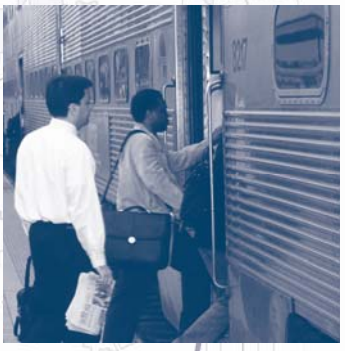
MARENGO EXTENSION



COMMUTER RAIL FEASIBILITY STUDY

DRAFT FINAL REPORT

FEBRUARY 24, 2010

Metra

This report was prepared in cooperation with the U.S. Department of Transportation, Federal Highway Administration, Federal Transit Administration, and Illinois Department of Transportation. The contents reflect the views of the author who is responsible for the facts and accuracy presented. The contents do not necessarily reflect the official views or policies of IDOT or U.S. DOT. This report does not constitute a standard, specification, or regulation.

Metra acknowledges the contribution of URS Corporation and their consulting team in the initial compilation of information in this report.

FOREWORD

It is very important that the reader recognizes from the outset that all of the discussions, assessments, and conclusions contained in this feasibility study are based on the best information available prior to publication. This is particularly true of the capital cost estimates for railroad infrastructure improvement needs. Such capital cost estimates are broad order-of-magnitude costs of the highest level, with very little actual engineering data upon which to make more detailed estimates. All of these estimates have been created by utilizing unit costs for materials and equipment in 2007 dollars, i.e., unit costs that were current when the cost estimating work for this study was completed.

If the potential project were to progress through the development process, the capital costs would be re-estimated several times before a decision to pursue implementation would be made. Therefore, while the capital cost estimates reported herein are appropriate measures for this first phase of the overall study, on an absolute scale they should be considered only as an order-of-magnitude indication of potential investment requirements. Further refinement of these values will be needed during succeeding phases of the study. Future analyses also need to take into account the related on-going operational and maintenance costs associated with this service.

The potential station locations found in this study were identified based on preliminary site inspections and considerations of the locations of existing and proposed housing developments, property availability, roadway access, current road and highway congestion, environmental issues, and availability of utilities required for locating storage and maintenance yard facilities. The final locations of stations on a potential rail extension would be identified through discussions involving the local communities, Metra, the Union Pacific Railroad and other relevant entities during future study phases. The station-related costs found in the capital costs estimate include elements of Metra's basic station design and exclude any costs related to land acquisition, as that cost is indeterminable at this time. At this juncture, it is particularly important to remember that all future park-and-ride station-related costs, including land acquisition and depot/parking facility construction will be the responsibility of and must be borne by the host community. The final locations and layouts of the Almora Interlocking, second main line track, and coach yard locations and related infrastructure will be determined in future studies.

Metra Staff

TABLE OF CONTENTS

List of Tables

Table Page

List of Figures

Figure Page

EXECUTIVE SUMMARY

1.0 INTRODUCTION

Metra, the Commuter Rail Division of the Regional Transportation Authority (RTA), initiated this Feasibility Study to evaluate the feasibility of extending commuter rail service on the Milwaukee District West (MD-W) Line from the City of Elgin (Big Timber Road Station) to the vicinity of the City of Marengo. The study focused on a 26-mile portion of the Union Pacific (UP) Railroad Belvidere Subdivision between Elgin and the McHenry-Boone County line. This portion of the UP Belvidere Subdivision travels through the communities of Elgin, Gilberts, Huntley, Union and Marengo.

This study evaluates the physical and operational feasibility of commuter rail service along the UP Belvidere Subdivision through the assessment of the existing conditions, future development, and environmental features in the study area, as well as an operations plan and an order-of-magnitude capital cost estimate. A final recommendation regarding the preliminary feasibility of this project and the proposed next steps are also included in this study.

2.0 EXISTING CONDITIONS

The existing physical and operating characteristics of the study area were evaluated to identify any improvements or new facilities that would be required to operate commuter rail service along the UP Belvidere Subdivision. The inventory of existing railroad conditions was based on documentation from Metra on the UP Railroad, published maps and aerials of the study area and from a field review of the rail line and its adjacent properties. Freight operations, public transportation services, and environmental features in the study area were also assessed during this process.

The UP Belvidere Subdivision is operated directionally as an east-west route, with trains running east toward West Chicago and west to Rockford. This line is a single-track, non-signalized railroad controlled by dispatchers using a radio dispatch network located in Omaha, Nebraska. Trains on this line are limited to a maximum speed of 49 miles per hour; however, the UP has restricted speeds to 40 miles per hour, with further speed restrictions of 30 miles per hour at the eastern end of the study area, due to existing tie and surface conditions. The UP owns the right-of-way and physical plant in the proposed project Study area. No connection currently exists between the UP Belvidere Subdivision and Metra's Milwaukee District West Line.

It has been found that substantial upgrades to the physical plant (i.e., track, ties, ballast, subballast, turnouts, signals, and sidings) would be required in order to provide for safe and efficient commuter rail service. In addition to infrastructure investments to the physical plant, it is prudent to note the institutional actors along the line. The McHenry County Conservation District (MCCD), a significant landowner along the UP Belvidere Subdivision, owns the outer 25-feet railroad right-of-way along both sides of the UP track

between Kruetzer Road in the Village of Huntley and County Line Road west of Marengo (except for a small portion in Downtown Huntley). Ownership of this land was given to the MCCD in 1993 for the proposed Huntley-Union-Marengo (H.U.M.) Trail and for the preservation of the rare natural resource elements that are growing within the UP right-of-way limits. These preservation areas may impact potential station and coach yard locations and Metra's ability to provide commuter rail service. The communities that have proposed station sites within or near this preservation area will need to coordinate with the MCCD on the potential development of these sites.

At this point in time, none of the information presented within this study should be taken to imply sponsorship or support of the Marengo Extension by the Union Pacific Railroad. Also, the critiques and assessments provided in this study are not intended to portray or imply that the current UP physical plant and infrastructure is in substandard condition for operating the existing and/or proposed freight service utilizing this facility.

3.0 FUTURE PLANS

Demographic projections obtained from Chicago Metropolitan Agency for Planning (CMAP) were used to evaluate the expected growth in the study area. Moderately high to very high growth in population, households, and employment in the study area is expected through 2030. The communities through which the UP Belvidere Subdivision travels have begun to plan for the expected growth through the development of comprehensive plans, revised zoning ordinances and transit-oriented development plans.

In addition, the Illinois Department of Transportation, the Illinois State Toll Highway Authority, Kane County, and McHenry County have identified a series of proposed future transportation projects in and around the study area. Some of these projects involve capacity increases through lane additions, intersection modifications, interchange expansions, new roadways, and signal installations and improvements, which could all improve access to potential commuter station sites.

4.0 POTENTIAL OPERATONS

Based on previous Metra extensions of commuter rail lines a proposed service plan was developed for extending the MD-W to Marengo along the UP Belvidere Subdivision. The operating assumptions used to create the proposed service plan include:

- The operation of commuter service would be an extension of Metra's existing Milwaukee District West Line.
- The initial service would operate 10 trains on weekdays only.
- The 10 weekday trains would consist of four inbound AM peak trains and four outbound PM peak trains, and one inbound and one outbound train during the midday period.
- Commuter rail service would utilize conventional rolling stock (diesel locomotives with passenger coaches).

- The new commuter rail service would be operated through a trackage-rights agreement between Metra and the Union Pacific Railroad. The exact nature of the service agreement would be subject to negotiations between Metra and the UP.

Potential locations for commuter rail stations and a yard facility were identified based on demographics and the availability of land. It is assumed that four new stations would be served along the UP Belvidere Subdivision. Prior to the final determination of station locations Metra would require both land dedication and commitment for funding the construction of station and parking facilities by the host communities. However, it is important to note that the necessary acreage for potential stations and parking facilities cannot be determined at the time of this report. However, new stations typically require 13 acres and up to 1,250 parking spaces.

This study concluded that to efficiently operate commuter rail service over the UP Belvidere Subdivision two new segments of second main line would be necessary. The purpose of these segments of second main line is to enable Metra commuter trains and UP freight trains to meet and pass each other. The final locations and layouts of the segments of second main line track will be determined in future studies.

In order to accommodate the potential new service on the UP Belvidere Subdivision, four trains sets, plus spares, would be needed. The operations plan assumes that two of the train sets would be relocated from the Milwaukee District West Line coach yard at Elgin, and two new train sets, plus spares, would be purchased. The construction of a new storage facility is proposed for a location near the western terminus of the line with an adjacent station. The final locations and layouts of the coach yard location and other related infrastructure will be determined in future studies.

5.0 CAPITAL IMPROVEMENTS

To support the potential Metra commuter rail operations described in the previous section, a series of capital improvements would be required. These improvements include work on the UP Belvidere Subdivision main line track, signals, proposed segments of second main line, grade crossings, rolling stock, commuter rail stations and a yard facility. The estimated order-of-magnitude capital costs for the Marengo Extension total $348.5 million (2007 dollars). Costs associated with property acquisition for the stations and yard facility and operating costs are not included in this estimate.

The estimated costs for four new commuter rail stations based on Metra's cost estimate for basic stations have also been included in the estimate. The communities in which the stations would be located would work with Metra to determine the final locations and design of the stations. In addition, all costs associated with station land acquisition, design and construction would be the responsibility of the host community.

6.0 RECOMMENDATIONS

The Marengo Extension Feasibility Study has determined that there would be significant capital costs involved with providing new commuter rail service along the UP Belvidere Subdivision, particularly associated with the improvements to the existing physical plant and the construction of two segments of a new second main line, required to handle the additional train traffic on the potential UP Belvidere Subdivision portion of an extended MD-W Line. Installation of CTC signalization would also be a significant cost of the project.

Further discussions would have to take place with the Union Pacific Railroad. As the owners of the UP Belvidere Subdivision, the freight railroad would have to approve any capital improvements and any commuter rail service on its right-of-way.

As discussed in Section 2.1.1 and Section 2.7.4, there is significant wetland and environmental issues within the corridor that will need to be studied further, including the HUM Trail, as discussed above in Section 2.0. The environmental impacts would need to be fully analyzed as the preservation areas may impact station and yard locations and Metra's ability to provide commuter rail service. The communities within and near this preservation area will need to coordinate with the MCCD.

In addition, ridership will need to be studied in potential future studies to determine adjustments to the existing MD-W Line schedules to determine if key trains would reach their maximum carrying capacity. Hence, the locations and layouts of additional infrastructure needed to run commuter rail operations (e.g. interlocking, signals, sidings, yard, and grade separation) will need to be further studied.

Communities within the Marengo Extension corridor are encouraged to review and update any land use plans around potential station sites. Land uses surrounding the station sites should be conceptually planned to include those types of developments that traditionally support commuter rail service. Further studies should include TOD planning by the local communities in conjunction with Metra. The communities of Huntley and Marengo have already examined potential station location sites and have updated their land use plans accordingly. Further coordination with the MCCD will be necessary.

A public safety program should be provided to residents and property owners along the UP Belvidere Subdivision to address the addition of higher train speeds and a lack of signalized crossings at many of the private farm crossings along the corridor. Large areas of the UP Belvidere Subdivision ROW border farms and open areas that have no fencing or other restrictions towards access of the ROW.

This study only analyzed the option of providing Metra commuter rail service to communities in the UP Belvidere Subdivision corridor through the extension of Metra's existing Milwaukee District West Line. While extending the MD-W is the most logical choice when considering Metra's current system, a future alignment for commuter rail

service to the corridor could utilize the Northwest Tollway (I-90) and connect to the proposed future STAR Line.

1.0 INTRODUCTION

1.1 PURPOSE OF STUDY

The purpose of the Marengo Extension Feasibility Study is to evaluate the physical and operational feasibility of extending Metra's Milwaukee District West Line commuter rail service from the City of Elgin (Big Timber Road Station) to the vicinity of the City of Marengo. This study is an examination of the different aspects of potentially providing commuter rail service along the Union Pacific (UP) Railroad's Belvidere Subdivision including existing conditions, future growth, operating characteristics, capital needs and capital costs.

The review of the existing conditions focuses on the physical characteristics of the existing UP Belvidere Subdivision and its immediate surroundings. The future growth in the corridor is determined using projections provided by the Chicago Metropolitan Agency for Planning (CMAP). The examination of operating characteristics looks at potential schedules, station locations, and a storage and maintenance yard location. The analysis of capital needs focuses on the physical infrastructure that would be needed in order to operate commuter rail service. Along with preliminarily determining the capital needs of the service, an order-of-magnitude capital cost estimate is also included in the study. The final chapter of this study presents recommendations on the next steps to be taken in the project development process for this potential extension of Metra service.

1.2 PROJECT BACKGROUND

In recent years southwestern McHenry and northern Kane Counties have seen tremendous growth in population and employment. The Chicago Metropolitan Agency for Planning (CMAP) has forecasted high levels of growth for the entire Northeastern Illinois region through 2030, including these areas. As a result of this growth, Metra has identified the potential need to enhance its current commuter system to meet changing transportation demands within the region. A potential extension of an existing commuter rail line would serve the commuting populations of southwestern McHenry and northern Kane Counties.

In April 1992, Metra and Pace published the "Future Agenda for Suburban Transportation" (FAST) in which an aggressive public transportation package for suburban residents was offered. Metra's portion of that document, the "Extended Transportation Agenda" (EXTRA), included discussions regarding potential upgrades and extensions of existing Metra lines and facilities. At that time, a commuter rail extension through this part of the region was included as a "Huntley Extension," with a "later-date" option to Marengo. The potential Metra extension to Huntley is also included in the Chicago Metropolitan Agency for Planning's (CMAP) Shared Path 2030 Transportation Plan Update. This study examines the potential for an extension of the Milwaukee District West Line from the existing Big Timber Road Station to the Boone/McHenry County line.

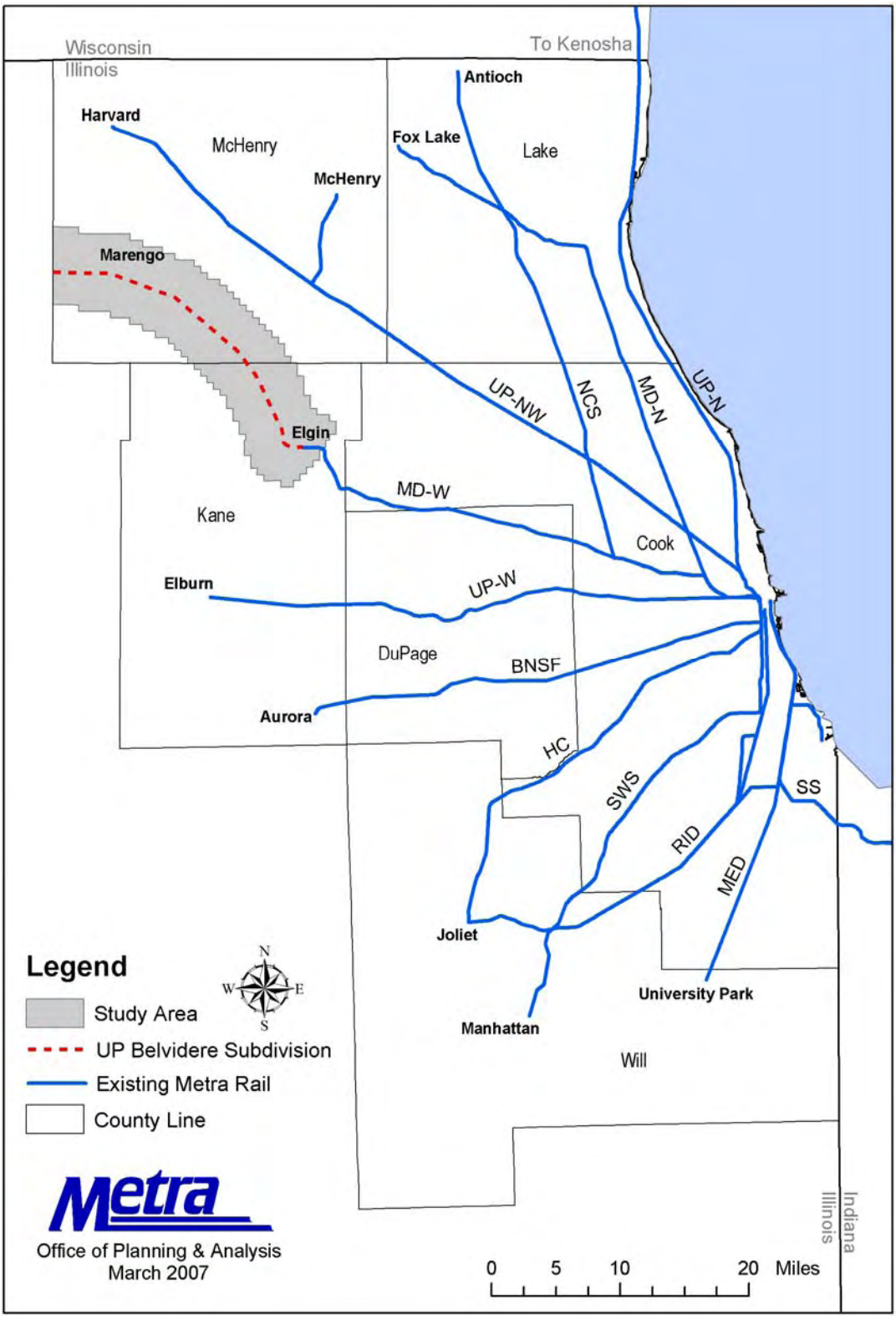
1.3 STUDY AREA DESCRIPTION

The study area for the Marengo Extension Commuter Rail Feasibility Study encompasses a six-mile wide corridor centered along the Union Pacific Railroad (UP) Belvidere Subdivision, extending from Metra's Big Timber Road Station to the McHenry-Boone County line. The corridor is approximately 26 miles in length and runs through parts of Kane and McHenry Counties. The communities of Elgin, Gilberts, Huntley, Union, and Marengo are all located along the UP Belvidere Subdivision within the study area. The location of the study area within the region is shown in Figure 1.3-1 and aerials of the study area are found in Appendix A.

Historically, the UP Belvidere Subdivision is part of Chicago's very first railroad, the Galena and Chicago Union. William B. Ogden, a railroad advocate, promoted the start of the railroad by personally soliciting the support of farmers along the proposed route with the promise of getting their produce to market quicker. The Galena and Chicago Union was routed west from the Chicago city limits to West Chicago, where it turned northwest in the direction of Galena. The steam engine "Pioneer" made the first trip along this route to Oak Park in 1848. The railroad continued its movement west, reaching Elgin in 1850, Belvidere in 1852, and Freeport in 1853. In 1864 the Chicago & North Western Railway acquired the Galena and Chicago Union, and owned and operated the railroad until 1995 when the Union Pacific Railroad acquired it. Ironically, the route was never completed to Galena, having been beaten there by the Illinois Central Railroad. Freight service on this route is relatively light, with the Chrysler Assembly Plant in Belvidere being the biggest customer.

Presently there is no commuter rail service along the UP Belvidere Subdivision. Metra's Milwaukee District West Line (MD-W) terminates at the Big Timber Road Station in the western portion of Elgin. This study assumes that potential commuter rail service in the corridor would be an extension of the Milwaukee District West Line. The current storage and maintenance yard facility for the MD-W is located near the Chicago Street Station in Downtown Elgin, east of the Big Timber Road Station.

Figure 1.3-1 Study Area Map



2.0 EXISTING CONDITIONS

This chapter discusses the existing conditions of the study area, with an emphasis on the physical and operating characteristics of the UP Belvidere Subdivision between Milepost (MP) 45.4, adjacent to Metra's Big Timber Road Station in Elgin, and MP 71.4, at the McHenry-Boone County line, west of Marengo. The conditions identified in this section are the basis for the preparation of the necessary capital improvements described in Section 4.0.

The inventory of existing conditions was completed using information received from Metra, the Union Pacific Railroad, a hi-rail inspection of the line, published maps and UP track charts, discussions with UP engineering personnel and field observations. The information and assistance provided by the UP for this study should not be taken as an endorsement of or support for any proposed service extension. Nor does this study make any judgment about the adequacy of the existing track conditions for current freight train operations on the UP Belvidere Subdivision. Statements regarding the physical condition of the existing infrastructure are the professional opinions of the authors, with which UP personnel may not concur. Any critiques provided in this study are not intended to portray or imply in any way that the current physical plant and railroad infrastructure is in substandard condition for their freight operations. The existing conditions of the following aspects of the UP Belvidere Subdivision are reviewed in this chapter:

- Main line track and sidings, including the condition of the track bed, ties and rail
- Method of train dispatching
- Structures, including their type, general condition, and horizontal and vertical clearances
- Grade crossings, including their locations and types of warning systems in place
- Freight operating characteristics and service levels, including operational interfaces
- Land uses adjacent to the right-of-way and general accessibility to potential commuter rail stations and facilities
- General topography, including wetland locations and floodplain conditions

2.1 PHYSICAL PLANT

The segment of freight railroad that runs through the study area is known as the UP Belvidere Subdivision. This Subdivision was a part of the Chicago & North Western Railway (C&NW) until the C&NW was purchased by the UP in 1995. The line is a single-track, non-signalized railroad extending 63 miles from West Chicago, Illinois to Rockford, Illinois. The majority of the traffic on the line moves between West Chicago and Belvidere, Illinois, where Chrysler has an automotive assembly plant. Annual maintenance on the line has included vegetation control in the track area by the UP. Long sections of the right-of-way in the study area are governed by the terms of prairie

preservation leases, and vegetation control in these sections is the responsibility of the lessees.

The UP Belvidere Subdivision is considered an east-west railroad. To be consistent with railroad practice, all references in this study consider that trains on the line run in either an eastbound or a westbound direction. This is despite the fact that the line itself has primarily a north-south compass orientation along most of the alignment.

Through the study area, the UP Belvidere Subdivision has no current track connections to any other railroads except the Illinois Railway Museum in Union. However, in the vicinity of Almora, west of Metra's Big Timber Road Station in Elgin, Metra's Milwaukee District West Line's right-of-way is adjacent to the UP Belvidere Subdivision. The proximity of the two rights-of-way provides a possible location to construct a new track connection between the two railroads, potentially enabling seamless commuter rail service.

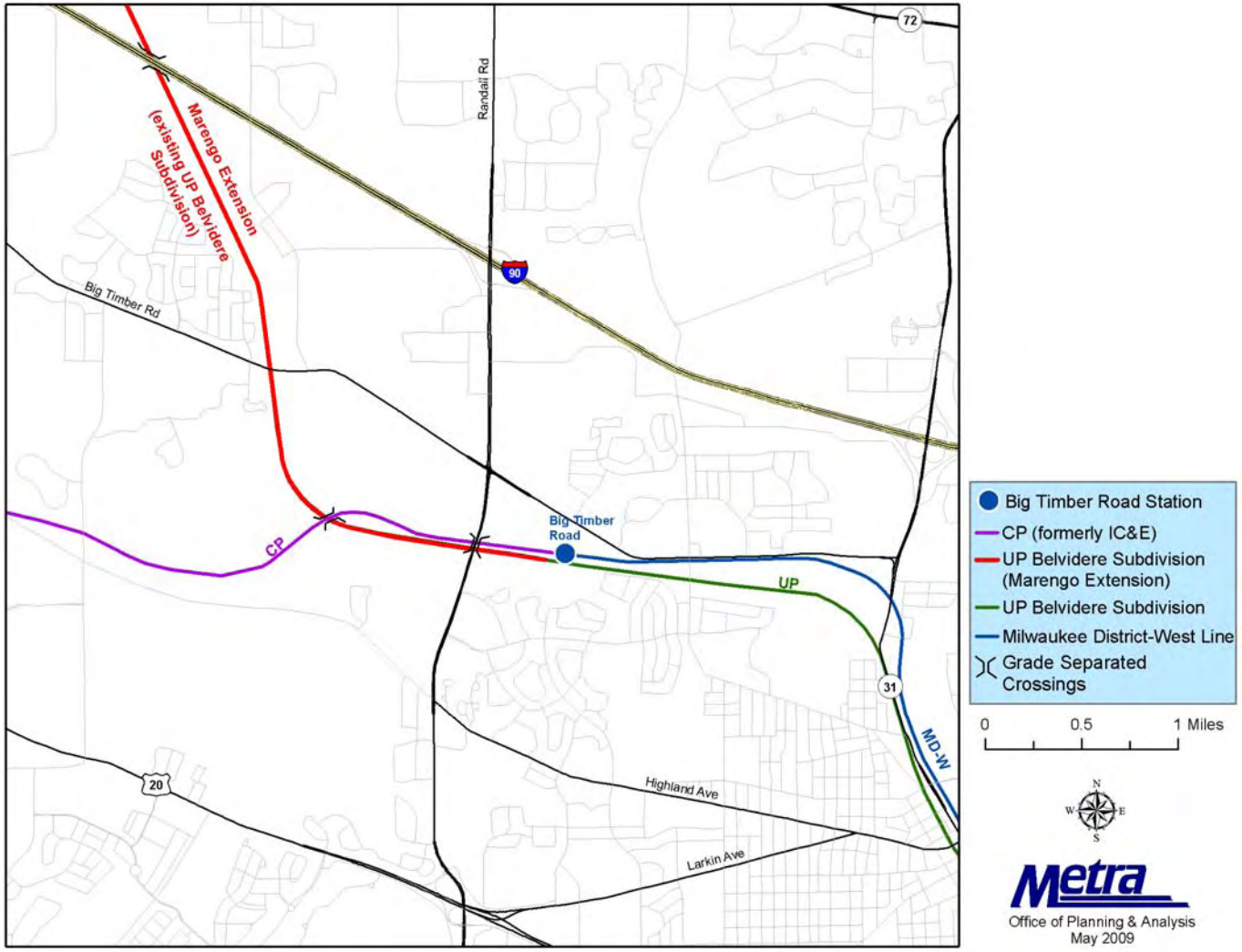
Almora, Illinois is a small unincorporated area located on the west side of Elgin. Its history is primarily associated with rail operations in this area, as three railroads own right-of-way around Almora. Metra owns and operates commuter rail service on its Milwaukee District West Line between Downtown Chicago and Elgin before track ownership switches to the Canadian Pacific Railway (CP), formerly known as the Iowa, Chicago & Eastern (IC&E) Railroad, near Almora. The UP owns and operates freight traffic over its Belvidere Subdivision through Almora. Though the UP and CP tracks cross one another, the crossing is grade-separated and no connections between the railroads exist. The configuration of the railroads near Almora is shown in Figure 2.1-1.

