Iowa State Rail Plan Final

Chapter 3

Proposed Passenger Rail Improvements and Investments

IOWA DOT

Contents

3.1 Introduction

This chapter notes the various ongoing or proposed passenger rail initiatives as well as new passenger rail service concepts that could enhance mobility options for Iowans. These include intercity passenger and commuter rail services. Intercity rail passenger services are generally of 100-150 miles or more in length operating with limited frequencies seven days a week. Commuter rail is a mass transit option that links relatively high density work centers with outlying residential communities with a service concentration on weekdays during the morning and evening commute periods. A third passenger rail mode involves tourist railroads.

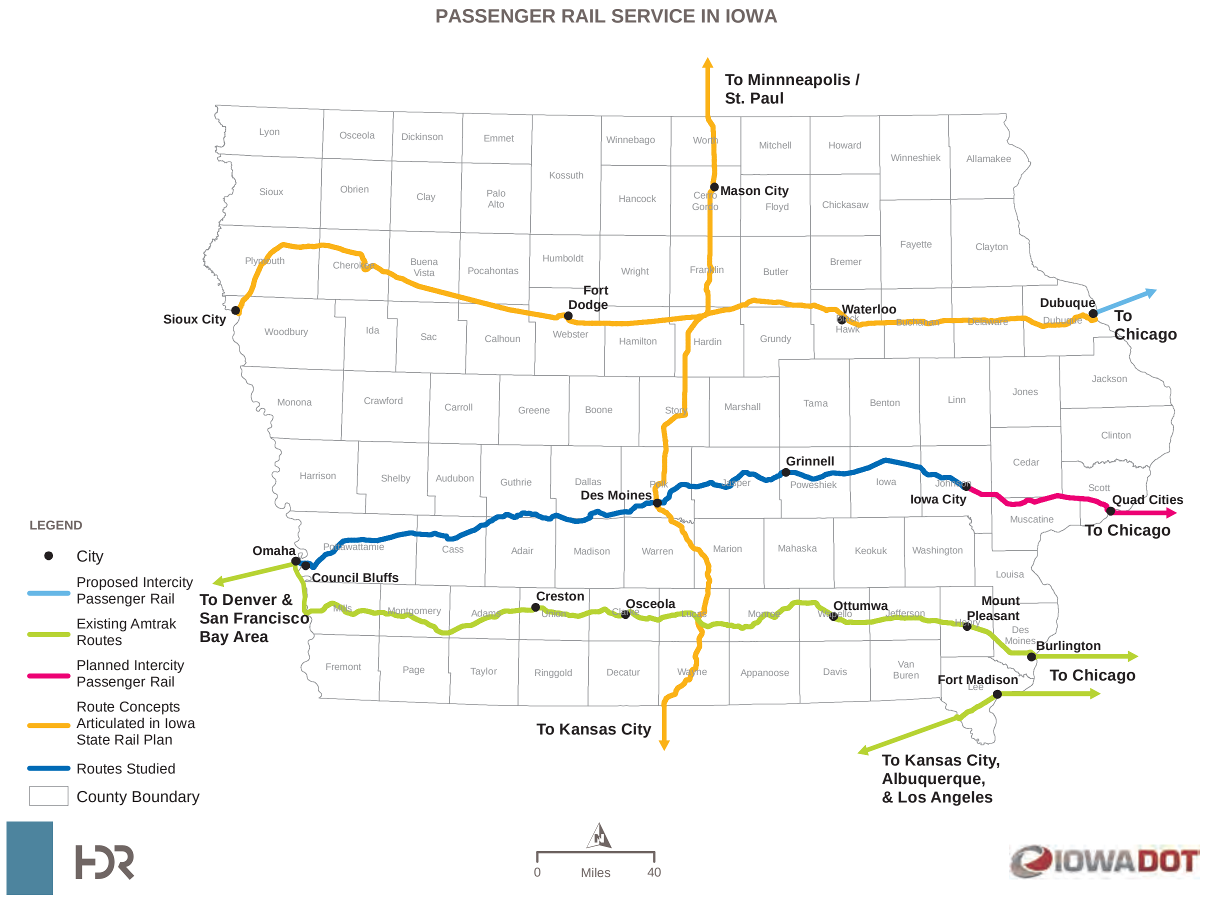
The intercity passenger rail initiative involving Iowa that is furthest along in planning is between Chicago, Illinois, and Council Bluffs, Iowa/Omaha, Nebraska. The initiative was identified as one of several routes of the Midwest Regional Rail System (MWRRS), a passenger rail system that will provide service radiating from Chicago to major population centers and intermediate stations throughout the Midwest. Additional components of the MWRRS include higher speed services between Chicago and St. Louis, Missouri, and between Chicago and Detroit, Michigan. Both of these routes are under development. The MWRRS system is shown in Figure 3.1 below.

Figure 3.1: Midwest Regional Rail System

Source: Midwest Interstate Passenger Rail Commission

New potential passenger services reaching all regions of the state, as well as existing passenger rail services, are seen in Figure 3.2 below.

Figure 3.2: Existing and Potential Future Passenger Rail Routes in Iowa



Source: Iowa Department of Transportation

In addition, two potential commuter rail services and new tourist and special operations rail concepts have also been identified. All of these various services are discussed in the sections that follow.

The chapter concludes with a description of iTRAM, an Iowa DOT travel demand model that can be used to forecast the ridership potential of new intercity passenger services.

3.2 Improvements to Existing Intercity Services

3.2.1 Current Projects and Initiatives

Current projects and initiatives to improve existing intercity services include those undertaken on the BNSF Railway's southern tier route across the state over which Amtrak's *California Zephyr* operates in Iowa. These recently completed improvements include the Burlington Bridge Replacement over the Mississippi River at Burlington, Iowa, and the Ottumwa Subdivision Crossover Improvement Project between Burlington and Creston, Iowa. The ongoing implementation of Positive Train Control (PTC) on the BNSF network, including on the southern tier route across Iowa, will have positive impacts to Amtrak services in the state. These improvements are discussed further in Chapter 4.

3.2.2 Potential Future Projects and Initiatives

Potential future projects and initiatives that Iowa might consider proposing to improve existing intercity services in the state are identified in this section

3.2.2.1 THRUWAY BUS SERVICES

To provide Iowans with improved access to existing Amtrak long-distance and corridor routes, new connecting Amtrak Thruway bus routes could be implemented. One route could be implemented along north-south Interstate 35, linking the Twin Cities with Mason City, Ames, Des Moines, Osceola, and Kansas City. The route could provide connections to the Amtrak *Empire Builder* in St. Paul, the *California Zephyr* in Osceola, and the *Southwest Chief* and the *Missouri River Runner* in Kansas City. Ultimately, this potential Thruway route could become a rail route, as east-west rail corridor service between Chicago and Council Bluffs-Omaha via the Quad Cities and Iowa City is implemented. The nexus of the two routes would be Des Moines.

Meanwhile, as new corridor rail service is implemented between Chicago and the Quad Cities, Thruway buses could provide a connection to Iowa City, Des Moines, Council Bluffs, and Omaha, until such time as rail service could be implemented over the entire corridor.

3.2.2.2 IMPROVE PEDESTRIAN AND BICYCLE ACCESS AND ADD BIKE RACKS AT AMTRAK STATIONS

With the exception of Fort Madison, Iowa Amtrak stations are located on public roadways near downtown areas, providing for reasonably good motorized and non-motorized access. The Fort Madison Amtrak station is located at the east end of the BNSF's rail yard, 1.5 miles west of downtown; public access is via a 1,100-foot driveway off of 20th Street. Bus connections available at stations are discussed in Chapter 2. At the present time, there are no bicycle racks at the six Amtrak stations in Iowa. Bike racks could be installed to provide riders an alternative for accessing Amtrak trains in Iowa.

3.2.2.3 SECOND DAILY ROUND TRIP ON THE BNSF SOUTHERN TIER ROUTE IN IOWA

As a way to enhance and supplement the existing Amtrak *California Zephyr* service in the Chicago-Omaha corridor across Iowa, a second round trip operating between Chicago, Burlington, and Omaha could be implemented. The train would serve five of the existing Amtrak stations in Iowa and could be connected to Des Moines via Thruway bus at Osceola, as discussed above. The service would encourage ridership and mobility along the southern tier by doubling service. Eastbound arrivals in Chicago and westbound arrivals in Omaha could be in late afternoon or early evening, providing for midday runs across Iowa.

3.3 Proposed New Intercity Services

3.3.1 Chicago to Council Bluffs-Omaha

This Chicago — Council Bluffs-Omaha rail corridor through Iowa and Illinois has been explored through various studies since 2004 that looked at the potential for implementation of new intercity passenger rail services on the regional corridor as a whole or on segments of the corridor, as demand and funding dictated.

