

SECTION 2

PURPOSE OF AND NEED FOR ACTION

This section defines the purpose of the proposed action, including a brief history of intermodal activity in the Greater Detroit Area (GDA). It then explains the need for the project in terms of demand and capacity.

2.1 Purpose of the Proposed Action

The purpose of the Detroit Intermodal Freight Terminal (DIFT) project is to support the economic competitiveness of southeastern Michigan and the state by improving freight transportation opportunities and efficiencies for business, industry and the military. The goal is to ensure Southeast Michigan has a regional facility, or facilities, with sufficient capacity and interconnectivity to provide for existing and future intermodal demand and reduce time, monetary costs and congestion to support the economic competitiveness of Southeast Michigan.

2.1.1 Project Background

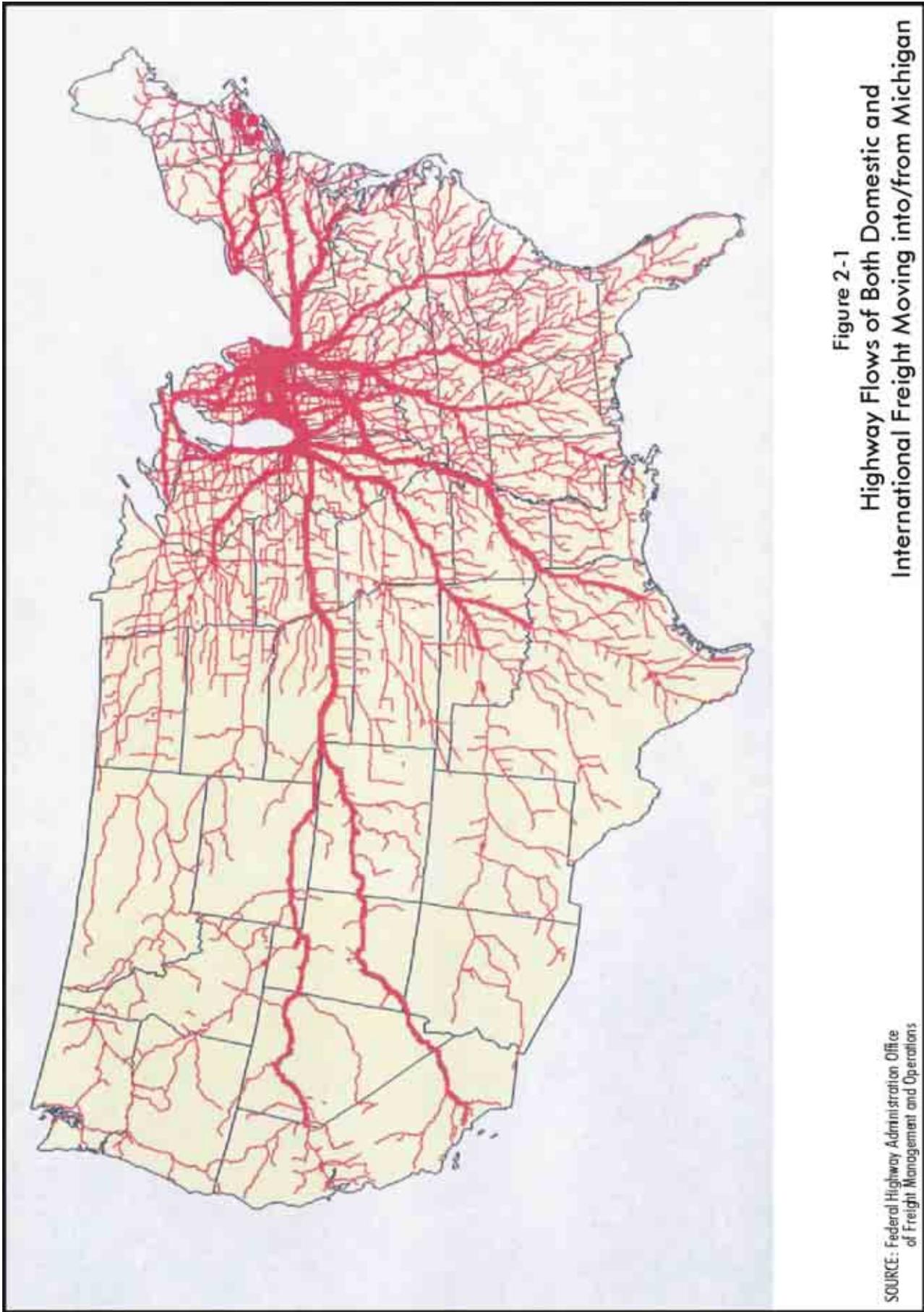
The growth of U.S. intermodal traffic (Figures 2-1 and 2-2), the enormous influx of double-stack trains, and the entry and rapid growth of rail-truckload initiatives have all raised questions about the adequacy of intermodal terminals to handle traffic increases, and to do so efficiently.

In the 1980s, railroads consolidated their intermodal service networks into fewer, larger hub terminals. Railroads saw an opportunity to consolidate enough volume in one location to justify lift machines and other costly improvements/equipment, and to eliminate smaller facilities.

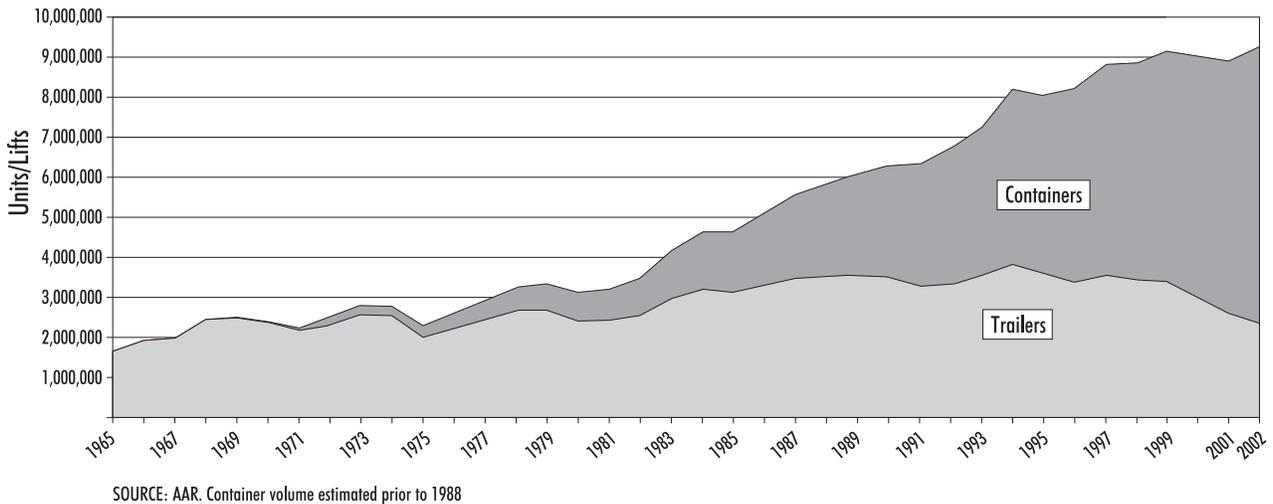
But, the challenge is to not only provide capacity for future intermodal growth; it is to also plan for this growth so that rail and highway freight facilities operate as a coordinated system.

The initial response to the challenge occurred when the Michigan Department of Transportation hired Mercer Management Consultants in 1993 to respond to the Michigan Legislature's initiative to address intermodal transportation in the Greater Detroit Area. The results of that, and subsequent work recognized that:

- Detroit is one of the top markets in the nation for intermodal freight (trailer or container loads moving by rail).
- Because of the auto industry, Detroit leads the nation in its use of "RoadRailer" technology, i.e., a truck trailer becomes a rail car by placing rail wheels underneath.
- One-third of Detroit's intermodal traffic is trucked to and from other cities. This means it travels by rail to Chicago, Toledo, or Windsor for example, and then is trucked to Detroit. Better intermodal service could result in a diversion of some of this intermodal activity to Detroit because of reduced transportation costs. This would eliminate some trucks from Michigan's roads, which could reduce congestion and help ease the need for added capacity on the roadway network.



**Figure 2-2
U.S. Rail Intermodal Traffic**



- The improvement of the Detroit-Windsor rail tunnel and the recent construction of a new Port Huron-Sarnia rail tunnel enhance intermodal access to/from the Detroit area.

2.2 Need for the Proposed Action

The needs of the U.S. economy and national defense are undergoing a significant change. Modern supply chain logistics, just-in-time manufacturing and deployment, and leaner organizations have revolutionized the way industry and the military transport freight. Concurrently, intermodal freight transport also is undergoing change. It is growing, spreading into new markets and restructuring to meet the needs of its customers. As highway and rail systems are modernized and integrated, supporting the needs of business, industry and the military – particularly in the way they contribute to the quality of life, the economy and national defense – continues to be the primary justification for public investments in the transportation system.

Detroit is one of the top intermodal markets in the nation. The Detroit market has characteristics that could cause intermodal traffic to grow faster than the national average, including its role as the automotive capital of the world and strategic position on the Canadian border. Intermodal traffic could grow faster and to greater levels in Detroit, if adequate capacity existed.

It is the role of government (in this case MDOT) to ensure that the businesses and industries involved in the freight transportation segment of the economy continue to have access to the market (i.e., customers, workers, shippers, etc.). This, in turn, supports jobs in Michigan and nationally and ensures maintenance of the national defense as well as a high quality of life for the region’s citizens. MDOT’s role in the DIFT is to improve the connectivity between modes through provision of a better interface between the public road system and the private rail system and to facilitate the development of significant capacity at the region’s intermodal facilities.

2.2.1 Intermodal Terminal Capacity Versus Demand

The following discussion deals with intermodal terminal activity in the Greater Detroit Area (GDA). It is presented without identifying each terminal because of the proprietary nature of the information.

Mercer Management Consulting, under contract with the Michigan Department of Transportation, assessed the 1993/1994 conditions of intermodal transportation in the Greater Detroit Area and defined a course for the future. The study found that the volume of intermodal traffic, called lifts,¹ was 335,000 in 1994, which was an 18 percent increase over the 1992 volume of 283,000 lifts. In 1998, the volume had grown to approximately 400,000 lifts or another 16 percent over 1994. The number of lifts then declined, mainly because of the railroads' decision to truck more GDA products to Chicago, the economic conditions of the period, and the increasing attention to international security threats (Table 2-1). Nevertheless, the actual number of lifts in 2002 had rebounded and was higher than the low end of the Mercer forecast made for 2000 (i.e., 335,000 lifts). Those Mercer forecasts indicated the intermodal capacity of the GDA would be exceeded in 2000.

**Table 2-1
2002 Lift Summary**

Terminal^a	Lifts
1	60,000
2	55,000
3	83,000
4	77,000
5	25,000
6	48,000
Total	348,000

^a Terminals are those that served intermodal activity in 2002, exclusive of Mazda, which is not available for commercial use. Willow Run was not in intermodal service at this time.

Source: The Corradino Group of Michigan, Inc. through cooperation of CSX, NS, CP and CN.

Following the Mercer work, MDOT conducted a feasibility study in 2001. It concluded that doing nothing did not address the regional intermodal capacity demands on Southeast Michigan. It also determined that a build alternative could provide the future capacity needed, help address community issues in the vicinity of the Livernois-Junction Yard and form a partnership of railroads, community and government to create a sustainable environment. This led to the Environmental Impact Study, which began early in 2002.

As an early part of the environmental analysis, an inventory was conducted in 2002 of intermodal activity and capacity at each of the six terminals operating at that time. It ratified the earlier Mercer forecast and the feasibility study conclusion that the overall regional intermodal demand is at terminal capacity (Table 2-2), while three of six terminals lacked adequate capacity. Recent information gathered for the DIFT project indicates the Norfolk Southern Railroad has realized a significant increase in its Triple Crown business to the extent it cannot be accommodated at the Melvindale terminal. NS has requested MDOT's financial assistance so that it can consolidate its

¹ A lift is the transfer of a trailer or container to or from a rail car.

Triple Crown intermodal trailer operations at the Livernois-Junction Yard as it has done with Oakwood and Delray container operations. But, until the DIFT EIS is finalized and a Record of Decision executed, use of federal monies to provide such assistance is not available. So, NS reopened in 2004 its terminal at Willow Run in Romulus, Michigan to handle its Triple Crown business growth. If the DIFT were approved, and if appropriate improvements are made on a timely basis, NS will shift all its intermodal operations at Triple Crown in Michigan to the Livernois-Junction Yard. This will leave four intermodal Class I Railroad terminals serving Southeast Michigan in the future.²

An assessment of the demand/capacity relationships at the four intermodal terminals that will serve the region in the future under the No Action scenario is shown on Table 2-2. A range of demand is provided based on varying growth rate forecasts. Table 2-2 also illustrates the maximum possible capacity as provided by the terminal operator. It is the most the terminal can handle with the densest use of the existing terminal space, i.e., stacking of containers/parking of trailers, and without additional property. These data indicate a lack of capacity at each yard and an overall deficit in the region from 80 percent to more than 125 percent by 2025 (Table 2-2).

Table 2-2
Detroit Intermodal Freight Terminal Project
Demand vs. Capacity
No Action Scenario

Terminal ^{a,b}	2025 Outlook of Lift Activity (Demand) ^c		Lift Capacity	Lift Deficiency
	Low	High		
W	352,800	441,600	150,000	202,800 to 291,600
X	44,500	55,700	25,000 ^d	19,500 to 30,700
Y	137,200	171,700	95,000	42,200 to 76,700
Z	85,500	107,000	75,000	10,500 to 32,000
Total	620,000	776,000	345,000	275,000 to 431,000
				80% to 125%

^aTerminals listed are those four that will serve as intermodal facilities following the assumed NS consolidation at the Livernois-Junction Yard.

^bTerminal's owner/operator is not identified at the railroads' request in light of proprietary interests.

^cDetroit Intermodal Freight Terminal Project, Commodity Flow Model Structure and Preliminary Results, January 2004.

