Kankakee County Commuter Rail Feasibilty Study

Final Report

Submitted to:

County of Kankakee
Planning Department
189 East Court Street
Kankakee, Illinois
60901

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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 view or policies of IDOT or U.S. DOT. This report does not constitute a standard, specification, or regulation.

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ABBREVIATIONS

BNSF	Burlington Northern & Santa Fe Railway
CATS	Chicago Area Transportation Study
CBD	Central Business District
CCF	[Metra's] Consolidated Control Facility
CN	Canadian National Railway
CREATE	Chicago Regional Environmental and Transportation Efficiency Program
CSX	CSX Railroad
CTA	Chicago Transit Authority
CTC	Centralized Traffic Control
CTCO	Chicago [railroad] Transportation Coordination Office
CTPP	Census Transportation Planning Package
CUS	Chicago Union Station
CWR	Continuous welded rail
CWT	Constant warning time [for grade crossings of streets and railroads]
DMU	Diesel Multiple Unit
EJ&E	Elgin, Joliet & Eastern Railway
EMD	Electro Motive Division [of General Motors}
EMU	Electric Multiple Unit
FAST	Future Agenda for Suburban Transportation [reference 47]
FBO	Full Build-Out
FRA	Federal Railroad Administration
GIS	Geographic Information System
HSR	High Speed Rail
ICC	Illinois Commerce Commission
ICRR	Illinois Central Railroad (predecessor of CN)
IDNR	Illinois Department of Natural Resources
IDOT	Illinois Department of Transportation
IHB	Indiana Harbor Belt Railroad
KACOR	Kankakee County Commuter Rail [Feasibility Study]
KATS	Kankakee Area Transportation Study
LRPM	Land Resource Management Plan
LRT	Light rail transit
MED	Metra Electric District
MFR	Multiple family residence(s)
MOS	Minimum Operable Segment

MP	Milepost
MSF	Maintenance and storage facility
MWRRI	Midwest Regional Rail Initiative [composed of 9 states plus Amtrak]
MWRRS	Midwest Regional Rail System [s proposed by MWRRI]
N/A	Not applicable
NICTD	Northern Indiana Commuter Transportation District
NIPC	Northeastern Illinois Planning Commission
NJT	New Jersey Transit
NS	Norfolk Southern Railroad
O&M	Operations and maintenance
PB	Parsons Brinckerhoff
RDC	Rail Diesel Car
RID	[Metra's] Rock Island District
ROW	Right-of-way
SCC	[FTA's] Standard Cost Categories
SES	[Metra's Proposed] South East Service
SFR	Single family residence(s)
SSL	South Short Line [Commuter rail service run by NICTD]
SSA	South Suburban Airport [a.k.a. Peotone Airport]
STAR	[Metra's proposed] Suburban Transit Access Route
TAZ	Traffic Analysis Zones
TOD	Transit Oriented Development

HISTORICAL BACKGROUND AND INTRODUCTION

In 1851, the U.S. Congress gave the newly chartered Illinois Central Railroad a land grant of 2,595,000 acres within Illinois to build a freight railroad within four years from Cairo to Galena with a branch from Centralia to Chicago. A railroad-sponsored steamboat line connected Cairo with New Orleans and other southern ports on the Mississippi River. The Illinois Central Railroad eventually replaced these steamboats with rail lines.

In 1856, the Illinois Central Railroad initiated commuter rail service on what is currently the Metra Electric District Main Line to Richton Park. This service ran and continues to run just west of the Illinois Central's existing freight tracks. Its success led to commuter rail service on the present day South Chicago Branch in 1883 as well as on the present day Blue Island Branch in 1892.

In order to reduce coal emissions along Chicago's lakefront, the Illinois Central Railroad electrified its commuter rail tracks and its commuter rail rolling stock in 1926. It allowed the Chicago South Shore and South Bend Railroad to use its tracks into Chicago when that railroad converted to a 1500 volt direct current system. Prior to that time, Chicago South Shore and South Bend trains terminated at Kensington Station in what was then Pullman, Illinois.

In 1972, the Illinois Central Railroad merged with the Gulf, Mobile & Ohio to become the Illinois Central Gulf. The Illinois Central Gulf extended its main line commuter rail service to Park Forest South (the present day University Park) in 1977.

In 1974, approval of a referendum in Northeastern Illinois' Cook, DuPage, Kane, Lake, McHenry, and Will Counties led to creation of the Regional Transportation Authority, which was originally designed to subsidize operating deficits of the seven private commuter rail operators that then existed. With possible loss of commuter rail services on the Norfolk and Western and Heritage Corridor and with looming bankruptcies for the Milwaukee Road and Rock Island Railroads, commuter rail services in Chicago were threatened. The Regional Transportation Authority's responsibilities were therefore expanded to include acquisition and operation of public transportation carriers as well as authority to enter into service contracts with private commuter rail operators.

In June 1981, the State legislature substantially amended the original Regional Transportation Authority Act to place all operating and fare responsibilities under three service boards and to give the Regional Transportation Authority increased financial responsibility and budget oversight over its new service boards. These service boards were the Chicago Transit Authority, Metra, and Pace.

In May 1987, Metra acquired the Illinois Central Gulf's commuter rail operations, equipment, and rights-of-way. By 1990, The Illinois Central Gulf returned ownership to its individual shareholders and restored the original Illinois Central name. The Canadian National Railroad bought the Illinois Central soon after and continues to run its freight lines.

Since its inception, Metra has restored and upgraded many of the Chicago area's commuter rail services and has aggressively expanded its system. In September 1992, Metra initiated FAST, the Future Agenda for Suburban Transportation (Reference 47), which suggested extensions of its existing lines and creation of new commuter rail lines. Several projects that have come out of FAST are three extensions of the SouthWest Service, implementation and expansion of the North Central Service, and expansion of the Union Pacific West Line to Elburn. Since then, several other rail line extensions have been or are being planned or designed.

In July 2003, Kankakee County and the other members of the Commuter Rail Task Force solicited responses from consultants to determine whether commuter rail service to Kankakee was physically, operationally, and financially feasible. The Commuter Rail Task Force consists of members from Aroma Park, Bourbonnais, Bradley, Kankakee, Manteno, Monee, Peotone, Kankakee County, Will County, and the Illinois Department of Transportation's Division of Public Transportation. In February 2004, Parsons Brinkerhoff was selected to perform the study, which is published in this Final Report.

The Canadian National Railroad and Metra have provided some of the information for this broad-based feasibility study. The consultant team, however, performed this work independently of them and did not ask them to officially approve of this study's recommendations. In subsequent phases of this project, however, the railroads will be asked to cooperate further with this study's Commuter Rail Task Force.

This study's conclusions and recommendations for future work are provided in Chapter 7. A separate Project Overview in a brochure format is also available.

1.0 DOCUMENTATION OF EXISTING CONDITIONS

1.1 RAILROAD RIGHT-OF-WAY

Data Sources

The consultant team developed a series of right-of-way schematic drawings, which depict infrastructure items along the right-of-way in approximate longitudinal scale, using the data sources described below. These right-of-way schematics are provided in Appendix 4 as "Right-of-Way Schematics: Existing Conditions."

The consultant team used a copy of the Canadian National Railway's track charts (Reference 10), dated July 1999, which show track configuration and alignment, drainage pipes, bridges, utilities, grade crossings, some railway signaling elements, and easements. These track charts provided the basis for most of the data needed for engineering work in this phase of the study. Other data sources were used to verify and corroborate this data. Although the consultant team found some discrepancies between these track charts and other data sources, these discrepancies can be resolved in a later phase of this project. Employee timetables for the Canadian National Railway (Reference 42) helped fill in some of the missing data, such as speed limits and siding lengths, throughout the study area.

The consultant team also used the Highway Grade Crossing Database (Reference 25), which the Illinois Commerce Commission (ICC) developed and maintains. This database lists all of the grade crossings and their associated IDOT numbers, which were compared against the aforementioned Canadian National data and supplemented it. Field visits were conducted to resolve as many milepost discrepancies as possible between the Canadian National Railway and the Illinois Commerce Commission. The Highway Grade Crossing Database also contained a history of the area's grade crossing accidents, which may be used during the preliminary engineering phase if grade crossing upgrades are considered.

Metra gave the consultant team a copy of its Electric District's "Operations Profile" (Reference 13), which is a well-researched and documented inventory of the line's trackwork, signaling, bridges, and other infrastructure items. Since it reflects Metra's existing service, it extends only to MP 32.5 on the Electric District Main Line. It also had some additional information about a "proposed Peotone Extension" that would span to MP 42.5 on the Canadian National Railway's tracks. Because of its limited coverage, this inventory was used primarily to resolve discrepancies among other data sources.

1.1.1 Physical Description of the Right-of-Way

The Metra Electric District Main Line extends from Randolph/South Water Street Station (MP 0.0) to Chicago's south side and southern suburbs in Cook and Will Counties. It terminates 32.5 miles later just south of the University Park Station (MP 31.1). The South Chicago Branch diverges from the Main Line near 68th Street (at MP 8.23) and travels through Chicago's southeast side until it reaches South Chicago (93rd Street) Station at MP 13.3. The Blue Island Branch diverges from the Main Line near 120th Street (at MP 14.7) and proceeds through Chicago's far southwest side and near southwestern suburbs until it reaches Blue Island Station at MP 18.9. The Metra Electric District has forty-seven stations.

The Northern Indiana Commuter Transportation District operates the South Shore Line from its own depot at Randolph/South Water Street Station to Michiana Airport in South Bend, Indiana. It shares the Metra Electric District's tracks just south of its depot at Randolph/South Water Street Station to MP 14.49 near Kensington Avenue. At MP 14.49, the South Shore Line diverges from the Main Line onto its own tracks and travels to Chicago's Hegewisch neighborhood and northwestern Indiana. Its

passengers can board or alight at seven Metra Electric District stations and the South Shore Line's thirteen stations.

The Canadian National Railway runs along the east side of the Metra Electric District Main Line from approximately MP 2.4 near McCormick Place to Metra's University Park Station at MP 31.1. It continues past the University Park Station through Kankakee County and Illinois to New Orleans, Louisiana. Canadian National freight and Amtrak passenger trains currently use this route.

The Amtrak service originates at Chicago's Union Station and uses a short section of the Burlington Northern Santa Fe to access the St. Charles Airline (which comprises a bridge system over the Burlington Northern Santa Fe and Metra Electric District) to connect with the Canadian National Railway at approximately MP 2.4, as noted above.

The proposed commuter rail line extension to Kankakee County would use the Metra Electric District Main Line to University Park and continue to Kankakee County using the Canadian National Railway's right-of-way. Since Metra's infrastructure to University Park is well-established and developed, the consultant team found it unnecessary to suggest changes to the Metra Electric District north of its current terminus at University Park. It therefore made University Park Station (MP 31.1) this study's northern limit to the right-of-way. This study's southern limit extends approximately three miles south of Kankakee's city limits at MP 64.

The right-of-way between University Park and Kankakee is generally straight, free of obstructions, and wide enough for a second mainline track, if one or a part of one is needed. Currently, there is only a single track mainline. Information from various sources indicates that a second (and even portions of a third) mainline track existed along the Illinois Central Railroad until the early 1960s. Remnants of this second mainline still exist in the three passing siding tracks that are situated between University Park and an area just south of the City of Kankakee. (Please see the Appendix 2 for photographic evidence of this second mainline and its infrastructure.)

1.1.2 Track

Within the study area, the Canadian National's mainline track is in excellent condition and is rated for passenger train speeds of up to 79 mph. It primarily consists of 132 and 136 pound continuously welded rail (CWR) dating from 1977 to 1982 (according to 1999 information). Rail that weighs 132 or 136 pounds per yard is some of the heaviest used in the U. S. Metra, by contrast, typically requires 115 pound rail for lines that have no freight trains. The heaviness of this rail and numerous industrial turnouts indicate heavy traffic volumes on this rail line.

South of University Park, the Canadian National Railway continues to operate on a single track mainline toward Monee. As the track approaches Monee, the right-of-way is depressed below grade level via a cut that was built during the 1950s to reduce the railroad's grade through the area, resulting in a significant grade difference between the track and the general surface elevation through Monee's center. As the track proceeds south of Monee, its elevation begins to approximate that of the surrounding area.

The right-of-way continues as a single tangent (straight) track in a southwesterly direction toward and through Peotone. Just south of Wilmington Road, a passing siding begins at MP 41.2, just west of the mainline, and continues for 10,519 feet to MP 43.2, just north of County Line Road. This siding has a speed restriction of 40 mph.

The track continues as a single tangent mainline through Manteno until MP 48.0 near Amberstone Road, where there is a 0°45' horizontal curve to the south. North of 6000N Road at MP 49.5 is a second passing siding, which begins just east of the mainline and continues for 30,655 feet to MP 55.3 through Bourbonnais, Bradley, and portions of Kankakee. This siding has a speed restriction of 20 mph. Just before the end of the passing siding at MP 55.2, the Norfolk Southern Railroad crosses the Canadian National at Kankakee Junction.

Through much of Bradley and Kankakee, the Canadian National tracks are elevated onto an embankment which allows most of the local roads to pass under them. The Canadian National has a rail yard on both sides of its mainline from approximately MP 54.7 to Kankakee Junction.

South of MP 55.3, the Canadian National mainline continues without passing sidings across the Kankakee River and into a 1° horizontal curve to the west. At MP 57.6, a third passing siding begins along the mainline's west side and continues 13,224 feet to MP 60.4, which is near this project's limits. This siding is restricted to 40 mph.

The Canadian National did not identify any improvement plans to this line's physical plant that would benefit this potential commuter rail line. Section 3 and the Appendix, however, provide specific trackwork suggestions for possible future improvements.

1.1.3 Railroad Grade Crossings

Railroad grade crossings include highway, unimproved road, and pedestrian at-grade crossings over railroad tracks. Although grade crossings are common, most railroads like Metra and the Canadian National have many reasons for not wanting to add new grade crossings to their infrastructure, which include the following: safety issues, costs and impacts of installing grade crossings, costs and impacts of associated signal system improvements, maintenance costs, and the difficulty of removing crossings once they are in place.

Table 1.1-1 summarizes the grade crossings that the consultant team identified between Metra's University Park Station and MP 59.0, south of Kankakee.

Table 1.1-1 – KACOR Area Railroad Crossings

Type of Grade Crossing	Quantity	Comments & Warning Devices
Road Rail Crossing		
Paved – single track	17	Includes flashers, bells and gates
Paved – double track	9	Includes flashers, bells and gates
Wood Tie – single track	1	Harlem Avenue – includes flashers, bells and gates
Unimproved or stone	2	Private Road at MP 37.45 - crossbuck only – and MP 42.75 – no warning devices.
Pedestrian Crossing	2	Wilson St. in Peotone and First St. in Manteno – crossbuck and bells

The consultant team assumes that this project will not require any new grade crossings. However, it recommends that all single-track crossings are improved to two-track crossings and that the wood tie crossing at Harlem Avenue is upgraded to a paved or rubber/concrete crossing surface.

The existing unimproved private crossings require further evaluation to determine if they can be eliminated. If not, they would require active warning devices for commuter rail service. Although the consultant team searched for unimproved crossings in the project area, a more detailed search from the track should be performed to identify others that may exist and might not be reflected in public or railroad documents.

1.1.4 Structures and Clearance

This study's 28 mile right-of-way has a number of structures, such as bridges, culverts, and depots. These are summarized in Table 1.1-2.

Table 1.1-2 – Railroad Structures

Type of Structure	Quantity	Comments
Railroad bridges over highways	5	All within Bradley and Kankakee
Railroad bridges over water	5	Includes Ford Creek, Rock Creek (2), Kankakee River and Gar Creek
Culvert	1	At MP 57.20
Highway bridges over railroads	7	Includes four in or near or Monee, two in Bourbonnais, and one in Kankakee (on Court Street)
Railroad depots	3	Metra University Park (active), Peotone (inactive) & Kankakee-Amtrak (active)
Maintenance facilities	0	The Canadian National does not have any shops in the study area. However, Metra has Electric District shops north of University Park.

Bridges

The consultant team's preliminary bridge inspection revealed that the aforementioned bridges generally are in good condition and could be used for the proposed commuter rail service. Since this corridor has likely supported more than one mainline, these bridges also appear to have enough horizontal clearance to support a second mainline. Please see Appendix 2 for photographs of some of these bridges.

In Section 5, Financial Feasibility, some upgrade costs are assumed for each railroad bridge. Since these bridges seem to have adequate clearances, the consultant team does not expect significant costs for these structures. If this project progresses into Preliminary Design, the project's engineers will need to conduct a detailed assessment of each bridge in order to confirm its suitability for continued and expanded use.

Depots

The study corridor contains Metra's University Park Station, the defunct Illinois Central's Peotone Station, and Amtrak's Kankakee Station. Metra's University Park Station could still accommodate Metra Electric District Service if it was extended further south into Kankakee County or could serve as a transfer point for Diesel Multiple Unit service that would shuttle between this station and one in Kankakee County. In either case, some platform improvements will be required, but no major facility improvements.

The defunct Illinois Central's Peotone Station is currently used as a small retail shop. Although it could be evaluated for use as a train depot again, Peotone has selected another site for its potential station.

Amtrak's existing Kankakee Station appears to be in excellent condition and is quite suitable for additional use as a commuter rail station. Possible double tracking of the mainline for commuter rail service will require a new platform on the west side of the track(s). Amtrak's existing office could also accommodate ticket agents for this potential commuter rail service.

1.1.5 Signaling Systems

Within the project area, both the Metra Electric District and the Canadian National Railway utilize conventional wayside railroad block signaling systems to manage train traffic. Each railroad utilizes a train dispatcher, who remotely governs all train movement on the line as well as determining the routing and train priority at railroad turnouts and crossings.

Wayside signal systems utilize "track circuits", which use the running rails to carry electrical signals to detect the presence or absence of a train within a given section of the track. Each section of track is known as "signal block", which varies in length, depending upon the track speed and the train traffic capacity of the line. As trains enter a block, wayside signals ahead and behind the train change their "aspect" (i.e. different light colors or flashing patterns) to indicate the presence of the train to other trains that may be approaching or following.

Where tracks intersect via turnouts, crossovers or track crossings, the signal system defines what track routing is available and which train may proceed into the track intersection area, or "control point". When train traffic to a siding does not warrant a control point with a remotely operated electric switch, a manual switch may be present that require the train crew to manually "throw" the switch. In these cases, an "electric lock" on the switch may be present that must be remotely unlocked by the dispatcher prior to the switch being capable of being manually moved. The electric lock also verifies that the mainline track is clear via the signal system prior to releasing the switch, which protects against an unsafe condition. This arrangement is typical for turnouts to small industrial sidings such as those along the Canadian National Railway.

The signal system also includes the road and pedestrian railroad crossing protection system, comprising warning bells, flashers and gates. These systems are automatically controlled utilizing audio frequency overlay track circuits and do not require dispatcher involvement.

All Metra Electric District train operations are controlled from Metra's Consolidated Control Facility with a Centralized Traffic Control (CTC) system. The Metra Electric District's signaling system consists of fixed block, four aspect color light wayside signals, utilizing electronically coded track circuits. Although some of the control points on the Metra Electric District are operated using a traditional railroad industry approach of electro-magnetic relays, newer Metra control points utilize solid state systems. The control point at University Park consists of two tracks with a single crossover to allow access into the yard track, and is currently in the process of being converted to a solid state control point.

Within the limits of the project area from University Park to the southern end of the City of Kankakee, the Canadian National Railway is operated and controlled by a CN dispatching center located in Homewood, Illinois. Similar to the Metra signal system, the study portion of the CN system operates with a CTC system utilizing fixed block color light wayside signals incorporating three or four aspects. The signal system controls operations on both the mainline and access to/from the mainline via non-signaled siding tracks or industrial sidings. Electric lock switches are used for non-signaled sidings.

1.1.6 Maintenance and Storage Facilities

The Canadian National Railway does not have any maintenance facilities within the study corridor between University Park and Kankakee; however, it maintains a large facility at Hazel Crest (MP 22.5). Prior to Metra's purchase of the Illinois Central Gulf's commuter railroad, the Illinois Central Gulf performed some overhaul work of its electric multiple units at this facility.

Metra's existing electric multiple unit cars are currently stored and serviced at a number of locations. Most daily servicing, including car cleaning, light mechanical inspections, and maintenance, for these cars is performed during the midday period at Metra's Weldon Yard, which is also known as the 18th Street M(ultiple) U(nit) Facility (MP 1.8), and is located in Chicago near 14th Street and Lake Shore

Drive. Inspections and mechanical work for these train cars is performed at either Weldon Yard or the KYD Mechanical Shop, which is also more simply known as Kensington (MP 15.6).

Two additional overnight storage and cleaning yards are located near the Richton Park and University Park Stations. The Richton Park Yard (MP 28.9) has five double-ended storage tracks which are parallel to the mainline and the University Park Yard (MP31.3) has one stub ended track north of the station and three stub-ended tracks south of the station.

Metra's plans for a new Metra Electric District yard south of University Park are discussed in Section 2.1.1.

1.1.7 Railroad Operations

Metra commuter rail service, Amtrak passenger rail service, and freight operations currently operate within the project corridor.

Metra Traffic

Metra currently operates 28 northbound trains from University Park between 4:20 a.m. and 11:40 p.m. and 26 scheduled arrivals to University Park between 6:25 a.m. and 1:56 a.m. each weekday. Eleven trainsets begin and end their operations at University Park during this time.

Metra also runs five a.m. peak direction trains from Flossmoor and five p.m. peak direction trains to Flossmoor. The Richton Park Yard supports these Flossmoor-bound trainsets as well as seven other trainsets that enter a.m. peak revenue service at stations further north, at either Homewood or Harvey.

Amtrak Traffic

Amtrak currently operates four trains daily through the Chicago to Kankakee Corridor. These include the "City of New Orleans" trains (Trains 58 and 59), which link Chicago and New Orleans on a daily basis; and Trains 391 and 392, which provide local service in the Chicago-Carbondale Corridor. All of these trains stop at Homewood and Kankakee. Amtrak does not carry passengers between Homewood and Chicago, unless those passengers are connecting to another Amtrak train, to avoid competing with Metra.

Amtrak's current schedule (effective April 26, 2004) shows Train 58 arriving in Kankakee at 7:13 am, Homewood at 7:44 am, and Chicago Union Station at 9:00 am. Train 391 departs Chicago at 4:05 pm, arrives in Homewood at 4:46 pm, and stops at Kankakee at 5:12 pm. Train 392 arrives in Kankakee at 7:50 pm and is scheduled to stop in Homewood at 8:19 pm (only to discharge passengers). It terminates at Chicago Union Station at 9:35 pm. Amtrak's Train 59 leaves Chicago Union Station at 8:00 pm, stops in Homewood at 8:54 pm, and arrives in Kankakee at 9:23 pm. Commuters, therefore, could ride Train 58 to Chicago and return to Kankakee on Trains 391 or 59. However, these are their only travel time options.

Amtrak's round trip, single coach fares are roughly equivalent to single trip fares for Metra's Zone K (55 to 60 miles), however, Metra offers many deep discounts for multiple rides.

Freight Traffic

The Canadian National Railway reports that it has approximately 20 manifest trains traveling within the study corridor each day. These tracks also accommodate up to eight bulk trains per day, depending on the season. A seasonal increase might include additional trains used for grain shipments during the fall season.

1.2 ROADS

Interstate 57 and IL 50 are four lane roads that parallel the proposed commuter rail alignment. Interstate 57 primarily serves long distance travel and has limited access and a speed limit of 65 miles per hour for cars and 55 miles per hour for trucks. IL 50 has a speed limit of 55 miles per hour, provides more access to adjacent land uses, and uses at-grade intersections.

IL 50, US 45, US 52, IL 1, IL 17 and IL 102 are primary arterials, which are good for regional travel because they can handle high traffic volumes and restrict access to adjacent land uses. The study area's collector roads, such as 4000 N, 5000 N, 9000 N, Warner Bridge, Lehigh, Eagle Island, and Sand Bar, carry less volume than the arterials but offer more access to adjacent land uses.

The consultant team has found that potential riders who live within the study corridor have good access from IL 50 and other east-west roads within the study area to the proposed commuter rail stations.

1.3 PUBLIC TRANSPORTATION

1.3.1 River Valley Metro Mass Transit District

The River Valley Metro Mass Transit District operates nine bus routes in the Kankakee area to serve the City of Kankakee and the Villages of Aroma Park, Bourbonnais, and Bradley. These routes generally operate Monday to Friday from 6:00 am to 6:30 pm and Saturday from 6:30 am to 6:00 pm. Service is every 30 minutes or hourly. The River Valley Metro charges a $1.00 full fare for riders who are over five years old and has unlimited ride monthly passes available for seniors, people with disabilities, and students.

Service is provided through a hub system. All of its bus routes terminate in downtown Kankakee near the current Amtrak and potential commuter rail station, except for Route 10. Route 10, the Bourbonnais Flex Route, terminates at the Meadowview Shopping Center and Northfield Square Mall. The River Valley Metro map in Figure 1.3-1 shows the various routes.

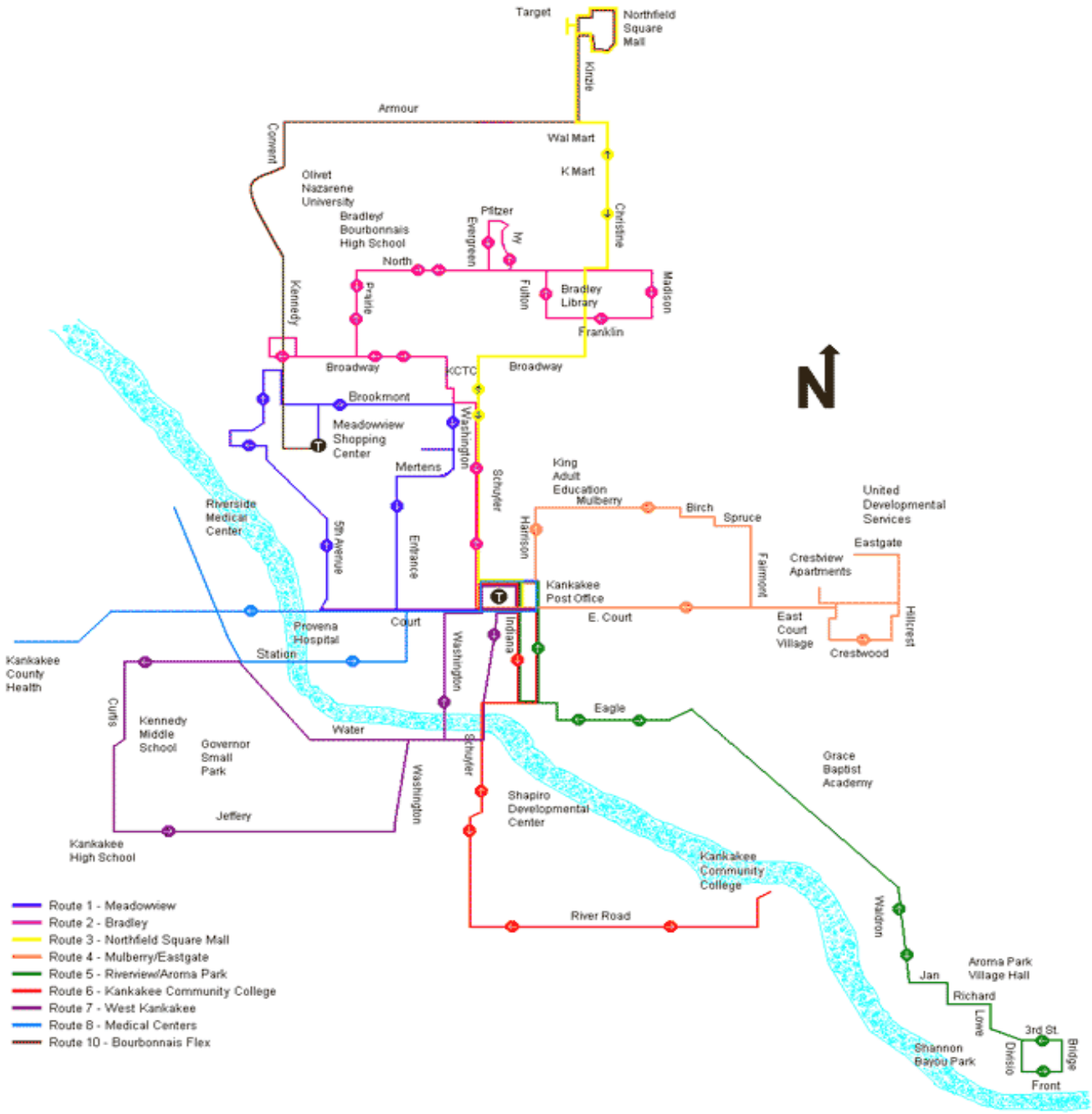
River Valley Metro also provides paratransit services within its service area during its mainline operating hours. Fares are $2.00, although personal care attendants ride free. Reservations are needed and can be made a day before the trip until 4:00 pm.

The most recent ridership data (April 2004) shows average daily ridership at 607, which includes an average of 40 daily paratransit trips. Route 10 has the most riders of all of the fixed routes.

1.3.2 Other Services

Kankakee County provides paratransit services for elderly or disabled rural residents outside of the River Valley Metro service area. Riders need to pay a $3.00 fare and reserve their rides in advance: a minimum of 24 hours is required for reservations. This service operates Monday to Friday from 8:30 am to 4:30 pm.

Figure 1.3-1 – Existing River Valley Metro Service



1.4 SOCIOECONOMIC AND LAND USE CHARACTERISTICS

1.4.1 Socioeconomic Characteristics

From 1990 to 2000, Kankakee County's population increased 8% to more than 103,000 residents, while Will County's population increased 41% to more than 502,000 residents. These counties are projected to increase 14% and 64% respectively in 2020. Please see the tables below for further information.

Table 1.4-1 – Kankakee County Population*

Year	Population	% Change
1990	96,255	
2000	103,833	8%
2020 Forecast*	**118,143**	**14%**

* Source: Kankakee County, Illinois Department of Commerce and Economic Opportunity

Table 1.4-2 – Will County Population**

Year	Population	% Change
1990	357,313	
2000	502,266	41%
2020 Forecast	**822,743**	**64%**
2030 Forecast**	**1,107,778**	**121%**

** Source: Northeastern Illinois Planning Commission

Table 1.4-3 shows the populations of communities within the study corridor, while Table 1.4-4 lists the corridor's major employers.

Table 1.4-3 -- Municipal Population

Municipality	1990	2000	2003 (Special)	Forecast
Kankakee	27,575	27,491		N/A
Bradley	10,792	12,784		N/A
Bourbonnais	13,934	15,256	16,333	N/A
Manteno	3,488	6,414		*13,464
Peotone	2,947	3,385		**15,611
Monee	1,044	2,924	4,183	**47,804

* Source: Manteno 2020 from 1998 Comprehensive Plan page 9. Estimate of 3.8% per year.
** Source: Northeastern Illinois Planning Commission; through 2030

Table 1.4-4 – Major Employers

Employer	Location	Jobs
Riverside Healthcare	Kankakee	1,475
Shapiro Developmental	Kankakee	1,375
Centeon	Manteno	1,050
Provena St. Marys	Kankakee	1,020
Aventis Behring	Bradley (Unincorporated)	950
Sears Logistic Services, Inc.	Manteno	800
Kankakee School District 111	Kankakee	680
Kmart Distribution Center	Kankakee	500
Baker & Taylor	(Momence)	500
Armstrong World Industries	Kankakee	436
Bunge Foods Corp	Bradley	250
Whiting Crane	Monee	200
Cleveland Steel	Peotone	200
Nutrasweet	Manteno	175
World Kitchen	Monee	108
Commander Packaging	Monee	100
Triton Mfg.	Monee	88
Windy City Truck Stop	Monee	72
South Holland Metals	Monee	71

* Source: Illinois Department of Commerce and Economic Opportunity (Data dated 2002, 2003 and Manteno, March 2004)

Some of the area's communities are experiencing growing development demand. Bourbonnais reported that it had expected to receive approximately 2,500 new single-family housing permit requests in 2004. This projection is a 1,463% increase over 2003, when Bourbonnais only issued 160 permits for new single-family units. The village of Monee nearly doubled its population from 2000 to 2003 and currently has seven new subdivisions under construction.

1.4.2 Land Use

County Land Use

Kankakee County's most recent comprehensive plan was adopted in November 1992, but amended in 1997, to reflect changes resulting from the proposed South Suburban Airport (SSA) near Monee and Peotone. The 1992 plan's land use analysis was completed in October 1991, when the county's existing land use was overwhelmingly classified as agricultural. Municipal land comprised slightly less than 4% of the county's land. Water features, including the Kankakee River, also took up less than 1% of the county's land. Recent development in the county has increased the amount of urbanization. However, Kankakee County is still predominately agricultural.

Will County updated its comprehensive land use plan in 2002, which showed that approximately 20% of its land was developed or used for something other than agricultural uses. Development in Will County has been on the urban fringe and in existing rural communities. Will County expects to be the fastest growing county within the State during the 2000 to 2010 period and is preparing for growth with another updated comprehensive plan. Development of the proposed South Suburban Airport, with its anticipated growth in employment opportunities, will have a significant impact on the pace and types of development throughout the county. As an example of the anticipated growth, the Village of Peotone has two versions of its land use plan; with the new airport, the Village anticipates significant growth in commercial development as well as residential. The effects of the airport will affect growth in the county and its local municipalities.

Municipal Land Use

Land use in the communities adjacent to the commuter rail line – and especially those looking for a station – is important in that the pool of potential riders in the surrounding area will drive ridership of the service as well as connecting transportation systems. If a station is surrounded by higher density residential development, the pool of potential riders is large. If the station is surrounded by lower density industrial or warehousing development, the number of potential riders is smaller. If the network of streets leading to the station offers sidewalks and other pedestrian amenities, chances that people who will walk to the station increase. In comparison, if the street network offers convenient access only by motorized vehicle, then the chances that people will walk to the station will decline, and parking will need to be provided. These issues will be critical for the municipalities in determining how to develop their communities in the future.

Although a detailed analysis of land use in the potential station areas is beyond the scope of this study, existing municipal comprehensive plans provide an indicator of the degree and type of development in areas near the potential commuter rail line.

Monee: The village's comprehensive plan was last updated in July 1997 and included two future land use scenarios: one with the South Suburban Airport and one without it. The South Suburban Airport would change the boundaries of Monee and University Park and would need to be determined. The comprehensive plan, therefore, considered a 1.5 mile area beyond the village corporate limits, as defined by state statute (65 ILCS 5/11-12-6). As of May 1997, Monee's land use includes:

Area	Land Use Percentage
Village	58% Residential 4% Commercial/Office 1% Industrial 0% Open Space/Recreation 36% Agriculture/Vacant 1% Transportation/Utility/Public/Other
Unincorporated Area	8% Residential 0% Commercial/Office 0% Industrial 3% Open Space/Recreation 88% Agricultural/Vacant 0% Transportation/Utility/Public/Other

Peotone: The village's most recent comprehensive plan was adopted in December 1997. A survey of the existing land use was completed in May 1997. The percentage of existing land use types in the community are the following:

Area	Land Use Percentage
Village	63% Residential 8% Commercial/Office 2% Industrial 3% Open Space/Recreation 20% Agriculture/Vacant 4% Transportation/Utility/Other
Unincorporated Area (1.5 mile planning area beyond the village limits)	4% Residential 0% Commercial/Office 0% Industrial 0% Open Space/Recreation 93% Agricultural/Vacant 2% Transportation/Utility/Public/Other

Manteno: The August 1998 version of the Village of Manteno's comprehensive plan provided information from an August 1996 survey of land uses, which stated the following:

Area	Land Use Percentage
Village	46% Residential (26% SFR; 6% MFR, and 14% Mobile Home) 3% Commercial / Office 10% Industrial 5% Open Space / Recreation 18% Agriculture / Vacant 19% Transportation / Utility / Public / Other

Bourbonnais: The village last updated its comprehensive land use plan in September 1999, which provided a snapshot of the community. Based on the November 1998 land uses survey completed by the village, the village and nearby unincorporated area include:

Area	Land Use Percentage
Village	36% Residential (66% SFR; 25% MFR 5+ units) 8% Commercial / Office 1% Industrial 6% Open Space / Recreation 22% Agriculture / Vacant 27% Transportation / Utility / Public / Other
Unincorporated Area	6% Residential >1% Commercial / Office 4% Industrial 15% Open Space / Recreation 68% Agricultural / Vacant 7% Transportation / Utility / Public / Other

Bradley: Based on zoning ordinance and map information, the Village of Bradley primarily has residential single-family housing with multi-family housing found west of the Canadian National Railway along Broadway Street. It also maintains a good balance of commercial and industrial properties, located primarily along the Canadian National Railway. Most of its commercial properties are located in the Northfield Square Mall and along Broadway Street and Kennedy Drive.

Kankakee: The City of Kankakee adopted its comprehensive land use plan in 1997. Based on a February 1992 land use survey, the City and surrounding unincorporated areas have a variety of uses, found in the following table.

Area	Land Use Percentage
Village	28% Residential 8% Commercial/Office 7% Industrial 9% Open Space/Recreation 29% Agriculture (27%)/Vacant (2%) 18% Transportation/Utility/Public/Other
Unincorporated Area	5% Residential 1% Commercial/Office 2% Industrial 1% Open Space/Recreation 87% Agricultural/Vacant 4% Transportation/Utility/Public/Other

The City of Kankakee and surrounding unincorporated areas had a population decline of less than 100 people from 1990 to 2000. Given this stable population rate, only minor changes likely occurred in land use during these years.

1.5 ENVIRONMENTAL FEATURES

1.5.1 Topography

Within the corridor and study area, the land is flat with minor variances in slope. Items of interest include water features (Rock Creek, Lake Manteno, the Monee Reservoir and the Kankakee River), an adjacent quarry, and communities built along the rail line. The existing rail way is active, with sufficient right-of-way for additional service.

1.5.2 Environmental Features

Significant natural environmental features in the corridor are depicted on a map in Appendix 3. This information was obtained from the Illinois Department of Natural Resources (IDNR), and includes state parks, natural areas, cemeteries, landfills, water features, flood zones, and wetlands. When considering potential sites for commuter rail facilities, such as yards, sidings and stations, identification of these sites is important for facility location or allowing for mitigation costs.

Within the immediate corridor, environmental features of interest include Raccoon Grove, Lake Manteno, Rock Creek and the Kankakee River. There are flood zones and wetlands in the corridor, which generally follow a river or creek. Along the proposed alignment, these environmental considerations cross the tracks in two places. There are several closed landfills and cemeteries adjacent to the alignment. Between communities, most of the land is classified as agricultural or rural grassland.

2.0 ASSESSMENT OF FUTURE PLANS AND CONDITIONS

2.1 PROJECTED RAIL CARRIER OPERATIONS AND IMPROVEMENTS

Number of Rail Carriers

The number of rail carriers involved on a single route can greatly affect the design, construction, negotiation, and implementation processes. First, the conceptual design and engineering work will have to conform to each carrier's design criteria and standards for the line or to a mutually acceptable set of design criteria and standards. Metra, in this case, might provide its design criteria and standards for the other carriers' approval as a mutually acceptable set of design criteria and standards. If approved, the rail carriers could review and approve of such things as concept and engineering drawings as provided by Metra.

Second, when it comes time to obtain trackage or operating rights, schedule issues, and other matters related to service implementation, negotiations will be required with each of the line's carriers. The more carriers a line has, the more difficult negotiations can become.

Finally, the more hand-offs between carriers on a line, the more chances there are for delays or other problems. The Chicago Transportation Coordination Office has worked to significantly lessen these chances for delays or other problems. This office has a full-time staff comprised of representatives from Metra and each of the freight carriers that are in the region. They work together to ensure that each train is efficiently handed-off and have significantly improved interline coordination.

This proposed rail line would need to run on the Canadian National Railway and the Metra Electric District Main Line into downtown Chicago to minimize the number of rail carriers, with whom it would need to work. It would therefore have to use electric multiple unit or dual-mode multiple unit rail cars since diesel-powered rail cars are prohibited from Chicago's Grant Park. To choose another downtown terminal would require multiple carriers. Traveling to LaSalle Street Station, for example, would require the proposed service to travel on the Canadian National, Union Pacific, and Norfolk Southern Railroads and Metra's Electric District and Rock Island District Main Lines. Any alternative that would not use the Metra Electric District Main Line would require travel through the proposed South Suburban Airport.

2.1.1 Operations

Metra's Proposed Yard and Shop Complex

Metra plans to build its Metra Electric District yard and shop complex south of University Park, which will likely be responsible for all Metra Electric District cars. This facility will change the volume and nature of train movements in the study area since cars that currently terminate at yards in Richton Park, Blue Island, and other Metra Electric District locations will terminate south of University Park and dead-head back to their starting points (e.g. Blue Island, 93rd Street, and Kensington) at a later time. It has not yet been determined when many of these dead-head movements will occur, although they will likely happen after the PM rush hour and before the start of the next operating day.

Metra will likely locate its proposed shop east of the Canadian National right-of-way. Since the Metra Electric District Main Line is west of the Canadian National right-of-way, the connection to the new facility may involve an interlocked, at-grade crossing of the Canadian National track. Metra Electric trains will therefore need to cross over the Canadian National tracks as required. All of these additional train movements will occur where the proposed Kankakee service will operate.

Amtrak and the Midwest Regional Rail Initiative

Amtrak does not currently plan to expand its conventional train services within the corridor. However, it has worked closely with the Midwest Regional Rail Initiative to develop plans for improving passenger rail services throughout the Midwest. The Midwest Regional Rail Initiative is a consortium of nine midwestern Departments of Transportation, which seeks to develop several high-speed rail corridors radiating out of Chicago, including the Canadian National Railway to Champaign and Carbondale. It seeks to upgrade this line to accommodate 110 mph passenger trains, which may reduce up to thirty minutes from the current Chicago to Carbondale travel time of 5 hours and 30 minutes. This line would have five daily round trips between Chicago and Champaign and retain the two daily trips between Chicago and Carbondale. (These two daily round trips do not include service provided on Amtrak's existing City of New Orleans service.) The Midwest Regional Rail Initiative estimates that it would take seven years to implement the proposed Chicago to Champaign service and ten years to implement the proposed Chicago to Carbondale service.

Freight Railroads

The Canadian National has projected three to five percent annual traffic growth per year in its immediate future. This would result in approximately one additional freight train per day within the study corridor. [To reach this conclusion, the consultant took an average of the projected annual traffic growth and multiplied it with the existing number of trains that travel within the study corridor (28 trains).] The consultant team was unable to get the actual traffic growth rates from the Canadian National or other freight lines since this information was considered proprietary.

2.1.2 Projected Railroad Infrastructure Improvements

The Canadian National, Norfolk Southern, and Amtrak currently have no plans to significantly improve the right-of-way within the study corridor. (The Norfolk Southern crosses the Canadian National just north of downtown Kankakee.) As previously mentioned, Metra plans to build a new rail yard and shop south of University Park. In December 2003, Metra advertised for services associated with this facility's environmental assessment and design (reference 50). It hired a consultant and has proceeded with these services. Although specifics on this facility are not yet available, the consultant team assumes that this facility will be built. It also believes that the right-of-way for the Illinois Central's original 3 and 4-track mainline is intact and has not identified any plans that might encroach upon that right-of-way.

2.2 PROJECTED LAND USE

2.2.1 County Land Use

Kankakee County is currently developing a new comprehensive land use plan. However, it amended its old plan to account for development from the potential South Suburban Airport.

In April 2002, Will County adopted a comprehensive land resource management plan that establishes a general framework for how the county's residents, elected officials, planners, and other stakeholders want the county and its communities to grow. It also creates an open space plan for the county, recognizes the importance of the Will County Cultural and Historic Preservation Plan (1976), and incorporates the goals of the Will County 2020 Transportation Plan (2000) and the Will County Comprehensive Storm Water Management Plan (1998).

In its comprehensive Land Resource Management Plan (LRMP), Will County stated that suburbanization will continue in northern Will County up to and including Monee. It also acknowledges that some of the towns and hamlets in southern Will County (such as Peotone) will continue to grow. These towns will likely retain their own character since they are not near the suburban fringe. The rest of Will County will likely retain its rural character. Will County has

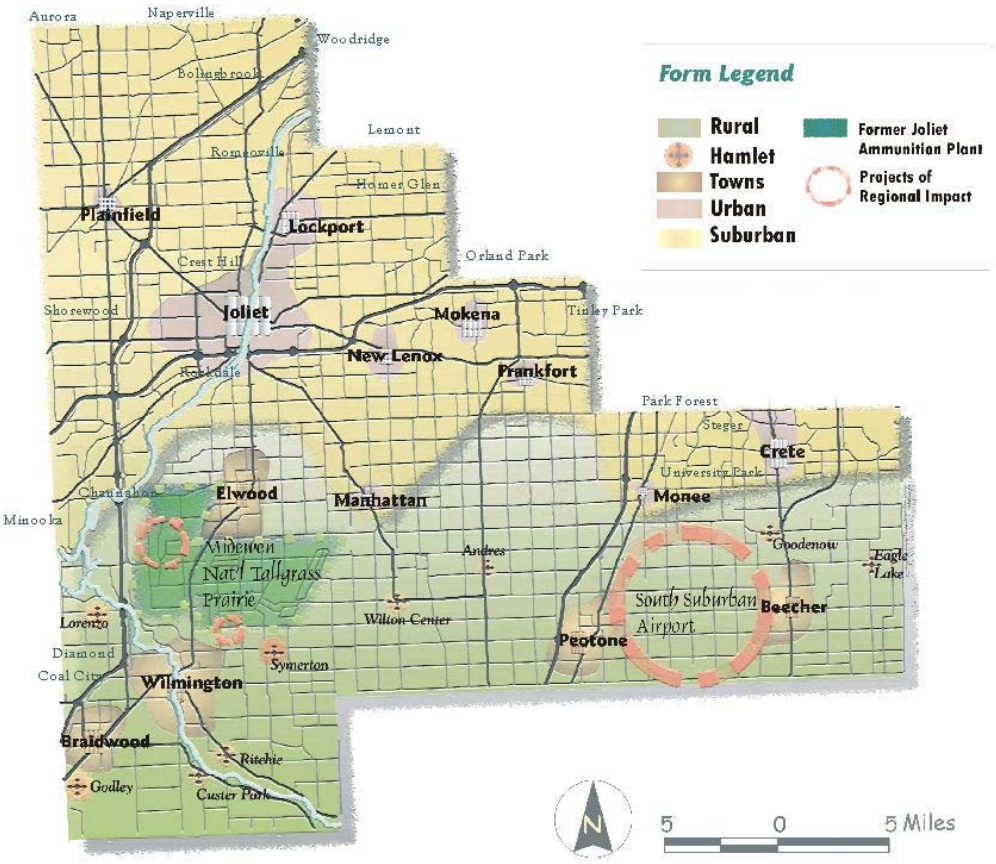
designated approximately 30 to 40 percent of the southern part of the county as rural because it recognizes agriculture as a viable use.

This LRMP also recognizes the South Suburban Airport as a "project of regional significance" and identifies strategies to fully leverage the benefits that the new airport may bring while recognizing and addressing potential adverse effects from the airport. In this regard, the plan recommends the county to take steps to ensure that development near the airport is carefully planned, coordinated and regulated. Figure 2.2-1 is a map of the preferred land use development forms as presented in the LRMP.

The importance of developing efficient and effective traffic flows for the South Suburban Airport is recognized in the LMRP, but it will also be important for the county to address rail transit if the airport is constructed. If the land for and near the South Suburban Airport are designed with the commuter rail extension in mind, the extension could support the South Suburban Airport and associated development as well as benefit from it.

This proposed commuter rail line may benefit from its connections to the South Suburban Airport and therefore should be coordinated with Will County, IDOT, and others involved in the airport's planning processes.

Figure 2.2-1 – Development Form Map



Source: Will County LRMP-Policy Gateway. 2002

2.2.2 Municipal Land Use

The municipalities of Monee, Peotone, and Manteno have already addressed the South Suburban Airport in their comprehensive plans since it will spur new employment opportunities within the area and create additional residential demand.

Monee

Much of Monee's future development relies on the South Suburban Airport. If the airport is built as currently planned, it will occupy most of the land near Monee. Monee therefore has given a commercial designation to most of its land near the planned airport. If the airport is not built, Monee will designate this land as residential.

Peotone

Peotone's 1997 Comprehensive Plan acknowledges the rapid pace of development that is adversely affecting the community. It has therefore sought to slow down residential demand and promote commercial and industrial growth. The Village believes that pursuing these goals will effectively balance residential, business, industrial, and recreational demands within its borders and 1.5 mile unincorporated planning area.

Peotone seeks to promote single-family, large lot housing and low level multi-family housing within its borders. It also seeks to promote the development of large estates within its 1.5 mile unincorporated planning area in order to help the village retain its semi-rural, small town character.

If the airport is built, the village expects increased demand for industrial sites, at the expense of residential opportunities. Without the airport, future commercial and industrial development will be focused on the central business district and the IL 50 and I-57 corridors.

Manteno

Manteno's 1998 Comprehensive Plan discusses the vision of future development in the village and an adjacent 1.5 mile unincorporated area. With the village currently at 720 acres, the plan addresses the addition of close to 10,200 acres, 14 times larger than the existing village.

With this plan, the Village of Manteno seeks to retain its residential character and allocate most of its new housing north of the village's existing boundaries. A total of 5,500 additional acres are designated for residential development.

Next to the proposed train station site at 10000 N Road, the village plans a transit-oriented development that will have commercial properties, single-family housing, mixed density housing, and open space. From 9000 N Road to 7000 N Road and from US 45/52 to 4000 E Road, the Village envisions scattered commercial development along IL 50, and some single-family housing and significant light industrial/distribution development north of Rock Creek's south branch between IL 50 and I-57. Commercial/office development is also designated for the intersection of US 45/52 and 9000 N Road. Manteno anticipates new industrial development on 4,400 additional acres, with 290 acres dedicated to new commercial development.