The proposed service would be a component of the MWRRS centered on Chicago. The route of the proposed service, and existing connecting state-supported intercity passenger rail corridors, is shown in Figure 3.3 below.

Figure 3.3: Chicago — Council Bluffs-Omaha Corridor

Source: Iowa Department of Transportation

In September 2004, the Midwest Regional Rail System Executive Report identified the route as a fundamental component of the regional system, with train speeds of up to 90 mph over the segment of the corridor between Chicago and Wyanet (near Princeton), Illinois, and 79 mph train speeds on the rest of the corridor to Council Bluffs-Omaha. Then in 2008, Amtrak developed its Feasibility Report on Proposed Amtrak Service, Quad Cities — Chicago. The proposed service assumed two round trips per day and use of the BNSF Railway (BNSF) and the Iowa Interstate Railroad (IAIS) between Chicago and the Quad Cities of Illinois and Iowa. This basic service concept between Chicago and the Quad Cities, and specifically Moline, Illinois, was adopted as Phase 1 of the Chicago to Council Bluffs-Omaha rail service concept discussed later in this section.

In 2009, the states of Iowa and Illinois partnered to study and pursue funding for implementation of an intercity passenger rail service over a segment of the Chicago — Council Bluffs-Omaha corridor between Chicago, Moline, and Iowa City. The Chicago to Iowa City High Speed Intercity Passenger Rail Program advanced by the states completed a Tier 1 service level environmental assessment in 2009, which also identified a preferred alternative route for the Chicago-Iowa City service via BNSF between Chicago and Wyanet and via IAIS between Wyanet and Iowa City. In 2010, the state partnership completed the Chicago to Iowa City High-Speed Intercity Passenger Rail Program Service Development Plan and applied for a federal High Speed Intercity Passenger Rail (HSIPR) grant. The partnership received $230 million in HSIPR funds from the Federal Railroad Administration (FRA), which were jointly awarded to the states of Iowa and Illinois to establish the new intercity passenger rail service. The funds were split between the states in 2011 to allow for phased service implementation, with $177 million obligated to Illinois to complete Phase 1 of the corridor between Chicago and Moline and $53 million remaining left to Iowa to complete Phase 2 of the corridor between Moline and Iowa City. Starting in 2012, Iowa DOT launched a broader scale look at new intercity passenger rail service by studying the potential for implementation on the entire Chicago — Council Bluffs-Omaha corridor, as discussed in the next section.

3.3.1.1 SERVICE CONCEPT

The states of Iowa and Illinois have envisioned a new intercity passenger rail service running between Chicago and Council Bluffs-Omaha. The concept was defined in a study undertaken during 2012 and 2013.

Six existing rail routes between Chicago and Council Bluffs-Omaha were screened during development of the Chicago to Council Bluffs-Omaha Regional Passenger Rail Planning Study Alternatives Analysis Report in 2012. A preferred alternative route emerged that included use of Amtrak, BNSF, and IAIS trackage between Chicago and Council Bluffs, and as shown in Figure 3.3 above.

The outcome of the alternatives analysis was used to support development of the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study, Tier 1 Service Level EIS (May 2013) and a subsequent Draft Service Development Plan (November 2013), a component of the Tier I EIS.

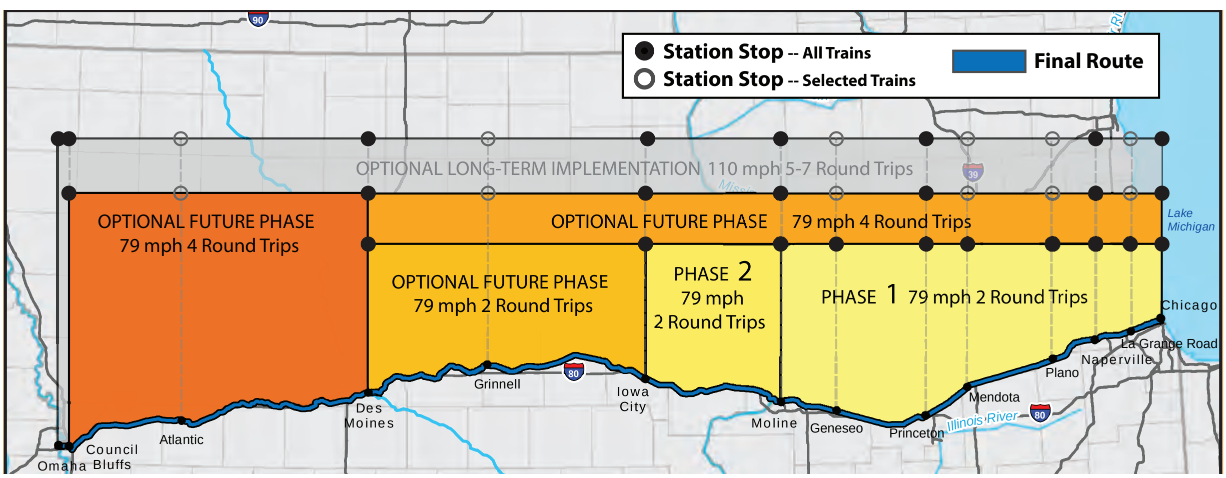
According to these documents, the Chicago to Council Bluffs-Omaha Passenger Rail service would be implemented in several phases from east to west. As currently proposed, it would provide up to five round-trips per day between Chicago and Omaha, and seven between Chicago and Des Moines, operating at a maximum speed of 110 mph. The proposed service would be a component of the MWRRS centered on Chicago.

3.3.1.2 SERVICE PLAN

3.3.1.2.1 Phased Implementation

The 2013 Draft Service Development Plan assumed the service would be implemented incrementally in five initial phases that extended to Council Bluffs only. The first two phases would be Chicago to Moline and Moline to Iowa City, which are already under development or study. Phase 3 would extend the service to Des Moines. Phase 4 would increase frequency from two to four roundtrips per day. Phase 5 would extend the four daily roundtrips to Council Bluffs. A summary of the potential phased implementation identified in the 2013 Draft Service Development Plan appears in Figure 3.4 and Table 3.1 below.

Figure 3.4: Potential Long-Term Phased Implementation in the Chicago — Council Bluffs-Omaha Corridor



Source: Iowa Department of Transportation

Table 3.1: Potential Phased Service Implementation Chicago-Council Bluffs as Identified in Draft Service Development Plan, 2013

PHASE	SERVICE	ROUND-TRIPS DAILY	SPEED	INITIATION OF SERVICE
1	New service between Chicago and Moline, Illinois (Quad Cities)	2	79 MPH	2015
2	Extension of service from Moline to Iowa City	2	79 MPH	2017
3	Extension of service from Iowa City to Des Moines	2	79 MPH	2022
4	Increase frequencies between Chicago and Des Moines	4	79 MPH	2025
5	Expansion of service from Des Moines to Council Bluffs	4	79 MPH	2030

Source: Draft Service Development Plan, 2013

With a maximum speed of 79 mph, average travel times over the 475-mile route between Chicago and Council Bluffs would be 7 hours and 48 minutes.

The long-term goal for the corridor is to implement 110 mph maximum speed service and extend the western terminus from Council Bluffs to Omaha, with seven round trips between Chicago and Des Moines, and five round trips between Chicago and Omaha. Average travel times over the route would be reduced to approximately 5 hours and 40 minutes.

From Chicago to Council Bluffs, the route would use track owned by Amtrak at Chicago Union Station; by BNSF between Chicago and Wyanet; and by IAIS between Wyanet and Council Bluffs. In addition, the service would use short segments of BNSF trackage in the Quad Cities and UP trackage in Des Moines. A route between Council Bluffs and Omaha has not been selected.

3.3.1.2.2 Equipment

The proposed service as currently proposed would be powered by conventional diesel-electric locomotives. Passenger cars would be bi-levels, like those already operating or that will soon be constructed and operating on other Midwest intercity passenger rail corridors. The standard trainset or consist for the various phases of implementation are listed in Table 3.2 below. A layout of a typical bi-level coach car appears in Figure 3.5 below.

