Feasibility Report on Proposed Amtrak Service
Chicago-Rockford-Galena-Dubuque

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I. Introduction and Background

I.A. General Discussion

In mid-2006, the State of Illinois doubled the funding for existing state-supported Amtrak routes and an increase in train frequencies commenced on three corridors effective October 30, 2006. U.S. Senator Dick Durbin held a community meeting in Rockford on July 3, 2006, with Congressman Don Manzullo, the Illinois Department of Transportation (IDOT) and Amtrak, where broad support was given from communities and other stakeholders in northwest Illinois for initiation of Amtrak service. IDOT's then-Secretary sent a formal request to Amtrak on August 11, 2006 for a feasibility study regarding possible service between Chicago-Rockford-Galena and Dubuque.

The general population growth along the eastern portion of this corridor has been strong over the past decade, but passenger train service formerly provided by Amtrak ceased in 1981. Highway traffic volumes on I-90 between Chicago and Rockford are significant; with frequent backups the closer one gets to Chicago. Rockford is a major residential and commercial center and the largest metropolitan area in Illinois without passenger rail service. Between Rockford and the O'Hare Airport area, many new residential developments have been established, especially along the I-90 corridor. As information, there are 17 daily round trips by commercial bus companies between Rockford and the airport and five between Rockford and downtown Chicago. Further west, Galena is a significant destination city for tourism, especially during the summer and fall. At Dubuque, there is an aggressive plan underway to redevelop the downtown property along the Mississippi River. It is within this complex that it is proposed to terminate the train and it would be held here overnight. A storage track of sufficient length already exists, with ample parking available. In the immediate area of this location and along the Mississippi River, recent developments have included the construction of a "river walk", establishment of a large convention center and hotel complex (with indoor water park), and construction of a Mississippi River National Riverways Aquarium, an affiliate of the Smithsonian. Finally, there is a floating casino within this complex and plans are underway for further expansion of facilities here.

Following receipt of the study request, a number of alternative rail routes were identified as candidates for this service. Physical evaluations of the routes were conducted with host railroad personnel, including hi-rail inspections, assessments of capital needs, and identification of operational challenges. Revenue/ridership forecasts were determined based on recommended schedules, and estimates of cost to operate the service were developed. Since the desire of the state and communities is to re-establish Amtrak service in the most expeditious way possible, this study did not focus on "high-speed" scenarios but rather on incremental and focused improvements which would result in a reasonably attractive service. Amtrak was requested to study a coach-only proposal, with no food service. The goal was to prepare a high-level and objective report of the findings, in response to IDOT's request, for their further discussion with different local jurisdictions in the northwestern part of the state, several of which have their own preferences for routes and station stops to be used. The study included fact-finding discussions with the host railroad owners of the trackage, local governmental representatives, and advocacy groups.

Other rail transportation studies for this corridor that have been issued in the past by various groups were also reviewed. It should be noted that a major study is currently underway by the consulting firm TranSystems to extend Metra commuter service to Rockford from Elgin (Big Timber). Discussions were conducted with TranSystems to coordinate both efforts, as some of the required improvements may potentially be common to, and benefit, both Amtrak operations and the commuter service. However, there are significant differences,

ranging from the number of daily train frequencies and stops, to station and parking facility requirements, to bus feeder networks, to layover facilities and rolling stock needs, among others. A further discussion on the commuter study is included in this report.

Although there have been general discussions and field inspections with the host freight railroads, the specific infrastructure improvement proposals, draft schedules and other railroad-related comments in this report have not been negotiated or agreed to with the host freight railroads and reflect only the findings and best judgment recommendations of the study team.

Alternative routes were initially identified as potentially feasible for establishment of Amtrak service between Chicago and Rockford, with an additional route identified following public informational meetings. Only one route was found to be practical between Rockford and Dubuque. These alternatives are shown on the map below. Each requires a different level of capital investment to make the service a practical reality. With a couple of notable exceptions which are detailed elsewhere in this report, it was the goal to establish travel times consistent with the maximum authorized timetable speeds of each route segment. While that provides the quickest path forward to initiation of train service, further reductions in travel times could be achieved by significant additional investments in the infrastructure above that recommended in this report. The routes studied were:

