



INITIATION DOCUMENT

NORTHEAST CORRIDOR AA/EIS

June 10, 2010

DRAFT

HNTB

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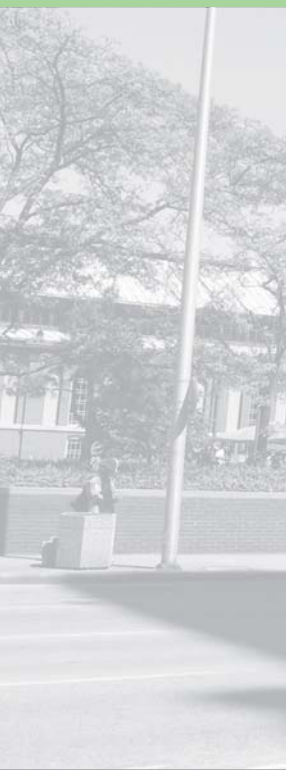
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INTRODUCTION

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The Federal Transit Administration (FTA) in concert with the Indiana Department of Transportation (INDOT) and the project’s management team (PMT), consisting of the Central Indiana Regional Transportation Authority (CIRTA), the Indianapolis Metropolitan Planning Organization (Indianapolis MPO) and Indianapolis Public Transportation Corporation (IndyGo), are preparing an Alternatives Analysis/Environmental Impact Statement (AA/EIS) relating to proposed fixed guideway transit improvements in the Northeast Corridor located in Marion and Hamilton counties in Indiana. As defined by the FTA, a “fixed guideway” refers to any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part.

The Central Indiana region has recognized the need for transportation improvements in the Northeast Corridor for several decades. In 1980, a planned extension of I-69 between I-465 and the I-65/I-70 junction on the northeastern edge of downtown Indianapolis (I-165) was cancelled by the mayor of Indianapolis and the governor of Indiana due to concerns about community impacts. As population and employment in the corridor continued to grow through the 1980s, 1990s, and 2000s, existing arterial and expressway routes experienced increasing levels of congestion and other mobility challenges.

A series of studies has consistently identified the Northeast Corridor as the region’s top priority for fixed guideway transit investment and has built consensus behind many elements of the future regional transit system. The ConNECTIONS study recommended a combination of highway and transit improvements in the corridor in 2001. The DiRecTionS study explored the corridor in the context of a regional transit system plan. In 2004, the Indianapolis Regional Transportation Council (IRTC) Policy Committee selected the Northeast Corridor as the first priority for rapid transit implementation. The final phase of the DiRecTionS study evaluated more than a dozen conceptual alternatives in the Northeast Corridor. In 2008, the MPO policy committee unanimously selected the Hoosier Heritage Port Authority, or HHPA Railroad corridor as the preferred alignment for fixed guideway transit in the Northeast Corridor. The Central Indiana Transit Task Force (CITTF) recommended a regional transit strategy in early 2010 that confirmed improved bus service and rail investment in the Northeast Corridor to be among the top priorities for regional transit investment. Accordingly, the Alternatives Analysis is focusing on the evaluation of detailed bus and rail alternatives that reflect the findings of these previous studies.

In February 2010, the Indianapolis MPO initiated a year-long process known as Indy Connect to update the Long Range Transportation Plan (LRTP). The CITTF recommendation is being used as the starting point for the discussion of the transit element of the plan. The LRTP will define a regional transit system plan, of which the Northeast Corridor is expected to be an early action item. The Northeast Corridor AA/EIS is being prepared consistent with and in coordination with the concurrent Indy Connect initiative.

This document provides information about the Northeast Corridor AA/EIS study area; the transportation problem and project need; study goals, objectives, and evaluation measures; and the detailed alternatives to be evaluated for review by FTA at the beginning of the study.

The study area is an approximately 23-mile long travel corridor extending from downtown Indianapolis to Noblesville (refer to Figure 1). The Northeast Corridor includes the main travel corridors between downtown Indianapolis and the rapidly growing areas of southeastern Hamilton County, including the communities of Fishers and Noblesville, as well as the intervening high-density residential and commercial areas of northeastern and central Marion County. The corridor includes the Hoosier Heritage Port Authority (HHPA) Railroad (former Nickel Plate Railroad) between Indianapolis and Noblesville.