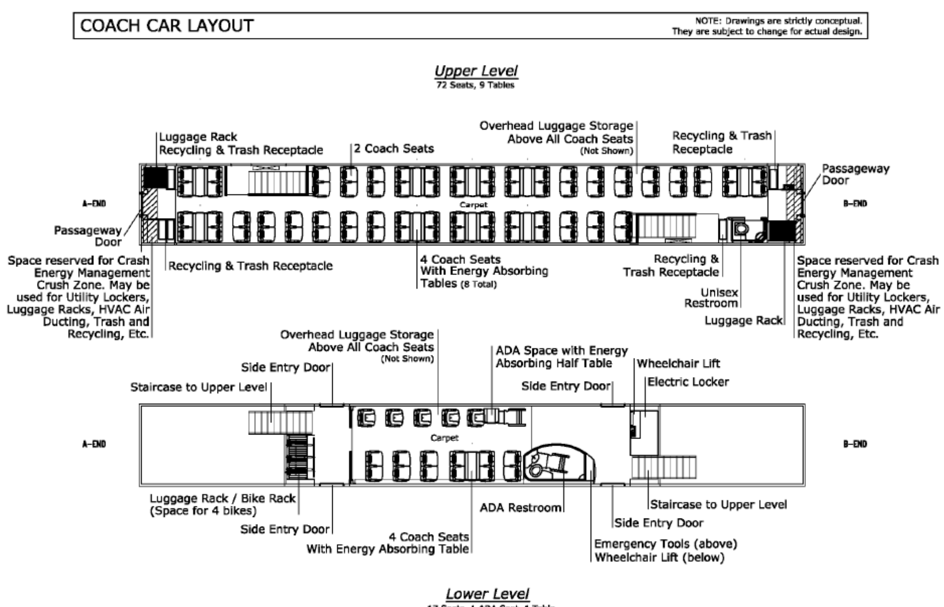
Table 3.2: Train Consists

PHASES 1 AND 2	PHASES 3, 4, AND 5
1 locomotive (west end)	1 locomotive (west end)
2 coach cars	2 coach cars
1 café/lounge car	1 café/lounge car
1 coach car	2 coach cars
1 coach/cab-car (east end)	1 locomotive (east end)

Source: Draft Service Development Plan, 2013

Over time, the train consists are anticipated to grow longer to handle increasing ridership. Trainsets in later phases may have an additional locomotive to improve travel time and reliability.

Figure 3.5: Bi-Level Coach Car Layout for Midwest Intercity Service



Source: PRIIA 305-001/Amtrak 962 Technical Specification Revision C.1

3.3.1.2.3 Stations
The proposed service would make use of both existing stations already serving other Amtrak intercity and long-distance trains in Illinois and new stations in Illinois and Iowa. These are shown in Table 3.3 below.

Table 3.3: Stations Planned for the Chicago — Council Bluffs Service

EXISTING ILLINOIS STATIONS	PLANNED NEW STATIONS
Chicago Union Station	Geneseo Station (Illinois)
La Grange Road Station	Moline Station (Illinois)
Naperville Station	Iowa City Station (Iowa)
Plano Station	Grinnell Station (Iowa)
Mendota Station	Des Moines Station (Iowa)
Princeton Station	Atlantic Station (Iowa)
	Council Bluffs Station (Iowa)

Source: Draft Service Development Plan, 2013

3.3.1.2.4 Maintenance and Layover Facilities
The proposed service would require an overnight train layover and light maintenance facility at each route terminus. The first of such facilities will be built in Moline, a second in Iowa City, a third in Des Moines, and a fourth in Council Bluffs as the service is expanded. These facilities will provide track on which trains can be stored and receive cleaning, servicing, and light maintenance. Over time, facilities in Moline and Iowa City may be closed, as trains will no longer overnight there.

3.3.1.2.5 Rail Infrastructure Improvements
Implementation of the Chicago-Omaha service, as proposed, would require infrastructure improvements to comply with federal law, deliver the required on-time performance for passenger trains, and mitigate effects on freight and other passenger train operations in the corridor.

IAIS will host the service over the longest segment between Wyanet and Council Bluffs, with the exception of small portions of the route through Des Moines, where UP trackage will potentially be used, and through the Quad Cities, where BNSF trackage will potentially be used. IAIS trackage is mostly single track with welded rail, maintained to FRA Class 3 (with maximum freight speeds of 40 mph). The trackage will have to be upgraded to handle higher speed passenger trains, and track sidings will need to be extended or added at the appropriate intervals to allow for freight trains and passenger trains to meet and pass each other, and to mitigate effects of the passenger service on freight service. In addition, a Centralized Traffic Control (CTC) wayside signal system and a Positive Train Control system (PTC) overlay will need to be installed and grade crossing signal and surface improvements will be required.

BNSF will host the service over the second longest segment between Chicago and Wyanet, which already handles Metra commuter trains between Chicago and Aurora and existing Amtrak intercity and long-distance trains for other services between Chicago and Wyanet. The Draft Service Development Plan deemed the infrastructure on BNSF sufficient to accommodate the proposed service, with the addition of a bypass track around Eola Yard in west suburban Chicago (under construction at present to improve the Chicago-Quincy, Illinois, service), a new connection between BNSF and IAIS in Wyanet, and installation of PTC. BNSF is currently implementing PTC on the line.

Furthermore, any BNSF trackage in the Quad Cities and UP track in Des Moines needed for the service will require upgrades.

3.3.1.2.6 Ridership, Revenue, and Costs
Table 3.4 below shows the key metrics generated by a pro forma evaluation of the Chicago to Council Bluffs-Omaha service. The table captures performance starting in 2017, the year in which the *Draft Service Development Plan* assumed two round-trips would extend from Moline to Iowa City (Phase 2). By 2025, with

the extension of the trains westward to Des Moines (Phase 3) and the addition of two round-trips (Phase 4), ridership and revenue increase to about three times that predicted for 2017. Expenses and subsidies (expenses less revenues) also increase, but at lesser rates, resulting in improving fare box recovery ratios (revenues divided by expenses). The revenue, ridership, and fare box recovery continue to improve through to the horizon year for the evaluation. The service's fare box recovery in 2037 of 49 percent would be comparable to Amtrak's long distance service fare box recovery of 53 percent in Fiscal Year 2014.

Table 3.4: Pro Forma Metrics for Chicago — Council Bluffs Passenger Rail Service

KEY METRIC	PHASE 2: SERVICE TO IOWA CITY	PHASE 3: SERVICE TO DES MOINES	PHASE 4: 2 ADDITIONAL ROUND-TRIPS	PHASE 5: SERVICE TO COUNCIL BLUFFS	HORIZON YEAR
	2017	2022	2025	2030	2037
Ridership	186,109	346,973	547,624	737,492	847,146
Revenue (millions)	$5.0	$11.1	17.8	$24.0	$27.5
Expenses (millions)	$21.0	$32.2	$45.1	$59.8	$59.8
Subsidy (millions)	$16.0	$21.1	$27.3	$34.2	$30.4
Fare Box Recovery	24%	35%	39%	43%	49%

Source: Draft Service Development Plan, 2013

Note: Service implementations identified in the table above are from the 2013 Chicago to Council Bluffs-Omaha Draft Service Development Plan and are subject to completion of future planning and engineering activities as well as funding availability.

Revenues include ticket revenues and revenues from onboard services, including the sale of food and beverages on the trains. Expenses include all operating costs related to the service, inclusive of payments to the host railroads, fuel, crew labor, mechanical labor, station maintenance, and other direct costs.

The plan identified the total cost for implementation at $1.2 billion for Phases 1 (service from Chicago to Moline) through 5 (the final extension to Council Bluffs). The total cost identified in the Draft Service Development Plan to implement, operate, and maintain passenger rail service in the corridor is a preliminary planning estimate. Further study and consultation with host railroads would be required in future study to better understand these costs.

3.3.1.3 FUNDING PLAN

As noted earlier in this section and in the Draft Service Development Plan, Phases 1 and 2 are already partially, but not totally, funded. Phase 1 is in the process of being implemented by Illinois DOT. Implementation of Phase 2 is currently in the preliminary engineering and Tier 2 EIS phase, under the management of Iowa DOT.

Current planning anticipates that federal funding will need to be made available for implementation of Phases 2 through 5. A formula for federal, state, and local funding shares has yet to be determined. The new service would begin only after a funding source for ongoing operations is found.

The current concept for funding ongoing operations between Chicago and Council Bluffs-Omaha is as follows:

- The states of Illinois and Iowa would provide 100 percent of funding for operations and maintenance costs of the service not recovered through fare box revenue and onboard food and beverage sales.
- Municipalities from Geneseo, Illinois, to Council Bluffs, Iowa, inclusive would be responsible for 100 percent of funding for the operation and maintenance of stations.
- For Chicago Union Station and other stations shared with Chicago's Metra commuter rail service, costs will be shared by Amtrak and Metra.

Cost allocation formulas for cost sharing between the states will be determined.