In response to the South Suburban Airport, the Village of Manteno adopted an addendum to its 1991 Comprehensive Plan, which was later updated in 1996. It addressed the additional 1.5 mile adjacent unincorporated area, and noted that Manteno was in the process of negotiating agreements with adjacent communities.

In thinking about future development if the airport is created, the Village adjusted its development strategy to take advantage of the spin-off demand for airport-related commercial services. Manteno

would still direct residential development north of the existing village boundaries, but would seek airport-related commercial development east of IL 50 and other areas that are close to the airport.

Bourbonnais

Like the aforementioned communities, Bourbonnais' comprehensive land use plan addresses land use within the village as well as an adjacent 1.5 mile unincorporated area. Forty-six percent of the village's land is undeveloped, while 46% of it is zoned for single-family residential development. In the unincorporated areas that have sewer and water service, Bourbonnais has zoned most of the land as residential or agricultural. Bourbonnais is growing quickly and is anticipating a special census to assess how fast it is developing.

Bradley

The Village of Bradley is currently revising its comprehensive plan, which was previously updated in 1998. It has some new commercial development east of IL 50 and will likely face new development with the South Suburban Airport's arrival.

Kankakee

The City of Kankakee's 1997 Comprehensive Plan seeks to maintain the city's existing mix of uses, improve and enhance existing developments, and develop land that is adjacent to the city's existing eastern, western, and southern boundaries. (Kankakee cannot expand northward since Bradley and Bourbonnais are north of it.) The city is actively working to develop these areas and is looking to build a new convention center near I-57's Exit 308. The City of Kankakee anticipates increased demand for all land uses, if the South Suburban Airport is built. However, this airport could replace the Greater Kankakee Airport, which is located in southeastern Kankakee. It currently serves small planes, but can accommodate larger commercial aircraft.

2.3 ROAD IMPROVEMENTS

The consultant team has identified future roadway improvement projects within a five mile corridor centered on the existing Canadian National alignment. The consultant team also identified projects that were outside the corridor but provided critical access to the study area. This information came from the Illinois Department of Transportation's Proposed Highway Improvement Program (FY 2004-2008), comprehensive plans, and discussions with the municipalities and counties.

2.3.1 IDOT (2004 to 2008)

I-57: bridge replacement at Kankakee River, south of IL 117
I-57: bridges over ICG Railroad [CN] and IL 50 interchange (PE2, 2004)
I-57: bridge over at 6000 North Road (PE1)
I-57: Manteno interchange (PE2, 2004)
I-57: Monee – Manhattan Road interchange reconstruction, bridge replacement
US 45/52: bridge superstructure and vertical realignment (land acquisition)
US 45/52: bridge superstructure, Minnie Creek
US 45/52: bridge replacement (PE2)
IL 17/IL 50/US 45/Kennedy Drive: intersection improvements (signals) at fourteen locations in Kankakee
IL 17: Lowe Road intersection improvement (signals)
IL 50/Indiana Ave: culvert replacement, hazardous materials mitigation; south of Conrail Railroad [NS]
IL 50: new left turn lanes at intersection with Court St (Crete-Monee Road)
IL 102: resurfacing of Will County Line to US 45/52 (2004)
IL 102: bridge replacement over Davis Creek (land acquisition, 2004)

IL 113: bridge replacement, relocation over Wiley Creek (land acquisition)
IL 113: curve corrections, 0.6 mile north to 0.2 mile south of Tower Road (land acquisition)
Armour Rd: resurfacing, curb and gutter, bi-directional turn lane, from US 45/52 to IL 50 (PE2)

2.3.2 IDOT Local Projects for 2004 – 2006

Kankakee: Fifth Avenue bridge replacement over Soldier Creek, north of IL 17
Kankakee: widening and resurfacing of Waldon Road, (Division to Lowe) and Lowe Road (Waldron to Day)

2.3.3 Other Local Projects

Bourbonnais: southerly extension of Belson Drive to McKnight Road
Bourbonnais: closing McKnight Road grade crossing at Canadian National tracks;
Bourbonnais: northerly extension of Belson Drive to Roadway 6000 North
Bourbonnais: Burns Road extension from US 45/52 to Career Center (three lane collector, 2005)
Bourbonnais: Career Center widening from Bethel Road to 6000 N Road (potentially 2006; problematic since it will not all be part of village; seven potential school/church sites without a fee)
Bourbonnais: St. George Road widening 1000 feet east of US 45/52 (five lanes in 2004)
Manteno: 10000 N Road widening and extension to 11000 E Road and IL 1
Manteno: County Highway 9/ 9000 N Road straightening, widening, and improvement from US 45/52 to village, through village at Division Street, and east to Grant Park
Manteno: 7000 N Road widening and extension to industrial area
Manteno: IL 50 - expansion and improvement to address additional airport traffic
Manteno: US 45/52 - widening and improvement
Monee: Monee – Manhattan Rd widening to four lanes, US 45 to IL 1
Monee: IL 50 – Expansion and improvement to address traffic issues

The proposed improvements show definite effort to improve north-south and east-west access to the project area while still keeping abreast of highway maintenance projects.

2.3.4 Other Possible Future Road Projects

Brookmont Boulevard Underpass

The Canadian National's underpass at Brookmont Boulevard is a cast-in-place concrete structure for eight tracks that was built in 1926. However, only seven tracks appear to be located there now. The City of Kankakee has applied for federal funds to widen Brookmont Boulevard and repair this structure.

If this project receives funding and is repaired, a station platform could be located over the underpass or immediately north of it. This platform could use the currently unused eighth track bay or a wider railroad area that could result from lengthening the underpass. The design for this underpass' renovation could include access to a center platform from the underpass' pedestrian walkway.

The consultant team has included commuter rail station costs associated with the Brookmont Boulevard overpass in this study's cost estimates. However, it assumes that upgrades to the bridge itself are outside of this project's scope.

I-57 / 6000 Road Interchange

A new Interstate 57 interchange is being discussed at 6000N Road. In conjunction with the 6000N Road Corridor Study, this will provide vastly increased access to the industrial area bounded by US Route 45/52 and Illinois Route 50 between Manteno and Bradley and Bourbonnais.

Engineering studies are underway to plan for the eventual replacement of structures over I-57 to accommodate six lanes on I-57. The replacement of these structures, and the additional traffic carrying capacity envisioned by those structures will have a major impact on the continued growth and development of the region between Bradley, Bourbonnais and Manteno. This continued growth will further support the extension of commuter rail service into Kankakee County.

6000 Road / Warner Bridge / I-57 Exit-308 Corridor

An Illinois Tomorrow Planning Grant was issued to Kankakee County for a Corridor Study of the east-west corridor between 5000N Road and 7000N Road from Warner Bridge Road to Vincennes Trail, and for the north-south corridor connecting Interstate 57 Exit 308 with the Kankakee River crossing at Warner Bridge Road. The study recommended a connecting road from 2000W Road to I-57 Exit 308 shown in Appendix A6-10. The study recommended a major east-west roadway along 6000N Road that would provide access to an Interchange with I-57 at 6000N Road. The projects recommended in this study are at present unfunded. Kankakee County will make an effort to preserve the proposed right-of-way for the projects, and will recommend that other units of local government do likewise.

3.0 POTENTIAL IMPROVEMENTS

3.1 RAILROAD INFRASTRUCTURE

There are a number of different physical alternatives possible for providing commuter rail service to Kankakee County. At a minimum, the following sub-alternatives are possible:

- Four different motive power choices exist.
- Three general classes of upgrades or uses of the Canadian National Railway (CN) mainline right-of-way are feasible.
- There are five alternative alignments for getting from the Metra Electric District (MED) into a downtown Chicago passenger station.
- Four service alternatives exist for connecting to the South Suburban Airport (SSA)
- At least two different end-of-line yard concepts can be envisioned.

There are nearly 480 mathematical combinations of these alternatives. Many of them can be immediately eliminated from further consideration because they are not logical or consistent. For example, diesel-hauled trains cannot go into Metra's Randolph Street station because there is no ventilation for diesel exhaust and there is insufficient head room in the facility to add that ventilation. Nevertheless, the number of feasible alternatives still runs in the dozens.

This section contains technical descriptions of the various alternatives. These descriptions provide justifications for culling down the dozens of alternatives to a more manageable group of alternatives that can then be compared in an evaluation matrix. That culling down and evaluation matrix comparison is provided in Chapter 7. If conditions change after this study, the discussion and data provided herein and the component costs from Chapter 5 can be used in future studies to resurrect alternatives that were set aside or to look at new alternatives.

3.1.1 Motive-Power Modes

Diesel-Hauled

This is the most common mode used on the Metra system today, consisting of a diesel-electric locomotive hauling a consist of coaches and a cab car at the other end of the train. Typically, the shortest length train on the Metra system is four cars, meaning that three coaches and a cab car are propelled by the locomotive. Both the locomotive and the cab car have controls for operating the train, allowing the train to operate in what is known as the "push-pull" mode. This eliminates the need to wye or turn the train at an end-of-line station before making a trip in the other direction. Only a crew change from one end of the train to the other is required and that is normally achieved during the station layover time required for passenger discharge and boarding.

The advantage of this mode is the commonality with the rest of the Metra system, meaning that operating and maintenance employees are familiar with the requirements of this equipment. It also means that if Metra were to operate the Kankakee commuter rail service, this equipment could be maintained at an existing Metra facility (such as the 47th Street shop and yard on the Rock Island District) during the midday period.

This also brings up an important point about this mode, and that is the flexibility it offers in terms of the routing to/from downtown Chicago. Since no overhead wire is required (as would be the case for an electric multiple-unit, as used on the Metra Electric District [MED] service), a diesel-hauled consist can be routed over another line or lines to access other Metra commuter rail routes. Of course, this could require new connecting tracks to be built, such as at Harvey to the CN (ex-Grand Trunk) line and at Blue Island Junction to the Metra Rock Island District (RID).

An outlying servicing facility in Kankakee would be required for this mode (as would be true of any of the other modes being considered). It would require a head-end power installation, where the trains are plugged into a 480 Volt AC power installation when in storage, allowing the diesel engines to be shut down. It would also require drip pans and other environmental precautions, as well as toilet-servicing facilities. Finally, the storage yard would require suitable access between tracks to allow car cleaners to service the coaches and cab cars while the trains are in storage.

This commonality of equipment with the rest of the Metra system could result in a lower acquisition cost if it were possible to include the locomotives required for the Kankakee service in an order being placed by Metra. One issue which might complicate the similarity of the coaches and cab cars with those used elsewhere on the Metra system is the possible need to serve stations on the MED (including University Park), which are equipped with high-level platforms. The typical Metra hauled coach or cab car is configured to serve only low-level platforms. Diesel-hauled trains would need to run on the RID to get into Chicago because of Chicago station ventilation issues discussed below. So, when operating on the RID, the Kankakee trains would have to be able to serve a low-level platform.

The 26-car electric multiple unit (EMU) order for the MED, which is currently in design will provide a stairwell and trap arrangement that allows the car to serve both high- and low-level platforms. Therefore, if the diesel-hauled mode were to be selected for the Kankakee extension service, it is possible that additional EMU-style carbodies could be bought (as trailers) to be hauled behind locomotives. However, the new cars for the MED have only one set of stairs that would be able to serve a low-level platform compared to a pair of stairs on typical Metra hauled coaches. If used on the Kankakee cars, this single stair arrangement could make these cars very slow loading/unloading at low-platform stations. A modification to the EMU design is possible, wherein both sets of stairs could be equipped with “traps” to provide for use at either high- or low-level platforms.

Depending on the routing at the proposed South Suburban Airport (SSA), and the timing of other projects (such as the Midwest Regional [High-Speed] Rail Initiative), ventilation of any subway structure in the SSA might be required if diesel-hauled trains were to be used on the Kankakee service. Ventilation is not an issue at LaSalle Street Station, where each of the three alignment alternatives for this mode is presumed to terminate. This is due to the fact that the track area is not covered in this station, allowing the diesel engine exhaust to be vented to the air.

However, there is no ventilation for locomotive exhaust at Randolph Street Station on the MED, nor could it be added easily. Also, Metra service to Chicago Union Station (CUS) is already at or near the capacity of the station, and Metra is seeking ways to relocate its trains from CUS to LaSalle Street station which has spare capacity. Therefore, for this study diesel-hauled Kankakee service will be considered into LaSalle Street station only, and not into CUS or Randolph Street Station.

Considering the above factors, this mode is recommended by the Consultant for further study in the context of the Kankakee Commuter Rail Feasibility Study.

Dual-Mode

A dual-mode locomotive would haul a consist of coaches and a cab car, similar to what was described in the preceding section. However, the dual-mode locomotive is a diesel-electric/electric engine, meaning that it can operate as a standard diesel-electric, or draw power from an external source (either a third rail adjacent to the tracks or an overhead catenary) allowing it to function as an electric locomotive. Recent examples of this mode can be found on Amtrak’s “Empire Service” and the Metro-North Commuter Railroad, operating to/from Grand Central Station in New York City. In addition, the Long Island Railroad also has a fleet of dual-mode locomotives operating to/from New York’s Penn Station. It happens that each of the examples cited previously uses third rail current collection when operating as an electric

locomotive, but there is no reason why these engines couldn't operate off overhead catenary, as is used on the Metra Electric District (MED). To do this, they would have to be equipped with pantographs, similar to those the MED cars use. The raising/lowering of a pantograph to start/end the conversion from/to diesel propulsion might normally be performed in a station. However, it can also be done at speed, as has been done for years on the CTA "Skokie Swift", now known as the Yellow Line.

In the past Metra has considered the possibility of using dual-mode hauled trains. Most recently they reviewed this issue before finalizing the current 26-car EMU procurement. Their prime motivation for considering dual-mode was the elimination of much of the overhead catenary electrification of the MED, thereby reducing the yearly maintenance costs on that expensive subsystem. They chose not to pursue dual-mode technology for many of the reasons discussed in this report and summarized in Chapter 7 under Alternative F. However, this most recent decision not to pursue dual-mode was driven largely by the need to keep the electrification from Kensington (MP 14.6) into downtown Chicago to enable NICTD's South Shore EMUs to operate in from Indiana. That section of the MED represents a little over half of the mainline by milepost measurements, but it is a full 4-track mainline operation. So in terms of catenary miles, dual mode would allow Metra to eliminate only a quarter to a third of all of its catenary.

The South Shore Line has also considered a version of dual-mode propulsion but only for its planned new Lake County (IN) service. That has not advanced beyond the concept stage at this time.

The dual-mode engines operating to/from New York City are required to conform to ordinances and other regulations requiring the use of electric propulsion on trains operating to/from these two depots in Manhattan. A similar situation would exist on the MED if it were decided to route the Kankakee extension trains to/from Randolph Street station, which is covered by the Lakefront Ordinance of the City of Chicago. While it is true that diesel-electric locomotives did operate into this facility on the South Shore Line several years ago, this was a temporary situation. Furthermore, at that time the South Shore's portion of the Randolph Street terminal was open to the environment, negating the need for any special ventilation requirements. This would not be the case in the MED portion of the station which is completely covered by adjacent buildings. Nor does it still apply for the South Shore station since it has since been covered by the new Millennium Park.

Applying dual-mode technology to the Kankakee service would mean that the engine would operate as a conventional diesel-electric unit between Kankakee and the SSA or University Park. Although Metra SSA service is almost certain to be an extension of MED and thereby provides electrical catenary over the tracks, the high-speed rail service that is planned for the airport is equally likely to be diesel-hauled and thereby require ventilation. Therefore, a reasonable assumption is no additional costs are needed to provide either electrical propulsion north from the airport or ventilation through the SSA facilities. Furthermore, the conversion point for dual-mode vehicles from diesel to electric is very flexible and can be chosen later based on the final facility design and operational considerations.

There are several significant downsides for this mode. It is not currently in use on any of the Metra lines, nor is there any other projected use for it by Metra. Transit properties generally try to standardize equipment to maximize the economies of scale associated with original capital costs, maintaining spares, training employees, intermingling fleets, and general operations and maintenance (O&M) efficiencies. As noted above, Metra has already considered dual mode and decided against it. Selecting dual mode for the Kankakee would run counter to the prevailing choice of technology within Metra. This technology would be more complex than that on any of the Metra diesel-electrics because it must operate in two distinct modes and be capable of fairly high-performance in both of them. Because of this complexity, it will generally have a higher level of technology that can be expected to reflect in higher O&M costs than those associated with either a straight diesel-electric locomotive or an electric multiple unit car (as used on the MED).

Another aspect to consider is that the dual-mode engines would be unique to the Kankakee extension (no other Metra line extension or new service is contemplating the use of this mode) and place new burdens on those existing maintenance and storage facilities. Running and heavy repairs of the engines would have unique requirements and introduce additional parts requirements to existing storerooms, etc. The midday servicing/storage on the MED are currently done at Weldon Yard (18th Street, Chicago). The crews working at this location do not deal with diesel locomotives or hauled cars, meaning that this mode would require additional training for the maintenance personnel. Furthermore, as Weldon Yard does not deal with diesel-electric engines, the facility would have to be outfitted with drip pans and other environmental equipment to prevent against possible fuel spills, etc.

Use of the dual-mode engines would not relieve the requirement that the outlying servicing/storage facility be equipped with a head-end power installation, drip pans and other equipment as described in the preceding section.

A further limiting factor with the dual-mode locomotive is the amount of current that can be drawn through the pantograph shoe. As there would only be one locomotive per train, only one pantograph would be up, unlike a train of EMUs where several cars will have the pantographs up. For closely spaced stops, the EMU will out-perform the locomotive due to the fact that the EMU train, with all or several cars powered can draw more current from the wire and put more tractive effort into the rail to start the train and get it up to speed quicker than the lone engine on a locomotive-hauled train.

The uniqueness of the dual-mode engines would eliminate the possibility of lowering the acquisition costs for Kankakee motive power by increasing the size of an existing Metra order. While both of the two largest North American locomotive buildings, General Electric and GM's Electro-Motive Division (EMD), have built dual-mode locomotives, EMD's product is no longer offered. Metra's latest order of diesel-electrics was built by MPI. To date, MPI has not built a dual-mode locomotive. These market limitations, the number of builders that have experience with such a product, the general demand for dual-mode locomotives in the US, and the likely small order from Metra, all suggest that the per-locomotive price would be considerably higher than what Metra would pay for a diesel-electric or an electric multiple-unit car.

Furthermore, the coaches and cab cars they would haul, while externally similar to other Metra rolling stock, would also be unique in that the cab car would have to be equipped with mode selection (diesel vs. electric) equipment, and the cars within the consist would have to be able to trainline this command (i.e., allow it to be implemented from a cab car controlling the train with the locomotive in "push" mode). For the routing to/from Randolph Street, these coaches and cab cars would have the same problem as was discussed in the preceding section. That is, the basic Metra design must be modified to allow them to serve both high- and low-level platforms, thereby making these cars even more unique.

Finally, there are reasons for Metra ordering a larger fleet of dual-mode locomotives and coaches than it would for conventional diesel-hauled trains. First, because this equipment would be unique and require only a small fleet, Metra might wish to ensure in the future that they can provide reliable service or make modest improvements in it by having a larger than normal number of spare locomotives and coaches. Secondly, the heavy use of downtown stations provides incentive to Metra to maximize use of every platform. Therefore, although the Kankakee ridership itself may not dictate it, Metra may desire to have the capability of sizing all trains to the maximum platform length, and then schedule the Kankakee trains to fill other seats by making additional stops along the remainder of the route. Both of these arguments would increase the size of the initial order of rolling stock and increase the net initial capital cost attributable to the Kankakee service. Yet neither would add any more revenue to the other side of the financial equation.

In short, it appears that the choice of dual-mode trains would require a larger fleet of more expensive locomotives and coaches, and would generally reduce Metra's opportunities for economies of scale in capital and O&M areas. As a result, this mode is not recommended by the Consultant for use in the Kankakee service nor for further review in future continuing studies.

Diesel Multiple Unit

The diesel multiple unit (DMU) is a self-propelled railcar. It has the diesel engine and drive mechanism mounted on it and can carry passengers as well. DMUs are widely used in Europe and Asia for both commuter rail and long-distance applications.

Products made for the European market are in limited use in North America. Ottawa, Ontario uses three of Bombardier's "Talent" style DMUs on its "O-Train" commuter rail operation. In mid-2004, New Jersey Transit began operation on its 34-mile South Jersey light rail transit (LRT) line, using a fleet of 20 Adtranz-built (now Bombardier) DMUs. In February 2004, industry journals reported that the North [San Diego] County Transit District placed an order for 12 Siemens "Desiro" type DMUs. Additionally, United Transit Systems (UTS) has recently won an order for up to 32 new DMUs for the Triangle Transit Authority (of North Carolina). However the UTS vehicle exists only in concept at this time.

A fundamental fact about the European/Asian market DMUs is that they do not comply with Federal Railroad Administration (FRA) requirements relative to crashworthiness. Therefore, in order to use these non-compliant products in the US, the rail line operators listed in the preceding paragraph had to agree to a temporal (time-based) separation of commuter rail and freight train operations. This ensures that there is no possibility of a collision between a non-compliant DMU and a freight or passenger train which did conform to the FRA requirements.

In the case of New Jersey Transit (NJT), the agency entered into negotiations with Conrail (then the owner of the proposed route of the South Jersey LRT service). After protracted negotiations, NJT was forced to buy the rail line and contract out the freight operations in order to ensure that the temporal separation was achieved. It is important to note that this track purchase was possible only because the line was a branchline, not a mainline as the CN line through Kankakee is. Further, the CN is densely trafficked, with about 25 trains per day in both directions. These include a mix of freight and passenger moves. All the cars and locomotives in these trains conform to FRA requirements (including crashworthiness). So running on the CN lines will require FRA-compliant DMUs.

Even if the Kankakee extension were to be built on totally separate tracks from the CN line, an expensive rearrangement of the tracks and platforms at University Park would be required for dual facilities to keep non-FRA-compliant DMUs separated from FRA-compliant Metra EMUs rather than sharing station trackage. That is because a common platform transfer between the Kankakee extension trains and the MED trains is required for passenger comfort and convenience. Certainly, making this transfer as easy as possible is essential to attract and retain ridership.

For these reasons, use of a non-compliant DMU would not be acceptable for the Kankakee extension service. To obtain a compliant DMU, there are presently two options: rebuild a 40 to 50-year old Budd-built Rail Diesel Car (RDC) or purchase a new, compliant DMU from Colorado Railcar or United Transit Systems (the only firms which can offer such a product).

Rebuilding of RDCs for current-day operations has been successfully employed by Trinity Rail Express (in Dallas, TX), a commuter operation in Syracuse, NY and by VIA the intermediate- and long-distance passenger train operator in Canada. In the case of the Dallas and Syracuse operations, these rebuildings were undertaken before any new, compliant DMU was available. VIA had a large number of RDCs it had been using for various services, allowing the operator to select the best cars for rebuilding and continued operation on a limited number of routes.

Industry journals reported that Dallas spent about $1.69 million per RDC in 1996. If this is escalated to current-year prices (at 4% per year) the total in 2004 dollars would be $2.23 million. This compares to a price for a new, compliant DMU from Colorado Railcar which would be around $2.5 million. Even after extensive rebuilding, the 40 to 50-year old RDC will only be suitable for another 15 to 20 years of service, before requiring further attention. While the stainless steel structure and body of the car can be expected to have a very long service life, the trucks and propulsion equipment will require complete replacement on a more frequent basis. Given these factors, if DMUs are to be used for the Kankakee extension, we recommend that only new compliant cars be considered.

The DMU alternatives included on the evaluation matrix of Chapter 7 reflect only shuttle services between Kankakee and University Park. While the cars are physically capable of operating service to/from downtown Chicago, the capacity at the downtown depots is such that higher-capacity trains (such as those operated on the MED or other Metra radial routes) should be operated to make the best use of the platforms at these stations.

DMUs are not currently used on the Metra system. They have been considered for use on a couple of proposed Metra routes. For example, the conceptual planning for the Northwest Corridor (I-90)/STAR Line (Suburban Transit Access Route), from O'Hare to Hoffman Estates via I-90 and between Hoffman Estates and North Joliet via the Elgin, Joliet & Eastern (EJ&E), was predicated on the use of three-car DMU trainsets. For the more intensely trafficked Northwest Corridor portion, these were envisioned to be coupled into six-car trains.

Use of DMUs has also been considered by Metra for the proposed Inner Circumferential route linking O'Hare and Midway Airports via the Indiana Harbor Belt. Therefore, the use of DMUs on the Kankakee service would be consistent with Metra's planning.

The DMUs have been considered for these other Metra routes as they are a more economical way to operate frequent service, which is thought to be essential on circumferential routes to promoting ease of connection with the trains on existing radial Metra lines. This same philosophy could be applied to the Kankakee service, leading to operation of more than Metra's previous new service "standard" of 10 round trips per day. After a short period of an 8-trip schedule from opening day, that 10-trip operating schedule is what Metra has been operating on the newest of its lines, the North Central Service on the CN to Antioch, IL.

In terms of maintenance and operations requirements, the DMUs will be new to Metra, but the staff will soon become familiar with these vehicles. If the proposed STAR line extension through Joliet and east to Lynnwood (on the Elgin, Joliet & Eastern rail line, near the Illinois-Indiana border) is put in operation, this would put another service using DMUs in fairly close proximity to the Kankakee service. Depending on where the maintenance base for the STAR-assigned DMUs is located, it might be possible to maintain the Kankakee-assigned DMUs out of that same facility.

An outlying servicing facility in Kankakee will be required for the DMUs. Head-end power will have to be provided at this site in order to shut down the diesel engines overnight and on weekends. Drip pans and other environmental precautions will be required in the servicing facility. As with the hauled coaches, this site will also require toilet servicing and provisions for car cleaners to access the stored consists.

The price of cars can depend on timing. The procurement of the DMU orders for the Kankakee service and the Metra Northwest Corridor/STAR Line might be combined to achieve a lower per-car price.

As with the diesel-electric hauled option for the Kankakee service, the configuration and routing of the Kankakee service through the SSA may require the provision of ventilation to handle exhaust

from the DMUs. It is possible that provisions for high-speed rail may bear the cost of the track, stations and ventilation at this location.

DMUs are considered to be a viable option for the Kankakee-University Park shuttle service. The Consultant recommends further attention as the feasibility study progresses.

Electric Multiple Units

This type of vehicle has operated on the MED (and its predecessor) since 1926. The South Shore Line's (SSL) commuter service into northwestern Indiana also uses this type of car, but with a different, single-level configuration. Metra has recently ordered 26 new EMUs (with the design based on the locomotive-hauled cab cars now being delivered). This commonality of design allowed the builder, Nippon-Sharyo, to offer a more attractive price to Metra, compared to a stand-alone order for EMUs. Delivery of these cars is expected to begin in 2005. Metra is intending to place a second order for up to 160 EMUs which are intended to replace the existing "Highliner" fleet of EMUs. However, according to Metra's "Preliminary 2005 Program & Budget" (issued October 2004), this new procurement is currently on hold pending receipt of funding.

The use of EMUs on the Kankakee extension would have the potential advantage of commonality of equipment with rolling stock already in use on the Metra system. This commonality of car equipment should result in a lower operations and maintenance cost per car-mile. It should also reduce the costs associated with operations and maintenance employee training on the new cars.

The biggest downside toward the application of the EMU is the physical plant required to distribute traction power to the cars. On the MED and SSL this is achieved by overhead catenary. Metro-North and the Long Island Railroad (in metropolitan New York) use third rail to distribute the power. A complete installation of overhead catenary includes the wire and supporting towers, as well as substations on a frequent enough spacing to support the power demands of simultaneous starting trains and/or failure conditions at an adjacent substation. Representatives of the CN have indicated that the carrier will not accept the installation of wire and catenary support towers on their mainline track south of University Park because of the interruptions required for added maintenance and clearance issues for double-stack container trains, multiple-level auto carriers and other high-profile freight cars. Therefore, new electrified tracks would be required over the full 27.9 route-miles between University Park and Kankakee.

One way in which the catenary capital costs might be mitigated is if the MED is extended to the SSA prior to implementation of the Kankakee extension service. In this case, the Kankakee extension project would be responsible for design, procurement and installation of the catenary, supporting structures, substations and other required equipment only between the SSA and Kankakee County saving about 5 miles of improvements to the Kankakee project.

Another factor that must be considered in the determination of the feasibility of using EMUs for the Kankakee operation is the ridership and the resulting frequency of service to accommodate this projected ridership. Certainly, on the basis of five round trips per day, the investment in the physical plant required for electric operation (regardless of the earlier question about using the CN tracks versus installing dedicated commuter rail tracks) is another issue to be addressed in the evaluation matrix comparison of alternatives.

The EMU offers no flexibility in terms of routing or downtown terminal access, without including the expense of equipping another rail line for electric operation. Therefore, it has been assumed that any alternative using EMUs will serve the Randolph Street Station in downtown Chicago, as is the case for the MED.

Equipping of a line through the SSA with electrification equipment depends on the timing of the Kankakee extension relative to any extension of the MED to the airport. Regardless of this

situation, no special ventilation would be required for the SSA stations, other than that which may be provided to improve the overall station environment.

An outlying servicing facility could be required in Kankakee for the EMUs. However, an alternate solution may be to expand the size of the proposed Metra yard in University Park to accommodate the added Kankakee trains, since this yard will be built to service the retention toilets included on the 26-car EMU orders now in progress. The downside of this arrangement is that additional car miles would be operated each and every day to get the cars to this yard at the close of the operating day. In a similar context, the trains would have to operate from University Park to Kankakee each morning in order to be in place for the AM peak period trips. This operation to/from the University Park yard would most likely be without passengers, so that no revenue would result from this additional mileage. However, this is another aspect which should be considered when the ridership forecasting for the Kankakee extension is performed.

Use of EMUs for the Kankakee extension service is recommended by the Consultant for continued study at this time.

3.1.2 New Track Requirements

Each of the modal and alignment alternatives will require some new trackwork, at the very least to connect the MED and CN tracks at University Park (assuming the CN would allow the extension service trains to operate on its tracks south of that location). There are other new track requirements associated with the extension, which are discussed in the following paragraphs.

Diesel-Electric and Dual-Mode Hauled Trains, and Diesel Multiple Units

Depending on CN's acceptance of the operation of these types of trains/vehicles over its mainline tracks, it may be that all that is required is a connection between the MED and CN tracks at University Park and the storage yard in the Kankakee area.

If this is the case, two sidings should be provided at the Kankakee station to allow the commuter trains to take their layover time without blocking the mainline track. This will allow for the simultaneous staging of at least two trainsets. Ideally, these station sidings would be directly connected to the trackage leading to the Kankakee storage yard, so that moves to/from the yard can be performed without impacting the CN mainline track.

The yard trackage should be sufficient to accommodate the opening-day trains/cars required for the extension, plus 10% expansion. The actual yard site should be substantially larger than the initial facility constructed, so that it can accommodate future expansion, as ridership increases, etc.

However, it may be that CN will determine that the only acceptable way to accommodate the commuter trains on its mainline will be for the commuter rail project to pay for the double tracking of the CN from University Park to Kankakee. To downtown Kankakee, for example, the new trackage would total 92,938 track-feet. The two sidings on the CN, in Manteno and Bradley/Kankakee total 41,174 track-feet in length. Furthermore, there is an industrial siding lead in University Park (south of Stunkel Road) which could also be incorporated as part of the new second main track. However, it is likely that these sidings and lead tracks would require an upgrade to be suitable for use as mainline trackage. The upgrade work can be done at a lower cost than the construction of new trackage, of course.

As part of this double-tracking project, both Metra and the CN are likely to require additional crossovers between the two main tracks in this section. This is an added expense for the commuter rail project, but will serve to increase the operational flexibility for all users (CN, NS, Amtrak and the commuter trains).

Finally, there is the possibility that CN will not accept the commuter trains on its trackage under any circumstances. In this instance, a totally new track will be required over the full length between University Park and Kankakee County. At the very least, for service to downtown Kankakee there should be two sidings off the commuter track, spaced about 8 miles from either end of the extension. This will increase the flexibility of the operation, by providing places where a bad-order train can be temporarily moved and/or that facilitate meets between trains. Exact siding locations and lengths can be determined as the operating plan for the extension is developed. As with the previous discussion, the Kankakee station should have two tracks to hold commuter trains, and be directly connected to the track leading to the commuter train storage yard.

If the Kankakee trains were stored in the expanded Metra University Park yard, the matter of meets on the commuter rail extension would become more critical, as the four trainsets would need to deadhead down to Kankakee each weekday morning. Depending on the schedule used for these moves, it may be that the earlier northbound revenue trains will meet deadheads coming from the yard. This may require additional sidings or relocation of the sidings to facilitate the meets.

Another option in staging trains from the yard is to "fleet" the trains, that is run them on a close headway, one behind the other, or as one very long train down to Kankakee County in the morning, for example. This could eliminate the possibility of meets between revenue and non-revenue trains, but it would require additional track and platform space in Kankakee, since all trainsets might be in the station at once. Again, this is a decision that can be made as the extension operating plan advances.

Note that new track would be required on the UP/CSX line through parts of South Holland and Dolton if it is decided to route the Kankakee extension trains via this line. This new trackage would consist of passenger main track(s) to the east of Yard Center and the trackage on the passenger flyover at Dolton Junction.

Electric Multiple Units

In the case of EMU operation on the extension, CN has been clear that an extension using this mode would be on separate tracks south of University Park. Therefore, the preceding three paragraphs in the diesel-electric discussion would apply to this mode, as well. The discussions about yard location and sizing and the effect of yard location on passing siding location and quantity also apply.

3.1.3 New Structures

On the CN mainline, there are seven (7) waterway crossings identified between University Park (MP 31.1) and south of Kankakee at the southern limits of the project corridor (MP- 64.0). Between University Park and the City of Kankakee, Ford Creek is crossed at approximately milepost MP 37.3, and the Rock Creek is crossed twice south of Manteno, once near MP 47.5 and again at MP 48.8. As the corridor continues through and south of the City of Kankakee, there are additional waterway crossings at the Kankakee River at MP 56.3, a small culvert at MP 57.20, Gar Creek at MP 57.70 and Minnie Creek at MP 60.10.

The existing bridges over all of these waterways were originally designed to accommodate multiple tracks. However, over the years, the tracks over most of these bridges have been reduced to a single track, with only the Gar Creek and Minnie Creek bridges retaining multiple tracks. As it has been some time since multiple tracks were installed on some of these structures, at the very least the structures must be inspected to determine whether or not they can be used to accommodate either new second main track for joint use or a new commuter rail track paralleling the CN mainline.

The line section between University Park and MP 64.00 south of Kankakee includes eight overhead crossings of local roads and highways. Visual inspections and the previous ICRR multiple track mainline indicate that there is sufficient clearance for added tracks. However, these structures will have to be inspected more thoroughly to determine whether or not the abutments, columns or other structural elements and/or repairs have been located such that multiple tracks could be accommodated on the CN (either as part of the double-tracking of the rail line, or to provide the separate commuter main track). Note that the location of sidings off the commuter main track should be chosen so that multiple commuter tracks over or under bridges are minimized.

The 8-track railroad bridge over Brookmont Boulevard (MP 54.7) is also a concern. It is discussed at the end of Chapter 2.

Other structural requirements are specific to the alignment being used. Those are discussed below.

CN-MED-UP-NS-RID Routing

MED service terminates at Randolph Street Station in downtown Chicago. That station is underground and does not have locomotive exhaust ventilation so diesel powered trains will not be able to enter the station.

DMUs are not likely to operate into down downtown Chicago on a regular schedule because of operational efficiencies. DMUs are specifically designed for lower levels of ridership and shorter trains. Yet to make optimal use of the busiest commuter rail stations in downtown Chicago, trains should be sized to correspond roughly to those longer Loop platforms. Although DMUs can be coupled into longer trains, those trains would be inefficient compared to conventional diesel-hauled trains. The single larger engine of one locomotive will be more energy and maintenance efficient. Also, a locomotive-hauled train allows the entire propulsion mechanisms in the locomotive to be parked away from the passenger platform boarding area, effectively creating a higher capacity train than a train of DMUs of the same platform length.

However, if diesel locomotive-hauled coach trains are to be a viable scenario for operation between Kankakee County and downtown Chicago, a different downtown station from Randolph will be needed. A different route will also be needed to that other station.

There is only one station in downtown Chicago which could accommodate the

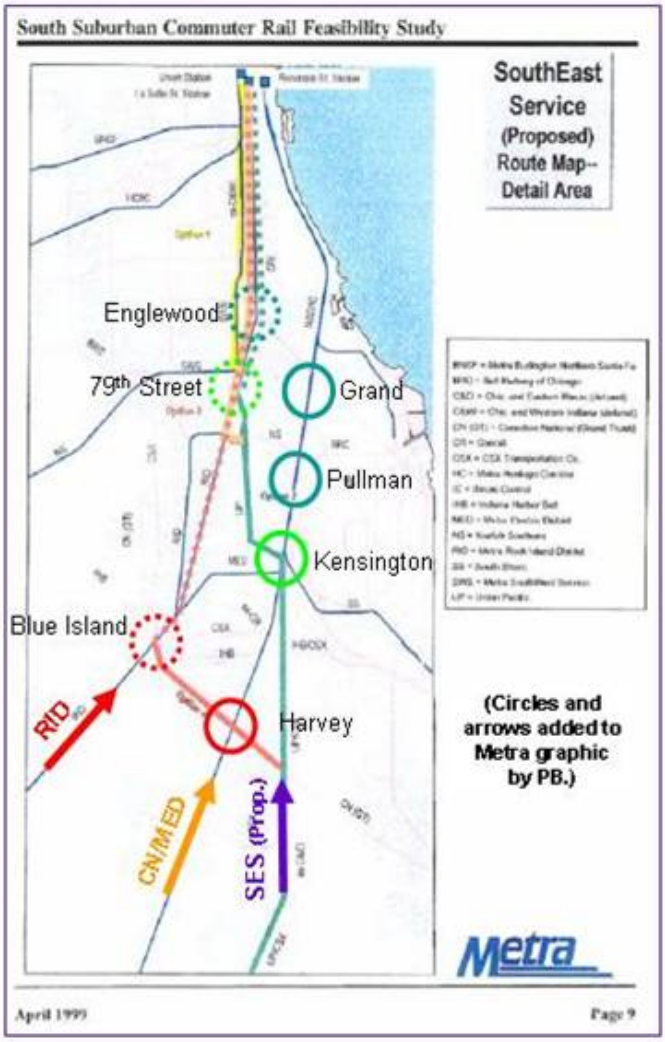


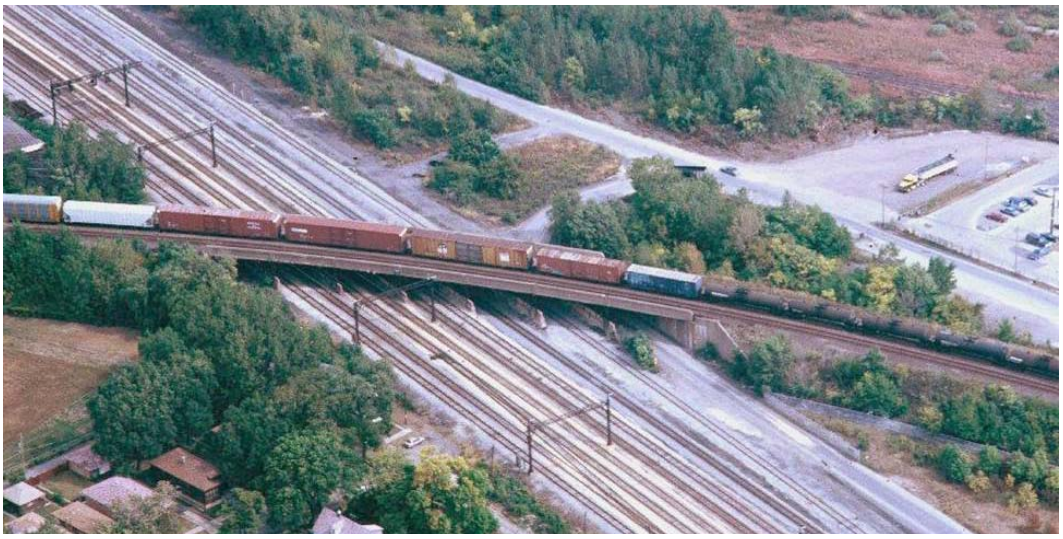
Figure 3.1-1 – Alternate Routes within Chicago

Kankakee diesel-hauled service, La Salle Street station. Chicago Union Station (CUS) is already crowded with operations from several Metra lines and Amtrak. In addition, proposals for the addition of high speed rail (reference 15) would most likely connect to other Amtrak services at CUS, further burdening the stations operations. In fact, Metra is looking for ways to move some services from CUS to La Salle Street station.

The question of routing trains from the south suburbs of Chicago to La Salle Street station has already been studied as part of a feasibility study for Metra's South East Service (SES) (reference 48). The background map for Figure 3.1-1 is taken from one of the final reports of that study. The relative positions of the proposed SES and the existing MED service are shown by arrows entering from the bottom of the map. The SES line would connect to Metra's Rock Island District (RID) which feeds into La Salle Street station and is also shown as an arrow entering at the bottom of the Figure. If the SES is built, it must cross the MED, and the study shows those crossings at either Harvey or Kensington on the map. Aerial photographs of those two sites are shown in Figures 3.1-2 and 3.1-3. Connections between the CN/MED and the SES at either of those locations are feasible, but, of course would be expensive.

Figure 3.1-2 – View to northwest of Harvey Junction (MED MP 19.8)

Figure 3.1-3 – View to northwest of Kensington Junction (MED MP 15.0)



Metra is continuing work on the SES. But if the SES is not ultimately built, a connection between the CN/MED and the RID for the diesel-hauled Kankakee service would have more alternative routes to choose from, as shown by the pairs of solid and dashed circles in Figure 3.1-1. Two of those connections (Englewood and 79th) are part of, or very close to, rail-over-rail grade separation improvements planned as part of the Chicago Region Environmental and Transportation Efficiency (CREATE) Program. CREATE is a Chicago region freight railroad improvement program that is being undertaken with federal, state and railroad funding.

Without the SES, more construction would be required to connect CN/MED commuter rail trains to the existing RID service. Two rail-to-rail connections plus the upgrading of the connecting tracks between those connections would be needed.

All of the construction discussed above would be required solely for the benefit of the Kankakee service, so the costs associated with it should be proportioned to the diesel-hauled coach alternative in this study. The conceptual engineering, costing, trade-off study, and selection of this route will depend upon the decision on the SES, and, in any case, is well beyond the scope of this study. However, one likely routing scenario, the Kensington-79th connection, is discussed below as evidence of the feasibility of the overall CN to La Salle Street Station scenario.

For the Kensington-79th connection, new structures will be required to connect the MED to the UP near 119th Street, Chicago, and to connect the NS to the RID near 78th Street, Chicago. While these connections can be single-track, given the low frequency of train operation envisioned for the opening day services on the Kankakee extension, they will still be significant construction in that they connect two grade-separated rail lines in both instances. Furthermore, in each case both of the rail lines are themselves grade-separated with respect to the surrounding streets/ neighborhoods. In order to prevent the connections from becoming operational choke-points, it may be wise to build the structures to accommodate a double-track connection, even if only single-track is initially installed.

In the case of the connection between the MED and the UP, the area to the west of the MED is a lower-income residential. Kensington Park lies immediately to the west of the MED and is in the southwest quadrant where this connection would be located. The parkland raises environmental concerns, which would have to be addressed during preparation of an environmental impact statement (not a part of the feasibility study).

It would be possible to make the connection between the CN tracks (which are to the east of the MED trackage) and the UP line in the southeast quadrant of the crossing, as that area is largely vacant land. However, the downside of this is that the extension trains would have to cross from the MED tracks to the CN tracks and then cross both CN tracks in order to be on the correct side of the right-of-way to make the connection to the UP. One way in which the crossing of the CN tracks could be avoided would be to run the extension commuter trains up the CN tracks all the way from Kankakee to 119th Street, Chicago.

However, there are three major concerns with this routing. First, there's the question of whether or not the CN would accept the commuter trains on its tracks over this extended distance. Secondly, there is the fact that the only passenger station on the CN tracks in this section is at Homewood. This would mean that the commuter rail project would either have to construct new stations at other locations (again, a significant item in the course of negotiations with the CN), or run essentially non-stop from University Park to Homewood, and then from there north to Chicago. This would significantly limit the utility of the extension trains to MED-area riders. Finally, there is a concern that running these trains over the CN would introduce an operational choke-point opposite the CN's yard in Markham.

In the case of the transition from the UP to the NS to the RID, this would be made in the area between 83rd and 87th Streets, Chicago. The surrounding area is largely low-income residential. It is believed that the connection between the UP and the NS could be made at grade (although

this would be a matter of negotiation with the NS) and that the connection between the NS and the RID would be made around 78th Street, after the RID has passed over the NS.

This is the arrangement of connections that was envisioned for the Metra Southeast Service, which might operate over this same routing. However, a major consideration about the connection between the NS and the RID is the fact that a housing development is being constructed on the previously vacant site between the two rail lines (from 78th to 76th Streets). Given this recent development, the location for this connection should be re-surveyed as part of the feasibility study.

CN-SSA-UP-NS-RID Routing

As the plans for the South Suburban Airport (SSA) have not yet been released, it is not possible to envision what the alignment of, or structural requirements for, the rail line through the airport will be. As described in previous sections of this report, a subway alignment is envisioned. Furthermore, as noted in those earlier discussions, it is possible that either a MED extension to the SSA or the high-speed rail project may bear the burden of construction of the rail route to or through the airport. If high-speed rail is built through the SSA prior to the implementation of the Kankakee extension, then ventilation structures will be included as part of the rail physical plant. If not, the Kankakee extension project may have to pay for these. Regardless of this responsibility, the conceptual design of the rail facilities as part of the SSA should make provision for ventilation structures, as adding them to an already-built airport would considerably expand the design and construction costs.

Similarly, the design of the junctions of the airport rail link with the CN and UP rail lines should include grade-separation structures from both the north and south on the CN line and from the north on the UP route. The track, signals and other elements required for rail service would not be installed until rail service is to be extended to the SSA.

In the case of the Kankakee extension, the project would then pay to install the connections to/from the south of the airport on the CN (assuming that the connection to/from the north would be the responsibility of either the MED or high-speed rail projects). Installation of the track, signals, etc. on the connection to/from the north onto the UP would be the responsibility of either the South East Service or Kankakee extension projects, whichever is the first to use it.

Once on the UP, the new structures required to support commuter rail operations will include: sections of the passenger main track(s) to be built to the east of Yard Center; and the passenger flyover at Dolton Junction. As with the connection to the UP in Beecher, the cost of these structures might be borne either by the South East Service or the Kankakee extension projects, whichever is the first to be built.

The new passenger track(s) around yard center will include a bridge over the Calumet River (approximately 159th Street) at the south end of the yard. During preliminary investigations of this alignment for the South East Service, it appeared that a single passenger main could be routed between the abutments and the columns supporting the Sibley Boulevard bridge over the yard. There are some existing buildings to the east of the rail yard and north of Sibley Boulevard that might be impacted by the construction of the passenger main track(s).

Design of the passenger flyover for Dolton Junction needs to be considered in greater detail, in particular where the south end of the structure will be. North of Yard Center, there are streets crossing the UP line at grade every two blocks – 146th, 144th and 142nd Streets. The concern is conformance with Metra design criteria as to the grade on the approach structures and how far back the approach structure must extend. This might require one of the cross streets to be closed (no discussions have occurred to date with the village with regard to street closing), or extension of the structure south of 142nd in order to avoid street closings.

Similarly, the north approach for the Dolton Junction flyover requires further investigation. There are two grade crossings (Lincoln Avenue and 136th Street) in close proximity to each other and the rail crossing. North from 138th Street, the next major crossing is the Little Calumet River, following immediately by grade crossings at 134th Place and 134th Street.

The justification for these additional tracks and structures is that both Yard Center and Dolton Junction are serious operational choke-points on the UP/CSX line. These needs were established as the best way of ensuring that any passenger service on this line could be operated reliably.

3.1.4 Signaling System

Although the existing system is suitable for the current CN operation, the addition of a second mainline track would require extensive upgrades to the signal system including the interfacing of the new track into the signal system. Another key area where signal upgrades would be required include the addition of new solid state signal control points with new universal crossovers to allow for flexible train movement from one track to another in either direction. This requires the re-spacing of fixed block color light wayside signals for proper safe braking operations.

Finally, the new or improved railroad grade crossings would also result in the need to upgrade the signal system to protect the crossings.

Some of the features that would likely be included involve Constant Warning Time (CWT) which automatically adjusts the point at which a grade crossing gate is activated, depending upon the speed of the train. In effect this results in a fast train activating the gate from a further distance than a slow train, providing a "constant" time from when the gates lower and the train reaches the crossing.

3.1.5 Catenary/Substations

If EMUs are used on the extension, catenary towers and substations will have to be erected over the length of the extension, or at least as far north as the SSA, if the MED has been extended to this location prior to inception of the Kankakee extension service.

Substations on the MED are spaced about every 3 miles or so. The ones at Harvey, Vollmer Road and University Park are each equipped with two 2,000 kW transformers. However, the volume of train operation and length of the trains are considerably different in this section than they are projected to be on the Kankakee extension. The same basic three-mile spacing could be used, but with a smaller power output at each substation. As with the yard, the philosophy would be to build what is required for the initial demand, but to design such that future expansion is not precluded.

With regard to substation capacity, that will have to be determined once the ridership forecasting work has been completed. Those efforts will allow the number, frequency and size of the extension trains to be fixed. The power demand can then be ascertained. This, however, is not a typical feasibility study effort. It is more appropriate in the Alternatives Analysis or Preliminary Engineering Phases.