2.1.1 Trackbed; Line and Grade

The UP Belvidere Subdivision track in the study area is relatively flat with a slight ascending grade in the westward direction between Almora and Gilberts, and a slight descending grade between Gilberts and the McHenry-Boone County line. There is a difference in elevation through the 26-mile study area of only about 119 feet. The highest elevation on the line is 900.1 feet above sea level at the IL 72 grade crossing in downtown Gilberts. The lowest elevation in the study area is 781 feet above sea level at the McHenry-Boone County line. The steepest grade is 0.37 percent to 0.48 percent, ascending for westbound trains, between MP 45.4 and MP 48.3.

The railroad is primarily tangent track with only six curves in the study area. The maximum curvature is 2° 31' and extends 0.7 miles from approximately MP 46.5 to MP 47.2, located between Almora and Gilberts where the UP Belvidere Subdivision passes

Figure 2.1-1 Existing Railway Map



beneath the CP Railway's overhead viaduct. Curves along the UP Belvidere Subdivision are located at the following locations:

1) MP 46.5 to MP 47.2 (under the CP overhead viaduct, west of Randall Road)

2) MP 47.9 to MP 48.1 (west of the Big Timber Road grade crossing)

3) MP 52.6 to MP 52.8 (between Freeman Road and Kreutzer Road, east of Huntley)

4) MP 55.0 to MP 55.2 (Main Street and IL 47 grade crossings in Huntley)

5) MP 61.3 to MP 61.7 (alongside the Illinois Railway Museum, east of Union)

6) MP 66.6 to MP 67.1 (between West Street and Ritz Road in Marengo)

Each of these curves has 1½ inches of superelevation, except the curve between MP 46.5 and MP 47.2, which has two inches of superelevation.

The track generally follows the surrounding ground elevations, being raised on a low, ballasted embankment several feet above the surrounding ground. The sub-grade is in generally good condition. However, at various locations along the line, the ditches are partially filled with sediment, or there are no ditches at all. The areas with no ditches are primarily in the downtown areas of each of the four communities (Gilberts, Huntley, Union, and Marengo) along the line.

Several sections of the UP Belvidere Subdivision in the study area have potential for flooding due to the relatively flat ground and proximity to Tyler Creek, the Kishwaukee River, and its tributaries. In past years, water over the top of the rail has been experienced at several locations including under the CP overpass area at MP 46.8, where drainage requires frequent attention, particularly during winter months when ice has occasionally accumulated over the track. There are also several areas in and around Gilberts, Huntley, and near the Illinois Railway Museum where water has filled the ditches and approached the base of the rail during periods of flooding.

There are several problematic soil types and high water table conditions in the Gilberts area. One such problematic soil, called the Houghton Muck, is located in areas north and west of Gilberts. This type of soil is not suitable for development and can be costly to correct. The C&NW Railway (the line's former owner), in past years, experienced flooding and unstable track between Gilberts and Huntley.

2.1.2 Rail and Ties

A major maintenance project was completed by the UP along the Belvidere Subdivision in 2006. As part of this project, the rail between Almora (MP 45.4) and the McHenry-Boone County line (MP 71.4) now consists entirely of 115-pound continuous welded rail (CWR). The rail and wooden ties appear to be in good condition.

2.1.3 Sidings

There are presently no full-length sidings in the study area where two mainline freight trains could meet or pass each other. In the study area, there are several stub tracks serving local industries and there is only one small siding (run-around track) at Marengo capable of holding a locomotive and several freight cars clear of the main track. There is an industrial lead track east of Huntley with several other tracks connected to it, serving the Huntley Industrial Park. Turnouts to stub tracks serving local industries were observed at the locations listed below. The turnouts that provide access to these industrial spur tracks and the Marengo run-around track appear to be No. 10 turnouts. It should be noted that the field locations of these turnouts do not always match the exact locations depicted on the UP track chart.

- MP 50.4 (north side, west of Mill Street crossing in Gilberts)
- MP 53.9 (south side, west of Kreutzer Road crossing in Huntley)
- MP 54.9 (south side, west of Grove Street crossing in Huntley)
- MP 62.4 (south side, connection to the Illinois Railway Museum at Union)
- MP 65.4 (north side, east of Marengo)
- MP 66.1 to MP 66.3 (south side, west of Illinois Route 23 crossing in Marengo, with a stub track off the south side of this run-around track.)

2.2 SIGNALS AND INTERLOCKINGS

The UP Belvidere Subdivision is non-signalized track, known as “dark” territory, that is controlled by the UP train dispatcher at the UP Harriman Dispatching Center in Omaha, Nebraska. The line is operated by means of a Track Warrant Control (TWC) system using the UP radio system. Trains operating under TWC must receive clearance from the train dispatcher to operate over, or work on, the line. This method of operation is efficient for the current light-density operations on the UP Belvidere Subdivision and does not have the capital, maintenance, and operating costs that are associated with a signal control system. In addition, there are no automatic train defect detectors (such as for dragging equipment or overheated wheels and bearings) located along the railroad within the study area.

There are no interlockings on the UP Belvidere Subdivision in the study area. Almora Interlocking is located on Metra’s Milwaukee District West Line adjacent to Metra’s Big Timber Road Station in Elgin and is controlled by Metra.

2.3 STRUCTURES AND CLEARANCES

Two roadways pass over the UP Belvidere Subdivision in the study area. The Randall Road overpass is located at MP 45.9, just west of Almora and the Northwest Tollway (I-90) overpass is located at MP 49.3, east of Gilberts. Both concrete and steel overpasses presently accommodate the vertical and horizontal clearances required by the tri-level automobile carrier cars used in UP trains and could accommodate commuter trains using bi-level coaches.

The CP Railway double-track mainline passes over the UP Belvidere Subdivision at MP 46.7, west of the Randall Road roadway overpass in Elgin. This structure, which consists of through plate girder spans, is significantly older than the two highway bridges mentioned above. Its physical condition is unknown, and there are drainage issues at this location that require periodic attention. However, it does have sufficient vertical and horizontal clearances to accommodate the existing freight train operations, and it would also accommodate potential commuter rail operations.

The remaining structures in the study area consist primarily of box and pipe culverts for stream crossings and local drainage under the UP Belvidere Subdivision. There are 38 such drainage structures between Almora and the McHenry-Boone County line. The bridge over Tyler Creek at MP 47.6, just east of Big Timber Road, was replaced in 2003. At the same time, Big Timber Road was widened, the grade crossing was replaced, and a nearby intersection with Tyrrell Road was upgraded and signalized. The scope of this study did not include detailed structural inspections of any of the structures, and no obvious structural problems were identified during the hi-rail trip. Normal structure maintenance and cleanout is an on-going requirement.

There are many locations along the line where leases and/or land sales have occurred adjacent to the railroad's right-of-way. It is not possible to determine what effects these leases and sales may have on the ability to make changes to the railroad to accommodate potential future commuter service. However, it was evident from observations made during the hi-rail trip that some private property owners have made improvements to their property as close as 15 feet from the centerline of the main track, particularly in the downtown areas.

2.4 AT-GRADE CROSSINGS

There are 24 at-grade public roadway crossings, 12 at-grade private crossings, and one at-grade pedestrian crossing of the UP Belvidere Subdivision between Almora and the McHenry-Boone County line. Most of the public grade crossings are one of two types of construction; prefabricated concrete panels with asphalt approach surfaces, or a timber and asphalt combination with asphalt approach surfaces.

The grade crossing signals operate with coded track circuits, with the trains shunting the circuit, which runs through the rails, activating the crossing warning systems. Several of the grade crossings are near the intersections of public streets and may have an

interconnection with the computer controlling the traffic signals at those locations. The interconnection permits the traffic signals to be pre-empted to allow street traffic to clear the grade crossings when approaching train movements are detected.

Some at-grade crossings may have been updated since the initial survey work conducted in 2004. However, this information has not been verified since 2004 and the grade crossing protections will need to be resurveyed. All grade crossings are listed in Table 2.4-1.

Table 2.4-1
Grade Crossings

UP MP	Road or Highway Name	DOT Grade Crossing Number	Crossing Warning System
47.59	Big Timber Road	174 551 N	Crossbucks, Bell, Flashers, Gates, Center median divider
48.53*	Private	N/A	N/A
48.61	Private	N/A	N/A
49.86	IL 72 (Higgins Road)	174 552 V	Crossbucks, Bell, Flashers
50.14	Mill Street	174 553 L	Crossbucks
51.20	Private	N/A	N/A
51.53	Freeman Road	174 554 J	Crossbucks
52.20	Private	N/A	N/A
53.76	Kreutzer Road	174 556 X	Crossbucks, Stop signs
54.72	Grove Street	174 557 E	Crossbucks, Stop signs
54.94	Mill Street	174 556 L	Crossbucks, Bell, Flashers, Cantilevers
55.14	Main Street	174 559 T	Crossbucks, Bell, Flashers
55.17	IL 47 (Vine Street)	174 560 M	Crossbucks, Bell, Flashers, Gates, Cantilevers
56.77	Coyne Station Road	174 561 N	Crossbucks, Bell, Flashers
57.00	Private	N/A	N/A
59.45	Seeman Road	174 562 B	Crossbucks, Yield signs
61.31	Private	N/A	N/A
61.98	Olson Road	174 563 H	Crossbucks, Yield signs
62.48	Jefferson Street	174 564 P	Crossbucks, Bell, Flashers
62.63	Main Street	174 566 D	Crossbucks, Bell, Flashers

UP MP	Road or Highway Name	DOT Grade Crossing Number	Crossing Warning System
62.70	Vine Street	174 567 K	Crossbucks, Bell, Flashers
63.56	Dunham Road	174 568 S	Crossbucks, Bell, Flashers, Gates
64.64	Private	N/A	N/A
64.84	Private	N/A	N/A
65.50	Prospect Street	174 569 Y	Crossbucks, Bell, Flashers
65.93	East Street	174 570 J	Crossbucks, Bell, Flashers
66.05	Taylor Street	174 571 A	Crossbucks, Bell, Flashers
66.17	IL 23 (State Street)	174 572 G	Crossbucks, Bell, Flashers
66.35	Pedestrian Crosswalk	174 573 N	Crossbucks, Stop sign
66.68	West Street	174 574 Y	Crossbucks, Bell, Flashers
67.35	Ritz Road	174 575 C	Crossbucks
68.10	Private	N/A	N/A
68.50	Private	N/A	N/A
69.10	Thorne Road	Not Inspected	Crossbucks
69.50	Private	N/A	N/A
69.80	Private	N/A	N/A
71.37	County Line Road	Not Inspected	Crossbucks

*All private crossings are farm crossings exceot for the crossing at MP 48.53. This crossing leads to a water treatment plant.

2.5 FREIGHT OPERATIONS

The UP presently operates one regular through freight train in each direction five days per week between West Chicago and Belvidere. This train carries auto parts, new automobiles, and other commodities including lumber, sugar, grain, building materials, and other products to and from local industries along the UP Belvidere Subdivision. A local freight train also operates on an as-needed basis between Belvidere and Elgin, depending on traffic conditions.

The UP provided its record of train operations on the UP Belvidere Subdivision for the period from September 2003 through August 2004. During that time period, normal train operations included a regular through freight train to and from Belvidere five nights per week, as well as a local freight train that operated as needed. Occasional extra trains were also operated as needed. During the period covered by the report, the UP operated 586 regular one-way freight train trips and 72 extra one-way freight train trips for a total of 658 trips between Belvidere and West Chicago. These trains usually were time-sensitive, carrying automobiles, auto parts, and other commodities. They generally operated during nighttime hours and made no stops to serve industries en route.

The UP also operated 94 local round trips on the Belvidere Subdivision. This round-trip, local train leaves Belvidere and operates west to Rockford and Loves Park, and east to Marengo, Union, Huntley, Gilberts, and Elgin. The train normally operates weekdays during daylight hours, and the itinerary for each trip depends on the local freight traffic service requirements of the industrial customers in the communities along the line. The UP also occasionally operated small extra trains consisting of locomotives or maintenance-of-way equipment.

According to the information provided by the UP, the length of its through freight trains between Belvidere and West Chicago normally ranged between 1,300 and 6,000 feet. However, during the year for which records were provided, of the 586 through freight trains operated, 71 trains were longer than 6,000 feet. Of those 71 trains, 36 trains were between 6,000 and 7,000 feet long, 22 trains were between 7,000 and 8,000 feet long, 11 trains were between 8,000 and 9,000 feet long, one train was between 9,000 and 10,000 feet long, and one train was over 10,000 feet long. The local freight train was usually several hundred feet long. It only exceeded 1,000 feet in length four times during the year, and never exceeded 1,400 feet in length.

For additional discussion of freight train operations, see Section 4.4.1.

2.6 SURROUNDING LAND USE AND UTILITIES

2.6.1 Land Uses

The majority of land adjacent to the UP Belvidere Subdivision is cultivated farmland and open space. The communities of Gilberts, Huntley, Union and Marengo were all built around the railroad and continue to have their central business districts adjacent to the

railroad. Also, many industrial parks are located adjacent to the railroad, with some featuring industrial stub tracks. A more detailed description of the land uses adjacent to the UP Belvidere Subdivision within the study area can be found in Appendix B.

2.6.2 Utilities

Many utility companies have equipment and facilities located along the UP Belvidere Subdivision right-of-way. The locations of these utilities were identified by field reconnaissance and data available at the time of this study. Some of the examples of utilities identified include buried fiber optic cables, buried telecommunications cables, gas and petroleum pipelines, overhead electrical wires and water pipes. In addition, some municipal utilities, such as water treatment facilities, are located adjacent to the UP Belvidere Subdivision. A comprehensive review of all utilities along the right-of-way within the study area would be completed in future studies. Maps identifying the locations of the known utilities are found in Appendix A and more detailed descriptions are found in Appendix C.

2.6.3 Major Employers and Destination Sites

There are a number of large employers and destination sites along the UP Belvidere Subdivision. In addition, there are numerous smaller companies in several industrial parks located adjacent to the right-of-way. The UP Belvidere Subdivision also travels through the central business districts of four communities: Gilberts, Huntley, Union and Marengo. The major employers and destination sites within the study area include Elgin Industries in Elgin; Coils, Inc., Dean Foods, Huntley Factory Shops, and Union Special Machine in Huntley; Miceli Drapery, Trench It, Bag Makers, Inc., New Dimensions, and Illinois Railway Museum in Union; and Arnold Engineering, Danaher Motion, Nissan Forklift Corporation, and Pork King in Marengo.

2.7 ENVIRONMENTAL FEATURES

Although a comprehensive environmental analysis is beyond the scope of this study, land areas that might require further investigation in subsequent stages of the potential project development process are identified within this section of the report. Vegetated ditches exist along both sides of the right-of-way throughout most of the UP Belvidere Subdivision. These ditches appear to be accommodating the runoff that is generated within and adjacent to the right-of-way. They appear to be maintained on a regular basis. Wetland and floodplain areas are present in many places within the study area, especially between the Big Timber Road Station and the Village of Huntley. West of Huntley the corridor only passes through five floodplains and two wetland areas whose acreage is small compared to those areas east of Huntley

2.7.1 Waterways/Floodplains

The UP Belvidere Subdivision crosses two significant waterways at six different locations.

- Tyler Creek - approximately 5,750 feet west of Randall Road and 1,425 feet west of the Canadian Pacific (CP) Railway (formerly known as the IC&E) overpass (MP 47.0).

- Tyler Creek – approximately 3,700 feet north of the Big Timber Road grade crossing (MP 48.3).

- Branch of Tyler Creek – approximately 1,265 feet southwest of the I-90 overpass (MP 49.0).

- Kishwaukee River South Branch – approximately 2,910 feet northwest of the Kreutzer Road grade crossing (MP 54.3).

- Kishwaukee River South Branch – approximately 5,545 feet northwest of the Coyne Station Road grade crossing (MP 57.8).

- Kishwaukee River South Branch Tributary – MP 61.5.

The Federal Emergency Management Agency's Flood Insurance Rate Maps show that approximately 15,100 linear feet of the study area is within the 500-year floodplain area, of which approximately 13,900 linear feet is located within the 100-year floodplain area. This accounts for approximately 10% of the length of the UP Belvidere Subdivision within the study area. The locations of these floodplains are shown on the aerials in Appendix A.

2.7.2 Wetlands

A review of the National Wetlands Inventory Maps revealed that the UP Belvidere Subdivision passes through nine wetland areas and an additional ten wetland areas are adjacent to the right-of-way in the study area. The vast majority of these wetlands are located within the Gilberts and Huntley areas, which are known for soil conditions that are common within wetlands. The westernmost 6.5 miles of the study area do not intersect any wetlands. The locations of all wetland areas are listed in Appendix D and shown on the aerials in Appendix A.

2.7.3 Parks and Open Space

There are three public parks that lie adjacent to the proposed project area. These parks are owned and operated by either the local municipalities or by the county forest preserve districts in which the park is located. These properties include:

- The Burnidge/Paul Wolff Forest Preserve (Kane County Forest Preserve District), located on the west side of the UP track between MP 47.2 and MP 47.6 (Big Timber Road).

- The President George Bush Park/Joseph Waitcus Park (Village of Gilberts) located in the northwest quadrant of the intersection of Higgins Road (IL 72) and the UP track.

- The Freeman Kame Forest Preserve (Kane County Forest Preserve) is located at the northeast quadrant of the intersection of Freeman Road and the UP track.

2.7.4 The H.U.M. Trail

The McHenry County Conservation District (MCCD) owns the outer 25-feet railroad right-of-way along both sides of the UP track between Kruetzer Road in the Village of Huntley and County Line Road in the City of Marengo (except for a small portion in Downtown Huntley). Ownership of this land was given the MCCD in 1993 for the proposed Huntley-Union-Marengo (H.U.M.) Trail and for the preservation of the rare natural resource elements that are growing within the UP right-of-way limits. The H.U.M. Trail conceptually connects the communities of Huntley, Union, and Marengo. Phase I of the trail was completed in 2006 that includes a 3.5 mile trail connection that runs northeast of IL Route 20 from East Street in Marengo to Main Street in Union. Once the trail is completed, the trail would run 17 miles from Boone County to Huntley, Illinois. The MCCD's preservation area may impact station and coach yard locations and Metra's ability to provide commuter rail service. The communities that have proposed station sites within or near this preservation area will need to coordinate with the MCCD on the potential development of these sites.

2.8 PACE/COMMUTER BUS SERVICE

There are a number of Pace and long-haul bus routes that operate within the northeast regions of both Kane and McHenry Counties. However, none of these services directly serve the study area. The three long-haul routes operated by the Van Galder Bus Company and the three closest Pace routes are briefly described below:

Van Galder Bus Company

- Madison, Wisconsin to O'Hare International Airport: This service provides 22 daily one-way bus trips between Madison, Wisconsin and

O'Hare International Airport. The bus travels primarily along I-90, and the closest stop to the study area is in Rockford.

- Madison, Wisconsin to Chicago Union Station: This service provides 12 daily one-way bus trips between Madison, Wisconsin and Chicago Union Station. The bus travels primarily along I-90, and the closest stop to the study area is in Rockford. This service has been implemented to connect with the Amtrak operations at Union Station.

- McHenry, Illinois (Shah Center at IL 31 and Shamrock Lane) to O'Hare International Airport: This service provides 16 daily one-way bus trips between McHenry and O'Hare International Airport. The only stops between McHenry and O'Hare in both directions is at the Holiday Inn in Crystal Lake (800 S. IL 31) and the Elgin Country Inn & Suites in Elgin, which is located at I-90 and Randall Road.

Pace Bus Service

- Route #806: This route provides service in northeastern McHenry County and northwestern Lake County. The route connects communities including Crystal Lake, McHenry, Johnsburg and Fox Lake. The bus route serves the Crystal Lake (UP Northwest), McHenry (UP-NW McHenry Branch) and Fox Lake (Milwaukee North) Metra Stations. There are five northbound and six southbound trips per weekday on this route.

- Route #807: This route provides service in central and eastern McHenry County. The route connects communities including Woodstock, Wonder Lake and McHenry. The bus route serves the Woodstock and McHenry Metra Stations along the UP Northwest Line. There are four eastbound and five westbound trips per weekday on this route.

- Route #808: This route provides service in McHenry County, connecting the communities of Crystal Lake, Woodstock and Harvard. The bus route serves the Crystal Lake, Woodstock and Harvard Metra Stations along the UP Northwest Line. There are seven trips every weekday on this route.

3.0 FUTURE PLANS

This section explores how future municipal plans and roadway improvements might impact planning for potential commuter rail service along the UP Belvidere Subdivision from the existing Big Timber Road (MD-W) Metra Station to the City of Marengo. Information pertaining to future roadway improvements, community and residential growth, and business expansion along this corridor was gathered from municipal comprehensive plans, land resource management plans, transportation plans, and media sources. Demographic data for this section came from CMAP and the 2000 Census. Informational meetings with the communities and major businesses along the study corridor were not conducted for this study. These types of information gathering sessions would be completed in future studies.

3.1 DEMOGRAPHIC CHARACTERISTICS

The demographic analysis included in this study focuses on the six-mile-wide study area centered along the UP Belvidere Subdivision, which stretches approximately 26 miles from Big Timber Road Station to the McHenry-Boone County Line. For analytical purposes, the study is divided into seven segments, each approximately four miles in length. The mileage attributed to each segment corresponds to the mileposts of the potential extension along the UP Belvidere Subdivision. Tables 3.1-1 through 3.1-3 and Figures 3.1-1 through 3.1-6 on the following pages summarize the population, household, and employment data by segment of the study area. The data and growth projection used in the demographic analysis was provided by the Chicago Metropolitan Agency for Planning at the quarter-section level.

3.1.1 Population

According to the 2000 U.S. Census, about 8.1 million people lived in the six-county region of northeastern Illinois, including 55,000 people within the study area. Between 2000 and 2030, population in the study area is projected to grow by approximately 207%, to 170,000 people. While most segments are projected to at least double in population, the most significant growth is expected in Segments 2 through 4 (Gilberts-Huntley area), as shown in Table 3.1-1 and Figures 3.1-1 and 3.1-2.

3.1.2 Households

Historically, Metra ridership correlates more directly to the number of households (i.e. a single occupied housing unit of any type) than to population. According to the 2000 U.S. Census, there were 2.9 million households in the six-county region of northeastern Illinois, including 20,000 households within the study area. Between 2000 and 2030, the number of households in the study area is anticipated to increase by approximately 196% to 58,000 households. While almost every segment is projected to at least double the number of households, the most significant growth is projected in Segments 2 through 4 (Gilberts-Huntley area), as shown in Table 3.1-2 and Figures 3.1-3 and 3.1-4.

3.1.3 Employment

According to the 2000 U.S. Census, more than 4.3 million people worked in the six-county region of northeastern Illinois, with approximately 31,000 jobs in the study area. Between 2000 and 2030, employment in the study area is projected to expand by approximately 150% to 76,000. While all segments are projected to see an increase in employment, the most significant growth is expected in Segments 2 through 5 (Gilberts, Huntley, and Union), as shown in Table 3.1-3 and Figures 3.1-5 and 3.1-6.