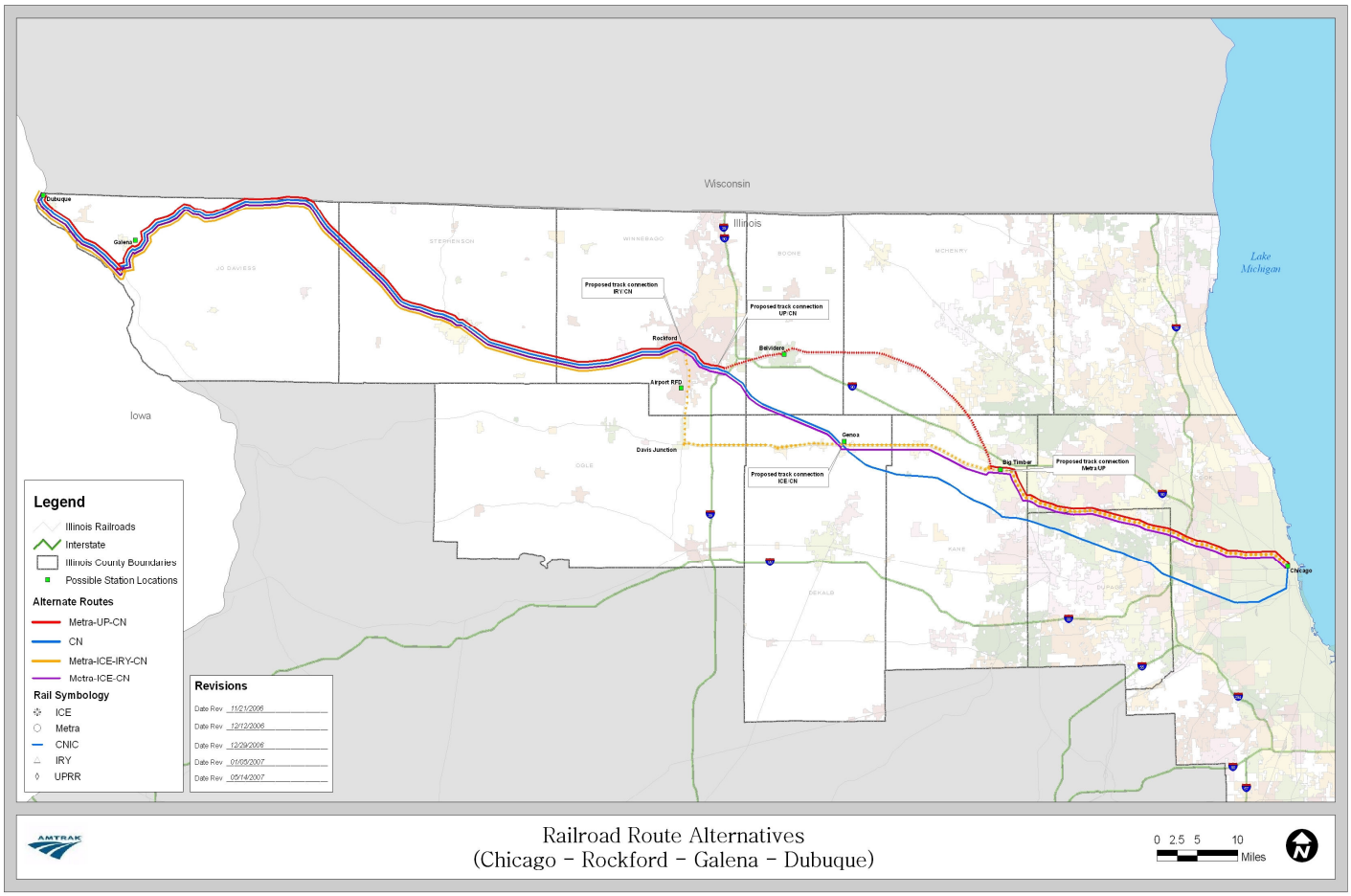
Route A: Chicago-Elgin-Rockford-Galena-Dubuque via Amtrak-Metra-UP-CN

Route B: Chicago-Elgin-Genoa-Rockford Airport-Rockford-Galena-Dubuque via Amtrak-Metra-ICE-IRY-CN

Route C: Chicago-Elgin-Genoa-Rockford-Galena-Dubuque via Amtrak-CN

Following the distribution of the original report earlier this year (original text above), a series of public meetings were held and an additional route alternative was suggested by Winnebago County.

Route D: Chicago-Elgin-Genoa-Rockford-Galena-Dubuque via Amtrak-Metra-ICE-CN



In Section II, each route alternative is discussed in some detail and a summary of each is shown at the end of the report.

While it is presumed that train service is to be provided over the entire Chicago-Dubuque corridor, there is interest by some groups in serving downtown Rockford as well as the Rockford airport. To serve the latter from Routes A, C or D would require a deviation off the direct east-west routing to the south, some five miles, with a subsequent reverse move and significant increase in overall travel time on the corridor. It is our recommendation that consideration of airport service be limited to the Route B option. The Routes A, C or D scenario for airport service would also require additional capital expenditures to construct appropriate connection tracks.

I.B. Rolling Stock

All route alternatives assume a train consist in "push-pull mode", with 1 locomotive and 1 non-powered-control-unit (NPCU), or second locomotive, and no food service as directed by the State. The number of coaches in the consist have been sized to reflect the anticipated patronage. As will be reflected later in the ridership/revenue forecast summary, it appears that the number of coaches required for all routes will be two. It should be understood that the current car supply situation at Amtrak is extremely tight and it is likely that equipment for this service would have to be generated from our bad order storage inventory, thus requiring significant initial rehabilitation expenditures. The consist can be modified as future demand dictates or as the State desires. It should be noted that, although Amtrak was asked to price this proposed service without on-board food service, this would be the longest run in the Amtrak system without such an amenity.

I.C. Station Facilities

There are very limited station facilities along the proposed alternative routes. For example, on the CN, there are station buildings at Rockford, Freeport and Galena. However, only the long abandoned Rockford station, which is CN-owned, has a platform with a canopy. It would take a significant amount of investment to bring these facilities back to a serviceable level. The platforms at Galena and Freeport are badly deteriorated and do not comply with even minimum ADA requirements. Those stations are privately-owned. There is no station platform at Dubuque, although a totally refurbished station building with waiting room is located close to the proposed termination point of the train. For purposes of this report, it is assumed that all station facilities will be provided by parties other than Amtrak, including platforms, parking, and waiting areas. The assumption is that local communities desiring a station stop will provide such facilities as well as their ongoing maintenance.

Although the suggested station stops have been shown in the sample schedules, they could well be modified depending on the willingness and ability of local communities to provide facilities. For example, there is a very well organized and enthusiastic group at Lena, IL, desiring a stop in that community. Whether the State ultimately directs Amtrak to establish a stop there, as well as Freeport, is an item for further discussion. The proximity of Northern Illinois University to Route B, C and D makes a stop at Genoa attractive, since the campus student population is approximately 25,000. The distance between the two is approximately 16 miles. Other station-related issues for further discussion include the question of whether both a downtown and east Rockford stop is desired, in addition to the desirability of providing service to/from the Rockford airport. The latter provides another challenge, in that the trackage is located along the eastern boundary of the airport, while the airport terminal facilities are located on the other side of the airport. How to connect the two for Amtrak service is not specifically addressed in this report but it would appear a bus shuttle might be feasible. No costs related to this airport connection operation are included in this report.

Regarding station platform design and construction, it should be noted that there is industry-wide discussion underway of DOT's notice of proposed rulemaking concerning amendments to the Department's Americans with Disabilities Act (ADA) regulations, specifically Docket OST-2006-23985. In this notice, the DOT proposes that new commuter and intercity rail stations shall provide level-entry boarding to all accessible cars in each train using the station. Because this notice is still under consideration and no new rules have been promulgated, questions of station platform design, dimensions and construction cannot be fully addressed and may therefore delay station (platform) development efforts.

