

South Suburban Commuter Rail Feasibility Study

FINAL REPORT

Metra

and

⇒ ICF KAISER

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Foreword

It is very important that the reader recognize from the outset that all of the discussions, assessments and conclusions contained in this feasibility study report are based on the best information available prior to publication. This is particularly true of the capital cost estimates for railroad infrastructure improvements. These cost estimates are broad order-of-magnitude estimates of the highest level, with very little actual engineering data upon which to make more detailed estimates. All of these estimates have been created by utilizing unit costs for materials and equipment in 1997 dollars, i.e., unit costs that were current when most of the cost-estimating work for this study was done.

More precise capital cost estimates will come after the process advances to engineering and design. In fact, the costs are likely to be re-estimated several times before reaching the stage where the decision to pursue implementation could be made. Even computing probable cost increases based on current rates of inflation would be futile, given the potential for changes to the economy of the railroad industry and the lack of predictability for exactly when (presuming further feasibility studies continue to show viability) implementation of this commuter rail service might be pursued by Metra. At least three factors can impact the capital cost estimates in the future:

- C Freight railroad operations and traffic volumes are subject to change at any time on any existing freight railroad. Growth of the national economy, improved competitive costs produced by the railroads, or future railroad mergers could all have a major influence on the potential cost of implementing commuter service. A case in point is the Conrail break-up, which has been divided between Norfolk Southern and CSX Transportation. Without having the ability to determine the exact amount of service Metra could provide, neither the amount of ridership which can be attracted to the service nor Metra's potential operating costs can be derived at this time.
- C Since a specific service alignment has not yet been selected, it is too early in the study process for Metra to initiate formal negotiations with any of the freight railroads in this report. Until such negotiations actually begin, it is difficult to know what capital improvements the railroad might require to provide them with a comfort level that is sufficient to allow them to approve implementation of commuter rail service on their railroad. Also, it is not possible to know what kind of trackage-rights or other form of agreement could be achieved, or at what cost.
- C New track-protection regulations, developed to augment existing safety procedures, could affect the productivity of contractors implementing the necessary improvements. These regulations, combined with the potential for increasing freight traffic, could limit the amount of time available for construction work, which could also significantly impact potential costs.

Therefore, while the capital cost estimates reported herein are a good relative measure for this first phase of the overall Study, on an absolute scale they should be considered only as an order-of-magnitude indication of potential investment requirements. Further refinement of these values will be needed during succeeding phases of the project.

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Operating costs can only be determined following travel demand forecasts, since the schedule of trains operated will be influenced by the demand, and conversely increased levels of service can influence the attraction of higher demand (i.e., more riders). Travel demand forecasts (often called ridership estimates) are slated for the next step in the study process. This phase will take the form of either a Major Investment Study or Phase II Feasibility Study (see Recommendations). The results of the forecasting process could render the entire concept unworkable from a cost/benefit standpoint if few riders are expected. Conversely, the level of service required to attract a sufficient level of ridership to make the service cost-effective might not be implementable due to constraints caused by a route's infrastructure or an insurmountable level of freight service. The ratio of projected revenue to projected operating costs, a key indicator of potential performance, can only be determined after ridership is forecasted. Therefore, projected operating costs will be developed later in the process.

An extremely costly but vital line capacity analysis must be performed in the Phase II Feasibility Study, in order to determine if the suggested railroad improvements are sufficient to run commuter trains efficiently (i.e., on time), or whether additional improvements (e.g., additional tracks, signals, bridges, etc.) must be provided in order to avoid potential delays from freight traffic. This computerized depiction inputs all current freight train schedules and mixes them with potential commuter train schedules in order to simulate actual running experience, and determine whether the suggested additional infrastructure is adequate to handle all of the train movements. The closer to implementation that this is performed, should the decision-making process reach that point, the better and more relevant will be the accuracy of the results.

At this point in time, the potential station locations indicate only that communities have suggested potential sites that fit with their future plans. These locations become place holders that will be carefully examined and evaluated as to site acceptability concurrent with the travel demand forecasting process, at which time the projected ridership will be used to determine requirements for depot size, platform length, number of parking spaces (with room for expansion to the year 2020), and ancillary station-related needs. There were also no detailed examinations of the environmental aspects of potential station sites.

Without ridership forecasts, from which the scope of station and parking needs are derived, specific station-related costs (including land acquisition) are indeterminable at this time. Parking requirements will dictate the necessary size of the land parcels that must be acquired (and therefore the cost, which could change dramatically over time); also the suggested sites must have adequate vacant land for acquisition and room for future expansion. Site-specific cost estimates for land and station/parking facilities will be examined in the Phase II Feasibility Study. However, in order to provide complete capital-cost estimates, a conservative estimate of potential total station costs is included. At this juncture, it is particularly important to remember that all future park-and-ride station-related costs, including land acquisition and depot/parking facility construction, will be the responsibility of and must be borne by the host community.

Metra Staff

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EXECUTIVE SUMMARY

1.0 INTRODUCTION

The South Suburban Commuter Rail Feasibility Study examines the potential for implementing Metra commuter rail service on a new radial line to serve suburbs in southeastern Cook and northeastern Will Counties. The proposed route focuses on utilizing the jointly owned tracks of the Union Pacific Railroad (UP) and CSX Transportation (the railroad subsidiary of the multi-modal CSX Corporation) between Beecher and Dolton, with several options to connect with other lines to reach downtown Chicago.

This Phase I Feasibility Study is the first step in a longer process to ascertain not only the potential demand for this proposed new service, but also how it might reach eventual implementation. The Study was a collaborative effort, sponsored by the South Suburban Mayors and Managers Association (SSMMA), who provided the necessary funding. The Study is organized into four major tasks or milestones, all aimed at providing a methodological and objective means of formulating Study recommendations. The four major sections are: Existing Conditions, Potential Operations, Future Plans, and Capital Improvements.

The initial task on this project was to determine a short-list of feasible alternative alignments for the potential SouthEast Service (SES). The many alternative alignments, which resulted from various combinations of active or abandoned railroad right-of-way segments and three Loop terminals, yielded as many as fifty segments that could form different permutations of routes which might be utilized to connect the UP/CSX segment of the route to the Loop. After some examination of these candidates, a final short-list suggested four feasible potential alignments to be studied during this Phase I Study:

- Option 1: SWS/74th Street via NS
- Option 2: RID/79th Street via UP
- Option 3: RID/Gresham via CRL
- Option 4: RID Blue Island via CN

The study area is comprised of Chicago suburbs in Will County which include Beecher, Crete, and part of Steger (split by the county line) and Cook County including part of Steger, South Chicago Heights, Chicago Heights, Glenwood, Thornton, South Holland, and Dolton, as well as portions of the south side of the City of Chicago. The south terminus for the potential SES was to be in Beecher, per the decision reached in the Steering Committee Meeting of July 1996, and most of the discussion of outer-end terminal sites and coach storage yards assumed a Beecher location. The Village of Beecher had asked to be involved in the Study, even though they were not a part of the SSMMA. However, early in 1998, the Board of Trustees of the Village of Beecher voted not to be included in further planning for the potential SES. The decision was made by Metra that since the report document was nearing completion, all discussions and compiled information regarding Beecher would remain in the report.

2.0 EXISTING CONDITIONS

This section documents the physical and operating characteristics of each potential route through the Study corridor. This initial step is critical to the consideration of instituting commuter rail service, since it provides an early indication of what new facilities might be required. An inventory of existing conditions of the physical plant (tracks, track-side signal systems, bridges, at-grade crossings, etc.), freight operations and public transportation systems relied primarily on existing resources from Metra, the Union Pacific, communities along

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each of the routes, regional planning organizations, and field inspections for verifications. A broader list of potential alternatives to provide commuter rail service in the Study corridor underwent a cursory review and was narrowed to four primary options. The report includes detailed descriptions of each of the four alignments. Three of the alignment options assume operations on the UP/CSX (and later UP alone) from Beecher or Crete on the southern end to Oakdale (90th/Eggleston), 79th Street, or 74th Street, with a fourth operating on the UP/CSX only as far north as Thornton Junction in South Holland.

Option 1: SWS/74th Street via NS

This alignment follows the UP/CSX route north to Yard Center in South Holland and Dolton. At Dolton Junction, the CSX route turns west and joint ownership ends. The alignment would continue north on UP tracks past Oakdale, where the Chicago Rail Link (CRL) crosses the UP. North of Oakdale, the alignment would follow an abandoned right-of-way between the NS and BRC freight tracks. It would cross both of the NS/BRC connecting tracks and follow this route until it passes under Metra's Rock Island District (RID) at 79th Street. North of the 79th Street underpass, the alignment would follow the parallel NS freight track to 74th Street, where the new tracks would join the current SWS route. At 21st Street Junction, the route would turn northeast onto Illinois Central (IC) tracks. It would follow the IC up to 18th Street, where a new connecting track would branch off to the north, crossing the St. Charles Air Line west of 16th Street Tower and connecting to the RID around 14th Street. North of 14th Street, the alignment would follow the current RID route into LaSalle Street Station.

Option 2: RID/79th Street via UP

This alignment follows the same route described in Option 1 to 79th Street. North of the 79th Street underpass, the alignment would turn to the right and cross the NS track, then use new tracks across a vacant industrial property south of 76th Street to make a connection with the RID at 73rd Street. From 73rd Street to LaSalle Street Station, the alignment would follow the current RID route.

Option 3: RID/Gresham via CRL

This alignment follows the same route described in Option 1 to Oakdale. From Oakdale, the alignment would travel west on the CRL about a half-mile to Gresham Junction where it joins Metra's RID Main Line at 89th Street. From 89th Street to LaSalle Street Station, the alignment would follow the current RID route.

Option 4: RID Blue Island via CN

This alignment would diverge from the UP/CSX at Thornton Junction, just south of Yard Center, where the CN crosses the UP/CSX. New connecting tracks to link with the CN would be required. The alignment would proceed to the north along the CN to Blue Island Junction (where the RID crosses above the CN) just south and west of the intersection of Broadway and Dixie Highway; the route would utilize new connecting tracks on fill through an open field in the southeast quadrant to merge onto Metra's RID embankment. After joining the RID, the alignment would follow the current RID route to LaSalle Street Station.

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The designs and condition of the track, roadbed, signal systems, interlockings, and at-grade crossings vary from segment to segment along the alignments, but overall are fairly typical of any railroad infrastructure. The conclusion of the field inspection was that all four alternative alignments remained physically viable. At this point in time, none of the information that was supplied by the respective railroads should be taken to imply sponsorship or support of the SES concept by any of them. Also, the critiques provided in this section of the report are not intended to portray or imply in any way that their current physical plants and infrastructure are in substandard condition for operating their respective freight services.

Potential station locations were identified for each community along the UP/CSX or CN alignments. The potential locations were derived from the suggestions and expressed interest by the respective communities. The locations noted here as potential sites are those identified during the site visits with the communities. It should be understood that station selection is a dynamic process that will evolve with future phases of this study and that all locations are subject to change. Note that most of this material was compiled in the summer and fall of 1996; therefore information regarding the Village of Beecher remains in the report.

3.0 FUTURE PLANS

The planning activities involved in this section address the future trends in land use and demographics. This section describes the history of growth and development in Cook and Will Counties, reviews market-area trends setting the stage for overall growth trends for the south suburbs, and reviews the key issues affecting the municipalities adjacent to the potential commuter rail alignment. The information on the municipalities in the study area was obtained from the Northeastern Illinois Planning Commission (NIPC) for population and household forecasts, the 1990 U.S. Census for employment and other socioeconomic factors, and the municipalities themselves.

Future plans of the freight railroads and other State and Regional agencies are also included in this section. A potentially major generator of related transportation improvements to the south suburbs is the proposed South Suburban Airport to be located between Peotone and Beecher. This airport would impact the entire south suburban transportation network. Associated transportation improvements would include additional access roads, additional lanes for the existing roadway system, and extension of Metra's Electric District to serve the new facility. Plans also include a continuation of I-355 running east-west just south of Crete to connect with I-65 in Indiana. An Outer Circumferential Commuter Rail Service is also being considered along the EJ&E through Chicago Heights; this potential service is the subject of a separate feasibility study.

Some of the difficulty in determining future (private) railroad plans arises from the proprietary nature of planning data. Future traffic volumes can also be impacted by railroad mergers (which are often difficult to predict) and operational agreements. At this time, there appear to be no significant changes planned in railroad traffic volumes or operations, nor are there any planned abandonments along the lines studied in this project. There are some alignment changes and/or improvements planned along current Metra lines which could be utilized by the potential SES.

4.0 POTENTIAL OPERATIONS

For comparative purposes, the following methodology was utilized in order to develop a reasonably feasible service operation on any one of the four potential alignments. Operating plans for each service alignment operation was assumed to be similar to existing Metra diesel-powered, push-pull operations. Once the operating

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plans were defined, the facilities required to support these operations (e.g., track, bridges, stations, equipment) were identified. In many cases these would be new facilities, while in other cases they would be rehabilitations of existing facilities. The same general level of service was assumed for each potential alignment under the following parameters:

- C Service would be operated by Metra with its own forces. Trackage-rights agreements would be negotiated with each affected railroad. The exact nature of any service agreement would be subject to negotiation and agreement between Metra and the respective railroad(s).
- C Service would utilize standard Metra commuter rail equipment and operating rules.
- C All four alignment options would utilize the UP/CSX line from either Beecher or Crete to at least Thornton Junction in South Holland. From there, the alignment would divert onto one of four options as previously described. Eventually each option would connect with Metra's RID, and continue to LaSalle Street Station, which appears to be able to absorb the potential SES train operations without significant impact.
- C Service was assumed to operate on weekdays only, with three trains each in the a.m. and p.m. peak periods (on 30-minute headways), and one midday turn.
- C Potential commuter station sites (including station buildings, parking lots, and other associated site improvements) would be funded, constructed, maintained, and operated by the host communities, although subject to Metra criteria and supervision. All stations would comply with ADA guidelines.
- C Train equipment would be stored and maintained at Metra's 47th Street Yard. Expansion of existing facilities might be necessary, but there appears to be sufficient room at the site to accommodate any needed expansion.

There are four possible commuter transfers via physical connections with planned or existing Metra services. However, of the four, two are not recommended (Chicago Heights - proposed Outer Circumferential Rail Line and Harvey - MED) since they would result in unacceptably close station spacings and/or present other physical constraints. The other two possible stations (119th Street - MED and 79th Street - RID) warrant further study.

One concern which can become critical to the successful operation of a commuter rail line is the interference with freight traffic along the line. The available traffic data for each segment and crossing railroad were reviewed to determine the need for additional tracks to separate the potential passenger alignment from the possibility of conflicting freight movements. Several alignment changes and improvements came out of this examination. The major areas that will be problematic for potential service due to freight interference are at the crossings with the BRC/NS connecting tracks, Dolton Junction and Yard Center. The ultimate solution at Yard Center would be a separate "passenger main" bypass around the Yard. Other improvements may be required along the UP and UP/CSX lines, in order for commuter trains to proceed unimpeded. This could include the addition of a third track on the entire UP/CSX segment of the route. Various land acquisitions would also be involved, depending on the selected alignment, for building connecting tracks.

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5.0 CAPITAL IMPROVEMENTS

This section describes the capital improvements that would likely be required to create the infrastructure for a feasible commuter rail operation along each of the four alignment options. In order to support the potential operations, new track, bridges, signal systems and at-grade street crossings would be installed (in some cases existing facilities could be rehabilitated or rebuilt), station and parking facilities would be built, new rolling stock would be purchased, and land acquisition would be necessary, particularly for park-and-ride stations.

The capital facilities are defined to provide a basis for developing order-of-magnitude estimates for the cost of constructing the necessary facilities. Again, keep in mind that the required improvements presented in this section are considered necessary to operate commuter trains efficiently, and are not intended to portray or imply that the current physical plants and infrastructure of the respective railroads are in substandard condition for operating their freight services.

In general, there are only moderate variations among the four alignments options in the quantities of Capital Improvements. Some of the more significant aspects of these improvements are required for one or all of the alignments. A new passenger train bypass on the east side of Yard Center in Dolton would need to be constructed, in order to eliminate potential delays arising from conflicting yard traffic. The construction of new trackage on abandoned railroad right-of-way from the vicinity of Oakdale to 74th Street would eliminate crossing the Belt Railway of Chicago at 80th Street. A new connecting track from the IC tracks at 18th Street northeast to Metra's RID in the vicinity of 16th Street would allow Metra's Heritage Corridor and SWS trains to move their terminal from Union Station to LaSalle Street Station. Other improvements include a balloon track connection from the CN to the Metra-RID at Blue Island Junction and a new signaling system for the CRL over the portion of its line between Oakdale and Gresham. In addition, a storage, light servicing, and employee welfare facility would need to be provided at the south end of the line.

Estimated capital costs for the entire potential SES route are within an order-of-magnitude range between \$214.4 and \$263.4 million, a cost differential among the four options of nearly \$50 million. Keep in mind that the evaluation of alignment options should not focus solely on the lowest cost estimate, since those with higher costs might later prove to be the most practical. The cost estimates resulted from a scenario of operating potential Metra SES trains jointly with freight trains on the various railroads, including the heavily congested UP/CSX segment. The order-of-magnitude costs that would include a third UP/CSX main range between \$314.6 and \$363.7 million. This triple-track alternative scenario essentially provides a new track with coordinated signal system and interlockings, new bridges parallel to existing UP/CSX bridges, and an additional track through grade crossings. The cost estimates for park-and-ride stations would be increased slightly due to some necessary reconfiguration caused by a three-track operation. Costs for requisite layover and maintenance facilities and new rolling stock would not change.

Potential Operating Scenario	Total Estimated Capital Costs			
	Option 1	Option 2	Option 3	Option 4
Joint Operation (Commuter and Freight)	\$263.4 million	\$255.5 million	\$230.7 million	\$214.4 million
Expanded Physical Plant (Third Main Track UP/CSX)	\$363.7 million	\$355.7 million	\$330.9 million	\$314.6 million

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6.0 RECOMMENDATIONS

This report has shown that each of the four potential routes appears to be physically feasible. However, there are major capital costs involved for all options, particularly when additional track(s) would be necessary to avoid conflicts with freight trains. All along the route, local support is substantial. Based on the evaluations in this report, this Phase I Feasibility Study recommends that all four of the remaining options should be studied further. It should be understood that this conclusion and recommendation is qualified based on the findings in this Study phase alone, and does not account for any “unknowns” that may emerge from more detailed studies. Furthermore, at the present time the results of this Study phase cannot and should not be construed as indicating that any recommended SES route will be considered operationally viable or even desirable at the completion of the remaining Study phases.

The four alignments that are recommended for further study are already undergoing a separate interim study, prior to an MIS or Phase II Study. The primary question regarding the differences in viability between the four options is the physical feasibility of the proposed connections to the RID. In order to ascertain the feasibility of these connections, a separate report was commissioned to determine if any of these proposals might be impractical. This report is further evaluating environmental aspects of the east run-around track at Yard Center, the NS-RID connection at 79th Street, and the CN-RID connection in Blue Island, as well as preliminary engineering of the latter two connections. The report will be issued prior to proceeding to the MIS and Phase II Studies, in order to provide direction for further study aspects in Phase II.

It is recommended the alignments determined to be feasible as a result of the interim report continue first with a Major Investment Study (MIS) and afterward with a Phase II Feasibility Study. The MIS process has a public forum component that will substantiate the level of public support. It would try to resolve any issues over whether or not commuter rail can be a useful contributor to congestion mitigation and improved air quality in this relatively densely populated suburban sub-region. The MIS process would also determine projected ridership in order to justify the probable capital expenditures. [Note that in TEA-21, the successor to ISTEA, the MIS terminology has changed but the function remains similar.] The Phase II Study would then examine environmental aspects of the potential station sites, perform detailed line capacity analyses to get a better understanding of infrastructure needs, and seek solutions to resolve potential freight/passenger train conflicts in order to make the proposed service reliable. Specific areas to be addressed in the next phase studies are summarized below.

Refined Cost Estimates: The order-of-magnitude cost estimates performed in the Phase I Study made extensive use of standard unit costs for many categories. This task would examine those unit costs to determine where refinements are needed to ensure a reliable project cost estimate for both capital and operating costs (the latter was not a part of Phase I).

Ridership Estimates: A forecast of ridership and travel patterns would be completed for the base years 2010 and 2020. The model used for these forecasts would be sensitive to a variety of travel demand parameters including, as a minimum, travel time, service frequency, service hours, number of stations, availability and ease of transfer to other transport modes, and fares.

Environmental Impacts: The environmental tasks would address important concerns relating to the physical and natural environment. The assessment would describe the environmental conditions within the study area, identify and evaluate the short- and long-term impacts of each alignment on the environment, determining

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potential concerns and liabilities, and recommend mitigation measures to be incorporated in design and/or operation plans for each alignment.

Line Capacity Analyses: A simulation model would be developed to perform line capacity analyses along each alignment using different combinations of operating conditions. The conditions would include current and projected freight train traffic densities, proposed commuter train schedules, speed and signaling restrictions, existing dispatcher prioritizations, and potential changes with improvements to physical plant.

Additional Stations within the Chicago City Limits: All of the potential stations examined in Phase I are suburban stops. Additional feasible station stops could exist within the City of Chicago. Potential Chicago sites would be reviewed for potential ridership, impact on development, station and park-and-ride site feasibility, connections with other transit services and possible impacts on operations.

Impacts on Regional Transportation Network: The regional impact of this service on the total transportation network would be reviewed. This would include impacts on automobile traffic and air quality in the region. A number of variables would be reviewed including potential Metra ridership and other transit ridership, impact of land-use changes associated with new service especially surrounding station areas, and possible changes in automobile use and ozone-precursor vehicle emissions. Identifying these factors would help support an application for a CMAQ (Congestion Management/Air Quality) grant for this project.

South Suburban Airport: The main thrust of this Study has been to review and analyze service on the UP/CSX line itself and the municipalities along the line. Future studies would need to review detailed issues such as circulation within the airport in order to reach the rail stations, the use of the airport grounds as a commuter rail layover facility, patronage impacts arising from airport service, and commuter rail operating schedule impacts from airport service.

Sub-Regional Benefits: A variety of tangible benefits might be expected as a result of providing commuter rail service on any of the four alignment options that were studied. The key sub-regional benefits are associated with the population and employment market to be supported by commuter rail, additional mode choice and increased accessibility arising from new service, and the potential local development initiated by this transportation investment. Such benefits could range from opportunities that communities in the study area might derive from local response to the inception of commuter rail service to broader regional benefits such as congestion mitigation and improvements to air quality. Also, there would be opportunities to enhance comprehensive and development plans of individual communities, and provide infrastructure enhancements such as commuter rail stations which could serve as community focal points for transit-oriented developments.

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1.0 INTRODUCTION

The South Suburban Commuter Rail Feasibility Study examines the potential for implementing Metra commuter rail service on a new radial line [i.e., Chicago Central Business District (CBD)-oriented] to serve suburbs in southeastern Cook and northeastern Will Counties. The proposed route focuses on utilizing the jointly owned tracks of the Union Pacific Railroad (UP) and CSX Transportation (the railroad subsidiary of the multi-modal CSX Corporation) between Beecher and Dolton, with several options to connect with other lines to reach downtown Chicago. The initial task on this project was to determine a short-list of feasible alternative alignments for the potential SouthEast Service (SES).

This effort was sponsored by the South Suburban Mayors and Managers Association (SSMMA), who provided the necessary funding for this Metra Study. The potential service would operate in a corridor between the existing Metra Electric District (MED) and the Indiana State Line. It would provide rail access to downtown Chicago in a manner similar to existing service on Metra's eleven current routes, which now includes the 2½-year-old Metra North Central Service (NCS) in northeastern Cook and Lake Counties. [The South Shore, which is overseen by the Northwest Indiana Commuter Transportation District (NICTD), is the twelfth radial commuter rail line in Chicago.] The following description is extracted from page 5 of the RFP:

“The objective of the study is to evaluate and compare the physical, operational and financial feasibility of operating commuter rail service on one or more segments of the existing UP/CSX rail line, as well as portions of any other rail lines in the vicinity that might provide appropriate and useful links (between segments). The central focus of this study is to determine the feasibility of providing commuter rail service to communities between either Crete or Beecher and downtown Chicago . . . on UP/CSX tracks (which) would then connect to downtown Chicago on existing tracks likely over one of three (existing) routes . . . (or) any other possibilities or combinations of viable routes and downtown Chicago terminals.”

