CHAPTER 1
INTRODUCTION

The Iowa Department of Transportation (Iowa DOT), in conjunction with the Federal Railroad Administration (FRA) and Illinois Department of Transportation (Illinois DOT), is evaluating alternatives for the reestablishment of intercity passenger rail service from Chicago, Illinois, through Iowa, to Omaha, Nebraska (the Project). Iowa DOT's evaluation will be documented in the Chicago to Omaha Regional Passenger Rail System Planning Study (the Study) Tier 1 Service Level Environmental Impact Statement (EIS).

This report describes the initial range of route alternatives proposed for consideration for the Study, the screening methodology and criteria used to evaluate these route alternatives, and the results of the alternatives analysis. Through a two-step screening process, preliminary service planning elements were analyzed to identify the range of route alternatives that will be considered in the Tier 1 Service Level EIS, which will be prepared to comply with the National Environmental Policy Act of 1969 (NEPA). The Tier 1 Service Level EIS will evaluate potential impacts of route alternatives carried forward from the screening process for detailed analysis and comparison. In addition, a No-Build Alternative will be retained for analysis in the Tier 1 Service Level EIS to allow equal comparison to the route alternatives carried forward and to help decision makers and the public understand the consequences of taking no action. Ultimately, Iowa DOT, Illinois DOT, and FRA will select one route alternative based on the detailed evaluation in the Tier 1 Service Level EIS and input from resource agencies and the public.

This report is organized as follows:

- Chapter 1, Introduction – Defines the purpose of and need for the Study, describes the Study Area, and provides an overview of the alternatives analysis review process.
- Chapter 2, Description of the Proposed Service – Describes the proposed passenger rail service to be provided by the selected route alternative.
- Chapter 3, Identification of a Range of Route Alternatives – Describes the previously established passenger rail routes in the Study Area and the range of route alternatives to be evaluated using the screening methodology discussed in Chapter 4.
- Chapter 4, Screening Methodology – Describes the screening criteria and the screening process for both coarse- and fine-level screening.
- Chapter 5, Coarse-Level Screening – Presents the results of coarse-level screening and identifies the route alternatives carried forward for fine-level screening.
- Chapter 6, Fine-Level Screening – Presents the results of fine-level screening and identifies the route alternatives carried forward for evaluation in the Tier 1 Service Level EIS.
- Chapter 7, Reasonable and Feasible Alternatives Carried Forward – Summarizes the route alternatives carried forward from coarse- and fine-level screening for detailed evaluation in the Tier 1 Service Level EIS.

- Chapter 8, References – Provides detailed information on the sources used to prepare this Draft Alternatives Analysis Report.

1.1 STUDY AREA

The Chicago to Omaha corridor (the Corridor) extends from Chicago Union Station, in downtown Chicago, Illinois, on the east to a terminal in Omaha, Nebraska, on the west. The Study Area consists of the five previously established passenger rail routes between Chicago and Omaha that pass through the states of Illinois and Iowa (see Figure 1-1). Each route is approximately 500 miles long. In Illinois, the Study Area runs generally west from Chicago Union Station, which is the hub for the Midwest Regional Rail Initiative (MWRRI) to the Mississippi River and, depending on the route, is a distance of between 150 and 250 miles. In Iowa, the Study Area runs west from the Mississippi River across the entire state to the Missouri River, a distance of approximately 300 miles. In Nebraska, the Study Area terminates in Omaha, which is located at the Missouri River, the eastern border of the state. The general location for the terminal in Omaha will be identified as part of this Study. The five previously established passenger rail routes to be evaluated are numbered from north to south. For each route, the counties that are traversed in Illinois, Iowa, and Nebraska are listed east to west in Table 1-1.

