = 85.02

ESTIMATED VISCOSITY at critical viscosity temp. of 2765 °F = 460 Poises
T_{250} = 2790 °F

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

L.W. TAYLOR, Western Division Manager

LWT/vh

Figure 15.

Charter Member

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 · AREA CODE 312 726-6434

PLEASE ADDRESS ALL CORRESPONDENCE TO:
10775 EAST 51st AVE., DENVER, COLO. 80239

OFFICE TEL. (303) 373-4772

Sept. 12, 1975

Sample Identification
by

Kind of sample reported to us	Coal
Sample taken at	Black Diamond Mine
Sample taken by	
Date Sampled	xxxxx
Date Received	8-20-75

Analysis report no. 72-35264 Page 1

PROXIMATE ANALYSIS

	As received	Dry basis
% Moisture	7.03	xxxxx
% Ash	3.60	3.87
% Volatile	30.11	32.39
% Fixed Carbon	59.26	63.74
	100.00	100.00
Btu	13406	14420
% Sulfur	0.53	0.57

FUSION TEMPERATURE OF ASH

	Reducing	Oxidizing
Initial Deformation	2510°F	2610°F
Softening (H=W)	2535°F	2660°F
Softening (H=1/2W)	2565°F	2685°F
Fluid	2605°F	+2700°F

H is Cone Height

W is Cone Width

FREE SWELLING INDEX = 4
HARDGROVE GRINDABILITY INDEX = 60.3% at 4.51% Moisture

LWT/vh

Figure 16.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO

L.W. TAYLOR, Western Division Manager

Comment 19 Sulfur dioxide emissions should be computed for each potential fuel source.

(Metropolitan Council)

Response: Essentially this has been done in that a maximum of 1.2 lb. of SO_2 per million BTU of heat input can be emitted. This refulation is independent of the type of fuel used. For further information see Comment 20.

Comment 20 Emissions from the 3M site alone result in projected violations of the SO_2 standards in 1995. Other SO_2 sources would add to these levels.

(Minnesota Pollution Control Agency, Metropolitan Council; Tri-Lakes Association)

Response: The projected 1-Hour SO_2 levels contained in the draft EIS are in fact 10 minute averages. This error has been corrected and is presented below. In addition, SO_2 emissions which might result from the Allan S. King Power Plant as well as other sources have been considered. (See responses to Comment 21 and Comment 22).

Five boilers are planned by the year 1995 to cover a maximum boiler demand of 668 MBTU/hr. The boilers are to be a stoker type to facilitate burning of refuse as a supplement to the coal. It has been established that the combustion temperatures in this type of boiler are not high enough to generate any appreciable amount of nitrogen oxides. It is, therefore, anticipated that the impact of the boilers on the ground-level concentrations of nitrogen oxides will not be significant.

The operation of the boilers has to comply with the existing air pollution emission regulations. Besides other limitations, these regulations permit a maximum of 1.2 lb of SO_2 be released into the atmosphere for each million BTU of the heat input. Also, the pollutants from the boilers must not result in violating the air quality standard when the plume from boiler stacks reaches the ground.

The emission regulation for sulfur dioxide of 1.2 lb/MBTU results in the permissible emission rate of SO_2 from the 3M's boilers of 801.6 lb/hr or 101 g/s. This emission rate was utilized by 3M personnel to evaluate the impact of the utility plant on the air quality at ground level.

In these calculations the emissions were considered to be released through five stacks of equal height at a temperature of 400°F (477°K) and with a velocity of 2200 fpm (11.2 m/s). The plume dispersion was also evaluated for stack heights of 107 ft (32.6 m) and also 175 ft (53.4 m). The stack diameters utilized for these calculations were as follows:

Stack #1	3.63 ft (1.11 m)
Stack #2	4.68 ft (1.43 m)
Stack #3	5.41 ft (1.65 m)
Stack #4	5.41 ft (1.65 m)
Stack #5	5.41 ft (1.65 m)

The dispersion from these stacks has been analyzed as a function of wind speed and atmospheric stability using an EPA dispersion model PTMAX. From this model the atmospheric conditions have been established which will result in maximum concentrations of SO_2 at the ground level.

Using the same dispersion model, the results of the 3M study have been doublechecked by Interpoll and found to be correct. The results of these calculations are summarized in Table 136.

Table 136. Maximum Ground-Level Concentration of SO_2 From Five Stacks of the Planned Utility Plant at the Ambient Temperature of 20° F.

	107 Ft. Stack					175 Ft. Stack				
Atm. Stability	Dist. From Stack (km)	Wind Speed (m/s)	SO_2 Concentr. 10-Min.	3-Hr.	24-Hr.	Dist. From Stack (km)	Wind Speed (m/s)	SO_2 Concentr. 10-Min.	3-Hr.	24-Hr.
C	0.7	10	180	110	77	1.3	5	113	69	49
D	1.2	12	132	80	57	2.6	7	66	40	28
E	5	2	130	79	56	75	2	75	46	32
F	11	2	100	61	43	50	2	50	30	21
AIR QUALITY STANDARD			N/A	655	260			N/A	655	260

From this table it can be seen that the ambient concentration of sulfur dioxide will be increased by the utility plant operation by no more than approximately 110 microgm/cu.meter as a 3-hour average and 77 microgm/cu.meter as a 24-hr. average, even if the stacks are only 107 feet tall.

Comment 21 The plume from the Allan S. King plant, when trapped under a nighttime inversion, may spread out and touch ground in the vicinity of the site. This may cause elevated levels of SO_2 which together with 3M's utility plant emissions may cause violations of SO_2 standards before the projected violation in 1995.

(Minnesota Pollution Control Agency, Tri-Lakes Association)

Response: Under certain meteorological conditions, the plume from the King plant is very stady and is visible for a very long distance before it disappears. Such a situation may result in a relatively high ground-level concentration of pollutants many miles away from the plant.

Based upon the information which was provided by MPCA, the plant operates 24 hours a day, 300 days per year and emits 72950 tons of sulfur dioxide per year. The stack parameters required for dispersion calculations are as follows:

Stack Height	785 Feet = 239 m
Stack Outlet I.D.	18.5 Feet = 5.64 m
Stack Exit Temp.	297^{o} F. = 421^{o} K
Gas Flow Rate	2,040,000 ACFM = $963 m^3/s$
SO_2 Emission Rate	2560 gm/cu.

The effective plume height calculated from Hollands equation for an average summer ambient air temperature of 290^{o} K is:

$$H_E = H_S + \frac{1320}{u} = 239 + \frac{1320}{u} \quad (1)$$

where:

H_E - effective plume height, m

H_S - stack height, m

u - wind speed, m/s

As it follows from equation (1) the effective plume height can vary between 300 m up to 1500 m, depending on the wind speed.

These values can be compared with the annual average atmospheric mixing heights as published by Holzworth. The morning mixing heights are about 450 m for the St. Paul area while the afternoon heights are about 1200 m. This means that the plume dispersion goes through a frequent limited mixing and break-up fumigation situation as the mixing height increases from the morning value of about 450 m to the afternoon value which exceeds the effective plume height.

An analysis of all possible adverse dispersion situations resulted in the limited mixing situation to have the most pronounced impact on the Oakdale site. Because all other situations result in less significant impact, the limited mixing situation is described below.

The distance from the King plant to the Oakdale site is 12 km. Considering a limited mixing situation with an inversion layer located close above the plume, elevation of 1200 m, for D stability class and wind speed of 2 m/s, (typical inversion conditions), the ground level concentrations of SO_2 (calculated from the equation recommended by Turner) at the Oakdale site will be as follows:

SO_2 = 608 microgm/cu.meter (10 min. ave.)

SO_2 = 371 microgm/cu.meter (3 Hr. ave.)

SO_2 = 261 microgm/cu.meter (24 Hr. ave. - improbable)

Because only the 3-hr. average is possible, for this inversion situation can hardly exist for a longer period of time, it appears that the plume from the King's plant will not result in the air quality violation at the Oakdale site.

Comment 22 Residential space heating emissions should have been added to the SO2 estimates according to the residential land use forecasts. The effect of this would be to raise the predicted concentrations of SO_2.

(Minnesota Pollution Control Agency)

Response: The Draft E.I.S. anticipated that the largest number of new households related to the 3M project will be experienced in Washington County. The number of new households will be about 11710 by the year 1995. One

can consider that 70 percent of these households will be housed in new dwelling units and 20 percent of these will be heated by oil. For maximum oil consumption by an average house of 76 MBTU/month and for an average sulfur content in the oil of 0.7 percent, the new houses will result in the generation rate of sulfur dioxide of 22.2 gm/cu.

The most adverse air quality situation will occur when all the houses are located on one single area of 9370 ft. by 9370 ft. (An average lot of 150 ft. by 100 ft. is assumed.) This single area can be analyzed as a ground-level area source of SO_2. For the most adverse meteorological conditions (an inversion with stability class F and wind speed 2 m/s) this hypothetical residential area will result in a ground-level concentration of 35 microgm/cu.meter (3-hr. ave.) or 24.8 microgm/cu.meter (24-hr. ave.) on the edge of the area. In reality, the houses will be scattered and their impact on the background concentration of SO_2 will be significantly lower than the above values indicate.

Comment 23 Emissions of oxides of nitrogen from the utility plant were not discussed.

(Minnesota Pollution Control Agency)

Response: The type of boilers which are being proposed for the utility plant are low temperature boilers. As a result of low flame temperatures, the NOx emissions should be low. As published by W. S. Smith and C. W. Gruber, the emission rate of NOx from the utility boilers should not exceed 0.8 lb. per MBTU. This emission rate is about 60 percent of the anticipated emission rate of SO_2; therefore, the ground-level concentrations of NOx will be about 60 percent of the ground-level concentrations as calculated for SO_2. It is estimated that the maximum annual average concentration of SO_2 resulting from the utility plant operation will be on the order of 5 to 10 microgm/cu.meter. The annual average ground-level concentration of NOx can be then expected to be around or below 7 microgm/cu.meter. The ambient air quality standard for NOx is 100 microgm/cu.meter as an annual arithmetic mean.