II. Discussion of Alternative Routes

II.A. Route A

II.A.1. General Description of Route A

This proposed alternative would use the tracks of four carriers, as follows, and require the construction of two connection tracks (see "Capital Requirements, Section II.A.2.ii):

	Miles
Amtrak	0.6
Metra	39.2
UP	42.6
CN	101.6
Total:	184.0 Miles

The short Amtrak portion of the route is the immediate area of the north train shed and includes lead tracks at Chicago's Union Station. This transitions onto Metra's "Milwaukee District-West Line" commuter territory between Chicago and Elgin (Big Timber), a well-maintained segment with nearly 60 commuter trains daily during weekdays, in addition to a variety of freight operations. Except for a short single track river bridge at Elgin, this portion of the route has two and three main tracks along its entire length, with segments having a top speed of 70-mph and the entire segment having centralized traffic control.

The Union Pacific's segment from Elgin (Big Timber) to Belvidere, just east of Rockford, is dark (non-signaled) trackage with a top speed of 49-mph. Freight traffic is currently limited to one road train in each direction daily, primarily serving the Chrysler automobile production facility at Belvidere. There is also a local train which operates tri-weekly west of Belvidere and twice weekly east of there. UP officials stated that a second road train is under consideration. Between Elgin and Belvidere, a distance of nearly 40 miles, there is 115# continuous welded rail and excellent crosstie and surface conditions. A major maintenance program was completed in 2006. On this trackage there are no intermediate sidings to meet or pass trains, which would become a necessity should passenger service be initiated on the line. An order-of-magnitude cost for such a siding has been included in this report under the "Capital Requirements" section. Since the length of the approach circuits for activation of grade crossing warning devices are set for the maximum speed of 49-mph, it is recommended that a diagnostic analysis be undertaken to determine what would be required to initiate a higher passenger train speed differential on this line. Ultimately, consideration should be given to installation of CTC and upgrading of speeds to a maximum of 79-mph, since the vertical and horizontal alignments lend themselves to a significant speed improvement. Although that analysis was outside the scope of this feasibility study, it is expected that UP will request this CTC improvement, even for the existing speeds, should this route be preferred. As information, the estimated cost of installing CTC on the UP portion of the route may be as high as $14 million, based on information received from the commuter study, and has been included in the cost summaries in this report.

From a point immediately west of the automobile production facility at Belvidere to the eastern portion of Rockford, a distance of 7½ miles, the track conditions on the Union Pacific worsen considerably, with significant lightweight (90#) rail, poor crosstie conditions, and a maximum authorized track speed of 10-mph (FRA Class I). This is clearly unacceptable for passenger train operations and a capital program to upgrade the track to at least FRA Class III is included under "Capital Requirements". As information, UP representatives advised that a crosstie renewal and surfacing program on this segment has been tentatively programmed for 2008, but there are no current plans to replace the rail.

From Rockford to Dubuque, the CN trackage, known as the "Freeport Subdivision," is signaled (ABS and CTC) and generally well-maintained, with mainly 115# continuous welded rail and some segments of jointed rail present. Approximately 13 miles of the jointed rail west of Freeport was observed to be surface-bent and is recommended for replacement. The estimated cost is included in the "Capital Requirements" section. The line is equipped with defective and dragging equipment detectors at strategic intervals. The freight traffic on this route segment is relatively light, with two trains in each direction daily. In addition, there are seasonal unit grain train movements but overall, the line appears to be quite fluid, as verified by CN representatives accompanying us on the route inspection. They stated that the traffic density is approximately 10-12 MGT annually. Ultrasonic rail flaw detection testing is conducted three times annually and the track geometry car is operated once per year.

The CN's line segment between Portage (just west of Galena) and East Dubuque, approximately 13 miles in length, is a joint operation with BNSF owning the two main tracks. BNSF dispatches this segment. As information, the BNSF has recently issued an RFP for extension of the Center Siding at East Dubuque. The purpose of this proposal is to have a long track available for trains waiting to cross over the Mississippi River into Dubuque. There is a possibility that BNSF will require further mitigation of any capacity constraints at that location with the initiation of passenger train service and may suggest that a capacity study be performed.

BNSF has pledged its full cooperation in the event the train is funded. No cost for any capital improvements at East Dubuque has been included for purposes of this report.

Since the Rockford-Dubuque route segment over CN is common to all four route alternatives between Chicago and Rockford, this discussion about CN is identical in each scenario. As in the case of the Metra and UP segments, and as is typical for any Midwest rail operations, there are numerous public at-grade street and highway crossings along the entire corridor and, in the more rural areas, private crossings as well. Although many are equipped with train activated devices, i.e., gates and/or flashers, there are still numerous crossings with only passive cross buck signs. It is recommended discussions be initiated with the State of Illinois about any additional grade crossing warning devices or closures that may be deemed appropriate for the route.

In summary, the miles of track associated with each category of maximum authorized speed on this corridor are as follows:

Maximum Speed	Existing Max. Timetable Speed (Miles)	Proposed Maximum Speed (Miles)*
10	8.3	2.1
20	2.7	2.7
25	20.9	20.9
30	1.7	0.0
40	4.1	4.1
45	0.2	0.2
49	32.2	40.1
50	63.8	63.8
55	3.4	3.4
60	18.7	18.7
70	28.0	28.0
Total	184.0 Miles	184.0 Miles

* After upgrading of UP trackage Belvidere-Rockford

II.A.2. Capital Requirements

II.A.2.i. Recommended Track Upgrading

For operations at conventional maximum timetable speeds on the majority of the route, no significant track work maintenance needs were identified on the Metra or CN trackage, except as described in this section. As previously discussed, it is recommended that the UP's 10-mph trackage between Belvidere and the eastern portion of Rockford around Alpine Rd., a distance of approximately 7½ miles, be completely rebuilt to at least FRA Class III, (60-mph maximum passenger train speed) with continuous welded rail, heavy crosstie renewal and surfacing. An order-of-magnitude cost estimate for this work is $6.5 million. Although this study does not address the overall upgrading of the entire UP line to a maximum authorized speed of 79-mph, that is certainly an option that should be explored, as the horizontal and vertical alignments lend themselves to that opportunity. In addition, approximately 13 miles of surface-bent jointed rail on the CN west of Freeport is recommended for replacement with continuous welded rail, at a cost estimated at $5.7 million.