^dCapacity of 40,000 lifts was reduced to 25,000 lifts per year when a lease for land used by the terminal was terminated.

Source: The Corradino Group of Michigan, Inc.

It is noteworthy that the growth associated with the No Action Alternative is forecast by use of a commodity flow model created specifically for the study of the Detroit Intermodal Freight Terminal (refer to Technical Report list at the end of Table of Contents). The model's results were submitted for review to the railroads affected by the DIFT. The intermodal terminal operators who responded indicated the high end of the lift range for the alternatives involving government investment (i.e., Alternatives 2, 3 and 4) are optimistic, but reasonably so, in light of the horizon being over 20 years in the future i.e., 2025. These consultations also indicated that, without government assistance, i.e., Alternative 1: No Action, the intermodal growth could be as

² A Class I railroad does at least \$250 million of business annually.

low as about 500,000 lifts per year in 2025, compared to the model’s low side forecast of 620,000 lifts. This is because business would be shifted to terminals outside the region, for example CSX to Cleveland, NS to Toledo and CP to Chicago. Nevertheless, even this low forecast of future activity under No Action conditions cannot be handled without the railroads expanding existing terminals (Table 2-3).

Table 2-3
Detroit Intermodal Freight Terminal Project
Demand vs. Capacity
Revised Low-end-of-Range Forecast

Terminal^{a,b}	2025 Revised Low-end Lift Forecast	Lift Capacity	Low-end-of-Range Lift Deficiency
W	280,000	150,000	130,000
X	35,000	25,000	10,000
Y	110,000	95,000	15,000
Z	70,000	75,000	-5,000
Total	495,000	345,000	150,000 43%

^aAll Norfolk Southern intermodal activity is consolidated at Livernois-Junction yard, so NS’ four terminals become one.

^bTerminal’s owner/operator is not identified at the railroads’ request in light of proprietary interests.

Source: The Corradino Group of Michigan, Inc.

2.2.2 Intermodal Connectivity Needs

Because freight transport is not just about terminal facilities but also about how the system operates, there is a need to provide a better interface between the public road system (primarily interstate freeways) and the terminals and between the rail lines themselves external to the intermodal terminals. There is a need to locate and coordinate services so they can best meet the needs of businesses, industries, and the U.S. military in Michigan and nationally. Individual private businesses, such as rail companies, are not expected to take sole responsibility for these system issues. Government has a role. The types of connections to be considered in addressing the need for better connectivity are (Figure 2-3):

- Rail-to-Highway (I-75, I-96, I-94)
- Rail-to-Rail (CN, CP, CSX, NS)
- Rail-to-Cross-Border Connections
 - Bridges (Blue Water, Ambassador and possible new crossing)
 - Tunnels (Port Huron-Sarnia and Detroit-Windsor)

The rail-to-highway issues, while specific to each alternative, affect connections to I-75/I-96 and/or I-94. For example, channeling trucks directly to I-96 at the CP/Oak terminal will ease traffic on streets such as Artesian, Davison and Schoolcraft. Likewise, better connections at Livernois Avenue to I-94 will ease traffic on streets such as Central Avenue and Livernois/Dragon Avenues at the Livernois-Junction Yard.

As an example of the difficult rail-to-rail connectivity issues in the Detroit area, the June 2003 *Trains* magazine reported: “...For railroads, Detroit is the proverbial bowl of spaghetti. Main lines entangle and intertwine in seemingly impossible combinations.”



SOURCE: The Corradino Group of Michigan, Inc.
1. / Project 2014 - All rights reserved Fig 2.3.d

Capacity is determined through a combination of train speed, length of trains, route conflicts, signaling and track switching operations. In Detroit, a number of these issues are causing problems.

- **Train Speeds.** Due to the layout and the historical development of the routes in the Detroit area, train speeds are restricted at many of the junctions because of the curves in the tracks, track conditions, inadequate signaling or railroad operating rules. Trains operating at 10 mph occupy track junctions 2.5 times longer than trains operating at 25 mph.

Examples:

- Milwaukee Junction and Bay City Junction interlockers (refer to Figure 3-15 for interlocker locations) have severe curves restricting speeds to just 10 mph.
- Delray’s interlocker does not have adequate signaling equipment, so trains must operate at less than 20 mph.

Because of speed restrictions, Norfolk Southern trains traveling from Livernois-Junction Yard to the River Rouge Bridge are scheduled to take 30 minutes, even though it is approximately three miles away. Trains occupying these segments of track for this long – whether they are departing, waiting or arriving – reduce the available track time for other trains, which must park and wait.

- **Length of Trains.** For many years, the standard rail car was 40 feet long and a train with 100 cars was about 4,000 feet long. Today, many rail cars are 90 feet long with some reaching 250 feet. Train length can easily reach 9,000 feet. There are approximately 80 trains per day that operate through the Southwest Detroit area.

Examples:

- If a train longer than 4,000 feet is stopped between West Detroit interlocker and Delray interlocker it will block tracks at Dix and Waterman, stopping other trains trying to get into the Livernois-Junction Yard as well as through the corridor.
- A train moving to the NS/Oakwood Yard could have tracks blocked affecting movement to and from Delray, River Rouge and Ecorse.

- **Route Conflicts.** Because of the way some track connections are laid out, trains sometimes block other trains.

Examples:

- Amtrak trains currently travel from the Milwaukee Junction interlocker to Livernois-Junction Yard. While making this trip, they stop all movements on three of the four tracks causing conflicts at Milwaukee Junction interlocker. The Amtrak trains cause conflict again at Beaubien Junction, stopping the movement on three of the four tracks. They then have to cross over Vinewood interlocker, stopping movement on all but one track. Finally, they cross at West Detroit interlocker, stopping all movement on the CN and NS mainline track.
- Every time a CP train travels through Delray interlocker, all NS and CN trains must stop moving until the CP train has cleared the yard.

- **Signaling.** In the area around Livernois-Junction Yard, several different signaling situations cause major impacts on train operations.

Examples:

- Delay interlocker is operated by CSX, while the River Rouge Bridge, less than half a mile south, is operated by NS. The track in between has signals in only one direction. This requires continual coordination among railroads for every train movement.
 - Because there are signals in only one direction, trains must operate at restricted speeds.
 - Signal spacing governs the speed at which trains can operate. Trains leaving and entering areas with signals around the Livernois-Junction Yard generally must operate at only 10 mph.
 - In several locations, more than one train operator is needed to make a single movement. This happens when one railroad has control over one switch while another has control of a second switch, and both are needed for a train to move through an area. This occurs at Vinewood, where Conrail has control of one switch and CN has control over the other switch. This also occurs at CP Lou, Coolidge and Milwaukee Junction interlockers.
- Switching Operations. At several locations in the area, railroads must use the mainline tracks to switch rail cars around while “building” a train.

Examples:

- At the southeast end of Livernois-Junction Yard, rail cars being switched take up three of the four available tracks that mainline trains could be using to pass through.
- This also occurs at the east end of Livernois-Junction Yard, at the Milwaukee Junction, and Ecorse interlockers. At all of these locations, switching rail cars impacts movement within the yard or on the mainline.

In all cases cited above, any increase in the number of trains or the amount of switching required will make the existing problems worse. Addressing these rail connection problems, however, would improve the efficiency of the yards, increase the productivity of the trains, and reduce costs, pollution and noise.

2.3 Government Involvement

A commitment to study improving intermodal transportation in Southeast Michigan was initiated in 1993 by MDOT. In 1998, study of Detroit Intermodal Freight Terminal was listed as a High Priority Project within the federal transportation bill known as the Transportation Equity Act of the 21st Century, or TEA-21. TEA-21 provides \$18 million in federal funding assistance for the project (TEA-21, Section 1602, High Priority Project 1221).

2.4 Summary

The Michigan Department of Transportation is engaged in the DIFT studies to ensure that the businesses and industries involved in the intermodal freight transportation segment of the economy continue to have access to the market (customers, workers, shippers, and the like). This, in turn, will support mobility and maintenance of the Michigan and national economies and national defense and promote a high quality of life for the region’s citizens including the following, if improvements are made to the intermodal system under one of the Action Alternatives:

- Providing the necessary infrastructure to support current and future distribution needs of industry, particularly auto manufacturing, the state’s largest industry, and other Southeast Michigan businesses.
- Achieving a competitive advantage both regionally and nationally by focusing federal, state, local and private (i.e., railroad and other private entities) investments and resources on an “intermodal” strategy.
- Stimulating economic development and redevelopment throughout Southeast Michigan through job creation, and increasing the tax base.
- Reducing truck “vehicle miles traveled,” which saves lives, reduces pollution and conserves highway capacity.
- Removing intermodal terminal-related truck traffic from the local streets of the nearby neighborhoods so that quality of life issues, such as air pollution and safety, are addressed.
- Buffering the intermodal facility from nearby neighborhoods through improvements that reduce noise and use trees, vegetation and other enhancements to improve the terminal’s exterior appearance.

The project is needed to handle the increasing intermodal volumes, which have grown from 283,000 lifts in 1992 to 348,000 lifts in 2002 (down from a high of about 400,000 in 1998 largely due to economic and security risk conditions). The capacity of the existing intermodal terminals in the region is about 345,000 annual lifts. The forecast demand for 2025, if normal trends occur, would range from about 500,000 to 800,000 annual lifts.

SECTION 3

ALTERNATIVES

This section describes how the alternatives were developed. A preferred alternative has not been identified and the No Action Alternative remains a choice. A decision on a preferred alternative will not be made until after the public hearing and comment period that follows, and consideration of all comments in this decision-making process.

3.1 Alternatives Development

The purpose of an EIS is to present alternatives, disclose impacts related to the alternatives and serve as a decision-making document in order to select an alternative that addresses the project's need and best meets the goal of the project, while considering the impacts. The goal of the DIFT is to develop a regional facility or facilities with enough capacity to handle current and future intermodal freight shipments needed by business, industry and the U.S. military and to provide efficient interconnectivity of intermodal operations to reduce time, monetary costs, and congestion to support the economic competitiveness of Southeastern Michigan and the nation. This report also identifies impacts and benefits of all practical alternatives. Where negative impacts are identified, ways to avoid, minimize or mitigate them are examined and applied, if appropriate.

From the passage of TEA-21 in 1998 (Public Law 105-178, Section 1602, High Priority Project [HPP] 1221) until the fall of 2002, federal and state efforts on the DIFT project were directed at a single intermodal terminal in Southwest Detroit, Wayne County at the Livernois-Junction Yard. In March 2002, the federal Notice of Intent was published to advise the public that an Environmental Impact Statement (EIS) would be prepared. It listed one alternative to taking no action, i.e., "refinements to Rail Strategy 3," as identified in the Detroit Intermodal Freight Terminal Project Feasibility Study, Technical Report No. 4, i.e., consolidation of regional intermodal operations at the Livernois-Junction Yard. In the latter part of 2002, the Federal Highway Administration, following a resource agency scoping meeting held on September 19, 2002, issued the following position:

"The overall goal of the DIFT is to enhance intermodal operations and economic competitiveness of SE Michigan. In fulfilling this goal, we (FHWA) believe treating the RRs with equity is sound public policy. This policy does not [emphasis added] define the starting point, rather it places a condition on the outcome, similar, for example, to assuring that air quality standards will be met. In our (FHWA) view this policy does not pre-limit [emphasis added] the EIS to investigating only a single solution. The EIS must consider a range of practical alternatives. Ultimately, the EIS process will result in a preferred alternative and the EIS must clearly articulate the basis for the preferred alternative."

Subsequently, the approach to alternatives was updated. The revised Notice of Intent was issued in March 2003. Since then, the project has evolved, with public involvement, to include the following:

Alternative 1 No Action: This alternative assumes the railroads will develop their existing intermodal rail yards in Southeast Michigan without federal and state government funding assistance and oversight.

Alternative 2 Improve/Expand: This alternative proposes improvements will be made to four existing intermodal rail terminals (at Livernois-Junction Yard, CP/Expressway, CP/Oak and CN/Moterm) operated by the four Class I railroads in Southeast Michigan with railroad funding, as well as federal and state governments funding assistance and oversight. This alternative includes improvements inside and outside the existing railroad terminal property.

Alternative 3 Consolidate: This alternative proposes the intermodal operations of all four Class 1 railroads will be consolidated at the Livernois-Junction Yard area. Railroad funding, plus federal and state governments funding assistance and oversight would be involved in making improvements inside and outside the existing yard. The existing terminals from which intermodal business is transferred will continue to serve other railroad business.

Alternative 4 The Composite Option: This alternative proposes the intermodal operations of three railroads (CSX, Norfolk Southern and Canadian Pacific) be consolidated at the site of the Livernois-Junction Yard in southwest Detroit, while improving/expanding the existing CN/Moterm terminal, with federal and state funding assistance and oversight for improvements inside and outside the terminals. The railroads will also invest in these improvements. The existing terminals from which intermodal business is transferred will continue to serve other railroad business.

It is important to recognize that “external-to-terminal” improvements, such as the rail connections/interfaces at Delray, Milwaukee Junction and Vinewood interlockers, are part of Alternatives 2, 3 and 4 (see Figure 3-15). These will all be accomplished on existing railroad property. All Action Alternatives also include improving the north side of the I-94/Livernois Avenue interchange to facilitate truck movements to the Livernois-Junction Yard and keep them out of the neighborhood to the north.

3.2 Alternatives Eliminated from Further Study

All reasonable and practical alternatives have been carried forward for detailed study in this DEIS. Alternatives which clearly do not address the project purpose and need were eliminated from future consideration.