Table 3.1-1 Marengo Extension Study Corridor Population

Segment	Length (mi.)	Population 2000	Population 2030	Change (2000 vs 2030) Number	Change (2000 vs 2030) Percent
1 (Mile 0-2)	2	24,490	56,791	32,301	132%
2 (Mile 2-6)	4	5,774	21,485	15,711	272%
3 (Mile 6-10)	4	13,659	61,026	47,367	347%
4 (Mile 10-14)	4	1,262	7,632	6,370	505%
5 (Mile 14-18)	4	1,568	3,008	1,440	92%
6 (Mile 18-22)	4	7,866	19,120	11,254	143%
7 (Mile 22-26)	4	585	554	-31	-5%
Total	**26**	**55,204**	**169,616**	**114,412**	**207%**

Table 3.1-2 Marengo Extension Study Corridor Households

Segment	Length (mi.)	Population 2000	Population 2030	Change (2000 vs 2030) Number	Change (2000 vs 2030) Percent
1 (Mile 0-2)	2	24,490	56,791	32,301	132%
2 (Mile 2-6)	4	5,774	21,485	15,711	272%
3 (Mile 6-10)	4	13,659	61,026	47,367	347%
4 (Mile 10-14)	4	1,262	7,632	6,370	505%
5 (Mile 14-18)	4	1,568	3,008	1,440	92%
6 (Mile 18-22)	4	7,866	19,120	11,254	143%
7 (Mile 22-26)	4	585	554	-31	-5%
Total	**26**	**55,204**	**169,616**	**114,412**	**207%**

Table 3.1-3 Marengo Extension Study Corridor Employment

Segment	Length (mi.)	Employment 2000	Employment 2030	Change (2000 vs 2030) Number	Change (2000 vs 2030) Percent
1 (Mile 0-2)	2	19,589	34,711	15,122	77%
2 (Mile 2-6)	4	1,410	19,617	18,207	1291%
3 (Mile 6-10)	4	2,854	11,253	8,399	294%
4 (Mile 10-14)	4	327	1,779	1,452	444%
5 (Mile 14-18)	4	167	685	518	310%
6 (Mile 18-22)	4	6,057	8,212	2,155	36%
7 (Mile 22-26)	4	233	241	8	3%
Total	**26**	**30,637**	**76,498**	**45,861**	**150%**

Figure 3.1-1 Marengo Extension Corridor: 2000 Population

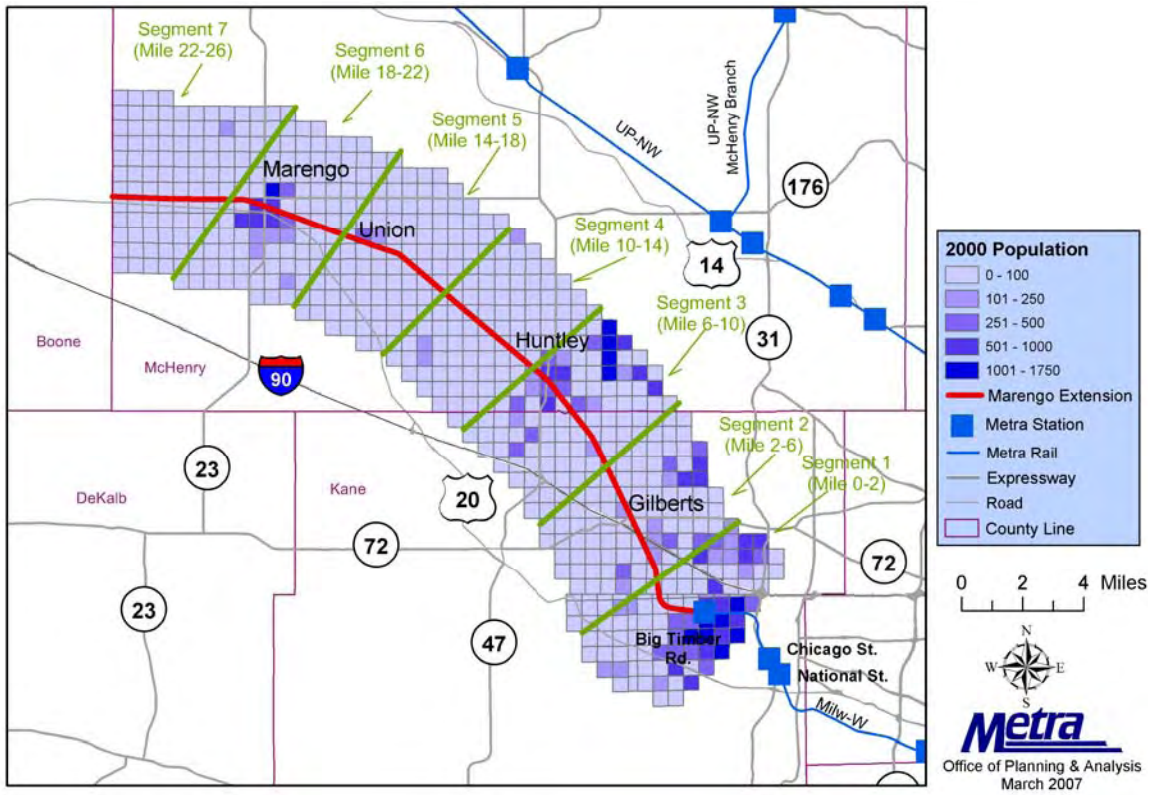


Figure 3.1-2 Marengo Extension Corridor: 2030 Population

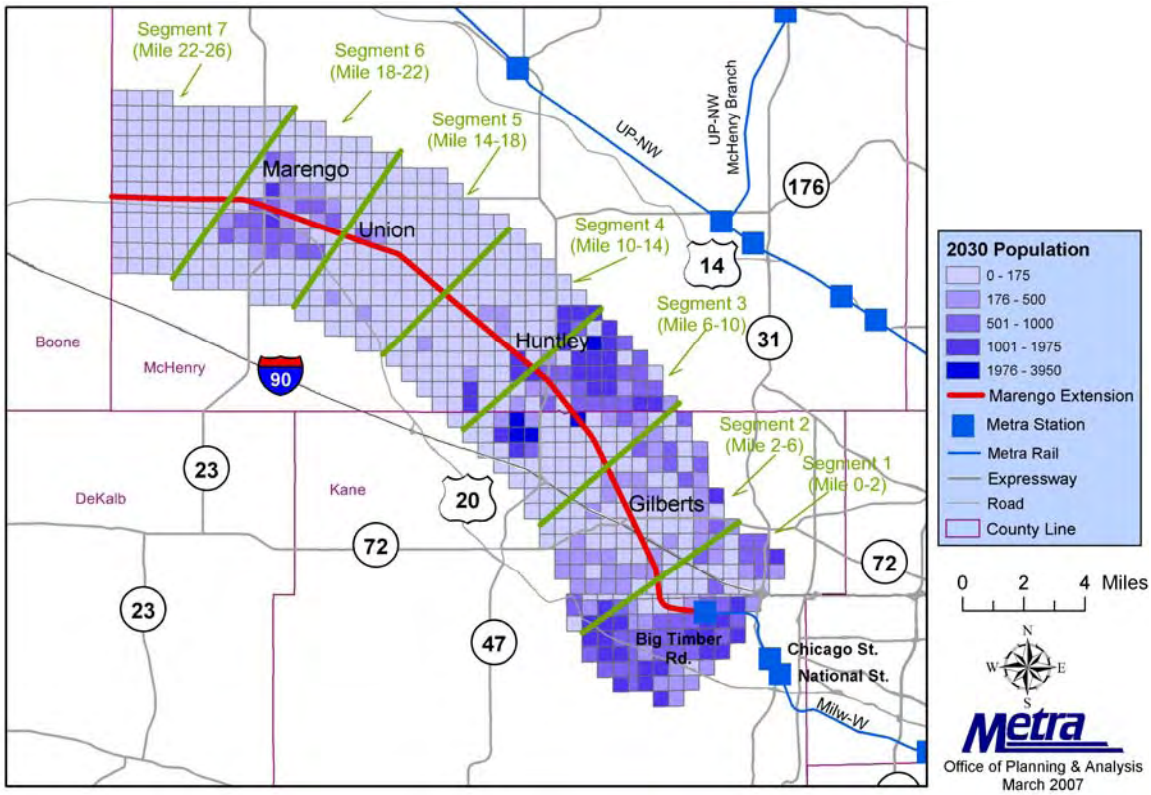


Figure 3.1-3 Marengo Extension Corridor: 2000 Households

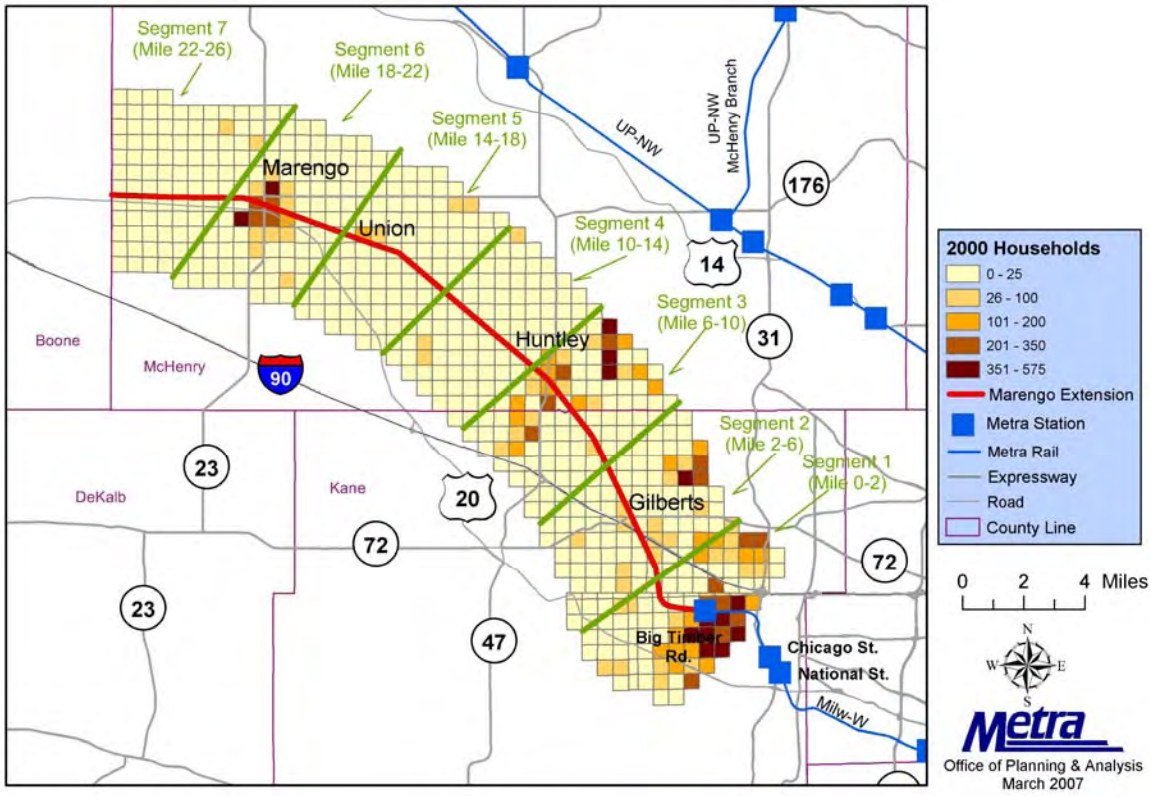


Figure 3.1-4 Marengo Extension Corridor: 2030 Households

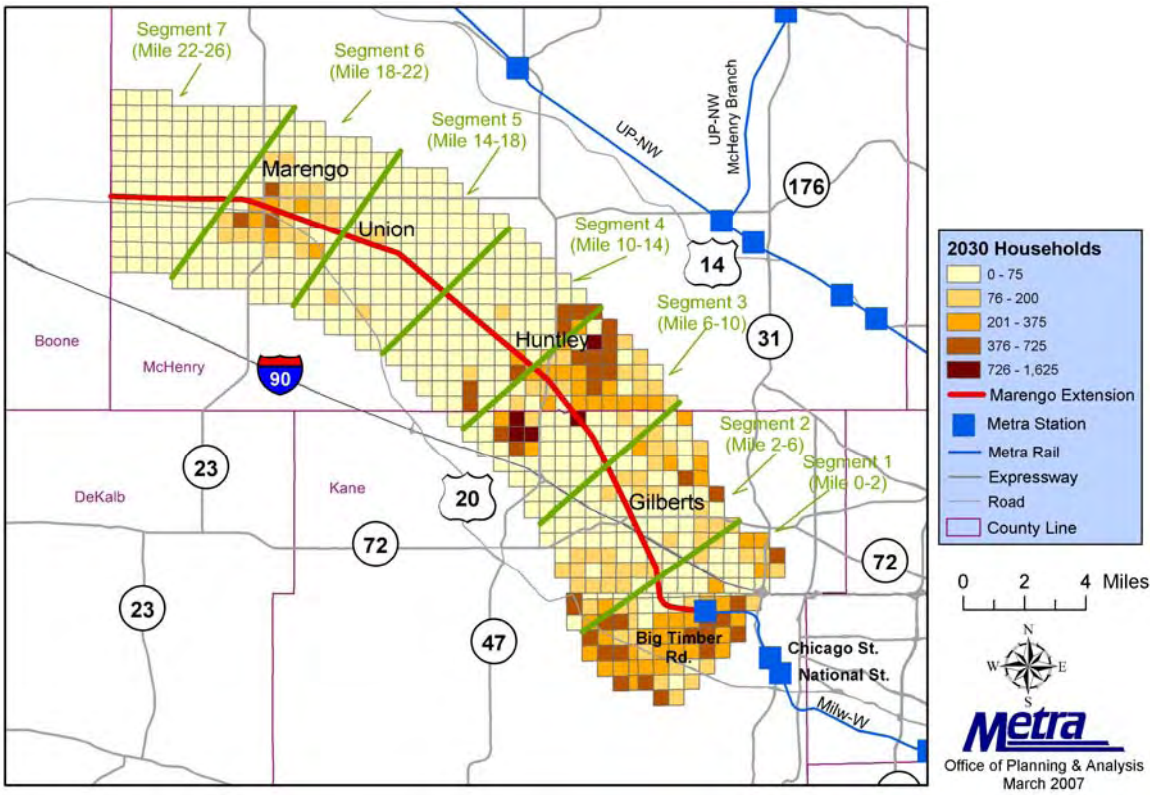


Figure 3.1-5 Marengo Extension Corridor: 2000 Employment

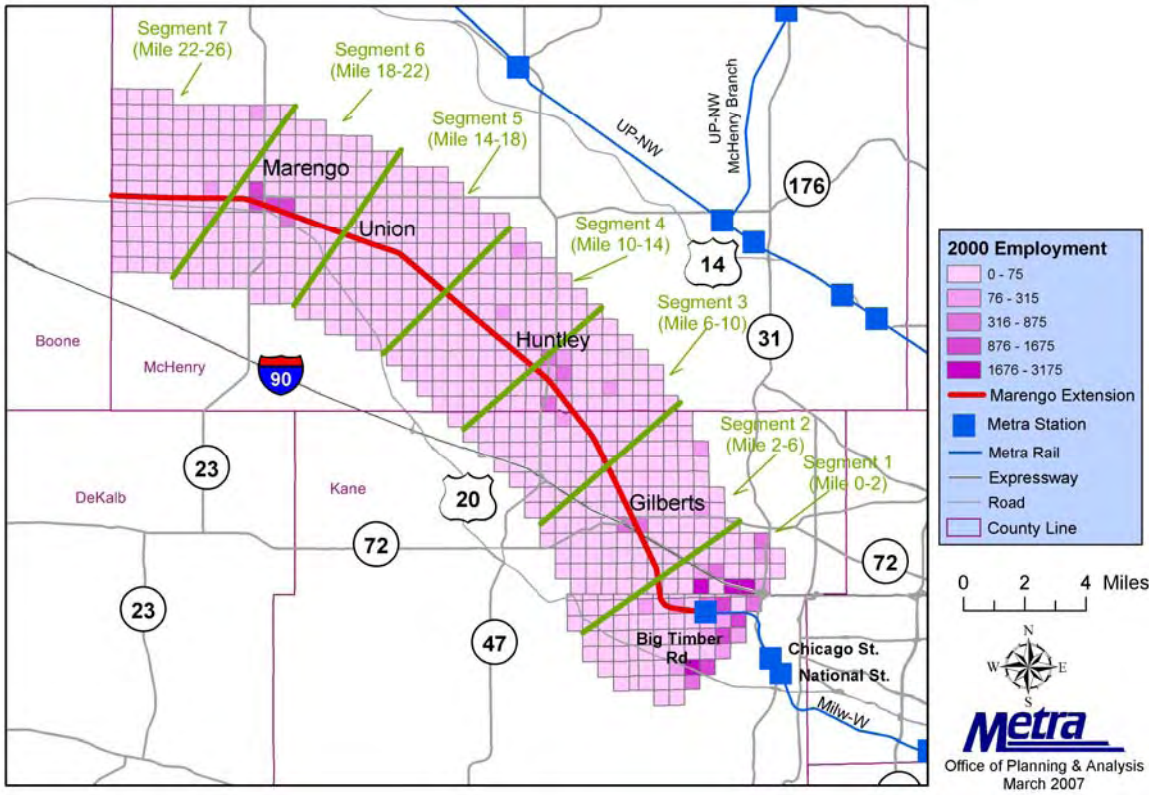
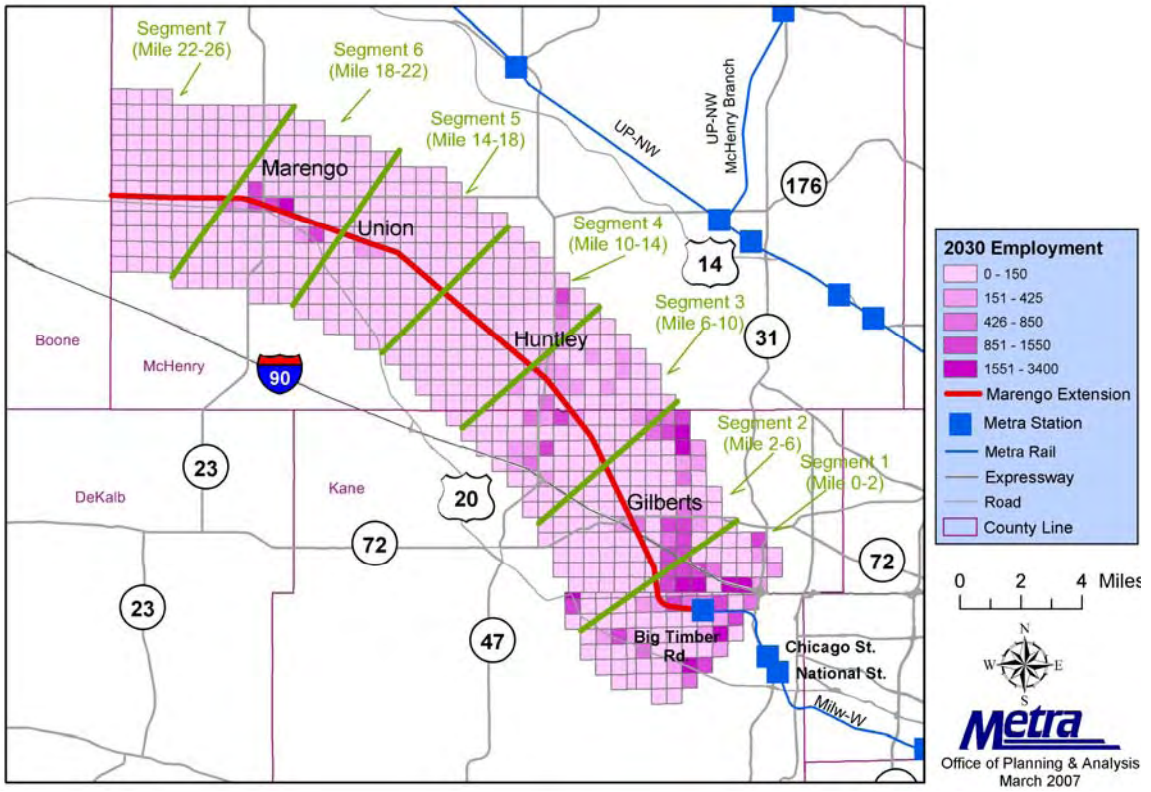


Figure 3.1-6 Marengo Extension Corridor: 2030 Employment



3.2 ROADWAY IMPROVEMENTS

The Illinois Department of Transportation (IDOT), the Illinois State Toll Highway Authority (ISTHA), Kane County, McHenry County and the local municipalities have each identified proposed and future projects that are either within or could impact the study area. Many of these projects involve the ongoing maintenance of existing roadways such as bridge rehabilitation, channelization, and resurfacing, while others will increase capacity through intersection modifications, signalization improvements and expansions, such as additional lanes. Many of these projects are included in the future plans of IDOT and the county highway departments.

The roadway improvements within the study corridor are mainly geared to improve the IL 47 and I-90 corridors, and the arterial roadways that serve these facilities. Many of these proposed projects could impact access to potential Metra station sites along the UP Belvidere Subdivision. These projects are listed by jurisdictional agency in Appendix E.

3.3 MUNICIPAL DEVELOPMENT PLANS

Information from various sources has been utilized to determine the potential for future development within the study area. Potential development in the study corridor is predominantly residential and commercial, with some industrial development, within, and adjacent to, the communities of Gilberts, Huntley, Union, and Marengo. According to published newspaper reports as of 2004, there were more than 33,000 residential units planned or proposed in the area over the next several years, which are shown by community and development in Appendix F. As a recent example, there are two recently approved subdivisions with approximately 45 single-family units further west along Powers Road toward Route 47. East of the UP and south of the airport is the Kane County Freeman Kame-Meagher Forest Preserve. Further to the east there are approved plans for a residential subdivision with 965 single-family homes in the Village of Gilberts. East of the planned commercial development along Route 47, south of Kreutzer Road, two multi-family residential developments are proposed. One has received preliminary approval for 430 units and the other is proposing 180 units.

3.3.1 Village of Gilberts

The Village of Gilberts is located approximately 40 miles northwest of Downtown Chicago, and has been a relatively small, agricultural-based community since the mid-1800s. Passenger rail service was virtually eliminated in the early 1930s, and growth within this village has been somewhat slower when compared to other outlying areas of Chicago. In a thirty-year period from 2000 to 2030, the population of the Village of Gilberts is projected to grow by 439% (1,279 persons to 6,891 persons), or approximately 15% annually. During the same time period, the number of households in Gilberts also is anticipated to increase at approximately the same rate, 431% (394 households to 2,091 households). Village employment within the same period is estimated to expand at a

smaller percentage, 81% (959 to 1,731), or three percent annually. The majority of this growth has been related to new residential developments adjacent to the UP Belvidere Subdivision and along Big Timber Road.

Gilberts has a definite growth plan identified within their Comprehensive Plan. According to the plan, it is the Village's intent to develop high-quality, low-density residential communities that will provide a diversity of housing types. Their intent is to maintain a semi-rural character by promoting predominantly small single-family neighborhoods that do not exceed two dwelling units per acre. Their Comprehensive Plan identifies the need to preclude development in wetland and floodplain areas, to protect the underground water recharge areas located within the community, and to preserve and manage the area's natural resources.

The primary goal of the Village of Gilberts is to maintain a balance of residential, commercial, and environmental land uses. It is recommended in the Comprehensive Plan that future residential development is compatible with the Village's economic ability to provide municipal services to both existing and proposed residential and business communities.

3.3.2 Village of Huntley

The Village of Huntley is a rapidly growing community that straddles the McHenry-Kane County line. The county boundary is located approximately one mile to the south of downtown Huntley. IL 47 bisects the Village and provides access to I-90, which is approximately three miles to the south of downtown Huntley. The existing I-90/IL 47 interchange currently provides only eastbound entrance and westbound exit ramps. Both Kane County and the Village of Huntley have been actively working with the Illinois State Toll Highway Authority (ISTHA) to expand this to a full interchange.

During a thirty-year period from 2000 to 2030, the population of the Village of Huntley is projected to grow by 675% (5,730 persons to 44,435 persons), or approximately 23% annually. In the same time period, the number of households in Huntley is expected to increase by a slightly smaller percentage, 592% (2,324 households to 16,076 households). Employment in the Village within the same period is projected to expand at a smaller percentage, 352% (2,183 to 9,876), or 12% annually.

The Village was awarded a planning grant from the Regional Transportation Authority's Regional Technical Assistance Program (RTAP) in 2007. The purpose of this study is to determine the preferred site for a potential future station and to created guidelines for transit-oriented development. The plan was completed in summer 2009. The study reviewed two parcels of land, one called Coyne Station, the other Kreutzer Rd. Coyne Station is located north of Main St. on the west side of the UP Belvidere Subdivision where the future Algonquin Road overpass is designated. The Kreutzer Road site is located south of Kreutzer Road. The plan preferred the Coyne Station Road site but ultimately left both sites for possible station locations.

3.3.3 Village of Union

The Village of Union, the smallest of the four corridor communities, is located approximately 7.4 miles northwest of Huntley and approximately 3.6 miles southeast of downtown Marengo. In a thirty-year period from 2000 to 2030, the population of the Village of Union is projected to grow by 118% (576 persons to 1,254 persons), or approximately four percent annually. During the same time period, the number of households in Union also is anticipated to increase at approximately the same rate, 131% (204 households to 471 households). Village employment within the same period is projected to expand at a larger percentage, over 570%, or about 20% annually.

3.3.4 City of Marengo

The City of Marengo is located approximately 68 miles northwest of Downtown Chicago, and approximately 12 miles east of Belvidere, Illinois. During a thirty-year period from 2000 to 2030, the population of the City of Marengo is projected to grow by 187% (6,355 persons to 18,213 persons), or approximately six percent annually. In the same time period, the number of households in Marengo is anticipated to increase by 151% (2,387 households to 5,985 households). Employment in the City within the same period is expected to expand at a smaller percentage, 40% (5,642 to 7,927), or one percent annually.

The City of Marengo has developed a Comprehensive Plan (May 2004) that examines how growth would affect the community, and how the community would need to respond to this anticipated growth. The vision of the plan is that Marengo will evolve into a balanced and sustainable community that offers diversity of housing types, transportation alternatives, and land uses. The plan also encourages compact development in the central core and near potential future transit facilities. Three potential Metra station locations are identified in the Marengo Comprehensive Plan.

The City of Marengo received a planning grant from the Regional Transportation Authority's Regional Technical Assistance Program (RTAP) in 2007. The purpose of the study is to create a land use plan for a transit-oriented development area near the potential Ritz Road station location. The plan was completed in summer 2009.

4.0 POTENTIAL OPERATIONS

This section describes the potential operating characteristics of a commuter rail extension of the Metra Milwaukee District West Line along the UP Belvidere Subdivision from Metra's Big Timber Road Station to the City of Marengo.

4.1 TRAIN OPERATIONS

The following assumptions were made without concurrence from the UP regarding the operations of potential commuter rail service along the UP Belvidere Subdivision. These assumptions include the addition of several segments of second main line track at strategic locations along the UP Belvidere Subdivision. The location of these segments, as well as the length will be determined based upon preliminary engineering and discussions with the UP:

- The service would operate over Metra's existing double-tracked Milwaukee District West Line from Union Station in Chicago to Big Timber Road Station in Elgin. Metra trains would then continue west over a new connecting track to the UP Belvidere Subdivision at Almora, east of Randall Road in Elgin. The trains would then operate on the UP Belvidere Subdivision to Marengo.

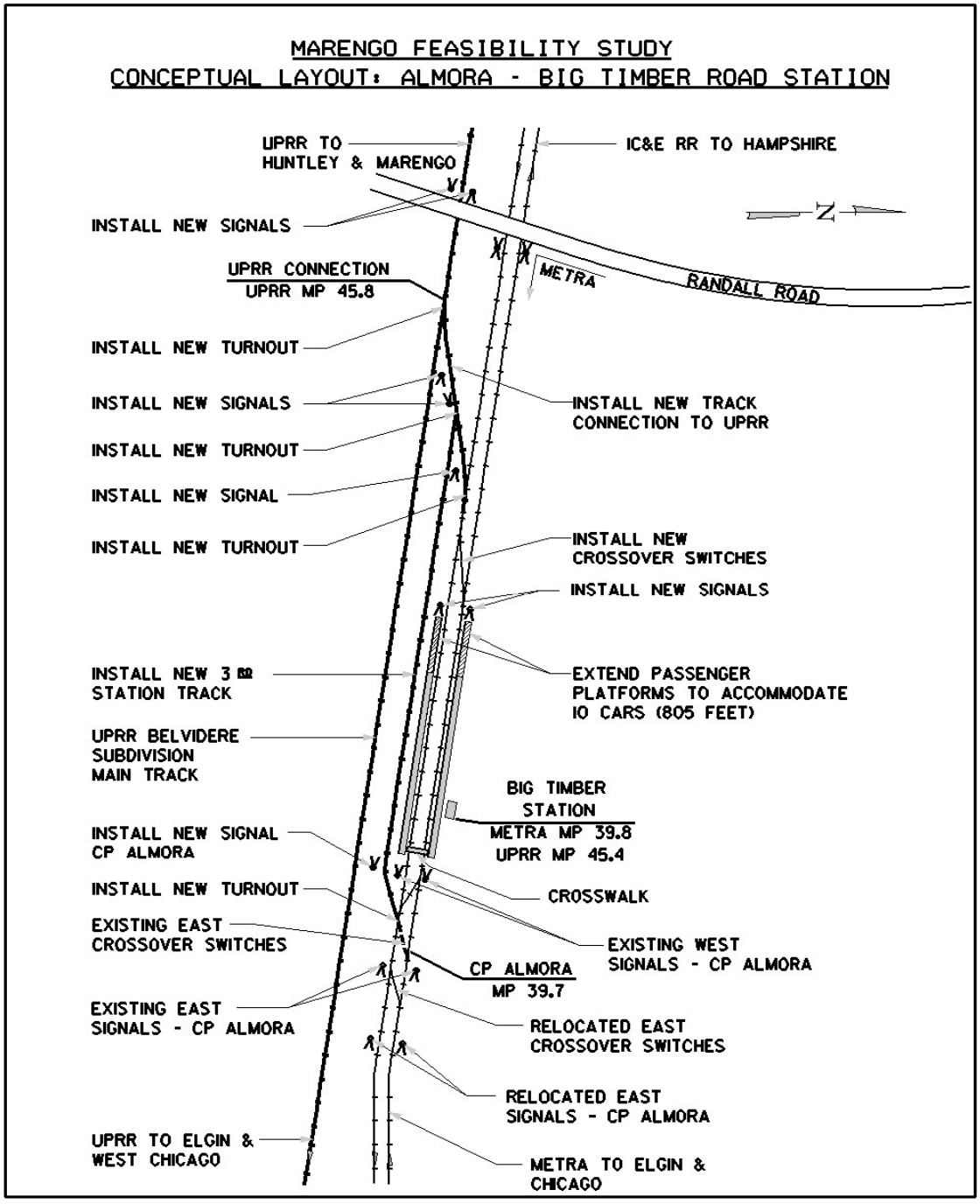
- New track connections, crossovers, and signals at Almora, along with platform modifications to the Big Timber Road Station (Figure 4.1-1), would allow Metra trains operating in opposite directions to meet each other at the station. The proposed configuration would also allow Metra the option to terminate some of its Milwaukee District West Line trains from Chicago at the Elgin/Big Timber Road Station, as it does now, without affecting Metra trains moving to or from the UP Belvidere Subdivision. This flexibility is considered critical for dependable train operations. The main line turnouts for each of the proposed second main line segments would be designed for 40 mph operation to minimize the train delay involved in the use of these tracks.

