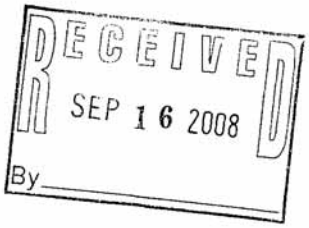
Appendix B

Relocation Plan - Conceptual Stage

Michigan Department of Transportation
Real Estate Division
Conceptual Stage Relocation Plan
Detroit Intermodal Freight Terminal (DIFT)
Control Section 82900, Project Number 52295B

September 9, 2008



GENERAL AREA AND PROJECT INFORMATION

This is a supplement to the Conceptual Stage Relocation Plan dated September 21, 2006. The purpose of this supplement plan is to address any changes that have occurred since the completion of the original plan, including approval of the Alternative 4 Modified as the Preferred Alternative for this project. The Alternative 4 Modified calls for expansion of the Livernois-Junction Yard to accommodate increased capacity for CSX, Norfolk Southern and, Canadian Pacific Railroads.

DISPLACEMENTS

Residential	32
Commercial	29

DISPLACEMENT EFFECTS AND ANALYSIS

Acquisition of property for this project will allow for an orderly and timely relocation of all eligible displaced residents and businesses. The acquiring agency will ensure the availability of a sufficient number of replacement properties in Southwest Detroit for all eligible displacees.

Residential: The project may cause the displacement of approximately 32 residential units. A study of the housing market in the project area indicates a sufficient number of replacement homes and rentals will be available throughout the relocation process. It is anticipated that the local residential real estate market will have the capacity to absorb the residential displacements impacted by this project.

Business: The project may cause the displacement of approximately 29 businesses. A review of the local commercial real estate market indicates that there are a sufficient number of replacement sites available to relocate eligible displaced businesses. Displacement of these businesses is not expected to have a major economic or otherwise generally disruptive effect on the community impacted by this project.

ASSURANCES

The acquiring agency will offer assistance to all eligible residents, businesses, farms and non-profit organizations impacted by the project, including persons requiring special services and assistance. The agency's relocation program will provide such services in accordance with Act 31, Michigan P.A. 1970; Act 227, Michigan P.A. 1972; Act 87, Michigan P.A. 1980, as amended; P.A. 367 and 439 of 2006, as amended, and the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended. The acquiring agency's relocation program is realistic and will provide for the orderly, timely and efficient relocation of all eligible displaced persons in compliance with state and federal guidelines.

Prepared by:

Date: SEPT. 11, 2008

Approved by: Teresa R. Vanis

Date: 9/11/08

Appendix C

Final Memorandum of Agreement with SHPO

MEMORANDUM OF AGREEMENT BETWEEN
THE FEDERAL HIGHWAY ADMINISTRATION AND
THE MICHIGAN STATE HISTORIC PRESERVATION OFFICER
REGARDING
THE DETROIT INTERMODAL FREIGHT TERMINAL,
DETROIT, WAYNE COUNTY, MICHIGAN
SUBMITTED TO THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
PURSUANT TO 36 CFR PART 800.6(b)(1)

WHEREAS, the Federal Highway Administration (FHWA) of the U.S. Department of Transportation has determined that improvements to the Detroit Intermodal Freight Terminal (DIFT), Detroit, Wayne County, Michigan will pose an adverse effect upon the Michigan Box Company (Spranger Wire Wheel Corporation), 7175 Clayton Street, Detroit, which appears to meet the criteria for listing in the National Register of Historic Places and will be removed by the project; and

WHEREAS, the FHWA has consulted with the Michigan State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) (the Act); and

WHEREAS, The Michigan Department of Transportation (MDOT) participated in the consultation and has been invited to concur in this Memorandum of Agreement (MOA);

NOW, THEREFORE, FHWA and SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on the historic properties.

STIPULATIONS

FHWA shall ensure that the following measures are carried out:

I. Recordation:

The Michigan Box Company (Spranger Wire Wheel Corporation) Building, 7175 Clayton Street, shall be recorded so that there is a permanent record of its existence. MDOT shall prepare photographic documentation and a historical overview of the resources according to the SHPO *Documentation Guidelines* attached hereto as Attachment A. Unless otherwise agreed to by the SHPO, MDOT shall ensure that all documentation is completed and accepted by the SHPO for deposit in the State Archives of Michigan prior to the commencement of any demolition or construction activity concerning the affected properties. MDOT will provide additional original copies of the recordation package to appropriate local repositories designated by the SHPO.

1. MDOT shall include, if available, as part of the recordation package original or archival – quality copies of historic photographs of the affected property; additionally, electronic versions of these photographs will be submitted to the SHPO.

II. Archaeological Resources:

A. Identified Sites: Two NRHP eligible historic archaeological sites were identified in the project study area. Both sites will be avoided by the DIFT.

1. **Jacques Baby Mill Site:** the site is outside of the terminal footprint and will not encounter any project related construction activities.
2. **Stockyard Hotel Site:** the site is within the existing Livernois-Junction Terminal Livernois gate area on land owned by the railroad. The gate area will be altered and will include the introduction of fill material but no excavation or other ground disturbing activities will occur.

B. Unanticipated Finds: In the event any unknown archaeological resources are accidentally identified during the execution of the work, it is further agreed that such resources would be only important for the information they may reveal and not for preservation in place.

III. GENERAL CONSIDERATIONS

A. Amendment

1. Any party to this MOA may propose to the other parties that it be amended, whereupon the parties will consult in accordance with 36 CFR800.6(c)(7) to consider such an amendment.

2. In the event that any portion of this MOA is found to be infeasible, the parties to this MOA shall consult to consider appropriate alternative mitigation.

3. Any additional or alternative actions considered pursuant to this agreement shall be subject to implementation by amending this MOA in accordance with this section.

B. Dispute Resolution

Should the SHPO or MDOT object within 30 (thirty) days to any actions proposed pursuant to this MOA, the FHWA shall consult with the objecting party to resolve the objection. If the FHWA determines that the objection cannot be resolved, the FHWA shall forward all documentation relevant to the dispute to the Advisory Council on Historic Preservation (Council). Within 45 (forty-five) days after receipt of all pertinent documentation, the Council will either:

1. Provide the FHWA with recommendations, which the FHWA will take into account in reaching a final decision regarding the dispute; or
2. Notify the FHWA that it will comment pursuant to 36 CFR 800.7(c) and proceed to comment. Any Council comment provided in response to such a request will be taken into account by FHWA in accordance with 36 CFR 800.7(c)(4) with reference to the subject of the dispute.

C. Termination

1. If the FHWA determines that it cannot implement the terms of this MOA, or if the SHPO determines that the MOA is not being properly implemented, the FHWA or the SHPO may propose to the other parties to this MOA that it be terminated.

2. The party proposing to terminate this MOA shall so notify all parties to this MOA explaining the reasons for termination and affording at least sixty (60) days to consult and seek alternatives to termination. The parties shall then consult.

3. Should such consultation fail, the FHWA or the SHPO may terminate the MOA by so notifying all parties.

4. Should this MOA be terminated, the FHWA shall either

   a. Consult in accordance with 36 CFR § 800.6 to develop a new MOA; or
   b. Request the comments of the Council pursuant to 36 CFR § 800.7.

Execution and implementation of this MOA and its submission to the Council evidences that FHWA has afforded the Council a reasonable opportunity to comment on the project and that the FHWA has taken into account the effects of the project on historic properties.

FEDERAL HIGHWAY ADMINISTRATION

By: _____ Date: 9/3/09
James J. Steele, Division Administrator

MICHIGAN STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 7/28/09
Brian D. Conway, State Historic Preservation Officer

Concur:

MICHIGAN DEPARTMENT OF TRANSPORTATION

By: _____ Date: 8/4/09
Susan Mortel, Director, Bureau of Transportation Planning

FORM APPROVED
8/30/09
ASSISTANT ATTORNEY GENERAL

ATTACHMENT A

MICHIGAN STATE HISTORIC PRESERVATION OFFICE
DOCUMENTATION GUIDELINES

The following guidelines provide instruction for producing permanent documentation of historic properties. Following submittal to the State Historic Preservation Office, the photos produced will be transferred to the State Archives, where they will be maintained and made available to the public for research purposes. In many cases, this documentation will constitute the only visual public record of a resource. It is therefore important that reports, drawings and photographs adequately depict the salient visual characteristics of the resource, and that they be produced using archivally stable materials and procedures.

The specifications outlined in this memorandum are intended to ensure that the material will be of high quality and remain in usable condition for many years to come. The guidelines were adapted from those used for submitting nominations to the National Register of Historic Places, as described in **National Register Bulletin 16:** ***Guidelines for Completing National Register of Historic Places Forms.*** The complete text of this and other National Register Bulletins may be found on the web at *http.lAvww.cr.nps.govlnrlpublicationslbulletins.htm.*

I. REPORTS - GENERAL INSTRUCTIONS

Reports should be printed on archival paper and be 8½ by 11 inches in size.

