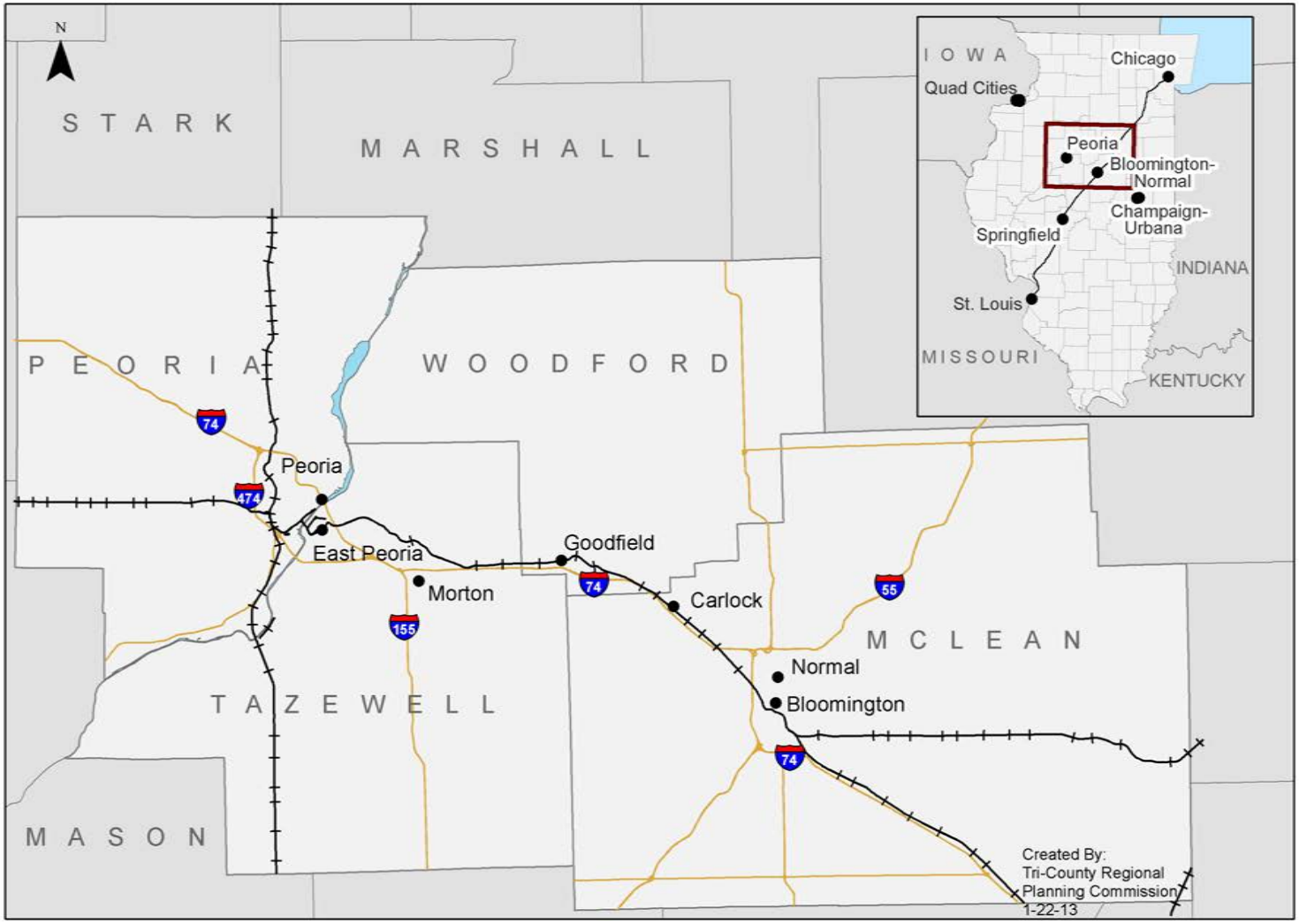
Commuter Rail for Central Illinois

Feasibility Study

Presented by:
Tri-County Regional Planning Commission
Peoria, IL
with
Romac Ventures
Jacobs Engineering
Connetics Transportation Group
Vantage Point Development Advisors

January 2013

COMMUTER RAIL FOR CENTRAL ILLINOIS STUDY AREA



Commuter Rail for Central Illinois Feasibility Study

Table of Contents

Executive Summary

Background

The Central Illinois region, consisting of the Peoria metropolitan area and the Bloomington/Normal metropolitan area, has identified commuter rail services as a strategic goal. The two urban areas are approximately forty-five miles apart and share employment opportunities, services and educational institutions. The two metropolitan areas represent 534,000 residents and another approximately 100,000 students.

An Amtrak station is located in Normal, Illinois. However, the Peoria area is the largest urbanized in Illinois without a commitment for passenger rail service. Commuter rail service between Peoria and Normal will allow Peoria residents to take advantage of Amtrak service to Chicago, St. Louis, and beyond.

The commuter rail line will generally follow I-74 on what is currently a Norfolk Southern freight line. At either end of the line, the use of infrastructure provided by other railroads will be required.

Passenger rail will make Central Illinois more accessible and competitive in the national and world economy. In addition, it will reduce the amount of vehicle miles traveled (VMT) by private automobile, thus reducing carbon emissions and improving the region's air quality.

The Project

In the spring of 2012, this feasibility study for a commuter rail connection between Peoria and Bloomington/Normal was begun. The Tri-County Regional Planning Commission, representing the Peoria area, obtained a Federal Transit Administration (FTA) Alternatives Analysis grant of $160,000 matched with $40,000 in local funds. The feasibility study analyzed ridership, rail operations, transit-oriented development, and capital and operating costs.

Ridership

The Commuter Rail for central Illinois study includes ridership projections using the Aggregate Rail Ridership Forecasting (ARRF) software modeling tool provided by the FTA. The ARRF model provides a high level picture of ridership projections by analyzing employment, bus travel, and work trip data reported for the two urbanized areas and unincorporated areas along the I-74 corridor. Additionally, ARRF analyzes the opportunity for Transit-Oriented Development (TOD) at various station area sites. The report concludes that ridership can be sustained by the corridor, and that the region's present and future projected population will be adequate to support the level of operation required.

Ridership projections are 1,250 to 1,570 daily riders. The service will include eight round-trips per day, with stops at nine different stations: Peoria's General Wayne A. Downing International Airport, Downtown Peoria, East Peoria, Morton, Goodfield, Carlock, West Normal, Downtown Bloomington, and the Central Illinois Regional Airport in Bloomington.

Rail Operations

The rail line will primarily utilize Norfolk Southern railroad tracks which parallel I-74 between Peoria and Bloomington/Normal. Other rail lines at either end of the study area, including the Tazewell & Peoria Railroad (TZP), the Toledo Peoria and Western Railroad (TPW), and the Burlington Northern Santa Fe (BNSF), or Union Pacific (UP) Railroad Rights of Way (ROWs) will be utilized as well.

Rolling stock will be acquired as either new or rehabilitated equipment, and will total as few as four trailer coach vehicles and four locomotives. Acquiring Diesel Multiple Unit (DMU) equipment is a strong possibility, depending on cost and availability. It is possible that the bi-level cars will be discarded as an option, due to the favorable operating conditions of the newly designed and efficient equipment of the 'Stadler' style DMU.

Transit-Oriented Development (TOD)

Transit-Oriented Development (TOD) near commuter stations will be encouraged. Transit supportive development policies, supportive zoning regulations near transit stations, and tools to implement TODs are in place in the larger cities on the rail line.

Trip generators are strong at this time and will only improve as transit-oriented development takes form. Each station location is well-suited for transit access and will be pedestrian friendly after construction is complete. Transit-oriented development will be promoted, encouraged, and attracted by local jurisdictions, economic developments commissions or councils, and Chambers of Commerce along the corridor.

Capital and Operating Costs

Capital Costs include preliminary engineering; final design; project management for design and construction; construction administration and management; professional liability and other non-construction insurance; legal, permits, and review fees; surveys, testing, investigation and inspection; plus start-up. Partial double tracking, one new bridge, Positive Train Control (PTC) signalization, re-ballasting, undercutting, tie replacement, yard and holding track, stations and platforms, and railroad vehicles are also included in the capital costs. The estimated capital cost is $178.5M. Sources of funding for the project include federal, state and local sources. On the federal side, FTA New Starts funding is assumed. State of Illinois financing options will be sought. A one-quarter of one percent sales tax is being proposed throughout the region for local funding.

Operating costs, made up of operating expenses and debt service, have been estimated at $16.0M annually. A combination of fare box and the one-quarter of one percent sales tax will fund the operating portion of the project.

Abraham Lincoln Interstate 74 Knowledge Corridor

The Commuter Rail for Central Illinois project is part of a larger initiative. The Abraham Lincoln Knowledge Corridor would connect the Quad Cities area to the west of Peoria, to the Champaign/Urbana area to the east of Bloomington/Normal. Enhanced public transportation and regional cooperation can contribute to economic development, livability, and sustainability for this 180 mile long corridor.

Rail Operations and Shuttle Bus Service

Summary of Rail Operations

The project consists of nine stations, with service from the Peoria Airport area at the western edge of the proposed corridor to southeast Bloomington, near the Bloomington Airport at the eastern edge of the rail corridor. Stations included: Peoria Airport, Downtown Peoria, East Peoria, Morton, Goodfield, Carlock, West Normal, Bloomington and Southeast Bloomington.

The proposed rail alignment utilizes existing Norfolk Southern (NS) freight tracks and is generally parallel to I-74. NS operates one local train Sunday through Thursday, one coal train per week and two grain trains per week. The current maximum allowable train speed is 49 mph between Bloomington and East Peoria. Segments between East Peoria and Peoria have a maximum speed restriction of 10 mph.

Travel time estimates assume a maximum 75 mph train operating speed, with lower speeds in sections with curves, development activity and/or multiple grade crossings. The estimates take into account train acceleration and deceleration rates, and are based on characteristics of the Stadler GTW DMU. Dwell time assumptions are thirty seconds, except at the Downtown Peoria Station where a five-minute dwell has been assumed to account for the need to reverse train operations. The service has a one-way distance of 49 miles and a one-way travel time estimate of approximately 68 minutes.

Summary of Shuttle Bus Service

Shuttle bus service is needed in order for the commuter rail line to be most effective, as many trip attractions, such as employment and schools, are located outside of a reasonable walking distance. Each of the proposed rail stations was analyzed to determine shuttle operations. In some cases, existing public transit (bus) lines exist to provide this service. In other cases, a dedicated shuttle system is required.

Technical Memorandum: Rail Operations

1. Introduction

This Technical Memorandum presents an analysis of potential train travel time estimates and operating statistics.

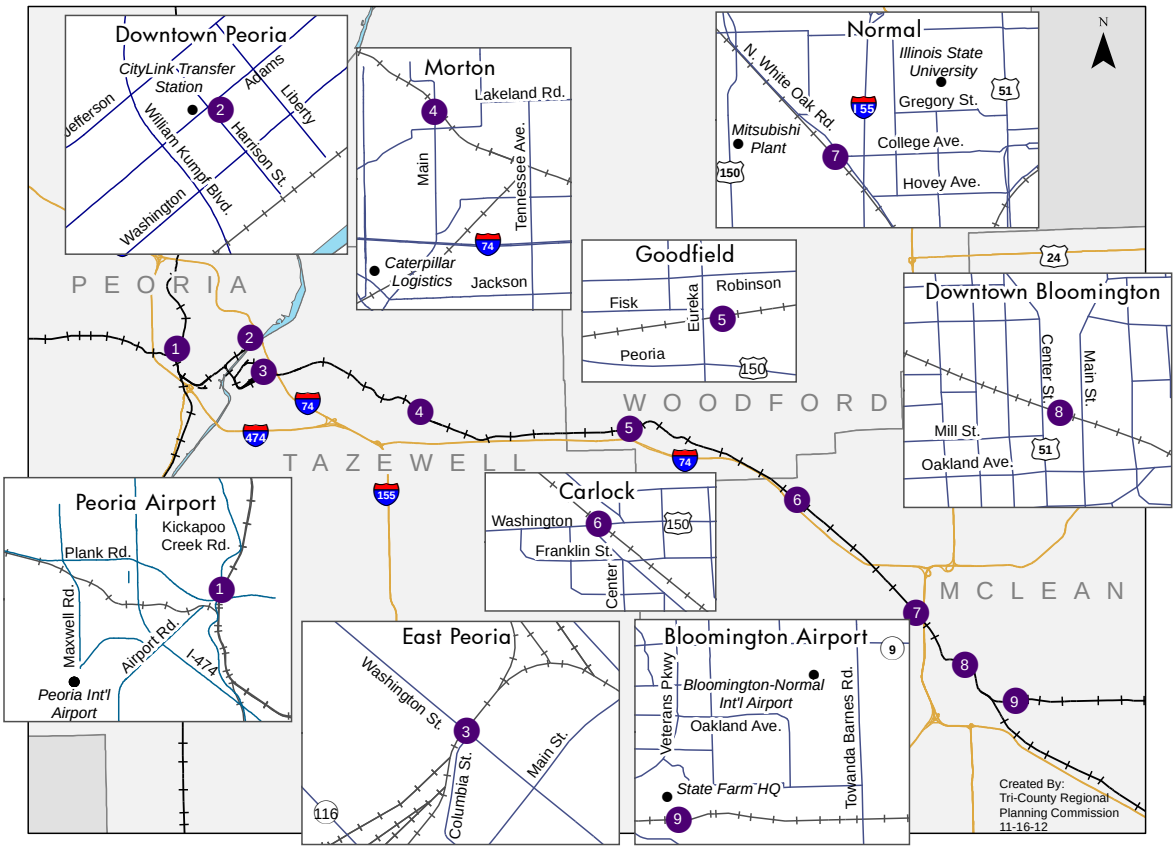
Service requirements have been estimated assuming a schedule of either eight or six round trips per day. The travel time estimates and service requirements presented in this Technical Memorandum will be used as input in the ridership forecast process, and in the development of rail operating and maintenance (O&M) cost estimates.

Figure 1-1 presents the general alignment and proposed station locations. Nine potential stations have been proposed at the following locations:

- Peoria Airport
- Downtown Peoria
- East Peoria
- Morton
- Goodfield
- Carlock
- West Normal
- Bloomington
- Southeast Bloomington

Figure 1-1

Station Location Map



2. Train Travel Time Estimates

The proposed rail alignment utilizes existing Norfolk Southern (NS) freight tracks and is parallel to I-74. NS operates one local train Sunday through Thursday, one coal train per week and two grain trains per week. The current maximum allowable train speed is 49 mph between Bloomington and East Peoria. Segments between East Peoria and Peoria have a maximum speed restriction of 10 mph.

Federally-mandated priority is given to maritime over rail traffic at the Illinois River in Peoria. The freight rail bridge is raised 10 to 20 times a day to accommodate barge traffic, depending on the season of the year. The bridge remains open about 20 minutes each time and as such, significant train delay is possible at this location.

Travel time estimates presented in this Technical Memo assume significant upgrades in track infrastructure to allow for speeds up to 79 mph. These travel time estimates assume unimpeded passenger rail operations (i.e., delays associated with joint passenger rail/freight traffic have not been

assumed). The travel time estimates also do not take into account potential delays at the Illinois River bridge in Peoria.

The travel time estimates assume a maximum 75 mph train operating speed, with lower speeds in sections with curves, development activity and/or multiple grade crossings. Travel time estimates take into account train acceleration and deceleration rates, and are based on characteristics of the Stadler GTW DMU (the rail vehicle used in Austin and Denton, TX). Thirty-second dwell times have been assumed at most stations.

In the downtown Peoria area, the proposed alignment requires trains to operate to/from downtown Peoria after crossing the Illinois River. Trains would operate parallel to Washington Street on existing railroad tracks. Trains would then operate in-street on Harrison Street to the existing CityLink bus terminal. Trains then reverse operations and return via the same alignment. Travel time estimates presented in this Technical Memo assume full signal prioritization when trains are operating in-street. A five-minute dwell has also been assumed at the downtown Peoria station, to account for the need to reverse train operations.

Finally, it is important to note that travel time estimates are based on imprecise measurements from aerials available on the internet. Typically, detailed plan and profile drawings are used to determine station and curve locations, and speed restrictions.

The one-way distance is 49 miles. The travel time estimate is approximately 68 minutes with an overall average speed of 43 mph. See Table 2-1.

Table 2-1
Travel Time Estimate (All Stations)

Station	Max Spd. (mph)	Dist. Feet	Distance (miles) Incr.	Distance (miles) Total	Run Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
Peoria Airport				**0.00**		**0:00:00**	**0:00:00**
	45	19,659	3.72		0:04:45		
Junction Street				3.72		0:00:00	0:04:45
	35	7,850	1.49		0:02:27		
Water St to Transfer Center via Harrison				5.21		0:00:00	0:07:12
	15	967	0.18		0:00:26		
Downtown Peoria				**5.39**		**0:05:00**	**0:12:38**
	15	967	0.18		0:00:19		
Harrison Street to Junction Street				5.58		0:00:00	0:12:57
	35	7,850	1.49		0:02:20		
Begin Curve at Junction Street				7.06		0:00:00	0:15:17
	25	1,584	0.30		0:00:43		
End Curve at Junction Street				7.36		0:00:00	0:16:00
	35	4,541	0.86		0:01:23		
Begin Curve near Yard				8.22		0:00:00	0:17:23
	15	1,320	0.25		0:01:00		
End Curve near Yard				8.47		0:00:00	0:18:23
	35	6,441	1.22		0:01:45		
East Peoria				**9.69**		**0:00:30**	**0:20:38**
	25	1,848	0.35		0:00:31		
End of Curve				10.04		0:00:00	0:21:09
	45	39,706	7.52		0:09:48		
Morton				**17.56**		**0:00:30**	**0:31:27**
	75	50,741	9.61		0:08:08		
Goodfield				**27.17**		**0:00:30**	**0:40:05**
	45	19,114	3.62		0:04:38		
End of Curves at Congerville				30.79		0:00:00	0:44:43
	75	25,291	4.79		0:04:09		
Carlock				**35.58**		**0:00:30**	**0:49:22**
	75	38,491	7.29		0:06:16		
West Normal				**42.87**		**0:00:30**	**0:56:08**
	55	6,600	1.25		0:01:16		
MLK Drive				44.12		0:00:00	0:57:24
	25	11,141	2.11		0:04:50		
Bloomington				**46.23**		**0:00:30**	**1:02:44**
	35	15,734	2.98		0:04:40		
Southeast Bloomington				**49.21**		**0:00:30**	**1:07:54**
TOTAL				**49.21**	**0:59:24**	**0:08:30**	**1:07:54**
Peoria Airport to East Peoria				**9.69**	***Avg Speed =***	**28.19**	**0:20:38**
East Peoria to SE Bloomington				**39.52**	***Avg Speed =***	**50.17**	**0:47:16**
					Total Avg Speed =	**43.49**	

Notes:
1. *Distances based on measurements from Google Earth, and are not based on specific track alignment drawings.*
2. *Travel time estimates assume track upgrades that will allow trains to reach maximum speeds shown in this table.*
3. *A 5-minute dwell has been assumed in downtown Peoria for trains to reverse direction.*
4. *Travel times do not take into account potential delays associated with Illinois River lift bridge and/or freight railroad traffic operations.*
5. *All at-grade street crossings assumed to be gated or have full signal pre-emption, with no delays for trains.*

3. Service Plans and Requirements

Three service plan scenarios were analyzed:

- Scenario 1 assumes 8 round trips per day. Trains would operate at 90-minute frequencies over a 12-hour span of service.
- Scenario 2 assumes 6 round trips per day. Trains would operate at 2-hour frequencies over a 12-hour span of service.
- Scenario 3 also assumes 6 round trips per day. However, trains would operate at 90-minute frequencies in the morning and afternoon time periods (4.5 hours each time period). There would be a 3-hour service gap in the midday.

Table 3-1 presents service plans and service requirements. The service plan scenarios require two trains to be in operation. Thus, there will be a train meeting that needs to be accommodated for all scenarios (i.e., siding will be required at that train meet location). Peak and fleet rail requirements assume 2-car trains and a 20 percent spare ratio. Annual revenue train-hours and car-miles are based on 254 weekdays of service.

Table 3-1
Service Plan Statistics
All Stations

Service Scenario	Run Time (min.)	Distance (miles)	Service Freq.	Train Consist	Vehicles Peak	Vehicles Total	Daily Trips	Daily Car-Miles	Daily Train-Hrs	Annual Car-Miles	Annual Train-Hrs	Trains In-Serv.	One-Way Trips
8 Round Trips 12 Hr. Span of Serv.	67.90	49.21	90	2.0	4	5	16	1,575	24.0	399,980	6,100	2	16
6 Round Trips 12 Hr. Span of Serv.	67.90	49.21	120	2.0	4	5	12	1,181	24.0	299,980	6,100	2	12
6 Round Trips 9 Hr. Span of Serv.	67.90	49.21	90	2.0	4	5	12	1,181	18.0	299,980	4,570	2	12

4. Shuttle Bus Service

In order for the commuter rail line to be most effective, a robust bus shuttle service has been proposed. Many trip attractions (e.g., major employment centers) are located outside a reasonable walking distance of the proposed rail stations. Dedicated shuttle services can provide a means to connect to these stations. This section presents potential shuttle bus services. Each shuttle bus warrants further analysis to determine if the proposed service is cost effective, should this study advance beyond the current feasibility analysis. Some of the proposed shuttle services presented in this Technical Memo duplicate existing public transit services, and some may not warrant all-day service. For purposes of the Feasibility Study, all shuttle bus services presented in this memo have been priced as a means to determine maximum potential O&M costs for supporting bus services.

Following are descriptions of potential shuttle bus services at each potential rail station. The intent of this exercise is to present potential shuttle bus services that are dedicated rail feeder routes, branded so potential customers know these services are connected with the rail service. Representative alignments have been identified for each route. Should this project advance beyond the feasibility phase, further effort will be required to determine the most cost-effective supporting shuttle service plan.