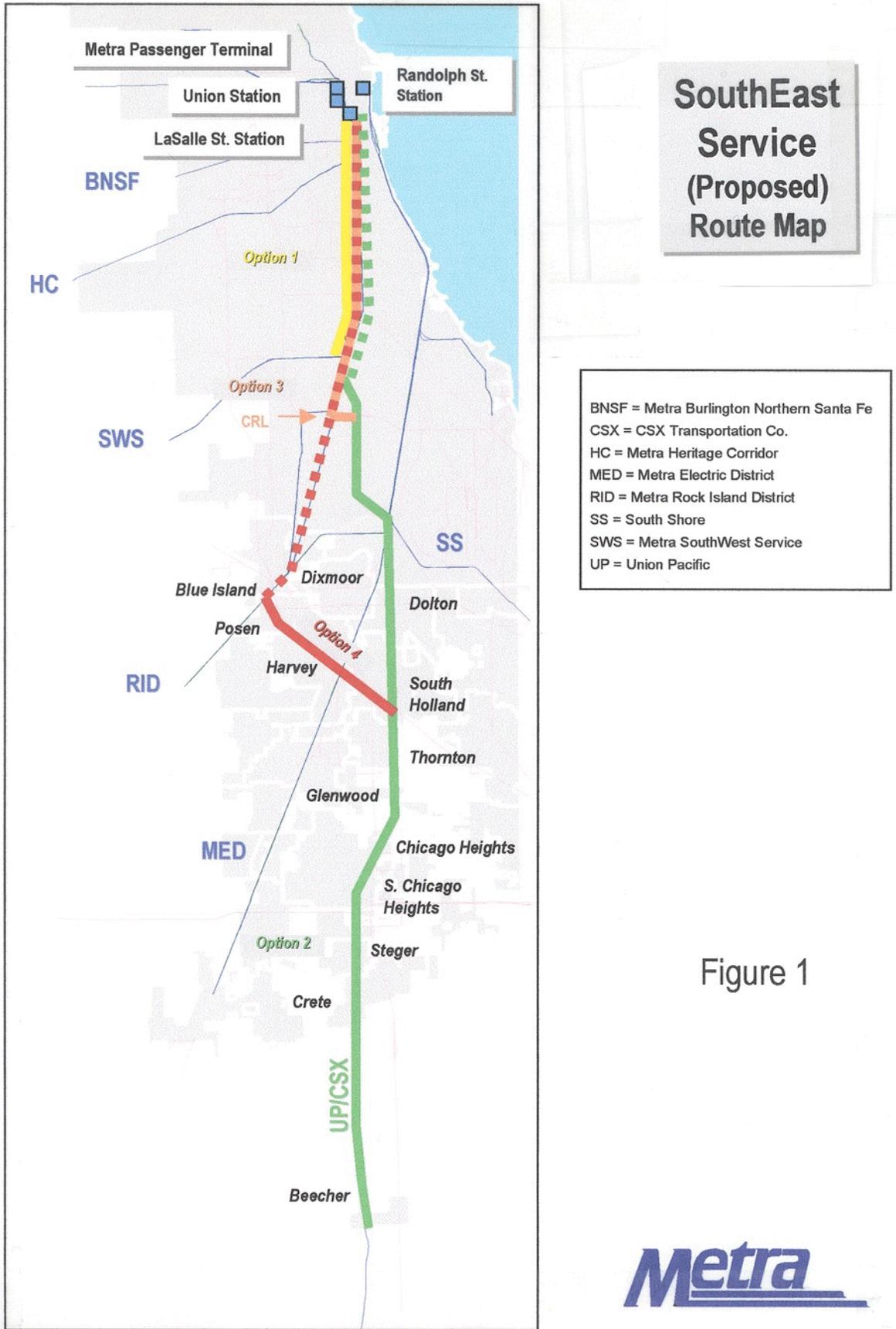
This Phase I Feasibility Study is the first step in a longer process to ascertain not only the potential demand for this proposed new service, but also how it might reach eventual implementation. This first step focuses largely on information-gathering to “see if it could work”, and also includes an early look at potential capital costs. The Study is organized into four major tasks or milestones, all aimed at providing a methodological and objective means of formulating Study recommendations. The four major sections are:

- Existing Conditions
- Future Plans
- Potential Operations
- Capital Improvements

1.1 STUDY AREA

The study area is comprised of Chicago suburbs in Will County [Beecher, Crete, and part of Steger (split by the county line)] and Cook County [part of Steger, South Chicago Heights, Chicago Heights, Glenwood, Thornton, South Holland, and Dolton] as well as portions of the south side of the City of Chicago. The SSMMA represents the suburban municipalities through which the proposed route passes (except Beecher), as well as some adjacent communities that are already served by Metra's MED service. The MED route runs diagonally to the southwest after crossing the UP/CSX around 119th Street north of Dolton; the UP/CSX route runs almost straight south from Dolton, with increasing distance from the MED route to the west. The relative locations of the municipalities with potential station sites are portrayed in Figure 1.

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1.2 HISTORICAL BACKGROUND

A bit of railroad history from the last thirty years might explain some of the seeming anomalies in study-area railroad ownership, particularly when viewing maps with different dates or time frames. The two railroads that comprise the UP/CSX route today have both had several predecessor-railroad names, which some long-time local residents might recall. This railroad line through the study area was the Chicago and Eastern Illinois (C&EI) from the 1870s. Most of the communities along the route had stations at some time or other. C&EI passenger trains used the Dearborn Station on Polk Street in Chicago (two blocks east of LaSalle Street Station) as their terminal.

Intercity passenger service was offered by the C&EI, for example to Evansville with through connections via the Louisville and Nashville (L&N) and other railroads to the southeast as far as Florida. The intercity schedules were such that the C&EI was never considered a commuter railroad, i.e., with operations and schedules oriented to bringing city and suburban commuters to downtown Chicago. By the mid-1960s, most of the passenger service was gone, as was the case with so many other railroads. By late 1968, C&EI passenger service had been reduced to one train daily in each direction, and only as far as downstate Danville; it was appropriately named the “Danville Flyer”. A single study-area station (“Chicago Heights/Steger”) remained on the timetable, although the train also stopped at the 63rd Street Station on the Chicago and Western Indiana [(C&WI) see discussion below]. On the last timetable, the “Danville Flyer” arrived in Chicago at 9:15 a.m. and departed at 5:30 p.m.; it ran until Amtrak took over in May of 1971.

As early as 1959, the Chicago & Eastern Illinois was having discussions with the Missouri Pacific (MoPac) railroad about a possible merger. Several other railroads voiced opposition, but MoPac began acquiring C&EI stock in 1961, and in 1963 the Interstate Commerce Commission (ICC) approved the acquisition of C&EI by MoPac. The C&EI was operated as a subsidiary until 1976, when MoPac finally completed the acquisition and took control of the operations as far north as Dolton Junction (where C&EI ownership ended); the C&EI name officially disappeared. This acquisition included Yard Center, which is in both Dolton and South Holland. In 1982, MoPac became one of many acquisitions by the Union Pacific, which kept control over the operations and maintenance of the route, including Yard Center.

In 1969, the L&N acquired the C&EI route to Evansville as far north as Woodland Junction [south of Watska (47 miles south of Beecher), where the C&EI had split into two routes], while MoPac retained the route toward St. Louis. The sale of the Evansville route to the L&N had been stipulated by the ICC in the acquisition approval in 1963. Also in 1969, the L&N bought a one-half interest in the former C&EI, hence the joint ownership that exists today. The L&N apparently passed up the opportunity to have part-ownership in Yard Center, perhaps because they already had Barr Yard in Riverdale. In 1982, as the UP absorbed MoPac, the L&N merged with the Seaboard Coast Line to form the Seaboard System Railroad. In 1986, the Seaboard System merged with the Chessie System to form the CSX Transportation Company. Today CSX sends trains to and from points south (Nashville through Evansville to Chicago is a major route) over the UP/CSX, north through Yard Center, then west at Dolton Junction to Barr Yard in Riverdale.

North of Dolton Junction, today’s UP route was owned by the Chicago & Western Indiana, which was a jointly owned terminal railroad within Chicago. This portion of the C&WI was actually a branch off their Main Line (more commonly known as their State Line route) from around 81st Street; the C&WI Main Line ran to the Indiana State Line near Hammond. The C&WI was jointly owned by five railroads, one of which was the C&EI, and MoPac acquired the C&EI’s ownership share. C&WI also owned Dearborn Station.

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The C&WI ran a commuter service with two-trains-each-way weekday service down the Main Line and onto the Dolton Branch as far south as Dolton, which was the only suburban stop (all others were within the Chicago City Limits). The downtown terminal also was Dearborn Station, the same as the C&EI, which used C&WI trackage to get there. Only one C&WI train operated in the peak period, however, while the second round trip occurred in midday with a single coach or combine. On Saturday, one round trip was provided, with the return trip from downtown in the early afternoon which allowed a half-day Saturday work day (more common at the time). This service ended in August of 1964. The C&WI Main Line was later bought by the Norfolk and Western (N&W) from 74th Street to Hammond, while the C&EI's share of the branch ownership went to MoPac and later UP. Metra owns the former C&WI between 74th Street and 21st Street Junction, over which the SouthWest Service (SWS) operates today.

The neighboring Wabash Railroad operated one-train-each-way weekday peak-period service to 143rd Street in Orland Park. This service also ran over the C&WI's tracks north of 74th Street. The Wabash, which had been leased by the N&W since 1964, was absorbed by them in 1970. Later, N&W merged with the Southern Railway to form the Norfolk Southern (NS) in 1982. The Wabash's downtown terminal also was Dearborn Station, but after Amtrak began in May of 1971 and Dearborn Station was permanently closed, the N&W began to use the Polk Street Annex (one block west of Dearborn Station) as its terminal. At some point in time, probably under the auspices of the Regional Transportation Authority [(RTA), which began running or overseeing all of the commuter services in 1974], the terminal was changed to Chicago Union Station (CUS). The former Wabash/N&W/NS service, which is now Metra's SWS, has grown to 16 trains each way daily and more planned. Metra anticipates shifting the SWS trains to LaSalle Street Station when the next service expansion occurs, since Union Station is virtually out of capacity for more trains.

1.3 CANDIDATE ALIGNMENTS

The initial task on this project was to determine a short-list of feasible alternative alignments. The south side of the Chicago metropolitan area has many active railroads, as well as quite a few segments of abandoned railroad rights-of-way, some of which are largely intact. In addition, any of three existing Metra terminals were considered candidates for the downtown destination of the potential SouthEast Service (SES). The many alternative alignments, which resulted from various combinations of active or abandoned railroad right-of-way segments and three Loop terminals, yielded as many as fifty segments that could form different permutations of routes which might be utilized to connect the UP/CSX segment of the route to the Loop. This is particularly important since the UP/CSX extends only to Dolton Junction around 142nd Street; from this point the CSX turns west toward Barr Yard while the UP alone continues north to where their ownership ends at 81st Street in Chicago. From this point, or from some other diverting point along the route, the potential Metra SES route would have to use other railroads to arrive in downtown Chicago.

A short-list of ten route alignments (listed on the next page), three of which were modifications of alignments with some expectation of viability, was created by subjectively eliminating route segments or connections that did not appear to be feasible. The schematic map on the following page portrays their relative locations. After some examination of these candidates, a second short-list suggested four alignments (B, CA, D, and FA) to be studied in more detail, including two that are modifications of the seven original basic alignments shown on the schematic map. The four alignments destined for Randolph Street Station (A, EA, F, and G) were eliminated primarily due to restrictions of the MED infrastructure and parallel IC freight right-of-way that would have to be crossed, as well as severe terminal restrictions. Alignment CA was chosen over Alignment C with the determination that Chicago Union Station would not be able to accommodate additional trains. Alignment E was eliminated due to private ownership of part of the former right-of-way, and the City of Chicago's plans to use the former route as a bike path.

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Ten Short-Listed Candidate Alignments for Potential SouthEast Service

- A UP/CSX to MED at 119th St. to Randolph Street Station (RSS)
- B UP/CSX to RID at 79th St. to LaSalle Street Station (LSS)
- C UP/CSX to UP at Dolton Jct. to SWS at 74th St. to Chicago Union Station (CUS)
- CA UP/CSX to UP at Dolton Jct. to SWS at 74th St. to IC at 21st St. to RID at 14th St. to LSS
- D UP/CSX to CRL (ex-CRI&P) at Oakdale to RID at Gresham to LSS
- E UP/CSX to ex-Pennsylvania (abandoned by Conrail) at Dolton Jct. to RID at 103rd St. to LSS
- EA UP/CSX to CSX (ex-B&OCT) at Dolton Jct. to MED at Riverdale to RSS
- F UP/CSX to Grand Trunk (now CN) at Thornton Jct. to MED at Harvey to RSS
- FA UP/CSX to Grand Trunk (now CN) at Thornton Jct. to RID at Blue Island Jct. to LSS
- G UP/CSX to CSX (ex-B&OCT) at Chicago Heights to MED at Harvey to RSS

Note: CRL is Chicago Rail Link
CRI&P was Chicago Rock Island and Pacific
B&OCT was Baltimore and Ohio Chicago Terminal

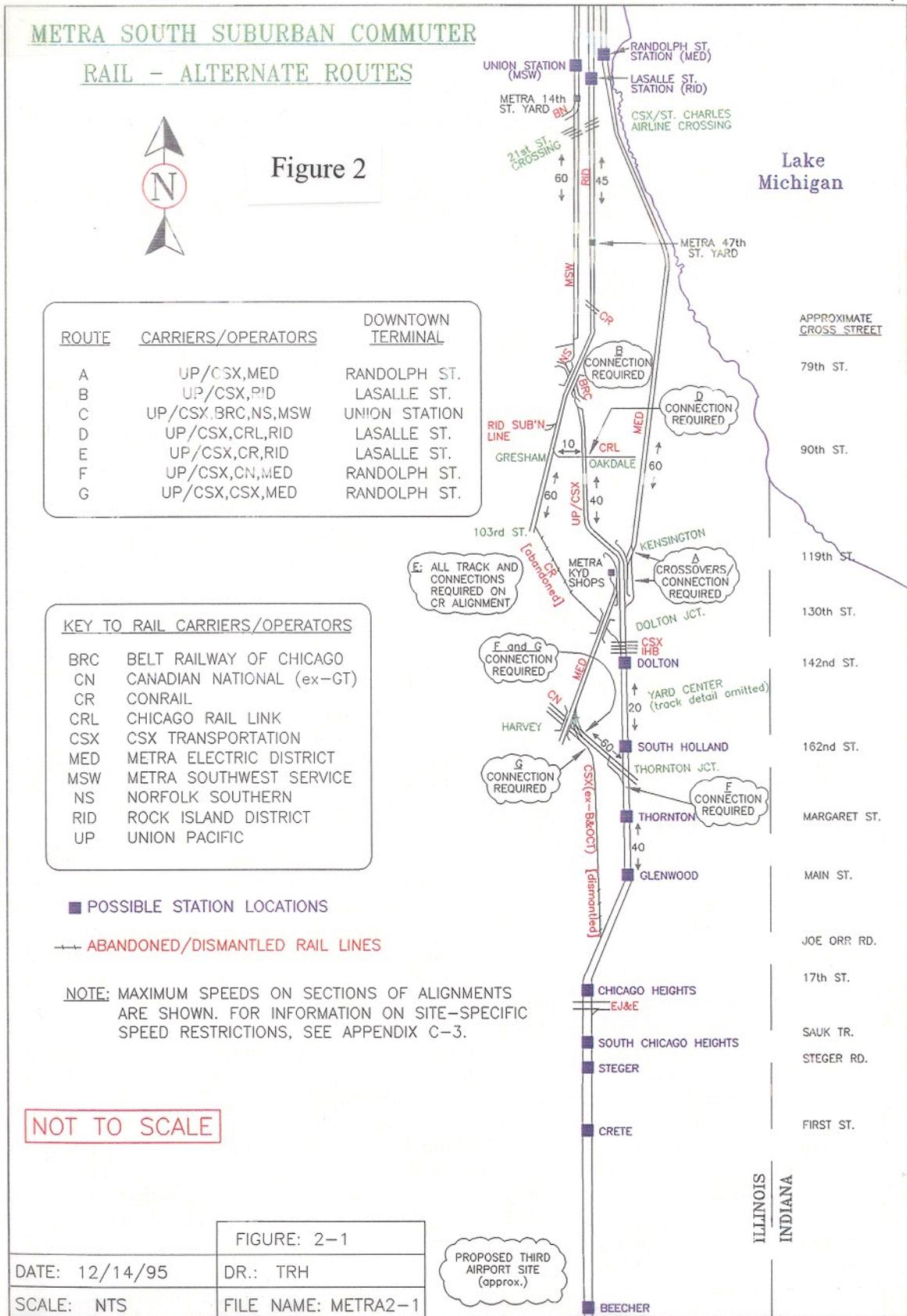
Appendix A provides more detail concerning the rationale for eliminating Union Station and Randolph Street Station as potential terminals, and for deciding against the other six potential routes not studied further in this report. This Phase I Feasibility Study then concentrated on a fact-finding examination of the four remaining candidate alignments.

A Note on the Location of the Outer Suburban Terminal

The south terminal for the potential SES was to be in Beecher, per the decision reached in the Steering Committee Meeting of July 1996, and most of the discussion of outer-end terminal sites and coach storage yards assumed a Beecher location. The Village had asked to be involved in the Study, even though they were not a part of the SSMMA. The officials whom the Study team spoke with indicated that they had definite plans for enhancement of their historic downtown, and felt that a train station would be an important and appropriate component of their plans.

However, early in 1998, the Board of Trustees of the Village of Beecher voted not to be included in further planning for the potential SES. The decision was made by Metra that since the document was nearing completion, and there remains the possibility that the Village Board could change their minds before the service could ever be implemented, all discussions and compiled information regarding Beecher would remain in the report. In the MIS and/or Phase II examinations of this rail corridor, however, barring a change in Beecher's position, the tentative terminal location would be south of Crete near Balmoral Park, which the predecessor C&EI once served.

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2.0 EXISTING CONDITIONS

This section documents the physical and operating characteristics of each potential route through the Study corridor. This initial step is critical to the consideration of instituting commuter rail service, since it provides an early indication of what new facilities might be required. The inventory of existing conditions relied primarily on existing resources from Metra, the Union Pacific, communities along each of the routes, regional planning organizations, and field inspections or verifications.

2.1 ALIGNMENT OPTIONS

As stated in the introduction, a broader list of potential alternatives to provide commuter rail service in the Study corridor underwent a cursory review and was narrowed to four primary options. Three of the alignment options assume operations on the UP/CSX (and later UP alone) from Beecher or Crete on the southern end to Oakdale (90th/Eggleston), 79th Street, or 74th Street, with a fourth operating on the UP/CSX only as far north as Thornton Junction in South Holland. At this point in time, none of the information that was supplied by the respective railroads should be taken to imply sponsorship or support of the SES concept by any of them. Also, the critiques provided in this section of the report are not intended to portray or imply in any way that their current physical plants and infrastructure are in substandard condition for operating their respective freight services.

A south-to-north right-of-way summary of each of the four final candidate alignments follows below. The identifying letters used to delineate the original ten candidate alignments have been changed to read more simply as Options 1 thru 4 (see Figure 3), and are referred to as such throughout the Study. The segment divisions are based on railroad ownership and/or diverging points for the various alignments.

Option 1: SWS/74th Street via NS (Alignment CA)

This alignment is a slight modification of Alignment C (direct route to Union Station). Option 1 now would divert from the SWS at 21st Street Junction to access LaSalle Street Station.

- C The alignment follows the UP/CSX route north to Yard Center in South Holland and Dolton.
- C To avoid the congestion at Yard Center (UP/CSX Main Line runs through the middle of the yard), new tracks would skirt around this area on the east side of the yards, rejoining the Main Line just south of Dolton Junction.
- C At Dolton Junction, the CSX route turns west and joint ownership ends. The alignment would continue north on UP tracks past Oakdale, where the Chicago Rail Link (CRL) crosses the UP.
- C North of Oakdale, the alignment would follow the UP route to 81st Street, then an abandoned right-of-way west of the NS freight track. It would cross both of the NS/BRC connecting tracks and follow this route until it passes under Metra's Rock Island District (RID) at 79th Street.
- C North of the 79th Street underpass, the alignment would follow the abandoned right-of-way parallel to the NS to 74th Street, where it would join the current SWS route. [Note that an earlier scenario described one new Metra track and joint utilization of the NS track (or possibly joint double-track operation). This was reconfigured to minimize potential freight interference to the SES trains.]

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- C At 21st Street Junction, the route would turn northeast onto Illinois Central (IC) tracks. It would follow the IC up to 18th Street, where a new connecting track would branch off to the north, crossing the St. Charles Air Line west of 16th Street Tower and connecting to the RID around 14th Street.
- C North of 14th Street, the alignment would follow the RID into LaSalle Street Station.

Option 2: RID/79th Street via UP (Alignment B)

This alignment is the most direct route from the UP/CSX and UP to LaSalle Street Station. The alignment follows the same route described in Option 1 (i.e., first four dot points) to 79th Street, where:

- C North of the 79th Street underpass, the alignment would turn to the right, cross the NS track, then use new tracks (on new fill to match the respective embankments) across a vacant industrial property south of 76th Street to make a connection with the RID at 73rd Street. [At 79th Street, the BRC and NS (and abandoned right-of-way between them) are on an embankment, while the RID is on a higher embankment to cross all of these tracks.]
- C From 73rd Street to LaSalle Street Station, the alignment would follow the current RID route.

Option 3: RID/Gresham via CRL (Alignment D)

Both of the first two options could suffer from freight interference on the NS. Option 2 would require an at-grade crossing of the NS to access the RID north of the 79th Street overpass. However, Option 3 utilizes the lightly used Chicago Rail Link [CRL (former Rock Island trackage)] between Oakdale and Gresham to connect with the RID south of 87th Street to avoid those potential problems. This alignment follows the same route described in Option 1 (i.e., the first three dot points) to Oakdale, where:

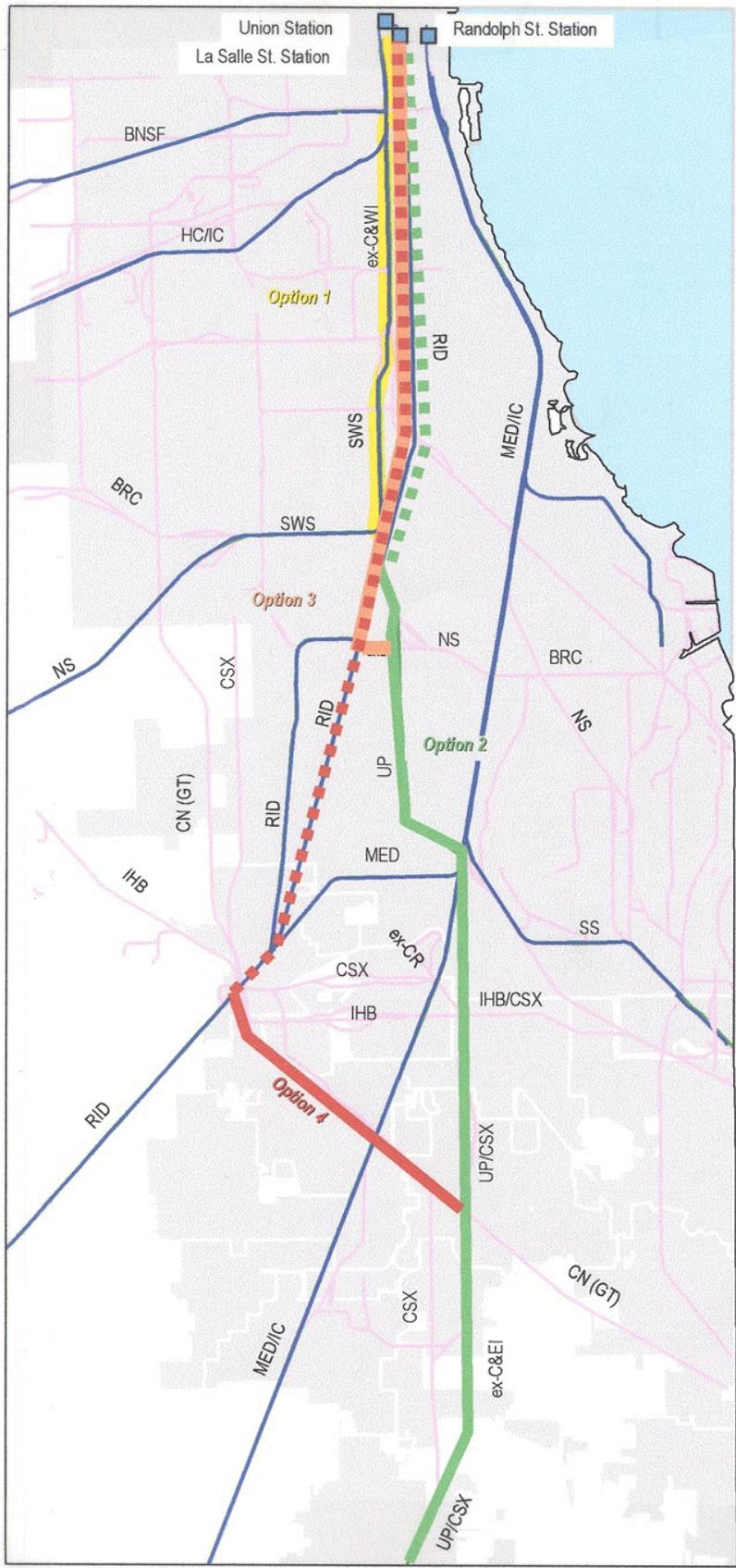
- C From Oakdale, the alignment would travel west on the CRL to Gresham Junction where it joins Metra's RID Main Line at 89th Street. (This is the same location where trains from the RID Beverly Branch diverge from or rejoin the Main Line.)
- C From 89th Street to LaSalle Street Station, the alignment would follow the current RID route.

