

# Peoria Programs Rail

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## COMMUTER RAIL CONCEPT—PEORIA-BLOOMINGTON-NORMAL, IL

Illinois has eight metropolitan statistical areas (MSAs) that lie fully within the state's boundaries. Peoria is the largest of these with a population of 379,186 in the 2010 US Census and it does not have any passenger rail service, while smaller SMAs have rail, including access to Illinois' emerging high speed rail (HSR) service. Peoria would like to have rail service and access to high speed rail.

The Tri-County Regional Planning Commission (TCRPC) with offices in downtown Peoria, is evaluating developing a commuter rail service linking with nearby Bloomington-Normal jobs and population, including a link to the Uptown Station's high speed rail service in Normal. Together, the two anchors for the proposed commuter rail service include over a half million persons and an additional 100,000 University students. TCRPC engaged multiple consultants to assist in developing the commuter rail concept.

Romac Venures was engaged to develop the concept with the railroads and to coordinate with the various governmental jurisdictions. The Jacobs team was engaged to assist in defining the route and station locations, estimating ridership, estimating capital and operating costs, exploring sources and uses of funds, and considering transit-oriented development (TOD) potential and related economic development issues. This paper presents key findings for the initial concept study.

### Concept Description

The concept is to use the existing Norfolk Southern (NS) trackage paralleling I-74 between the two communities and additional local railroad trackage to develop an approximately 50-mile-long line with nine stations extending between major employers near each community's airports. A short segment of new single track is proposed to reach the existing CityLinks multimodal bus terminal in downtown Peoria. Park-n-ride capacity is proposed for each station, including a garage in downtown Peoria, and bus shuttle operations are proposed to gather and distribute riders to and from nearby employment and educational venues.



### Rail Operations

NS operates one local train Sunday through Thursday, one coal train per week and two grain trains per week on its trackage between Peoria and Bloomington-Normal, according to a recent Amtrak study. The current maximum allowable train speed is 49 mph between East Peoria and Bloomington; segments between Peoria and East Peoria have a maximum speed restriction of 10 mph. The lift bridge between Peoria and East Peoria is raised 10 to 20 times a day to accommodate barge traffic, depending on the season of the year; however, coordination with the railroad and the Coast Guard suggest that bridge operations will not conflict with proposed rail operations.

Upgrades in trackage are expected to accommodate maximum 75 mph passenger rail operating speeds, with lower speeds in sections with curves, development activity, and/or multiple grades. Proposed operating speeds take acceleration and deceleration into account and are based on characteristics of the Stadler GTW DMU (the rail vehicle used in Austin and in Denton, TX). Dwell times were assumed to be 30 seconds, except at the Downtown Peoria station where a five-minute dwell time was used to account for the need to reverse train operations. The proposed operations will require building a siding to accommodate a train meet.

Alternative rail operating scenarios were developed for eight and six round trips over 12 and nine-hour service periods. Both 1½-hour and two-hour service frequencies were considered for the approximately 50-mile-long end-to-end service using two-car train consists, resulting in the following rail operating characteristics.

Round Trips / Service Hours	Daily			Annual	
	Trips	Car-Miles	Train-Hrs	Car-Miles	Train-Hrs
8 / 12	16	1,575	24.0	399,980	6,100
6 / 12	12	1,181	24.0	299,980	6,100
6 / 9	12	1,181	18.0	299,980	4,570

### Shuttle Bus Service

Numerous trip attractions (e.g., major employment centers) are located beyond a reasonable walking distance of proposed rail stations. Existing public transit can serve some proposed rail stations and others would benefit from additional bus service. Dedicated shuttle services were evaluated to connect major employment centers with nearby proposed stations at the following stations:

- **Peoria Airport Shuttle** – potentially connecting with Peoria’s airport terminal and National Guard installations on Smithville Road and Airport Road.
- **East Peoria Shuttle** – potentially connecting to nearby major employers: the Pair-of-Dice Casino, Illinois Central College, and the Caterpillar Plant.