II. DESCRIPTIVE AND HISTORICAL NARRATIVES

The report should contain a descriptive and historical narrative about the resource(s). The descriptive overview should concisely but thoroughly describe the resource, including discussion of its site and setting; overall design and form, dimensions, structural character, materials, decorative or other details, and alterations. The historical narrative should provide an account of the resource's history and explain its significance in terms of the national register criteria (information about the criteria for listing a resource in the national register may be found on the web at *http://www.cr.nps.govlnr/listing.htm).* Published and unpublished sources should be used as needed to document the resource's significance. For bridges and public structures, public records and newspapers should be used for information concerning the historical background and construction of the resource and to identify those involved in its design and construction. All sources of information (including author, title, publisher, date of publication, volume and page number) should be listed in a bibliography.

III. DRAWINGS - GENERAL INSTRUCTIONS

Drawings should be drawn or printed on archival paper and folded to fit an archival folder approximately 8½ by 11 inches. Use coding, crosshatching, numbering, transparent overlays, or other standard graphic techniques to' indicate the information. Do not use color because it can not be reproduced by microfilming or photocopying. Drawings should be used to document the existing condition of the resource, the evolution of a resource, alterations to a building or complex .of buildings, floor plans of interior spaces. - Site plans should have a graphic north arrow and include locations and types of trees, shrubs and planting beds. All architectural and site plans should include dimensions indicating the overall size of buildings, sizes of major interior spaces and distances between major site features. If original drawings of the resource(s) exist, add a graphic scale the drawings and reproduce them to fit on 8½ by 11 inch archival paper. Photographic reductions are permissible provided they meet the photographic requirements specified in these guidelines.

IV. PHOTOGRAPHS - GENERAL INSTRUCTIONS

Submit clear and descriptive black and white photographs and negatives in acid-free envelopes. Photographs should provide a clear visual representation of the historic integrity and significant features of the resource. The number of photographs needed will vary according to the project and the nature of the resource. The attached article by David Ames, A *Primer on Architectural Photography and the Photo Documentation of Historic Structures* (Vernacular Architecture Forum News, no date) provides helpful information for photographing buildings and structures. This article is available on the web at *http:/www.vernaculararchitecture.orgIFeatures/ photography article.htm.*

GUIDELINES FOR PHOTOGRAPHIC COVERAGE

The number of photographic views required depends on the size and complexity of the resource. Submit as many photographs as needed to depict the current condition and significant aspects of the resource. When available, prints of historic photographs may supplement documentation.

Buildings, Structures and Objects

- Submit one or more views to show the principal facades and the environment or setting in which the resource is located;
- Additions, alterations, intrusions, and dependencies should appear in the photographs;
- Include views of interiors, outbuildings, landscaping, or unusual details if the significance of the resource is entirely or in part based on them.

Historic and Archaeological Sites

- Submit one or more photographs to depict the condition of the site and any above-ground or surface features and disturbances;
- If they are relevant to the site's significance, include drawings or photographs that illustrate artifacts that have been removed from the site;
- At least one photograph should show the physical environment and configuration of the land making up the site.

BASIC REQUIREMENTS

Photographs must be:

- at least 5 x 7 inches, preferably 8 x 10 inches, unmounted (do not affix the photographs to paper, cards, or any other material); photographs with borders are preferred;
- printed on double or medium-weight black-and-white paper having a matte, glossy, or satin finish; fiber-based papers are preferred; resin-coated papers that have been

processed automatically will be accepted provided they have been properly processed and thoroughly washed; we recommend the use of a hypo-clearing or neutralizing agent, and toning in selenium or sepia to extend the useful life of the photographs;

- submitted in acid free envelopes; the envelopes should be labeled in pencil (see labeling instructions below).

ENVELOPE LABELING INSTRUCTIONS

Neatly print the following information on the upper right comer of the envelope in soft **lead pencil:**

1 . Name of the resource;
2. Street Address, township, county, and state where the resource is located;
3. Name of photographer;
4. Date of photograph;
5. Description of view indicating direction of camera;
6. Photograph number.

Do not use adhesive labels for this information.

NEGATIVE SUBMISSION INSTRUCTIONS

The negatives must be submitted with the prints. Each strip of negatives should be submitted in acid free envelopes that have the following information submitted in soft lead pencil in the upper right comer of the envelope.

1. Name of the resource;
2. Name of the photographer;
3. Date of photograph;
4. Negative numbers

V. ADDITIONAL ITEMS

In addition to the items described in these guidelines, the SHPO may request additional documentation, depending on the nature and, significance of a particular resource.

If you have any questions, please contact the Environmental Review Coordinator at 517-335-2721.

State Historic Preservation Office
Michigan Historical Center
717 W. Allegan
Lansing, MI 48918-1800

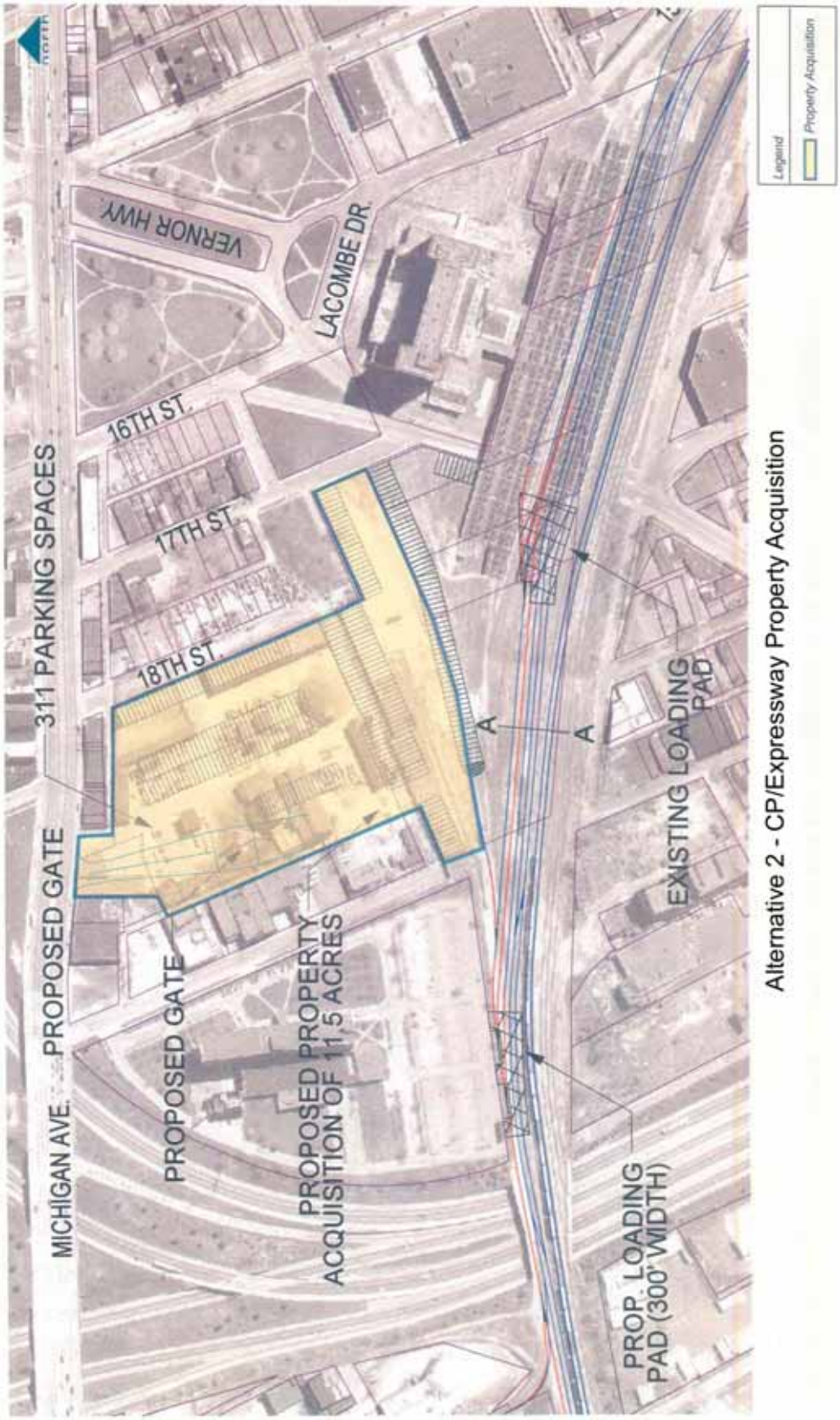
(8/00

Appendix D

Right-of-Way Areas Needed by Alternative

Alternative 2 - Livernois-Junction Options A, B & C
Property Acquisition Central Street Area