In the case of the dual-mode locomotive-hauled train, catenary supports and a substation would be required in the vicinity of the SSA, but only if these facilities have not been already constructed for an MED extension to the airport.

3.2 RAILROAD OPERATIONS

3.2.1 Station Configurations, Route Length and Running Time

La Salle Street Station (Diesel-Hauled Trains)

As discussed in Section 3.1.3, all three options for the diesel-hauled extension services were predicated on using La Salle Street Station as the downtown terminal. As was discussed in the preceding section, this is because Randolph Street is not suitable for a diesel-electric train, and Chicago Union Station's (CUS) south concourse cannot reasonably accept additional train operations in the peak hours. Use of La Salle Street is consistent with Metra's plans to shift the Southwest Service from CUS. Furthermore, the use of La Salle Street as the downtown terminal would give MED riders an option they do not now enjoy, which might lead to increased usage of the extension trains at the stops north of University Park.

The routing of these trains, on the CN or MED tracks north of University Park has a significant effect on the similarity of the coaches and cab cars to those used elsewhere on the Metra system. See the discussion in Section 3.1.1, Motive Power Modes.

Note that routing the trains up the CN north of University Park would limit the stopping pattern of the trains to Homewood, while the routing up the MED allows these trains to serve additional on-line locations.

The track arrangement at University Park would have to be modified to tie the extension trackage into the MED tracks. The east track (which ends in a tail track) would be connected to the extension trackage. If, the extension could begin with a single-track portion on leaving University Park, the existing two-track yard which comes off the west track of the MED would not have to be disturbed. On the other hand, if this portion of the extension must be double-tracked, the MED yard will have to be relocated. Note that Metra is designing a new, expanded yard at University Park. If this is implemented prior to the start of the Kankakee extension service, this matter will be moot.

Using performance curves for an EMD diesel-electric hauling four cars, the running time from Kankakee to University Park is virtually the same as has been estimated for the DMU (below). That is, 39 minutes one-way is needed, which is an average speed of 37.4 mph.

Operation via MED to Union Pacific (UP) to Rock Island District (RID)

North of University Park, for the routing which takes these trains via the UP (around 119th Street) and the RID (at 80th Street) to LaSalle Street Station, the presumed stopping pattern for the extension trains is similar to that for the University Park zone express trains on the MED. That is, the trains would stop at Richton Park, Matteson, 211th Street and Olympia Fields.

However, the diesel-electric train cannot match the performance of the EMUs on the MED. Using the performance curves for a diesel-electric hauling four cars, the estimated running time between University Park and Olympia Fields is 14 minutes, while the EMU requires as little as 10 minutes to operate between these two stations with the same stopping pattern.

Around 119th Street, the extension trains would leave the MED and connect to the Union Pacific trackage. They would operate on this line to around 80th Street, where they would connect to the Norfolk Southern and from there to Metra's Rock Island District. They would operate via the RID to LaSalle Street in downtown Chicago.

It is estimated that 89 minutes would be required to cover the 53.9 miles, which is an average speed of 36.4 mph. Much of the time in this schedule is required to make the transitions between rail lines.

Timing of the trains was based on available timetable paths on the RID, as well as trying to match the arrival/departure times used in the schedule for Metra's North Central Service. Some retiming of the Kankakee trains may be necessary to ensure that they do not adversely affect schedules of existing MED trains. This is particularly important, given the differences in performance capability between the two modes.

CN to UP (via SSA) to RID

This alternative would see the diesel-hauled extension trains leave the CN at the SSA and operate via a connection under the airport property to the UP line through Crete and other south suburban communities. The connection between the two rail lines is about one mile in length. Once on the UP line, there are two major operational hurdles to be faced: Yard Center and Dolton Junction. Earlier work on the South East Service determined that the only way to effectively operate past Yard Center was to construct a passenger [only] main to the east of the existing yard tracks. Dolton Junction is a level crossing that lies immediately north of Yard Center. It is a major crossing between the UP, CSX and IHB lines. In addition to its close proximity to Yard Center, it is also just to the east of the IHB and CSX yards in Riverdale. The high volume of moves on both the CSX and IHB dictates that a passenger-only grade separation is required at this location to ensure reliability of the passenger service.

The expense of the three projects (the interline connection, the passenger-only mainline around Yard Center and the grade separation at Dolton Junction) would be considerable. Responsibility for the projects depends on the timing of the Kankakee extension relative to the proposed Southeast Service. Financial feasibility may also depend on ridership projections to be done during the feasibility study.

Routing the Kankakee extension trains through the airport and onto the UP line results in the longest one-way distance of any of the alternatives for service into downtown Chicago. Not surprisingly, the one-way running time is the longest. This is due to speed restrictions around Yard Center and Dolton Junction, as well as on the transitions between rail lines. Finally, the operation over the RID is largely in a restricted speed territory. The net result is that the estimated one-way travel time between Kankakee and LaSalle Street via this routing is on the order of 97 minutes. This works out to an average speed of 34.6 mph.

Randolph Street (Dual-Mode)

Operation of the Kankakee trains using dual-mode locomotives would be to/from Randolph Street in Chicago. In terms of the tie-in of the extension to the MED trackage at University Park, Section 3.1.2 describes the way in which this could be accomplished. As noted in that same section, Metra's plans for a new yard in University Park would make it possible to have a double track-to-double track connection between the MED and the Kankakee extension, should traffic on the extension warrant it. At the very least, the connection could be designed such that double tracking in the future is not precluded.

The dual-mode locomotives would operate as electric locomotives on the MED. However, as discussed in Section 3.1.1, because the locomotive is the single motive power source in the train, it has limitations on current pick-up through its pantograph and rail adhesion in its wheels. As a result, its performance will generally be closer to that of a diesel-electric engine rather than an EMU and as the Kankakee train continues north from University Park, it will not be able to match the schedules for the EMUs on the MED. This mismatched performance would be exacerbated by Metra's possible desire to operate full-length trains that make maximum use of the Randolph Street station platforms, also as discussed in Section 3.1.1 above. The performance differences

would be particularly noticeable in the zone from University Park to 211th Street where the MED University Park zone express trains are making frequent stops. However, this is also true on the extension between University Park and the SSA and between the SSA and Peotone, as these stations are at most 6 miles apart. For this reason, new timetables for this service would likely be predicated on the Kankakee trains being additional moves over and above the existing MED service, rather than replacing existing scheduled trains. That will be difficult to achieve on the already busy MED line.

Even if the extension trains operated to the same stopping pattern as the MED University Park zone expresses, the running time to downtown would be at best 57 minutes, as opposed to the 51 minutes now scheduled on the MED. In spite of the extra running time requirements, the dual-mode trains would still be able to attain an average speed of 39.2 mph for the 56.9 mile one-way trip. As was noted before, this is due to the longer distances between stations on the extension, as well as the long non-stop zone on the MED between Olympia Fields and 55-56-57th Streets.

Note that no adjustment has been made to the timing of other MED trains operating behind the dual-mode extension train. Given its slower acceleration and deceleration, the dual-mode train may impact following trains. However, as noted in Section 3.1.1, Motive Power Modes, the use of dual-mode locomotives for the Kankakee extension trains is not recommended. These operational issues add to that recommendation.

University Park (DMUs)

As discussed in Section 3.1.3, DMUs are not likely to run to downtown Chicago in regular service. They would provide a relatively inefficient service compared to conventional diesel-hauled trains.

The DMU shuttle options are recommended to extend only as far north as University Park, where they would connect with MED trains to/from Randolph Street. The existing terminal arrangement at University Park is an island platform, with MED tracks on either side of the platform. Both tracks extend south of the platform to a single crossover between them and a tail track off the east platform track. The west platform track feeds a two-track yard to the south of that crossover.

Extension of the platform is possible to allow a Kankakee DMU train to enter the island platform, and still have sufficient platform length to allow the MED train to load to the north of the Kankakee train on the same track (or on the opposite side of the platform, when that track is available). Extending the platform to the south would require rearrangement of the MED tracks to provide the functional equivalent of the existing tail track (if necessary) and the two yard tracks. It is possible that the Kankakee extension could be single-tracked through this area, so that the two-track yard would not have to be relocated. As noted elsewhere, Metra has plans to build a new yard south of University Park, which would supersede this existing facility.

Operating the extension service as a shuttle between Kankakee and University Park will not be as attractive as the provision of a one-seat ride to/from downtown Chicago, but as was discussed in Section 3.1.1, Motive Power Modes, occupancy of timetable paths and downtown terminal platforms by a lower-capacity DMU train is not felt to be the best use of these resources.

The sample timetable that was prepared as part of the PB Proposal used actual performance data for a FRA-compliant DMU (based on a three-car trainset, composed of two motor cars and one trailer, as was proposed for the Metra STAR line) to develop theoretical running times on the Kankakee-University Park run. Without any diversion into the SSA (providing a transfer station to an intra-airport circulator service), it was estimated that 45 minutes would be required for a 27.9 mile one-way trip to the Kankakee I-57 Interchange Station. This works out to an average speed of 37.2 mph. The distance between most of the stations on the extension is fairly long, allowing the train to attain a fairly high speed and run at that speed for some time.

Connection times at University Park between the extension trains and the MED service are on the order of 9-10 minutes. Timing of the extension trains was established based on the downtown arrival/departure times of the connecting MED train, in order to approximate the schedule of North Central Service arrivals/departures in the central business district. A fundamental consideration in this is that the connecting MED trains were picked solely on the basis of optimum arrival/departure times. During the course of the feasibility study, additional consideration will have to be given to the additional riders the Kankakee trains may introduce to these connecting trains, the length of the connecting train (i.e. the ability to add cars to the train, if necessary) and the available capacity (if any) on the connecting train. Depending on the results of those further investigations, the connection may have to be shifted to another MED train that is better able to absorb new riders/cars. Another possibility is that a totally new MED train could be scheduled to make the connection at University Park. However, timetable paths on the MED are tight, so providing a new timetable path may require re-adjustment of several existing MED schedules.

In the sample timetable, the running times for the connecting MED trains between University Park and Randolph Street ranged between 51 and 60 minutes. When the 10-minute connection time at University Park and the 34 minutes to travel to Kankakee are added to the MED running time, this results in an overall one-way travel time of between 95 and 104 minutes.

Rearrangement of the stopping patterns of the connecting MED trains is one way in which this overall travel time could be reduced. However, the case for making such a change to a train's operating pattern would have to be thoroughly demonstrated. In addition, consideration of how the stopping patterns of adjacent trains might be revised would also have to be undertaken to ensure that the needs of riders on the MED were met. A prelude to any such activity would be ridership forecasting for the Kankakee extension.

Another comment relative to the DMU shuttle service is the development of the Minimum Operating Segment (MOS) and Full Build Out (FBO) investment alternatives, discussed elsewhere in this report. The MOS represents a feasible first step in establishing the extended commuter rail service, and could be viewed as a stepping stone on the path to building the FBO.

The MOS would see the shuttle operation established between University Park and Manteno, a one-way distance of 14.3 miles. The schedule developed for the MOS (using DMU performance data) indicates that the one-way trip could be made in 20 minutes. This would allow just three sets of equipment to cover the five daily roundtrips, however it would require some peak period deadhead moves (against the flow of rush hour trains) in order to cover these additional trips. This does not introduce any significant operating issues, as the investment program for the MOS calls for double-tracking of the CN line, as well as the installation of universal crossovers on a regular spacing, to facilitate meets/overtakes.

In the case of the FBO, the one-way distance is 27.9 miles, and the estimated one-way travel time is 45 minutes. End points for the commuter rail service under this scenario would be University Park and Kankakee/I-57. Four trainsets are required to cover the five daily roundtrips. No deadheading of trains against the peak period flow is required under this schedule.

Another issue which applies to both the MOS and the FBO is the location where the DMU trainsets would be kept midday. If this is not at University Park, it will require additional deadhead moves to/from the new commuter rail maintenance and storage facility (MSF), at the end of the am peak and prior to the pm peak. One exception to this might be the trainset which fills the midday (off-peak) round trip. In this instance, this trainset could be kept at University Park after it completes its am peak service, or it could deadhead with the rest of the trainsets to the MSF.

One way in which the volume of deadhead moves could be reduced would be to couple the DMU trainsets into a longer consist, therefore making only one move in place of the three or four that would otherwise be required.

If the DMU trainsets are kept at University Park midday, this would isolate the train crews from their personal vehicles, which would be at the MSF, where they reported for work. Some Metra crews on the MED and other lines work "Split Shifts", where they layover downtown during the midday. However, in the case of the KACOR operation, there is not much reason to have these crews remain at University Park, when the MSF is no more than 45 minutes away. There are two options: one would be to use one trainset to deadhead all the crews to/from the MSF; the other would be to use a bus or van to transport the crews.

A final comment relative to the deadhead moves, whether they occur "against traffic" during the peak, or at the ends of the peaks, is that these trips could be made into additional revenue trips, that are available to passengers and included in the public timetable. It becomes a question of likely ridership (the deadhead trips are timed to place the equipment at the other end of the line when it is needed, and not necessarily coordinated with any MED arrival/departure at University Park).

Randolph Street (EMUs)

As discussed in the preceding sections, the tie-in of the Kankakee extension trackage to the MED at University Park can be done as either a single-track connection to the existing east track of the MED or as double track. This latter arrangement will be easier to accomplish once the yard at University Park has been relocated. Regardless of initial demand, the design of the track connection to the MED should be such that future double tracking is not precluded.

Given the higher performance capabilities of the EMU, it is expected that this type of car will be able to make the 27.9 mile trip on the extension in less time than is scheduled for the diesel-electric or dual-mode hauled consists. As noted in the section discussing operation of the diesel-electric train on the MED, the EMUs can make the typical station-to-station run in about one minutes less time. Therefore, it is reasonable to expect that the one-way time on the extension for an EMU train would be at most 30 minutes. This would equate to an average speed of 50.8 mph.

Therefore, the total travel time from Kankakee to Randolph Street would be between 81 and 90 minutes, depending on the stopping pattern for the train north of University Park. As noted elsewhere in this section, one of the fundamental issues is whether the Kankakee trains would operate on the scheduled times of existing MED trains, or if they would operate in a new timetable path.

For this determination to be made, the expected passenger loading on the Kankakee service has to be compared to the number of cars and passenger load factor on the existing MED train, in order to determine whether or not it can accommodate additional cars and/or riders. In the event that the train cannot be expanded, then the issue becomes finding an available timetable path in which to schedule the extension train between University Park and Randolph Street.

3.2.2 Operational Pinch Points

As discussed previously, ridership forecasting has to be conducted to determine if the five round trips per day schedule is reasonable for the extended commuter rail service. The CN will not accept operation of EMUs over its mainline tracks on the extension, but it is yet to be confirmed that the railroad would accept operation of the Kankakee trains using the other motive power modes (diesel-electric or diesel multiple-unit) over its tracks. Most likely the railroad would accept these other modes operating over its tracks as long as appropriate infrastructure improvements are provided. One way to increase the fluidity of the rail line would be to restore double track south of University Park. There is sufficient right-of-way to do this in the section of interest. Increasing the capacity of this rail corridor would also be an operational benefit to the CN, Amtrak and Norfolk Southern (which operates freight trains over trackage rights on the CN).

If CN were to require a separate right-of-way for the commuter rail extension, regardless of the motive power mode employed, it appears that sufficient CN right-of-way exists for this next to the existing CN mainline. However, there are industrial sidings off either side of the CN line and the crossing of the MED tracks to service those customers would have to be addressed.

Operation via the MED raises some issues of capacity, chiefly in the ability to schedule additional trains, particularly north of 67th Street, where the trains of the MED mainline and both branches are operating over the four-track electrified line. Metra is in the process of increasing the throughput of the MED signal system by shortening block lengths.

In terms of operational pinch points, the most challenging alternative is the one that would route diesel-electric hauled trains through the SSA to the UP and then up through Dolton, etc. As noted in the preceding section, both Yard Center and Dolton Junction represent particular challenges to reliable, scheduled rail service. Provision of passenger mains around Yard Center can address the throughput problems at that location, and construction of a passenger-only flyover can eliminate the interference at Dolton Junction, but both of these are expensive projects.

Connections between rail lines (such as between the MED and the UP or between the UP, NS and RID) will restrict train speed as they involve changes of grade and curves which may be fairly tight. These connections can be single track and easily accommodate the demands for Kankakee service. However, when a single-track connection is made to a multiple-track railroad (such as to the RID), the multiple-track railroad must have crossovers installed on approach to the connection to allow trains to access/leave the connecting track. These at-grade crossovers represent a capacity constraint to opposing traffic on the multiple-track railroad. One exception to this is at 79th Street. The NS passing under the RID is single track at this point, and there is an available empty industrial site to the north of this acute angle crossing. That combination allows a conceptual layout for a full bi-directional connection between the NS and the RID without causing any conflicting movements (reference 48, volume 3).

3.2.3 Connections with Other Modes

All modal options and routing alternatives offer connections to other modes. One aspect that has not yet been addressed is the possibility for stations on the UP or RID within the City of Chicago. These might increase the possibilities, particularly if one of these stations were to be served by the CTA rail system. In-city stations should be investigated with Metra in a future phase of this study. For example, in previous studies Metra expressed interest in such stations to serve major attractions.

3.3 STATIONS AND PARKING LOTS

The project team evaluated station sites at University Park, Monee, Peotone, Manteno, Bourbonnais, Bradley and Kankakee. Additionally, potential station sites were also identified and located for the proposed South Suburban Airport (SSA) based upon a previous study by IDOT (Reference 1) for potential commuter rail service to the SSA. However, the SSA station sites were not evaluated for location, size or ridership (except for their impact on travel times), or included in the cost estimates for this study.

For the new station sites associated with the Kankakee Commuter Rail Extension, a total of 14 sites were evaluated, designated as Sites A through N in the analysis below. In most cases, multiple sites were available for the station location in each municipality. Only the “preferred” station site(s) for each municipality was carried forward into Chapter 5 for a capital cost evaluation, although the other sites considered would typically have costs similar in magnitude, depending upon the site and station configuration. Capital costs were then used to provide a baseline for calculating the financial feasibility of the project.

For general planning purposes, Metra prefers a minimum of 20 acres for new station stops (Reference 20). Where acreage is limited, the potential for a decked parking lot can effectively create 20 acres of parking from a 10-acre site. These 20 acres provide sufficient space for the station, commuter parking lots, kiss-and-ride and bus drop-off lanes, and for future growth. With the exception of the Kankakee Amtrak Station, this 20-acre goal has been provided. In this case, the exception to the 20-acre rule of thumb was made because of the existing Amtrak station in the center of Kankakee. However, alternate 20-acre sites for Kankakee have been identified.

For the purposes of this study, all proposed train stations would include two 380' platforms, one located on either side of the CN tracks. Platform configuration exceptions include upgrades to the existing Metra University Park station which is currently equipped with a center platform and at the proposed Bradley station where a center platform might be more appropriate for the track configuration in the area. This platform size would accommodate up to four (4) EMUs, DMUs or diesel-hauled passenger coaches, which would appear sufficient for this service at this time. A 380' platform is also consistent with Metra's current minimum standards for platform length for diesel line service (see Reference 20). Space is provided for future platform extension, as required. Access between the two platforms and to parking lots would be via adjacent highway grade crossings or a pedestrian bridge or a tunnel spanning the tracks. This is based upon an indication from Metra that it will not allow new pedestrian-only track crossings at station locations.

Each station would also include a station house, sized according to ridership projections. The station house would be located adjacent to the northbound train platform. This would be consistent with typical commuter railroad station locations being on the "inbound" (to Chicago in this case) side of the tracks, where commuters are more likely to be waiting for a train. A conceptual "Typical 2-Track Side Platform Metra Station Layout" has been developed based upon these criteria and is included as Appendix 5. This typical design would be applicable to most of the potential station sites proposed for the Kankakee Commuter Rail Extension.

In terms of station costing in Chapter 5, it will be generally assumed that the complete 20 acres (if available) will be acquired, but initially only approximately 10 acres will be assumed to be developed for stations, circulation and parking. This would reflect a reasonable initial build-out for station facilities.

In general, because of SSA and High-Speed Rail (HSR), the details of the stations would need to provide for expansion of the CN mainline to 3 or 4 tracks. However, it is assumed that this provision will have no impacts on the work herein.

3.3.1 University Park

The existing Metra station at University Park is the current end-of-line for the Metra Electric District service on the University Park Subdistrict. The station is located within Will County along Governor's Highway, just north of Stuenkel Road/University Parkway at Mile Post (MP) 31.1. The address of the station is 1900 University Parkway.

Metra trains can enter the station on either the mainline track (Track 1) or a station siding (Track 2). The passenger station facilities include an enclosed station area and one center platform, 518 feet in length, which can accommodate up to six (6) MED cars on each track. The station and platform are accessible to customers via a pedestrian tunnel under the Metra tracks, adjacent CN tracks and nearby Governor's Highway. The tunnel connects with, and provides accessibility to, the two commuter parking lots associated with the University Park Station, one located on each side of the tracks. Together, the parking lots encompass approximately 9 acres (including traffic circulation space) and include a total of 709 parking spaces (an April 2004 visit to this station reveals that additional parking capacity has been recently added and may not be included in this figure). Access to the east parking lot is from Stuenkel Road/University Parkway, while access to the west parking lot is from Governors Highway.

The University Park station facility, in terms of site size and parking capacity, currently appears to be adequate to meet projected service increases resulting from an extension of Metra service to Kankakee. If ridership from the station increases in the future due to growth within the area, additional greenfield space for parking lot expansion is available for both parking lots.

The principal impact to the University Park Station resulting from the extension of commuter rail service will be the need to connect the southern end of the existing station tracks to the commuter rail extension along the CN right-of-way, although there may be a need to physically separate the KACOR and Metra tracks for reasons of safety. Along with the rail connections, the extended service could also possibly require a low-level platform extension at the end of the existing University Park platform(s) to accommodate differences in platform height requirements between the MED service (4'-3 ½" above top-of-rail [TOR]) and diesel hauled or DMU service (8" above TOR).

3.3.2 Monee

Two potential station sites were considered for Monee:

- Site A – Central Monee between Court and Main Streets
- Site B – South Monee at Industrial Drive

Site A – Central Monee Site

As the CN passes through the center of Monee, the right-of-way is located in an open cut. The configuration of the cut would result in the need for a costly station infrastructure to provide for passenger vertical access and movement between the street levels and the lower commuter rail station levels. Current Americans with Disabilities Act (ADA) requirements may drive up the cost of such a station by requiring elevators and/or long ramps. Additionally, there is inadequate space to locate the supporting 20 acres of parking lots within the immediate vicinity of the station in the downtown area of Monee. As such, this station location was not considered further.

Site B – Industrial Drive Site

Toward the southern limits of Monee, the CN railroad begins to return to the same elevation as the surrounding land. A commuter rail station site location for Monee could be located just south of Industrial Drive at the point where Illinois Route 50 crosses over the CN. This would place the station at approximately MP 34.7, or 3.6 miles south of the existing Metra University Park station, providing a reasonable distance between stations. This is the preferred site for a Monee Station.

This proposed station site (refer to Appendix 6, Sheet 1) would include two parcels of land, one east and one west of the CN right-of-way. The eastern parcel is a crescent shaped parcel formed by the CN tracks on the west and Rt. 50 on the east as the road crosses the CN tracks near Industrial Drive and curves toward the south and west to parallel the CN alignment. This parcel includes approximately 9.1 acres of undeveloped land that can be accessed directly from Rt. 50. Southern access to the station site could also be provided with a short extension of Watson Road which connects directly to Egyptian Trail / Oak Road. Access to the northern end of the eastern parcel may also be possible from Oak Road via an existing open service road bay under the Rt. 50 Bridge. This option would provide convenient access to the parking lot for Monee residents without the need to cross Rt. 50; however, a ramp up from the cut would be required and it is not costed in this study.

The western parcel would be constructed west of the CN right-of-way in a relatively undeveloped space south of Industrial Road. The parcel is currently used as an access to an existing Prairie Material Sales concrete plant, but an alternative industrial access road could be constructed around the proposed parking lot. In order to achieve Metra's goal of 20 acres of station and

parking lot space, this parcel would include approximately 11 acres. Access to this parcel would be from Industrial Drive which intersects with Rt. 50 just west of the highway bridge over the CN.

Pedestrian access between platforms and the parking lots would be via either a pedestrian bridge or tunnel spanning the tracks. Depending upon need and funding availability, the eastern parcel could be developed first, and as the ridership warrants, the western parcel parking lot could be constructed in out-years. Therefore, purchase of the western lot site is included in the cost estimate of Chapter 5 of this report, but not its development, excepting for necessary west parcel platform and pedestrian tunnel elements.

Another benefit of this site is its location just north of the proposed South Suburban Airport (SSA) and the potential northern connection of a possible rail link to the SSA. If the airport is constructed and the rail link built, this would be the first Metra station north of the airport, possibly providing for a convenient rail transfer point between Metra and the SSA.

3.3.3 Peotone

Three station sites were considered for Peotone:

- Site C – North Peotone at Beecher Road
- Site D – Central Peotone at the former Peotone Depot
- Site E – South Peotone at Wilmington Road

Site C – Beecher Road Site

This site is located in the northwest quadrant of the intersection of Illinois Route 50 and Beecher Road. The proposed site would occupy two parcels of land, one east and one west of the CN right-of-way, spanning the space between Beecher Road and Harlem Avenue, as shown in Appendix 6, Sheet 2. The station location would be at approximately MP 39.9, or 5.2 miles south of the recommended Monee Industrial Drive station location.

The eastern portion of the site is a wedge shaped parcel of about 4 acres in size located between the CN railroad on the west and Rt. 50 on the east. This parcel could have access to Rt. 50 and Beecher Road. This portion would be suitable for shuttle bus service, kiss-and-ride facilities and limited commuter parking. An existing industrial/farm fueling facility is located at the southern end of this parcel that will require environmental assessment and possibly remediation.

The western portion of the site would be located west of the CN tracks in what is currently open farm land, except for an access road to a Federal Pipe and Steel facility just south of the proposed site. This parcel would measure approximately 16 acres in size and have access to Harlem Avenue via a new east-west roadway that would also serve as a relocated Federal Steel access road. Harlem Avenue crosses the CN tracks at MP 39.51, connecting directly to Rt. 50. The Harlem Avenue railroad crossing is currently of a timber construction, but it is protected with flashers and gates. The Harlem Avenue crossing would require improvement to support the heavier traffic and pedestrian volume expected with a commuter rail station and parking lot facility. Pedestrian movement between the two platforms and the parking lots would be accommodated with the improved Harlem Avenue grade crossing.

A detracting feature of this site is the presence of a rail siding serving Federal Pipe and Steel that begins just south of the Harlem Avenue Crossing. A short distance from the beginning of the siding, a rail “run-around” track begins that is used to allow locomotives to move around freight cars on the siding to access the opposite ends of the train. Both the siding and the run-around track would have to be relocated to provide space for the outbound commuter platform at this site.

Site D – Central Peotone Site

The CN railroad passes through the main business district of Peotone. A former Illinois Central Depot is located between Crawford and Main Streets on the east side of the tracks that currently is in use as a small commercial business ("Country Depot"). This facility could possibly be renovated for reuse as a commuter rail station. However, there is little open land for parking in the immediate vicinity of the station, although some parking could be developed along the tracks extending through the central business district. Even if all available open land in the vicinity is developed for parking, it would not meet Metra's current criteria for a preference of 20 acres for station and parking facilities, and would not serve to draw park-and-ride commuters from more distant locations. With more suitable station sites available both north and south of Peotone, this site was not given further consideration.

Site E – Wilmington Road Site

This site is located at the southwest quadrant of the intersection of Rt. 50 and Wilmington Road, across the street from the Will County Fairgrounds. As with the North Peotone Site, this proposed site would occupy two parcels of land, one east and one west of the CN right-of-way, along the south side of Wilmington Road (See Appendix 6, Sheet 3). Both parcels of land are currently undeveloped. The station location would be at approximately MP 41.2, or 6.5 miles south of the recommended Monee Industrial Drive station location.

The eastern portion of the site is a triangular shaped parcel of about 9.5 acres in size, located between the CN railroad on the west and Rt. 50 on the east. This parcel could have access to both Rt. 50 and Wilmington Road. This portion would be suitable for bus service, kiss-and-ride facilities and commuter parking.

The western portion of the site would be located west of the CN tracks. This parcel would measure approximately 10.5 acres in size and have direct access to Wilmington Road. Pedestrian movement between the two platforms and the parking lots would be accommodated with the Wilmington Road grade crossing.

Depending upon need and funding availability, the eastern parcel could be developed first, and as the ridership warrants, the western parcel parking lot could be constructed in out-years. The costing of Chapter 5 includes purchase of this parcel, but not its development, except for an outbound platform and bus pick-up and drop-off.

A possible alternative to the western parcel would be the undeveloped land across Rt. 50 from the eastern parcel described above. A drawback to this option is the need to provide for a safe pedestrian crossing across Rt. 50. This could be accomplished with traffic control lights for a street level crossing or a pedestrian bridge or a tunnel spanning Rt. 50. This is not a recommended approach and costs are not included in Chapter 5 for this alternate parcel option.

Of the three sites considered for Peotone, Site E – Wilmington Road site appears to have the most advantages for a commuter rail station. This site is close to the community and has good access to local roads as well as direct access to I-57 approximately 1-1/2 miles west on Wilmington Road at the I-57 Interchange 327. Further, the South Peotone Site has a distinct advantage of being located across the street from the Will County Fairgrounds, providing convenient rail access to fairground events.

3.3.4 Manteno

Two station sites were suggested for consideration by the Village of Manteno, based upon the Village of Manteno Comprehensive Plan of 1998 and its Addendum with the proposed Peotone Airport scenario (Reference 17).

- Site F – North Manteno at 10000N Road
- Site G – South Manteno at 7000N Road

Site F – 10000N Road Site

This site is located in the northwest quadrant of the intersection of Illinois Route 50 and 10000N Road (also known locally as Lake Manteno Road). The proposed site would occupy two parcels of land, one east and one west of the CN right-of-way, as shown in Appendix 6, Sheet 4. The station location would be at approximately MP 45.4, or 4.2 miles south of the recommended Peotone Station location at Wilmington Road.

The eastern parcel of the site is an 80' wide by 950' long (about 1.5 acres) strip of land located between the CN railroad on the west and Rt. 50 on the east. This parcel could have access to Rt. 50 for bus service and commuter drop-off at the north end of the strip and the station house and inbound platform toward the south end of the strip near 10000N Road.

The western parcel of the site would be located west of the CN tracks in what is currently open farm land. This parcel would measure approximately 20 acres with direct access to 10000N Road. This parcel would contain the commuter rail parking lot, kiss-and-ride and bus service facilities and the outbound platform. Pedestrian movement between the two platforms would be accommodated with the Wilmington Road grade crossing. For costing in Chapter 5 of this report, it is assumed that both parcels will be purchased, but only 10 acres of the west parcel will be initially developed. The cost for this land may be higher than surrounding farm land due to its close proximity to the established residential neighborhood near North Manteno Lake.

This site provides excellent access to Manteno and nearby communities via Illinois Rt. 50 or other north-south roads accessible from 10000N Road. Additionally, access to I-57 Interchange 322 at Division Street (9000N Road) is relatively convenient via either Rt. 50 or 1000E Road.

> *[**Note:** During a final review of this Study, the Village of Manteno revised their preference for the Manteno station to be at a different site north of 10000N Road (Reference 59). Likely locations that would meet this criteria include 11000N or 12000N Road.*
>
> *Although this report has not been changed to reflect the change in preference for the Manteno station location, additional information pertaining to the anticipated impact of this change to the overall Study results and conclusions is described in Appendix 11. Further detailed evaluation of a new Manteno Station site will be performed in the Phase II Study, as described in Section 7.2.]*

Site G – 7000N Road Site

This site was reviewed but not given further consideration as 7000N Road is unimproved in this area and there is no existing CN railroad crossing at 7000N Road. Although a commuter rail station could be located at this site, additional highway improvements would be required to access the site. Since there is no existing railroad grade crossing at 7000N road, it is unlikely that the CN or Metra would be receptive to adding a new crossing, necessitating the need for a highway and/or pedestrian tunnel to cross the tracks. Finally, the location of this site is not as convenient to the Manteno residential area or I-57 as Site F, the 10000N Road site.

This assessment was reinforced by the Village of Manteno in their transmittal cover letter (dated March 16, 2004) for the Comprehensive Plan referenced above, wherein the village expressed a preference for the 10000N Road site for a new commuter rail station.

3.3.5 Bourbonnais

Three station sites were considered for Bourbonnais, all located north of the main business district:

- Site H – 6000N Road
- Site I – St. George Road (5000N Road)
- Site J – Larry Power Road (4000N Road)

Site H – 6000N Road

This site is located in the southwest quadrant of the intersection of Illinois Route 50 and 6000N Road. The proposed site would occupy two parcels of land, one east and one west of the CN right-of-way, as shown in Appendix 6, Sheet 5. The station location would be at approximately MP 49.8, or 4.4 miles south of the recommended Manteno Station location at 10000N Road.

The eastern parcel of the site is a 65' wide by 1200' long (about 1.8 acres) strip of land located between the CN railroad on the west and Rt. 50 on the east. This parcel could have access to Rt. 50 for bus drop-off at the south end of the strip with the station house and inbound platform toward the north end of the strip near 6000N Road.

The western parcel of the site would be located west of the CN tracks in what is currently open farm land with the exception of a small electrical substation near 6000N Road. It would measure approximately 20 acres with direct access to 6000N Road. It would contain the commuter rail parking lot, kiss and ride and bus drop-off/pick-up facilities and the outbound platform. Pedestrian movement between the two platforms would be accommodated with the 6000N Road grade crossing. For costing in Chapter 5 of this report, it is assumed that both parcels will be purchased, but only 10 acres of the west parcel will be developed initially.

An asphalt plant is located across 6000N Road from the proposed site and a quarry is located at the northeast quadrant of the intersection of Illinois Rt. 50 and 6000N Road. A scrap yard is located immediately west of the site. The rest of the land in the area is open farm land.

This site is located midway between Manteno and Bourbonnais/Bradley and provides good access to all three communities via the various north-south roads connecting to 6000N Road, including U.S. Rt. 45, 1000E Road, Illinois Rt. 50 and 2000E Road. If a proposed new interchange for I-57 is constructed on 6000N Road, this site would be very accessible and attractive to more distant locations.

Although the 6000N Road site is attractive for a commuter rail station at present, there is a pending proposal to upgrade the 6000N Road in the site area with an overpass over both the CN tracks and Illinois Rt. 50. This would result in the elimination of the railroad grade crossing at 6000N Road, resulting in the need for a pedestrian tunnel to provide access to the commuter rail platforms. Furthermore, the embankment for the new bridge would also complicate accessibility to the parking lot area, and would likely require an additional separate access road to the station site. As the configuration for the proposed overpass is not known at this time, the Site H station location plan on Sheet 5 of Appendix 6 does not reflect the overpass.

Site I – St. George Road (5000N Road)

This site is located at the intersection of Illinois Route 50 and St. George Road (also known as 5000N Road). The proposed site would occupy two parcels of land, with the east parcel located

between Illinois Route 50 and the CN tracks and the west parcel located west of the CN tracks, as shown in Appendix 6, Sheet 6. The station location would be at approximately at MP 50.7, or 5.3 miles south of the recommended Manteno Station location at 10000N Road.

Note that after the aerial photograph for this site was taken, Illinois Rt. 50 was relocated approximately 900' to the east at St. George Road to provide for improved clearance between the CN crossing and the Rt. 50 intersection. An approximation of the current Rt. 50 alignment has been drawn onto the photograph for reference.

The eastern parcel for the site would be located between the CN right-of-way (ROW) and the relocated Rt. 50 in what is currently open farm land. This parcel would measure approximately 10.4 acres with direct access to Rt. 50 and St. George Road. This parcel would include bus drop-off and kiss-and-ride facilities, the main commuter rail parking lot, the inbound platform and the station house.

The west parcel would be located west of the CN ROW on a parcel of land that comprises a large unused parking lot and some undeveloped land near the CN ROW. This parcel includes approximately 9.6 acres. The parking lot and an associated small former Chicago Bridge and Iron (CB&I) office building were available through Perry Commercial Real Estate (815-933-9919). Since the property is listed as being divisible, only the parking lot acquisition cost is included in Chapter 5, as the office building may be suitable for other uses.

The west parcel would include the outbound station platform, bus drop lanes and commuter parking. There would be direct access to this parcel from St. George Road. Pedestrian movement between the two platforms would be accommodated at the St. George railroad grade crossing.

This site provides good access to Bourbonnais and Bradley from St. George Road via Illinois Rt. 50 or U.S. Route 45 to the west. It also provides good access to I-57 Interchange 315 and would also be convenient to the proposed new 6000N interchange for I-57, if it is constructed. The availability of an existing parking lot on the west parcel of this site is also a benefit. Finally, there are several industrial facilities located west of the CN, including a large Alabama Metal facility plant immediately west of the proposed west parcel. A commuter rail station at this site may provide an opportunity for commuting to these facilities.

Site J – Larry Power Road (4000N Road)

This site is located at the intersection of Illinois Route 50 and Larry Power Road (also known as 4000N Road). The area is currently occupied by a combination of industrial, commercial and limited undeveloped land. The northeast quadrant includes an antique mall and other commercial or light industrial businesses. The northwest quadrant is occupied by Birmingham Steel Corporation comprising a large heavy industrial facility with a number of rail siding tracks leading to their plant from the CN. The southeast quadrant is occupied by a large metal scrap yard and processing facility. Only the southwest quadrant is currently undeveloped, but the inbound platforms would still require acquisition of a portion of the scrap yard. Because of existing development in this area, the potential for environmental issues with the scrap yard and the presence of the industrial rail sidings which may impact station platform locations, further consideration was not given to this site.

In evaluating the potential sites for a Bourbonnais commuter rail station, Site I at St. George Road appears to be the best choice and is the recommended site for Bourbonnais. The pending construction of an overpass at 6000N Road is a major detracting feature for that site and the existing heavy industrial use at the Larry Power Road site precludes the use of this site for a commuter rail station.

3.3.6 Bradley

One commuter rail station site was considered for the Village of Bradley based upon recommendations from the village in their March 5, 2004 correspondence (Reference 18) to the project team.

Site K – South Street / Brookmont Boulevard

The proposed station site is located on two parcels of land, one on each side of the CN right-of-way at Site K – South Street / Brookmont Boulevard, as shown in Appendix 6, Sheet 7. The station location would be at approximately MP 54.5, or 3.8 miles south of the recommended Bourbonnais Station location at St. George Road.

The proposed western parcel is bordered by the CN tracks to the east, Goodwin Street to the north, Washington Avenue to the west and Brookmont Boulevard to the south. Most of this parcel is currently undeveloped, although several small commercial businesses are located along Washington Avenue near Brookmont Blvd. A large building for Kroehler Manufacturing Company is located just west of the proposed parcel at the corner of Goodwin St. and Michigan Ave.

This west parcel comprises approximately 14.6 acres. Access to the parcel could be from Brookmont Blvd., Washington Ave. or Goodwin St. Although Goodwin does not continue past the CN tracks, Brookmont Blvd. at the south end of the parcel does pass under the CN via an underpass. This parcel would include the outbound platform, bus drop-off, and commuter parking.

The eastern parcel is currently a ComEd facility which, according to the Village of Bradley, may become available in the near future. This parcel is bordered by the CN tracks to the west, South Street to the south (also the Bradley village limits), Schuyler Avenue to the east and Erie Street to the north. Neither Erie nor South Streets continue past the CN right-of-way; however, Schuyler Avenue intersects with Brookmont Blvd one block south of the site where the CN can be crossed via an underpass. The parcel comprises approximately 6.8 acres. Access to this parcel could be at new intersections with Schuyler at Erie and South Streets. The parcel would include the inbound platform, station house, kiss-and-ride and bus drop-off areas and commuter parking.

The eastern parcel could be expanded south to Brookmont Blvd. if an additional 5.3 acres between South St. and Brookmont Blvd. is acquired. This land is within the City of Kankakee, and would result in a station site spanning two municipalities. The inclusion of this Kankakee parcel would bring the total site size to 27.6 acres for both east and west parcels.

The CN Railway includes two mainline tracks through this corridor. Within the limits of the proposed station site, a third industrial siding lead also exists on the east side of the mainline. This siding feeds an industrial facility to the north and connects to a CN rail yard that begins just north of South Street. The rail yard continues to the south, ending near the CN / NS Junction. This track configuration will require the relocation of either the mainline or siding tracks to accommodate the commuter station platforms. To minimize the impact on the CN rail yard, a center platform is proposed for this site, located toward the northern end of the site near Goodwin / Erie Streets and possibly extending even further north than Goodwin / Erie Streets along the railroad embankment. This would also require the construction of a pedestrian tunnel in the same area to access the platform. The site plan on Sheet 7 in Appendix 6 reflects this platform configuration.

An alternative proposal for the platform location is the area just north of Brookmont Blvd. This would eliminate the need for a pedestrian tunnel as platform access could be made via the Brookmont Blvd. underpass, although a pedestrian platform access stairway from the Brookmont Blvd. underpass would be required. The implementation of this plan would require land acquisition in both Bradley and Kankakee, as noted above and also a major reconfiguration of the

northern end of the CN rail yard to provide space for the new platform. As a result, the station could be located closer to Brookmont Blvd, perhaps improving its accessibility and desirability as a site. Such a configuration is not reflected in the site plan in Appendix 6, Sheet 7.

Depending upon need and funding availability, either the eastern or western parcel could be developed, then as ridership increases warrant, the other parcel could be developed to provide additional commuter parking. For the purposes of the costing in Chapter 5, it is assumed that both Bradley parcels will be purchased, but only the east parcel and five acres of the west parcel will be initially developed. The Kankakee eastern parcel will not be considered for costing purposes.

The location of this site provides good access to all three nearby communities of Bradley, Bourbonnais and Kankakee. Access to the site from an east-west direction is best from Brookmont Blvd. which connects to major north-south streets including U.S Route 45 to the west and Illinois Route 50 to the east. Interchange 315 at Rt. 50 toward the north end of Bradley is about 3 miles away from this station site. Interchange 312 at Illinois Rt. 17 in Kankakee is slightly closer at 2.6 miles, but the route between this interchange and the station site is not as direct as for Interchange 315.

The County of Kankakee indicates that improvements to the Brookmont Blvd. underpass are pending which will greatly improve the capacity for traffic along Brookmont Blvd. and east-west access to this site. If other proposed improvements to the Washington Avenue Corridor are implemented, then north-south access to this site would also be substantially improved.

Another aspect for consideration with this site is its location just north of the CN & NS Junction. One possible routing for the proposed High-Speed Rail (HSR) Corridor from St. Louis to Chicago is up the Union Pacific Railroad (UPRR) to Dwight and then east on the NS to Kankakee, where the HSR would proceed north on the CN. Should this HSR alignment be adopted, it is likely that a HSR stop would be located within the Kankakee metropolitan area. Site K may be an ideal location for the HSR stop as it is centrally located within the Kankakee-Bourbonnais-Bradley area and it would provide for a HSR to commuter rail service connection.

The central location of site K coupled with the possibility of an HSR connection, apparent availability of land and the pending improvements for roadways within the area, lead to a preliminary recommendation for a commuter rail station at this site.

3.3.7 Kankakee

Three station sites were considered for Kankakee:

- Site L – Junction of the CN and NS Railroads
- Site M – Kankakee Amtrak Depot at Merchant Street
- Site N – I-57 Interchange 308 with U.S. Route 45

Site L – CN & NS Junction

This site is located at the junction of the Canadian National (CN) Railway and the Norfolk Southern Railroad (NS) within the City of Kankakee. The NS connects to the CN via an approximate 10°0' (~580' radius) curve within the northwest quadrant of the junction. The curve connects to the western portion of the same CN rail yard noted above in the Bradley site discussion.

There are two possible scenarios for this site; one assumes that High-Speed Rail (HSR) does not pass through this junction and a second assumes that HSR does pass through the junction. In either case, the proposed CN & NS Junction station site would be in the same northwest quadrant of the junction as the CN & NS connecting curve. The proposed site would occupy at

least two parcels of land, as shown in Appendix 6, Sheet 8. The station location would be at approximately MP 55.5, or 1.0 mile south of the recommended Bradley Station location at South Street.

The center parcel for the site is a 6.3 acre parcel undeveloped land bordered by the curved track connection between the CN and NS railroads on the south and east, Washington Avenue on the west and roughly Mertens Street on the north. This parcel could have access to Washington Ave. and Mertens St. in the northwest corner and would include provisions for bus drop-off, kiss-and-ride and commuter parking facilities.

The western parcel for the site would comprise approximately 13.6 acres and be primarily for overflow parking for the station. It would be located between Washington Blvd. on the east side, Entrance Avenue on the west side, Mertens St. on the north, and an industrial property on the south side. Access to this parcel could be from Washington Ave., Mertens St. and Entrance Avenue. The parcel currently includes various commercial and light industrial facilities.

Platform Location if no HSR through the CN & NS Junction: If no HSR passes through the junction, then the platforms for this site would be located along both sides of the two mainline CN tracks, just north of the railroad junction. Realignment of some of the nearby yard tracks and sidings would be required to locate the station in this area. A pedestrian tunnel would be required to access the platforms from the center parcel parking lot. A signaled street crossing at the intersection of Washington Ave. and Mertens St. would be required for safe pedestrian movement across Washington Ave.

Platform Location with HSR through the CN & NS Junction: If the HSR passes through the junction, then the existing 10°0' curve at the junction will need to be replaced, as at best this curve could only accommodate train speeds of up to 32 mph (assuming track geometry with 4" of superelevation and 3" unbalance). Even though some HSR trains might stop at a Kankakee station, many would continue through Kankakee at speed. With proposed speeds of 110 mph, a high-speed train would require a curve of approximately 0°50' (6876' radius) through this junction, again assuming 4" superelevation and 3" unbalance. As shown in Appendix 6, Sheet 8, this would require a new curve that would cut through a substantial portion of industrial, commercial and residential areas.

If a slower speed is accepted by the HSR through this junction, then the curve through the junction can be reduced in radius. To accommodate 75 mph speeds, a 1° 45' (3274' radius) curve would be required. For 60 mph speeds, a 2°45' (2083' radius) curve would be needed. As shown on Sheet 8 in Appendix 6, this would progressively require less land for the curve.

In any event, if the HSR is implemented and the junction site is considered for a station stop, then the station platforms would need to be located on the curve. Train platforms on curves are not desirable for several reasons. The sightlines along the train, particularly along the outer side of the curve, are not good. In fact, Metra will not allow construction of a platform on a curve less than 1°45' in curvature. A second factor to be considered is the superelevation in the curve which results in a train leaning toward the inside of the curve when stopped at a platform located on a superelevated curve. For these reasons, station platforms are not recommended for HSR operation at this site, even though they are represented on Sheet 8 in Appendix 6.

When all factors are considered, the problems with locating the platforms at this site (whether with or without HSR) outweigh the benefits of its location at the CN and NS junction and its proximity to central Kankakee. Furthermore, access to the site, particularly from an east-west direction is not good. Because of these factors, this site is not recommended for a station site.

Site M – Kankakee Amtrak Depot

An existing Amtrak Depot is located within the City of Kankakee on the east side of the CN tracks at Merchant Street, as shown in Appendix 6, Sheet 9. A commuter rail station stop at the Amtrak Depot would be at approximately MP 55.8, or 1.3 miles south of the recommended Bradley Station location at South Street. A pending multi-modal facility is being planned for the northeast corner of East Ave. and Station Street, which will provide for improved bus feeder service to the depot.

This site is located in downtown Kankakee, and as such is desirable for its central location to the business district. However, it includes only limited parking. Based upon aerial photographs, site visits and discussions with representatives of the City of Kankakee, it is estimated that up to 10.3 acres of existing unused parking or potential land for parking exists within two blocks of the Amtrak Depot (as shown in Sheet 9 of Appendix 6). Although the land identified for potential commuter rail parking is limited to less than the desired 20 acres, it would be possible to increase the effective parking area through the use of multi-level parking structures in the vicinity of the Amtrak Depot. Located south of the CN & NS Junction, the site could not be a HSR station stop in Kankakee.

A commuter rail station stop at this location would help to provide an economic stimulus to the central Kankakee business district. Although this site is only 1.3 miles south of the next recommended station site in Bradley, it is located toward the end of the proposed Kankakee service and as a result, the relatively close station spacing is not of great concern to commuter rail operations. For these reasons, this site is recommended for further consideration.

Site N – I-57 Interchange 308

This site is located near the I-57 Interchange 308 with U.S. Route 45, south of the City of Kankakee. The proposed site would occupy two parcels of land, one east and one west of the CN right-of-way, as shown in Appendix 6, Sheet 10. The station location would be at approximately MP 59.0, or 3.2 miles south of the Amtrak Depot station location in downtown Kankakee.

The eastern parcel of the site includes approximately 23 acres of undeveloped land located within an industrial park between the CN railroad on the west and Festival Drive on the east. This parcel is currently posted as being available through Bennett Commercial Real Estate (815-929-9381). This parcel would contain the station house, inbound platform, and commuter rail parking lot, kiss-and-ride and bus service staging lanes.

The west parcel would be located west of the CN right-of-way on a strip of land parallel to the CN measuring about 65' wide by 1475' long (approximately 2.3 acres). This parcel would include the outbound station platform. Pedestrian movement between the two platforms would be provided with a pedestrian tunnel under the tracks near the station structure.

Highway access to the site would be from Festival Drive which parallels the CN northward until it intersects with South Tec Drive. South Tec Drive is an east-west road that crosses the CN at a grade crossing and connects with Kensington Drive on the west side of the CN. To the east, South Tec Drive intersects with U.S. Route 45 at a signaled intersection, providing for good north-south access to the proposed station site from either Kensington Ave. or U.S. Route 45. Approximately ¾ miles south of South Tec Drive, U.S. Route 45 intersects with I-57 at Interchange 308, providing additional access to the station from I-57.