Peoria Airport Station

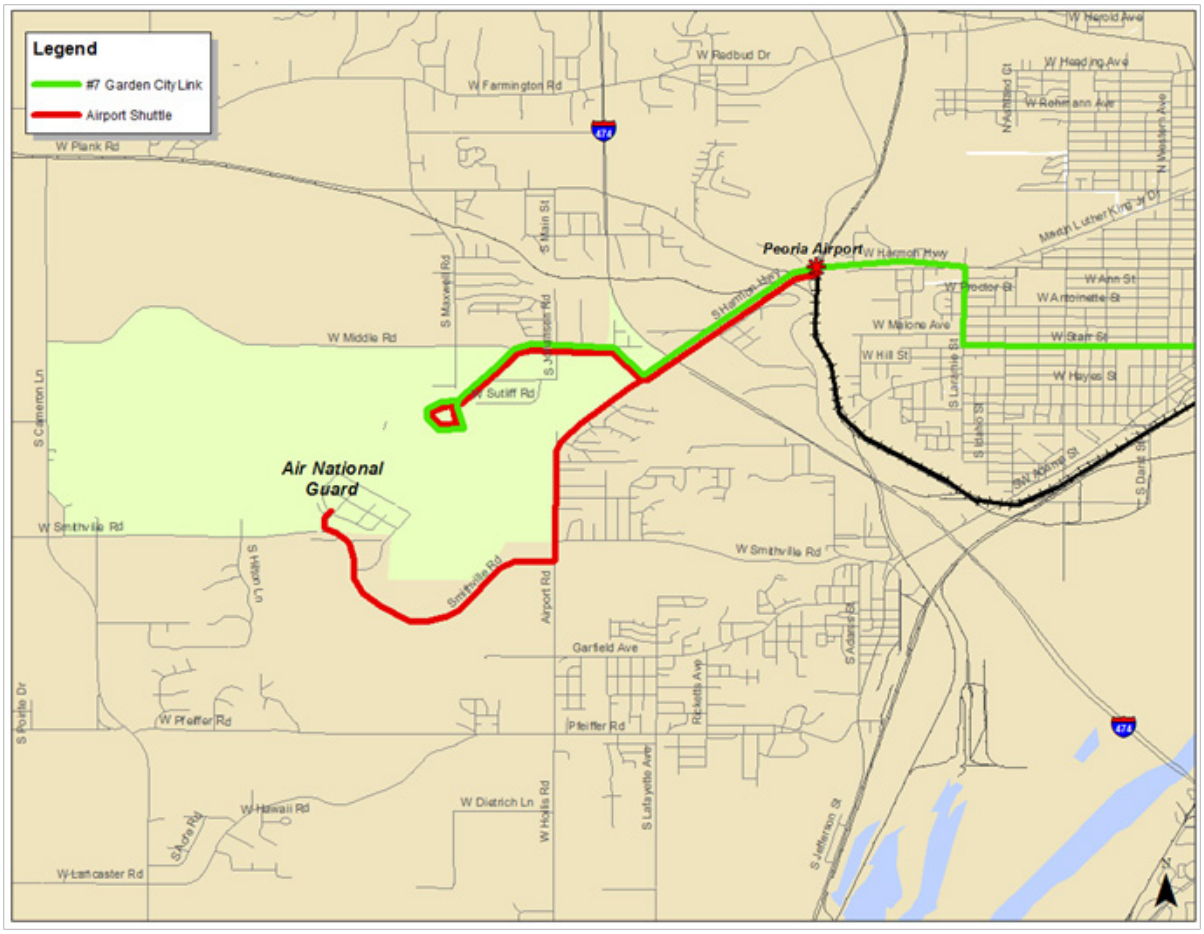
A dedicated airport shuttle service, as shown in Figure 4-1, can provide a connection between the rail station, the passenger terminal and National Guard installations on Smithville Road and Airport Road. It is also important to note that the Peoria Mass Transit District (CityLink) Route #7 (Garden) passes by the proposed rail station and can be used to provide a supplemental bus connection between the rail station and the airport passenger terminal. Appropriate "train to plane" marketing should be considered for this shuttle route.

Table 4-1

Summary of Bus Connection Characteristics at Peoria Airport Station

Rail Station	**Peoria Airport Station**, located in the area of W Harmon Hwy and S Kickapoo Creek
Existing Bus Transit Connection	CityLink Route #7 – Garden (east connection to Transfer Center at SW Adams)
Proposed New Shuttle Route Pattern	**Airport Circulator** exit station to L – Airport Road to R – W Smithville, continue back toward Airport via W Smithville, L – Airport Road, L –Airport Loop Road into Main Entrance. Continue back to rail station via Airport Loop Road, L- Airport Road and into station
Shuttle Round Trip Hours (assumes 25 MPH)	0.45
Shuttle Round Trip Miles	11.20
Potential Station Access Improvements	Way finding, signage, vertical transportation from station to street level estimated to be a 20ft rise

Figure 4-1
Potential Bus Connections at Peoria Airport



Major Trip Attraction Distances from Peoria Airport Station

- To National Guard Helicopter Installation: 2 miles
- To National Guard Plane Installation: 4.2 miles
- To Airport Parking/Main Entrance: 2.53 miles

Downtown Peoria Station

The proposed rail station is located directly across the street from CityLink's Adams Street Transfer Center. Locating the station here opens up the possibility of a multi-modal center in downtown Peoria. Trains will access the transfer center via Harrison Street after departing from the railroad tracks parallel to Washington Street. The proposed placement of this station puts it within walking distance of many downtown Peoria destinations. Its close proximity to CityLink's transit center also provides strong bus connectivity throughout Peoria. Bradley University is connected to this rail station via CityLink Routes 1 and 5. Table 4-2 presents a summary of bus connection characteristics at the Downtown Peoria Station.

Major Trip Attraction Distances from Downtown Rail Station

- To City Hall: 0.31 miles
- To Civic Center: 0.47 miles
- To O'Brien Field: 0.41 miles
- To County Offices: 0.34 miles
- To Bradley University: 1.52 miles
- To Caterpillar World Headquarters: 0.3 miles
- To USDA National Center for Agriculture Research: 2.3 miles

Table 4-2
Summary of Bus Connection Characteristics at Downtown Peoria Station

Rail Station	**Downtown Peoria**, located at Adams and Harrison Street
Existing Bus Transit Connection	CityLink Transfer Center at SW Adams and Harrison **Routes:** 1,2,3,4,5,6,7,8,9,10,11,13,14,15,16,19,20,23
Potential Station Access Improvements	Way finding, signage

East Peoria Station

The proposed rail station is located near Columbia and West Washington Streets. The area directly around the station includes some major employers and trip attractions. The Par-A-Dice casino, Illinois Central College and the the new East Peoria downtown development are located nearby. Figure 4-2 presents a potential shuttle route that provides a connection to the Par-A-Dice casino and Illinois Central College. Existing CityLink routes provide additional connectivity throughout East Peoria. Table 4-3 presents a summary of bus connection characteristics at the East Peoria Station.

Major Trip Attraction Distances from East Peoria Rail Station

- To Par-A-Dice Casino: 1.40 miles
- To Fond Du Lac Park: 0.67 miles
- To Eastside Centre: 2.35 miles
- To Fond Du Lac Petting Zoo: 2.98 miles
- To Illinois Central College: 5.39 miles

Figure 4-2
Potential East Peoria Shuttle Routes

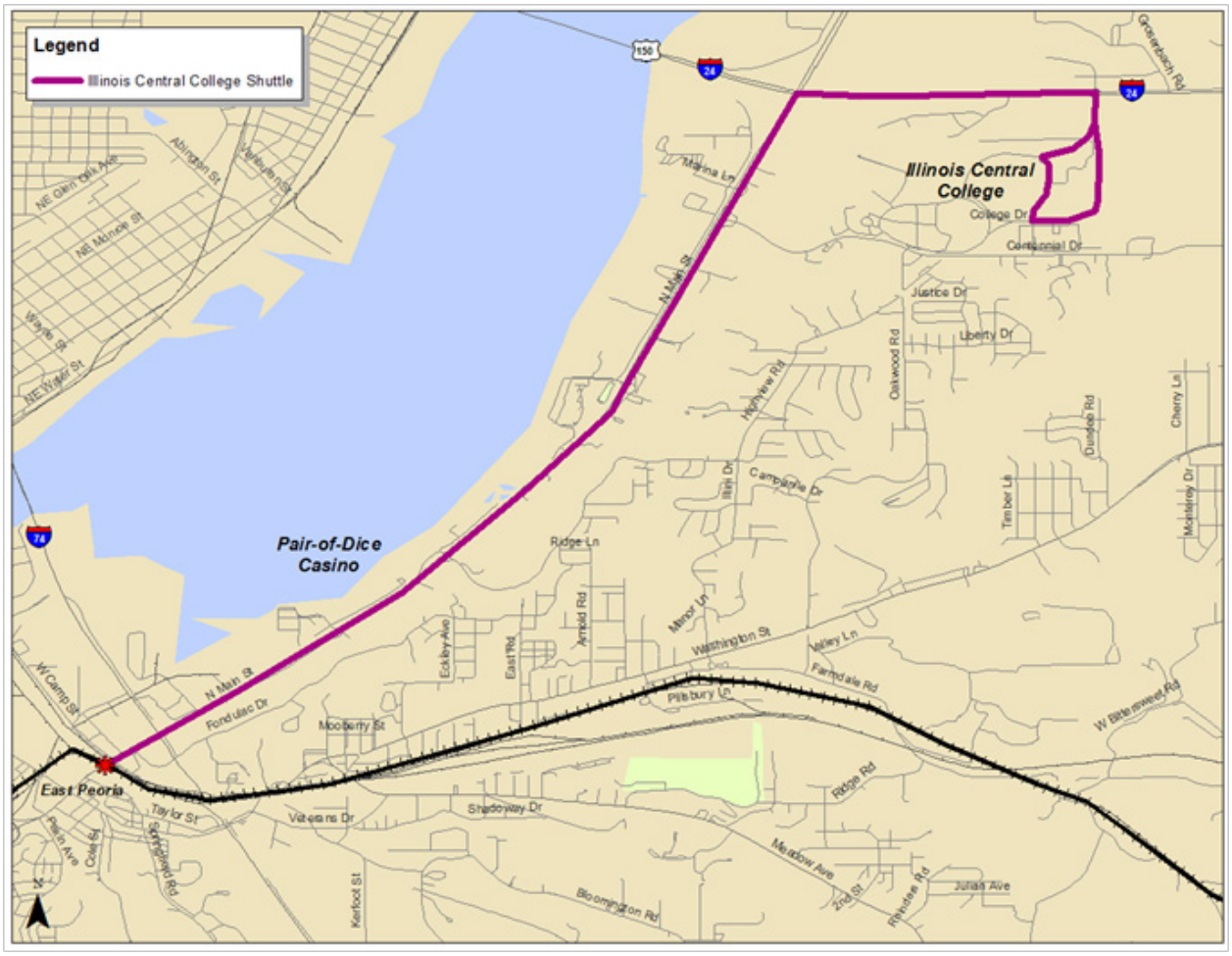


Table 4-3

Summary of Bus Connection Characteristics at East Peoria Station

Rail Station	**East Peoria**, located at/near Columbia and West Washington Street
Existing Bus Transit Connection	CityLink #8 – East Peoria / Sunnyland (connection at SW Adams Transit Center)
Proposed New Shuttle Route Pattern	**Illinois Central College Shuttle** - Exit station onto E Caterpillar Trail, serving Pair of Dice. Continue E Caterpillar Trail to US24 servicing ICC. Return to the station reversing route
Shuttle Round Trip Hours (25 MPH)	0.41
Shuttle Round Trip Route Miles	10.34
Potential Station Access Improvements	Sidewalks, way finding signage, lighting

Morton Station

This proposed rail station is located at N Main Street, north of Interstate 74. This area is not presently served by local transit. Thus, local shuttle service will be beneficial to improve connectivity to/from the station. Proposed shuttle routing, as shown in Figure 4-3, provides a connection to the Caterpillar Logistics Services and Libby Pumpkin Processing Plant. This shuttle route would also provide service to a Wal-Mart Supercenter. Table 4-4 presents a summary of bus connection characteristics at the East Peoria Station.

Major Trip Attraction Distances from Morton Rail Station

- To Caterpillar Plant: 2.59 miles
- To Wal-Mart Supercenter: 3.39 miles
- To Libby Pumpkin Processing Plant: 3.12 miles

Table 4-4

Summary of Bus Connection Characteristics at Morton Station

Rail Station	**Morton**, located at N Main Street
Proposed New Shuttle Route Pattern	**Circulator** exit station to R – N Main to L – Lakeland to L – N Morton to L – W Jackson R – N Main R – W Birchwood and R – Detroit. Reverse and return back into station
Shuttle Round Trip Hours (20 MPH)	0.25
Shuttle Round Trip Miles	4.94
Potential Station Access Improvements	Bus stop signage, way finding

Figure 4-3
Potential Morton Shuttle Route

Goodfield Station

The rail station will be located in the area of Eureka Street and W Peoria Street, downtown Goodfield. Given the relative small size of the downtown business area, shuttle bus connection service is not contemplated for this station. All major businesses are located within two to four blocks; east, west, north and south of the rail station. Sidewalk and pedestrian crossing improvements may be considered as deemed appropriate.

Carlock Station

The rail station will be located at the junction of Washington and Highway 51. Similar to Goodfield station the relative small size of the downtown business area makes the station easily accessible to all businesses within a four square block zone. Residential nor industrial densities do not justify a dedicated shuttle bus.

West Normal Station

The proposed rail station is located at the junction of W College and White Oak road, just southeast of an existing rail yard. The Bloomington/Normal Mass Transit System (Connect-Transit) Lime Route can provide service to this station, but does not provide direct access to nearby major trip attractions. A new east-west rail shuttle route may be appropriate to serve this station. This route could provide connections to the Mitsubishi Plant to the west, and to the Illinois State University campus and Amtrak Station to the east. Shuttle bus service to the Amtrak station provides a connection to proposed high speed rail service. Figure 4-4 illustrates a potential shuttle route alignment. Table 4-5 presents a summary of bus connection characteristics at the West Normal Station.

Major Trip Attraction Distances from Rail Station

- To Mitsubishi Plant: 2.15 miles
- To Illinois State University: 1.74 miles
- To AMTRAK Uptown Station: 2.89 miles

Table 4-5:
Summary of Bus Connection Characteristics at West Normal Station

Rail Station	**West Normal**, located at West College and White Oak Road
Existing Bus Transit Connection	Connect-Transit Lime Route at West College
Proposed New Shuttle Route Pattern	**CIRCULATOR** – R – W College to N Mitsubishi intersection. Reverse and return to station.
Shuttle Round Trip Hours (20 MPH)	0.44
Shuttle Round Trip Miles	8.72
Potential Station Access Improvements	Bus stops, way finding

Bloomington Station

The rail station will be located between Center Street and Main Street in downtown Bloomington. Easy access to the station is provided by pedestrian walkways within the immediate area of the station. Connect-Transit's Aqua route serves both Center Street and Main Street in a north/south pattern. This provides easy access to the rail station for those using the bus system. Connect-Transit's Red, Yellow, Blue and Brown routes have stops two to three blocks, east and west of the station. The result is that no supplemental bus service is required at this stop. Table 4-6 presents a summary of bus connection characteristics at the Bloomington Station.

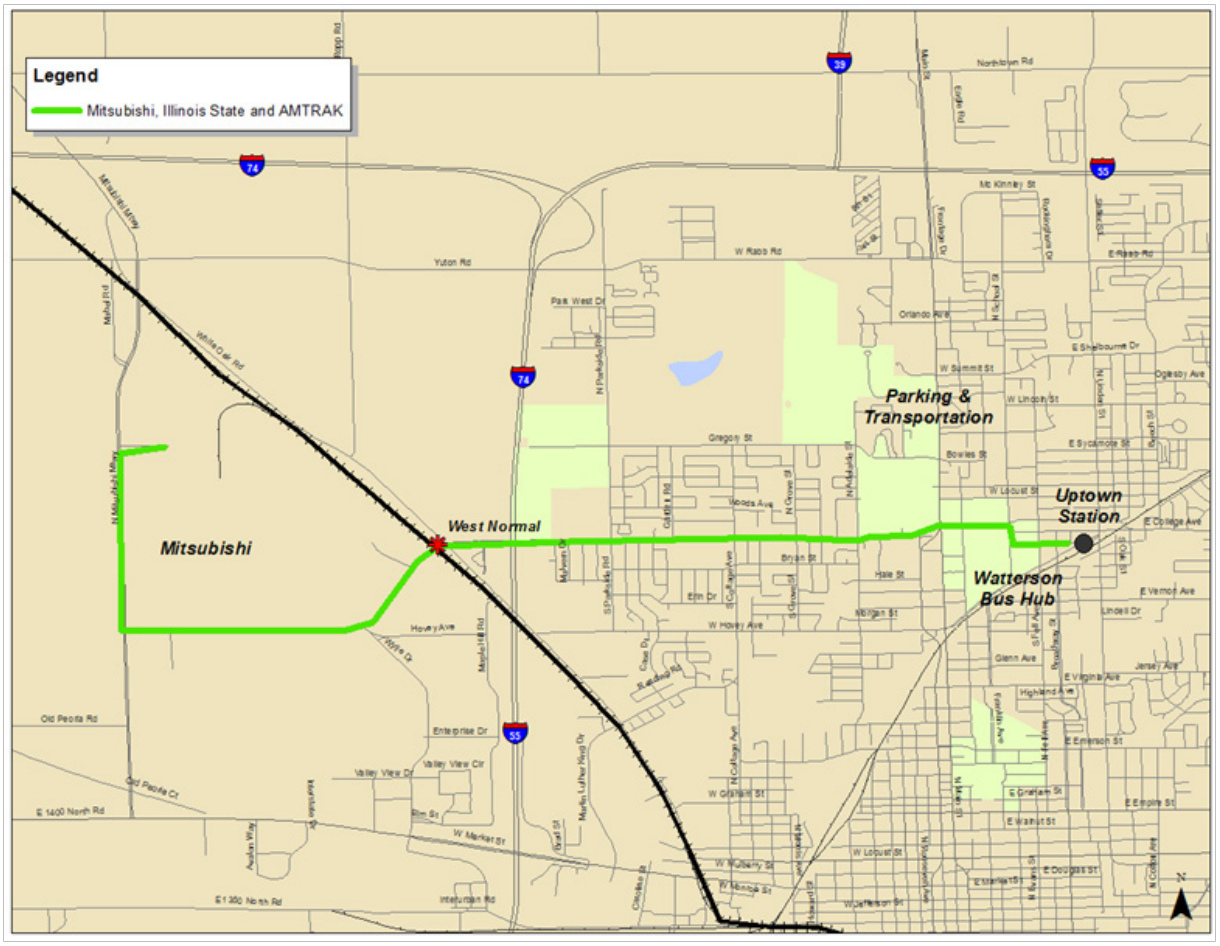
Major Trip Attraction Distances from Rail Station

- To Illinois Wesleyan University: 1.90 miles

Table 4-6:
Summary of Bus Connection Characteristics at Bloomington Station

Rail Station	**Bloomington**, located at S Center and W Mill, adjacent to S Main to the east
Existing Bus Transit Connection	**Connect-Transit Routes**: Aqua (within 1 block of station) Red, Yellow, Brown & Blue (within 2 – 3 blocks of the station)
Potential Station Access Improvements	way finding, bus stops

Figure 4-4
Potential West Normal Shuttle Route



Southeast Bloomington

The rail station will be located on Hamilton Road, approximately 5 miles southwest of the airport. Connect-Transit provides bus service along E Empire, directly north of the airport, which accesses the airport terminals. However, the route continues along an east/west path, therefore more direct supplemental service is needed to connect the airport to the rail station via Hershey Road. A second shuttle route is also proposed to serve major employment destinations along the Ventrans Parkway, including State Farm Insurance World Headquarters. Figure 4-5 illustrates the two potential shuttle route alignments. Table 4-7 presents a summary of bus connection characteristics at the Southeast Bloomington Station.

Major Trip Attraction Distances from Rail Station

- To Central Illinois Regional Airport: 5.11 miles
- To State Farm World Headquarters: 0.89 miles

2. Potential O&M Costs

Cost estimates for the supplemental or dedicated shuttle services were derived from 2010 National Transit Database information (most recent year available) and by using data from the closest local transit agency. A cost per revenue bus-hour was determined from the NTD reports for both public transit operators. This hourly rate was then applied to the potential span of service for each new shuttle route. It is important to note that there are numerous options in how shuttle services are provided. Some of these routes could be operated by CityLink and Connect-Transit. Some may be operated through contracted operations. Some nearby employers (e.g., Caterpillar) may determine it is cost effective for them to operate their own shuttle service to service their employees. All shuttle services open to the public should have consistent vehicle branding in order to provide a similar "look and feel" for bus to train service.

As previously noted, there are three train service scenarios being considered in this study.

1. Scenario 1 provides 8 train trips per day, each direction. Trains operate at 90 minute frequencies over 12 hours. Under this scenario, it is proposed shuttle buses operate during the full 12-hour span of train service.
2. Scenario 2 provides 6 train trips per day, each direction. Trains operate at 2-hour frequencies over 12 hours. Since there is no change in the span of train service, shuttle buses would also operate over the full 1-hour span of service.
3. Scenario 3 also provides 6 train trips per day, each direction. Under this scenario, trains operate at 90 minute frequencies in the morning and afternoon time periods. Both service time periods would be 4.5 hours in length, with a 3-hour midday gap in service. Thus, shuttle buses would operate over a 9-hour time period.