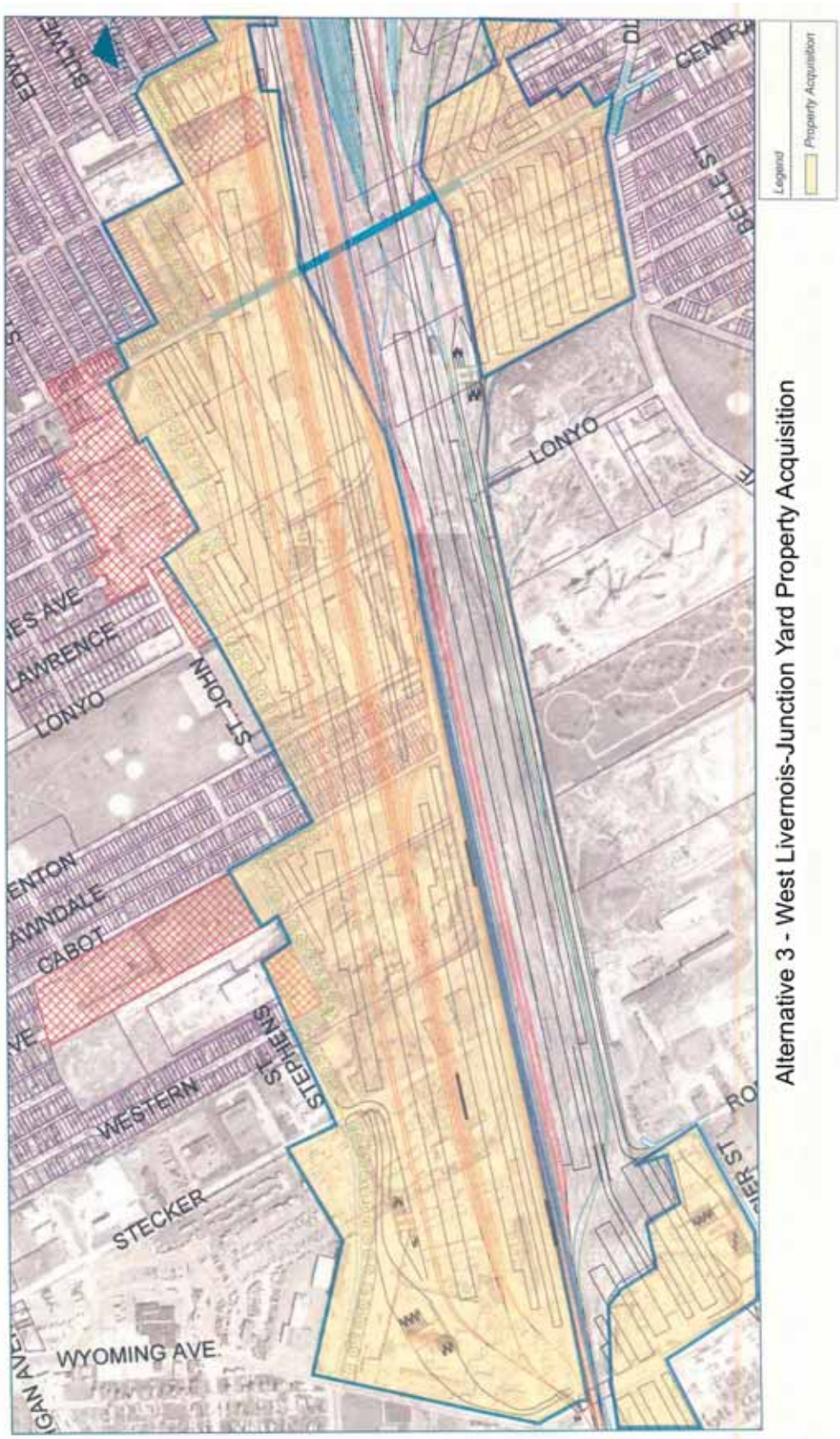
Alternative 2 - Livernois-Junction Option B
Property Acquisition West Yard

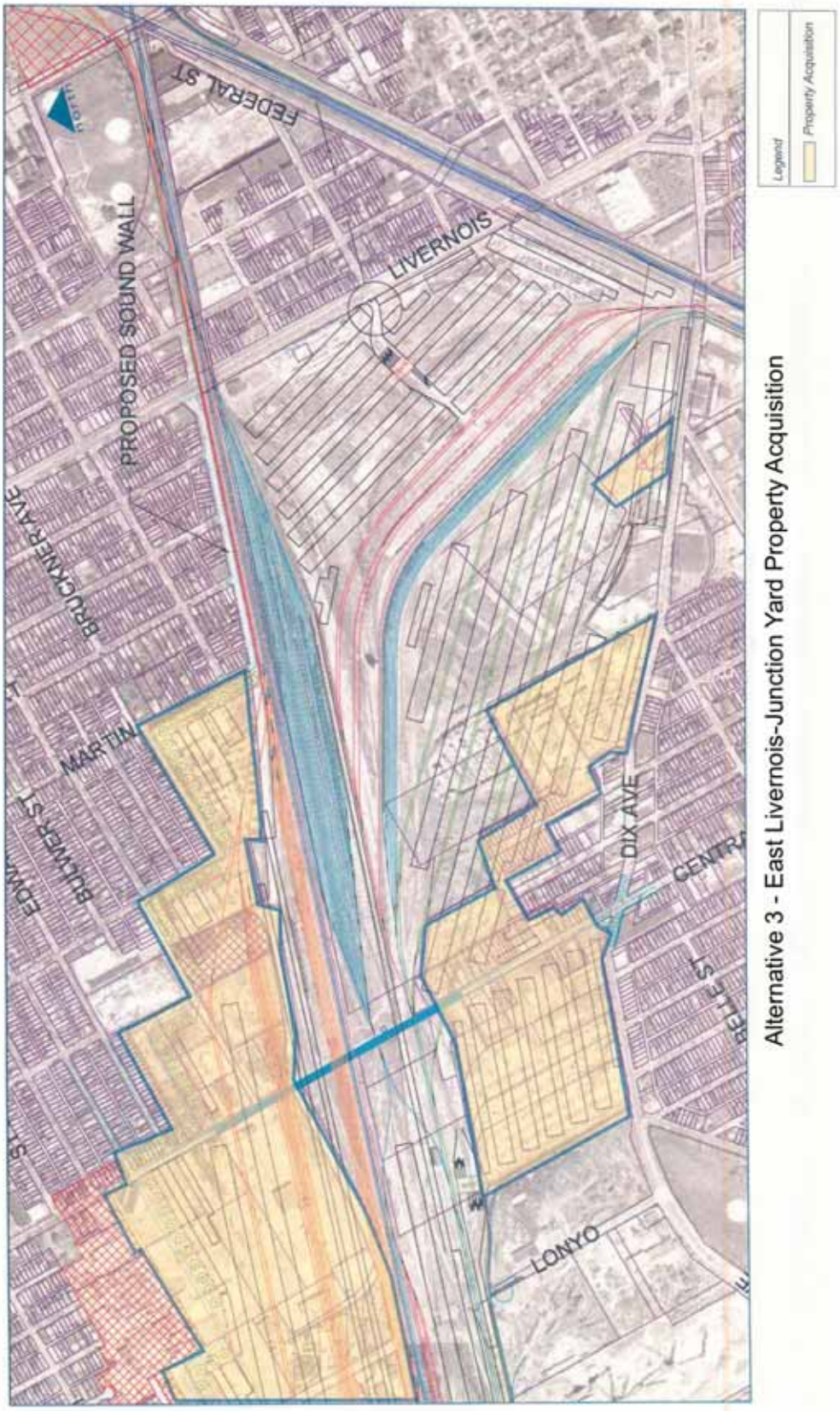


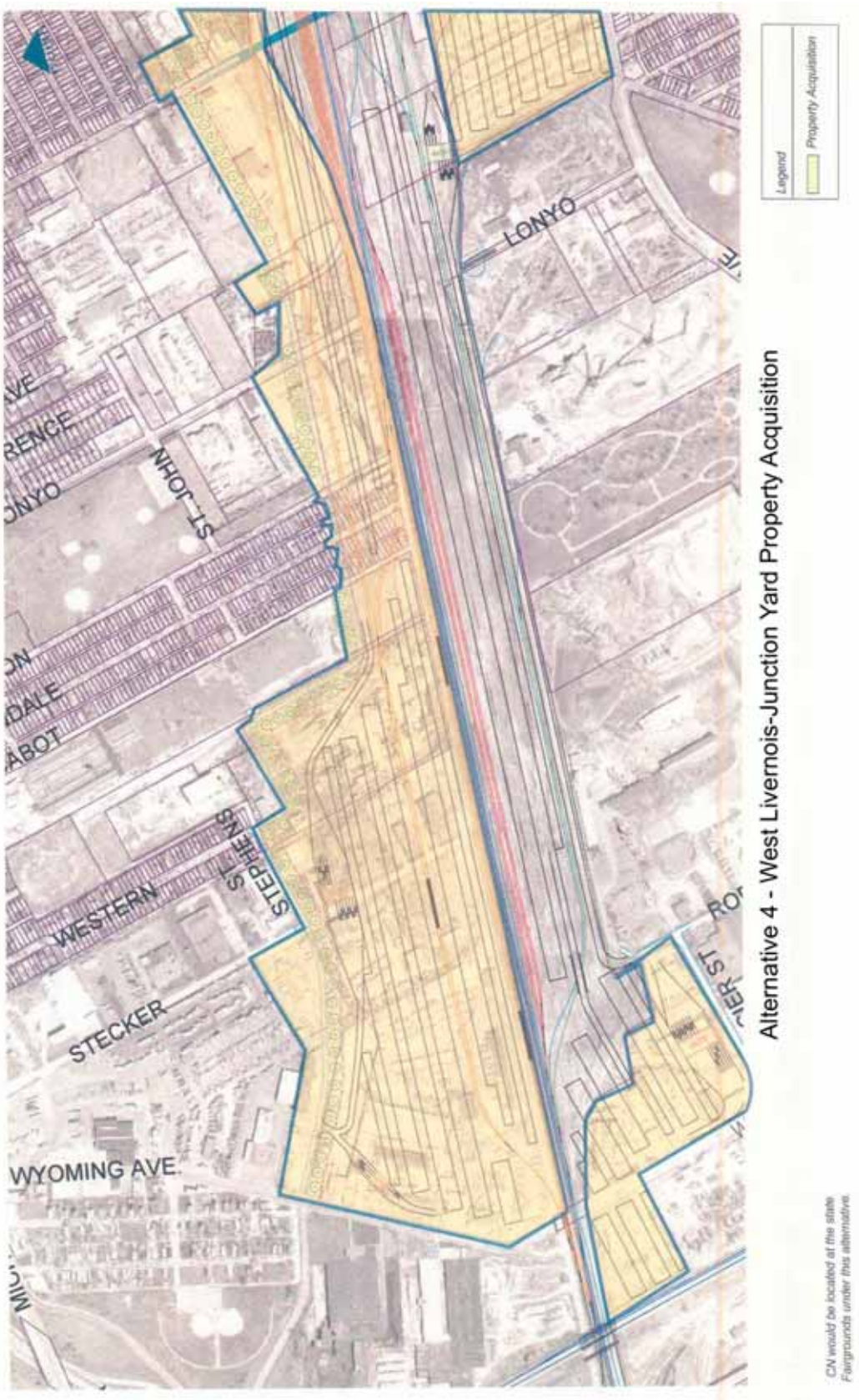
Alternative 2 - CP/Expressway Property Acquisition