Option 4: RID Blue Island via CN (Alignment FA)

This option attempts to avoid potential difficulties at Yard Center and Dolton Junction entirely by utilizing the Canadian National [(CN), also known as the Grand Trunk (GT)] from Thornton Junction.

- C The alignment would diverge from the UP/CSX at Thornton Junction, just south of Yard Center, where the CN crosses the UP/CSX. New connecting tracks to link with the CN would be required.
- C The alignment would proceed to the northwest and then north again along the CN to Blue Island Junction (where the RID crosses above the CN) just south and west of the intersection of Broadway and Dixie Highway; the route would utilize new connecting tracks on fill through an open field in the southeast quadrant to merge onto Metra's RID embankment.
- C After joining the RID, the alignment would follow the current RID route to LaSalle Street Station.

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SouthEast Service (Proposed) Route Map-- Detail Area

- BNSF = Metra Burlington Northern Santa Fe
- BRC = Belt Railway of Chicago
- C&EI = Chic. and Eastern Illinois (defunct)
- C&WI = Chic. and Western Indiana (defunct)
- CN (GT) = Canadian National (Grand Trunk)
- CR = Conrail
- CSX = CSX Transportation Co.
- HC = Metra Heritage Corridor
- IC = Illinois Central
- IHB = Indiana Harbor Belt
- MED = Metra Electric District
- NS = Norfolk Southern
- RID = Metra Rock Island District
- SS = South Shore
- SWS = Metra SouthWest Service
- UP = Union Pacific

Figure 3



2.2 DESCRIPTIONS OF ALIGNMENT SEGMENTS

The designs and condition of the track, roadbed, signal systems, interlockings, and at-grade crossings vary from segment to segment along the alignments, but overall are fairly typical of any railroad infrastructure. Aerial photographs, USGS maps, and multiple field observation/documentation sessions were used to determine the general topography and any physical constraints along the four alternative alignments. The conclusion of the field inspection was that all four alternative alignments remained physically viable.

2.2.1 UP/CSX from Beecher to Yard Center

There are several railroad facilities which could affect the potential commuter rail service. The one which would have the most fundamental effect on the potential service, as well as affecting all four alternatives now under consideration, is the joint UP/CSX line from Beecher north to Dolton. This freight line is double-tracked throughout the study area, and operates under Centralized Traffic Control (CTC). It has the physical plant to accommodate frequent movements of heavy freight trains. The UP controls the operations (including dispatching) and maintains the physical plant, although the route is jointly owned (50% each) by the two railroads. Consequently, any plans that are developed, and any changes proposed to the physical plant or related facilities, probably would have to be approved by both of the controlling railroads.

As observed on various site inspections and flyovers, the line is densely trafficked, with substantial and fairly frequent delays to freight traffic all too common. On several occasions, a number of freight trains were seen stacked up on the Main Line, awaiting clearance to go into the yard (UP trains) or through it (CSX trains). Addition of any significant level of passenger traffic to this line would likely be met, at a minimum, with demands for substantial improvement to track and signals to accommodate the needs of the freight railroads. Also, improvements might be needed to bring the facilities into conformance with Metra standards and practices. It is entirely possible that a third main track would be required to create the physical plant on which to operate commuter rail service.

No existing Metra service would be intersected on this section of line. The UP/CSX line crosses the potential routing of the proposed Metra Outer Circumferential Service (OCS) on the Elgin, Joliet & Eastern (EJ&E) in Chicago Heights. A connection between the UP/CSX and the EJ&E already exists in the southeast quadrant of the junction. Remnants of a connection in the northwest quadrant were evident late in 1996, although this track was no longer physically connected to the UP/CSX. The abandoned "Jay" Tower stands in the southwest quadrant, as does an active section house.

2.2.2 Yard Center

The Yard Center complex in Dolton and South Holland is under UP ownership and control. This facility is relevant to three of the candidate alignments, as Option 4 would divert off the UP/CSX line before reaching Yard Center. Yard Center presents so large a problem that the solution(s) are fairly straightforward.

The existing Main Line tracks run up the center of the yard, and often there are situations where all the tracks in the yard are occupied, so the possibility of delay to commuter trains is quite high. [One published anecdotal story told of a trip on Amtrak's "Cardinal", where the train averaged slightly over 11 mph from the time it entered the UP/CSX line at Thornton Junction, passed through Yard Center, and until it arrived at Union Station.] Field observations from the Sibley Boulevard overpass on one particular day showed that one main track was occupied by a northbound CSX train, and the usual high level of yard activity was occurring on the

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other tracks. The yard-access road off Sibley Boulevard was used to observe conditions along the east side of the facility. This location is of interest since it appeared to be a likely location for one or two potential bypass tracks, which would skirt the perimeter of the yard (see Sections 4.3 and 5.1).

The Study team also inspected the UP right-of-way just north of the crossing of 162nd Street (US 6). At this location the right-of-way is three tracks wide, consisting of the “inbound runner” (CN connecting track) and two main tracks. All three tracks have automatic equipment identification (AEI) readers just north of the CP 1019 relay house.

2.2.3 CN from Thornton Junction to Blue Island Junction

This route diverges from the UP/CSX line at Thornton Junction, crossing under the MED in Harvey. The existing MED Harvey Station, which is a part of the Harvey Transportation Center where several bus routes terminate, is approximately $\frac{3}{4}$ -mile distant to the south. There are streets on either side of the MED, both of which cross the CN at grade. Furthermore, the MED/IC right-of-way is on a retained fill, meaning the CN under the IC is like riding through a short tunnel. The opening in the IC structure is only wide enough for the double-track CN and paralleling CSX (ex-B&OCT) right-of-way, effectively precluding any potential construction of a transfer station here.

This line was observed just west of the Western Avenue grade crossing. Compromise joints between 115-pound rail (to the west) and 132-pound rail (to the east) were observed just west of the grade crossing. In addition, the south track was observed to have a severe low joint several hundred feet west of the crossing. At Park Avenue in Harvey, the team observed the underpasses for the CN and CSX lines under the MED/IC embankment, as well as the at-grade crossing of the CN and CSX lines just west of Park Avenue. This crossing consists of two diamonds, with appropriate signal protection. This new Main Line could be used not only by Metra and Amtrak passenger trains, but also by CSX freight trains bound for Riverdale that are otherwise blocked by UP/CSX yard activity in Dolton.

2.2.4 UP and NS North of Oakdale to 74th Street

The site visit was made via the railroad access road. The project team reviewed the alignment from the NS connection to the SWS at 74th Street on the north, to the end of the access road at 88th Street on the south. At the present time, the UP uses its own (ex-C&WI Dolton Branch) tracks until connecting to the NS (ex-C&WI Main Line track) around 81st Street. From there the UP utilizes trackage rights over the NS to access the isolated Canal Street Yard near 39th Street.

2.2.5 Existing Junctions

Perhaps a more serious constraint on capacity arises from at-grade crossings (diamonds) with other freight railroads. On the potential SES some of the current rail crossings of concern would be the CN at Thornton Junction, CSX and IHB at Dolton Junction, NS at 81st and the IC at 21st Street. Dispatcher data for these current crossing movements and the Main Lines over which the potential SouthEast Service would travel would be needed as a starting point. In addition, some knowledge of the railroads projections of traffic, use of lines, plans for new facilities, etc. would be needed for the future. From that, a total traffic load and conflicting crossing movements could be projected for the future higher frequencies of potential SES trains.

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There are several key junctions that would have to be traversed to link the various rail segments. Some of the towers are manned, including Dolton (controlled by IHB), Gresham (Metra RID), 21st Street (Amtrak) and 16th Street (Metra RID). Other junctions are remote-controlled, including Jay (EJ&E in Chicago Heights, controlled by UP), Thornton Junction (UP) and 74th Street (BRC/Metra). Oakdale is also controlled by the UP, and CRL must request permission to cross the junction.

2.2.6 Clearances

Freight railroad clearances are generally greater than the passenger clearances required for Metra trains. In recent years many freight railroads have been increasing their vertical clearances to allow for “double-stack” container cars. One such increase in clearance was recently completed when the Norfolk Southern undercut its single track where it passes under the RID at 79th Street. (Options 1 and 2 also would use the parallel center bay.) Some of the new segments would require the reinstallation of tracks previously abandoned and removed. No significant clearance problems appear to exist on these new lines. In general, no unusual or restricting clearance problems for bi-level commuter trains were found along any of the alignments.

2.2.7 Track, Roadbed, Signals, and Grade Crossings

Table 1 summarizes the existing circumstances regarding tracks and rail, signaling, speed limits, and grade crossings along the various segments utilized by the four short-listed alignments on the project. These results were obtained by the project staff from a variety of sources. The track work and signal information was obtained primarily from rule books, site inspections, the Metra Operations Profile plot for the UP/CSX, and conversations with various railroad personnel. The grade crossing data came from the same sources plus railroad valuation sheets, aerial photos, and aerial videos.

The scope of this effort was to determine typical conditions on each segment not currently carrying Metra trains. Information on Metra segments have been included for reference. All of the conditions reported are typical of a cross-section of railroad infrastructure. In reviewing the data, the general conclusion is that there are no unusual circumstances or particularly problematic track work, signaling or grade crossing conditions on any of the existing segments. Variations among the segments are addressed when the capital improvements required for each segment are quantified in order to provide consistent levels of service over all four alignments.

2.3 FREIGHT RAILROAD OPERATING CHARACTERISTICS

Projected future freight traffic data required for this planning effort generally were not available during this phase of the project. Even current levels of traffic sometimes were difficult to obtain. Through Metra’s efforts, some limited current freight traffic information was obtained, although it was formatted as total counts of trains over several days or hours. More-detailed dispatcher data of current operations over typical weekdays would be needed for further planning in the next Study phases.

This reticence to provide railroad traffic data is not unusual. Private railroads consider these data proprietary and are reluctant to release them. The situation is further compounded by the number of railroads involved and the presence of many at-grade crossings with other railroads. Main Line capacity for all of the alignments selected in this Study could certainly be severely limited by the freight traffic on the UP/CSX. Generally this traffic is flowing in the same direction as the potential Metra service. Congestion of this sort can be solved with additional tracks, assuming that sufficient right-of-way is available to build the tracks.

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**Table 1
Existing Conditions**

Segment	Railroads	Miles	Tracks ¹	Rail ²	Speed ³	Signals ⁴	Grade Crossings
Beecher to Thornton Jct	UP/CSX	17.6	2	119 # CWR	60 - 40	CTC	28
Thornton Jct to Yard Center	UP/CSX	0.7	2	119 # CWR	20	CTC	0
Yard Center to Oakdale	UP/CSX and UP	7.2	2	133 # CWR	40	CTC	17
Oakdale to 74th St	UP and NS	2.1	2	133 # CWR	40	CTC	0
87th St to 79th St	NS	1.1	2 - 1	n / a # CWR	40	CTC	0
74th St to 21st St	SWS	6.8	2	115 # Jointed	60	ABS	0
21st St to 16th St	IC	0.4	2	n / a # Jointed	n / a	ABS	0
Oakdale to Gresham	CRL	0.4	1	n / a # Jointed	10	Dark	5
Thornton Jct to Blue Island Jct	CN	4.1	2	n / a # Jointed	60	ABS	16
Blue Island Jct to Gresham	RID	6.2	2	119 # CWR	60	CTC	12
Gresham to 79th St	RID	1.2	2	115 # CWR	60	CTC	0
79th St to 16th St	RID	7.4	2	115 # CWR	70 - 60	CTC CBS	0
16 St to LaSalle St Sta	RID	1.1	2	115 # CWR	25 - 10	CBS	0

¹ Number of Main Line tracks

² Weight of rail (#); CWR = continuous welded rail

³ Speed limit given is maximum mph for passenger trains

⁴ Track-side signal system: CTC = Centralized Traffic Control; ABS = Automatic Block Signals; CBS = Controlled Block Signals; Dark = no signals at all

Metra supplied considerable data on freight traffic along sections of the UP (81st Street to Dolton Junction), UP/CSX (Thornton Junction to Beecher), and the BRC (74th to 87th Streets), and for junctions and control points along these lines by time of day. Survey data from June 1995 to April 1996 was collected for a one-week period on an every-other-month basis, which indicates that the level of traffic increases the farther south one goes on the UP and UP/CSX lines. The traffic-by-day-of-week data shows that Saturdays and Sundays are the highest trafficked. The flow of trains is also greatest in the period between 3:00 and 7:00 p.m. While Saturday and Sunday service is not part of the initial service plan for the potential SouthEast Service, the traffic data does indicate a high probability of interference due to freight traffic along the line and on intersecting routes. This would also hold true on weekdays.

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2.3.1 Freight Traffic on the UP and UP/CSX Lines

The traffic data for train operation on the UP and UP/CSX lines is significant. Metra-supplied data demonstrated that the traffic increases the further south on the line you go. On the date surveyed, 37 trains operated through 81st Street, while 60 passed through Beecher that same day. Regardless of the location, the peak traffic on the UP line occurs in the four hours coinciding with the p.m. peak. In that time period, 22 trains operated through Beecher (one train every 11 minutes). Broadly assuming an equal number in each direction, this means 22 minutes between trains in one direction. These findings are consistent with the expectations and observations throughout the duration of this project, i.e., that the line is densely trafficked even on weekdays and the possibility of freight train interference, or for having to go to additional expense in order to mitigate that interference, is high.

This confirms observations about the line made on first inspections and throughout subsequent visits. The UP/CSX and UP lines, despite having CTC and being double-tracked, are prone to delays and slow-moving trains, particularly on approach to Yard Center. This means that additional expenditure, over and above that required to bring the line into conformance with Metra standards, could be required in order to allow commuter trains to find the “path of least resistance” through the parade of freight trains in both directions.

2.3.2 NS Freight Traffic South of 74th Street

Data for the NS line (between 74th and 87th Streets) were not available. Consequently, field observations were made in order to make some assumptions. On one date in late 1996, a move where UP and NS trains exchanged cars at 79th Street was observed. This process was fairly time-consuming and did not appear to be the least bit hurried, leading to the assumption that this line is not too densely trafficked. In addition, it is understood that NS plans to convert Landers Yard from a general freight facility to a carrier-specific intermodal terminal, and that this change may lead to a further reduction in the number of moves through the area of interest to Metra for potential SouthEast Service.

Metra Dispatcher Tables were collected for the first full week of every other month between and including June 1995 and April 1996. The section of these tables dealing with CP 74th Street (on the south side of Chicago, where Metra’s SouthWest Service diverges from the other NS line that connects with the UP at 81st Street) is relevant to the Phase I South Suburban Study. The tables provide actual train operation data for the SWS line, and other railroad movements (by Amtrak, BRC, Conrail, NS, UP and extra trains) through this location allows a determination of the likelihood of interference between commuter and freight trains by time of day, using current traffic trends. By having exact times of train operation through this junction (rather than accumulated data in four-hour “windows”), a more precise determination of the possibility for interference with peak-period commuter trains could be made. Four sample weekdays throughout the data collection period are summarized in Appendix B.

2.3.3 Cross Traffic at Junctions

Cross-traffic data for the various junctions were also supplied by Metra, on a by-time-of-day basis. Of the intersecting lines, the BRC at 81st Street/Chicago has the highest average daily number of train movements, while the combined traffic of CSX and IHB trains at Dolton Junction puts that location in a close second place. Preliminary design concepts suggest that potential SES trains might be able to run without ever crossing the BRC at-grade, but the situation at Dolton Junction is a concern. The ultimate solution at this latter location would be a “Metra-only” flyover to avoid the cross-traffic interference. Review of the available data and field

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observations confirms the need for bypass track around Yard Center, and indicates that considerable other improvements may be required along the UP and UP/CSX lines, in order for commuter trains to proceed unimpeded.

Traffic data for Dolton Junction confirmed the likelihood of interference with potential SES trains. Daily traffic on the CSX and IHB trackage totaled 73 trains on the day surveyed. Of these, 13 trains operated in the a.m. peak (one every 18 minutes on average), while 19 trains crossed the UP line during the p.m. peak (one every 12 to 13 minutes).

The BRC and NS at WI Junction (81st Street) had the highest density of traffic: 88 trains per day, with 32 in the midday period. Peak-period traffic in the a.m. at this location totaled 13 movements, while p.m. peak-period traffic totaled 18 train movements. These flows average out to 3¼ trains per hour (one approximately every 18 minutes) in the a.m. and 4½ trains per hour (every 13 minutes) during the p.m. peak. The possibility of commuter train interference is apparent.

Data for other junctions, including WI Junction North (Metra SWS and freight trains operating north of 74th Street), WI Junction South (87th Street), 81st Street, Thornton Junction (CN) and Jay Tower (EJ&E) were collected as well. None of these locations had the volume of traffic found on either the BRC and NS or at Dolton Junction.

2.4 EXISTING TRANSPORTATION SERVICES

This section reviews the existing Chicago Transit Authority (CTA) and Pace services in relation to the possible alignments for the potential SES. It is recognized that there are other service providers, including several paratransit providers and other common carriers whose services would require consideration. Each of the alignments are considered from the south end of the potential service (Beecher) working north. CTA and Pace routes intersected by existing Metra lines (RID and SWS) are not discussed.

Two on-line communities (Chicago Heights and Thornton) have a sufficient concentration of Pace services in or near their central areas that could warrant the establishment of a transit center incorporated with the potential SES stations. All four of the alternative alignments would serve both of these potential transit centers. There are no other obvious transit center possibilities in the current fixed-route service structures.

2.4.1 Common Section of UP/CSX Line - Crete to Thornton Junction

At present, there is no fixed-route bus service south of Steger. Pace Route 358 crosses the UP/CSX alignment on Steger Road, which was identified as the tentative location for the potential Steger Station. This route parallels the UP/CSX line through South Chicago Heights, continuing into Chicago Heights. Four Pace routes terminate in downtown Chicago Heights at a single location, while a fifth route passes through this intersection, operating east-west on 16th Street. These routes could be diverted to the potential SES station, including an off-street terminal, creating a Chicago Heights Transit Center.

No other Pace routes are intersected until Thornton, where four routes meet (one of which operates north/south along Halsted Street). The other three routes terminate at Halsted, in line with Margaret Street in Thornton, with this location being a little over one mile west of the UP/CSX line at Washington Square Mall in Homewood. In addition, a fifth route terminates at Margaret and State, adjacent to the potential station site on the UP/CSX line. The three terminating routes could be rerouted to terminate at the SES station, as could

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the route which presently terminates at Margaret/State, again creating a transit center. Pace Route 448 parallels the UP/CSX line to the east from Thornton through South Holland, although it branches to the east via 170th Street.

2.4.2 UP/CSX - Thornton Junction to 90th Street/Chicago

Two Pace routes operate east-west using 162nd Street (US 6), intersecting the UP/CSX line at one potential station site for South Holland. The rail line bridges 162nd Street, although pull-off bays could be provided along 162nd for the Pace services. A part-time branch of Pace Route 350 terminates at the South Suburban College, approximately ¾-mile distant from the potential station site. This route could be extended to terminate at the station location, requiring provision of suitable layover/turnaround facilities.

Pace Route 353 parallels the UP/CSX line from 154th to 142nd (approximately), via South Park Road, to the east of the rail line. This route crosses the UP/CSX on Lincoln Avenue in Dolton, which is not considered as a potential station location. The Pace route continues north, paralleling the UP/CSX line via Michigan Avenue.

CTA Routes 34 and 108 (part-time) are crossed at-grade near 130th Street in Chicago. CTA Routes 34 and 119 and Pace Route 353 are crossed at Michigan Avenue, which the UP/CSX line crosses on a grade-separation. CTA Route 111 is crossed at-grade on both 111th and 115th Streets and at 95th Street, the UP/CSX line crosses Pace Routes 352 and 381 and CTA Routes 95W, 108 and 112 at-grade. Station sites have not been identified north of Dolton, including the above-mentioned crossings. At this time, the need or desire for in-city stations has not been determined.

2.4.3 UP - 90th to 80th Streets in Chicago

CTA's 87th Street service is crossed via a grade-separation. This is also true for Routes 8A and 79, both of which operate nearby on 79th Street. As in the other street crossings in Chicago, no potential station sites have been identified, though it is possible that a transfer station with the RID could be built at 79th Street if Option 1 were to be chosen.

2.4.4 CRL - UP to Gresham

CTA Route 8 is crossed at-grade on Halsted Street, but no station is envisioned for this location.

2.4.5 CN - Thornton Junction to Blue Island Junction

The CN route diverges from the UP/CSX line at Thornton Junction, crossing Pace Route 888 via a grade-separation at Indiana Avenue. This site has been mentioned as a possible station location, and if implemented, could be equipped with turn-off bays for the north-south bus service.

The UP/CSX crosses 159th Street at-grade, intersecting four Pace routes at this location. Several Pace routes are crossed on Halsted Street and Park Avenue in Harvey, with most of these routes destined for the Pace transit center adjacent to the MED station in downtown Harvey. Five routes terminate here, while two other routes pass through this area.

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The crossings of 147th Street (Sibley Boulevard) and Wood Street occur in rapid succession. Two Pace routes are intersected on these streets in close proximity to the potential (possibly joint) station site between Harvey and Dixmoor at 147th Street and Wood Street. Interstate 57 crosses over the CN around 143rd Street, and Pace Route 877 operates express via the interstate. Pace Route 349 is crossed at Dixie Highway, on the border of Posen and Dixmoor. This is the last fixed-route transit service intersected before the potential SES trains would leave the CN for the RID at Blue Island Junction.

2.5 POTENTIAL STATION LOCATIONS

Potential station locations were identified for each community along the UP/CSX or CN alignments. The potential locations were derived from the suggestions and expressed interest by the respective communities. The project staff conducted meetings with city or village managers/administrators, planners, and other community representatives from each municipality in order to identify potential station sites. For some communities, the station location had already been designated in local transportation plans. In several municipalities, the station location was identified at the site where the station was historically located along the railroad routes. The sites noted here as potential sites are those identified during the site visits with the communities; not all of them are included in their master plans, comprehensive plans, or transportation plans, unless they are identified as such. It should be understood that any and all locations are subject to change.

Appendix C provides community profiles for each of these municipalities, with relative geographic locations and information on local demographics, land uses, major employers, and development trends. Appendix D provides aerial photos of the suggested potential station sites and their surroundings. Appendix E provides a table summarizing the information in the text below. Note that most of this material was compiled in the Summer and Fall of 1996; therefore the Village of Beecher remains in the report even though in 1998 the Village Board of Trustees voted not to be included in further planning for the potential SES.

2.5.1 Beecher

Community leaders in Beecher have distinct plans for the community, designed to enhance its rural character. One initiative deals specifically with downtown historic preservation as an economic development tool. They have discussed three options for a station site, one south of downtown, one in the center of downtown as a part of the historic district, and one further north adjacent to a proposed industrial park. If the proposed industrial park development is successful, a station at that location could provide a benefit as a destination for employees that live north of Beecher and work in the office park (pending later reverse-commute train service). An important decision for the station location in Beecher would relate to the focus and purpose of the station, and whether it should be a local downtown stop or a regional park-and-ride.