3.2.1 Other Sites for Intermodal Terminals

Since the 1980s, railroads have consolidated their intermodal service networks into fewer, larger hub terminals as they saw an opportunity to consolidate enough volume in one location to justify lift machines and other expensive equipment/facilities. Small facilities have been eliminated. For example, the intermodal activity at the smaller Norfolk Southern terminal at Oakwood was shifted/consolidated at the Livernois-Junction Yard in 2003. This location, and others in the region

like at Highland Park, do not lend themselves to productive intermodal operations. Nevertheless, an existing terminal like Norfolk Southern's terminals at Melvindale and Willow Run may be used for some time into the future, if adequate capacity is not available for consolidation on a timely basis at the Livernois-Junction Yard. But, even if these Class I railroad terminals stay in use indefinitely, their capacity, when added to that of the four intermodal terminals most likely to continue, does not address the demand expected in the future.

The August, 1994 Mercer Report³ identified the CN/Highland Park terminal as one of two alternatives that warranted further investigation for a consolidated terminal (the Livernois-Junction Yard was the other alternative identified at that time). The Mercer Report and subsequent research has found the Highland Park site is not a viable intermodal terminal option for CN because:

1. The Highland Park property is cut up by major transportation facilities, so that standards for a modern intermodal terminal cannot be met.
2. Storage and support tracks would have to be located offsite causing additional switching inefficiencies for the rail operators and the possible need for additional property acquisition.

It is also not a viable option for CSX, NS and CP or for consolidation of the intermodal activity of all four railroads for the above-stated reasons, plus:

1. Extensive trackage rights would be required for any of these railroads to use the site.
2. The cost and time for these carriers to access the site make it an unacceptable option.

3.2.2 Greenfield Site

Each of the railroads reaches Detroit over a network of individually-owned rail lines. There are locations along those lines where tracts of land that are largely undeveloped and otherwise known as "greenfields," might appear to be available for development. But the rail infrastructure is not available for multiple railroads' access. The same can be said of abandoned properties known as "brownfield" sites.

Another issue with those undeveloped properties is they tend to be removed from the shippers that they will be serving. This fragmentation results in increased distance/time to haul goods (drayage) and contributes to highway congestion creating a less efficient intermodal transportation system, which is counter to the purpose of this project. Finally, "greenfield" developments may also contribute to urban sprawl and require new highway, utility and other infrastructure. Conversely, for the most part, the existing intermodal facilities, and the proposed consolidated terminal at the Livernois-Junction Yard, are able to use the established infrastructure that is already in place.

The earlier studies in 1993/1994 conducted for MDOT by Mercer Consulting examined possible "greenfield" sites. One, Willow Run, while having several attributes, was served by only a single railroad at the time, Conrail. Since the sale of the Conrail assets, Norfolk Southern now controls access to the location. Additionally, Willow Run has been proposed for high-speed passenger service. The earlier MDOT studies found that the Willow Run site was far from its market with high pickup and delivery costs. Nevertheless, because of the Triple Crown business growth, NS

³ *Greater Detroit Area Intermodal Study, Phase II – Intermodal Transportation Center Concept*, Mercer Management Consulting, August 1994.

has had to reopen the Willow Run terminal or lose the business. It has, at the same time, asked MDOT for financial assistance so that it can consolidate all its intermodal operations on an accelerated pace at the Livernois-Junction Yard. None can be provided unless and until the DIFT environmental review is complete.

Overall, a “greenfield” site does not meet the purpose of the project because it results in increased distance/time to haul goods (drayage) and contributes to highway congestion creating a less efficient intermodal transportation system.

3.2.3 CBRA Alternative

An alternative proposed by a group known as Communities for a Better Rail Alternative (CBRA) focuses only on the Livernois-Junction Yard. It involves several elements including building a new interchange at I-94/Rotunda Drive to connect with the rail line plus a second interchange connecting the rail line with I-75 north of the Ambassador Bridge. These interchange concepts are not possible according to American Association of State Highway and Transportation Officials (AASHTO) design standards because of constraints on spacing of interchanges, and elevations/grades. In addition, the CBRA alternative would not meet the forecasted future demand for lift capacity. There would be no increase in the terminals’ size for increased lift capacity resulting in a lift deficiency ranging from 155,000 to 431,000 lifts per year in 2025. Nevertheless, the basic CBRA concept of improving, without expanding the boundaries of the Livernois-Junction Yard and improving its physical relation with the surrounding community is closely, but not completely, aligned with the proposal for that terminal under Alternative 2.

3.3 Project Status

A preferred alternative has not been identified, and the No Action Alternative remains a choice. A decision on a preferred alternative will not be made until after the public hearing and consideration of comments received from the public and agencies. The comment period will start 30 days prior to the public hearing and last at least 60 days after the public hearing for a total of at least 90 days.

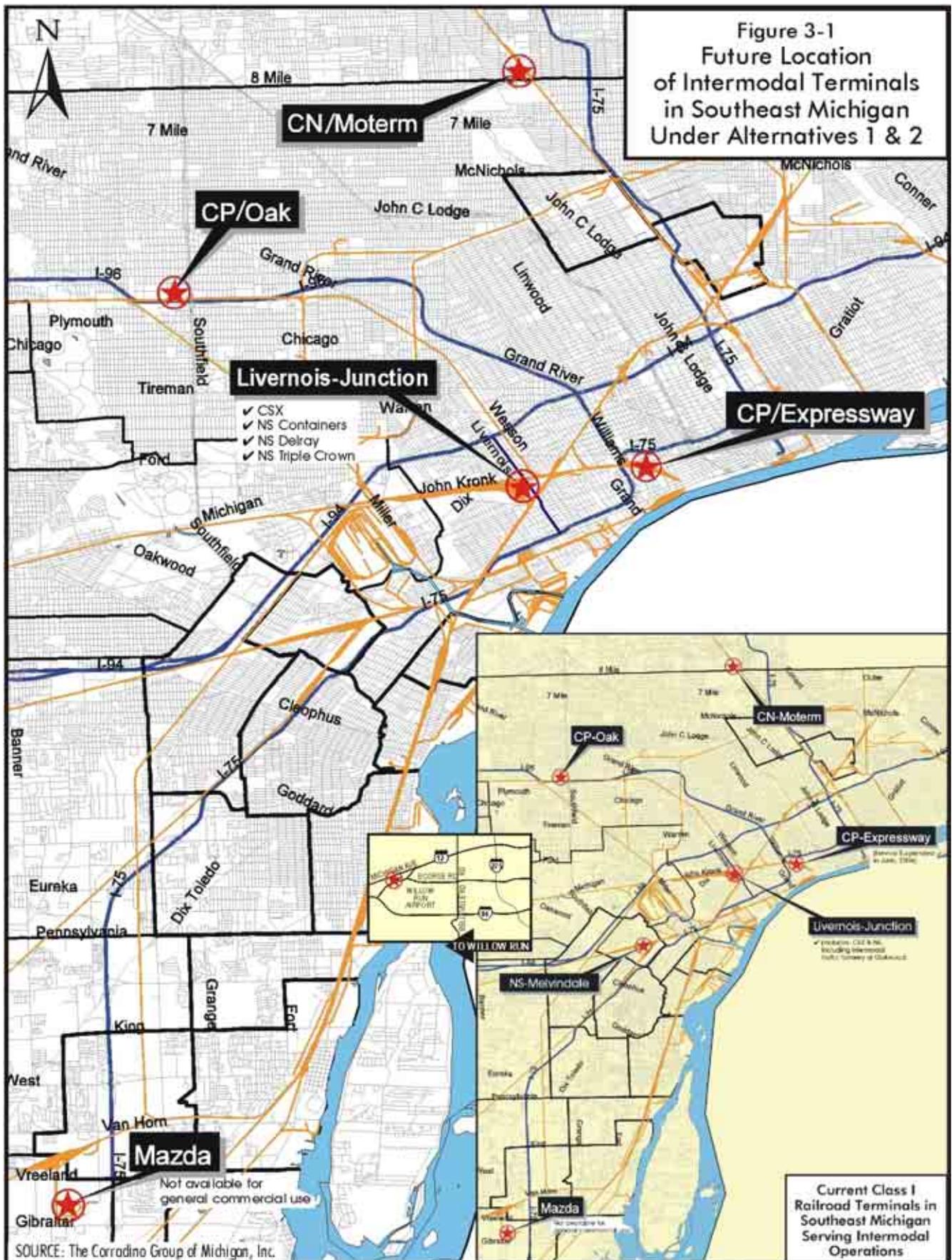
3.4 Practical Alternatives

The Practical Alternatives analyzed for this project are those defined at the outset of this section and identified as follows:

- Alternative 1 – No Action
- Alternative 2 – Improve/Expand Existing Terminals
- Alternative 3 – Consolidate All Four Class I Railroads’ Intermodal Activity at the Livernois-Junction yard Area
- Alternative 4 – The Composite Option, or a combination of Alternatives 2 and 3.

3.4.1 Characteristics of Proposed Intermodal Terminals

The following information is provided to understand how the terminals shown on Figure 3-1 will operate. Their general characteristics are summarized on Table 1-1.



Livernois-Junction Yard

CSX and Norfolk Southern have jointly controlled the 300-acre Livernois-Junction Yard since 1999 following acquisition of Conrail's assets. The yard is now being improved through a project of independent utility with a \$10 million public (MDOT)/private (CSX/NS) investment. Meanwhile, NS's Triple Crown business has outgrown its Melvindale terminal. So, NS reopened its Willow Run terminal in 2004. NS has indicated it prefers to consolidate all its intermodal business at the Livernois-Junction Yard, provided adequate facilities can be developed. NS has asked MDOT for financial assistance in accomplishing that objective. None can be provided unless and until the environmental review of the proposed DIFT is complete.

Under Alternative 1 – No Action, the Livernois-Junction Yard will continue to operate with two gates – one at Livernois Avenue, between John Kronk Street and Toledo Avenue, and a second near the intersection of Dix/Waterman/Vernor (Figure 3-2). Trucks use a variety of paths to reach these gates, including streets like Dragoon, Livernois and Vernor. Other local streets, such as Waterman, Dix and Springwells may be impacted by intermodal trucks. Additionally, a host of industrial activities, (e.g., the trucking center at the northwest corner of John Kronk Street and Central Avenue), will likely continue to operate/grow causing streets like Central Avenue to experience an increase in large-truck traffic.

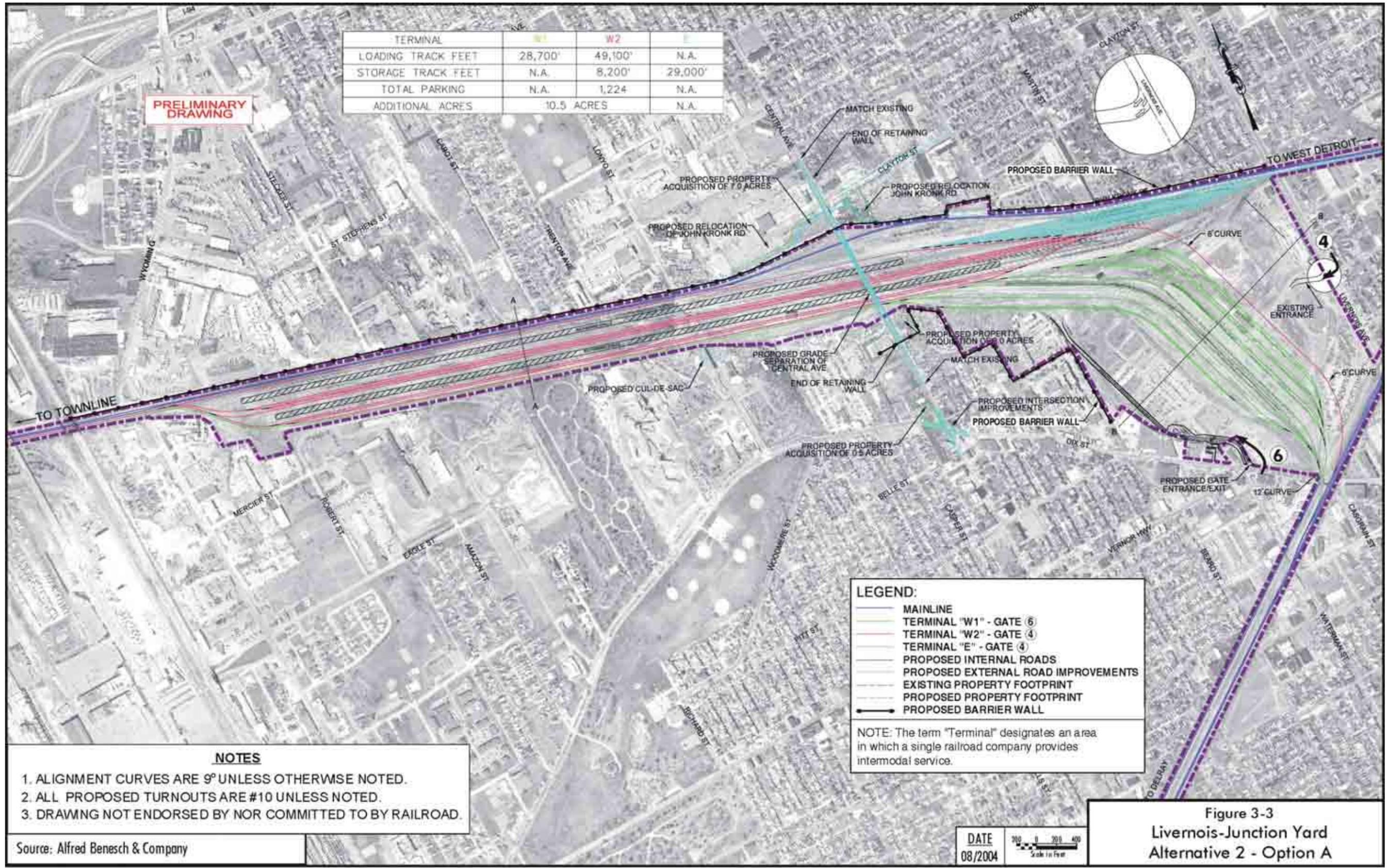
Under Alternative 2 – Improve/Expand Existing Terminals, the Livernois-Junction Yard will still be served by the Livernois Avenue entrance. Under Option A, the Dix/Waterman/Vernor gate will remain (Figure 3-3). There would be no displacements of residential properties but eight business relocations on 10 to 11 acres. Under Option B, the Dix/Waterman/Vernor gate will be eliminated by developing a western gate (Figure 3-4) served by Wyoming Avenue. There would be 11 businesses relocated but no involvement of residential properties. Acquisition would be 29.5 acres. Under Option C, the Dix/Waterman/Vernor gate will be eliminated by focusing all traffic at the Livernois Avenue gate, with a tunnel (14'-9" clearance) within the yard to allow trucks to move under the rail lines to access both sides of the terminal without crossing the rail lines at grade (Figure 3-5). Eight businesses would be relocated but no residential units would be acquired. Acquisition would be 10 to 11 acres. Under DIFT Alternative 2, for all options, Lonyo Avenue would be closed at the railyard boundary. Traffic would be channeled by way of a relocated John Kronk Street to Central Avenue (see Figure 3-3). Central would pass under the railroad tracks (Figures 3-3 through 3-5). Businesses supporting the terminal's intermodal growth would likely be drawn to the area near the terminal. There are hundreds of acres of brownfield and otherwise vacant/abandoned properties in the terminal area to accommodate such development. Under this alternative, the Livernois-Junction Yard would be paved and a barrier wall for terminal security would be provided along the entire north side of the terminal and on the south side east of Central Avenue. These latter two elements are integral parts of the proposed project.