II.A.2.ii Proposed Construction of Connection Tracks

In order to utilize Route A, the construction of two connection tracks will be necessary: One between Metra and UP near Elgin (Big Timber) and the other between UP and CN in the eastern part of Rockford. In both of these

locations, the tracks to be connected are parallel to each other, a short distance apart, and at basically the same elevation. The approximate total cost to construct a controlled connection track at both locations is estimated at $5,000,000.

II.A.2.iii **Order of Magnitude Summary of Capital Cost** **$ Millions**

a.	Upgrade UP trackage Belvidere to east Rockford	$ 6.5
b.	Replace approximately 13 track miles of jointed rail with CWR on CN west of Rockford	$ 5.7
c.	Install CTC on UP	$14.0
d.	Connection tracks Metra to UP and UP to CN	$ 5.0
e.	Construct Siding on UP	$ 3.6
f.	Subtotal	$34.8
g.	Contingencies	$ 8.7
h.	Layover Facility	$ 0.3
i.	Total	$43.8

II.A.3. **Schedules**

Using Amtrak's standard methodology and reflecting the maximum authorized timetable operating speeds, station dwell times, and 8% recovery time, a "strawman" schedule was developed for Route A. It is as follows:

Proposed Schedules – Route A

Chicago – Bensenville – Belvidere – Rockford
Freeport – Galena – Dubuque
Amtrak -- Metra – UP -- CN

Westbound Daily					Eastbound Daily
6:15 PM	Dp	Chicago, IL-Union Sta. CT	Ar		10:25AM
R 6:55 PM	Dp	Bensenville, IL	Dp		D 9:55 AM
8:17 PM	Dp	Belvidere, IL	Dp		8:19 AM
8:42 PM	Dp	Alpine Road	Dp		7:46 AM
8:52 PM	Dp	Rockford, IL	Dp		7:36 AM
9:31 PM	Dp	Freeport, IL	Dp		6:57 AM
10:50PM	Dp	Galena, IL	Dp		5:38 AM
11:40PM	Ar	Dubuque, IA CT	Dp		5:00 AM

R at Bensenville Westbound - Stops only to receive passengers.
D at Bensenville Eastbound - Stops only to discharge passengers.

The proposed station stops indicated above reflect our initial recommendations for this route based on discussions with various parties. It is possible that these may change, or that other stations may be added, if this route is seriously considered. (See also general discussion on "Station Facilities", Section I.C.)

II.A.4 Ridership/Revenue Forecast

Based on a review of all route alternatives by the firm AECOM, the estimated annual ridership and revenue forecasts were developed and are included in the attachment.

II.A.5. Estimated Annual Operating Expense/Operating Contract Requirement

The projected expenses associated with operations over this route alternative are detailed in Section VI and the attachment.

II.A.6. Summary of Key Elements of All Routes Including Required Operating Contract

Key elements of each route alternative are summarized in Section VI, including the projected annual operating contract.

II.B. Route B

II.B.1. General Description of Route B

This route would permit service via the Rockford Airport as well as downtown Rockford, with straightaway moves to/from Dubuque. The alternative would use the tracks of five carriers, as follows, and require the construction of one connecting track as well as a major rebuilding and rehabilitation of trackage. (See "Capital Requirements", Sections II. B.2.i. and II.B.2.ii):

	Miles
Amtrak	0.6
Metra	39.8
ICE	39.6
IRY	11.8
CN	96.8
Total	188.6 Miles

The Amtrak and Metra segments are identical to those in Route A and described again here. The short Amtrak portion of the route is the immediate area of the north train shed and includes lead tracks at Chicago's Union Station. This transitions onto Metra's "Milwaukee District-West Line" commuter territory between Chicago and Elgin (Big Timber), a well-maintained segment with nearly 60 commuter trains daily during weekdays, in addition to a variety of freight operations. Except for a short single track river bridge at Elgin, this portion of the route has two and three main tracks along its entire length, with segments having a top speed of 70-mph, and the entire segment having centralized traffic control.

The ICE's main track segment from Elgin (Big Timber) to Davis Jct., approximately 40 miles in length, is single track continuing westward from the end of Metra's ownership at Big Timber. It has an automatic block signal system and the track structure consists of 131#/132# jointed rail. There are two sidings on this segment, one at Genoa with a length of approximately 9,900 feet, which is at the halfway point, and the other at Davis Junction with a length of approximately 8,300 feet. During several visits to Davis Jct., that siding was occupied by freight cars and it was learned from railway personnel that it is used as a freight car staging area. In the late 1990's, the line had a maximum authorized speed of 50-mph for freight trains. Today the maximum authorized timetable speed is 40-mph but when the line was inspected in early September 2006, the majority of the trackage

was slow-ordered to 25-mph due to the poor condition of crossties, track surface (mud) and badly-battered rail ends (primarily the latter). It is unknown whether the approach circuits for grade crossing warning devices have been shortened to 40-mph from the prior 50-mph, or whether a passenger train speed differential once existed. The assumption has been made for purposes of this report that the maximum speed is 40-mph. It is recommended that at least 30 miles of the jointed rail be replaced with continuous welded rail, and that a crosstie renewal, ballast shoulder cleaning, and surfacing program be undertaken to restore the trackage to at least 40-mph and, if crossing circuitry permits, to a 60-mph passenger differential. A number of grade crossings need to be rebuilt. Without addressing the rail end batter it will be difficult, if not impossible, to maintain track surface and ride quality.