- The proposed new control point west of the Big Timber Road Station along the UP Belvidere Subdivision at Randall Rd. (Figure 4.1-1) for station alighting is adequate for the initial service levels planned (10 passenger trains per day). However, any increase in traffic, especially any planned reverse peak movements would require a second "ladder" track from the Milwaukee District West Line to the UP Belvidere Subdivision to allow for unimpeded movement in both directions.

- The UP Belvidere Subdivision between Almora and Marengo would be upgraded and signalized to permit the operation of Metra commuter trains at speeds up to 79 mph and UP freight trains at speeds up to 70 mph. Lower speed restrictions would be in effect where required by the physical characteristics of the railroad. The signal system would include design characteristics to permit the operation of

trains at these speeds. All the electronic grade crossing warning systems on the line would be modified to accommodate the higher train operating speeds.

Figure 4.1-1 Conceptual Layout: Almora Interlocking



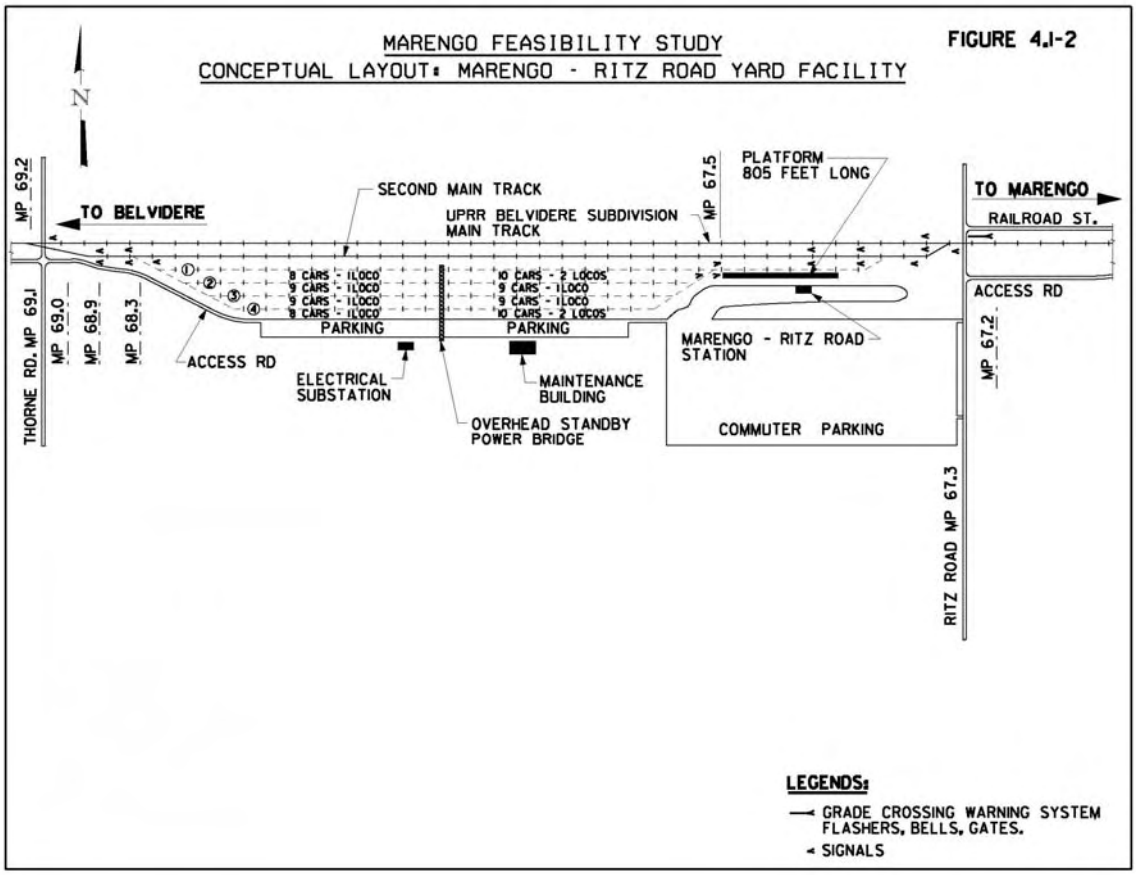
- In addition to the importance of the on-time operation of Metra commuter trains, UP freight trains on this line are also very time-sensitive since they serve the Daimler Chrysler automobile assembly plant at Belvidere and other local industries. Therefore, to maintain efficient commuter and freight train traffic two segments of a new second main line would need to be installed to allow for the meeting and passing of Metra and UP freight trains. The first segment would extend from MP 50.9 to MP 54.3, between Gilberts and Huntley. The second segment would be in the City of Marengo, extending from MP 66.4 to MP 69.2. Both segments of second main track would be located so as to permit most UP freight trains to stop without obstructing any public grade crossings. The length of these two segments of second main track could also permit two Metra trains to meet each other at "approach" speeds (up to 40 mph) instead of the much lower speeds (less than 20 mph) that could be required if shorter segments of second main track were used.

- A new commuter train storage yard would be built on the south side of the main line west of Ritz Rd in Marengo. As Metra has done in past rail expansions, the new facility would be located near the end of the commuter rail line with an adjacent station and commuter parking serving Marengo. The configuration of the potential station and yard facility (Figure 4.1-2) would have one passenger platform located on the south side of the eastern yard lead track into the coach yard. This platform would be located off of the main line UP right-of-way. This station configuration allows for multiple commuter trains to serve the station simultaneously while allowing the UP Belvidere Subdivision first main line to remain unimpeded by commuter train operations.

  The second segment of second main track (MP 66.4 to MP 69.2) would also lead into the yard facility, enabling a UP freight train to occupy the first main track and, at the same time, permitting Metra trains to enter and exit either end of the yard. This configuration would provide a critical element of flexibility by permitting Metra trains to operate in and out of either end of the layover facility without affecting trains on the first main track. This feature would significantly reduce train delays by allowing simultaneous movement of UP freight trains and Metra commuter trains in the area of the double-ended facility.

- The final locations and layouts of the Almora Interlocking, second main line track, and coach yard locations and related infrastructure will be determined in future studies.

Figure 4.1-2 Conceptual Layout: Marengo Coach Yard



4.2 ROLLING STOCK

This study assumes that Metra would operate its commuter trains with the current type of diesel-electric locomotives and bi-level commuter cars in the push-pull configurations that are presently used on the Milwaukee District West Line. Locomotives are placed on the west end of the commuter trains and cab cars are placed on the east end of the commuter trains. The locomotive engineer operates the train from the locomotive on westward trips, and from the cab control car on eastward trips. This is the system Metra currently uses on all of its non-electrified commuter lines.

4.3 STATION AND YARD LOCATIONS

4.3.1 Station Locations

It is assumed that four new stations would be served by the potential extension to Marengo. Thirteen candidates for potential station sites were identified and evaluated along the UP Belvidere Subdivision (see Table 4.3-1). Factors that will be considered as part of the final station selection include:

- The proximity of the communities that would be served and their residential developments (existing and future), as well as the proximity to employment and/or recreational destinations.

- The availability of major highways or access roads that would cause minimal additional traffic in central business districts or on local residential streets.

- Environmental conditions including wetlands, floodplains, heavily wooded areas, or other sensitive locations.

- The availability of land to construct the station, yard and parking facilities required.

- Station spacing. Generally, stations need to be located at least three to five miles apart from one another.

Table 4.3-1 contains a list of the thirteen candidates for potential station sites. The general locations of the potential station sites can be found in Figure 4.3-1 and in Appendix A. A detailed description of each of the sites can be found in Appendix G. The potential station locations would all be subject to discussions with the communities in which they are located during future steps in the project development process. Public meetings were not conducted and community input was not requested in identifying potential station sites for this study. Rather, the potential station locations were determined on a preliminary basis in order to determine the feasibility of serving the communities along the UP Belvidere Subdivision.

The selection of station sites is a dynamic process that would continue from this initial feasibility study through future steps in the project development process. The input and commitments from the communities, the public, and other organizations with a vested interest in the potential extension of Metra service would be significant factors in determining the final station locations. All locations would be subject to modifications based on input from the communities, Metra, the Union Pacific Railroad and other affected entities.

A significant factor that would be considered when refining the station locations is the availability of property needed for station and parking facilities. Metra would require both land dedication and commitment for funding the construction of station and parking facilities by the host communities. Metra typically requires 13 acres of land, which encompasses the station and 1,250 parking spaces.

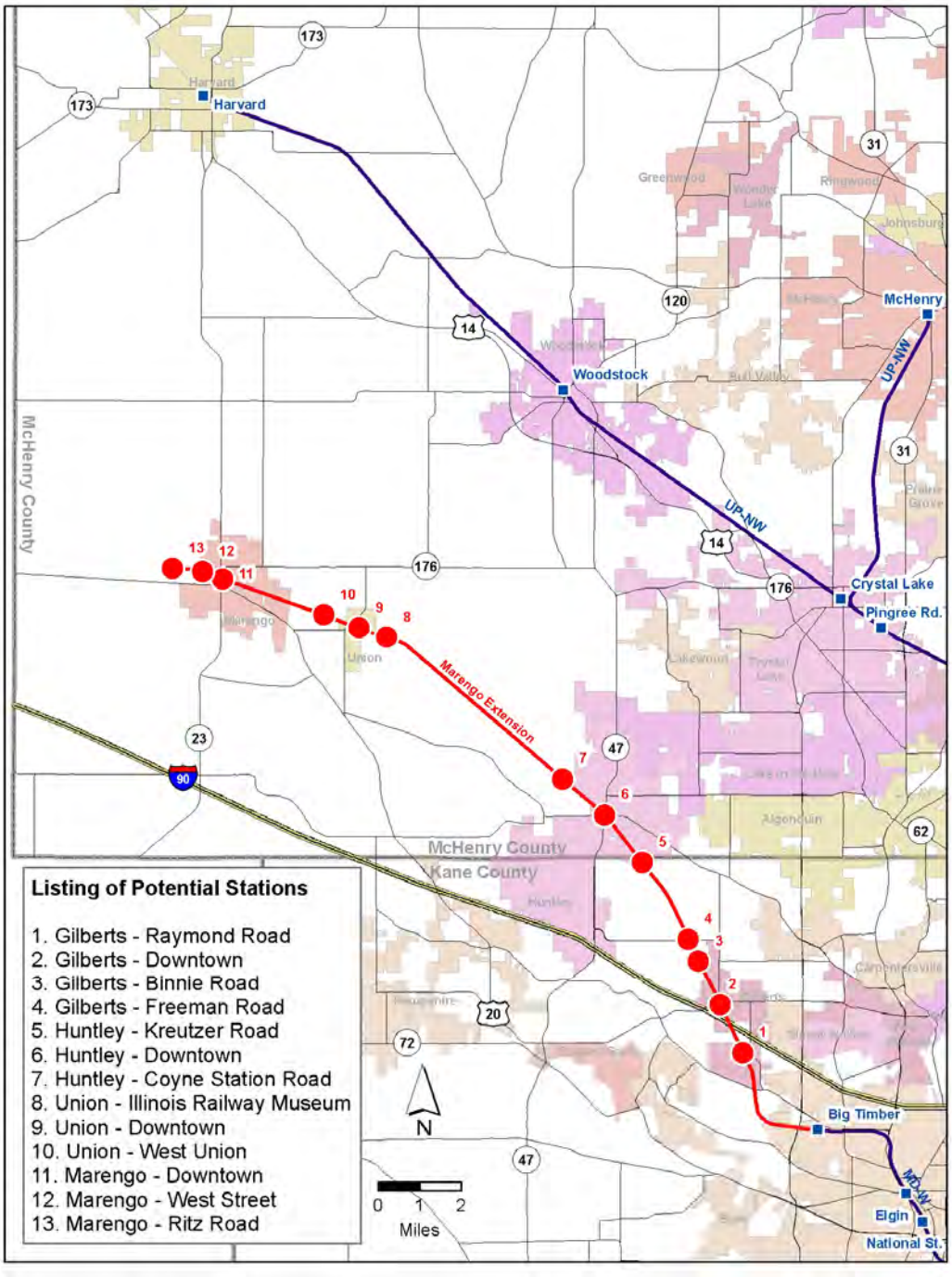
The communities of Huntley and Marengo have conducted station area planning studies as part of the RTA's Regional Technical Assistance Program (RTAP), now Community Planning Program. Both studies were completed in summer 2009. As a result, both studies have chosen preferred station locations. Marengo has chosen a location west of Ritz Road near the proposed coach storage facility (see Figure 4.1-2). This station would be located on the eastern lead track to the storage facility and would be off of the main line UP right-of-way. Huntley has examined two station sites at Coyne Station and Kreutzer Roads. This plan prefers the Coyne Station site; however Huntley has left both sites as possibilities for station development.

Table 4.3-1 Potential Metra Commuter Station Sites

Village or City Suggested Location	Milepost Location	General Size (acres)	Distance From Big Timber Road Station (miles)
Gilberts-Raymond Road	UP 48.5	13.7	3.1
Gilberts-Downtown	UP 49.7	18.9	4.3
Gilberts-Binnie Road	UP 50.8	20.0	5.4
Gilberts-Freeman Road	UP 51.6	20.0	6.2
Huntley-Kreutzer Road	UP 53.6	20.0	8.2
Huntley-Downtown	UP 55.0	Note 1	9.6
Huntley-Coyne Station Road	UP 56.6	20.0	11.2
Union-Illinois Railway Museum	UP 61.8	19.8	16.4
Union-Downtown	UP 62.7	Note 1	17.3
Union-West Union	UP 63.6	20.0	18.2
Marengo-Downtown	UP 66.3	Note 1	20.9
Marengo-West Street	UP 66.5	19.2	21.1
Marengo-Ritz Road	UP 67.4	20.0	22.0

Note 1- This site did not appear to have the adequate acreage for commuter parking unless major property-use changes were made with significant effects to the downtown business district.

Figure 4.3-1 Potential Metra Commuter Station Sites



4.3.2 Coach Yard Location

The potential extension of the Milwaukee District West Line to Marengo would require a new commuter train storage yard facility to be constructed. A candidate location for a yard facility has been identified on the west side of Marengo, near Ritz Road. The final location and layout of the coach yard location and related infrastructure will be determined in future studies. This location was identified as a suitable location for a yard facility for the following reasons:

- The site is situated on the west side of Marengo, which enables the train to serve all of the communities along the UP Belvidere Subdivision, without "dead-heading" non-revenue trains between the yard facility and the terminal station.

- There appears to be available land near Ritz Road that could accommodate both initial operations and additional capacity in the future.

- The site is parallel to the UP Belvidere Subdivision and a power substation is located in the southeast quadrant of the intersection between Ritz Road and the UP Belvidere Subdivision. This would be necessary to provide the 480-volts of commercial power required to supply standby power for the trains.

- The site is approximately 0.3 miles north of US 20, and 1.1 miles west of IL 23. The site offers good accessibility for Metra employees and commuters using the terminal station adjacent to the yard facility, including those commuting from the west, beyond the study area.

- The McHenry County Conservation District has land holdings adjacent to the UP Belvidere Subdivision on both the north and south sides of the railroad for major portions of the Marengo Extension study area between Huntley and Marengo. The location of the HUM Trail will impact the location of the commuter storage yard. See Section 2.7.4 for more information.

4.4 OPERATIONS, SCHEDULES, AND INTERFACES

4.4.1 Rail Freight Operations

Freight rail service in the study area is operated by the UP on its Belvidere Subdivision and by the CP on its line west of Almora and on Metra's Milwaukee District West Line east of Almora. The UP currently operates between West Chicago, Belvidere, and Rockford, with no connection to either the CP or to the Metra MD-W. The CP operates freight train service to and from the Chicago area through its direct mainline connection with Metra at Randall Road (Almora).

The Chrysler automobile assembly plant at Belvidere, Illinois provides the majority of the freight rail traffic for the UP Belvidere Subdivision. In 2005, there were two regular through freight trains per day (one in each direction) between Belvidere and West

Chicago (five days per week), carrying time-sensitive automobile and auto parts. (See Section 2.5 for additional information about freight train traffic levels on this line.) However, as of April 2009, Chrysler is currently reorganizing itself under Chapter 11 bankruptcy and the expected partnership with Fiat Group. Given this state of affairs, it is difficult to know what the future rail freight operations may be. In addition to the Chrysler assembly plant, there are also other freight customers on the line at several locations that are served by the UP local freight train based at Belvidere.

One of these time-sensitive through freight trains (the morning train returning from West Chicago to Belvidere) could conflict with potential Metra morning peak-hour commuter train operations between Marengo and Almora. If the UP were to add a second pair of regular through freight trains on the UP Belvidere Subdivision, one or more of these trains could also conflict with Metra service. The two proposed segments of second main track would be used to permit UP and Metra trains to meet or pass each other in the study area.

The UP local freight train that serves customers along the UP Belvidere Subdivision is operated on an as-needed basis (approximately three round trips per week). It normally operates during the daylight hours and should not conflict with Metra peak-hour commuter train traffic, unless running very late. It is assumed that this local freight train would use the segments of second main track to meet, or be passed by, Metra trains.

The capital and operating improvements proposed in this study are designed to permit the flexibility of train operations that could be required to accommodate the train service described above.

4.4.2 Commuter Rail Service

Based on previous Metra extensions of commuter rail lines, a proposed service plan was developed for extending the MD-W to Marengo along the UP Belvidere Subdivision. The operating assumptions used to create the proposed service plan include:

- The operation of commuter service would be an extension of Metra's existing Milwaukee District West Line.
- The initial service would operate 10 trains on weekdays only.
- The 10 weekday trains would consist of four inbound AM peak trains and four outbound PM peak trains, and one inbound and one outbound train during the midday period.
- Commuter rail service would utilize conventional rolling stock (diesel locomotives with passenger coaches).
- The new commuter rail service would be operated through a trackage-rights agreement between Metra and the Union Pacific Railroad. The exact nature of the service agreement would be subject to negotiations between Metra and the UP.

The proposed service plan is similar to the start-up level of service at the opening of the new North Central Service Line to Antioch in August 1996. Other possible scenarios for

levels of service would be examined with potential future studies. Weekend service on the Milwaukee District West Line likely would remain the same, with all trains terminating at the station in downtown Elgin, providing no weekend or holiday service along the proposed extension.

One particular caveat to the proposed service plan would be the potential station location in Union at the Illinois Railway Museum. Should the proposed facility be constructed, this would likely spur demand for weekend ridership to visit the museum. Decisions regarding additional scheduling of equipment and manpower would need to be addressed.

5.0 CAPITAL IMPROVEMENTS

This chapter identifies the capital improvements required to implement Metra commuter rail service along the UP Belvidere Subdivision through northeastern Kane County and southwestern McHenry County. Based on the existing conditions, improvements would have to be made to the track, ballast and sub-grade, interlocking, at-grade street crossings and signals in order to provide commuter rail service that meets Metra's standards. In addition to the work necessary on the existing rail, two new segments of second main line and additional rolling stock would be necessary. As described in Section 4.3 of this study, new commuter rail stations, which would include station buildings, parking lots, and associated site improvements, and a new storage and maintenance yard facility, would also be required. The required improvements presented within this chapter are considered necessary to operate commuter trains efficiently, and are not intended to portray or imply that the current UP Belvidere Subdivision physical plant and infrastructure is in substandard condition for operating freight service.

An order-of-magnitude capital cost estimate, including a breakdown of quantities, has been prepared for the Marengo Extension and can be found in Appendix H. These capital costs are based on initial levels of commuter rail service. If future studies are undertaken, the capital needs and cost estimate will be refined.

5.1 IMPROVEMENTS TO PHYSICAL PLANT

This section identifies the improvements to physical plant items that would be necessary in order to operate commuter rail service that meets Metra's standards over the UP Belvidere Subdivision. These include track improvements, new segments of a second main line, signal system installation, and grade crossing improvements. These improvements are recommended based on the need to add operational flexibility and reliability upon potential implementation of commuter rail service.

The proposed layout of the UP Belvidere Subdivision is adequate to handle the initial planned service level of 8 peak (four AM and four PM) and 2 off-peak trips. Additional peak trips and off-peak trips with headways closer than two hours will create potential "bottlenecks" at those locations beyond the planned second main track extensions (MP 50.9-54.3 and MP 66.4-69.2). Assuming any increase in freight traffic on the UP Belvidere Subdivision due to these improvements increases the potential for delay.

5.1.1 Rail

On all of its rail lines, Metra maintains high quality rails that provide commuters with a comfortable and fast ride. In order to operate commuter service that meets Metra's standards, all rail along the UP Belvidere Subdivision between Almora and Thorne Road would need to be replaced. The new rail would have a minimum classification of 115 RE continuously welded rail.

5.1.2 Second Main Line Track

The current single-track configuration of the UP Belvidere Subdivision is not adequate for commuter rail operations. Operating both freight and commuter trains along the same single-track right-of-way means that conflicting train movements need to be addressed. Along the UP Belvidere Subdivision this is best addressed through the construction of two new segments of a second main line adjacent to the existing main line. These second main line segments will allow trains to pass one another in either direction, eliminating time-consuming conflicts.

The recommended locations for the two new segments of second main line proposed in this study are listed below. Segment lengths and locations would ultimately be dependent on future engineering studies and discussions with the UP, as well as other factors, including the location of grade crossings.

- Segment #1 (MP 50.9 to MP 54.3) – construct 3.4 miles of track from about 1.0 mile northwest of IL 72, near Gilberts, to about 0.5 miles northwest of Kreutzer Road, in Huntley.

- Segment #2 (MP 66.4 to MP 69.2) – construct 2.8 miles of track from about 0.3 miles east of West Street in Marengo to about 0.1 miles west of Thorne Road, west of Marengo.

These two new segments of second main line would not impact any existing industrial sidings along the UP Belvidere Subdivision. However, both segments of new second main line might impact wetlands, floodplains and other environmentally sensitive areas. The currently proposed locations were selected to minimize construction in wetlands, floodplains, and developed areas of the municipalities where possible. The final verification for the need and locations of these segments of second main line track would be determined during future studies. Any environmental issues would be evaluated further in future environmental studies.

5.1.3 Almora

In order to extend commuter rail service to Marengo a connection between the Milwaukee District West Line and the UP Belvidere Subdivision is needed. This connection would take place at Almora, just west of Big Timber Road Station, where the two railroads currently run parallel and adjacent to one another. This connection would involve a new interlocking, relocated crossovers, new turnouts, new and upgraded signals and new ballasted track. The final location and layout of the Almora Interlocking will be determined in future studies.

5.1.4 Ties

As part of the UP maintenance project completed in 2006 the general condition of the wooden ties appears to be good. Therefore, there is no tie replacement work assumed for this project.

5.1.5 Roadbed

Some potential problems have been identified with the existing roadbed, which may need to be addressed before any potential initiation of Metra operations over the UP Belvidere Subdivision. The grade of the track follows the surrounding ground elevations and the track is raised on a low, ballasted embankment, which raises the track several feet above the surrounding ground. In the past, scattered areas of pumping have caused mud contamination in areas where no drainage ditches are adjacent to the track. These areas may need to be undercut and new ballast may need to be placed to alleviate these conditions.

The existing ditches adjacent to the track are partially filled with sediment. These ditches would need to be cleaned and regraded through a scheduled program so that positive drainage is maintained along this facility. Within the downtown areas of Gilberts, Huntley, Union and Marengo, there are generally no ditch drainage systems adjacent to the tracks. This does not provide for positive drainage scenarios. Additional ditch control would also be needed adjacent to the Kishwaukee River, Tyler Creek, and their tributaries. This would help alleviate the threat of the track being flooded by high water. The capital cost estimate includes an allocation for environmental work within the study area.

5.1.6 Signals

The UP Belvidere Subdivision currently has no trackside signal control system, and is controlled by a train dispatcher from the UP Harriman Dispatching Center located in Omaha, Nebraska. This is accomplished by a Track Warrant Control (TWC) system that utilizes the UP radio system. There are also no interlockings or control points along the UP Belvidere Subdivision within the study area. One interlocking is located at Almora on the Metra Milwaukee District West Line, adjacent to the Big Timber Road Station.

To provide potential Metra commuter rail service along the UP Belvidere Subdivision, a Centralized Traffic Control (CTC) system would need to be installed. This would include the installation of five control points and thirty intermediate signals, along with the following: circuit microprocessor controls, control signals, electrically coded track circuits, radio-controlled data systems, signal instrument housings, signal relays, switch machines and underground cables.

5.1.7 Turnouts and Crossovers

To permit the speeds of commuter operations needed by Metra operations, new No. 20 turnouts with rail-bound manganese frogs and guardrails would be installed at each end of the two segments of proposed second main track, and also within the Big Timber Road Station area. New No. 10 turnouts would be utilized for the industry stub tracks, while No. 8 and No. 15 turnouts would be utilized in the coach yard.