- **Morton Shuttle** – potentially connecting to the Wal-Mart Supercenter, the Caterpillar Logistics Services, and the Libby Pumpkin Processing Plant.
- **West Normal Shuttle** – potentially connecting to the Mitsubishi Plant, as well as to Illinois State University, and the Amtrak/high speed rail Uptown Station.
- **Southeast Bloomington Shuttles** – potentially connecting to major employment destinations along Veterans Parkway, including State Farm Insurance campuses, St. Joseph’s Hospital, and Countrywide Insurance, as well as to Bloomington’s Central Illinois Airport.

### Ridership

Preliminary ridership estimates were initially developed for three alternatives; the Tri-County Regional Planning Commission’s (TCRPC) Passenger Rail Advisory Committee (PRAC) elected to focus on one of the alternatives consisting of nine stations.

Ridership estimates were prepared, in part, on the Federal Transit Administration’s (FTA) Aggregate Rail Ridership Forecasting (ARRF) Model (version 2.0). The actual results achieved may vary from the projections, and those variations could be material.

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

The forecasts considered two operating scenarios of 6- and 8-trains per day per direction. Results in the table below show a range of ridership results—low, medium, and high. Low estimates do not reflect peripheral 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.

Range of Estimates by Trains per Day per Direction	Daily Ridership		Annual Ridership (x254)	
	8	6	8	6
No. of Trains	8	6	8	6
<b>Low</b> —Unadjusted ARRF Forecast	1,386	1,242	352,044	315,468
<b>Medium</b> —Adjusted for Bus Circulators	1,492	1,337	378,968	330,598
<b>High</b> —Adjusted for Bus Circulators and TOD	1,563	1,400	397,002	355,600

\*Transit-Dependent Ridership is estimated to be 11% of total ridership.

Income-based as opposed to auto-ownership-based estimates were computed using Year 2000 Census information to calculate the volume of low income riders accessing each rail station. Results were summed and then annualized to arrive at the total passenger volumes, which show an estimated transit dependency of 11 percent of daily ridership.

The following table shows the expected daily boardings at each of the proposed stations with six and eight train runs per day:

2035 Forecast By Station	Daily Boardings (Rounded)	
	6	8
<b>Trains:</b>	<b>6</b>	<b>8</b>
Peoria Airport	170	220
Downtown Peoria	320	380
East Peoria	180	220
Morton	80	150
Goodfield	10	10
Carlock	10	10
West Normal	120	150
Bloomington	200	240
SE Bloomington	160	190
<b>Totals</b>	<b>1,250</b>	<b>1,570</b>

### Cost Estimate and Funding Potential

Rough order-of-magnitude (ROM) costs were estimated for the project and categorized into FTA's standard cost classifications. The cost estimates were developed assuming a start of construction in the first quarter of 2015 and with an aggressive two-year construction schedule. A 30-percent contingency was applied, given the project's very preliminary stage, and three percent escalation was used.

Potential sources of funding were identified, based on typical national experience for comparable projects and on local conditions. The financing options include potential federal, state, and local funding sources that could be used to develop the proposed commuter rail project, as well as cover the project's annual operating expenditures. The analysis shows that 100 percent of capital and operating costs can be covered using the identified funding sources. The following tables present proposed funding sources alongside the project's estimated capital and operating costs.

Capital Costs (Total)					
Sources	M	%	Uses	M	%
FTA New Starts Grants (5309)	\$ 75.0	42%	Track-work	\$ 30.3	17%
Subtotal Federal	\$ 75.0	42%	Stations	\$ 35.4	20%
IDOT-DPIT Grants	\$ 25.0	14%	Yard & Shops	\$ 1.7	1%
Illinois Finance Authority Loans	\$ 25.0	14%	Parking	\$ 9.2	5%
Subtotal State	\$ 50.0	28%	Systems	\$ 13.5	8%
TCRPC STP-MM Funds	\$ 1.6	1%	ROW	\$ 7.8	4%
Sales Taxes	\$ 38.6	21%	Vehicles	\$ 40.0	22%
Bonds	\$ 13.6	8%	Professional Services	\$ 24.7	14%
Subtotal Local	\$ 53.8	30%	Contingency	\$ 16.2	9%
<b>Total</b>	<b>\$178.8</b>	<b>100</b>	<b>Total</b>	<b>\$178.8</b>	<b>100</b>