An additional aspect to consider with this site is the "6000N Road/Warner Bridge Road/Exit 308 Corridor Study" (6000N to Exit 308 Study) that recommends a new highway to the west of Kankakee that would connect to I-57 at Interchange 308 (as shown in Appendix 6, Sheet 10). If this project is constructed, there would be the potential for additional access to the site from the

west. In this case, it might be desirable to acquire an expanded parcel of land on the west side of the CN for additional parking for park-and-ride commuters originating from the west.

For costing in Chapter 5 of this report, it is assumed that both parcels will be purchased. However, only 10 acres of the east parcel will be initially developed.

Although the site has good north-south access, there is relatively limited east-west access. However, the proposed site's close proximity to I-57 may make the station attractive to communities south of Kankakee such as Aroma Park, St. Anne, Chebanse and Clifton. Since the site is also within several miles of the Kankakee Valley Regional Airport, there may be some additional ridership generated by the airport. This additional ridership would not be projected from conventional home-based work trip calculations.

The main detracting feature of this site is its relatively distant location from central Kankakee which requires an additional 4.5 miles of track improvements from the Bradley South Street station site. Still, this site is recommended for further consideration, although the final recommendation is dependent upon the projected ridership and the likelihood for development of the 6000N to Exit 308 corridor.

3.4 COMMUTER RAIL SUPPORT FACILITIES

In addition to the mainline improvements discussed in Section 3.1 and the station and parking lot improvements covered in Section 3.3, the only other railroad capital costs that would be required are for a new end-of-line yard, servicing and crew welfare facility. The type and location of the yard and facility are directly related to the equipment to be used on the Kankakee Commuter Rail Extension. As discussed in Chapter 3 and compared in the "KACOR Systems Comparison Matrix" in Chapter 7, there are four (4) possible types of commuter rail car equipment being considered for this extension:

- Electric multiple units (EMUs)
- Diesel multiple units (DMUs)
- Diesel-hauled coaches
- Dual-mode locomotives

Within the KACOR evaluation matrix of Chapter 7, each type of the above equipment is also paired with one or more possible suburban end-of-the-line locations, with the combinations identified as scenarios "A" through "H". Again, the type of support facilities required for the Kankakee Commuter Rail Extension will depend upon both the equipment type and the end-of-line location.

3.4.1 Typical Commuter Rail Support Facility Requirements

The support facilities for commuter rail equipment typically include train storage yards and maintenance shop facilities. The storage yards are used for storage of the equipment, as well as for routine daily car servicing and inspections. Typical daily EMU and coach servicing includes interior sweeping and cleaning, servicing of toilets (emptying tanks and replenishing toilet chemicals) and brief inspection of various systems such as the wheelchair lifts.

Daily diesel locomotive (or DMU) servicing includes cleaning, inspection, fueling and sanding (adding traction sand to sand bins on the locomotive). These activities require the locomotive to be moved from the storage yard to servicing tracks or shops. The fueling and sanding functions may not be required each day, depending upon the daily mileage of the equipment. Additionally, entire train exteriors are frequently washed in drive-through train washers on a frequent basis, weather permitting.

Most Metra daily servicing of equipment is performed during the day, between the AM and PM rush periods, although limited work is also performed during second and third shifts. Additional cleaning activities are also performed overnight at end-of-line storage yards where trains are stored while awaiting the next morning's rush period.

More extensive inspections and repairs are performed for both the EMUs, diesel locomotives, DMUs and coaches on a scheduled basis, according to FRA regulations and Metra policies. This work is typically performed in an enclosed running maintenance shop facility. If extensive repairs or equipment overhauls are required, the cars may be moved to a separate heavy maintenance shop that specializes in that type of work.

For the KACOR extension, some operating scenarios will require a new end-of-the-line yard. Appendix 7 provides a conceptual design for an end-of-line yard suitable for DMU operation and another one for a yard for trains of diesel-hauled coaches. The engineering design standards used in creating them are also summarized on those sketches. The concepts provided a basis for the engineering cost estimate work in Chapter 5. These layouts were created on a "blank sheet of paper." That is, they were laid out without any property line constraints. In reality, the layout of any yard would need to be adapted to fit an available piece of property.

3.4.2 Support Facilities for EMUs – Operating Scenario A

Under Chapter 7 evaluation matrix scenario A, Metra EMU service is extended from the University Park Station to the Industrial Drive Station in Monee, which would be the new end-of-the-line for MED, and the extent of the Kankakee Commuter Rail Extension. As is the current practice, the Randolph Street Station would be the Chicago depot for this operation.

The existing Metra Electric District EMU cars are currently serviced and stored at a number of locations. Most daily servicing, including car cleaning and light mechanical inspections and maintenance for these cars, is performed during the midday period at the Metra 18th Street facility (MP 1.8). Additional overnight EMU servicing is performed at outlying smaller storage yards located at Richton Yard (MP 28.8) and University Park (MP 31.3). Inspections and mechanical work for the EMU cars is performed at either the 18th Street facility or the KYD mechanical shop (MP 15.6).

However, Metra has recently announced plans to relocate the 18th Street M.U. facility train cleaning and mechanical functions to a new yard and shop facility to be located south of the University Park Station, just north of Monee (estimated at MP 33.2). This would require an extension of the existing electrical catenary system approximately two miles further south to at least the new yard and shop.

If EMUs are used for the extended Metra service to the Industrial Drive Station in Monee (MP 34.7), then it is likely that the daily car servicing activities would take place at the new Metra storage yard and mechanical facility near University Park because the Monee Station is only approximately 1.5 miles from the proposed new University Park yard and shop. As is the case at the Metra University Park Station, one or two storage tracks may be needed at the Monee Industrial Drive Station for the purposes of train staging, but no new train servicing or maintenance facilities would be required under scenario A.

3.4.3 Support Facilities for DMUs – Operating Scenarios B, C, D and E

Under Chapter 7 scenarios B, C, D and E, DMUs are used between the existing MED University Park Station and the KACOR extension terminus at Peotone, Manteno, Bradley or Interchange 308. A cross-platform transfer between the DMU service and the EMU service would be required at University Park. The MED trains would continue to operate to the Randolph Street Station.

Under all of these DMU scenarios, a new yard and maintenance facility would be required as part of the KACOR extension, as there are no other existing Metra facilities on the MED capable of servicing or maintaining diesel-powered equipment. Although cleaning functions could be performed at the proposed new University Park yard and shop facility, that facility will not have the fueling, sanding or maintenance facilities required for diesel equipment. The nearest Metra facility that could service the DMUs would be the 47th Street facility on the Metra Rock Island District. Daily or even frequent trips from University Park to this facility are not feasible because of the distance that must be traveled (over 60 miles round trip) and the complexity of the routing.

The likely initial service requirement of DMUs defined in Chapter 5 is four three-car consists. A small purpose-built DMU yard with an associated maintenance facility would be required for this fleet. Appendix 7 provides a conceptual design for a yard suitable for DMU operation. The engineering design standards used in this design are also summarized on the sketches. They provided a basis for the engineering cost estimate work in Chapter 8. These layouts were created on a "blank sheet of paper." That is, they were laid out without any property line constraints. In reality, the layout of any yard would need to be adapted to fit an available piece of property.

The yard would contain enough storage space to accommodate the entire fleet with some spare capacity for modest system growth. Storage tracks would be configured to allow for access to either end of the consist, where the powered DMUs are to be located, as they will require more frequent servicing, inspections and maintenance than unpowered coaches. The yard track design would closely follow Metra's standards which provide for adequate space between storage tracks for servicing and inspections such as wheelchair lift testing. The yard would be double-ended to provide access to the mainline from either end of the yard. This provides an alternate yard access in the event of a track or equipment problem on the main yard lead track.

A maintenance facility that could perform the fueling, sanding, inspections and light maintenance activities would be included in the design. The facility would include two tracks. The first would be a through-track that can accommodate four single cars (DMUs or coaches) or one five-car coupled consist for routine servicing and inspections. A second two-car stub-end track would be available for more comprehensive inspections or repairs. The shop would include storage space for maintenance and repair parts, space for bench work, office facilities and employee welfare facilities. The maintenance facility would be sized at approximately 110' x 450' (49,500 SF). Major repair or overhaul work would have to be performed at a Metra facility such as the 47th Street facility.

A train washer facility sized at 30' x 340' (10,200 SF) would be located adjacent to the shop facility for washing train exteriors. During the winter months, this facility could also be used for indoor car cleaning.

A separate crew welfare building sized at 42' x 187' (7,854 SF) would be required to provide a quiet space for the train crews to rest between split shifts (the AM and PM rush periods). Space for employee parking and outdoor storage for track repair material or other miscellaneous equipment would be available.

In total, the size of the parcel expected to be required for the yard and shop facilities would be approximately 300' wide by 3300' long, or approximately 23 acres. Actual sizing and site requirements may vary depending upon the final yard configuration and capacity requirements.

The DMU yard could be located anywhere along the KACOR extension, although operationally, it is preferred to locate the yard toward the end of the line. Although the yard can be located on either side of the CN Railway, it is highly undesirable to have to cross any highways or roads to access the yard. Based upon a review of aerial photographs of the KACOR study area, possible yard and shop locations for each DMU scenario were identified, as shown in Table 3.4-1. This is

a very preliminary assessment of potential locations that will require further review as the project progresses.

Table 3.4-1 – Possible DMU Yard and Shop Locations by KACOR Terminus

Operating Scenario	KACOR Terminus Station	Possible Yard & Shop Location
B	Peotone Wilmington Road	West of the CN between the south end of the Wilmington Road Station and Kennedy Road
C	Manteno 10000N Road	West of the CN between the north end of the 10000N Road Station and approximately the location where 3000E Road intersects with Illinois Route 50
D	Bradley South Street	East of the CN between Armour Road and North Street
E	Kankakee Interchange 308	West of the CN between the south end of the Interchange 308 Station and about 3500S Road

3.4.4 Support Facilities for Dual-Mode Locomotives & Coaches – Operating Scenario F

Under Chapter 7 scenario F, dual-mode locomotives hauling unpowered coaches would operate between the Metra Randolph Street Station and the end of the KACOR extension in Bradley at the South/Brookmont Station.

This scenario would present many of the same challenges as the DMU scenarios in that there are no existing diesel locomotive servicing facilities on the MED line, so that a new facility would need to be constructed specifically for the KACOR extension. Additionally, longer train consists of up to eight or nine coaches may need to make the entire journey from Bradley to Chicago. This would require longer yard storage tracks for the proposed new yard. In this case, the yard configuration would be similar to that shown in the diesel push-pull operation diagram in Appendix 7.

Although the dual-mode and DMU fleets might be the same size, the dual-mode shop would need to be much larger than that shown for the DMU because the shop would have to accommodate the maintenance requirements of both electric and diesel propulsion systems. Moreover, the unpowered coaches would be unique equipment to the MED, could not be as easily transferred to other Metra facilities, and therefore might require additional shop space for routine maintenance.

As discussed in Chapter 7, these are contributing drawbacks to the use of dual-mode locomotives for this service. However, if a dual-mode yard and shop facility were to be constructed, it might be located it is feasible to locate it at the Bradley site previously identified for a DMU yard in Section 3.4.3 above.

3.4.5 Support Facilities for Diesel-Hauled Coaches – Operating Scenarios G and H

Scenarios G and H in the Chapter 7 evaluation matrix include the use of conventional diesel-hauled coaches for the KACOR service with both options using the Bradley South Street Station as the terminus for the extended commuter rail service. The key difference between these options is the route taken to Chicago and the Chicago terminus at the LaSalle Street Station.

Under scenario G, the northbound diesel-hauled coach trains would depart from the Bradley Station and proceed north along the KACOR extension. When the trains enter MED territory, the trains would continue up either the MED or CN right-of-way toward Chicago. At one of four possible locations, the trains would be diverted to the Metra Rock Island District (RID) Line and continue to Chicago's LaSalle Street Station.

In scenario H, the northbound diesel-hauled coach trains would again depart from the Bradley Station and proceed north along the KACOR extension. However, under this option, the trains would divert off of the KACOR extension north of Peotone and proceed along new tracks into the South Suburban Airport. The trains would stop at the SSA Terminal Station and then continue east, connecting to the Union Pacific Railroad (UPRR) just south of Balmoral Park. The trains would proceed north along the UP but divert onto new siding to service a proposed new Metra South East Service (SES) station at Balmoral Park. At this point, the trains would continue north on the SES extension (along the UP right-of-way), ultimately connecting to the Metra RID and terminating at the LaSalle Street Station in Chicago.

Under both of these scenarios, full-sized consists of one locomotive and up to nine coaches would be operated. Daily cleaning, servicing, fueling, sanding and all inspection and maintenance activities would be performed by Metra at the 47th Street yard and shop facility.

As with most Metra service, trains used for the AM rush need to be located at an outlying yard overnight to avoid costly deadhead train movement. For the KACOR extension, this function could be accommodated with a small secondary yard near the extension terminus in Bradley. This yard would principally comprise storage tracks configured to accommodate complete train consists, as shown in the figure in Appendix 7. The size of this yard would depend on the scheduled service, but the referenced figure would accommodate initial service requirements for the KACOR extension.

Although some overnight train cleaning activities are performed at these outlying yards, no inspection or maintenance activities that require a shop facility are performed there. A crew welfare facility would be included to provide a quiet rest area for the train crews during split shifts. As with the DMU operation, the yard could be located in Bradley, east of the CN between Armour Road and North Street.

3.5 SHUTTLE SERVICES

With the transit services currently available in the county, it is possible to restructure existing routes or provide new service to the proposed rail service if funding is available. Most of the existing River Valley Metro bus service routes terminate in the Kankakee city center. Altering the route to make a stop at the nearby Amtrak / potential commuter rail station may offer additional ridership opportunities for River Valley Metro.

Within the larger county, the Kankakee County Paratransit System, currently limited to seniors and the disabled, could be expanded to provide trips for rural residents to the commuter rail station, depending on funding and legal issues. If this is not feasible, the existing system offers the flexibility of easy access to the station for its existing ridership.

Offering shuttle services to the proposed stations in Monee, Peotone and Manteno, where the proposed station is on the edge of town, may not be feasible because of limited ridership. In this case, ensuring that there are bicycle facilities, such as a road or trail network to the station, and safe, covered bicycle parking, may encourage local residents to make the trip to the station by bicycle.

3.6 HIGHWAYS AND ROADS

There are a number of significant road improvements programmed and planned for the county. IDOT's 2005 to 2011 Highway Improvement Program lists a number of bridges to be reconstructed; resurfacing, widening or re-profiling on a number of key roads; and intersection enhancements, realignments or traffic signal improvements during 2005, with other projects to

follow within the next six years. The benefit of these improvements is widespread and the commuter rail service will benefit as well from this improved mobility.

The corridor enhancement (from Grant Park, west along 7000 / 6000 N roads to the Kankakee / Will border, south to IL 17, west to IL 115 and south to a new interchange at I-57 exit 308) proposed by the County will also foster additional mobility and access to the commuter rail service. Although the proposed corridor includes a fly-over at 6000 N Rd, thereby eliminating that site as a potential station, access to the rail service is available with connections to the proposed station at St George / 5000N Rd.

3.7 SOUTH SUBURBAN AIRPORT IMPLICATIONS FOR KACOR

The South Suburban Airport (SSA) is proposed to be located roughly east of the CN and between Monee and Peotone. The proposed western boundary of the airport (full build-out) extends to Illinois Route 50 (and at some points west of Rt. 50) between Watson Road in Monee and Church Road north of Peotone. None of the station sites recommended in this section lie within the airport boundaries as currently defined. The Monee station at Industrial Road is just at the proposed northern airport boundary while the next recommended station to the south, the Peotone station at Wilmington Road, is several miles south of the southern edge of the airport's western boundary at Rt. 50.

In a 1998 study for IDOT to "Evaluate Service and Facility Alternatives for Metra Commuter Rail Service to the Proposed Peotone Airport" (Reference 11), it was proposed that Metra commuter rail service could be provided directly to SSA via two alignment options, a North Route and a West Route.

The North Route was proposed to leave the CN ROW near MP 31.7, just south of Stuenkel Road and proceed directly south, roughly paralleling Will Center Road on the east to an underground airport rail terminal located approximately midway between Offner and Eagle Lake Roads and about ¼ mile east of Will Center Road. During discussions with the Village of Monee, it was found that since the IDOT study, substantial development has occurred within this corridor, reducing its desirability for a new rail corridor. As a result, an alternate SSA North Route alignment was developed that would result in the SSA rail link diverging from the CN just south of the proposed Monee commuter rail station at Industrial Road. The SSA alignment would then curve to the southeast, passing the north side of Racoon Grove, and continue southeast before returning to the original North Route alignment near Offner Road. This proposed revised SSA North Route alignment is depicted in Appendix 6.

An option was proposed in the IDOT study to continue this North Route alignment south from the SSA rail station and then turn west to rejoin the CN near MP 39.5, approximately midway between Church and Beecher Roads. This segment was intended to provide a through-route for the Chicago-St. Louis High-Speed Rail (HSR) corridor to the SSA. This alignment is also shown on Appendix 6.

The proposed West Route to the SSA diverged from the CN near MP 36.5 (approximately Offner Road), and continued east to a stub-end station within the SSA rail terminal. Under this proposed alignment, rail traffic could only proceed north from SSA (see Appendix 6).

If no rail access to SSA is proposed, then a new SSA Entrance Station was proposed in the IDOT study along the CN at approximately Offner Road. In this case, travelers would transfer at the SSA Entrance Station from the rail service to shuttle buses that would transport them to the SSA terminals.

For the purposes of this study, the implication of the construction of the SSA is considered in the design and station locations for the extension of commuter rail service to Kankakee. However, costs for the rail links and associated station facilities for the SSA are not included.

4.0 POTENTIAL RIDERSHIP

4.1 CENSUS DATA

Ridership projections for this project were developed from the 2000 Census Transportation Planning Package (CTPP) part 3 flow data (reference 53). The draft version of this data source was released by the Census Bureau early in June 2004. The CTPP, often referred to as the Census Journey-to-Work data, comes from the census long form one-in-six sample. The CTPP part 3 flow data help in forecasting because they include information on where people live and work, what travel mode they use, the number of vehicles they own, their household income, travel time, departure time, etc. The data are tabulated at a variety of geographic levels. For this Kankakee County Commuter Rail (KACOR) Feasibility Study, the county [050], place [160] and traffic analysis zone (TAZ) [944] levels have been used. The same data items are included in all tabulation levels, but more fields are empty at the finer geographic levels due to confidentiality rules. A sample from the 2000 CTPP for communities in the corridor showing the number of workers traveling to Chicago by travel mode used is included in Table 4.1-1 below.

Table 4.1-1 – 2000 Census Transportation Planning Package Data

Place of Residence	Commuters to Chicago	Percent Using Auto	Percent Using Commuter Rail	Percent Using All Other Modes
Crete	580	78%	21%	1%
Monee	235	74%	23%	3%
Peotone	155	69%	31%	0%
University Park	770	63%	26%	11%
Kankakee/Aroma Park/ Bourbonnais/Bradley	250	80%	12%	8%
Manteno	220	73%	23%	4%
Momence	30	100%	0%	0%

This table shows that a relatively high proportion of trips into Chicago are by commuter rail, but the number of trips is not large. It should be noted that for these communities, 100% of the rail trips are to the Chicago Central Business District (CBD). Although it is a rich and useful source of travel information, the CTPP is not without limitations. It contains data only on work trips. This is not a serious shortcoming for this project as most commuter rail ridership is work oriented. For example, approximately 85% of the total Metra Electric inbound boardings occur in the morning peak. Another challenge in appropriately using CTPP data is that the various geographic levels do not necessarily sum to the same totals. The county level has the most complete information on total travel, but is quite gross in terms of location. At this geographic level, it cannot be determined whether a trip to Cook County is destined to the north, south or CBD part of the county. The place geographic level allows a more precise identification of trip origin and destination, but fewer trips have detailed information on mode, time, etc. The increased information about whether a trip went to a community located in the southern or northern part of Cook County is balanced by less information about the trip because data are suppressed when there are too few responses. The TAZ geographic level data provide very specific locational information, but outside the most developed parts of the region few records contain details like mode, income of traveler, etc. In the case of Will County, the county summary level reports 8025 trips to Cook County by train while summing over the 775 TAZs in Will County results in 1833 of these trips. By using the different geographic summary levels contained in the CTPP for the appropriate purpose, a robust forecast can be developed.

4.2 SOCIOECONOMIC FORECASTS

The other principal ingredient for ridership forecasting is an estimate of future population, households and employment. The number of people, the places where they live and the location of jobs are primary determinants of future travel patterns and levels. For this study, the estimate of future socioeconomic development is that used for the South Suburban Airport Environmental Impact Study and the Prairie Parkway Phase 1 Engineering Study. This forecast is consistent with the Northeastern Illinois Planning Commission's (NIPC) forecast for the six counties in northeastern Illinois and also includes more refined estimates for five bordering Illinois counties, which include Kankakee County. The methodology used to develop this forecast was reviewed and accepted by NIPC. The estimates developed for this project are thus consistent with both the NIPC and Chicago Area Transportation Study (CATS) regional planning efforts.

The table below shows the current regional forecast of socioeconomic data used in estimating ridership. Year 2000 and estimated 2030 levels of population, households and employment from the region's current forecast for Cook, Will and Kankakee counties are included. From discussion with the KACOR Task Force, it was apparent that several members felt the current forecast of population and households was too conservative for Kankakee. In response, we have developed ridership estimates for a 2030 socioeconomic scenario with Kankakee population and households 25% higher than in the region's current forecast. This is referred to below in Table 4.2-1 as the KACOR Enhanced Forecast.

Table 4.2-1 – Socioeconomic Forecasts

County	2000	Current Regional Forecast		KACOR Enhanced Forecast	
		2030	Percent growth	2030	Percent growth
Population					
Cook	5,376,741	5,938,248	10.4%	5,938,248	10.4%
Will	502,266	1,107,778	120.6%	1,107,778	120.6%
Kankakee	103,637	139,996	35.1%	174,995	68.9%
Households					
Cook	1,974,181	2,224,929	12.7%	2,224,929	12.7%
Will	167,542	358,867	114.2%	358,867	114.2%
Kankakee	40,524	51,029	25.9%	63,786	57.4%
Employment					
Cook	2,841,941	3,318,234	16.8%	3,318,234	16.8%
Will	169,317	443,370	161.9%	443,370	161.9%
Kankakee	54,984	75,981	38.2%	75,981	38.2%

Both Will and Kankakee counties are expected to grow dramatically between the present and 2030, and Cook County is expected to add almost half a million jobs in that same period. As spectacular as Will County's 160% employment increase may seem, Cook will add more jobs than the total number that Will is forecast to have by 2030. All this development has direct effects on future travel. In Will and Kankakee, this amount of development can lead to unimagined levels of road congestion if system capacity is not increased comparably. The majority of Cook's projected job growth is in the Chicago central area, which probably means it will continue to be a strong market for travel by rail from all parts of the region.

4.3 RIDERSHIP PROJECTION METHODOLOGY

The first task in estimating potential ridership for this project was to develop a series of tables from the 2000 CTPP that would form the basis for estimation. The county summary level was used to establish current travel patterns because it has the most complete reporting of work travel. There is very little data suppression at this geographic level. This table of county-to-county work travel flows, together with the socioeconomic growth factors, was used with a Fratar growth model to estimate future travel patterns and levels. In this application of the Fratar model, growth in households was used as a surrogate for the increase in trip productions and employment growth for the increase in trip attractions. While far less sophisticated than the CATS trip generation model, these assumptions are consistent with that model's philosophy of households controlling trip productions and attractions being allocated based upon employment. The Fratar model is appropriate for the level of detail and data availability in this project.

Next, a set of tables was built from the TAZ summary level. Traffic analysis zones were grouped into approximately township sized districts, 36 square miles. Note that the census TAZ boundaries are more irregular than the surveyor geography commonly used for planning in this region. Even so, good approximations to township-like districts or subareas, such as the central business district, can be established. TAZ-based districts were created using geographic information systems (GIS) for Kankakee, Will and Cook counties. This work travel flow information was much sparser than that from the county summary level, but enabled calculation of travel proportions between subareas in the three counties. Using these districts it was possible to estimate future work trip flows from subareas in the study corridor to other subareas, such as the Chicago CBD.

At this point, estimates of total future work travel between subareas in Cook, Will and Kankakee counties were completed, but detail in terms of travel modes was lacking. CTPP place summary level data have an intermediate level of locational information and are sufficiently aggregate that detailed trip information like mode is less suppressed than at the TAZ summary level. A minimum of forethought in defining the TAZ districts so as not to split municipal places insures that the modal information available from the place summary level is a good fit with the total work flow data disaggregated from the county summary level. A useful discovery from creating tables of differing TAZ district geographies was that the train mode work flows from the study area to a Chicago or CBD district were virtually identical. It also turned out that train mode work flows with Chicago as a destination were approximately equal when generated from TAZ district or place. This was important because at the place summary level all of Chicago is a single destination. For this study, a good estimate of CBD-destined work travel would be important. Our analysis showed that rail mode usage at the place summary level for Chicago was an almost perfect surrogate for train travel to the CBD. The following Table 4.3-1 summarizes the place summary level information for travel to Chicago by the train mode.

This table includes communities currently with commuter rail service and communities along the proposed extension of rail service. It seems clear that the presence of commuter rail service strongly influences how much of an area's work travel is oriented to Chicago. Communities with service send somewhat over 30% to almost 60% of their work flow to Chicago, while the further out communities send far fewer. Even Monee's 20% probably reflects the fact that it is the next community after the current last station on the Metra Electric District. In terms of using the train mode to travel to Chicago, the communities beyond current service limits are not as different. It would be fair to generally characterize these two markets thus: communities with commuter rail service send approximately 40% of their work travel to Chicago and on average slightly more than 30% of that travel is by train mode; communities without rail service send around 10% of their work trips to Chicago and about 25% of those trips are by train.

Table 4.3-1 – Work Travel to Chicago by Train Mode from 2000 CTPP

Municipal Place	Percent of Total Work Trips to Chicago	Share of Work Trips to Chicago on Train Mode
Riverdale	59%	19%
Harvey	33%	8%
Hazel Crest	42%	18%
Homewood	36%	42%
Flossmoor	40%	38%
Olympia Fields	42%	27%
Matteson	38%	24%
Richton Park	43%	31%
University Park	35%	26%
Monee	20%	23%
Peotone	11%	31%
Manteno	9%	23%
Kankakee	3%	12%

The future trip flows based on county summary level CTPP data and forecast growth, disaggregated using TAZ district CTPP flow data, were combined with the following assumptions about travel to Chicago. Use of the train mode was derived from the place level CTPP data and other Metra data.

1. Communities on the proposed rail extension would send an increased proportion of their work trips to Chicago. Two levels are included in our projections. The first is that the percentage will increase to 35%. This proportion is slightly below the 40% of suburban communities on this line today and is consciously conservative. The second assumption is that the share of total work trips to Chicago will grow to 45%. This level is still within current bounds, but at the high end. It presumes that the level of Chicago-bound travel would experience a very significant level of road congestion accompanying the growth in the study corridor.

2. The train mode share of travel to Chicago will not change significantly. It is assumed to be 25%. This is again slightly below the overall value for communities with service on this line as noted above, but is supported by the limited data available. Only the Kankakee community's train mode share would rise significantly. This is reasonable for an end-of-line terminal station where riders come from the widest area of any station.

3. The CTPP has information only on work travel. Therefore, we used the July 2000 "Metra Rail Service and Residential Development Study" rider survey (reference 54) database to estimate non-work travel as 5% of total travel.

4. The reverse commute and inbound non-CBD trip categories are not large. At the county summary level, the 2000 CTPP reported less than 100 reverse commute train trips from Cook to Will and Kankakee combined and none at the TAZ summary level. Also, as noted earlier, inbound train trips for Chicago do not differ significantly whether they are derived from place or aggregated TAZ summary levels, so the CTPP is not a good source for estimating these markets. Metra has a strong data collection effort and conducts regular boarding counts for all its lines. Using the Metra 2002 station boarding/alighting count database (reference 37), we estimate inbound non-CBD travel to be 7.5% of total travel and reverse commuting to be 6.7% of total travel.

4.4 RIDERSHIP RESULTS

Table 4.4-1 summarizes the ridership projections for the full build-out (FBO) scenario of this project. For each station there is a low and high estimate based on the assumptions above; and there are separate estimates based upon the region's current 2030 socioeconomic forecast and a 2030 KACOR enhanced scenario forecast with higher population and household growth in Kankakee County. Note that the South/Brookmont and Amtrak stations in the municipalities of Bradley and Kankakee are too near to each other for individual estimates, so that a single projection was evenly split between the two proposed stations. The estimates for Monee below are best viewed as an undetermined mix of new riders and diverters from the University Park station.

Projected ridership for a minimum operable segment (MOS) ending at Manteno is shown in Table 4.4-2. This estimate follows the assumptions of the low projection for new stations. Ridership from areas beyond Manteno are assumed to have a proportion of travel to Chicago and a train mode share of 15% and 10% respectively, which are slight increases over the values in the 2000 CTPP for these areas. Again, separate estimates for the two socioeconomic forecasts are provided.

Table 4.4-1 – 2030 Ridership Projections (Boardings and Alightings) by Station
Full Build-Out (FBO) Scenario (University Park to I-57 Exit 308)

Station	Current Regional Forecast		KACOR Enhanced Forecast	
	High	Low	High	Low
Monee	1520	1180	1520	1180
Peotone	810	630	810	630
Manteno	520	400	650	500
St. George (Bourbonnais)	1150	890	1430	1110
South/Brookmont (Bradley)	430	330	540	410
Amtrak (Downtown Kankakee)	430	330	540	410
308 interchange (S. Kankakee)	860	670	1070	840
Totals	**5720**	**4430**	**6560**	**5080**
Averages	**5070**		**5820**	

Table 4.4-2 – 2030 Ridership Projections (Boardings and Alightings) by Station
Minimal Operable Segment (MOS) Scenario (University Park to Manteno)

Station	Current Regional Forecast		KACOR Enhanced Forecast	
	High	Low	High	Low
Monee	1520	1180	1520	1180
Peotone	810	630	810	630
Manteno	1030	790	1280	990
Totals	**3360**	**2600**	**3610**	**2800**
Averages	**2980**		**3200**	

The above approach and resulting ridership estimates cannot consider elements such as frequency of service, fare policy, availability of parking or many other aspects of rail service that are important to an individual's decision to use it. Analysis of these elements requires a network-based travel demand model. That level of modeling also enables the effects of roadway congestion to be accurately incorporated into transit ridership projections. As this project moves forward, model-based patronage forecasts will be required to meet New Starts requirements. The initial ridership projections prepared in this study will still be useful to the modelers in accessing the reasonableness of their more analytical forecasts.

5.0 FINANCIAL FEASIBILITY

*[**Note:** During a final review of this Study, the Village of Manteno revised their preference for the Manteno station to be at a different site north of 10000N Road (Reference 59). Likely locations that would meet this criteria include 11000N or 12000N Road. Because this change may affect the location of the MOS, the financial costs and analyses provided in this report relative to the MOS location may also change.*

Although this report has not been changed to reflect the change in preference for the Manteno station location, additional information pertaining to the anticipated impact of this change to the overall Study results and conclusions is described in Appendix 11. Further detailed evaluation of a new Manteno Station site will be performed in the Phase II Study, as described in Section 7.2.]

5.1 RAILROAD FACILITY UPGRADES

Eight commuter rail service alternatives have been discussed earlier. They are summarized in Chapter 7. For costing purposes, the results of Chapter 7 generally indicate that cost estimates should be developed for the first six scenarios. These six scenarios include the extension of MED service and the use of DMUs shuttling up to University Park station where passengers would transfer to MED.

The other two scenarios involve diesel-hauled and dual-mode hauled trains. Some available cost information on the other two scenarios is also provided herein.

5.1.1 MED Extension and DMU Service

Section 3.1 considers a number of potential capital investment improvements, or options, for the existing Canadian National mainline, i.e. the Railroad Infrastructure per the original Request for Proposals for this project. These options are the means of accommodating the addition of commuter rail train operation in the section of line between the existing Metra University Park station and Kankakee County. This addition of commuter rail traffic is in addition to any increases in CN freight train traffic (which the railway estimates to be 4% per year) and the possible introduction of MWRRS intermediate-distance high-speed passenger trains. All of this traffic is described in Railroad Operations in Section 3.2.

In addition, Section 3.4 considers the potential improvements required in the form of Commuter Rail Support Facilities. These are the new yard, maintenance and crew welfare facilities needed for the KACOR service.

Together, the potential improvements in the railroad infrastructure (CN mainline) and the commuter rail support facilities (yard, maintenance and crew welfare facilities) constitute the Railroad Facility Upgrades that are evaluated in this section.

The five KACOR options from Section 3.1 and the DMU end-of-line yard option from Section 3.4 were costed. The unit and lump sum costs used in the preparation of the capital cost estimates for the extension project were derived from PB's extensive and proven database of such costs developed and refined as a consequence of our involvement in many similar projects throughout the nation. Capital costs developed on these assignments have been reviewed by several of the Class I and regional railroads and commuter rail operators in the US, including the Burlington Northern Santa Fe (BNSF), Metra and the Wisconsin Central (which is now part of the CN). In addition, PB is continuously monitoring procurements throughout the commuter rail and railroad industry and updating the unit pricing as warranted by the results of more recent procurements. Recent work for Metra and other agencies has been used extensively, including preliminary capital cost estimations

developed for the reconstruction of the California Avenue Yard on the UPRR for Metra. Local, recent land prices for the Kankakee County area were obtained and utilized.

Most of the quantities for the capital improvements were derived from information and sketches in the Appendix. That is, they are "take-offs." The sketches used include:

- Right-of-way (ROW) schematics
- Aerial photographs of station sites
- Typical station layouts
- Typical end-of-line yard, servicing and crew welfare facilities.

Lump sum quantities were taken from the experience of the project team on other similar projects.

The line item component costs include right-of-way purchase prices; civil and structural components for drainage, retaining walls, and bridges; appropriate railroad equipment and appurtenances, including trackwork and signaling; and engineering design costs. In addition, contingencies and other allocations appropriate to a feasibility study have been applied to each of the capital improvement programs, including an allowance for hidden railroad issues.

The resulting detailed tables for those capital costs are provided in the Appendix. Note that the Option B through E tables address costs for successive portions of the extension between specific mileposts. As such, the costs must be added for each subsequent segment of the KACOR extension. For example, the total cost for DMU track improvements between University Park and Manteno is the sum of the costs reflected in the cost sheets for both segments as defined in Options B and C ($67.9m + 16.4m = $84.3m). The total values for each segment and the associated yard concept (if applicable) are summarized in Table 5.1-1.

Table 5.1-1 – Railroad Improvement Costs by Extension Segment

Cost Option	Railroad Improvements by Segment	Segment Mileposts *	Estimated Capital Cost
Option A	Extend Metra EMU Service from University Park to Monee at Industrial Drive	33.2 to 35.0	$ 23.1 million
Option B	Provide DMU Service from University Park to Peotone at Wilmington Road	31.5 to 41.3	$ 63.4 million
Option C	Provide DMU Service from Peotone to Manteno at 10000N Road	41.3 to 45.5	$ 16.4 million
Option D	Provide DMU Service from Manteno to Bradley at South Street / Brookmont Boulevard	45.5 to 54.75	$ 47.3 million **
Option E	Provide DMU Service from Bradley to Kankakee at I-57 Interchange 308	54.75 to 59.5	$ 33.0 million
DMU Yard and Shop Facility – Applicable to Options B – E			$ 59.9 million

* The Segment Mileposts reflect end-of-track estimates for the KACOR extension, not the station locations which are slightly different.
** Includes $4.4m applicable only to service between University Park and Bradley, i.e. Options B through D. If service is to be extended to Option E – Kankakee, I-57 Interchange 308, deduct $4.4m from the Option D amount.

5.1.2 La Salle Street Station Access Costs

As discussed in Section 3.1.3, diesel-hauled trains will need to be routed from the CN/MED right-of-way to the Metra Rock Island District (RID). One such connection is discussed there. The connection would require the addition of connecting tracks between railroads which cross each other and are grade separated (fly-over).

A general indication of the costs associated with each rail-to-rail connection can be taken from the SES study (volume 3 of reference 48) where double and single track connections at 79th Street have already been conceptualized. These concepts are estimated therein at $9.5 and $13.7 million respectively in September 2000 dollars. Allowing for inflation and for greater complexity at Kensington or any of the other junctions discussed earlier, an allowance of $15 to $25 million per connection would probably be appropriate.

In addition, upgrading costs for the mainlines between the junctions would be needed. These mainline upgrade costs could range from $1 to $5 m per mile.

However, as noted earlier, all of these costs may not be assigned to the initiation of Kankakee service. The assignment of these costs will depend on whether or not the SES is built.

5.2 PASSENGER FACILITIES

The project team created a typical station concept for stations located along two-track mainlines. It is shown in Appendix 5. This typical station follows Metra's station design guidelines (Reference 20) for both diesel-hauled equipment and electric multiple unit (EMU) operations except where Metra has indicated it has an alternate design preference. Specifically, Metra has advised that they will no longer allow any new pedestrian crossings of the mainlines except at road crossings.

The concept was priced as a baseline for the specific stations in this study. Adjustments were then made for specific variations at each site. The resulting station costs for the station sites discussed in Section 3.3 are provided in the following Table 5.2-1. Detailed costs for each station site are provided in Appendix 8.

Table 5.2-1 – Capital Costs for Stations

Station Site & Location		**Station Cost in 2004 Dollars**
University Park	Existing Metra Station	$693,000
Monee	Industrial Drive	$8,745,000
Peotone	Wilmington Road	$5,577,000
Manteno	10000N Road	$5,577,000
Bourbonnais	St. George Road	$5,346,000
Bradley	South St. / Brookmont Blvd.	$8,481,000
Kankakee	Amtrak Depot	$2,541,000
Kankakee	I-57 Interchange 308	$8,481,000
Total Cost for all Stations		**$45,441,000**

The specific costs used for the station costs were derived from several sources, including previous studies, Metra information and standard construction cost information sources. Land costs were assumed to be $75,000 per acre, based upon information received from Kankakee County real estate sources.

Some of the key differentiators for costs between the various stations include the following:

For the University Park Metra Station, the cost of $693,000 reflects an upgrade of the existing Metra station facility to add a new low level DMU platform extension at the south end of the existing high-level Metra EMU platform. A connecting ramp will enable passengers to move from one platform to the other. It is not expected that any significant upgrades would be required to the remaining Metra facilities at University Park.

At the Monee Industrial Drive site, the station cost of $8,745,000 considers the need to construct a new station facility in a Greenfield location. For this particular station, either a pedestrian bridge or a tunnel will be required because there is no existing at-grade crossing. This feature adds an estimated $2,200,000 to the total cost. Additionally, $200,000 is added to provide for a new access road for the Prairie Material Sales company plant that is located just south of the proposed west parcel.

The Peotone Wilmington Road, Manteno 10000N Road and Bourbonnais St. George Road station sites are very similar in cost at $5,577,000 for the Peotone and Manteno stations and $5,346,000 for the Bourbonnais station. Pedestrian access between platforms is provided via existing signalized road-railroad grade crossings, negating the need for pedestrian tunnels. The Bourbonnais site development cost is slightly less than the others because of expected savings due to the existing parking lot from the former Chicago Bridge and Iron office facility.

The Bradley South St. / Brookmont Blvd. station cost is $8,481,000. As a center platform is anticipated for this site, the platform costs are expected to be less than the costs of the other sites that will use two platforms, but this will be more than offset by the need for a pedestrian tunnel to access the platform area. Because the site is located in a commercial and industrial area, it is anticipated that at least two new signalized traffic intersections will be required, which is also reflected in this site cost.

The Kankakee Amtrak Depot station site is costed at $2,541,000. This cost is much less than that of other sites and reflects the anticipated use of the existing station and parking facilities for the KACOR service. A new outbound platform will be required, but pedestrian crossings between platforms are expected to occur at the existing Merchant Street road-rail grade crossing, so that a pedestrian tunnel is not required. It is anticipated that the City of Kankakee will provide some of the land to be developed into parking; however, $1,000,000 for land acquisition for additional parking is included.

At the Kankakee I-57 Interchange 308 station site, the costs are expected to be $8,481,000, which is similar to the costs of other KACOR Greenfield station locations requiring a pedestrian tunnel.

5.3 ROLLING STOCK

5.3.1 Service Plan

Starting from the service plan of five inbound and five outbound trips per day, the equipment requirements for the MOS and FBO services can be estimated.

For the MOS, operating between University Park and Manteno, the one-way trip is estimated to require 20 minutes. This is based on actual performance data, and includes dwell times at each station, plus end of line layover time. With these allowances, three sets of equipment can be used to cover the five round trips per day. One additional set would be necessary to cover maintenance requirements. In order for this recycling of equipment sets to occur, there are two deadhead trips operated by KACOR-assigned trains, requiring meets with the revenue KACOR trains between Monee and Peotone and between Peotone and Manteno.

In the case of the FBO, the one-way travel time is estimated to be 45 minutes between University Park and the Kankakee I-57 stations. This would require four sets of equipment to cover the five daily round trips. In addition, a fifth set would be required to cover maintenance, etc.

To be conservative, these travel times are applied to all three possible modes (DMUs, EMUs and diesel-hauled trains). Given some of the longer station-to-station spacings on this project, it is likely that the EMU could operate some of these segments in slightly shorter times.

5.3.2 Rolling Stock Capital Costs - DMUs

It is assumed that a gallery-car configuration would be used for the DMUs. Furthermore, these cars would be made into motor-trailer-motor sets. This is entirely consistent with the conceptual service plan for Metra's STAR line. If those plans continue along those lines, it might be possible for the KACOR equipment purchase to be added to the order for the STAR line (about 85 cars were estimated to be needed for that service), thereby reducing the per-car purchase price.

At the time of the conceptual investigations into the STAR line (late 2002), a per-car price of $2.26 million was used. Escalating this by 5% per year (a slightly higher rate of escalation is used to reflect the possibility that the KACOR order might be placed independently of any other procurement, thereby providing a conservative purchase price), the per-car price in 2004 dollars would be around $2.5 million.

For the MOS, four three-car sets are required: 12 x $2.5 million = $30 million.

The FBO would require five three-car sets: 15 x $2.5 million = $37.5 million.

5.3.3 Rolling Stock Capital Costs – EMUs

Based on the recent Metra procurement for 26 EMUs and the pending order for 160 EMUs, it is reasonable to assume that a per-car price of $2.5 million per EMU could be used for the KACOR order. However, it must be realized that the KACOR project will not advance to the point where equipment can be ordered in time to handle the KACOR requirements as an option to the pending MED order. Therefore, the per car EMU price is escalated by 4% to reflect the penalty for a small order size, resulting in a per-car price for the KACOR EMUs of $2.6 million.

The MOS would require, 12 EMUs at $2.6 million = $31.2 million. The FBO would require 15 EMUs, each at $2.6 million = $39 million.

5.3.4 Rolling Stock Capital Costs – Diesel-Hauled Trains

Metra's most recent locomotive procurement (from MPI for 27 locomotives) had a per-unit purchase price of $3.1 million (reported in 2001 dollars). That same year, NJ Transit bought diesel locomotives from Alstom, with a reported price of $5.3 million per locomotive. Averaging these two results and escalating that result to 2004 dollars results in a predicted per-locomotive price of $4.7 million. This is somewhat higher than the result would be escalating the Metra price alone, but it is felt that this pricing should be conservative in order to reflect the small quantity of locomotives required for the KACOR project. Note that if there is another Metra locomotive procurement occurring around this same time, the KACOR requirements could be bid as an option to that order, resulting in a lower per-locomotive price.

The most recent Metra order for gallery cars (coaches and cab cars were included in the order) had a per-car price of $1.34 million (2001 dollars) and was considered a very low price in the industry. If that price is inflated from 2001 to 2004 with an extra year to compensate for the low price, the value would be increased by 16%. The resulting predicted per car price in 2004 dollars would be $1.6 million.

For the MOS, 4 locomotives and 12 cars are required, resulting in a total purchase price of $38 million ($18.8 million for the locomotives; $19.2 million for the cars). The FBO would require 5 locomotives and 15 cars, costing a total of $47.5 million ($23.5 million for the locomotives and $24 million for the cars).

5.4 OPERATING AND MAINTENANCE (O&M) COSTS

5.4.1 Deriving O&M Costs by Mode

O&M costs for the diesel-hauled trains and the EMUs are expected to be consistent with the Metra experience for these modes to date. For the second phase of the Kane/Kendall Commuter Rail Feasibility Study (studying the extension of BNSF commuter service between Aurora and Oswego), a per-vehicle mile O&M rate of $14.10 was derived (expressed in 2002 dollars). This rate was developed using the O&M costs Metra reports to the FTA as part of the agency's Section 15 reporting requirements, in addition to reflecting adjustments suggested by both Metra and BNSF personnel to reflect the total cost picture more accurately.

If this rate is escalated by 4% per year, in 2004 dollars it would be $15.23. Once again, this is a per-vehicle mile rate, so it must be multiplied by the number of cars in the train, as well as the distance over which the entire train is operated. The O&M cost that was developed for the BNSF study included an adjustment for the increase in fuel prices. In the interim, particularly in the last year, fuel prices have continued to increase. Some commuter rail operators have indicated that fuel prices have increased by as much as 40% per gallon over the past six months. For this reason, the $15.23 per vehicle-mile cost is escalated by an additional 15% to a unit price of $17.51 per vehicle mile.

In the case of DMUs, there is not much of a cost database for the US market. However, PB developed a per-mile O&M cost for an FRA-compliant DMU for another commuter rail study in 2001. When this per-mile cost is escalated to 2004 dollars and when the fuel price adjustments noted above are included, the per-vehicle mile cost is estimated to be $12.70. To be conservative, the diesel-hauled O&M cost is applied to the EMU case.

5.4.2 Vehicle Miles Operated – MOS Schedule

The sample schedules for the MOS and the FBO are based on 10 trips per day by three car trains, regardless of the specific mode being used. Each one-way trip in the MOS is 14.3 miles long, leading to a total daily mileage of 429 miles. Each trip is made by a three-car consist, so that the miles per trip must be multiplied by three, before applying the O&M costs derived above.

In addition, there are six non-revenue deadhead trips per day under this schedule (to get trainsets in place for succeeding trips). The total vehicle miles for these trips are estimated to be 250 miles. Therefore, the total vehicle miles operated per day are 670. When this is multiplied by 250 operating days per year, the annual vehicle miles are 166,750. However, there are also miles that are accumulated moving cars around in the yard, to/from the shop or in test operations (either preceding or following repairs). Therefore, an additional 10% is added to the revenue and non-revenue miles estimated above, resulting in 180,000 vehicle miles per year for the MOS schedule.

5.4.3 Vehicle Miles Operated – FBO Schedule

The same process is followed for the FBO schedule, except that each one-way trip is 27.9 miles in length. Revenue vehicle miles in this scenario are estimated to be 837 miles per day; non-revenue vehicle miles would total 495, for a total per day of 1320 miles. The annual vehicle miles would be 330,000 miles; when the 10% factor is applied, the annual total becomes 363,000 miles.

5.4.4 Application of the Calculated O&M Costs by Mode

DMU

MOS: 180,000 annual miles x $12.70 per mile = $2.29 million per year

FBO: 363,000 annual miles x $12.70 per mile = $4.61 million per year

The DMUs would operate as a shuttle service to/from University Park. Therefore, the annual costs listed above represent the total cost for the proposed service.

EMU – KACOR Extension Only

MOS: 180,000 annual miles x $17.51 per mile = $3.15 million per year

FBO: 363,000 annual miles x $17.51 per mile = $6.36 million per year

The annual mileage and costs listed above represent only the incremental cost for operating the MED extension trains, assuming that these trains operate only as three-car trains. As is noted elsewhere in this report, this phase of the study did not include analysis of the proposed MED connecting trains to determine whether or not those trains could accept additional cars/riders.

However, for the purposes of this study, if the KACOR EMU trains were assumed to operate to/from Randolph Street, Chicago, the following annual miles and O&M costs would result for the additional equipment required to service the extension trains – only:

EMU – KACOR to Randolph Street, Chicago

MOS: 376,000 annual miles x $17.51 per mile = $6.58 million per year

FBO: 487,000 annual miles x $17.51 per mile = $8.53 million per year.

Diesel-Hauled via SSA to LaSalle Street Station, Chicago

The one-way mileage via this routing from the Kankakee/I-57 station is estimated at 63.3 miles. Applying the unit O&M cost to five three-car consists, the following results:

FBO: 522,000 annual miles x $17.51 per mile = $9.14 million.

Diesel Hauled via CN to UP to RID to LaSalle Street Station, Chicago

In this instance, it is possible to have diesel trains operate either the MOS (42.4 miles to Chicago) or the FBO (56.6 miles to Chicago). The annual vehicle miles and resulting annual O&M costs are:

MOS: 350,000 annual miles x $17.51 per mile = $6.12 million per year

FBO: 467,000 annual miles x $17.51 per mile = $8.18 million per year.

5.5 TOTAL START-UP COSTS

The project team reviewed and selected CN ROW improvement options for the initial KACOR service in Section 3.1.2. Specifically, without the benefit of a line capacity analysis, the team's judgment was that the only improvement option needed was the addition of a second continuous mainline track between the Metra University Park Station and the new end-of-line terminus for KACOR. Other major improvements did not appear to be justified to the project team on the basis of the projected traffic flow. Once the line capacity analysis is completed, this judgment may change, so that the possibility of re-examining the choice of these investments should be made as the study progresses.

For the purposes of this study, the planned investments for the minimum operable segment (MOS) option to Manteno – 10000N Road and the full build out (FBO) option to Kankakee – I-57 Interchange 308 are summarized in the following table.