5.1.8 Structures and Grade Crossings

In order to accommodate both freight and commuter rail operations along the UP Belvidere Subdivision, improvements would have to be made to existing water and roadway crossings. Three waterway crossings would need to be upgraded, due to the addition of the two new segments of second main line. Each of these crossings would need to be extended in a northeasterly direction so that existing drainage flows would still be able to pass beneath both the existing and proposed track. These waterways are not designated stream crossings, but are related to the irrigation and drainage systems of the adjacent agricultural properties. During potential future environmental analysis, these waterway crossings would be investigated further to determine if the scope of work would require an extension of the existing culvert systems, or a total replacement that would include culvert extensions.

Improvements would also be necessary at all grade crossings along the UP Belvidere Subdivision between Almora and Marengo except for the Big Timber Road crossing. To alleviate traffic congestion at the Illinois 47 and Main Street crossings, in Downtown Huntley, a new grade separation is included in this study that spans both roadways. Also, with the addition of the two segments of second main line five existing single-track grade crossings (Freeman Road, Kreutzer Road, West Street, Ritz Road and Thorne Road) will be expanded to double-track crossings. At all other public crossings within the corridor the roadway surface will be upgraded.

Many of the public crossings currently only provide protection in the form of crossbucks, flashers and bells. To meet Metra's safety requirements the protection at all public crossings would be upgraded to provide crossbucks, bells, flashers and gates. In addition to the public crossings, there have also been 12 identified private crossings. These crossings may need certain protection as well and are not included in the capital cost estimate.

5.2 ROLLING STOCK

Conventional rolling stock, with diesel locomotives and gallery cars like those that Metra presently uses, would be utilized. All passenger coaches would be ADA-compliant and accommodate approximately 140 to 150 passengers.

Four train sets, consisting of five diesel locomotives (including one spare), four cab control cars, and 28 coaches would be required to operate the example initial service

scenario described in Section 4.4.2. It might be possible that two of the necessary trains (eight-car train sets) could be relocated from existing train sets at the present coach yard in downtown Elgin. (If that were possible, only half of the rolling stock required to operate the example initial service scenario would have to be purchased new.) However, the potential effects on existing service and schedules from the Big Timber Station, as well as other stations on the entire Milwaukee District West Line to the east of Elgin cannot be determined at this time. This would require more detailed evaluation of the effects to current operations, including a potentially necessary Line Capacity Analysis. Determining the rolling stock requirements for the proposed service would be folded into a potential future Alternatives Analysis and subsequent studies.

5.3 STATIONS AND YARD FACILITY

Four new commuter stations and parking facilities would be constructed within the study area along the UP Belvidere Subdivision to serve the communities between the Big Timber Road Station and the McHenry-Boone County line. Individual station locations will be determined through discussions between Metra and the communities within the study area, as part of potential future studies. Though the exact requirements of the station facilities would not be known until ridership estimates are conducted during a potential Alternatives Analysis, it is assumed that each of the new stations would feature a small warming house, one 805-foot platform, and platform wind shelters. In addition, platform modifications at Metra's Big Timber Road Station would be required to accommodate longer commuter trains on all three tracks. Platforms would need to be extended to a length of 805 feet for potential future 10-car commuter trains.

A new commuter train storage yard facility meeting Metra's design standards would be required near the western terminus of the potential commuter rail extension. The facility would be large enough to accommodate the initial service plan and to expand to meet future needs. The facility would consist of train storage tracks, yard drainage facilities, servicing and access roadways, yard lighting, a 480-volt commercial standby power installation to provide electrical power for parked trains, and employee parking. It would also require water, sewer, electrical power and commercial communications connections, train crew offices and welfare facilities, and offices and storage buildings for Metra's Mechanical and Engineering Departments. A commuter station and parking lot, which would serve as the western terminal of the rail line, would also be constructed adjacent to the coach yard facility.

Land acquisition along this corridor may be necessary for the commuter rail stations and yard facility. The land acquisition and the construction costs of the station facilities would be the responsibility of the host communities, which is a provision that Metra has adopted for recent expansions and start-ups. Metra would be responsible for acquiring the property for the proposed coach yard, and potentially any required limited right-of-way along the alignment for additional trackage and maintenance access needs. Determination of specific land acquisition locations and costs would be included as part of future studies.

5.4 ENVIRONMENTAL IMPACTS

Implementing commuter rail service along the UP Belvidere Subdivision could have potential impacts on the environment within the study corridor. Metra would endeavor to avoid negative environmental impacts, while mitigating the negative effects wherever they are unavoidable. While the extent of the potential impacts would be determined in future studies of the proposed extension, the sections below identify the locations of potential environmental conflicts. It is important to note that there could be some significant costs associated with potential environmental impact mitigation, which cannot be accurately estimated without further studies.

5.4.1 Wetlands

A preliminary assessment of the potential wetland impacts was performed by reviewing the National Wetland Inventory Maps. The UP Belvidere Subdivision currently runs through a series of wetland areas that might be impacted by commuter rail operations. The impacts to these wetland areas are not addressed in this study, but would be further analyzed in future environmental studies. Appendix D provides a list of these wetland areas, and Appendix A illustrates the location of them within the study area.

5.4.2 Floodways/Floodplains

A preliminary assessment of the potential floodway and floodplain impacts was performed based on the review of the FEMA Flood Insurance Rate Maps. The UP Belvidere Subdivision currently runs through a series of floodways and floodplains that might be impacted by commuter rail operations. As with the wetlands identified, the impacts to these floodways and floodplains are not addressed in this study, but would be further analyzed in future environmental studies. The locations of these floodways and floodplains are found in Appendix A.

5.4.3 Other Environmental Issues

Another potential environmental issue identified in this study is noise created as a result of commuter rail operations. Noise impacts, and any other additional environmental issues identified during further examination of the study area, would be fully analyzed as part of future environmental studies.

5.4.4 Potential Station Location Environmental Impacts

The following potential environmental impacts related to potential station locations have been identified in this study:

- The candidate Gilberts-Freeman Road Station location has potential wetlands impacts, and potential impacts to a Kishwaukee River South Branch tributary.

- The candidate Huntley-Kreutzer Road Station location has potential impacts to a floodplain and to the Kishwaukee River South Branch Tributary that is located on the east side of the UP Belvidere Subdivision.

- The McHenry County Conservation District land holdings, specifically the HUM Railroad Prairie East and West parcels, which are adjacent to the UP Belvidere Subdivision right-of-way for much of the route between Huntley and Marengo. Please refer to Section 2.7.4 for more information.

The impacts in these areas would need to be fully analyzed in potential future environmental studies of this potential commuter rail extension. The locations of the potential stations and the environmentally sensitive areas they might impact are found in Appendix A.

5.5 CAPITAL COST ESTIMATE

An order-of-magnitude capital cost estimate was developed for a potential extension of commuter rail service from Elgin to Marengo based on the capital and operational improvements described in this study. Using unit costs developed by Metra and STV, the estimated capital cost for this project is $348.5 million in 2007 dollars (see Appendix H).

This capital cost estimate excludes any land acquisition for the construction of stations and parking, yard facilities, or additional right-of-way. The annual cost of operating and maintaining potential commuter service along the UP Belvidere Subdivision was not included in this estimate. The capital costs of this project would be refined as part of future studies.

6.0 RECOMMENDATIONS

The Marengo Extension Feasibility Study has examined the defined study area in order to determine whether it is physically and operationally feasible to provide new commuter rail service along the UP Belvidere Subdivision. The intent of this study has been to identify some of the operational and capital aspects associated with potential commuter rail service, and to approximate the capital cost of potentially implementing an extension of the Milwaukee District West Line to Marengo. The extent of community support was not analyzed in this study, but would be determined in subsequent study phases.

The Marengo Extension Feasibility Study has determined that there would be significant capital costs involved with providing new commuter rail service along the UP Belvidere Subdivision, particularly associated with the improvements to the existing physical plant and the construction of two segments of a new second main line, required to handle the additional train traffic on the potential UP Belvidere Subdivision portion of an extended MD-W Line. Installation of CTC signalization would also be a significant cost of the project.

As discussed in Section 2.1.1 and Section 2.7.4, there are significant wetland and environmental issues within the corridor that will need to be studied further. One such issue is the location of conservation lands adjacent to the UP Belvidere Subdivision right-of-way. The McHenry County Conservation District (MCCD) owns the outer 25-feet railroad right-of-way along both sides of the UP track between Kruetzer Road in the Village of Huntley and County Line Road in the City of Marengo (except for a small portion in Downtown Huntley). Ownership of this land was given to the MCCD in 1993 for the proposed Huntley-Union-Marengo (H.U.M.) Trail and for the preservation of the rare natural resource elements that are growing within the UP right-of-way limits. These preservation areas may impact potential station and coach yard locations and Metra's ability to provide commuter rail service. The communities that have proposed station sites within or near this preservation area will need to coordinate with the MCCD on the potential development of these sites. Likewise, they will need to work with Metra on the yet to be determined environmental mitigation that will be required due to the trail and preservation area within the right-of-way.

In addition, ridership will need to be studied in potential future studies to determine adjustments to the existing MD-W Line schedules to determine if key trains would reach their maximum carrying capacity. Hence, the locations and layouts of additional infrastructure needed to run commuter rail operations (e.g. interlocking, signals, sidings, yard, and grade separation) will need to be further studied.

It should be understood that the conclusions and recommendations are qualified based on the findings in this feasibility study alone, and cannot account for any "unknowns" that might emerge from additional more detailed analysis. Furthermore, at the present time, the results of this study cannot, and should not, be construed as indicating that the Marengo Extension would be considered operationally viable or even desirable at the completion of any additional studies.

6.1 FURTHER STUDY

The Marengo Extension Feasibility Study has concluded that the segment of the UP Belvidere Subdivision between Elgin and the McHenry-Boone County line could be a potential candidate for the Federal Transit Administration's New Starts program. The New Starts program is the process through which major capital transit projects compete for federal funding. This program is highly competitive, with demand for funds greatly exceeding the available supply. The typical timeline for New Starts projects is ten years.

As part of the next steps in the development process discussions would have to take place with the Union Pacific Railroad. As the owners of the UP Belvidere Subdivision, the freight railroad would have to approve any capital improvements and any commuter rail service on its right-of-way. Metra currently has purchase of service agreements with the Union Pacific Railroad to operate and maintain commuter service on three existing Metra lines. However, the proposed extension to Marengo differs from the existing commuter lines that operate on UP track. Whereas the existing UP Metra lines operate exclusively along UP right-of-way, the proposed extension of the MD-W to Marengo would operate partially on the UP Belvidere Subdivision and partially on the existing Metra-owned MD-W right-of-way. This situation creates additional operational issues that would need to be negotiated with the Union Pacific Railroad.

In addition to the operational and infrastructure improvements that will be necessary for commuter rail service, significant environmental studies will be needed along the UP Belvidere Subdivision. As discussed previously in the report, there are significant environmental issues that exist along the corridor, including the Huntley-Union-Marengo (H.U.M.) Trail and the preservation areas owned by the MCCD present throughout much of the corridor. These preservation areas may impact potential station and coach yard locations and Metra's ability to provide commuter rail service. There is also the presence of significant wetland and waterway features near the corridor, including the Kishwaukee River South Branch and Tyler Creek. The impacts in these areas would need to be fully analyzed in potential future environmental studies of this potential commuter rail extension.

6.2 COMMUNITY PLANS

Communities within the Marengo Extension corridor are encouraged to review and update any land use plans around potential station sites. Land uses surrounding the station sites should be conceptually planned to include those types of developments that traditionally support commuter rail service. The Metra/NIPC Land Use Guidelines state that concentrated development around station sites can serve to generate ridership from residential areas and attract ridership to local commercial destinations.

Transit-oriented development (TOD) is becoming more and more popular throughout the nation as a way to not only offer convenient shopping, dining, housing, and transportation choices within walking distance, but in many cases TOD is the impetus behind the

redevelopment or creation of new station areas. Many new mixed-use developments are being planned, incorporating the elements of TOD, driven by the demand for transit access near residential, business, and commercial land uses. Further studies should include TOD planning by the local communities in conjunction with Metra. The communities of Marengo and Huntley have already completed the station area land use planning process through planning grants awarded by the Regional Transportation Authority.

6.3 PUBLIC SAFETY

A public safety program should be provided to residents and property owners along the UP Belvidere Subdivision to address the addition of higher train speeds and a lack of signalized crossings at many of the private farm crossings along the corridor. Large areas of the UP Belvidere Subdivision ROW border farms and open areas that have no fencing or other restrictions towards access of the ROW.

6.4 ALTERNATE ALIGNMENT

This study analyzed only the option of providing Metra commuter rail service to communities in the UP Belvidere Subdivision corridor through the extension of Metra's existing Milwaukee District West Line. While extending the MD-W is the most logical choice when considering Metra's current system, a future alignment for commuter rail service to the corridor could utilize the Northwest Tollway (I-90) and connect to the proposed future STAR Line.

Metra is currently in the Alternatives Analysis phase of the FTA's New Starts program for the first phase of the proposed STAR Line. The STAR Line is a proposed 55-mile route, connecting Joliet to the O'Hare International Airport area, using two dedicated transportation corridors. The first corridor is known as the Outer Circumferential Corridor and runs approximately 36 miles along the Elgin, Joliet and Eastern (EJ&E) railroad corridor. The route starts in Joliet, goes north through Plainfield, Naperville, Aurora and West Chicago and continues to Hoffman Estates at Prairie Stone.

The STAR Line, as proposed, would then travel along the Northwest Corridor Segment from Prairie Stone, heading east via Schaumburg, Rolling Meadows, Arlington Heights, Elk Grove Village and Des Plaines to the O'Hare International Airport vicinity. The Northwest Corridor Segment is uncharted territory for rail infrastructure requirements. This segment would travel in the median of the Northwest Tollway for approximately 19 miles. A connection between the two segments of the STAR Line would be provided at the proposed Prairie Stone Station in Hoffman Estates.

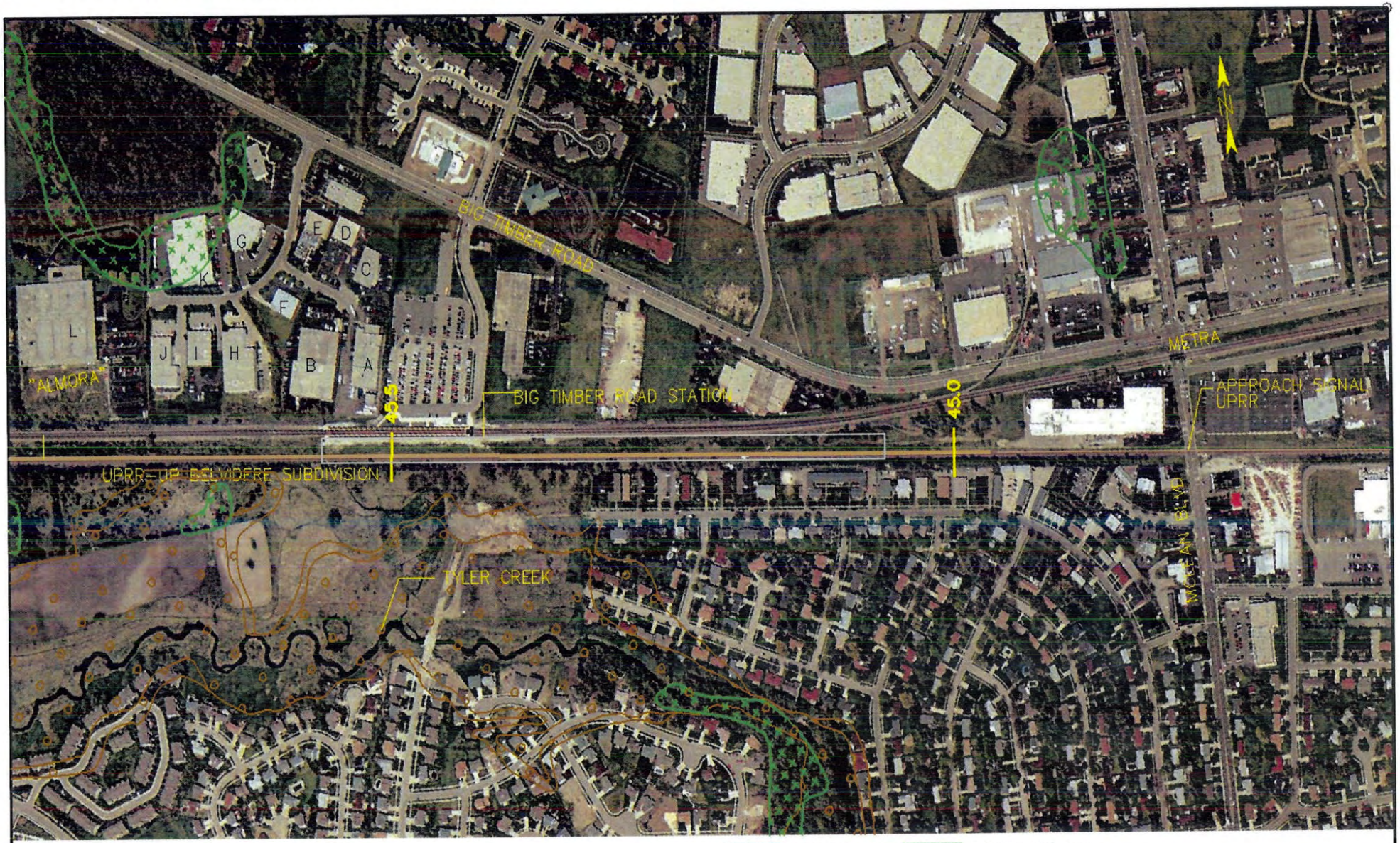
Should the first phase of the STAR be constructed, an alternate alignment for commuter rail service to the communities along the UP Belvidere Subdivision could involve an expansion of the STAR Line northwest from the proposed Prairie Stone Station. This

expansion would consist of extending the Northwest Corridor Segment of the STAR Line further along the Northwest Tollway to where the Tollway crosses the UP Belvidere Subdivision, just south of Gilberts. At this location a connection to the existing UP Belvidere Subdivision would be constructed and the service would operate as described in the previous sections of this study. Since the Tollway crosses the UP Belvidere Subdivision south of Gilberts, all of the communities recommended in this study to host commuter rail stations would continue to have the opportunity to do so.

APPENDICES

Appendix A:

Project Location Maps



EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

HORIZONTAL SCALE
200 0 100 200 400 800

DRAWN:	---
CHECKED:	---
APPROVED:	---
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	---

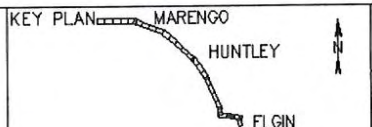
REVISIONS

NO.	BY	DATE	DESCRIPTION

BUSINESSES

A. HINKLEY SPRINGS
B. HAGG PRESS
C. M-TEC
D. BLAZERS
E. CBD INC.
F. VACANT
G. CUTTING EDGE MILLWORK
H. MIFAST
I. MAKINO
J. FONTANA DISTRIBUTION
K. COBPA METAL WORKS
L. ELGIN INDUSTRIES

KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

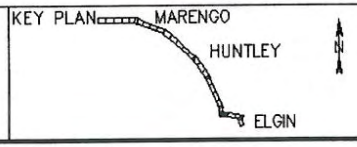
SHEET NO. 1

DRAWN:	---
CHECKED:	---
APPROVED:	---
DATE:	6/13/2004
SCALE:	1"=400'H
PROJECT NO.:	---

REVISIONS

NO.	BY	DATE	DESCRIPTION

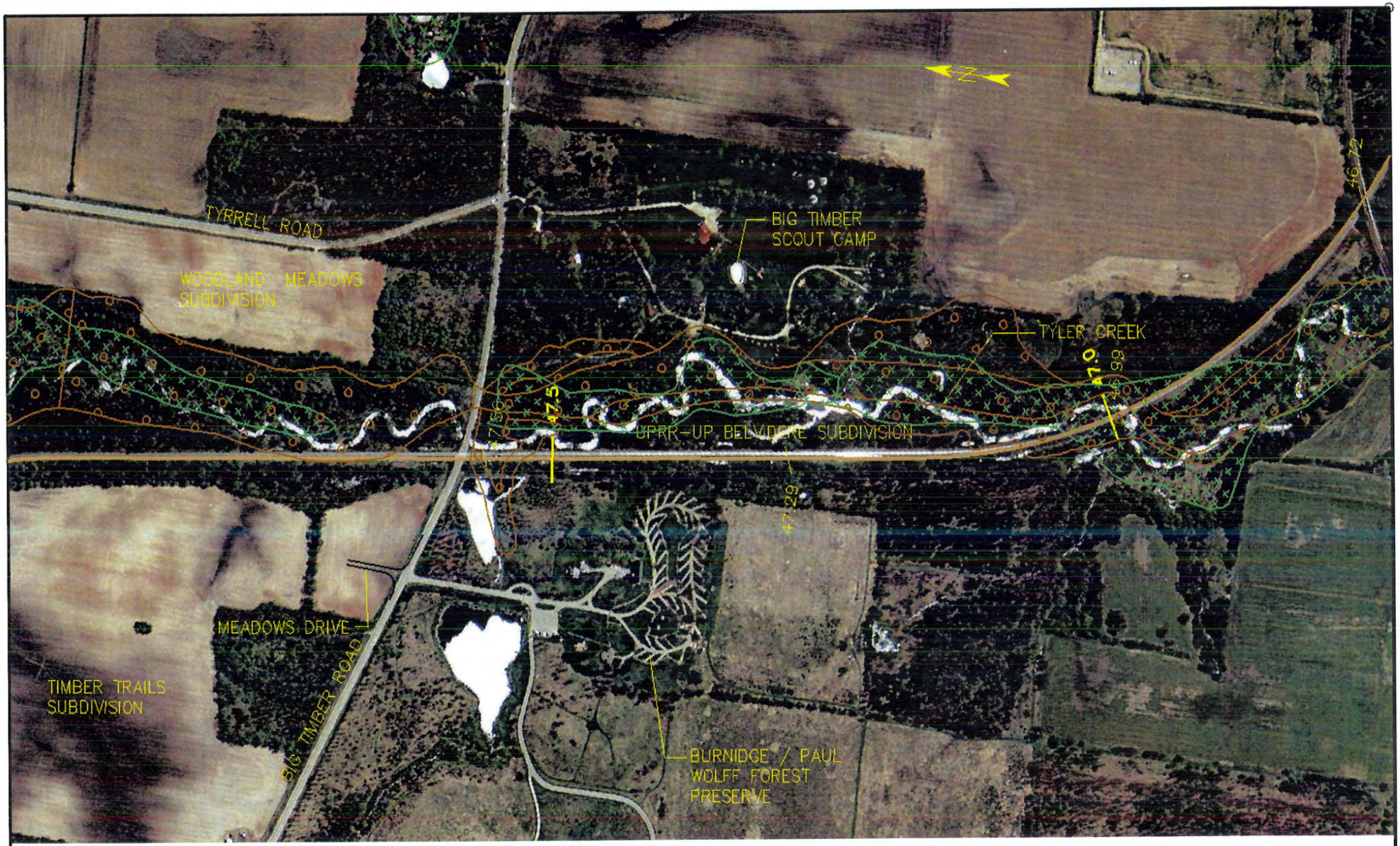
KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

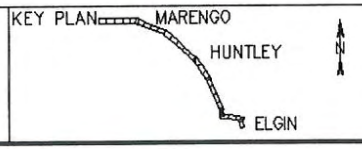
SHEET NO. 2



DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS	NO.	BY	DATE	DESCRIPTION

KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

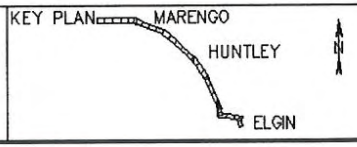
SHEET NO. 3

DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS

NO.	BY	DATE	DESCRIPTION

KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

SHEET NO. 4

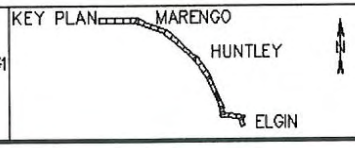
DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS	NO.	BY	DATE	DESCRIPTION

BUSINESSES

A. FORMING CONCEPTS
B. HARMONY METAL FABRICS
C. IRV'S AUTO BODY
D. PRESIDENT GEORGE BUSH PARK (JOSEPH WAITCUS PARK)
E. RUTLAND – DUNDEE TWPS. FIRE PROTECTION DIST. STA. #1
F. GILBERTS PUBLIC WORKS
G. MICROWAVE TOWER

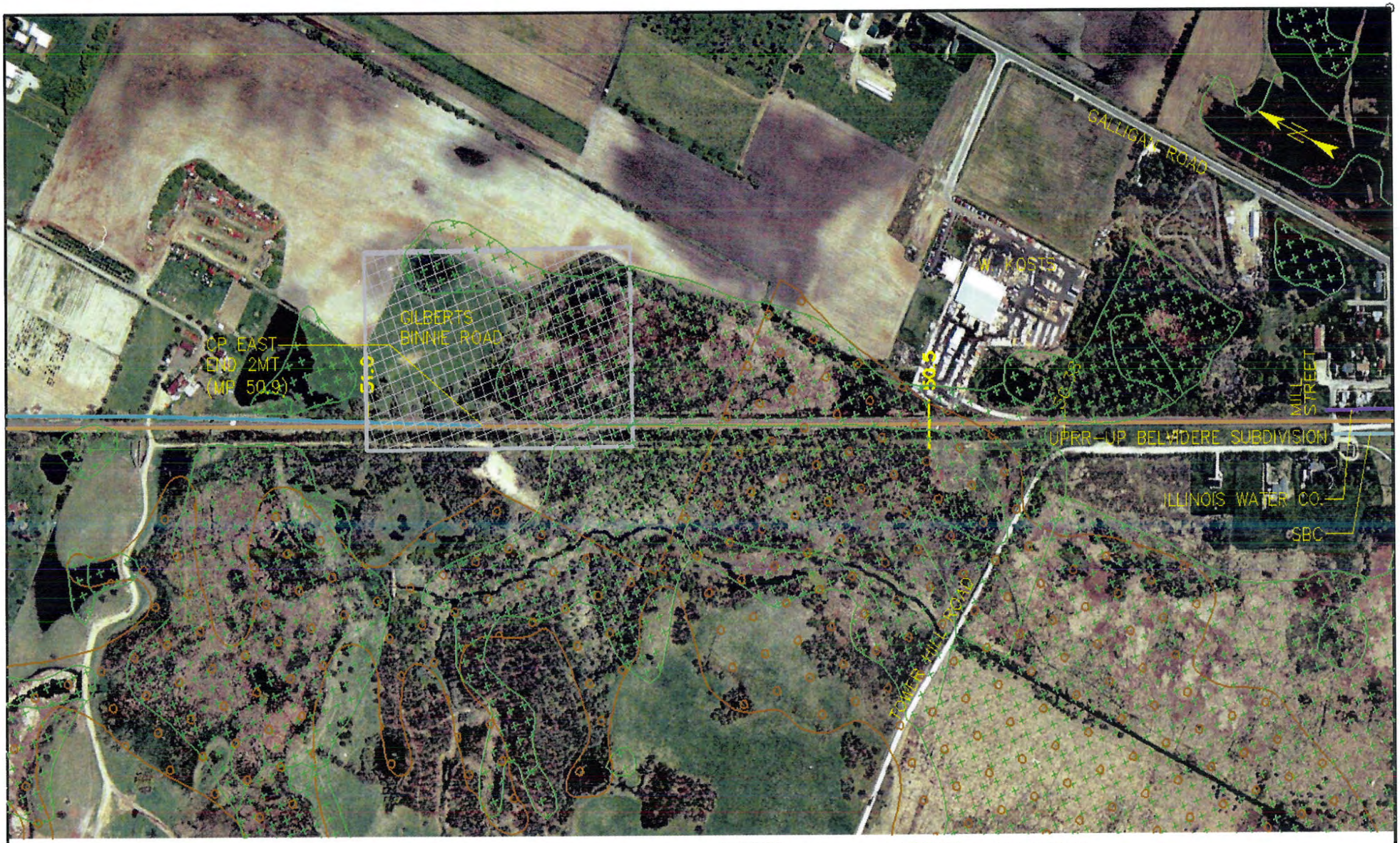
KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

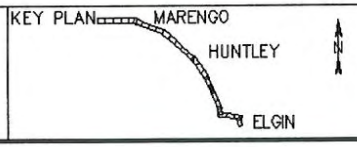
SHEET NO. 5



DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS	NO.	BY	DATE	DESCRIPTION

KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO
COMMUTER EXTENSION PROJECT

SHEET NO. 6

EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

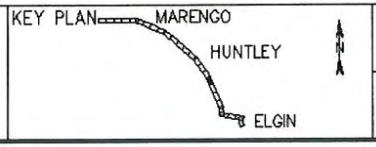
HORIZONTAL SCALE
200 0 100 200 400 800

DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS

NO.	BY	DATE	DESCRIPTION

KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

SHEET NO. 7

EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

HORIZONTAL SCALE
200 0 100 200 400 800

DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS

NO.	BY	DATE	DESCRIPTION

KEY PLAN


PROJECT LOCATION MAP

METRA MARENGO
COMMUTER EXTENSION PROJECT

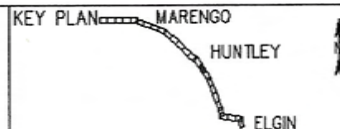
SHEET NO.
8

DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS

NO.	BY	DATE	DESCRIPTION

KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

SHEET NO.