Figure 4-5
Proposed Shuttle Routes at Southeast Bloomington Station

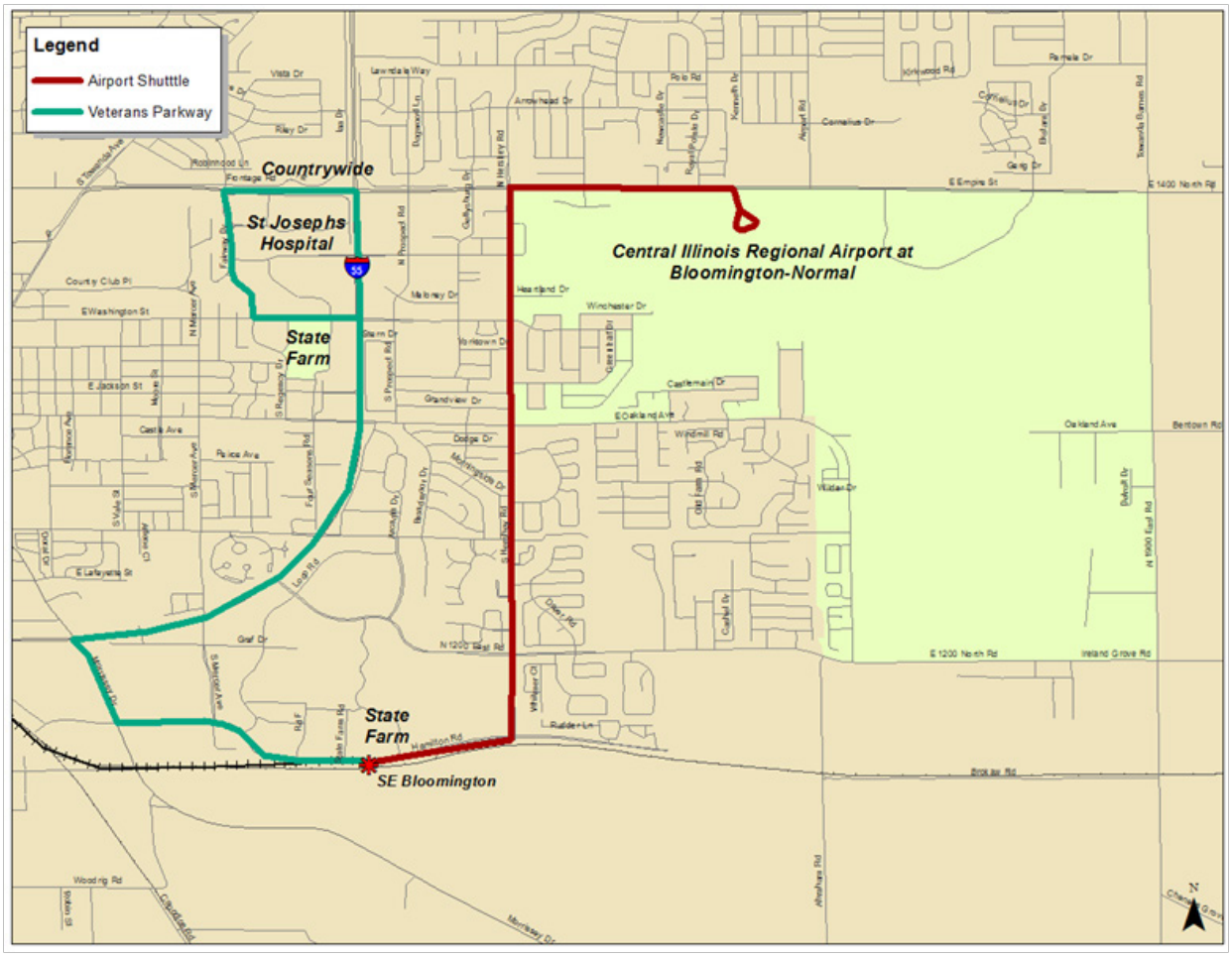


Table 4-7:
Summary of Bus Connection Characteristics at Southeast Bloomington Station

Rail Station	**SE Bloomington**, located on E Hamilton Road
Proposed New Shuttle Route Pattern to Airport	**INBOUND TO AIRPORT** – exit rail station to L – Hamilton Road, R – Hershey Road, R – E Empire into the Airport
Shuttle Round Trip Hours (30 mph)	0.24
Shuttle Round Trip Miles	7.32
Proposed New Shuttle Route Pattern to State Farm and Countrywide	**OUTBOUND TO COUNTRYWIDE** – exit rail station to R – Morrissey, R – Veterans Parkway, L –E Empire, L – Fairway, L – Washington, R – Veterans back to station
Shuttle Round Trip Hours (25 mph)	0.59
Shuttle Round Trip Miles	14.84
Potential Station Access Improvements	Bus stops, way finding

Table 4-8 presents potential shuttle bus O&M costs for each of these train service scenarios. Supplemental service would utilize a 29' cutaway vehicle.

Table 4-8
Potential Shuttle Bus O&M Cost Estimates

			Weekday Cost Estimate	
			Scenario #1 & #2	Scenario #3
Station	**Shuttle Route**	**2010 NTD Cost per Hour**	**12 Hours**	**9 Hours**
Peoria Airport	Airport	$168.68*	$2,024	$1,518
East Peoria	Pair of Dice / ICC	$168.68*	$2,024	$1,518
Morton	Libby & Caterpillar	$168.68*	$2,024	$1,518
Normal	Mitsubishi/ISU/ Amtrak	$60.51**	$726	$545
SE Bloomington	Veterans Parkway	$60.51**	$726	$545
SE Bloomington	Airport	$60.51**	$726	$545
Daily O&M Costs			**$8,250**	**$6,189**
Annualization			**254**	**254**
Annual O&M Costs			**$2,095,500**	**$1,572,006**

*see page 22
**see page 23

Greater Peoria Mass Transit District (CityLink), Operating Expense per Vehicle Revenue Hour: $168.68

Greater Peoria Mass Transit District (CityLink)

ID Number: 5056
www.ridecitylink.org
2105 Northeast Jefferson Street
Peoria, IL 61603-3587

General Manager: Mr. Thomas Lucek
(309) 679-8158

General Information

Urbanized Area (UZA) Statistics - 2000 Census

Peoria, IL	
Square Miles	123
Population	247,172
Population Ranking out of 465 UZAs	129
Other UZAs Served	

Service Area Statistics

Square Miles	105
Population	207,795

Service Consumption

Annual Passenger Miles	15,222,096
Annual Unlinked Trips	2,858,795
Average Weekday Unlinked Trips	9,691
Average Saturday Unlinked Trips	6,924
Average Sunday Unlinked Trips	0

Service Supplied

Annual Vehicle Revenue Miles	2,526,088
Annual Vehicle Revenue Hours	160,397
Vehicles Operated in Maximum Service	71
Vehicles Available for Maximum Service	108
Base Period Requirement	25

Financial Information

Fare Revenues Earned		$2,143,715
Sources of Operating Funds Expended		
Fare Revenues	(10%)	$2,143,715
Local Funds	(7%)	$1,388,122
State Funds	(62%)	$12,787,147
Federal Assistance	(19%)	$3,906,771
Other Funds	(1%)	$274,754
Total Operating Funds Expended		$20,500,509
Sources of Capital Funds Expended		
Local Funds	(0%)	$0
State Funds	(0%)	$0
Federal Assistance	(0%)	$0
Other Funds	(0%)	$0
Total Capital Funds Expended		$0

Summary Operating Expenses

Salary, Wages, Benefits	$13,336,764
Materials and Supplies	$2,875,036
Purchased Transportation	$1,865,427
Other Operating Expenses	$2,423,282
Total Operating Expenses	$20,500,509
Reconciling Cash Expenditures	$0

Vehicles Operated in Maximum Service and Uses of Capital Funds

Mode	Directly Operated	Purchased Transportation[1]	Revenue Vehicles	Systems and Guideways	Facilities and Stations	Other	Total
Bus	47	0	$0	$0	$0	$0	$0
Demand Response	0	24	$0	$0	$0	$0	$0
Total	47	24	$0	$0	$0	$0	$0

Sources of Operating Funds Expended

Sources of Capital Funds Expended

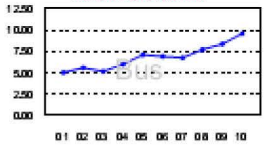
Modal Characteristics

Mode	Operating Expenses[1]	Fare Revenues[1]	Uses of Capital Funds	Annual Passenger Miles	Annual Vehicle Revenue Miles	Annual Unlinked Trips	Annual Vehicle Revenue Hours	Fixed Guideway Directional Route Miles	Vehicles Available for Maximum Service	Average Fleet Age in Years	Vehicles Operated in Maximum Service	Peak to Base Ratio	Percent Spares
Bus	$17,919,805	$1,729,497	$0	14,090,997	1,862,027	2,736,116	106,235	N/A	81	12.2	47	1.88	72%
Demand Response	$2,580,704	$414,218	$0	1,131,099	664,061	122,679	54,162	N/A	27	2.3	24	N/A	12%

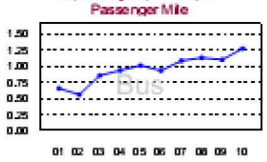
Performance Measures

Mode	Service Efficiency: Operating Expense per Vehicle Revenue Mile	Service Efficiency: Operating Expense per Vehicle Revenue Hour	Service Effectiveness: Operating Expense per Passenger Mile	Service Effectiveness: Operating Expense per Unlinked Passenger Trip	Service Effectiveness: Unlinked Passenger Trips per Vehicle Revenue Mile	Service Effectiveness: Unlinked Passenger Trips per Vehicle Revenue Hour
Bus	$9.62	$168.68	$1.27	$6.55	1.47	25.76
Demand Response	$3.89	$47.65	$2.28	$21.04	0.18	2.27

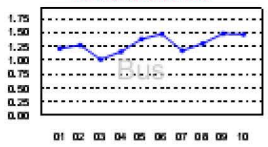
Operating Expense per Vehicle Revenue Mile



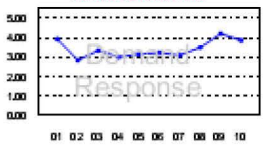
Operating Expenses per Passenger Mile



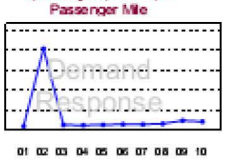
Unlinked Passenger Trips per Vehicle Revenue Mile



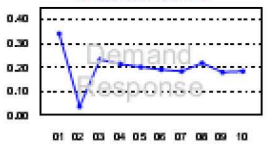
Operating Expense per Vehicle Revenue Mile



Operating Expenses per Passenger Mile



Unlinked Passenger Trips per Vehicle Revenue Mile



Bloomington – Normal Public Transit System, Connect-Transit, Operating Expense per Vehicle Revenue Hour: $60.51

Bloomington-Normal Public Transit System (B-NPTS)

ID Number: 5047
www.b-npts.com
351 Wylie Drive
Normal, IL 61701

Interim General Manager: Mr. David Anderson
(309) 829-1123

General Information

Urbanized Area (UZA) Statistics - 2000 Census

Bloomington-Normal, IL	
Square Miles	37
Population	112,415
Population Ranking out of 465 UZAs	243
Other UZAs Served	

Service Area Statistics

Square Miles	29
Population	117,156

Service Consumption

Annual Passenger Miles	3,622,677
Annual Unlinked Trips	1,261,374
Average Weekday Unlinked Trips	4,173
Average Saturday Unlinked Trips	3,696
Average Sunday Unlinked Trips	153

Service Supplied

Annual Vehicle Revenue Miles	1,559,465
Annual Vehicle Revenue Hours	109,597
Vehicles Operated in Maximum Service	30
Vehicles Available for Maximum Service	40
Base Period Requirement	22

Financial Information

Fare Revenues Earned		$975,866
Sources of Operating Funds Expended		
Fare Revenues	(14%)	$975,866
Local Funds	(0%)	$2,635
State Funds	(65%)	$4,368,176
Federal Assistance	(20%)	$1,370,074
Other Funds	(0%)	$23,895
Total Operating Funds Expended		$6,740,646
Sources of Capital Funds Expended		
Local Funds	(17%)	$1,232,964
State Funds	(0%)	$1,770
Federal Assistance	(83%)	$5,869,361
Other Funds	(0%)	$0
Total Capital Funds Expended		$7,104,095

Summary Operating Expenses

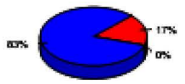
Salary, Wages, Benefits	$5,083,677
Materials and Supplies	$1,255,356
Purchased Transportation	$0
Other Operating Expenses	$401,613
Total Operating Expenses	$6,740,646
Reconciling Cash Expenditures	$0

Vehicles Operated in Maximum Service and Uses of Capital Funds

Mode	Directly Operated	Purchased Transportation [1]	Revenue Vehicles	Systems and Guideways	Facilities and Stations	Other	Total
Bus	22	0	$318,457	$0	$5,777,955	$7,700	$6,104,112
Demand Response	8	0	$135,460	$0	$863,373	$1,150	$999,983
Total	30	0	$453,917	$0	$6,641,328	$8,850	$7,104,095

Sources of Operating Funds Expended

Sources of Capital Funds Expended



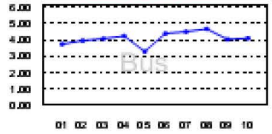
Modal Characteristics

Mode	Operating Expenses [1]	Fare Revenues [1]	Uses of Capital Funds	Annual Passenger Miles	Annual Vehicle Revenue Miles	Annual Unlinked Trips	Annual Vehicle Revenue Hours	Fixed Guideway Directional Route Miles	Vehicles Available for Maximum Service	Average Fleet Age in Years	Vehicles Operated in Maximum Service	Peak to Base Ratio	Percent Spares
Bus	$5,619,022	$922,362	$6,104,112	3,424,263	1,371,209	1,227,183	92,860	N/A	32	8.8	22	1.00	45%
Demand Response	$1,121,624	$53,504	$999,983	198,414	188,256	34,191	16,737	N/A	8	5.3	8	N/A	0%

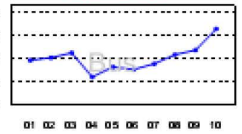
Performance Measures

Mode	Service Efficiency: Operating Expense per Vehicle Revenue Mile	Service Efficiency: Operating Expense per Vehicle Revenue Hour	Service Effectiveness: Operating Expense per Passenger Mile	Service Effectiveness: Operating Expense per Unlinked Passenger Trip	Service Effectiveness: Unlinked Passenger Trips per Vehicle Revenue Mile	Service Effectiveness: Unlinked Passenger Trips per Vehicle Revenue Hour
Bus	$4.10	$60.51	$1.64	$4.58	0.89	13.22
Demand Response	$5.96	$67.01	$5.65	$32.80	0.18	2.04

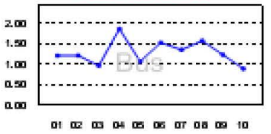
Operating Expense per Vehicle Revenue Mile



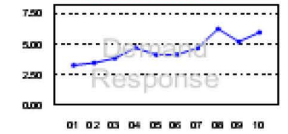
Operating Expenses per Passenger Mile



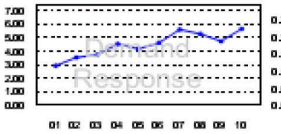
Unlinked Passenger Trips per Vehicle Revenue Mile



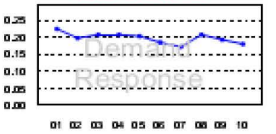
Operating Expense per Vehicle Revenue Mile



Operating Expenses per Passenger Mile



Unlinked Passenger Trips per Vehicle Revenue Mile



Ridership

Summary of Ridership Estimation

Ridership estimates were prepared, in part, on the methods set forth by the Federal Transit Administration's (FTA) Aggregate Rail Ridership Forecasting (ARRF) Model (version 2.0). However, all travel-related forecasts may be affected by fluctuating economic conditions and through a dependency on the occurrence of future events, results cannot be assured. The actual results achieved may vary from the projections, and those variations could be material. It should also be noted that the forecasts, as presented in this report, cannot be used for FTA New Starts given current guidance and particularly the measure of user benefits. The ridership estimates can be used to compute cost-effectiveness in the sense of cost per rider while remaining cognizant of the aforementioned uncertainties and potential revision under more critical review and analyses.

Ridership forecasts were also based on Year 2035 trip tables proved by the Tri-County Regional Planning Commission (Peoria Area) and the McLean County Regional Planning Commission (Bloomington/Normal Area). Peripheral methods were applied in the forecasts to reflect potential rail ridership from dedicated shuttle buses and transit-oriented development (TOD).

The forecasts considered two operating scenarios of 6- and 8-trains per day per direction. Estimates range from 1,242 to 1,400 trips per day under the 6 trains/day scenario, to 1,386 to 1,563 trips per day under the 8 trains/day scenario.

Technical Memorandum: Ridership Estimations

1. Average Rail Ridership Forecasting (ARRF) Model

This project investigated the feasibility of a commuter rail connection between Peoria and Bloomington/Normal using the Norfolk Southern (NS) freight railroad line. Figure 1-1 presents the proposed alignment and station locations.

The objective of this Technical Memorandum is to present estimates of ridership and describe the methods undertaken to produce the estimates. Table 1-2 summarizes daily and annual ridership estimates in ranges of low, medium and high and also for two operational scenarios; eight train per day per direction or six trains per day per direction. Annual ridership is based on a factor of 254 days and assumes no weekend or holiday service.

Table 1-2
Year 2035 Daily and Annual Rail Ridership Estimation

Range	Daily Ridership Estimates by Trains per Day per Direction		Annualized Ridership (x254)	
	8-Trains	6-Trains	8-Trains	6-Trains
Low	1,386	1,242	352,044	315,468
Medium	1,492	1,337	378,968	339,598
High	1,563	1,400	397,002	355,600

Notes:

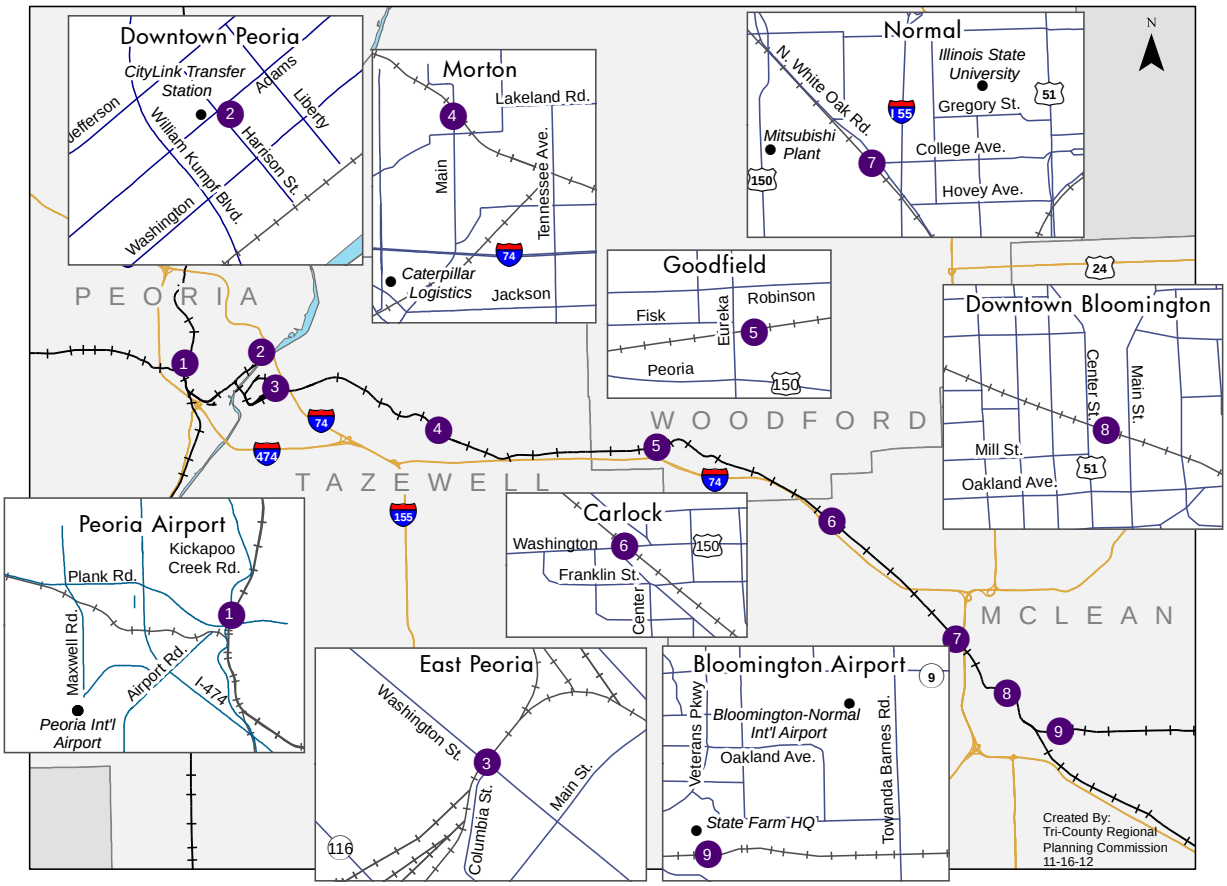
1) Low etsimate reflects ARRF computations with the TCRPC and MCRPC zone geography and predicted Year 2035 Home-Based Work trip interaction.

2) Medium estimates reflects additional methods for proposed bus circulators that deviate from ARRF model methods.

3) High estimates reflect the net increase from proposed bus circulators plus additional trip making from TOD-related forecasts..

Figure 1-1

Station Location Map



The analyses supporting this report are based on assumptions and sources of information discussed in subsequent sections, as well as other documents pertaining to the proposed commuter rail service under consideration by the TCRPC. Ridership estimates have been prepared, in part, on the methods set forth by the Federal Transit Administration's (FTA) Aggregate Rail Ridership Forecasting (ARRF) Model (version 2.0). However, all travel-related forecasts may be affected by fluctuating economic conditions and through a dependency on the occurrence of future events, results cannot be assured. The actual results achieved may vary from the projections, and those variations could be material.

It should also be noted that the forecasts, as presented in this report, cannot be used for FTA New Starts given current guidance and particularly the measure of user benefits. The ridership estimates can be used to compute cost-effectiveness in the sense of cost per rider while remaining cognizant of the aforementioned uncertainties and potential revision under more critical review and analyses. Subsequent sections (i.e., 2.0 through 4.0) describe the assumptions and methods used to estimate ridership as shown above in Table 1-2.

Preparing inputs for an ARRF application begins with a process based in Geographic Information System (GIS) technology. The process establishes the relationship between geographic components and station areas. Geographic components can be census tracts or traffic analysis zones (TAZ's). Station areas are defined with 6-, 2- and 1-mile buffers.

In general, processing steps involve:

1) Overlaying station points on the geographic units (i.e., Census Tract TAZ shapes).
2) Drawing 6-, 2- and 1-mile buffers are around the stations points.
3) "Clipping" portions of the underlying geographic shapes from the buffers.
Results from the process are then used to extract the Home Based Work (HBW) travel flows that make up the rail market.

Figure 1-1 illustrates buffered station areas. Figure 1-2 offers an example of the clipped TAZ's used to extract HBW rail market inputs for applying the ARRF model.