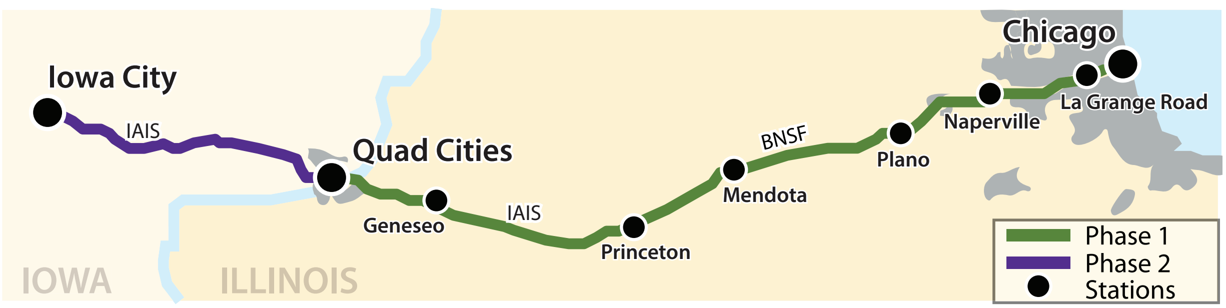
3.3.1.4 ADDITIONAL POTENTIAL SERVICE IMPLEMENTATIONS AND ENHANCEMENTS
Over time, the states may wish to increase speeds on the line from a maximum of 79 mph to 110 mph, add more service frequencies, and extend the service across the Missouri River from Council Bluffs to Omaha.

3.3.1.5 NEXT STEPS
Implementation of two daily roundtrip passenger trains on the Chicago-Moline segment (Phase 1) of the Chicago to Council Bluffs-Omaha corridor is under development by the state of Illinois, as of mid-2016. However, Phase 1's development was under administrative review during 2015-2016 while the state of Illinois addressed comprehensive budgeting for all state programs, and an anticipated implementation date for the Phase 1 service is not known as of mid-2016.

After completion of the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study in 2013, the state of Iowa commenced additional study of the Moline-Iowa City segment (Phase 2) of the corridor for implementation of passenger rail service, as an extension of the Chicago-Moline (Phase 1) service under development by Illinois. The Quad Cities-Iowa City Extension Program will conduct preliminary engineering and service development planning and Tier 2 environmental studies for implementation of the two daily roundtrip service to Iowa City. Anticipated completion of the study is 2017.

Detail of the Phase 1 and Phase 2 service territories is identified in Figure 3.6 below.

Figure 3.6: Phase 1 and Phase 2 Corridor Services

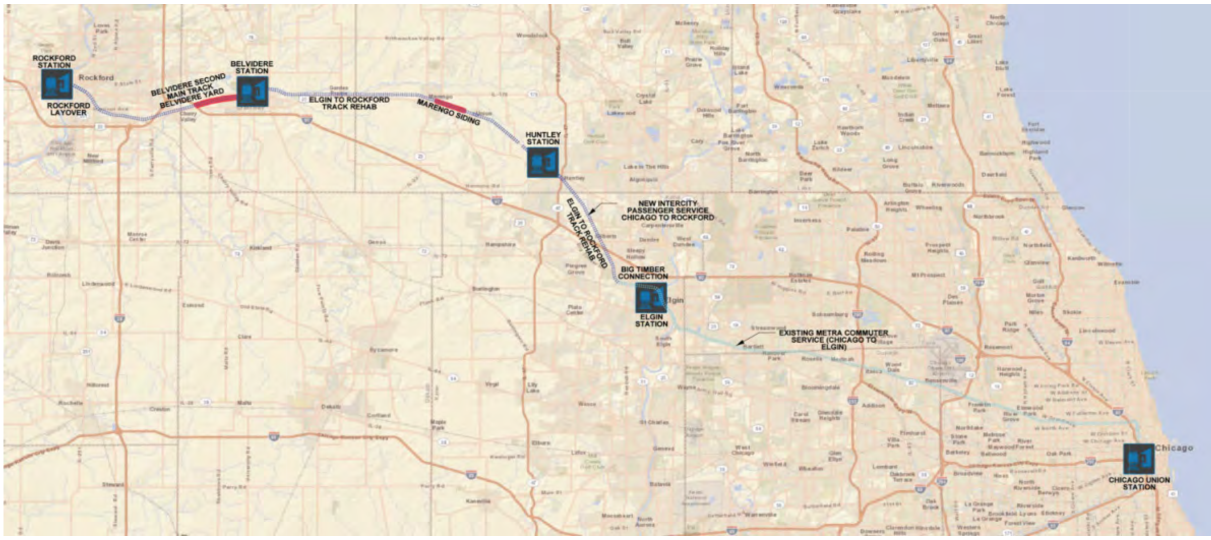


Source: Iowa DOT

Study and implementation of additional service phases in the corridor may occur in the future, as demand grows and funding becomes available.

3.3.2 Chicago to Dubuque
Passenger rail service between Chicago, Illinois, and Dubuque, Iowa, was operated by Amtrak until it was discontinued in 1981. The Chicago to Dubuque project aims to restore intercity passenger rail service in the corridor incrementally. In the first phase, service would be implemented from Chicago to Rockford, Illinois, by utilizing Metra (the Chicago Area commuter rail network) and Union Pacific routes. Improvements would include: upgrading tracks, capacity improvements, a layover facility, a UP/Metra connection, bridge improvements, and new stations. It is anticipated that the proposed service will be provided by Amtrak, with future plans to extend service west to Freeport and Galena, Illinois, and Dubuque, Iowa, in a second phase. Figure 3.7 below identifies the route of the first implementation phase in the corridor between Chicago and Rockford.

Figure 3.7: Chicago-Dubuque Corridor: First Implementation Phase



Source: Illinois Passenger Rail website

This project received $223 million from the Illinois Jobs Now! Capital Program in 2014. The money is to be used to upgrade the UP between Rockford and a new connection with Metra at Elgin, a western suburb of Chicago. The service would then share tracks with Metra from Elgin to Chicago Union Station. Plans called for corridor improvements to be completed and start-up of state-sponsored Amtrak service in 2016, but the project is now on hold and under administrative review while the state of Illinois addresses comprehensive budgeting for all state programs.

The Chicago-Dubuque service arose two other times in recent past, before evolving into the concept outlined above.

In October 2009, Illinois DOT submitted a grant application for Chicago — Dubuque service, seeking $140 million in American Recovery and Reinvestment Act (ARRA) funding under the High Speed Intercity Rail (HSIPR) discretionary program. The funding request was to support environmental impact analyses, track structure improvements, layover facility construction, equipment acquisition, and station improvements. Total capital costs were estimated at $147 million, and ridership was forecasted at 82,700 per year. The application was not selected for award. That proposal assumed use of a Canadian National Railway line between Dubuque and Chicago.

Earlier, in 2007, Amtrak studied the route. Its report, Feasibility Report on Proposed Amtrak Service, Chicago-Rockford-Galena-Dubuque, explored four routing options in the corridor. The differences in the routes were on the Chicago — Rockford segment. West of Rockford, all routes assumed the use of CN to Dubuque.

One round trip daily was assumed, with a 5:00 AM departure from Dubuque and a 6:15 AM departure from Chicago, running at a maximum speed of 79 mph. The differences among the four routes were:

- Route mileage ranged from 181.0 to 188.6 miles.
- Host railroads over which the passenger service would operate ranged from two to five.
- Transit time estimates ranged from 5 hours and 10 minutes to 5 hours and 42 minutes.
- Ridership ranged from 53,600 to 74,500 passengers per year.
- Fare box recovery ranged from 24 percent to 34 percent.

The route with the shortest transit time and fewest host railroads had both the highest ridership and the highest fare box recovery. This 182.2-mile route used the CN almost entirely from Chicago to Dubuque: 180.6 miles on CN and 1.6 miles on Amtrak at Chicago Union Station. The 2009 ARRA application submitted by Illinois DOT assumed this route, shown below in Figure 3.8 below.