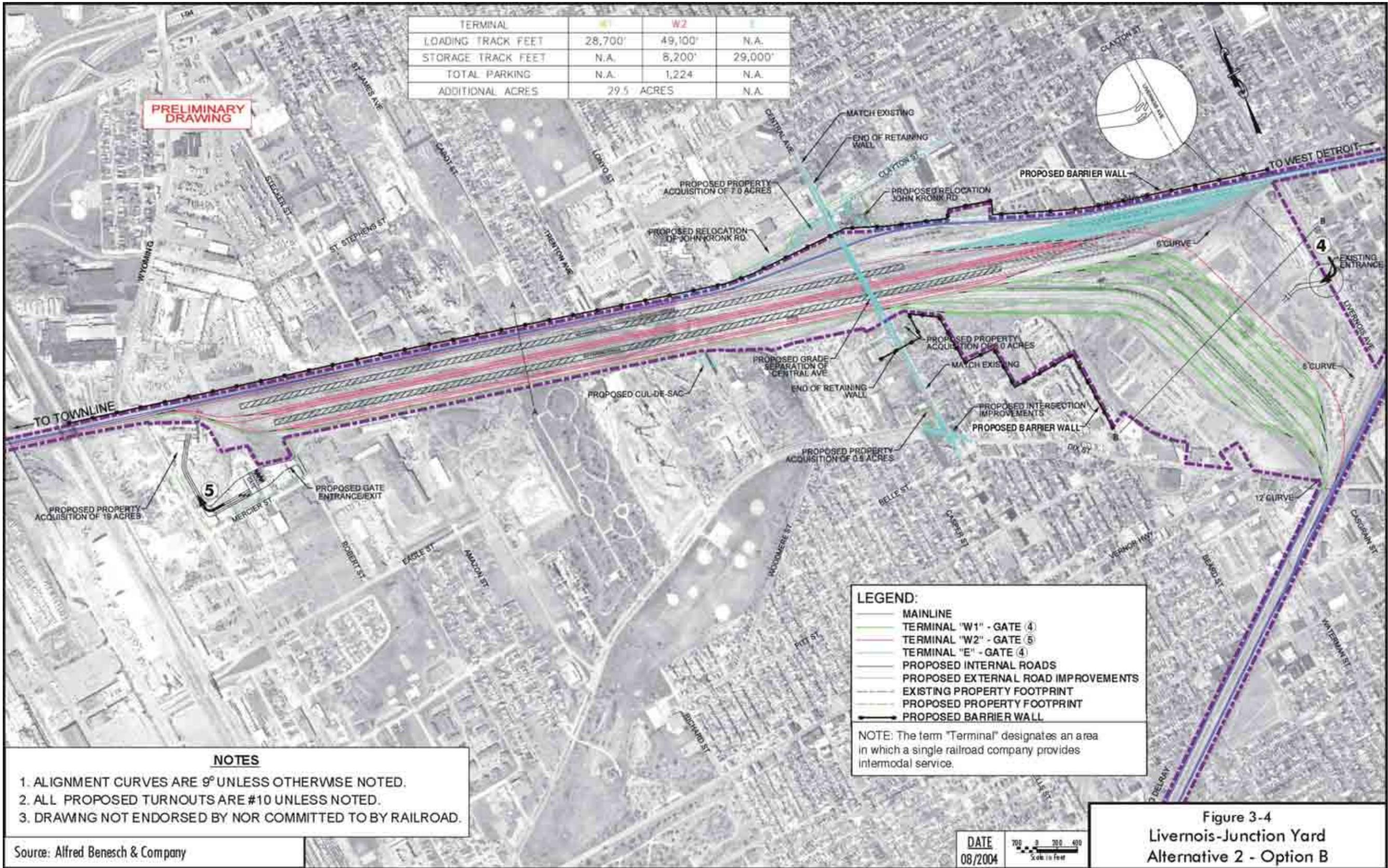
Under Alternative 3 – Consolidation, the Livernois-Junction Yard would accommodate all Class I railroads' intermodal operations in Southeast Michigan. The terminal would be served by five gates (Figure 3-6). Alternative 3, like Alternative 2, would see Lonyo Avenue closed and Central Avenue passing under the railroad tracks. Because this alternative would remove John Kronk as a city street, a perimeter road on the terminal's north side would be constructed to include a landscaped buffer. It would allow travel between Livernois and Wyoming Avenues. Alternative 3 would require acquisition of approximately 384 acres and relocation of 64 businesses and 83 residential units. This acquisition would cause relocation to other locations in the terminal area of more than 4,000 trips per day. So, while the expanded intermodal activity under Alternative 3 will generate about 5,000 daily truck trips (two-way) in 2025 (which is approximately 3,500 more

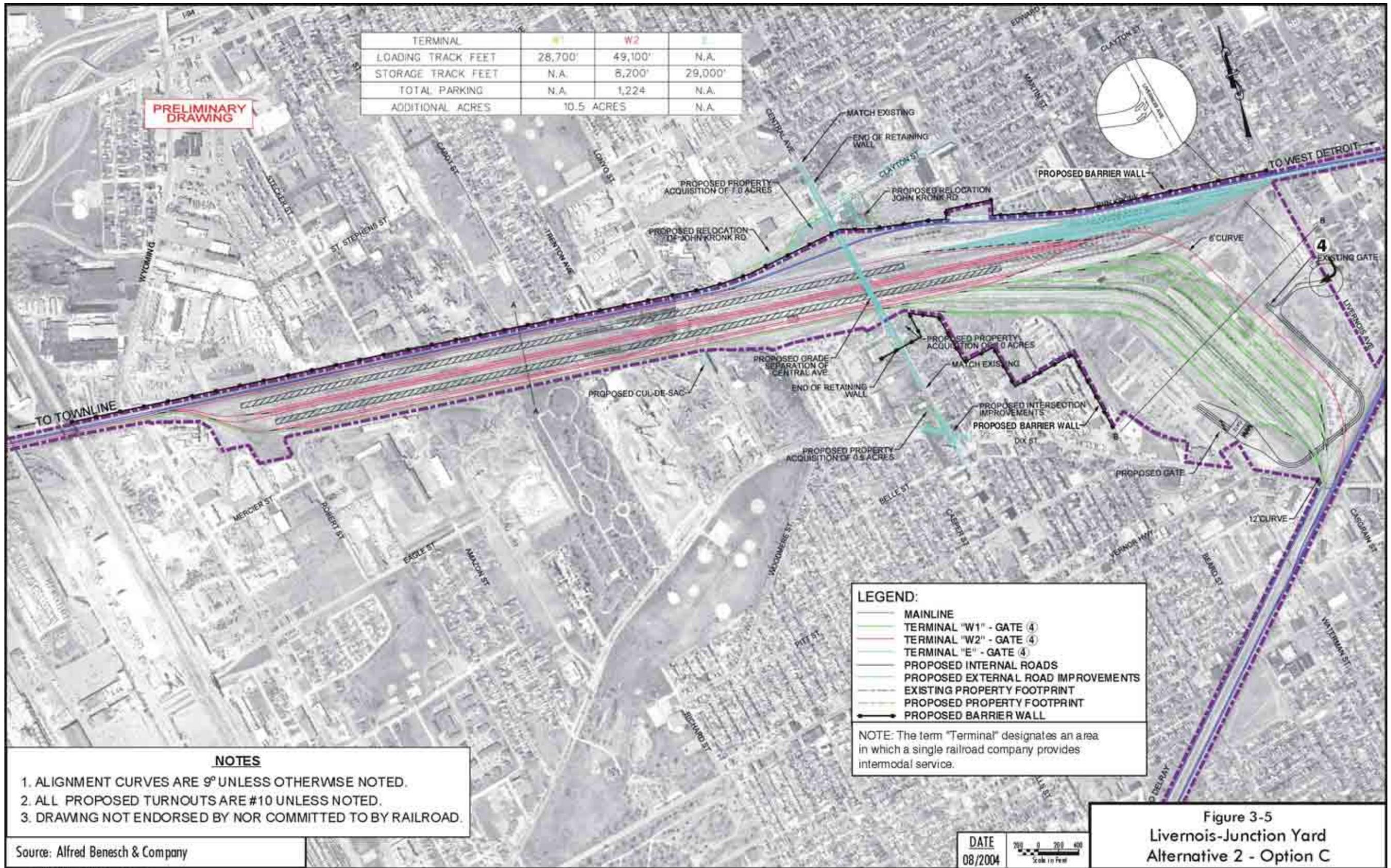
Figure 3-2
Existing Livernois-Junction Yard Access

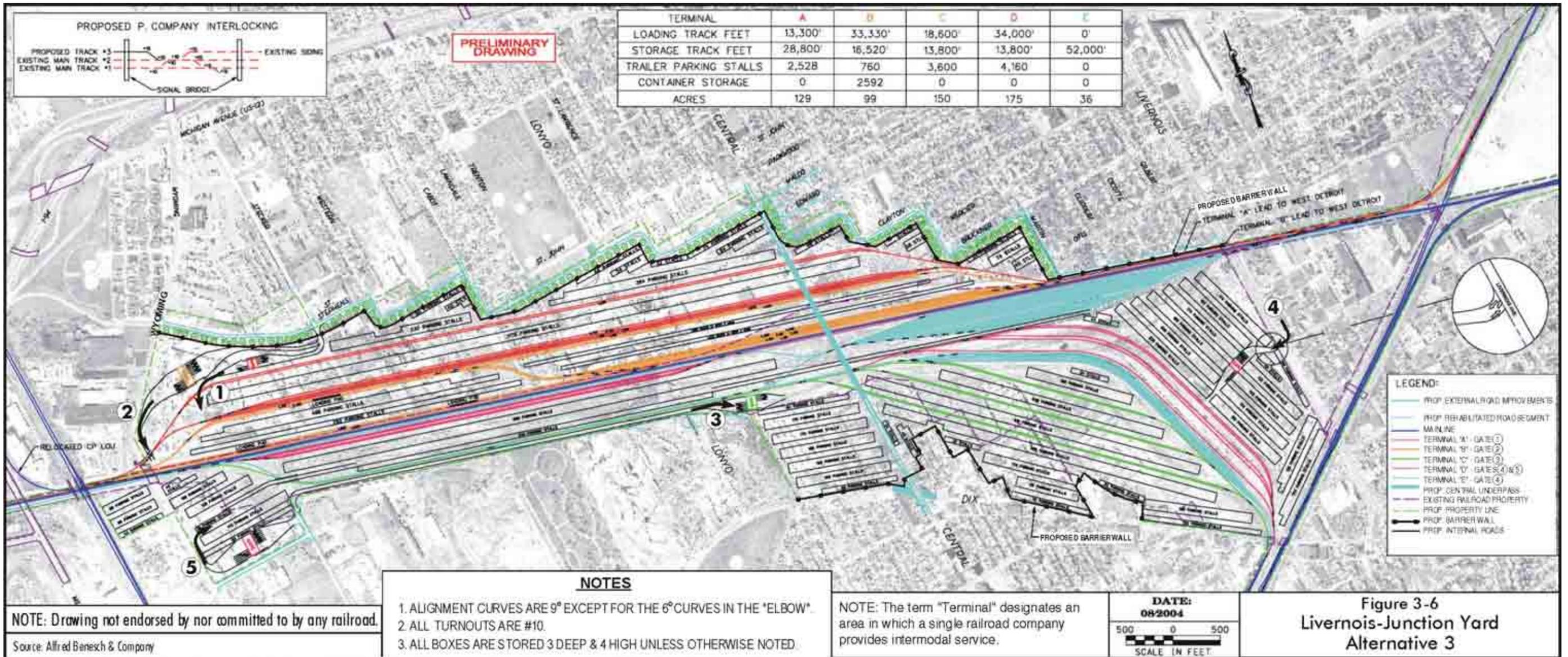


Source: The Corradino Group of Michigan, Inc.
Source: The Corradino Group of Michigan, Inc.









daily truck trips (two-way) expected at the terminal than the No Action Alternative), there will be an offsetting relocation of trips from the area immediately surrounding the terminal to the broader terminal area. Furthermore, access to the terminal's gates will be a combination of interstate-to-major arterial connectors (i.e., I-75/I-94 to Wyoming/Livernois⁴ Avenues) directing intermodal trucks away from the neighborhoods. Businesses supporting the terminal's intermodal growth would likely be drawn to the area near the terminal. Under this alternative, the Livernois-Junction Yard would be paved and a barrier wall for terminal security would be provided along the entire north side of the terminal and on the south side east of Central Avenue. These latter two elements are integral parts of the proposed project.

