# DRAFT
# Air Quality Analysis Protocol - ADDENDUM

## Detroit Intermodal Freight Terminal
## Environmental Impact Statement

October 17, 2006

# Background

This Addendum to the Detroit Intermodal Freight Terminal (DIFT) project Air Quality Protocol has been prepared to address comments received on the Draft Environmental Impact Statement (DEIS) and new requirements related to particulate matter - $PM_{2.5}$ and $PM_{10}$. Section A below updates the Protocol relative to comments on the DEIS and interagency consultation since the DEIS publication. Then in Section B new requirements related to $PM_{2.5}$ and $PM_{10}$ are discussed.

# A. Updates to the AQ Protocol - General

This section notes changes reflecting comments on the DEIS, changes due to passage of time (updating some information), and changes due to the fact that a Preferred DIFT Alternative has been identified. That alternative has been determined following the Public Hearing, the comment period, a review of comments, and discussions between MDOT and the railroads, on the one hand, and on the other, "host" community representatives of the Southwest Detroit community affected by the project.

Changes for the FEIS will be consistent with: EPA's letter of August 16, 2005, commenting on the DEIS; a meeting held with EPA in Lansing on December 2, 2005; a follow-up teleconference with EPA on January 12, 2006; and an EPA letter of March 6, 2006.

Regarding alternatives, future work will cover the Preferred Alternative and No Action conditions for 2015 and 2025. Year 2015 was used in the DEIS as the first year of operations of the project. While construction funding of the Preferred Alternative is projected to extend further, the basic physical plant is expected to be in place by 2015, and that year will continue to be used to demonstrate the air quality characteristics at and around the Livernois-Junction Yard. The horizon year is 2025. Since the project began, the Southeast Michigan Council of Governments (SEMCOG) has updated the horizon year of their Regional Transportation Plan (RTP) to 2030. Changing the horizon year for the DIFT project would involve significant work with no change in the decision-making process or outcome. Therefore, 2025 will continue to be used as the horizon year, except for purposes of conformity (see Section B).

The Preferred Alternative is a modification of the Alternative 4 that was described in the DEIS. One change is that the CP/Expressway operation has been terminated, so it will not be included in the Livernois-Junction Yard pollutant totals (and it will not be included in any <u>future</u> No Action condition). Secondly, Canadian National Railroad (CN) will not be participating in any project-related <u>terminal</u> changes. This means there will be no shift of CN intermodal activity to the Livernois-Junction Yard or expansion into the Michigan State Fairgrounds. CN's Moterm facility will be included in the air quality analysis of the Preferred Alternative (reflecting only the growth at a non-expanded facility) to continue the "apples-to-apples" comparison with the No Action condition.

The air quality analysis will not revisit DEIS Alternatives 2, 3, or 4 — they are not the Preferred Alternative. Revising/updating the air quality analysis for those earlier alternatives will not affect the identification or composition of the Preferred Alternative. On the other hand, there will be for the Preferred Alternative new terminal pollutant burden estimates for 2015 and 2025, as well as

new roadway pollutant burden estimates for those years. (Again, 2030 data will be prepared as needed for the conformity analysis only.)

Changes related to $PM_{2.5}$ and $PM_{10}$ hotspot analysis are noted in Section B; however, general conformity has also been considered in the development of this protocol. The area is in non-attainment for $PM_{2.5}$ and a sub-region of SEMCOG is a maintenance area for $PM_{10}$; so a determination is needed regarding general conformity. However, it is already known that the project will reduce $PM_{2.5}$ and $PM_{10}$, and the *de minimus* level for these pollutants is 100 tons annually. Therefore, general conformity does not apply. That will be confirmed through interagency consultation.

The discussion of pollution trends presented in the DEIS will be updated. There is an additional year of data to add to the trend lines (refer to DEIS Figure 4-32). The $PM_{10}$ value for 2004 at the Dearborn monitor (2842 Wyoming Avenue/26-163-0033) was found to reflect an "exceptional event" due to local construction and the value was not used for attainment/maintenance purposes. Trends for the Dearborn monitor at 2842 Wyoming (26-163-0033) and the monitor at 13710 Oak Park Drive (26-125-0001), which is the closest monitor to the CP/Oak and CN/Moterm terminals, will continue to be reported, adding the most recent data. The latter monitor reflects nearby intermodal activity plus industrial activity more typical of Detroit than such developments as Severstal, U.S. Steel, the Marathon Refinery and related heavy industries, which are near the Dearborn monitor (this will be part of the qualitative $PM_{2.5}$ and $PM_{10}$ hotspot analysis). Monitoring data that reflect pollutant type (mobile vs. non-mobile source) will be presented to the extent possible (also for the qualitative $PM_{2.5}$ and $PM_{10}$ hotspot analysis).