Figure 3.8: Potential CN Route from Chicago to Dubuque

Source: Chicago-Rockford-Dubuque Corridor Intercity Passenger Rail Service Development Plan, Illinois DOT, 2009

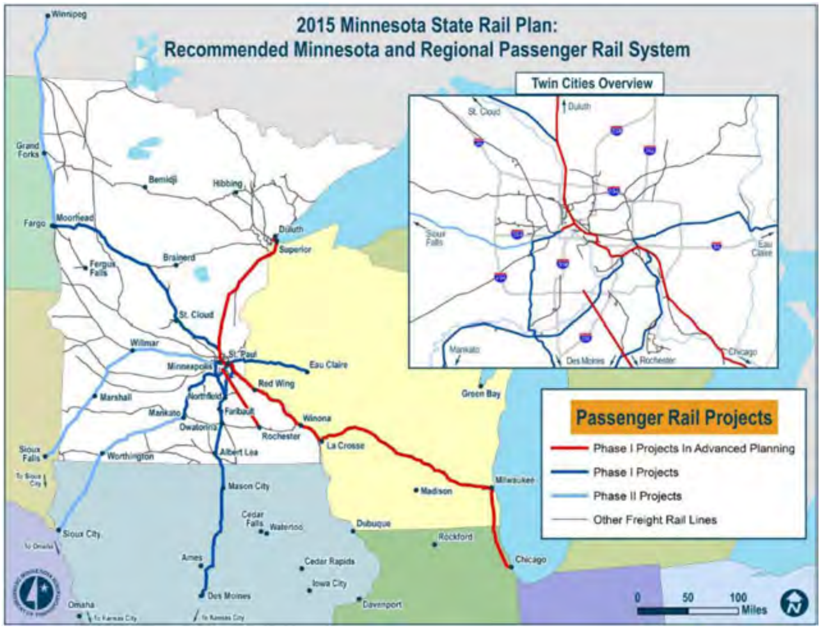
3.3.3 Dubuque to Sioux City

As seen in Figure 3.8 above, this conceptual route would be a 328-mile extension of the Chicago — Dubuque service westward to Sioux City, Iowa. The route would use the CN across the northern tier of Iowa, with station stops in Waterloo and Fort Dodge. Additional station stops could include Iowa Falls, which could provide a connection to a service proposed between Minneapolis/St. Paul, Minnesota; Des Moines, Iowa; and Kansas City, Missouri, on the UP “Spine Line.” At Sioux City, the route would serve residents in nearby northwestern Nebraska and southeastern South Dakota. This route potential remains to be studied.

3.3.4 Twin Cities to Des Moines

The March 2015 Draft Minnesota GO State Rail Plan identified a potential intercity route from either Minneapolis and/or St. Paul, Minnesota, to Des Moines, Iowa (see Figure 3.9 below). The plan assumed up to four round trips per day traveling at maximum speeds of 79 mph. The Minnesota plan envisioned possible extension southward to Kansas City with connections there to other cities. The Minnesota plan included implementation costs for the service between the Twin Cities and Albert Lea, Minnesota, just north of the Minnesota/Iowa state line. The plan identified the route to Des Moines as a Phase I project, that is, a project that is in a 0-20 year implementation horizon. The route into Iowa and on to Des Moines and Kansas City has yet to be evaluated.

Figure 3.9: Potential New Minnesota Passenger Trains to Serve Iowa



Source: Minnesota GO State Rail Plan, 2015

3.3.5 Twin Cities to Sioux City

The Minnesota rail plan also envisioned service between the Twin Cities and Sioux City, Iowa. The route would be on the UP via Mankato and Worthington, Minnesota, and Sheldon and Le Mars, Iowa, as seen in Figure 3.9 above. The Twin Cities to Mankato segment of the route is identified as a Phase I project. The Minnesota plan envisioned up to four daily round trips at a maximum speed of 79 mph. The extension south to Sioux City is identified as a Phase II project, that is, a project with a 20+ year implementation horizon. In Iowa, the trains would traverse the UP from just north of Sibley, Iowa, to Sioux City. The Minnesota plan envisioned extension southward to Omaha and Kansas City in subsequent phases. The Minnesota plan developed implementation cost estimates for the service between the Twin Cities and Mankato. The route into Iowa and on to Sioux City has yet to be evaluated.

3.3.6 Twin Cities-Des Moines-Kansas City

Another concept articulated by Iowa DOT for the Iowa State Rail Plan is a corridor service linking three major metropolitan (and two state capitols) on a 478-mile north-south route through Iowa. The service could provide for daytime/early evening service between St. Paul, Des Moines, and Kansas City. The concept has a working title, the Tri-State Rocket, in the tradition of the former CRI&P's Twin Star Rocket, which followed the route until it ceased operations in 1969.

For comparative purposes, 2015 ridership for nearby corridor services having route lengths greater than 200 miles and frequencies of two to four trains per day are identified in Table 3.5 below. Given the cities served, it seems possible that average daily riders per Tri-State Rocket would be similar to ridership levels achieved on these other corridor services. To confirm ridership, as well as operating and financial performance, an in-depth feasibility analysis would be required.

Table 3.5: Comparative Corridor Services

CORRIDOR SERVICE	END POINTS	ROUTE LENGTH IN MILES	FREQUENCIES OR ROUND TRIPS (RT)	ANNUAL RIDERSHIP FOR FY 2015	AVERAGE RIDERSHIP PER TRAIN
Missouri River Runner	Kansas City-St. Louis	283	2 RT	178,915	122

Lincoln Service	St. Louis-Chicago	284	4 RT	576,705	197
Carl Sandburg/ Illinois Zephyr	Chicago-Quincy	258	2 RT	208,961	143
Illini/Saluki	Chicago-Carbondale	309	2 RT	292,187	200
Wolverine	Chicago-Pontiac	304	3 RT	465,627	212

Sources: Amtrak Monthly Performance Report for September 2015, Amtrak System Timetable, and CDM Smith

3.3.7 FRA Midwest Regional Rail Study
As noted in Chapter 2, the FRA will initiate either in 2016 or 2017 an update and expansion of the 2004 MWRRS. The FRA effort, titled the Midwest Regional Rail Plan, will look at new services making stops in 12 Midwestern states, including Iowa.

3.4 Proposed Commuter Rail Services
Commuter rail is a mode of passenger rail transportation typically involving diesel-electric locomotives and passenger coaches on corridors shared with freight trains. As noted earlier, the services are concentrated on weekdays, with most trains operating in the peak commute period in the peak commute direction, with station stops several miles apart. The trains link outlying residential suburbs with downtown work centers. In most cases, the tracks are owned by freight railroads, who have agreed to share their tracks with the commuter operators, but some commuter operators do own their track. Some systems, as in Chicago and the New York area, are electric systems. A diesel-based technology, called diesel multiple units (DMUs) or self-propelled railcars, have been gaining popularity around the county. DMUs now operate in Oregon, Texas, and South Florida and will operate soon in the San Francisco Bay Area.

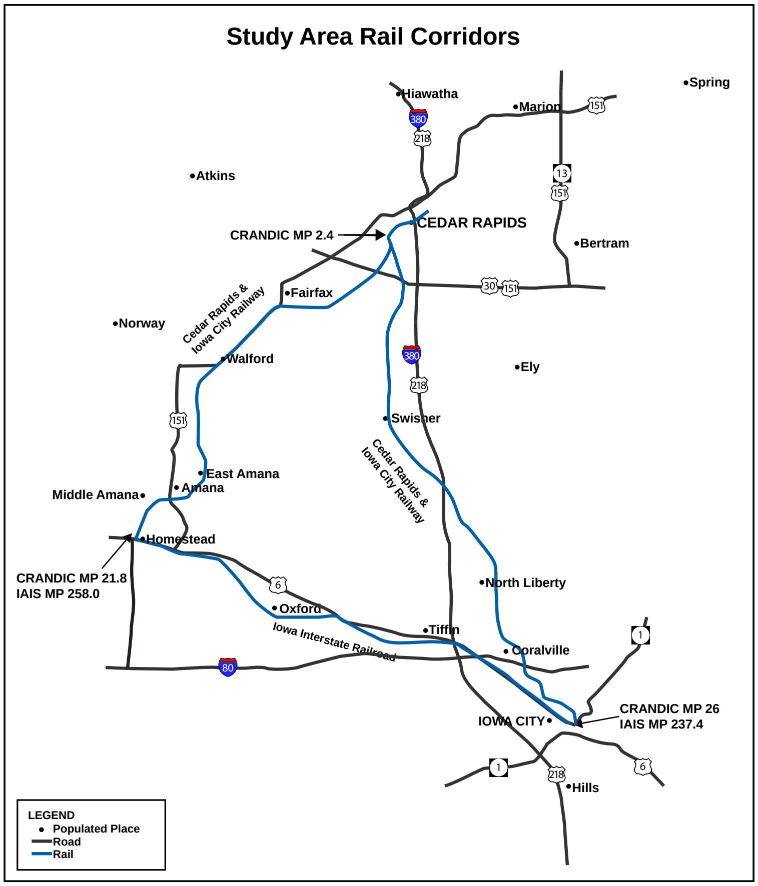
Commuter rail concepts have been explored in two parts of Iowa since 1995. These are discussed below.