2.5.1.1 Beecher South

The first of Beecher's potential station sites is located just south of downtown Beecher and south of Indiana Avenue. This site is vacant farm land situated in the southwest quadrant of the intersection of the railroad and Indiana Avenue. Beecher's downtown is located just north of this site across Indiana Avenue; therefore, a station at this site could be tied into the existing plans for downtown redevelopment. East of the site is a new residential development. This location provides good roadway access from surrounding eastern Will County to the site from Indiana Avenue (the road goes west into Peotone). The site could provide enough room to be developed as a regional, end-of-the-line station, similar to the facility at University Park on the MED. This location provides room for a park-and-ride, overnight storage yard and maintenance facility.

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2.5.1.2 Beecher Downtown

Beecher officials have identified a potential station site on the north side of Penfield Road straddling the UP/CSX tracks where the historic C&EI station was located. This site is in the middle of downtown Beecher and west of the existing municipal buildings, including the Village Hall. Most of the land adjacent to the tracks is owned by the UP/CSX. Beecher would like to relocate the station on this site and recreate the components that helped Beecher grow in the first place, including the train station and commercial development. Recent plans have proposed a designated historic district surrounding this station area. The plans include support to businesses in the district for facade renovation, recreating the district in the late-1800s architectural style. New commercial buildings also would be required to follow the architectural guidelines. Proposed new commercial activities include a movie theater and additional retail establishments.

The land use on Gould Street to the west and on Reed Street to the east of the tracks is predominately commercial. An early tavern/hotel also still exists (although it is a residence now) on the west side of the tracks. Land uses in some of the historic buildings along Penfield Road to the south of this site include antique shops and a flower shop. Beyond the historic district, the station area is surrounded primarily by residential land uses.

South of the crossing between Penfield Road and the UP/CSX is the site for a new Hallmark store. This store would act as the anchor to Beecher's downtown commercial redevelopment. The station site is also adjacent to a large active grain silo. If the facility were to close, Village officials have shown interest in keeping the structure intact on site as part of the historic district and a monument to the activities and development of Beecher. Although Penfield Road is a local road, it provides access to the downtown station site from east and west of the site. A station at this location would enhance the redevelopment activities proposed by the Village and would benefit the community. However, on a regional level, if demand for parking grew, this potential site would likely become physically constrained.

2.5.1.3 Beecher North

The north end of Beecher is zoned industrial and has good roadway access via Church Road. At present, the area is primarily agricultural. Recent efforts have started to develop an industrial park at this location north of Church Road as part of a tax increment financing (TIF) district. This third potential station site for Beecher would be developed adjacent to the industrial park. A station at this site could potentially attract reverse commuters to the industrial park. However, such activities (both build-out and higher-level Metra service) are many years away. The site could also house the maintenance yard and storage facilities. However, due to the superior benefits of the other two Beecher sites, it was recommended that this site not be studied further.

2.5.2 Crete

The Village of Crete has identified two locations for potential stations. These areas are very different from each other, one being in the traditional downtown and the other amidst what is presently vacant land south of the Village. The distance between the two locations is about two miles. Therefore, both options could be considered viable locations for stations, with the downtown station acting as a local stop and the Balmoral Park facility as a larger regional station site for the longer term.

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2.5.2.1 Crete Downtown

As part of a larger comprehensive plan, the Village of Crete has identified and outlined the layout for a commuter rail station and a larger site-planning area in their downtown. The area is located north of Exchange Street, the main east-west street, on the east side of the UP/CSX tracks, north of First Street and west of IL 1. Within that planning area, the site is located between Linden Avenue and 5th Street. To the east is Crete Park, existing residential uses, and proposed commercial business uses. The station plan includes over 175 spaces for park-and-ride users. This parking area could include shared use during evenings and weekends, allowing use by the patrons of the adjacent park. The former railroad right-of-way has been purchased by the Village.

The main access route would be First Street on the south end of the site. The plans also call for one-way traffic from IL 1 down 5th Street and Linden Street to aid in facilitating automobile traffic. Also, Village officials have discussed converting the residential area within the station plan (on Linden and 5th Streets) to commercial. Commercial uses are also proposed west of the tracks, in an area which today is primarily residential. The community's municipal buildings are located south of the potential station on Exchange Street to the east of the UP/CSX tracks. This station plan ties in with the Village's historic preservation ordinance to bring the early 1900s feel back to the community; the potential station at this site would support the community's revitalization plans.

2.5.2.2 Balmoral Park

The Village of Crete is actively growing to the south. The general area is a combination of new subdivisions and agricultural land. Balmoral Park is located nearly two miles south of downtown Crete, with the UP/CSX tracks located about a half-mile to the west. In viewing the future growth of the community, the Village has suggested considering a commuter rail location west of the race track. The vacant land between was once an off-line terminal for the C&EI to bring patrons to the track, at a time when both the track and the station were known as "Lincoln Fields". Track owners have shown interest in a station at this location.

Due to the amount of vacant land at this location, this potential station creates a number of development options and opportunities for its surrounding area. For example, the station could be tied into a larger transit-oriented development (TOD), bringing together multiple housing types and commercial activities. The station could also be developed as part of an entertainment district between the station to the west and the race track to the east. Among the potential station sites along the alignment, this site probably brings the highest potential for new development. Other potential stations are in areas that are more landlocked.

This station could be developed as a regional station including park-and-ride facilities with room to grow, although a limiting factor could be the start-up train schedule. Ideally, a station at Balmoral could serve race track patrons, but a suggested low-level service of eight trains per day, oriented to the Chicago CBD, likely would not meet the needs of the race track patrons. Service to and from the track would need to await higher service levels and reverse-commute trains (depending on the origins of track patrons), although a park-and-ride could be developed sooner while further development plans are formulated.

2.5.3 Steger

The station site in the Village of Steger is located in the heart of downtown, on the west side of the railroad tracks just south of Steger Road (34th Street). This is the site of the old C&EI station; the old depot is now leased to a construction company that uses the space for equipment storage. The land north of the Steger Road-

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UP/CSX crossing is owned by the Village, which purchased the land for parking as an inducement to attract the adjacent K-Mart store. The lot has 400 spaces and could accommodate joint-use commuter parking without taking needed spaces away from K-Mart. The Village would like to use the original depot.

The area surrounding the site is primarily convenience-oriented neighborhood-commercial, with two strip shopping centers (Steger Plaza and Steger Commons) in addition to the K-Mart store. The potential station site is well-located with regard to these nearby retail uses and parking. While the Village does not have a comprehensive plan or downtown plan that covers this area, a station here is compatible with the existing land uses and would serve to enhance the activity in the downtown area. The Steger location is in close proximity to other potential stations where spacing might be an issue; for example, downtown Crete is 1.6 miles to the south and one potential South Chicago Heights station site is only 0.8 miles to the north.

2.5.4 South Chicago Heights

2.5.4.1 Sauk Trail Road

This potential site is located between Jackson Avenue (Halsted) and East End Avenue on the north side of Sauk Trail Road, which is a main thoroughfare in South Chicago Heights. It is an abandoned industrial site previously owned by the Dowel Company. Additional right-of-way east of the tracks is owned by the railroad. Other industrial and commercial activities are located along Sauk Trail Road; a number of industrial supply companies are located on the south side of Sauk Trail Road. West of the tracks is zoned for both business and residential uses. This site would provide good access for station users, whether walking or driving. However, station spacing between South Chicago Heights and station locations in Steger (0.8 miles to the south) and downtown Chicago Heights (1.5 miles to the north) is short, and would have to be examined more closely in further analyses of station locations and spacing between them.

2.5.4.2 Jackson Avenue

This potential site is located at Jackson Avenue and 28th Street. The site is presently a park, and is just south of the existing police station (which used to be the Village Hall). West of the tracks some municipal buildings are to the north, and residential areas are to the west and south. The main access route to this location would be IL 1 to 28th Street, through the residential neighborhood. East of the Main Line tracks is a seven-track rail yard that is currently inactive. A closed landfill is located east of parallel East End Avenue. If the inactive rail yard was developable, then the station area and parking could be developed on the east side of the rail tracks. The site could be accessed from East End Avenue and provisions made to use the inactive rail yard site as station facilities if the yard was removed. Such a configuration would ease traffic through the residential area and enhance the potential for development surrounding the east side of the station.

2.5.5 Chicago Heights

2.5.5.1 Chicago Heights Downtown

The City has expressed a preference for creating an SES station and combined relocated transit center in the central area of Chicago Heights, requiring only minor diversion of the four Pace routes serving the existing transit center in Chicago Heights' central business district. The potential station site is located downtown, on the east side of Halsted Street between 17th Street and Illinois Avenue. Downtown Chicago Heights has

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deteriorated over the past twenty years as large retailers such as J.C.Penney, Sears, and Carson Pirie Scott closed their stores. What had once been a vibrant and major retail node for the south suburbs has become a more desolate area with vacant land and buildings. The main functions in downtown Chicago Heights are now municipal and institutional, including St. James Hospital located along Chicago Road. The First National Bank building, located on Halsted Street at 17th Street is an anchor for the downtown, though the bank itself relocated its office from the building. Ameritech has an office building on Vincennes Avenue, close to the site of the potential train station. In the immediate vicinity are a VFW Hall and several small businesses. Limited retail use is to the north along Halsted and Otto Streets. Two blocks east of the railroad tracks is a former industrial building now used as an incubator facility operated by the Regional Economic Development Coordinating Council.

The City's recently adopted comprehensive plan considers the redevelopment of the City Center to be an important goal. The plan area is roughly bounded by Lincoln Highway on the north, the former Michigan Central Railroad (Conrail) right-of-way on the south, the UP/CSX line on the east and Euclid Avenue on the west. While recognizing that the downtown is no longer the retail focus of the city, the area's plans exhibit the needs of the community to upgrade the downtown with a new focus on institutional, civic and mixed uses. Thus, a train station within this area is viewed as a catalyst for downtown redevelopment, particularly for convenience-oriented retailing to serve commuters and nearby residents. A station would also improve the prospects for attracting residential development, one of the recommended uses for downtown. In addition, the growing civic and institutional uses downtown (particularly the municipal offices and hospital) could benefit from proximity to the station.

The City already owns a large parking lot near this location, which could easily be used for commuter park-and-ride. The lot occupies one full square block between Halsted Street, Chicago Road, 17th Street and Independence Way. This lot is underutilized at present and could easily accommodate commuter parking. The lot is used for a 4th of July festival, and consideration is being given to holding a farmers' market there. These special events would not interfere with its use as commuter parking. In association with other transportation facilities, the station site in Chicago Heights could become a transportation center combining Metra activities with existing Pace facilities. Presently, Pace runs a transfer center just two blocks west and north of the potential location. Pace sees the demand for bus service in this area growing and is presently increasing the size of their facility.

2.5.5.2 EJ&E Rail Crossing

A second potential site is at the crossing between the EJ&E and UP/CSX, several blocks from downtown. This location is not considered as an alternative by the City. The crossing between these rail routes is in the midst of a manufacturing area. The nearest residential area to the southeast of the connection is considered partially blighted by the city's planners. The location would not further the goals of improving the downtown area, and at this point would not offer the opportunity to provide ancillary services for commuters. Space for parking is not readily available at this location. It is more likely that a transfer facility between the two potential rail routes could be developed later, should both routes prove to be feasible for commuter rail. A three-block walkway could be built extending north to the UP/CSX station in downtown Chicago Heights and the municipal parking lot to tie the potential transfer station to downtown Chicago Heights.

2.5.6 Glenwood

The Village of Glenwood held a design competition to combine Main Street revitalization with new municipal facilities. As part of this significant redevelopment plan to build a new town center, Glenwood has identified

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a station site that would be an integral part of a mixed-use development. As proposed, the redevelopment would include a train station on the east side of the railroad tracks and a commuter passenger drop-off/kiss-and-ride along the west side of the railroad tracks. Park-and-ride facilities would be provided on the west side of the tracks between Main and Center Streets, and on an 18-acre Village-owned parcel on the east side of the tracks on Young Street north of Center Street. Key access routes to the station would be by Main Street, Center Street, Young Street, and Maple Street.

To the west of the realigned Campbell Street (west of the tracks) would be a town square, new Village Hall, the existing police station and water tower, retail and office space, and elderly housing. To the east of the railroad tracks would be the existing buildings at Main and Young Streets, with new development along Center Street, most likely office and multi-family residential. The intent of the development plan is to create a sense of place for the downtown and Village overall, and the train station would become a key element of this plan.

2.5.7 Thornton

The Village of Thornton suggested three possible station locations, all of which are associated with their downtown TIF district. In general, Thornton sees station development as an opportunity to bring a tax base to the area. The preferred location is at the center of Thornton's downtown at Margaret and Williams Streets.

2.5.7.1 Thornton Downtown

The location at Margaret and Williams Streets is comprised of ten 60'x120' contiguous lots totaling 1.65 acres, west of the UP/CSX tracks. Most of the lots are vacant, although three buildings remain on this square-block of land. South of the station site there is more land which could be used for additional parking, but has not been designated as such. The downtown site is at the key intersection in central Thornton; a 24-hour traffic count identified traffic flow at over 18,000 cars and trucks. Margaret Street is the main access road going west through the quarries toward Homewood.

The Village Hall and library are located directly to the east of the tracks, also along Margaret Street. Some commercial activities are located surrounding this potential station area, for example, between the tracks and the municipal buildings is the Thornton Paint company (occupying the former C&EI station site). A banquet hall is located on the north side of Margaret Street. A boarded-up building and a trucking facility are also located immediately north of the site. As part of the TIF district, Village officials hope to draw commercial activities into the area surrounding this location. The downtown site is the recommended location for a local station within the Village of Thornton. However, this site is less than two miles from other potential station sites such as South Holland's CN station option (1.4 miles) to the north and Glenwood (1.7 miles) to the south. As a result, distance between stations might be an issue.

2.5.7.2 Harriet Street

The second potential site for Thornton's commuter rail station is a block north of the downtown site. This 0.8 acre site is at Harriet and Williams Streets. While north-south access to the location is similar to that of Margaret Street along Williams Street, east-west access is less desirable. Harriet Street runs west and dead-ends at the quarries. The actual property is comprised of five 60' x 120' contiguous lots, zoned for business. This location is also in the community's TIF district and identified by local officials for redevelopment. At only a half the size of the Margaret Street site, this location would be better utilized as a second parking lot for the downtown station site to create approximately 2.5 acres of total parking.

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2.5.7.3 Thornton North

Thornton's third option for a commuter rail station is located in the north part of the Village, near I-80 along Williams Street. This piece of property is about 1.9 acres, west of the UP/CSX tracks and just west of the I-80/Halsted interchange. Williams Street is the only access to this location. There is no east-west access road. Thornton, however, would like the Department of Transportation and Tollway Authority to put in an interchange just north of this location at Williams Street and I-80. How timely or likely that would be is an important question for further review.

The site is bounded by the quarry on the west, I-80 on the north, a residential area on the east, and an industrial area to the south. This location is at the north end of Thornton's downtown TIF district, and is just a tenth of a mile and across I-80 from South Holland's potential station at the Babe Ruth Ball Field. Due to the short distances between this location and other options, and poor east-west access, it was recommended that this station option not be considered.

2.5.8 South Holland

The Village of South Holland identified several potential station locations. The best choice for South Holland varies, depending on the chosen alignment. The intersection between the UP/CSX and the CN occurs at Thornton Junction in the southern portion of the community. If the alignment runs through downtown South Holland, the recommended site would be the downtown site. If the preferred alignment runs on the CN (Option 4), then the combination of two sites at 168th Street would be recommended.

2.5.8.1 Babe Ruth Ball Field - 173rd and Vincennes

The site located furthest south is the Babe Ruth Ball Field location. This nine-acre site on the west side of the railroad tracks is at the southern boundary of the village and is actually partially located in Thornton, with I-80 directly south of the site. A large rock pile, created in the construction of the Deep Tunnel, is to the north and a large quarry is to the west. The area to the east of the railroad is primarily residential. The site is controlled by the South Holland Park District.

The site has good north-south access off Vincennes Road (State Street), and also eastern access from 173rd Street via South Park Avenue, but since 173rd Street is a narrow street surrounded by homes on both sides, the resulting east-west access is considered poor. The site is at the far southern border of the Village and is farther from the residential population base. With the other station locations in South Holland providing better access and a larger residential base, this option was not recommended for a station location.

2.5.8.2 168th Street

Operation of the potential SES via the CN alignment means that the proposed station sites in downtown South Holland and Dolton would go unserved. The CN line traverses an area of limited development, particularly where it crosses Indiana Avenue. However, it is possible that a South Holland station could be located near the grade-separated crossing of this thoroughfare, or near the grade crossing for 159th Street, to compensate for the loss of the potential site on the UP/CSX line. It must also be recognized that by the point where the CN crosses 159th Street, this location is only a mile from the MED Harvey station, making the Indiana Avenue location more desirable.

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Two parcels of land are currently vacant and for sale on the northeast and southwest sides of 168th Street and the UP/CSX tracks. One site, on the south side of 168th Street has 18 acres, while a seven-acre parcel fronting on 168th Street, known as the Permacrete property, is located in the triangle formed between 168th, UP/CSX and CN. Nearby uses are industrial and warehousing. On the east side of the UP/CSX tracks south of 168th Street is a residential neighborhood. In addition, the aforementioned rock pile is located directly south of the 18-acre parcel and extends to 173rd Street. It must be removed within five years and at that time, the site could be available for a potential station and parking facility.

Access to these sites is somewhat problematic because few streets cross the railroad tracks. At present, the only access is from 168th Street via State Street or South Park Avenue. The site has the same access problems from the east side of the Village as does the Taft Drive site, although it is slightly more accessible from South Park Avenue. If Option 4 using the CN is identified as the preferred alternative in this Study, then a station site at this location would be recommended.

2.5.8.3 Taft Drive

This site is a ten-acre parcel at the southeast corner of Taft Drive and State Street, northwest of the crossing between the UP/CSX and CN tracks. The site is located in an industrial area with a large industrial concentration west of State Street. Access to the site would be off State Street, which is a major north-south road on the west side of the Village. However, it is difficult to reach the site from the east side of the Village because few nearby streets cross the tracks. The site has excellent access for the industrial park on the west side of the Village, but poor access for residential areas east of the tracks. Due to the surrounding composition of industrial use and the poor access, this station location is relatively less desirable.

2.5.8.4 South Holland Downtown

The Village identified one potential site on the east side of the tracks just north of 162nd Street [(US 6), which passes under the tracks], considered to be the downtown of South Holland. The 4.7-acre site was once occupied by Wausau Lumber, which has closed, and has most recently been used for storage of new automobiles. The site extends as far north as the Little Calumet River. It is in an industrially zoned area south of the Yard Center complex. If either Options 1, 2, or 3 were chosen as the suggested alignment for this Study, then the recommendation would be for a station at this site.

This location has the advantage of proximity to the core of South Holland, with its civic complex and retail uses on 162nd Street and a pedestrian-oriented specialty shopping area north of 162nd Street along South Park Avenue. In addition, a Park District recreational facility is on 161st Place just west of South Park Avenue. South Suburban Community College, which could generate significant ridership, is nearby at 162nd and State Streets. The Village is encouraging additional commercial and multi-family residential development along 162nd Street, and has recently granted approvals for senior citizen housing at the southwest quadrant of 162nd Street and the railroad tracks. The Village has also used TIF financing for several redevelopment projects along 162nd Street, and is considering redevelopment further east. A station here would be consistent with Village actions to strengthen this corridor and would enhance the pedestrian-oriented retail district on South Park Avenue, although the Village has not identified this or any other site as their first choice for the potential station. However, this is the only site under consideration that could provide commuter-oriented retail stores and services.

Access to the site is less than ideal. While 162nd Street and South Park Avenue are major east-west and north-south streets serving the village (and 162nd is the only street providing unimpeded east-west access under the

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railroad tracks), access to the site is off of South Park Avenue west on 161st Place. More than likely, 161st Place would become congested with commuter traffic and there would be a need for better access. Older homes along 162nd Street are no longer compatible with the level of commercial activity on the street. If this site is chosen for the station, the Village might want to acquire these homes to provide better station access, redeveloping the area with transit-oriented development.

2.5.9 Dolton

The Village of Dolton's potential station site is directly west of downtown along 142nd Street. Several light industrial facilities are adjacent to the potential site. These include Lansing Truck (currently in receivership) and a warehouse building currently for lease. The Village owns the station parcel and would be able to purchase the Lansing Truck property. A station here would be readily accessible to nearby residential neighborhoods. While many Dolton residents drive to neighboring Riverdale for the Metra Electric service, few roads cross the busy railroad tracks, and only one road (Sibley Boulevard) offers uninterrupted travel. A station here could also serve some of the larger industrial firms located north of 142nd Street, such as Safety Kleen and Ball-Foster Glass Container.

Village officials would like to see more activity in the downtown area, although a downtown plan completed in 1990 was never adopted or implemented. The Dolton Village Mall, located within two blocks of the station site, is the focus of the downtown area. It had extensive vacancies four years ago, but the ground-floor space is now largely occupied. However, second-story office space is in poor condition and is largely vacant. A portion of the mall was converted into the Dolton Expo Center years ago. This facility is used mostly on weekends. The Village also owns a parking lot at 142nd Street and Greenwood, used for overflow parking for the nearby Expo Center. This lot would be able to accommodate commuter parking as a park-and-ride facility.

However, further technical analysis has identified a possible conflict between Dolton's identified station location and activities at Yard Center and Dolton Junction. The Village's potential station location could interrupt activities at the junction. Also, trains stopping at this location would be required to stop in the midst of Main Street, unless the platform at the location is short. Therefore, the project's technical staff has identified an alternative station site for Dolton just south of Main Street on the east side of the street. This location is presently utility right-of-way, with additional residential uses to the east. The site is still well accessed by Main Street on the north end and 144th Street on the south end of the station site. The municipal parking facility is only a half-block distant from the site. Also, the location would tie into the community interests of the Village.

2.5.10 Harvey

The City of Harvey is presently served by Metra's Electric District trains. The intersection of the CN and the MED along Option 4 in downtown Harvey would not be a viable station location based on physical and topographical constraints. However, if Option 4 was chosen for the potential SES, then the opportunity exists to add an additional station along the CN further northwest of downtown Harvey. The abandoned Wyman-Gordon facility located at Sibley Boulevard and Wood Street was identified by Harvey's planners as a potential station site. Use of this location as a station site would be a prime example of reusing the city's brownfields for economic development purposes.

The City is presently in the process of acquiring this land for future development. A majority of the 56 acres are located in Harvey, but a portion lies in Dixmoor. The site is also near a number of new residential

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developments both in Harvey and in Dixmoor. As a result, this site would also provide an opportunity for cooperation between these communities for the benefit of both. This location is in close proximity to the I-57/Sibley Boulevard interchange. Both Wood Street and Sibley Boulevard provide good access to the site. Adding a train station to the plans for the redevelopment at Wyman-Gordon would increase the opportunity to provide transit-oriented commercial and business development at this site.

2.5.11 Dixmoor

The Village of Dixmoor has identified three potential sites for a station, two of which would be joint stations with neighboring Harvey or Posen. The Village's first choice would be the Wyman-Gordon plant site in Harvey at Sibley Boulevard and Wood Street as discussed above. The site extends into Dixmoor at 145th Street and has been an eyesore for years. The location would easily serve Dixmoor residents, especially those moving into the new housing developed north of this site.

The second site would be under the Commonwealth Edison lines at Spaulding Avenue and Robey Street. Parking could be provided under the utility lines, with a station near the planned new municipal complex. A station at this location would be a local stop with minimal parking. Due to the proximity of the other two Dixmoor station locations, this location is relatively less desirable.

The third site is an open area west of Dixie Highway and I-57 at 141st Street in Posen. Immediately east of this site in Dixmoor is land under Commonwealth Edison power lines that could be used for parking. Dixmoor and Posen have been trying to attract more business to this area, especially along Dixie Highway. The area has good access off of I-57, and a station here, within TIF districts of both communities, would be a great benefit for possible economic development.