Alternative 4 – Composite of Alternatives 2 and 3 is similar to Alternative 3 except Canadian National Railroad would remain at an expanded/improved Moterm facility and not consolidate its intermodal business at the area of the Livernois-Junction Yard. This would reduce the number of gates there to four, compared to five for Alternative 3 (Figure 3-7). The potential acquisition of 265 acres at the Livernois-Junction Yard area (119 fewer than Alternative 3) would involve acquisition of 51 businesses and 33 residential units. This acquisition would cause the relocation of more than 3,600 trips per day. The number of daily, two-way intermodal truck trips in 2025 would be close to 4,600. The access routes to these gates via the interstate highway system, in combination with Wyoming and Livernois Avenues, would be the same as Alternative 3. Lonyo Avenue would be closed at the terminal boundary. Its traffic would be channeled via a new perimeter road to connect with Central Avenue to pass under the railroad tracks. The perimeter road and buffer would be built on the north side of the terminal to connect Livernois and Wyoming Avenue. Businesses supporting the terminal's intermodal growth would likely be drawn to the area near the terminal. Under this alternative, the Livernois-Junction Yard would be paved and a barrier wall for terminal security would be provided along the entire north side of the terminal and on the south side, east of Central Avenue. A barrier wall would also be placed on the east side of the CN/Moterm terminal. These elements are integral parts of each terminal's plan.

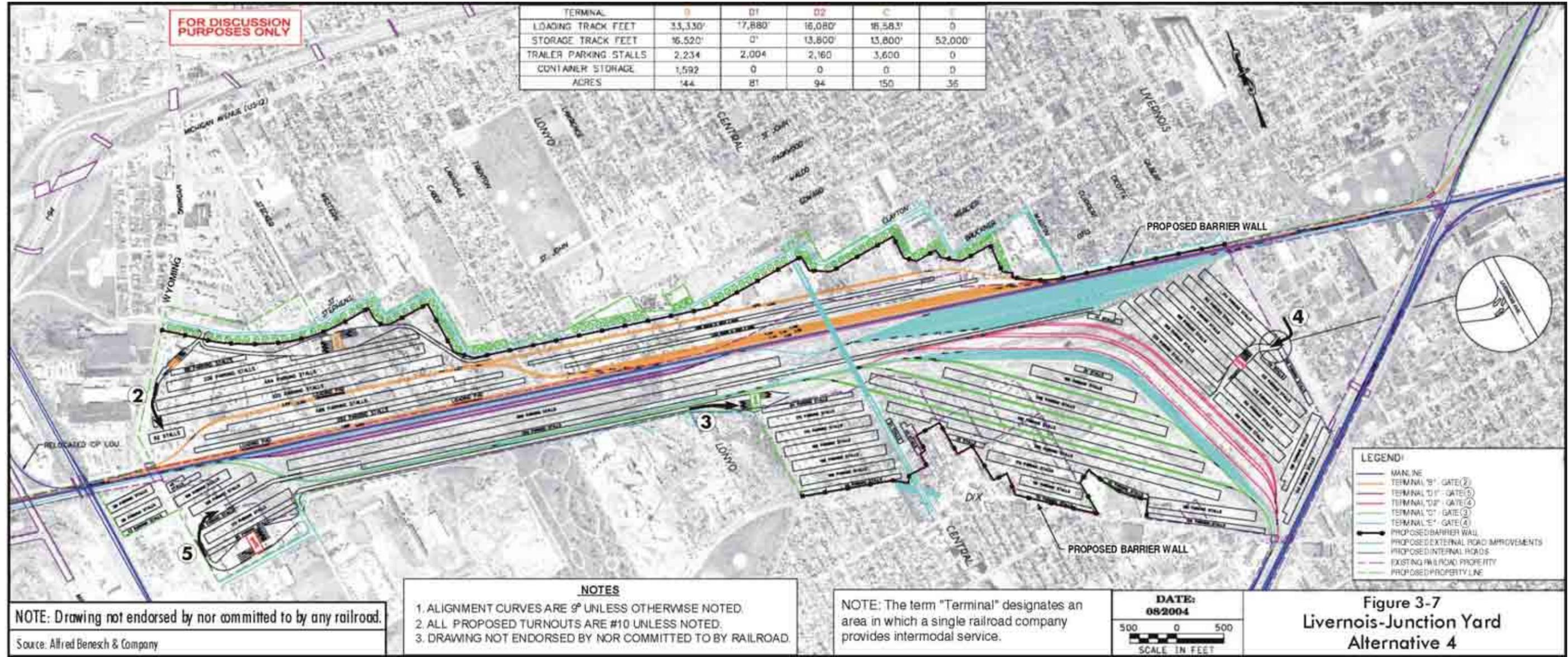
CP/Expressway Terminal

The CP/Expressway terminal under the Alternative 1 - No Action in 2025 is expected to handle about 140 daily two-way truck trips using city streets when business resumes (Figure 3-8). The terminal's operation was temporarily suspended in June 2004. Under Alternative 2 - Improve/Expand, the truck trips would grow to 250 also using city streets (Figure 3-9). Expanding the terminal would require the acquisition of 12 acres, including one institutional property and no residences. Noteworthy is that expansion of this terminal will be precluded if the Jobs Tunnel proposal by the Detroit River Tunnel Partnership (DTRP) becomes a reality because there is not enough space to handle both projects.⁵ Businesses supporting the terminal's intermodal growth would likely be drawn to the area near the terminal.

Under Alternatives 3 and 4, CP/Expressway's business (trailers) would be consolidated at the Livernois-Junction Yard area (refer to Figures 3-6 and 3-7).

⁴ The Livernois Avenue entrance would be configured so trucks must enter from or exit to the north.

⁵ The proposed DTRP project proposes to convert two existing rail tunnels connecting Detroit and Windsor to truck use and build a third, more modern, tunnel for rail. Project is in discussion phase. Public information on details is limited.

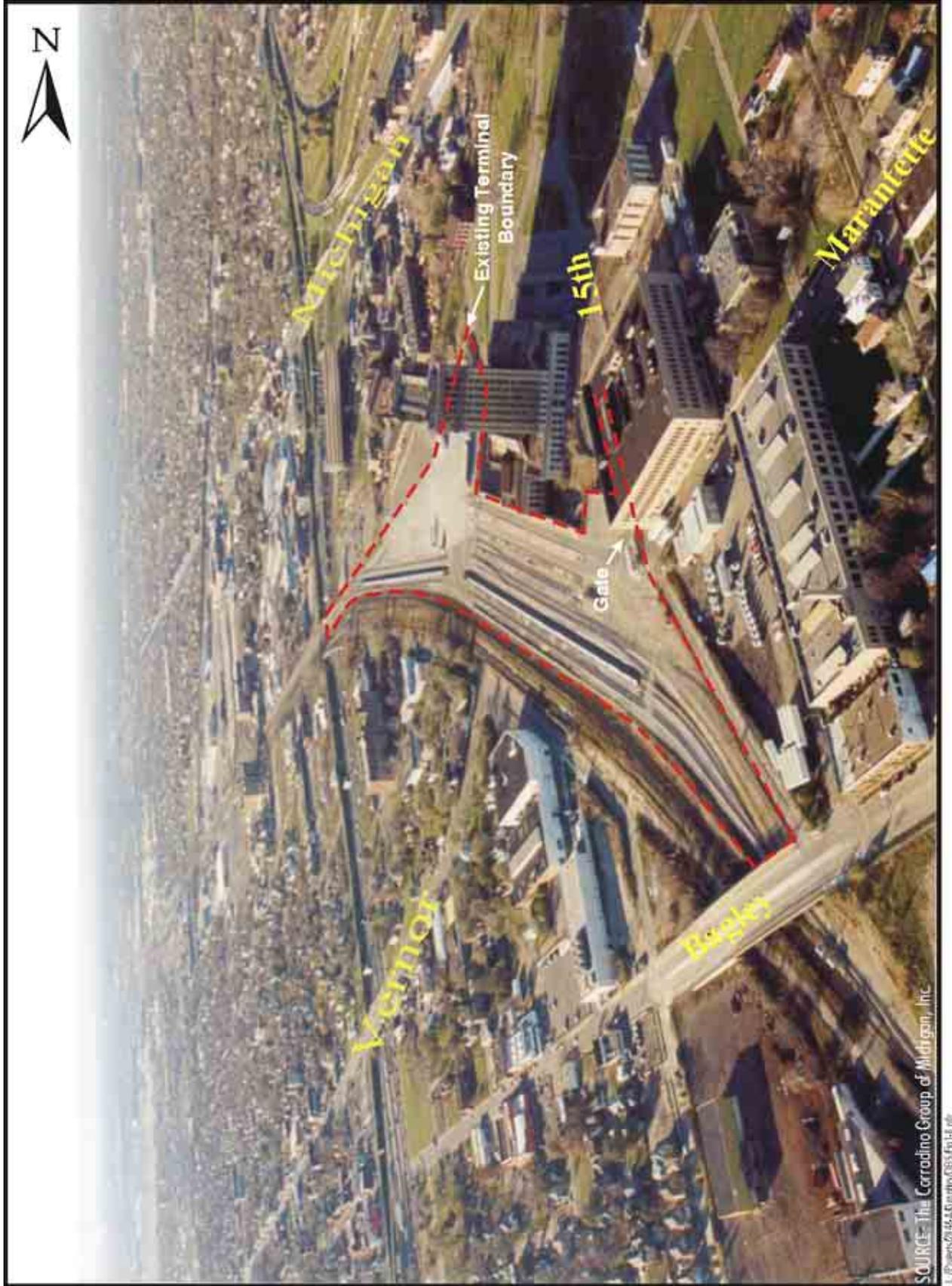


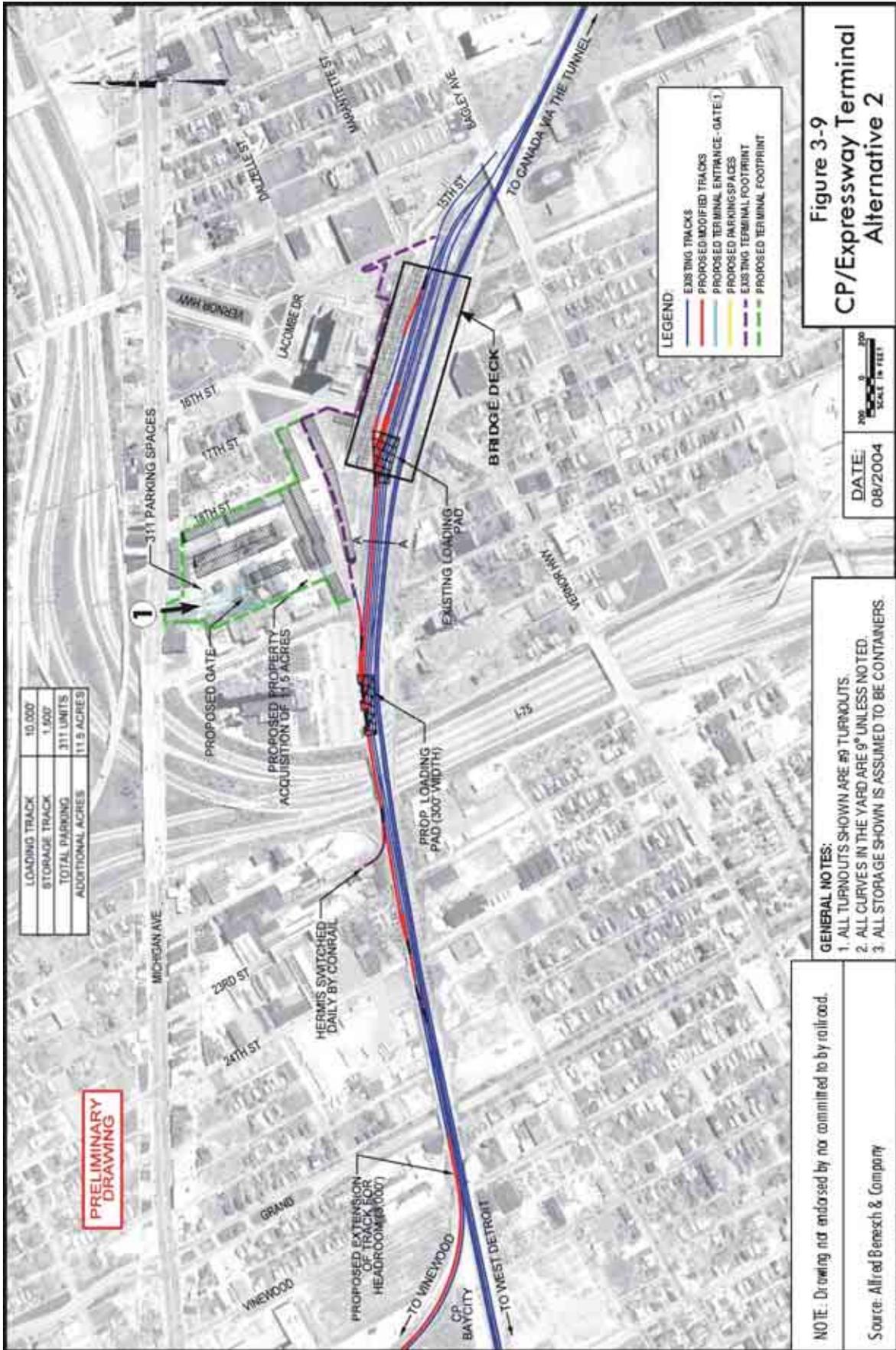
NOTE: Drawing not endorsed by nor committed to by any railroad.

Source: Alfred Benesch & Company

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Figure 3-8
Existing CP/Expressway Terminal Access





CP/Oak Terminal

Under Alternative 1 – No Action, Canadian Pacific Railway (CP) would continue to operate on approximately 24 acres leased from CSX to conduct its intermodal container business at the CP/Oak terminal (Figure 3-10). Today's truck traffic is about 280 (two-way trips), which will grow to almost 400 (two-way trips) by 2025 under No Action, Alternative 1.

