BEFORE THE COUNCIL OF THE
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF ESTABLISHING A TASK FORCE TO EVALUATE THE FINDINGS OF THE DIESEL EXHAUST STUDY	)))))	RESOLUTION NO. 83-380 Introduced by the Regional Development Committee

WHEREAS, The Metropolitan Service District and the Oregon Department of Environmental Quality are jointly conducting a study to determine the air quality impacts from the increased use of diesel automobiles in the Portland metropolitan area; and

WHEREAS, An independent evaluation of the study's findings is appropriate for an issue of such importance to the citizens of the metropolitan area; now, therefore,

BE IT RESOLVED,

1. The the Metro Council establishes a Task Force to independently evaluate the findings of the Metro/DEQ Diesel Exhaust Study.

2. That said Task Force shall recommend to the Metro Council and the Director of the Department of Environmental Quality any appropriate measures to mitigate identified potential adverse impacts to the environment.

3. That the composition of and appointments to the Task Force shall be as described by the Regional Development Committee.

ADOPTED by the Council of the Metropolitan Service District this 27th day of January, 1983.

Cindy Banzer
Presiding Officer

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Diesel Study Work Plan

1. Locate and Review Literature Regarding Diesel Automobiles.

   Review existing literature regarding diesel vehicles and their potential impacts. This is necessary to gain a better understanding of the problem, to be aware of findings made in other regions, and to ensure that this study does not duplicate previous efforts.

2. Estimate Size of Existing Diesel Fleet.

   Estimate current number of diesel automobiles in the Portland metropolitan area. Will be accomplished by discussions with the Oregon Department of Motor Vehicles, the Oregon Automotive Dealers Association, and selected automotive dealers.

3. Project Size of Diesel Fleet in 1987 and the Year 2000.

   Metro will accomplish this task by looking at past trends and at forecasts of national manufacturers and local automobile dealers. Attempts will be made to forecast a Portland-specific diesel fleet population. Recognizing the uncertainty in making such forecasts, Metro will assume varying scenarios and forecast a probable minimum and maximum diesel population.

4. Estimate VMT from Diesel Vehicles.

   VMT estimates for light and heavy duty diesel vehicles will be estimated by running Metro's travel forecasting models for the base year and horizon years. VMT for light duty diesel vehicles will be estimated by applying a percentage (representing the percent that diesels are of the entire fleet) against total light duty vehicle VMT. A factor will be applied to account for the fact that newer vehicles are driven more than older vehicles. VMT estimates from diesel buses will also be made, using information provided by Tri-Met.

5. Determine Composite Light Duty Diesel Exhaust Emission Factors for Portland Diesel Fleet (1980, 1987 and 2000).

   Light duty diesel particulate emissions vary according to vehicle type (e.g., GM diesels pollute more than Volkswagen diesels). Diesel sales data will thus be examined to determine the 1980 composite particulate emission factor. Looking at sales trends and projections, we would then assume a mix of diesel vehicles into the future and estimate the Portland-specific light duty diesel particulate emission factors for 1987 and the year 2000. If possible, Mobile 2 will be used to calculate these factors. Metro will use EPA's particulate emission factors for heavy duty vehicles and buses.

Using a methodology similar to that described above, emission factors for fine particulate, elemental carbon, and sulfur oxides will also be calculated.

6. Estimate Emissions from Diesel Vehicles.

Metro will use the emission factors derived in Task 5 to estimate total emissions, by pollutant, for the Portland-Vancouver AQMA for the years 1980, 1987 and 2000. The Metro emissions forecasting model, MYPOLLUT, will be used for this analysis. Metro's travel network will be applied to a 2 kilometer square grid so that emission concentrations may be forecast for specific locations throughout the region.

7. Estimate Particulate Concentrations.

DEQ will use their GRID cell model to determine TSP and fine particulate concentrations resulting from diesel vehicles, as well as background concentrations. The fine particulate and TSP concentrations will be reported by 2 kilometer square grid. (This procedure will allow the diesel's contribution to ambient air quality to be independently analyzed.) Forecasts will be made for both average and worst day concentrations at specific locations (e.g., TSP non-attainment areas) and for each grid cell within the Portland AQMA.

8. Impact Analyses.

Following the estimates of particulate emissions and concentrations, a variety of issues will be examined. These are:

a. Visibility

Using concentration estimates from the GRID model, an algorithm will be developed to estimate visibility impacts. Regional visibility models are not widely available. Thus, DEQ's existing GRID model will need to be adapted to make these predictions.

Estimates from private consultants to do this work are in the range of $10,000 to $20,000. Instead, DEQ proposed to do this work in-house. Included in this work will be a literature search, telephone communications, and personal consultations with authorities in the field. The selected algorithms will then be coded into a visibility model by DEQ.