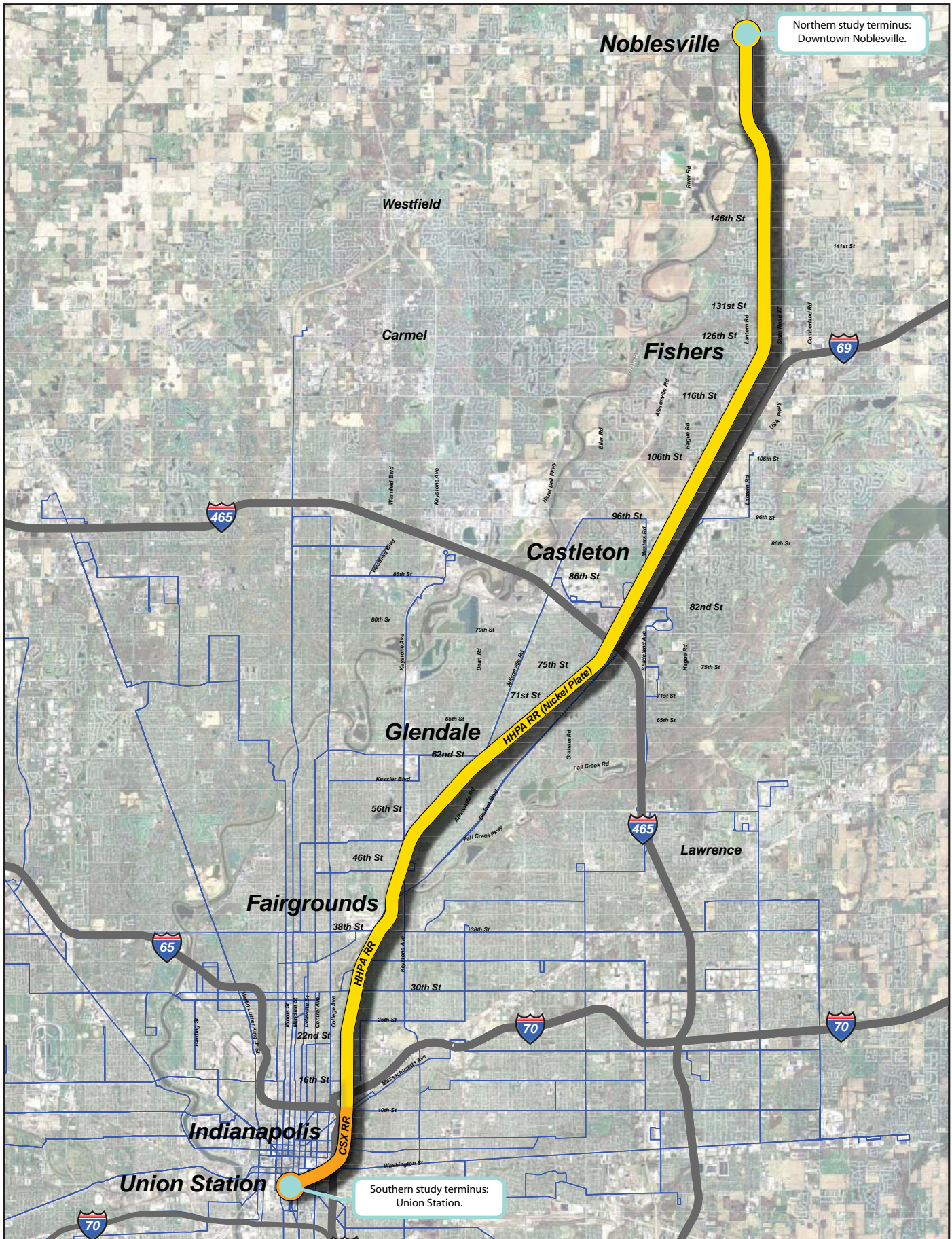
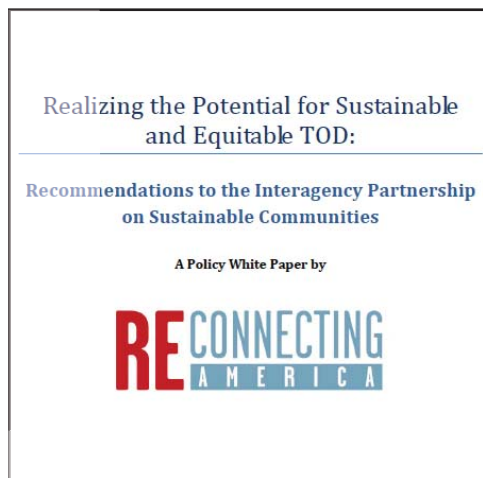


FIGURE I - NORTHEAST CORRIDOR STUDY AREA



PROBLEM STATEMENT

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INTERAGENCY PARTNERSHIP FOR SUSTAINABILITY

The Northeast Corridor contains the Central Indiana region's most severe travel and mobility challenges. Previous studies have shown that the Northeast Corridor, particularly I-69 north of I-465, continues to face significant traffic congestion. Given growing mobility challenges, forecasted population and employment growth, and a strong urban center in downtown Indianapolis, a potential promising alternative is investment in transit to supplement and enhance the existing Indianapolis bus system (IndyGo) and to extend services to new markets throughout this regional corridor.

The purpose of the project is to improve mobility and accessibility within the Northeast Corridor through the development of improved transit options. Consistent with the purpose of the project, the AA/EIS will address the need to:

1. Improve mobility, accessibility and travel options within the Northeast Corridor;
2. Support sustainable, long-term economic growth and livability; and
3. Support local transportation plans and policies.

PROJECT GOALS & OBJECTIVES

Based on the purpose and need identified above, the FTA New Starts criteria¹, and the livability principles of the federal Interagency Partnership for Sustainability², the goals and objectives for the Project are as follows:

Goal 1: Provide a quality transit option for travelers in the study area.

Objectives:

- **Provide more travel options for travelers.** According to the 2007 Urban Mobility Report, Indianapolis ranks among the top 25 cities in the United States in terms of average delay per peak-period traveler, with more than 24 million person-hours per year in congestion³. Traffic congestion has continued to increase over the past three decades on the three interstate routes that traverse the Northeast Corridor: I-69, I-465 and I-70. Transit strategies can provide a useful new travel alternative for travelers trying to avoid congestion.
- **Improve air quality in the Indianapolis Metropolitan Region.** Increasing vehicle emissions are expected to continue to contribute to deteriorating air quality in Central Indiana. The eight-county Indianapolis metropolitan planning area lies within or partly within two non-attainment areas as classified by the U.S. Environmental Protection Agency (EPA). In July 2004, Marion and Hamilton counties were classified as non-attainment for the ground level pollutant ozone (O₃) under the 8-hour standards. Much of the Northeast Corridor traverses these areas. In April 2005, Hamilton and Marion Counties were also classified as non-attainment for fine particulate matter (PM_{2.5}) under the annual standard⁴.
- **Improve travel time and convenience.** Travelers continue to put a high value on their time and continue to look for new travel options that will make traveling in the region more convenient.