Under Alternative 2 – Improve/Expand Existing Terminals, expanding the CN/Moterm terminal would grow the two-way, daily truck volume to about 700. Today, trucks access that yard through one gate and exit at two locations. These trucks use the Southfield Freeway service drive plus local streets like Glendale, Davison, and Artesian to travel to/from this facility. There are two options for this terminal under Alternative 2 (Figure 3-11 and 3-12). These Options, called A and B, differ only in the connection between the improved interchange at I-96/Evergreen Road and the expanded terminal. By virtue of the improved access, intermodal truck traffic affecting the surrounding neighborhood, including numerous residential properties located along the Southfield Freeway service drive, will be virtually eliminated and the now-existing gates closed. Expanding the terminal would require acquisition of five businesses for Option A and six for Option B. The truck traffic associated with these businesses will also be relocated. No residential property will be acquired. The expanded terminal will then be about 60 acres larger than today. Businesses supporting the terminal's intermodal growth would likely be drawn to the area near the terminal. Under this alternative, a barrier wall for terminal security would be provided on the north side of the terminal as an integral part of this proposed project.

Under Alternatives 3 and 4, CP/Oak's business (containers) would be consolidated at the Livernois-Junction Yard area (refer to Figures 3-6 and 3-7).

CN/Moterm Terminal

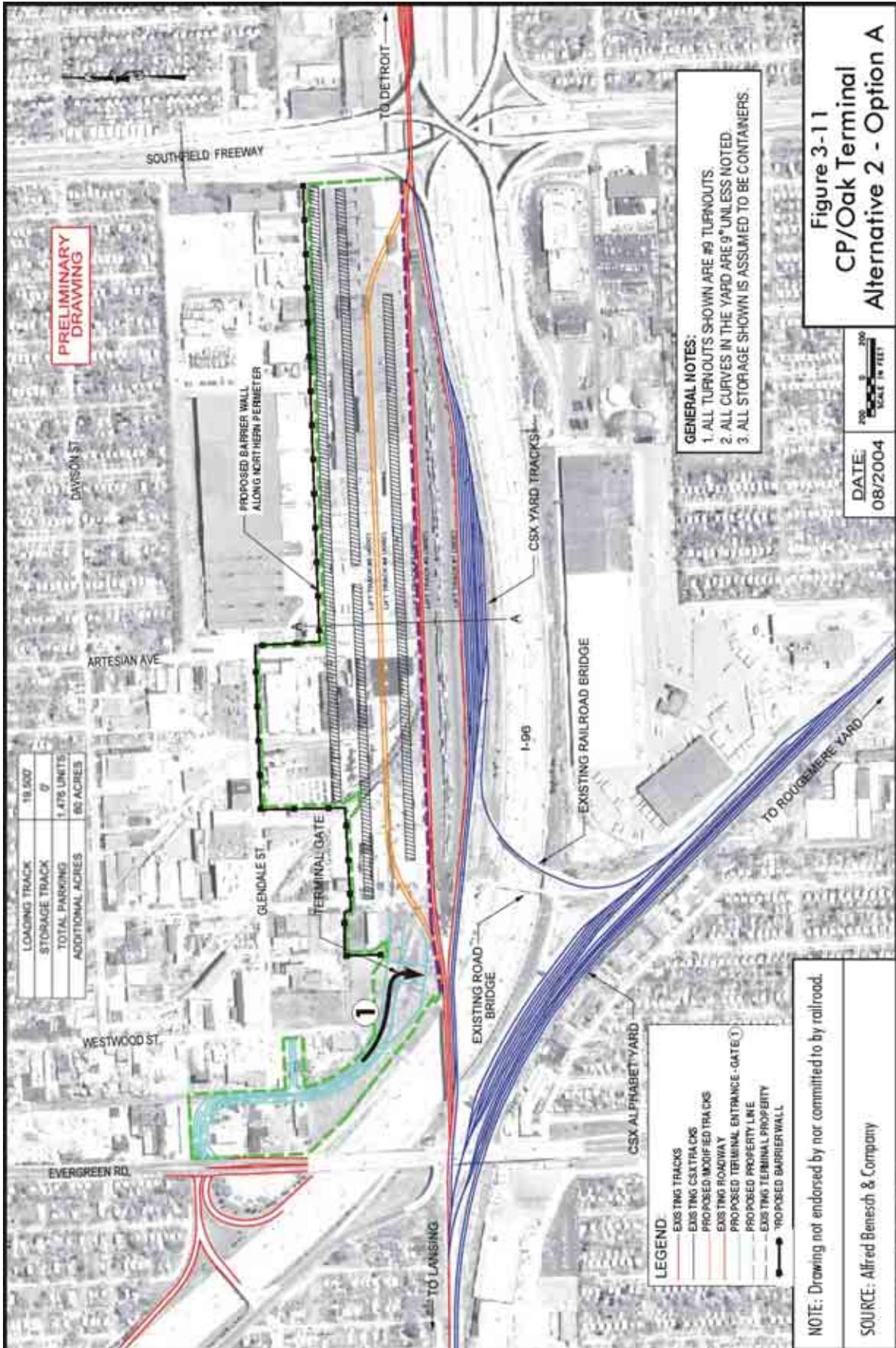
Grand Trunk Western Railroad, now Canadian National (CN), has for many years operated the 29-acre terminal in Ferndale north of Eight Mile Road. Trucks access/egress the terminal by way of Fair and Chesterfield Streets north of Eight Mile Road. Late in the 1990s, the intermodal business was roughly double what it is today. At that time, CN leased five to 10 acres of State Fairgrounds property for container storage (south of Eight Mile Road). When a major shipping contract ended, CN ceased its use of the Fairgrounds property.

Under Alternative 1, the CN/Moterm terminal would continue on the existing 29-acre site (Figure 3-13). The number of daily two-way truck trips in 2025 would be 370.

In developing the proposal for Alternatives 2 and 4 to re-enter the Fairgrounds for expansion of the CN/Moterm terminal, options to the east and west of the terminal, and north of Eight Mile Road, were examined, but were not considered reasonable. Going west would require penetration of a dense residential area. Sixty single-family houses would be acquired, as well as seven businesses. Fair Park would also be taken by expansion of the terminal to the west. Expanding the terminal to the east, north of Eight Mile Road, would cause displacement of 10 businesses that, combined, are responsible for a major portion of the tax base of the City of Ferndale. Because of the limited amount of industrial redevelopment property in the city, these businesses would likely be lost to other areas. Additionally, Gage Products Company would be displaced by expanding the CN/Moterm terminal to the east. This company is a permitted storer of up to one million gallons of hazardous material. It is Ferndale's largest tax payer. It will not be possible to relocate in Ferndale because of its handling of hazardous material. Expanding the terminal to the

Figure 3-10
Existing CP/Oak Terminal Access





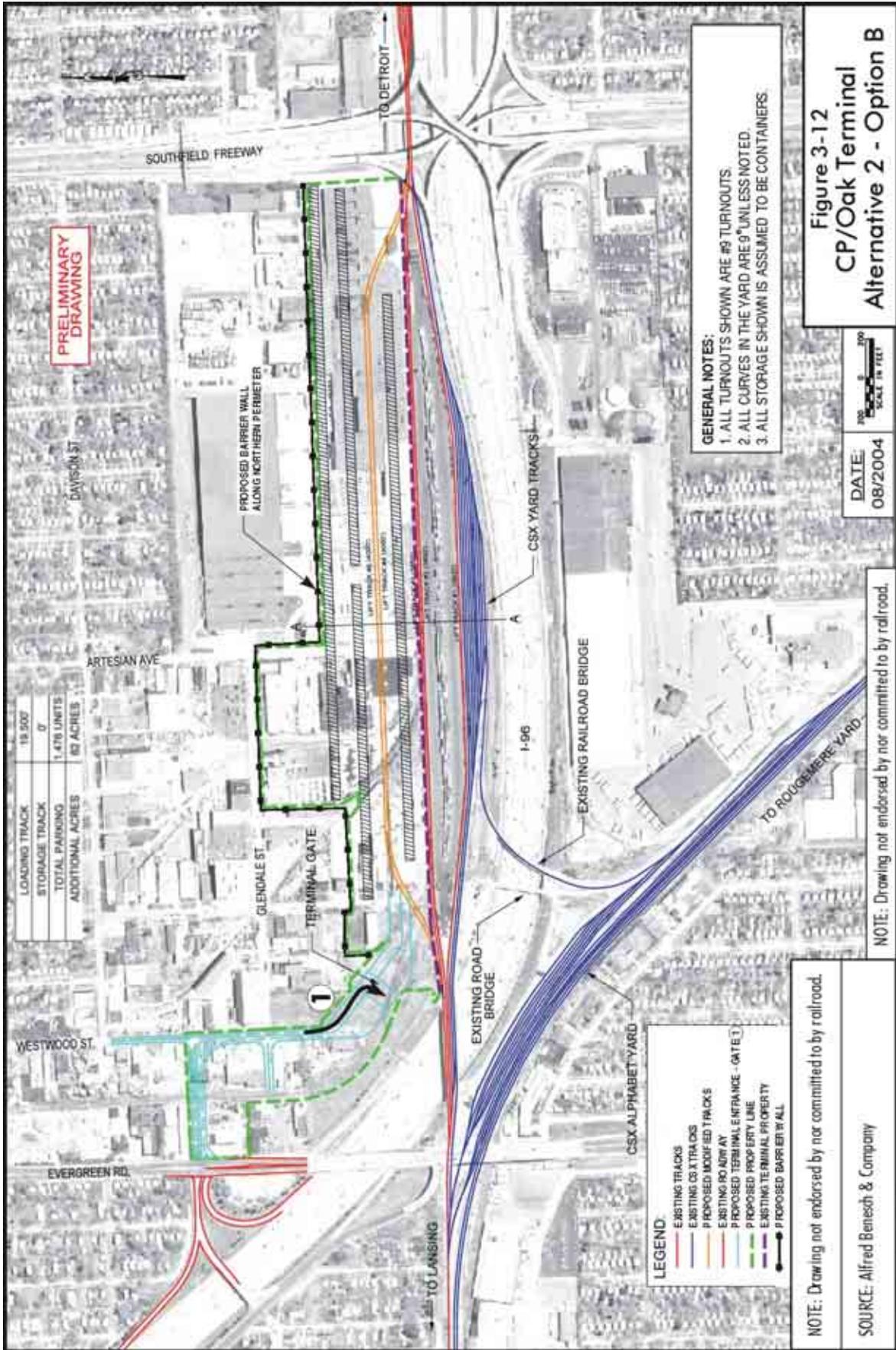
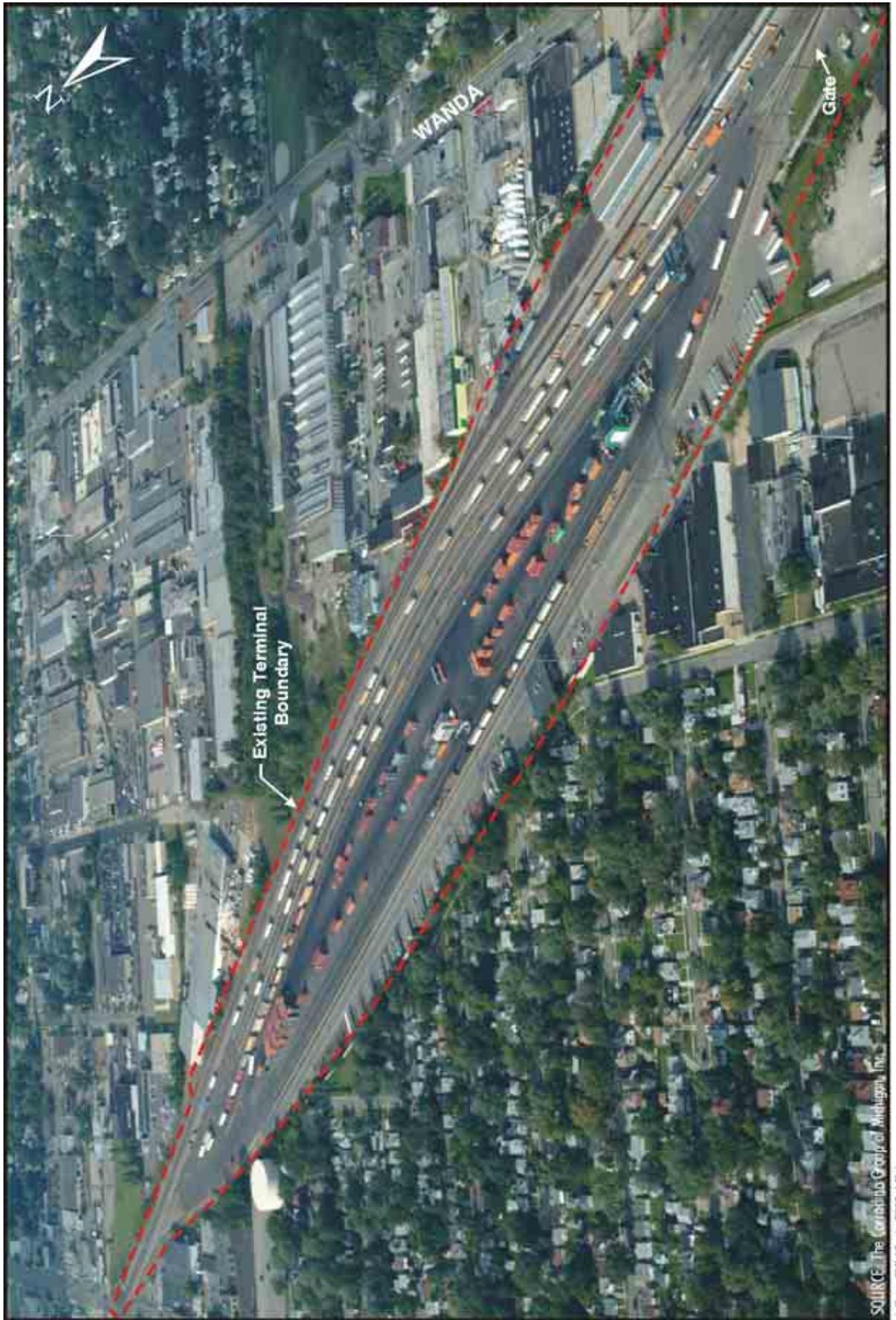


Figure 3-13
Existing CN/Moterm Terminal Access



east, south of Eight Mile Road, would cause the displacement of 90 single-family residences and seven businesses. Hunt Playground (about six acres) would also be removed.