Table 5.5-1 -- Summary of Capital Investments by Alternative
(All costs in 2004 dollars)

Improvement		Costs by Alternative	
Item	**Details**	**MOS**	**FBO**
CN Mainline	Provide DMU service from University Park to Manteno at 10000N Road	$ 79.8 million	$ 79.8 million
	Provide DMU service between Manteno and Kankakee I-57 Interchange 308	N/A	$ 75.9 million
Stations	• University Park upgrades • Monee – Industrial Road • Peotone – Wilmington Road • Manteno – 10000N Road	$ 20.6 million	$ 20.6 million
	• Bourbonnais – St. George Road • Bradley – South St. / Brookmont Blvd. • Kankakee – Amtrak Depot • Kankakee – I-57 Interchange 308	N/A	$ 24.8 million
Yard & Service Facility	End-of-Line DMU Yard and Shop	$ 59.9 million	$ 59.9 million
New Rolling Stock	Diesel Multiple Units in 3-car sets • 12 cars required for MOS • 15 cars required for FBO	$ 30.0 million	$ 37.5 million
TOTALS		**$ 190.3 million**	**$ 298.5 million**

It is very important to note that the capital costs, in particular, are early feasibility study estimates. In past informal meetings with Metra personnel on similar projects, Metra suggested that, as a safeguard, the capital costs should be automatically tripled and the operating costs doubled at this early stage of a project.

In particular, the largest potential variables in these costs are the improvements to the CN mainline. Simulation studies will need to be completed to determine/verify the extent of mainline improvements that are needed on the CN to ensure that their freight operations are kept whole. A line capacity analysis is proposed for the next phase of the study, as discussed in Chapter 7. The results of these simulations ultimately will be used in negotiations with the CN to determine the exact mainline improvements that will be required.

5.6 REVENUE

The revenue calculations for this study treat the KACOR operation on a "stand-alone" basis with regard to both revenue and costs. This has been done to avoid "biasing" the results, which might occur if the KACOR revenue were based on ticket prices to/from downtown Chicago. Performing the calculations in this way avoids the situation of recognizing revenue without considering the additional costs for transporting passengers on the MED between University Park and Chicago. Changes to these assumptions for cost analysis should be performed in future phases of this study.

The revenue collected from passenger fares can be projected based on the following:

- The ridership by stations projected in Chapter 4
- The station milepost locations shown in the right-of-way (ROW) schematics in Appendix 4
- Metra's fare structure by milepost (Reference 51)

- The following generally conservatively low assumptions:
  - All trips are round trips to University Park
  - All tickets are monthly passes
  - An average of the low and high forecast values of Chapter 4
  - The current regional forecast of Chapter 4.

The results of the collected revenue calculations are tabulated below. The tables show both the full build out (FBO, Alternative E) and the minimum operable segment (MOS, Alternative C) scenarios.

Assuming also that all trips are to downtown Chicago, the additional new revenue collected by Metra from the passengers for their monthly pass transfers for transit between University Park and Randolph Street Station can also be calculated. Each rider would need an additional six zone (A to G) monthly pass transfer at $ 10.80 per zone (reference 51, page 36), or $64.80 per month. This added Metra revenue is also shown below in Tables 5.6-1 and 5.6-2. Since the current Metra fare structure is used, all results are in 2004 dollars.

Table 5.6-1 – FBO (Alternative E) Projected Annual Collected Revenue

Proposed Station		Projected Daily Ridership		Metra Fares		Yearly Revenue
Location	CN Milepost	Boardings & Alightings	Round Trip Riders	Zone	Monthly Pass Price	
Monee	34.7	1350	675	A	$ 49.95	$ .40 m
Peotone	41.2	720	360	B	$ 55.35	$ .24 m
Manteno	45.4	460	230	C	$ 78.30	$ .22 m
St. George	50.7	1020	510	D	$ 89.10	$ .55 m
South/Brookmont	54.5	380	190	E	$ 99.90	$ .23 m
Amtrak	55.8	380	190	E	$ 99.90	$ .23 m
308 Interchange	59.0	765	383	F	$ 110.70	$ .51 m
Totals		**5075**	**2538**			**$ 2.38 m**

Added Metra revenue from University Park to Randolph Street Station: $ 1.97 m. (Total: $ 4.35 m.)

Table 5.6-2 – MOS (Alternative C) Projected Annual Collected Revenue

Proposed Station		Projected Daily Ridership		Metra Fares		Yearly Revenue
Location	CN Milepost	Boardings & Alightings	Round Trip Riders	Zone	Monthly Pass Price	
Monee	34.7	1350	675	A	$ 49.95	$ .40 m
Peotone	41.2	720	360	B	$ 55.35	$ .24 m
Manteno	45.4	910	455	C	$ 78.30	$ .43 m
Totals		**2,980**	**1,490**			**$ 1.07 m**

Added Metra revenue from University Park to Randolph Street Station: $ 1.16 m. (Total: $ 2.23 m.)

5.7 COMPARATIVE START-UP COSTS

5.7.1 Federal Cost Effectiveness Index

Assessment of the financial feasibility of transit capital improvement projects can also be done by calculating the project's cost effectiveness index (CEI). As defined by the Federal Transit Administration (FTA), the CEI is the incremental cost per incremental passenger. It is a measure of the cost of attracting the rider to transit services, as a result of the investment in the transit capital improvement.

The CEI is calculated as:

$$CEI = \frac{\text{Annualized capital cost + Annualized O\&M cost}}{\text{Annual ridership}}$$

The FTA has formulas for the annualization of the capital costs, recognizing that the different cost elements have varying useful service lives. For example, right-of-way and the preparation of it both have a useful service life of 100 years. Structures, trackwork, signals and electrification equipment have a 30-year service life. Rolling stock is estimated to have a useful service life of 25 years.

For the KACOR project, the annualized capital costs, annual O&M costs and annual projected ridership, lead to the following CEI for the MOS and FBO investment alternatives:

Table 5.7-1 – KACOR Investment Alternatives – Cost Effectiveness Index

Investment Alternative	Annualized Capital Costs	Annual O&M Costs	Annual Ridership	Cost Effectiveness Index
MOS	$11.8 million	$2.3 million	0.74 million	$19.05
FBO	$18.4 million	$4.6 million	1.27 million	$18.11

The calculated CEIs for both the MOS and the FBO are in the range of intermediate cost effectiveness; that is, this investment alternative would stand a fair chance of receiving federal funding in comparison to other potential capital investment projects. The difficulty in making any absolute statement relative to any one project being compared to other projects is that this is a constantly changing picture. As the KACOR project advances, liaison with the FTA Region V office will be essential in securing support (and ultimately, funding) for this project.

5.7.2 Comparison with Other Metra Extensions and New Lines

The comparison to other planned Metra line extensions can be done by updating the estimated capital costs for other Metra projects to 2004 dollars, and then calculating the cost per mile for those comparison projects. The tables below compare the projections for the KACOR investment alternatives to other Metra projects for which data are available.

Table 5.7-2 – Capital Cost per Added Mile of Extension

Line	Miles	Estimated Capital Cost	Cost per Mile
UP-West Extension *	7	$138.1 million	$19.7 million
Southwest Service Extension *	11	$218 million	$20 million
BNSF Extension **	6.4	$102.1 million	$16.0 million
KACOR – MOS **	13.9	$190.3 million	$13.7 million
KACOR – FBO **	27.5	$298.5 million	$10.9 million

* - Under construction ** - Projected

Therefore, both of the KACOR investment alternatives are projected to have a lower cost per mile than any of the comparison projects.

Table 5.7-3 – Capital Cost per Added Rider

Line	Project Year of Work	Year of Data	Capital Cost	Ridership Per Day	Cost per Daily Rider
NCS	1986	2000*	$152 m	4,480 **	$33.9 k
BNSF Ext.	2002	2010*	$102 m	3,500	$29.1 k
KACOR – MOS	2004	2004	$190 m	2,980	$63.8 k
KACOR – FBO	2004	2004	$299 m	5,075	$58.9 k

* Capital costs escalated to 2004 dollars by 4% per year
** Actual. All other ridership data are projected.

By this comparison, both the KACOR MOS and FBO investment alternatives are projected to have substantially higher costs per daily rider than either the North Central Service or the BNSF extension to Oswego.

5.7.3 Revenue Recovery Ratios

The revenue collected on the KACOR service, divided by the added operating and maintenance costs for the new service can be calculated from the numbers in this report. These ratios are known as the revenue recovery ratio, or fare box recovery ratio.

The estimated revenues for the KACOR investment alternatives have been calculated in Section 5.6 for two different revenue collection schedules:

1. A stand-alone system operating between Kankakee and University Park
2. MED's added revenue for transferring riders on the current service from University Park to Randolph Street Station.

Projected operating costs for the stand-alone system have also been calculated. However, there is no readily apparent rational model for calculating the projected marginal operating costs for the added riders on the existing MED service. The two revenue collection schedules can be used with the stand-alone operating costs to establish extreme values for the revenue recovery ratios. These extremes would most likely bound any ratios based on marginal operational cost estimates for the transferring MED riders. For discussion purposes, a range of expected revenue recovery ratio is arbitrarily taken in the table below as the middle two quarters of the ranges between those extremes.

Table 5.7-4 – Revenue Recovery Ratio

Alternative	Annual O&M Cost	Projected Revenue	Revenue Recovery Ratio
Stand-Alone System:			
MOS	$2.3 million	$1.07 million	0.47
FBO	$4.6 million	$2.38 million	0.52
Stand-Alone PLUS MED Transfer Rides:			
MOS	$2.3 million	$2.23 million	0.97
FBO	$4.6 million	$4.35 million	0.95
Middle Two Quarters of Above Range:			
MOS			.59 to .84
FBO			.63 to .84

These recovery ratios indicate that both the MOS and FBO would produce sufficient revenue to cover 2/3 to 3/4 of their projected O&M costs. This is a very positive outcome for a "new start" transit service.

Few, if any, transit services even come close to covering the cost of their operation with collected fares, so they require external support to cover their operating costs. Metra, for example, is considered one of the financially stronger commuter rail transit agencies in the industry and it has a statutory funding limit that is tied to a 55% revenue recovery ratio (reference 51). The 59% to 84% ranges shown above indicate that either the MOS or the FBO would help Metra to meet that financial operating goal.

As noted in Section 5.6, the revenue and cost projections treat the KACOR operation as a "stand-alone" system. Additional operating and maintenance costs on the MED to accommodate the KACOR originating riders on their trip north from University Park have not been included. However, neither have the benefits of increased revenues for new riders between University Park and Chicago resulting from the KACOR operation, which would clearly benefit Metra's operation. An estimate of those impacts and the resulting costs is beyond the scope of this initial investigation, but could be conducted as part of any future study of this project.

In general, the projected revenue recovery ratios for the KACOR operation are very good, both from the perspective of a stand-alone KACOR operation and from that of an operation keeping Metra's revenue recovery ratio above its mandated goal.

5.8 FUTURE COST ISSUES

5.8.1 Future Cost Escalations

The cost data presented in this report are all in current US dollars. For future reference, there is a readily available escalation factor that can be used to convert these values to approximate values at future dates. That conversion is accomplished via a construction cost index history that is available on line from the leading construction industry trade journal, Engineering News Record, published by McGraw Hill. That index history can be found at the following internet web site:

http://enr.com/features/conEco/costIndexes/constIndexHist.asp.

5.8.2 Federal Standard Cost Categories

In late July 2004, the US Federal Transportation Administration (FTA) issued Standard Cost Category (SCC) worksheets and associated guidance on using them by posting these documents on its website. These guidelines were issued after the basic costing effort had been completed on this project so were too late to be incorporated in this work. Future KACOR work will need to consider these guidelines in anticipation on applying for federal funding.

As a brief introduction to the SCC guidelines, the following are "the ten main categories that comprise a capital project."

1.00	Guideway and Track Elements
2.00	Station, Stops, Terminals, Intermodals
3.00	Yards, Shops, Admin/Support Facilities
4.00	Sitework & Special Conditions
5.00	Systems
6.00	ROW, Land, Existing Improvements
7.00	Vehicles
8.00	Soft Costs
9.00	Finance Charges
10.00	Contingency

6.0 INSTITUTIONAL ISSUES

6.1 RTA ISSUES FOR EXTENSION

The Regional Transportation Authority (RTA) was established in 1974 with the approval of a referendum in the six-county northeastern Illinois region (Cook, DuPage, Kane, Lake, McHenry, and Will counties). The RTA is a special purpose unit of local government, a body politic, a political subdivision, and a municipal corporation of the State of Illinois. In 1983, the RTA Act was amended resulting in substantial changes in the organization and funding of the RTA and its operations. All operating responsibilities were assigned to the three "service boards", the CTA, Metra and Pace. The RTA was was given increased power and responsibility to supervise the budgets and financial condition of the CTA, Metra and Pace.

Section 2.07 of the RTA enabling act ("An act providing for the establishment of a Regional Transportation Authority") states, in part, "the Authority may…enter into agreements with any unit of local government….for such service" which may be "between points…outside the metropolitan region, whether in this State or in Wisconsin or Indiana" Therefore, the RTA has the authority to operate beyond the six-county northeastern Illinois RTA region. Current Metra operations to Kenosha, Wisconsin exist because they were grandfathered into the system prior to the creation of the RTA. Metra is also considering at least one other new extension (the proposed BNSF extension) of its service beyond the boundaries of the basic RTA six-county region.

The Kankakee County Commuter Rail Feasibility Study examined options that extend outside the RTA six-county region (the full build option), as well as a minimum operable segment option that would initially terminate just south of Will County, which is part of the RTA six-county region. Thus, the MOS could be funded similarly to other Metra extension projects, such as the Elburn extension of the UP-West line and the Manhattan extension of the Southwest Service that are within the RTA six-county region. The capital cost of these projects was funded using Federal Transit Administration New Start funds (it is likely that the reauthorization of the federal transportation bill will cap the new starts funding at 50 percent of the capital cost of the project), other federal funds (Surface Transportation Program [STP}, Congestion Mitigation and Air Quality [CMAQ], Sections 5307 and 5309 transit funds, etc.), state, and local funds. For recent new extension projects, Metra has required that local communities pay the capital cost of the new stations in their communities. On the operating side, the RTA's enabling legislation mandates a 50 percent regional farebox recovery ratio as a condition for the receipt of state funding for operating purposes. The primary sources of operating revenue other than fare box and system generated revenues are the regional sales tax, which is levied at 1% in Cook County and 0.25% in the collar counties, and the Public Transportation Fund (annually appropriated by the Illinois General Assembly in an amount representing 25 percent of the total revenues collected locally by the RTA from its sales tax levy).

For the Full Build option and other potential options extending into Kankakee County, the prorating of capital and O&M costs for the portion of the line outside of the RTA six-county region would be required. Several methods of prorating costs can be used. All are geographically based to differentiate between the current RTA six-county region, which includes Will County but not Kankakee County. One method is based on miles of new mainline. The current end-of-line station at University Park for Metra service is 0.8 miles south of the county line between Cook and Will counties. Will County is in the RTA six-county region. Of the approximately 27.9-mile extension from University Park to Kankakee, about half of it is in Will County and is therefore already covered by the RTA Act. As a result, approximately half of the mainline related capital and operating costs associated with this extension can be treated as through they are part of a conventional Metra line extension. The other half of the mainline miles prorated costs could be addressed by Kankakee County and its affected local jurisdictions, or jointly with Metra/RTA. Other methods of prorating the costs exist. These methods could be based on ridership from stations in or outside the RTA's region along the extension, or on train/vehicle-miles traveled in or outside the region.

For the non-New Start portion of capital costs for the Kankakee County portion, other federal funds should be sought. Potential non-New Start federal funding sources include:

- Section 5307 Program
- Congestion Mitigation and Air Quality (CMAQ) Program
- Surface Transportation Program (STP)
- Section 130 Grade Crossing Program
- Job Access and Reverse Commute Grants
- Livable Communities Initiative
- Transportation and Community System Preservation Pilot Program (TCSP)
- Transportation Enhancements.

At a minimum, state and local funds will probably be needed to complete 50 percent (possibly higher) of the total project funding, and virtually 100% state and local funding will be needed to operate the new service. The most obvious source of state and local funds would be from general appropriations, or from transportation funds. For example, former Governor Ryan's Illinois FIRST, a **F**und for **I**nfrastructure, **R**oads, **S**chools, and **T**ransit, was a five-year, $12 billion program that began in fiscal year 2000 and provided significant funding for transportation. This included a $4.1 billion allocation for transit infrastructure needs in northeastern Illinois and cities with established transit districts. With the expiration of Illinois FIRST, a new state funding program will be needed.

Other historical sources of local/state capital funding include the Illinois Department of Transportation series "B" bond program and Service Board funds. The IDOT series "B" bonds typically provide approximately $40 million annually, but are subject to annual appropriation. Service Boards funds provide funding for capital projects, typically in the form of local share for federal match.

On the operating side, potential local funding methods and sources that could be considered include:

Value Capture Mechanisms
- Joint development
- Special assessments
- Tax Increment Financing (TIF)
- Impact Fees
- Right-of-Way Exactions
- Private Sector Dedications of Right-of-Way

Project-Related Revenue Sources
- Fiber-Optic Networks
- Leases
- Concessions
- Corporate Naming rights

Special Dedicated New Revenues
- Incremental Tax Revenues (gas, sales, other) on a permanent basis
- Incremental Tax Revenues (finite time period)
- Authority to Pledge Incremental Tax Revenues for Repayment of Short or Long Term Debt
- Local Credit Enhancement Techniques.

In addition, mass transit districts may also be used to help fund the operations. A local mass transit district may be created for the purpose of acquiring, constructing, owning, operating and maintaining mass transit facilities (buses, trolley buses, or railway systems) for public service or subsidizing their operation. A local mass transit district is a municipal corporation with right of eminent domain. A mass transit district may levy a tax on property within the district at a rate not to exceed 0.25% of the

assessed value only after the question of authorizing the tax is submitted to the voters in the district and approved by a majority. The River Valley Mass Transit District (RVMTD), comprised of the city of Kankakee, the villages of Bourbonnais, Bradley, and Aroma Park, and portions of Kankakee County, currently operates bus service, but does not levy a property tax.

Also, special legislation was enacted for the Metro-East Mass Transit District allowing the levy of a sales tax to support operations for the extension of Bi-States's MetroLink light rail transit service to St. Clair and Madison counties in southwestern Illinois. This special legislation included a sales tax on general merchandise and sales of qualifying food, drugs, and medical appliances (0.25% in Madison County and 0.75% in St. Clair County), and a 0.25% sales tax on sales of titled or registered general merchandise in St. Clair and Madison counties. Similar special legislation could be used on this project.

6.2 IMPACT ON LOCAL AREA

Due to the existing operating freight railroad, the impact on local areas of the proposed Kankakee County commuter rail extension options will be primarily related to the added activity in the areas of the proposed stations. The location of a layover facility has much more flexibility and generally is not a significant issue during a feasibility study of this type.

The station activity has a positive side in the potential for increases in both commercial and residential development. A popular planning tool used by municipalities with rail transit stations is to plan for and encourage transit-oriented development (TOD) in the areas of rail transit stations. TOD is moderate to higher density development, located within an easy walk of a transit station, generally with a mix of residential, employment and shopping opportunities designed for pedestrians without excluding the auto. TOD can be new construction or redevelopment of one or more buildings whose design and orientation facilitate transit use.

TOD is a strategy that has broad potential for communities with bus and rail transit systems. TOD focuses compact growth around transit stops, thereby capitalizing on transit investments by bringing potential riders closer to transit facilities and increasing the likelihood that they will use the transit system. Because of its orientation to pedestrian travel, TOD is typically applied to areas within ¼ to ½ mile of a transit stop or station – corresponding to a 5 to 10 minute walk. TOD can also produce a variety of other local and regional benefits such as compact and/or infill development and improved urban design. It is an opportunity -- another tool -- to build community, connect people and create special places that people care about.

But for development to be transit oriented, it needs to be more than just adjacent to transit. Development generally needs to be shaped by transit in terms of density, building orientation (in comparison to conventional suburban development) and/or parking. A successful TOD will reinforce both the desirable qualities of the community and the transit system.

A potential negative side of added activity in the area of new rail stations relates primarily to the added automobile traffic to that site, particularly during the morning and evening rush hours. This negative impact can be mitigated not only through the use of TOD, as indicated above, but also through the encouragement of non-motorized (walk and bicycle) access, feeder bus service, and proper station design. Furthermore, if commuters who use their automobile to access the proposed rail station and then take commuter rail to their destination previously used their auto for their entire trip, then there would be a net savings in vehicle miles of travel, resulting in less air pollutant emissions.

7.0 CONCLUSIONS and PROGRAM FOR FUTURE STUDY

7.1 CONCLUSIONS

The project team has concluded that commuter rail service into Kankakee County is feasible. The basis for this conclusion is summarized herein.

A number of different service scenarios were considered. They included four different types of locomotives and rolling stock, various locations for the last station at the south end of the service, alternate stations in downtown Chicago, multiple station locations along the line, and different routes into the Chicago Loop. While hundreds of combinations of these characteristics are theoretically possible, a short-list of eight alternatives was selected to cover the wide variety of parameters and facilitate a further winnowing down to a few scenarios which could be evaluated for their feasibility.

These eight variations are identified as alternatives A through H and are shown in Table 7-1. Their characteristics have been discussed and evaluated in Chapters 3 through 6. The results from those various Chapters are summarized in Table 7.1. The table facilitates a comparative evaluation of the alternatives. The resulting conclusions about the individual alternatives and their relative merits are discussed below.

This work is, of course, a feasibility study, so that the minimum conclusion from the work could be a simple “yes” or “no” response to the question “Is any commuter rail service to Kankakee County feasible?” The team has reached a bit further, however, and established a tiered evaluation of the alternatives. Some alternatives are not recommended. Others are feasible, but dependent on other projects. Finally, of the remaining feasible alternatives, two have been selected as the best choice of a pair of extensions that could be presented to the federal government as a viable New Start transit system. The pair is referred to in federal government terminologies as the minimum operable segment (MOS) and the full built out (FBO). Both are considered viable projects. The MOS is the minimum initial project that is viable and allows the extension to start, while the FBO is the furthest practical extent of an extension that can be envisioned.

7.1.1 Alternative A – Metra Electric Extension to Monee

This alternative is a simple extension of the existing MED service. The current end-of-line station is at University Park with the tail tracks of the overnight storage yard south of the station ending right at Stuenkle Road (MP 31.4). Metra is in the process of designing a major new yard and shop facility for the MED south of University Park. That new yard would extend the electrified section of track to somewhere between the University Park station and the village of Monee, but no new stations are being planned as part of that added electrified line.

A MED extension takes advantage of that extended electrified line and adds to it to reach the next village to the south, Monee. Since the exact location and configuration of the yard are not yet fixed, the KACOR project team assumed a nominal location for the extent of new electrification. To be consistent, the team used the same preferred station location for Monee that is used in all of the other alternatives.

The first two advantages are interrelated. First, a major part of the railroad improvements will already be made and paid for by another project, the new MED yard. Secondly, the total capital cost for reaching the new station is considerably cheaper than the other viable alternatives.

Table 7-1. ALTERNATIVE SERVICE SCENARIOS EVALUATION MATRIX

	MED Extension	Diesel Multiple Units (DMUs) (Transfer to MED at University Park)				Dual Mode	Diesel Hauled Coaches	
Ends-of-Line : Suburban:	**Monee** Industrial Drive	**Peotone** Wilmington Road	**Manteno** 10000 N Road	**Bradley** South St./ Brookmont Blvd	**Kankakee** Exit 308 I-57	**Bradley** South Street/ Brookmont Boulevard		
Chicago:	**Randolph St. Station**						**LaSalle St. Station**	
Interim Route:	**CN-MED**						**CN-??-RID**	**CN-SSA-SES (UP/CSX-RID)**
Characteristics/Criteria	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
New Stations								
RTA District	1	2	2	2	2	2	2	2
Kankakee County	0	0	1	3	4 or 5	3	3	3
Total	1	2	3	5	6 or 7	5	5	5
Travel time (incl xfer): Peotone to Metra	NA	:15	:15	:15	:15	:15		
Transfer	:00	:05	:05	:05	:05	:00	:00	:00
Other Metra to Loop	:54	:54	:54	:54	:54	:54		
Peotone to Loop	NA	1:11	1:11	1:11	1:11	1:06		
Travel Distance: Peotone to Loop	NA	41.2 miles	41.2 miles	41.2 miles	41.2 miles	41.2 miles	43.3 miles	50.0 miles
Total Trip	34.7 miles	41.2 miles	45.5 miles	54.5 miles	59.0 miles	54.5 miles	56.6 miles	63.3 miles
New Construction Mainline Mileage								
RTA District	3.6	10.1	12.2	12.2	12.2	12.2	12.2	17.5
Kankakee County	0.0	0.0	2.2	11.2	15.7	11.2	11.2	11.2
Total	3.6	10.1	14.4	23.4	27.9	23.4	23.4	28.7
Percent in Kankakee County	0%	0%	15%	48%	56%	48%	48%	39%
Technical Issues:								
Freight Railroad Issues:								
# of RRs Operating Over	1	1	1	1	1	2	3 or 4	1 + SES
New Major RR Junctions	0	0	0	0	0	0	1 (SES) or 2	1 (SES) or 2
Metra Issues:								
Mixing motive power on MED	No	No	No	No	No	Slight	Yes (2)	No
New Motive Power Technology		Moderate	Moderate	Moderate	Moderate	Significant	No	No
Redesign of U Park Station	Minimum	Yes	Yes	Yes	Yes	Minimum	Minimum	No
General:								
Yard & Shop Size/Complexity	Minimum	Moderate	Moderate	Moderate	Moderate	Significant	Moderate	Moderate
Operating Agency	Metra	Metra or K3	Metra or K3	Metra or K3	Metra or K3	Metra	Metra	Metra
Dependence on or Interface with Possible Future Projects:								
SSA	No	No	No	No	No	No	No	Yes
Metra: SES	No	No	No	No	No	No	No	Yes
New MED Yard	Potential +	No	No	No	No	No	No	No
Order for DMUs (STAR line)	No	Yes, or could be resolved by a new rail transit agency						
Chicago-St. Louis HSR	No	No	No	No	Yes	No	No	No
6000 N / Warner Bridge Rd. / 308	No	No	No	No	Yes	No	No	No
IDOT CREATE RR Junctions	No	No	No	No	No	No	Yes	Done by SES
Ridership			3200 / day		5820 / day			
Costs ($ m)								
Capital Total	$23.1 m		$190.3 m		$ 298.5 m			
RR Improvements per mile	$ 12.8 m/mi		$ 5.7 m/mi		$ 5.4 m/mi			
Motive Power Costs	Low	Moderate				High	Moderate	Moderate
Annual O&M			$ 2.3 m / yr		$ 4.6 m / yr			
Revenue Recovery Indicator			.59 to .84		.63 to .84			
Recommendation for Future Study:	Feasible	Feasible	**Current Proposed Minimum Operable Segmt (MOS)**	Feasible	**Current Proposed Full Build Out (FBO)**	Not Recommended	Feasible	Feasible, but depends on SSA and SES Projects

Impact Key:

Least cost or most desireable	More costly or less desirable	> > > >	Very costly or highly undesirable

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This pair of advantages will carry forward further south if the South Suburban Airport (SSA) is built. The plans are to extend the MED service to the airport. This extended service would go right past the proposed new end-of-line in alternative A. However, because of the uncertainly to the status and construction schedule by the SSA project, the feasibility of the Kankakee service extension studied herein must be judged independent of the SSA. If and when a firm commitment to the SSA is made, it will simply provide additional opportunities for improving the feasibility of the Kankakee service.

However, if the SSA is not built, the pair of advantages discussed above does not carry forward to further extensions of the MED service to the south. This is readily apparent in that the cost per mile for railroad improvements on the MED is over twice the cost of the other alternatives. This added cost arises from two technical issues. First, the project team assumed that separate MED tracks would be needed apart from the CN freight tracks. Although MED rolling stock could run safely inter-mixed with freight trains, the CN has indicated informally that they would not want to mix such operations. One of the biggest problems is that an overhead electrification system, or catenary wire, requires additional maintenance time and has the potential for added interruptions to operations. Secondly, the cost per mile for electrified track is much higher because of the substations, electrification poles and catenary wire.

A third advantage to alternative A is a service that does not require a transfer between trains. In all of the DMU shuttle alternatives (B through E discussed below), a transfer is required from the DMU to the MED service. Transit transfers can be a significant deterrent to attracting riders. It is not surprising because a single-seat ride is commonly preferred. In the transit industry the euphemism seamless transit has arisen in recent years to represent the goal of mitigating the hassles of transfers. So when transfers are unavoidable, it is desirable to make them as convenient and comfortable as possible. As discussed below, the transfers required for the DMU shuttle service in alternatives B through E are about as “seamless” as possible. So, in this case, the relative advantage for alternative A of a single-seat ride is probably only a marginal benefit.

The most significant disadvantage of this alternative is that it does not reach very far south. Because of that it would probably have only a marginal impact on convenience for Kankakee riders. With little impact on convenience, the alternative is not expected to generate any significant number of new riders. As a result, other alternatives are preferred to alternative A.

In general, extensions of MED service are feasible alternatives only when they are paired with other projects that will bear a significant share of the capital costs. Fortuitously, there are two projects on the horizon, the new MED yard and the SSA, which are in this category. Therefore, Alternative A is considered feasible and should be carried forward into future studies, though it is not currently the preferred alternative.

7.1.2 Alternatives B through E – Diesel Multiple Units

In these alternatives, DMUs would provide shuttle service between Kankakee County and the Metra University Park station. At that station, passengers would transfer over a common platform to the MED service that is destined for downtown Chicago. The DMUs would wait at the University Park platform for MED trains, thereby ensuring a comfortable environment and short walk for the transferring passengers.

DMUs are discussed in detail in Section 3.1.1. Though they represent new rail technology, Metra has embraced their use for the proposed STAR line. Some economies of scale may be possible if the Kankakee service is initiated in parallel with the STAR, particularly in vehicle procurement. A common heavy maintenance facility for both services may also be possible, especially if the STAR line reaches to the east of Joliet. In fact some informal discussions have mentioned the possibility of the STAR line reaching the SSA at some future date.

The DMUs selected for Kankakee would need to be fully compliant with the Federal Railroad Administration requirements for freight railroads because they would be operating mixed in with freight trains on the CN. Although that limits the number of manufacturers, it is not a technical problem.

The DMUs provide a unique compromise for the Kankakee service. They appear to solve two problems at the same time. First, they are designed to address smaller levels of ridership. Therefore, they are ideal for the end of a line, like Kankakee, where the loads on trains are the lightest and the DMU train size can be tailored to ridership rather than hauling around extra empty seats to be filled further up the line. Secondly, they solve a platform height problem that is discussed under diesel-hauled trains in Sections 3.1.1 and below. The DMUs could be built for high platforms or if they are designed for low platforms, in which case they could stop at specially assigned new low-platform positions at University Park. Either way, the problem of compatibility between Metra's current fleet of low-level platform coaches and high-level platform on the entire MED is resolved by the transfer of the passengers.

A downside for the DMUs is that they require passengers to transfer trains at University Park. In general, transit transfers are an inconvenience to passengers and can create passenger anxiety. Transferring riders, especially first-time riders, may wonder whether they have understood the process and are if they are expected to be doing something differently. The circumstances here, however, would make the transfer as comfortable and easy as possible, removing virtually all of the uncertainty about how to do it. On-board announcements could explain the physical layout of the same-platform connection to the other train. If the connecting train has not yet arrived, on-board announcements could also be made to invite passengers to wait in the comfort and climate controlled environment of their current seats inside their arriving vehicle. The transfer itself would be only a short walk down or across the same platform.

Perhaps the biggest negative for DMUs is the need to build a complete yard and shop facility capable of addressing most light and heavy maintenance. Except for the possibility of combining services with the proposed STAR route, few economies of scale are available with the choice of this technology.

In general, DMU trains can be tailored to meet demand and are therefore so are more cost effective. They also address the issue of compatibility with MED high platforms. They appear to be the most viable alternative for the Kankakee commuter rail service.

The choice of DMUs as the most viable motive power leads to a sub-analysis within the DMU heading of the evaluation matrix. The combination of all end-of-line station possibilities and all motive power choices would have created too many combinations to evaluate properly in the study. Instead, the study team performed a limited parametric analysis on various end-of-line stations using DMUs as a common baseline motive power. The resulting options are shown as alternatives B through E in the evaluation matrix.

As discussed in Section 3.3, four different end-of-line locations were selected for the DMU service parametric analysis. The reasons for the choices of these alternatives are summarized as follows:

Alternatives:

B. Peotone: The furthest village that is totally within Will County.
C. Manteno: The closest stop to the Will County line.
D. South/Brookmont: A site that would provide service through all of the municipalities along the line (Monee, Peotone, Manteno, Bourbonnais, Bradley and Kankakee) and could become a common station with Chicago-SSA-St. Louis high-speed rail service.
E. Interstate 57, Exit 308: The furthest likely limit of the Kankakee commuter rail service and the southern end of the county's 6000/Warner Bridge/Exit 308 Corridor.

One of the uses of a parametric study is to aid in selecting the phases of building a system, if needed. In the event that funding or political support dictates that the Kankakee service must be built in stages, the two alternatives that stand out from the above are Manteno and I-57, Exit 308. These have been proposed as the minimum operable segment (MOS) and full build out (FBO) scenarios. They were chosen primarily because they offer even increments of commuter rail miles (14 and 28 miles further south of University Park) and a choice between a system that is essentially completely within the RTA and one that is clearly an extension outside the RTA district.

7.1.3 Alternative F – Dual-Mode Hauled Trains to Randolph Street Station

Dual-mode locomotives are described in Section 3.1.1. Their technical applicability to the Kankakee service is also discussed therein. In general, the conclusions are that both the locomotives and coaches would require a larger fleet of more expensive equipment and generally reduce or interfere with Metra's attempt to gain economies of scale in procurement, operations and maintenance.

From an operations viewpoint, Section 3.2 makes a similar conclusion. The dual-mode hauled trains would not perform as well as the current EMU trains. As a result, they would interfere with optimal operations.

A third negative vote is cast by Section 3.4.4 in its analysis of supporting facilities for the dual-mode equipment. That section concludes that both the yard and the shop facilities will likely need to be the largest of any of the modes considered in this study. The yard would need to be the same size as that required for diesel electric service. In contrast, the smaller DMU trains will require a smaller yard and the MED option has the smallest requirement because of the perfectly matched new yard and shop that Metra is planning. The shop will likely be the largest required for this service for two reasons. There will be dual propulsion technologies to service on the locomotives and the coaches will be a unique fleet that may not be as easily transported and overhauled at other Metra facilities.

However, the strongest argument against using dual-mode trains maybe that Metra has seriously considered them in the past and decided against them, as discussed in Section 3.1.1. Selecting dual mode for the Kankakee extension would run counter to the prevailing choice of technology within Metra.

Other feasible motive power alternatives are available and receive favorable evaluations herein. In contrast, there are no compelling reasons to support the choice of dual-mode hauled trains for the Kankakee service. Therefore it is recommended to drop dual-mode from further consideration.

7.1.4 Alternative G – Diesel-Hauled Trains to LaSalle Street Station

In this scenario, conventional diesel-electric Metra trains are used to run from Kankakee to University Park. At University Park, the trains continue north on either MED or CN tracks. Further north at one of four possible rail crossings between Harvey (MP 19.8) and Grand Junction (MP 9.4), the trains would leave the CN or MED tracks and connect with a freight railroad. They would run on the freight railroad to a second connection with Metra's existing Rock Island District (RID) service.

New rail connections would need to be built at both locations. Each of these connections might cost an additional $15 to 25 million depending on the specific location, number of connecting tracks and design speeds through the connection. But whether the attribution of the cost of both connections to the Kankakee service and the choice of connections depend on the success and timing of Metra's proposed SES. Since the SES is generally east of the Kankakee service and the southern end of the MED, the SES would be crossing over or under the CN/MED ROW to reach the RID. Several routes have been proposed for the SES and Metra has apparently made a preliminary selection of one. This is explained and shown with a map and photos in Section 3.1.3. Therefore, if the SES is built, the Kankakee service should clearly capitalize on it and ride the SES rails into LaSalle Street Station. That would mean that only the first connection, from the CN/MED to the SES, would need to be built.

Its costs would need to be borne by the Kankakee service since that connection would serve no other purpose.

Perhaps the strongest advantage of this alternative is that it benefits from the economies of scale of the well-established diesel electric locomotives and bi-level coaches that Metra uses on ten of its eleven commuter rail lines. This means that the original capital costing of equipment, assignment or provisions of spare parts and vehicles, training of employees, and general efficient operations will all benefit from Metra's considerable experience.

As discussed in Section 3.2, the disadvantage of this alternative is that the trains can easily run on the MED, but present loading difficulties and operations problems. Specifically, diesel-hauled bi-level coaches are designed for low platforms while all MED stations have high platforms, and the performance of diesel electrics is inferior to that of electric multiple unit (EMU) trains. So, although the Kankakee trains could operate on either the MED or the CN tracks, they would not be able to make stops along that route without modifications to, or additions of, station platforms, and, in any case are likely to slow the overall system operations. Furthermore, the connections necessary among the three railroads may represent operational pinch points that will slow down the overall performance of the service.

Furthermore, the connection point to Metra's RID line would not provide much additional opportunity for other stops to fill the trains. As a result, the projected loading of the trains may suggest shorter length trains. As discussed in Section 3.1.1 under the dual-mode locomotives, Metra may desire to run longer trains to make better use of platform areas at the LaSalle Street Station

In summary, diesel electric hauled coach trains are very feasible for the Kankakee service. However, there are a number of minor details that would need to be resolved and may require solutions which are compromises.

7.1.5 Alternative H – Diesel Hauled Trains via SSA to SES

This alternative is very similar to alternative G, except that the connection to Metra's new SES would be made through the South Suburban Airport (SSA). Thus, this alternative is dependant upon the successful implementation of not just Metra's SES service, as in Alternative G, but also of the South Suburban Airport (SSA). However, from a railroad technology viewpoint, this alternative is more feasible than alternative G because the incompatibility of MED and diesel electric equipment discussed above does not occur here.

However, even if the SSA is built, this scenario is predicated on the assumption that the airport would have an east-west rail spine that would connect the two north-south freight railroads that run along its east and west borders. An argument in favor of that spine was developed independently of this project by Parsons Brinckerhoff and is provided in Appendix 10.

The summary conclusion, then, is that alternative should be kept in reserve for reconsideration later in the life of the Kankakee County Commuter Rail Project. For the time being it is not considered the current best prospect.

7.1.6 Summary Evaluation

The evaluation matrix shows that Kankakee commuter rail service is indeed feasible and that it could be implemented in several different ways. The most promising of these alternatives is to use diesel multiple units (DMUs) to provide shuttle service up to the current Metra University Park station. To provide funding and construction flexibility, the study has defined two alternatives for the southern end-of-line station. Either of these alternatives could be a complete service by itself, or together they could become stages in a multi-year project. Together they are the current preferred alternatives for providing commuter rail service to Kankakee:

A. Minimum Operable Segment (MOS): A 14.3-mile DMU shuttle service would be provided between 100000 North Road north of Manteno near the Will/Kankakee County line and the current MED end-of-line station at University Park. Intermediate stations would be located at Monee and Peotone.

B. Full Build Out (FBO): A 27.9-mile DMU shuttle service would be provided between Interstate-57 Exit 308 south of Kankakee and the current MED end-of-line station at University Park. Intermediate stations would be located at Monee, Peotone, Manteno, Bourbonnais, Bradley, and downtown Kankakee.

Both of these services presume that:

- Opening day service would consist of 10 one-way trips (5 in each direction), on weekdays only.
- The CN would be fully double-tracked over the distance of the service.
- The train sets required to provide this service would be stored and fully serviced in a new maintenance and storage facility in either the Manteno or Kankakee areas.

Other promising scenarios might become the preferred choices in the future if there are significant changes in the transportation plans for the area. Of particular interest are on-going studies for several related projects:

- A south suburban airport (SSA)
- High-speed rail service to St. Louis and/or Champaign/Carbondale
- A new Metra South East Service to Balmoral Park
- Metra's proposed STAR line around the Chicago regional area.

Depending on their details, if any one of these projects were to come to fruition, it could impact the selection of the preferred scenario for the Kankakee County service. But each of them is foreseen as having only a positive impact on the results of this study, thereby making Kankakee County commuter rail service even more feasible.

For these two options, the total capital cost of the mainline railroad improvements, stations and parking lots, a new yard, and operating equipment is estimated at $190 m and $298 m respectively. These are initial planning estimates. The next level of refinement for these numbers would require a resolution of impacts of the other major projects above and preliminary engineering and/or preliminary negotiations with the CN.

The operations of the system were modeled after the 1996 start-up service on Metra's new North Central Service (NCS). The annual operations and maintenance (O&M) costs for the two proposed alternatives are estimated at $2.3 and $4.6 million, respectively. These correspond roughly to the costs that occur from operations within the current Metra service area (i.e. to the Will/Kankakee County line just north of Manteno).

The county's ridership projection for the MOS and FBO alternatives anticipate attracting totals of 3200 and 5800 daily riders (counting both directions) respectively. This projection is based on continued growth in the area at slightly more than the rate that has recently been experienced. However, more conservative medium values of 2980 and 5070 are used for revenue calculations in this report. The resulting projected revenue for the two alternatives is $1.1 and $2.4 million per year for a stand-alone system carrying passengers to University Park. An additional $1.2 and $2.0 million per year will be collected by Metra from transferring passengers who will be riding the MED to downtown Chicago.

*[**Note:** During a final review of this Study, the Village of Manteno revised their preference for the Manteno station to be at a different site north of 10000N Road (Reference 59). Likely locations that would meet this criteria include 11000N or 12000N Road. Because this change*

may affect the location of the MOS, the financial costs and analyses provided in this report relative to the MOS location may also change.

Although this report has not been changed to reflect the change in preference for the Manteno station location, additional information pertaining to the anticipated impact of this change to the overall Study results and conclusions is described in Appendix 11. Further detailed evaluation of a new Manteno Station site will be performed in the Phase II Study, as described in Section 7.2.]

7.2 PROGRAM FOR FUTURE STUDY

This Phase I study has been conducted pursuant to a Metra multi-staged process for the evaluation of the feasibility of new routes/services. The study has concluded that Kankakee commuter rail service is feasible. Therefore, the next step in the Metra process is to conduct a Phase II study. The requirements for a Phase II study include the following key tasks:

- Task 1 –Ridership Estimates
- Task 2 – Environmental Impacts
- Task 3 – Site Studies
- Task 4 – Refined Cost Estimates
- Task 5 – Line Capacity Analysis (the computer-based simulation of rail line capacity), and
- Task 6 – Project Management.

With the exception of Task 5, preliminary work on each of these tasks was included in the Phase I project. As such, some of the subtasks within these areas will need no further work in Phase II. In other subtasks, the Phase II effort will be a continuation of more detailed work based on the foundation established by this Phase I project.

Any changes to the assumptions or information used to develop the Phase I study would also be considered during the Phase II study. This would include recommendations for changes involving station locations, possible train storage yard locations and the MOS and FBO recommendations. Should any of these assumptions change from the Phase I study, then the projections for ridership, capital and O&M costs and revenue would also be refined as required for the Phase II study.

* * * *

LIST OF APPENDICES

APPENDIX 1: BIBLIOGRAPHY

Kankakee County Commuter Rail Feasibility Study (KACOR)

Kankakee County Contract dated 10 February 2004
PB Project No. 16802A

Reference No.	Technical Categories: Railroad: Trackwork	Railroad: Signaling	Railroad: Property ROWs	Railroad: Other	Roads: Maps	Roads: Traffic Levels	Roads: Other	Planning: Growth	Planning: Land Use	Planning: Other	Source: RR/Transit: CN	RR/Transit: Metra	RR/Transit: Amtrak	RR/Transit: Other	Governments: Municipalities	Governments: Kankakee Co.	Governments: Other Counties	Governments: State of Illinois	Governments: CATS, RTA	Source: Other	Medium: Document	Medium: Newspaper	Medium: Drwgs or Maps	Medium: Video, Other	Date Received (or added to Project Files)	Title and Comments
01										X						X								X	17-Feb-04	**Map Atlas** - dwg format. One of eight CDs from Kankakee County.
02										X						X								X	17-Feb-04	**Community Profiles** - pdf format. One of eight CDs from Kankakee County.
03									X							X								X	17-Feb-04	**Greenways and Trails PLAN** - pdf. One of eight CDs from Kankakee County.
04									X							X								X	17-Feb-04	**NWI Wetlands MAPS** - tif images. One of eight CDs from Kankakee County.
05									X							X								X	17-Feb-04	**FEMA Floodplains MAPS** - tif images. One of eight CDs from Kankakee County.
06										X						X								X	17-Feb-04	**USGS Topo MAPS** - tif images. One of eight CDs from Kankakee County.
07								X								X								X	17-Feb-04	**Census 2000 MAPS** - pdf format. One of eight CDs from Kankakee County.
08									X							X								X	17-Feb-04	**1999 Orthos** - MrSID format. One of eight CDs from Kankakee County.
09										X						X									On Going	**KACOR Task Force Notebooks:** Living notebook of minutes, etc. Multiple 3-ring volumes.
10	X	X		X			X				X												X		21-Nov-03	**CN Trackcharts:** Dated July 1, 1999, MP 28 to 65
11	X		X		X				X									X			X				~ Nov-03	**MED-SSA Service: IDOT Report,** "Evaluate Service & Facility Alternatives for Metra Commuter Rail Service to the Proposed Peotone Airport", February 1998 (by DLC).
12					X		X		X									X		X	X				2-Mar-04	**SSA Material:** IDOT South Suburban Airport (SSA) Material, 1995. Resurrected from personal files of PB employee.

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13	X	X		X	X							X									X			X	11-Mar-04	**MED Ops Profile:** Metra "Operations Profile, Electric District," June 15, 2003. Includes CNRR to County Line. Hardcopy and CD. CD has MUCH more info, including aerial photos, political maps, etc. (a Jon Gottlieb beauty)
14	X	X		X								X												X	11-Mar-04	**MED Head-End Video:** "Metra Electric District," April 2003. Head end video on CD with sort capability by many infrastructure categories. (Another excellent Gottlieb product)
15	X			X	X			X	X	X								X						X	22-Mar-04	**Chicago-St. Louis High-Speed Rail DEIS:** Draft Environmental Impact Statement, June 2000, CD.
16					X			X	X	X					X						X		X		10-Mar-04	**Village of Bourbonnais Data:** Letter from village administrator. Attachments include: Comp Plan, Zoning Ordinance and Map, Newspaper article on Chicago Bears, 2000 Census, 2004 Growth. Bound by PB as one document.
17					X			X	X	X					X						X		X		18-Mar-04	**Village of Manteno Data:** Letter from village trustee. Attachments are Aug 1998 Comprehensive Plan, Addendum to Comp Plan with Airport Scenario and Zoning. Bound by PB as two volumes.
18					X			X	X	X					X						X		X		18-Mar-04	**Village of Bradley Data:** Letter from Mayor. Book of Zoning Ordinance with 2-sheet zoning map, Street and Limit Map with station site mark-up. Bound by PB as one document.
19																									29-Mar-04	**Kankakee County Population Projections:** By age for year 2020.

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20*				X								X												X	31-Mar-04	**Metra Station & Parking Lot Design Standards:** Web site address for the documents.
21	X			X								X													1-Apr-04	**Metra Cantenary Height Info:** Several drawings and sketches.
22*	X			X										X											NA	**AREMA Manual:** Greg Toth has the CD purchased by PBT&RS. Only selective pages for catenary clearance are in project file.
23									X						X						X			X	12-Apr-04	**Village of Monee Data**: zoning map; future land use w/o airport; future land use map with airport; SSA boundaries map; July 1997 Comp Plan.
24								X	X	X							X				X					**Will County Data:** Land Resource Management Overview and Update; Travel; Population and Growth. Will County LRMP found in W/PlanningDept/Reference/WillCo LRMP
25 *	X		X								X							X			X				15-Apr-04	**Illinois Commerce Commission Data:** Log of all CN Crossings between MP 28 and MP 64 and Report of all Crossing Accidents within same area.
26									X	X						X									19-Apr-04	**K3 County Data Disks:** 11 CDs - 1 pop maps, 1 LU and zoning maps, 3 GIS data, 5 tiff format aerials, 1 autocad map and 1 digital map on server.
27									X																19-Apr-04	**K3 County Hard Copy Data:** Comp Plan (11.10.92); LRMP Addendum (05.97); Zoning (05.14.96)
28										X															19-Apr-04	**KATS**: 1999 Long-Range Transportation Plan Update and River Valley Metra bus schedules.