Operating Costs (Annual)*					
Source	M	%	Uses	M	%
Fares	\$3.8	24%	Rail Operations	\$12.6	79%
Parking	\$1.0	6%	Bus Operations	\$2.1	13%
Advertising & Rents	\$0.1	1%	Interest	\$1.3	8%
Sales Taxes	\$11.1	69%			
<b>Total</b>	<b>\$16.0</b>	<b>100%</b>	<b>Total</b>	<b>\$16.0</b>	<b>100%</b>

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

### Supportive Public Policy Considerations

An important aspect of the rail concept is having public policies that support rail and in turn can benefit from rail.

The two metropolitan planning agencies and the various jurisdictions are in the process of adopting zoning, land use, infrastructure and economic development policies and regulations to supplement and enhance existing zoning policies, subdivisions regulations, overlay districts, capital budgeting/infrastructure investment policies, economic development policies, planning and zoning approval processes, public-private partnerships, and the like to enhance transit oriented development. A summary of general policies is provided by jurisdiction below.

The communities are willing to adopt specific land-use and or zoning policies within defined areas around transit stations to facilitate and encourage transit supportive development. The communities have also expressed a willingness to provide infrastructure and other financing or funding assistance to facilitate compact, mixed-use, transit supportive development.

Specific policies are being adopted to facilitate land-use and or zoning policies within defined areas around transit stations to facilitate and encourage transit supportive development.

All Jurisdictions have indicated a desire to support policies, programs, and infrastructure investments that will encourage Smart Growth and TOD.

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

#### A. Tri-County Regional Planning Commission (TCRPC)

- The Big Plan is an integrated plan for the Tri-County region that bridges the gaps between transportation, land use, and environmental planning.
- The Big Plan focuses primarily on the regional scale, with more specific details and small area trends presented as necessary.
- The Big Plan offers five themes that were identified as mutual priorities for the region's future:
  - i) Agriculture Preservation
  - ii) Balanced Growth
  - iii) Economic Development
  - iv) Environmental Stewardship
  - v) Transportation Infrastructure

#### B. McLean County Regional Planning Commission

- The strategies outlined in the McLean County Regional Planning Commission Comprehensive Plan reflect sensible growth alternatives and are intended to guide decision making toward preserving and enhancing the region's quality of life through the year 2035." (MCRPC, 2009)
- Coordinated land use and transportation planning can help ensure that land use patterns and intensities support alternative transportation. Different modes of transportation should interconnect and complement each other. (MCRPC, 2009)
- Efforts continue at the federal and state levels to institute high speed rail service between Chicago and St. Louis, which would provide enhanced passenger rail service for Bloomington-Normal.

#### C. The City of Peoria

- The City has identified the Downtown Parking Master Plan: Development as a high priority in its Management Agenda for 2011-2012. (City of Peoria Strategic Plan, 2012)
- The City of Peoria identified a City Services Priority and Plan as a top priority within its Strategic Plan for the City to enhance Smart Growth and TOD. (City of Peoria Strategic Plan, 2012)

#### D. The City of East Peoria

- The City of East Peoria has designated the station area as an overlay district designed to encourage a more “urban environment” through reduced or eliminated setbacks and increased lot density. (City of East Peoria, 2004)

#### E. The City of Bloomington

- The station area in the City of Bloomington is zoned General Business District (B-2), and the City has plans for walkable districts with walkable urban design in the station area. The City is looking to foster multi-modal transportation by providing bicycle parking facilities and bicycle lanes in the station area. (City of Bloomington, 2005)

### ***TOD projections***

Vantage Point Development Advisors, LLC examined Regional/MPO projections from 2008-2035 to determine estimates of additional TOD at each station area. The demographic indicators analyzed in this review included change in population, households, employment, and dwelling units within the region, jurisdiction, sub areas and within 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. Local planning and development officials were interviewed about policies and programs (existing & potential) to support TOD initiatives.

A typology was established to assess TOD potential by detailing the character of each station and by categorizing the intensity of potential TOD. The station typology and empirical evidence at other stations permitted applying an assumption of a 10, 20, or 30% increase in development over the 2008 - 2035 projections.