The IRY line segment from Davis Jct. to Rockford consists primarily of 90# jointed rail, much of it dating back to the 1910's and 1920's, with poor crosstie and ballast conditions. This trackage is designated as FRA Class I, with a maximum authorized speed of 10-mph. In its current condition, the line is adequate for light density freight traffic, but the line is not suitable for passenger train operations. In addition to the above, there are numerous grade crossings, both public and private. With the potential operation of passenger trains, consideration should be given to enhancing the crossing warning devices on the route. Several small bridges on the IRY also require rehabilitation of backwalls, ballast retainers and bridge decks, including removal of fouled ballast. An order-of-magnitude cost estimate to upgrade the ICE/IRY was prepared by independent consultants in 2005 (U.S. Rail Partners, Ltd, Interim Report, January 14, 2005; and Railroad Industries, Inc., June 22, 2005). This cost figure was determined to be $24.5 million for the ICE and a corresponding number for the IRY between Rockford and Davis Jct. was $6.3 million. Based on our inspection, these numbers and scope of work appear to be reasonable for the ICE, but slightly low for the IRY. For purposes of this report, a range of $30-35 million will be used for required track rehabilitation and upgrading work. This includes upgrading of the existing connection between ICE and IRY at Davis Jct. and rehabilitation of numerous grade crossings in the area of Rockford.

With respect to current train operations, there are four trains in each direction, five days per week, on the ICE between Big Timber and Davis Junction. Two of these roundtrips provide local service. From Davis Jct. to Rockford, ICE operates one roundtrip, 5 days per week, via trackage rights over the IRY. The IRY operates over this trackage 3 days per work week northbound and southbound on the two opposite days. One concern about the ICE route is that there is a potential that a heavy volume of coal trains could be routed onto this corridor should the DM&E, a sister company to the ICE, be successful with its proposal to serve the Powder River Basin coal fields.

In order to service the Rockford Airport with Amtrak trains, Route B provides an opportunity to do so, while maintaining the ability to avoid a lengthy reverse movement, and still serve the entire Chicago-Dubuque corridor. However, it would require the construction of a new connection track between the IRY and CN near downtown Rockford to permit straightaway movements to and from Dubuque. An order-of-magnitude cost for this connection is $3 million and would require the acquisition of property. This cost is included in Section II.B.2. Between Rockford and Dubuque, this alternative would follow the same CN routing as described in Routes A, C and D with capital improvement recommendations also being identical.

As in the case of the Metra and UP segments, and as is typical for any midwest rail operations, there are numerous public at-grade street and highway crossings along the entire corridor and, in the more rural areas, private crossings as well. Although many are equipped with train activated warning devices, i.e., gates and/or flashers, there are still numerous crossings with only passive crossbuck signs. It is recommended that discussions be initiated with the State of Illinois about any additional grade crossing warning devices or closures that may be deemed appropriate for the route.

In summary, the miles of track associated with each category of maximum authorized speed on this corridor are as follows:

Maximum Speed	Existing Max. Timetable Speed (Miles)	Proposed Maximum Speed (Miles)*
10	13.9	2.1
20	0.2	0.2
25	19.7	19.7
30	0.1	0.1
40	42.0	42.0
45	0.2	0.2
49	0.0	11.8
50	61.8	61.8
55	3.4	3.4
60	18.7	18.7
70	28.6	28.6
Total	188.6 Miles	188.6 Miles

* After upgrading of IRY trackage Davis Jct. – Rockford

II.B.2. Capital Requirements

II.B.2.i. Recommended Track Upgrading

For operating at conventional timetable speeds on Metra or CN, no significant trackwork maintenance needs were identified, except as described in this section. As previously discussed, it is recommended that rail replacement, track surfacing, and ballast shoulder cleaning be performed on the ICE. The rail is in particularly poor condition, resulting in degradation of the ballast and muddy conditions. The IRY trackage from Davis Jct. to Rockford, a distance of approximately 11 miles, requires complete rebuilding to bring it to at least FRA Class III conditions. The scope of the recommended capital maintenance work on the CN between Rockford and Dubuque is identical to that identified in Routes A, C and D.

II.B.2.ii. Proposed Construction of Connection Tracks

In order to utilize Route B, the construction of a connection track will be necessary at Rockford between IRY and CN. This will permit straightaway movements to/from Dubuque.

II.B.2.iii Order of Magnitude Summary of Capital Cost

		$ Millions
a.	Upgrade ICE/IRY trackage Elgin (Big Timber) to Rockford, via Davis Jct.	$30.0-$35.0
b.	Construct connection track IRY to CN at Rockford	$ 3.0
c.	Replace approximately 13 miles of jointed rail with continuous welded rail on CN	$ 5.7
d.	Subtotal	$38.7-$43.7
e.	Contingencies	$ 9.9-$11.4
f.	Layover Facility	$ 0.3
g.	Total	$48.9-$55.4

II.B.3 Schedules

Using Amtrak's standard methodology and reflecting the maximum authorized operating speeds, station dwell times, and 8% recovery time, a "strawman" schedule was developed for Route B. It is as follows:

Proposed Schedules – Route B

Chicago – Bensenville – Rockford Airport - Rockford
Freeport – Galena – Dubuque
Metra – ICE - IRY - CN

Westbound Daily					Eastbound Daily
6:15 PM	Dp	Chicago, IL-Union Sta. CT	Ar		10:42AM
R 6:55 PM	Dp	Bensenville, IL.	Dp		D 9:51 AM
8:00 PM	Dp	Genoa, IL	Dp		9:19 AM
8:48 PM	Dp	Rockford Airport, IL	Dp		7:50 AM
9:02 PM	Dp	Rockford, IL	Dp		7:36 AM
9:41 PM	Dp	Freeport, IL	Dp		6:57 AM
11:00PM	Dp	Galena, IL	Dp		5:38 AM
11:57PM	Dp	Dubuque, IL	DP		5:00 AM

R at Bensenville Westbound - Stops only to receive passengers.
D at Bensenville Eastbound - Stops only to discharge passengers.

The proposed station stops indicated above reflect our initial recommendations for this route based on discussion with various parties. It is possible that these may change, or that others may be added, if this route alternative is seriously considered. (See also general discussion on "Station Facilities," Section I.C.).