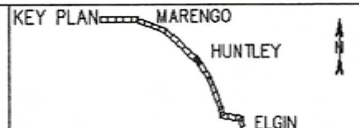
9

DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS

NO.	BY	DATE	DESCRIPTION

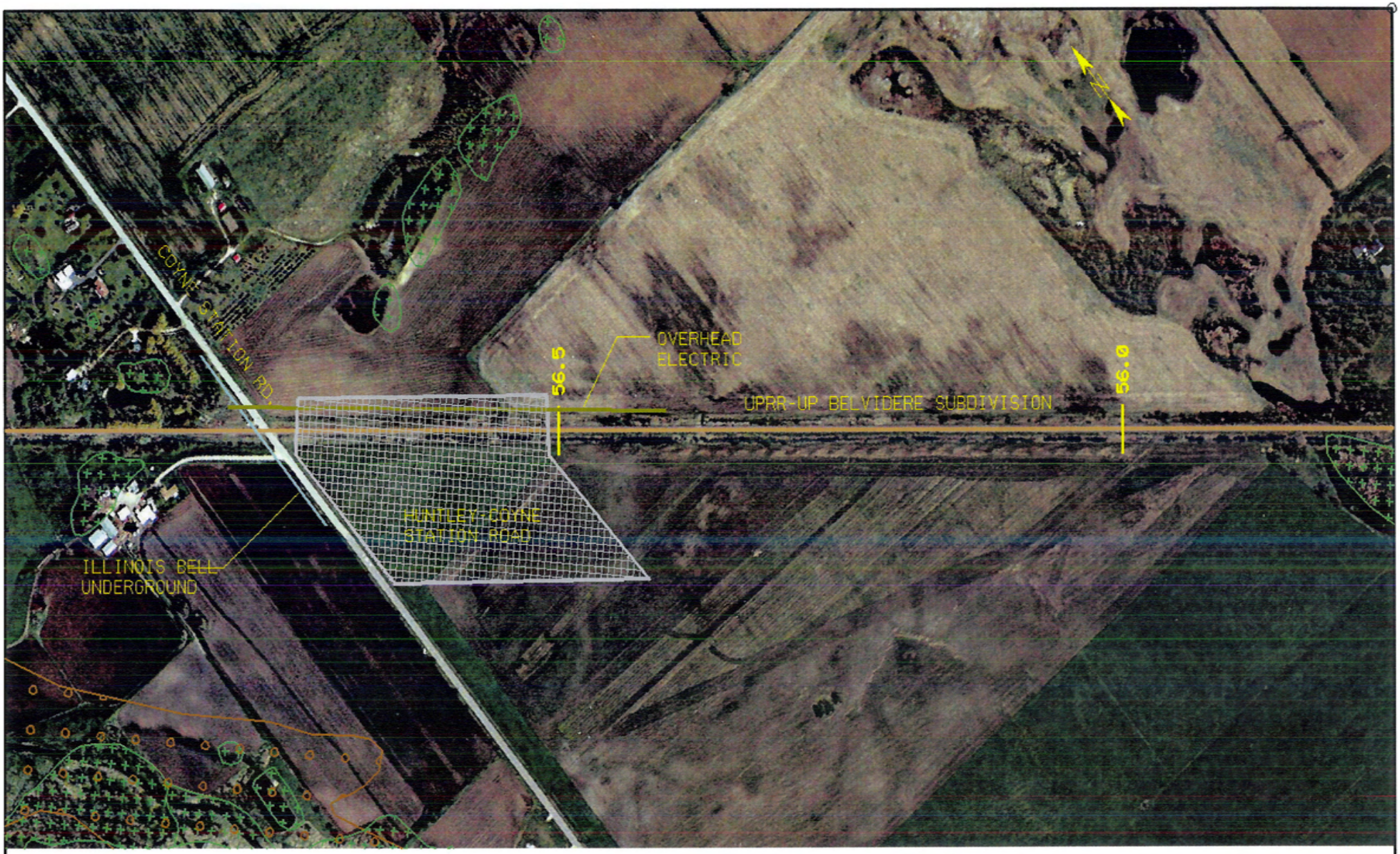
KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

SHEET NO. 10



EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

HORIZONTAL SCALE
200 0 100 200 400 800

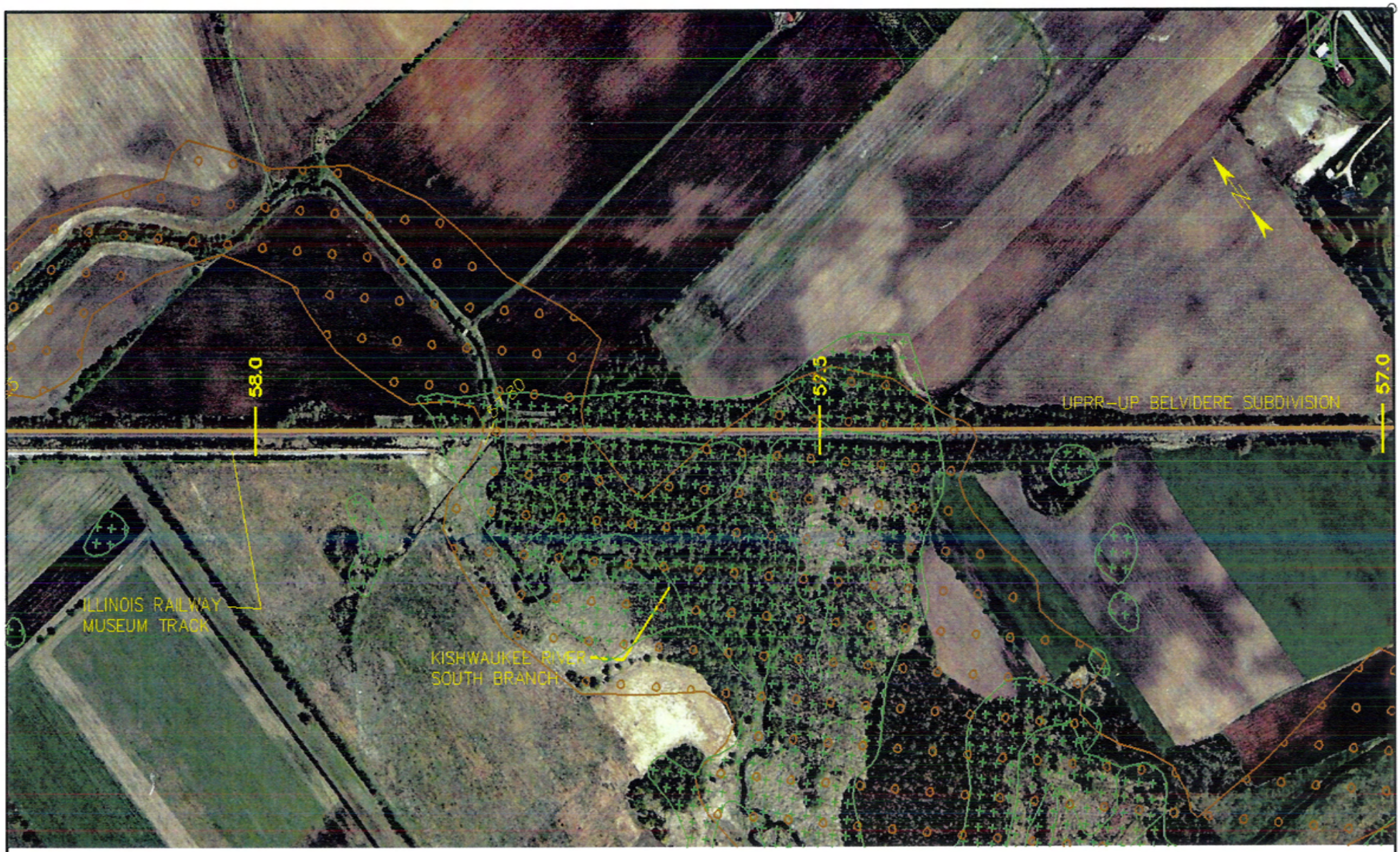
DRAWN:	--	REVISIONS	NO.	BY	DATE	DESCRIPTION
CHECKED:	--					
APPROVED:	--					
DATE:	8/13/2004					
SCALE:	1"=400'H					
PROJECT NO.:	--					

KEY PLAN: MARENGO, HUNTLEY, ELGIN, N

PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

SHEET NO. 11



EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

HORIZONTAL SCALE
200 0 100 200 400 800

DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS

NO.	BY	DATE	DESCRIPTION

KEY PLAN


PROJECT LOCATION MAP

METRA MARENGO
COMMUTER EXTENSION PROJECT

SHEET NO.
12

DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	---

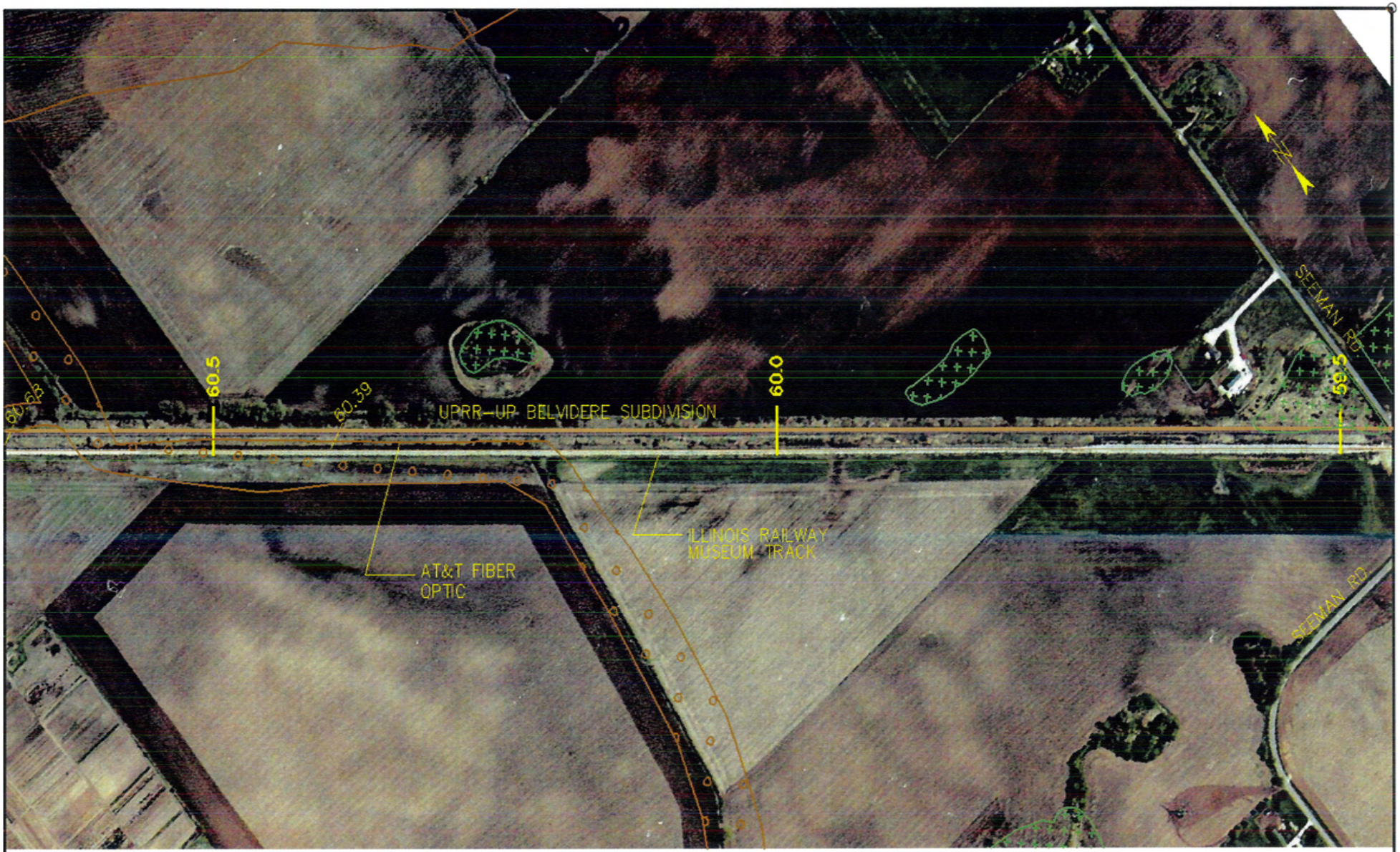
REVISIONS	NO.	BY	DATE	DESCRIPTION

KEY PLAN

PROJECT LOCATION MAP

METRA MARENGO
COMMUTER EXTENSION PROJECT

SHEET NO.
13



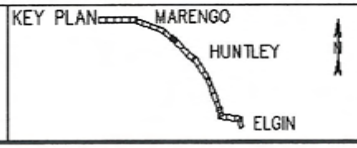
EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

HORIZONTAL SCALE
200 0 100 200 400 800

DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS

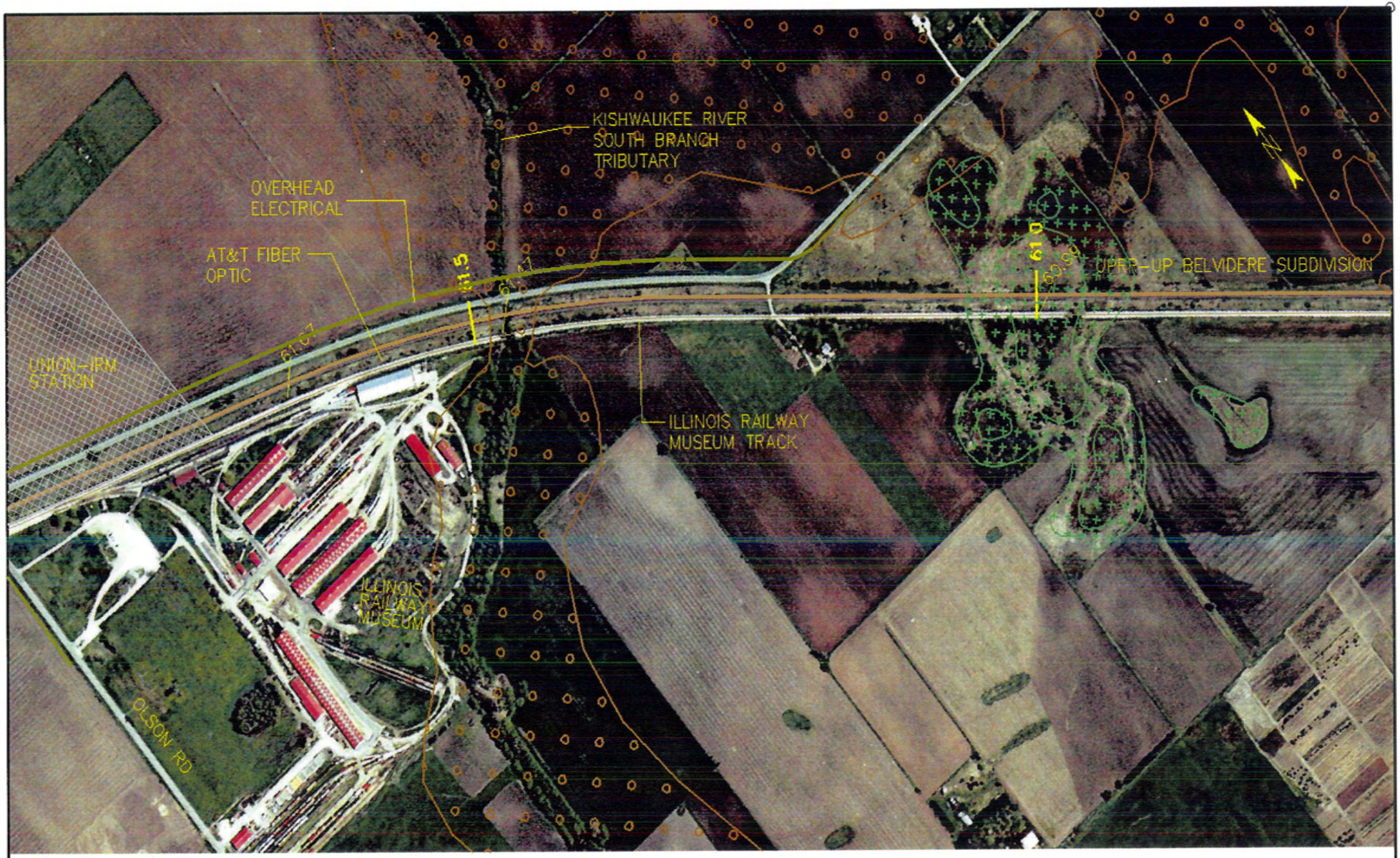
NO.	BY	DATE	DESCRIPTION

KEY PLAN


PROJECT LOCATION MAP

METRA MARENGO
COMMUTER EXTENSION PROJECT

SHEET NO.
14



DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS	NO.	BY	DATE	DESCRIPTION

KEY PLAN

PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

SHEET NO. 15

DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

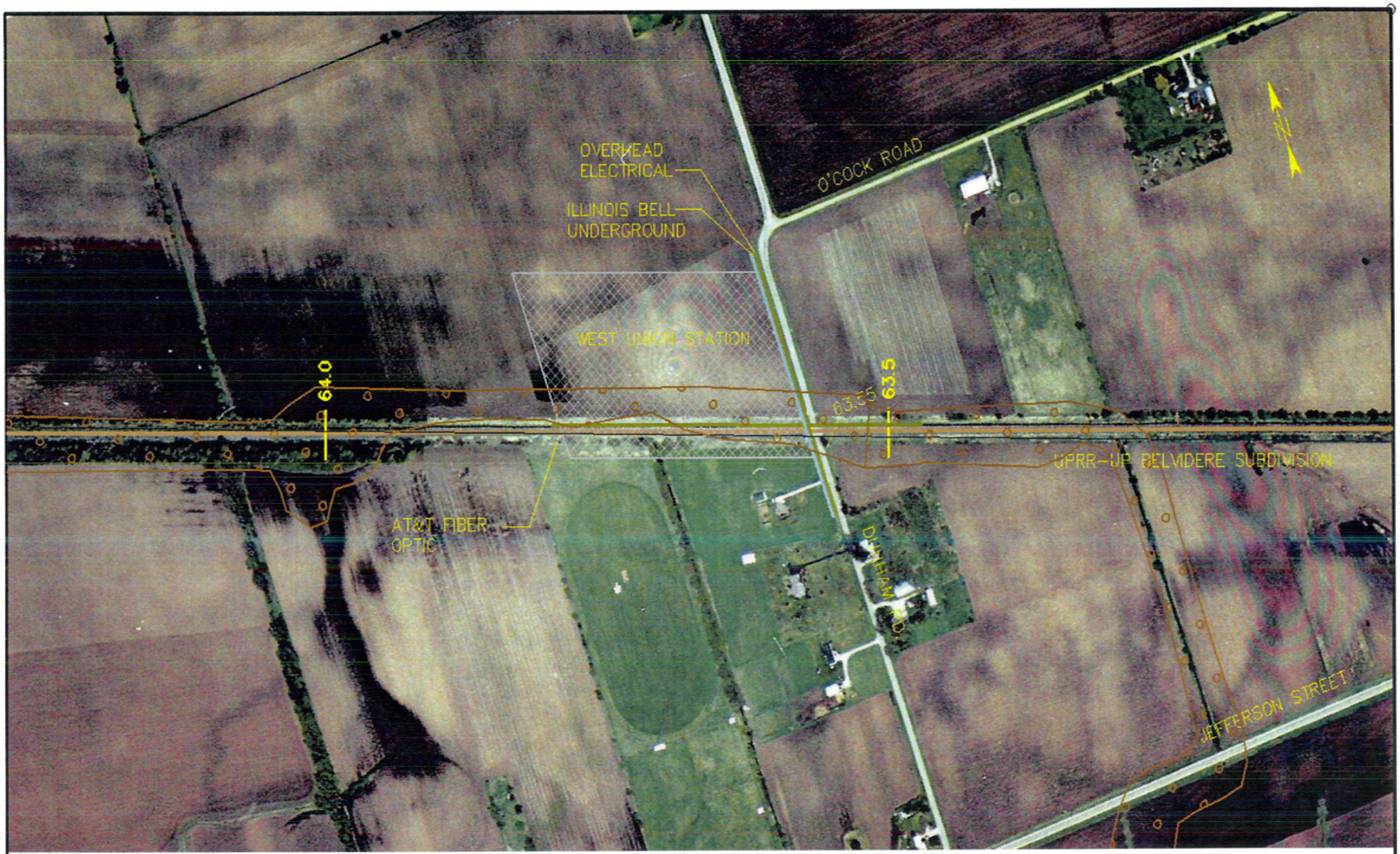
REVISIONS	NO.	BY	DATE	DESCRIPTION

KEY PLAN

PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

SHEET NO. 16



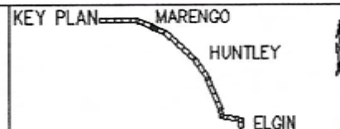
EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

HORIZONTAL SCALE
200 0 100 200 400 800

DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS

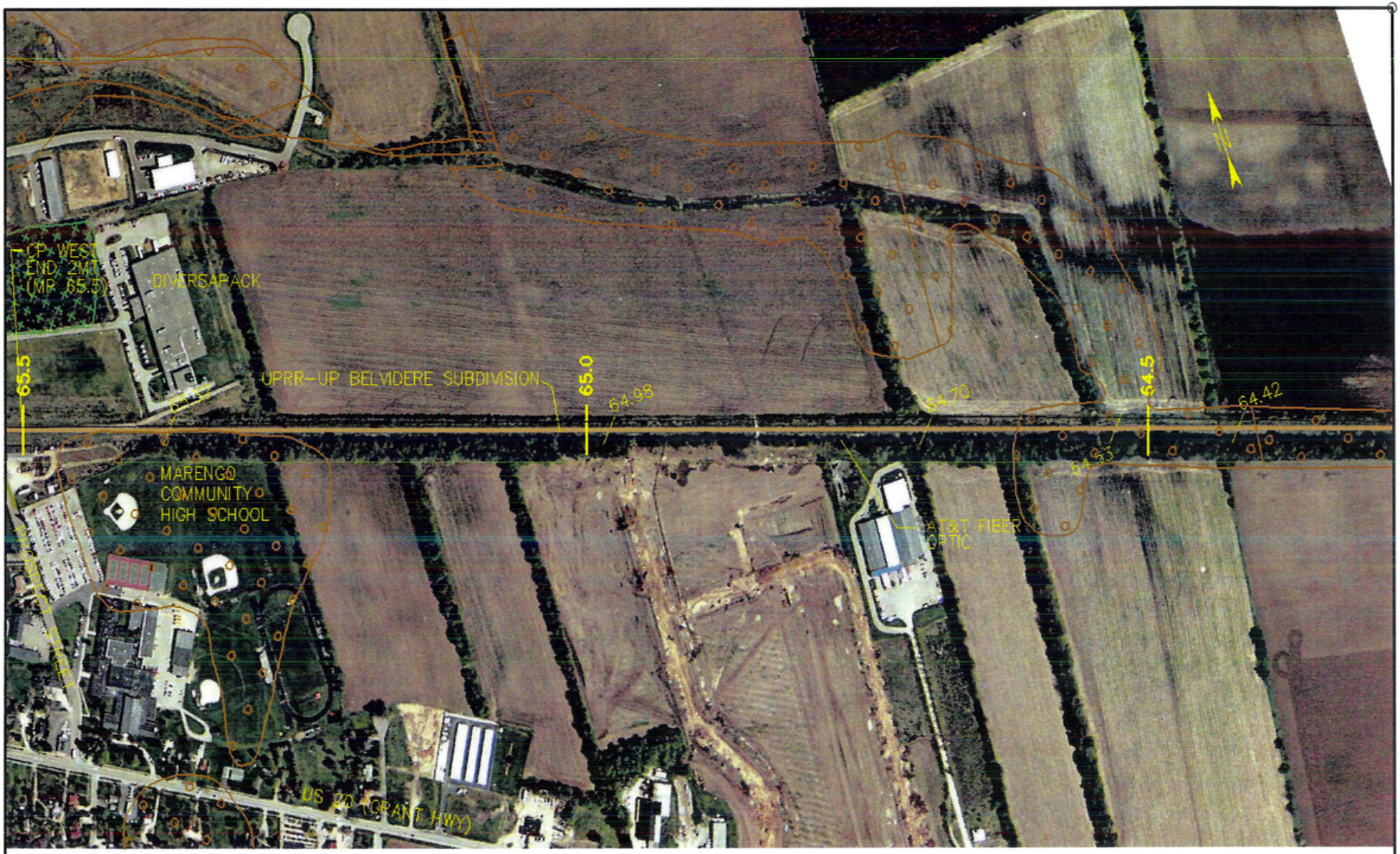
NO.	BY	DATE	DESCRIPTION

KEY PLAN


PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

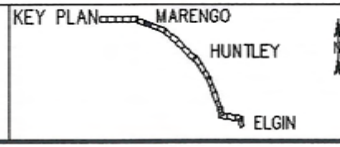
SHEET NO.
17



DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS	NO.	BY	DATE	DESCRIPTION

KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO
COMMUTER EXTENSION PROJECT