Comment 24 The Draft E.I.S. did not discuss the possibility of installing flue gas desulfurization equipment, the costs and effectiveness of watering to control fugitive dust, nor the possibility of a total enclosure for stored coal.

(Minnesota Pollution Control Agency)

Response: All of these measures would help to reduce the impact of various pollutants. However, in light of the analyses as presented in these responses, the implementation of these measures does not appear to be necessary in order to meet air quality standards.

Comment 25 A mitigating measure which was identified was stricter emission regulations for the entire metropolitan area. The MPCA would not impose such regulations in order to accommodate the 3M development.

(Minnesota Pollution Control Agency)

Response: It was not the intent of the Draft E.I.S. to suggest that stricter emission regulations be imposed on the region for the benefit of 3M. It is agreed that, as a mitigating measure, stricter emission regulations are inappropriate. The intent of the statement was to recognize that this possibility exists and that such a restriction, if implemented, would apply region-wide.

NOISE

Comment 1 The noise levels appearing in Table 44 appear to be incorrect and do not conform with the appropriate noise reduction relationships.

(Minnesota Highway Department, Pollution Control Agency)

Response: The noise levels for peak hour traffic on roadways surrounding the 3M site have been recomputed using a computer model based on the NCHRP 117/144 noise prediction method. The recomputed levels appear in Table 137. The noise levels were previously computed manually for the Draft EIS also using the NCHRP 117/144 method. This previous method yielded somewhat lower predicted noise levels, especially in areas close to the highway. The increases in the recomputed noise levels shown in Table 137 are not significant enough to warrant change in Map 41. In addition to the L_{10} calculations, L_{50} noise calculations also are shown in Table 137 for comparison with State noise standards.

While the general rule for noise reduction from a line source is 3 dBA for each doubling of distance, the computed noise levels using the NCHRP 117/144 method show a 3-5 dBA reduction per doubling of distance. This method is one of two models approved by the Federal Highway Administration.

TABLE 137
PROJECTED 1995 HIGHWAY NOISE LEVELS (L_{10})

Roadway	Distance from Roadway (feet) 25	50	100	200	500	1,000
I-694 A	86	82	77	72	65	60
B	87	82	77	72	66	61
T.H. 212 A	84	81	76	70	63	57
B	87	83	78	72	65	60
C	88	84	78	73	66	61
D	87	83	78	72	65	60
E	85	82	77	71	64	58
F	83	80	75	70	62	56
40th Street	74	68	63	57	50	45
Ideal A	77	73	68	63	56	49
B	78	73	69	64	56	50
Co.Rd. 80 A	80	76	72	67	59	53
B	79	75	71	66	58	52
C	81	77	72	68	60	54

TABLE 138
PROJECTED 1995 HIGHWAY NOISE LEVELS (L_{50})

Roadway	Distance From Roadway (feet) 25	50	100	200	500	1,000
I-694 A	77	74	71	67	62	58
B	78	75	71	68	62	58
T.H. 212 A	69	66	63	59	54	50
B	73	70	67	63	58	53
C	74	71	67	64	58	54
D	73	70	66	63	57	53
E	71	68	65	61	56	52
F	68	65	62	58	53	49
40th Street	62	58	54	50	44	39
Ideal A	62	58	54	49	44	39
B	63	59	55	51	45	40
Co.Rd. 80 A	68	64	60	56	51	46
B	67	63	59	55	50	45
C	70	67	63	59	53	49

Comment 2 The land uses appearing on Map 41 for the west side of I-694 between T.H. 212 and 40th Street are incorrect.

(Minnesota Highway Department)

Response: Land uses for the noise classification map were taken from the future Land Use Plan of the City of Oakdale completed in 1972. The present turkey farm is planned for residential use and the Highway Department building, classified Institutional, was categorized with the residential land uses on Map 41.

Comment 3 Hours adjacent to the peak hour should be analyzed for noise impact.

(Pollution Control Agency)

Response: Other hours of traffic were not analyzed for noise impact because it would be difficult to predict the small amount of non-peak hour traffic directly or indirectly related to the 3M project.

HOUSING

Comment 1 — The Draft EIS states that "the availability of housing at an affordable price can be the most important determinant that influences residential patterns". This may conflict with the basic methodology utilized in the residential distribution of 3M employees.

(City of Lake Elmo)

Response: This statement is not in conflict with the method used in the residential distribution of 3M employee households. The ten factors (listed on page 298 of the Draft EIS) used in the residential distribution include five that are directly related to the availability and affordability of housing:

a. Metropolitan Council development policies.
b. Existing and proposed urban services to communities.
c. Existing and proposed development controls.
d. Existing and proposed housing developments, commercial activities, parks and school capacities.
e. The amount of land available for residential use.

It is possible for a residential distribution to occur that will be different from that projected in the Draft EIS. For example, if a large residential development were proposed for Lake Elmo and the urban services needed were made available, the availability of housing in Lake Elmo would be potentially higher than currently anticipated; this could affect the number of 3M employees expected to reside in Region 2.

Comment 2 — The EIS should discuss housing programs that will need to be initiated which take full advantage of both subsidized and multi-family housing.

(Metropolitan Council)

Response: The Draft EIS discusses the potential need for low income and moderate income housing. While the need may be greater in close proximity to the site, all communities should provide a variety of housing at a range of

costs to allow low income persons some freedom of choice. All communities, then, should prepare a comprehensive housing plan that details both expected needs and the anticipated supply.

The Metropolitan Council's Housing Chapter of the Metropolitan Development Guide details the government programs that are available to Twin Cities communities for meeting the expected demand. It also suggests means by which local governments can institute their own programs for assisted housing.

Comment 3 The EIS does not discuss short-term impacts on the housing industry.

(Pollution Control Agency)

Response: The Draft EIS points out the need for housing for 1980 and 1985 by impact area region. It also details the price ranges that 3M employee families can afford to purchase or rent. This should be an indication to the housing industry of what the market for new homes will be like in five or ten years in Washington County.

The Metropolitan Council anticipates a need for 9,140 new housing units in Washington County between 1974 and 1980, and 30,590 by 1990. The 3M project may accelerate this need in the Stillwater Area (Region 3) and St. Croix Communities (Region 4) by 380 units in 1980 and 1,200 units by 1990. With the exception of this increased demand in Washington County, no other unexpected impacts are likely to occur.

Comment 4 The housing analysis assumes that a homeowner can afford a home that costs 2.5 times his annual family income. With an average income of $16,840 and the average home valued at $44,000 as described in the tax revenues section, the cost/income ratio is 2.6.

(City of Lake Elmo)

At an average income of $16,840 and a cost/income ratio of 2.5, the average 3M family could afford to purchase a home that cost $42,100 rather than $44,000 as stated in the Tax Revenues section. The difference in fair market value ($1,900) and therefore the difference in assessed valuation ($817)

amounts to less than five percent. To be consistent with the states 2.5 ratio, the property taxes shown on pages 470 and 477 of the Draft EIS should be reduced by that amount (five percent).

Comment 5 Because of all the other expenses a family must incur, the cost/income ratio should be closer to 2.25.

(City of Lake Elmo)

Response: The cost/income ratio of 2.5 is documented in "Balancing Your Housing Needs and Resources", (Agricultural Extension Service, University of Minnesota). The guideline states that the sales price should not exceed 2-2½ times the gross annual income. Assuming that the ratio of cost to income is 2.25 rather than 2.50, and assuming the same income proportions as shown on page 430 of the Draft EIS, fewer 3M families will be able to afford average-priced housing. The following analysis points out the need for low and moderate-income housing under the assumption of a 2.25 ratio (the analysis is comparable to that appearing on page 431 of the Draft EIS):

Table 105 (Draft EIS) showed that 680 families will have incomes of less than $8,000 per year in 1995. These persons would be able to spend less than $135 per month on housing, which would probably not be adequate to cover the cost of a one-bedroom apartment at today's market prices (the average cost in the Twin Cities was $125 per mont in 1970). These persons would be able to afford virtually no owner-occupied units.

The 5,620 families in the income range $8,000-$15,000 would be able to afford housing that costs between $18,000 and $33,750. Most of these persons would not be able to afford the average-priced previously occupied home (costing $27,000 in 1973). Those earning between $8,000 and $12,000 would be able to spend between $135 and $200 per month on rent. If an even income distribution is assumed in the $8,000 to $15,000 category, almost 4,200 families would have incomes of $12,000 or less-meaning essentially that these families could not afford to purchase a home costing more than $27,000. Half of these families could afford to spend less than $150 per month for housing.

Those families at the upper end of the $8,000 to $15,000 income range could afford to purchase a home costing at most $33,750. While these persons would be virtually excluded from purchasing the average-priced new home ($37,000 in the Twin Cities in 1973), they could probably afford the average priced previously occupied home. This means that at least a total of 6,300 families (37 percent) will require low and moderately-priced housing.

Sixty-three percent of the 3M employee households will have family incomes greater than $15,000. Because this income category is open-ended, very little can be said about the types of housing these families can afford. They will be able to spend $250 per month or more and can afford to purchase housing costing more than $33,750. While they will not all be able to purchase the average-priced new home, a large percentage will probably have that income ability.

Assuming that the relationship between purchase price and income is the same as the relationship between purchase price and income is the same as the relationship between average value and income, property tax revenue generated by this housing will be somewhat less than shown in Tables 116 and 121 of the Draft EIS. See the Tax Revenues section, Final EIS.

Comment 6 Community zoning and sewer/septic ordinances provide some mitigation of secondary impacts related to the additional housing required. How many communities have P.U.D. ordinances? How many have subdivision controls? Sewer/septic ordinances?