Table 1-1. Counties Traversed by Routes in the Study Area

State	Route 1	Route 2	Route 3	Route 4	Route 5
Illinois	Cook DuPage Kane DeKalb Boone Winnebago Stephenson Jo Daviess	Cook DuPage Kane DeKalb Ogle Lee Whiteside	Cook DuPage Kane DeKalb Ogle Carroll	Cook Will Grundy La Salle Bureau Henry Rock Island	Cook DuPage Kane Kendall DeKalb La Salle Bureau Henry Knox Warren Henderson
Iowa	Dubuque Delaware Buchanan Black Hawk Butler Franklin Hardin Hamilton Webster Calhoun Sac Crawford Harrison Pottawattamie	Clinton Cedar Linn Benton Tama Marshall Story Boone Greene Carroll Crawford Harrison Pottawattamie	Jackson Clinton Jones Linn Benton Tama Marshall Story Boone Dallas Guthrie Carroll Crawford Shelby Harrison Pottawattamie	Scott Muscatine Cedar Johnson Iowa Poweshiek Jasper Polk Dallas Madison Guthrie Adair Cass Pottawattamie	Des Moines Henry Jefferson Wapello Monroe Lucas Clarke Union Adams Montgomery Mills Pottawattamie
Nebraska	Douglas	Douglas	Douglas	Douglas	Douglas

1.2 PURPOSE OF AND NEED FOR THE STUDY

1.2.1 Study Background

The MWRRI was established in 1991 as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (Public Law [PL] 102-240) and its reauthorization in 1998 with the Transportation Equity Act for the 21st Century (TEA-21) (PL 105-178). ISTEA and TEA-21 included a broader national effort to support high-speed rail investment. Nine transportation agencies across the Midwest as well as Amtrak sponsored the MWRRI.

As a result of the MWRRI and the national high-speed rail initiative, numerous corridors were identified and refined, with Chicago as the hub. Between 1996 and 2004, a single transportation plan was developed that included all of these corridors; this plan is known as the Midwest Regional Rail System. Meanwhile, numerous studies were completed with regard to bus service integration with the MWRRI; financial, economic, market, and transportation analysis; infrastructure and capital costs; operating costs; and institutional and organizational issues. These efforts culminated in 2004, when the MWRRI issued the Midwest Regional Rail Initiative Project Notebook (MWRRI, June 2004) and the Midwest Regional Rail System: A Transportation Network for the 21st Century, Executive Report (MWRRI, September 2004).

Since 2004, efforts have progressed to develop the various corridors. In 2006, the Midwest Regional Rail Initiative Project Notebook, Chapter 11, Benefit Cost and Economic Analysis, was updated to reflect economic conditions at that time (MWRRI, November 2006). In addition, reports were issued from studies that included nine passenger rail corridors in the Midwest Regional Rail System.

In 2009 and 2010, Iowa DOT and Illinois DOT, in conjunction with FRA, evaluated alternatives for the corridor extending from Chicago Union Station to Iowa City, Iowa, with the completion of the Chicago to Iowa City Intercity Passenger Rail Service Tier 1 Service Level Environmental Assessment. On October 28, 2010, FRA awarded Iowa DOT and Illinois DOT a grant of $230 million to implement the Chicago to Iowa City service.

On October 14, 2011, FRA agreed to a phased implementation approach for the Chicago to Iowa City corridor. Illinois DOT is proceeding with the Tier 2 Project Level studies for the portion of the corridor extending from Chicago to the Quad Cities (Moline and Rock Island, Illinois, and Davenport and Bettendorf, Iowa), while Iowa DOT is focusing on completing the Tier 1 Service Level studies for the MWRRI corridor extending from Chicago to Omaha.

The implementation of service from Chicago Union Station to Iowa City, Iowa, is independent from the analysis for service from Chicago to Omaha. However, should the route alternative selected for the Chicago to Iowa City service overlap with any route alternative analyzed in the Chicago to Omaha Tier 1 Service Level EIS, the infrastructure improvements and impacts associated with the Chicago to Iowa City service will be incorporated into the analysis of route alternatives for Chicago to Omaha.