The proposed priorities for visibility modeling are:

(1) Predicting elemental carbon concentrations from GRID and calculating visibility impacts due to light absorption alone.

(2) Adding light scattering impacts from predicted carbon concentrations.

(3) Predicting visibility impacts from all motor vehicle fine particulate.

(4) If time allows, visibility impacts from sulfate formation will also be analyzed. This will require a chemical conversion algorithm for the conversion of SO_2 to sulfate to be added to the GRID model.

b. Particulate Standard Violations

Concentration projections will be compared to state and federal standards to determine areas which may exceed standards.

c. Odor

It will not be possible to quantitatively estimate the increased odor impacts resulting from the increased use of diesels. However, a literature search will be performed and a qualitative assessment will be made.

d. Health Effects

A literature search of existing health effects data will be performed. The results of the emissions and concentrations forecasts will then be analyzed to determine if projected emissions would pose any health problems. If the results of this analysis are not conclusive, the DEQ health effects advisory committee will be asked to review the data and make their own findings.

9. Task Force.

In conjunction with this study, Metro and DEQ will form a task force composed of business, community, environmental, and government leaders to recommend solutions or mitigation measures to identified problem areas. The task force will meet shortly after the study commences. At the initial meeting, Metro and DEQ will discuss the objectives of the study and outline the role the task force will have. Consensus regarding the assumptions used in the study will also be sought. The task force will then meet periodically as findings are made. If adverse impacts are identified, discussion of the task force would focus on their severity and potential mitigation measures. At the conclusion of the study, the task force will make specific recommendations to Metro and DEQ.

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DIESEL STUDY BUDGET

Tasks	Task Budget
1. Literature search	$ 3,000
2. Estimate size and composition of existing diesel fleet	1,500
3. Project size and composition of diesel fleet in 1987 and year 2000	2,000
4. Estimate VMT from diesel vehicles - 1980, 1987 and year 2000	4,500
5. Determine composite emission factors - 1980, 1987 and year 2000	2,500
6. Estimate emissions - 1980, 1987 and year 2000	5,000
7. Estimate emissions concentrations (DEQ - $3,000)	1,000
8. Impact Analyses	
A. Visibility (DEQ - $4,500)	3,000
B. Particulate standard violations	0
C. Odor	1,279
D. Health effects	2,500
9. Support task force activities; act on recommendations	5,000
	$31,279

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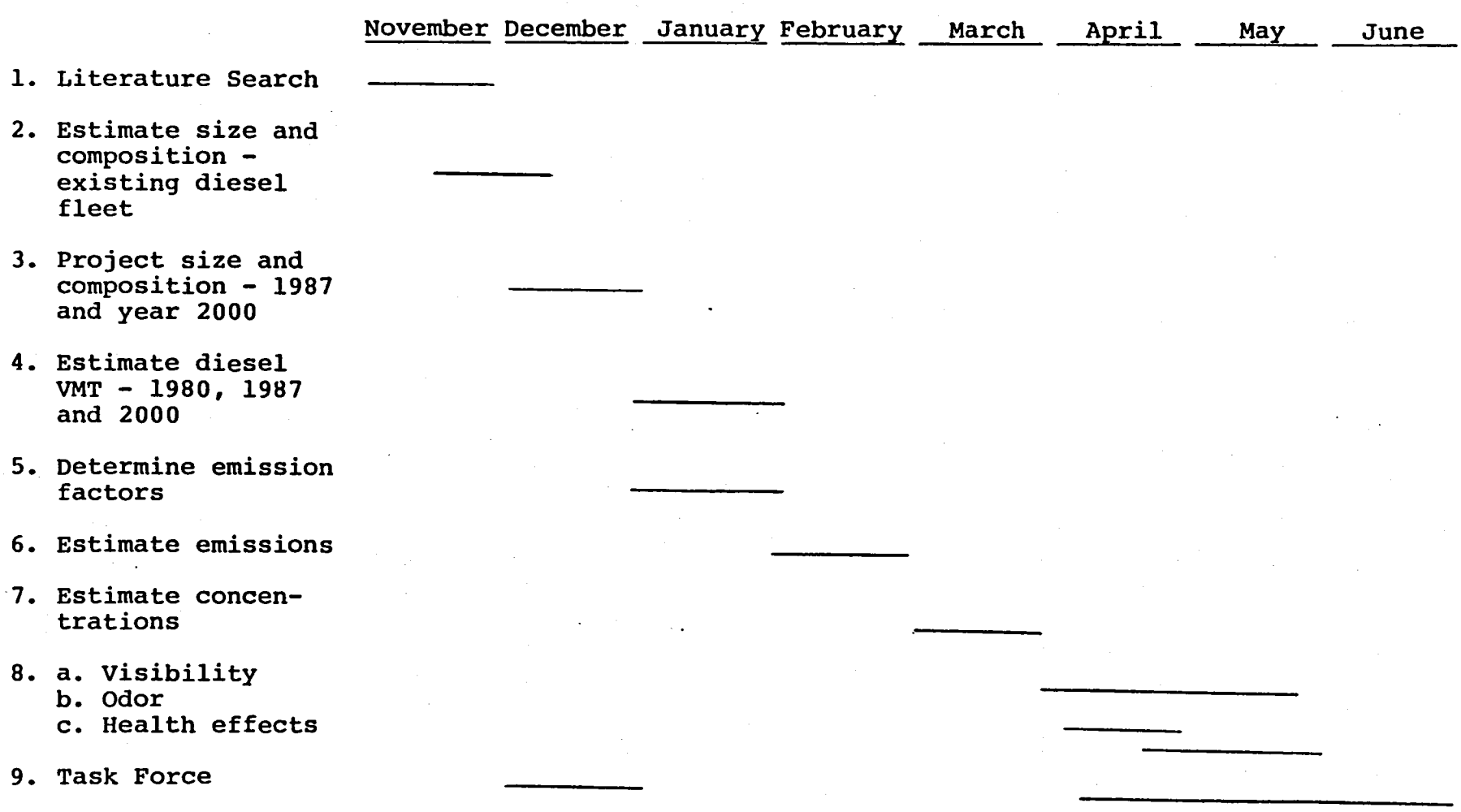
DIESEL STUDY SCHEDULE