(State Planning Agency)

Response: A telephone survey of the impact area cities and township was conducted to answer these questions. The results of this survey are found on Table 139 The following questions were asked in the survey:

(1) Does the city/township have a septic tank controls or sanitary sewer ordinances?

(2) How does the city/township control subdivisions? Responses were one of the following:

A. Controlled by zoning ordinance.
B. Controlled by separate subdivision ordinance.
C. Use county zoning ordinance
D. No control.

(3) Does the city/township have a P.U.D. ordinance?

TABLE 139

Region/Community	Septic Tank Controls	Sanitary Ordinance	Subdivision Control	P.U.D.
1 Oakdale/Landfall				
Oakdale	X	0	B	X
Landfall				
2 Central Washington County				
Lake Elmo	CO	0	B	X
Grant Township				
3 Stillwater				
Oak Park Heights		No Response		
Stillwater	X	0	B	X
Stillwater Township				
4 St. Croix Communities				
Afton	CO	0	C	X
Baytown Township				
Bayport	0	0	D	0
Lakeland	X	0	B	BD
Lakeland Shores	S	0	D	0
Lake St. Croix				
St. Mary's Point	S	0	D	0
West Lakeland Twp.				
5 Southwest Washington County				
Cottage Grove	S	0	B	X
Grey Cloud Township				
Newport	0	0	C	0
St. Paul Park	X	0	D	0
Woodbury		No Response		

X - Yes
0 - No
BD - Being Developed

CO - Use County Ordinance
S - Use State Code

TABLE 139
(Continued)

Region/Community	Septic Tank Controls	Sanitary Ordinance	Subdivision Control	P.U.D.
6 Mahtomedi Area				
Birchwood		No Response		
Dellwood	X	O	A	X
Mahtomedi	X	O	A	X
Pine Springs		No Response		
Willernie		X	O	O
7 North Washington Co.				
Hugo	X	O	A	X
Forest Lake	O	X	B	X
Forest Lake Township				
Marine-On-St. Croix	O	CO	B	X
May Township				
New Scandia Township				
8 Denmark Township				
Denmark Township				
9/10 Maplewood Area				
Maplewood	X	O	B	X
North St. Paul	X	O	B	X
11 White Bear Area				
Gem Lake	O	X	B	O
North Oaks	X	O	B	BD
White Bear Lake	S	O	B	X
White Bear Township				
12 NW Ramsey County				
Roseville	O	X	A	X
Falcon Heights	O	X	B	X
Lauderdale	O	X	A	X
Moundsview	O	X	B	BD
New Brighton	O	X	B	X
St. Anthony	O	X	B	X
Arden Hills	X	O	B	X
Shoreview	X	O	B	X

X - Yes
O - No
BD - Being Developed
CO - Use County Ordinance
S - Use State Code

TABLE 139
(Continued)

Region/Community	Septic Tank Controls	Sanitary Ordinance	Subdivision Control	P.U.D.
13/14 St. Paul	O	X	B	X
15 Dakota Co. Suburbs				
Sunfish Lake	X	O	D	O
West St. Paul	X	O	B	X
South St. Paul		X	B	O
Mendota	X	O	A	O
Mendota Heights		No Response		
Lilydale			D	O
Inver Grove Heights	X	O	B	BD
16 Hastings Area				
Hastings	X	O	B	X
Nininger				
17 Wisconsin				
Hudson		No Response		
North Hudson				

X - Yes
- No
BD - Being Developed

CO - Use County Ordinance
S - Use State Code

EDUCATION

Comment 1 The forecasts of school-age children in 3M households were based on 1995 averages of between 0.75 and 1.04 school-age children per household for Washington County. The Metropolitan Council and Minnesota State Planning Agency have made population projections that assume ratios of 2.1 and 1.9 children per family, respectively. The projections of school children presented in the EIS might therefore misrepresent potential school district impacts.

(Washington County Planning Department, Tri-Lakes Association)

Response: The Education section of the EIS presents forecasts of school-age children likely to be in attendance at public or private elementary, junior and senior high schools. They should be considered as projected enrollments rather than the total number of children in 3M families.

The projected enrollments are based on 3M survey results showing that on the average, 3M employees had about 1.9 children in 1974. Because a significant number of employees are married to one another, this converts to just over 2.0 children per 3M family. Of all 3M children only 53 percent were enrolled in elementary, junior or senior high schools; this means that on the average, each 3M family generated 1.09 enrollments in 1974.

The Metropolitan Council forecasts for Washington County communities show that the average family size is expected to be smaller in the future than it has been in the past. This is expected as a result of lower birth rates and increases in the number of one-person households. Because of these projected declines, it can be expected that future 3M households will generate fewer enrollments than in 1974. In light of the 1974 survey average of 1.09 enrollments per household, values between 0.75 and 1.04 do not seem unrealistic. These ratios were derived in the following manner:

a) Estimates were made of average family size for each impact area region for 1974, 1980, and 1995, using Metropolitan Council forecasts of population and number of households.

b) Each region was assigned a 1974 ratio of enrollments per family by adjusting the overall survey average of 1.09 according to spatial variations in family size.

c) Assuming that the ratio of enrollments per family would decline at the same rate as family size, ratios of between 0.75 and 1.04 enrollments per family were developed for 1995.

Projected enrollments should not be confused with the total number of children in 3M families. The Metropolitan Council forecast of 2.1 and State Planning Agency forecast of 1.9 children per family actually are total fertility rates representing the average number of children per female at the end of childbearing (or per completed family). The values of 2.1 and 1.9 cannot be compared to enrollment ratios of between 0.75 and 1.04 because they are measures of two different variables. The enrollment ratios can be converted to an average number of children per 3M family, ranging from 1.4 to 2.0. All 3M families would not, however, be at the completed stage so one would have to expect that these values would be lower than 1.9 or 2.1 children per completed family.

Comment 2 Further explanation is needed to clarify the methodology used for school projections in the Stillwater school district (ISD 834).

(Stillwater School District)

Response: The Stillwater school district encompasses all or part of Central Washington County (Region 2), the Stillwater Area (Region 3), the St. Croix Communities (Region 4), and North Washington County (Region 7). For the purposes of estimating school district impacts, it was assumed that all Region 3 and 4 households were located in the district; 35 percent of all Region 2 households and 10 percent of all Region 7 households would be located in the Stillwater school district.

Table 140 was prepared as a worksheet to show the computations in the enrollment projections for ISD 834. Total enrollments were estimated for each region on the basis of anticipated new households and an estimate of enrollments per household. Regions 2, 3, and 7 were assigned the survey average of 1.09 enrollments per

TABLE 140

WORKSHEET FOR ENROLLMENT PROJECTIONS:
STILLWATER SCHOOL DISTRICT

I. 1980 Projections	Region 2	Region 3	Region 4	Region 7	Total
New 3M Households	50	140	70	30	290
Enrollments/Household	1.09	1.09	1.19	1.09	-
Total Enrollments	55	153	83	33	324
- Elementary (51%)	28	79	43	17	167
- Junior High (27%)	15	41	22	9	87
- Senior High (22%)	12	34	18	7	71
Percent in ISD 834	35%	100%	100%	10%	-
- Elementary in 834	10	79	43	2	134
- Junior High in 834	5	41	22	1	69
- Senior High in 834	4	34	18	1	57
- Total Enrollments in 834	19	154	83	4	260

II. 1995 Projections	Region 2	Region 3	Region 4	Region 7	Total
New 3M Households	990	2890	1200	550	5630
Family Size 1995/1974	0.93	0.83	0.87	0.83	-
Enrollments/Household	1.01	0.91	1.04	0.90	-
Total Enrollments	1000	2630	1248	495	5373
- Elementary (51%)	514	1352	641	254	2761
- Junior High (27%)	266	700	332	132	1430
- Senior High (22%)	220	579	275	109	1183
Percent in ISD 834	35%	100%	100%	10%	-
- Elementary in 834	180	1352	641	25	2198
- Junior High in 834	93	700	332	13	1138
- Senior High in 834	77	579	275	11	942
- Total Enrollments in 834	350	2631	1248	49	4278

household for 1980 because the forecasted average family size for communities in those regions was similar to that of the entire impact area. Region 4, which exhibited a high family size, was assigned 1.19 enrollments per family for 1980. Once the total number of enrollments was computed for each region, estimates were made of enrollments at the elementary, junior and senior high levels. The 1974 3M survey showed that of all children enrolled at these levels, 51 percent were in elementary grades, 27 percent were in junior high and 22 percent were in senior high. It was assumed that the same percentage split would occur in the future, although this could possibly change depending on fertility and migration patterns. The proportion of each region's households located in the school district was used to estimate the number of enrollments each region would contribute.

The same basic procedure was followed for estimating 1995 enrollments except that the ratio of enrollments per household was decreased in proportion to anticipated declines in family size. The Stillwater school district, showing relatively high family sizes for 1995, has an overall enrollment per household ratio of 0.95, ranging from 0.90 in Region 7 to 1.04 in Region 4.

Comment 3 The 3M project's secondary growth will place considerable strain on the Hudson (Wisconsin) school system without any direct tax benefit from the 3M Company. The EIS fails to suggest mitigation measures for this impact.

(St. Croix County, Wisconsin)

Response: There are no means by which the Hudson school district can receive tax benefits directly from the 3M project since the site is not located in the Hudson school district. The only way to mitigate possible impacts on the school district would be to:

a) Alter the expected residential distribution of 3M employee households (i.e., promote growth in areas where urban services already exist and discourage growth in unserviced areas).

b) Reduce the total number of 3M employees at the site (which has no guarantee of reducing the number who choose to reside in the Hudson school district).