The FEIS will document pertinent air quality reports by others, such as the Detroit Exposure and Aerosol Research Study (DEARS) analysis and the Detroit Air Toxics Initiative (DATI) Risk Assessment Report, and others.

The DEIS information showing NAAQS and air toxics trends for cars and trucks (from MOBILE emission factors) will be updated, as appropriate. Notably, the $PM_{2.5}$ emission factors produced by MOBILE6.2 were found by EPA to be in error for heavy-duty diesel vehicles after 2007. The input module has been corrected and the analysis reported in the FEIS will reflect that correction.

Traffic volumes on the local roadway network and pollutant burdens on that network will be made more accessible, and more complete information on 2015 conditions will be provided in the FEIS. The $PM_{2.5}$ emission factors will be updated and the $PM_{2.5}$ emission burdens on the roadway network and at the terminals will reflect the updated factors.

The CO hotspot analysis will not change.

A qualitative assessment of air quality effects of construction will be added. This will address the duration and nature of the construction, which will represent a series of small projects spread over time. Activity will be displayed graphically. MDOT's Standard Construction Specification Sections 107.15(A) and 107.19 will apply to control fugitive dust during construction and cleaning of haul roads.

The FEIS will include measures to mitigate on-terminal pollution. Those measures will be included in the Pre-Development Plan Agreement that is to be signed by the railroads and incorporated into the FEIS. The measures now contemplated are:

Container handling - The FEIS/ Pre-Development Plan Agreement should specify that, to the extent feasible, new container-handling equipment would be electric or hybrid. And, if is diesel, it will use low-sulfur fuel. In any case, this equipment will be a minimal polluter.

Line-haul locomotives – The FEIS /Pre-Development Plan Agreement should specify that, to the extent feasible, when new line-haul locomotives are purchased for use at the terminal they will be equipped with the latest pollution abatement technology.

Switching locomotives – The FEIS /Pre-Development Plan Agreement should specify that, to the extent feasible, the railroads will participate in a "matching-cost" program to retrofit switch locomotives (total cost of about $40,000 per switch locomotive).

Clean fuels – The FEIS /Pre-Development Plan Agreement should specify that, to the extent feasible, all railroad equipment used on the terminal will burn clean diesel after a date certain; 2008 (or the first year of construction) is suggested. That date precedes the EPA mandate of vehicles by mid-2010 and locomotives by mid-2012. This means use of newer diesel engines that require low-sulfur fuel.

Finally, MDOT will assist SEMCOG in performing regional transportation conformity. It is anticipated this could consist of network modifications related to the I-94/Livernois interchange and the closing of Lonyo, and triptable changes. The later include: 1) the decrease in vehicles relocated by the DIFT project; 2) the increase in trucks associated with the DIFT project; and, 3) the regional decrease in trucks brought about by the mode shift from truck to rail. Data for the regional effects will be derived from the commodity flow model that was used in forecasting lifts for the project.

# B. Updates to the AQ Protocol Related to $PM_{2.5}$ and $PM_{10}$

## 1.0 Introduction

This section of the Addendum addresses the change in the air quality regulatory background resulting from the publication of the "Final Rule for $PM_{2.5}$ and $PM_{10}$ Hotspot Analyses in Project-Level Transportation Conformity Determinations," in the March 10, 2006, *Federal Register*. Subsequent to the publication of the Final Rule, the US EPA and FHWA jointly issued "Transportation Conformity Guidance for Qualitative Hotspot Analysis in $PM_{2.5}$ and $PM_{10}$ Nonattainment and Maintenance Areas," March 29, 2006. Upon the publication of the guidance, interagency consultation occurred via video-conference among EPA, FHWA, SEMCOG, MDOT and MDEQ on May 11, 2006. EPA, FHWA, and MDOT met again July 19, 2006.