Six-mile buffers represent a general catchment area for the Park-Ride or drive modes-of-access. The 2-mile buffers represent walk and bus transfer modes-of-access. One-mile buffers represent the area for modes-of-egress and generally reflect how far travelers are willing to travel when departing from a station. Destinations outside the 1-mile area are not considered as a potential rail market trip. These market definitions stem from a comprehensive analysis of observed data across twenty rail systems and provide a reasonable basis for describing order-of-magnitude rail markets for HBW travel.

The "clipping" step is done to calculate the portion of the underlying geography that lies within a particular buffer area. This relationship is then used to factor HBW trips in the rail market as follows:

HBW Rail Market Trips = Total Trips x "Clipped" Area / Total Area

The process yields geographic definitions for rail market trips that are then used as input to a computer program along with HBW trip information. The program essentially accumulates all HBW trips that are expected to occur between station areas and reports accordingly. The reported HBW trips are then used in conjunction with the rail system's operating characteristics to produce daily ridership estimates.

As documented, the ARRF model estimates total unlinked rail transit trips for proposed light rail and commuter rail systems by applying a series of expected rail shares to the amount of total (all mode) travel to work occurring within the rail corridor as recorded in the Year 2000 Census Transportation Planning Package (CTPP). Ridership is adjusted up or down to account for the level-of-service (speed and frequency) of the modeled rail line as compared to the baseline values for the rail lines used to calibrate the model.

The ARRF model is calibrated to 11 light rail systems around the nations, as well as nine commuter rail systems. The model is intended to develop order-of-magnitude estimates of ridership for new rail lines in metropolitan areas where no existing fixed guideway transit facilities are present—so

called "New" New Starts. The model was calibrated to represent ridership on existing systems throughout the country that are generally similar to these proposed lines. Because "New" New Starts are generally in growing cities without an extensive history of fixed guideway transit, the calibration excluded systems in the very largest metropolitan areas, those that have been in operation for many decades and those that are part of a large rail network.

The ARRF model estimates weekday unlinked trips by purpose, mode of access and destination type defined as follows:

- Purpose:
  - Work
  - Non-Work
- Mode of access, 2- and 6-mile station areas respectively:
  - Walk, Feeder Bus, or Kiss and Ride (KNR) trips to any station on the system
  - Park-and-Ride (PNR) trips to any station offering parking
- Destination Densities, 1-mile station area:
  - Destinations with fewer than 50,000 jobs per square mile
  - Destinations with more than 50,000 jobs per square mile

Figure 1-1
Buffered Stations Areas

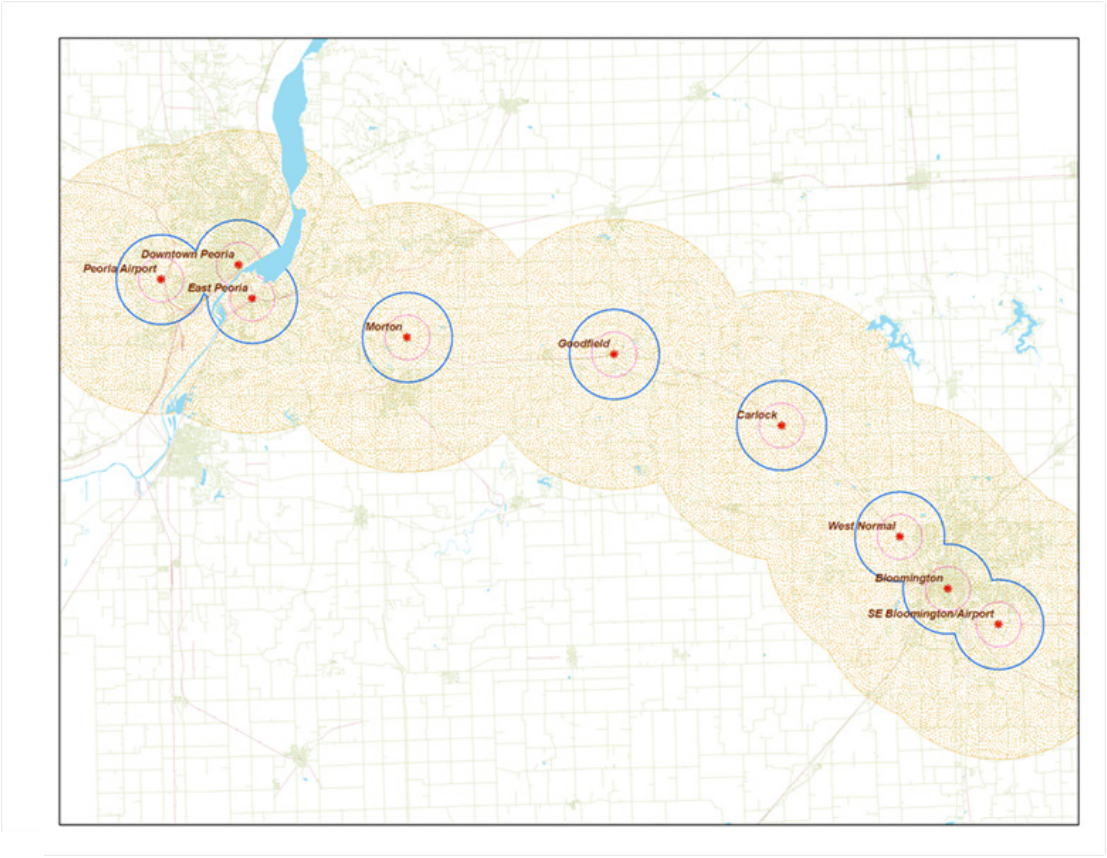
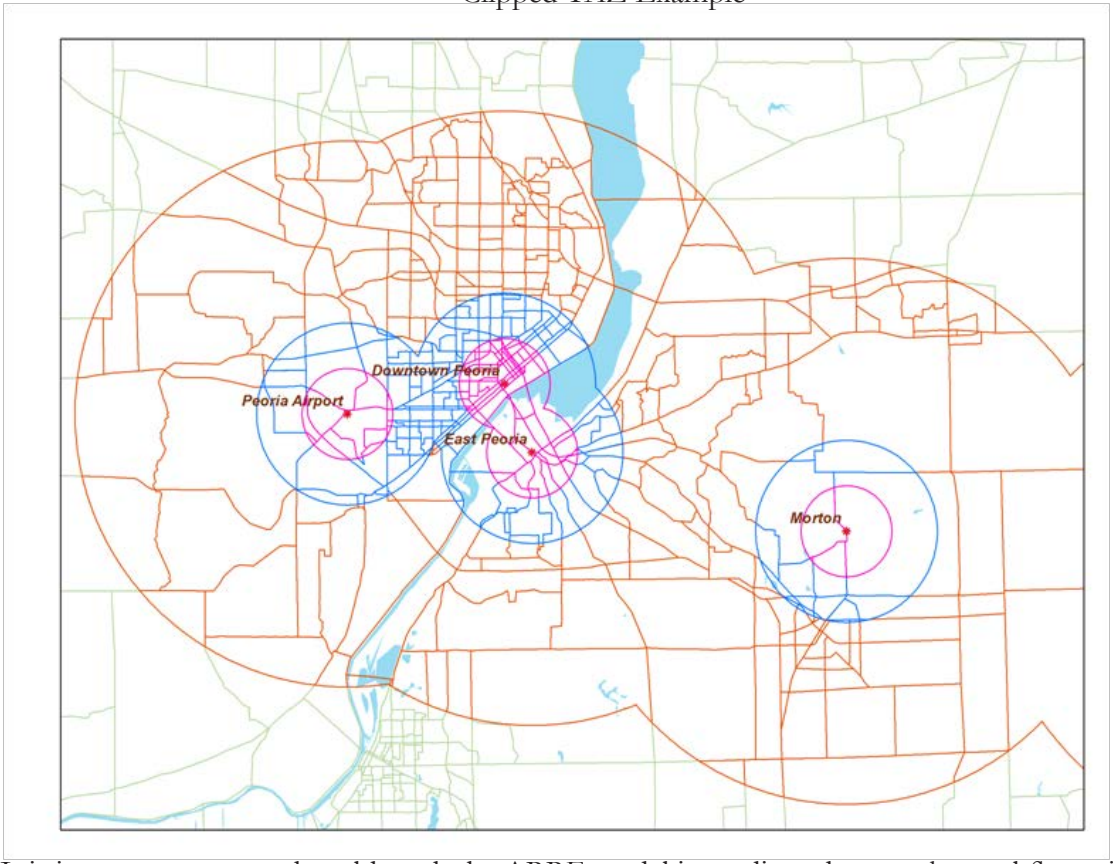


Figure 1-2
Clipped TAZ Example



It is important to note that although the ARRF model is predicated on work travel flows, it also generates an estimate for non-work rail ridership. Non-work rail trip calculations are based on rates observed from the twenty rail systems used to calibrate the model. In addition, rail trips made for special purposes like students or events are implied by the ARRF model's calibration efforts. For example, Metrolink in St. Louis experiences considerable student and event travel and Metrolink is also one of the rail systems used in the calibration. Therefore, rail trips observed for St. Louis' Metrolink and the other twenty systems incorporate special trip-making through the derivation of non-work trip rates (i.e., model calibration).

2. Peripheral Methods and Assumptions

As noted in the introductory section, ridership estimates were prepared, in part, on the methods set forth by procedural documentation for FTA's ARRF Model (version 2.0). Peripheral methods and assumptions that diverge from prescribed methods involve:

1) Accounting for growth from Year 2000 Census-based survey trips to the horizon Year 2035.
2) Expanded egress buffers along proposed shuttle service alignments.
3) Additional trips associated with estimated Transit Oriented Development (TOD) uses around stations.

Rail Market Estimates and Growth

With regard to the first item, the approach uses estimated Year 2035 HBW trip tables from the travel demand models (TDM) of the Tri-County Regional Planning Commission (TCRPC) covering the Peoria metropolitan area, and the McLean County Regional Planning Commission (MCRPC) covering the Bloomington/Normal metropolitan area. The term "estimated" means that HBW trip interaction is based on each RPC's forecast of trip distribution as opposed to observed data. The ARRF model is calibrated to Year 2000 Census survey data or observed data.

The upper left "2a" portion of Table 2-1 sums Daily Drive Access person trips by station. As described in the previous section, these trips represent travel from the 6-mile station areas to the 1-mile station areas (i.e. rail drive access markets). The lower left "2b" tabulations show egress markets or in other words, departure stations for the drive access markets. The "2c" and "2d" tabulations show similar information for the localized walk and bus travel markets. An important distinction is that these estimates are not rail riders, rather they represent the home-to-work travel markets upon which the ridership estimates are predicated.

As noted in Table 2-1, year 2000 values reflect Census Journey-to-Work (JtW) trips accumulated with tract level geography. Year 2008 and 2035 values reflect HBW trips accumulated at the TAZ level. In general, results suggest some sizable differences at the station level between the year 2000 Census (JtW) and the 2008 base year, while overall growth declines 6 percent for drive access/egress and 2 percent for walk and bus access/egress.

Drive markets for the Horizon year 2035 grow by 16 percent over the Year 2000 JtW survey data and also by 15 percent for the walk and bus access/egress markets. The horizon year also grows by 23 percent and 16 percent for the drive and walk/bus markets respectively. The general conclusion was that using the 2035 estimates from each regional planning commons would be conservative given that year 2008 decline and year 2035 growth over the year 2000 Census JtW survey data is relatively modest.

Peripheral Methods for Shuttle Services

As discussed later in the previous chapter, proposed shuttles would provide dedicated rail feeder service; branded so potential customers know the service is connected to the rail service. Shuttles would operate beyond the 1-mile rail market egress definition established in the ARRF model. Affected stations and the peripheral methods (i.e., deviation from ARRF methods) are identified below in Table 2-2. Additional HBW rail market trips in the far right column are not rail riders; these values represent the universe of HBW trip exchanges from which ridership estimates are computed. Moreover, their application in estimating ridership was limited to work destinations.

Table 2-1

2a. Drive Access Summation

Stations	Home-Based Work: Drive Access					
	Y2000	Y2008	% Growth from Y2000	Y2035	% Growth from Y2000	% Growth from Y2008
Peoria Airport	3,864	3,847	0%	4,258	10%	11%
Downtown Peoria	902	1,407	56%	1,699	88%	21%
East Peoria	2,464	2,249	-9%	2,439	-1%	8%
Morton	2,213	2,165	-2%	2,199	-1%	2%
Goodfield	354	159	-55%	343	-3%	116%
Carlock	220	99	-55%	213	-3%	116%
West Normal	1,856	1,876	1%	2,446	32%	30%
Bloomington	1,298	1,321	2%	1,893	46%	43%
Southeast Bloomington	2,207	1,367	-38%	2,361	7%	73%
Totals	**15,378**	**14,491**	**-6%**	**17,852**	**16%**	**23%**

2b. Drive Egress Summation

Stations	Home-Based Work: Drive Egress					
	Y2000	Y2008	% Growth from Y2000	Y2035	% Growth from Y2000	% Growth from Y2008
Peoria Airport	218	245	13%	289	33%	18%
Downtown Peoria	7,907	6,800	-14%	7,444	-6%	9%
East Peoria	1,302	2,397	84%	2,727	109%	14%
Morton	320	404	26%	575	80%	42%
Goodfield	7	37	429%	48	589%	30%
Carlock	20	8	-59%	10	-50%	22%
West Normal	672	549	-18%	815	21%	49%
Bloomington	3,599	2,573	-29%	3,581	-1%	39%
Southeast Bloomington	1,333	1,461	10%	2,333	75%	60%
Totals	**15,378**	**14,491**	**-6%**	**17,852**	**16%**	**23%**

2c. Walk & Bus Access Summation

Stations	Home-Based Work: Walk & Bus Access					
	Y2000	Y2008	% Growth from Y2000	Y2035	% Growth from Y2000	% Growth from Y2008
Peoria Airport	1,420	1,821	28%	1,944	37%	7%
Downtown Peoria	249	547	120%	711	186%	30%
East Peoria	501	719	43%	774	54%	8%
Morton	417	311	-25%	355	-15%	14%
Goodfield	30	50	66%	55	84%	11%
Carlock	36	25	-31%	31	-14%	24%
West Normal	835	557	-33%	710	-15%	27%
Bloomington	854	730	-14%	891	4%	22%
Southeast Bloomington	1,046	544	-48%	703	-33%	29%
Totals	**5,388**	**5,304**	**-2%**	**6,174**	**15%**	**16%**

2d. Walk & Bus Egress Summation

Stations	Home-Based Work: Walk & Bus Egress					
	Y2000	Y2008	% Growth from Y2000	Y2035	% Growth from Y2000	% Growth from Y2008
Peoria Airport	68	108	59%	105	54%	-3%
Downtown Peoria	2,208	2,386	8%	2,559	16%	7%
East Peoria	313	811	159%	975	212%	20%
Morton	80	143	78%	207	159%	45%
Goodfield	3	14	367%	19	538%	37%
Carlock	9	14	56%	10	11%	-29%
West Normal	364	283	-22%	340	-7%	20%
Bloomington	1,634	877	-46%	1,048	-36%	20%
Southeast Bloomington	709	669	-6%	913	29%	36%
Totals	**5,388**	**5,304**	**-2%**	**6,174**	**15%**	**16%**

Table 2-2
Peripheral Methods for Shuttle Services

Station	Peripheral Methods	Additional HB Work Rail Market Trips
Peoria Airport	Incorporated all Airport Employment	305
East Peoria	¼ - mile Alignment Buffer	17
Morton	¼ - mile Alignment Buffer	2,252
West Normal	¼ - mile Alignment Buffer	78
Southeast Bloomington	¼ - mile Alignment Buffer	62
Total		2,714

Where peripheral methods used ¼-mile alignment buffers, the process of adding Home-Based Work trips to the daily rail markets involved clipping traffic analysis zones, isolating production-attraction pairs and then selectively reviewing results to eliminate implausible trip exchanges.

For the Peoria Airport, only work trips originating east of the Illinois River were considered and only those trips in the 6- and 2-mile access markets. All work trips destined to TAZ's along the East Peoria and Morton shuttle bus alignments were considered and also limited to the access definitions. In the Bloomington/Normal area, trip isolations were based on external trip volumes and distributions; internal HBW trip exchanges were considered implausible and excluded from the rail markets. These are work trips that would both begin and end in the Bloomington/Normal area.

It also merits some mention that operating statistics were adjusted to reflect additional shuttle bus travel time in the estimate of rail ridership. The adjustment incorporated additional shuttle mileage, travel speed, transfer times and out-of-vehicle perception weight. The adjustment were done in aggregate and sensitivity tests found a three percent downward adjustment was yielded by incorporating operational characteristics of the shuttle services.

Transit-Oriented Development
Assumptions related to Transit-Oriented Development (TOD) are shown below in Table 2-3 (for the dicussion of TOD see the chapter entitled "Transit Oriented Development". Daily rail market estimations in the far right column are not rail riders; these values represent the universe of HBW trip exchanges from which ridership estimates are computed. As noted, households were assumed as multi-family units and as such, trip production rates are lower than single-family. Attractions assume an 8% reduction of total employment to account for absenteeism and workers with more than one job and other factors.

Daily rail market estimates were produced by incorporating the estimated productions and attractions into the HBW trip tables of each RPC, isolating trip exchanges and then applying rail market methods under the prescribed ARRF definitions. TOD estimates did not incorporate the peripheral assumptions for shuttle buses.

As shown, the TOD assumptions could be expected to produce 1,540 additional work trips and attract another 2,700 work trips per day. Of those trips, some 1,370 are estimated to occur as trips exchanged between rail stations.

Table 2-3
Assumptions for Transit-Oriented Development

	Typology		TOD Increment		Home-Based Work Person Trip Estimations		
Station Area	Use Characteristics	Development Intensity	Households	Employment	Daily Productions	Daily Attractions	Daily Rail Market Estimation
Peoria Airport	Mixed	Low	200	100	140	92	121
Downtown Peoria	Employment	High	600	1,305	420	1,201	467
East Peoria	Employment	High	200	550	140	506	223
Morton	Mixed	Low	200	100	140	92	102
Goodfield	Residential	Low	200	20	140	18	70
Carlock	Residential	Low	200	20	140	18	88
West Normal	Mixed	High	200	100	140	92	88
Bloomington	Employment	Medium	200	280	140	258	106
SE Bloomington	Employment	High	200	225	140	207	106
Totals			**2,200**	**2,700**	**1,540**	**2,484**	**1,371**

Notes:
TOD assumptions provided by Vantage Point Development Advisors.
Households assumed as multi-family units.
Production and attraction trip rates derived from TCRPC and MCRPC models.
Attractions assume 8% reduction to account for absenteesim et. al.

3. Year 2035 Ridership Estimates

As was mentioned previously, the ARRF model produces ridership estimates by applying a series of expected rail shares to the amount of total (all modes) travel to work occurring within the rail corridor. Ridership is adjusted up or down to account for the level-of-service (speed and frequency) of the modeled rail line as compared to the baseline values for the rail lines used to calibrate the model. Speed and frequency inputs are based on rail operating assumptions described in the chapter entitled "Rail Operations and Shuttle Bus Service". All of the ARRF inputs that were used to produce ridership estimates appear in Table 3-1

Table 3-1
Inputs Used for Producing Year Round Ridership Estimates

				Rail Market Travel Flows			
				Drive Access (6->1)		Walk & Bus Access (2->1)	
Alternative 1 Assumptions	Directional Route-Miles	Average Travel Speed (mph)	Trains per day per Direction	Under 50,000 Employees per Sq. Mi.	Over 50,000 Employees per Sq. Mi.	Under 50,000 Employees per Sq. Mi.	Over 50,000 Employees per Sq. Mi.
Year 2035 without Shuttles and TOD	98.4	43.5	6 or 8	19,867	0	6,912	0
Year 2035 with Shuttles	98.4	43.5	6 or 8	21,727	0	7,766	0
Year 2035 with TOD	98.4	43.5	6 or 8	20,886	0	7,264	0

Tables 3-2 and 3-3 summarize the rail market and rail ridership estimates for the 6- and 8-Train operating scenarios respectively. Year 2035 "unadjusted" rail markets (base) reflect trip exchanges extracted from each RPC's HBW trip tables.

The overall rail markets do not change with respect to the two operating scenarios. With the peripheral assumptions noted previously, bus shuttles add 2,715 daily work trips to the rail market, a 10% increase over the base or "unadjusted" rail market. TOD adds another 1,371 HBW trips or 5% more than the base. Together, they add 4,086 or 15% to the rail market conditions upon which the ridership estimates are predicated.

Under the 6-train scenario, daily rail ridership is estimated to be 1,242 per day for the base condition. Some 575 or 46% of the ridership is expected to stem from drive access. Mode share for the rail market (i.e., Ridership div. by Rail Market) is estimated at 5%. Annual ridership is estimated to be 315,468 riders, under the assumption of 254 operating days. Shuttle buses add 8% to the ridership estimates and TOD increases ridership by 5%.