II.B.4 Ridership/Revenue Forecast

Based on a review of all route alternatives by the firm AECOM, the estimated annual ridership and revenue forecasts were developed and are included in the attachment.

II.B.5. Estimated Annual Operating Expense/Operating Contract Requirement

The projected expenses associated with operations over this route alternative are detailed in Section VI and the attachment.

II.B.6 Summary of Key Elements of All Routes Including Required Operating Contract

Key elements of each route alternative are summarized in Section VI, including the projected annual operating contract.

II.C. Route C

II.C.1. General Description of Route C

This route alternative proposes use of Amtrak's trackage from Chicago Union Station to 21st Street, with subsequent routing via the Canadian National Railway (CN) from 21st Street to Dubuque. Although this route is the most straightforward to operate from a railroad-to-railroad handoff standpoint, there are some freight traffic congestion concerns in the immediate Chicago area between downtown and Milepost 36, ("Munger") where a number of CN freight trains operating over the EJ&E enter CN property to proceed toward Chicago. Apparently, several CN freight trains operating over the former Wisconsin Central (WC) into Chicago were shifted to the EJ&E/CN routing upon commencement of expanded Metra commuter service on the former WC territory last year. In view of this, and assuming this operating scenario continues in the future, it is recommended that additional track capacity be constructed in the Munger area to accommodate staging of freight trains. The estimated cost of this additional trackage is included in the "Capital Requirements" Section III.C.2.iii as a "placeholder". In addition, although there is existing double track in the immediate Chicago area, significant freight traffic congestion was observed around Hawthorne Yard and east to the connection with the Belt Railway of Chicago (BRC). It is recommended that additional track be constructed here to alleviate congestion and provide operating flexibility. The total cost of providing this additional capacity is included as a "placeholder" of $8 million, subject to a detailed capacity analysis being performed in cooperation with the CN. Finally, a short two-mile portion of this route joins the CN's Chicago-Joliet corridor. CN has voiced prior concern about capacity issues here but has offered no specific recommendations.

Our recommendations are based on several days of observing operations in the Chicago area. The remainder of the route appears to have relatively light traffic and railway officials advised that annual traffic density is in the range of 10-12 MGT, with peak flows occurring during operation of seasonal grain trains. The trackage is under an ABS signal system between Chicago and Freeport, with CTC beyond to Dubuque. The rail is inspected ultrasonically for internal defects three times annually and a track geometry car is operated once per year. There is a mixture of welded and jointed rail, primarily 115# in weight.

Generally, the trackage is maintained for the maximum authorized timetable speeds and no major track maintenance or upgrading programs are recommended, except as outlined under Route A for trackage west of Rockford and on several segments of jointed rail closer to Chicago. There are segments of jointed rail that should be replaced with continuous welded rail and the estimated costs for this work are included in the "Capital Requirements" section.

The mileage for each carrier on this route alternative is as follows between Chicago and Dubuque:

	Miles
Amtrak	1.6
CN	180.6
Total	182.2 Miles

The miles of trackage associated with each category of maximum authorized speed on this corridor are as follows:

Maximum Authorized Timetable Speed	Maximum Authorized Timetable Speeds (Miles)
10	1.9
15	0.2
25	30.4
30	2.7
40	13.4
50	122.3
60	11.3
Total	182.2 Miles

II.C.2. Capital Requirements

II.C.2.i. Recommended Track Upgrading

For operating at conventional speed on this route alternative, no significant track work maintenance needs were identified, except as described in this section regarding rail. The scope of the recommended capital maintenance work on the CN between Rockford and Dubuque is identical to that identified and described in all the route alternatives.

II.C.2.ii. Proposed Construction of Additional Trackage

Due to freight train congestion issues, it is recommended that consideration be given to constructing additional trackage at both Munger and in the area of Hawthorne Yard (Chicago). These improvements are included in the order-of-magnitude cost estimate summary in Section II.C.2.iii. Further discussions with CN are recommended on this issue and ultimately, any capacity enhancement proposals may be subject to a train traffic simulation study.

II.C.2.iii. Order of Magnitude Summary of Capital Cost

		$ Millions
a..	Replace approximately 13 miles of jointed rail with CWR on CN west of Rockford	$ 5.7
b.	Other jointed rail replacement	$18.3
c.	Construct trackage to increase capacity at Munger and Hawthorne (Placeholder)	$ 8.0
d.	Subtotal	$32.0
e.	Layover Facility	$ 0.3
f.	Total	$32.3

II.C.3 Schedules

Using Amtrak's standard methodology and reflecting the maximum authorized operating speeds, station dwell times, and 8% recovery time, a "strawman" schedule was developed for Route C. It is as follows:

Proposed Schedules – Route C

Chicago – West Elgin – Rockford – Freeport
Galena – Dubuque
Amtrak – CN

Westbound Daily					Eastbound Daily
6:15 PM		Dp	Chicago, IL-Union sta	Ar	10:10AM
R 7:28 PM		Dp	West Elgin, IL	Dp	D 8:38 AM
7:54 PM		Dp	Genoa, IL	Dp	8:12 AM
8:22 PM		Dp	Alpine Road	Dp	7:46 AM
8:32 PM		Dp	Rockford, IL	Dp	7:36 AM
9:11 PM		Dp	Freeport, IL	Dp	6:57 AM
10:30PM		Dp	Galena, IL	Dp	5:38 AM
11:25PM		Dp	Dubuque, IL	Dp	5:00 AM

R at West Elgin Eastbound - Stops only to receive passengers
D at West Elgin Westbound,- Stops only to discharge passengers

The proposed station stops indicated above reflect our initial recommendations for this route based on discussion with various parties. It is possible that these may change, or that other stations may be added, if this route alternative is seriously considered. (See also general discussion on "Station Facilities", Section I.C.).

II.C.4. Ridership/Revenue Forecast

Based on a review of all route alternatives by the firm AECOM, the estimated annual ridership and revenue forecasts were developed and are included in the attachment.