1 Federal Transit Administration. *Reporting Instructions for the Section 5309 New Starts Criteria*. July 2009. Available at http://www.fta.dot.gov/planning/newstarts/planning_environment_2619.html

2 U.S. department of Transportation. *Interagency Partnership for Sustainable Communities*. Announcement available at <http://www.dot.gov/affairs/2009/dot8009.htm>

3 Texas Transportation Institute. *The 2007 Urban Mobility Report*. September 2007.

4 Indianapolis MPO. "Air Quality and Congestion Management System." 2005.

- **Attract new riders to transit.** The goal of introducing fixed guideway transit is to encourage transit ridership as a viable alternative to personal automobile use.
- **Improve services for low-income/minority/transit dependent travelers.** Transportation equity is an important consideration for future transportation investments. Transit dependent residents in the study area need good transit options to serve more of the region's employment areas as well as trips to recreation and community facilities.

Goal 2: Support economic development and positive regional growth patterns.

Objectives:

- **Provide transportation capacity to support growth.** Population and employment growth in the region and within the study area are expected to continue in the future. From 1970 to 2000, Hamilton County increased 235% in population, and is expected to continue to lead the region's population growth. Additional transportation capacity and travel options will be needed to support this growth, providing access between employment centers in Marion and Hamilton Counties and surrounding residential areas.
- **Help attract new businesses and employment.** Marion County is the dominant county for regional employment, with Hamilton County having the second largest employment concentration. Employment forecasts continue this trend through 2035. Companies seeking to relocate to new facilities or expand existing facilities will be looking for assurances that steps are being taken to provide the area with improved transportation services and new travel alternatives.
- **Stimulate infill development and redevelopment.** The increased accessibility associated with fixed guideway transit can stimulate infill or redevelopment in station areas. The urban form of new transit-supportive development can be significantly more walkable than the existing patterns of development. This can support higher density real estate products that have not been built widely in the region, such as residential units over shops or mixed use development with integrated parking.

Goal 3: Support local plans and policies.

Objectives:

- **Contribute to the development and adoption of the transit component of the Long Range Transportation Plan.** As this AA/EIS is being prepared, the Indianapolis MPO is in the process of updating its Long Range Transportation Plan. A significant element of this update is the preparation of the transit component of the plan. Further definition of transit options in the Northeast Corridor and public dialogue of its benefits and impacts will support the refinement of this plan.
- **Contribute to the evaluation and adoption of transportation policies.** A significant element of the FTA New Starts process is the definition of a continuing funding source and management plan for proposed actions. As these elements are defined for this project, systems and strategies will be put in place that will provide a policy structure for potential advancement of similar or related initiatives throughout the region.

EVALUATION MEASURES

The detailed evaluation of alternatives will be conducted using performance measures that fall into the five classes of evaluation measures suggested by FTA for a desirable project⁵. An evaluation matrix will be developed to summarize the results for the measures that identify the most significant differences between alternatives.

Transportation Effectiveness

Transportation effectiveness describes the extent to which the project solves the stated transportation problems in the corridor or impacts the transportation system. Evaluation measures will include:

Transportation System User Benefits

User benefits are computed as the aggregate difference in generalized price of transit between a given alternative and the New Starts baseline alternative, summed over all existing and new users of the transportation system. This measure, which includes both out-of-pocket costs (fares, parking fees at park/ride lots) and time costs (walking, waiting, riding, transferring), is expressed in terms of hours of travel time. A preliminary transportation system user benefit, or TSUB score from the FTA SUMMIT model, which computes the user benefits in a uniform manner from the output of the MPO regional travel demand model, will be evaluated for each detailed alternative.

Travel Time Competitiveness

The ratio of current peak period travel time by public transit and by private automobile between Monument Circle in downtown Indianapolis and key locations in the corridor, including 38th Street, 62nd Street, 96th Street, and the northern terminal, will be evaluated for peak and reverse commute directions. Transit travel times will be based on schedules developed for each alternative, including any downtown connecting services. Automobile travel times will be based on data collected by the Indianapolis MPO to support development of the regional travel demand model.

Transportation System Performance

The total 2035 system-wide highway and transit person-hours of travel (PHT), person-miles of travel (PMT), and average speed (PMT/PHT) will be evaluated for each alternative. These statistics will be derived from vehicle-hours of travel (VHT), vehicle-miles of travel (VMT), and vehicle occupancy factors as forecast by the MPO regional travel demand model.

Predicted Annual Crashes

Using a methodology similar to that used in the conceptual evaluation of alternatives, the system-wide crash exposure potential will be evaluated for each alternative. The methodology uses national crash data for various transit modes, local traffic volume forecasts, transit schedule information, and information on grade crossing protection measures to predict annual crashes by location.

Incremental Transit Ridership

The forecast 2035 daily boardings compared with the No-Project Alternative will be evaluated. The distribution of riders with origins in each district will be evaluated. Ridership forecasts will be developed using the MPO regional travel demand model.

“The detailed evaluation of alternatives will be conducted using performance measures that fall into the five classes of evaluation measures suggested by the FTA.”