3.4.1 Cedar Rapids-Iowa City Area Commuter Service
Passenger rail service between Cedar Rapids and Iowa City, Iowa, was discontinued in 1953. The concept of new passenger services between the growing Cedar Rapids and Iowa City metropolitan areas has been reviewed four times in the last 20 years. These studies mainly looked at passenger use of the Cedar Rapids and Iowa City (CRANDIC) Railway's Cedar Rapids — Iowa City line, most of which, south of Cedar Rapids, is lightly used for freight rail service today.

3.4.1.1 EAST CENTRAL IOWA COMMUTER RAIL FEASIBILITY STUDY (1995)
This 1995 study, sponsored by the East Central Iowa Council of Governments (ECICOG), identified the capital improvements required to support passenger rail service and included a forecast of the ridership potential and an evaluation of various rolling stock types appropriate for the service and for the corridor. The study focused mostly on the CRANDIC's line between Cedar Rapids and Iowa City, which was studied again in 2006, 2014, and 2015, as discussed in the sections that follow. The line can be seen in Figure 3.10 below, a map developed for the 2006 study.

The 1995 study investigated two rail alternatives, along with an express bus alternative using mostly Interstate 380. Both rail alternatives assumed use of self-propelled DMUs. A rendering of a DMU, which will run on track shared with freight rail operations (as would be the case on the CRANDIC Cedar Rapids-Iowa City line), is shown in Figure 3.11 below. The DMU, to be operated by Sonoma Marin Area Rail Transit (SMART) north of San Francisco, is anticipated to start revenue service in late 2016.

Figure 3.10: 2006 CRANDIC Rail Network and Study Corridors



Source: Cedar-Iowa River Rail Transit Project Feasibility Study, November 2006, with modification to show Eastern Iowa Airport at Cedar Rapids

Figure 3.11: Diesel Multiple Unit in Northern California

Source: Sonoma Marin Area Rail Transit

The results of the evaluation of the three transit alternatives are summarized in Table 3.6 below. Cost and revenue estimates are in 1995 dollars.

Table 3.6: Cedar Rapids — Iowa City Transit Options Evaluation

MEASURE	PRIMARY RAIL	SECONDARY RAIL	EXPRESS BUS
Level of service on weekdays	Peak hour headways: 20 minutes	Peak hour headways: 20 minutes	Peak hour headways: 20 minutes
Ridership (weekday)	1,670	1,336	100
Fare revenue (annual)	$340,000	$272,000	$133,000
Fare box recovery	5%	3%	9%
Running time	32 minutes	48 minutes	35 minutes
Route miles	27.1 miles	28 miles	26 miles
Rolling stock	DMU	DMU	Highway motor coach
Operating costs (annual)	$6.5 million	$7.8 million	$1.5 million
Capital costs	$84.4 million	$51.6 million	$3.3 million

Source: East Central Iowa Commuter Rail Feasibility Study, 1995

Capital cost estimates were inclusive of mainline improvements, signalization, rolling stock, and eight stations in the corridor. All options would depart from downtown Cedar Rapids, east of the Cedar River. The primary rail alternative would head straight west, on a new bridge over the Cedar River and thence by street running to reach the UP's east-west mainline in southwest Cedar Rapids, before heading south to the CRANDIC line and Iowa City, thus triggering higher capital costs. The secondary rail alternative assumed trains would depart first northbound from Cedar Rapids on the UP Cedar Rapids Industrial Lead and cross the Cedar River on an existing bridge to reach the UP east-west mainline in southwest Cedar Rapids before heading south to the CRANDIC line and Iowa City, thus generating a longer transit time and higher operating costs. On an ongoing basis, ticket revenue from neither of the alternatives would cover more than 9 percent of operating costs (the recurring costs for running the system: train crews, management, insurance, maintenance, fuel, etc.), with the bus option doing better than either of the rail options. More typically rail and bus transit services achieve far higher ticket revenue-to-operating cost returns, i.e., fare box recovery.

The study did not recommend further analysis of any option at the time, but did recommend that ECICOG consider examining rail passenger and bus service options on a regular basis as part of its long-range planning process.

The study did uncover the potential for a development of rail transit service on the corridor segment between North Liberty and Iowa City, which was explored in subsequent analyses. It also pointed to the potential for operating a vintage trolley for tourists on the CRANDIC's line between Cedar Rapids and the Amana Colonies at Amana, Iowa, also seen in Figure 3.10 running southwest from Cedar Rapids.

3.4.1.2 CEDAR-IOWA RIVER RAIL TRANSIT PROJECT FEASIBILITY STUDY (2006)

In 2006, Five Seasons Transportation and Parking, a private sector bus charter and rental firm, and the Johnson County Council of Governments sponsored this study, which revisited commuter rail options on the CRANDIC's line between Cedar Rapids and Iowa City.

The study focused on two commuter rail options. The options studied are:

1. Between the Eastern Iowa Airport in Cedar Rapids (see Figure 3.10 above) and Iowa City
2. Between North Liberty and Iowa City

Because of relatively heavy freight traffic near downtown Cedar Rapids, the Eastern Iowa Airport south of Cedar Rapids (approximately 6 miles south of downtown Cedar Rapids) was selected as the northern terminus for the first option. The line south of downtown Cedar Rapids to Iowa City sees relatively light freight train movements, a condition that would facilitate the implementation of commuter rail there. Characteristics of the two options are summarized in Table 3.7 below.

Table 3.7: Cedar Rapids — Iowa City Commuter Rail Service Options

CHARACTERISTICS	EASTERN IOWA AIRPORT – IOWA CITY		NORTH LIBERTY – IOWA CITY	
	2006	2030	2006	2030
Level of service: AM peak	2 trains southbound; 2-hour frequency	6 trains southbound; 30-minute frequency	Continuous service from 6 AM to 7 PM; hourly frequencies	Continuous service from 6 AM to 9 PM; 20-minute frequencies
Level of service: mid-day	None	90-minute frequency		
Level of service: PM peak	2 trains northbound; 2-hour frequency	6 trains northbound; 30-minute frequency		
Ridership (weekday)	837 passenger trips	1,991 passenger trips	742 passenger trips	1,336 passenger trips
Running time	50 minutes	33 minutes	20 minutes	15 minutes
Route miles	20 miles	20 miles	9 miles	9 miles
Rolling stock	Traditional or DMU	Traditional or DMU	Traditional or DMU	Traditional or DMU
Operating costs (annual)	$5.0 million	$12.0 million	$4.1 million	$6.8 million
Capital costs	$21.4 million	$35.2 million	$18.7 million	$28.0 million

Source: Cedar-Iowa River Rail Transit Project Feasibility Study, November 2006

The study looked at each option at the year of implementation (2006) and also in the year 2030. The 20-mile Eastern Iowa Airport — Iowa City option aimed at providing commuter service between the two main population centers on the corridor: Cedar Rapids and Iowa City. The option assumed a bus connection between the airport and downtown Cedar Rapids. In 2006, the service would be bi-directional and focused in the morning and evening peaks. In 2030, more weekday trains and mid-day service along with reduced weekend service would be added. The 9 mile North Liberty — Iowa City option would provide bi-directional, continuous service through most of the day on weekdays. In 2030, more weekday trains and reduced weekend service would be added; also, the service period would be extended for two hours in the evening, from 7 PM to 9 PM on weekdays.

Potential stations for the corridor from north to south were:

- Eastern Iowa Airport (Cedar Rapids)
- Swisher
- North Liberty
- Coralville
- Riverside Drive (Iowa City)
- Court Street (Iowa City)

Both services were envisioned to use either DMUs or traditional equipment: one trainset would include a diesel-electric locomotive and trailing coaches operating in a push-pull mode obviating the need to turn the trainsets.

The study concluded that, given the ridership and the capital and operating costs involved, the two commuter rail concepts would not easily qualify for federal funding at the time. However, the study recommended monitoring demographic changes in the corridor, which might begin to favor a commuter rail implementation over time.

The CRANDIC's Cedar Rapids — Amana corridor was also investigated, but was not deemed a candidate for commuter rail.

3.4.1.3 IOWA COMMUTER TRANSPORTATION STUDY (2014)

This study was completed by Iowa DOT in 2014 pursuant to a directive from the Iowa State Legislature to identify the existing and future commuter needs in the Interstate 380 corridor and to determine the viability of various commuter transportation improvements to address those needs. Based on U.S. Census data, the study found there were approximately 7,500 commuters in the corridor between Cedar Rapids and Iowa City.