PUBLIC HEALTH AND SAFETY

Comment 1 The Draft EIS estimates that an additional 214 hospital beds will be required as a result of the new 3M population. Which, if any, public agency should construct such a structure?

(Washington County Planning Department)

Response: As shown on Table 112, page 458 of the Draft EIS, the additional hospital bed demand would gradually accrue to the year 1995 when the total would be 214. Further, these beds would not be accommodated in a single structure as the above cited figure is the total of all 17 impact area regions. Thus, these extra beds are likely to be added as part of the future additions to existing hospitals needed to provide for non-3M related growth in the 17 regions.

Comment 2 Where will reserve water come from for fighting fires at the project site?

(Washington County Planning Department)

Response: Reserve water will be supplied by city water systems through contracts with 3M. It is possible that on-site storage ponds could be employed to augment reserves supplied through city systems. (See pp. 266-267 of the Draft EIS.)

In any event, water supplies for fire-fighting purposes would be required to meet insurance underwriters' requirements in addition to building and fire codes before any permits could be issued for construction of any part of the project in either City.

RECREATION

Comment 1 Will site areas 7 and 8 in fact remain as parkland or do future plans call for some kind of development?

(Minnesota Department of Natural Resources)

Response: Site areas 7 and 8 in the above comment refer to a map which appeared on page D-1.5 of the Environmental Assessment for the project prepared by National Biocentric, Inc. Site areas 7 and 8 refer to the small portions of the 3M site which protrude to the south and north.

At the present time, 3M has no plans to construct facilities in either of the two sites in question. Both areas, however, were originally identified as candidate construction areas because they could accommodate structures. Site number 7 has been identified as a preferred location for a mass transit station serving the project if and when such a mass transit system becomes a reality in the future, and if the project is identified as a desirable station location.

Similarly, 3M has no plans to designate either of these areas as parkland.

Comment 2 Two of the four alternatives for supplying sanitary sewer service to the project site involve construction in the Lake Elmo Park Reserve. What are the impacts of constructing such a facility in the reserve and what mitigating measures should be taken?

(Metropolitan Council)

Response: All four of the alternatives for providing sanitary sewer service to the project are alternatives set forth by the Metropolitan Waste Control Commission (see page 143 of the Draft E.I.S.). The M.W.C.C. is the agency which will select an alternate and construct it, thus 3M has no direct control over which option is selected. Further, separate environmental impact statements are normally prepared for interceptor sewers, and the question of impacts on the park reserve from the interceptor sewer options would more appropriately be addressed in that context.

ECONOMIC GROWTH

Comment 1 The increased operating expenditures resulting from the project should be offset by the economic loss resulting from the loss of agricultural crop production on the Oakdale/Lake Elmo site.

(City of Lake Elmo)

Response: The purchases and services alone resulting from the project are measured in tens of millions of dollars annually. The value of crops produced on the Oakdale/Lake Elmo site can be measured in thousands of dollars. Thus, not even considering the increased tax revenues resulting from 3M, the loss represented by agricultural crops is a negligible factor by comparison.

TAX REVENUES

Comment 1 The EIS does not discuss potential capital expenditures.

(City of Lake Elmo, Washington County Planning Department, State Planning Agency, Tri Lakes Association)

Response: The Washington County Planning Department prepared a report that reviewed potential capital expenditures in Washington County communities. That report is reprinted as part of the comments received on the Draft EIS.

For comparison purposes, potential capital expenditures for 1,000 dwelling units were taken from The Costs of Sprawl: Environmental and Economic Costs of Alternative Residential Development Patterns at the Urban Fringe (Real Estate Research Corporation, April, 1974). This source presents six housing patterns ranging from single-family conventional to high-rise apartments to a mixed pattern of development. The capital costs are detailed for each alternative development pattern, as are annual operating and maintenance costs. Table 145 shows that total capital expenditures for streets and roads to serve a neighborhood of 1,000 dwelling units ranges from just over $800,000 to $3.1 million, depending on the density of development. Operating and maintenance costs for these streets range from less than $6,000 to over $37,000.

The cost of utilities to serve 1,000 dwelling units is exhibited in Tables 141 through 146. Capital expenditures for the provision of sanitary sewerage (Table 141) range from $136,000 for high-rise apartments to $912,000 for the single-family conventional pattern. Annual operating and maintenance costs are fairly stable at between $28,000 and $32,000. Storm drainage (Table 143) could mean a capital outlay of as little as $885,000 or as much as $1,596,000 for 1,000 dwelling units. The capital cost of a water supply shows the most variation by density of development; Table 144 shows that capital expenditures can vary from $447,000 to $4,951,000 with annual operating costs of between $26,000 and $32,000.

TABLE 141

NEIGHBORHOOD COST ANALYSIS
SANITARY SEWERAGE

	Housing Pattern (1,000 Units)					
	A	B	C	D	E	F
	Single-Family Conventional	Single-Family Clustered	Townhouse Clustered	Walk-Up Apartment	High-Rise Apartment	Housing Mix (20 Percent Each A - E)
Capital Costs						
Pipeline 1/	$611,658	$405,506	$258,255	$154,086	$ 91,248	$288,838
Manholes 2/	90,000	59,500	38,000	22,500	13,500	42,500
Subtotal Capital Costs	$701,658	$465,006	$296,255	$176,586	$104,748	$331,338
Profit, Overhead, Engineering	210,497	139,502	88,876	52,975	31,424	99,401
Total Capital Costs	$912,155	$604,508	$385,131	$229,561	$136,172	$430,739
Operating and Maintenance Costs						
Pipeline 3/	$ 4,536	$ 3,007	$ 1,915	$ 1,143	$ 677	$ 2,142
Treatment 4/	17,354	17,354	16,417	16,417	13,927	16,417
Other 5/	10,243	10,243	9,690	9,690	8,221	9,690
Total Operating Costs	$ 32,133	$ 30,604	$ 28,022	$ 27,250	$ 22,825	$ 28,249

Notes:

1/ Pipes for all six neighborhoods sized in the following proportions: 70%, 8" at $8.22 per foot; 20%, 15" at $14.52 per foot; 10%, 30" at $26.69 per foot. Estimates of cost include earthwork, materials, and installation. 8" and 15" pipes are vitrified clay. 30" pipes are reinforced concrete. Costs per foot derived from average of three studies.
Sources: Madison-Madison, Adequacy and Cost Analysis of New Community Infrastructure (ref. no. 09-028); Wiedeman and Singleton, Water, Sewerage and Storm Drainage (ref. no. 11-030) and VTN, Technical Study for New Town Development for Rancho San Diego (ref. no. 11-027).

2/ One manhole every 300 feet.
Source: Seelye, Design (ref. no. 09-015) and VTN, Technical Study for New Town Development (ref. no. 11-027).
Number of manholes: A - 180; B - 119; C - 76; D - 45; E - 27; F - 85. Cost per manhole is $500.
Source: Means, Building Construction Cost Data (ref. no. 09-013).

3/ At $.084 per linear foot per year.
Source: EPA, Costs to the Consumer for Collection and Treatment of Wastewater (ref. no. 09-021).

4/ At $4.93 per capita for activated sludge secondary treatment and two stage lime clarification and filtration tertiary processes.
Source: EPA, Costs to the Consumer For Collection and Treatment of Wastewater (ref. no. 09-021).

5/ At $2.91 per capita for customer service and administration.
Source: EPA, Costs to the Consumer For Collection and Treatment of Wastewater (ref. no. 09-021).
Populations: Neighborhoods A, B = 3,520; C, D, F = 3,330; E = 2,825.

SOURCE: The Costs of Sprawl, Real Estate Research Corporation, April, 1974, page 62.

TABLE 142

NEIGHBORHOOD COST ANALYSIS
OPEN SPACE/RECREATION

Capital Costs 1/	Housing Pattern (1,000 Units) A Single-Family Conventional	B Single-Family Clustered	C Townhouse Clustered	D Walk-Up Apartment	E High-Rise Apartment	F Housing Mix (20 Percent Each A - E)
Recreation facilities and site development	$190,000	$190,000	$190,000	$190,000	$190,000	$190,000
Open space site development	30,000	84,000	84,000	62,400	13,200	54,720
Total	$220,000	$274,000	$274,000	$252,400	$203,200	$244,720
Operating and Maintenance Costs						
Total per Year	$ 30,356	$ 41,172	$ 41,172	$ 41,172	$ 30,356	$ 36,845

Notes:

1/ Source: Derived from community cost analysis, adjusted to Real Estate Research Corporation neighborhood prototype land budget.
Recreation and open space facilities assumed to be as follows:

	Housing Type A	B	C	D	E	F
Open space/recreation (acres)						
Playground	10	10	10	10	10	10
Neighborhood park	10	10	10	10	10	10
Open space	25	70	70	53	11	45
Subtotal	45	90	90	73	31	65
Private recreation ("backyards")	165	98	48	35	13	72
Total	210	188	138	108	44	138

Recreation and open space operation and maintenance assumed to be as follows:

	Housing Type A	B	C	D	E	F
Number of employees						
Recreation	2	2	2	2	2	Average costs
Open space	1	2	2	2	1	of Types A - E.

a/ Assumes Type F is average of costs of Types A - E.

b/ Assumes salary is 80% of total expenditure.

SOURCE: The Costs of Sprawl, Real Estate Research Corporation, April, 1974, page 55.

TABLE 143

NEIGHBORHOOD COST ANALYSIS
STORM DRAINAGE

	Housing Pattern (1,000 Units)					
	A	B	C	D	E	F
	Single-Family Conventional	Single-Family Clustered	Townhouse Clustered	Walk-Up Apartment	High-Rise Apartment	Housing Mix (20 Percent Each A - E)
Capital Costs						
Pipeline 1/	$1,227,582	$ 821,574	$ 546,653	$ 355,708	$ 218,886	$ 634,081
Profit, Overhead, Engineering	368,275	246,472	163,996	106,712	65,666	190,224
Total Capital Costs	$1,595,857	$1,068,046	$ 710,649	$ 462,420	$ 284,552	$ 824,305
Operating and Maintenance Costs						
Per Year 2/	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.