⁵ Federal Transit Administration. *Procedures and Technical Methods for Transit Project Planning: Part II Conduct of the Analysis: Chapter 9: Evaluation of Alternatives*. Available at http://www.fta.dot.gov/printer_friendly/planning_environment_2396.html

Corridor Traffic Impacts

The composite 2035 highway vehicle-hours of travel (VHT), vehicle-miles of travel (VMT), and average speed (VMT/VHT) will be evaluated for key roadways parallel to each alternative. Key roadways will include segments of SR 37, I-69, Binford Boulevard, Fall Creek Parkway, Capitol Avenue, Illinois Street, Ohio Street, Massachusetts Avenue, South Street, Allisonville Road, I-465 Northeast, I-70 East, Meridian Street, Pennsylvania Street, and Delaware Street.

Corridor Congestion

The number of miles of key corridor roadways operating at or above capacity will be evaluated for each alternative. Capacity will be evaluated using volume-to-capacity ratios from the MPO regional travel demand model. Key roadways will include segments of SR 37, I-69, Binford Boulevard, Fall Creek Parkway, Capitol Avenue, Illinois Street, Ohio Street, Massachusetts Avenue, South Street, Allisonville Road, I-465 Northeast, I-70 East, Meridian Street, Pennsylvania Street, and Delaware Street.

Lane Reductions

The reduction in travel lanes on streets with transit operations will be evaluated. Travel lane reductions will be expressed in lane-miles during the peak period and off-peak period.

Street Parking Impacts

The reduction in street parking capacity on streets with transit operations will be evaluated. Parking capacity reductions will be expressed as an estimated number of parking spaces lost during the peak period and off-peak period.

Grade Crossing Impacts

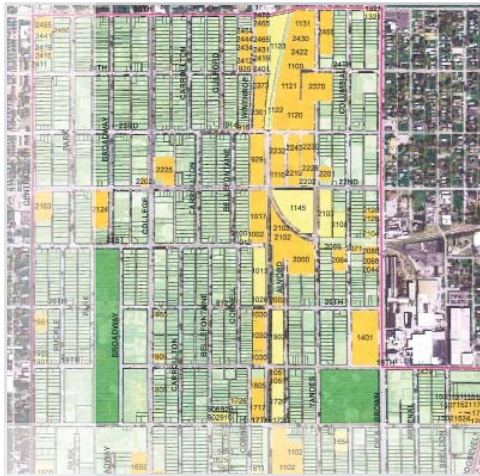
The traffic effects of each alternative will be evaluated where the road intersects with an at-grade transit crossing. The measure will combine information on 2035 daily roadway traffic volume from the MPO regional travel demand model with 2035 daily transit volume from operating schedules developed for each alternative. The measure will express the composite corridor effect as the product of the roadway and transit volumes, summed overall grade crossing locations.

Employment Served

The number of current and future jobs within walking distance of a transit station will be evaluated for each alternative. Employment will be based on 2010 and 2035 socio-economic data by traffic analysis zone (TAZ) from the MPO regional travel demand model. Walking distance to a transit station will be defined as the area within a ½-mile radius of a transit boarding platform.

Population Served

The number of current and future residents within walking distance of a transit station will be evaluated for each alternative. Population will be based on 2010 and 2035 socio-economic data by traffic analysis zone (TAZ) from the MPO regional travel demand model. Walking distance to a transit station will be defined as the area within a ½-mile radius of a transit boarding platform.



BROWNFIELD REDEVELOPMENT



HISTORIC UNION STATION

Community Impacts and Benefits

Community impacts and benefits describe the extent to which the project supports economic development, environmental, or local policy goals. Evaluation measures will include:

Infill Redevelopment Opportunities

The area of brownfield, vacant, or economically distressed parcels within ½ mile of stations will be evaluated for each alternative. Brownfield parcels will be identified using available GIS data. Vacant parcels will be identified using available GIS data and field verification.

Business Property Impacts

The number of businesses that would be displaced by each alternative will be evaluated. These impacts will be based on a parcel-level evaluation of the right-of-way needs associated with transit guideway, stations, park-and-ride lots, and maintenance facilities.

Residential Property Impacts

The number of households that would be displaced by each alternative will be evaluated. These impacts will be based on a parcel-level evaluation of the right-of-way needs associated with transit guideway, stations, park-and-ride lots, and maintenance facilities.

Park and Recreational Area Impacts

The number and acreage of impacts to parks and recreation areas will be evaluated for each alternative. Any instances where unavoidable right-of-way needs coincide with a park or recreational area, mapping will be used to illustrate the magnitude of land needed.

Historical and Archeological Site Impacts

The number and acreage of impacts to historical and archeological sites will be evaluated for each alternative. Any instances where unavoidable right-of-way needs coincide with a historical or archeological site, mapping will be used to illustrate the magnitude of land needed.

Noise and Vibration Impacts

The noise and vibration effects on sensitive receptors in the corridor will be summarized for each alternative.

Other Environmental Impacts

Any significant impacts, including those related to air quality, visual impacts, farmland, wetlands, ecosystems, threatened and endangered species, related habitat, hydrology, aquatic resources, water quality, floodplains, historic properties, or archeological sites, that help to distinguish differences between alternatives will be summarized.

Cost-Effectiveness

Cost-effectiveness describes how the costs of the project, both capital and operating, compare with the benefits of the project. The primary evaluation measure will include a preliminary estimate of the measure that the FTA uses to evaluate the cost effectiveness of projects seeking New Starts funding. The measure combines annualized capital cost estimates, annual operating cost estimates, and TSUB for each detailed alternative.

Financial Feasibility

Financial feasibility describes the availability of funds for the construction and operation of the alternative without placing undue burdens on the sources of those funds. Evaluation measures will include:

Capital Cost

The total construction cost will be estimated for each detailed alternative. Construction costs will be prepared using FTA Standard Cost Categories (SCC), expressed in 2010 dollars.