SHEET NO.
18

EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

HORIZONTAL SCALE
200 0 100 200 400 800

DRAWN:	---
CHECKED:	---
APPROVED:	---
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	---

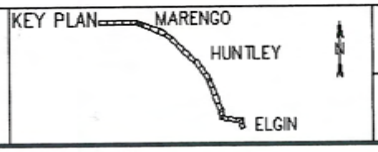
REVISIONS

NO.	BY	DATE	DESCRIPTION

BUSINESSES

A. STORAGE FACILITY
B. MARENGO TOOL & DIE
C. MARENGO STEEL

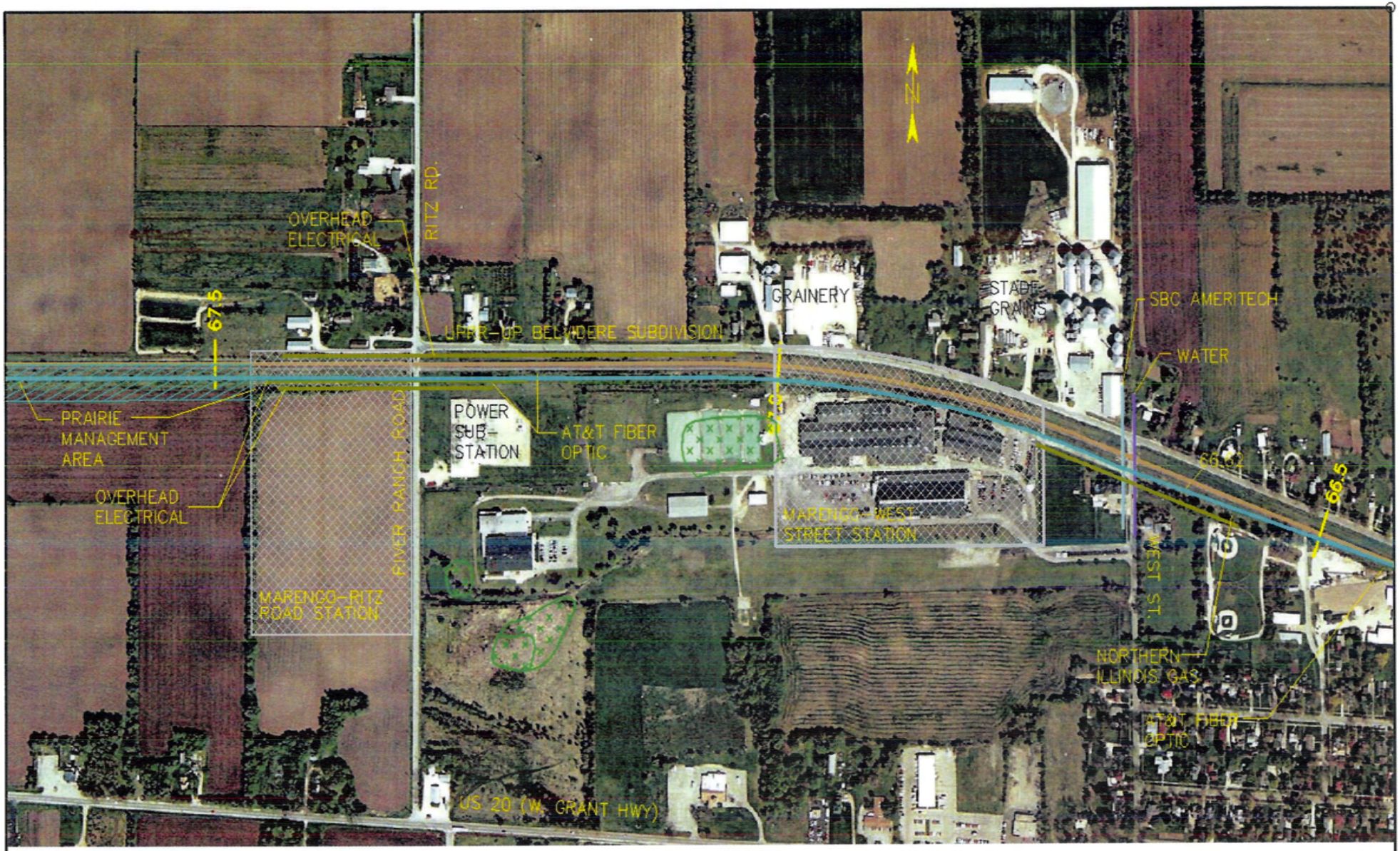
KEY PLAN



PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

SHEET NO. 19



DRAWN:	--
CHECKED:	--
APPROVED:	--
DATE:	8/13/2004
SCALE:	1"=400'H
PROJECT NO.:	--

REVISIONS

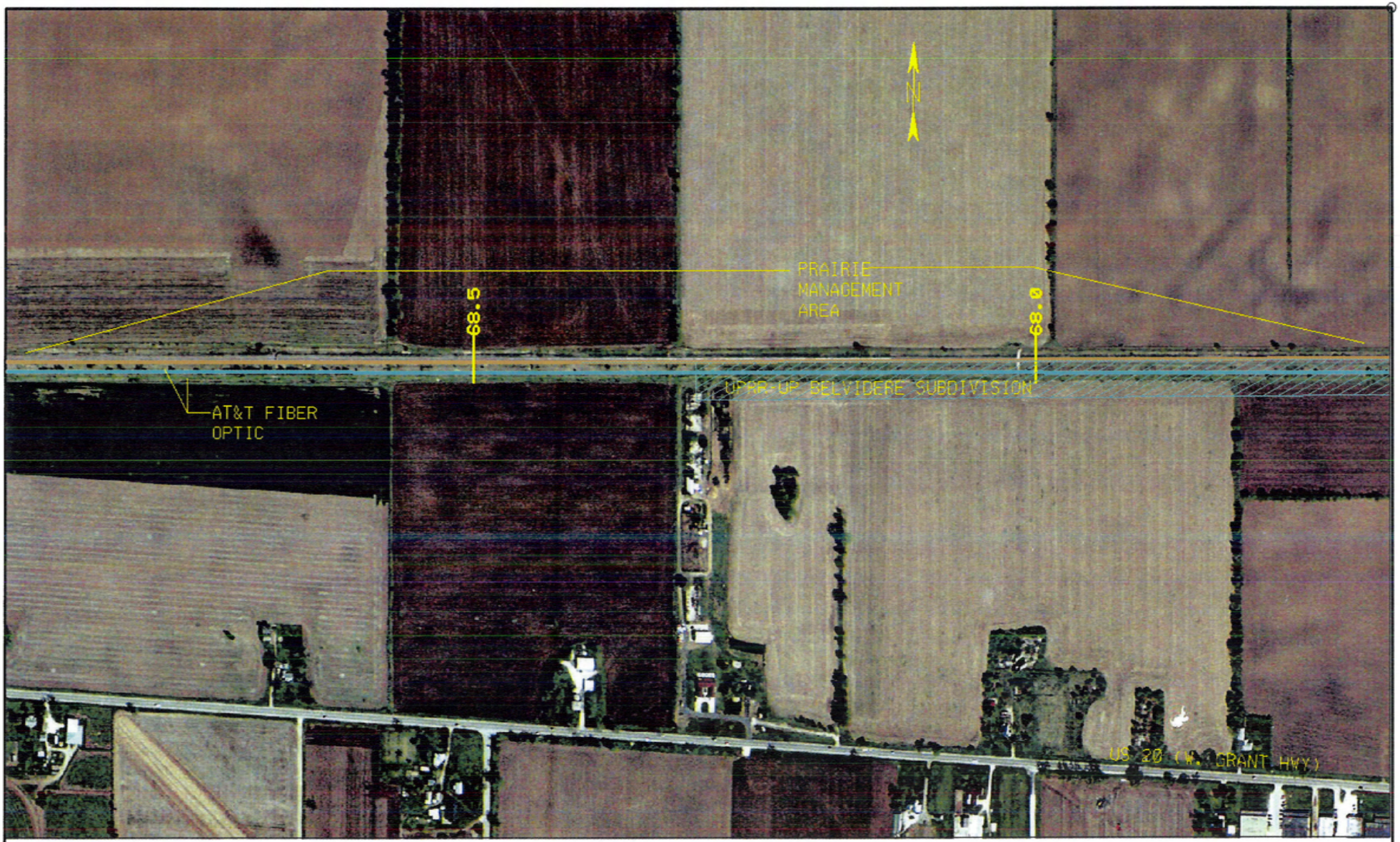
NO.	BY	DATE	DESCRIPTION

KEY PLAN — MARENGO, HUNTLEY, ELGIN

PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

SHEET NO. 20



EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

HORIZONTAL SCALE
200 0 100 200 400 800

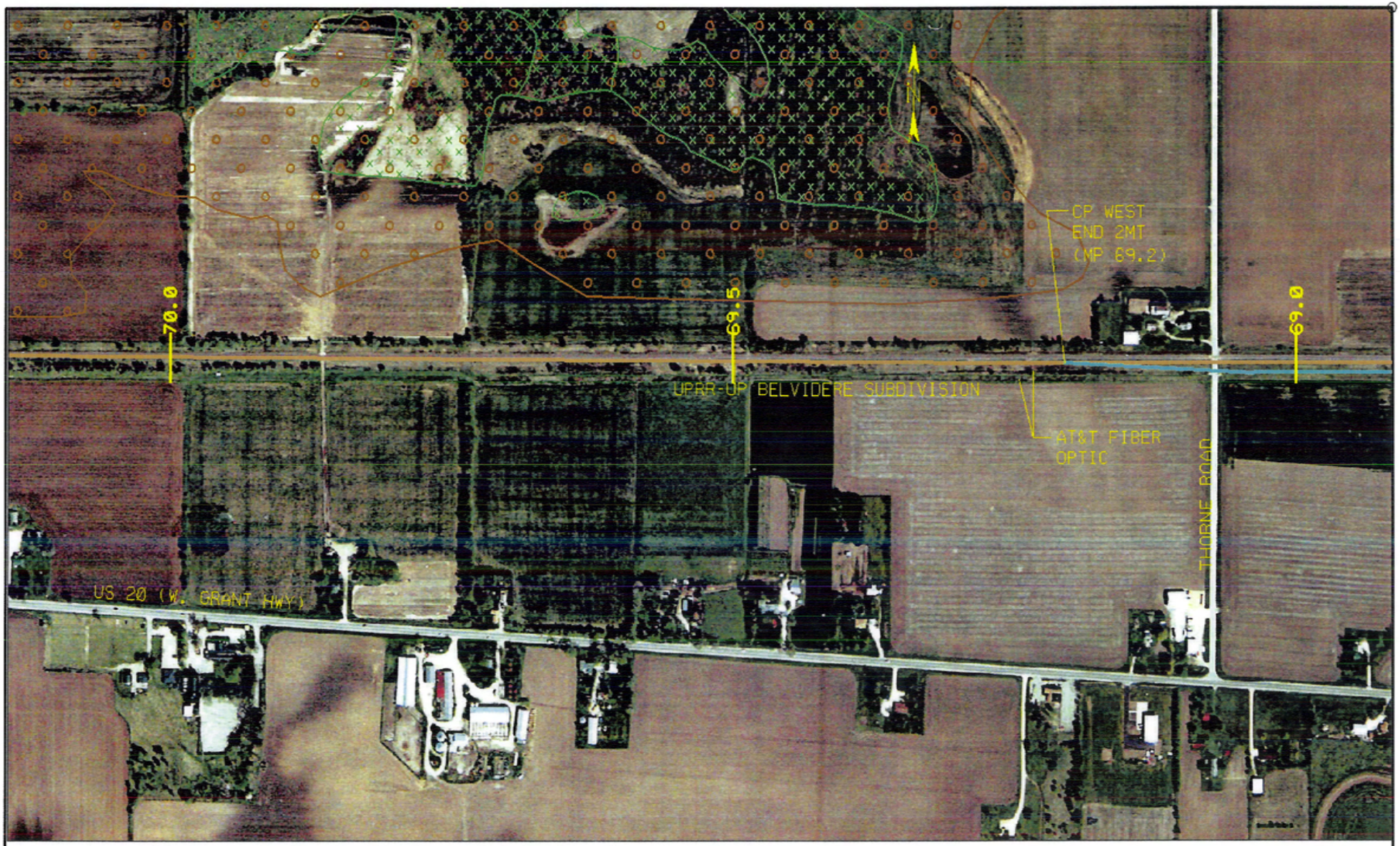
DRAWN:	--	REVISIONS	NO.	BY	DATE	DESCRIPTION
CHECKED:	--					
APPROVED:	--					
DATE:	8/13/2004					
SCALE:	1"=400'H					
PROJECT NO.:	--					

KEY PLAN
MARENGO
HUNTLEY
ELGIN

PROJECT LOCATION MAP

METRA MARENGO
COMMUTER EXTENSION PROJECT

SHEET NO.
21



EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

HORIZONTAL SCALE
200 0 100 200 400 800

DRAWN:	--	REVISIONS	NO.	BY	DATE	DESCRIPTION
CHECKED:	--					
APPROVED:	--					
DATE:	8/13/2004					
SCALE:	1"=400'H					
PROJECT NO.:	--					

KEY PLAN


PROJECT LOCATION MAP

METRA MARENGO
COMMUTER EXTENSION PROJECT

SHEET NO.
22

EXISTING RAILROAD
PROPOSED SECOND MAIN TRACK
PETROLEUM PIPELINE
FIRE HYDRANT, WATER
AT & T BURIED CABLE
AT&T FIBER OPTIC
NORTHERN IL GAS, NICOR
OVERHEAD ELECTRICAL
POTENTIAL NEW COACH YARD
POTENTIAL NEW STATION
NATIONAL WETLANDS INVENTORY MAP
FEMA FLOOD INSURANCE RATE MAP

HORIZONTAL SCALE
200 0 100 200 400 800

DRAWN:	--	REVISIONS	NO.	BY	DATE	DESCRIPTION
CHECKED:	--					
APPROVED:	--					
DATE:	8/13/2004					
SCALE:	1"=400'H					
PROJECT NO.:	--					

KEY PLAN


PROJECT LOCATION MAP

METRA MARENGO COMMUTER EXTENSION PROJECT

SHEET NO. 23

Appendix B:

Land Use

Segment	Land Uses
MP 45.4 – MP 46.7	**Metra Big Timber Road Station to IC&E Overpass**
North of UP	• Parallel to the UP track is the double-track railroad owned and operated by Metra. The UP and Metra facilities are adjacent to each other from the Big Timber Road Station to the IC&E overpass located at MP 46.7. Metra/IC&E ownership changes at Randall Road (Metra MD-W Line MP 40.3, Union Pacific MP 45.9). • The Elgin - Big Timber Road Station is located on the Metra tracks, between Union Pacific MP 45.4 and MP 45.6. • An industrial/office park is located west of the Big Timber Road Station. This industrial area extends from MP 45.5 to MP 45.9 (Randall Road). This is a relatively small industrial park consisting of twelve businesses.
South of UP	• Lightly wooded open land and Tyler Creek.
MP 46.7 – MP 49.3	**IC&E Overpass to I-90 Overpass**
North of UP	• The IC&E rail line passes over the UP track at MP 46.7. • Wooded land exists from MP 46.7 to MP 48.2. • Tyler Creek passes under the UP at MP 47.0, and then parallels the UP track to MP 48.3 where it again passes under to the south side of the railroad. • The Big Timber Scout Camp is located between MP 47.2 and the Big Timber Road crossing at MP 47.6. • A small single-family residential community is located from MP 48.0 to MP 48.3 • An abandoned building foundation and its adjacent property is located from MP 48.3 to MP 48.5 • The property from MP 48.5 to MP 48.7 is maintained by the local water treatment facility, and contains a water tower. • The remainder of the property located north of the UP track from MP 48.7 to MP 49.3 (I-90) is cultivated farmland.
South of UP	• Wooded land exists from MP 46.7 to MP 47.2. • The Burnidge/Paul Wolff Forest Preserve is located from MP 47.2 to the Big Timber Road crossing (MP 47.6). • The Timber Trails Subdivision, consisting of single- and multi-unit residential buildings, is located from MP 47.6 to MP 48.2. • The local water treatment facility is located from MP 48.2 to 48.8. • The remainder of the property from MP 48.8 to 49.3 (I-90) is cultivated farmland. • A branch of Tyler Creek passes under the UP track at MP 49.0.

MP 49.3 – MP 50.1	**I-90 Overpass to Mill Street**
North of UP	• An undeveloped area is located from MP 49.3 (I-90) to MP 49.7. • Downtown Gilberts is located from MP 49.7 to MP 49.9 (Higgins Road/IL 72). • The Rutland-Dundee Township Fire Protection District Station #1 is located in the southeast quadrant of the Higgins Road/UP intersection. • An older residential community is located between MP 49.9 (Higgins Road/IL 72) and MP 50.1 (Mill Street).
South of UP	• The Gilberts industrial park is located between MP 49.3 (I-90) and MP 49.9 (Higgins Road/IL 72). There are a number of smaller-based industries located within this area. • In the northwest quadrant of the Higgins Road/UP track intersection, the President George Bush Park/Joseph Waitcus Park is located. It extends to MP 49.9, and consists primarily of a grassed parking area and a baseball diamond area. • The area from MP 49.9 to MP 50.1 (Mill Street) is occupied by the Gilberts Public Works facility and a microwave tower.
MP 50.1 – MP 55.6	**Mill Street to Village of Huntley**
	• A wooded parcel extends from MP 50.1 (Mill Street) to MP 50.4. • The W. Kosts Lumber Yard is located from MP 50.4 to MP 50.5, and a rail spur serves this facility. • A combination of lightly wooded land, private yards, and a nursery occupy the areas extending from MP 50.5 to MP 51.5 (Freeman Road). • Cultivated farmland is located from MP 51.5 (Freeman Road) to MP 53.8 (Kreutzer Road). • An extension of a housing development that is currently under construction extends from MP 53.8 (Kreutzer Road) to MP 53.9. • A wooded parcel extends from MP 53.9 to MP 54.4. • Cultivated farmland is located from MP 54.4 to MP 54.7. • The central business district for the Village of Huntley is located from MP 54.7 to MP 55.6.
South of UP	• Mill Street parallels the railway approximately 100 feet to the west, and there are five developed residential properties along this section of Mill Street from MP 50.2 to MP 50.4. • Moderately wooded areas extend from MP 50.4 to MP 51.3. • A residential subdivision is located from MP 51.3 to MP 51.5 (Freeman Road).

	• The Freeman Kame Forest Preserve extends from MP 51.5 (Freeman Road) to MP 52.2. • Cultivated farmland is located from MP 52.2 to MP 52.6. • The Landings Condominiums Landing Field extends from MP 52.6 to MP 53.3. • Cultivated farmland extends from MP 53.3 to MP 53.8 (Kreutzer Road.) • An industrial park extends from MP 53.8 (Kreutzer Road) to MP 54.0. • A wooded parcel is located from MP 54.0 to 54.4. • A residential community extends from MP 54.4 to MP 54.7 (Grove Street). • The Huntley central business district is located from MP 54.7 to MP 55.6. Dean Foods is located from MP 54.7 (Grove Street) to MP 54.9 (Mill Street). • Various commercial properties are located from MP 54.9 (Mill Street) to MP 55.3. • A single-family residential community extends from MP 55.3 to MP 55.6.
MP 55.6 – MP 62.9	**Village of Huntley to Village of Union**
North of UP	• Moderately wooded area extends from MP 55.6 to MP 55.9. • Cultivated farmland extends from MP 55.9 to MP 56.8 (Coyne Station Road). • Residential property extends from MP 56.8 (Coyne Station Road) to MP 57.0. • Cultivated farmland is located from MP 57.0 to MP 62.0 (Olson Road). • The Kishwaukee River South Branch crosses under the UP at MP 57.8. • Hemmingsen Road is parallel to and approximately 70 feet north of the UP from MP 61.2 to MP 62.0 (Olson Road). • A Village of Union industrial park is located from MP 62.0 (Olson Road) to MP 62.5 (Jefferson Street). • The Village of Union's central business district extends from MP 62.5 (Jefferson Street) to MP 62.9.
South of the UP:	• Lightly wooded and open land is located from MP 55.6 to MP 55.9. • Cultivated farmland extends from MP 55.9 to MP 57.4. • A wooded area extends from MP 57.4 to MP 57.9. • The parallel track owned and operated by the Illinois Railway Museum begins at MP 57.9 and extends to MP 62.5. This single-track museum railroad is electrified, contains one siding, and includes an operational Automatic Block Signal system.

	• Cultivated farmland extends from MP 57.9 to MP 61.5. • The main buildings and yard of the Illinois Railway Museum are located from MP 61.5 to MP 62.0 (Olson Road). • Cultivated farmland extends from MP 62.0 (Olson Road) to MP 62.5 (Jefferson Street). • The Village of Union's central business district extends from MP 62.5 (Jefferson Street) to MP 62.9.
MP 62.9 – MP 65.5	**Village of Union to Prospect Street**
North of UP	• Cultivated farmland extends from MP 62.9 to MP 63.6 (Dunham Road). • Cultivated farmland extends from MP 63.6 (Dunham Road) to MP 65.3. • An industrial facility is located from MP 65.3 to MP 65.5 (Prospect Street).
South of UP	• Cultivated farmland extends from MP 62.9 to MP 63.9. • A 100-foot wide tree line parallels the UP track from MP 63.9 to MP 65.3. South of this tree line are cultivated farmlands. • The Marengo Community High School is located from MP 65.3 to MP 65.5 (Prospect Street).
MP 65.5 – MP 71.4	**Prospect Street to McHenry-Boone County Line**
North of UP	• A Nissan manufacturing facility is located from MP 65.5 (Prospect Street) to MP 65.7. • The Marengo City Cemetery is located from MP 65.7 to MP 65.9 (East Street). • A number of small light-industrial businesses are located between MP 65.9 (East Street) and MP 66.4 (Ann Street). • Single-family residences are located on the north side of Railroad Street, which runs parallel to the track, between MP 66.4 (Ann Street) and MP 66.7 (West Street). • Industrial properties are located from MP 66.7 (West Street) to MP 67.5. • Cultivated farmland extends west to the McHenry-Boone County line. • The H.U.M. Prairie Management Area is located on both the north and south sides of the UP track west of Ritz Road, and extends to the McHenry-Boone County line.
South of the UP	• Single-family residences are located between MP 65.5 (Prospect Street) and MP 65.9 (East Street). • The Marengo central business district is located between MP 65.9 (East Street) and MP 66.5. • A public park and baseball diamonds are located between MP 66.5 and MP 66.7 (West Street).

	• Industrial properties, including an electrical power substation, are located between MP 66.7 (West Street) and MP 67.4 (Ritz Road). • Cultivated farmland is located west of MP 67.4 (Ritz Road)

Appendix C:

Utilities

Location	Utility
MP 48.5 **Water Treatment Plant**	• A buried Proline Petroleum line passes under the UP track in an east-west direction.
MP 50.1 **Mill Street**	• A buried Illinois Water Company line is located approximately 10 feet east of and parallel to the UP track. • A buried AT&T communication line is located approximately 10 feet west of and parallel to the UP track.
MP 51.5 **Freeman Road**	• Two buried Ameritech (AT&T) communication lines pass under the UP track. • A buried Northern Illinois Gas (NICOR) line passes beneath the UP track in a northeast to southwest direction. • Overhead electrical lines run along the north side of Freeman Road.
MP 53.8 **Kreutzer Road**	• A water main that provides fire protection service to the adjacent areas passes beneath the UP track along the north side of Kreutzer Road.
MP 54.7 **Grove Street**	• An AT&T communication line is buried approximately 10 feet west of and parallel to the UP track. • A Northern Illinois Gas (NICOR) line passes beneath the UP track and is parallel to the east side of Grove Street. • Overhead electrical lines run along the west side of Grove Street.
MP 54.9 **Mill Street**	• A city water main runs along the north side of Mill Street. • Overhead electrical lines run along the north side of Mill Street.
MP 55.1 and MP 55.2 **Main Street and IL 47**	• Overhead electrical lines run along the south side of Main Street. • Overhead electrical lines run along the east side of IL 47. • These two electrical lines share a power pole in the southeast quadrant of this intersection.
MP 56.8 **Coyne Station Road**	• An AT&T telephone line passes beneath the UP track on the west side of Coyne Station Road. • Overhead electrical lines run along the north side of the UP track.
MP 61.2 **Hemmingsen Road**	• Buried AT&T fiber optic lines were first located and identified at this private crossing. UP Condensed Profiles show that these AT&T fiber optic lines originate at MP 60.0. These lines continue along the south side of the UP track throughout the remainder of the study area.