north
TO DE
PROPOSED SOUND WALL ALONG NORTHERN PERIMETER
GLENDALE ST
TERMINAL GATE
EXISTING ROAD BRIDGE
Alternative 2 - CP/Oak Property Acquisition
Option A
TO
PROPOSED SOUND WALL ALONG NORTHERN PERIMETER
GLENDALE ST
TERMINAL GATE
EXISTING ROAD BRIDGE
Legend
Property Acquisition
Alternative 2 - CP/Oak Property Acquisition
Option B

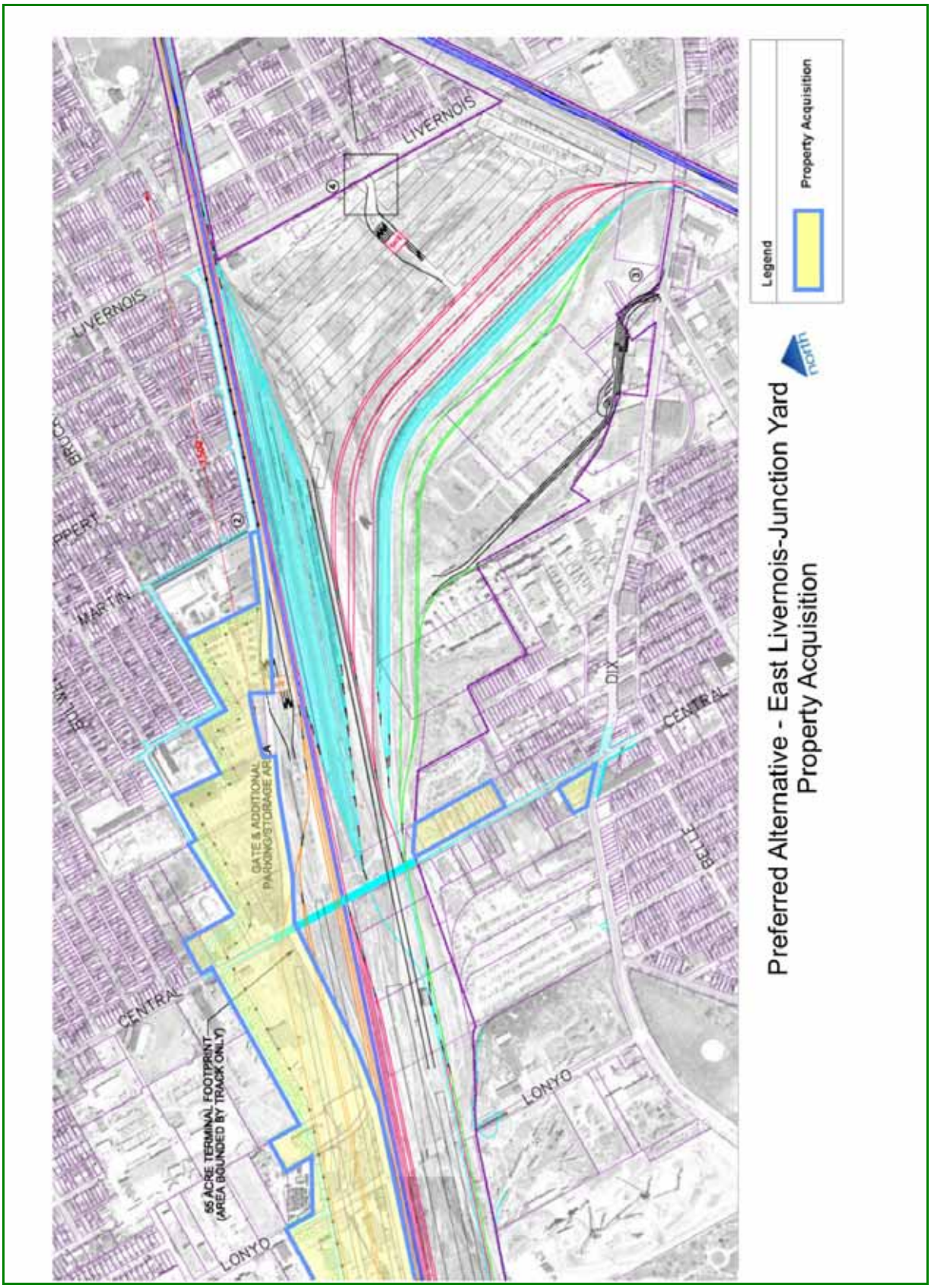
Alternatives 2 and 4 - Property Acquisition at State Fairgrounds

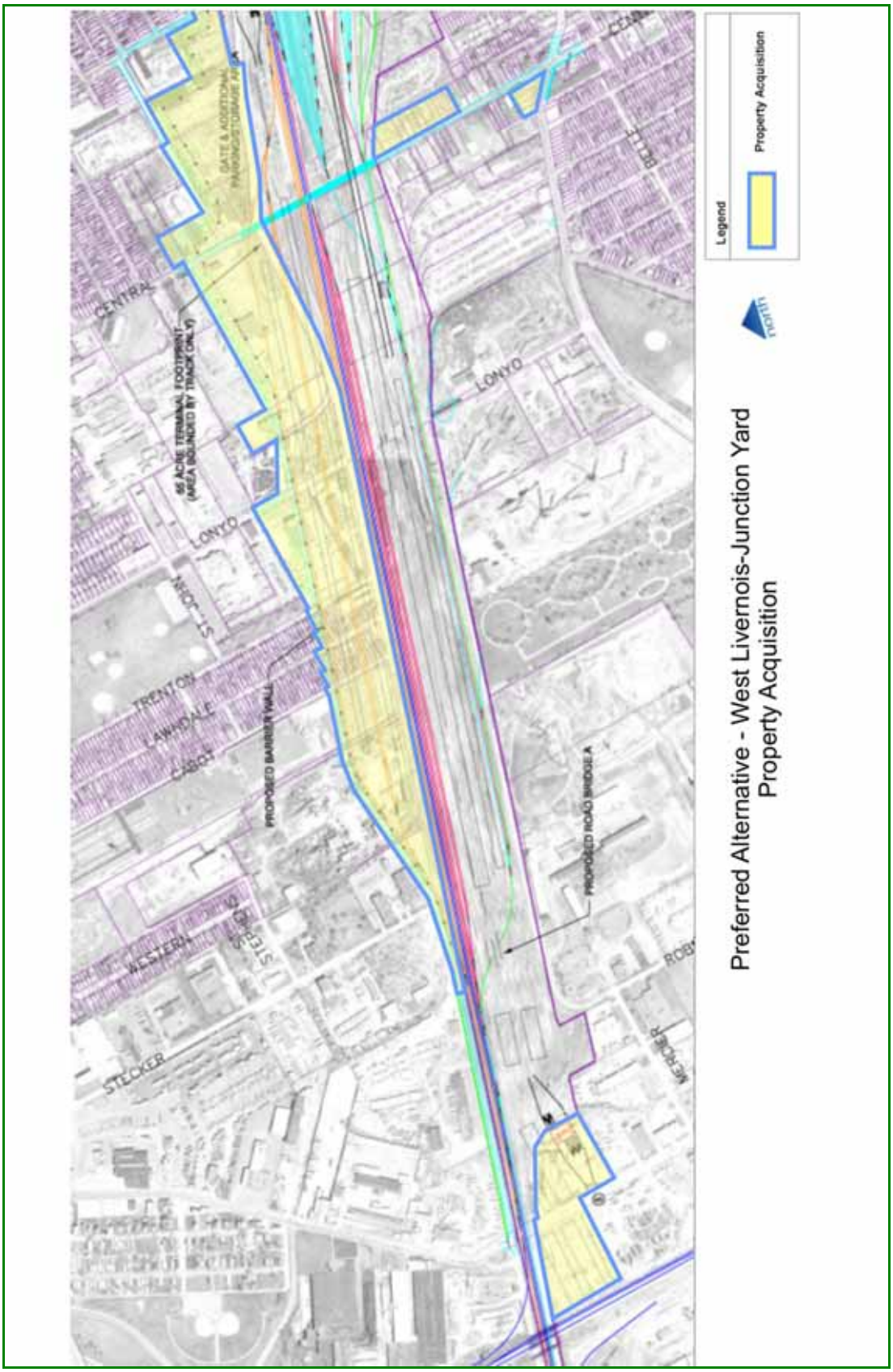

Legend
Property Acquisition
LONYO
ST. JOHN
LAWRENCE
LONYO
CABOT
STEPHENS ST
WESTERN
STECKER
WYOMING AVE.
Alternative 3 - West Livernois-Junction Yard Property Acquisition


Legend
Property Acquisition
FEDERAL ST
LIVERNOIS
PROPOSED SOUND WALL
BRUCKNER AVE
MARTIN
BULWER ST
DIX AVE
LONYO
Alternative 3 - East Livernois-Junction Yard Property Acquisition


Alternative 4 - West Livernois-Junction Yard Property Acquisition
Legend
Property Acquisition
LONYO
ST JOHN
WESTERN
STECKER
WYOMING AVE.
CN would be located at the state Fairgrounds under this alternative.