Operating Cost

The total operating and maintenance (O&M) cost will be estimated for each detailed alternative. O&M costs will be prepared for 2035 planned operations and will be expressed in 2010 dollars.

Adequacy of Proposed Regional Funding

The net cash flow associated with building and operating each detailed alternative will be estimated. The net cash flow will reflect the projected revenues associated with a planned regional dedicated transit funding source and will be expressed as a surplus or deficit over a 20-year period.

A financial plan will be prepared for the Locally Preferred Alternative to support the planned New Starts Request to Initiate Preliminary Engineering. The financial plan will describe the recent financial history of the project sponsor, describe its current financial health, document projected costs and revenues, and demonstrate the reasonableness of key assumptions underlying these projections.

Equity (Environmental Justice)

Equity describes how fairly the costs and benefits are distributed across different population groups. Evaluation measures will include low-income households served versus affected. Using a methodology similar to that used in the conceptual evaluation of alternatives, the number of households below the poverty level with the potential to be served by rapid transit will be compared to the number of households with the potential to be negatively impacted by a rapid transit system. Households served by transit will be defined as those below the federally defined poverty level within a one-half mile radius of transit stations, wherein the poverty level is determined by the 2000 Census. Households impacted by transit will be defined as those below poverty which are also located within an assumed maximum impact area of 500 feet from a transit line, and which would experience the externalities, such as noise and vibration of potential transit service, without necessarily having nearby station access.



ALTERNATIVES

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BUS RAPID TRANSIT
Source: NABI

The alternatives to be evaluated in the AA/DEIS are the product of ongoing planning activities that began with the ConNECTIONS study more than a decade ago. The ConNECTIONS DEIS determined that “additional studies were needed to determine the transit needs of the greater Central Indiana Region.” This became the impetus for the DiRecTionS regional rapid transit study, initiated in 2003.

Phase I of the DiRecTionS study evaluated transit improvements at a regional system-wide level, with consideration of three transit technology options in seven radial corridors extending from downtown Indianapolis. Phase II evaluated alignment options in each proposed corridor and considered system-wide implementation strategies and phasing. As the study progressed, implementing rapid transit within the Northeast Corridor proved to satisfy those goals and objectives to a higher degree than the other alternatives considered. In 2004, the policy committee of the Indianapolis MPO selected the Northeast Corridor as the first priority for rapid transit implementation.

CONCEPTUAL ALTERNATIVES



ELECTRIC LIGHT RAIL TRANSIT
Source: Bombardier Transportation

The Alternatives Analysis phase of the AA/DEIS process began with the final phase of the DiRecTionS study in 2007¹. More than a dozen conceptual alignment-technology alternatives were refined and evaluated. Alignments corresponded with the major expressway, arterial, and railroad facilities in the corridor, including Allisonville Road, Binford Boulevard / I-69, Keystone Avenue, and the HHPA Railroad. Technologies included bus rapid transit (BRT), diesel or electric light rail transit (LRT), and automated guideway transit (AGT). Following the evaluation of these conceptual alternatives, a commuter rail transit (CRT) alternative was also evaluated as a limited initial investment option in the “Start-Up Commuter Rail Study.”

In 2008, the Policy Committee of the Indianapolis Regional Transportation Council unanimously selected diesel multiple unit, or DMU Transit technology on the HHPA Railroad alignment as the preferred investment strategy in the Northeast Corridor. More detailed documentation of the conceptual alternatives screening process through this decision point, is provided in the Conceptual Definition of Alternatives report².

The AA/EIS will evaluate a range of service levels and operating plans to identify the transit service strategy that best meets the Northeast Corridor goals and objectives. This section outlines the representative characteristics, including service frequency, vehicle capacity, station locations, and route terminals, of the alternatives that will be evaluated in detail in the AA/EIS. More specific information on the features of each detailed alternative will be included in the Detailed Definition of Alternatives report.

REFINEMENTS BASED ON SUBSEQUENT STUDIES

In 2008, the IRTC Policy Committee selected diesel multiple unit, or DMU transit technology on the Hoosier Heritage Port Authority (HHPA) railroad corridor as the preferred investment strategy in the Northeast Corridor. Since the evaluation and screening of conceptual alternatives was conducted, Central Indiana has continued to develop its understanding of, support for, and expectations for regional transit investment, including in the Northeast Corridor.



COMMUTER RAIL TRANSIT
Source: HNTB

¹ Indianapolis MPO. *DiRecTionS Northeast Corridor Rapid Transit Alternatives Analysis Completion Study: Evaluation of Alternatives Report*. September 2008. Available at http://www.indympo.org/Plans/DiRecTionS/Documents/RTSAlternativesEval_Final.pdf

² Indianapolis MPO. *Northeast Corridor Alternatives Analysis/Environmental Impact Statement: DRAFT Conceptual Definition of Alternatives Document*. May 2010.

The IndyGo Downtown Transit Center Feasibility Study in 2009 confirmed the role of Union Station as the hub of the region's urban and intercity bus and rail transportation systems. It also developed a more detailed plan for downtown circulation, including a primary transit spine on Capitol Avenue and Illinois Street, to complement radial transit lines.

The Central Indiana Transit Task Force (CITTF) recommended transportation strategy in early 2010 confirmed improved bus service and rail investment in the Northeast Corridor to be among the top priorities for regional transit investment. The study also identified Union Station as a hub, highlighting the importance of strategically using transit investment to guide economic development in already-urbanized areas, further advancing the regional discussion on the transit agency governance structure and the dedicated transit funding source needed to realize the vision. Options for the use of existing CSX tracks to reach Union Station include a parallel track for exclusive transit use, shared track with schedule separations, or routing of freight trains to an alternative through route.