The designation of the SEMCOG region as nonattainment for $PM_{2.5}$ and maintenance for $PM_{10}$ means qualitative hotspot analysis is required. General conformity does not apply, as previously noted. That determination is made by comparing the project's levels of $PM_{2.5}$ and $PM_{10}$ to *de minimus* levels defined in 40 CFR Part 51.93 b(1). A *de minimus* level of 100 tons annually was published in the Federal Register of July 17, 2006. The project will reduce the annual $PM_{2.5}$ and $PM_{10}$ burden at the Livernois Junction Yard (the only terminal that receives government funding under the Preferred Alternative) in 2015 and 2030 compared to the No Action Alternative, so the DIFT project operations will not trigger general conformity. General conformity related to construction on the terminal has yet to be tested, but will be by examining individual project components and their duration over the construction period.

## 2.0 Analysis Elements

The DIFT FEIS air quality analysis will be expanded to cover a qualitative $PM_{2.5}$ and $PM_{10}$ hotspot analysis, using Method B as outlined in the March 2006 Joint Guidance. The analysis will begin with a description of the background conditions (current and future) without the proposed project, followed by an analysis of change introduced by the proposed project. The future analysis years will be 2015 and 2030. The analysis will rely on air quality studies and data from available sources as identified through the interagency consultation process. For $PM_{2.5}$ some elements of the analysis will be area wide and general in nature, while other elements will be site specific. For $PM_{10}$ background analysis will also include information on existing unpaved areas adjacent to the Livernois Junction terminal area roadway network and the degree of transport of material onto that network.

In order to demonstrate conformity to the purpose of the State Implementation Plan (SIP), the analysis must show in a qualitative manner that the proposed project will not cause new air quality violations, worsen existing violations, or delay timely attainment. The analysis and resulting conclusions will be reviewed through the interagency consultation process.
The qualitative $PM_{2.5}$ and $PM_{10}$ hotspot analysis will cover:

- Project Description (already in FEIS)
- Method Chosen (B)
- Emissions Considered ($PM_{2.5}$ and $PM_{10}$)
- Background No Action Conditions – current (2004) and future (2015 and 2030)

- Project Conditions – future (2015 and 2030)
- Documentation of Public Involvement
- Mitigation
- Conclusions

The elements are described in greater detail below.

# 3.0 $PM_{2.5}$ and $PM_{10}$ Qualitative Hotspot Analysis

The Preferred Alternative will be described in the FEIS. Introductory paragraphs will explain the $PM_{2.5}$ and $PM_{10}$ attainment status, and the use of Method B of the new guidance as the means of analysis.

## 3.1 Background No Action Conditions

Background conditions without the proposed project will be described. References will be made, as appropriate, to other sections of the FEIS that cover traffic, land use and the cumulative impacts of non-project actions. These sections address development trends and the traffic expected to result. Where appropriate, information will be summarized in the air quality section. Unique to the air quality section will be a description of meteorology, including seasonal conditions, as it influences air quality.

Materials and studies on regional air quality will be summarized, including information provided by MDEQ, USEPA, and SEMCOG. The emphasis to date in SEMCOG's input to Michigan's SIP has been on a document entitled "Weight of Evidence for Southeast Michigan $PM_{2.5}$ Attainment Strategy." This is a working document that is added to and modified as additional information becomes available. It draws from other documentation and ongoing analyses. It explores the subjects of inventories, monitoring and modeling. In particular, it notes actions that are currently underway related to $PM_{2.5}$:

- A Consent Order issued by the Michigan Department of Environmental Quality to Severstal North America, Inc. that operates steel productions facilities just to the west of the Dearborn air quality monitor that has registered the highest $PM_{2.5}$ levels in the state. This order will result in significantly lower $PM_{2.5}$ levels from this industry.
- A Consent Decree entered into by US EPA with Marathon Oil Company, which will substantially reduce nitrogen oxides and sulfur dioxide emissions at their Detroit refinery southwest of the DIFT project area.
- Improvements planned at US Steel.

Together MDEQ estimates there will be an annual $PM_{2.5}$ emission reduction of 330 tons per year from these actions.