Notes:

N.E. = Not estimated.

1/ Includes materials, installation, earthwork, manholes and catch basins. Pipe size assumptions as follows:

	A	B	C	D	E
12"	40%	30%	20%	10%	-
18"	30%	40%	40%	40%	40%
30"	20%	20%	30%	30%	40%
42"	10%	10%	10%	20%	20%

Source: Real Estate Research Corporation.
Costs per linear foot for reinforced concrete pipe: 12" = $17.86; 18" = $20.02; 30" = $28.13; 42" = $39.57.
Source: Means, Building Construction Cost Data (ref. no. 09-013), and Madison-Madison, Adequacy and Cost Analysis of New Community Infrastructure (ref. no. 09-028).

2/ Reliable cost estimates for storm sewer maintenance could not be obtained. It is assumed that routine removal of debris from catch basins would be part of street maintenance costs.

SOURCE: The Costs of Sprawl, Real Estate Research Corporation, April, 1974, page 63.

TABLE 144

NEIGHBORHOOD COST ANALYSIS
WATER SUPPLY

	Housing Pattern (1,000 Units)					
	A	B	C	D	E	F
	Single-Family Conventional	Single-Family Clustered	Townhouse Clustered	Walk-Up Apartment	High-Rise Apartment	Housing Mix (20 Percent Each A - E)
Capital Costs						
Pipeline 1/	$1,791,585	$1,187,754	$ 756,447	$ 526,648	$ 311,817	$ 914,850
Hydrants 2/	50,760	33,840	30,550	25,380	25,380	34,310
Valves 3/	37,260	24,300	15,660	14,290	6,720	21,720
Subtotal	$1,879,605	$1,245,894	$ 802,657	$ 566,308	$ 343,917	$ 970,880
Overhead, Profit, Engineering	563,881	373,768	240,797	169,892	103,175	291,264
Total Capital Costs	$2,443,486	$1,619,662	$1,043,454	$ 736,200	$ 447,092	$1,262,144
Operating and Maintenance Costs						
Per Year 4/	$ 31,821	$ 31,821	$ 30,103	$ 30,103	$ 25,538	$ 30,103

Notes:

1/ Assumed pipe size mix

	A	B	C	D	E
6" @ $16.60 per linear foot	35%	35%	35%	-	-
8" @ $25.51 per linear foot	-	-	-	35%	35%
10" @ $32.65 per linear foot	35%	35%	35%	-	-
12" @ $41.56 per linear foot	-	-	-	35%	35%
15" @ $64.20 per linear foot	20%	20%	20%	20%	20%
24" @ $24.00 per linear foot	10%	10%	10%	10%	10%

Costs include materials, installation, and earthwork. 6" - 15" pipe is cast iron; 24" is asbestos cement.
Costs for F are based on the proportional housing mix and are derived from estimates for A - E.

2/

	A	B	C	D	E	F
Assumed distance between hydrants	500'	500'	350'	250'	150'	350'
Number of hydrants	108	72	65	54	54	73

Hydrant spacing standards based on fire protection requirements. Cost per hydrant = $470.
Source: Means, Building Construction Cost Data (ref. no. 09-013).

3/

	A	B	C	D	E	F
Assumed distance between valves						
Minor and Collector Streets	800'	800'	650'	600'	500'	650'
Arterial Streets	1,320'	1,320'	1,320'	1,320'	1,320'	1,320'
Average valve cost (based on pipe sizes)	$540	$540	$540	$840	$840	$540 - 50% $840 - 50%
Number of valves	69	45	29	17	8	33

Source: Seelye, Design (ref. no. 09-015) and Means, Building Construction Cost Data (ref. no. 09-013).

4/ At $9.04 per capita. Derived from data on water service costs for communities in non-central city counties within SMSAs.
Source: U. S. Bureau of the Census, Local Government Finances in Selected Metropolitan Counties (ref. no. 06-037).

SOURCE: The Costs of Sprawl, Real Estate Research Corporation, April, 1974, page 64.

TABLE 145

NEIGHBORHOOD COST ANALYSIS
TRANSPORTATION - STREETS AND ROADS

	Housing Pattern (1,000 Units)					
	A	B	C	D	E	F
	Single-Family Conventional	Single-Family Clustered	Townhouse Clustered	Walk-Up Apartment	High-Rise Apartment	Housing Mix (20 Percent Each A - E)
Capital Costs 1/2/						
Arterial Streets	$ 579,000	$ 530,750	$ 482,500	$ 361,875	$ 231,600	$ 443,900
Collector Streets	337,680	832,140	651,240	542,110	300,312	612,648
Minor Streets	1,435,380	671,880	482,400	217,080	82,008	522,732
Seeding 3/	16,832	12,306	7,479	4,871	2,617	8,085
Subtotal - Capital Costs	$2,368,892	$2,047,076	$1,623,619	$1,125,936	$ 616,537	$1,587,365
Profit, Overhead, Engineering	710,668	614,123	487,086	337,781	184,961	476,209
Total Capital Costs	$3,079,560	$2,661,199	$2,110,705	$1,463,717	$ 801,498	$2,063,574
Operating and Maintenance Costs Per Year 4/	$ 37,409	$ 27,901	$ 17,769	$ 10,602	$ 5,580	$ 18,704

Notes:

1/ Road length calculations and standards used are presented below:

	A	B	C	D	E	F
Total Road Length	60,000'	44,750'	28,500'	17,005'	8,950'	30,000'
Arterial Streets	6,000'	5,500'	5,000'	3,750'	2,400	4,600'
Percent of Total Length	10%	12%	18%	22%	27%	16%
R.O.W. Width	100'	100'	100'	100'	100'	100'
Collector Street	7,000'	17,250'	13,500'	8,755	4,850'	12,700'
Percent of Total Length	12%	39%	47%	51%	54%	42%
R.O.W. Width	60'	60'	60'	70'	70'	60'
Minor Street	47,000'	22,000'	10,000'	4,500'	1,700'	12,700'
Percent of Total Length	78%	49%	35%	27%	19%	42%
R.O.W. Width	50'	50'	60'	60'	60'	40% 50', 60% 60'

Source: Real Estate Research Corporation. Standards from Community Builder's Handbook (ref. no. 21-088) and Planning Design Criteria (ref. no. 21-034).

2/ Costs per lineal foot include curbs, gutters, sidewalks, lighting, earthwork. Storm sewers are costed separately. Minor roads in neighborhoods A, B and C are surfaced with bituminous materials. All other surfaces are concrete. Pavement widths are for traveled way and parking lanes only.

- Minor street, 50' R.O.W., 20' pavement width, 2 lanes, no parking - $30.54 per linear foot
- Minor or collector street, 60' R.O.W., 32', pavement width, 2 lanes, 1 parking lane - $48.24 per linear foot.
- Collector street, 70' R.O.W., 40' pavement width, 2 lanes, 2 parking lanes - $61.92 per linear foot.
- Major arterial street, 100' R.O.W., 64' pavement width, 4 lanes divided, with 2 parking lanes - $96.50 per linear foot.

Source: Madison-Madison, Adequacy and Cost Analysis of New Community Infrastructure (ref. no. 09-028), and engineering studies for Shenandoah and Nouville new communities (ref. nos. 13-089, 13-090).

3/ Cost of seeding within the right-of-way at $600 per acre:

A - 28 acres
B - 20.51 acres
C - 12.47 acres
D - 8.12 acres
E - 4.36 acres
F - 13.48 acres

Source: Means, Building Construction Cost Data (ref. no. 09-013).

4/ At $3,292 per mile per year. Includes cost of street cleaning.
Sources: Average of estimates found in Howard County: 1985 (ref. no. 21-066), Apartments in St. Louis County (ref. no. 01-105) and Do Single Family Homes Pay Their Way (ref. no. 01-069).

SOURCE: The Costs of Sprawl, Real Estate Research Corporation, April, 1974, page 58.

TABLE 146

NEIGHBORHOOD COST ANALYSIS
SCHOOLS

Capital Costs [1]	Housing Pattern (1,000 Units) A: Single-Family Conventional	B: Single-Family Clustered	C: Townhouse Clustered	D: Walk-Up Apartment	E: High-Rise Apartment	F: Housing Mix (20 Percent Each A - E)
Elementary (1 school)						
Structure	$3,013,650	$3,013,650	$2,550,780	$2,550,780	$ 695,970	$2,550,780
Furnishings	452,048	452,048	382,617	382,617	452,048	382,617
Parking, paving	9,731	9,731	8,251	8,251	2,368	8,251
Landscaping	3,600	3,600	3,475	3,475	2,000	3,475
Subtotal	$3,479,029	$3,479,029	$2,945,123	$2,945,123	$1,152,386	$2,945,123
Recreation	121,000	121,000	110,000	110,000	88,000	110,000
Subtotal	$3,600,029	$3,600,029	$3,055,123	$3,055,123	$1,240,386	$3,055,123
Secondary						
Structure	$1,467,427	$1,467,427	$1,241,047	$1,241,047	$ 389,579	$1,241,047
Furnishings	220,114	220,114	186,157	186,157	50,936	186,157
Parking, paving	11,115	11,115	9,400	9,400	2,572	9,400
Landscaping	2,871	2,871	2,428	2,428	664	2,428
Recreation	52,026	52,026	44,000	44,000	12,039	44,000
Subtotal	$1,753,553	$1,753,553	$1,483,032	$1,483,032	$ 405,781	$1,483,032
Total Capital Costs	$5,353,582	$5,353,582	$4,538,155	$4,538,155	$1,646,167	$4,538,155
Operating and Maintenance Costs						
Total per Year (excluding transportation) [2]	$1,168,258	$1,168,258	$ 988,526	$ 988,526	$ 269,598	$ 988,526

Notes:

1/ Source: Derived from community cost analysis; adjusted to various school populations according to housing type. School populations assumed to be as follows:

	Housing Type A	B	C	D	E	F
Elementary	905	905	765	766	209	766
Secondary	363	363	307	307	84	307
Other	32	32	27	27	7	27
Total	1,300	1,300	1,100	1,100	300	1,100
Pupils per dwelling unit	1.3	1.3	1.1	1.1	0.3	1.1

Source: Derived from 1970 U. S. Census Data, General Social and Economic Characteristics, Tables 96, 99. Urban fringe areas. Also ASFO, Pupil Enrollment by Housing Type (ref. no. 03-010), Planned Unit Development (ref. no. 21-019), Barrington, Illinois Cost-Revenue Analysis of Land Use Alternatives (ref. no. 03-001) and Garden Apartment Development: A Municipal Cost-Revenue Analysis (ref. no. 03-016).

