



# 3C Quick Start Passenger Rail Environmental Assessment

Submitted to:



August 2010

**PB** PARSONS  
BRINCKERHOFF  
100 YEARS

**3C Quick Start Passenger Rail  
Environmental Assessment**

Prepared Pursuant to 42 USC § 4332, 49 USC § 303, and 64 FR 28545

By the Ohio Department of Transportation

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## **LIST OF ACRONYMS**

|         |  |
|---------|--|
| ACHP    | Advisory Council on Historic Preservation  |
| ADA     | Americans with Disabilities Act  |
| ADT     | Average Daily Traffic  |
| AFB     | Air Force Base   |
| APE     | Area of Potential Effects  |
| AST     | Above Ground Storage Tank  |
| ASTM    | American Society of Testing and Materials International                              |
| BCRTA   | Butler County Regional Transit Authority   |
| BMP     | Best Management Practice   |
| BRS     | Biennial Reporting System  |
| BUSTR   | Bureau of Underground Storage Tank Regulations                                       |
| C       | Coldwater  |
| CAA     | Clean Air Act  |
| CAAA    | Clean Air Act Amendments   |
| CEQ     | Council on Environmental Quality   |
| CERCLA  | Comprehensive Environmental Response, Compensation and Liability Act                 |
| CERCLIS | Comprehensive Environmental Response, Compensation, and Liability Information System |
| CFR     | Code of Federal Regulations  |
| COTA    | Central Ohio Transit Authority   |
| CR      | County Road  |
| CSO     | Combined Sewer Overflow  |
| CSX     | CSX Railroad   |
| CWA     | Clean Water Act  |
| CWH     | Coldwater Habitat  |
| dBA     | Decibels (A-weighted)  |
| DR      | Direct Route   |
| EA      | Environmental Assessment   |
| EB      | Eastbound  |
| EIS     | Environmental Impact Statement   |
| EJ      | Environmental Justice  |
| EO      | Executive Order  |

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| EPA   | US Environmental Protection Agency                                   |
| ESA   | Environmental Site Assessment  |
| EWH   | Exceptional Warmwater Habitat  |
| EWV   | Exceptional Warm Water   |
| FEMA  | Federal Emergency Management Agency                                  |
| FFIS  | Federal Facilities Information System                                |
| FHWA  | Federal Highway Administration                                       |
| FIRM  | Flood Insurance Rate Map   |
| FIS   | Flood Insurance Study  |
| FONSI | Finding of No Significant Impact                                     |
| FPL   | Federal Poverty Level  |
| FPPA  | Farmland Protection Policy Act                                       |
| FRA   | Federal Railroad Administration                                      |
| FTA   | Federal Transit Administration                                       |
| GCRTA | Greater Cleveland Regional Transit Authority                         |
| GDRTA | Greater Dayton Regional Transit Authority                            |
| GHG   | Greenhouse Gases   |
| GIS   | Geographic Information System  |
| GPS   | Global Positioning System  |
| HSR   | High Speed Rail  |
| LOS   | Level of Service   |
| LRW   | Limited Resource Water   |
| LUST  | Leaking Underground Storage Tanks                                    |
| LWCF  | Land and Water Conservation Fund                                     |
| LWWH  | Limited Warm Water Habitat   |
| METRO | Southwestern Ohio Regional Transit Authority Fixed Route Bus Service |
| MOA   | Memorandum of Agreement  |
| MOU   | Memorandum of Understanding  |
| MPO   | Metropolitan Planning Organization                                   |
| MSATs | Mobile Source Air Toxics   |
| MWRRS | Midwest Regional Rail System   |
| MWW   | Modified Warm Water  |
| NAAQS | National Ambient Air Quality Standards                               |
| NB    | Northbound   |
| NCDB  | National Compliance Data Base  |
| NEPA  | National Environmental Policy Act                                    |
| NFRAP | No Further Remedial Action Planned                                   |
| NHPA  | National Historic Preservation Act                                   |
| NHS   | National Highway System  |
| NOI   | Notice of Intent   |
| NPDES | National Pollutant Discharge Elimination System                      |
| NPL   | National Priority List   |
| NRCS  | Natural Resources Conservation Service (USDA)                        |
| NRHP  | National Register of Historic Places                                 |
| NS    | Norfolk Southern Railroad  |