II.C.5. Estimated Annual Operating Expense/Operating Contract Requirement

The projected expenses associated with operations over this route alternative are detailed in Section VI and the attachment.

II.C.6 Summary of Key Elements of All Routes Including Required Operating Contract

Key elements of each route alternative are summarized in Section VI, including the projected annual operating contract.

II.D. Route D

II.D.1 General Description of Route D

Following feedback received at the public informational meetings sponsored by IDOT, Amtrak was requested by the State to evaluate one additional route alternative between Chicago and Rockford. This one entails operations westward from Chicago's Union Station over four carriers using Amtrak and Metra segments previously described in Route Alternatives A and B and westbound on that portion of the ICE to Genoa, Illinois, where the ICE crosses under the CN's main track at a grade separation. This route alternative proposes

construction of a connection track at Genoa, with passenger train operations continuing westward from that location to Rockford and Dubuque over the same CN route as described for other scenarios in this report. Although this alternative would avoid the congestion mitigation required on the CN near Chicago and some jointed rail replacement on the CN between Genoa and Chicago, it would still require significant rail replacement on the ICE and the construction of a new connection track at Genoa where the CN and ICE are grade-separated by nearly thirty feet.

II.D.2 Capital Requirements

II.D.2.i. Recommended Track Upgrading

The proposal to upgrade the ICE by replacing jointed rail on the segment between Big Timber and Genoa as described elsewhere in this report is still applicable and the scope of the recommended capital maintenance work on the CN between Rockford and Dubuque is identical to that identified and described in all the other route alternatives.

II.D.2.ii. Proposed Construction of Connection Track

Due to the grade separation between the ICE and CN's main tracks at Genoa, it will be necessary to construct a connection track in the northeast quadrant with a length of approximately 3,800 feet. This will require property acquisition from multiple property owners and possibly the construction of a retained fill, with a control point on each end of the connection. How complex or lengthy the property acquisition process could become is unknown but is a matter of concern. The estimated cost is included in the section "Order of Magnitude Summary of Capital Cost".

II.D.2.iii. Order of Magnitude Summary of Capital Cost

		$Millions
a.	Upgrade ICE trackage Elgin (Big Timber) to Genoa	$14.2
b.	Construct connection track ICE to CN at Genoa, including control points.	$ 7.7
c.	Replace approximately 13 miles of jointed rail with continuous welded rail on CN	$ 5.7
d.	Subtotal	$27.6
e.	Contingencies	$ 6.6
f.	Layover Facility	$ 0.3
g.	Total	$34.5

This alternative would use the trackage of four carriers, as follows:

	Miles
Amtrak	0.6
Metra	39.8
ICE	19.5
CN	121.1
Total	181.0 Miles

The miles of trackage associated with each category of maximum authorized speed on this corridor are as follows:

Maximum Speed

Existing Maximum Timetable Speed (Miles)

1.0	-	2.1
20	-	0.2
25	-	21.8
40	-	22.0
45	-	0.2
50	-	84.0
55	-	3.4
60	-	18.7
70	-	28.6
Total		181.0 Miles

II.D.3 Schedules

Proposed Schedules – Route D

Chicago-Bensenville-Genoa-Rockford-Freeport
Galena-Dubuque
Metra – ICE – CN

Westbound Daily					Eastbound Daily
6:15 PM	Dp	Chicago, IL-Union Sta. CT	Ar		10:22AM
R 6:55 PM	Dp	Bensenville, IL	Dp		D 9:49 AM
8:00 PM	Dp	Genoa, IL	Dp		8:33 AM
8:36 PM	Dp	Alpine Road	Dp		7:46 AM
8:46 PM	Dp	Rockford, IL	Dp		7:36 AM
9:25 PM	Dp	Freeport, IL	Dp		6:57 AM
10:44PM	Dp	Galena, IL	Dp		5:38 AM
11:37PM	Ar	Dubuque, IA CT	Dp		5:00 AM

Notes: **R** at Bensenville Westbound - Stops only to receive passengers.
D at Bensenville Westbound - Stops only to discharge passengers.

II.D.4. Ridership/Revenue Forecast

Based on a review of all route alternatives by the firm AECOM, the estimated annual ridership and revenue Forecasts were developed and are included in the attachment.

II.D.5. Estimated Annual Operating Expense/Operating Contract Requirement

The projected expenses associated with operations over this route alternative are detailed in Section VI and the attachment.

II.D.6. Summary of Key Elements of All Routes Including Required Operating Contract

Key elements of each route alternative are summarized in Section VI, including the projected annual operating contract.

III. Layover Facility

It is presumed that an existing track at Dubuque located within the redeveloped riverfront area, as described elsewhere in this report, can be utilized for overnight storage of the train consist. It is recommended that some minor rehabilitation work be performed, totaling $80,000. In addition, a small building facility should be provided for use by train crews, as well as for storage of cleaning equipment and for communications facilities. A standby 480-volt power unit as well as potable water unit needs to be provided.

A line item of $300,000 is recommended for the track rehabilitation and layover facilities, and this amount has been added to the capital requirements of each route alternative as reflected in Section VI.

IV. Ridership/Revenue Forecast Summary – All Routes

See attachment, Page 24.

Based on these results, it is recommended that the route alternative favored by the State be operated with an appropriately-sized consist of either two or three coaches.

V. Estimated Annual Operating Expense Summary – All Routes

See below.