So, the proposed expansion of the Moterm terminal avoids going east or west of the terminal, north of Eight Mile Road. It avoids going east of the existing tracks south of Eight Mile Road. Expansion is proposed due south into the State Fairgrounds on approximately 35 acres (Figure 3-13 and refer to Figure 4-10d). Access would be directly from Eight Mile Road south into the terminal. A recent survey of the terminal's intermodal activity indicates that virtually all intermodal trucks use I-75 and M-102 (Eight Mile Road) to access the terminal. That is expected to be the pattern of the future. Under this alternative, a barrier wall for terminal security would be provided on the east side of the terminal as an integral part of the proposed project.

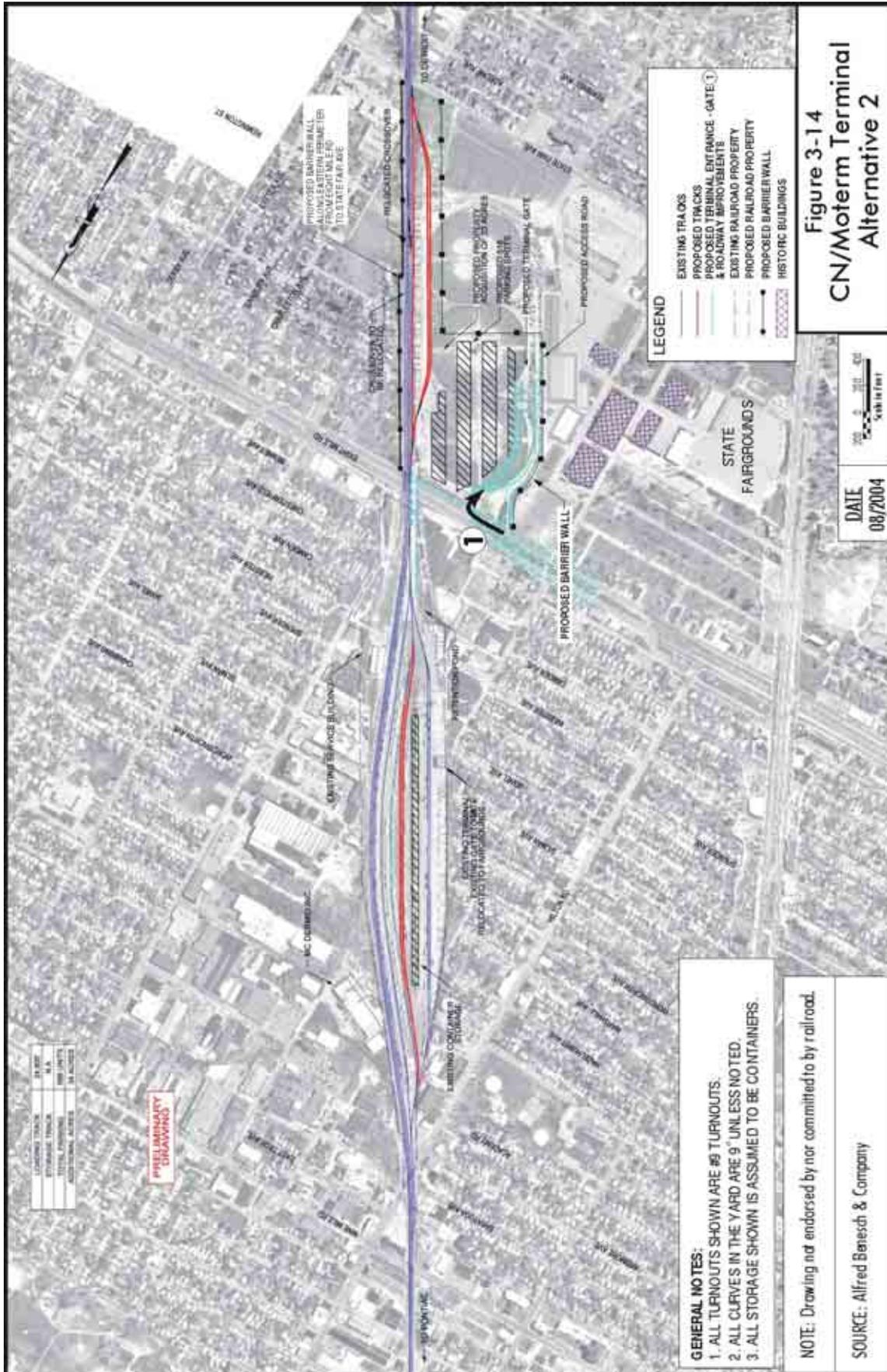
It is noted that use of the Fairgrounds as depicted on Figure 3-13 will cause no residential or business relocations. It will create a 4(f) recreational resource impact and wetland impact, discussed in more detail in Section 4.14 and 5.13, respectively.

Under Alternatives 2 and 4, the number of intermodal trucks serving the terminal on an average day in 2025 is expected to be 650 compared to 370 under Alternative 1 – No Action. Businesses supporting the terminal's intermodal growth would likely be drawn to the area near the terminal (Figure 3-14). Under this alternative, a barrier wall for terminal security would be provided on the east side of the terminal as an integral part of the proposed project.

Under Alternative 3, Canadian National's intermodal operation would be shifted to the Livernois-Junction Yard area (refer to Figure 3-6).

Continued Use of CP/Oak, CN/Moterm and CP/Expressway

It should be noted that under Alternatives 3 and 4, where intermodal operations of either three or four railroads are consolidated at the Livernois-Junction Yard, the terminals at CP/Oak and CN/Moterm will continue to be used by the railroads for shipping freight by means other than intermodal. That activity will be associated with a much smaller volume of truck traffic than if the terminal were to continue to serve intermodal. Shifting intermodal activity from the CP/Expressway terminal to the Livernois-Junction Yard area under Alternatives 3 and 4 will allow the Expressway terminal area to be transitioned to other uses. There is now a proposal by a private sector venture to convert two existing rail tunnels to Canada to truck facilities and to build a new rail tunnel. According to public reports of statements made by proponents of this proposed project (the Detroit River Tunnel Partnership), daily truck activity associated with tunnel conversion is likely to be 5,000 to 10,000 (two-way) in 2025 compared to 250 (two-way), if the intermodal terminal were expanded as proposed in Alternative 2.



Rail Network Improvements

The rail network in the Greater Detroit Area has a number of correctable shortcomings that would increase the efficiency of train movements. These are switches, interlockers,⁶ and track modifications that will positively affect intermodal train speed and lessen route conflicts and, as a result, enhance the region's rail system's interconnectivity, which is consistent with the project purpose as stated in Section 2.1. None would involve any right-of-way acquisition. All would occur on existing railroad-owned property. No environmental impacts are anticipated with these improvements. Figure 3-15 shows the major interlockings in the Detroit area. Those affected by the alternatives are listed in Table 3-1.

**Table 3-1
Railroad Interlockings Affected by Alternatives**

Railroad Interlocking	Alternative		
	2	3	4
2. Beaubien	✓	✓	✓
4. Delray	✓	✓	✓
5. Dix	✓	✓	✓
7. Lou	✓	✓	✓
9. Milwaukee Junction	NC	✓	NC
12. P Company	✓	✓	✓
14. Townline	✓	✓	✓
17. Vinewood	✓	✓	✓
18. Waterman	✓	✓	✓
19. West Detroit	✓	✓	✓

NC – No Change

Source: Alfred Benesch & Company

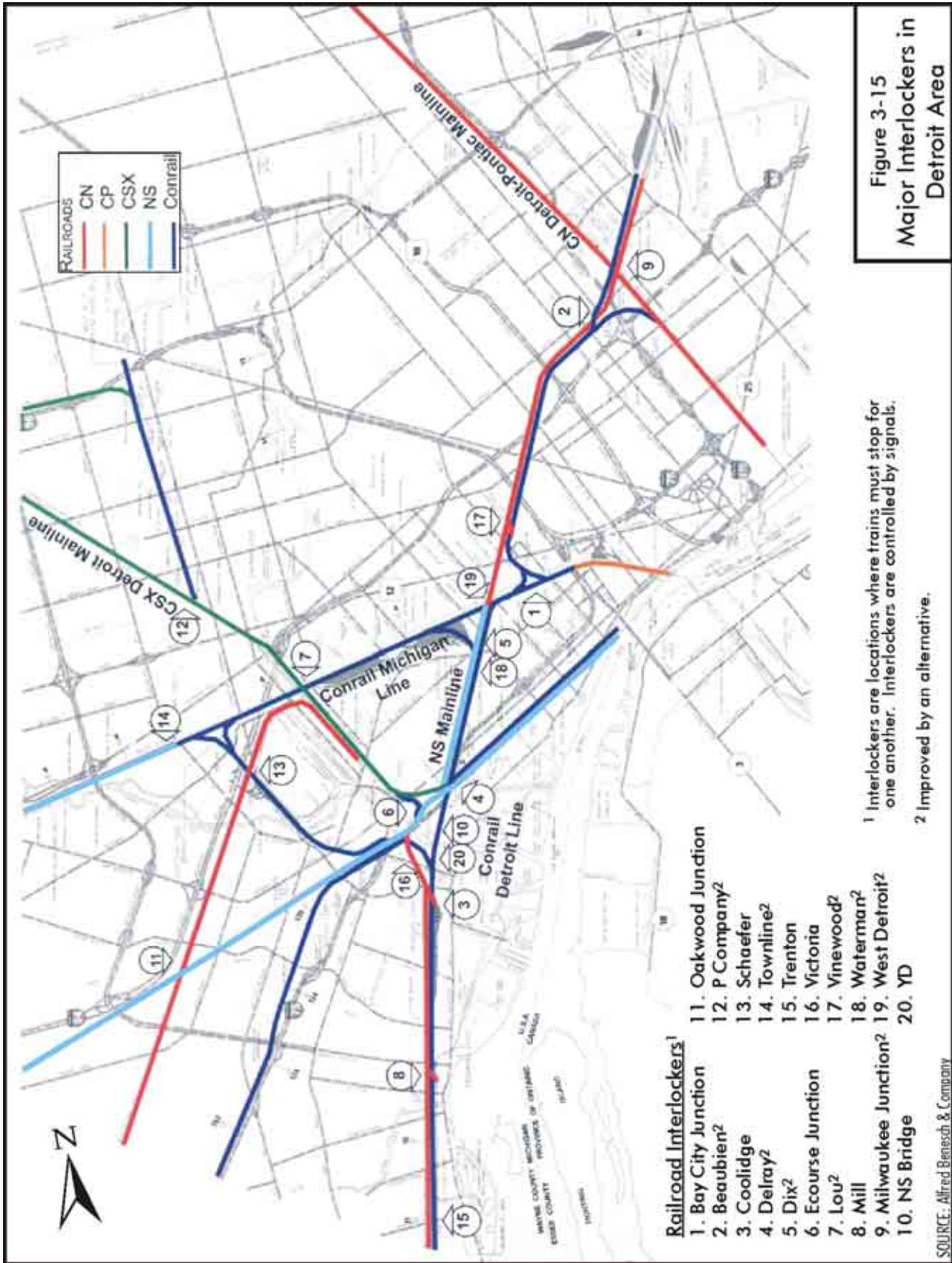
3.4.2 Terminal Areas

Each intermodal terminal has a “zone of influence” known as a terminal area. The definition of each terminal area reflects the neighborhood/community relationships to the terminal and the transportation facilities serving them. In defining each terminal area associated with transportation/land use interaction, aerial photography since the mid-1930s was examined to assess the extent to which transportation and land developments have occurred over the last 70 years. The definition of each terminal area was also established by examining community facilities and services.

Livernois-Junction Yard and CP/Expressway Terminal Area

The terminal area that encompasses the Livernois-Junction Yard and the CP/Expressway terminal is shown on Figure 3-16. It lies in the cities of Detroit and Dearborn. Railroad facilities and activities have been dominant in this area since 1850.

⁶ Interlockers are locations where trains must stop for one another. Interlockers are controlled by signals.