The initial round of Indy Connect public meetings in the spring of 2010 suggests that the interest in new and improved transit options has gained momentum since the Northeast Corridor meetings in 2008. Public comments also suggested strong interest in operating the Northeast Corridor service between Union Station and Noblesville, constructing a station at 16th Street to take advantage of infill development opportunities in the historic railroad corridor, and developing a north-south arterial transit corridor using BRT or LRT technology.

These developments suggest several refinements to the preferred investment strategy in the Northeast Corridor, including:

Noblesville Terminal

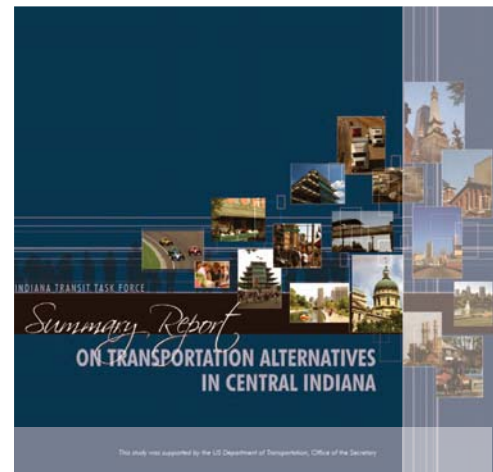
The detailed alternatives will explore the feasibility of a station near Noblesville. This is north of the 146th Street location evaluated in the DiRecTionS and the 116th Street location recommended by the CITTF. A candidate location identified in previous studies is at 8th Street and Pleasant Street south of downtown Noblesville. As site plans are developed for this location during the detailed definition of alternatives, alternative locations may be identified.

CSX Corridor Options

The section of the rail corridor proposed for use between 10th Street and Union Station is used by CSX Transportation Corporation for its Cleveland to St. Louis main line operations. Three options have been identified for jointly accommodating passenger and freight operations on this section. The first is use of the same track and separating vehicles through scheduling or positive train control technology. The second option is to provide a third set of tracks so that current double track movements of CSX can be maintained. (This was the original track configuration in this area.) The third option is to upgrade the Indianapolis Belt Railroad, as mentioned previously, to provide an option for freight rail operations that would avoid travel through downtown. This would completely separate daily passenger and freight movements. Each of these options will be considered in the evaluation of rail alternatives in the Northeast Corridor.

North Side Transit Service

Recent transit system planning work and Indy Connect public comments suggest that improved transit service on arterial streets near North Meridian Street and North College Avenue could be an attractive strategy for serving the neighborhoods and activity centers on the North Side of Indianapolis. This suggests that the travel markets intended to be served by increased service frequency and closer stops near downtown in the ConNECTIONS preferred transit alternative and the CITTF recommendation may be better



CITTF STUDY SUMMARY REPORT



PROJECT WEBSITE

served by BRT or LRT services in these arterial corridors. The detailed alternatives will explore the feasibility of stations in this area, recognizing that complementary (and potentially more service-intensive) transit service might be provided on arterial streets further east. This service could provide an important connection between the Northeast Corridor and other north side activity centers. The design team will coordinate closely with the Indy Connect transit system planning process as this transit service is defined in the MPO Long Range Transportation Plan.

DETAILED ALTERNATIVES

Drawing from the results of previous studies, current Indy Connect public input, and comments received during the agency and public scoping process, four main build alternatives will be defined and evaluated as detailed alternatives in the AA/EIS. The alternatives represent a range of service levels and operating plans, which will help to identify the transit service strategy that best meets the project goals and objectives. The representative characteristics, including service frequency, vehicle capacity, station locations, and route terminals, of the build alternatives to be evaluated in detail in the AA/EIS are described in Table 1. More information on the refinement of conceptual alternatives based on subsequent studies and input is provided in the *Conceptual Definition of Alternatives* report³.

Including the several variations on the No-Build and Build alternatives, the following alternatives will be evaluated in detail in the AA/DEIS.

Alternative 0a – No-Build Alternative

As required by the NEPA evaluation process, this alternative is defined as the existing transportation system plus any committed transportation improvements. Committed transportation improvements include projects that are already in the Indianapolis MPO and Indiana Department of Transportation (INDOT) Transportation Improvement Program (TIP), which includes added travel lanes and interchange improvements on I-69 and I-465. The No-Build alternative includes no changes to IndyGo bus service or other transit services. This alternative will serve as the basis for comparison of environmental impacts resulting from the build alternatives, as well as the cost-effectiveness of the Transportation System Management (TSM) alternative as required by Council on Environmental Quality's (CEQ's) Regulations for Implementing NEPA (40 CFR 1500 through 1508).

Alternative 0b – No-Project Alternative

This alternative is defined as the No-Build Alternative plus the regional bus service improvements recommended by the 2010 IndyGo Comprehensive Operational Analysis study. Because of the significant shift in policy reflected in the expected results of the study and the lack of committed funding to implement significant service improvements at this time, bus system expansion was not included in the No-Build Alternative. This alternative is included to facilitate the evaluation of the incremental ridership associated with the build alternatives compared to the ridership of the planned, but not committed, expanded regional bus system.