|        |  |
|--------|--|
| NWI    | National Wetland Inventory                                     |
| O&M    | Operations and Maintenance                                     |
| OAC    | Ohio Administrative Code                                       |
| OAI    | Ohio Archaeological Inventory                                  |
| O-D    | Origin-Destination   |
| ODNR   | Ohio Department of Natural Resources                           |
| ODOD   | Ohio Department of Development                                 |
| ODOT   | Ohio Department of Transportation                              |
| ODPS   | Ohio Department of Public Safety                               |
| OEPA   | Ohio Environmental Protection Agency                           |
| OES    | Office of Environmental Services (ODOT)                        |
| OHI    | Ohio Historic Inventory  |
| OSHPO  | Ohio State Historic Preservation Office                        |
| ORAM   | Ohio Rapid Assessment Method                                   |
| ORC    | Ohio Revised Code  |
| ORDC   | Ohio Rail Development Commission                               |
| OTS    | Office of Technical Services (ODOT)                            |
| OWI    | Ohio Wetland Inventory   |
| PB     | Parsons Brinckerhoff   |
| PEIS   | Programmatic Environmental Impact Statement                    |
| PCB    | Polychlorinated Biphenyl                                       |
| PCS    | Permit Compliance System                                       |
| PHWH   | Primary Headwater Habitat                                      |
| PIP    | Public Involvement Plan  |
| QHEI   | Qualitative Habitat Evaluation Index                           |
| RCRA   | Resource Conservation and Recovery Act                         |
| RCRIS  | Resource Conservation and Recovery Information System          |
| RJC    | R. J. Corman Railroad Company                                  |
| ROD    | Record of Decision   |
| RTC    | Rail Traffic Controller  |
| S&I    | Service and Inspection   |
| SARA   | Superfund Amendment and Reauthorization Act                    |
| SB     | Southbound   |
| SCCTCC | Springfield Clark County Transportation Coordinating Committee |
| SIP    | State Implementation Plan                                      |
| SORTA  | Southwest Ohio Regional Transit Authority                      |
| SR     | State Route  |
| SS     | Seasonal Salmonid  |
| SSA    | Sole Source Aquifer  |
| STIP   | State Transportation Improvement Program                       |
| SWCD   | Soil and Water Conservation District                           |
| SWPPP  | Stormwater Pollution Prevention Plan                           |
| TDM    | Transportation Demand Management                               |
| TIP    | Transportation Improvement Program                             |
| TR     | Township Road  |
| TRAC   | Transportation Review Advisory Council                         |
| TSM    | Transportation System Management                               |

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| W&LE   | Wheeling and Lake Erie Railway                        |
| USACOE | United States Army Corps of Engineers                 |
| USDA   | United States Department of Agriculture               |
| USDHHS | United States Department of Health and Human Services |
| USDOE  | United States Department of Energy                    |
| USDOI  | United States Department of the Interior              |
| USDOT  | United States Department of Transportation            |
| USEPA  | United States Environmental Protection Agency         |
| USFS   | United States Forest Service                          |
| USFWS  | United States Fish and Wildlife Service               |
| USGS   | United States Geological Survey                       |
| UST    | Underground Storage Tank                              |
| V/C    | Volume to Capacity Ratio                              |
| VMT    | Vehicle Miles Traveled                                |
| WB     | Westbound   |
| WWH    | Warmwater Habitat                                     |

## **1.0 INTRODUCTION/PURPOSE AND NEED**

The State of Ohio has been working to re-establish passenger rail service on the rail corridor between Cleveland, Columbus, and Cincinnati (3C Corridor). A historic opportunity now exists to receive significant federal funding to make this a reality.