Under the 8-train scenario, daily rail ridership is estimated to be 1,386 per day for the base condition. Some 626 or 45% of the ridership is expected to stem from drive access. Mode share for the rail market (i.e., Ridership div. by Rail Market) is estimated at 5%. Annual ridership is estimated to be

Table 3-2
Summary of Rail Markets and Ridership Estimates
6-Trains per Day per Direction

Rail Markets (*Home Based Work Person Trips*)

Modes-of-Access	Unadjusted	Add Shuttles	Change from Unadjusted	Change %	Add TOD	Change from Unadjusted	Change %	Add Shuttles & TOD	Change from Unadjusted	Change %
Drive	19,867	21,728	1,861	9%	20,886	1,019	5%	22,747	2,880	14%
Walk & Bus	6,912	7,766	854	12%	7,264	352	5%	8,118	1,206	17%
Total	**26,779**	**29,494**	**2,715**	**10%**	**28,150**	**1,371**	**5%**	**30,865**	**4,086**	**15%**

Ridership Estimates (*Total Daily Work and Non-Work Rail Riders*)

Modes-of-Access	Unadjusted	Add Shuttles	Change from Unadjusted	Change %	Add TOD	Change from Unadjusted	Change %	Add Shuttles & TOD	Change from Unadjusted	Change %
Drive	575	610	35	6%	604	29	5%	639	64	11%
Walk & Bus	667	727	60	9%	701	34	5%	761	94	14%
Total	**1,242**	**1,337**	**95**	**8%**	**1,305**	**63**	**5%**	**1,400**	**158**	**13%**
Mode Share	*5%*	*5%*	*3%*		*5%*	*5%*		*5%*	*4%*	
Annualized (254)	**315,468**	**339,598**	**24,130**	**8%**	**331,470**	**16,002**	**5%**	**355,600**	**40,132**	**13%**

Table 3-3
Summary of Rail Markets and Ridership Estimates
8-Trains per Day per Direction

Rail Markets (*Home Based Work Person Trips*)

Modes-of-Access	Unadjusted	Add Shuttles	Change from Unadjusted	Change %	Add TOD	Change from Unadjusted	Change %	Add Shuttles & TOD	Change from Unadjusted	Change %
Drive	19,867	21,728	1,861	9%	20,886	1,019	5%	22,747	2,880	14%
Walk & Bus	6,912	7,766	854	12%	7,264	352	5%	8,118	1,206	17%
Total	**26,779**	**29,494**	**2,715**	**10%**	**28,150**	**1,371**	**5%**	**30,865**	**4,086**	**15%**

Ridership Estimates (*Total Daily Work and Non-Work Rail Riders*)

Modes-of-Access	Unadjusted	Add Shuttles	Change from Unadjusted	Change %	Add TOD	Change from Unadjusted	Change %	Add Shuttles & TOD	Change from Unadjusted	Change %
Drive	626	664	38	6%	658	32	5%	696	70	11%
Walk & Bus	760	828	68	9%	799	39	5%	867	107	14%
Total	**1,386**	**1,492**	**106**	**8%**	**1,457**	**71**	**5%**	**1,563**	**177**	**13%**
Mode Share	*5%*	*5%*	*4%*		*5%*	*5%*		*5%*	*4%*	
Annualized (254)	**352,044**	**378,968**	**26,924**	**8%**	**370,078**	**18,034**	**5%**	**397,002**	**44,958**	**13%**

352,044 riders, under the assumption of 254 operating days. Shuttle buses add 8% to the ridership estimates and TOD increases ridership by 5%.

Table 3-4 summarizes the estimate of daily boarding activity at stations. Values are rounded and as such, may not exactly match aggregate values in the previous tables (i.e., Tables 3-2 and 3-3) which are ungrounded.

Table 3-4
Estimate of Daily Boarding Activity at Proposed Rail Stations

Stations	Unadjusted		Add Shuttles		Add TOD		Add Net Increase of Shuttles & TOD to Base	
	6-Trains	8-Trains	6-Trains	8-Trains	6-Trains	8-Trains	6-Trains	8-Trains
Peoria Airport	170	190	180	210	170	200	180	220
Downtown Peoria	320	350	340	350	350	380	370	380
East Peoria	180	200	210	210	190	210	220	220
Morton	80	90	110	150	80	90	110	150
Goodfield	10	10	10	10	10	10	10	10
Carlock	10	10	10	10	10	10	10	10
West Normal	120	130	130	150	120	130	130	150
Bloomington	200	220	210	230	210	230	220	240
Southeast Bloomington	160	180	170	190	170	170	180	180
Totals	**1,250**	**1,380**	**1,370**	**1,510**	**1,310**	**1,430**	**1,430**	**1,560**

Low, Medium and High Ranges

The introduction presented daily and annual ridership in ranges of low, medium and high. Table 3-5 reiterates that presentation. Forecast ranges usually attempts to quantify elements of uncertainty. However, the results presented in this report reflect order-of-magnitude estimates intended for a feasibility type analysis. Moreover, the underlying assumptions used to generate the estimates contribute to considerable uncertainty and as such, the forecast ranges do suggest any quantification of uncertainty.

The low range was defined as the "unadjusted" ridership estimates. The rationale for designating these results as the low range was largely because Year 2008 rail market trips were lower than the observed Year 2000 and since Year 2035 is predicated on the Year 2008, the low range represents a conservative estimate based on ARRF rail market definitions, notwithstanding the use of each RPC's zone geography and trip distribution methods. Medium estimates add peripheral methods and trips associated with proposed shuttle services. High estimates add net increases from the shuttle buses and TOD assumptions.

Table 3-5
Alternative 1: Year 2035 Daily and Annual Rail Ridership Estimation

Range	Daily Ridership Estimates by Trains per Day per Direction		Annualized Ridership (x254)	
	8-Trains	6-Trains	8-Trains	6-Trains
Low	1,386	1,242	352,044	315,468
Medium	1,492	1,337	378,968	339,598
High	1,563	1,400	397,002	355,600

Notes:

1) Low etsimate reflects ARRF computations with the TCRPC and MCRPC zone geography and predicted Year 2035 Home-Based Work trip interaction.

2) Medium estimates reflects additional methods for proposed bus circulators that deviate from ARRF model methods.

3) High estimates reflect the net increase from proposed bus circulators plus additional trip making from TOD-related forecasts..

Project Costs and Funding

Summary of Project Costs and Funding

Capital and Operating Costs

The project is in its early planning stage and there are no designs or drawings of even a preliminary nature. Therefore, Rough Order-of-Magnitude (ROM) Costs have been estimated for the project. Capital costs have been broken down into Trackwork, Stations, Yard and Shops, SiteWork, Systems, Right-of-Way, Vehicles, Professional Services, and Contingency. The ROM estimate, assuming start of construction in 2015, is $178.8M.
Operating funds have been estimated at $16M annually.

Sources and Uses of Funds

The study investigated potential sources of funding for the project. Potential sources include federal, state, and local revenues. In addition, both grants and loans were studied. A one-quarter of one percent sales tax is proposed for revenue on the local level.

Technical Memorandum: Capital and Operating Costs

1. Project Background & History

The project is in an early planning stage and there are no definitive designs (drawings) even of a preliminary nature. Therefore the estimate is a Rough Order of Magnitude (ROM) of a conceptual nature and is based on assumptions known at this time. The supporting documents used for the estimate include a Planning Spreadsheet identifying Stations with a preliminary location dated September 9, 2012 along with an Amtrak Feasibility Study dated September 26, 2011. Other supporting information utilized in preparation of the estimate includes Train Travel Time & Operating Study and Ridership Study prepared in October 2012 by Connectics Transportation Group. See Table 1-1 for Estimated Costs.

Table 1-1
Estimated Capital Costs

FTA No.	Summary Description	Base Year Dollars w/20% Contingency	Year of Expenditure Dollars w/3% Escalation*
10.00	Trackwork	$ 25.5	$ 30.3
20.00	Stations	$ 30.2	$ 35.4
30.00	Yard & Shops	$ 1.4	$ 1.7
40.00	Sitework: Parking	$ 7.8	$ 9.2
50.00	Systems	$ 11.2	$ 13.5
60.00	ROW	$ 7.1	$ 7.8
70.00	Vehicles	$ 32.8	$ 40.0
80.00	Professional Services**	$ 21.7	$ 24.7
90.00	10% Unallocated Contingency	$ 13.8	$ 16.2
	Total*	$151.4	$178.5

*Based on a start of construction in the first quarter of 2015 and a two-year construction period.
**Includes preliminary engineering; final design; project management for design and construction; construction administration and management; professional liability and other non-construction insurance; legal, permits, and review fees; surveys, testing, investigation and inspection; plus start-up.
*** Totals may not sum because of rounding.

SCC 10: Guideway And Track

The proposed alignment is an existing Single Track freight line and thus siding or passing tracks along with infrastructure upgrades/improvements are obviously required to facilitate commuter rail operations. From the 2011 Amtrak study the following scope items are included in the ROM Estimate.

1. Layover Facility to store four (4) Locomotives & four (4) Coaches, currently planned for East Peoria
2. Upgrade approximately 30 miles of Track at existing alignments within the project parameters to allow higher operating speeds as identified in the 2011 Amtrak Feasibility study.
3. Extension of existing Crandall Siding from 3,882 lineal feet to 12,000 lineal feet
4. Construction of 12,000 lineal feet of new siding near the Yukon Elevator
5. Eliminate the Crandall interlocking, requires new connection track from the NS to TP&W main
6. Double track between the Bloomington and Normal Yard with Bridge (17,741 Lineal Feet of Track & 400 Lineal Feet of Bridge)
7. New embedded track in downtown Peoria (1,800 Lineal Feet) plus ballasted track along diagonal section (800 lineal feet)

Double tracking is not anticipated for this ROM estimate other than the portion identified in the above text.

SCC 20: Stations, Stops, Terminals, & Inter-modal

There are nine planned stations and these are anticipated to be spartan in nature with simple practical designs, and if any enhancements are wanted these costs will be by others. The stations will be at grade and will most likely be side platforms to avoid alignment changes to the existing railroads. No underground or elevated stations are planned and all pedestrian traffic is assumed to be crossing at grade across the active railroad tracks. Surface parking is anticipated at each station location.

The only enhanced station element to be included will be the necessity for vertical circulation or connectivity at the Peoria airport, as the station is planned to be located at a roadway underpass, but still at grade. Thus an ADA ramp along with standard stairs will be utilized to gain access to the elevated roadway to the airport. (Alternatively, airport shuttle service could pick up at the below street rail location if connections are not provided via the No. 7 Garden bus.) It is also anticipated that due to constrained property conditions at the airport the parking will be in a parking structure versus surface parking and this structure will be provided by others as a Transit-Oriented Business and not a project cost.

The stations at Goodfield and Carlock will be minimal stations and as such were included at a lower unit cost than the other seven stations.

A 5% allowance is included for "Art" at the stations as is required by FTA policy.

SCC 30: Support Facilities

Minimal capital costs are included for buildings or support facilities such as a Vehicle Maintenance Building or Maintenance of Way Building as these costs will be "operational costs" through agreement with outside entities performing maintenance services.

SCC 40: Site Work And Special Conditions

Minimal sitework will be required at each station to include some landscaping, grading & drainage, but as is customary these costs are included with the stations in SCC20.

Grading and Drainage along with roadway work is anticipated at the existing roadway crossing. Any earthwork or drainage required for track work is included within SCC10

Pavement replacement is anticipated at each roadway crossing in order to support the increased speeds for the Commuter Rail Project.

Pavement replacement is anticipated for the embedded track section in Downtown Peoria, any betterment or utility replacements will be by others and are not included in the estimate. Other utilities along the mainline are not assumed to be significant. Some costs on a percentage basis are included for Temporary Facilities, normally allocated within SCC 40.08.

Cost for Hazardous Material and Environmental Mitigations are not identified in the estimate and are not expected to be significant and would be covered within Project Contingencies.

SCC 50: Systems

Signaling and Train Communications is included with the exception of Positive Train Control as the requirements for this system have not been clearly identified by FTA at this time. Included in the estimate are the following items for system work:

1. Train Control/Signaling to incorporate/upgrade speeds within Project
2. Train Control Signaling to support installation of approximately 34 new grade crossings signals (traffic).
3. Relocation of the Downtown Peoria stations is anticipated to require additional or shifted tracks with embedded track/traffic crossing panels necessary at any railroad/street crossing of the tracks.
4. Signal and Communications to support siding construction/modifications
5. Requirements & Accommodations for Positive Train Control are not included in the Estimate. It is of some value to note the recently completed Northstar project in Minneapolis, MN anticipated a cost of $1 million to $3 million to incorporate this system as a future cost.

SCC 60: Row, Land, Existing Improvements

Real estate and easement requirements are obviously unknown due to the lack of project definition at this early planning stage; but the following items are anticipated as being necessary and costs were included in the ROM estimate for these items:

1. Operating Agreement with the affected Railroads to allow operation of Commuter Trains; these are generally structured as Real Estate Agreements in order to avoid tax implications for the Railroads. This cost was not included and is assumed will be incorporated as a Memorandum of Understanding type agreement and become a portion of the annual operating costs, so it was not included as a capital cost.
2. Right of Way for nine (9) station locations to include surface parking at eight (8) locations and no parcel for the separately funded parking structure at the airport
3. Real Estate for a yard or layover facility for the vehicles
4. Right of Way for Parking Structure at the Airport Station is not included
5. Additional Right of Way needs for the relocation of the Downtown Peoria Station that will likely be located off of the Railroad ROW including Demolition Costs.
6. Easements and other agreements for Utilities or property access needs.
7. Relocation costs for Downtown Peoria Station Parcels

SCC 70: Vehicles

From the 2011 Amtrak Feasibility Report it is anticipated that 4 Locomotives or DMUs will be purchased along with two Coach Cars or Coaches. However the estimate includes 4 locomotives and 4 coaches to have four 2 vehicle consists to match the Operating Study . Due to the small size of the system no spares are included for the vehicle fleet as it is anticipated this requirement can be waived by the FTA.

The project could also incorporate Diesel Multiple Units versus standard push/pull locomotives and coaches and this is a decision that can be made during Preliminary Engineering based on potential costs and operational issues.

No costs are included for specialty Maintenance of Way vehicles, shuttles or buses. Costs are included for minimal non-revenue vehicles needed to maintain Stations, Communications, Crossings, sidings and other Train Control, Security or Emergency needs.

SCC 80: Professional Services

No manpower charts or organization charts exist for professional services and soft costs due to the level of project development, so these costs are included in the ROM as percentages of Construction Costs based generally on FTA guidelines for these costs. Costs included for professional services and soft costs on a percentage basis are as follows:

A. 3.00 % for SCC 80.01 Preliminary Engineering
B. 8.00% for 80.02 Final Engineering
C. 6.00% for 80.03 Project Management for Design & Construction
D. 5.00% for Construction Administration and Management
E. 2.00 % for SCC 80.05 Professional Liability and other Non-Construction Insurance
F. 1.50% for SCC 80.06 Legal; Permits; Review Fees by other agencies, cities, etc.
G. 1.50% for SCC 80.07 Surveys, Testing, Investigation, Inspection
H. 1.50% for SCC 80.08 Start up
I. 4.00% is included for SCC 40.08 for Temporary Facilities (Partial Construction General Conditions & P & P Bond)

SCC 90: Unallocated Contingency

Within the ROM Estimate a 20% allocated contingency is included for each SCC category with an additional 10% un-allocated (overall) contingency included as a management reserve value. It is normal for early stages of design development that an estimate can predict the cost with an accuracy range within a +/- thirty to fifty percent range. So, an overall contingency/management reserve of 30% is the minimum recommended at a planning stage.

SCC 100: Finance Charges

Finance charges are a necessary and normal cost for most large public work and private construction projects. But at early planning stages so little is known that predicting these costs is premature, so generally it is assumed these costs can be covered within the project contingencies

Miscellaneous, exclusions & qualifications

Definitive designs are not prepared and so all costs within the estimate are conceptual and preliminary in nature. As design development advances quantities and construction schedules can be determined so a more accurate estimate can be prepared to eliminate cost and schedule risks and lower contingency requirements. All costs in the ROM estimate are in fourth quarter 2012 dollars (4Q2012$).

The overall length of the proposed alignment is approximately 49.34 miles.

From the text in the 2011 Amtrak Feasibility Report a risk exists with the alignment in Peoria due to excessive civil cost required to avoid river traffic delays at the existing bridge waterway crossing. It is anticipated an agreement will occur to avoid these delays and allow the bridge to be in a "down" position prior to the train crossing to facilitate commuter rail operations. Thus no costs for elements like a shoofly and new bridge crossing are included in the estimate to positively avoid these potential delays and risks.

A construction or project schedule has not been developed, but it is anticipated three years will elapse from the beginning of preliminary engineering to the start of construction. So, for high level planning it is thought all of 2013 will be spent on conceptual engineering, and during 2014 and part of 2015 an Environmental Impact Study (EIS) along with project plans/specifications will be completed. This sets the start of construction at the first quarter of 2015 as an early start. The construction duration is likely to take 2 years for an early finish and 3 years for a late finish. These durations are needed to project cost escalation for the ROM Estimate in order to fulfill FTA requirements for a Base Year Cost (2012) and a Year of Expenditure (YOE) cost. The anticipated project finish is most likely in the last quarter of 2017, but conservatively could extend into the first and second quarters of 2018.

Unit costs to develop the ROM estimate are based on historical costs for similar projects, namely the 40 mile Northstar Commuter line from Minneapolis to Big Lake, Minnesota and the Oceanside, California Sprinter Commuter Project that utilized DMUs. Unit costs derived from these projects were escalated to 4Q2012 and all costs included in the ROM estimate are 4Q2012$.

Sales Taxes were not included in the ROM Estimate as it is assumed the project would receive an exemption if State Law requires inclusion of Sales Taxes.

Technical Memorandum: Sources and Uses of Funds

The following discussion of financing options presents the potential Federal, State, and Local funding sources that could be used to develop a commuter rail project as proposed for the Peoria to Bloomington/Normal corridor, as well as cover the project's annual operating expenditures. This analysis assumes that 100% of capital and operating costs can be covered using the sources of funds described below.

Federal

FTA grants

This project could potentially qualify to receive a Section 5309 Capital Investment Grant (Small Starts) grant, according to FTA's eligibility requirements. The Small Starts program requires that a qualifying project's total cost must be less than $250 million, with no greater than $75 million in requested funds. In addition, a project must meet one of the following guideway criteria:

- Be a fixed guideway (such as commuter rail) for at least 50% of the project length in the peak period; or;
- Be a corridor-based bus project satisfying a number of minimum requirements.

Thus, for the purposes of this financial assessment, the Peoria project is assumed to receive **$75 million**, or 42% of its total project cost under the Small Starts program.

TIGER Grant and Other Federal Grant Programs

The Peoria to Bloomington/Normal rail corridor project would provide enhanced multi-modal access, as well as increase mobility in an environmentally sustainable manner. As such, the proposed project would provide a potentially strong application with respect to TIGER grant funding, assuming that the Federal government makes additional TIGER (Transportation Investment Generating Economic Recovery) discretionary grant funds available. Additionally, the project would also serve as a feeder system to the proposed Chicago-to-St. Louis high-speed rail line, which could

also make it eligible to access certain Federal Railroad Administration (FRA) grant programs. In previous years, the Federal Highway Administration (FHWA) in conjunction with the Environmental Protection Agency (EPA) and the U.S. Department of Housing and Urban Development (HUD) has also provided grant funding for similar projects. Additional appropriations, notably for the TIGER discretionary grant program, are not scheduled at this time, and as a result, this source is not currently proposed for the Commuter Rail for Central Illinois study.

TIFIA and RRIF Loan

The U.S. Department of Transportation (USDOT) offers low-interest loans and 35-year maturities to qualified borrowers through its loan programs, such as the Transportation Infrastructure Finance and Innovation Act (TIFIA) and the Railroad Rehabilitation & Improvement Financing (RRIF). In addition to these Federal lending programs, which merit further consideration, the Illinois Finance Authority (IFA) offers a similar program, which might offer a better funding opportunity because IFA loans have longer maturities (40 years) and reduced competition from other borrowers (statewide vs. national). As a result, the project is not assumed to pursue either TIFIA or RRIF loans at this time.

Federal Appropriations/Earmarks

Federal appropriations or earmarks to fund transportation infrastructure have been significantly reduced in recent years and are excluded from the latest MAP-21 legislation. No new earmarks are assumed to be available to support the development of this project, given the current political climate.

State

Illinois DOT Division of Public and Inter-modal Transportation (IDOT-DPIT) Grant

The Illinois Department of Transportation Division of Public & Inter-modal Transportation (IDOT-DPIT) provides grants to municipalities, mass transit districts, counties, and private non-profit organizations. Funding for these grants comes from varied sources, including the Federal Transit Administrations (FTA) Section 5309, 5310, 5311, 5316, and 5317 programs, as well as state resources. Grant recipients must certify that projects are derived from a locally developed, coordinated public transit-human services transportation plan (HSTP). The local Metropolitan Planning Organizations (MPO) are the agencies responsible for developing the HSTP in urban downstate areas. Grant applicants should be actively involved in developing these plans, and the local HSTP transportation planning committees need to endorse the grant application to be eligible for IDOT-DPIT funding. IDOT-DPIT will make its recommendation to the Governor after completing its final review of the application. Vehicles will be ordered and grant contracts forwarded to the applicants for signature following the Governor's approval. When both copies are returned, the agreement will be executed and dated at IDOT-DPIT; only then can IDOT-DPIT deliver vehicles. IDOT-DPIT, on behalf of the grantees, develops the vehicle specifications, purchases the vehicles, and assures that the procurement conforms to all state and federal requirements. For the purposes of this analysis, the proposed project is assumed to receive **$25 million** from the IDOT-DPIT

program. This estimate is in line with recent requests made under this program, which include:

- Rock Island County Metropolitan Mass Transit District received $15.2 from the Division of Public and Inter-modal Transportation, Illinois DOT (50% of project costs)
- City of Joliet requested $32.3 million (76% of project costs)

Potential applicants need to discuss funding availability, project eligibility and readiness, and the terms of a possible grant agreement with IDOT for the project to be able to access Downstate Operating Assistance Program funding.

Illinois Finance Authority

The project could potentially obtain a low-interest loan from the Illinois Finance Authority (IFA), which allows borrowers to repay these loans over 40 years. Specifically, the proposed project could be eligible to obtain IFA loans, since it is a "public purpose project." A public purpose project is defined as a "facility including without limitation land, buildings, structures, machinery, equipment, all other real and personal property, which is authorized or required by law to be acquired, constructed, improved, rehabilitated, reconstructed, replaced or maintained by any unit of government." Sales tax revenues are estimated to be able to support **$25 million** in IFA loans.

Downstate Operating Assistance Program (DOAP)

The Peoria to Bloomington/Normal rail corridor could potentially tap into IDOT's Downstate Operating Assistance Program (DOAP). Examples of other local governments that received assistance through DOAP are the city of DeKalb ($182,000) and LaSalle County ($800,000). The proposed project might be able to obtain up to $400,000 annually in support of project operating expenses. Potential applicants need to discuss funding availability, project eligibility and readiness, and the terms of a possible grant agreement with IDOT to be able to access DOAP funding. However, this analysis does not assume DOAP program funding at this early stage of project development.

State Infrastructure Bank

Illinois does not have an active SIB. As a result, the city of Chicago has established its own State Revolving Fund to finance new infrastructure projects. The city of Peoria and/or surrounding jurisdictions are not anticipated to have sufficient capital to develop a local revolving fund to finance infrastructure.