2/ Assumes $898.66 per pupil expenditure; consideration of busing transportation given in community cost analysis. Source: School Management, January 1973 (ref. no. 03-024).

SOURCE: The Costs of Sprawl, Real Estate Research Corporation, April, 1974, page 57.

The costs associated with open space and recreational facilities for 1,000 dwelling units are exhibited on Table 142. These costs are likely to remain fairly constant across all development alternatives: capital costs range from $203,000 to $274,000 with annual operating costs that fall between $30,000 and $41,000.

School costs per 1,000 dwelling units are illustrated on Table 146. The cost of elementary level facilities range from $1.2 million to $3.6 million; secondary level facilities could cost between $1.6 million and $5.4 million. Total operating expenses could range from $270,000 to almost $1.2 million.

These tables show how capital expenditures can vary with the density of development for 1,000 dwelling units. Because household size can vary across these development alternatives, the 1,000 dwelling units can support a varying population which is reflected especially in the capital expenditures for schools. Table 146 assumes that each dwelling unit in the single-family alternatives would result in 1.3 enrollments; townhouses and walk-up apartments would generate 1.1 enrollments, whereas high-rise apartments would add only 0.3 enrollments per dwelling unit.

Generally, few impact area regions will incur the lowest costs shown in Tables 141 through 146 since they are basically associated with high-rise apartments. Many communities can expect to incur the highest or second highest set of costs (single-family conventional or single-family clustered patterns) unless plans are made to incorporate a mix of housing types and densities.

Comment 2 — If the relationship between housing cost and income is closer to 2.25 than 2.5 as shown in the EIS, tax revenues generated by residential property will be less.

(City of Lake Elmo)

Response: As was discussed in the Housing section, Comment 5, the property tax revenue generated by 3M housing will be less using an average value of $37,900 rather than $44,000. Assuming that average value of all units is $37,900 (including rental units), residential property taxes were recomputed as shown on Tables 147 and 148.

TABLE 147

RESIDENTIAL PROPERTY TAX REVENUE
FROM THE 3M-RELATED POPULATION[1]/

(IN THOUSANDS $)

	Impact Area Region	1980	1985	1990	1995
1	Oakdale/Landfall	35	171	403	703
2	Central Washington County	5	21	57	102
3	Stillwater Area	30	156	358	618
4	St. Croix Communities	7	36	71	257
5	South Washington County	51	248	560	963
6	Mahtomedi Area	3	11	32	53
7	North Washington County	6	25	59	102
8	Denmark Township	0	0	1	2
9/10	Maplewood Area	19	79	167	279
11	White Bear Lake	9	34	72	120
12	Northwest Ramsey County	10	40	89	150
13/14	St. Paul	160	563	1023	1618
15	Dakota County Suburbs	19	73	157	264
16	Hastings	9	45	99	167

[1]/Assuming that the average value of all units is $37,900.

Comment 3 Many developing communities presently have few public facilities and services but will be forced to "gear up" very rapidly. Unless these communities can develop methods of retaining low densities and rural services, this implies higher community taxes.

(Washington County Planning Department)

Response: Rather than project future year mill rates for all impact area communities, the Draft EIS uses current tax rates. The Draft EIS did not make projections of special assessments but did show that many communities rely heavily on such sources of revenue whereas others rely more on local property taxes. Many communities will have to prepare for rapid growth through the installation of infrastructure and services, and these will have to be purchased through local property taxes and special assessments. Because residential growth will not necessarily pay for its own needs, other types of development (i.e., commercial and industrial) will have to be encouraged and property taxes will have to be raised in some communities. This of course depends on the level of service provided and the amount of revenue raised through other sources.

Comment 4 The EIS used an estimated value of $10,000 per acre for 1980 in the computation of property tax revenue on the Oakdale/Lake Elmo site. This may be an over-valuation of the land.

(City of Lake Elmo)

Response: Land value was set at $10,000 per acre for 1980, increasing at a rate of six percent per year. Generally, land value plays a relatively small role in comparison to the value of property improvements when tax revenues are computed. However, in a case such as this where property improvements could be delayed on the Lake Elmo portion of the site, an over-valuation of the land may cause an over-estimation of actual taxes in earlier years. If land value were set at $5,000 per acre for 1980 increasing in value at six percent annually, then anticipated tax revenues to Lake Elmo would be reduced by $3,600 (15 percent) in 1980 and $4,800 (one percent) in 1985.

Comment 5 A listing of the services that might be required of local units would help them anticipate possible service demands.

(State Planning Agency)

Response: Table 115 of the Draft EIS (page 468) compares 1972 per capita municipal costs by community size. As the community grows, higher cost is incurred per capita for public safety, sewerage, refuse, libraries and recreation. The communities in the population range 2,500-10,000 show the highest per capita cost (of all communities) for highways, miscellaneous costs, and interest. This comparison of per capita cost among the various community sizes should provide local governments an indication of the types (and costs) of services offered by developing and fully developed communities.

Comment 6 Costs to Lake Elmo were estimated based on a cost/employee ratio of the 3M Center. This raises concerns because a) technological advances may reduce the number of employees needed while costs remain fixed, b) the level of services in Lake Elmo is not the same as in Maplewood before 3M Center was constructed, and c) costs were distributed to Lake Elmo and Oakdale according to projected tax base contributions.

(City of Lake Elmo)

Response: No true estimates of costs to Lake Elmo could be given because of the variables that remain unsettled at this time: roadway improvements, sewer alternatives, fire protection services, water supply, and others. The cost/employee ratio of $18 could be converted to a ratio of cost/square foot of building area (including parking ramps) based on data from the 3M Center and other 3M facilities.

3M facilities located at the 3M Center show an approximate municipal cost of $0.040/sq.ft. while off-site facilities show about $0.055/sq.ft. (assuming a cost/employee ratio of $18 and a space/employee ratio of 447 square feet at the 3M Center and 328 square feet off-site). These ratios yield total costs to Lake Elmo of between $98,300 and $135,200 at full development of 2,458,336 square feet of building area slated for the Lake Elmo portion

of the site. Table 56 of the Draft EIS showed costs to Lake Elmo that total $103,400 by 1995.

If the same assumptions are applied to the Oakdale portion of the site, costs will range from $337,200 to $463,600 at full development; this compares to estimated costs of $222,800 as shown in Table 56. Even though the high cost estimate is more than twice the estimate at $18/employee, Oakdale would still show net revenues of $1.9 million in 1995.

Comment 7 The EIS does not deal with the impact on County facilities and services, such as the cost of social services, libraries, parks and roads.

(Washington County Planning Department)

Response: The Washington County Planning Department prepared a report that reviews the Draft EIS. The report outlines some of the impacts on County facilities that can be expected to occur as a result of the 3M project.

Few primary impacts can be expected to affect County facilities other than roads. The traffic impacts on these roads are discussed in the Roadway System impacts section (pages 175-210 of the Draft EIS).

Secondary impacts will occur throughout Washington County and the anticipated population influx will greatly affect the demand for County facilities and services. The County projects that its library system will incur costs of up to one million dollars by 1995 for new facilities construction and over $200,000 per year in operating costs. The cost of additional County parkland was estimated at between $1.5 and $3 million, while the cost of general government would increase by $8-10 million per year.

By 1995, the 3M site in Oakdale and Lake Elmo will generate over one million dollars per year in property taxes payable to Washington County. Residential and commercial-industrial property that is secondarily related to the project will also pay property taxes to the County to help pay for new facilities and services.

Comment 8 — Net revenues show a decrease from 98 percent of total revenues in 1980 and 82 percent in 1995 for Lake Elmo. Oakdale's ratio is relatively constant at 91 percent. The longer term implications of this trend should be closely scrutinized.

(City of Lake Elmo)

Response: After 1995, costs to Lake Elmo will remain relatively stable while revenues can be expected to continue to rise. This means that after 1995 the ratio of net revenues to total revenues will increase from its projected 1995 level of .82 for Lake Elmo and .91 for Oakdale.

Comment 9 — State aid to school districts is based on a state-set school aid figure minus the ability of the district to pay schooling costs. As the wealth of a district increases, school aids generally decrease. Were these factors considered? Were pupil units used?

(State Planning Agency)

Response: A flat per student ratio of $925 was applied to 3M-related enrollments, regardless of the ability of any school district to pay for educational costs. This was done because of the number of variables involved in the computation of aid, and because of the various types of aid available at the present time.