STAFF REPORT

Agenda Item No. 8.1

Meeting Date January 27, 1983

CONSIDERATION OF RESOLUTION NO. 83-380 FOR THE PURPOSE OF ESTABLISHING A TASK FORCE TO EVALUATE THE FINDINGS OF THE DIESEL EXHAUST STUDY

Date: December 29, 1982 Presented by: Richard Brandman

FACTUAL BACKGROUND AND ANALYSIS

The use of diesel automobiles has grown substantially in the past few years and is projected to increase through the 1980's. Many of these automobiles are followed by clouds of dense black particulate exhaust. On the average, automobiles with diesel engines emit from 40 to 60 times as many particulates as automobiles with gasoline engines.

Recognizing these facts, Metro and DEQ are conducting a study to evaluate the impacts of the increased use of diesel automobiles in the Portland metropolitan area. (The Unified Work Program was amended in October 1982 by the Metro Council to include the Diesel Exhaust Study.) Major study areas to be analyzed are ambient air quality concentrations, visibility, odor, and health effects.

Staff is proposing that an independent Task Force be formed to review the findings of the study and to make appropriate recommendations for mitigating potential problems to the Metro Council and the Environmental Quality Commission.

Proposed members of the Task Force are:

- The Chairman of the Air Quality Advisory Committee
- The Portland City Club
- The Portland Chamber of Commerce
- The Oregon Environmental Council
- The Oregon Automotive Dealers Association
- The Western Oil and Gas Association
- A representative of the Medical Community
- Two citizens to be appointed by Metro
- Two citizens to be appointed by DEQ

Organizations sitting on the Task Force would appoint a member of their choice to represent them. Two citizen members would be appointed by DEQ. The representative from the medical community and the two remaining citizen members would be jointly appointed by the Presiding Officer of the Metro Council and the Executive Officer.

The charge of the Task Force is 1) to review and evaluate the staff findings of the various environmental impacts associated with the increased use of diesel automobiles in the Portland metropolitan area; and 2) to make a recommendation to the Metro Council and the Director of the Department of Environmental Quality regarding control strategies or mitigation measures which are deemed appropriate to alleviate any impact. (Dependent on the study's findings, the Task Force could recommend anything from doing nothing to proposing legislation to regulate diesel exhaust.)

The analysis of the environmental impacts is scheduled to be completed by July 1983. The evaluation by the Task Force is scheduled for completion by September 1983.

The budget for the Diesel Exhaust Study includes funds to staff the Task Force. No budget adjustments are required.

EXECUTIVE OFFICER'S RECOMMENDATION

Adopt the Resolution establishing a Task Force to evaluate the impacts from the Diesel Exhaust Study.

COMMITTEE CONSIDERATION AND RECOMMENDATION

On January 10, 1983, the Regional Development Committee recommended Council adoption of Resolution No. 83-380 with the amendment that a member of the Diesel Car Club of Oregon be added to the Task Force.

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