In 2010 and 2011, studies were completed for Planning Phase 7 of the MWRRI. These studies included MWRRI corridor alternatives analysis, capital cost updates, operating equipment configurations and performance standards, advanced train control, and public outreach (MWRRI, 2011). The Chicago to Omaha corridor was included in these studies.

1.2.2 Purpose

The Project and the Midwest Regional Rail System are intended "to meet current and future regional travel needs through significant improvements to the level and quality of passenger rail service," as defined by the MWRRI in its Midwest Regional Rail System Executive Report (MWRRI, September 2004). The Chicago to Omaha Regional Passenger Rail System would provide competitive passenger rail transportation between Chicago and Omaha to help meet future travel demands in the Study Area. The Project would create a competitive rail transportation alternative to the available automobile, bus, and air service and would meet needs for more efficient travel by:

- Decreasing travel times
- Increasing frequency of service
- Improving reliability
- Providing an efficient transportation option
- Providing amenities to improve passenger ride quality and comfort
- Promoting environmental benefits, including reduced air pollutant emissions, improved land use options

1.2.3 Need

The need for the Project stems from the increasing travel demand resulting from population growth and changing demographics along the Corridor as well as the need for competitive and attractive modes of travel (MWRRI, June 2004).

1.2.3.1 Travel Demand

Travel demand is the total demand for travel services in the Corridor. Between 2000 and 2009, the Chicago and Omaha metropolitan statistical areas have seen growth of approximately 5 and 11 percent, respectively (U.S. Census Bureau, March 2010), which has resulted in increased travel demand. The combined population in Illinois, Iowa, and Nebraska has increased by approximately 15 percent between 1970 and 2010 (U.S. Census Bureau, March 27, 1995, and August 17, 2011). Not only is population increasing in the area, but it is also becoming more urbanized, with expanded access to and demands for public transportation (Iowa DOT, December 27, 2010). For example, Iowa has historically had a mostly rural population; however, in 2003, that trend shifted, and 60 percent of the population is projected to live in urban areas by 2030 (Iowa DOT, December 27, 2010).

The predominant mode of travel in the region is the automobile. Highway access between Chicago and Omaha is afforded through Interstates 80 and 88 (portions of which are toll road), as well as number of federal and state highways. Table 2-2 shows the total trips estimated by the MWRRI in the Chicago-Des Moines-Omaha corridor for the year 2000.

Table 2-2.
Total Trips in the Chicago-Des Moines-Omaha Corridor for the Year 2000

Mode of Travel	Reason for Travel		Total	Percent of Total
	Business	Non-business		
Air	270,000	452,000	722,000	1.4%
Bus	5,000	118,000	123,000	0.2%
Auto	12,324,000	38,738,000	51,062,000	98.0%
Rail	32,000	149,000	181,000	0.3%
Total	12,631,000	39,457,000	52,088,000	

Note:

Data modified from MWRRI, 2006, Midwest Regional Rail Initiative Project Notebook, Exhibit 4-10. (Values have been rounded to nearest 1,000 trips and adjusted to remove estimated travel to Quincy, Illinois).

The population is also aging and is increasingly seeking alternative modes of transportation. Between 2000 and 2010, the population of individuals who are 65 years of age and over in Illinois, Iowa, and Nebraska has increased by 7.3, 3.8, and 6.2 percent, respectively (U.S. Census Bureau, 2000 and 2010). Within the Chicago and Omaha metropolitan statistical areas, the growth of the population of individuals who are 65 years of age and over, a population segment who tend to rely more on public transportation, is 8.2 and 25.9 percent higher, respectively, in 2010 compared to 2000 (Iowa DOT, 2012; Iowa DOT, December 27, 2010; U.S. Census Bureau, 2000 and 2010).

1.2.3.2 Competitive and Attractive Travel Modes

Introducing intercity passenger rail service in the Chicago to Omaha corridor would provide a competitive modal option for travel in the Corridor. As shown in Table 2-2, the MWRRI estimates that 98 percent of both business and personal travel between city pairs in the Study Area is by automobile, with bus, air, and rail travel making up the remainder (MWRRI, June 2004).