The Lake Michigan Air Directors Consortium (LADCO) issued two reports on March 31, 2006, "Midwest Urban Organics Study: Lessons Learned" and "Integration of Results for the Upper Midwest Urban Organics Study." These and other relevant studies will be reviewed for information related to meteorology (including prevailing winds), the contributions of mobile and non-mobile sources, and spatial distribution.

As noted previously, pollution trends presented in the DEIS will be updated with an additional year's data (refer to DEIS Figure 4-32). Data will be reported for the Dearborn monitor (2842

Wyoming Avenue/26-163-0033) and the monitor at 13710 Oak Park Drive (26-125-0001). The latter is the closest monitor to the CP/Oak and CN/Moterm terminals, and reflects nearby intermodal activity plus land uses more typical of Detroit than such developments as Severstal, U.S. Steel, the Marathon Oil Company and related heavy industries, which affect the Dearborn monitor. Monitoring data that reflect pollutant type by sources (mobile vs. non-mobile) will be presented, to the extent possible.

## 3.2 Project Conditions – Future (2015 and 2030)

Future traffic changes, especially diesel traffic, will be described, with graphics and tables of truck traffic. These may be considered direct impacts. Indirect impacts will be regional in nature as intermodal supports the competitiveness of Southeast Michigan, and results in a regional mode shift from truck to rail.

The local component of the qualitative hotspot analysis (Figure 1) will examine: 1) the local roadway network; 2) local intersections; and, 3) the gate areas at the Livernois-Junction Yard where the Preferred Alternative (4-Modified) truck traffic is focused.

1. The roadway network that was established for the pollutant burden analysis in the DEIS will be examined to determine those road links that would experience the greatest increase in diesel truck traffic with the project. Truck traffic volumes for 2004, 2015, and 2030 will be displayed. For $PM_{10}$, there will be a qualitative assessment of changes in re-entrained road dust as a result of Livernois-Junction Yard paving and acquisition of some unpaved adjacent land uses.
2. Data are available to show project effects at intersections identified in the DEIS that are proximate to the project and that will experience congestion changes. Only a few intersections get more congestion with the Preferred Alternative, based on results presented in the DEIS. Those intersections currently experiencing Level of Service D or worse with a significant number of diesel vehicles, and those which will experience a drop in the traffic Level of Service to D, or worse, with a significant number of diesel vehicles relate to the project will be identified.
3. Two gates now serve the Livernois-Junction Yard. The Preferred Alternative would eliminate the one at Waterman. The entry volumes at these gates will be compared to entry volumes for 2004, 2015 and 2030 conditions. Under the Preferred Alternative, three new gates are planned (Figure 1). These will disperse the entry volumes and relocate them to points away from residential neighborhoods. The number of diesel vehicles congregating at each gate will be identified.

Based on information available in the DEIS, the preliminary identification of locations for hotspot analysis is shown on Figure 1. As the FEIS analysis advances and the need arises, these locations will be updated. Examination of these hotspots will allow identification of areas that will experience local changes, good and bad. As the graphics show the base year and the no action condition, they effectively display the area hotspots without the project as well (except of course where new gates are built).