Creation of a Regional Tax Authority or Mass Transit District

The creation of a Mass Transit District defines the governance and operational arrangements for the proposed commuter line, which would help the project to obtain federal grant or loan funding. This approach involves establishing a set fee that a regional transit authority can use for capital or operational expenses. The authority would have the legal authority to bond, assess and collect taxes, and maintain a separate budget from participating entities. However, the establishment of a mass transit district or regional tax authority requires the State legislature to enact specific legislation.

No new revenues are assumed from this potential source of funds at this time, given the political uncertainty associated with this approach.

Local

Fares

A ridership analysis that was conducted for the Peoria to Bloomington/Normal rail corridor estimates average annually daily ridership to be 1,482/day (mid-point of the range of ridership forecasts without taking any credit for transit-dependent riders). This ridership estimate translates to an estimated 375,000 trips per year using an annualization factor of 254 days. Using an average fare of $10 per one-way trip will generate an average of **$3.8 million** in revenues per year, representing a 26% fare box recovery ratio.

Parking Revenue

The project includes the development of 250 parking spaces at each proposed station. The downtown Peoria station will have structured parking with hourly rates, while the parking spaces at other stations will be on an adjacent lot next to the station, which will be provided at no additional cost to riders. For the downtown structured parking garage, each space could potentially generate $15/day depending on the parking rate assessed and the utilization rate of the parking facility. Using an annualization factor of 254 days, the parking facility could generate an estimated **$1.0 million** per year.

Advertising and Rents

The project could also generate approximately **$0.1 million** in revenue from advertising and rents.

Transportation Program-Metropolitan Mobility (STP-MM)

STP-MM funds from FHWA are designed to fund surface transportation projects that improve mobility within the transportation system. The Tri-County Regional Planning Commission (TCRPC) could allocate **$1.6 million** of these STP-MM funds to support project development.

Sales Tax

The corporate authorities of a home rule unit (defined as a municipality with a population of 25,000+ residents or a county with a CEO elected by the electors of the county) may impose a new sales tax or an increase in an existing sales tax rate. Historical data from the Illinois Department of Revenue (IDOR), which is responsible for administering home rule sales taxes, and existing county level sales tax data, were used to estimate the incremental sales tax that could be generated to support the project. A $0.25 cent sales tax increase in each of the four affected counties (Peoria, McLean, Tazewell, and Woodford) could generate approximately **$38.6 million** in revenues over three years that could be used to defray capital costs. Additionally, approximately **$11.1 million** per

year can be used for operating costs. Legal authority may already exist at the state level to increase county sales tax rates by 0.25% subject to local approval.

Bonds

Local municipalities or counties can issue general obligation bonds secured by property tax revenues or revenue bonds secured by a defined and stable revenue source. This financial analysis has identified that revenues from sales tax, passenger fares, and parking can be used to secure the issuance of new revenue bonds. The project is estimated to be able to support approximately **$13.6 million** in bonds.

Tax-Increment Financing

Tax Increment Financing (TIF) financing involves establishing a TIF district to capture increased property values from: (1) new buildings built on vacant land; (2) improvements made to existing buildings; or (3) existing buildings without improvements, which can be assessed at a higher property tax rate. The basic principle behind TIFs is that the locality freezes the taxes at a site's pre-development levels so that the increased tax revenues that the project generates can be used to help fund the project's upfront infrastructure costs. The expected post-development increase in property taxes creates a future revenue stream. This revenue stream can be used to finance future project costs (e.g., O&M) and/or secure debt financing. For example, a study that the city of Peoria commissioned estimates that approximately 119,000 square feet could be used to attract new commercial development in the Peoria Warehouse District, which includes the proposed downtown commuter rail project terminus and is adjacent to the Downtown TIF District. However, the city of Peoria has already allocated the potential TIF resources in these districts and they are assumed to be unavailable for the commuter rail project.

Public Facilities Tax/Developer Fees

This financing mechanism was considered, but it was determined that it may be politically difficult to impose an increase in this tax, especially given the proposed increase in sales taxes and the issuance of bonds. Similarly, imposing a developer fee is assumed to be politically difficult.

CityLink

The Illinois Department of Revenue reports that CityLink received $3.0 million in revenues through the creation of a public transportation district. Given this relatively small amount of available resources, CityLink is not considered to have the financial resources to provide direct financial support for the project.

Other

Private, University, and Airport Shuttle Bus Services

The cost of shuttle bus service to and from rail stations is proposed to be covered by large employers in the region including, but not limited to Caterpillar, State Farm, Mitsubishi, Libby, and Par-A-Dice. Universities (such as, Bradley University, Illinois State University and Illinois Wesleyan University) and the region's two airports might also provide shuttle service by extending/rerouting their existing bus shuttle operations to commuter rail stations. However, no additional funding from theses sources has been assumed at this stage of project development.

Other Public and Private

Other potential funding and financing sources that could be used to support the proposed commuter rail project, include but are not limited, to the following:

- Illinois Economic Development Program (EDP);
- Illinois Department of Commerce and Economic Opportunity (DCEO) Community Development Assistance Program;
- Business organizations, such as Peoria Area Chamber of Commerce, Economic Development Council for Central Illinois, and the Heartland Partnership could also contribute.

The table on the following page summarizes the sources and uses of funds.

Peoria-Normal Commuter Rail Line Sources and Uses of Funds

Capital Costs (Total)					
Source of Funds	**$M**	**% Total**	**Uses of Fund**	**$M**	**% Total**
Federal			**Capital Costs**		
FTA New Starts Grants (5309)	$75.0	42%	Trackwork	$30.3	17%
TIGER and Other Federal Grants	0	0%	Stations	35.4	20%
TIFIA/RRIF	0	0%	Yard & Shops	1.7	1%
Federal Appropriations/Earmark	0	0%	Parking	9.2	5%
Subtotal Federal	**$75.0**	**42%**	Systems	13.5	8%
State			ROW	7.8	4%
IDOT-DPIT Grants	25.0	14%	Vehicles	40.0	22%
Illinois Finance Authority Loans	25.0	14%	Professional Services	24.7	14%
State Infrastructure Bank	0.0	0%	Contingency	16.2	9%
Subtotal State	**$50.0**	**28%**			
Local					
TCRPC STP-MM Funds	1.6	1%			
Sales Taxes	38.6	21%			
Bonds	13.6	8%			
Tax Increment Financing	0.0	0%			
Public Facilities Tax/Developer Fees	0.0	0%			
City Link	0.0	0%			
Subtotal Local	**$53.8**	**30%**			
Other					
Other Public and Private	**0.0**	**0.0%**			
Total Sources	**$178.8**	**100%**	**Total Uses**	**$178.8**	**100%**

Operating Costs (Annual)*					
Source of Funds	**$M**	**% Total**	**Uses of Fund**	**$M**	**% Total**
State			**Operating Costs**		
IDOT Downstate Operating Assistance Program	$0.0	0%	Rail Operations	$12.6	79%
Local			Bus Operations	2.1	13%
Fares	3.8	24%	Interest	1.3	8%
Parking	1.0	6%			
Advertising & Rents	0.1	1%			
Sales Taxes	11.1	69%			
Other					
Private, University, Airport Shuttle Bus Operations	0	0%			
Total Sources	**$16.0**	**100%**	**Total Uses**	**$16.0**	**100%**

*Excludes any annualized operating agreement costs to use railroad rights-of-way, which are unknown at this time.

Transit Oriented Development

Transit-Oriented Development Section Summary

Transit-Oriented Development (TOD) relies on various modes of public transportation to be effective. One of those modes is commuter rail. As part of the Commuter Rail for Central Illinois Feasibility Study an analysis of TOD potential at the nine proposed stations was undertaken.

Order of magnitude estimates were projected for incremental households and employment that could be attracted within a half-mile radius of each rail station over the 2008 to 2035 time frame.

The analysis included reviewing existing land use, vacant and available land, along with physical opportunities and constraints at each station. Interviews were conducted with local planning and development officials in regard to policies and programs (existing and potential) that support TOD initiatives.

Results of the analysis project the number of households and employment opportunities at each TOD station. The three stations with the highest potential for TOD are Peoria, East Peoria, and Southeast Bloomington

Both the Peoria metropolitan area and the Bloomington/Normal metropolitan area support TOD. Many zoning, land use, infrastructure and economic development policies and regulations are currently in place.

Technical Memorandum: Transit Oriented Development

1. Purpose

The purpose of this Memorandum is to estimate the order of magnitude of Transit Oriented Development (TOD) potential at the selected Peoria Commuter Rail Station Areas. This Memorandum is also to provide guidance to decision-makers and data to input into the ridership model. Section 2 summarizes the methodology: existing economic and demographic information and official projections for the jurisdictions and identified station area are presented in Section 3. The memorandum concludes with order of magnitude estimates of TOD induced households and employment.

2. Methodology

To determine the estimates of additional TOD at each station area, Regional/MPO projections were examined from 2008-2035. The demographic indicators analyzed in this review include change in population, households, employment and dwelling units within the region, jurisdiction, sub areas and a ½ mile radius of each selected station area.

The analysis included reviewing existing land use, vacant and available land, along with physical opportunities and constraints at each station area. Interviews were conducted with local planning and development officials in regards to policies and programs (existing and potential) that support TOD initiatives.

In order to assess TOD potential a typology was established to detail the character of each station, and to categorize the intensity of potential TOD. Based on the station typology, and on empirical evidence at other stations, an assumption of 10%, 20% or 30% increase over the 2008 - 2035 projections was applied based on the level of intensity.

In addition, given relatively low base line projections at the station areas, a base or threshold level of TOD development was established at each selected station area. As a test of reasonableness,

the likely capture rate or proportion of the regional demand captured by the incremental projected station area TOD households and employment was examined in order to determine if this market capture rate reflected likely market realities.

3. Existing and Projected Population, Households and Employment

The current and projected population households and dwelling units for the jurisdictions and ½ mile radius of the stations are presented in the following section.

4. Estimated TOD Induced Household and Employment Change by Station Area

In order to provide direction for key decision-makers as well as provide input into the travel demand model, order of magnitude estimates were projected of the incremental households and employment that could be attracted within a half-mile radius of each transit station over the 2008 -2035 time-frame/design year.

The incremental development is based upon the existing projections of household and employment growth within the station areas, a review of the existing land use, vacant land, available land and physical and market opportunities and constraints within the station areas, as well as interviews conducted with local planning and development officials.

In order to establish order of magnitude estimates a typology was determined for each station area. The basic use characteristics in terms of predominantly residential, employment center or mixed-use were defined based on existing and projected development patterns. As shown in Table 7 downtown Peoria, East Peoria, Bloomington and the Bloomington South East station area were categorized as predominantly an employment center. The Peoria Airport, Morton and West Normal have more mixed-use characteristics of both residential and employment activity. The generally rural Goodfield and Carlock stations were categorized as predominantly residential.

Based upon current development projections as well as existing comprehensive plans and small area plans each of the station areas were also characterized in terms of their likely relative intensity. Downtown Peoria, East Peoria, West Normal and Bloomington Southeast were characterized as high, downtown Bloomington medium and Morton, Goodfield and Carlock as low.

Two approaches to estimating TOD induced development were undertaken. One defined a base level threshold of development related to a likely threshold residential, employment or mixed-use TOD. The base level residential development assumes 200 residential units and a modest 10,000 square feet of nonresidential use which would be the equivalent of approximately 20 employees. The nonresidential base or threshold development has approximately 40,000 square feet of nonresidential use representing approximately 80 employees. Mixed-use developments were assumed to contain both the residential and non-residential threshold development levels.

The second, based upon general empirical evidence of the ability of TOD to enhance development

potential, assumed a relative increase in projected households and employment based upon order of magnitude empirical evidence and other localities with similar levels of service. An estimated 10, 20 or 30% enhancement in household and employment growth was estimated based upon the low, medium and high intensity assumptions.

Given the relatively small increments of projected growth within the station areas, the threshold level of development served as a base to establish a floor level of TOD development. Without the establishment of this case or floor the projected induced development would be small reflecting the modest growth projected for the individual station areas. Therefore the larger of the estimates in induced development under either the threshold or induced development assumptions were utilized.

For downtown Peoria the baseline residential projections were adjusted upward from the MPO projections by TAZ to take into consideration the planned 2,000 units in the Warehouse District. As shown in Table 7, all of the station areas, with the exception of downtown Peoria, were projected to experience very modest residential growth and therefore have been assumed to the threshold level of 200 units each. In downtown Peoria application of the high intensity development assumption upon the projected 2,000 units in the downtown resulted in a transit oriented development increment of 600 units. The nine stations are expected to experience an order of magnitude of 2,200 additional households as a result of TOD development.

The threshold level of employment induced TOD development was projected at five of the nine stations: Peoria Airport, Morton, Goodfield, Carlock, and West Normal. The projected 30% increment in employment for downtown Peoria resulted in a transit induced employment impact of 1,305 employees. Similarly application of high intensity induced development and East Peoria and Bloomington Southeast resulted in transit induced estimate of 550 and 225 employees respectively. The assumed medium intensity of development at the level of induced employment in Bloomington was estimated at 280 employees. In total, an estimated 2,700 induced jobs are assumed to take place in transit oriented development projects around the nine stations.

In order to test the reasonableness of the level of induced development projected at each station estimates the proportion of regional growth that would be captured by the estimated induced development were calculated. As shown in Table 8 the proportion of regional growth that is captured in the individual station areas appears reasonable and consistent with empirical evidence and other stations. In general the capture rates of incremental household growth within the station areas ranges from 3 to 4% of the larger sub regional area. Similarly, the incremental induced TOD employment within the station areas generally represents 1 to 3% capture of the larger sub regional area.

Slightly higher capture rates are achieved by TOD development in East Peoria and downtown Peoria. East Peoria employment related TOD is assumed to capture 9% of the Tazewell County employment growth, which given the redevelopment efforts in the downtown area is reasonable. Downtown Peoria incremental induced residential developments and employment is estimated at 9% and 34% respectively of the County household and employment growth. Given the central position of downtown Peoria and its already significant concentration of County employment growth, both of these capture rates also appear reasonable. While the 34% capture of employment may appear aggressive is a concerted effort to concentrate development and the region's core and the downtown

has the capacity and transportation and other infrastructure capacity to attract and accommodate this level of development.

Population, Households, Employment Dwelling Units for Jurisdictions for 2008

- Population

Table One is an illustration of the MPO Data by TAZ for selected jurisdictions. The 2008 MPO numbers show the largest population in the Tri-County area (The Tri-County area consists of Peoria, Tazewell and Woodford Counties) with 352,735 people and the McLean County (including Bloomington and Normal0 with 130,417 people. The largest metropolitan areas in 2008 were the City of Peoria/ E. Peoria with 138,688 people and the City of Bloomington with 64,691 people.

- Households

In 2008 the largest number of households was in the metropolitan area of the City of Peoria/E. Peoria with 61,583 households and the City of Bloomington with 28,942 households.
The Tri-County area had the largest number of households in the project area with 352,735 households followed by the McLean County with 130,417 households.

- Employment

In 2008 the City of Peoria/E. Peoria had the largest number of employees of the metropolitan area in the region with 98,332 employees. The metropolitan area with the second largest number of employment is the City of Bloomington with 58,775 employees.

- Family Dwelling Units

The metropolitan area with the largest number of Dwelling Units is the City of Peoria/E. Peoria with 42,970 Single Family Units and 18,613 Multi-Family Units. The City of Bloomington has the second largest number of Single and Multi-Family Units. The City of Bloomington has 18,106 Single Family Units and 10,836 Multi-Family Units.

Table One
Population, Households, Employment, Dwelling Units
Peoria Commuter Rail Project
Selected Jurisdictions

2008

Area	Population	Households	Percent of Households by Total Households in the Region	Employment	Employees Per Household	Occupied Single-Family Dwelling Units	Percent Occupied Single Family Dwelling Units
TRI-County RPC	352,735	149,947	100%	180,992	1.2	117,021	78%
Peoria County	188,879	82,223	55%	103,721	1.3	60,673	74%
City of Peoria/E. Peoria	138,688	61,583	41%	98,332	1.6	42,970	70%
Tazewell County	128,914	54,108	36%	65,477	1.2	44,388	82%
City of Morton	9,213	3,996	3%	17,983	4.5	2,689	67%
Bloomington-Normal RPC	130,417	56,574	100%	96,375	1.7	34,175	60%
City of Bloomington	64,691	28,942	51%	58,775	2.0	18,106	63%
City of Normal	49,525	21,504	74%	26,988	1.3	10,543	49%

Source: MPO Data by TAZ, Aggregated/Allocated by Jacobs/VPDA

Population, Households, Employment Dwelling Units for Jurisdictions for 2035

- Population

Table Two is an illustration of the MPO Data by TAZ for selected jurisdictions for the year 2035. The 2035 MPO numbers show the Tri-County area with 373,929 people and McLean County with 198,416 people. The largest metropolitan areas in 2035 will be the City of Peoria/ E. Peoria with 138,164 people and the City of Bloomington with 69,146 people.

- Households

In 2035 the largest number of households will be in the City of Peoria/E. Peoria with 63,907 households followed by the City of Bloomington with 69,146 households. The City of Normal will be the third largest metropolitan area with 27,458. households.

In 2035 the Tri-County area will have 164,921 household; the McLean County will have 95,294 households.

- Employment

In 2035 the City of Peoria/E. Peoria is projected to have the largest number of employees with 103,065 employees. The second area with the largest number of employment is in the City of Bloomington with 77,934 employees.

- Dwelling Units

The area with the largest number of Dwelling Units in 2035 will be the City of Peoria/E. Peoria with 45,076 Single Family Units and 18,831 Multi-Family Units. The City of Bloomington is the second with 20,003 Single Family Units and 14,354 Multi-Family Units.

Table Two

Population, Households, Employment, Dwelling Units
Peoria Commuter Rail Project

Selected Jurisdictions
2035

Area	Population	Households	Percent of Households by Total Households in the Region	Employment	Employees Per Household	Occupied Single-Family Dwelling Units	Percent Occupied Single Family Dwelling Units
TRI-County RPC	373,929	164,921	100%	191,075	1.2	129,713	79%
Peoria County	197,692	89,259	54%	107,545	1.2	66,608	75%
City of Peoria/E. Peoria	138,164	63,907	72%	103,065	1.6	45,076	71%
Tazewell County	141,494	61,563	96%	71,581	1.2	50,710	82%
City of Morton	10,162	4,591	7%	19,252	4.2	2,992	65%
Bloomington-Normal RPC	198,416	95,294	100%	167,989	1.8	64,691	68%
City of Bloomington	69,146	34,357	36%	77,934	2.3	20,003	58%
City of Normal	55,473	27,458	80%	38,095	1.4	12,287	45%

Source: MPO Data by TAZ, Aggregated/Allocated by Jacobs/VPDA

Population, Households, Employment Dwelling Units Change for Jurisdictions for 2008-2035

Table Three displays the change in households and employment for the selected jurisdictions from 2008 and 2035.

- Population

Population growth in McLean County is projected to increase 52% (67,999) from 2008-2035. The City of Normal has the largest increase with 12% (5,948).

- Households

Households in McLean County are projected to increase 68% (38,720) and the Tri-County area a 10% increase (14,974) in units.

The City of Normal is estimated to experience a 28% (5,954) increase in households. City of Bloomington a 19% (5,415) increase in households followed by the City of Morton with 15% (595).

- Employment

The Cities of Normal and Bloomington will have the growth rates in employment of 41% (11,107) and 33% (19,159) respectively.

The City of Peoria/E. Peoria is projected to have the largest number of additional employment with 103,065.

Table Three

Population, Households, Employment, Dwelling Units

Peoria Commuter Rail Project

Selected Jurisdictions

2008-2035 Change

Area	Population	Households	Percent of Households by Total Households in the Region	Employment	Employees Per Household	Occupied Single-Family Dwelling Units	Percent Occupied Single Family Dwelling Units
TRI-County RPC	21,194	14,974	100%	10,083	0.7	12,692	85%
Peoria County	8,813	7,026	47%	3,824	0.5	5,935	84%
City of Peoria/E. Peoria	-524	2,324	16%	4,733	2.0	2,106	91%
Tazewell County	12,580	7,455	50%	6,104	0.8	6,322	85%
City of Morton	949	595	4%	1,269	2.1	303	51%
Bloomington-Normal RPC	67,999	38,720	100%	71,614	1.8	30,516	79%
City of Bloomington	4,455	5,415	14%	19,159	3.5	1,897	35%
City of Normal	5,948	5,954	110%	11,107	1.9	1,744	29%

Source: MPO Data by TAZ, Aggregated/Allocated by Jacobs/VPDA

Population, Households, Employment and Dwelling Units for Station Areas for 2008

The estimated population, households, employment, and dwelling units within a ½ mile radius of the proposed transit station is based upon allocation of MPO TAZ estimates as displayed in Table 4.

Peoria Airport Station

- In 2008 the Peoria Airport Station Area had a population of 778 with 303 households and 348 employees within a ½ mile radius of the station.

Downtown Peoria Station

- The population in 2008 within a ½ mile of the Downtown Peoria Station was 736 with a total of 358 households. The Downtown also had a total of 4,566 employees in the station area.

East Peoria Station

- In 2008 the East Peoria Station area had a population of 583 people. There were 358 households and 2,092 employees within a ½ mile radius of the station.

Morton Station

- In 2008 the Morton Station had a population of 207. There were 81 households and 150 employees within a ½ mile radius of the station.

Bloomington Station

- In 2008 the Bloomington Station had a population of 4,431 people. There were 2,410 households and 6,460 employees within a ½ mile radius of the station.

West Normal Station

- The population in 2008 within a ½ mile of the West Normal Station was 75 with a total of 26 households. The West Normal Station also had a total of 453 employees in the station area.

Bloomington SE Station

- In 2008 the Bloomington SE Station area had a population of 26 with 8 households and 1,045 employees within a ½ mile radius of the station.