The Federal Railroad Administration (FRA) has released guidance on implementing the President's "Vision for High Speed Rail" and applying for funding for high-speed rail projects under the American Recovery and Reinvestment Act of 2009. In response, the Ohio Department of Transportation (ODOT) is preparing an application for funding under FRA's "Track 2" High Speed Intercity Passenger Rail Program. The Track 2 aims at developing new high speed and conventional intercity passenger services, or substantial upgrades to existing corridor services. It is intended to fund a set of interrelated projects as part of a long-range service development plan for high-speed rail. It can encompass the entire corridor or represent a phased approach (begin with conventional rail and progress to high speed rail over a number of years or in geographic sections).

The Ohio 3C Start Passenger Rail project is being proposed by ODOT as a Track 2 project. Funding received under a Track 2 project can be used for engineering, Tier 2 National Environmental Policy Act (NEPA) documentation (site-specific), construction, and other program development costs. FRA requires that applications for funding be accompanied by a Service Development Plan describing the program and a "service level" Tier 2 NEPA document. This Environmental Assessment (EA) has been undertaken to meet this requirement and will be submitted along with Ohio's application to the FRA.

The 3C Quick Start Passenger Rail Corridor is approximately 260 miles long and connects the four largest cities in Ohio. From north to south, these cities are Cleveland, Columbus, Dayton, and Cincinnati, (Figure 1-1). The initial Service Development Plan presented in the funding application will consist of six stops that were identified as the express service in the Ohio Hub Study<sup>1</sup>. These stations locations (Cleveland, Southwest Cleveland, Columbus, Dayton, North Cincinnati, and Cincinnati) will be included in the Amtrak Study<sup>2</sup> as the scheduled station stops. Where alternative sites exist, Amtrak will assess stations requiring the most conservative investment. These stations will be included in the Service Development Plan that forms the basis of Ohio's funding application.

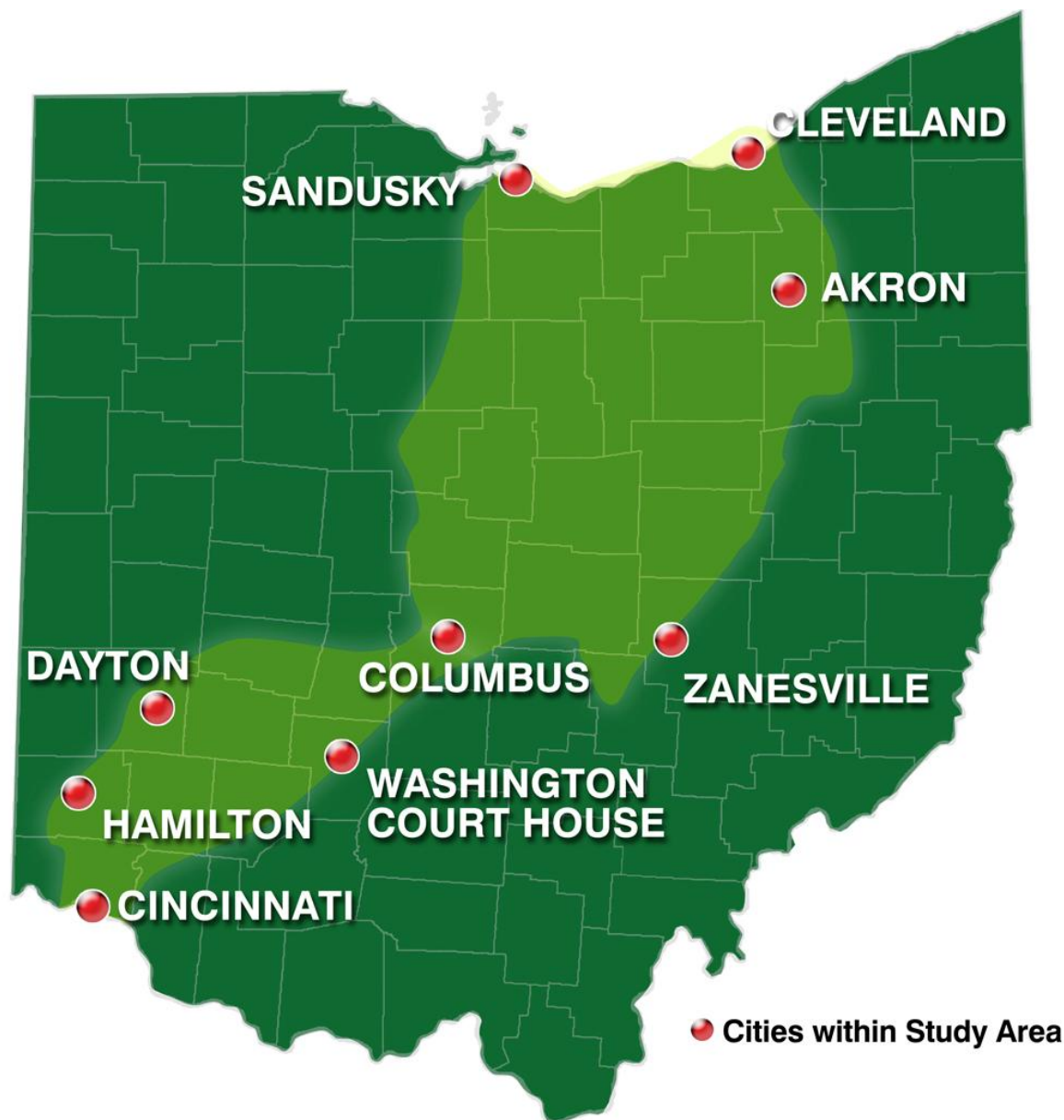
Two station stops in the suburban Dayton and Springfield areas have also been analyzed as part of this EA. Other possible station locations that have been identified through previous studies, community input, and project team analysis will be reviewed in later phases of service as the potential locations are cleared through the appropriate level of environmental review and as funding becomes available.