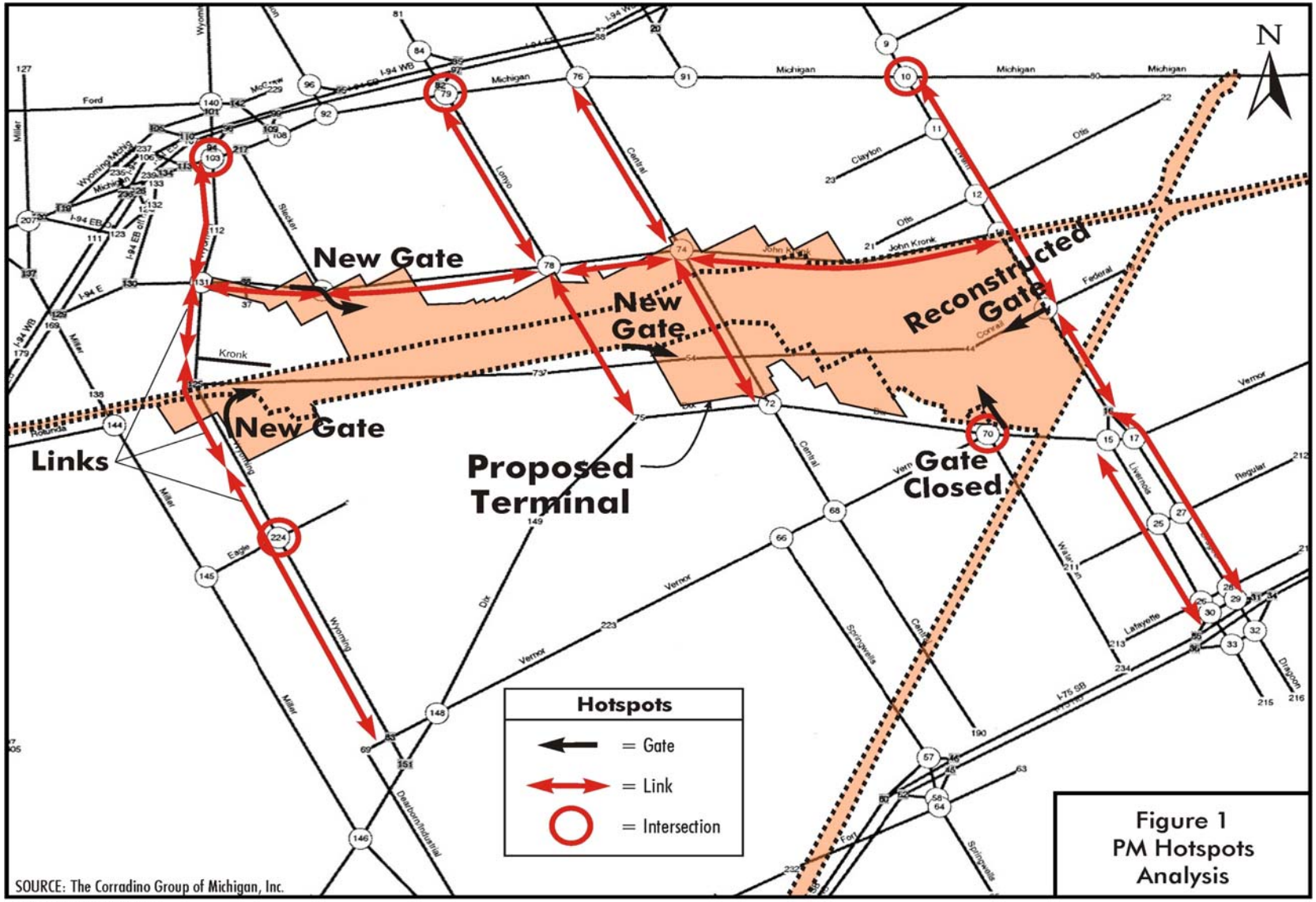


Figure 1
PM Hotspots Analysis

## 3.3 Mitigation

The DEIS noted that the project will result in a regional mode shift from truck to rail, resulting in a reduction in the regional $PM_{2.5}$ and $PM_{10}$ burden. The project will route trucks to routes away from neighborhoods. This mitigation will be reported with respect to mobile sources and the qualitative $PM_{2.5}$ and $PM_{10}$ hotspot analyses.

## 3.4 Conclusions and Conformity

The portions of the project subject to transportation conformity (an interchange reconstruction and roadway use pattern changes) and those portions subject to general conformity (terminal construction and operations) will be defined. Separate sections will document how the requirements of the transportation conformity rule are met for project-level conformity (see 40 CFR 93.109(b)) and general conformity.

With respect to general conformity, analysis is already sufficient to conclude that the project operations will reduce $PM_{2.5}$ and $PM_{10}$, and so *de minimus* thresholds are not exceeded. An analysis will be performed to determine whether construction will generate particulate emissions in excess of the *de minimus* thresholds.

With respect to project hotspot conformity, and consistent with Method B: 1) trends in mobile source emissions will be examined; 2) reports by others will be reviewed; 3) SEMCOG's efforts in developing their input to MDEQ's SIP will be summarized; 4) a comparison of monitoring data at Dearborn and other regional monitors will be made; 5) background conditions related to $PM_{10}$ will be noted; 6) enforcement actions expected to result in lower $PM_{2.5}$ emissions will be reported; and, 7) information on roadway segments, intersections, and gates considered hotspots will be presented, all in a qualitative context.