In addition, a base or threshold level of TOD development was established at each selected station area, given the relatively low base line projections at the station areas. As a test of reasonableness, households and employment were examined to determine if the likely capture rate, or proportion of the regional demand captured by the incremental projected station area TOD reflected likely market realities.

Each of the station areas was also characterized in terms of its likely relative intensity, based on current development projections, as well as existing comprehensive plans and small area plans. 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 used. 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 approach, which is based on general empirical evidence of TOD’s ability to enhance development potential, assumed a relative increase in projected households and employment reflecting order of magnitude empirical evidence and experience in other localities with similar levels of service. An estimated 10, 20, or 30% enhancement in household and employment growth was estimated based on the low, medium, and high intensity assumptions.

The threshold level of development served as a base to establish a floor level for TOD development, given the relatively small increments of projected growth within the station areas. Without the establishment of this base or floor, the projected induced development, reflecting the modest growth projected for the individual station areas, would be so small that it would not likely be implemented. Therefore, the larger of the estimated development under either the threshold or induced development assumptions was utilized.

The baseline residential projections were adjusted upward for downtown Peoria from the MPO projections by TAZ to take into consideration the planned 2,000 units in the Warehouse District.

The results of the analysis are shown in the table below.

**TRANSIT ORIENTED DEVELOPMENT (TOD)**

Station Area	Typology		TOD Increment	
	Use Characteristics	Development Intensity	House-holds	Employ-ment
Peoria Airport	Mixed	Low	200	100
Down-town 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
Blooming-ton	Employment	Medium	200	280
Blooming-ton SE	Employment	High	200	225
<b>Total</b>			<b>2,200</b>	<b>2,700</b>

***Abe Lincoln Knowledge-Based Corridor***

The proposed passenger rail project from Peoria to Bloomington- Normal can be an important economic development contributor as part of a larger Abraham Lincoln Interstate 74 Knowledge Corridor. This project

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 to Champaign-Urbana.

An expanded cooperative multi-modal planning process along the Corridor would help brand transportation and economic development and assure support of public policies along with interregional cooperation to achieve both economic development and transportation needs and improve transportation and housing choices.

Enhanced rail service connecting the Peoria/Burlington-Normal regions in the context of the larger Abraham Lincoln Interstate 74 Knowledge Corridor with connections to multimodal high-speed Amtrak rail service between Chicago and St. Louis presents significant opportunities to leverage regional cooperation.

Best practices of regional collaboration would address the following: 1) A broad base of leadership needed to support meaningful regional collaboration; 2) A sense of common purpose needed among public, private, and non-profit leaders; 3) Regional scorecards providing a benchmark for regional improvement; 4) Regions confirming the need for better alignment of all regional resources; 5) Acknowledgement of the need to build regional leadership capacity; 6) Understanding of the need for clear metrics, transparency, and accountability; 7) Recognizing and leveraging a broad base of regional assets.

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

The economic engines of Caterpillar, Mitsubishi, Easton Bell Sports, and John Deere combine to make a significant advanced manufacturing cluster. The ag lab, and various applied technology centers, Bradley, ISU, Augustana College, Illinois Wesleyan College, and the University of Illinois provide a world-class education and a center of innovation and invention. University of

Illinois Medical Center, OSF and Carle Hospital, and others make the area a medical powerhouse.

Rather than compete, the expanded corridor would 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 and competitiveness, as well as to improve both passenger and freight rail movement.

An important strategy component is to provide for smooth and efficient movement 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. Steps should be taken to realize: 1) Reduced congestion 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 multistate organizations to address potential interstate transportation issues and needs.

Developing a commuter strategy, including designating a light density rail line for future use, where feasible, should address the following: 1) Service and appropriate frequency to major metropolitan areas; 2) Identifying TOD opportunity areas; and 3) Insuring that bedroom communities and major employment centers are connected with commuter rail service.

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. These measures will improve interconnectivity, competitiveness, and productivity as is being demonstrated in numerous locations, such as the CT/MA Knowledge Corridor, California's Capital Corridor, the Downeaster Corridor (Maine), and the Keystone Corridor (Pennsylvania), among others.