2.5.12 Posen

The Village of Posen identified a potential station location at Dixie Highway and 141st Street, which could be a joint station with neighboring Dixmoor as mentioned above. The five-acre location, in the northern part of Posen's TIF district, contains the foundation of a razed lumber yard that once stood on this land. Surrounding land uses include a mobile home park, Commonwealth Edison power lines (in Dixmoor), and some light industrial businesses. A station at this location would allow residents from Posen and Dixmoor to walk to the station, and would have ample room for park-and-ride facilities. The location, however, is relatively close to the potential station sites proposed in Dixmoor and Harvey.

2.5.13 Blue Island

Option 4 would connect the CN to the RID in Blue Island. Blue Island currently has six Metra stations on both the Rock Island and Electric lines. According to city staff, there is ample parking at the Vermont Street station to accommodate additional service with the potential SES line. The station is proximate to downtown and St. Francis Hospital, the city's largest employer. Given the availability of parking, the existing station and the added benefit of transferring from one line to the new line, makes this a very good potential station site. An alternate site is possible at the north end of the city in a TIF District on the east side of the RID Main Line tracks between 120th and 121st Streets. The city owns the land and there is ample land to accommodate both a station and parking.

3.0 FUTURE PLANS

Examination of future plans, with development and growth projections, is intended to provide an important understanding of the communities located along this potential rail service corridor. Other factors such as demographic and socioeconomic trends play a key role for communities in guiding various land uses. Regional economic factors might also drive both current and future land-use decisions made by either municipal or private concerns.

There appear to be no significant changes planned in railroad traffic volumes or operations, nor are there any planned abandonments along the lines studied in this project. There are some alignment changes and/or improvements planned along current Metra lines which could be utilized by the potential SES. These alterations are assumed to be completed before the new service would start. Some of the difficulty in determining future (private) railroad plans arises from the proprietary nature of planning data. Future traffic volumes can also be impacted by railroad mergers, which are often difficult to predict, and operational agreements.

3.1 STUDY-AREA DEMOGRAPHICS

The planning activities involved in this section address the existing conditions and future trends in land use and demographics. The first section describes the history of growth and development in Cook and Will Counties. The second section reviews market-area trends, setting the stage for overall growth trends for the south suburbs and potential riders for the commuter rail line. The third section that follows offers a discussion of the key issues affecting the municipalities adjacent to the potential commuter rail alignment. Detailed summaries of characteristics for each SES corridor community are provided in Appendix C which presents an overview “profile” of each of the municipalities, their location, demographics, employment, land uses, and development trends. The information provided acts as a basis for assessing the likely effect of potential commuter rail service on these communities.

In summary, the communities along the UP/CSX alignment are in the midst of change. They differ significantly in terms of demographics, urbanization, and employment. The northern portion of the study area is largely urban and physically built-out, while the southern portion in Will County remains largely agricultural outside of the communities. As a result, the southern communities are actively annexing and growing while the northern communities are witnessing aging populations and housing turnover. Although the south suburban region has been characterized by the loss of its manufacturing jobs, other industries still endure. The present trends in population and employment are factored into Northeastern Illinois Planning Commission's (NIPC) population and employment forecasts for 2020. The NIPC forecasts portray increases in both population and employment.

3.1.1 Regional Economic Growth and Development Trends

The south side of the City of Chicago and close-in suburban communities were the region's traditional location for heavy industry and its high-paying unionized jobs. Relatively few workers commuted to clerical jobs in downtown Chicago before 1970. But with cutbacks in the steel industry and the general decline in industrial production as a share of the region's economic base, Chicago's south side and nearby suburbs lost much of their ability to compete for a proportional share of new housing development and jobs. More workers have had to look outside the area to find jobs. For the last 25 years, the south suburbs have grown more slowly than suburban Chicago generally. Their share of regional population and jobs has not increased. The south suburbs

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captured a smaller share of new housing construction than other suburban sub-regions, and have experienced lower-than-average appreciation of value for existing homes. The south suburban area provides a wide range of housing types at some of the most affordable prices in the Chicago region. However, the concentration of job growth in downtown Chicago, in DuPage County and in the northern suburbs during the last two decades, poor east-west access to existing Metra stations and ever-increasing highway congestion have meant longer-than-average commuting times for south suburban residents. In part a result of the shifting location of regional job opportunities, lower labor-force participation rates and higher-than-average unemployment rates have been characteristic of south suburban communities.

Since the last recession, the pace of growth has increased in many southwestern suburban areas, but the southeastern suburban communities near the Indiana border have not benefited to the same extent. In southern Cook County, the areas around Orland Park and Tinley Park have been capturing the bulk of development activity. Economic growth in Will County has been strong, with the number of private sector jobs growing 18.8% between 1990 and 1994. However, this development is focused in communities along Interstate 55 (Bolingbrook, Romeoville, Lockport, Plainfield, and Joliet) and in Homer and Frankfort Townships south of Interstate 80, rather than in the eastern portion of the county. The programmed extension of I-355 from I-55 to I-80 is likely to further increase development activity in the northwestern part of Will County. South suburban officials are discussing a longer extension of I-355 south of I-80 heading east to Indiana, with possible corridor alignments also under discussion by the Tollway Authority for I-80 to I-57 and potential extensions beyond I-57 into Indiana. There are no specific plans for these segments at present, although they are considered in many local and regional transportation plans. Such an extended road would have a significant effect on development in and around Beecher and Crete.

Most of the rail corridor communities lack corporate headquarters, major office buildings, and modern business parks. Combined with the area's distance from downtown and the two existing airports, these factors deter employers from locating in the southeastern suburbs despite their development cost advantages. Communities in Cook County are further disadvantaged by the higher real estate tax burden on commercial properties. However, some major housing developments and significant employers are located between the UP/CSX alignment and the Indiana border.

3.1.2 Population and Employment Trends

In addition to examining individual communities and their potential contributions to or effects from the plans for a SES, it is also important to take a macro/comprehensive view of the study area as a whole, assessing the general state of population and employment in the present and in the future. These future numbers could translate, in later phases of the Study, to substantial projected ridership for this potential Metra service.

As a market area, this Study focuses on a wedge-shaped area in the southeastern part of the Chicago Region. Approximately two townships wide at its base, extending from the Indiana border to about six miles west of the potential rail alignment, the study area tapers northward, ending at the potential terminal in Downtown Chicago. This area includes many of the rapidly developing communities and unincorporated areas in Will County, along with a significant portion of southeastern Cook County as well as Chicago's South Side.

The study area contains a range of socioeconomic characteristics as well as urban and suburban development forms. The southernmost portion, anchored by Beecher, is still largely rural in nature and has the greatest supply of undeveloped land. The southern core of the study area includes several suburban communities that are currently undergoing a fairly significant amount of population growth, particularly between Crete and Chicago Heights. The northern portion of the study area includes more mature suburban communities that are

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nearly fully developed, and therefore are not anticipated to increase their size dramatically, either in population or in employment. The northernmost section of the study area includes basically static parts of Cook County and the City of Chicago, communities that are typified by stable, or in some cases declining, population and employment.

3.1.2.1 Base Population and Employment Characteristics

The 1990 base population and employment characteristics and the growth forecasts for 2020 are derived from the 2020 Trends Land Use Scenario developed by the Northeastern Illinois Planning Commission (NIPC) for the Chicago Area Transportation Study (CATS) Destination 2020 Regional Transportation Plan (RTP). Although NIPC had derived three separate forecasts, all maps and tables for this Study depend on the NIPC Trends forecast as the sole source of data (other NIPC forecasts looked at an in-fill scenario and a South Suburban Airport scenario). After consultation with NIPC and Metra staff, the Study team felt that the 2020 Trends forecasts were the most representative of the growth potential in the study area. (Note that NIPC forecasts have since been revised; the latest figures will be used in later Study phases.)

The base population density in the study area is oriented around the potential rail alignment. It is greatest in concentration in Steger, South Chicago Heights, and Chicago Heights along the southern part of the UP/CSX alignment, and in South Holland and Dolton along the northern part of the alignment. Overall population density generally increases going northward from the southern end. The base employment densities are very low in the far southern portion of the study area. This is representative of the more rural character south of Crete and surrounding Beecher. Employment densities increase significantly in the northern portions of the study area. The Chicago Heights area includes some of the highest employment densities in the SES corridor.

Given the CBD orientation of the commuter rail service, suburban employment density is not such a significant indicator of potential commuter rail use at the likely start-up level of service. Similar to the NCS, the limited amount of service at start-up would be mostly CBD-oriented. The 1990 Census for Transportation Planning Package (CTPP) indicates that nearly 30 percent of the population in the corridor travels to the Chicago CBD, primarily for trips to work, appearing to offer a significant market.

3.1.2.2 Forecast Growth in Population and Employment

The 2020 population forecast highlights significant projected growth throughout the entire study area. From Beecher north through Crete, Steger and South Chicago Heights, the corridor is expected to have a dramatic increase in population density. This type of growth, particularly given its location in the southern (farthest) portions of the study area, represents greatly increased potential for additional commuter rail ridership. The dramatic increase in population density, and the continued predominance of the Chicago CBD as an employment center, reinforce this apparent potential. (Note that the development of actual ridership forecasts would be a component of the Phase II Feasibility Study.)

The 2020 employment densities also forecast an increase in employment in the study area, especially in the area along the rail corridor. As with population growth, employment forecasts predict significant increases in the southern concentration of the market area, extending from the Indiana border west to I-57. Increased employment densities eventually could attract reverse-commute trips, once sufficient service is in place to accommodate them. Concurrent increases in levels of service should be planned to coincide with this expected job growth. This growth may be enhanced further by the development associated with the proposed South Suburban Airport between Beecher and Peotone, if and when this project occurs.

3.1.2.3 Comparison of Study-Area Growth 1990 to 2020

Considering the study area as a whole, on a percentage basis there is a significant amount of growth expected. It is also evident that the majority of growth in both population and employment is in the southern portion of the study area. Table 2 highlights the growth in population and employment in the study area and in the entire areas of the two counties. Note that these percentage figures and those that follow in subsequent sections could be misleading if taken at face value. The actual numbers are really more important, since smaller base numbers will yield higher growth percentages.

Table 2
Forecast of Study-Area Growth 1990 to 2020

	1990	2020	Percent Change
Employment			
Will County	100,906	289,733	187%
Cook County	2,832,426	3,293,792	16%
Study Area	953,200	1,907,812	100%
Population			
Will County	334,024	765,043	129%
Cook County	5,291,127	5,492,271	4%
Study Area	1,841,344	1,887,190	3%

Source: Population and employment forecasts derived from the NIPC Preliminary 2020 Trends Forecast and 1990 Census for Population and Housing

3.2 RAIL CORRIDOR COMMUNITY ANALYSIS

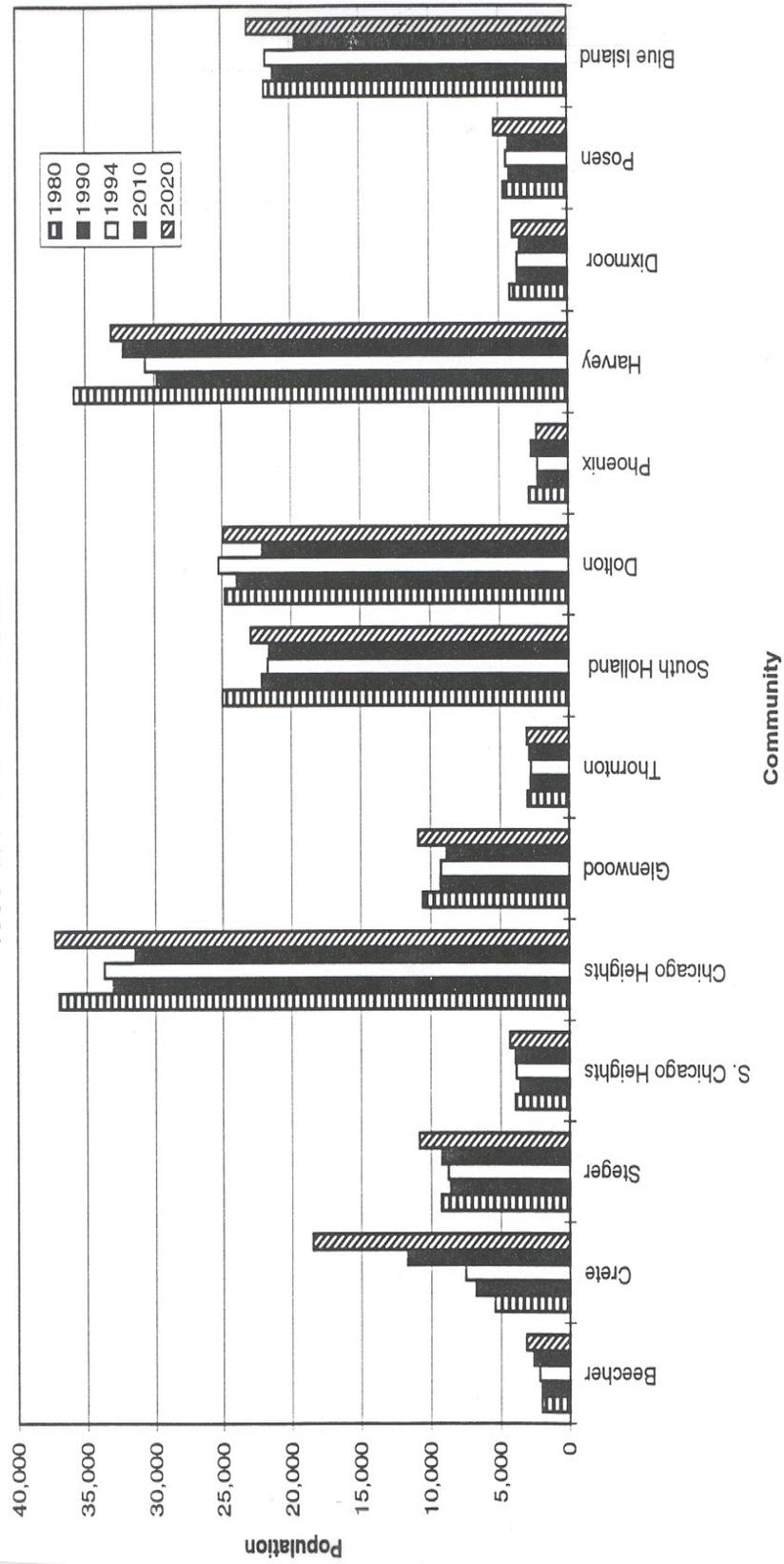
The South Suburban Commuter Rail Feasibility Study looked closely at the 14 communities directly adjacent to the alternate rail alignments presented in this Study. This section summarizes the key issues and trends.

3.2.1 Population

Population change in these communities reflects a changing dynamic in the area. Between 1980 and 1990, 12 out of the 14 South Suburban communities experienced a population decrease (see Figure 4). The largest 1980-1990 population decreases were in the larger communities of Chicago Heights, South Holland, and Harvey, with each losing several thousand people. On the other hand, the Village of Crete saw a 25% increase in population at the same time, gaining nearly 1,400 people.

Interim 1994 census counts portray a shift in the downward trend, showing population increases for ten of the communities with the largest growth. NIPC's 2020 population forecasts (see Table 3) support the upward trend, projecting population growth for all of the communities in the study area, with stronger growth for the communities further south.

Figure 4
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Community Population Growth
1980-1990-1994-2010-2020



Source: 1980 and 1990 Census for Population and Housing, 1994 Population Estimates, 2010 and 2020 NIPC Population Forecasts

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The 2020 population growth would come from different situations. In the older built-out communities, population growth would relate to the turnover of housing as the population ages. For example, in South Holland, the median age is 40.3. Like many of the south suburban communities, South Holland has identified the aging trend in the community and has begun plans to increase the amount of elderly housing. As the elderly population moves out of their long-time homes, they are expected to be replaced by families with children. In the southern study-area communities, population growth is expected to be directly associated with the increase in the number of homes built in new subdivisions in recently annexed areas.

Table 3
Forecast of Percent Population Change
by Community 1990-2020

Community	Population Growth
Beecher	55%
Crete	173%
Steger	26%
South Chicago Heights	20%
Chicago Heights	13%
Glenwood	17%
Thornton	10%
South Holland	4%
Dolton	4%
Phoenix	3%
Harvey	11%
Dixmoor	10%
Posen	26%
Blue Island	9%

Source: 1990 Census of Population and Housing and NIPC 2020 Forecast of Population

3.2.2 Housing

Mature communities in the northern portion of the rail corridor (e.g., Blue Island, Dolton, South Holland, and Chicago Heights) are already heavily built-up. They have median home values well below the metropolitan area median (see Table 4). Along the corridor, Crete is the only community with home values above the Will County median.

Residential building permits are a strong indicator of area growth for the south suburbs. As Table 5 shows, Crete has had a consistently high number of building permits granted. Building-permit numbers for communities such as Steger, Chicago Heights, Blue Island and Posen show steady increases from 1990 to 1995. New in-fill development in some of the older communities is an important trend. In general, the increase in building permits corresponds to the increases in population growth for the southern study area in communities like Crete and Steger. The unincorporated communities in Will County have also seen steady growth in the past few years. From 1992 to 1995, Crete Township (which comprises the majority of the unincorporated area surrounding the rail corridor) has issued 361 residential building permits.

Table 4
Median Home Value in 1990

Community	Median Home Value
Beecher	\$88,100
Crete	\$106,900
Steger	\$55,300
South Chicago Heights	\$59,900
Chicago Heights	\$62,500
Glenwood	\$86,000
Thornton	\$71,100
South Holland	\$90,600
Dolton	\$65,100
Phoenix	\$42,800
Harvey	\$49,900
Dixmoor	\$46,700
Posen	\$60,400
Blue Island	\$64,300
Cook County	\$102,100
Will County	\$89,900

Source: 1990 Census of Population and Housing

Table 5
Residential Building Permits 1990-1995

Community	1990	1991	1992	1993	1994	1995	Total
Beecher	5	5	33	15	19	6	83
Crete	59	49	61	52	70	46	337
Steger	13	20	38	32	33	32	168
S. Chicago Heights	n/a	n/a	n/a	23	13	6	42
Chicago Heights	10	8	18	13	21	20	90
Glenwood	3	3	3	5	0	0	14
Thornton	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Holland	2	5	7	8	10	13	45
Dolton	8	4	35	13	6	14	80
Phoenix	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Harvey	0	1	0	0	0	2	3
Dixmoor	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Posen	4	6	11	20	31	24	96
Blue Island	5	4	1	7	3	43	63

Source: Bell Federal Home Building Permits Reported and Community Interviews

Note: In a letter response following review, the City of Harvey indicated that they had issued 1,700 permits in 1995.

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3.2.3 Employment

Between 1991 and 1995, the combined corridor communities gained 8,218 jobs, an increase of 7.0% (see Table 6). The number of business establishments with employees covered by unemployment insurance (standard measure) grew by 11.1%. As previously indicated, the job mix in Chicago's south suburbs used to be dominated by manufacturing and blue-collar service-sector firms. By 1995, manufacturing employment was only 17.4% of the job base.

The vast majority of jobs in the rail corridor are found in the Cook County communities. Out of a total of 107,798 jobs in the corridor in 1995, only 4,547 (4.2%) were in the Will County communities of Crete, Beecher, Monee, Peotone, and surrounding townships. While southern Cook County contains a mix of industries, along with commercial corridors along I-57, Dixie Highway and the Bishop Ford Expressway, the Will County portion of the corridor consists primarily of agricultural land and suburban subdivisions. There is no regional shopping center; strip shopping centers serve a predominantly local population.

Table 6
Private Sector Employment Change 1991-1995

Municipality	1991-1992	1992-1993	1993-1994	1994-1995	1991-1995
Dolton	(248)	15	(372)	15	(590)
South Holland	771	(937)	(4)	296	126
Chicago Heights	(1,245)	(68)	(23)	415	(921)
Blue Island	63	(66)	447	(729)	(285)
Harvey	(544)	(43)	308	(620)	(889)
Harvey Group ¹	2,285	2,813	480	4,120	9,698
Chicago Heights Group ²	427	(773)	700	(127)	227
Will County Group ³	334	(65)	136	457	862

¹ Includes Thornton, Burnham, Calumet Park, Country Club Hills, Crestwood, Dixmoor, Hazel Crest, East Hazel Crest, Homewood, Orland Park, Phoenix, Robbins, Posen and Tinley Park.

² Includes South Chicago Heights, Steger, Glenwood, Flossmoor, Ford Heights, Lynwood, Matteson, Olympia Fields, Richton Park and Sauk Village.

³ Includes Crete, Beecher, Monee, and Peotone.

Source: Illinois Department of Employment Security, "Where Workers Work in the Chicago Metro Area."

The northern corridor communities in Cook County (except for South Holland) experienced a loss of jobs between 1991 and 1995, despite the Chicago region's strong economic rebound. Data from the Illinois Department of Employment Security indicate that Dolton and Chicago Heights together lost over 1,500 jobs and Harvey lost 899 jobs during the four-year period. At the same time, however, communities in the western and southern portions of the rail corridor gained 10,913 jobs.

Unemployment rates in the south suburbs tend to be higher than in the metro area as a whole, but vary significantly among individual communities. While the average unemployment rate for 1995 was 5.1% in the Chicago Primary Metropolitan Statistical Area (PMSA) and 5.3% in Will County, it was over 10% in Harvey and 6.5% in Dolton, but well under 5% in South Holland and Chicago Heights.

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In the Cook County communities, many commercial and industrial buildings are functionally obsolete or in need of major repairs, but little vacant unimproved land remains. Renewed growth could occur if older properties are redeveloped, but vacant, developable, and less-expensive land remains in ample supply in nearby eastern Will County and in growing southwestern Cook County. In the six townships in eastern Will County, the vast majority of the land acreage (84%) was still agricultural in 1990. Commercial and industrial uses occupied less than 2% of total acreage, and residential uses occupied only 8%. In the incorporated corridor communities of Beecher and Crete, commercial and industrial business occupied only 223 of approximately 5,100 acres.

3.2.4 Northwestern Indiana

The population and job base in Indiana communities close to the rail corridor (such as Dyer and St. John) are also growing. In fact, the southern part of Lake County (i.e., south of Route 30) is the fastest growing part of northwest Indiana. With the close proximity between these growing communities and the UP/CSX alignment, this growth could translate into an additional source of ridership for the new rail line. Table 7 provides the figures on changing population trends.

However, another rail line has been proposed in northwestern Indiana (called the West Lake Corridor) that would provide service from Lowell to Hammond where it would connect with the South Shore line to downtown Chicago. This line is parallel to the UP/CSX and likely would intercept Indiana riders, but its future is uncertain. Although planning studies are underway, no funding source has been identified yet.

Table 7
Population for Northwestern Indiana Counties
and Selected Municipalities 1980-1994

County/Municipality	1980	1990	1994 (Est.)
Lake County	522,965	475,594	481,632
Cedar Lake	8,754	8,885	9,460
Crown Point	16,455	17,728	18,027
Dyer	9,555	10,923	11,930
Griffith	17,026	17,916	18,544
Hammond	93,714	84,236	82,837
Highland	25,935	23,696	22,613
Hobart	22,987	21,822	24,214
Lowell	5,827	6,430	7,072
Merrillville	27,677	27,257	27,652
Munster	20,671	19,949	20,402
St. John	3,974	4,921	7,108
Schererville	13,209	19,926	24,486
Porter County	119,816	128,932	138,246
LaPorte County	108,632	107,066	109,628
TOTAL: 3 Counties	751,413	711,592	729,506

Source: Northwestern Indiana Regional Planning Commission, 1980 and 1990 Census and 1994 Census Estimates.

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Northwestern Indiana's economy is still dominated by the steel industry. The nation's top five integrated steel producers all have plants in this area that combined employ 30,000 persons, with even more working at supplier firms. However, health care is the area's fastest-growing business.

The population of Dyer grew over 14% between 1980 and 1990, and another 9.2% between 1990 and 1994. St. John's population in 1994 topped 7,100; in 1980, it was only 3,974. Schererville, just to the east of Dyer, grew nearly 23% in just four years, adding over 4,500 residents. A growing percentage of northwestern Indiana residents are now commuting to jobs in Illinois. In 1980, only 24,604 local residents traveled to jobs in Illinois, accounting for just 5.4% of their total work trips. By 1995, the number of commuters to Illinois had more than doubled, reaching 49,419 (9.7% of the total). In the Indiana communities closest to the potential SES rail line, very few commuted by rail to Chicago in 1990, although many did work in Chicago. In contrast, fewer Illinois residents are now working in Indiana than ten years ago.