The study looked at various solutions. These included:

- Public bus transportation, including express options
- Private bus transportation or subscription services
- Vanpooling
- Carpooling
- Intercity bus transportation
- Commuter rail

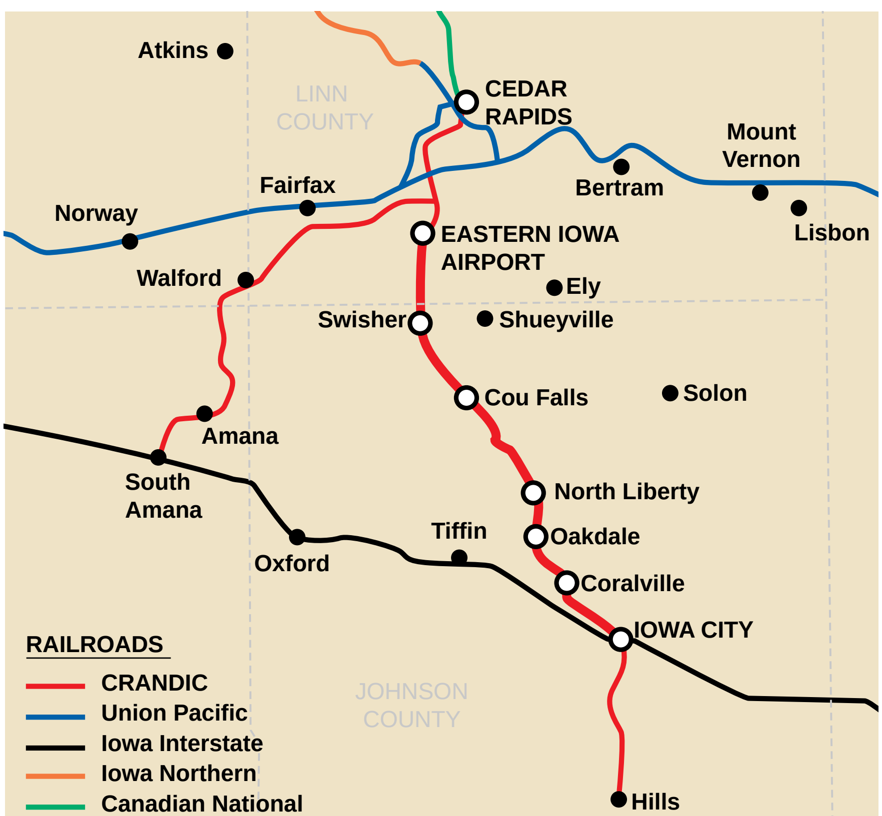
The study assumed findings from the 2006 commuter rail study. Costs were updated from 2006 to 2014. The study concluded that the cost per rider of commuter rail service is significantly greater than the comparable public express bus service options and therefore, commuter rail service was not recommended for short- or mid-term implementation.

3.4.1.4 IOWA CITY — CEDAR RAPIDS PASSENGER RAIL CONCEPTUAL FEASIBILITY STUDY (2015)

This 2015 study sponsored by CRANDIC, Iowa DOT, and other local stakeholders revisited potential passenger rail implementation options for the CRANDIC's Cedar Rapids-Iowa City corridor. The purpose was to provide stakeholders with an understanding of the different modes that are available for passenger rail service in the corridor, to understand probable capital and operating and maintenance costs for each mode, and to consider service frequencies, service capacities, and the regulatory and funding environment for implementing a passenger rail service in the corridor.

The study area comprised the CRANDIC's Cedar Rapids-Iowa City line between the Eastern Iowa Airport in Cedar Rapids and Iowa City, a total of 20.5 miles, as shown in the bold red line in Figure 3.12 below.

Figure 3.12: 2015 CRANDIC Corridor Study Area



Source: HDR Engineering and Iowa Department of Transportation

3.4.1.4.1 Modal Options Considered

The report discussed the three different modal options — streetcar, light rail transit, and commuter rail — and provided some high-level, conceptual capital and operating and maintenance cost information. No recommendations were made.

The report explained that streetcar mode tends to operate like a downtown people mover, linking downtown visitors, employees and residents to jobs, shopping and entertainment venues, and sometimes connecting to remote parking facilities. The vehicles have steel wheels operating on steel tracks typically sharing a travel lane with automobiles. The cars are generally powered electrically by an overhead power supply. Street car systems typically have frequencies of 5 to 15 minutes and closely spaced stops of between 0.25 and 0.5 miles. The concept of streetcars is well over 100 years old, but the cars began to disappear from city streets in the years following World War II as city dwellers found homes in the suburbs. However, the mode has experienced a resurgence in the last 20 years. In many cases, streetcars have evolved into an urban development tool. A typical streetcar is seen in Figure 3.13 below.

Figure 3.13: Typical Modern Streetcar Operation

Source: HDR Engineering

Light Rail Transit (LRT) operates singly or in short, usually two or four-car trains, on fixed rails. LRT often runs in its own dedicated right-of-way, but it can also run in city streets, if needed, to pass through downtown business districts and residential neighborhoods. LRT vehicles are typically driven electrically with power drawn from overhead wires. Stop spacing is somewhat longer than for streetcars, ranging from 0.5 to 1 mile in shared rights-of-way and between 0.5 and 2 miles in exclusive rights-of-way. An LRT trainset is shown in Figure 3.14 below.

Figure 3.14: Typical LRT Operations in Dedicated Right-of-Way

Source: HDR Engineering

As previously noted, commuter rail generally links downtown work centers with more remote residential areas. Frequencies are mostly in peak commute periods and peak commute direction oriented, with station spacing varying between 1 and 4 or more miles. Trains mostly are powered by diesel-electric locomotives, with commuters riding in coaches. A typical commuter rail trainset is seen in Figure 3.15 below. Some commuter systems are powered electrically, for example, in Chicago and on Long Island, New York. Furthermore, some commuter rail systems have deployed DMUs, as noted previously and seen in Figure 3.14 above. Figure 3.16 below shows a DMU that can operate on a rail line over which freight trains do not operate or that do so on a temporally separated basis, in which passenger and freight trains have exclusive occupancy of the corridor at different times of day. These DMUs are sometimes called light DMUs, as they are not engineered to robust FRA crashworthiness requirements for operation on track shared with freight trains and other traditional locomotive-hauled passenger trains with no temporal separation.

Figure 3.15: Typical Commuter Rail Operation

Source: HDR Engineering

Figure 3.16: DMU Vehicle in Austin, Texas

Source: HDR Engineering

A summary comparison the typical characteristics of the rail options studied appears in Table 3.8 below.

Table 3.8: Summary Comparison of CRANDIC Corridor Passenger Rail Options

CHARACTERISTICS	STREETCAR	LIGHT RAIL TRANSIT	COMMUTER RAIL
Frequency of service	Every 5 to 15 minutes	Every 5 to 15 minutes	Every 30 minutes
Station spacing	0.25 miles to 0.5 miles	0.5 miles to 2 miles	1 to 4 miles
Typical route length	Up to 4 miles	Up to 20 miles	Up to 50 miles
Avg. operating speed	5-8 MPH	30-35 MPH	40 MPH
Capacity per trainset	60	225	Over 250

Source: Iowa City-Cedar Rapids Passenger Rail Conceptual Feasibility Study, 2015

3.4.1.4.2 Modal Options Conceptual Costs

The development of typical representative conceptual capital costs included assumptions of rehabilitated track and structures; new rolling stock; upgraded signaling and communications systems, including PTC for commuter rail; a layover and maintenance facility; and electrical power distribution systems for streetcars and LRT; among other things. Also, six stations were assumed over the 20.5-mile route. Typical representative conceptual cost estimates appear in Table 3.9 below.

Table 3.9: CRANDIC Corridor Typical Representative Conceptual Capital Cost Estimates by Mode in 2015 Dollars

MEASURE	STREETCAR	LIGHT RAIL TRANSIT	COMMUTER RAIL
Capital cost per mile	$52 - $80 million	$42 - $65 million	$12 -$25 million
Total capital cost for 20.5-mile route	$1.07 - $1.64 billion	$860 million - $1.33 billion	$250 million to $520 million

Source: Iowa City-Cedar Rapids Passenger Rail Conceptual Feasibility Study, 2015

For all modes, annual operations and maintenance costs were estimated at between $275,000 and $325,000 per mile and between $5.6 million and $6.7 million per year for the 20.5-mile route.

3.4.1.4.3 Phased Implementation

The study further considered a phased implementation of the passenger service on the corridor. Phase 1 could be between Iowa City and North Liberty, and Phase 2 between North Liberty and the Eastern Iowa Airport at Cedar Rapids.

Additional phased implementation could include more frequencies and more stations, and even a Phase 3 which would take the service from the Eastern Iowa Airport north to downtown Cedar Rapids.