Alternative 1 – Transportation System Management/Baseline

As required by the FTA New Starts evaluation process, this alternative reflects the best that can be done for mobility without constructing a new transit guideway. Bus service would operate in mixed traffic along Conner Street, SR 37, I-69, Binford Boulevard, Fall Creek Parkway, and the Capitol Avenue / Illinois Street one-way pair between Noblesville and South Street in Indianapolis. The alternative includes features to improve the attractiveness

³ Indianapolis MPO. Northeast Corridor Alternatives Analysis/Environmental Impact Statement: DRAFT Conceptual Definition of Alternatives Document. May 2010.

Characteristics	1 TSM	2 Bus Rapid Transit	3a Commuter Rail
Service frequency, peak/off-peak (minutes between vehicles)	5/10	5/10	30/60
Vehicle type	60 foot, low-floor articulated hybrid bus	60 foot, low-floor articulated hybrid bus	FRA-compliant diesel locomotive, plus 2 passenger cars
Vehicle capacity, seated/standees/ total (number of passengers)	60, 40, 100	60, 40, 100	280, 550, 830
Alignment	SR 37 to I-69 to Binford Blvd. to Fall Creek Pkwy. to Capitol Ave. / South St. / Illinois St. loop	HHPA RR to Massachusetts Ave. to Ohio St. to Capitol Ave. / South St. / Illinois St. loop	HHPA RR to CSX RR
Guideway	Mixed traffic with transit signal priority on arterial streets; Mixed traffic with shoulder-running in congested areas on I-69; Curbside right turn / bus lanes downtown	At-grade exclusive busway on HHPA RR; Curbside right turn / bus lanes downtown	At-grade exclusive trackway on HHPA RR; Shared CSX RR Right-of-way downtown
Passenger capacity (total peak passengers/hr/direction)	1,200	1,200	1,660
Candidate station locations	Conner St. / 8th St. Conner St. / 16th St. Conner St. / SR 37 Town & Country Blvd. / SR 37 Greenfield Ave.. / SR 37 146th St. / SR 37 126th St. / SR 37 116th St. / I-69 106th St. / I-69 96th St. / I-69 82nd St. / I-69 75th St. / Binford Blvd. 71st St. / Binford Blvd. 62nd St. / Binford Blvd. 56th St. / Binford Blvd. Keystone Ave.. / Binford Blvd. 38th St. / Fall Creek Pkwy. College Ave.. / Fall Creek Pkwy. Meridian St. / Fall Creek Pkwy. 22nd St. / Capitol/Illinois 16th St. / Capitol/Illinois St. Clair St. / Capitol/Illinois Michigan St. / Capitol/Illinois Ohio St. / Capitol/Illinois Washington St. / Capitol/Illinois South St. / Capitol/Illinois	Conner St. / HHPA RR / 8th St. Allisonville Road / HHPA RR 146th St. / HHPA RR 126th St. / HHPA RR 116th St. / HHPA RR 106th St. / HHPA RR 96th St. / HHPA RR 82nd St. / HHPA RR 75th St. / HHPA RR 71st St. / HHPA RR 62nd St. / HHPA RR / Allisonville Rd. 56th St. / HHPA RR 46th St. / HHPA RR / Keystone Ave.. 38th St. / HHPA RR 30th St. / HHPA RR 22nd St. / HHPA RR 16th St. / HHPA RR 10th St. / HHPA RR St. Clair St. / Mass. Ave.. / College St. Michigan / Mass. Ave.. / New Jersey Ohio St. / Meridian St. Washington St. / Capitol/Illinois South St. / Capitol/Illinois	Conner St. / HHPA RR / 8th St. 116th St. / HHPA RR 82nd St. / HHPA RR 62nd St. / HHPA RR / Allisonville Rd. 38th St. / HHPA RR 16th St. / HHPA RR Union Station

TABLE 1 - PHYSICAL CHARACTERISTICS OF THE DETAILED BUILD ALTERNATIVES

Characteristics	3b Heavy DMU	3c Light DMU
Service frequency, peak/off-peak (minutes between vehicles)	15/30	7.5/15
Vehicle type	FRA-compliant diesel multiple unit (DMU) powered car, plus unpowered coach	Low-floor non-FRA compliant diesel light rail vehicle, coupled triple
Vehicle capacity, seated/standees/ total (number of passengers)	196, 300, 496	135, 90, 225
Alignment	HHPA RR to CSX RR	HHPA RR to Massachusetts Ave. to Ohio St. to Capitol Ave. / South St. / Illinois St. loop
Guideway	At-grade exclusive trackway on HHPA RR; Shared CSX RR Right-of-way downtown or freight relocation to Indianapolis Belt Railroad	At-grade exclusive trackway on HHPA RR; Shared CSX RR Right-of-way downtown or freight relocation to Indianapolis Belt Railroad
Passenger capacity (total peak passengers/hr/direction)	1,984	1,800
Candidate station locations	<p>Conner St. / HHPA RR / 8th St.</p> <p>146th St. / HHPA RR</p> <p>116th St. / HHPA RR</p> <p>96th St. / HHPA RR</p> <p>82nd St. / HHPA RR</p> <p>71st St. / HHPA RR</p> <p>62nd St. / HHPA RR / Allisonville Rd.</p> <p>38th St. / HHPA RR</p> <p>16th St. / HHPA RR</p> <p>Union Station</p>	<p>Conner St. / HHPA RR / 8th St.</p> <p>Allisonville Road / HHPA RR</p> <p>146th St. / HHPA RR</p> <p>126th St. / HHPA RR</p> <p>116th St. / HHPA RR</p> <p>106th St. / HHPA RR</p> <p>96th St. / HHPA RR</p> <p>82nd St. / HHPA RR</p> <p>75th St. / HHPA RR</p> <p>71st St. / HHPA RR</p> <p>62nd St. / HHPA RR / Allisonville Rd.</p> <p>56th St. / HHPA RR</p> <p>46th St. / HHPA RR / Keystone Ave..</p> <p>38th St. / HHPA RR</p> <p>30th St. / HHPA RR</p> <p>22nd St. / HHPA RR</p> <p>16th St. / HHPA RR</p> <p>10th St. / HHPA RR</p> <p>Union Station</p>