Home-builders are able to attract residents to Lake County, Indiana, because real estate and sales taxes are lower than in either far south Cook or northern Will Counties. They also advertise that Indiana housing costs are lower than for comparable homes in Illinois. For businesses, a Lake County location offers lower workers' compensation costs (especially for iron and steel manufacturing operations) and lower unemployment tax rates than Cook County.

3.3 RAILROADS AND OTHER AGENCIES

The lack of uncovering any significant future plans for these railroads may arise in part from the nature of the freight railroad business. These railroads are private corporations which operate under a competitive environment. As such they are often reticent to divulge details of their future plans in fear of losing any competitive advantage arising from the plans.

Business has changed dramatically for some lines in the Chicago area, such as the Belt Railway of Chicago (BRC). Perhaps most importantly, mergers have been steadily consolidating lines into larger and larger railroads which can have dramatic local impact on lines or yards. The relatively recent BNSF merger resulted in a major shift of loose-car switching here in Chicago. Other business transactions could have similar dramatic impact on the freight railroad lines involved in this Study, but are impossible to evaluate at this time. In addition, several related news and planning items relate to the railroads considered for the potential SES. Some of these items are discussed below, along with the reasons why they are expected to have no significant impact on this project. As noted earlier, the cooperation of these railroads in providing information does not necessarily indicate, and is not meant to imply, support for or endorsement of a potential SouthEast Service.

3.3.1 Belt Railway of Chicago (BRC)

In the last 10 years, the BRC has again become a busy railroad reminiscent of its active past. Recently the BRC announced that they were entering into an agreement with the General Electric Company (GE) to perform long-term maintenance on GE-built diesel-electric locomotives at the BRC's Clearing Yard facility. Furthermore, the BNSF railroad has transferred all loose-car switching from the original Santa Fe yard at Corwith to the BRC's yard at Clearing.

While both of these more recent news items signify a strengthening of business activity for the BRC, they are unlikely to generate any increased traffic along the line where the potential SES would cross it (Options 1 and 2). Furthermore, while two of the short-listed alignments were originally envisioned as crossing over the BRC

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Main Line, later refinements to the alignments have eliminated all conflicting movements between BRC traffic and the potential SES trains (except for the crossing of the NS/BRC connecting tracks between 88th and 79th Streets). As a result, future changes in the traffic levels on the BRC should have little significant impact on the results of this Study.

3.3.2 Metra RID and SWS

Formal plans within Metra for the upgrading of existing commuter rail lines were determined by conversations with Metra staff. In general, three improvement projects will have been completed by the time the potential SouthEast Service could be considered for implementation:

- C The track work and signaling at Gresham Junction on Metra's Rock Island District (RID) will have been completely rebuilt to remove the puzzle (double slip) switch and install a crossover north of the Gresham Station platform.
- C The single-track bend at 74th Street on the South West Service (SWS) will be converted to double track.
- C The SWS trackage from 47th Street to Conrail's control point CP 518 will be converted to double track and the SWS mains moved to the west side of Conrail's piggyback yard at 47th/51st Street. This will result in complete double track for the SWS along that section of the line where potential SES trains would share the same right-of-way.

All improvements to existing lines which are currently planned by Metra, and which would benefit any of the alignments, are assumed to be completed before any possible start-up of the new SES. These improvements are assumed to have no expense in the capital cost estimate of the potential SES project.

3.3.3 Transferring Service to LaSalle Street Station

This item is not yet a formal plan but rather is being informally considered by two state agencies. There are several factors which provide incentives to Metra to transfer some of their commuter rail service from Union Station to LaSalle Street Station.

- C Union Station is currently heavily utilized, while LaSalle Street has much more capacity to expand. Metra owns and operates LaSalle Street Station, and would benefit from using its own facility where it can control operations and costs, as compared to being under Amtrak's control at Union Station.
- C Metra has its own servicing facilities at 47th Street on the RID, directly south of LaSalle Street Station. This servicing facility could be used for daytime layovers, whereas layover facilities related to Union Station are problematic. Service at the BNSF 14th Street facility would be leased, and again out of Metra's control. Access to Metra's Western Avenue facility on the Milwaukee District (MWD) from the south tracks, where potential SES trains would arrive, requires use of the Union Station run-through tracks to get to the MWD (see Appendix A for an expanded discussion).

The Metra services which are candidates to make this switch to LaSalle Street Station are the SouthWest Service (SWS) (weekdays: eight trains in each direction) and the Metra Heritage Corridor (HC) (weekdays: two trains in each direction). Option 1 would use the same new and existing tracks and interlockings between 21st Street Junction and LaSalle Street Station that would be needed for the relocated trains.

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3.3.4 Planned Transportation Improvements

The Transportation Improvement Program (TIP) for Northeastern Illinois was reviewed to assess the infrastructure plans for the south suburbs. A number of short-term and long-term transportation plans exist for the south suburbs. No major projects were identified in the TIP for Northeastern Illinois FY 96 element. Some minor improvements include roadway resurfacing in Crete and interchange improvements to the Bishop Ford Expressway from Thornton to Crete.

The project team collected transportation plans for the communities and counties along the UP/CSX alignment as part of the planning discussions and site visits with each community. The key transportation improvements in the region are not near-term. They include plans for a third airport in the south portion of the study area (between Beecher and its western neighbor Peotone), and a continuation of I-355 running east-west just south of Crete and connecting to I-65 in Indiana. An additional outer circumferential commuter rail service is also being considered along the EJ&E through Chicago Heights; this potential service is the subject of a separate feasibility study.

Will County officials and regional transportation planners have identified a need for increased east-west access through Will County. Presently, an extension of I-355 from I-55 (its present terminus) to I-80 is under consideration. The Will County 2020 Transportation Framework Plan proposes further extension of I-355 from I-80 east, across the state line to connect with I-65 south of Gary, Indiana. This extension, called the South Suburban Expressway, would be located just to the south of Crete. The CATS 2010 Plan designated this extension as a "Corridor of the Future". In the CATS document, the I-355 extension is combined with an extension of the Bishop Ford Expressway from its present terminus to connect with the I-355 extension.

Will County's 2020 Transportation Framework Plan also identified a number of interchange and bridge crossing improvements, all of which are in western Will County outside of the study area. The plan also requires all state and county road improvements to include bike and pedestrian improvements within the right-of-way. Other plans for highway improvements as designated by the communities include an IL 1 bypass around Beecher and two ring roads surrounding Crete. Both proposals address easing of heavy traffic and bottlenecks through the center of these communities. Planners in Thornton have identified a need for an additional interchange at I-80 and Williams Street to enhance their Tax Increment Financing district.

A potentially major generator of related transportation improvements to the south suburbs is the proposed South Suburban Airport to be located between Peotone and Beecher. This airport would impact the entire south suburban transportation network. Associated transportation improvements would include additional access roads, additional lanes for the existing roadway system, and extension of Metra's Electric District to serve the new facility. The communities in the south suburbs, including Beecher and Crete, have just completed comprehensive planning processes. Their resulting documents establish plans for their communities both with and without the proposed airport. The rest of the transportation improvements discussed herein have been identified regardless of the outcome of the proposed South Suburban Airport.

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4.0 POTENTIAL OPERATIONS

For comparative purposes, the following methodology was utilized in order to develop a reasonably feasible service operation on any one of the four potential alignments.

- C **Operating Plans** - Each service operation was assumed to be similar to existing Metra diesel-powered, push-pull operations. Although other types of operations and equipment may be feasible for this service, they are beyond the scope of this Feasibility Study. Each operating plan also has to be compatible with the operations of the host railroads.
- C **Capital Facilities** - Once the operating plans were defined, the facilities required to support these operations (e.g., track, bridges, stations, equipment) were identified. In many cases these would be new facilities, while in other cases they would be rehabilitations of existing facilities. Estimates of the costs for the required capital facilities were then prepared.

The same general level of service was assumed in each case, under the parameters indicated below:

- C Service would be operated by Metra with its own forces. Trackage-rights agreements would be negotiated with each affected railroad. The exact nature of any service agreement would be subject to negotiation and agreement between Metra and the respective railroad(s).
- C Service would utilize standard Metra commuter rail equipment and operating rules. Initial service would be provided by three new train sets, each consisting of one locomotive and five bi-level coaches (gallery cars). One spare consist (a locomotive and five coaches) would also be included in capital cost estimates.
- C All four alignment options would utilize the UP/CSX line from either Beecher or Crete to at least Thornton Junction in South Holland. From there, the alignment would divert onto one of four options as previously described. Eventually each option would connect with Metra's RID, and continue to LaSalle Street Station.
- C Service was assumed to operate on weekdays only, with three trains each in the a.m. and p.m. peak periods (on 30-minute headways), and one midday turn. The start-up operation would be similar to that of the 2½-year-old North Central Service (NCS) on the Wisconsin Central in August of 1996.
- C Determination of the improvements necessary to safely and efficiently support commuter rail service were based on assumed service levels and operations.
- C Potential community station locations came from meetings and discussions held with officials from each community, and are subject to change in future Study phases.
- C Potential commuter station sites (including station buildings, parking lots, and other associated site improvements) would be funded, constructed, maintained, and operated by the host communities, although subject to Metra criteria and supervision. All stations would comply with ADA guidelines.
- C Train equipment would be stored and maintained at Metra's 47th Street Yard. Expansion of existing facilities might be necessary, but there appears to be sufficient room at the site to accommodate this.

4.1 SERVICE CONCEPT

The service concept for the potential SouthEast Service (SES) would be based on the opening-day service levels for the North Central Service (NCS) in August of 1996. The SES would consist of four weekday-only trains inbound and outbound. Three inbound trains (approximately every 30 minutes) would run during the a.m. peak period, while the fourth train would be a late afternoon trip, arriving downtown in time to make the last outbound p.m. peak trip. Outbound service would include one midday train (on NCS it leaves the CBD at 1:25 p.m.) and three outbound trains (approximately every 30 minutes) during the p.m. peak period.

Within six months of opening day, the NCS schedules were revised to add a fourth a.m. peak inbound train and a fourth p.m. peak outbound train, approximately 30 minutes behind the former last train in both cases. There was no change to the departure times for the midday round-trip, but p.m. peak-period departure times and the intervals between trains were adjusted slightly. This additional service, i.e., adding a fourth peak-period train (or any other trains), could occur only after several months of SES operation, indications that demand would warrant them, and joint discussions with the railroads about allowing additional trains.

For the purposes of preliminary cost estimating, it was assumed that the potential SES would require three five-car consists to cover the four inbound and outbound trips, plus a spare consist for a total of four locomotives and twenty coaches. Travel demand estimation would occur in the next phase of the Study, at which time the suggested number of trains and consist lengths would be examined in greater detail.

4.2 UTILIZATION OF EXISTING FACILITIES

The RID appeared to have sufficient capacity to accommodate potential SES trains. However, some capital costs would be incurred to make the appropriate track connections and expanded servicing facilities.

4.2.1 LaSalle Street Station

This station has eight tracks and five low-level platforms. The throat of the terminal (above Polk Street) is three tracks wide, which extends to just north of 16th Street Tower at the St. Charles Air Line crossing. From this point south the RID is double-tracked. In the midday, three of the eight terminal station tracks are used for equipment storage; the locomotives for these consists are deadheaded to 47th Street for servicing. The westernmost track in the station (Track 8) is used for midday train operations. This leaves four tracks unoccupied, some of which might be used to store SES train sets.

Available data for operations past 16th Street Tower date to May of 1993 (within the effective date of RID Public Timetable Number 8); they provide an indication of how many additional deadhead moves are made during the peak hours. In the hour from 0700 to 0759, four southbound deadhead moves were observed. When added to the seven scheduled arrivals and departures in that same hour, the result is a total of 11 train movements. Similarly, between 0800 and 0859 there were three southbound deadheads. Adding this to the 10 scheduled trains results in 13 total trains. Between 1600 and 1659, three northbound deadheads were observed. Adding this to the six scheduled trains in that hour yields a total of nine moves. Between 1700 and 1759, three deadheads were observed. With nine scheduled trains in this hour, the total train traffic is 12 moves. These data indicate that the eight-track terminal and its three-track throat (all are signaled for bi-directional operation), along with the signaling system in operation on the double-track main (bi-directional on Track 2, immediately adjacent to the 47th Street Yard), appear to be able to absorb the potential SES train operations without significant impact.

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4.2.2 47th Street Yard and Shops

The RID maintenance facility is 47th Street Yard, which is on the west side of the right-of-way. RID consists and locomotives are deadheaded to and from this location for midday storage and servicing. Some RID-assigned consists are uncoupled from the locomotives and left in LaSalle Street Station during the midday. Either or both of these concepts could be applied to the potential SES trains. This is also the location of the major overhaul facilities; locomotives are routed here from other lines on the Metra system.

The facility at 47th Street is heavily utilized, but it appears that some expansion of storage is possible. Use of this facility would have the additional advantage of enabling potential SES cars and locomotives requiring major attention to be cycled to or from Metra's overhaul shops as part of the normal scheduled operation, minimizing the need for special moves. However, Metra is considering transferring the Heritage Corridor (HC) and SouthWest Service (SWS) downtown terminal from Union Station to LaSalle Street Station, further increasing the demand for storage and servicing facilities at 47th Street. Potential SES commuter rail plans would have to be taken into account. While 47th Street Yard is generally considered to have limited capacity, there appears to be adjacent available land to expand the yard, providing a suitable location where potential SES trains could be stored.

4.2.3 Sharing LaSalle Street Access with SWS and HC

The primary reasons for considering the relocation of the SWS and HC terminal are that LaSalle Street has more spare capacity and it is owned by Metra (CUS is owned by Amtrak). To make this transfer, new connecting tracks would be needed in the vicinity of 21st to 16th Streets. One of the short-listed SES alignments (Option 1) would also require that same connection. Joint benefits from that commonality of need for a specific section of new track cannot be quantified, but it does need to be highlighted for possible future consideration.

If Option 1 were to be employed for the potential SouthEast Service, this would result in a routing from the SWS tracks at 21st Street crossing via new connecting tracks. Restoration of the former C&WI trackage that once ran parallel to and southeast of the IC tracks (heading for Dearborn Station) is no longer possible, since the right-of-way is occupied by the CTA Orange Line. Metra trains would have to run on the IC tracks. However, rather than crossing under the St. Charles Air Line (SCAL) tracks, as the C&WI Dearborn Station leads once did at 16th Street, new Metra tracks would divert north from the IC tracks and cross over the SCAL tracks at-grade west of 16th Street Tower, then connecting to the LaSalle Street Station leads around 14th Street. Providing these connections and new trackage would allow Metra to shift the SWS trains to LaSalle Street, and with additional track connections in the 21st Street plant, would also provide a routing for Heritage Corridor (HC) trains into LaSalle Street.

4.3 POTENTIAL TRANSFERS WITH EXISTING LINES

Wherever two Metra routes cross one another, the potential for commuters to transfer between them could be examined. Some might make sense, while others might not. Each would be studied, first for physical practicality, but especially for potential utility, i.e., would any Metra riders use the opportunity if it were provided. On Metra's radial system, the opportunity does not occur very often, but on two potential circumferential routes (currently the subject of separate studies), transfer possibilities are considered to be important attributes that might support the rationale for their implementation. The SES would be a radial line like other existing routes, but depending upon the alignment, there would be opportunities to consider.

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4.3.1 Transfers to MED

The Metra Electric District (MED) is crossed in the vicinity of 119th Street in Chicago. The UP tracks are elevated over the MED on a curving, concrete viaduct. The two-track viaduct has high side walls, which would have to be modified if a transfer station (with no parking) would be considered at this site. There is residential development to the west of the MED, but none to the east at this location. A transfer station could be located at this site. The MED is just slightly above street level at this location, while the UP is fully grade-separated from the MED. Providing safe access to and from the adjacent neighborhood might entail significant construction costs. Even a transfer-only station would have to have some form of controlled outside access, such as for emergency services.

MED service at this location includes Main Line and Blue Island Branch trains. Main Line trains do not stop between Kensington (115th Street) and Riverdale (137th Street), while Blue Island trains make their first stop at State Street, some distance west on the Branch. Weekday Main Line train service is frequent (local trains running every few minutes in the peak and hourly midday), while Blue Island trains operate every 20 minutes during peak periods and hourly in the non-peak periods.

The MED crosses above the CN and CSX in Harvey. Option 4 is the only alignment that would utilize the CN, which diverges at Thornton Junction south of Yard Center. The existing MED Harvey Station, which is a part of the Harvey Transportation Center where several bus routes terminate, is approximately ¾-mile to the south. Locating stations this close together on the MED is not recommended, so a transfer station would not be proposed here. This case is similar to that of the potential Chicago Heights Station, which in that case involves the nearness to the crossing of the proposed EJ&E/OCS route. There are also several physical constraints which argue against locating a station on the CN at this site.

4.3.2 Transfers to RID

RID service on weekdays is provided as frequently as every five minutes in the peak, and on an hourly basis midday. As in the case of the station suggested for the crossing of the MED by the UP, it must also be determined if a 79th Street transfer station is to be accessible to the neighborhood around it, or only to provide for interline transfers (and only if Option 1 is chosen). Either way, this station would be expensive to construct, given the fact that both railroads are grade-separated at this location. Providing accessible vertical circulation elements would be a significant cost consideration. In addition, with the RID on a concrete viaduct over the NS and BRC, demolition of a significant portion of the viaduct's side walls would be required in order to provide for the station.

No transfer station would be required at the intersection of the CN and RID at Blue Island Junction, as the potential SES trains would use to-be-built connecting trackage in order to access the RID to continue downtown. In fact, shortly after operating via this connection, potential SES trains would stop at the Vermont Street Station in Blue Island. At this station, connections can be made with RID suburban and Main Line trains, as well as with the MED Blue Island Branch service.

5.0 CAPITAL IMPROVEMENTS

This section describes the capital improvements that would likely be required to create the infrastructure for a feasible commuter rail operation along each of the four alignment options. In order to support the potential operations described in the previous section, new track, bridges, signal systems and at-grade street crossings would be installed (in some cases existing facilities could be rehabilitated or rebuilt), station and parking facilities would be built, new rolling stock would be purchased, and some land acquisition would be necessary, particularly for park-and-ride stations.

The capital facilities are defined to provide a basis for developing order-of-magnitude estimates for the cost of constructing the necessary facilities. Again, keep in mind that the required improvements presented in this section are considered necessary to operate commuter trains efficiently, and are not intended to portray or imply that the current physical plants and infrastructure of the respective railroads are in substandard condition for operating their freight services. The capital cost estimates for each route option are summarized in Table 8. It is quickly evident that providing new facilities and infrastructure (rather than rehabilitated) would create substantially higher costs than might have been initially expected.

Improvements along the alignments are required for one or more of the following reasons:

- C New trackage is needed to make connections between various segments in an alignment. These new tracks would require track work and signaling at a minimum, and frequently also would require bridges, excavation and grading, and in some cases property acquisition to provide rights-of-way.
- C Additional new trackage has also been proposed in areas where passenger and/or through-freight traffic warrant separation from local freight and/or switching activity.
- C The new tracks would diverge and merge into existing lines at interlockings and sometimes cross other existing railroad tracks along the way. Turnouts would be necessary at the interlockings, while at-grade diamond crossings would be required at crossing sites.
- C Because of the expected continuing density of freight traffic, new or upgraded signal interlockings are required to ensure safety and maximize throughput for all connecting and crossing points of the new line.
- C Civil constraints (curves and grades) along the alignment would allow higher speeds, but current signaling, track and/or bridge conditions impose lower speed limits. Maximum speeds of 79 mph are suggested whenever possible, although civil constraints and practical speed limits from trains making station stops usually set the practical line-speed limits.
- C Crossovers between pairs of main line track would be required to allow turn-back operations at the end of the line, or to ensure that traffic in both directions would be able to travel in the conventional direction on a two-track main line, and to allow for train routing flexibility at or near new junctions.
- C The condition of at-grade crossings of streets and highways and the associated warning devices must be brought up to current public safety standards.

5.1 YARD CENTER

There are several significant obstacles to overcome if potential SES trains would be routed past Yard Center, as suggested in Options 1, 2, or 3. For example, current operating practices at Yard Center frequently include using the main tracks in the middle of the yard as temporary storage tracks. To avoid delays to potential SES trains, it was proposed that one or two new bypass track(s) be built around the perimeter of the yard. The bypass track would be similar to the single-track bypass in Schiller Park Yard on the Wisconsin Central Ltd. (WCL), which is utilized by both Metra's North Central Service (NCS) and through-routed WCL freight trains. Due to the larger number of UP and CSX freight trains, the SES bypass capital cost estimates assume double track at start-up, although the northern portion might be only single track because of right-of-way restrictions. More detailed studies of this situation would be done in Phase II.

There are two alternatives for the proposed bypass, which depend largely on physical feasibility. The new bypass track(s) could be built almost entirely on railroad-owned property. Following the east-side access road north under the Sibley overpass, it was confirmed that one bay under the bridge is now used for the outermost yard tracks and the access road, and that the road could be relocated into the next bay to the east (against the abutment). This would allow the second bay to be used for a single bypass track. A second bypass track could also fit into the first bay along with the road, but this preferred double-track option would require that the abutment be moved to the east and this portion of the bridge rebuilt.

Alternatively, the center mains could be retired and the outermost yard tracks shifted to allow room for a two-track bypass. The bypass tracks would replace the existing two main tracks through the center of the yard, thus becoming a new double-track main line for both potential Metra SES trains and through-routed CSX or UP trains. Most CSX freight trains are only passing through Yard Center on their way to Dolton Junction, where they turn northwest to go to Barr Yard in Riverdale. CSX and UP through-trains destined north of Yard Center might avoid congestion delays on the new alignment. Note that if both passenger and freight trains share the bypass tracks, they would be bi-directionally signaled and have convenient crossovers for Metra trains to pass any standing freights waiting to clear Dolton Junction.

From aerial photos, there was concern about the proximity of an industry to the east of the yard between 147th and 146th Streets. The site visit confirmed that this industry had built up to the pole line along the east side of the yard. At a minimum, relocation of the UP pole line would be required from this point northward to achieve a right-of-way of sufficient width (for a single track). Acquisition of a rear addition to an occupied industrial building (relocating contents to roof or a new addition on the side of the building) and a vacant industrial building to the north could be required in order to provide the necessary right-of-way. The final obstacle to the bypass tracks lies between Engle and 144th Streets. This is the Dolton Municipal Yard, where maintenance vehicles, supplies and materials are stored. There are several structures within the yard which extend up to the east limits of the UP facility. These would have to be relocated, possibly in conjunction with an alternate Dolton station site, in order to provide the necessary right-of-way.

Field inspection of the right-of-way at the south end of Yard Center showed that a former lumber yard (currently used for storage of new automobiles) lies some distance east of the UP trackage. There appeared to be sufficient room to construct turnouts and bypass tracks, as well as a potential station (one of South Holland's options) to the east of the easternmost yard lead. The bridge over 162nd Street was examined for the purpose of locating a fourth track (i.e., a single bypass track). It was determined that a fourth track could not be installed on this bridge; the turnouts leading to the bypass tracks would have to be located north of the bridge, and clear of the automatic equipment identification readers.

5.2 RAIL JUNCTIONS

A significant concern which could be critical to the successful operation of a potential SES is the likelihood of interference caused by freight traffic both along the route and crossing the route at rail junctions. (There are similar significant problems today with crossing traffic on the SWS.) The available traffic data for each segment and crossing railroad were reviewed to determine the need for additional tracks and modified interlockings to shield the potential SES trains from the possibility of conflicting freight movements as much as possible. The potential commuter rail operation would not be considered viable without capital outlays to eliminate such likely problems. Appendix G contains aerial photos of the relevant segments and junctions.

The junctions on the various alignments include both manned and remote-controlled interlockings. There are physical limitations at these at-grade railroad crossings. Where the combination of projected Main Line freight, Metra passenger, and crossing freight traffic from third railroads exceeds these limitations, the best way to accommodate them all would be to build flyovers (grade separations). Flyovers and double- or triple-tracking are easy to suggest, but frequently are difficult to build economically. The expense of such structures argued against these improvements for the initial service. If the alignment eventually chosen passes through these areas, and ridership demand dictates a need for more trains, such improvements might be justified in the future.