Alternative 4 - East Livernois-Junction Yard Property Acquisition
Legend
Property Acquisition
FEDERAL ST
LIVERNOIS
PROPOSED SOUNDWALL
MARTIN
DIX AVE
LONYO
CN would be located at the state Fairgrounds under this alternative.


Preferred Alternative - East Livernois-Junction Yard
Property Acquisition
Legend
Property Acquisition
North
LIVERNOIS
MARTIN
CENTRAL
DIX
BELT
LONYO
GATE & ADDITIONAL PARKING/STORAGE AREA
65 ACRE TERMINAL FOOTPRINT (AREA BOUNDED BY TRACK ONLY)


Legend
Property Acquisition
NORTH
Preferred Alternative - West Livernois-Junction Yard
Property Acquisition
CENTRAL
LONYO
TRENTON
LAWNDALE
CABOT
STECKER
WESTERN
PROPOSED BARRIER WALL
PROPOSED ROAD BRIDGE A
55 ACRE TERMINAL FOOTPRINT
(AREA BOUNDED BY TRACK ONLY)

Appendix E

Air Quality Protocol

Air Quality Analysis Protocol

Detroit Intermodal Freight Terminal

Environmental Impact Statement

Updated March 2005

1.0 Introduction

Under the National Environmental Policy Act (NEPA), federal agencies are required to identify and describe the potential impacts to the human and natural environments as a result of their action(s), including those to air quality. This paper describes the air quality analysis that will be performed for the Detroit Intermodal Freight Terminal project (DIFT) environmental impact statement.

The DIFT Project proposes to enhance development of intermodal (truck/rail) terminals operated by the four Class I Railroads[1] that serve Michigan to provide improved intermodal service to business, industry and the military. Four intermodal terminals are included in the DIFT EIS: the Livernois-Junction Yard in Southwest Detroit (operated by CSX and Norfolk Southern); Canadian Pacific's Expressway terminal behind the Michigan Central Depot just north of Bagley (temporarily closed as of June 2004); the CP/Oak Terminal located in the northwest corner of the intersection of I-96 and the Southfield Freeway; and, the Canadian National/Moterm Terminal on the Wayne County/Oakland County border north of 8 Mile Road between I-75 and Woodward Avenue.

Because of the concentrated activities of heavy-duty diesel trucks, locomotives, and container-handling equipment with the DIFT Project, air toxics and fine particulate matter ($PM_{2.5}$[2]) are of particular interest. There are no established regulatory standards specifying harmful concentration levels of air toxics, no attainment area designations, and no analysis protocol for evaluating air toxics impacts for transportation projects. Nevertheless, given community concern for air toxics, FHWA recognizes the need to address several key air toxics along with $PM_{2.5}$ (fine particulates) and the other NAAQS pollutants, through the protocol described here.

2.0 Analysis Elements

The DIFT air quality analysis will cover:

1. The attainment status of the project area with respect to the NAAQS, notably carbon monoxide (CO), ozone, and $PM_{2.5}$.
2. A CO hotspot analysis at key intersections in the terminal areas that will compare CO concentrations in areas of human activity to the 1- and 8-hour NAAQS.
3. Pollution trends, and a discussion of U.S. EPA measures to improve air quality.
4. A discussion of air toxics, including a qualitative discussion of health risks and current science.
5. An estimate of the pollutant burden[3] that will be generated by each terminal under each alternative. This burden analysis will include the NAAQS pollutants and several key air toxics.
6. An estimate of the pollutant burden produced by mobile source activities on the local public roadway network near each terminal that would experience traffic volume changes. This burden analysis will include the NAAQS pollutants and several key air toxics.

[1] A Class I Railroad has at least $250 million in revenue per year.

[2] $PM_{2.5}$ refers to particulate matter that is 2.5 micrometers or smaller in size. Sources of $PM_{2.5}$ include fuel combustion from automobiles, power plants, wood burning, industrial processes, and diesel-powered vehicles such as buses and trucks. These fine particles are also formed in the atmosphere when gases such as sulfur dioxide, nitrogen oxides, and volatile organic compounds (all of which are also products of fuel combustion) are transformed in the air by chemical reactions. Fine particles are of concern because they are so small they are able to penetrate to the deepest parts of the lungs, where the body has difficulty expelling them.

[3] Pollutant burden means the mass of a pollutant produced in a given period of time. In this case pollutant burden is expressed in terms of tons per year.

7. A discussion of air quality conformity.
8. Potential mitigation that could accompany the proposed project.

The goal of the analysis is to provide decision-makers and the public with information to view the relative impacts of each alternative. The results of the analysis will not provide a means for a pass/fail comparison to standards (other than carbon monoxide).

3.0 Regional Attainment Status

The NAAQS are set at levels that U.S. EPA believes will protect public health and welfare. NAAQS are used as the basis for determining an area's air quality designation (i.e., status, as "attainment" or "nonattainment"). Generally, a nonattainment area is one that does not meet a particular NAAQS. An area may be classified nonattainment for one or more pollutants and attainment for others. It is also possible for a nonattainment area to be reclassified as attainment, if it is able to achieve the standard over time. Such areas are given a "maintenance" designation, requiring them to demonstrate continued compliance with the standard, but not requiring additional controls to reduce emissions.

The air quality analysis and report will discuss Southeast Michigan's attainment status. The study area is now a maintenance area for the CO standard and is in nonattainment of the 8-hour ozone standard. It was designated to be in nonattainment for $PM_{2.5}$ on December 15, 2004 (effective April 5, 2005). A portion of the southwest Detroit area is also a maintenance area for PM_{10}, but this is not a part on the mobile source review process on the part of SEMCOG, the Southeast Michigan Council of Governments.

4.0 Hotspot Analysis

Carbon monoxide (CO) hotspot analysis is performed to ensure that project-related traffic does not cause a violation of the 1- or 8-hour NAAQS for CO. Carbon monoxide is a colorless, odorless, poisonous gas produced by incomplete combustion. Traffic information for each alternative is combined with information about roadway geometry and traffic flow conditions to determine the concentrations of CO at sensitive receptors. Sensitive receptors are locations where humans might be expected to be present. This analysis is done with a computer program called CAL3QHC. This program requires emission factors for various types of vehicles operating under various speeds and conditions (such as ambient temperature and fuel type), expressed in grams per mile. These emission factors are generated using the U.S. EPA-approved model, MOBILE6.2. Input parameters that go into the MOBILE6.2 model, such the vehicle fleet mix and age, are drawn from SEMCOG (Southeast Michigan Council of Governments) in consultation with U.S. EPA and the Michigan Department of Environmental Quality (MDEQ).

5.0 Pollution Trends – NAAQS Pollutants and Air Toxics

The EIS will provide information on past trends in NAAQS pollutant emissions and regulatory measures taken by U.S. EPA to continue the downward trends. Historic data from local monitoring stations nearest to the terminals (or with the most complete records) will be documented.

Future air quality trends will be discussed based on U.S. EPA forecasts of the expected consequences of recently implemented regulations related to on-road diesel engines and fuels. Trends in passenger vehicle emissions will also be noted.

Diesel exhaust is a complex mixture of inorganic and organic compounds that occur as a blend of gases and particles. The gaseous components include nitrogen oxides, sulfur compounds, and low-molecular-weight hydrocarbons, such as the aldehydes, benzene, 1,3-butadiene, and polynuclear aromatic hydrocarbons. The particle phase of diesel exhaust consists of elemental carbon, adsorbed organic compounds and small amounts of sulfate, nitrate, metals and other trace elements. Diesel particulate matter (DPM) has been estimated to comprise about six percent of the total $PM_{2.5}$ inventory nationwide but more in urban areas, excluding natural and miscellaneous sources (U.S. EPA, 2002).