TABLE 1 - PHYSICAL CHARACTERISTICS OF THE DETAILED BUILD ALTERNATIVES (CONTINUED)

of the transit service, such as enhanced bus stops with sheltered waiting areas, real-time next bus arrival information, low-floor diesel-electric hybrid vehicles with enhanced on-board passenger amenities, the ability for buses to use highway shoulders to avoid traffic congestion, traffic signal priority technology to reduce travel times and improve schedule reliability, and dedicated lanes for buses and turning vehicles in downtown Indianapolis. The TSM alternative will also reflect the regional bus service improvements recommended by the 2010 IndyGo Comprehensive Operational Analysis study.

Alternative 2 – Bus Rapid Transit

A dedicated busway with on-line stations and other related capital improvements would be constructed in the HHPA Railroad right-of-way between Noblesville and 10th Street in Indianapolis, then operate on-street in mixed traffic via the Capitol Avenue / Illinois Street one-way pair to South Street. This alternative includes features such as stations with sheltered waiting areas, real-time next bus arrival information, low-floor diesel-electric hybrid vehicles with enhanced on-board passenger amenities, traffic signal preemption technology to give buses the right-of-way at busway-street crossings, and dedicated lanes for buses and turning vehicles in downtown Indianapolis.

Alternative 3a – Commuter Rail Transit

Although there have been public concerns about the use of diesel locomotive-hauled trains in the corridor, commuter rail transit (CRT) was evaluated as a potential initial implementation phase in the “Start-Up Commuter Rail Study,” this alternative is proposed to be carried forward to facilitate the evaluation of a full range of service level options using the improved MPO regional travel demand model. This alternative would operate with larger trains only about half as often during the peak period as the DMU on HHPA Railroad conceptual alternative. The use of FRA-compliant locomotive equipment in this alternative also provides some flexibility if a FRA-compliant DMU does not become available⁴.

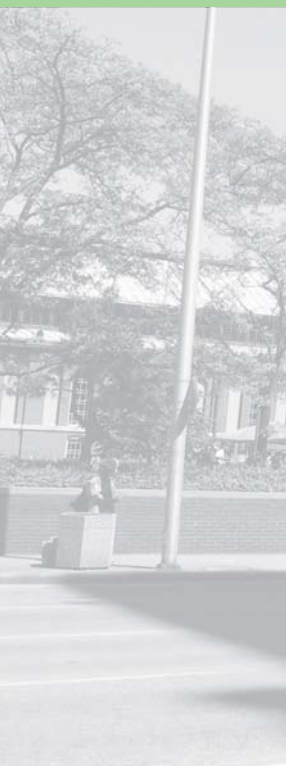
Alternative 3b – Heavy Diesel Multiple Unit

FRA-compliant (“heavy”) diesel multiple unit vehicles (DMUs), would operate on improved tracks in the HHPA Railroad right-of-way between Noblesville and 10th Street in Indianapolis, then in the CSX Railroad right-of-way to Union Station. This alternative corresponds most closely with the DMU on HHPA Railroad conceptual alternative evaluated previously. In comparison with Alternative 3a and 3c, this alternative facilitates the comparison of rail service level variations, including service frequency and station spacing.

Alternative 3c – Light Diesel Multiple Unit

Non-FRA-compliant (“light”) DMU light rail vehicles would operate on improved tracks in the HHPA Railroad right-of-way between Noblesville and 10th Street in Indianapolis, then in the CSX Railroad right-of-way to Union Station. Because these vehicles are smaller than the FRA-compliant vehicles, more frequent service is required to maintain similar passenger capacity. This service would operate twice as often as the Heavy DMU alternative and with more stops. With more frequent service (trains every 7 to 8 minutes, compared to 10 minutes) and comparable station spacing (19 stations, compared to 21), service level exceeds that of the Electric LRT on HHPA Railroad conceptual alternative.

⁴ The conceptual alternative evaluated the FRA-compliant DMU manufactured by Colorado Railcar, which has ceased operation. A new company, US Railcar, LLC, has announced plans to begin manufacturing a similar vehicle, but it was not in production as of early 2010.



APPENDIX A

List of Acronyms

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LIST OF ACRONYMS

AA/EIS	Alternative Analysis/Environmental Impact Statement
BRT	Bus Rapid Transit
ConNECTions	Northeast Corridor Environmental Impact Statement (2001)
CRT	Commuter Rail Transit
DiRecTionS	Regional Corridor Plan development and Indianapolis Northeast Corridor Preliminary Alternatives Analysis (2008)
DMU	Diesel Multiple Unit
EPA	United States Environmental Protection Agency
LPA	Locally Preferred Alternative
CIRTA	Central Indiana Regional Transportation Authority
FTA	Federal Transit Administration
HHPA	Hoosier Heritage Port Authority (former Nickel Plate Railroad)
IndyGo	Indianapolis Public Transportation Corporation
LRT	Light Rail Transit
MPO	Indianapolis Metropolitan Planning Organization
NEPA	National Environmental Policy Act
NOI	Notice of Intent
PMT	Project Management Team
ROD	Record of Decision
ROW	Right-of-way
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act
TSUB	Transportation System User Benefits

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HNTB