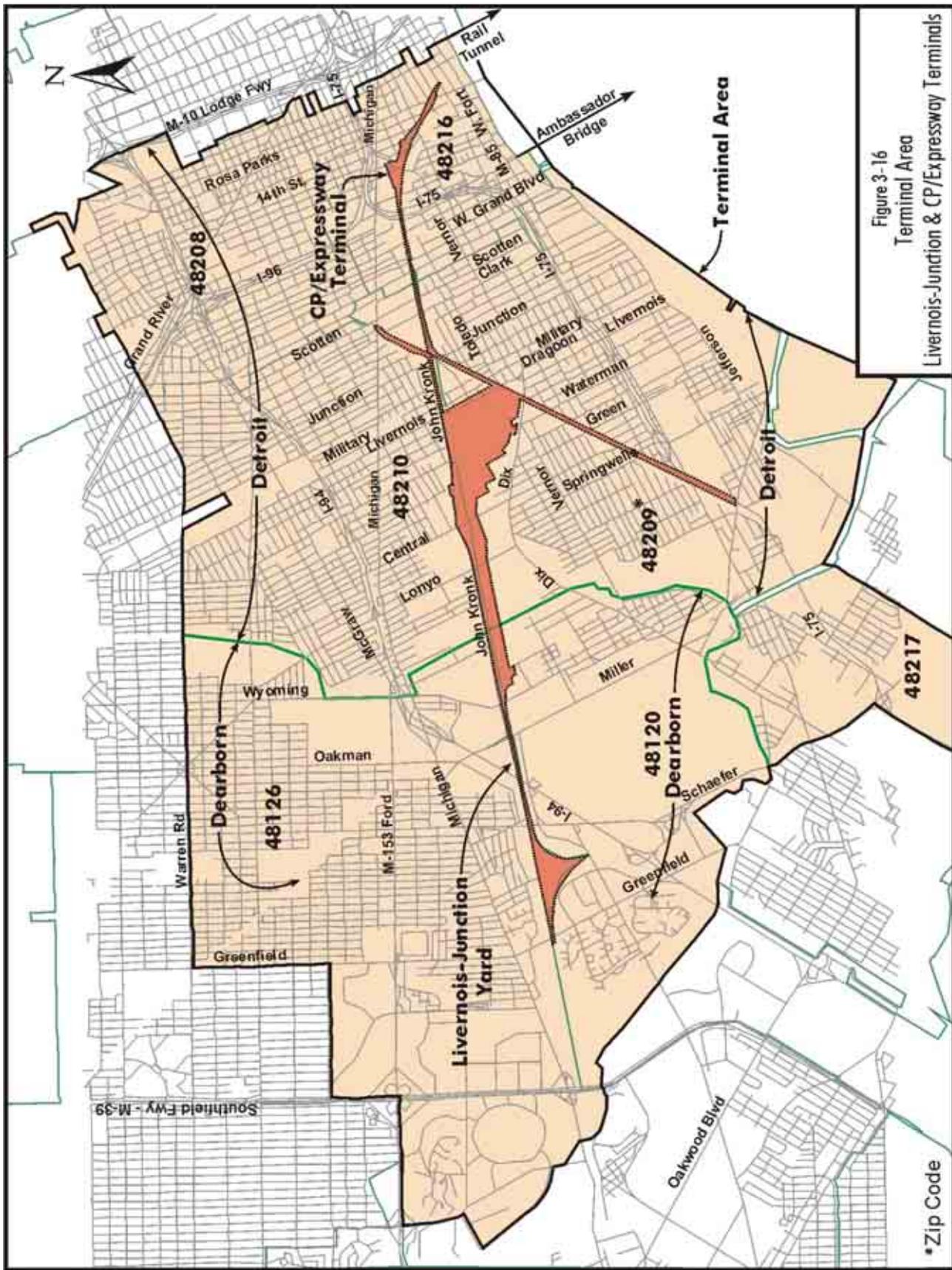


Figure 3-16
 Terminal Area
 Livernois-Junction & CP/Expressway Terminals

Presently about 80 train movements occur daily at some point within the area, with fewer than half being continuous through movements. International border crossings at the Ambassador Bridge, the Detroit-Windsor Tunnel, and the Detroit-Canada Rail Tunnel serve the area. A portion of the geographical area known as the Port of Detroit is within the project area. And, Greater Detroit's airports are directly connected to the project area by the freeway system.

The Fisher Freeway (I-75) cuts through the terminal area. It is a major north-south interstate highway that connects Miami, Florida, to the south and Sault Ste. Marie to the north in Michigan's Upper Peninsula. I-75 is a major economic corridor that is critical to Michigan's and the nation's economy.

The Edsel Ford Freeway (I-94) also traverses the terminal area. It is a primary east-west connector linking Canada through Port Huron, Michigan, to Chicago and points west. I-94 also links four regional airports in Southeast Michigan. I-96 (Jeffries Freeway) originates at the Ambassador Bridge where it intersects with I-75 and I-94. It runs west through Lansing, Michigan, and Grand Rapids before terminating near Muskegon, Michigan.

The Detroit Department of Transportation (DDOT) operates a number of bus routes on Michigan, Dix, Livernois and Wyoming. Suburban Mobility Authority for Regional Transit (SMART) operates a route on Michigan Avenue.

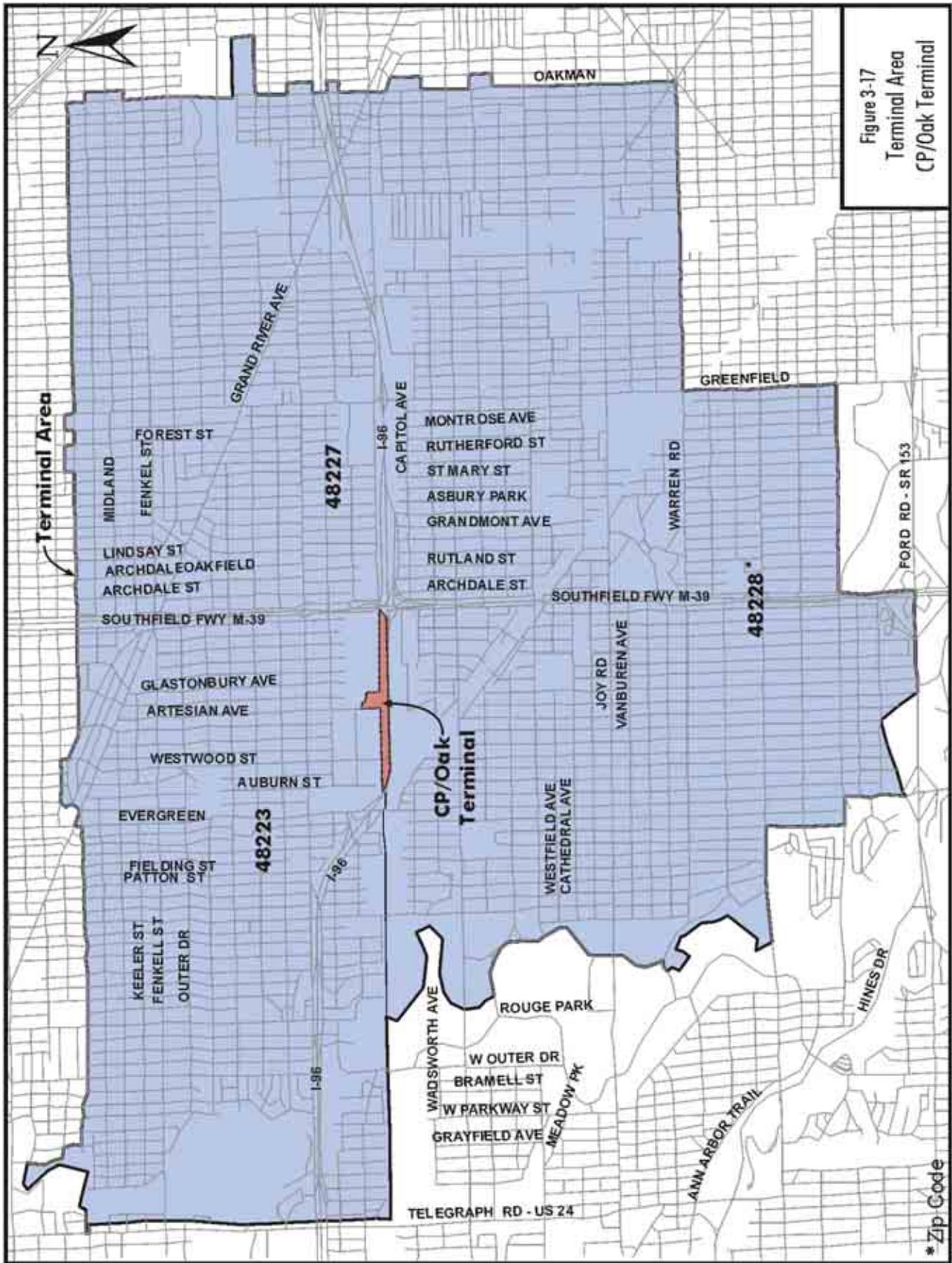
CP/Oak Terminal Area

CP/Oak is located entirely in the City of Detroit (Figure 3-17). A rail line has occupied the current location of CP/Oak since 1871 when the Detroit, Lansing and Lake Michigan Railroad completed its east-west routing through the site. Existing rail activity in the proposed terminal area includes intermodal and conventional rail freight operations of Canadian Pacific Railway. Land uses in the study area are a blend of industrial, commercial, and residential.

CP/Oak's primary north/south highway route is the Southfield Freeway (M-39) connecting with I-75, I-94, Michigan Avenue (U.S. 12), I-96, and the Lodge Freeway (M-10). Primary exits along the Southfield Freeway that serve the area include I-96 (exit 11), Joy Road (exit 9), and Grand River Avenue (exit 13). The main east/west route is I-96, which originates at the Ambassador Bridge where it intersects with I-75 and I-94. It runs west through Lansing and Grand Rapids before terminating at U.S. 31 near Muskegon on the western side of Michigan. Primary exits along I-96 that serve the area include Evergreen Road (exit 182) and the Southfield Freeway (exit 183). SMART and DDOT both provide bus service in the area. SMART serves the area with park-and-ride-routes connecting Livonia and Farmington to downtown Detroit and routes along Plymouth and Schoolcraft. DDOT provides service to the area through its Plymouth, Schoolcraft, Evergreen and Southfield routes.

CN/Moterm Terminal Area

The terminal area around CN/Moterm is bounded by I-696 on the north, Seven Mile Road on the south, Dequindre Avenue on the east, and Schaefer Road on the west (Figure 3-18). Approximately two-thirds of the area is in Wayne County with the balance in Oakland County. Land uses in the study area are a blend of industrial, commercial, and residential. The Michigan State Fairgrounds is located to the south of the terminal.



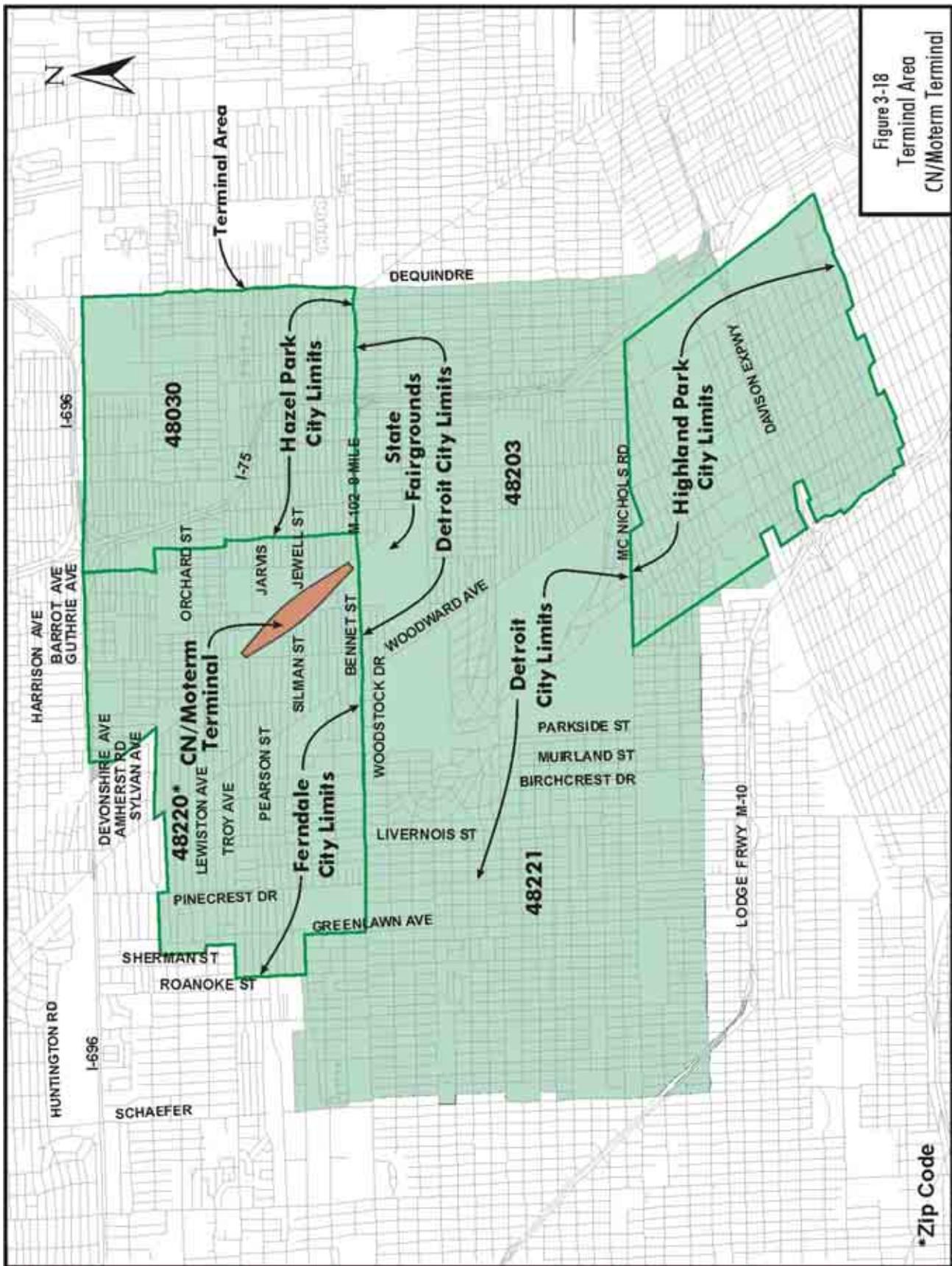


Figure 3-18
Terminal Area
CN/Moterm Terminal

* Zip Code

SOURCE: The Corridors Group of Michigan, Inc.
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The CN/Moterm area has direct access to two interstates, I-696 running east/west and I-75 running north/south. Primary exits along I-696 that serve the area include Woodward Avenue (exit 16), Schaefer Highway (exit 14), and I-75 (exit 18). Primary exits along I-75 that serve the area include Nine Mile Road (exit 60), Eight Mile Road (exit 59), and Six Mile Road (exit 57). The area is also served by State Highway 1 (Woodward Avenue), linking downtown Detroit with Pontiac and by State Highway 102 (Eight Mile Road).

Several public transportation routes also serve the area. SMART provides bus service to the area with its Woodward and John R routes as well as east/west routes along Eight Mile and Nine Mile Roads. DDOT maintains routes along Woodward, Eight Mile Road, and Seven Mile Road.