Compounds of most specific interest for the DIFT Project are those found in particulate matter and, to a lesser degree, volatile organic compounds (VOCs), which are also emitted by diesel vehicles. Data from the 1996 National Toxics Inventory indicate that mobile sources account for approximately 50 percent of air toxics emissions (U.S. EPA, 2000). Several of the air toxics that EPA has identified as priority mobile source air toxics (MSATs) constitute a subset of all VOCs. The MSATs considered in the DIFT environmental impact analysis are benzene, 1,3-butadiene, formaldehyde, acetaldehyde, and acrolein. Also included on EPA's list is diesel particulate matter (DPM). These particular air toxics were selected because: 1) mobile sources, both on-road and non-road, contribute the majority of annual emissions for five of these air toxics (acetaldehyde, acrolein, benzene, 1,3-butadiene and formaldehyde) on a national basis; 2) they are representative of the complete list of gaseous mobile source air toxics; and, 3) these air toxics are some of the more important ones from a health standpoint. It is important to note that almost all of the remaining hazardous air pollutants (HAPs) emitted by mobile sources are trace metals, and compounds associated primarily with the particulate phase. Stationary and area sources account for most the nationwide emissions of these HAPS.

EPA has issued a suite of motor vehicle and fuels regulations, including: 1) tailpipe emission standards for cars, SUVs, mini-vans, pickup trucks and heavy trucks and buses; 2) standards for cleaner-burning gasoline; 3) a national low-emission vehicle program; and, 4) standards for low-sulfur gasoline and diesel fuel. By the year 2020, these requirements are expected to reduce emissions of a number of air toxics (benzene, 1,3-butadiene, formaldehyde, and acetaldehyde) from highway motor vehicles by about 75 percent and diesel particulate matter by over 90 percent from 1990 levels (U.S. EPA, 2000).

EPA issued a regulation in May 2004 to control emissions from diesel-powered non-road engines, such as construction equipment and railroad locomotives. EPA also provides assistance in identifying and implementing voluntary programs, such as diesel retrofits, to achieve additional reductions.

The EPA-approved MOBILE6.2 model allows projections of future emission factors for the NAAQS pollutants and certain air toxics associated with mobile sources. The model accounts for the recent EPA regulatory changes. Emission factors vary by speed and type of vehicle. By focusing on representative vehicle types and speeds, future emission factors can be related to trends over time (i.e.

2004, 2015, and 2025). Graphics to illustrate these trends will be developed for the following conditions:

- Passenger vehicles and NAAQS pollutants at: a) 10, and b) 30mph
- Passenger vehicles and air toxic pollutants at: a) 10, and b) 30mph
- Trucks and NAAQS pollutants at: a) 10, and b) 30mph
- Trucks and air toxic pollutants at: a) 10, and b) 30mph

6.0 Air Toxics and $PM_{2.5}$ – Health Effects and Limitations on Current Science

Research is underway by EPA and others at a national level to evaluate ambient air toxics in order to understand their spatial variability in urban settings; evaluate data from mobile-source oriented monitors; and, provide data for the National Air Toxics Network maintained by EPA. One of the programs sponsored by EPA is the Detroit Air Toxics Pilot Project, which began collecting data from monitoring stations in 2001. Data from these programs may ultimately be used to develop standards to address health or environmental risks from air toxics.

Analysis of DIFT air toxics and $PM_{2.5}$ will qualitatively address health risks, the limitations of the current state of the science to quantify such risks, and potential benefits from selected mitigation measures. This approach is consistent with the CEQ NEPA regulations (40 CFR 1502.22 and 1502.24) that hold agencies accountable for the scientific integrity of sources and procedures relied upon for decision-making. Under this regulation, when the means to obtain data are unavailable (in this case, the state of the science for air toxics and $PM_{2.5}$), agencies must acknowledge such limitations, discuss the relevance to impacts on the human environment, summarize existing credible scientific evidence, and make reasoned judgments of impacts based on theoretical approaches.

Some health agencies and research institutions have reported on the health effects of air toxics and $PM_{2.5}$. Exposure to these pollutants at sufficient concentrations and durations may result in an increased chance of experiencing serious health effects. These health effects appear to include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory and other health problems. The health effects from some air toxics may appear following a short period of exposure, while others may only appear after long-term exposure. "For these (and other) reasons, it is frequently very difficult to conclusively associate environmental levels and potentially linked public health impacts" (MDEQ, 2003). Additionally, supporting documents for the health assessment of diesel engine exhaust used in the development of EPA's non-road rules acknowledge that "the assessment's health hazard conclusions are based on exposure to exhaust from diesel engines built prior to the mid-1990s"….and "as new diesel engines with cleaner exhaust emissions replace existing engines, the applicability of the conclusions in this Health Assessment Document will need to be re-evaluated" (U.S. EPA, 2002).

In addition to the uncertainty associated with the health risks of air toxics and $PM_{2.5}$, issues related to quantifying impacts and the lack of standards have been raised. There are no NAAQS for air toxics and methods for quantifying impacts are subject to scientific debate. Unlike smokestack testing for point sources, it is not feasible to directly measure mobile source emissions, given the number of tailpipes that would constitute any inventory. Modeling approaches, however, can provide a tool to assess project impacts and to compare the relative merits of various control strategies or project alternatives. These are the pollutant burden analyses discussed in the following sections. But,

although transportation and air quality models are constantly being tested and improved, credible models to calculate the dispersion of $PM_{2.5}$ and air toxics, and the resulting concentrations at any given point, have not been adopted for regulatory use.

The limitations preclude at this time the DIFT Project from conducting a quantitative pass/fail comparison to standards for air toxics and $PM_{2.5}$. Nevertheless, in order to gain some insights into the relative differences among the alternatives with regard to air toxics and $PM_{2.5,}$ this document proposes estimating the pollutant burdens of the proposed alternatives both on terminal sites and on the surrounding roadway network. This approach is consistent with the requirements of 40 CFR 1502.22 and 1502.24.

7.0 Terminal Pollutant Burden Estimates

For each terminal, an area has been defined that covers the existing yard and any area of potential acquisition (Figures 1, 2, 3 and 4). Within these areas the total pollution emitted will be calculated for 2004, 2015, and 2025. The estimate will cover terminal activity, travel on streets that would be incorporated into a terminal (for example John Kronk), and activity on land that would be incorporated into a terminal. This approach allows comparison of the burdens generated by the alternatives for a common geographic area. More specifically, the pollution estimates will address:

- Visitor and employee traffic on the rail yard.
- Truck activity on the rail yard related to container delivery and pickup.
- Container handling on the yard - moving containers between delivery points and trains.
- Locomotive idling and movement on the yard.
- Fugitive dust from paved and unpaved yard areas.
- Vehicular travel on sites of businesses to be acquired.
- Vehicular travel on streets that would no longer be public streets with project development: John Kronk and a section of Lonyo.
- Fugitive dust from business sites and the public streets that would be closed.

The pollutant burden will be calculated for the following NAAQS pollutants and precursors: carbon monoxide (CO), hydrocarbons (HC), oxides of nitrogen (NOx), particulates of 10 microns or smaller (PM_{10}), particulates of 2.5 microns or smaller ($PM_{2.5}$), and volatile organic compounds (VOC). It will likewise be performed for the following air toxics: benzene, acetaldehyde, formaldehyde, 1,3-butadiene, acrolein, and diesel particulate matter.

This information will be estimated for both on-road and non-road mobile sources. The emission factors (in grams/mile) for on-road sources (cars and trucks) will come from MOBILE6.2. An emission factor for an average speed of 2.5 miles per hour will be used to estimate idling conditions on the terminal yards because MOBILE6.2 does not generate emission factors for vehicle idling. The burden for on-road activity will be based on vehicle miles of travel on the site.

Emission factors for CO, NOx, HC and PM for locomotives will be obtained from EPA's 1997 "Emission Factors for Locomotives" (EPA420-F-97-051). $PM_{2.5}$ emissions estimates will be derived using a $PM_{2.5}$ fraction of 0.97 as recommended by EPA in April 2004. VOC emissions estimates will be calculated using a 1.005 VOC/HC ratio. Emission factors for locomotive air toxics will be derived