The study stopped short of recommending a modal option. Such a recommendation would typically require further refinement of costs, estimates of ridership and revenue, an evaluation of funding strategies, an environmental assessment, and a public outreach effort to test which option the potential users of the service would be most likely to support.

Project stakeholders will use the 2015 study to determine the feasibility of further study of the potential for implementation of passenger rail service in the CRANDIC corridor.

3.4.2 Des Moines Area Commuter Service

The June 2000 Commuter Rail Feasibility Study for the Des Moines, Iowa Metropolitan Area investigated a commuter rail concept using an east-west route through the state capital, linking outlying suburban areas with downtown Des Moines. The route is seen in Figure 3.17 below.

Figure 3.17: Proposed Des Moines Area Commuter Rail Service

Source: Commuter Rail Feasibility Study for the Des Moines, Iowa Metropolitan Area

From the east, commuter trains, each consisting of a reconditioned locomotive and at least two reconditioned coach cars, would depart Altoona and Pleasant Hill on the IAIS Newton Subdivision during the morning peak for the Des Moines Station at Court Avenue in the Central Business District (CBD). From the west, trains would depart Urbandale and Windsor Heights on the IAIS Grimes Branch, as other trains depart Waukee and West Des Moines on the UP's Perry Subdivision for the CBD. The trains would reverse their trips during the evening peak.

Ridership forecasts were developed assuming 15-, 30-, 45-, and 60-minute peak period, peak direction frequencies. The forecasts calculated 1,300 passenger trips per weekday assuming 45-minute peak period frequencies, and 1,800 passenger trips per weekday assuming 30-minute frequencies in 2005.

A cost estimate for implementation, based on the 45-minute frequency scenario, was $63.2 million (2000 dollars). The total covers the cost of track improvements, stations, grade crossing protection, rolling stock, and feeder buses and park-and-ride facilities.

Estimated operating costs — the recurring costs for running the system (train crews, management, insurance, maintenance, fuel, etc.) — for the 45-minute frequency scenario totaled $7.5 million a year, while the annual ticket revenue would be $533,000. The fare box recovery ratio would be just 7 percent, and the annual subsidy requirement would be $7.0 million.

The study pointed out that the 7 percent fare box recovery ratio is far below what comparable commuter rail operations generate (the range varied between 23 percent for the Tri-Rail commuter operation in Miami to 48 percent for the Metrolink commuter rail operation in Los Angeles). The study also calculated a subsidy per passenger trip of $21 in Des Moines as opposed to subsidies of less than $5 - $7 for the comparable services in Los Angeles, San Francisco, Miami, and Northern Virginia-Washington DC.

The study concluded that based on these performance measures, commuter rail in Des Moines is not feasible from an economic perspective, at least not at that time. The study recommended keeping options open, monitoring demographic and traffic trends, and preserving rail corridors which may become important for passenger rail in the future.

3.5 Proposed Special Event Trains and Tourist Excursion Trains

Special event and tourist excursion passenger trains operate or have operated in Iowa in recent years, and there is the potential for the continuation and enhancement of existing services and the implementation of new services in the state. Past studies have identified the potential of some additional services for Iowa.

3.5.1 Special Event Trains

Special passenger trains for college football games and other major local and state events have been an Iowa tradition for generations and continue to operate for the public today.

The *Hawkeye Express* began passenger railroad operations over the Iowa Interstate Railroad in 2004 between Iowa City's Kinnick Stadium and outlying parking areas in nearby Coralville to transport football fans during University of Iowa Hawkeyes home games. The *Hawkeye Express* train is owned by the Iowa Northern Railway, leased to the University of Iowa, and operated by Iowa Interstate Railroad. In recent years, the *Hawkeye Express* has used a locomotive and reconditioned Chicago commuter rail bi-level coaches to make several push-pull shuttle runs between the stadium and the parking areas before and after each game, as shown in Figure 3.18 below. The train accommodated approximately 5,000 Iowa football fans for each of the seven home games during the 2013 season[1]. The train operated during the 2014 and 2015 football seasons and plans are for it to operate again in 2016.

1 *http://www.iowanorthern.com/pdf/hawkeye_express_2014_flyer.pdf*

Figure 3.18: Hawkeye Express Special Train in Iowa City

Source: Iowa Northern Railway

IANR also operates a Holiday Express Train in December over various segments of its core network between Manly, Waterloo, and Cedar Rapids, Iowa.

Other special event trains have operated over the Iowa railroad network in recent years. In 2006, IAIS acquired two Chinese-built steam locomotives, which have been used on numerous special passenger trains on its system across Iowa and Illinois in subsequent years.

Proceeds from some special trains operated by IANR and IAIS have been used to support flood relief efforts or to benefit local fire departments in Iowa. Some special trains have also been operated for events held by railroad historical organizations at Cedar Rapids, Waterloo, and elsewhere in Iowa.

The potential for additional special trains for sporting and other events in the state — including the annual Iowa State Fair in Des Moines, for example —could be explored in the future. The aforementioned 2006 Cedar-Iowa River Rail Transit Project Feasibility Study suggested special event excursion service and another excursion service in Iowa using vintage railroad equipment. The services could run on any of the three lines in the Iowa City-Cedar Rapids region study area shown in Figure 3.18 above. An example of a special event train would be on a weekend day in late September for Oktoberfest. An excursion train could run between the Eastern Iowa Airport at Cedar Rapids and Iowa City via the CRANDIC, then via the IAIS between Iowa City and the Amana Colonies. Equipment could be traditional locomotive-hauled trainsets, with crews provided by the host railroads.

3.5.2 Tourist Excursion Trains

The Iowa railroad network hosted tourist excursion trains in the 1980s and 1990s, which are not presently operating. Some of these services included the Iowa *Star Clipper Dinner Train* that operated out of Osage, Waverly, and Cedar Falls, Iowa, and other points on the Cedar Valley Railroad (today, owned by CN) starting in 1985, and the *Madison County Zephyr* between Chicago, Illinois, and Earlham, Iowa, that operated over IAIS in Iowa during 1996.

The Boone and Scenic Valley Railroad operates historic railroad equipment on daily excursions from spring through fall as well as a *Dinner Train*, *Picnic Train*, and other special tourist excursion services locally at

Boone, Iowa, which use privately owned railroad museum trackage only and not a host railroad on the Iowa railroad network.

The aforementioned 1995 East Central Iowa Commuter Rail Feasibility Study and the 2006 Cedar-Iowa River Rail Transit Project Feasibility Study both noted the potential for tourist operations. The 1995 study suggested vintage trolleys on the CRANDIC Cedar Rapids — Amana Colonies line. Trolleys are electric powered and would require overhead electric power lines and the supporting infrastructure. No details of such a concept were included in the study.

Tourist railroad excursions using vintage railroad equipment were also identified in the 2006 report. Such equipment could include historic steam or diesel-electric locomotives, historic coaches, and even self-propelled (non-electric) rail interurban-style rail cars. Tourist rail operations could potentially occur on any of the corridors in the Cedar Rapids/Iowa City study area. Crews would likely consist of volunteers. Typical tourist train vintage equipment is shown for the Boone and Scenic Valley Railroad, along with riders, on a late summer afternoon in Figure 3.19 below.

Figure 3.19: Riders Aboard a Vintage Day Coach on the Boone and Scenic Valley Railroad

Source: Prime Focus

Unlike commuter rail, special event and/or tourist excursion passenger rail operations typically run at a profit or at least cover their costs. Accordingly, such operations are likely more possible in the near term.

Any arrangement between a host freight railroad and a third party for the operation of future passenger excursion trains in Iowa would be subject to agreement between the parties.

3.6 iTRAM Ridership Forecasting Model

iTRAM (Iowa Travel Analysis Model) is a state-of-the-art travel demand model developed for the Iowa DOT. The model consists of several key components and numerous subcomponents. The key parts are:

- Statewide Traffic Model
- Passenger Rail Model
- Freight Rail Model

This section will describe what the Passenger Rail Model is, and how the model can be applied. The iTRAM model was developed with assistance from the federal High Speed Intercity Passenger Rail (HSIPR) capital grant program for states.

3.6.1 Statewide Passenger Rail Model

The iTRAM Passenger Rail Model is designed to estimate the intercity rail demand for existing and new rail lines for the Iowa Statewide Model Area. The model is a market area logit model that has an independent rail network that is coordinated with the highway network by designating specific nodes within the iTRAM highway network as rail passenger stations. The model uses the long distance work and long distance non-work trip tables from the iTRAM Travel Demand Model as input.

3.6.2 Typical Applications

Possible applications of the Passenger Rail Model might include estimating current year and future year volumes for proposed new intercity passenger rail passenger services.

IOWA DOT