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<sup>1</sup> The Ohio Hub Study is part of an ongoing effort by the State of Ohio, led by the Ohio Rail Development Commission (ORDC), an independent commission within the Ohio Department of Transportation (ODOT), and ODOT to further develop the concept of expanding transportation capacity by improving the railroad system for both passenger and freight trains.  
(<http://www2.dot.state.oh.us/ohiorail/Ohio%20Hub/Website/oradc/theproject.html>)

<sup>2</sup> The Amtrak Study is an independent examination of sensitivity and alternatives analysis of multiple potential passenger rail routes, undertaken by ODOT/ORDC to identify station locations, potential ridership, capital/operating costs and environmental impacts for the most viable start-up passenger rail route in Ohio.

**Figure 1-1 3C Passenger Rail Corridor**



## **1.1 Project History**

Passenger rail service has not been available to the majority of Ohioians since the Penn Central Railroad terminated passenger operations in 1970. The State of Ohio has planned for the reinstitution of passenger train service on its 3C Corridor and vested several state agencies with that responsibility.

Current initiatives to advance passenger rail service in Ohio have been the responsibility of the Ohio Rail Development Commission (ORDC), which was established by the Ohio General Assembly in 1994. The Ohio Hub Study, which began in 2002, is a cooperative effort led by Ohio with support from several adjacent states, Amtrak, and Via Rail to further develop the financial and economic feasibility of an intercity/interstate passenger



rail system serving all of the major metropolitan areas in the region while connecting to the proposed Midwest Regional Rail System (MWRRS) and the developing corridors in neighboring states. The establishment of the Ohio Hub would add critical links between Chicago and Columbus and extend the reach of the MWRRI network to the Northeast and Canada.