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29			X		X							X												X	21-Apr-04	**MED-MSF Site:** 8 1/2 x 11 aerial photo of potential site for new yard south of U Park. (PB TEAM FYI ONLY; NOT FOR PUBLIC DISTRIBUTION.)
30									X																	**Village of Peotone**: Comp Plan Update; Zoning Map
31 *				X																					3-May-04	**DMU Specifications:** "New DMU," Sales material from Colorado Railcar. 32 pages. Downloaded from www.coloradorailcar.com.
32				X								X													3-May-04	**Metra Diesel-Hauled Equipment Dimensions:** Three locomotives and typical hauled coach. Copied from PB project files for Metra-California Yard. Five pages.
33					X											X		X							3-May-04	**IDOT - Aerial of New I-57 Exit 308:** pdf file on CD of south end of belt road around western side of Kankakee.
34									X															X	3-May-04	**City of Kankakee**: 1997 Comp Plan, CD
35					X													X					X		4-May-04	**ROW Plan: IL-50 and St. George Rd:** Fax copy of Remainder Area A, NW quadrant. [More detailed drawing to be sent by surface mail.]
36				X								X									X				14-May-04	**Metra Train Loadings:** Metra, Office of Planning & Analysis, "Capacity Utilization of Trains" three reports, January, February, March 2004.
37				X								X									X				14-May-04	**Metra Station Counts:** Metra, Office of Planning & Analysis, "Station Boarding/Alighting Count," Fall 2002, two volumes (Summary Results, Train-by-Train Detail)

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38					X			X	X							X								X	24-May-04	**6000 Corridor Maps:** 19 color figures on a CD from K3 County approved corridor report. ES-4 is map to use on KACOR System map.
39				X								X									X				27-May-04	**Metra Station Component Costs:** Metra Board of Directors Meeting Minutes of August 16, 2002. Item 5, "Discussion on BNSF Tollway Station," includes many typical costs for station components.
40 *				X								X									X				20 May, 04	**Metra Electric Schedule:** Pocket schedule "Effective 3:01 AM, June 3, AM 2001." Picked up as current schedule at CUS May 20, 2004.
41 *	X			X																X	X				3-Jun-04	**Midwest High-Speed Rail Plan:** "Midwest Regional Rail system: A Transportation Network for the 21st Century; executive summary, February 2000," by a consortium of 9 states plus Amtrak.
42	X			X							X									X	X				3-Jun-04	**CN/IC Timetable:** Midwest Division Timetable No. 2, effective July 1, 2001.
43 *				X									X								X				3-Jun-04	**Amtrak Schedule:** Selected schedules from Amtrak internet site for city of New Orleans and trains to Pontiac, IL.
44	X			X										X							X				3-Jun-04	**NS Track Design Guidelines:** From PB PAN 31 site.
45				X							X			X							X				7-Jun-04	**Railroad Traffic Data:** Numbers of movements on both the CN and NS as received from the two railroads to this date.

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46	X		X	X								X									X				22-Apr-04	**Metra Related Info.** Memo summarizing PB meeting with Metra Engineering on Ped tunnels, SSA service, crossovers, etc.
47 *	X			X						X		X									X				NA	**Metra Expansion Plans:** "FAST, Future Agenda for Suburban Transportation," April 1992, Metra and Pace.
48 *	X			X						X		X									X				NA	**Metra SES Plans:** "South Suburban Commuter Rail Feasibility Study," 3 volumes, by Metra/ICF Kaiser and Metra/PB, April 1999 and September 2000.
49 *	X			X										X						X					NA	**CREATE Project:** Railway Age July 2003 cover story plus maps from MWHSRA e-mails of "Corridors" and "Rail over Rail Grade Separations."
50 *			X	X								X									X				NA	**New MED Yard:** Metra Request for Proposals, "Master Request for Proposals," December 10, 2003 (pp 33-34).
51 *				X								X									X				NA	**Metra Annual Budget:** (Typically) Preliminary 2004 Program and Budget, October 2003
52 *				X								X													NA	**Metra View of K3 Project:** "On the Bi-Level," Metra Newsletter, May 2004, Q&A presents Metra's view of an extension to Kankakee.
53 *				X				X	X	X										X	X				NA	**US Census Data:** Copies of selected web sites and report covers of selected US Departments of Commerce and Transportation documents, all of which are available to the public, are kept in the project files.

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54 *				X								X									X				NA	**MED Ridership Characteristics:** "Metra Rail Service and Residential Development Study," S. B. Friedman & Co, July 2000.
55 *						X														X	X				NA	**River Valley Metro Bus Schedules:** Various effective dates: April 3, 2000 to August 25, 2003.
56 *	X	X	X	X																X	X				NA	**FTA Standard Cost Categories:** Seven page FTA guidance memo.
57 *			X		X					X						X							X		NA	**K3 County Official Road Map: 1999 edition.**
58	X	X		X			X	X	X	X					X	X	X	X			X				14-Oct-04 through 28-Jan-05	**Feedback Log on Draft Report:** Includes summary log and copy of all comments received on Draft KACOR Report dated October 2004
59*				X						X					X						X				3-Jan-05	**Village of Manteno Resolution 04-47:** Endorsement of support for KACOR Feasibility Study
60*				X						X					X						X				14-Jan-05	**Village of Monee Resolution 2004-8:** Endorsement of support for KACOR Feasibility Study
61*				X						X					X						X				16-Feb-05	**Will County Resolution 05-38:** Endorsement of support for KACOR Feasibility Study

NA = Not applicable. Obtained from PB-Chicago technical library, previous projects or PB employees.
# = Oversize. PB project copy kept in flat files.

Appendix 2:
DISCUSSION OF ALIGNMENT

The photographs in this section, along with the accompanying explanatory text provide a comprehensive "photo tour" and discussion of the existing Metra Electric District and CN Railway lines within the KACOR project corridor, along with most of the sites considered for commuter rail stations. They are arranged by increasing CN milepost beginning at the Metra University Park Station at MP-31.10 and continuing through the proposed location for the Kankakee I-57, Interchange 308 station location at MP 59.00. The photos within this section were taken between September 19, 2003 and April 29, 2004. The mileposts identified are roughly those of the location or major feature in the photo title. A map of the alignment is provided on the back cover of this report and may be a useful reference while using this Appendix.

MP 31.10 – Metra University Park Station Looking North

The Metra University Park Station is located at the southern terminus of the Metra Electric District (MED) service on the University Park Subdistrict. The station is located just north of Stunkel Road, with Governors Highway to the west and the Canadian National Railway to the east. This view looking north shows the center platform (note the ADA tactile edges on both sides of the platform) with a Metra EMU train on Track 1, the MED mainline. The track to the left (west) in the photo is Track 2, which is a secondary berthing track for this station. Track 2 is about 3,500 feet long, extending both north and south of the station for train storage and staging.

The CN Main 1 track is located immediately to the right (east) of MED Track 1, with Main 2 and industrial siding visible at the far right side of the picture.

A portion of Metra's west side parking lot is visible on the far left, west of Governors Highway. A similar parking lot is also located east of the CN tracks. The two parking lots and the station platform are connected by a pedestrian tunnel under the highway and the two railroads.

MP 31.40 – Current MED End-of-Line Looking North

This view from near Stunkel Road shows the end-of-the-line staging tracks for the MED service on the University Park Subdistrict. The structures in the foreground support the overhead electrical traction power distribution (catenary) system for the EMU cars. Track 1, the MED mainline track, ends at the structure in the center of the picture. Metra most likely will extend this track across Stunkel Road and continue it to the proposed new MED Yard and Shop Facility just north of Monee.

The CN Main 1 track is visible immediately to the right (east) of MED Track 1. The track to

the far right of the picture is CN Main 2. Both of these tracks cross Stunkel Road with Main 2 continuing to MP 31.60, at which point only Main 1 continues south. Under both proposed scenarios, MOS and FBO, the CN Main 2 track would be continued south to the new KACOR terminus. New track crossovers would be located just south of Stunkel Road to provide access to a new DMU platform extension to the southern end of the Metra University Park Station.

MP 34.05 – Monee – Looking Southwest Toward the Main Street Bridge

This image shows the open cut as the CN right-of-way passes through the center of Monee, as viewed from S. Oak Road. The CN mainline is a single track at this point although the bridges in the area can clearly accommodate a second mainline track on the western side of the right-of-way or even a double track MED extension to the South Suburban Airport (SSA) since the bridges on this cut originally accommodated a three-track mainline.

This is the location of the station site investigated for Central Monee (Site A). As described in Section 3.3.2, a passenger station located at this site would require extensive infrastructure to provide for vertical passenger access to track level and retaining walls to create sufficient close-in parking.

MP 34.70 – Monee – Industrial Drive Station Site Looking South

This is a view to the south from the Illinois Rt. 50 Bridge as it passes over the CN. The picture shows the recommended station site for the Monee Station at Industrial Drive (Site B).

At this point the CN right-of-way is emerging from the open cut through Monee and returning to the surrounding grade level. Space for a second mainline track is clear to the east of Main 1. Alternatively, a double-track MED to SSA would also fit. As there are no road-rail grade crossings in this area and the highway crossing is elevated and at a severe angle, either a pedestrian bridge or tunnel would be required for this station site.

MP 35.70 – Pauling Road Bridge Looking Southwest

There is clearly ample space for a second mainline to the east (left in the photo) of CN Main 1 under the Pauling Road Bridge. Alternatively, a double track MED to SSA could also be accommodated. This continues to be the case for the entire length of the proposed Kankakee County Commuter Rail corridor.

MP 39.81 – Peotone – Harlem Avenue Crossing Looking Southwest

This is the first view in this Appendix which is south of all SSA rail service considerations.

The Harlem Avenue Crossing is located at the north end of the station site considered at Beecher Road (Site C).

The road-rail crossing seen in the foreground is currently a wood timber crossing that would require upgrading if the site were used for a station. Also, Harlem Avenue is unpaved to the east of this crossing. The track siding visible in the photo continues to Federal Pipe and Steel, which is located to the south of the area identified for commuter parking. This siding would require relocation to provide space for the station platform.

MP 40.40 – Peotone – Old ICRR Peotone Depot Looking Northeast

An old ICRR Depot is located in Central Peotone in an area considered for a station (Site D). The building located between Crawford and Main Streets has been used for an arts and crafts store.

Although a station at this site would be convenient to downtown Peotone, there is limited space for new commuter parking within the immediate vicinity of the depot.

MP 41.10 – Peotone – Wilmington Road Looking West

Wilmington Road is the recommended location for a station for Peotone (Site E). The proposed station would be located to the south of Wilmington Road (left in the photo) with commuter parking on both sides of the tracks.

A major advantage for this site is its location adjacent to the Will County Fairgrounds. The far SE corner of the fairgrounds is visible on the right side of the photo, on the far side of the tracks.

MP 42.20 – Kennedy Road Grade Crossing Looking Southwest

Between Wilmington Road and County Line Road, a two-mile section of track (MP 41.20 to MP 43.20) exists as a passing siding along CN Main 1. This track provides the ability for trains moving in opposite directions to pass. The CN refers to this passing track as the Peotone Siding. The train in the photo is on the Peotone Siding headed toward Chicago.

This double-track section of the CN would be used as part of the proposed two-track mainline system for the KACOR project, eliminating the need for a new second track in this area.

MP 42.75 – Private Road Grade Crossing Looking West

This is a view of a private road-rail crossing that crosses both CN Main 1 and the above referenced Peotone Siding. The crossing is constructed of wood timbers and gravel and does not even have a crossbuck, let alone crossing gates or flashers.

Two such private crossings were located during the physical survey of the KACOR corridor, although others may exist that cannot be seen except from railroad property. With the implementation of commuter rail service, private crossings such as this would either be closed or require improvements including active crossing warning devices, with at least bells and flashers, and perhaps gates.

MP 45.60 – Manteno – 10000N Road Looking North

10000N Road is the proposed location for the Manteno commuter rail station (Site F).

Illinois Route 50 is located about 80 feet to the east of the tracks and is visible at the right side of the photo. This is the typical separation of the parallel railroad and highway for much of the alignment. The commuter rail station and inbound platform would be located in this strip of land, along with bus and commuter drop-off areas. The commuter parking lot would be located to the west of the tracks (left in the photo) in a 20-acre open farm land site.

This site would provide good access to Manteno and local highways.

MP 46.70 – Manteno – First Street Pedestrian Grade Crossing Looking Northwest

The pedestrian crossing shown in this view is currently equipped with a cross buck and bells as warning devices for trains. If the crossing is to remain with commuter rail service, it may require further upgrading to include flashers and possibly gates.

MP 46.80 – Manteno – Division Street Grade Crossing Looking South

As evidenced by this view from Division Street in Manteno, there is ample room for a second mainline track through the Manteno business district. In fact, as shown in the January 1955 photo below, at least four tracks used to be located within the Village of Manteno.

MP 49.78 – 6000N Road Grade Crossing Looking North

This northbound view from the grade crossing at 6000N Road shows a second CN track that began at MP 49.50, about ¼ mile north of this crossing. This is another passing siding (the Kankakee Siding) that extends 5.8 miles to MP 55.30 just north of Chestnut Street in Kankakee. This Kankakee Siding (right- hand track in the photo) would be upgraded to be a second mainline track to accommodate commuter rail service.

Illinois Route 50 continues to parallel the CN at this point and is visible at the right side of the photo.

MP 49.78 – 6000N Road Looking Southwest from Grade Crossing

The 6000N Road Crossing area was considered for a station location for Bourbonnais (Site H). In this case, the main commuter parking lot would be located in the field shown in this view taken from the railroad crossing looking southwest. The electrical equipment shown in the photo would probably require relocation if the site were to be used for a station.

There are apparently plans for a 6000N Road highway overpass at this location which would complicate the use of the area for a commuter rail station.

MP 50.81 – Bourbonnais – St. George Road Grade Crossing Looking Northeast

St. George Road, also known as 5000N Road, is the proposed location for the Bourbonnais commuter rail station (Site I).

Illinois Route 50 has been recently relocated at St. George Road to provide greater distance between the railroad crossing and Route 50 intersection. A car on Illinois Route 50 is just visible toward the right side of the photo.

The proposed station and approximately 10 acres of commuter parking would be located in the land shown in the photo between the tracks and Illinois Rt. 50.

MP 50.81 – Bourbonnais – St. George Road Looking Northeast

This view shows the west side of the CN right-of-way on St. George Road (Site I). The CN right-of-way is located in the background of the photo just beyond the electrical lines.

This area would be used for the remaining 10 acres of parking for the Bourbonnais St. George Road station. The land is currently partially improved with a parking lot for a former Chicago Bridge and Iron office facility. This property was available for purchase when the photo was taken in April 2004.

MP 51.35 – Bourbonnais – CN Mainline Looking North from McKnight Road

There are a number of industries located along the CN within the project corridor that have railroad service from the CN. This view from the McKnight Road Crossing (scheduled to be closed) shows the Lambert Grain Company. These CN customers can have tracks inside their property and/or sidings adjacent to the CN mainline, such as the one shown here.

Railroad access must continue to be provided to the CN industrial clients during and after construction to add commuter rail service. This will require a case-by-case investigation of each industrial siding as the study progresses to determine if it needs to be retained as is, modified or abandoned.

MP 51.80 – Bourbonnais – Larry Power Road Grade Crossing Looking South

This view of the grade crossing at Larry Power Road (4000N Road) clearly shows the continuing double-track configuration (one main line and one passing siding) within this area.

This site was considered as a station location (Site J), but did not prove suitable due to the heavy industrial nature of most of the area. Although open land is available in the southwest quadrant of the crossing (right side in the photo), a large scrap metal yard and processing facility occupies the southeast quadrant (left side of the photo) that would have to be partially acquired for a commuter rail station.

MP 52.40 – Bradley – I-57 Bridge over the CN Looking Southwest

Interstate 57 crosses the CN within the project corridor at MP 52.40 in Bradley. This view, taken from behind the Bradley Shopping Center, shows the continuation of the two-track railroad under a pair of I-57 bridges.

Since the bridges are already designed for two tracks and currently accommodate two tracks, modifications or upgrades to this bridge are not anticipated.

MP 54.50 – Bradley – West Avenue at the Corner of South Street Looking North

In this area, the CN is on a raised earthen embankment, visible on the right side of the photo.

The open area between the CN and West Avenue in this view is proposed for the South Street / Brookmont Blvd. commuter rail station in Bradley (Site K). The commuter parking in this area could extend from Goodwin Street at the north to Brookmont Blvd. at the south.

A pedestrian tunnel would be required to provide access between platforms at this site if the Brookmont Boulevard underpass is not used (see MP 54.75 below).

MP 54.50 – Bradley – CN Railroad Tracks Near West Avenue at South Street Looking South

In this view on the railroad embankment, a third track can be seen (with the train). This is a siding track that leads south to a rail yard located between Brookmont Blvd. and the Norfolk Southern Railway (NS) Junction (approximately MP 54.75 to MP 55.20).

This extra siding track would require consideration in the design for a station in this area.

MP 54.75 – Bradley – Brookmont Boulevard Looking East

The CN passes over Brookmont Blvd. via the railroad bridge shown in this view. The bridge was built in 1926 for 8 tracks. A yard and the CN mainline utilize 7 of those track positions now. One possible alternative for the station location at the Bradley site is over and to the north of this bridge. This would allow egress directly from the platforms to Brookmont Blvd. and negate the need for a pedestrian tunnel.

This bridge is currently under consideration for reconstruction to 4 lanes. This would be an excellent opportunity to consider the inclusion of commuter rail station elements in the new bridge design (column supports under rails spaced for a platform and vertical circulation to the pedestrian walkways.

MP 55.20 – Kankakee – CN / NS Railroad Junction Looking East

At MP 55.20, the Norfolk Southern Railway (NS) crosses and connects to the CN. In this view, a southbound CN train is just crossing the NS at the junction. The track in the foreground is an interchange track between the NS and CN.

The area immediately to the north of this view (the northwest quadrant of the junction) was considered for a possible station location (Site L). However a variety of factors, as explained in Chapter 3, Section 3.3.7, severely restrict this site for a commuter rail station.

MP 55.75 – Kankakee – CN Mainline Looking North from Court Street Bridge

This northern view from the Court Street Bridge shows the grade crossing at Chestnut Street (MP 55.61). Beyond the crossing, the southern end of the Kankakee Siding is visible at MP 55.30. South of that point, a second mainline track would be installed for commuter rail service to continue the two-track configuration toward the southern end of the KACOR corridor.

The NS crossing at MP55.20 and the CN yard over Brookmont can be seen in the far distance.

MP 55.80 – Kankakee – Amtrak Depot Looking Northeast

This view shows the existing Amtrak Depot located in Kankakee, which was also proposed for use as a commuter rail station (Site M). The depot is located in the heart of the business district of Kankakee at Merchant Street.

The Court Street Bridge is visible in the left side of the photo where it passes over the CN at MP 55.75. Note that there is only one track at this point, Main 1, although sufficient space exists to relocate it and install a second track under the bridge as well as on the west side of the existing track past the depot.

The picture postcard to the right from about 1910 shows the same Kankakee Depot on the then Illinois Central Railroad. In this view, there are two mainline tracks visible and one siding track on the far left side of the image. A previous Court Street overpass is in the background and appears to have accommodated three tracks.

Postcard image courtesy of www.rootsweb.com

MP 56.30 – Kankakee – Kankakee River Bridge Looking South

As the CN continues south out of the main business district of Kankakee and approaches the Kankakee River, the right-of-way is elevated above street level on an earthen embankment. The image at the left shows the CN Bridge over the Kankakee River from West Avenue near River Street.

The bridge structure appears to be in good condition and capable of accommodating a second track for an additional mainline track. Further structural inspection would be required during the preliminary engineering phase of the project.

The photo at the right is taken from the top of the railroad embankment approaching the north end of the CN Bridge over the Kankakee River. Again, there appears to be more than sufficient space for a second track across the bridge. There is currently only one mainline track, but the width of the bridge could accommodate a total of four tracks.

MP 56.55 – Kankakee – Hawkins Street Railroad Bridge Looking West

As the CN continues south from the Kankakee River, it remains on a raised earthen embankment for about one-half mile, passing over both Water Street at MP 56.34 and Hawkins Street at MP 56.55. Both bridges appear to have ample space for a second track.

The Hawkins Street railroad bridge shown at the left appears to be sagging at the center pier and may need to be repaired as part of the infrastructure upgrade associated with adding commuter rail service.

MP 56.80 – Kankakee – Jeffery Street Grade Crossing Looking South

By the time the CN approaches Jeffery Street at the southern limit of the City of Kankakee, the right-of-way has returned to grade level. There continues to be ample space for a second mainline track.

It is expected that crossings such as this one would remain in service but would be upgraded to accommodate two tracks. The railroad signal system upgrades would include relocation or replacement of crossing flashers, bells and gate systems. Signal system features, such as constant warning time (CWT) crossing, would be considered to reduce grade crossing waiting time as slower freight trains approach.

MP 57.70 – Gar Creek Railroad Bridge Looking East

This photo shows the railroad bridge over Gar Creek just south of Kankakee. It appears that the CN was working on the tracks above the bridge when the photo was taken.

There were five railroad bridges over creeks or culverts (in addition to the Kankakee River) identified in the study. All of these bridges would be expected to accommodate two tracks, but would require inspection and possibly repairs or upgrades as the project progresses.

North of this point at MP 57.60, the Gar Creek-Otto passing siding begins and continues south for 2.7 miles to Otto at MP 60.40.

MP 59.00 – Possible Station Site West of Festival Drive near Stewart Road Looking Northwest

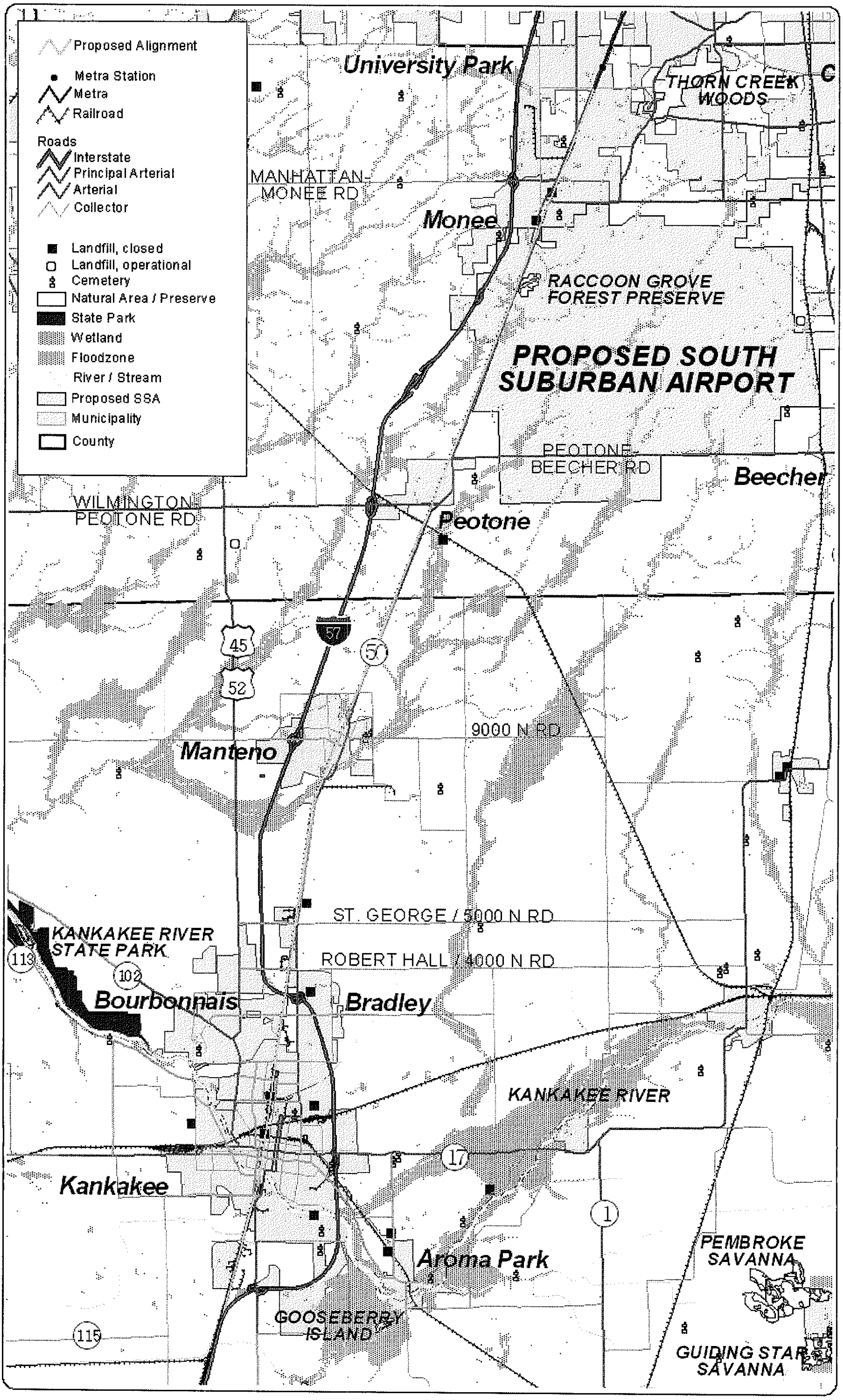
This view shows a possible site for the I-57, Interchange 308 station location (Site N). The area is an undeveloped parcel located in an industrial park bordered by the CN Railway to the west (at the horizon in the photo), U.S. Route 45 at the east and I-57 to the south. This particular 23-acre parcel of land between the CN and Festival Drive is currently available for purchase.

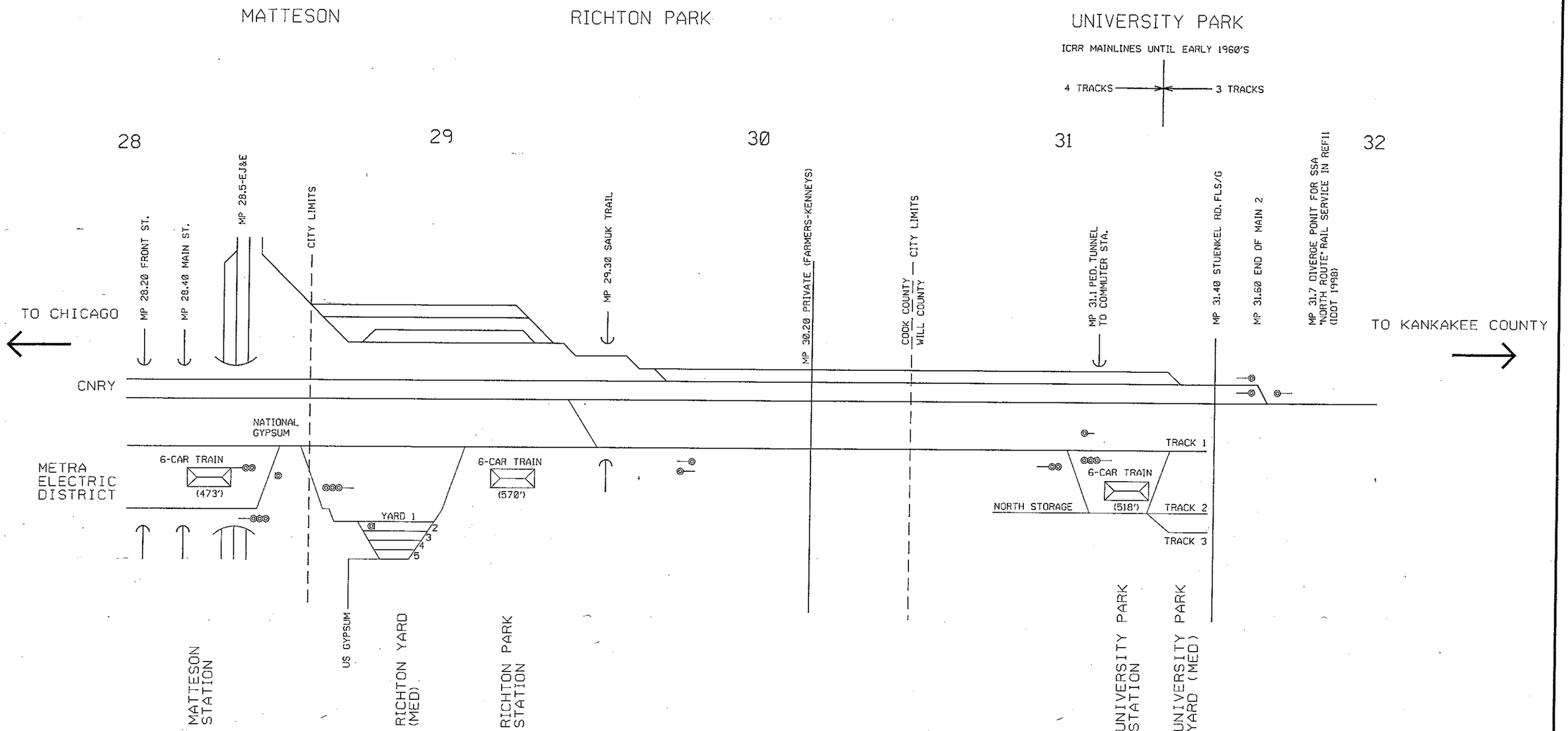
The I-57 Interchange 308 is located about 1/3 mile directly east of this location and would provide ready access to the station site from outlying communities. It is scheduled for redesign by IDOT in the near future. The Kankakee Valley regional Airport is about two miles east of this location.

MP 59.00 – Possible Station Site at 1000W Road Near 3000S Road Looking East

This photo shows the western side of the CN in the area of the proposed I-57, Interchange 308 Station. Ample open land is available for an outbound platform and commuter parking. A pedestrian tunnel would be required to access the two platforms due to a lack of a grade crossing in the area. Road access to this site would be by a bridge over the railroad which is included in the new I-57 Interchange 308 concept referred to in the Festival Drive site discussion above.

Although not visible in the photo, there are two tracks on the CN right-of-way in this area; the eastern track being CN Main 1 and the western track being a portion of the CN Gar Creek-Otto Siding. As with other passing sidings within the KACOR corridor, this siding would be upgraded into a second mainline track.


Proposed Alignment
Metra Station
Metra
Railroad
Roads
Interstate
Principal Arterial
Arterial
Collector
Landfill, closed
Landfill, operational
Cemetery
Natural Area / Preserve
State Park
Wetland
Floodzone
River / Stream
Proposed SSA
Municipality
County
University Park
THORN CREEK WOODS
MANHATTAN-MONEE RD
Monee
RACCOON GROVE FOREST PRESERVE
PROPOSED SOUTH SUBURBAN AIRPORT
PEOTONE-BEECHER RD
Beecher
WILMINGTON-PEOTONE RD
Peotone
45
57
52
9000 N RD
Manteno
ST. GEORGE / 5000 N RD
KANKAKEE RIVER STATE PARK
113
102
ROBERT HALL / 4000 N RD
Bourbonnais
Bradley
KANKAKEE RIVER
17
Kankakee
1
Aroma Park
PEMBROKE SAVANNA
GOOSEBERRY ISLAND
115
GUIDING STAR SAVANNA
1 0 1 2 Miles
Sources: IDNR, IDOT, USGS
KANKAKEE COUNTY
COMMUTER RAIL FEASIBILITY STUDY
PARSONS BRINCKERHOFF



REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 11	M. BANH	D. GARY
1	2004 JUNE 14		
2			
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6			
7			

NOT TO SCALE

KANKAKEE COUNTY COMMUTER RAIL FEASIBILITY STUDY - PHASE I

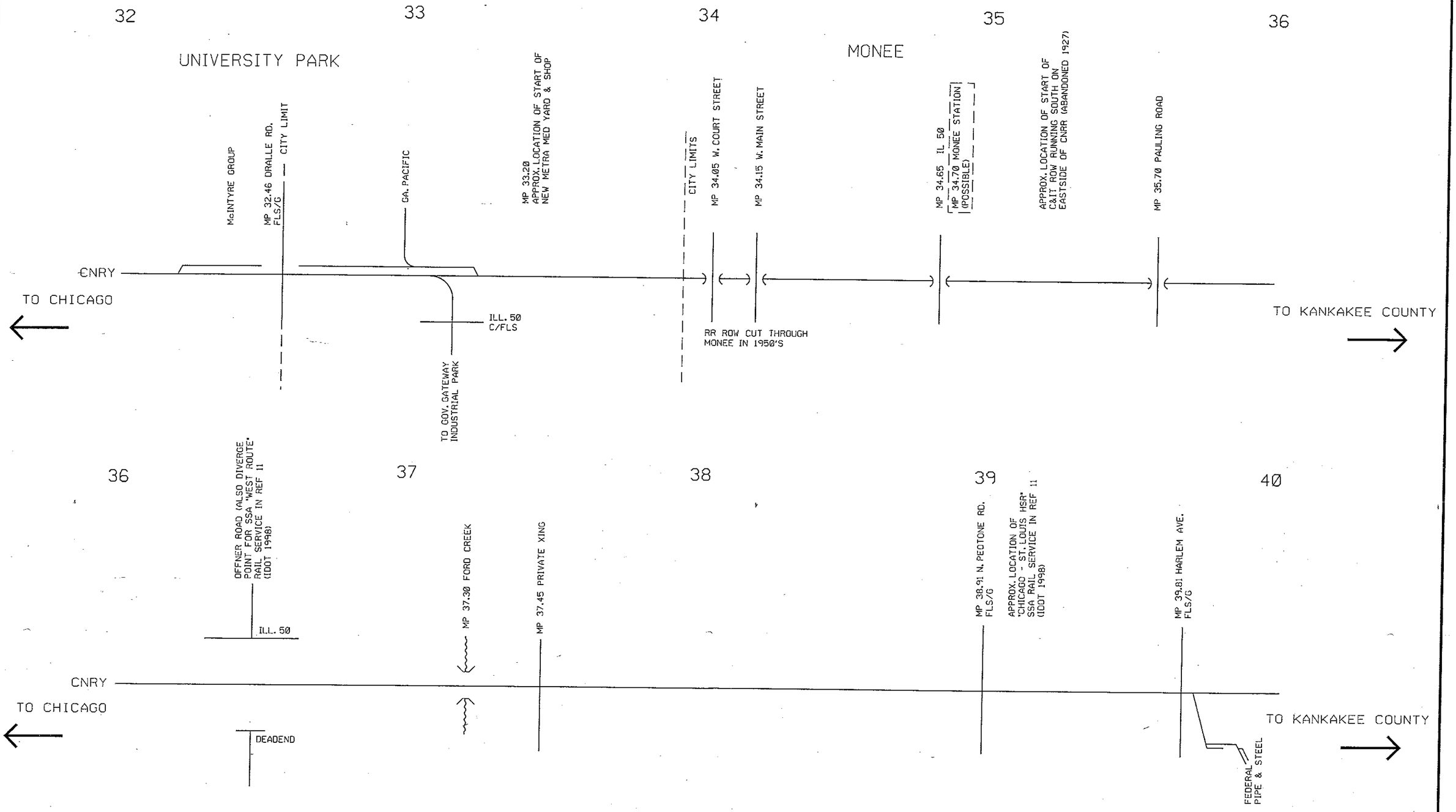
PARSONS BRINCKERHOFF | PROJECT NO. 16802A

ROW SCHEMATIC:
EXISTING CONDITIONS

AREA: MATTESON-UNIVERSITY PARK

MP: 28-32 | SHEET 1 OF 5

FILE NAME: MP28-32REV1.DGN



REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 11	M. BANH	D. GARY
1	2004 JUNE 14		
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NOT TO SCALE

KANKAKEE COUNTY COMMUTER RAIL FEASIBILITY STUDY - PHASE I

PARSONS BRINCKERHOFF | PROJECT NO. 16802A

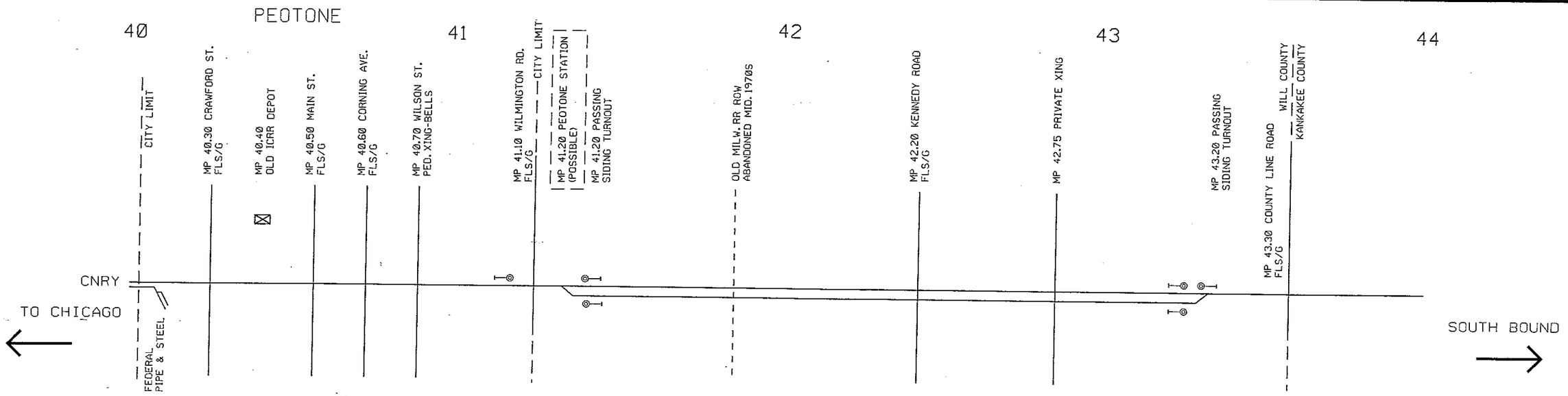
ROW SCHEMATIC: EXISTING CONDITIONS

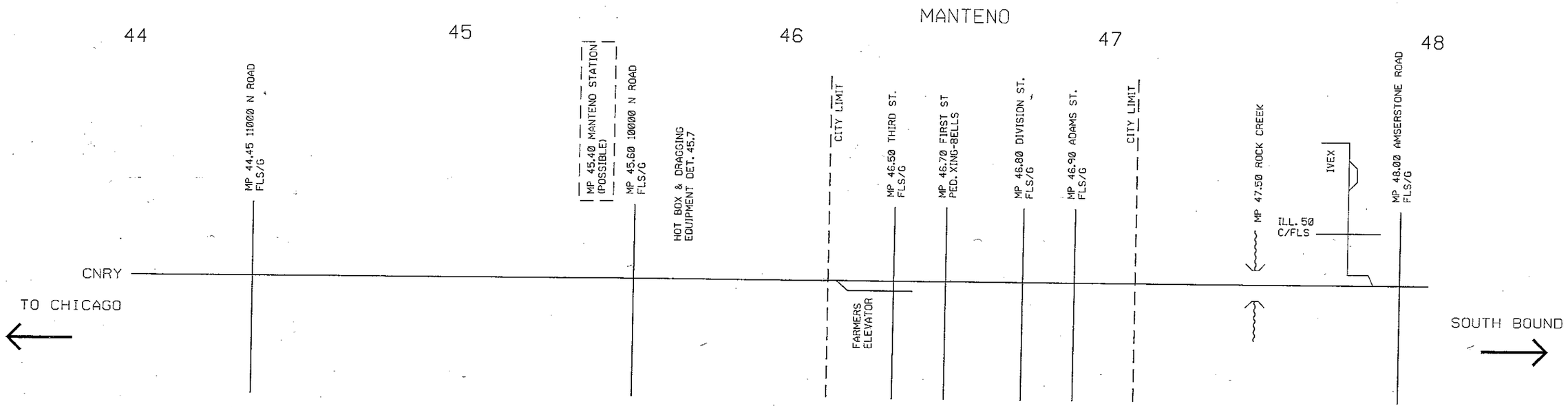
AREA: UNIVERSITY PARK-PEOTONE

MP: 32-40

SHEET 2 OF 5

FILE NAME: MP32-40REV1.DGN





REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 11	M. BANH	D. GARY
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NOT TO SCALE

KANKAKEE COUNTY COMMUTER RAIL FEASIBILITY STUDY - PHASE I

PARSONS BRINCKERHOFF | PROJECT NO. 16802A

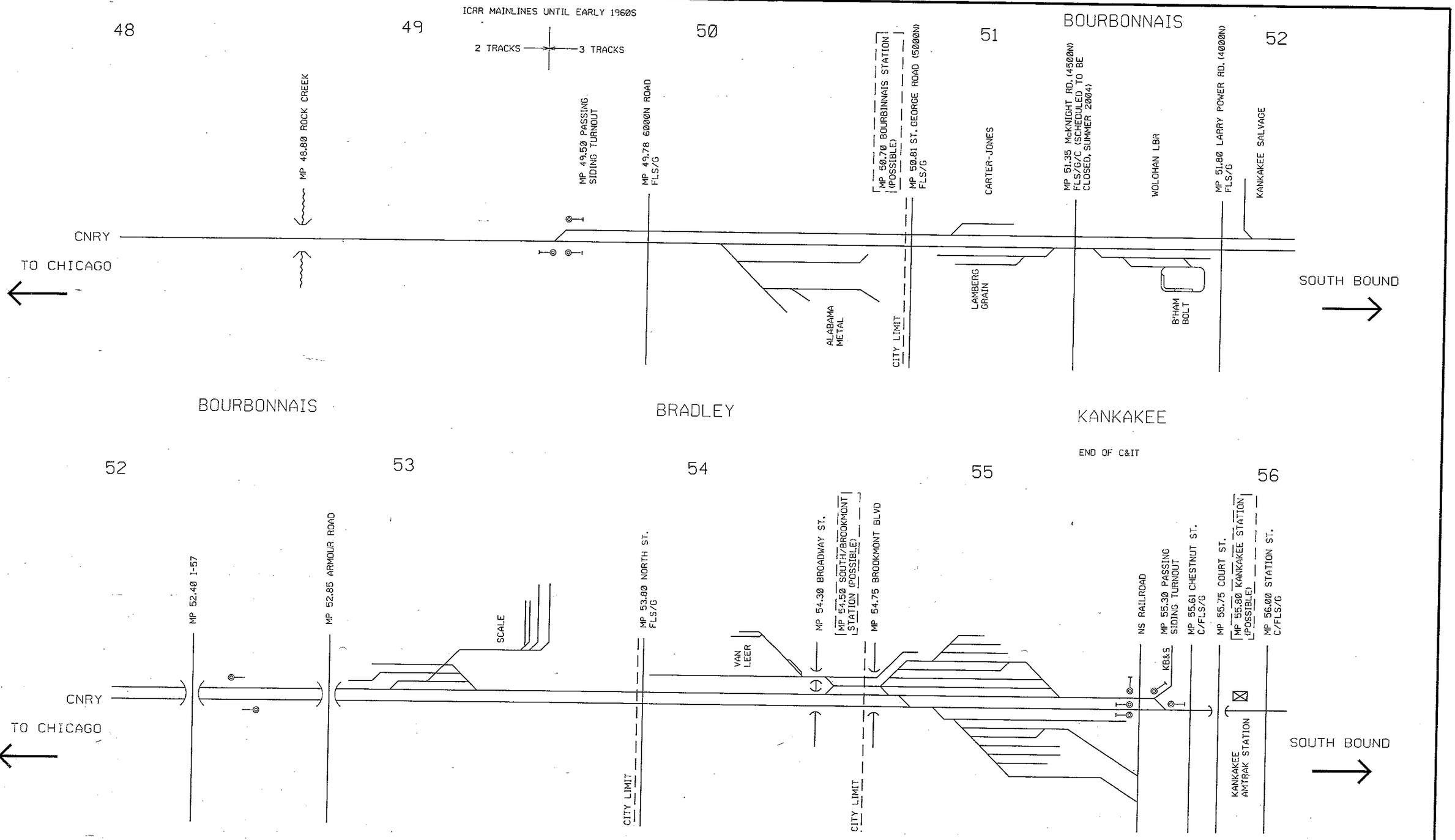
ROW SCHEMATIC: EXISTING CONDITIONS

AREA: PEOTONE-MANTENO

MP: 40-48

SHEET 3 OF 5

FILE NAME: MP40-48REV1.DGN



REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 11	M. BANH	D. GARY
1	2004 JUNE 14		
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NOT TO SCALE

KANKAKEE COUNTY COMMUTER RAIL FEASIBILITY STUDY - PHASE I

PARSONS BRINCKERHOFF

PROJECT NO. 16802A

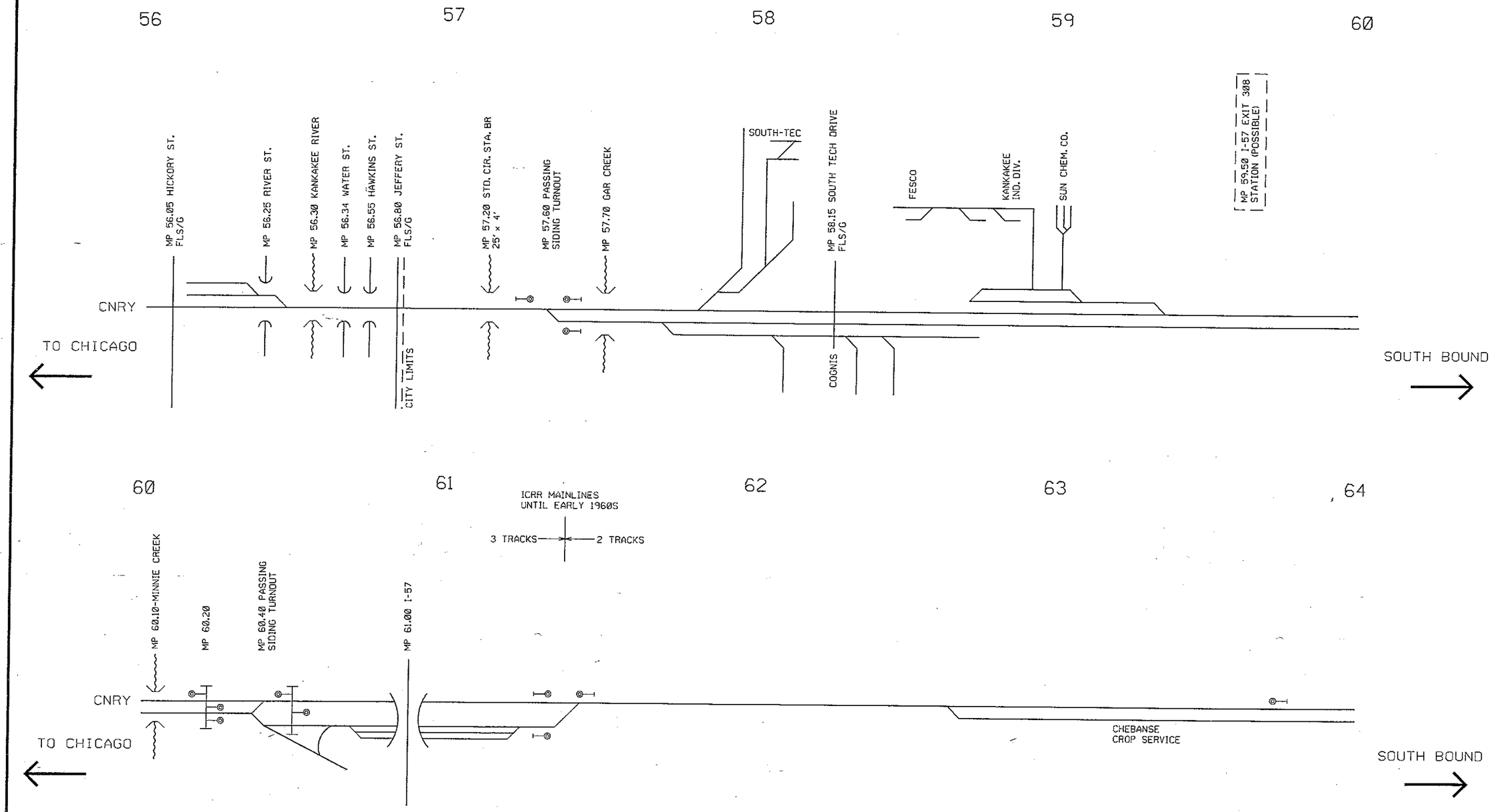
ROW SCHEMATIC: EXISTING CONDITIONS

AREA: MANTENO-KANKAKEE

MP: 48-56

SHEET 4 OF 5

FILE NAME: MP48-56REV1.DGN



REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 11	M. BANH	D. GARY
1	2004 JUNE 14		
2			

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NOT TO SCALE

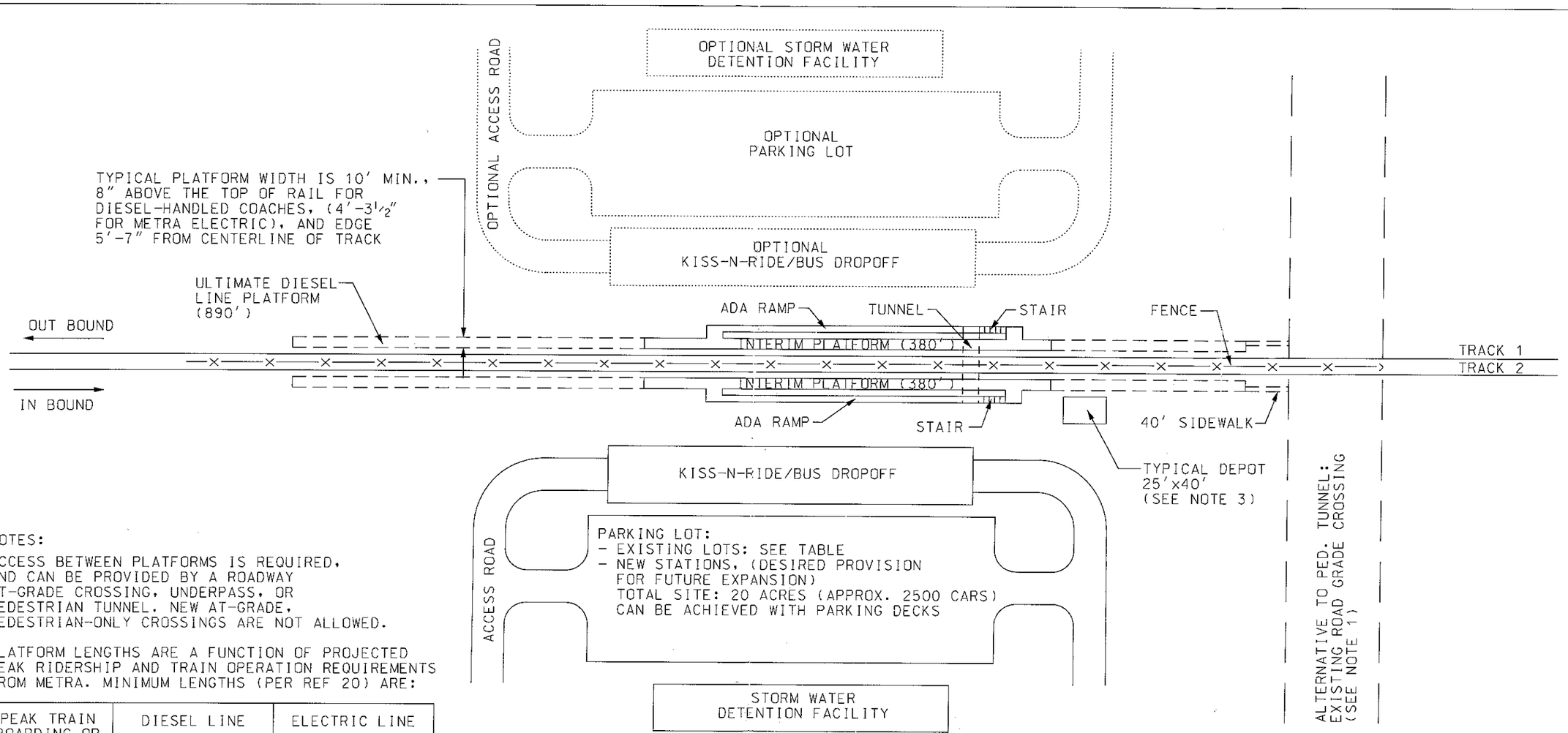
ROW SCHEMATIC: EXISTING CONDITIONS

KANKAKEE COUNTY COMMUTER RAIL FEASIBILITY STUDY - PHASE I

AREA: KANKAKEE-CHEBANSE

PARSONS BRINCKERHOFF | PROJECT NO. 16802A | MP: 56-64 | SHEET 5 OF 5

FILE NAME: MP56-6SREV1.DGN



NOTES:

1. ACCESS BETWEEN PLATFORMS IS REQUIRED, AND CAN BE PROVIDED BY A ROADWAY AT-GRADE CROSSING, UNDERPASS, OR PEDESTRIAN TUNNEL. NEW AT-GRADE, PEDESTRIAN-ONLY CROSSINGS ARE NOT ALLOWED.