Intercity passenger rail service would provide an option to highway and air travel in the face of a growing and aging population and increasing congestion on Midwest highways and at Midwest airports. For example, highway vehicle miles traveled in Iowa have increased 37 percent since 1990, and Chicago O'Hare International Airport is the second busiest airport in the nation (Iowa DOT, 2012; U.S. DOT, January 2012).

Travel modes available to the public along the Corridor include automobile, bus, air, and traditional-speed long-distance passenger rail. Current passenger rail service from Chicago to Omaha is part of Amtrak's long-distance service on the California Zephyr, which does not provide travel times that are competitive with other modes in the Study Area. Travel time from Chicago to Omaha on the current Amtrak long-distance service is approximately

8 hours and 55 minutes while travel time from Omaha to Chicago is approximately 9 hours and 36 minutes, compared to approximately 8 hours for travel by automobile (Amtrak, November 7, 2011). In addition, the arrival and departure times in Omaha are late at night or early in the morning, which is not consistent with convenient intercity travel. The only major metropolitan community in Iowa that currently has access to passenger rail is Council Bluffs via the once-a-day Amtrak California Zephyr (Iowa DOT, December 27, 2010).

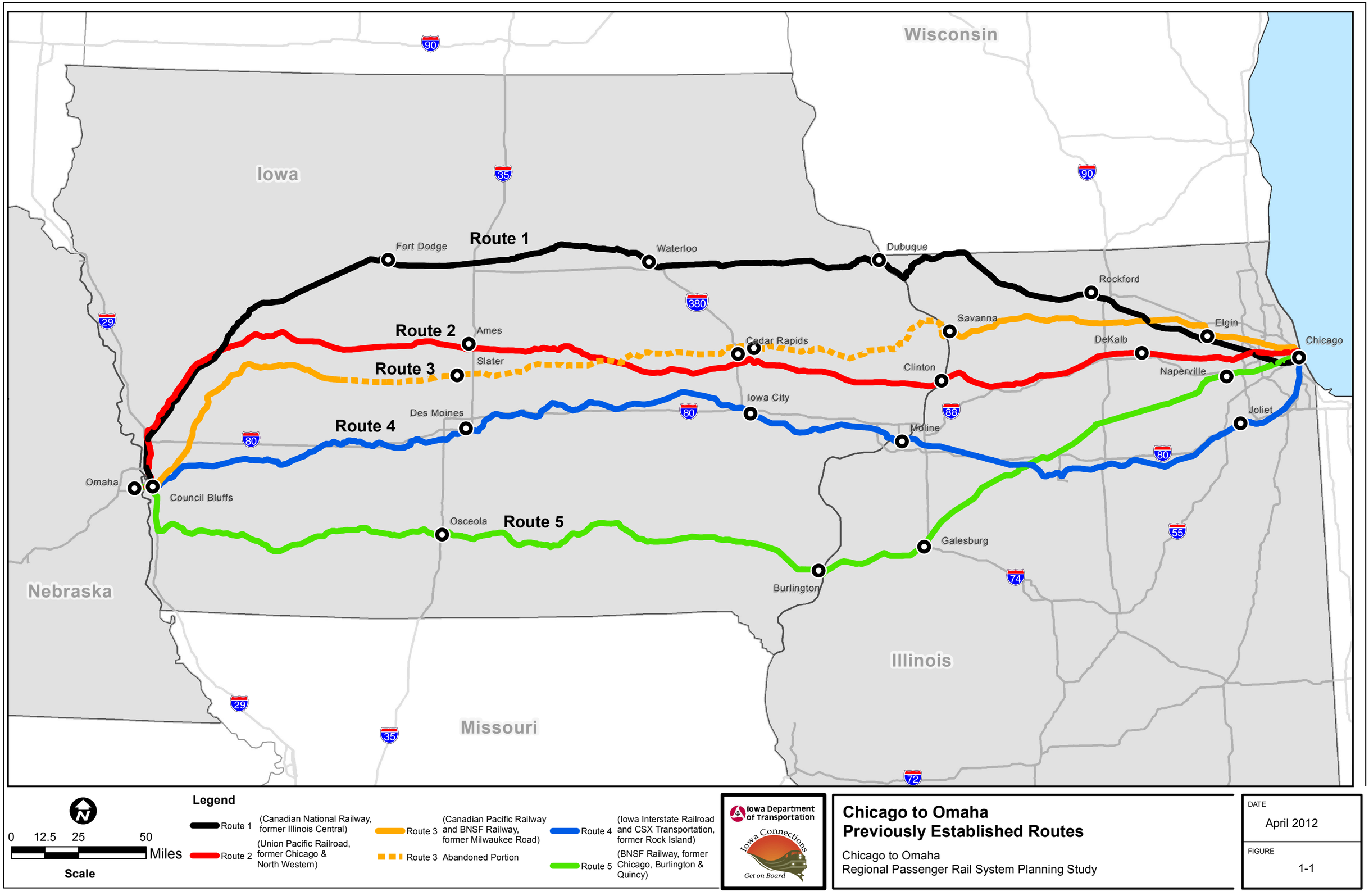
Different travel modes are selected by the public based on a combination of trip time, cost, and convenience. Bus and air service are available between several of the major cities in the Study Area. Interstate 80 (I-80) is the dominant transportation route in the Corridor. Between 2010 and 2030, vehicle miles traveled in Iowa on I-80 are expected to increase by more than 65 percent. If no capacity improvements are made, nearly 75 percent of I-80 in Iowa would be bordering on unstable traffic flow, at or beyond capacity (Iowa DOT, January 24, 2012). In Chicago, Des Moines, and Omaha, I-80 currently has peak-period congestion and capacity issues that impact travel times of both personal automobiles and bus service (FHWA, November 2010). In addition, by 2040, the majority of the I-80 corridor between