Based on the above considerations, there will be a qualitative conclusion related to the likelihood of the project contributing to an air quality (hotspot) violation of daily or annual standards. Project conditions will be compared to conditions without the project. The analysis and conclusions will be subject to interagency consultation.

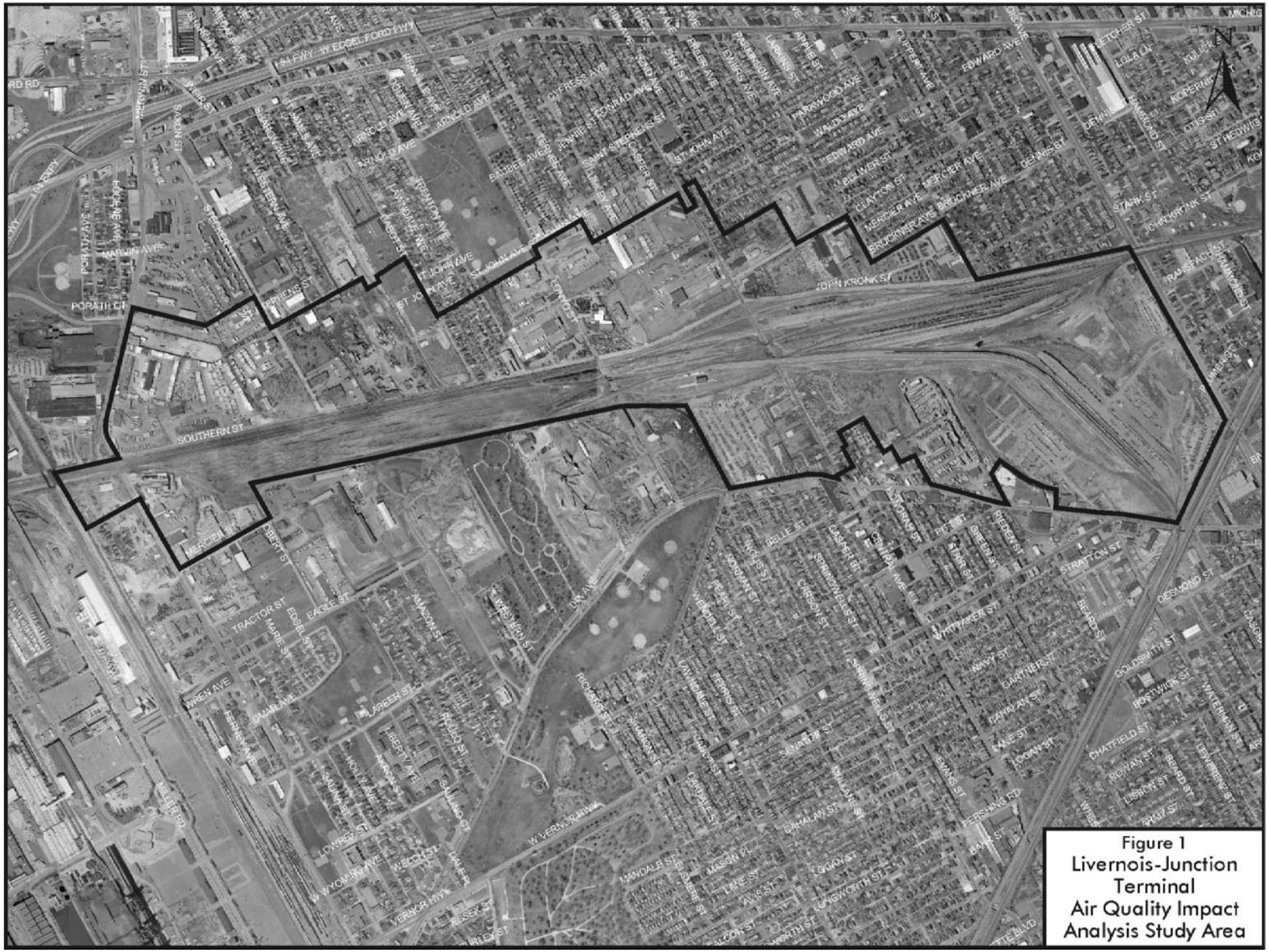


Figure 1
Livernois-Junction Terminal