2. PLATFORM LENGTHS ARE A FUNCTION OF PROJECTED PEAK RIDERSHIP AND TRAIN OPERATION REQUIREMENTS FROM METRA. MINIMUM LENGTHS (PER REF 20) ARE:

PEAK TRAIN BOARDING OR ALIGHTING	DIESEL LINE		ELECTRIC LINE	
	INBOUND	OUTBOUND	INBOUND	OUTBOUND
1 - 105	380'	380'	465'	380'
106 - 140	380'	465'	465'	465'
141 - 175	380'	550'	465'	550'
176 - 210	465'	635'	550'	635'
211 - 245	550'	720'	635'	635'
ETC.	--	--	--	--
MAX.	810'	890'	635'	635'

3. STATION WAITING AREA GUIDELINES (PER REF 20) DEPEND ON PEAK TRAIN BOARDING PASSENGERS (PTBP) 20 YEARS IN FUTURE AND CAN BE MET BY A DEPOT, LOGGIA, WARMING HOUSE, SHELTER AND/OR CANOPY. DEPOT SHOWN PROVIDES FOR 210 PTBP.

PARKING LOT TYPES USED IN METRA PUBLIC TIME TABLES

TYPES	# OF SPACES
A	25-99
B	100-249
C	250-499
D	500-749
E	750 OR MORE

0 100 200 300 400 500

SCALE: 1" = 100'

TYPICAL 2-TRACK SIDE PLATFORM METRA STATION LAYOUT

KANKAKEE COMMUTER RAIL FEASIBILITY STUDY (KACOR) PHASE ONE
PB PROJECT NO. 16802A
DATE: MAY 01, 2004

DRAWN BY: M. BANH
CHECKED BY: D. GARY

Parsons Brinckerhoff Quade & Douglas Inc.

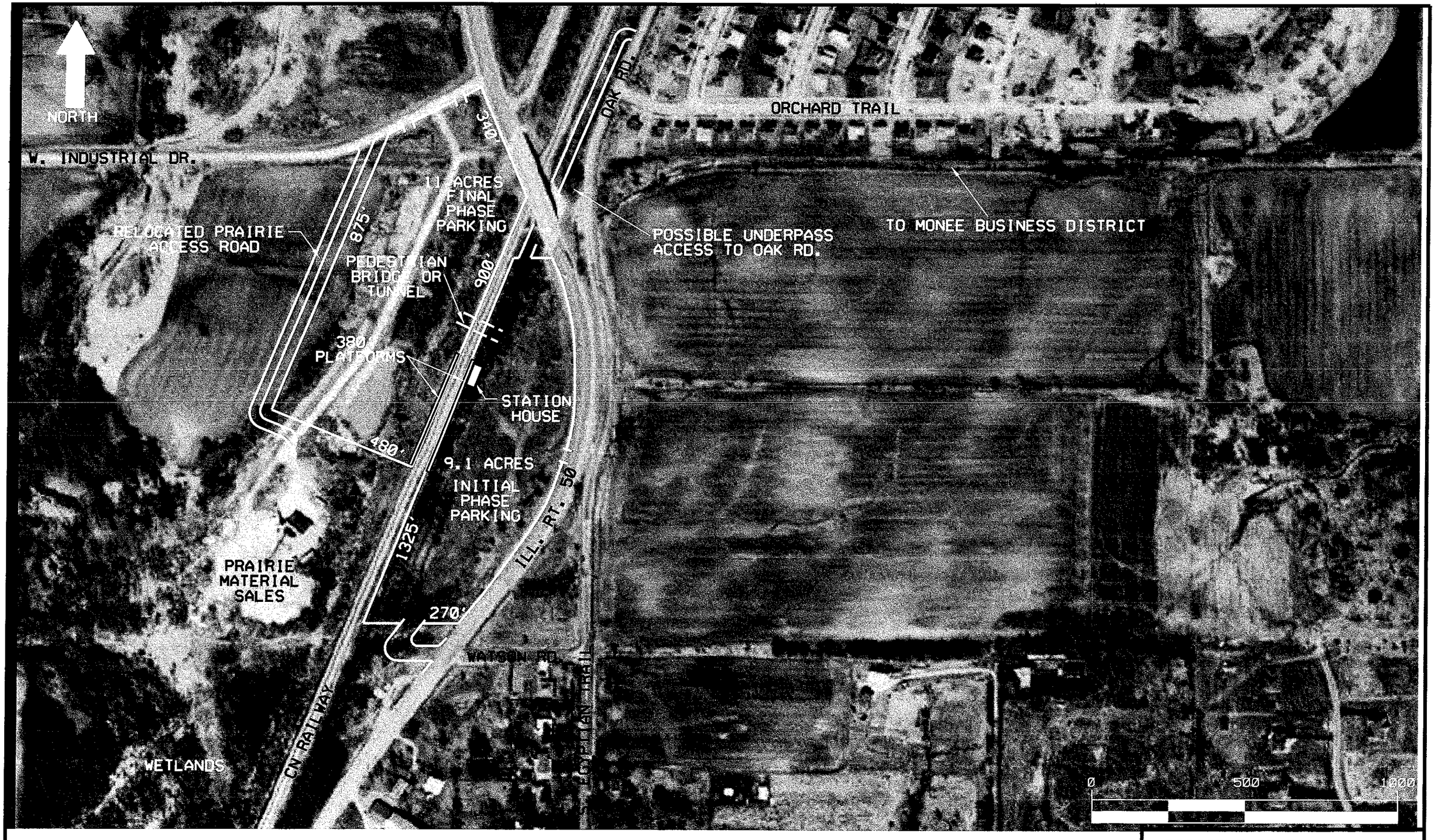
KACOR - Kankakee County Commuter Rail Feasibility Study

COMMUTER RAIL STATION EVALUATION MATRIX

MUNICIPALITY	MONEE		PEOTONE			MANTENO		BOURBONNAIS			BRADLEY	KANKAKEE		
STATION LOCATION	**Central Monee**	**Industrial Drive**	**Beecher Rd.**	**Central Peotone**	**Wilmington Rd.**	**10000N Rd.**	**7000N Rd.**	**6000N Rd.**	**5000N Rd.**	**4000N Rd.**	**South St. / Brookmont**	**CN / NS Junction**	**Amtrak Depot**	**I-57 -- 308 Interchange**
SITE DESIGNATION	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**
Site Description														
Station Mile Post (Estimated)	34.1	34.7	39.9	40.5	41.2	45.4	48.8	49.8	50.7	51.8	54.5	55.5	55.8	59.0
Site Size - Acres	Less than 5	20.1	20	Less than 5	20	21.5	20	21.3	20	Est. 19	Up to 26.7	19.9	Est. up to 10.3	25.3
Number of Parcels	NA	2	2	NA	2	2	2	2	2	2	2	3	11	2
Current Site Development Status	Railroad & Commercial	Farm & Undeveloped	Farm & Undeveloped	Railroad & Commercial	Farm & Undeveloped	Farm	Farm	Farm	Farm and unused parking lot	Industrial	Light Industrial, Commercial & Undeveloped	Light Industrial & Undeveloped	Existing Depot, Commercial & Vacant	Undeveloped & Farm
Adjacent Land Use	Downtown Monee - Commercial & Residential	Farm & Undeveloped with Residential Nearby	Farm & Residential Federal Pipe & Steel Nearby	Downtown Peotone - Commercial & Residential	Farm & Residential Will County Fairgrounds	Farm & Residential	Farm - Quarry Nearby	Farm, Asphalt Plant, Quarry & Scrap Yard	Farm & Industrial - Alabama Metal Plant	Industrial & Commercial - Northfield Square Mall	Light Industrial, Commercial, Park & Residential	Light Industrial, Commercial & Residential	Downtown Kankakee - Commercial & Residential	Farm, Industrial & Interstate 57 - Kankakee Airport Nearby
Map/Drawing Sheet No. in Appendix 6	NA	1	2	NA	3	4	NA	5	6	NA	7	8	9	10
Location Considerations														
Spacing to Adjacent Town's Recommended Stations														
North	3.0	3.6	5.2	5.8	6.5	4.2	7.6	4.4	5.3	6.4	3.8	1.0	1.3	3.2
South	7.1	6.5	5.5	4.9	4.2	5.3	1.9	1.0	3.8	2.7	1.3	0.3	3.2	NA
Access to Existing Roads														
NS	Fair	Good	Good	Fair	Good	Good	Good	Good	Good	Good	Good if Wash. Avenue is Improved		Good	Good
EW	Good	Fair	Fair	Good	Good	Good	Poor	Good	Good	Good	Fair	Fair	Good	Fair
Access to I-57	Fair to Interchange 335	Fair to Interchange 335	Fair to Interchange 327	Fair to Interchange 327	Very Good to Interchange 327	Fair to Interchange 322	Fair to Interchange 322	Very Good if New Interchange	Good to Interchange 315	Good to Interchange 315	Fair to Interchange 312 or 315	Fair to Interchange 312	Fair to Interchange 312	Very Good to Interchange 308
SSA Considerations	Just North of SSA. The Monee Station, particularly the Industrial Drive site, could be a KACOR - SSA transfer point via SSA rail shuttle.		South of SSA. As such, the SSA impact on the Peotone Commuter Rail Station likely limited to local resident travel between Peotone and SSA.			SSA impact on the Manteno Commuter Rail Station likely limited to local resident travel between Manteno and SSA.		SSA impact on the Bourbonnais Commuter Rail Station likely limited to local resident travel between Bourbonnais and SSA.			Potential transfer point between Commuter Rail and HSR bound for SSA.		SSA impact on these Kankakee Commuter Rail Stations is likely limited to local resident travel between Kankakee and SSA.	
HSR Considerations	Located along proposed HSR route from CN to NS in Kankakee. Unlikely to be a HSR stop.		Located along proposed HSR route from CN to NS in Kankakee. Unlikely to be a HSR stop.			Located along proposed HSR route from CN to NS in Kankakee. Unlikely to be a HSR stop.		Located along proposed HSR route from CN to NS in Kankakee. Unlikely to be a HSR stop.			Potential multi-modal transit station for KACOR and HSR		South of CN to NS HSR alignment. No multi-modal potential.	
Station Site Design Issues														
Site Configuration	Poor - In Cut & Narrow - Limited Parking	Good	Good	Poor - Narrow & Limited Parking	Good	Good	Good	Very Good	Very Good	Good	Fair - RR Yards Nearby	Poor - Site split by Washington Ave. and NS to CN curve.	Fair - Multiple Parking Lots & Less than 20 Acres	Good
Pedestrian Access from Parking Lot to Platform	Bridges - Ramps	Direct	Direct	Local Streets	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct & Street Crossing	Local Streets	Direct
Pedestrian Access Between Platforms	Bridges - Ramps	Tunnel or Bridge	RR Grade Crossing	RR Grade Crossings	RR Grade Crossing	RR Grade Crossing	Tunnel	RR Grade Crossing	RR Grade Crossing	RR Grade Crossing	Tunnel	Tunnel	RR Grade Crossings	Tunnel
Existing Parking Availability	Some?	None	None	Some?	None	None	None	None	Yes - Private	Shopping Center?	None	None	Yes	None
Existing Station Depot?	No	No	No	Yes - Private	No	No	No	No	No	No	No	No	Yes	No
Comments														
Positive	Close to Monee Business District. Potential transfer point to SSA	Good access to local residential areas. Potential transfer point to SSA and works well with likely SSA rail realignment.	Good site configuration and close to residential areas.	Close to Peotone Business District	Good proximity to residential areas and Will County Fairgrounds	Good loation near residential areas.	Site may be less costly than 10000N Rd. site	Direct access to I-57 if proposed new interchange at 6000N Rd. is built	Existing unused parking lot available west of CN. Open farm land to east. Possible commute to Alabama Metal Plant.	Closest site to Bourbonnais.	Central location for Bradley, Bourbonnais and Kanakakee Metropolitan Area. Potential HSR transfer point.	Close to residential areas. Potential HSR transfer point if HSR uses corridor.	Existing Amtrak Depot on site. Pending new Multi-Modal facility at site. Heart of Kankakee Business District.	Good location for access to Kankakee Airport, southern communites, I-57 and new development.
Negative	Inadequate space and very limited parking. Site geography would require costly access ramps and retaining walls.	Lack of grade crossing would require pedestrian tunnel or bridge	East parcel is an odd narrow shape. Would require improvements to Harlem Ave. RR Grade Crossing	Inadequate space and very limited parking.	Two separate parking lots to meet 20 acre requirement	Land next to North Manteno Lake may be costly	No RR crossing. Need for 7000N road improvements in site area would be costly. Less convenient to Manteno	Potential new 6000N Road overpass bridge at CN and Rt. 50 would adversely impact site for commuter rail station. Somewhat distant from Bourbonnais.	Two separate parking lots.	Potential site is an existing industrial area that might have envirionmental issues. May be costly to acquire.	Existing ComEd property may have environmental issues. Rail yard located nearby may impact platform locations. Multiple Municipality site.	RR curve at junction and nearby rail yard may impact station platforms. HSR alignment will likely cut through site. Requires coordination with 2nd RR (NS) for operations.	Inadequate space to meet 20 acre requirement without parking structures. No HSR transfer potential.	South of Kankakee Residential areas. Requires additional costs to extend RR to this point. No HSR transfer potential.
County Location Preferences														
City/Village Preferences														
Consider Further? (Preliminary Recommendation)	No	Yes	No	No	Yes	Yes (See Note 1)	No	No	Yes	No	Yes	No	Yes	Yes

Shaded columns denote preliminary recommended KACOR Station locations

Note 1: The Village of Manteno has since revised their station location preference to 11000N Road. See Appendix 11.



POSSIBLE STATION LOCATION

REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 31	M. BANH	
1			
2			
3			
4			
5			
6			
7			

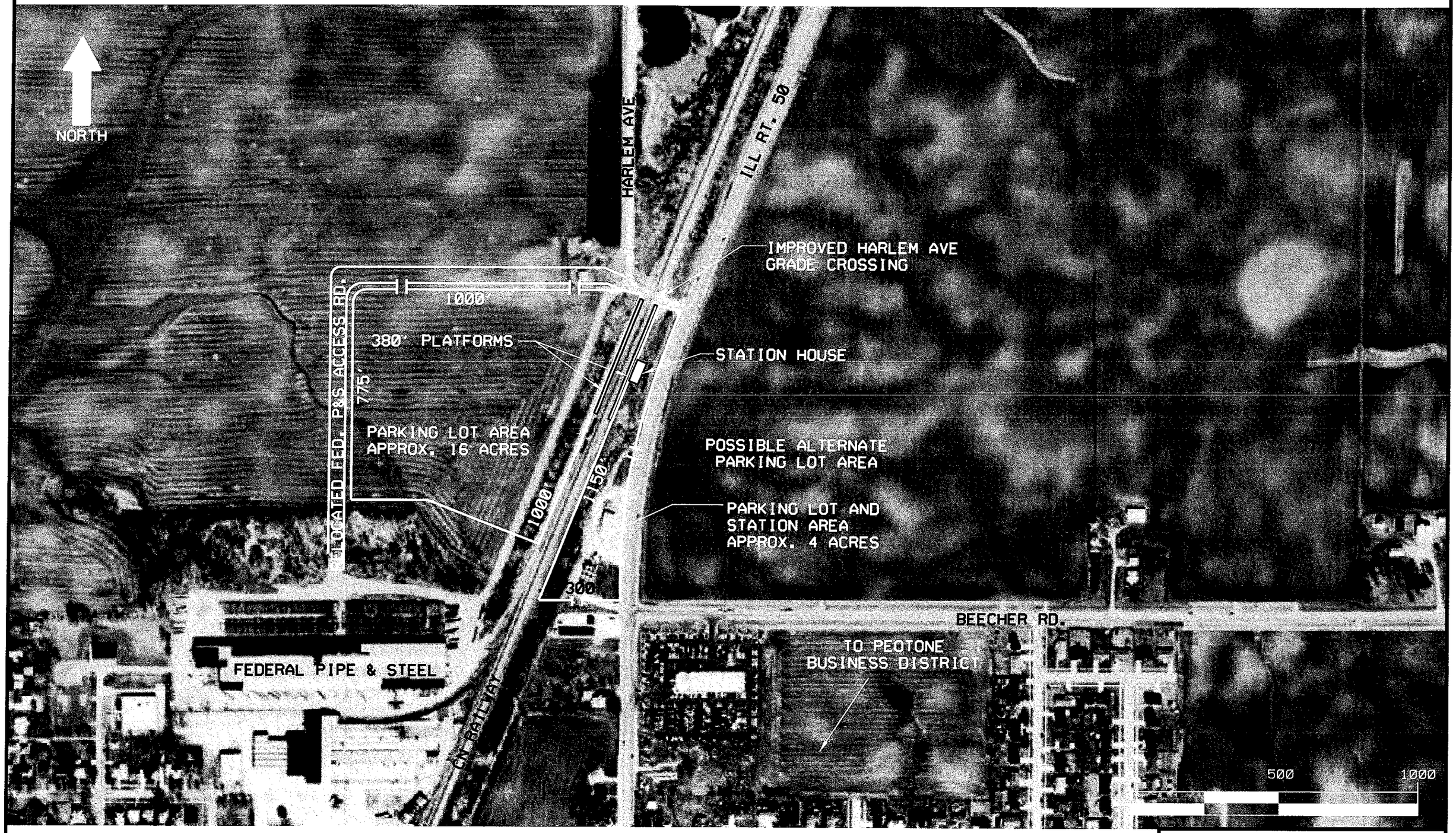
NOT TO SCALE

KANKAKEE COMMUTER RAIL FEASIBILITY STUDY - KACOR

SITE B - MONEE-INDUSTRIAL DR.

PARSONS BRINCKERHOFF | PROJECT NO. 16802A | MP: 34.7 | SHEET 1 OF 10

FILE NAME = 41087D64.DGN



POSSIBLE STATION LOCATION

REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 31	M. BANH	
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NOT TO SCALE

KANKAKEE COMMUTER RAIL FEASIBILITY STUDY - KACOR

SITE C - PEOTONE - BEECHER RD.

PARSONS BRINCKERHOFF | PROJECT NO. 16802A | MP: 39.9 | SHEET 2 OF 10

FILE NAME = 41087C72BEECHER.DGN

POSSIBLE STATION LOCATION

REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 31	M. BANH	
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NOT TO SCALE

KANKAKEE COMMUTER RAIL FEASIBILITY STUDY - KACOR

SITE E - PEOTONE-WILMINGTON RD.

PARSONS BRINCKERHOFF | PROJECT NO. 16802A | MP: 41.2 | SHEET 3 OF 10

FILE NAME : 41087C72.DGN

POSSIBLE STATION LOCATION

REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 31	M. BANH	
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7			

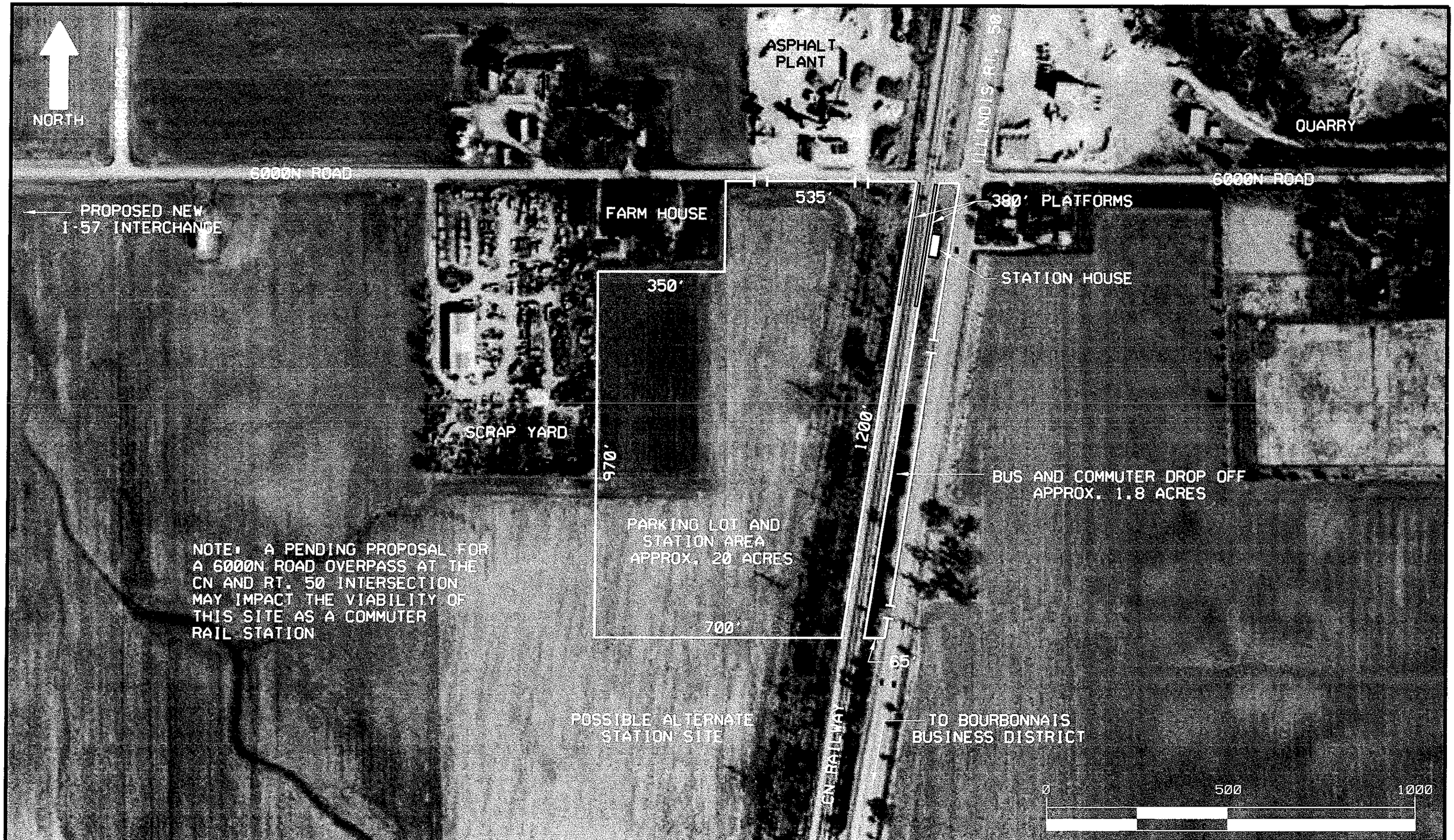
NOT TO SCALE

KANKAKEE COMMUTER RAIL FEASIBILITY STUDY - KACOR

SITE F - MANTENO - 1000N ROAD

PARSONS BRINCKERHOFF | PROJECT NO. 16802A | MP: 45.4 | SHEET 4 OF 10

FILE NAME = 41087C74.DGN



POSSIBLE STATION LOCATION

REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 31	M. BANH	
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NOT TO SCALE

KANKAKEE COMMUTER RAIL FEASIBILITY STUDY - KACOR

SITE H - BOURBONNAIS-6000N RD.

PARSONS BRINCKERHOFF | PROJECT NO. 16802A | MP: 49.8 | SHEET 5 OF 10

FILE NAME = 41087871.DGN

POSSIBLE STATION LOCATION

REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 31	M. BANH	
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NOT TO SCALE

KANKAKEE COMMUTER RAIL FEASIBILITY STUDY - KACOR

SITE I - ST GEORGE RD-5000N

PARSONS BRINCKERHOFF | PROJECT NO. 16802A | MP: 50.7 | SHEET 6 OF 10

FILE NAME : 41087B715000N.DGN

POSSIBLE STATION LOCATION

REV.	DATE	DRAWN BY	APPROVED BY
0	2004 JUNE 14	M. BANH	
1			
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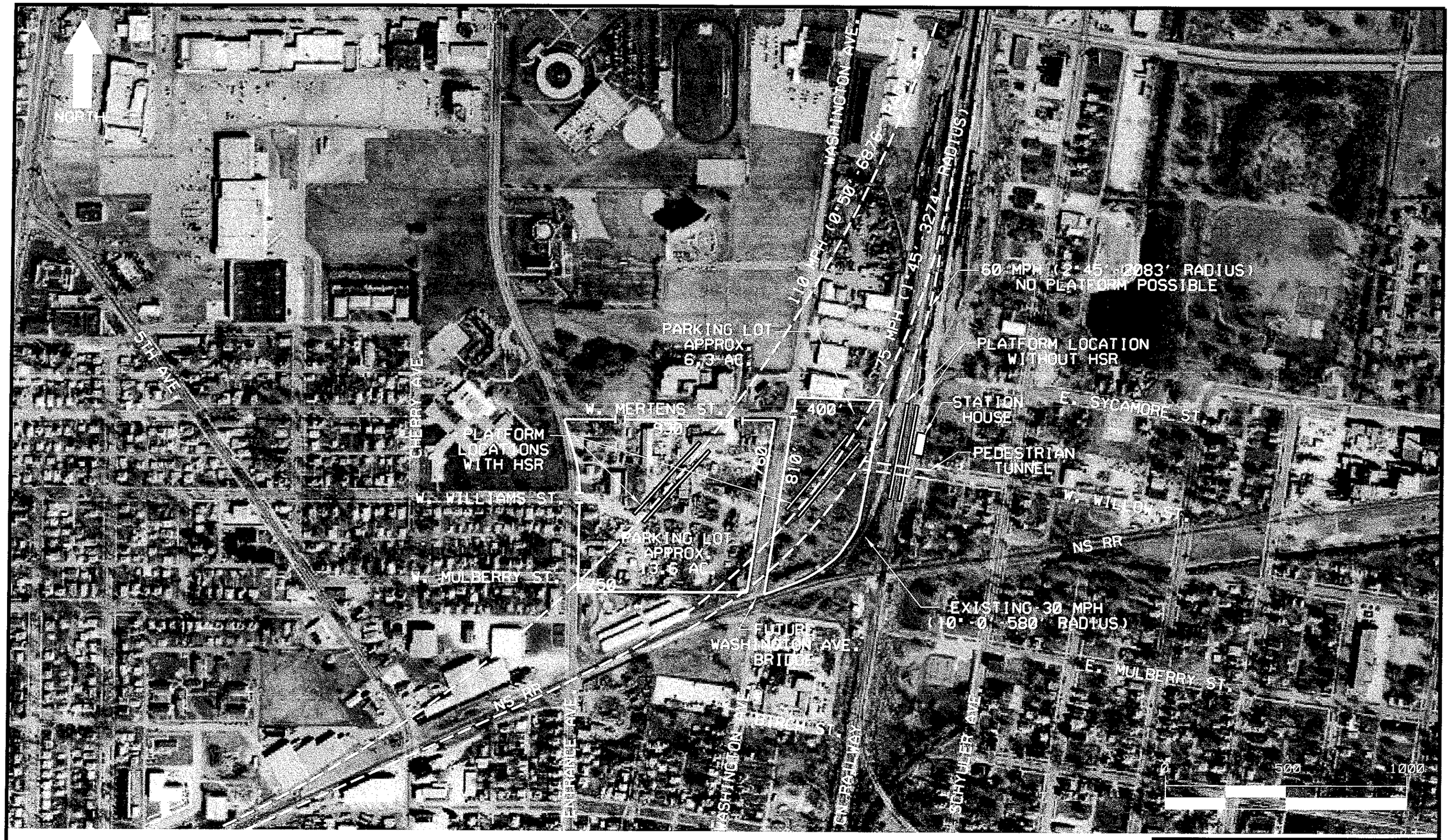
NOT TO SCALE

KANKAKEE COMMUTER RAIL FEASIBILITY STUDY - KACOR

SITE K-BRADLEY- SOUTH STREET/ BROOKMONT BLVD.

PARSONS BRINCKERHOFF | PROJECT NO. 16802A | MP: 54.5 | SHEET 7 OF 10

FILE NAME = 41087874SHT7.DGN



POSSIBLE STATION LOCATION

REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 31	M. BANH	
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NOT TO SCALE

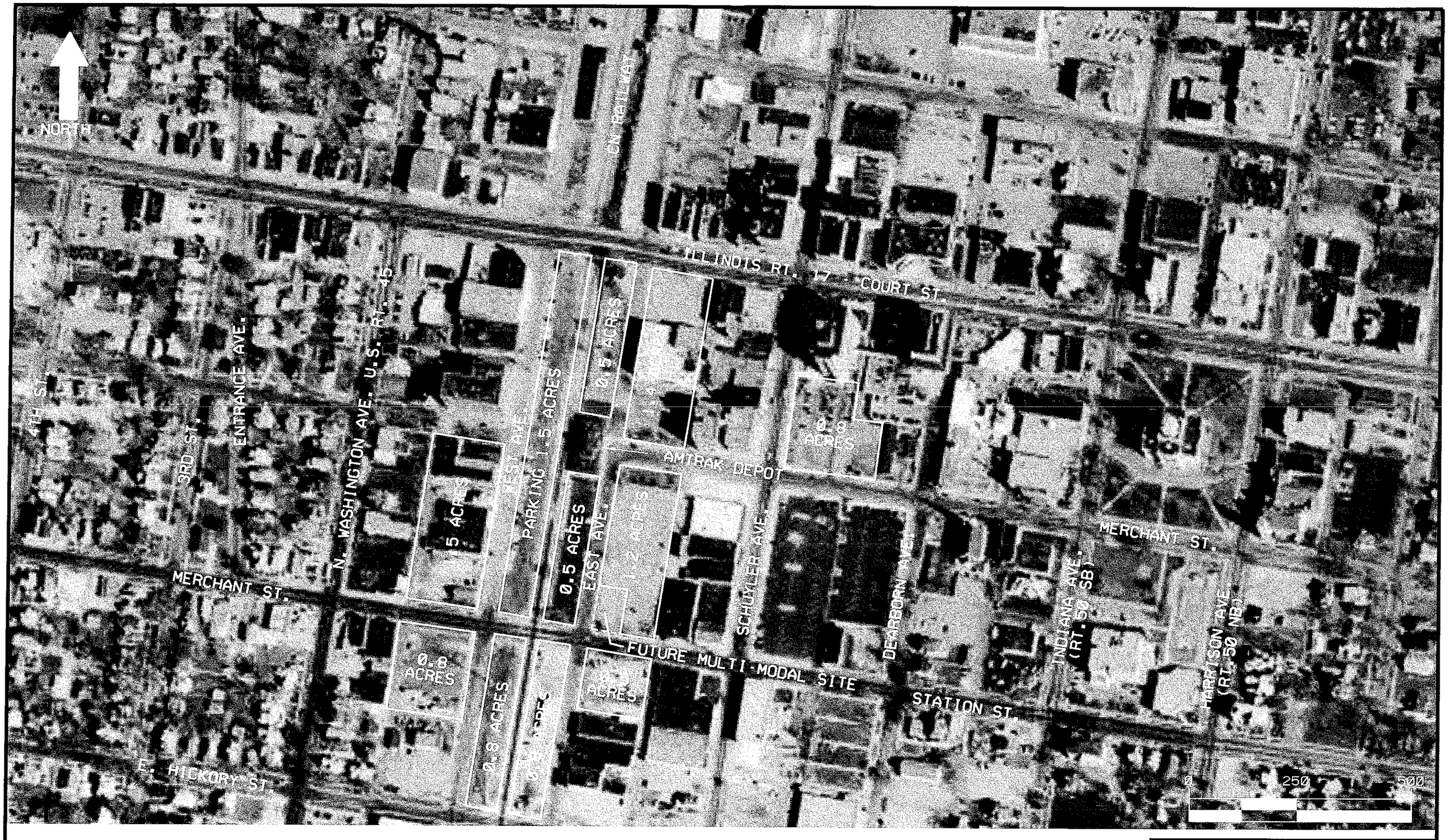
KANKAKEE COMMUTER RAIL FEASIBILITY STUDY - KACOR

PARSONS BRINCKERHOFF | PROJECT NO. 16802A

SITE L-KANKAKEE-CN/NS JUNCTION

MP: 55.5 | SHEET 8 OF 10

FILE NAME = 41087874SHT8.DGN



REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 31	M. BANH	
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NOT TO SCALE

KANKAKEE COMMUTER RAIL FEASIBILITY STUDY - KACOR

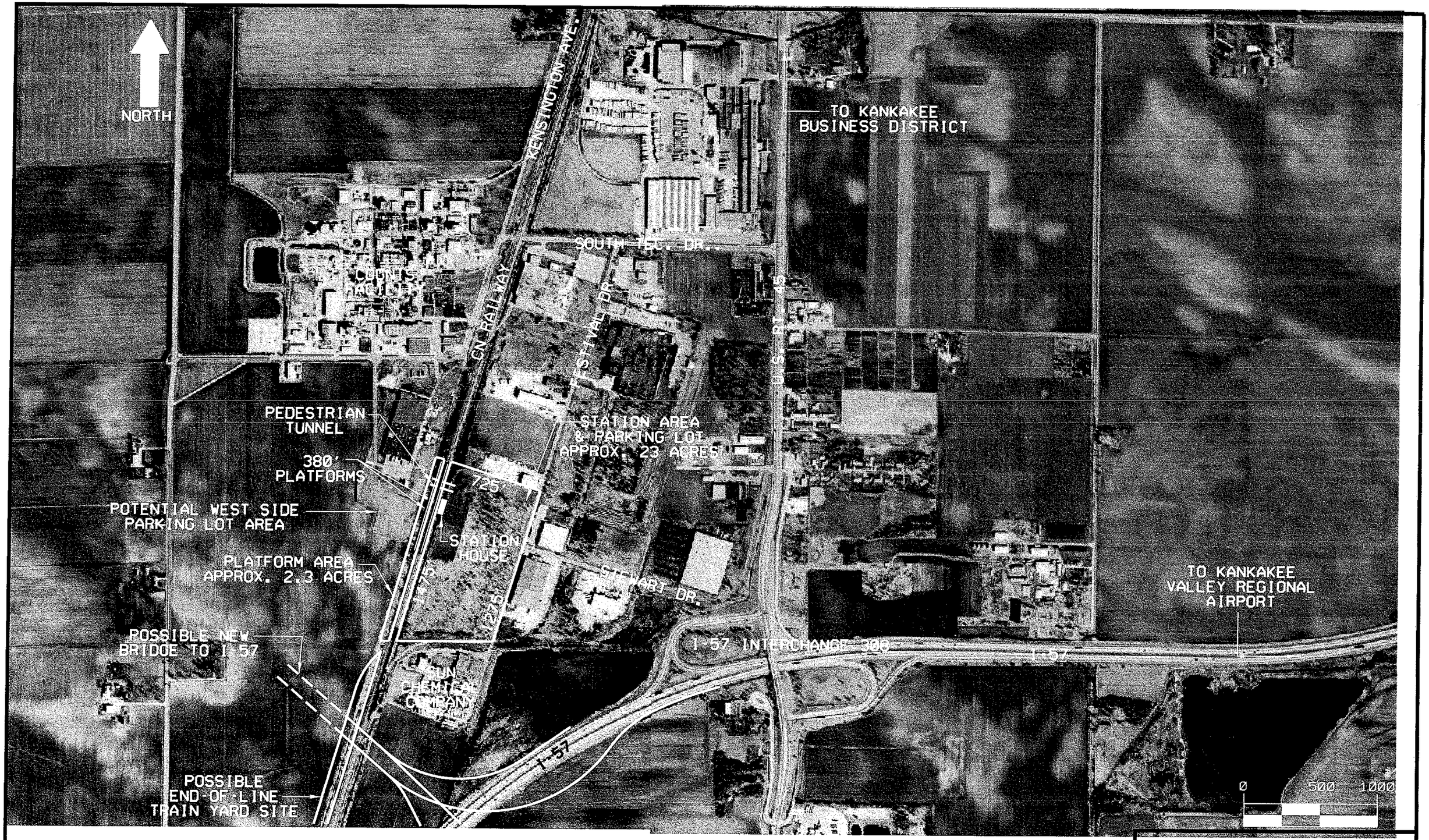
PARSONS BRINCKERHOFF | PROJECT NO. 16802A

POSSIBLE STATION LOCATION

SITE M - KANKAKEE-AMTRAK DEPOT

MP: 55.8 | SHEET 9 OF 10

FILE NAME : 41087A71.DGN



REV.	DATE	DRAWN BY	APPROVED BY
0	2004 MARCH 31	M. BANH	
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NOT TO SCALE

KANKAKEE COMMUTER RAIL FEASIBILITY STUDY - KACOR

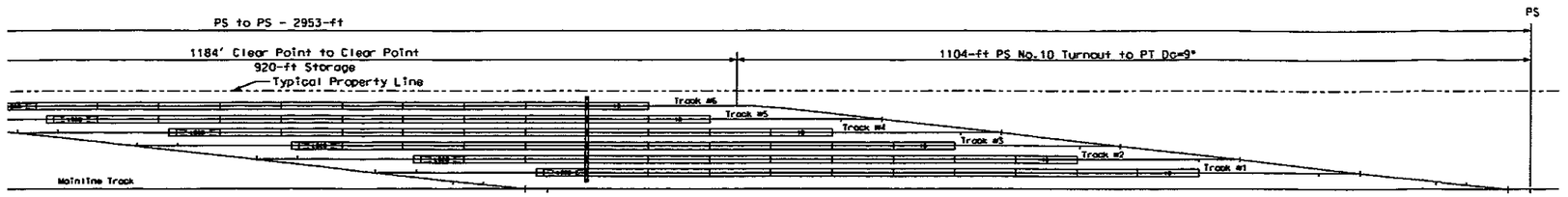
PARSONS BRINCKERHOFF | PROJECT NO. 16802A

POSSIBLE STATION LOCATION

SITE N - KANKAKEE-I-57 INT. 308

MP: 59.0 | SHEET 10 OF 10

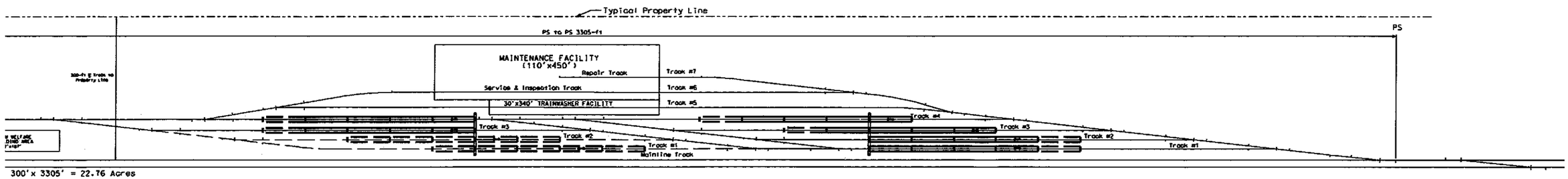
FILE NAME : 41087A71&82.DGN



TYPICAL END OF LINE YARD.
SERVICING & CREW WELFARE FACILITY

DIESEL PUSH-PULL OPERATION
KANKAKEE COMMUTER RAIL
FEASIBILITY STUDY - KACOR
PB PROJECT NO. 16802A
DATE: MAY 14, 2004

DRAWN BY: W.G.TOTH
CHECKED BY: R.JUVINALL



300'x 3305' = 22.76 Acres

0 100 200 300 400 500

SCALE: 1" = 100'

YARD DESIGN CRITERIA:	BASIS OF DESIGN
5 - CAR TRAINS	MAXIMUM BNSF TRAIN LENGTH
7 TRACKS	KACOR OPERATIONS PLAN
18'6" TRACK CENTERS	METRA DESIGN STANDARD (CALIFORNIA YARD)
MINIMUM RADIUS = 637.27-FT (Dc = 9°)	METRA DESIGN STANDARD (CALIFORNIA YARD)
No. 9 TURNOUTS IN YARD	METRA DESIGN STANDARD (CALIFORNIA YARD)
No. 10 TURNOUTS ON MAINLINE	METRA DESIGN STANDARD (CALIFORNIA YARD)
YARD CREW WELFARE BUILDING: 42'x187' PLUS 29'x41' GARAGE	METRA NCS ANTIOCH FACILITY
TRACK CENTER TO PROPERTY LINE: 14'0"	METRA NCS ANTIOCH FACILITY
	KACOR ESTIMATE

TYPICAL END OF LINE YARD.
SERVICING & CREW WELFARE FACILITY

DIESEL MULTIPLE UNIT OPERATION
KANKAKEE COMMUTER RAIL
FEASIBILITY STUDY - KACOR
PB PROJECT NO. 16802A
DATE: MAY 14, 2004

DRAWN BY: W.G.TOTH
CHECKED BY: R.JUVINALL

Appendix 8 - Capital Cost Estimates

Kankakee County Commuter Rail Feasibility Study -- KACOR

Railroad Infrastructure Improvement Costs
Option A: Extend Metra MED Service to Monee

Single Track from New Metra MED Yard to Monee Industrial Dr. Station					CNRY MP 33.2 - 35.0	
Line No.	**Cost Category**	**Quan.**	**Units**	**Unit Cost**	**Total Cost**	**Remarks**
1	TRACK - New - Psgr (115# CWR)		mile	$1,145,760	$0	
2	Frt/Psgr (136# CWR)	2.2	mile	$1,432,200	$3,150,840	
3	Improve - Upgrade to Class 3		mile	$390,600	$0	60 mph max. psgr.
4	Class 2/3 Improvements		mile	$271,250	$0	60 mph max. psgr.
5	Upgrade to Class 4		mile	$591,325	$0	79 mph max. psgr.
6	Class 4 Improvements		mile	$390,600	$0	79 mph max. psgr.
7A	TURNOUTS - New - #10 to #15	3.0	each	$119,350	$358,050	
7B	New - #20		each	$217,000	$0	Universal xovers on a 4-mile spacing
7C	Rehab existing turnouts		each	$50,995	$0	
8	SWITCH HEATERS - Hot Air	3.0	each	$27,125	$81,375	
9	DIAMONDS - New	1.0	each	$325,500	$325,500	At MED Yard
10A	SIGNALING - Mainline, New	2.2	mile	$1,052,450	$2,315,390	CTC
10B	Interlockings, New		each	$1,627,500	$0	Single-track
10C	Interlockings, New	1.0	each	$2,712,500	$2,712,500	Double-track
10D	Upgrade	1.0	each	$2,712,500	$2,712,500	At MED Yard
11A	SIGNAL BRIDGE - New		each	$162,750	$0	
11B	Modified		each	$108,500	$0	
12A	HWY XINGS - Surface, New		2-lanes	$32,550	$0	Rubber/Conc.
12B	Upgrade		each	$20,615	$0	
13A	Warning, New/Upgrade		each	$271,250	$0	Single-track
13B	Warning, New/Upgrade		each	$379,750	$0	Double-track
14A	BRIDGES - New, Major Span		l.f.	$13,563	$0	No. of bridges =
14B	Other Span		l.f.	$7,921	$0	No. of bridges =
14C	Rehab		l.f.	$1,411	$0	No. of bridges =
15A	CULVERTS/DRAINAGE - New		each	$10,199	$0	
15B	Rehab		each	$3,364	$0	
16A	EXCAVATION & GRADING - Major		mile	$1,312,850	$0	
16B	Significant		mile	$922,250	$0	incl. cut/fill
16C	Basic	2.2	mile	$325,500	$716,100	Base grading
17A	ROW ACQUISITION - Rural		s.f.	$2	$0	
17B	Urban		s.f.	$5	$0	
17C	Industrial		s.f.	$5	$0	
18	ENVIRONMENTAL - Mitigation		mile	$75,950	$0	
19A	ROW FENCING	1.8	mile	$75,950	$136,710	Both sides of track
19B	SLIDE FENCING		mile	$428,575	$0	
20	SOUND WALL		mile	$0	$0	
21	FACILITIES - Bldg Mods/Acquisitions				$0	
22	Roads/Mods				$0	
23A	STATIONS - Rural		each		$0	
23B	Suburban		each		$0	
23C	Urban		each		$0	
24	STORAGE/SERVICING - Remote		each		$0	
25A	TRACTION POWER - Catenary	2.2	mile	$580,800	$1,277,760	Constant Tension
25B	Crossover Catenary	1.5	each	$202,000	$303,000	No. 20
25B	Substation	1.0	each	$3,000,000	$3,000,000	3 megawatt
SUBTOTAL					$17,089,725	
DESIGN, CONSTRUCTION MGMT., ETC. 12% OF SUBTOTAL					$2,050,767	
CONTINGENCY 20% OF SUBTOTAL					$3,417,945	
RAILROAD REQUIRED IMPROVEMENTS $280,000 PER MILE					$504,000	1.8 miles
TOTAL					**$23,062,437**	

NOTES AND ASSUMPTIONS All costs are in 2004 Dollars

All new track presumed to be on railroad-owned land - no property acquisition required, except for stations or yards

W:\16802A KACOR\05 Client Tech I-F\5.1 Reports\Full Reports (final texts only)\05-01 Final\Appendices\A08 Capital Costs\[Track Costs - Rev 1.xls]Option E

Appendix 8 - Capital Cost Estimates

Kankakee County Commuter Rail Feasibility Study -- KACOR

Railroad Infrastructure Improvement Costs
Option B: Diesel Service from University Park to Peotone

Add Second Mainline Track from Stunkel Road to Peotone Station					CNRY MP 31.5 - 41.3	
Line No.	**Cost Category**	**Quan.**	**Units**	**Unit Cost**	**Total Cost**	**Remarks**
1	TRACK - New - Psgr (115# CWR)		mile	$1,145,760	$0	
2	Frt/Psgr (136# CWR)	10.0	mile	$1,432,200	$14,322,000	
3	Improve - Upgrade to Class 3		mile	$390,600	$0	60 mph max. psgr.
4	Class 2/3 Improvements		mile	$271,250	$0	60 mph max. psgr.
5	Upgrade to Class 4		mile	$591,325	$0	79 mph max. psgr.
6	Class 4 Improvements		mile	$390,600	$0	79 mph max. psgr.
7A	TURNOUTS - New - #10 to #15	2.0	each	$119,350	$238,700	
7B	New - #20	12.0	each	$217,000	$2,604,000	Universal xovers on a 4 mile spacing
7C	Rehab existing turnouts	8.0	each	$50,995	$407,960	Incl. remove/relocate
8	SWITCH HEATERS - Hot Air	22.0	each	$27,125	$596,750	All mainline T/Os
9	DIAMONDS - New	1.0	each	$325,500	$325,500	At MED Yard
10A	SIGNALING - Mainline, New	9.8	mile	$1,052,450	$10,314,010	CTC
10B	Interlockings, New		each	$1,627,500	$0	Single-track
10C	Interlockings, New	2.0	each	$2,712,500	$5,425,000	Double-track
10D	Upgrade	1.0	each	$2,712,500	$2,712,500	University Park
11A	SIGNAL BRIDGE - New		each	$162,750	$0	
11B	Modified		each	$108,500	$0	
12A	HWY XINGS - Surface, New	13.0	2-lanes	$32,550	$423,150	Rubber/Conc.
12B	Upgrade	1.0	each	$20,615	$20,615	CN at Harlem Ave
13A	Warning, New/Upgrade		each	$271,250	$0	Single-track
13B	Warning, New/Upgrade	12.0	each	$379,750	$4,557,000	Double-track
14A	BRIDGES - New, Major Span		l.f.	$13,563	$0	No. of bridges =
14B	Other Span		l.f.	$7,921	$0	No. of bridges =
14C	Rehab		l.f.	$1,411	$0	No. of bridges =
15A	CULVERTS/DRAINAGE - New		each	$10,199	$0	
15B	Rehab	1.0	each	$3,364	$3,364	Ford Creek - 37.30
16A	EXCAVATION & GRADING - Major		mile	$1,312,850	$0	
16B	Significant		mile	$922,250	$0	incl. cut/fill
16C	Basic	10.0	mile	$325,500	$3,255,000	Base grading
17A	ROW ACQUISITION - Rural		s.f.	$2	$0	
17B	Urban		s.f.	$5	$0	
17C	Industrial		s.f.	$5	$0	
18	ENVIRONMENTAL - Mitigation		mile	$75,950	$0	
19A	ROW FENCING	9.8	mile	$75,950	$744,310	
19B	SLIDE FENCING		mile	$428,575	$0	
20	SOUND WALL		mile	$0	$0	
21	FACILITIES - Bldg Mods/Acquisitions				$0	
22	Roads/Mods				$0	
23A	STATIONS - Rural		each		$0	
23B	Suburban		each		$0	
23C	Urban		each		$0	
24	STORAGE/SERVICING - Remote		each		$0	
SUBTOTAL					$45,949,859	
DESIGN, CONSTRUCTION MGMT., ETC. 12% OF SUBTOTAL					$5,513,983	
CONTINGENCY 20% OF SUBTOTAL					$9,189,972	
RAILROAD REQUIRED IMPROVEMENTS $280,000 PER MILE					$2,744,000	9.8 miles
TOTAL					**$63,397,813**	