Chicago and Omaha will be experiencing peak-period congestion issues if no capacity improvements are made (FHWA, November 2010). Although future highway infrastructure improvements are under consideration near and along the Corridor, the travel demand and ridership for the passenger rail system would be negligibly affected. In addition, inclement winter weather in the Study Area often creates conditions that impact both highway and air travel, creating a need for an alternative mode that is less prone to winter service interruptions. For example, winter storms (storms lasting 4 or more hours with snowfall rates of 0.20 inch per hour or more) in Iowa reduce traffic volumes by an average of 29 percent (ranging from 16 to 47 percent) depending on total snowfall and wind speeds (Knapp, Kroeger, and Giese, February 2000).

1.3 ALTERNATIVES ANALYSIS REVIEW PROCESS

Iowa DOT, in conjunction with FRA, hosted an online, open-house meeting in early 2012 for the public to discuss the scope of the Study and the initial range of route alternatives. In addition, agency scoping meetings were held in early 2012 to obtain comments from the federal and state resource agencies on potential purpose and need elements and the initial range of route alternatives.

After the two-step screening process is completed, a second public meeting will be held in May 2012 at three locations to obtain input from resource agencies and the public on preliminary results from the route alternatives screening. These meetings will be held in the Chicago and Omaha areas as well as in a representative location in central Iowa. The meetings will also be hosted online. Chapter 2 of the Tier 1 Service Level Draft EIS will include a summary of the Alternative Analysis process and will present the results of the process.

Another opportunity for resource agencies and the public to review route alternatives and the potential impacts associated with their implementation will be during the public comment period after the Tier 1 Service Level Draft EIS is published.



Chicago to Omaha
Previously Established Routes

Chicago to Omaha
Regional Passenger Rail System Planning Study

DATE
April 2012

FIGURE
1-1

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