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

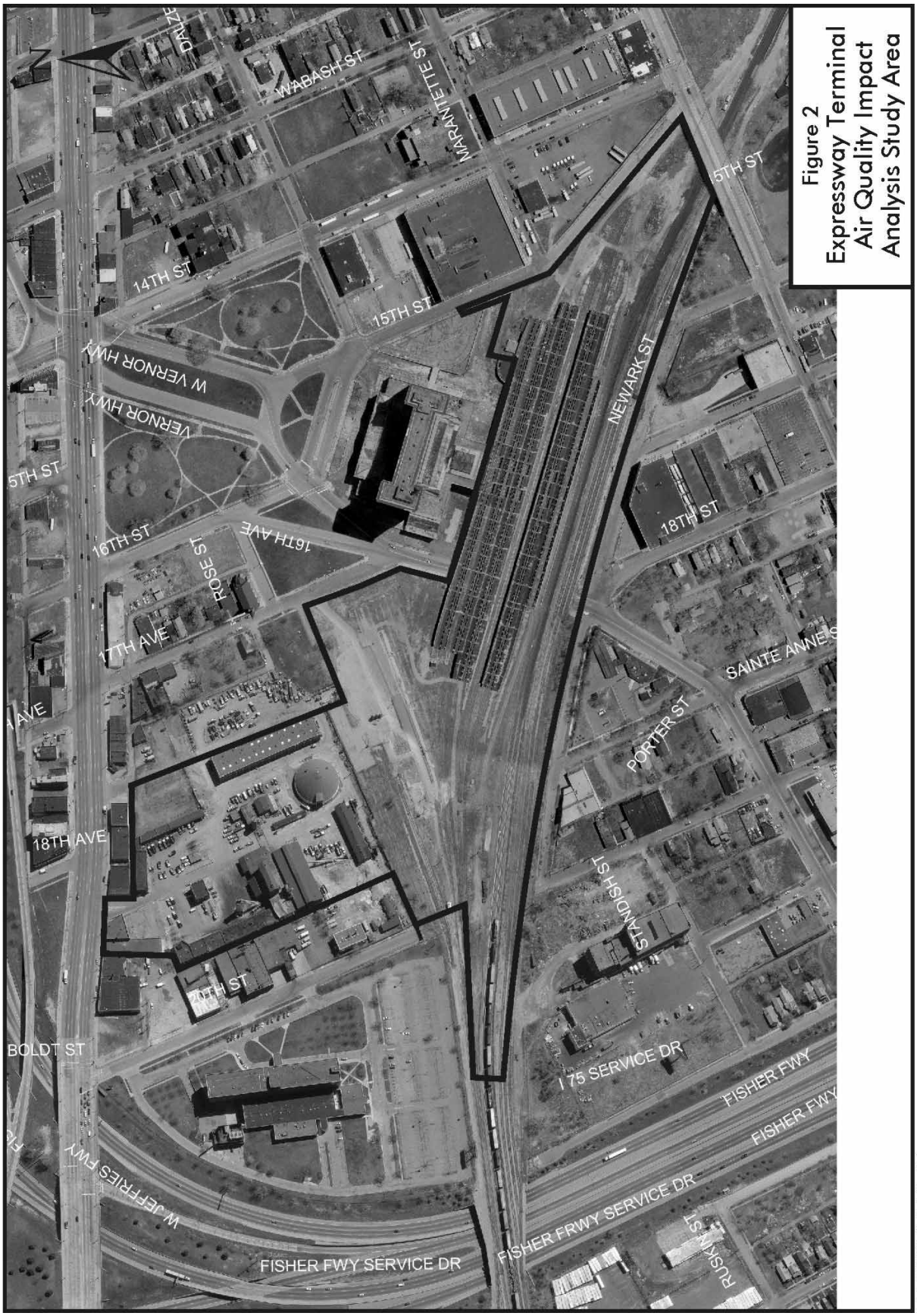


Figure 2
Expressway Terminal
Air Quality Impact
Analysis Study Area
N
DALZE
WABASH ST
MARANTETTE ST
5TH ST
14TH ST
15TH ST
W VERNOR HWY
VERNOR HWY
NEWARK ST
5TH ST
16TH ST
16TH AVE
ROSE ST
18TH ST
17TH AVE
SAINTE ANNE S
PORTER ST
18TH AVE
STANISH ST
BOLDT ST
I 75 SERVICE DR
FISHER FWY
FISHER FWY
W JEFFRIES FWY
FISHER FRWY SERVICE DR
FISHER FWY SERVICE DR
RUSKIN ST
L:\Projects\2446A\Graphics\Environ\Expwy F.cdr

Figure 3
CP Oak Terminal
Air Quality Impact
Analysis Study Area
N
W Davison St
Artesian St
Glendale St
E Borman Ave
Fitzpatrick St
Evergreen Service Driv
Heyden St
Kentfield St
W Davison St

L:/Projects/21464A/Graphics/Enviro/MotermCT.ai

from the 1999 National Toxics Inventory technical documents. A load factor (representing the portion of the engine's horsepower needed for an activity) will be applied to the emission factors in order to obtain realistic emission estimates. The burden for locomotives will be based on the number of hours of operation on the site. Non-road mobile sources in addition to locomotives include terminal tractors, hostlers, and cranes loading and unloading trailers from the trains. Emissions from terminal tractors, hostlers and cranes will be estimated using *Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling – Compression-Ignition*, EPA420-P-04-009, April 2004 and other technical guidance that support EPA's NONROAD model. Emission factors for non-road air toxics will be taken from technical documents supporting EPA's 1999 National Toxics Inventory, in consultation with EPA and SEMCOG.

The burden analysis will include estimates of emission sources located outside the terminal areas, but within the expansion areas. For example, traffic on the property of businesses that would be relocated would be added to the base-year total, but subtracted from the build alternatives (when such facilities are removed by an alternative). And, the emissions from roads that will be closed and included within the footprint of a terminal yard would similarly be included in the base year, but subtracted from the alternatives that close them. Examples are John Kronk and Lonyo.

The burden analysis for $PM_{2.5}$ will consider fugitive dust emissions. Project-related dust emissions are important in this analysis because the build alternatives are expected to reduce PM emissions by covering unpaved roads and exposed soil in terminal areas. Road/soil dust tends to have a lower percentage of $PM_{2.5}$ than diesel particulate matter; however, the sheer size of the unpaved terminal areas (e.g., at the Livernois-Junction Yard) represents a significant part of the total PM emissions (including $PM_{2.5}$) that could be eliminated or minimized by paving these areas. In the case of the Livernois-Junction Yard, analyses may show that $PM_{2.5}$ from road/soil dust to be *more significant* to DIFT neighbors because road/soil emissions are cool and not as buoyant as diesel emissions so they tend to disperse over a more localized area, albeit in higher concentrations. Diesel emissions are hot and buoyant so they tend to rise in the atmosphere and disperse over a wider area in relatively lower concentrations. EPA's "Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume 1: Stationary Point and Area Sources" (EPA 1995, revised December 2003) will be the source of emission factors for fugitive dust emissions. The approximate acreage of unpaved area on each terminal will be calculated using GIS mapping tools. The estimates will include individual emission calculations for roads as well as unpaved yards, as appropriate.

8.0 Public Roadway Pollutant Burden Estimates

A network of local roads near each terminal that could be influenced by the project will be identified. These include roads that would be used by new DIFT traffic, that would have traffic changes due to the closure of Lonyo, or that would experience changes in auto and truck traffic as businesses are relocated to make way for the DIFT.

The traffic changes resulting from each alternative are summarized as follows:

- Alternative 1, No Action
  - ✓ Background auto and truck traffic will grow 25 percent between 2000 and 2025.
- Alternative 2, Improve/ Expand Existing Terminals
  - ✓ Livernois-Junction Yard – DIFT trucks will use either Wyoming or Livernois. (Under one scenario that maintains the Dix/Waterman/Vernor gate, traffic could use

Livernois/Dragoon south of Dix, but in other scenarios, all traffic would be to/from the north on Livernois and connect with and I-94.)

- ✓ Expressway Terminal – Traffic would link directly to Michigan Avenue, rather than using 14th Street.
- ✓ Oak Terminal – A new entrance direct to Evergreen and the ramps linking to I-96 would be created, ending use of the Southfield freeway frontage roads and such local streets as Artesian.
- ✓ Moterm Terminal – Traffic would be eliminated from the residential areas served by Fair and Chesterfield Streets as the intermodal yard will be accessed directly south of 8 Mile Road into the State Fairgrounds.

- Alternative 3, Consolidate – DIFT truck traffic would use Wyoming and Livernois (north of the yard gate). Local traffic on Lonyo would shift to Central and to a lesser extent Wyoming, when Lonyo is closed at the rail yard boundaries. Intermodal traffic would be eliminated at other terminals.
- Alternative 4, Composite – The approach would be similar to Alternative 3 at the Livernois-Junction yard and the same as Alternative 2 at Moterm, as CN operations would not be consolidated, but expand into the State Fairgrounds.

Using available information on background traffic levels, traffic shifts will be calculated, with new DIFT traffic added, and traffic from displaced businesses removed. The vehicle miles of travel will be available by link, and using estimated speeds on each link, the pollutant burden will be calculated. Burden estimates will include NAAQS pollutants, plus diesel particulate matter and the previously identified air toxics. These estimates will be aggregated for autos and trucks, and then combined to get totals for each terminal area under each 2025 scenario. Data will be expressed in tons per year.

9.0 Air Quality Conformity

The Clean Air Act requires each state to have a *State Implementation Plan* (SIP) to demonstrate how it will attain and/or maintain federal air quality standards. SEMCOG, the Southeast Michigan Council of Governments, collaborates with the Air Quality Division of the Michigan Department of Environmental Quality (DEQ) on the work needed to prepare and/or update a SIP. SEMCOG is responsible for mobile source (vehicular) emissions in Southeast Michigan. SEMCOG's *2030 Regional Transportation Plan* (RTP) must undergo a quantitative analysis demonstrating that emissions levels associated with implementing planned projects are below designated emissions level limits (budgets) set forth in the SIP. In so doing, SEMCOG is managing and facilitating the transportation air quality conformity process in Southeast Michigan. The DIFT Project is subject to air quality transportation conformity review through SEMCOG's inclusion of any DIFT roadway improvements in its RTP.