NOTES AND ASSUMPTIONS All costs are in 2004 Dollars

All new track presumed to be on railroad-owned land - no property acquisition required, except for stations or yards

W:\16802A KACOR\05 Client Tech I-F\5.1 Reports\Full Reports (final texts only)\05-01 Final\Appendices\A08 Capital Costs\[Track Costs - Rev 1.xls]Option E

Appendix 8 - Capital Cost Estimates

Kankakee County Commuter Rail Feasibility Study -- KACOR

Railroad Infrastructure Improvement Costs
Option C: Diesel Service from University Park to Manteno

Add Second Mainline Track from Peotone Station to Manteno Station					CNRY MP 41.3 - 45.5	
Line No.	**Cost Category**	**Quan.**	**Units**	**Unit Cost**	**Total Cost**	**Remarks**
1	TRACK - New - Psgr (115# CWR)		mile	$1,145,760	$0	
2	Frt/Psgr (136# CWR)	2.4	mile	$1,432,200	$3,437,280	
3	Improve - Upgrade to Class 3		mile	$390,600	$0	60 mph max. psgr.
4	Class 2/3 Improvements		mile	$271,250	$0	60 mph max. psgr.
5	Upgrade to Class 4	1.8	mile	$591,325	$1,064,385	79 mph max. psgr.
6	Class 4 Improvements		mile	$390,600	$0	79 mph max. psgr.
7A	TURNOUTS - New - #10 to #15		each	$119,350	$0	
7B	New - #20		each	$217,000	$0	Universal xovers on a 4 mile spacing
7C	Rehab existing turnouts	4.0	each	$50,995	$203,980	Incl. remove/relocate
8	SWITCH HEATERS - Hot Air		each	$27,125	$0	
9	DIAMONDS - New		each	$325,500	$0	
10A	SIGNALING - Mainline, New	4.2	mile	$1,052,450	$4,420,290	CTC
10B	Interlockings, New		each	$1,627,500	$0	Single-track
10C	Interlockings, New		each	$2,712,500	$0	Double-track
10D	Upgrade		each	$2,712,500	$0	
11A	SIGNAL BRIDGE - New		each	$162,750	$0	
11B	Modified		each	$108,500	$0	
12A	HWY XINGS - Surface, New	4.0	2-lanes	$32,550	$130,200	Rubber/Conc.
12B	Upgrade		each	$20,615	$0	
13A	Warning, New/Upgrade		each	$271,250	$0	Single-track
13B	Warning, New/Upgrade	3.0	each	$379,750	$1,139,250	Double-track
14A	BRIDGES - New, Major Span		l.f.	$13,563	$0	No. of bridges =
14B	Other Span		l.f.	$7,921	$0	No. of bridges =
14C	Rehab		l.f.	$1,411	$0	No. of bridges =
15A	CULVERTS/DRAINAGE - New		each	$10,199	$0	
15B	Rehab		each	$3,364	$0	
16A	EXCAVATION & GRADING - Major		mile	$1,312,850	$0	
16B	Significant		mile	$922,250	$0	incl. cut/fill
16C	Basic	2.4	mile	$325,500	$781,200	Base grading
17A	ROW ACQUISITION - Rural		s.f.	$2	$0	
17B	Urban		s.f.	$5	$0	
17C	Industrial		s.f.	$5	$0	
18	ENVIRONMENTAL - Mitigation		mile	$75,950	$0	
19A	ROW FENCING	4.2	mile	$75,950	$318,990	
19B	SLIDE FENCING		mile	$428,575	$0	
20	SOUND WALL		mile	$0	$0	
21	FACILITIES - Bldg Mods/Acquisitions				$0	
22	Roads/Mods				$0	
23A	STATIONS - Rural		each		$0	
23B	Suburban		each		$0	
23C	Urban		each		$0	
24	STORAGE/SERVICING - Remote		each		$0	
SUBTOTAL					$11,495,575	
DESIGN, CONSTRUCTION MGMT., ETC. 12% OF SUBTOTAL					$1,379,469	
CONTINGENCY 20% OF SUBTOTAL					$2,299,115	
RAILROAD REQUIRED IMPROVEMENTS $280,000 PER MILE					$1,176,000	4.2 miles
TOTAL					**$16,350,159**	

NOTES AND ASSUMPTIONS All costs are in 2004 Dollars

All new track presumed to be on railroad-owned land - no property acquisition required, except for stations or yards

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Appendix 8 - Capital Cost Estimates

Kankakee County Commuter Rail Feasibility Study -- KACOR

Railroad Infrastructure Improvement Costs
Option D: Diesel Service from University Park to Bradley

Add Second Mainline Track from Manteno Station to Bradley Station					CNRY MP 45.5 - 54.75	
Line No.	**Cost Category**	**Quan.**	**Units**	**Unit Cost**	**Total Cost**	**Remarks**
1	TRACK - New - Psgr (115# CWR)		mile	$1,145,760	$0	
2	Frt/Psgr (136# CWR)	4.1	mile	$1,432,200	$5,872,020	
3	Improve - Upgrade to Class 3		mile	$390,600	$0	60 mph max. psgr.
4	Class 2/3 Improvements		mile	$271,250	$0	60 mph max. psgr.
5	Upgrade to Class 4	5.2	mile	$591,325	$3,045,324	79 mph max. psgr.
6	Class 4 Improvements		mile	$390,600	$0	79 mph max. psgr.
7A	TURNOUTS - New - #10 to #15		each	$119,350	$0	
7B	New - #20	8.0	each	$217,000	$1,736,000	Universal xovers on a 4 mile spacing
7C	Rehab existing turnouts	8.0	each	$50,995	$407,960	Incl. remove/relocate
8	SWITCH HEATERS - Hot Air	16.0	each	$27,125	$434,000	All mainline T/Os
9	DIAMONDS - New		each	$325,500	$0	
10A	SIGNALING - Mainline, New	9.3	mile	$1,052,450	$9,735,163	CTC
10B	Interlockings, New		each	$1,627,500	$0	Single-track
10C	Interlockings, New	2.0	each	$2,712,500	$5,425,000	Double-track
10D	Upgrade		each	$2,712,500	$0	
11A	SIGNAL BRIDGE - New		each	$162,750	$0	
11B	Modified		each	$108,500	$0	
12A	HWY XINGS - Surface, New	4.0	2-lanes	$32,550	$130,200	Rubber/Conc.
12B	Upgrade	1.0	each	$20,615	$20,615	
13A	Warning, New/Upgrade		each	$271,250	$0	Single-track
13B	Warning, New/Upgrade	4.0	each	$379,750	$1,519,000	Double-track
14A	BRIDGES - New, Major Span		l.f.	$13,563	$0	No. of bridges =
14B	Other Span		l.f.	$7,921	$0	No. of bridges =
14C	Rehab	150.0	l.f.	$1,411	$211,575	Rock Creek
15A	CULVERTS/DRAINAGE - New		each	$10,199	$0	
15B	Rehab		each	$3,364	$0	
16A	EXCAVATION & GRADING - Major		mile	$1,312,850	$0	
16B	Significant		mile	$922,250	$0	incl. cut/fill
16C	Basic	4.1	mile	$325,500	$1,334,550	Base grading
17A	ROW ACQUISITION - Rural		s.f.	$2	$0	
17B	Urban		s.f.	$5	$0	
17C	Industrial		s.f.	$5	$0	
18	ENVIRONMENTAL - Mitigation		mile	$75,950	$0	
19A	ROW FENCING	9.3	mile	$75,950	$702,538	
19B	SLIDE FENCING		mile	$428,575	$0	
20	SOUND WALL		mile	$0	$0	
21	FACILITIES - Bldg Mods/Acquisitions				$0	
22	Roads/Mods				$0	
23A	STATIONS - Rural		each		$0	
23B	Suburban		each		$0	
23C	Urban		each		$0	
24	STORAGE/SERVICING - Remote		each		$0	
25	END-OF-LINE STAGING TRACKS APPLICABLE ONLY TO OPTION D	1.0	each	$3,306,538	$3,306,538	Includes end-of-line T/Os & interlocking
SUBTOTAL					$33,880,482	
DESIGN, CONSTRUCTION MGMT., ETC. 12% OF SUBTOTAL					$4,065,658	
CONTINGENCY 20% OF SUBTOTAL					$6,776,096	
RAILROAD REQUIRED IMPROVEMENTS $280,000 PER MILE					$2,590,000	9.25
TOTAL					**$47,312,236**	

NOTES AND ASSUMPTIONS All costs are in 2004 Dollars

All new track presumed to be on railroad-owned land - no property acquisition required, except for stations or yards

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Appendix 8 - Capital Cost Estimates

Kankakee County Commuter Rail Feasibility Study -- KACOR

Railroad Infrastructure Improvement Costs
Option E: Diesel Service from University Park to Kankakee I-57 Interchange 308

Add Second Mainline Track from Bradley Station to I-57 Interchange 308 Stati					CNRY MP 54.75 - 59.5	
Line No.	**Cost Category**	**Quan.**	**Units**	**Unit Cost**	**Total Cost**	**Remarks**
1	TRACK - New - Psgr (115# CWR)		mile	$1,145,760	$0	
2	Frt/Psgr (136# CWR)	2.0	mile	$1,432,200	$2,864,400	
3	Improve - Upgrade to Class 3		mile	$390,600	$0	60 mph max. psgr.
4	Class 2/3 Improvements		mile	$271,250	$0	60 mph max. psgr.
5	Upgrade to Class 4	2.8	mile	$591,325	$1,626,144	79 mph max. psgr.
6	Class 4 Improvements		mile	$390,600	$0	79 mph max. psgr.
7A	TURNOUTS - New - #10 to #15		each	$119,350	$0	
7B	New - #20	8.0	each	$217,000	$1,736,000	Universal xovers on a 4 mile spacing
7C	Rehab existing turnouts	10.0	each	$50,995	$509,950	Incl. remove/relocate
8	SWITCH HEATERS - Hot Air	16.0	each	$27,125	$434,000	All mainline T/Os
9	DIAMONDS - New		each	$325,500	$0	
10A	SIGNALING - Mainline, New	2.0	mile	$1,052,450	$2,104,900	CTC
10B	Interlockings, New		each	$1,627,500	$0	Single-track
10C	Interlockings, New	2.0	each	$2,712,500	$5,425,000	Double-track
10D	Upgrade	2.0	each	$2,712,500	$5,425,000	
11A	SIGNAL BRIDGE - New		each	$162,750	$0	
11B	Modified		each	$108,500	$0	
12A	HWY XINGS - Surface, New	4.0	2-lanes	$32,550	$130,200	Rubber/Conc.
12B	Upgrade		each	$20,615	$0	
13A	Warning, New/Upgrade		each	$271,250	$0	Single-track
13B	Warning, New/Upgrade	4.0	each	$379,750	$1,519,000	Double-track
14A	BRIDGES - New, Major Span		l.f.	$13,563	$0	No. of bridges =
14B	Other Span		l.f.	$7,921	$0	No. of bridges =
14C	Rehab	850.0	l.f.	$1,411	$1,198,925	Kankakee & Ga
15A	CULVERTS/DRAINAGE - New		each	$10,199	$0	
15B	Rehab	1.0	each	$3,364	$3,364	At MP 57.2
16A	EXCAVATION & GRADING - Major		mile	$1,312,850	$0	
16B	Significant		mile	$922,250	$0	incl. cut/fill
16C	Basic	2.0	mile	$325,500	$651,000	Base grading
17A	ROW ACQUISITION - Rural		s.f.	$2	$0	
17B	Urban		s.f.	$5	$0	
17C	Industrial		s.f.	$5	$0	
18	ENVIRONMENTAL - Mitigation		mile	$75,950	$0	
19A	ROW FENCING	4.8	mile	$75,950	$360,763	
19B	SLIDE FENCING		mile	$428,575	$0	
20	SOUND WALL		mile	$0	$0	
21	FACILITIES - Bldg Mods/Acquisitions				$0	
22	Roads/Mods				$0	
23A	STATIONS - Rural		each		$0	
23B	Suburban		each		$0	
23C	Urban		each		$0	
24	STORAGE/SERVICING - Remote		each		$0	
SUBTOTAL					$23,988,645	
DESIGN, CONSTRUCTION MGMT., ETC. 12% OF SUBTOTAL					$2,878,637	
CONTINGENCY 20% OF SUBTOTAL					$4,797,729	
RAILROAD REQUIRED IMPROVEMENTS $280,000 PER MILE					$1,330,000	4.75 miles
TOTAL					**$32,995,011**	

NOTES AND ASSUMPTIONS All costs are in 2004 Dollars

All new track presumed to be on railroad-owned land - no property acquisition required, except for stations or yards

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Appendix 8 - Capital Cost Estimates

Kankakee County Commuter Rail Feasibility Study -- KACOR

End of Line DMU Yard and Shop Facility Costs

Line No.	Cost Category	Quan.	Units	Unit Cost	Total Cost	Remarks
1	NEW YARD TRACKS (115# CWR)	2.3	mile	$1,145,760	$2,635,248	
6A	TURNOUTS - New - #9 - Yard	15.0	each	$108,500	$1,627,500	
6B	New - #10 to #15 - Mainline	6.0	each	$119,350	$716,100	Mainline connection and crossover
7	Rehab existing turnouts		each	$50,995	$0	
8	SWITCH HEATERS - Hot Air	6.0	each	$27,125	$162,750	
9	DIAMONDS - New		each	$325,500	$0	
10A	SIGNALING - Mainline, New		mile	$1,052,450	$0	CTC
10B	Interlockings, New		each	$22,785,000	$0	
10C	Interlockings, New	2.0	each	$4,557,000	$9,114,000	Either end of Yard
10D	Upgrade		each	$4,557,000	$0	
11A	BRIDGES - Rehab		l.f.	$1,411	$0	
12A	EXCAVATION & GRADING - Major		s.f.	$10	$0	
12B	Significant		s.f.	$7	$0	
12C	Basic	750,000.0	s.f.	$3	$2,522,625	Estimate 75% of site
13	ROW ACQUISITION - Rural	23.0	acre	$75,000	$1,725,000	
14	ENVIRONMENTAL - Mitigation		s.f.	$1	$0	
15A	Yard Drainage	1.0	lot	$300,000	$300,000	
15B	ROW FENCING	0.7	mile	$77,035	$53,925	
16A	FACILITIES - Maintenance Shop	50,000.0	s.f.	$275	$13,750,000	With Equipment
16B	Trainwasher Facility	10,200.0	s.f.	$275	$2,805,000	With Equipment
16C	Crew Welfare Facility	8,000.0	s.f.	$175	$1,400,000	
16D	Yard Out Buildings	1,200.0	s.f.	$168	$201,810	
17	Site Security System	1.0	lot	$125,000	$125,000	
18A	Access/Circulation Roads	4,000.0	l.f.	$23	$91,140	
18B	Employee Parking	60.0	space	$228	$13,671	
18C	Yard and Road Lighting	600,000.0	s.f.	$5	$2,734,200	60% of site
18D	Yard Air/Water/Electric	1.0	lot	$100,000	$100,000	
18E	Yard Walkways - Cross-Track Access	500.0	l.f.	$11	$5,425	
18F	Yard Walkways - Cast Sections	7,500.0	l.f	$109	$813,750	
22	New Power Bridges	2.0	each	$70,525	$141,050	
SUBTOTAL					**$41,038,194**	
CONTINGENCY 30% OF SUBTOTAL					$12,311,458	
DESIGN/CONSTRUCTION MANAGEMENT ALLOCATION 16%					$6,566,111	
TOTAL					**$59,915,763**	

NOTES AND ASSUMPTIONS All costs are in 2004 Dollars

Land acquisition cost is based on recent, local real estate information for farm land near railroad.

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Appendix 8 - Capital Cost Estimates

Kankakee County Commuter Rail Feasibility Study -- KACOR

Capital Cost Estimates for Stations

STATION LOCATION	UNIVERSITY PARK	MONEE	PEOTONE	MANTENO	BOURBONNAIS	BRADLEY	KANKAKEE	
Options	**Metra Station**	**Industrial Drive**	**Wilmington Road**	**10000N Road**	**St. George Road**	**South St. / Brookmont Blvd.**	**Amtrak Depot**	**I-57 Interchange 308**
Station House	N/A (1)	$225	$225	$225	$225	$225	$100 (2)	$225
Parking Lot(s)	N/A (1)	$925	$925	$925	$750 (3)	$925	$750 (4)	$925
Kiss N Ride Lots	N/A (1)	$325	$325	$325	$325	$325	$150 (5)	$325
Platforms & Sidewalks	$500 (6)	$750	$750	$750	$750	$500 (6)	$400 (7)	$750
Pedestrian Tunnel	N/A (1)	$2,200	N/A (8)	N/A (8)	N/A (8)	$2,200	N/A (8)	$2,200
Landscaping	$25 (1)	$220	$220	$220	$220	$220	$25 (1)	$220
Site & Access Roads	N/A (1)	$230 (9)	$30	$30	$30	$30	N/A (1)	$30
Signalized Intersection (10)	N/A (1)	$250	$250	$250	$250	$500	N/A (1)	$250
Land Cost (11)	N/A	$1,500	$1,500	$1,500	$1,500	$1,500	$500	$1,500
Subtotal Cost per Station	**$525**	**$6,625**	**$4,225**	**$4,225**	**$4,050**	**$6,425**	**$1,925**	**$6,425**
Design & CM at 12%	$63	$795	$507	$507	$486	$771	$231	$771
Contengency at 20%	$105	$1,325	$845	$845	$810	$1,285	$385	$1,285
Total Cost per Station	**$693**	**$8,745**	**$5,577**	**$5,577**	**$5,346**	**$8,481**	**$2,541**	**$8,481**
Total Cost all Stations	**$45,441**							

All costs are in thousands of dollars. All costs are in 2004 dollars.

Note References:

(1) Existing facilities will be used.

(2) Minor modifications to Depot to accommodate KACOR ticketing requirements.

(3) Existing former CB&I Parking Lot will reduce development costs.

(4) Existing parking in vicinity of Amtrak Depot should reduce initial parking lot costs.

(5) Assume proposed new Multimodal facility or existing parking lot areas will reduce costs for Kiss & Ride.

(6) Island platform rather than two outside platforms as for other stations.

(7) Use existing Amtrak inbound platform and add one outbound side platform.

(8) Passengers would use existing at-grade crossings.

(9) Includes $200,000 for estimated 1000 feet of relocated Prairie Materials Sales access road.

(10) Refelcts costs for new signaled intersections of 3 or less lanes at $250,000 each. It is assumed that there will be one new signaled intersection per site, excepting the Bradley Station, where it is assumed that two new signaled intersections will be required.

(11) Generally assumes 20 acres at $75,000 per acre with the following exceptions:
a) At the University Park station, the land required for the additional stationplatform space is Metra/CNRY owned and presumed available for KACOR.
b) At the Kankakee Amtrak Depot, it is assumed that most of the land to be developed for parking is owned by the City. However $500,000 is included for the purchase of private land, as required.

Appendix 9:
SAMPLE TIMETABLES FOR KACOR MOS AND FBO

9.1 BACKGROUND

As is noted elsewhere in this report, draft schedules for the various modes and alignment alternatives were developed as part of the PB Team's response to the County's solicitation for proposals. These efforts pre-dated the dialogue with the on-line communities and the counties, relative to preferred station locations, development plans, etc. Therefore, it was recognized that as station locations and other aspects of the proposed service/physical plant were developed, these schedules would require refinement. This appendix presents the refined schedules for the diesel multiple unit (DMU) operation on the Minimum Operating Segment (MOS) and the Full Build Out (FBO).

Some aspects of the refined schedules did not change including the assumption of five round trips per weekday was maintained. This service plan is consistent with that now operated on Metra's North Central Service (NCS). Initially, this line operated eight round trips per day, but was soon expanded to a five round trips per day schedule. Another aspect which was maintained through the schedule refinement process was the use of vendor performance data for a motor-trailer-motor DMU trainset.

Also unchanged from the draft schedules was the presumed connection to MED trains, based on those trains' arrival/departure times at Randolph Street, Chicago that best emulated the NCS scheduled arrival/departure times in the Chicago CBD. A minimum of nine minutes connection time between KACOR and MED trains at University Park was also maintained in the refined schedules.

9.2 REFINED MOS SCHEDULE

As with the draft schedules, estimated station-to-station distances were used to calculate the required travel time for the DMUs. In addition, a grade/curve allowance and reasonable dwell times were included on each segment of the trip. For the MOS, with a one-way distance of 14.3 miles, a one-way travel time of 20 minutes has been estimated. This works out to an average speed of 42.9 mph (note that a top speed of 75 mph was used for these estimates).

The 20-minute one-way travel time makes it possible for one set of equipment to cover two of the peak direction trips in each peak period, reducing the total equipment requirements for the schedule to just three trainsets. However, in order for this trainset to cover these additional trips, it must deadhead against the flow of peak-period traffic in order to get in place to make its second peak period, peak direction trip. These deadhead trips are not shown in the timetable, but the required travel times and layover times have been included to ensure the feasibility of this operation. The recommended physical plant also supports these deadhead moves, without impacting the peak direction service.

Of course, these deadhead moves could be turned into additional revenue-producing trips. The approximate time of the am peak deadhead trip would depart University Park around 6:40 am, in order to arrive in Manteno at 7:00 am. Therefore, this trip would allow connections with MED Train Number 103, which is due in University Park at 6:25 am. In the pm peak, the deadhead train would leave Manteno at 6:05 pm, arriving at University Park at 6:25 pm. Connections to MED Train Number 140 (leaving University Park at 6:40 pm) are therefore possible. The train/vehicle mileage will be operated either way, so it just becomes a matter of determining the likely revenue that each of these trips might produce. These are investigations which are most appropriate in a succeeding phase of the project.

Of the three trainsets, one makes a total of six revenue-producing one-way trips per day, while the other two sets each make two revenue one-way trips per day. A fourth DMU trainset is required to cover maintenance other servicing requirements.

9.3 REFINED FBO SCHEDULE

Applying the DMU performance curves, as well as the grade/curve and dwell time allowances, this schedule results in a 45-minute one-way travel time for the 27.9 miles between University Park and the Kankakee/I-57 station. This equates to an average speed of 37.2 mph.

The 45-minute travel time is such that each trainset can be used on only one peak period, peak direction trip. Therefore, four trainsets are required to cover service, and a fifth set is needed as a spare, to cover maintenance needs, etc. One trainset makes four revenue producing one-way trips per day, while the other three sets each make two revenue one-way trips per day.

Appendix 9 - Typical Operating Schedules

Sample Timetable for Minimum Operable Segment (MOS) (DMUs: University Park to Manteno)

Five Round Trips per Day Service

Southbound Service - Read Down							Northbound Service - Read Up				
139	**709**	**705**	**701**	**123**		**Connecting Metra Electric Train**	**700**	**704**	**706**	**712**	**132**
1808	1737	1702	1632	1330		Randolph Street - Chicago	731	801	819	901	1736
1908	1831	1755	1726	1430		Ar. University Park Lv.	640	710	725	801	1636
909	**907**	**905**	**903**	**901**	**Miles**	**Kankakee Commuter Rail Train**	**902**	**904**	**906**	**908**	**910**
1920	1840	1805	1735	1440	0.0	Lv. University Park Ar.	630	700	715	750	1625
1926	1846	1811	1741	1446	3.6	Monee	624	654	709	744	1619
1934	1854	1819	1749	1454	10.1	Peotone	616	646	701	736	1611
1940	1900	1825	1755	1500	14.3	Manteno	610	640	655	730	1605

NOTES

1) Schedule based on providing similar service pattern to that operated on Metra North Central Service.
2) Connecting MED trains were selected for arrival/departure time at Randolph Street, Chicago; ability to accommodate additional riders/cars must be investigated in a future study phase.
3) Three sets of equipment required to operate this service - set A is used on trains 901, 902, 903, 908, 909 and 910; set B is used on trains 904 and 905; and, set C is used on trains 906 and 907.
4) One additional set of equipment is required to cover maintenance.

Appendix 9 - Typical Operating Schedules

Sample Timetable for Full Build Out (FBO) (DMUs: University Park to Kankakee I57 Exit 308)

Five Round Trips per Day Service

Southbound Service - Read Down | **Northbound Service - Read Up**

139	709	705	701	123		Connecting Metra Electric Train	700	704	706	712	132
1808	1737	1702	1632	1330		Randolph Street - Chicago	731	801	819	901	1736
1908	1831	1755	1726	1430		Ar. University Park Lv.	640	710	725	801	1636
909	**907**	**905**	**903**	**901**	**Miles**	**Kankakee Commuter Rail Train**	**902**	**904**	**906**	**908**	**910**
1920	1840	1805	1735	1440	0.0	Lv. University Park Ar.	630	700	715	750	1625
1926	1846	1811	1741	1446	3.6	Monee	624	654	709	744	1619
1934	1854	1819	1749	1454	10.1	Peotone	616	646	701	736	1611
1941	1901	1826	1756	1501	14.3	Manteno	609	639	654	729	1604
1948	1908	1833	1803	1508	19.6	Bourbonnais	602	632	647	722	1557
1953	1913	1838	1808	1513	23.4	Bradley	557	627	642	717	1552
1959	1919	1844	1814	1519	24.7	Kankakee - Amtrak Station	551	621	636	711	1546
2005	1925	1850	1820	1525	27.9	Kankakee - I57 Station	545	615	630	705	1540

NOTES

1) Schedule based on providing similar service pattern to that operated on Metra North Central Service.
2) Connecting MED trains were selected for arrival/departure time at Randolph Street - Chicago; ability to accommodate additional riders/cars must be investigated in a future study phase.
3) Four sets of equipment required to operate this service - set A is used on trains 901, 902, 909 and 910; set B on trains 903 and 904; set C on trains 905 and 906; and, set D on trains 907 and 908.
4) One additional set of equipment is required to cover maintenance.

Appendix 10:
RATIONALE FOR EAST-WEST RAIL CORRIDOR AT SOUTH SUBURBAN AIRPORT (SSA)

INTRODUCTION

Early SSA concept plans (1995, reference 12) showed separate east-side and west-side access roads, a people mover loop connecting those two sides of the airport, and no rail service. A 1998 IDOT report that evaluated Metra commuter rail service to the airport (reference 11), however, showed a north-south corridor for Amtrak, high-speed rail (HSR) service, and Metra Electric District (MED) service connecting only to the airport's western side. The northern end of the MED service would continue to terminate at the Randolph Street Station on the east side of the Chicago Loop.

A consortium of nine states and Amtrak proposed a system of seven Chicago-centric radial HSR lines in a February 2000 Midwest Regional Rail System study (reference 41). One of these lines would pass along the SSA's western border on its way to Champaign and Carbondale. A June 2000 USDOT/IDOT Draft Environmental Impact Statement on the Chicago-St. Louis HSR line (reference 15) also proposed to divert the Chicago-St. Louis HSR into Kankakee and the SSA. Therefore, two of the nine Chicago radial HSR lines are already under consideration to serve the SSA.

At the May 24, 2004 Meeting and Workshop #2 of the Airport Master Plan Local Advisory Group, participants were asked for their ideas on transportation access to and around the airport's "Final Phase." They were told to project their thinking 50 years ahead to the years 2040 and 2050. While many good road, rail and people mover ideas were discussed, the concept of a full-service, east-west railroad corridor through the airport was not mentioned. This paper provides preliminary rationales for such a corridor.

THE CORRIDOR

Two, mainline class I railroads bound the east and west sides of the land proposed for the SSA's final configuration. On the west side, the CN Railway (CN) connects Chicago and New Orleans, and on the east side, the Union Pacific Railroad (UP) connects Chicago with Evansville, Indiana and points south, and also with St. Louis and points southwest.

The SSA E-W rail corridor proposed herein would connect these two lines on a right-of-way totally within the proposed airport property. It would provide a complementary rail corridor parallel to the Illiana freeway corridor proposed north of the airport.

CORRIDOR USES

From a planning perspective for both the initial minimum SSA facility and the ultimate year 2050 airport, the corridor has several possible uses. Those uses include:

1. Airport Circulation: The airport people mover would presumably provide an airside loop for circulating passengers who have passed through security. In contrast, this rail corridor could provide a landside (before security) connection for passengers and employees parking on one side of the airport and flying from or working at the other side. This park-and-ride circulation could significantly reduce the highway traffic that otherwise would loop around the airport's north side. Landside passenger circulation might also be

expanded with more frequent service to provide access to remote site services, such as car rentals.

2. Air Cargo to Rail Connection: The E-W rail corridor could provide a rail connection for air cargo. This could facilitate commercial and freight operations at the airport by providing direct shipment either to a local off-site air cargo processing facility, or to Chicago and/or remote cities. This freight service to remote sites might be expanded with dedicated equipment to carry smaller than normal intermodal containers for services such as off-site airline meal preparation, airport trash removal, etc.

3. East Side Access: The corridor would provide additional transportation resources that would preclude the western access problems that have plagued O'Hare. Passengers from the east and south would now have the options of driving all the way to close-in more expensive west-side airport parking or using safe, reliable public transportation from more economical east-side parking.

4. Commuter Rail: Metra is planning a new southeast service (SES) commuter rail line from Chicago's LaSalle Street Station to Balmoral Park on the UP, just outside the SSA boundary to the northeast. A mile-and-a-half extension of this line would provide easy access to the SSA E-W corridor, east side rail access, a larger gathering area for transit access to the airport, and an alternate downtown Chicago terminal for airport passengers.

5. Chicago-Centric Intercity and High-Speed Rail: The IDOT report referenced above provides for airport access to current intercity (Amtrak) and future HSR along two of the seven proposed HSR lines radiating out of Chicago. Those two lines are to the southwest and south: to St. Louis and Carbondale respectively. The SSA E-W rail corridor would also facilitate access to three additional radial HSR corridors from Chicago to the southeast and east: to Cincinnati, Cleveland and Detroit. In particular, connection to these three eastern lines would be further improved if a rail line were to be included in the Illiana highway corridor planned from the northeast corner of the SSA eastward to I-65 in Indiana.

6. Midwest HSR Network: Probably the most successful HSR system in the world is the French TGV. But although Paris is the undisputed economic, cultural, business and population center of France, not all TGV trains radiate from Paris. A large number divert around Paris by passing through the northwest suburban Charles de Gaulle Airport, which has a major HSR passenger station located in the midst of its air terminals. These trains skirt Paris as they connect England, Belgium and points north with the south of France, Italy and Spain. In a similar manner, because it provides ready access to five of the seven HSR lines radiating from Chicago, this airport E-W rail corridor could work to make the SSA a major transportation hub for the entire southeastern Midwest, including in particular, Michigan, Ohio, Indiana and south central Illinois.

SUMMARY

While the specific alignment at the connections with the existing mainline railroads on the east and west sides may present some engineering challenges, the basic concept of an east-west rail corridor through the airport appears to have significant advantages and lies totally within the airport boundary.

Given the continuing history of Chicago as a transportation hub, the strength of Chicago's commuter rail system, the slow building momentum of a proposed Chicago-centric Midwest HSR

system, and the increasing need for alternatives to gasoline-fed automobile ground transportation, provisions for this airport corridor appear to be easily made at this time and offer the potential for huge future payoffs, even if not utilized as part of the initial airport build out.

Appendix 11:
STAKEHOLDER COMMENTS APPENDED TO REPORT

A Draft version of the Kankakee County Commuter Rail Feasibility Study was issued for stakeholder comments on October 7, 2004. Over a 2-1/2 month review period, comments on the Draft KACOR Report were received from the following agency, city or county stakeholders:

- Village of Bourbonnais
- Kankakee County
- Will County
- Village of Monee
- Village of Manteno
- Illinois Department of Transportation

All comments received were documented in a Feedback Log and retained within the Project Files as Reference 58.

Most of the comments received pertained to minor corrections, clarifications or format changes, all of which were incorporated into this Final Report. However, some comments pertained to issues or changes that were beyond the scope of the present Phase I Feasibility Study and were not incorporated into this Final Report. This is not to say that these comments were not valid, but rather that they will be addressed in subsequent Phases of this Project, should it proceed.

The specific comments received, but not incorporated into this Final Report include the following:

Village of Manteno Request to Locate Station at 11000N Road:

The Village of Manteno has indicated that they have revised their preference for the Manteno Commuter Rail Station from 10000N Road to a location north of 10000N Road (possibly 11000N or 12000N Road). This position is reflected in Village of Manteno Resolution 04-47, as passed by the Board of Trustees of the Village of Manteno on December 20, 2004 (Reference 59, copy included in this Appendix).

Incorporating this change is beyond the current scope of this Phase I Study although a brief investigation of the impact of changing the Manteno Commuter Rail station location north of 10000N Road leads to the following general observations:

- The most likely location for a Manteno Commuter Rail station north of 10000N Road would be either 11000N or 12000N Roads, based upon the existing road-rail grade crossings over the CN at those locations.

- The 11000N station would be at approximately MP 44.4, about 3.2 miles from the previous Peotone Station. This places the end-of-line MOS station about one mile inside Kankakee County, reducing the MOS by 1.0 mile from 14.3 to 13.3 miles.

  If the 12000N site were selected, the station would be at approximately MP 43.3, which is about 2.1 miles from the Peotone Station. This results in the end-of-line MOS station being located at the Will – Kankakee County Line (it could be in either County), reducing the MOS by about 2.1 miles from 14.3 to 12.2.

- The cost of the station construction at either alternate location would be expected to be similar to that for the 10000N Road site, as the geometry of the railroad, crossings and nearby highways is similar. In all three cases, the station parking lot would be located west of the tracks on land that is currently undeveloped. All locations also have existing road-rail grade crossings with crossing protection comprising bells, flashers and gates.

- The reduction in mileage for the MOS for Manteno Station locations north of 10000N Road will result in a reduction of capital construction costs (primarily for trackwork) and O&M costs. However, reducing the station distance also happens to place the station in a less costly Fare Zone (based on Metra's current fare system) and could reduce annual revenues as well.

A more comprehensive evaluation of the Manteno station location and a definitive determination of the cost and revenue impact of the station location change and its effect on the Revenue Recovery Ratio would be performed in the Phase II Study. This would also allow the Village of Manteno to complete its comprehensive plan which might have an impact on the station location. As such, the references to the 10000N Manteno station location have not been revised in this report. However, to alert the reader of this study to a possible station location change, notes indicating a revised preference for the location north of 10000N Road are included within relevant sections of the report in *[bracketed italics]*.

Village of Bourbonnais Request to Change the MOS Location to 5000N Road:

In a letter dated November 19, 2004 (Reference 58, copy included in this Appendix), the Village of Bourbonnais recommended that the Minimum Operable Segment (MOS) location be changed from the Manteno Station at 10000N Road to the Bourbonnais Station at 5000N Road. Paraphrasing from the referenced letter, Bourbonnais supports their recommendation with the following:

- The expectation of additional ridership from a station located closer to Bourbonnais, as reflected in the Full Build Out ridership projections and because of the continuing development of the Bourbonnais area.
- The concern that there may be only one chance to secure the extension of the rail line, with RTA participation, and that the extension should reach as far into Kankakee County as possible.
- That Metra's proposed extension of the BNSF commuter rail line into Kendall County creates precedence for the extension of the KACOR line further into Kankakee County.

The Consultant's MOS recommendation for an end-of-line station at Manteno (at 10000N Road) was based to a large extent on the limit that the Kankakee County Commuter Rail extension might be able to be constructed and operated without using Kankakee County (or other local) funding. This expectation is based upon the premise that a station just outside the six-county Regional Transportation Authority (RTA) region may be attractive for inclusion within the RTA system, if the final station location is more desirable from a location, operations and economic perspective than a station just inside the six-county region.

The precedence for this assumption is the aforementioned proposed BNSF extension, which extends 2.8 miles beyond the six-county RTA region into Kendall County. The proposed last stop on the BNSF extension is at Orchard Road in Oswego, principally because it is a convenient and reasonable location for an end-of-line station. In addition to the desirable location next to Orchard Road, the proposed site also offers an existing park-and-ride facility, a retail shopping development and open space for a potential end-of-line rail equipment storage and maintenance facility.

The proposed KACOR MOS at Manteno is a similar situation to the proposed BNSF extension in that it extends only 2.1 miles outside the six-county RTA region if constructed to 10000N Road (1.1 miles if to 11000N Road). If the KACOR extension were to be constructed to the Bourbonnais Station at 5000N Road, approximately 7.4 miles of the extension including two commuter rail stations (Manteno and Bourbonnais), would be well outside the RTA region.

It is the Consultant's opinion that extending the KACOR extension to Bourbonnais will trigger the requirement for Kankakee County and/or other local municipalities to financially support the portion of the extension outside the six-county RTA region. For this reason, the Consultant does not recommend altering the MOS recommendation from the Manteno Station at this time. However, there will be opportunity to fully explore the implications of the extent of the MOS, as well as the FBO during the Phase II Study.

RESOLUTION 04- 47

ENDORSEMENT OF SUPPORT FOR KANKAKEE COUNTY COMMUTER RAIL FEASIBILITY STUDY

WHEREAS, the expansion of service to the Metra Electric District line is recognized by local officials as a critical regional transportation route that will have a large impact on future land use decisions and development within the identified study area; and

WHEREAS, the expansion of service to the Metra Electric District line will have a large impact on both the local and the regional transportation network; and

WHEREAS, a project to study the expansion of service to the Metra Electric District line was initiated in February 2004 under the collaboration of the Villages of Aroma Park, Bourbonnais, Bradley, Manteno, Monee, Peotone, City of Kankakee, Counties of Kankakee and Will, and the Illinois Department of Transportation; and

WHEREAS, the expansion of service to the Metra Electric District line is identified and recommended as a necessary improvement, including new stations servicing the County of Kankakee; and

WHEREAS, the expansion of service to the Metra Electric District line is identified in the Chicago Area Transportation Study's 2030 Regional Transportation Plan and is a recommended "Corridor for Further Study" from University Park to the City of Kankakee; and,

WHEREAS, the Plan Commission of the Village of Manteno at their regular meeting on December 16, 2004 have recommended the endorsement of the Kankakee County Commuter Rail Feasibility Study and is more fully described in the form and content of Exhibit "A" which is attached hereto and made a part of this Resolution.

NOW THEREFORE BE IT RESOLVED by the President and Board of Trustees of the Village of Manteno, Kankakee County, Illinois as follows:

Section 1: That the Board of Trustees of the Village of Manteno, Kankakee County, Illinois does hereby endorse the draft version of the Kankakee County Commuter Rail Feasibility Study, dated October 2004,

Section 2: That the Board of Trustees further recommends that said Study continue to evaluate the proposed location as well as additional locations, including more northerly sites for a commuter facility to best serve the Village.

Section 3: Furthermore, that the proposed station site shall be more fully evaluated as part of the forthcoming formal update of the Official Comprehensive Plan of the Village of Manteno.

Passed by the Board of Trustees of the Village of Manteno, Kankakee County, Illinois at a regular meeting thereof held on 20th day of December, 2004 and approved by me as Village President on the same day.

YEAS: 5

NAY: 0

ABSTAIN: 0

ABSENT: 1

Bernard O. Christenson, Village President

ATTEST:

Robin Batka, Village Clerk

700 Main Street, NW
Bourbonnais, Illinois 60914
815.937.3570

Village of Bourbonnais

Memo

To: Mike Lammey, Kankakee County Planning Department
Ron Shimizu, Parsons/Brinkerhoff
Rich Juvinall, Parsons/Brinckerhoff
Sam Nicholos, Kankakee County Board, Chair, Commuter Rail Task Force

Fr: Frank Koehler, Village Administrator

Dt: Friday, November 19th, 2004

Re: COMMENTS – DRAFT REPORT: KANKAKEE COMMUTER RAIL FEASIBILITY STUDY

Gentlemen:

Thank you for the opportunity to review the draft report. I had previously sent a memo to Mike Lammey concerning my comments on the draft report. In the event you did not receive them, my comments, at that time, were as follows:

1. Maintenance/Storage: On page 1-6 of the study, you might want to direct the reader to section 2.1.1, which discusses the proposed Monee maintenance and storage yard in greater detail.

2. Transportation: I did not see reference to the proposed interchange at Roadway 6000 North and I-57, nor to potential improvements to the Manteno and Bradley interchanges. Each of these will significantly enhance surface transportation in the area, and allow for continued growth and development of the region, further supporting the need for extension of commuter rail service.

3. Bourbonnais Service: In looking at projected ridership, it was interesting to note that under the full build-out scenario, Bourbonnais would have the highest projected ridership in the Kankakee County area. However, under the modified extension plan, rail service would be extended only as far south as Manteno/100000 Road. It is possible to develop cost estimates for the potential of extending service to the Bourbonnais site? I don't know how difficult it would be to seek RTA participation for this further extension, but it would be worth having the information just in case.

Subsequent to my initial comments, I have become concerned over reports that Manteno support for the rail extension may be predicated on a station location at 11000 or 12000 Road, and not 10000 Road. To limit potential extension of the commuter rail line to the County line at this time would be a significant diminishment of our effort and would fail to provide to the County the full benefits we hoped would derive from the extension of commuter rail. We may only get one chance to secure the extension of the rail, with RTA participation, and to limit ourselves to the County line would be inconceivable.

It is my understanding that the Kendall County extension of commuter rail was as far as six miles beyond the RTA boundary. I don't understand why we cannot pursue a similar extension, allowing for rail service as far south as 6000 or 5000 Road.

To support further consideration of the extension to Roadway 5000, simply look at the ridership projections. At full buildout, Bourbonnais had the highest ridership projection. While elimination of the Bourbonnais station will result in increased projected ridership at Manteno (assuming the 10000 road location) the total ridership was less than the combined ridership of Manteno and Bourbonnais at full buildout.

	Full Build Out		Partial Build Out	
Station	**High**	**Low**	**High**	**Low**
Monee	1520	1180	1520	1180
Peotone	810	630	810	630
Manteno	650	500	1280	990
Bourbonnais	1430	1110		

As to growth dynamics, you should note that the Village of Bourbonnais recently completed the annexation of 1.6 square miles of land, reflecting the creation of upwards of 1,800 housing sites and a projected population equivalent of more than 5,400 new residents In addition to residential development, the annexed area also provided for hundreds of acres of land for commercial and office development. The annexations are very real, as are the monetary investments of the developers.

I would strongly recommend that consideration be given to incorporating into this report the extension of the commuter rail service south to 5000 Road. The ridership numbers supports the extension, the Kendall County scenario supports the extension, and the growth dynamics of Bourbonnais supports the extension. We may not have another chance to do so without the region's participation in the RTA structure.

FJK/

cc: Robert Latham, Mayor
BOARD OF TRUSTEES
Ed Hayes, Chair, Planning Commission
Project File – COMMUTER RAIL

VILLAGE OF MONEE, ILLINOIS

RESOLUTION NO. 2004-8

A RESOLUTION ENDORSING THE SUPPORT FOR KANKAKEE COUNTY COMMUTER RAIL FEASIBILITY STUDY

ADOPTED BY THE
BOARD OF TRUSTEES
OF THE
VILLAGE OF MONEE

THIS 10th DAY OF November, 2004

Published in pamphlet form by authority of the
Board of Trustees of the Village of Monee,
Will County, Illinois,
This 10th day of November, 2004

VILLAGE OF MONEE

RESOLUTION NO. 2004-8

A RESOLUTION ENDORSING THE SUPPORT FOR KANKAKEE COUNTY COMMUTER RAIL FEASIBILITY STUDY

WHEREAS, the expansion of service to the Metra Electric District line is recognized by local officials as a critical regional transportation route that will have a large impact on future land use decisions and development within the identified study area; and

WHEREAS, the expansion of service to the Metra Electric District line will have a large impact on both of the local and the regional transportation network; and

WHEREAS, a project to study the expansion of service to the Metra Electric District line was initiated in February of 2004 under the collaboration of the Village of Aroma Park, Bourbonnais, Bradley, Manteno, Monee, and Peotone, City of Kankakee, Counties of Kankakee and Will, and the Illinois Department of Transportation; and

WHEREAS, the expansion of service to the Metra Electric District line is identified and recommended as a necessary improvement, including new stations servicing the Village of Monee and the Village of Peotone, in the Will County 2020 Transportation Framework Plan adopted by the Will County Board in December of 2000; and

WHEREAS, the extension of rail service to Kankakee will directly serve the present and future residents of the Village of Monee.

NOW, THEREFORE, BE IT RESOLVED that the President and Board of Trustees of the Village of Monee hereby endorses the draft version of the Kankakee County Commuter Rail Feasibility Study dated October 2004 to be approved as a final report.

BE IT SO RESOLVED THIS 10th **DAY OF** November**, 2004.**

Timothy P. O'Donnell
Village President

Kathleen M. Buchmeier
Village Clerk

AYES: Gryczewski
Jensen
May
Sieron
Stockton
VanDeursen
NAYS: None
ABSENT: None
ABSTAIN: None

Public Works & Transportation Committee
Resolution 05-38

RESOLUTION

Endorsement of Support for
Kankakee County Commuter Rail Feasibility Study

WHEREAS, the expansion of service to the Metra Electric District line is recognized by local officials as a critical regional transportation route that will have a large impact on future land use decisions and development within the identified study area; and

WHEREAS, the expansion of service to the Metra Electric District line will have a large impact on both the local and the regional transportation network; and

WHEREAS, a project to study the expansion of service to the Metra Electric District line was initiated in February of 2004 under the collaboration of the Villages of Aroma Park, Bourbonnais, Bradley, Manteno, Monee, and Peotone, City of Kankakee, Counties of Kankakee and Will, and the Illinois Department of Transportation; and

WHEREAS, the expansion of service to the Metra Electric District line is identified and recommended as a necessary improvement, including new stations servicing the Village of Monee and the Village of Peotone, in the Will County 2020 Transportation Framework Plan adopted by the Will County Board in December of 2000; and

WHEREAS, the expansion of service to the Metra Electric District line is identified in the Chicago Area Transportation Study's 2030 Regional Transportation Plan and is a recommended "Major Capital Project" from University Park to the South Suburban Airport and is a recommended "Corridor for Further Study" from University Park to the city of Kankakee; and

WHEREAS, expansion of service to the Metra Electric District line is in substantial conformance with the planning goals, strategies and keystones found within the Will County Land Resource Management Plan adopted by the Will County Board in April of 2002; and

WHEREAS, the Public Works Committee of the Will County Board reviewed and recommended endorsing the Kankakee County Commuter Rail Feasibility Study to the full Will County Board on December 28, 2004.

NOW, THEREFORE, BE IT RESOLVED that the Will County Board hereby endorses the draft version of the Kankakee County Commuter Rail Feasibility Study dated October 2004 to be approved as a final report.

Adopted by the Will County Board this 20th day of January, ~~2005~~.

Vote: Yes 26 *No* 0 *Pass* 0 *(SEAL)*

Nancy Schultz Voots
Will County Clerk

Approved this 1st day of February, 2005.

Lawrence M. Walsh
Will County Executive

LEGEND

- METRA - EXISTING STATION
- KACOR - CONSIDERED SITE
- KACOR - RECOMMENDED SITE
- SSA - PROPOSED SITE
- CN RAILWAY
- NS RAILWAY
- SSA PROPOSED
- UP RAILROAD
- 6000/WARNER BRIDGE/EXIT 308 CORRIDOR
- KACOR PROPOSED SES CONNECTION

0 1/2 1 2 3

SCALE IN MILES

METRA UNIVERSITY PARK STATION
GOVERNORS STATE UNIVERSITY
UNIVERSITY PARK
CRETE
MONEE
SSA INTERMEDIATE STATION
CENTRAL MONEE
PROPOSED SES BALMORAL PARK
INDUSTRIAL DRIVE
SSA NORTH ROUTE
RACCON GROVE
SSA ALT NORTH ROUTE
SSA TERMINAL STATION
SSA ENTRANCE STATION
ANDRIS
SOUTH SUBURBAN AIRPORT
LENERT TPD
CHICAGO-ST. LOUIS HSR ROUTE
SSA WEST ROUTE
BEECHER
PEOTONE
BEECHER ROAD
CENTRAL PEOTONE
WILMINGTON ROAD
WILL CO
KANKAKEE
10000N ROAD
MANTENO
WIBTACRE
GRANT PARK
DESELM
WILL COUNTY
KANKAKEE COUNTY
ILLINOIS DIVERSATECH CAMPUS
PROPOSED NEW I-57 INTERCHANGE
7000N ROAD
KANKAKEE RIVER STATE PARK
6000N ROAD
ST. GEORGE
ST. GEORGE ROAD
BOURBONNAIS
LARRY POWER ROAD
BRADLEY
SOUTH STREET / BROOKMONT BLVD.
SUN RIVER TERRACE
CN-NS JUNCTION
AMTRAK DEPOT
KANKAKEE
308 INTERCHANGE
AROMA PARK
PROPOSED NEW I-57 INTERCHANGE
GREATER KANKAKEE AIRPORT

Base Map Produced by:
Kankakee County Planning Department
189 E. Court Street, Room 201
Kankakee, IL 60901
www.k3county.net

KANKAKEE COUNTY
COMMUTER RAIL FEASIBILITY STUDY

PB PARSONS BRINCKERHOFF

PB 100 YEARS