Table Four
Population, Households Employment, Employment per Household, Dwelling Units
Peoria Commuter Rail Project
Selected Station Areas (1/2 Mile Radius)
2008

Station Areas	Population	Households	Employment	Employees Per Household	Occupied Single-Family Dwelling	Percent Occupied Single Family	Occupied Multi-Family Dwelling Units
Peoria Airport	778	303	348	1.1	288	95%	15
Downtown Peoria	736	358	4,566	12.8	34	9%	324
East Peoria	583	279	2,092	7.5	208	75%	71
Morton	207	81	150	1.9	75	93%	6
Bloomington	4,431	2,410	6,460	2.7	1,001	42%	1,409
West Normal	75	26	453	17.4	25	96%	1
Bloomington SE	26	8	1,045	130.6	8	100%	0

Source: MPO Data by TAZ, Aggregated/Allocated by Jacobs/VPDA

Population, Households, Employment and Dwelling Units for Station Areas for 2035

The estimated population households, employment and dwelling units within a ½ mile radius of the proposed transit station is based upon allocation of MPO TAZ estimates as displayed in Table 5.

- Peoria Airport Station

In 2035 the MPO Projections for the Peoria Airport Station Area is a population of 921 with 371 households and 342 employees within a ½ mile radius of the station.

- Downtown Peoria Station

The 2035 MPO Projections for population within a ½ mile of the Downtown Peoria Station is 706 with a total of 351 households. The MPO is also projecting the Downtown Station area to have a total of 11,089 employees by 2035.

- East Peoria Station

In 2035 the MPO Projections for the East Peoria Station Area is 652 people. There will be 313 households and 3,927 employees within a ½ mile radius by 2035.

- Morton Station

In 2035 the MPO Projections for the Morton Station Area is a population of 198 people, 77 households and 198 employees within a ½ mile radius of the station.

- Bloomington Station

The 2035 MPO Projections for population within a ½ mile of the Bloomington Station is 5,056 with a total of 3,257 households. The MPO is also projecting the Bloomington Station area to have 7,845 employees by 2035.

- West Normal Station

In 2035 the MPO Projections for the West Normal Station Area is a population of 338 people, 101 households and 701 employees.

- Bloomington SE Station

In 2035 the MPO Projections for the Bloomington SE Station Area is a population of 430, 121 households and 1,788 employees.

Table Five
Population, Households Employment, Employment per Household, Dwelling Units
Peoria Commuter Rail Project
Selected Station Areas (1/2 Mile Radius)
2035

Station Areas	Population	Households	Employment	Employees Per Household	Occupied Single-Family Dwelling Units	Percent Occupied Single Family Dwelling Units	Occupied Multi-Family Dwelling Units
Peoria Airport	921	371	342	0.9	352	95%	19
Downtown Peoria	706	351	11,089	31.6	37	11%	314
East Peoria	652	313	3,927	12.5	232	74%	81
Morton	198	77	198	2.6	73	95%	4
Bloomington	5,056	3,257	7,845	2.4	1,072	33%	2,185
West Normal	338	101	701	6.9	99	98%	2
Bloomington SE	430	121	1,788	14.8	121	100%	0

Source: MPO Data by TAZ, Aggregated/Allocated by Jacobs/VPDA

Population, Households, Employment and Dwelling Units Change for Station Areas from 2008-2035

The estimated population households, employment and dwelling units within a ½ mile radius of the proposed transit station is based upon allocation of MPO TAZ estimates as displayed in Table 6.

- Peoria's Airport Station

Based upon allocation of the MPO TAZ data, the Peoria Airport Station Area is expected to have an increase in population of 143 residents and 68 households. Employment is projected to remain stable, decreasing by 6 employees.

- Downtown Peoria Station

According to the MPO data by TAZ, the Downtown Peoria Station area is expected to see a decrease in population (30) and households (2) by the year 2035. The downtown station area is expected to see an increase in employment by 6,523 by 2035.

- East Peoria Station

The station area is projected to see an increase of 69 persons or 34 households, and an 88% increase in employment. However, an additional 1,835 employees is projected.

- Morton Station

MPO projections for the Morton Station Area are a modest decrease in population (9), and households (4). The station area is projected to increase by 48 employees.

- Bloomington Station

The MPO estimates the Bloomington Station Area to see a 14% increase in population by 2035, 625 households and an increase in employment of 1,385.

- West Normal Station

MPO projections for the West Normal Station are a population increase of 263 by 2035. Households are expected to increase by 75 while employment is projected to increase by 248 employees.

- Bloomington SE Station

MPO projections for the Bloomington SE Station are an increase in population and households by an additional 404 people or 113 households. Employment is expected to increase with an additional 743 employees.

Table Six
Population, Households Employment, Employment per Household, Dwelling Units
Peoria Commuter Rail Project
Selected Station Areas (1/2 Mile Radius)
2008-2035 Change

Station Areas	Population	Households	Employment	Employees Per Household	Occupied Single-Family Dwelling Units	Percent Occupied Single Family Dwelling Units	Occupied Multi-Family Dwelling Units
Peoria Airport	143	68	-6	-0.1	64	94%	4
Downtown Peoria	-30	-7	6,523	-931.9	3	-43%	-10
East Peoria	69	34	1,835	54.0	24	71%	10
Morton	-9	-4	48	-12.0	-2	50%	-2
Bloomington	625	847	1,385	1.6	71	8%	776
West Normal	263	75	248	3.3	74	99%	1
Bloomington SE	404	113	743	6.6	113	100%	0

Source: MPO Data by TAZ, Aggregated/Allocated by Jacobs/VPDA

Table Seven
Summary Chart Of
Incremental Household & Employment TOD Potential by Station Area
Peoria Commuter Rail Project
Selected Station Areas (1/2 Mile Radius)
2008-2035

	Typology		TOD Increment	
Station Area	Use Characteristics	Development Intensity	Households	Employment
Peoria Airport	Mixed	Low	200	100
Downtown Peoria	Employment	High	600	1,305
East Peoria	Employment	High	200	550
Morton	Mixed	Low	200	100
Goodfield	Residential	Low	200	20
Carlock	Residential	Low	200	20
West Normal	Mixed	High	200	100
Bloomington	Employment	Medium	200	280
Bloomington SE	Employment	High	200	225
Total			2,200	2,700

Source:Estimated by VPDA

Table Eight
Incremental TOD Household & Employment Change As A
Percentage of the Sub-Regional Household & Employment Change
Peoria Commuter Rail Project
Selected Station Areas (1/2 Mile Radius)
2008-2035

Station Areas	Incremental Household 2008-2035	Incremental Employment 2008-2035
Peoria County	100%	100%
Peoria Airport	3%	3%
Downtown Peoria	9%	34%
Tazewell County	100%	100%
East Peoria	3%	9%
Morton	3%	2%
Goodfield	-	-
Carlock	-	-
The City of Normal	100%	100%
West Normal	3%	1%
The City of Bloomington	100%	100%
Bloomington	4%	1%
Bloomington SE	4%	1%

Source: Estimated by VPDA

5.0 Public Sector Policies to Encourage TOD

The purpose of this section is to identify and summarize existing local public sector policies that support Transit Oriented Development (TOD). Identifying these policies is important because these policies and actions are necessary to generate the projected ridership and because they are a vital part of any federal funding request. We have identified the two MPOs' and the various jurisdictions' existing general policies that support TOD, their specific policies that target TOD, and also small area plans and policies that support TOD. We have identified the various steps the MPOs, jurisdictions and key stakeholders have taken to help implement these policies. Finally, we have outlined additional potential tools and approaches that would help facilitate TOD.

Introduction

The two Regional planning commissions, the Tri-County Regional Planning Commission in Peoria and the McLean County Regional Planning Commission in Bloomington/Normal and various jurisdictions within each are in the process of adopting: zoning, land use, infrastructure and economic development policies and regulations to supplement and enhance existing zoning policies, subdivision regulations, overlay districts, capital budgeting/infrastructure investment policies, economic development policies, planning and zoning approval processes, public/private partnerships and the like to enhance TOD.

Specific policies are being adopted to facilitate land use and/or zoning policies within the defined areas around transit stations to facilitate and encourage transit supportive development. In addition, the jurisdictions have expressed a willingness to provide infrastructure and other financing or funding assistance to facilitate compact, mixed-use, transit supportive development.

The Cities of Peoria, East Peoria, Bloomington, and Normal have all demonstrated a commitment to achieve revitalization in their core areas including more compact mixed-use development, new transit centers and rail linkages.

All jurisdictions have indicated a desire to support policies, programs and infrastructure investments to encourage TOD.

High density areas that provide services, such as healthcare, employment, education, etc., are targeted areas for supportive TOD policies and sidewalk improvement plans to foster multi-modal transportation.

General Policies to Support TOD

The City of Peoria

The 2012 City of Peoria Strategic Plan includes the following statements:

> "As a part of the supportive policy to enhance Smart Growth and TOD within the City of Peoria's Strategic Plan, the City identified a City Services Priority and Plan as a top priority for the City."
>
> "As a part of the supportive policy to enhance Smart Growth and TOD within the City of Peoria's Strategic Plan, the City identified a Community Investment Plan for Capital and Equipment: Format/Process Revision as a top priority for the City."
>
> "As a part of the supportive policy to enhance Smart Growth and TOD within the City of Peoria's Strategic Plan, the City identified City Economic Development Framework as a top priority."
>
> "As a part of the supportive policy to enhance Smart Growth and TOD within the City of Peoria's Strategic Plan, the City identified a City Structure Reorganization: Completion as a top priority."
>
> "As a part of the supportive policy to enhance Smart Growth and TOD within the City of Peoria's Strategic Plan, the City identified a Plan for Connectivity: Development as a moderate priority."
>
> "As a part of the supportive policy to enhance Smart Growth and TOD within the City of Peoria Strategic Plan, the City has identified a Sidewalk Policy and Program Direction as a moderate priority for the City."
>
> "As a part of the supportive policy to enhance Smart Growth and TOD within the City of Peoria Strategic Plan, the City has identified advocacy for the Bloomington-Normal Rail Link as a high priority."
>
> "As a part of the supportive policy to enhance Smart Growth and TOD within the City of Peoria Strategic Plan, the City has identified the East Village Growth Cell TIF Plan as a moderate priority for the City."
>
> "As a part of the supportive policy to enhance Smart Growth and TOD within the City of Peoria Strategic Plan, the City has identified a Residential Development Strategy as a moderate priority."
>
> "As a part of the supportive policy to enhance Smart Growth and TOD in the City of Peoria Strategic Plan, the City has identified the Warehouse District to spur private investment as a moderate priority."

"As a part of the supportive policy to enhance Smart Growth and TOD within the City of Peoria Strategic Plan, the City has identified a Business Association Strategy and Direction as a moderate priority."

The City of East Peoria

The 2004 City of East Peoria Comprehensive Plan includes the following objectives:

"Pursue adequate connection to the proposed Chicago highway to the high speed rail corridor, and to all forms of mass transit."

"The City of East Peoria's Comprehensive Plan identifies the City's Land Use Goals and Objectives, which are supportive to Smart Growth and TOD."

"The City of East Peoria had designated the station area as an overlay district designed to encourage a more "urban environment" through reduced or eliminated setbacks and increased lot density. The City is optimistic about more dense development because the zoning is primarily B-3 Commercial with some M-1 Manufacturing around the perimeter of the site to the south and west."

The City of Bloomington

The 2005 City of Bloomington Comprehensive Plan includes the following goals:

"Provide means for alternative development concepts, such as traditional neighborhood development (TND) and transit oriented development (TOD), to offer potential for mixed income neighborhoods with a variety of housing types and costs."

"Land use patterns and intensities that promote accessibility to alternative modes of transportation."

"Encourage transit oriented development to accommodate all income levels and age groups"

The Town of Normal

The 2006 Town of Normal Comprehensive Plan includes the following goals:

"Designate land at appropriate locations relative to housing and transportation facilities for various types of commercial and industrial development."

"Encourage alternative development concepts, such as TND, clustering, conservation subdivisions and transit oriented development."

"Designate areas for traditional neighborhood district (TND), transit oriented development

(TOD), mixed use and cluster development."

"Promote cooperation with area employers to increase use of public transit, van and car pooling, and bicycle and pedestrian transportation."

"Encourage transit oriented development."

Additional Potential Policies

Additional TOD/joint development tools will likely include: education, visioning, planning, government coordination, zoning and land use regulations, parking reduction and demand management, advanced environmental clearance, infrastructure funding priorities, pre-development funding assistance, facility locations decision, pedestrian/bike access, potential tax incentives (tax abatement, tax credits, low-income housing tax credits, New Market Tax Credits, TITIA, etc.), financial assistance (TIF, benefit assessment, credit enhancement, loan guarantees, etc.), creation of public/private partnerships, etc.

"The National Association of Regional Councils (NARC) researched and reduced reoccurring livability themes contained in the literature and requested information from Metropolitan Planning Organizations (MPOs), Regional Councils of Government (COGs), the American Public Works Association (APWA), the International City/County Management Association (ICMA), The National Association of Counties (NACo), the National League of Cities (NLC), the American Public Transportation Association (APTA), and other federal, state, and local organizations about their familiarity with and implementation of livability mechanisms." (NARC, 2012)

"After identification and reduction, the following livability themes emerged as the most commonly occurring themes and represent ways in which practitioners achieve their livability goals. These themes include:" (NARC, 2012)

- Livability
- Sustainability
- Smart Growth
- Complete Streets
- Life Long Communities
- Safe Routes to Schools
- Context Sensitive Solutions/Design
- New Urbanism
- Transit Oriented Development
- Placemaking

This brief summary focuses on Livability, Smart Growth, and TOD. The Chicago Metropolitan Agency of Planning (CMAP) discussed livability similarly to the Partnership in their comprehensive regional plan, GoTo 2040" (CMAP, 2012)

Livable communities are healthy, safe, and walkable. Livable communities offer transportation choices that provide timely access to schools, jobs, services and basic needs. Livable communities are imbued with strength and vitality, features which emerge from preserving the unique characteristics that give our diverse communities a 'sense of place.' (CMAP, 2012)

"While other definitions may have come before it, the U.S. EPA and SGN (2001) developed the most commonly used smart growth definition, as development that support sustainability by achieving economic growth, strong neighborhoods and healthy communities. Authors created principles that allow developers, as well as a state or local government, to create smart growth by adhering to these principles. The principles include:" (NARC, 2012)

- Mix Land Use
- Take Advantage of Compact Building Design;
- Create a Range of Housing Opportunities and Choices;
- Create Walkable Neighborhoods;
- Foster Distinctive, Attractive Communities with a Strong Sense of Place;
- Preserve Open Space, Farmland, Natural Beauty and Critical Environmental Areas
- Strengthen and Direct Development Towards Existing Communities;
- Provide a Variety of Transportation Choices
- Make a Development Decision Predictable, Fair and Cost Effective; and
- Encourage Community and Stakeholder Collaboration in Development Decision

Transit Oriented Development is "promoting compact mixed use development around commuter rail stations and other public transit centers, which can help resident benefit from affordable transportation and access to shopping." (NARC, 2012)

The Federal Transit Administration (FTA) (2011) defined TOD as "compact, mixed-use development within walking distance of public transportation." (NARC, 2012)

"MPOs use TOD as a tactic to increase livability. TODs increase livability while improving access to transit, according to a 2008 U.S. DOT and U.S. HUD report. Further, TODs can reduce transportation costs for working families and mitigate the negative impacts of automobile travel on the environment and the economy." (NARC, 2012)

Appendices

Appendix 1: Peoria to Bloomington/Normal Commuter Rail Project within the Abraham Lincoln Interstate 74 Knowledge Corridor

Introduction

The proposed passenger rail project from Peoria to Bloomington/Normal can be part of a larger Abraham Lincoln Interstate 74 Knowledge Corridor. This would contribute to the quality of life, economic development, transportation, livability and sustainability goals and objectives of the two regions as well as a broad portion of central Illinois from the Quad Cities on the West to Champaign/Urbana on the east. This paper briefly discusses how enhanced transportation and regional cooperation can contribute to economic development, livability, and sustainability. An expanded cooperative multi-modal planning process can help brand transportation and economic development and assure support of public policies along with interregional cooperation to achieve economic development and transportation needs and improve transportation and housing choices. This paper briefly reviews these issues and provides selected case study information of other transportation and economic development corridors and how transportation, public policies and regional cooperation can address livability and sustainability issues.

Leveraging Regional Cooperation through Regional Rail

Enhanced rail service connecting the Peoria and Bloomington/Normal Metropolitan areas in the context of the large Abraham Lincoln Interstate 74 Knowledge Corridor with connections to multi-modal high-speed Amtrak Chicago to St. Louis Rail presents significant opportunities to leverage regional cooperation.

Leveraging regional cooperation has become more and more critical over the last five years, especially in these post-recessionary times. With public funding low due to the recession and depressed real estate market, and private investment slow to return, levering assets regionally has becoming increasingly more important. In addition, many public sector funding agencies are showing preference to funding requests by regional and cross-discipline applicants.

Best practices of regional collaboration has found the following: 1) Broad base of leadership is needed to support meaningful regional collaboration; 2) A sense of common purpose among public, private, and non-profit leaders; 3) Regional scorecards provide a benchmark for regional improvement; 4) Regions see the need for better alignment of all regional resources; 5) Acknowledgment of the need to build regional leadership capacity; 6) The understanding of the need for clear metrics, transparency and accountability; 7) The importance of recognizing and leveraging a broad base of regional assets.

Enhancing the Interregional Market Base

The interconnectivity between Peoria and Bloomington Normal converts 378,000 and 169,000 population centers and 158,000 and 70,000 employment centers to an expanded population of over half a million and employment of almost a quarter of a million. When Champaign-Urbana and the Quad Cities are included an economic powerhouse of almost 1.2 million people and more than 500,000 jobs is created.

Along the greater Quad Cities to Champaign corridor there are over 51,000 companies and half a million employees. The table to the right shows the location quotient of establishments across the corridor. Note: the corridor boundaries were estimated to provide a basis for this analysis.

by NAICS Codes	Location Quotient
Agriculture, Forestry, Fishing & Hunting	1.48
Mining	0.42
Utilities	1.42
Construction	1.04
Manufacturing	0.90
Wholesale Trade	0.91
Retail Trade	0.93
Transportation & Warehousing	1.19
Information	1.05
Finance & Insurance	1.13
Real Estate, Rental & Leasing	0.84
Professional, Scientific & Tech Services	0.73
Management of Companies & Enterprises	1.04
Administrative & Support & Waste	0.98
Educational Services	1.12
Health Care & Social Assistance	1.06
Arts, Entertainment & Recreation	1.15
Accommodation & Food Services	1.08
Other Services (except Public	1.09
Public Administration	1.42
Unclassified Establishments	0.54

Creating an Economic Cluster Powerhouse

The economic engines of Caterpillar, Mitsubishi, Easton Bell Sports and John Deere combine to make a significant and advanced manufacturing cluster. The USDA Center for Agriculture Research, and various applied technology centers including Bradley University, Illinois State University, Augustana College, Illinois Wesleyan College, and the University of Illinois provide a world-class education and a center of innovation and invention. The University of Illinois Medical Center, St. Francis Medical Center and Carle Hospital and others make the area a medical powerhouse.

All across the country, university research is partnering with private companies and other educational institutions to provide critical employment, innovation and research support. Successful economic development strategies going forward in this growing knowledge economy are fully leveraging the university, corporate and community assets. For example, the table on the next page shows that research expenditures for universities in the greater Peoria corridor are nearly $536.8 million, with the largest research sectors in life sciences and engineering.

Academic Institution - FY 2010	Bradley U.	Illinois State U.	U. of Illinois at Springfield	U. of Illinois at Urbana-Champaign	Total
Education	$5	$11,208	$23	$5,298	$16,534
Engineering	$852	$0	$0	$139,863	$140,715
Geosciences	$0	$127	$0	$7,174	$7,301
Life Sciences	$164	$3,387	$86	$180,847	$184,484
Math and Computer Sciences	$70	$432	$10	$71,300	$71,812
Physical Sciences	$30	$1,136	$8	$61,191	$62,365
Psychology	$4	$8	$0	$15,426	$15,438
Social Sciences	$2	$358	$1,704	$15,827	$17,891
Social Service Professions	$0	$244	$21	$3,838	$4,103
Other Non-science Disciplines	$24	$1,517	$244	$14,369	$16,154
Total	**$1,151**	**$18,417**	**$2,096**	**$515,133**	**$536,797**

Note: Figures in the table above are in thousands ($000's)

Cooperative Multi-modal Planning

Rather than compete, the expanded corridor can promote and develop its interconnected assets to utilize commuter rail, intercity rail, regional rail and high-speed connections to Chicago and St. Louis to enhance its interconnectivity, competitiveness and improve both passenger and freight rail movement.

An important strategy component is to provide for smooth and efficient transport of both people and freight on and between rail corridors (freight, high speed, intercity and commuter rail services), highway corridors and freight and passenger hubs.

Goals should include: 1) Reduced congestion along and best use plans for key rail/highway corridors; 2) On-time performance of 80 percent or higher for all passenger rail trains, while maintaining fluid freight movements for current and future traffic levels; 3) Improved air quality, reduced greenhouse gas emissions and reduced dependence on gas; and 4) Partnership with other counties, regions and even states and multi-state organizations to address potential interstate transportation issues and needs.

Develop a strategic plan for intercity passenger service in the corridor. Criteria for determining when to implement new intercity service, funding strategies, and roles and responsibilities of metropolitan planning agencies, local planning, transit agencies and cities. Strive to achieve a travel experience that will satisfy customers and maximize ridership.

Develop a commuter strategy including designating commuter rail for future use where feasible. 1) Service and appropriate frequency to major metropolitan areas; 2) Identify TOD opportunity areas; 3) Ensure that bedroom communities and major employment centers connected with commuter rail service.

Case Studies of Other Transportation/Economic Development Corridors

Improved transportation services combined with land use and economic development policies, strategies and physical improvements can result in compact, mixed-use development and public-private partnerships which will improve interconnectivity, competitiveness and productivity as is being demonstrated in numerous locations such as the CT/MA Knowledge Corridor, California's Capital Corridor, Downeaster Corridor (Maine) and Keystone Corridor (Pennsylvania), among others. For example, a brief overview of the California Capital Corridor is presented below.

California's Capital Corridor.

The Capital Corridor is an intercity passenger rail corridor operated by Amtrak that provides fast, reliable, and affordable service to 16 stations in the Northern California Mega-Region. The service began in 1991 with six daily trains between San Jose and Sacramento and by 2010 was operating 32 weekday trains between Sacramento and Oakland, and 14 daily trains to San Jose. In 1988, the Capitol Corridor Joint Powers Authority (CCJPA), broke away from the state rail authority and has managed the Capital Corridor ever since. In the first two years, CCJPA was able to expand train service by 50 percent and achieve substantial gains in ridership, revenues, and operating efficiency. In the full 12 years since taking over the Capital Corridor service, frequency has quadrupled, ridership and revenue have more than tripled, and the revenue-to-cost ratio has improved by 56 percent.