Some of the more significant locations where capital investments would be necessary and purposeful are discussed below. The capital cost estimates include only the costs of improvements that would leave the rail junctions at-grade. The line capacity analyses that would be conducted in Phase II would identify locations where flyovers might be considered essential as the level of commuter service increases, or perhaps required before even start-up service could begin. The cost estimates also presumed that all connections (where SES trains would switch to a different route segment) would be double-tracked, along with modifications to the existing interlockings. Railroad right-of-way is assumed to exist where the connections would be required.

5.2.1 Dolton Junction

The freight traffic congestion at this location is well-documented. The layout of connecting tracks to and from the UP/CSX line was visually inspected, and consideration was given to grade separation (flyover) of bypass track(s) from north of Sibley Boulevard through this location. The proposed bypass east around Yard Center was defined as a double-track right-of-way between 162nd Street (US 6) and 147th Street, but because of right-of-way constraints, the bypass could be only single-track between 147th and 143rd Streets. As short as this single-track section is, it could put a severe constriction on the two-way flow of trains and would impact train schedules, especially when it would be combined with the conflicting crossing freight movements at Dolton Junction immediately to the north. Essentially only one train in either direction would be able to use the diamonds and the bypass at a time. This situation might be acceptable at start-up with limited commuter service, but very likely would not be acceptable when service increased.

5.2.2 Oakdale and Gresham

Depending on the routing of potential SES trains, the junction at Oakdale would have to be upgraded to remote-controlled operation after the necessary track connection was established. The current single-track CRL segment would be upgraded and a second track would be added. Home signals for Gresham Junction are located on the north leg of the wye (currently inactive), and therefore do not include the easternmost turnout of the wye (where it splits to use either the north or south leg), so the interlocking would have to be modified

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to include it. The RID Main Line immediately south of Gresham has the steepest uphill grade (1.71%) on the entire Metra system, but upgrading this single-track connection appeared to be feasible. Installation of a double-track connection would be preferred, but further investigation would be necessary to ascertain right-of-way availability.

5.2.3 21st Street and 16th Street

Prior observation north of 21st Street Junction had shown that the former C&WI right-of-way had been used for the columns and footings supporting the CTA Orange Line structure. From aerial photos, team members had speculated that sufficient right-of-way lay parallel to and north of the IC tracks to allow new Metra tracks to be constructed, should that need arise. The field inspection showed that the parallel right-of-way, sufficient for a new double track parallel to and northwest of the IC tracks appeared to be available. There was a single-track connection to the IC tracks in the southeast quadrant of the junction, already located for possible use by potential SES trains. The placement of the CTA support columns could restrict a second track, but for now double track was assumed. It was also noted that there were no crossovers on the IC trackage, but that crossovers did exist in the appropriate location on the Metra trackage south of 21st Street.

This alignment also would require new trackage at 16th Street. The tower at this location is controlled by Metra. Of interest at this site was the possibility of using the old Dearborn Station approach underpasses to get under the St. Charles Air Line (SCAL), in order to come up along the west side of the RID right-of-way. Aerial photos showed the Dearborn Station approach underpasses to still be intact, but the field inspection showed that several changes had occurred. The SCAL tracks had been straightened, and two of the three through-girder bridges remained on the site but both had been filled. The project team investigated the possibility for routing at-grade double track from the IC trackage to the west of the old girder bridges, across the St. Charles Air Line trackage, and north/northeast to connect to the RID tracks. This routing appeared feasible, and is part of Option 1.

The right-of-way would bisect the southern quadrant of a 286-acre site on the east bank of the Chicago River stretching from Van Buren on the north to about 20th Street on the south. In 1992 and again in 1996 it was proposed as a tax-increment financing (TIF) district for various developments. The new commuter rail right-of-way through this area could prove beneficial to future development of this old railroad property. A second downtown station to supplement the LaSalle Street terminal could even be considered north of the SCAL, similar to Van Buren Street's relationship to Randolph Street on the MED. This would be a subject for Phase II studies; no further discussion or capital cost estimate was performed.

5.2.4 Oakdale to 74th Street

After reviewing several railroad maps and inspecting the site with Metra, the project team found an abandoned right-of-way which could avoid a connection between the UP and the NS near 87th Street. By proposing new connecting tracks over this short distance, Options 1 and 2 would be able to virtually eliminate BRC freight interference by running parallel with the NS using existing vacant (abandoned) bridges over all but one of the streets in the area. Assuming sufficient right-of-way is available, SES trains would operate on their own double track; alternatively, one new track would be provided and the NS track would be upgraded for joint operation.

For Option 1 (UP to SWS), there are two basic assumptions. First, Metra staff indicated that Metra would soon be double-tracking the short section of single track in the bend at 74th Street, where the SWS turns north toward Union Station. Therefore, all discussions of connections there should assume double track. Second,

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rather than crossing the NS, there appears to be sufficient room for a new Metra-owned double track starting from the double-track UP north of Oakdale (around 88th Street) up to the double-track Metra SWS at 74th Street.

- C The new tracks would start from the UP between 89th and 90th Streets, cross 88th Street on a new bridge (only the north side abutment from the old bridge still exists), and run adjacent to (west side of) the NS up to the SWS. The bridge over the BRC at 86th Street appeared to be wide enough for the new double track without realigning the NS.
- C The only realignment required over this length would be north of the RID overpass from 78th to 75th Streets, where the NS tracks would be shifted to the east a maximum of about 30 feet.
- C Between 81st and 77th Streets there are currently three crossing connections which would need to be addressed. The UP to NS (northbound) connection at 79th Street would be replaced by new Metra double track. The two parallel NS-to-BRC connections at 81st and 77th Streets would have to be crossed by the new Metra double track, but that would be preferable to running on existing freight tracks.
- C The Metra RID bridge over the BRC and NS at 79th Street has an open bay between those two railroads for the new double track to pass without disturbing either of the other two railroads.

For Option 2, there is sufficient vacant property for a single-track connection across the NS to the RID. The property between 79th and 76th Streets is a narrow triangular plot which was once industrial and served by a pull-push switching maneuver from the old Chicago Rock Island and Pacific Railroad (now Metra RID). The abandoned bridge over 76th Street from that siding is still intact and would be used by the potential alignment. This single-track bridge is approximately 15 feet below the RID grade. The triangular property formed by the NS, the RID and 76th Street is vacant (a former lumber yard until the early 1990s) and could be used for a more gentle balloon track, curving and rising from the NS grade to the higher elevation of the RID embankment.

The preferred double-track connection would require an additional single-track bridge over 76th and 78th Streets. The bridge over 78th Street appeared to be wide enough for one connecting track, but the track profile from the undercutting of the NS south of that under the RID bridge prevents locating the turnout further south, so the turnout must start approximately on the 78th Street bridge. The connecting balloon tracks would come parallel to the RID roughly still level with the NS, cross the 76th Street bridge(s), then rise on a grade to make the connection with the RID at approximately 73rd Street.

This new alignment could probably also be used by Amtrak's "Cardinal" (from Virginia through Indianapolis to Chicago), which frequently encounters delays in traveling along portions of the alignment included in this Study. The current route for the "Cardinal" in the area of 79th Street follows the UP alignment to 81st Street, where UP ownership ends. North of that, the "Cardinal" must use BRC and NS tracks before joining Metra's SWS alignment at 74th Street to continue north toward Union Station. The dispatching of trains through these two railroads in such a short distance can be problematic on any given day.

5.2.5 Blue Island Junction

The potential difficulties identified at Yard Center and Dolton Junction led to the identification of an alternate alignment (Option 4) that would turn west at Thornton Junction on the CN. (Note that the CN has not as yet been contacted about this proposal.) The key element of this route would be making the connection at Blue

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Island Junction, where again the RID is on an embankment to cross above CN, IHB, and CSX tracks. The plan calls for a balloon track off the CN right-of-way north of 139th Street, curving and rising through a vacant parcel to meet the RID embankment. The configuration would be such that separate new bridges over the CN and IHB would be required alongside the Metra route prior to connecting with the RID at a new interlocking.

5.3 RAIL SUPPORT FACILITIES

Access to a suitably equipped midday storage facility on the north end of the potential SES would eliminate any need for diesel servicing facilities on the south end of the line. All that would then be required at the south terminal would be lay-up tracks for overnight/weekend storage and car cleaning, a head-end power supply to plug the trains into, and an employee welfare facility. This is the standard configuration on all existing Metra lines. Security of the facility is important, and would be handled in a manner consistent with that used at Antioch on the NCS.

Per the decision reached in the Steering Committee Meeting of 15 July 1996, the south terminal for the potential SouthEast Service would be located in Beecher. Several suitable sites exist in or near Beecher. To minimize deadheading of trains, it is important that the storage facility be as close to the last station as possible and preferably beyond it (south of Beecher's CBD). Train storage might have to occur at a location more remote from the terminal station. A specific site has not been determined, but sufficient land (minimum 20 acres) must be available for storage of enough trains to eventually provide full-service levels on the route. In Beecher, the UP/CSX line traverses back-to-back reverse curves, and in some sections the right-of-way width is constrained by paralleling side streets. If a terminal station were to be built in Beecher, the station could be located in the block between Hodges and Penfield, or south of Indiana, with the storage/welfare facility in the next block south of the station.

Note that should a site in Beecher not become the terminal station location, an alternative site has been identified at Balmoral Park. There appeared to be sufficient acreage there to implement both a terminal station and an overnight coach storage facility. This location's suitability and the ramifications of terminating SES trains there would be examined further in Phase II of the Study.

5.4 COMPARATIVE CAPITAL COST ESTIMATES

Estimated capital costs for the entire potential SES route are within an order-of-magnitude range between \$214.4 and \$263.4 million, as portrayed in Table 8. The table indicates that the cost differential among the four options is nearly \$50 million, although the differences appear relatively smaller when they are displayed on a cost-per-mile basis. Keep in mind that the evaluation of alignment options should not focus solely on the lowest cost estimate, since those with higher costs might later prove to be the most practical. Additional details of the capital cost estimates in Table 8 are provided in Appendix F.

The cost estimates include a contingency level of 30% of estimated capital costs. This contingency level is appropriate since no facilities have had any in-depth design or engineering, even conceptually. The level of contingency would decrease, and the confidence in the capital cost estimates would increase, if and when the project proceeds through the design phase. Also included is a 12% allowance for potential costs associated with the proposed project such as design, engineering, and construction management.

5.5 ADDITIONAL INFRASTRUCTURE

The cost estimates in Table 8 result from a scenario of operating potential Metra SES trains jointly with freight trains on the various railroads, including the heavily congested UP/CSX segment. At this point in time, the levels of freight traffic on the other segments were moderate enough that a separate commuter track did not appear to be necessary. However, the UP/CSX could prove to be the largest operational problem, so a second scenario was created that added a new third main track between Beecher and Thornton Junction.

The potential difficulty of operating commuter trains on the same tracks with freight trains, particularly when freight train traffic is quite frequent, was noted earlier. For this reason alone, all of the proposed track connections at the junctions would be double track. Except for the CRL segment, all of the remaining non-UP/CSX route segments already have two tracks. Any new Metra trackage also would have two tracks, such as the route from 21st Street in Option 1, and the CRL would be converted to two tracks if Option 3 would be utilized. In the case of the UP/CSX segment, a completely separate and parallel Metra double-track physical plant is not contemplated at this time, nor have potential costs for such been estimated, although the need for that kind of operation could only be determined by the line capacity analyses in Phase II.

As it is, the order-of-magnitude costs portrayed in Table 9 that include a third UP/CSX main track range between \$314.6 and \$363.7 million (\$100 million for the third track). The triple-track alternative scenario essentially provides a new track with coordinated signal system and interlockings, new bridges parallel to existing UP/CSX bridges, and an additional track through grade crossings. The cost estimates for park-and-ride stations could be increased slightly due to some necessary reconfiguration caused by a three-track operation. Costs for requisite layover and maintenance facilities and new rolling stock would not change.

Metra prides itself on its on-time performance on the existing system, making every effort to provide consistent and reliable service. Potential new services, including the proposed SES in the UP/CSX Corridor, must not be allowed to degrade that record. Metra presently operates the North Central Service with a similar limited number of commuter trains on single track along with Wisconsin Central freight trains, and current plans are to continue joint operations on two tracks when the ongoing NCS double-tracking project is completed. Metra believes that similar operations might also be feasible on the UP/CSX, with three tracks instead of the existing two tracks offering an equivalent concept of adding an additional main track for more capacity. The commuter operation would share the triple-tracked physical plant with freight trains, but the additional line capacity would hopefully allow SES trains to avoid potential operating delays. However, only the line capacity analyses scheduled for the Phase II Study would determine if this is a correct assumption.

This proposed operation would be discussed with UP and CSX management during future Study phases, and the reader must always bear in mind that the freight railroads who own the tracks would have the final word on what is acceptable to them. Their first responsibility is conducting their freight business and serving their customers. During the line capacity analyses in Phase II, a lot will depend upon the levels of UP and CSX freight traffic that are current (and projected) at the time when such a decision might be made.

Further Metra studies would provide more information on potential ridership expectations, and how different service levels might influence Metra's ability to attract commuters to the potential SES. In particular, the line capacity analyses in Phase II would portray the numbers of trains that can be operated on various levels of physical infrastructure that might be provided. Based on what is known at this time, the sets of figures in Tables 8 and 9 can be regarded as minimum and maximum order-of-magnitude capital cost estimates for the potential SouthEast Service. However, Metra knows from experience that providing more trains attracts more riders. In this case, that means the three-track UP/CSX scenario should be the ultimate objective.

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Table 8
South Suburban Commuter Rail Feasibility Study
Track and Signal Capital Cost Estimates (1997 dollars)

Categories of Capital Infrastructure Requirements	Unit	Unit Cost	Alignment Options											
			Option 1		Option 2		Option 3		Option 4					
			UP to SWS at 74th St	UP to RID at 79th St	UP to RID at Gresham	CN to RID at Blue Island								
Description	Quantity	Estimated Cost	Quantity	Estimated Cost	Quantity	Estimated Cost	Quantity	Estimated Cost						
New Track, including Grading (Ground Level)	Track-mile	\$ 1,500,000	11.0	\$ 16.5	10.7	\$ 16.1	6.8	\$ 10.2	2.6	\$ 3.9				
Major Excavation and Grading (New Embankment)	Track-mile	\$ 1,000,000	0.0	\$ -	0.6	\$ 0.6	0.0	\$ -	2.6	\$ 2.6				
Rehabilitate Existing Track	Track-mile	\$ 500,000	51.3	\$ 25.7	50.6	\$ 25.3	50.9	\$ 25.5	44.6	\$ 22.3				
Install Turnouts	Each	\$ 150,000	12	\$ 1.8	6	\$ 0.9	10	\$ 1.5	6	\$ 0.9				
Install Crossovers	Each	\$ 300,000	19	\$ 5.7	15	\$ 4.5	13	\$ 3.9	17	\$ 5.1				
Install Diamonds	Each	\$ 300,000	10	\$ 3.0	8	\$ 2.4	2	\$ 0.6	0	\$ -				
	Subtotal Track Work			\$ 52.7		\$ 49.8		\$ 41.7		\$ 34.8				
New Bridges	Linear Foot	\$ 10,000	600	\$ 6.0	660	\$ 6.6	450	\$ 4.5	800	\$ 8.0				
Rehabilitate Existing Bridges	Linear Foot	\$ 4,000	6010	\$ 24.0	5810	\$ 23.2	4450	\$ 17.8	1990	\$ 8.0				
Miscellaneous Building or Road Modifications	Lump Sum	n/a	0	\$ 0.3	0	\$ 0.3	0	\$ 0.3	0	\$ 0.1				
	Subtotal Bridges and Structures			\$ 30.3		\$ 30.1		\$ 22.6		\$ 16.1				
Rebuild Existing Track Crossing	Each	\$ 25,000	84	\$ 2.1	84	\$ 2.1	89	\$ 2.2	82	\$ 2.1				
Place Second Track through Crossing and Rebuild	Each	\$ 105,000	1	\$ 0.1	1	\$ 0.1	1	\$ 0.1	1	\$ 0.1				
Upgrade Existing Crossing to CFBG	Each	\$ 200,000	12	\$ 2.4	12	\$ 2.4	12	\$ 2.4	27	\$ 5.4				
Add Second Track, Rebuild Crossing, Relocate Signals	Each	\$ 355,000	0	\$ -	0	\$ -	5	\$ 1.8	0	\$ -				
Add Constant Warning Time Devices	Each	\$ 150,000	53	\$ 8.0	53	\$ 8.0	58	\$ 8.7	51	\$ 7.7				
	Subtotal Grade Crossings			\$ 12.6		\$ 12.6		\$ 15.2		\$ 15.2				
Install New Interlockings	Each	\$ 1,500,000	9	\$ 13.5	8	\$ 12.0	5	\$ 7.5	5	\$ 7.5				
Modify Existing Interlockings	Each	\$ 500,000	7	\$ 3.5	5	\$ 2.5	5	\$ 2.5	4	\$ 2.0				
Install Intermediate Signals, Bi-Directional CTC	Each	\$ 450,000	18	\$ 8.1	18	\$ 8.1	18	\$ 8.1	18	\$ 8.1				
Install Intermediate Signals, One Track / One Direction	Each	\$ 150,000	0	\$ -	0	\$ -	0	\$ -	0	\$ -				
	Subtotal Signal System			\$ 25.1		\$ 22.6		\$ 18.1		\$ 17.6				
Park-and-Ride Stations	Lump Sum ²	n/a	9	\$ 19.5	9	\$ 19.5	9	\$ 19.5	11	\$ 21.9				
Overnight Coach Storage Yard / Maintenance Facility	Lump Sum ²	n/a	8	\$ 8.0	8	\$ 8.0	8	\$ 8.0	8	\$ 8.0				
Midday Storage / Servicing Facilities at 47th St Yard	Lump Sum ²	n/a	2	\$ 2.5	2	\$ 2.5	2	\$ 2.5	2	\$ 2.5				
	Subtotal Stations and Coach Storage Yard			\$ 30.0		\$ 30.0		\$ 30.0		\$ 32.4				
Subtotal for Physical Plant including Stations and Yard				\$ 150.6		\$ 145.0		\$ 127.5		\$ 116.1				
Contingency (30%)				\$ 45.2		\$ 43.5		\$ 38.3		\$ 34.8				
Engineering, Design, and Construction Management (12%)				\$ 18.1		\$ 17.4		\$ 15.3		\$ 13.9				
ESTIMATED CAPITAL COST OF IMPROVEMENTS TO PHYSICAL PLANT				\$ 213.8		\$ 205.9		\$ 181.1		\$ 164.8				
Locomotives (including one spare)	Each	\$ 2,400,000	4	\$ 9.6	4	\$ 9.6	4	\$ 9.6	4	\$ 9.6				
Coaches (including two spares)	Each	\$ 2,000,000	20	\$ 40.0	20	\$ 40.0	20	\$ 40.0	20	\$ 40.0				
	Subtotal Rolling Stock			\$ 49.6		\$ 49.6		\$ 49.6		\$ 49.6				
TOTAL ESTIMATED CAPITAL COST (millions of 1997 dollars)				\$ 263.4		\$ 255.5		\$ 230.7		\$ 214.4				
Total Route Length ³ / Estimated Capital Cost Per Route Mile			38.4	\$ 6.9	40.5	\$ 6.3	38.8	\$ 5.9	40.9	\$ 5.2				
New Commuter Route Length ³ / Estimated Capital Cost Per New Mile			31.2	\$ 8.4	32.4	\$ 7.9	29.0	\$ 8.0	24.7	\$ 8.7				

¹ Figures are in millions of dollars, rounded to single decimal point. They may contain further decimals that are not displayed, so some will not appear to add correctly.

² Station cost figures are order-of-magnitude estimates, with site-specific factors such as length of platform, size of depot or parking lot (all require ridership estimates) are subject to change in MIS or Phase II Feasibility Study. Additional land for parking expansion or potential environmental concerns that could require mitigation will be determined at that time.

THERE ARE NO COST ESTIMATES FOR LAND ACQUISITION OF POTENTIAL STATION SITES, COACH YARD STORAGE SPACE, OR ADDITIONAL RIGHT-OF-WAY.

³ "Total Route Length" is track mileage from outer terminus (Beecher Coach Yard) to LaSalle Street Station, while "New Commuter Route Length" is track mileage only on portion of routes that are currently freight-only. It is assumed that no additional improvements would be necessary on existing RID north of connection.

Commuter route length on freight-only lines includes passing sidings, new connecting tracks, etc. as part of new track mileage.

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Table 9
South Suburban Commuter Rail Feasibility Study
Track and Signal Capital Cost Estimates (1997 dollars)