Air Quality Impact Analysis Study Area

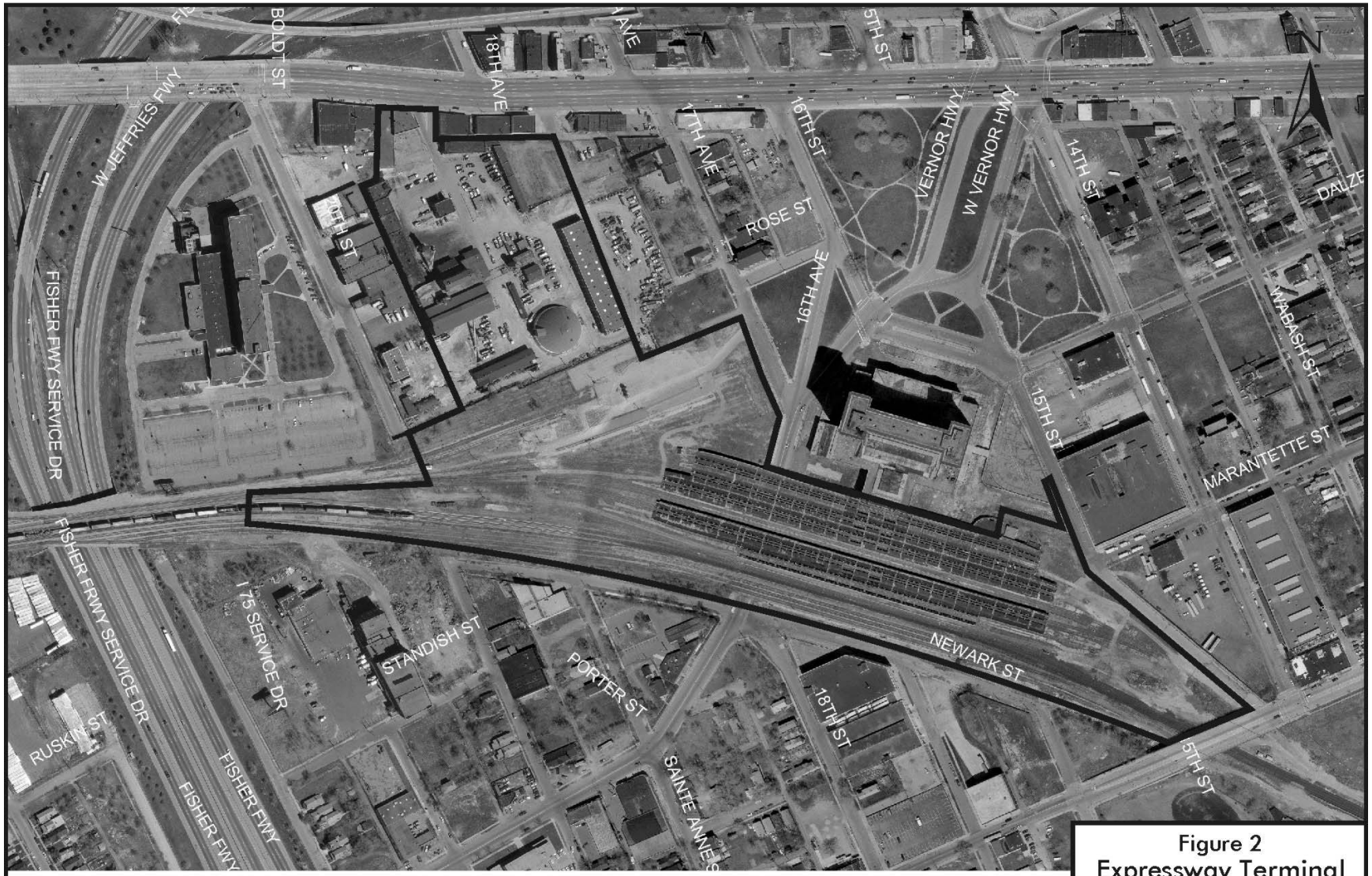


Figure 2
Expressway Terminal
Air Quality Impact
Analysis Study Area

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Figure 3
CP Oak Terminal
Air Quality Impact
Analysis Study Area

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Figure 4
CN Moterm Terminal
Air Quality Impact
Analysis Study Area

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