Four universities are located on the Corridor: San Jose State, Sacramento State, University of California-Berkeley, and University of California-Davis. The student and faculty of these schools make up a significant segment of the Corridor's ridership and CCJPA has taken care to cultivate this very important ridership group. The most remarkable aspect of the Capital Corridor is the revitalization and transit-oriented development that it has encouraged in the downtown areas of communities with one of its 16 stations.

Branding Transportation and Economic Development Cooperation

Branding, promotion, interregional cooperation and joint seeking of funding can help create a more livable and sustainable region leveraging transportation and land use assets and providing policies to support smart growth and more compact mixed-use transit oriented development.

As noted above, regional cooperation has become more important in securing funding and public sector participation in the process. To the same point, regional cooperation is important in developing a "brand" for the Corridor that while tailored for each node along the Corridor, carries a consistent brand message. By carrying the same brand message the investment in marketing and placed media, and the efforts involved in securing earned media, will be leveraged to the be greater than the sum of the parts. For instance, it might be cost prohibitive to send an economic development delegation on cross country or international trade mission. But as a leverage group with a greater resource base such a trip would not be out of the question.

When developing the brand it is important to involve a variety of key stakeholders, build off of the indigenous resource mapping described below and seek buy-in from both public and private sector

partners. The more support a brand has at its inception the stronger it will be used throughout.

Combining Transportation and Supportive Public Policies

The concept is to leverage improved transportation and supportive public policies to stimulate new public-private sector cooperation linking transportation improvements, land use, education infrastructure and the linkage between jobs and residents to optimize the larger regions infrastructure investments, economic development opportunities and quality of life.

Several frameworks can be applied to understanding transportation in the context of sustainability. One example of such a framework is presented by Timothy Bevan, Donna Day, Robin Senner and Sam Seskin in a recent paper for the Canadian Institute of Transportation Engineers (CITE) entitled Planning for Sustainability: Planning for Sustainable Transportation Infrastructure. The basic tenets of this framework follow.

Much of the existing transportation infrastructure in the United States was developed with an emphasis on vehicle mobility and safety, minimized short-term upfront capital costs, and gave less consideration to social and environmental aspects. Solutions to meeting mobility needs have historically focused more on expanding capacity than on addressing demand management, improving operational efficiency, or considering integration with surrounding communities.

Step 1 of the Two-Step Transportation and Sustainability Framework is to consider the full range of demand management, system efficiency, and infrastructure capacity solutions that can be considered for addressing mobility needs. When thinking of solutions in this way, comprehensive transportation system plans and specific improvement plans can consist of components from each category.

Step 2 of the Two-Step Transportation and Sustainability Framework comes into play when a transportation agency decides that a transportation problem is best addressed through the construction of new infrastructure. When infrastructure solutions are selected to meet mobility needs, further opportunities to improve sustainability are available. Step 2 frames projects in more sustainable ways by aligning projects to five broad objectives: Reduce Energy Consumption, Reduce Consumption of Material Resources, Reduce Impacts to Environmental Resources, Support Vibrant Urban Communities, and Support Sustainability During Implementation (defined as construction and operations and maintenance). The objectives are described further below.

> Reduce Energy Consumption — includes options and project solutions that reduce energy consumption, support energy efficient movement of people and goods, and use resources with lower operations and maintenance requirements.
>
> Reduce Consumption of Material Resources — includes design solutions that reduce the consumption of virgin material resources, use recycled materials in construction, require less infrastructure in the solution, or increase durability and life of the design.

Reduce Impacts to Environmental Resources —includes solutions that minimize impacts on surrounding ecosystems, encourage and support biodiversity, and reflect historical and cultural context.

Support Vibrant Urban Communities —includes solutions that incorporate features that support community livability; public services and adjacent land uses; and enhance public health, safety, and security for all people.

Support Sustainability during Implementation — includes solutions that support local economic, social, and resource management needs, or that reduce impacts during the construction of a capital project, or during operations and maintenance of physical transportation projects.

Improving Connectivity, Transportation/Housing Choices and Interregional Collaboration

The connectively should link disparate resources to increase accessibility, productivity and create expanded transportation and housing choices, opportunities diversification and interregional collaboration.

An approach to linking disparate resources is indigenous resource mapping. Indigenous mapping is a disciplined process for discovering what is truly unique about a region and its competitive advantages. The discovery will include both tangible assets such as infrastructure and cultural/historical and intangible assets including excellence, work ethic, innovation and knowledge. When gathered through a community/key stakeholder process, indigenous resource mapping is intended to be a wide open brainstorming activity with no right or wrong input. Discoveries are proportional to the amount of quality input and ranked accordingly.

Transportation can serve to interrelate the regional assets with the enhanced interconnectivity, inter-modal/logistical linkages, multi-modal linkages, strong industry/manufacturing base, educated/skilled workforce, research capabilities, education /training, strong healthcare sector, quality of life, affordability/cost of living, proximity/connections to St. Louis/Chicago.

Appendix 2: Public Outreach

On behalf of the Tri-County Regional Planning Commission, Romac Ventures (RVC) conducted a public information drive with various stakeholders and interested parties during September and October, 2012. In all more than 20 organizations were contacted and engaged on the subject of Commuter Rail in Central Illinois.

In each meeting, an agenda of several points was covered:
• the history of rail in Central Illinois and the greater Peoria area;
• the conduct of studies through the years;
• the securement of an FTA grant in 2011 to study Commuter Rail in Central Illinois;
• the establishment of a study of the feasibility and benefits of Commuter rail;
• the ridership modeling effort;
• the investigation of various Transit Oriented Development (TOD) possibilities along the I74 corridor under study;
• the examination of a route which linked various 'bus-receptive' stakeholder elements to rail via bus shuttle systems;
• the opportunities for 'destination' attendance enhancement with Commuter Rail;
• the opportunity to create a vital link for underemployed and transit dependent residents along the corridor;
• a benefit for the more than 100,000 students at Universities along the corridor;
• the creation of a potentially 'nationally significant' employment center feeder route circulator system;
• possible schedule and route and possible station locations being studied.

Romac Ventures was favorably greeted in every session. Many were surprised about the study because they had thought the study had happened and was discontinued a year before. Nearly every conversation ended with the discussion raised by the stakeholder representative as to the possibility of having an expanded system in the years ahead. Romac Ventures acknowledged that the conversation is strong to that point, but that this study would not present such an expanded system for the present.

Passenger Rail Advisory Committee Contact

RVC met with the Passenger Rail Advisory Committee (established by Tri-County Regional Planning Commission in 2010) of the commuter rail study numerous times since the study has begun. As a practical matter, the TCRPC PRAC is the citizen's advisory committee for the commuter rail study. The committee is comprised of a combination of elected officials, appointed staff, and interested citizens from both the Peoria and Bloomington/Normal metropolitan areas.

Media

RVC presented a power point demonstration of the corridor, its stakeholder relationships to the route, unique opportunities and their locations, proposed station locations, and likely terminal points. Power points were provided to several groups upon request. Literature is being developed for the next round of presentations.

Informational Meetings with Communities

City of Bloomington:
The City of Bloomington is a Central Illinois community with a population of 76,000 residents. The City of Bloomington was represented by Mr. David Hales, assistant City manager, Barbara Adkins, and Public Works director, Jim Karch.

The group was enthusiastic. The manager stated that the 'really' pro rail person on their team was the Mayor, Steve Stockton.

A downtown opportunity for a TOD was discussed briefly. There is no opposition to discussing it further. A TOD had never been an option for the community before.

Town of Normal:
Normal was represented by Mr. Mark Peterson. Mr. Peterson has been an active member of the TCRPC PRAC, the citizens and elected official advisory committee since 2010. Normal has a population of 53,000 residents.

Normal had been under the impression that a connection to the new Uptown Multimodal transportation Center, which also houses the City Hall offices, would be connectable to the route. RMC explained that the most likely and affordable connection is via Shuttle bus, which will go right through the center of campus at ISU, dropping students and employees at the Red Bird Arena, the Bone Center, and the Uptown Intermodal center in less than 7 minutes.

An opportunity exists for an excellent TOD at College Ave and White Oaks road at the tracks, as there is a very large unoccupied farm at that location.

City of Peoria:
RVC met with the Mayor, James Ardis, and the City Manager, Patrick Ulrich. A presentation was made and the Mayor indicated strong support for the proposed rail line. The opportunity exists to provide Peoria with an Airport and a downtown connection. The City has a population of 115, 000 and has a budget of over $ 169 million dollars annually. There are over 340,000 residents in the Peoria metropolitan area.

City of East Peoria:
RVC met with the Mayor of East Peoria, Mayor David Mingus, and the Planning Director, Ty Livingston. Meetings were held in the village Hall. The Mayor is a supporter of the rail line. Ty Livingston was advised that there would need to be some adjustments to the track configuration where the proposed station is located. The area will likely require double tracking, re-design and rebuild of two crossings, and a new bridge.

Naturally, the station can likely go where it is planned, but budget considerations will come into play. A tour of the station location has been made by RVC and the Planning Director to discuss the issues which are in play. There are over 24,000 residents in East Peoria.

Village of Morton:
RVC met with Mayor Norm Durflinger and Trustee Steve Newhouse of Morton. The city has a population of about 20,000. The Mayor is a supporter. He thinks that most people will think they can just go to a location quicker than to fiddle around with trains, but recognizes that it won't always be that easy in the future. Mr. Steve Newhouse is a reluctant supporter but indicates that he does support the proposed line. The village had already identified, planned, and zoned the site for the proposed station. The site is excellent.

Morton is the home to the Libby pumpkin processing facility which processes more that 80% of the pumpkin pulp supplied to the baking industry and homes in America. The Morton Buildings manufacturing company, a national prefabricating company, is in Morton. Morton is also home to Caterpillar Logistics Services with over 3,000 employees.

Tazewell County:
RVC met with the Chairman of Tazewell County, Mr. David Zimmerman, who was very supportive of the proposed rail line. Mr. Zimmerman indicated that the County would be supporting the rail study efforts. Tazewell County has more than 130,000 residents.

Woodford County:
RVC met with Woodford County Board Member Larry Whitaker. Mr. Whitaker is also the current Chairman of the Tri-County Regional Planning Commission. The Chairman is naturally concerned that the ridership numbers are found to be high enough for the continuation of the study. He is supportive of the proposed rail service. Woodford has approximately 38,000 residents.

Private Organizations

State Farm Insurance
The headquarters of State Farm Insurance Company is a major employment center, with over 20,000 employees within three minutes of the proposed Bloomington station. Mr. Kevin Callis, Vice President, is the contact with the company. Mr. Callis attended a presentation at the McLean County Chamber of Commerce conducted on behalf of the Study by Mr. Charlie Moore, Executive Director of the Chamber.

CIRA

CIRA is the Central Illinois Regional Airport, located in Bloomington. Ms. Fran Stebing, marketing director of CIRA, attended a meeting with RVC. Ms. Stebing was very positive. The airport is approximately five minutes by shuttle bus from the southeast Bloomington station. CIRA currently operates its own shuttle service for its parking lots, which may be expanded for the commuter rail link.

OSF St. Francis Medical Center

The OSF St. Francis Medical Center in Peoria is within a three minute bus ride from the proposed Peoria downtown station. There are more than 5,000 employees and 900 medical staff members. Mr. Jon McKee is the hospital contact. St Francis is concerned that it will be asked to provide some operating or Capital dollars to the project and does not think it can do that at this time, in spite of the assurances of RVC that any requests for funds of any kind is premature.

EDC

The Economic Development Council of greater Peoria, represented by Ms. Sally Hanley, hosted a meeting of stakeholders. In attendance were the area Director of the Illinois Economic Development Agency, Mr. Anthony Rolando; Mr. Dennis Kief, acting Regional Economic Development Director of Peoria County, and representatives from local jurisdictions.
The meeting was very positive. Many suggestions were given as to what positive impacts could be realized by such a line.

General Wayne A. Downing International Airport

RVC met with Mr. Gene Olson, Executive Director of the Peoria International Airport (PIA). Mr. Olson was very positive about the positive impact for residents of the area, although he did not really see a positive impact for the airport itself at this time. Mr. Olson said there are also 1,300 jobs at the site, as there is a National Guard Training center located here. Mr. Olson saw the positive impact for employees at the base, and indicated that the shuttle buses which are operating non-stop at its parking lots, could operate to the shuttle station location at /airport Road. There are more than 300 airport workers here at the site, and the airport has more than 500,000 enplanements each year.

Bradley University

Bradley University is home to more than 6,000 students and approximately 1,000 staff and employees. Ms. Barbara Carraway met with RVC. The University sees a great connection impact to the students of Bradley, particularly since the newest market for the University is St. Louis, Missouri, where many students reside. Ms. Carraway said there is no present rail connection to the Amtrak train in Normal, which has departures to St. Louis and Chicago.

Illinois State University

RVC met with Mr. Jay Groves of ISU, presented the power point presentation and discussed the rail/shuttle connection with ISU. Mr. Groves saw the positive impact. Mr. Groves indicated that ISU works very closely with other key stakeholders of Normal and Bloomington, so the University will need discuss the proposed train service with many other organizations before it can state that it is a supporter. Mr. Groves was very encouraged by the people with whom RVC had already met and found support. ISU is home to more than 13,000 students on its campus. There are approximately 2,000 staff and employees.

Peoria Area Convention and Visitors Bureau

RVC met with Mr. Don Welch of the PCVB in Peoria. It represents seven counties in the Greater Peoria Area. RVC presented its Power Point Presentation to him. Mr. Welch was very supportive of the proposed train. He will be discussing it with his Board at their next available Board meeting. RVC offered to come back and speak with whomever he requested in the future.

McLean County Regional Planning Commission

RVC met with Ms. Jennifer Sicks, Planning Director of the MCRPC. Ms. Sicks was very positive about the proposed service. She was not able to indicate support due to possible funding implications which would need considerable discussion at a later date. Ms. Sicks offered that her Planning and GIS data base division would be available to produce GIS mapping tools to assist the Consultant teams in Economic Development, traffic, and ridership analysis investigations.

McLean County Chamber of Commerce

RVC met with Mr. Charlie Moore, the President of the McLean County Chamber of Commerce who was very interested in the proposed rail line and the positive effects which RVC believed would be resultant from such a service initiation. Mr. Moore made a presentation to his board and indicated that he Board will continue to address the issue of support in the future.

Railroads

TPW Railroad-Genesee and Wyoming Railroad

RVC met with Mr. Paul Crawford of the TPW Railroad, and the Trainmaster, Mr. Preston Nelson. Mr. Crawford explained that an impending sale of his company to the Genesee and Wyoming Railroad should not pose difficulty for rail service. Mr. Crawford said that the railroad has been instructed that it will operate as it has always done for the immediate future anyway.

TZP Railroad-Genesee and Wyoming Railroad

RVC met with Mr. Spencer White, Vice President of the TZP railroad who was very helpful. He explained the consequences of some railroad mergers about to take place. Mr. Spencer also explained that the bridge across the Illinois River is operated and dispatched by the TZP, despite the bridge being owned by the P&P railroad…a terminal switching company owned by the UP, NS and BN class 1 railroads. The TZP will need the approval of the owners; however, they saw no major difficulty taking on another customer, the TZP will not allow for a degradation of service and requires that if PTC is brought into the yard, the TZP will need to be equipped as well. It is initially recommended that the TZP yard through which the Commuter rail service will need to travel, be circumvented by

an additional track, since the current highland runaround track is often used for a make-up track for assembling trains to leave town. RVC witnessed such a train being assembled while it visited the yard that afternoon.

P&P Railroad-Genesee and Wyoming Railroad

RVC met briefly with Ms. Julie Evans of the P&P railroad. She indicated the same things offered by Mr. Spencer White of the TZP rail. P&P railroad follows the lead of the Genesee and Wyoming railroad.

Union Pacific Railroad

RVC met with Mr. Adrian Guerrero of the Union Pacific railroad. The door remains open to continued discussions and the possibility of use by the service. Naturally, no diminishment of service can be experienced by the UP in the process. RVC indicated that before any actual proposals of service are presented to the UP, all options and schemes will be addressed by the study.

Other Stakeholders

Heart of Illinois Regional Port District

RVC met with Mr. Steve Jaeger, Executive Director of the Port District. The District services 95 miles of territory and six counties along the Illinois River. There are more than 40 barge terminals in the stretch of river. Mr. Jaeger was very positive. Mr. Jaeger has also served on the PRAC advisory committee of the TCRPC since 2010. Mr. Jaeger saw opportunities for the communities on the line, residents of the communities, and Central Illinois in general. The Port District is immediately accessible to four interstate highways and 13 railroads.

US Coast Guard

On advice that the US Coast Guard is very influential as to the use of the bridge crossing the Illinois River, RVC met with Lt. Micah Bonner and an aid to discuss the proposed service, the stations involved, and the use of the bridge. Lt. Bonner and staff were very supportive of the service. RVC was told that the number of seconds that the service would actually affect the bridge occupancy each day were cumulatively less than two minutes. Each train will probably require less than 10-12 seconds. The Coast Guard will assist in any way that it can as the study continues.

	Description	Quantity	Unit	Base Year Dollars w/o Contingency	Base Year Dollars Allocated 20% Contingency	Base Year Dollars Total	(3.0%) Escalation	YOE Dollars
10.00	GUIDEWAY & TRACK ELEMENTS (Route Feet)	264,000	RF	$21,211,250	$4,242,250	$25,453,500	$4,872,898	$30,326,398
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL	9	EA	$25,155,000	$5,031,000	$30,186,000	$5,253,673	$35,439,673
20.00	STATIONS, STOPS, TERMINALS, INTERMODAL	9	EA	$25,155,000	$5,031,000	$30,186,000	$5,253,673	$35,439,673
30.00	SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS		RF	$1,190,000	$238,000	$1,428,000	$247,747	$1,675,747
40.00	SITEWORK & SPECIAL CONDITIONS		RF	$6,460,000	$1,292,000	$7,752,000	$1,496,521	$9,248,521
50.00	SYSTEMS		RF	$9,350,000	$1,870,000	$11,220,000	$2,284,220	$13,504,220
SUBTOTAL SCC CATEGORIES 10-50				$63,366,250	$12,673,250	$76,039,500	$14,155,060	$90,194,560
60.00	ROW, LAND, EXISTING IMPROVEMENTS			$5,934,380	$1,186,876	$7,121,256	$672,345	$7,793,601
70.00	VEHICLES (#)			$29,681,000	$3,136,200	$32,817,200	$6,848,853	$39,666,053
80.00	PROFESSIONAL SERVICES (SCC CATEGORIES 10 - 50)	28.50%		$18,059,381	$3,611,876	$21,671,258	$2,981,109	$24,652,366
80.01	Preliminary Engineering	3.00%	LS	$1,900,988	$380,198	$2,281,185	$313,801	$2,594,986
80.02	Final Design	8.00%	LS	$5,069,300	$1,013,860	$6,083,160	$836,802	$6,919,962
80.03	Project Management for Design and Construction	6.00%	LS	$3,801,975	$760,395	$4,562,370	$627,602	$5,189,972
80.04	Construction Administration & Management	5.00%	LS	$3,168,313	$633,663	$3,801,975	$523,002	$4,324,977
80.05	Professional Liability and other non-Construction Insurance	2.00%	LS	$1,267,325	$253,465	$1,520,790	$209,201	$1,729,991
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	1.50%	LS	$950,494	$190,099	$1,140,593	$156,900	$1,297,493
80.07	Surveys, Testing, Investigation, Inspection	1.50%	LS	$950,494	$190,099	$1,140,593	$156,900	$1,297,493
80.08	Start-up	1.50%	LS	$950,494	$190,099	$1,140,593	$156,900	$1,297,493
SUBTOTAL SCC CATEGORIES 10-80				$117,041,011	$20,608,202	$137,649,214	$24,657,367	$162,306,580
90.00	Contingency (Unallocated)	10.00%		$11,704,101	$2,060,820	$13,764,921	$2,465,737	$16,230,658
100.00	Finance Charges (included in Contingencies)			$0		N/A		N/A
TOTAL PROJECT COST (10-100)				$128,745,112	$22,669,022	$151,414,135	$27,123,103	$178,537,238

The $4 million funding request is based upon approximately $2.4 million (rounded) for preliminary engineering (see above line 80.01) and approximately $1.6 million (rounded) to complete the environmental assessment (see next page).

Jacobs' Estimate for TCRPC Commuter Rail (11-20-12)

Task	Hours	Rate	Direct Salary	Total Labor
Natural Environment				
Water Resources/Wetlands	60	$45	$2,700	
Protected Species	40	45	1,800	
Farmland	120	45	5,400	
Forest/Natural Habitats	50	45	2,250	
Air Quality	200	55	11,000	
Man-Made Environment				
Land Use	400	50	20,000	
Neighborhood/Community Impacts	200	50	10,000	
Socioeconomics	400	50	20,000	
Environmental Justice	250	50	12,500	
Traffic & Transportation	400	60	24,000	
Noise	600	60	36,000	
Vibration	200	60	12,000	
Hazardous Materials	600	55	33,000	
Parks/Public Lands	50	45	2,250	
Cultural Resources	200	50	10,000	
Construction Impacts	100	50	5,000	
Energy	100	45	4,500	
Indirect & Cumulative Effects	200	50	10,000	
Other				
Financial Planning	200	65	13,000	
Agency Coordination	600	65	39,000	
Public Involvement Support	1,800	60	108,000	
Project Management	1,000	90	90,000	
Document Preparation				
PDEIS	700	70	49,000	
DEIS	300	70	21,000	
PFEIS	250	70	17,500	
FEIS	150	70	10,500	
ROD	300	70	21,000	
TOTAL	**9,470**		**$591,400**	**$1,360,220**

Directs --10%	$136,022
National Ridership Model - CTG*	$75,000
Grand Total	**$1,571,242**
Rounded	$1,600,000

** If a new mode choice model is created from the two region's models with surveys and validation, the cost would be on the order of the $0.5 million.*