MP 62.0 **Olson Road**	• Buried AT&T fiber optic lines run along the south side of the UP track. • Overhead electrical lines run along the west side of Olson Road. • Overhead electrical lines run along the north side of Hemmingsen Road. • A buried NICOR gas pipeline runs along the north side of the UP track.
MP 62.5 **Jefferson Street**	• A buried NICOR gas pipeline runs along the north side of the UP track. • Buried AT&T fiber optic lines run along the south side of the UP track.
MP 62.6 **Main Street**	• A buried Northern Illinois Gas (NICOR) pipeline runs along the east side of Main Street, and passes beneath the UP track. • Overhead electrical lines run along the west side of Main Street. • Buried AT&T fiber optic lines run along the south side of the UP track.
MP 62.7 **Vine Street**	• Overhead electrical lines run along the west side of Vine Street. • Buried AT&T fiber optic lines run along the south side of the UP track.
MP 63.6 **Dunham Road**	• A buried AT&T communication line runs along the west side of Dunham Road, and passes beneath the UP track. • Overhead electrical lines run along both the west side of Dunham Road and the north side of the UP track. • Buried AT&T fiber optic lines run along the south side of the UP track.
MP 65.5 **Prospect Street**	• Overhead electrical lines run along the east side of Prospect Street. • Buried AT&T fiber optic lines run along the south side of the UP track.
MP 65.9 **East Street**	• A buried Northern Illinois Gas (NICOR) line runs along the west side of East Street. • Buried AT&T fiber optic lines run along the south side of the UP track.
MP 66.1 **Taylor Street**	• A buried Northern Illinois Gas (NICOR) line runs along the east side of Taylor Street. • Buried AT&T fiber optic lines run along the south side of the UP track. • Overhead electrical lines run along the west side of Taylor Street.

MP 66.2 **State Street (IL 23)**	• Overhead electrical lines run along the north side of the UP track. Approximately 400 feet to the west of State Street these lines cross over to the south side of the UP tracks. • Buried AT&T fiber optic lines run along the south side of the UP track.
MP 66.4 **Ann Street**	• Overhead electrical lines run along the south side of the UP track. These are a continuation of the electrical lines that are located on the north side of the UP track at State Street (IL 23). These overhead electrical lines continue along the south side of the UP track through the remainder of the project area. • Buried AT&T fiber optic lines run along the south side of the UP track.
MP 66.7 **West Street**	• Buried AT&T communication lines run along the west side of West Street and pass beneath the UP track. • A City of Marengo water main is located along the east side of West Street and passes beneath the UP track. • A buried Northern Illinois Gas (NICOR) line runs along the south side of the UP track. • Buried AT&T fiber optic lines run along the south side of the UP track. • Overhead electrical lines run along the south side of the UP track.
MP 67.4 **Ritz Road**	• Overhead electrical lines run along both the north and south sides of the UP track. • Two separate buried AT&T fiber optic lines run along the south side of the UP track. A distance of approximately 20 feet separates these two lines.

Appendix D:

Wetlands

Location	Compass Direction In Relation to Tracks	Local Location / Compass Orientation	Milepost
West of Elgin	North – South crossing tracks	South of Big Timber Road	46.91 – 47.04
Gilberts	West – East crossing tracks	North of Big Timber Road	48.59 – 48.70
Gilberts	West of tracks	North of I-90	49.34 – 49.60
Gilberts	West – East crossing tracks	Northwest of IL 72	50.30 – 50.85
Northwest of Gilberts	East of tracks	Southeast of Freeman Road	51.01 – 51.10
Northwest of Gilberts	West of tracks	Southeast of Freeman Road	51.22 – 51.27
Northwest of Gilberts	West of tracks	Southeast of Freeman Road	51.39 – 51.45
Northwest of Gilberts	West – East crossing tracks	Northwest of Freeman Road	51.67 – 51.73
Northwest of Gilberts	West – East crossing tracks	Northwest of Freeman Road	51.82 – 51.90
Northwest of Gilberts	West – East crossing tracks	Southwest of Landings Condominium Landing Field	52.56 – 52.62
Southeast of Huntley	West – East crossing tracks	Northeast of Landings Condominium Landing Field	53.19 – 53.25
Northwest of Huntley	West of tracks	Approximately 0.6 miles northwest of IL 47 / Main St	55.77 – 55.82
Northwest of Huntley	West – East crossing tracks	Northwest of Coyne Station Road	57.39 – 57.85
Northwest of Huntley	West of tracks	Southeast of Seeman Road	58.29 – 58.42
Northwest of Huntley	East of tracks	Southeast of Seeman Road	58.67 – 58.70
Northwest of Huntley	West of tracks	Southeast of Seeman Road	58.80 – 59.02
Northwest of Huntley	East of tracks	Southeast of Seeman Road	59.36 – 59.44
Northwest of Huntley	East of tracks	Northwest of Seeman Road	59.46 – 59.58
Southwest of Union	West – East crossing tracks	South of Hemmingsen Road	60.91 – 61.06

Appendix E:

Roadway Improvements

Agency	Project Limits (East to West)	Project Need	Length (Miles)	Anticipated Construction Period
Illinois State Toll Highway Authority	Belvidere and Marengo Toll Plazas	Reconstruct and consolidate two toll plazas to single barrier-free express plaza	---	2005 - 2006
	Elgin Plaza to Sandwald Road	Reconstruct and add lanes for congestion relief	9.1	2010 - 2011
	Sandwald Road To Newburg Road	Reconstruct roadway	27.9	2010 - 2011
Illinois Dept. of Trans. (IDOT)	IL 47 (Vine Street) South of Main St. to Kreutzer Rd.	Resurfacing	0.7	2005
	IL 47 - Manning Rd. to U.S. 20 N. Jct.	Resurfacing	2.5	2005
	IL 47 (Vine Street) at Kreutzer Rd.	Install signal	---	2006 - 2011
Kane County Dept. of Trans. (KDOT)	I-90 / IL 47 Interchange	Expand to full interchange	---	
	Kreutzer Rd. – IL 47 to Huntley Rd.	Widen to 4 lanes	2.3	
	Big Timber Rd. - Tyrrell Rd. to Randall Rd.	Widen to 4 lanes	1.1	
	Big Timber Rd. - IL 47 to Tyrrell Rd.	Widen to 4 lanes	5.2	
	IL 72 - Tyrrell Rd. to Randall Rd.	Widen to 4 lanes	1.3	
	IL 72 - IL 47 to Tyrrell Rd.	Widen to 4 lanes	5.3	
McHenry County Dept. of Trans. (McDOT)	Kreutzer Road extension from IL 47 to Marengo Road	New roadway – southwest bypass of Huntley	1.7	2005 - 2010

Appendix F:

Residential Developments

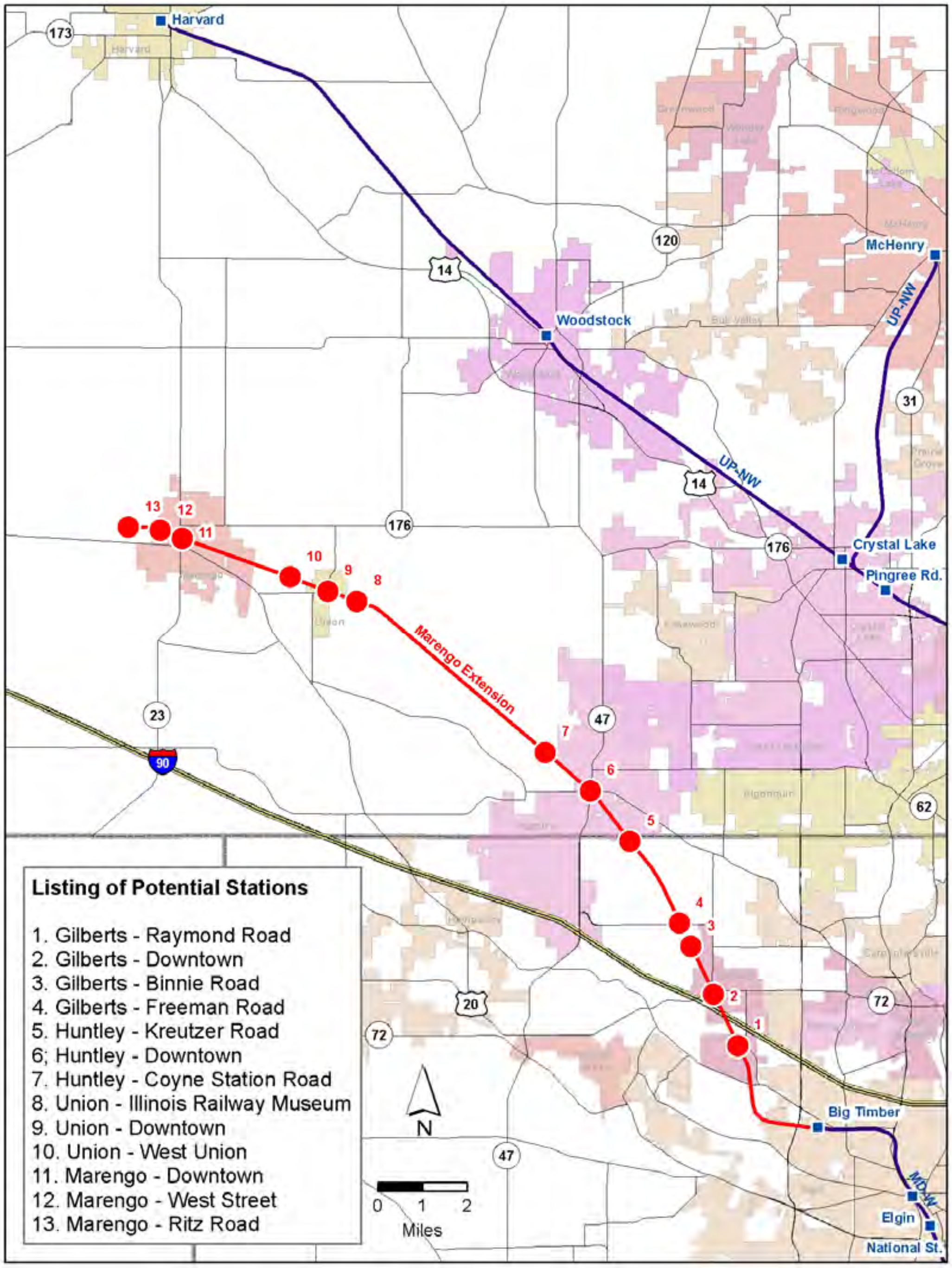
Community	Developer/ Development	Location	# of Units Planned/Proposed
Algonquin	Kennedy Homes	Old Burlington & Bolcum Rds.	133
Campton Township	B&B Enterprises' Prairie Lake Subdivision	Randall Rd.	150
Carpentersville	Pulte Homes' Winchester Heights Subdivision	Silver Glen Road and Burlington Rd	432
Elgin	Residential Land I LP's Stony Creek Subdivision	Near Pingree Grove	960
Elgin	HPI-Elgin LLC	Bowes Rd.	2,700
Elgin	Toll Brothers' Bowes Creek Country Club	Both sides of US 20 west of Switzer Rd.	936
Elgin	Sho-Deen's Pingree Creek	McLean Blvd., S of Wing St.	2,729
Elgin	Autumn Green	US 20, Plank Road, Coombs Road	160
Elgin	Yenerich Farm	S of IL 72 and E of Tyrrell Rd.	6,000
Gilberts	Neumann Homes' Neutown Square	N of IL 72 & E of Galligan Rd.	122
Gilberts	Ryland Homes' Gilberts Town Center	Galligan Rd. and Center Drive, N of Turner St.	596
Gilberts	Centex	S of IL 72	237
Hampshire	Centex	Harmony Rd. between Allen and Melms Rds.	170
Hampshire	Crown Community Development's Prairie Ridge	US 20 & IL 47	1,838
Hampshire	Crown Community Development's Oakstead	SW corner of Big Timber and Ketchum Rds.	811
Hampshire	KB Homes	IL 72 & Romke Rd.	177
Hampshire	Pasquinelli Homes' Tuscany Woods	SW of I-90 and US 20 near Brier Hill Rd.	641
Hampshire	Van Vlissingen's Brier Hill Crossing	E of Village on N side of IL 72	542
Hampshire	Hampshire Enterprise's Hampshire Highlands	E of Huntley on Dundee Rd.	174
Huntley	Town & Country Homes' The Reserve	N of Reed Rd. & W of IL 47	290
Huntley	The Ryland Group and Concord Homes Talomar development	S of Main St. between wastewater treatment plant and aquatic center	2,006

Community	Developer/ Development	Location	# of Units Planned/Proposed
Huntley	Richmond American Homes' Estates at Lions Chase	E of IL 47 & N of Reed Rd.	204
Huntley	Cambridge's final 2 phases of Covington Lake Subdivision	Along Grove St. & E of UP Belvidere Subdivision	530
Huntley	Niko Kanakaris' townhomes	Sun City	17
Huntley	Pulte Homes' Sun City (6,006 units planned with half to be completed by end of 2003)	E of Pinecrest Golf & Country Club on Algonquin Rd.	3,000
Huntley	Concord Homes' phases 3 & 4 of the Northbridge Subdivision	E of IL 47 near Huntley Rd.	151
Huntley	Kirk Homes' Georgian Place at Wing Pointe	Near Kruetzer Rd.	348
Huntley	PAR Development	S of U.S. 20	435
Marengo	Grand Pointe Homes	E side of Meyer Rd. & S of U.S. 20	112
Marengo	Centrum Properties	S of IL 176 near Deerpass Rd.	280
Marengo	William Ryan Homes	SE corner of IL 176 & Prospect St.	637
Marengo	Carriageway Developers Ltd.	S of IL 176 & Prospect St.	174
Marengo	Lou Zecchin	--	56
Pingree Grove	Cambridge Homes	1,562 units off West Highland Ave. near McCornack Rd. 1,181 units off Marshall Rd.	2,330
Pingree Grove	HPI-Elgin, LLC	Along South Union Road between East Coral and Northrup Rds.	2,743
Union	Orgler-Broshar Development LLC	Near Huntley	104
McHenry County	Neumann Homes		619
Total Units			**33,544**

Source: Development information collected from newspaper articles and internet research as of March 2005.

Appendix G:

Potential Station Locations


Harvard
Woodstock
McHenry
Crystal Lake
Pingree Rd.
Big Timber
Elgin
National St.
UP-NW
UP-NW
MD-W
Marengo Extension
173
120
14
14
31
176
176
47
23
90
62
72
72
20
47
13
12
11
10
9
8
7
6
5
4
3
2
1
N
0 1 2
Miles
Listing of Potential Stations
1. Gilberts - Raymond Road
2. Gilberts - Downtown
3. Gilberts - Binnie Road
4. Gilberts - Freeman Road
5. Huntley - Kreutzer Road
6; Huntley - Downtown
7. Huntley - Coyne Station Road
8. Union - Illinois Railway Museum
9. Union - Downtown
10. Union - West Union
11. Marengo - Downtown
12. Marengo - West Street
13. Marengo - Ritz Road

City of Elgin-Big Timber Road

The existing Metra station at Big Timber Road would require platform modifications and a third station track connecting Metra's double-track mainline to the UP Belvidere Subdivision main line track. Refer to Figure 4.4-1 for a diagram of the Big Timber Road Station, Almora, and the connecting track. This configuration is designed to accommodate commuter trains arriving or departing from any of the three station tracks as well as freight train movements to and from the Iowa, Chicago & Eastern Railroad. The Big Timber Road facility already has a modern Metra station and parking facilities. It lies south of Big Timber Road, west of McLean Boulevard, and east of Randall Road in the City of Elgin. The station site is located in a light industrial and commercial district with large residential developments nearby.

Village of Gilberts-Raymond Road

This potential station site lies south of Raymond Road, west of Tyrrell Road, and east of the UP track. It is adjacent to Tyler Creek, a Village of Gilberts water department facility and water tower, and an access road to a municipal sewage treatment plant. Recent residential development has occurred in the area west of Tyler Creek and there may not be adequate access from this development to the station area. There are indications that additional future developments may be planned in this general area. The proposed station site is constrained and even if ridership demand were to justify the station at a future date, the available acreage may not be large enough to provide for both the station facility and the desired number of commuter parking spaces.

Village of Gilberts-Downtown

The potential site for a station and parking facility lies west of the UP track, immediately south of Illinois Route 72 and approximately 0.4 miles north of the I-90 overpass over the UP. The area primarily contains light industrial and commercial businesses, and is near the center of the Village of Gilberts. The proximity to IL 72 and to county roads could provide good road access for surrounding residential development areas as well as residential developments west of Gilberts along IL 72. New residential construction is already occurring in the Gilberts area and additional developments are being planned. A station in the southwest quadrant of the UP and IL 72 crossing would provide a balanced station location with respect to this growing community, and also be accessible from multiple vehicular directions.

Village of Gilberts-Binnie Road

This potential station site on the east side of the UP track, located approximately 0.4 miles west of the termination of Binnie Road at Galligan Road, was considered due to the proximity of large residential developments to the east along Binnie Road. However, the site is heavily wooded and is located within both wetland and floodplain areas. It also has no current road access.

Village of Gilberts-Freeman Road

The potential site for a station and parking facility lies in the northeast quadrant of the intersection of the UP track and Freeman Road. The Freeman Kame Forest Preserve is located south of the UP and extends west along the railroad from Freeman Road. The site has existing two-lane road access both to the residential developments along IL 47 to the west, and areas to the east that may be sites for potential residential developments in the future. Consideration should be given to the prairie preservation leases in this area as well as the potential for site flooding from the nearby creek.

Village of Huntley-Kreutzer Road

The potential Kreutzer Road station site is adjacent to a large residential development on the west side of the UP track and south of Kreutzer Road. The Huntley Industrial Park is located on the west side of the railroad, north of Kreutzer Road. Kreutzer Road provides access to the residential and commercial developments in the southern portion of Huntley along IL 47. It also provides access to a large existing residential development on Huntley's east side. This site has the potential to draw commuter traffic from south of Main Street (Huntley Road) without creating additional traffic within the central business district of the community. Due to the existence of nearby creeks, consideration should be given to the possibility of flooding. Improvements to Kreutzer Road would likely be necessary to handle the volume of traffic that a commuter station would generate.

Village of Huntley-Downtown

The site of the former C&NW passenger station in the central business district of Huntley does not have sufficient property available to accommodate a Metra commuter station and parking facilities. The placing of a station at this location would create additional traffic on IL 47 and Main Street (Huntley Road), which are already heavily congested especially during the morning and afternoon peak hours. Commuter trains stopping close to the intersection of IL 47 and Main Street would further aggravate traffic delays at this location. The UP Belvidere Subdivision crosses IL47 and Main Street diagonally very close to the intersection of these two busy roads.

Village of Huntley-Coyne Station Road

The potential Coyne Station Road station site lies to the northwest of Huntley and is in the vicinity of several large residential developments. Other developments are planned in the future. While the station site lies along the east side of this two-lane north-south county road and southwest of the UP track, it provides the opportunity to attract commuter traffic from the north and west sides of Huntley without routing the traffic through the community's central business district. The Illinois Railway Museum and the McHenry County Conservation District both own property adjacent to the UP Belvidere Subdivision at this location. Right-of-way leases for prairie preservation also exist in this area and wetlands are nearby. These factors are important considerations in locating and configuring the station and parking facilities.

City of Union-Illinois Railway Museum

This potential station site is located adjacent to the intersection of Olson and Hemmingson Roads on the north side of the UP track. This location could serve potential future residential developments north, east and south of Union as well as visitors to the Illinois Railway Museum. The museum is a major tourist and recreational attraction and is a popular family destination. This proposed station site located north of the UP track and east of Olson Road would likely require some modifications to Hemmingson Road and Olson Road. However, opportunities may exist for synergies with the Illinois Railway Museum that could be explored during additional studies of the corridor. The potential for flooding at this site, as well as the existence of prairie preservation leases in this area must also be considered.

City of Union-Downtown

The site of the former C&NW passenger station in the center of the business district does not currently provide a sufficient amount of property for the construction of station and parking facilities. Major property-use changes would be required to accommodate a commuter station and parking facilities.

City of Union-West Union

This potential station site is just west of the City of Union, north of the UP track and adjacent to the intersection of Dunham Road, O'Cock Road and Millstream Road. The site is also accessible from nearby US 20 along county roads.

City of Marengo-Downtown

The site of the former C&NW passenger station in Downtown Marengo does not appear large enough to provide for station and parking facilities without negatively impacting the parking available for Marengo businesses and their customers. A commuter station at this location might add to traffic congestion concerns within the business district of the City of Marengo.

City of Marengo-West Street

The potential West Street station site could be evaluated for development as a station and parking facility. The site currently houses an operating industrial business. As such, the potential for exposure to environmental liability exists at this location. A significant portion of the potential vehicular traffic that would be expected to access the station site would need to pass through narrow residential streets.

City of Marengo-Ritz Road

The potential Ritz Road station site could be suitable for development as a station and parking facility. The proposed site is located on the west side of Marengo. Ritz Road connects the site to US 20. The surrounding areas are industrial to the east, residential to the north, and agricultural to the south and west. The site could provide access for future residential developments west, southwest, and northwest of Marengo without increasing the level of vehicular traffic in downtown Marengo. It may also be suitable for attracting commuters from points west beyond the terminal.

Appendix H:

Capital Cost Estimate

Description	Unit	Unit Cost (2007$)	Units	Total Cost (2007$)	Comments
Trackwork - UP Belvidere Subdivision Mainline and 2nd Main					
Earthwork - Cut / Fill	CY	$ 23	29,135	$670,105	
Trackbed - Subballast	TF	$ 18	158,400	$2,851,200	
Ballasted Track - Metra	TF	$ 195	158,400	$30,888,000	
No. 20 Ballasted Turnout	EA	$ 165,000	6	$990,000	
No. 10 Ballasted Turnout	EA	$ 86,000	16	$1,376,000	
			Subtotal	**$36,775,305**	
Storage and Maintenance Facilities					
Yard Facilities (Hotel Power, Crew Facilities)	EA	$ 2,000,000	1	$2,000,000	
Yard Track	TF	$ 145	10,350	$1,500,750	
Trackbed - Subballast	TF	$ 18	10,350	$186,300	
Earthwork - Cut / Fill	CY	$ 23	9,200	$211,600	
No. 15 Ballasted Turnout	EA	$ 126,000	2	$252,000	
No. 8 Ballasted Turnout	EA	$ 65,000	8	$520,000	
Employee parking (surface) including access roads	SPC	$ 9,000	30	$270,000	
			Subtotal	**$4,940,650**	
UP Belvidere Subdivision Signal System					
Train Control / Signaling: Intermediate Signal - Single Track (Bi-Direct.)	EA	$ 169,000	13	$2,197,000	
Train Control / Signaling: Intermediate Signal - Double Track (Bi-Direct.)	EA	$ 225,000	7	$1,575,000	
Train Control / Signaling: CTC Control Point - End of Siding Interlocking	EA	$ 1,125,000	2	$2,250,000	
Train Control / Signaling: CTC Control Point - Universal Interlocking	EA	$ 2,250,000	2	$4,500,000	
Grade X-ing Protection Hwy- Upgrade/Rehab	EA	$ 338,000	21	$7,098,000	Includes IL 72 to Thorne Road (IL 47, Main Street, Big Timber Rd excluded)
Pedestrian X-ing Protection (Single Track)	EA	$ 282,000	1	$282,000	
CTC Facility Upgrade/Expansion	%	10% of 50	22,402,000	$2,240,200	Includes signals at Almora
			Subtotal	**$17,902,000**	
Grade Crossing Improvements					
Highway At-Grade Crossing Upgrades	LF	$ 1,430	1,965	$2,809,950	Does not include 70 LF for IL 47
IL 47 / Main Street Grade Separation	LS	$ 30,000,000	1	$30,000,000	
			Subtotal	**$32,809,950**	
Commuter Station Facilities					
At-grade station - standard	EA	$ 1,400,000	4	$5,600,000	
Platform - Low Level	LF	$ 985	8,050	$7,929,250	Assumes 2 805' platforms per station
Station parking (surface) including access roads	SPC	$ 9,000	2,000	$18,000,000	500 per station
			Subtotal	**$31,529,250**	
Almora - Big Timber UP to MD-W Connection					
Platform - Low Level	LF	$ 985	400	$394,000	
No. 20 Ballasted Turnout	EA	$ 165,000	6	$990,000	
Relocate Existing Crossover Switches	EA	$ 50,000	2	$100,000	From '05 estimate
Trackbed - Subballast	TF	$ 18	3,700	$66,600	
Ballasted Track - Metra	TF	$ 195	3,700	$721,500	
Train Control / Signaling: Universal Interlocking	EA	$ 2,250,000	1	$2,250,000	
Train Control / Signaling: Intermediate Signal - Double Track (Bi-Direct.)	EA	$ 225,000	10	$2,250,000	
			Subtotal	**$6,772,100**	

Description	Unit	Unit Cost (2007$)	Units	Total Cost (2007$)	Comments
Special Conditions					
Utility Relocation / Protection	%	3.0%	130,729,255	$3,921,878	
Other environmental mitigation (wetlands, historic, etc.)	%	5.0%	130,729,255	$6,536,463	
			Subtotal	**$10,458,340**	
			Capital Improvements Subtotal	**$141,187,595**	
Rolling Stock					
Cab Car (gallery)	EA	$ 2,500,000	4	$10,000,000	
Coach Car (gallery)	EA	$ 2,200,000	28	$61,600,000	
Diesel-Electric Locomotive	EA	$ 3,700,000	5	$18,500,000	
Spare Parts Inventory (% of vehicle purchase - car)	%	2.00%	71,600,000	$1,432,000	
Spare Parts Inventory (% of vehicle purchase - loco)	%	5.25%	18,500,000	$971,250	
			Rolling Stock Subtotal	**$92,503,250**	
Professional Services (Soft Costs)					
Preliminary Engineering	% of C	3.5%	141,187,595	$4,941,566	
Final Design	% of C	7.0%	141,187,595	$9,883,132	
Project Management	% of C, 70	1.0%	233,690,845	$2,336,908	
Construction Admin. & Management	% of C	8.0%	141,187,595	$11,295,008	
Insurance / Legal / Permits / Review Fees	% of C	2.0%	141,187,595	$2,823,752	
Survey / Testing / Investigation / Inspection	% of C	0.2%	141,187,595	$282,375	
Agency Force Account Work	% of C	2.0%	141,187,595	$2,823,752	
			Subtotal	**$34,386,493**	
Project Reserve Contingency					
Project Reserve Contingency (% of 10-80)	% of 10-80	30.0%	268,077,338	$80,423,201	
			Subtotal	**$80,423,201**	
			Total Estimated Cost - Capital and Rolling Stock	**$348,500,539**	