VI. Summary – Proposed Chicago-Rockford-Dubuque Service

This section summarizes key elements of each route alternative between Chicago and Dubuque

	Route A UP Belvidere	**Route B ICE Airport**	**Route C CN Direct**	**Route D ICE-CN Hybrid**
Length of Route (miles)	184.0	188.6	182.2	181.0
No. of Rail Carriers	4	5	2	4
Proposed Scheduled Running Time (hours:minutes)	5:25	5:42	5:10	5:22
"Order of Magnitude" Capital Cost ($ millions)	$43.8	$48.9-$55.4	$32.3	$34.5
Estimated Annual Ridership	53,600	44,300	74,500	58,400
Estimated Annual Revenue ($ millions)	$1.1	$1.0	$1.5	$1.2
Estimated Annual Operating Expense ($ millions)	$4.1	$4.1	$4.4	$4.2
Estimated Annual Operating Contract ($ millions)	$3.0	$3.1	$2.9	$3.0

VII. Miscellaneous Issues

VII.A. Mobilization Costs (one-time expense)

There are a number of up-front expenses that would be incurred by Amtrak should any of the route alternatives be funded. These include coach rehabilitation, personnel recruitment and training, radio equipment, uniforms

for on-board personnel, etc. These costs are summarized below:

Mobilization Costs
Chicago – Rockford – Dubuque

One Time Costs	**All Routes**
Coach Rehabilitation	$1,300,000
Mechanical Training	7,860
Transportation Training	557,872
Transportation Uniforms	1,081
Transportation Radios	2,152
Total One Time Costs	$1,868,965

VII.B. Comparison of Proposed Amtrak Service with Proposed Commuter Operations Study by TranSystems

The commuter service study being conducted by TranSystems for Chicago-Rockford service focuses on a completely different level of capital investments and service levels than contemplated for the Amtrak operation: As mentioned previously in this report, there are substantial differences between the Amtrak and commuter proposals, including the number of train frequencies and stops, operating speeds and rolling stock needs, in addition to stations, parking lots and layover facilities. For example, the commuter study reflects a significant increase in maximum operating speeds above current levels on all the routes under consideration, including installation of a centralized traffic control system where there is none today. The commuter study has concluded that investments in the neighborhood of $123 million are required to provide the facilities and physical plant for commuter service via the UP/Metra/CN route, and $161 million to provide such service via the Metra/ICE/IRY.

Such levels of expenditures certainly cannot be justified for the single daily round-trip contemplated in the Amtrak service proposal and could take a significantly longer time to implement once a funding source is established.

Investments made toward start-up of Amtrak service to Rockford/Dubuque such as station facilities, new track connections, track upgrading, bridge improvements and possible grade crossing eliminations would certainly so facilitate late commencement of proposed commuter operations.

VII.C. Additional Discussion on Service to Rockford Airport

There are certain individuals and organizations who are advocating that Amtrak service be extended to the Rockford Airport. Providing such service under Route A, C or D would be difficult, as it would require movement off the east-west CN line in a southward direction over the IRY some five miles, and then a reverse movement northward to rejoin the CN line in Rockford, for subsequent operations to/from Dubuque or Chicago. This would add an unacceptable amount of transit time to the overall trip and also require a major capital investment: the reconstruction of an existing connection track, which has curvature greater than 20-degrees, onto a new alignment to permit a westward movement from CN, southward toward the airport (or reverse), and construction of a new connection track to permit a westward movement from the airport to CN (or reverse) for operations to/from Dubuque. These two connections would require property acquisition and an order-of-magnitude cost estimate is $6.0 million. In addition, the trackage owned by the IRY from the connection with CN to the Rockford airport is FRA Class I track, requiring a complete reconstruction. It is estimated that the cost of upgrading this trackage to FRA Class III (49-mph speed) is $4.0 million.

In summary, to serve the Rockford airport with Route A, C or D would require an additional order-of-magnitude capital investment estimated at $10.0 million and is not recommended due to the adverse affect on overall transit time between Dubuque and Chicago, which would increase by at least an estimated 45 minutes in each direction. Perhaps consideration could be given to an airport shuttle bus connection from the downtown Rockford station. Only Route B is considered viable for serving the Rockford Airport.

VII.D. Chicago-Rockford Service Only

Although not requested in the State's letter, we did review the feasibility of providing only a Chicago-Rockford service. As seen in the attachment, the ridership/revenue forecast for such an operation is quite low when compared to service all the way to Dubuque although service to the Rockford airport would be feasible via all four routes. In addition, most of the capital expenditures required for the four alternative routes for Dubuque service as previously described would still be required for a Rockford-only operation. In addition, most of the capital expenditures identified as needs for service all the way to Dubuque would still be required for any of the four routes in a Rockford-only operation.

Acronyms

ABS: Automatic Block Signals, on a specific section or length of track, an arrangement of automatic signals governing each block.

BNSF: Burlington Northern Santa Fe Railway Company

BRC: Belt Railway Company of Chicago

CN: Canadian National Railway (former Illinois Central, Chicago Central and WC, Wisconsin Central)

CTC: Centralized Traffic Control, a term applied to a system of railroad operation by means of which the movement of trains over routes and through blocks on a designated section of track or tracks is directed by signals controlled from a designated control point.

CWR: Continuous Welded Rail

DM&E: Dakota, Minnesota & Eastern Railroad Corporation

EJ&E: Elgin, Joliet and Eastern Railway Company

FRA Class of Track: Federal Railroad Administration classification of track based on physical conditions and geometry, which determines maximum train speeds that can be operated.

IC&E: Iowa Chicago & Eastern Railroad

IDOT: Illinois Department of Transportation

IRY: Illinois Railway, Inc.

Metra: The Commuter Rail Division of the Regional Transportation Authority, a division of an Illinois Municipal Corporation

MGT: Million Gross Tons, a traffic density measure. The movement of one million tons of freight, including the goods, cars and locomotives.

UP: Union Pacific Railroad Company

WC: See CN

Forecast Results for Proposed Rockford and Dubuque Service Options (Annual Totals)

	Route A Metra-UP-CN Belvidere		Route B Metra-ICE-IRL-CN Airport		Route C CN Direct		Route D Metra-ICE-CN Hybrid	
	Chicago-Rockford	Chicago-Rockford-Dubuque	Chicago-Rockford	Chicago-Rockford-Dubuque	Chicago-Rockford	Chicago-Rockford-Dubuque	Chicago-Rockford	Chicago-Rockford-Dubuque
Mileage	87.3	184.0	91.9	188.6	85.4	182.2	84.2	181.0
Riders	24,700	53,600	20,000	44,300	35,100	74,500	27,500	58,400
Revenue	$361,000	$1,104,000	$298,000	$971,000	$504,000	$1,512,000	$400,000	$1,203,000