In addition, aids were not distributed based on the expected number of pupil units in each district. Using the established ratios of 1.0 pupil units for enrollments in grades 1-6, and 1.4 pupil units for enrollments in grades 7-12, 100 students will generate about 120 pupil units for foundation aids (assuming that 51 percent are in elementary grades, 27 percent are in junior high, and 22 percent are in senior high). For a high cost district, each 1976-1977 pupil unit generates the maximum foundation aid of $960 less .029 EARC Valuation (an adjusted assessed valuation). Because it would be difficult to project future equalized EARC values, it is impossible to project accurate foundation aids. Even if foundation aids were projected, no consideration would be given to other forms of aid: transportation aid, aid to the handicapped, secondary vocational aid, summer school foundation aid, miscellaneous categorical aids and property tax relief aids.

TABLE 148

ESTIMATED SCHOOL DISTRICT PROPERTY TAX REVENUE
FROM 3M-RELATED RESIDENTIAL DEVELOPMENT[1/]

(IN THOUSANDS $)

	School District	1980	1985	1990	1995
6	South St. Paul	14	57	122	206
197	West St. Paul	24	96	206	346
199	Inver Grove Heights	26	105	226	381
200	Hastings	13	63	145	246
621	Moundsview	49	199	436	735
622	Maplewood	172	775	1803	3131
623	Roseville	44	181	390	658
624	White Bear Lake	122	471	1004	1682
831	Forest Lake	21	96	229	393
832	Mahtomedi	30	133	289	495
833	South Washington Co.	116	561	1266	2179
834	Stillwater	203	1008	2283	3954

[1/] Assuming that the average value of all units is $37,900.

GOVERNMENTAL POLICIES

Comment 1 — The statement "... not in compliance with metropolitan policy" on Page 489 of the Draft E.I.S. should be clarified.

(Metropolitan Council)

Response: 3M induced population is likely to cause current population forecasts for the area immediately west of Stillwater to be exceeded. Thus, the need to expand the urban sewer service area to serve this area may occur earlier than originally anticipated.

Comment 2 — Is the related and induced development of the 3M facility compatible with the goals established by the comprehensive plans and zoning ordinances of the local governmental units affected?

(State Planning Agency)

Response: In the preparation of the draft E.I.S. the approach taken on matters such as this was that the communities should be fully alerted as to the potential impacts they could experience from 3M induced growth. It was felt that once alerted, each local unit would be in the best position to assess whether the induced development it would experience is in accordance with its goals.

Comment 3 — Although some significant Metropolitan Council Development Framework policy issues were discussed, discussion should be expanded to include other equally relevant policy issues in regard to primary impacts. To facilitate addressing these policies, it is recommended that they be grouped and discussed by the following specific areas:

1. Establishment of an Urban/Rural Service Area
2. Orderly Provision of Urban Services
3. Regional Economy
4. Location of Employment Centers

(Metropolitan Council)

Response: The following listing of Development Framework policies appeared to be most relevant to the discussion of primary impacts and governmental policies. Each policy listed is prefaced by its Development Framework policy

number, and followed by a discussion of the policy issues related to the 3M project. The policies have been grouped as suggested by the comment.

It should be noted that some of these discussions appeared in the Draft E.I.S. They have been repeated here to provide a convenient reference for the reader.

Establishment of an Urban/Rural Service Area

POLICY NO. 1. "The Metropolitan Area should consist of an Urban Service Area and a Rural Service Area. Metropolitan systems and urban services will be provided only within the Urban Service Area. Rural service standards will be met in the Rural Service Area, and persons choosing a rural lifestyle should not expect to receive urban services."

Because the Urban Service Area will be expanded to include the site in the 1980's, the proposed use of the site will not directly necessitate the extension of any urban services into the Rural Service Area. If the development is implemented, sewer service extensions will be needed at the 3M site by 1981, according to latest 3M site occupancy scheduling. Future detailed sewer planning by the Metropolitan Council, Oakdale, and Lake Elmo will determine if sewer will be available to the site by 1981.

Orderly Provision of Urban Services

POLICY NO. 2. "Reinvestment required for replacement and maintenance of metropolitan systems serving existing development should have priority over investment for expansion except where analysis shows a shortage of land with urban services could seriously affect housing costs."

The 3M project does not require that metropolitan systems serving existing development be either replaced or upgraded. Therefore, according to this policy, any investment in metropolitan systems (i.e., sewers) to serve the 3M project could potentially be considered "second" priority.

POLICY NO. 10. "The Metropolitan Council shall use its authority to promote a pattern of urbanization within the Urban Service Area that allows the efficient, orderly, and economic expansion of metropolitan systems for future growth and avoids premature and scattered urbanization of rural areas. Further development in urbanized communities and in cluster communities that are contiguous to the currently built-up area shall be encouraged."

Although the site will be in the Urban Service Area extension in the 1980's, it is not at present contiguous to any highly developed areas. Because the site is within the Area of Planned Urbanization, its location will not directly cause any premature urbanization of rural areas; the properties on all sides of the proposed development are included either in the Area of Planned Urbanization or the Urban Service Area. By developing the southwest corner of the site first, (as opposed to the southeast corner as indicated in the Long Range Development Plan, 3M Company, June, 1975) the eastern areas of the site could be maintained in their "rural" state a few years longer. This action would necessitate relocation of the Central Utility Plant, or the extension of utility lines for one mile to reach the first building increment; traffic impacts could occur sooner than anticipated; and early tax base benefits to Lake Elmo would be lost. (Pages 291-292 Draft E.I.S.)

POLICY NO. 12. "Community development should be responsive to the social, economic, and environmental needs of the Metropolitan Area. For this reason counties and municipalities should prepare and implement plans consistent with the following guidelines:

...b. Local services, such as schools, police and fire protection, public streets, water and drainage facilities, and parks and recreation should be planned to be adequate for the population and employment densities anticipated. Areas of the community where local services are available should be developed first.

> New land should be opened for urbanization in a staged contiguous manner through a coordinated program of public service extensions. Existing facilities, including schools, should be used to full capacity. Cooperative arrangements between service districts should be made if necessary. Where practical, investment in all services, including schools, shall be consistent with local and metropolitan development plans."

While this policy pertains in large part to anticipated secondary impacts, it does have some implications regarding the 3M project's primary impacts. The policy states that "local services...should be planned to be adequate for the...employment densities anticipated." The Draft EIS showed that the portion of the site which is located in Lake Elmo could accommodate more employees than anticipated by 1985 and 1990. Therefore, this community will have to take this into consideration in planning its public services. Oakdale can continue its planning program along the guidelines established in Development Framework forecasts.

The policy also states that "where practical, investment..shall be consistent with local and metropolitan development plans." The 3M project necessitates an amendment in the Oakdale comprehensive guide plan, and therefore will cause some changes to be made in the City's investments. For example, under the original land use plan, that portion of the 3M site located in Oakdale was designated for residential use; residential development would mean that the City would have to invest in sewers, roads, recreational facilities and public safety equipment. Changing the designated use to allow the 3M project means an altogether different type of investment: no cost for on-site recreational facilities, no roadway improvements or sewer installation on the site, but instead the possibility of increased public safety costs, and increased public facility investments off-site (e.g. possible additional wells, roadway improvements).

POLICY NO. 12. "Community development should be responsive to the social, economic, and environmental needs of the Metropolitan Area. For this reason counties and municipalities should prepare and implement plans consistent with the following guidelines.

...f. Density of development should be planned by local authorities to be consistent with the capacity of Metropolitan sewer and transportation service; federal, state, and metropolitan environmental standards; and the continuation of agricultural activities on land not immediately programmed for urban expansion.

No Metropolitan sewer presently serves the 3M Oakdale/Lake Elmo site. The Metropolitan transportation system capacity could possibly be exceeded in about 1990 if the 3M project develops as anticipated in the Roadway System impacts section. This would of course depend on the mitigative actions taken by 3M or governmental agencies prior to that time.

Regional Economy

POLICY NO. 6. "The region should maintain its diversified economy by retaining its growing industries and attracting new industries that are suited to the Area's work force and environment. The agricultural economy should be encouraged in the Metropolitan Area and opportunities expanded for young farmers."

The 3M project can be considered one of the Metropolitan area's growing industries. By allowing the 3M Company to expand is research and development operations, the Twin Cities would benefit economically: from an increased number of job opportunities that could aid the Twin Cities in retaining its highly educated graduates, and from the tax revenue generated by additional facilities.

Location of Employment Centers

POLICY NO. 3. "Regional shopping, employment, cultural, entertainment, governmental, and high density residential facilities should be clustered in centers convenient to the metropolitan transportation system."

The proposed employment center would be located adjacent to the interchange of I-694 and T.H. 212. Its proximity to the regional transportation network was a site selection criterion. The function of the site, as well as its location, would make it appropriate for transit service in the future. (pages 289-290 Draft EIS)

It would be rather difficult to cluster any large amounts of shopping or residential facilities with this proposed employment center because the regional transportation network would potentially be overloaded.

POLICY NO. 4. "A choice of living and working opportunities in the Metropolitan Area should be available to everyone. Opportunities should be increased for low-and-moderate-income persons to live in the suburbs, and middle-and-upper-income housing should be developed in the central cities."

The 3M Company through its expansion is creating diversity in the type and number of working opportunities available in Washington County. Because of the nature of the project, a large proportion of the employees will most likely be highly skilled professional persons, limiting the number of low-income jobs provided. However, the communites of Oakdale and Lake Elmo--as well as other suburban areas--still have an obligation to provide low- and moderate-income housing for those employees. Because some low and moderate income jobs will be available at the Oakdale/Lake Elmo site, this will provide an opportunity for these communities to increase the choice of housing opportunities available in suburban areas.

POLICY NO. 5. "Land uses should be primarily determined by natural characteristics of the land and the availability of urban services. Urban development should not impair the functioning of vital natural systems."

Many aspects of environmental planning were incorporated into the 3M Company's concept plan for the Oakdale/ Lake Elmo site. Significant site features such as woodlands, water recharge areas and slopes were determining factors in the development plan. The hydrologic system, as regulated by the Valley Branch Watershed District, will not be impaired. The physical features of the site are such that a variety of land uses, other than the proposed use, could be accommodated. (Page 291 Draft E.I.S.)