Air quality conformity analyses for mobile sources in Southeast Michigan currently involve two major pollutants: ozone (and its precursors, volatile organic compounds and nitrogen oxides) and carbon monoxide (CO). A new standard will require such analyses for $PM_{2.5}$ by April 2006.

Currently, transportation conformity analyses are required for all regions designated by EPA as either nonattainment or maintenance for the one-hour ozone, CO, or PM_{10} standards. Conformity requirements for the two new NAAQS - eight-hour ozone and $PM_{2.5}$ - are now being established. The DEIS will report on the attainment status of the region, as follows:

One-hour Ozone - In 1995, the region was redesignated from nonattainment to maintenance for the one-hour ozone standard. At that time, a maintenance plan was developed establishing emissions budgets for the two precursors of ozone: volatile organic compounds (VOCs) and nitrogen oxides (NOx). In order for a conformity determination to be made with regard to the one-hour ozone standard, VOCs emissions cannot exceed the mobile source emissions budgets of 218 tons/day for years 2004-2014, and 173 tons/day for years 2015 and beyond. For NOx, emissions cannot exceed the budget of 413 tons/day in any analysis year. The 8-hour standard (see below) now supplants the 1-hour standard, but until an 8-hour emissions budget is established, conformity will be the same as for 1-hour.

Eight-hour ozone - On April 15, 2004, (effective June 15, 2004) the EPA officially designated Southeast Michigan a moderate nonattainment area for the 8-hour ozone standard. On September 15, 2004, EPA "bumped down" the designation to marginal, which means that the area must attain the new standard by June 15, 2007. A SIP is currently being developed to address this issue. As noted, for the time being the test of 8-hour conformity remains the same as that used to demonstrate conformity for one hour.

Carbon monoxide - In 1999, the region was redesignated from nonattainment to maintenance for CO. Similar to ozone, a positive conformity determination for CO requires that emissions in any future year remain at or below the approved mobile source emissions budget of 3843 tons/day. On January 28, 2005, (effective March 28, 2005) EPA approved a revised CO budget of 1946 tons /day.

PM_{10} - As Southeast Michigan currently meets the NAAQS for this pollutant, a regional conformity analysis is not required.

$PM_{2.5}$ - EPA designated seven counties in Southeast Michigan as nonattainment for this new standard December 15, 2004. Conformity determinations for $PM_{2.5}$ will be required by April 5, 2006.

10.0 Mitigation

The DIFT analysis will include a discussion of practical mitigation measures that would be considered to lessen air quality impacts, including from $PM_{2.5}$ and air toxics. Mitigation includes new technologies and strategies to reduce pollution from heavy-duty vehicles (trucks and locomotives) as well as off-road equipment. Some of the major technologies/strategies that will be evaluated are described below:

- Engine Idling Reduction Programs for trucks and locomotives, such as auxiliary power units for trucks and automatic shut-off devices for idling locomotives
- Use of electrified truck parking areas
- Use of alternative fuels for handling equipment, e.g. natural gas and hybrids

The railroads that will participate in the DIFT have expressed an interest in mitigation. In fact, CSX Corp. is a Charter Partner in the SmartWay Transport program, which is voluntary program that incorporates idle reduction, improved logistics management and other strategies to reduce pollution.

It is anticipated that the FEIS will contain agreements that mandate specific air quality mitigation measures, which will be defined as the project advances. Additionally, the paving of the Livernois-Junction Yard is part of the Alternatives 2, 3, and 4.

11.0 Technical Report

The DIFT Air Quality Impact Analysis Technical Report prepared for the DIFT EIS will include results from the above-stated methodology that characterize the communities around each terminal site. The report will show the locations of residential areas, schools, day care facilities, parks, and hospitals relative to the DIFT terminals. The type of activities that would occur at rail yards that could impact these nearby facilities (100 to 300 meters away) will be discussed. An evaluation of the potential health effects on population is beyond the scope of this analysis. Nevertheless, to the extent the data will foster a productive discussion, the occurrence of asthma hospitalizations for sensitive age groups (i.e. the very young and/or seniors) compiled by the Michigan Department of Community Health will be included in the report. This discussion will recognize that use of such information does not allow conclusions to be drawn about a specific project or alternative.

I:\Projects\2846-A-From L\WP\reports\FEIS\Chapters - 2009\Chap5 to End.doc

References

MDEQ. 2004. "2002 Annual Air Quality Report". Air Quality Division.

U.S. EPA. 2000. "Taking Toxics Out of the Air". Office of Air Quality Planning and Standards. EPA-425/K-00-002. August 2000.

U.S. EPA. 1997. "Emission Factors for Locomotives". Air and Radiation. EPA420-F-97-051. December 1997.

U.S. EPA. 1995. "Completion of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume 1: Stationary Point and Area Sources." Non-road Section updated December 2003. Research Triangle Park, N.C.

U.S. EPA. 2002. "Supplements to the Compilation of Air Pollutant Emission Factors AP-42, Fifth Edition, Volume 1: Stationary Point and Area Sources." Research Triangle Park, N.C.

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 Sverstal, 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).

This 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.

This 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 - This 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 – This 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 – This 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 – This 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 Sverstal 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 Sverstal, 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).

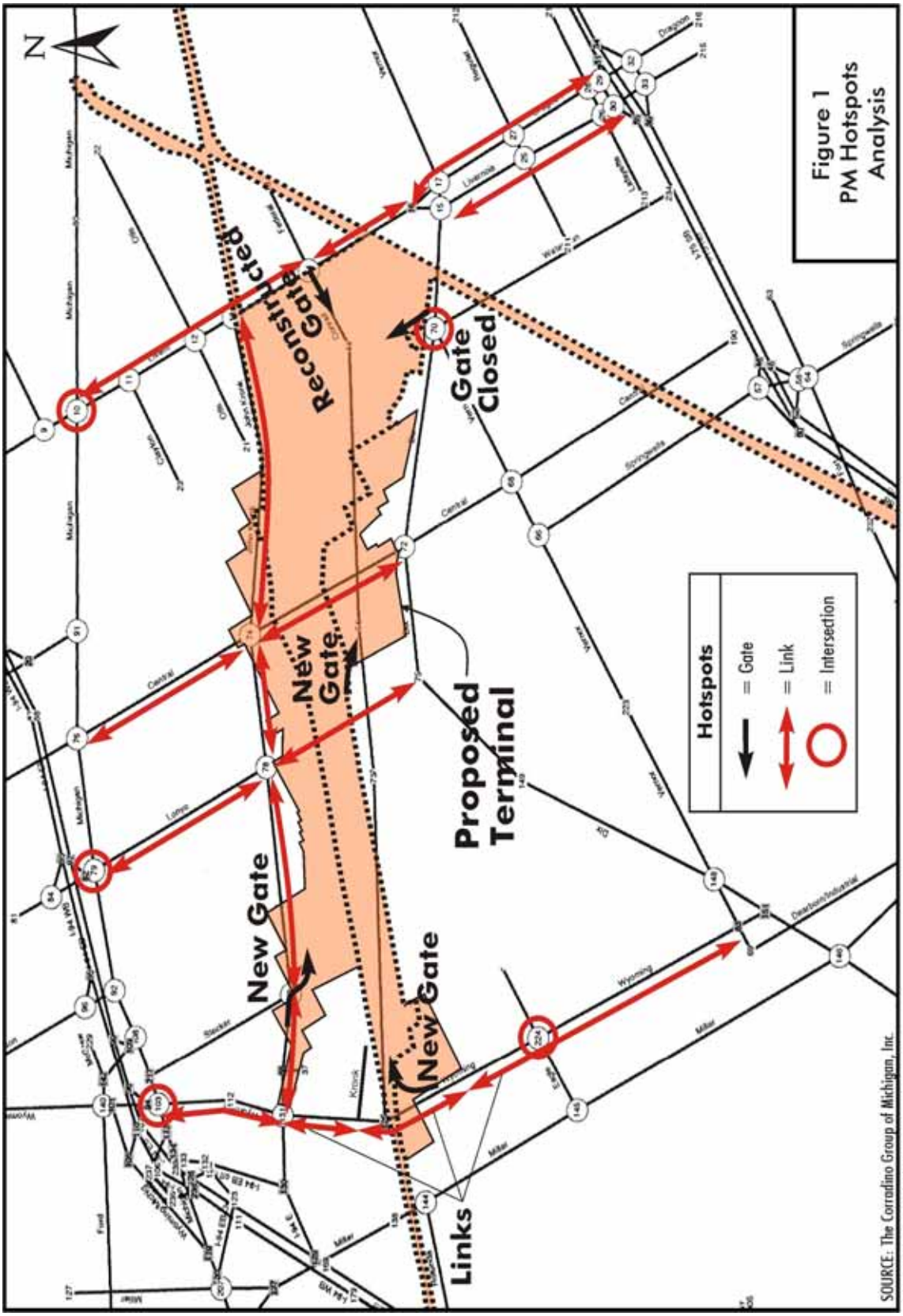


Figure 1
PM Hotspots
Analysis
N
Reconstructed
Gate
New
Gate
Gate
Closed
New Gate
New Gate
Proposed
Terminal
Links
Hotspots
= Gate
= Link
= Intersection
SOURCE: The Corradino Group of Michigan, Inc.

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.

i:\projects\2846-a-from I\wp\reports\feis\chapters - 2009\chap5 to end.doc