Categories of Capital Infrastructure Requirements	Alignment Options												
	Option 1			Option 2			Option 3			Option 4			
	UP to SWWS at 74th St	UP to SWWS at 79th St	UP to SWWS at Blue Island	UP to SWWS at 74th St	UP to SWWS at 79th St	UP to SWWS at Blue Island	UP to SWWS at 74th St	UP to SWWS at 79th St	UP to SWWS at Blue Island	UP to SWWS at 74th St	UP to SWWS at 79th St	UP to SWWS at Blue Island	
Description	Unit	Unit Cost	Quantity	Cost ¹	Estimated Cost	Quantity	Cost ¹	Estimated Cost	Quantity	Cost ¹	Estimated Cost	Quantity	Cost ¹
New Track including Grading (Ground Level)	Track-mile	\$ 1,500,000	28.6	\$ 42.9	\$ 1,218,540	28.3	\$ 42.5	\$ 1,201,350	24.4	\$ 36.6	\$ 891,240	20.2	\$ 30.3
Major Excavation and Grading (New Embankment)	Track-mile	\$ 1,000,000	0.0	\$ -	\$ -	0.6	\$ 0.6	\$ 600,000	0.0	\$ -	\$ -	2.6	\$ 2.6
Rehabilitate Existing Track	Track-mile	\$ 500,000	51.3	\$ 25.7	\$ 1,318,410	50.6	\$ 25.3	\$ 1,270,260	50.9	\$ 25.5	\$ 1,287,450	44.6	\$ 22.3
Install Turnouts	Each	\$ 150,000	13	\$ 2.0	\$ 26,000	7	\$ 1.1	\$ 7,700	11	\$ 1.7	\$ 16,650	7	\$ 1.1
Install Crossovers	Each	\$ 300,000	26	\$ 7.8	\$ 202,800	22	\$ 6.6	\$ 145,200	20	\$ 6.0	\$ 120,000	24	\$ 7.2
Install Diamonds	Each	\$ 300,000	12	\$ 3.6	\$ 43,200	10	\$ 3.0	\$ 30,000	4	\$ 1.2	\$ 12,000	2	\$ 0.6
Subtotal Track Work				\$ 81.9	\$ 2,600,950		\$ 79.0	\$ 2,514,510		\$ 70.9	\$ 2,120,840		\$ 64.1
New Bridges	Linear Foot	\$ 10,000	2270	\$ 22.7	\$ 515,190	2330	\$ 23.3	\$ 541,810	2120	\$ 21.2	\$ 451,440	2470	\$ 24.7
Rehabilitate Existing Bridges	Linear Foot	\$ 4,000	6010	\$ 24.0	\$ 144,240	5810	\$ 23.2	\$ 134,792	4450	\$ 17.8	\$ 79,170	1990	\$ 8.0
Miscellaneous Building or Road Modifications	Lump Sum	n/a	0	\$ 0.3	\$ 0	0	\$ 0.3	\$ 0	0	\$ 0.3	\$ 0	0	\$ 0.1
Subtotal Bridges and Structures				\$ 47.0	\$ 144,240		\$ 46.8	\$ 134,792		\$ 39.3	\$ 79,170		\$ 32.8
Rebuild Existing Track Crossing	Each	\$ 25,000	84	\$ 2.1	\$ 1,764,000	84	\$ 2.1	\$ 2,088,000	89	\$ 2.2	\$ 2,238,000	82	\$ 2.1
Place Second Track through Crossing and Rebuild	Each	\$ 105,000	1	\$ 0.1	\$ 105,000	1	\$ 0.1	\$ 105,000	1	\$ 0.1	\$ 105,000	1	\$ 0.1
Upgrade Existing Crossing to CFBG	Each	\$ 200,000	12	\$ 2.4	\$ 288,000	12	\$ 2.4	\$ 288,000	12	\$ 2.4	\$ 288,000	27	\$ 5.4
Add Second Track, Rebuild Crossing, Relocate Signals	Each	\$ 355,000	35	\$ 12.4	\$ 432,500	35	\$ 12.4	\$ 432,500	40	\$ 14.2	\$ 568,000	35	\$ 12.4
Add Constant Warning Time Devices	Each	\$ 150,000	53	\$ 8.0	\$ 795,000	53	\$ 8.0	\$ 795,000	58	\$ 8.7	\$ 864,600	51	\$ 7.7
Subtotal Grade Crossings				\$ 25.0	\$ 3,275,500		\$ 25.0	\$ 3,275,500		\$ 27.6	\$ 3,485,100		\$ 27.6
Install New Interlockings	Each	\$ 1,500,000	10	\$ 15.0	\$ 150,000	9	\$ 13.5	\$ 135,000	6	\$ 9.0	\$ 90,000	6	\$ 9.0
Modify Existing Interlockings	Each	\$ 500,000	14	\$ 7.0	\$ 98,000	12	\$ 6.0	\$ 180,000	12	\$ 6.0	\$ 180,000	11	\$ 5.5
Install Intermediate Signals, Bi-Directional CTC	Each	\$ 450,000	34	\$ 15.3	\$ 520,200	34	\$ 15.3	\$ 520,200	34	\$ 15.3	\$ 520,200	34	\$ 15.3
Install Intermediate Signals, One Track / One Direction	Each	\$ 150,000	0	\$ -	\$ 0	0	\$ -	\$ 0	0	\$ -	\$ 0	0	\$ -
Subtotal Signal System				\$ 37.3	\$ 768,200		\$ 34.8	\$ 735,200		\$ 30.3	\$ 690,200		\$ 29.8
Park-and-Ride Stations	Lump Sum ²	n/a	9	\$ 19.5	\$ 175,500	9	\$ 19.5	\$ 175,500	9	\$ 19.5	\$ 175,500	11	\$ 21.9
Overnight Coach Storage Yard / Maintenance Facility	Lump Sum ²	n/a		\$ 8.0	\$ 80,000		\$ 8.0	\$ 80,000		\$ 8.0	\$ 80,000		\$ 8.0
Midday Storage / Servicing Facilities at 47th St Yard	Lump Sum ²	n/a		\$ 2.5	\$ 25,000		\$ 2.5	\$ 25,000		\$ 2.5	\$ 25,000		\$ 2.5
Subtotal Stations and Coach Storage Yard				\$ 30.0	\$ 280,500		\$ 30.0	\$ 280,500		\$ 30.0	\$ 280,500		\$ 32.4
Subtotal for Physical Plant including Stations and Yard				\$ 221.2	\$ 3,535,250		\$ 215.6	\$ 3,485,210		\$ 198.1	\$ 3,186,640		\$ 186.6
Contingency (30%)					\$ 664,275			\$ 664,275			\$ 594,000		\$ 56.0
Engineering, Design, and Construction Management (12%)					\$ 265,230			\$ 265,230			\$ 238,000		\$ 22.4
ESTIMATED CAPITAL COST OF IMPROVEMENTS TO PHYSICAL PLANT				\$ 314.1	\$ 4,464,755		\$ 306.1	\$ 4,450,710		\$ 281.3	\$ 4,079,840		\$ 265.0
Locomotives (including one spare)	Each	\$ 2,400,000	4	\$ 9.6	\$ 38,400	4	\$ 9.6	\$ 38,400	4	\$ 9.6	\$ 38,400	4	\$ 9.6
Coaches (including two spares)	Each	\$ 2,000,000	20	\$ 40.0	\$ 800,000	20	\$ 40.0	\$ 800,000	20	\$ 40.0	\$ 800,000	20	\$ 40.0
Subtotal Rolling Stock				\$ 49.6	\$ 822,400		\$ 49.6	\$ 822,400		\$ 49.6	\$ 822,400		\$ 49.6
TOTAL ESTIMATED CAPITAL COST (millions of 1997 dollars)				\$ 363.7	\$ 5,287,155		\$ 355.7	\$ 5,305,920		\$ 330.9	\$ 5,006,240		\$ 314.6
Total Route Length ³ / Estimated Capital Cost Per Route Mile			38.4	\$ 9.5		40.5	\$ 8.8		38.8	\$ 8.5		40.9	\$ 7.7
New Commuter Route Length ³ / Estimated Capital Cost Per New Mile			31.2	\$ 11.7		32.4	\$ 11.0		29.0	\$ 11.4		24.7	\$ 12.7

¹ Figures are in millions of dollars, rounded to single decimal point. They may contain further decimals that are not displayed, so some will not appear to add correctly.

² Station cost figures are order-of-magnitude estimates, with site-specific factors such as length of platform, size of depot or parking lot (all require ridership estimates) are subject to change in MIS or Phase II Feasibility Study. A additional land for parking expansion or potential environmental concerns that could require mitigation will be determined at that time.

THERE ARE NO COST ESTIMATES FOR LAND ACQUISITION OF POTENTIAL STATION SITES, COACH YARD STORAGE SPACE, OR ADDITIONAL RIGHT-OF-WAY.

³ Total Route Length³ is track mileage from outer terminus (Beecher Coach Yard) to LaSalle Street Station, while "New Commuter Route Length³" is track mileage only on portion of routes that are currently freight-only. It is assumed that no additional improvements would be necessary on existing RID north of connection.

Commuter route length on freight-only lines includes passing sidings, new connecting tracks, etc. as part of new track mileage.

6.0 RECOMMENDATIONS

This Phase I Feasibility Study has examined several potential route options for providing a new commuter rail service in the UP/CSX Corridor and various connections to existing Metra routes to access downtown Chicago, in order to determine whether any of them might be physically and financially feasible. The Study has also determined the level of community support, i.e., which cities or villages would agree to sponsor and fund potential stations and parking facilities, should the proposed project reach the implementation stage. The intent was either to recommend one or more of the four alignment options from the final short-list for more detailed studies, or to decide that no further studies should be pursued if all of these options were deemed physically or financially infeasible, and/or where little local support was evident.

This report has shown that each of the four potential routes appears to be physically feasible. However, there are major capital costs involved for all options, particularly when additional track(s) would be necessary to avoid conflicts with freight trains. All along the route, local support is substantial. Based on the evaluations in this report, this Phase I Feasibility Study recommends that all four of the remaining options should be studied further. It should be understood that this conclusion and recommendation is qualified based on the findings in this Study phase alone, and does not account for any “unknowns” that may emerge from more detailed studies. Furthermore, at the present time the results of this Study phase cannot and should not be construed as indicating that any recommended SES route will be considered operationally viable or even desirable at the completion of the remaining Study phases.

6.1 ELEMENTS OF A MAJOR INVESTMENT STUDY

The sequence of studies that are required to determine the feasibility of new commuter rail routes provides that the next step be a Phase II Feasibility Study. However, implementation and start-up costs that would exceed Federal criteria and could be considered as “major” suggests that a Major Investment Study (MIS) should precede the Phase II Feasibility Study. Such studies are mandated by the Federal government prior to funding allocations to proceed with implementation. [Note that in TEA-21, the successor to ISTEA, the terminology has changed but the function remains similar.] A MIS is required to evaluate the comparative suitability (against other potential modes of transportation) of providing commuter rail service in new corridors or expanded service in existing corridors. Five modes can be analyzed as possible solutions:

- C Baseline:** Base alternative incorporates planned improvements that are contained in the 2020 Regional Transportation Plan, i.e., they are assumed to exist before the new proposals are considered.
- C Highways:** Alternatives include expansion of any number of possible routes, both existing expressways and major arterial roads, by adding lanes to increase capacity.
- C Rail Routes:** Alternatives include beginning new service, infrastructure upgrades to expand service (including schedule expansion to “full service”), extension of existing lines to serve new areas, new or increased parking facilities and/or additional trains on existing routes.
- C Bus Routes:** Alternatives include new or expanded service on feeder routes, remote parking lots with shuttle buses, or express bus service that complements the train schedule.
- C Transportation Management:** Alternatives include a variety of strategies within the classes of demand management, system management, and intelligent transportation systems.

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The potential commuter rail alternative must be measured against other modes, in order to determine if commuter rail service is the most effective and feasible option for serving the travel demand, or at least is superior to all other options. After developing all of the possible alternatives specific to the corridor in question, screening measures are used to pare down the list to options which appear to be most feasible. (Alternatives screened out from further consideration must have appropriate rationale for their dismissal.) Each of the remaining options are then evaluated further with respect to travel demand and travel times; estimated capital and operating costs; local (study area) social and environmental impacts; and broader regional benefits of the potential SES service such as air quality improvements, reductions in vehicular miles traveled, and enhanced travel-efficiency contributions to the commuter rail system.

Keeping with the intent that this Phase I Study could have declared all rail options feasible, the MIS should precede the detailed work required in Phase II. The MIS would seek to declare that the commuter rail alternative would make the greatest contribution toward serving travel demand and relieving traffic congestion in the study area. Since Federal dollars are most assuredly the primary portion of the eventual funding package for implementation, it makes sense to fulfill the Federal requirement before the more-detailed studies (some of which are quite expensive and time consuming) in Phase II. Travel demand forecasts, which were outlined for study in Phase II, would become a part of the MIS. Following sufficient evaluation in the MIS process, and presuming that commuter rail is found to be the best alternative for addressing present and future travel demand in the given corridor, the Phase II Feasibility Study would begin.

6.2 ELEMENTS OF A PHASE II FEASIBILITY STUDY

A Phase II Feasibility Study would be designed to evaluate the Phase I recommendation within a more in-depth and expanded scope. It would also allow for a more effective use of financial resources and efficient use of the time required to perform the Study. This Phase I Study has identified four commuter rail route options for further study and for a continuation into a Phase II Study, subject to the results of the recommended interim Study. A Phase II Feasibility Study includes the following general elements:

- C Ridership estimates would be completed utilizing the most recently accepted regional-planning base-year demographic and socioeconomic forecasts. This would include evaluating travel demand, travel time, service frequency, rail transfer options, intermodal transfers, and service fares. If this has been completed for the MIS, probably only an update and review would be necessary.
- C Environmental assessment would focus upon construction impacts, water systems and wetlands, air quality issues, noise and vibration, living species, historical issues and other actions which could require recommended mitigation strategies.
- C Site studies would evaluate physical locations of existing and potential rail infrastructure such as crossovers, turnouts, additional passing sidings, interlockings and CTC signal systems, at-grade highway crossings, and rail-from-rail or rail-from-highway grade separations.
- C Line capacity analyses would evaluate a variety of commuter and freight train operating scenarios on the recommended alignment. Operating scenarios would consider conditions such as freight train densities and system capacities, operating rules that regulate speed and signal restrictions, freight system volume forecasts, and the potential for the maximum allowable number of commuter trains, including scheduled revenue trains and non-revenue trips.

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- C Refined cost estimates would include more-detailed and site-specific capital cost estimates, as well as identification of costs that are subject to change as a result of updated design and engineering specifications. In particular, the revised cost estimates would take into account additional infrastructure needs identified by the line capacity analyses.

6.3 PROGRAM FOR FURTHER STUDY

Metra has defined a “Typical Overall Rail Corridor Evaluation Process”, as a phased plan for the study of new commuter rail service in a corridor. The intent of phasing the studies is to limit the investment in the Study effort to increments of progressively justified and more-detailed work. Specifically, the progressive investment before starting Phase II was to ensure that the planning and engineering concepts behind the service and the alignment were sound before investing in ridership forecasting, operations simulations, and associated site-specific and environmental studies of the alignments. Phase II of the South Suburban Commuter Rail Feasibility Study would be the next step after performing a Major Investment Study (MIS), both of which would occur prior to pursuing funding for the line’s implementation through the Federal Transit Administration. The following subsections outline the remaining elements to be studied further in a Phase II Feasibility Study (some of this might have been accomplished in the MIS beforehand).

6.3.1 Refined Cost Estimates

The order-of-magnitude cost estimates performed in the Phase I Study made extensive use of standard unit costs for many categories. For example, to estimate bridge costs, a unit cost per linear foot was used. This task would examine those unit costs to determine where refinements are needed to ensure a reliable project cost estimate for both capital and operating costs (the latter was not a part of Phase I). Particular attention would be paid to site-specific circumstances.

The three alignments operating past Yard Center likely would require some land acquisition north of Sibley Boulevard, in order to create potential bypass track(s). For Option 4, property acquisition would be required in order to provide the connection from the CN to the RID. This site could also involve wetlands mitigation, as the water table in the CN maintenance-of-way yard (to the south of the creek) was observed to be fairly high. Various land acquisitions could also be involved for building connecting tracks at 16th Street to go from the IC trackage across the SCAL to the RID, alongside the IC tracks from 21st to 16th Streets (only if a separate Metra right-of-way is deemed to be required), to connect to the RID at 79th Street, or to build the new Metra double-track route between the NS and BRC from 88th Street to either 79th or 74th Streets.

The primary question regarding the differences in viability between the options is the physical feasibility of the proposed connections to the RID. Two of the connections, in Options 2 and 4, involve grade separations and proposed balloon tracks to rise on a grade and curve at the same time in order to join the elevated right-of-way of the RID. For Option 1, there is an at-grade connection, but this is complicated by the parallel NS freight track. For Option 3, the connection at Oakdale is at grade but the connection at Gresham includes a fairly steep rise to attain the elevation of the RID. Added difficulty in this case comes from the tight 90⁰ turns with only a half-mile of CRL trackage between them, necessitating a very slow speed on this segment.

The four alignments that are recommended for further study are already undergoing a separate interim study, prior to an MIS or Phase II Study. The primary question regarding the differences in viability between the four options is the physical feasibility of the proposed connections to the RID. In order to ascertain the feasibility of these connections, a separate report has been commissioned to determine if, in fact, any of these proposals

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would be impractical. This report is evaluating environmental aspects of the east run-around track at Yard Center, the NS-RID connection at 79th Street, and the CN-RID connection in Blue Island, as well as preliminary engineering of the latter two connections. The report will be issued prior to proceeding to the MIS and Phase II Studies, in order to provide direction for further study aspects in Phase II.

6.3.2 Ridership Estimates

A forecast of expected ridership and travel patterns would be completed for the base years 2010 and 2020. The model used for these forecasts would be sensitive to a variety of travel demand parameters including, at a minimum, travel time, service frequency, service hours, number of stations, availability and ease of transfer to other transport modes, and fares. The model would also allow for consideration of future expansions of transportation service within the corridor. Possible impacts would be evaluated from connections with the potential Outer Circumferential commuter rail service on the Elgin, Joliet and Eastern Railroad (EJ&E), and an extension to create an eastern transit access to the proposed South Suburban Airport (should a decision on it be made or become imminent).

6.3.3 Environmental Impacts

The environmental tasks would address important concerns relating to the physical and natural environment by focusing on three objectives prior to preparing a complete documentation of findings:

- C Describe the environmental conditions within the study area
- C Identify and evaluate the short- and long-term impacts of each alignment on the environment, determining potential concerns and liabilities
- C Identify and recommend mitigation measures to be incorporated in design and/or operating plans for each alignment and its components

The screening of environmental impacts would begin with an identification of baseline conditions. An inventory of existing environmental conditions would be developed by reviewing and building on the previous Phase I work. The environmental tasks would be performed in parallel with the Phase II engineering activities, and would serve as the primary input to the identification of key mitigation strategies for each alternative alignment. The potential impacts of structures and construction activities would be identified and, if necessary, the requirement for and extent of necessary mitigation actions would be identified. Issues to be covered would include:

Land Use & Growth Management	Displacements & Relocations
Visual & Aesthetics	Noise & Vibration
Water Resources	Historical/Archaeological
Utilities & Public Services	Economic Development
Neighborhood Impacts	Air Quality
Ecosystems & Wetlands	Energy
Parklands	Construction Impacts

Issue identification, baseline establishment, and impact analysis would be prepared in full accordance with the planning procedures and methods of the National Environmental Policy Act (NEPA) and FTA. Environmental documentation would address both beneficial and adverse impacts for existing and future conditions. The

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consequences of construction activities and operations would be considered. Impacts would be classified, and their significance addressed on the basis of short- and long-term consequences. Mitigation measures would be provided wherever significant adverse impacts were identified.

6.3.4 Site Studies

In the Phase I South Suburban Commuter Rail Feasibility Study, four alignments have been recommended for further study. Most of the mileage for these alignments consists of existing railroads. However, several segments and connections between railroads are defined in that Study where there are currently no tracks. This task would study alternate alignments at selected sites. The alternate alignments to consider would be based on the following:

- C The lateral shifting of existing railroad tracks
- C The location or relocation of turnouts onto the new segments
- C The location or relocation of new crossovers on the existing rail lines
- C A better use of existing property parcels by avoiding multiple parcels and/or the splitting of parcels
- C The addition of a second track and/or additional crossovers arising from the operational needs defined by the line capacity analyses
- C The use of flyovers at one or more locations to eliminate conflicting railroad cross traffic

6.3.5 Line Capacity Analyses

A simulation model would be developed to perform line capacity analyses along each alignment using different combinations of operating conditions. The conditions would include:

- C Current and projected freight train traffic densities and proposed commuter train schedules
- C Operating rules and other operating considerations as defined by Metra, covering both Metra and freight railroad tracks
- C Speed and signaling restrictions from current conditions and projected future improvements
- C Existing dispatcher prioritizations and potential changes with improvements to physical plant

Each simulation would cover at least the time frames that commuter trains would be operating, and perhaps go further to ascertain limits of expanded service on the foreseen physical plant. All commuter train operations would have a 100% on-time performance each day of operation. All commuter trains must operate on clear signals, except where a less favorable signal indication is required by a diverging route or the train speed is not restricted by a less-than-clear aspect. The train speeds and meets must reflect and agree with the specific sets of potential improvements to the physical plant which have been costed. The simulations and analyses would meld the movements of the following railroad operations: potential SES commuter trains, the appropriate Metra RID, SWS, and HC operations, Amtrak inter-city passenger service, and typical actual freight railroad movements.

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6.3.6 Additional Stations within the Chicago City Limits

All of the potential stations studied in Phase I are suburban stops, primarily because the Study was funded by the South Suburban Mayors and Managers Association. Additional feasible station stops could exist within the City of Chicago. Candidate sites would be reviewed for potential ridership, impact on development, station and park-and-ride site feasibility, connection with other transit services, and impacts on operations. Discussions would ensue with City of Chicago transportation planning officials to determine, e.g., possible "neighborhood" stop(s) between 138th and 81st Streets if the UP alignment is followed.

6.3.7 Impacts on Regional Transportation Network

The regional impact of this service on the total transportation network would be reviewed. This would include impacts on automobile traffic and air quality in the region. A number of variables would be reviewed including potential Metra ridership and other transit ridership, impact of land-use changes associated with new service (especially surrounding station areas), and possible changes in automobile use and ozone-precursor vehicle emissions. Identifying these factors would help support an application for a CMAQ (Congestion Management/Air Quality) grant for this project.

6.3.8 South Suburban Airport

As noted in the Study Objectives, this project was to look at "the possibility of providing access to the proposed South Suburban Airport to be situated between Peotone and Beecher." The current plans for the airport show the public entrance on the west side facing the Illinois Central Railroad. Given this configuration, Metra would extend the MED south from University Park along the IC right-of-way to serve the airport. This possibility has already been the subject of a separate study conducted by consultants for Metra and IDOT.

The UP/CSX route skirts the full length of the proposed airport's eastern border. Station stops on the potential line in Crete and Beecher correspond roughly with the northeastern and southeastern corners of the airport property. Generally, commuter rail service on the UP/CSX could provide alternative public access to the proposed airport on the east side through a new station on the railroad Main Line, or through a new rail junction with signalized interlocking which might create a spur track into the proposed airport.

The main thrust of this Study has been to review and analyze service on the UP/CSX line itself and the municipalities along the line, and no effort has been made to look at specific alignments on the airport grounds or service issues within the airport proper. That is, detailed issues such as the following have not been considered in this Study:

- C Circulation within the airport in order to reach the rail stations
- C Use of the airport grounds as a commuter rail layover facility
- C Patronage impacts arising from airport service
- C Commuter rail operating schedule impacts from airport service

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The work to date has shown that no engineering problems exist to preclude the potential SouthEast Service from providing either Main Line station or spur-track eastern access to the proposed South Suburban Airport, nor has any of the work uncovered any problems which would prohibit service between the airport and downtown. Service to the proposed airport appears to be feasible, but its utility would depend on its proximity to the proposed airport's main terminals and whether it is desired, given plans for a southern extension of the MED from the western side. This issue of accessibility is outside the scope of this work.

6.4 SUB-REGIONAL BENEFITS

A variety of tangible benefits that might be expected could range from opportunities that communities in the study area might derive from local response to the inception of commuter rail service to broader regional benefits such as congestion mitigation and improvements to air quality. Benefits that are common to each alignment option include:

- C increased modal choices and enhanced intermodal options
- C reduced auto emissions and roadway congestion levels
- C improved access to employment centers and greater employment mobility for the economic health of both the study area and the overall region
- C opportunities to enhance comprehensive and development plans of individual communities
- C infrastructure enhancements such as commuter rail stations which could serve as community focal points for transit-oriented developments

All four alignment options would have similar effects on the transportation network by enhancing mobility, accessibility and mode choice in the south suburbs. Each of the four candidate alignments serve roughly the same area, with the variations more concerned with routes to the CBD. The key sub-regional benefits are associated with the population and employment market to be supported by commuter rail, additional mode choice and increased accessibility arising from new service, and the potential local development initiated by this transportation investment.

6.4.1 Population and Employment

The previous tasks have shown projected population growth for the communities of the south suburbs, with a larger percentage change forecasted for the southern end of the study area. Additionally, the unincorporated areas in Cook and Will Counties, other municipalities adjacent to the rail corridor communities, and communities in northwestern Indiana are witnessing substantial population growth. These areas would add to the potential utilization of this rail alignment.

Commuter rail in the south suburbs could also enhance access to employment in the region. NIPC's 2020 forecasts show overall employment growth for the south suburbs. The potential SES could allow passengers to access the south suburbs as an employment destination (pending higher service levels). For example, Beecher's proposed industrial park would create a destination in the south suburbs which could be supported by these alignments. Chicago Heights has one of the largest employment bases in the south suburbs, and this service could improve access to both their commercial and institutional facilities.

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6.4.2 Enhanced Modal Choice

The potential SES would add to the choice of transportation modes for commuters traveling to and from downtown Chicago. Currently, commuters are able to drive via the Bishop Ford Expressway and the Dan Ryan Expressway and I-394, or park-and-ride at the MED stations to the west of the UP/CSX route. Community leaders interviewed for this Study expressed difficulties in accessing the MED, due to inadequate east-west roadways and a large number of railroad grade crossings. The potential SES would create an additional accessible rail option and potentially ease traffic congestion on the expressway system.

Also, all of the final alignments terminate at LaSalle Street Station. Currently, passengers traveling from the south suburbs by way of the MED disembark at Randolph Street Station on the eastern side of the Loop. Instituting service along any of the four potential SES alignments terminating at LaSalle Street would provide a different destination to the south and west in the Loop. Passengers would be able to choose which service best suits access to their final destination. If feasible, connecting stations at points where the alignments intersect with other Metra lines would enhance downtown passenger dispersion.

6.4.3 Potential for Local Development

The potential SES would be an integral part of the transportation system within the communities it intersects, integrating with the local transportation networks. Station areas would be able to combine park-and-ride facilities, bus passengers, pedestrians, and bicyclists at a single transportation node. New facilities could create opportunities for physical improvements to the station areas.

Many of the communities in this Study grew up around the railroad. Potential SouthEast Service would be an opportunity for communities to reclaim their past using commuter rail as a catalyst for growth through new development, potential redevelopment, and overall community improvement. Clearly each community is different, but similar opportunities exist, e.g., in Beecher, Crete and Glenwood, where a commuter rail station is planned as a component of their downtown redevelopment. Their plans include facilities for commuter rail services as well as other amenities for commuters. Other communities like Chicago Heights have not yet devised a concrete plan, but they do recognize the potential to use the transportation investment as a catalyst for growth and creation of transit-oriented developments.

Development opportunities also vary slightly by alignment. Option 1 would connect the SWS to the RID via the IC in the midst of a proposed residential and commercial TIF district. A station at this location could be established as an origin and a destination for passengers. The station siting could also enhance transit-oriented development at this location. On the other hand, although Dolton would be left without an SES station, Option 4 opens up opportunities for communities along the CN route. In the MIS and Phase II Studies, such opportunities would be examined in greater detail.