POLICY NO. 11. "The development pattern should promote less reliance upon automobile transportation. The development of multi-purpose diversified centers to serve subregional shopping and service needs should be facilitated to reduce travel. A more balanced distribution of employment concentrations in relation to population should be encouraged to reduce the length of work trips and increase the use of transit."

The proposed development is contingent on the ability of the 3M Company to successfully establish high vehicle-occupancy rates and transit programs at the Oakdale/Lake Elmo site. The 3M Company will continue to promote car-pooling, van-pooling and subsidized transit service. (Page 292 Draft E.I.S.)

Comment 4 <u>The Environmental Impact Statement should briefly discuss the implications of the Metropolitan Planning Act, particularly any schedules established by the Metropolitan Council for its implementation</u>.

(State Planning Agency)

Response: The Metropolitan Land Planning Act requires that cities, towns, and counties prepare comprehensive plans whose functional elements are integrated with Metropolitan system plans. Local plans must include a land use plan, public facilities plan and a program for implementation. The law requires that the comprehensive plans be completed within three years after the Metropolitan Council prepares its Metropolitan System Statement (due July 1, 1977).

Comment 5 The EIS should point out the financial assistance available to local units from the Metropolitan Council through the Land Use Planning Grants Act.

(State Planning Agency)

Response: The Land Use Planning Assistance Act makes grant money available for planning programs undertaken by local government units. The total appropriation of $2.5 million will be dispersed so that $1.1 million will be available to local units of government in the Twin Cities Metropolitan Area. Grants will be made available for up to 75 percent of the total cost of the planning program. The grant program makes funds available until June 30, 1977, through the State Planning Agency.

Comment 6 Adoption/revision and implementation of necessary controls will take both time and money. Will there be enough time for this to occur before the growth begins? Which areas might experience time problems?

(State Planning Agency)

Response: Because the 3M site will not be occupied for several years, and because the growth of employment occurs at a relatively slow rate for the first ten or so years, there should be adequate time to adopt/revise development controls in impact area communities. However, even though the EIS alerts communities of anticipated development, it cannot ensure that communities will take adequate measures to prepare for growth. The communities most likely to experience time problems would be those lacking essential development controls: a comprehensive plan, zoning ordinance, sewer plan, capital improvements program, and natural resource control ordinances.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Comment 1 The estimate of land consumption by 3M-related growth on page 493 (15,000 acres) conflicts with the estimates in the land consumption summaries for each region on pages 337-350 (24,400 acres).

(State Planning Agency)

Response: The estimated 3M-related land consumption for Twin Cities Metropolitan Impact Regions 1-16 is 16,100 acres, with an additional 8,100 acres in Region 17 in Wisconsin. The 15,000 acre reference was a rounded impact total for the eastern metropolitan area within Minnesota.

Comment 2 Although land will be the major resource irreversibly impacted, other resources will also be impacted, particularly water (quality and quantity).

(State Planning Agency)

Response: Considering the magnitude of secondary growth related to the 3M project, water resources will also be committed to urban use. Most affected will be water quality, as urban development will generate runoff which will degrade the quality of surrounding water bodies. The extent of this water quality degradation will be dependent on future water management techniques developed by governmental agencies.

To a lesser degree, small wetland areas may be filled for urbanization. These would be small wetland areas, not controlled by State regulation or local ordinance.

SHORT TERM USES OF THE ENVIRONMENT VERSUS THE MAINTENANCE OF LONG TERM PRODUCTIVITY

Comment 1 Would the cumulative impact of the 3M project, plus stimulated housing and service construction, preclude future use of valuable public waters and agricultural lands, beyond the immediate site, with net adverse effects on long-term productivity of the region?

(Department of Natural Resources)

Response: The entire secondary impact portion of the Draft EIS considers these effects in reasonable detail. It is not possible for the Responsible Agency to conclude if the 3M project would result in a net positive or negative effect on the long-term productivity of the region.

ALTERNATIVES TO THE PROPOSED ACTION

Comment 1 Alternatives to the proposed 3M project were insufficiently discussed in the Draft EIS.

(Minnesota-Wisconsin Boundary Area Commission, Department of Natural Resources, State Planning Agency, Pollution Control Agency, Marine on St. Croix, Energy Agency, Tri-Lakes Association)

Response: Throughout the Draft EIS, the following types of project alternatives were discussed: 1) no project, 2) alternative uses of the site, and 3) project design and configuration. The "no project" alternative was especially addressed in the secondary impact sections, where levels of metropolitan growth were quantified with and without the 3M project. Alternative uses of the site were discussed on pages 100-104 of the Draft EIS, in the Land Use section. Project design and configuration alternatives were discussed in the sections dealing with energy, water supply, sanitary sewer, solid waste, roadway systems, and recreation. In addition to these discussions of alternatives, project schedule changes and site construction and operation techniques were discussed as mitigation measures. The Responsible Agency believes that these types of alternatives and mitigation measures were adequately discussed.

Considering the requested analysis of project site alternatives, the Responsible Agency does not consider project sites to be among "prudent and feasible" alternatives to the proposed project. The Final EIS will not address the impacts which may occur at alternative sites, for the following reasons:

1) The project developer has not proposed feasible alternative sites, nor does it have the statutory ability to acquire alternative sites at fair value. This is in contrast to a public site selection process, where units of government or special industries have the power of condemnation to assemble parcels of land subject to public scrutiny. The Oakdale/Lake Elmo site is the only site proposed by the 3M company, and is the only site analyzed in the Draft EIS.

2) The Responsible Agency, the City of Oakdale, does not have the ability to designate or acquire alternative sites beyond its jurisdictional boundaries.

3) The 3M site selection criteria and process are documented on page 10 and again on pages 499-500 of the Draft EIS. This site selection process began twelve years ago, in 1964, and culminated seven years ago, in 1969, with final Oakdale/ Lake Elmo site acquisition. The site selection criteria formulated by the 3M Company in 1964, nine years prior to enactment of the Minnesota Environmental Policy Act, were:

   A. PROXIMITY TO 3M CENTER - In this regard it must be remembered that the new site is to serve as an expansion for the 3M Center. No vacant land contiguous to 3M Center was available at the time the new site was being sought. The closest possible site was needed to facilitate the movement of equipment and personnel between the two sites. Person to person contact for the exchange of ideas between the entire 3M Research community is also considered to be very important by 3M. This would be facilitated by having the two sites located as close together as possible.

   B. EMPLOYEE RESIDENTIAL DISTRIBUTION PATTERNS - By the time the site selection process had been initiated, 3M Center employees had indicated a preference for residing in the eastern and northern suburbs of St. Paul. These residential distribution patterns were taken into account by 3M in order that employees could achieve maximum professional growth and could maximize career opportunities through transfers between sites without having to commute long distances in order to remain at their existing residence. As a result of this decision, the site search area was limited to those areas located within a twelve mile radius of the 3M Center.

   C. HIGHWAY ACCESSIBILITY - The new site had to be accessible from a high capacity highway or freeway and be readily accessible from other portions of the metropolitan area because of the large number of employees that would be

commuting to the site. For these reasons, it was considered necessary that the new site be situated in close proximity to an interchange of the developing interstate highway system.

D. AVAILABILITY OF LAND - A single piece of land was needed that would be large enough to accommodate the proposed development. It was estimated that a minimum site of 250 acres was required to accommodate a single, integrated research facility. This large tract of land was required because the 3M Company preferred horizontal lab structures to vertical, high-rise buildings. The reasons for the horizontal structure preference are:

- There is more flexibility to enlarge or to reduce sizes of labs in horizontal buildings.
- Safety features for evacuation in case of an accident are better provided for in horizontal buildings.
- People movement is less expensive in horizontal buildings.
- Energy requirements are less for horizontal structures than for vertical structures.
- Potential for underground facilities and their attendant energy savings are real in the future and can be utilized to a far greater extent in horizontal structures.
- Duct work for chemical labs becomes more expensive and difficult in vertical buildings.
- Vibration free spaces are more easily accomplished in low, horizontal buildings.
- Access to a building for utilities, services, materials, and personnel in easier in a horizontal building.

E. COST OF LAND - The site had to be available at a reasonable cost.

F. LACK OF PHYSICAL CONSTRAINTS - The site had to have innate physical attributes that would accommodate the proposed use in an exonomic manner and would be devoid of physical characteristics that would impose severe constraints on construction.

G. AVAILABILITY OF SEWER AND WATER - The site must be located where future municipal sewer and water systems would be available for serving the site.

After extablishment of these criteria in 1964, twenty-five sites were initially selected for further study by the 3M Company. Fifteen of these sites were eliminated when investigation indicated that they would not meet all of the above criteria. The remaining ten sites were then studied, and in May 1965 the 3M Company Board of Directors authorized acquisition of acreage at the 3M Oakdale/Lake Elmo site.

Comment 2 The Draft EIS discusses "no project" alternative impacts only for the 3M Company, and ignores impacts on the larger environment.

(Tri-Lakes Association)

Response: The Draft EIS considers the impact of the "no project" alternative throughout the document by discussing the probable impacts occurring with and without the 3M project. This is evident in sections on land use, population, employment, sanitary sewer, roadway system, education, economic growth, and tax revenues. Some of these issues are summarized on page 498.

Comment 3 The Draft EIS concludes that the environmental impact of the 3M project would be similar to residential use of the site without thorough study.

(Tri-Lakes Association)

It is summarized on page 498 that the residential requirement for urban services at the site would be similar to the 3M Research/office Park requirements.

It is also stated that "the secondary impacts of residential development would be smaller in scale and more localized than those associated with the 3M project".

Other sections of the document explore the impact of residential development of the site on traffic (page 102), surface runoff (page 60), sanitary sewer (page 150), and water supply (page 127).