The federal government has demonstrated new commitment and funding for intercity and high speed rail. In response, ORDC has accelerated planning efforts for both the 3C Corridor and the Ohio Hub. These efforts include successful application in 2008 for FRA high speed planning funds, which were used to begin a fresh update of previous 3C Corridor planning efforts. In 2009, ORDC has focused on the preparation of an application for initial 3C service called “Quick Start”. The 3C Quick Start Passenger Rail project was added to the State Transportation Improvement Program (STIP) by amendment on May 20, 2009. This amendment included \$7 million for the environmental phase of project development work.

ORDC will work with ODOT to add funds for Design, Right-of-Way, and Construction phases of this project as they are identified. This project does not currently appear on any Long Range Plan or Transportation Improvement Program (TIP) at the Metropolitan Planning Organization (MPO) level. ORDC and ODOT will work in close coordination with the appropriate MPO agencies to pursue these amendments and the necessary project-specific air quality analyses, as funds are identified.

In early 2010, ODOT, and ORDC expect to issue a Notice of Intent to prepare a Programmatic Environmental Impact Statement (PEIS) for the proposed Cleveland-Columbus-Dayton-Cincinnati corridor (3C); the Cleveland-Toledo corridor; the Toledo-Columbus corridor and the Cleveland-Pittsburgh corridor to support the advancement of a high speed rail facility (110 miles per hour (mph). These corridors are segments in the proposed Ohio and Lake Erie Regional Rail – Ohio Hub System, a network of high speed passenger rail routes in a five-state region consisting of Indiana, Michigan, New York, Pennsylvania, and Ohio.

The purpose of a Programmatic EIS (PEIS) is to evaluate the above corridors in a “concept” or “program level” document, also known as Tier 1. The PEIS (as defined in 40 CFR 1502.20) serves as an initial screen by which various levels of environmental review, as defined by NEPA are identified. The PEIS will identify segments of independent utility that would be subject to detailed environmental review in project level NEPA documents, also known as Tier 2. The PEIS provides the federal review agency (ies) with a composite picture of sensitive, moderately sensitive, and not sensitive project segments to address a high speed rail facility.

In accordance with Section 1506.1 of the President’s Council on Environmental Quality’s (CEQ) regulations governing NEPA process (40 CFR Part 1500-1508), until the Federal Railroad Administration (FRA) completes the environmental process or complies with NEPA, no action concerning the proposed project will be taken that would limit the choice of reasonable alternatives to be explored. No action covered by this project will be taken that would significantly affect the quality of the human environment unless it is justified independent of this project, is accompanied by adequate environmental documentation, and will not prejudice the ultimate decision of this project. The 3C Quick

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Start project will enable the re-establishment of passenger rail service on the 3C Corridor at speeds up to 79 mph. The future PEIS will address the establishment of high speed (110 mph) passenger rail service on this corridor and the other ones listed above. Alternatives considered for the PEIS will include the 3C Corridor and are not limited to just the 3C Corridor. No action will be taken with this project that will limit the range of feasible alternatives explored in the PEIS per CEQ's Section 1506.1.

**Figure 1-2 Ohio Hub Network**



## **1.2 Project Area**

The project area lies along an approximately 260 mile long rail corridor which extends in a northeast direction across the state of Ohio between Cincinnati, through Dayton, Springfield, and Columbus to Cleveland. The corridor is generally in the area east of I-75 between Cincinnati and Dayton, north of I-70 between Dayton and Columbus and parallel to I-71 between Columbus and Cleveland. The action proposed in this document is within and adjacent to existing railroad rights-of-way within this corridor. The overall project area included a wider geographic area reaching as far west as Sandusky in the northwest, and east to the Akron and Zanesville areas. The study area south of Columbus is generally a narrower corridor bounded on the west by Hamilton and on the east by Washington Courthouse. The project area is shown on Figure 1-1 shaded in lighter green.

### **1.3 Logical Termini**

FRA regulations do not specifically address the definition of independent utility, the FHWA definition of the term is sufficiently broad enough to apply to rail actions. FHWA regulation (23 CFR 771.111(f)) provides guidance on defining a reasonable project definition to be considered in a NEPA document: "In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evacuated in each EIS or finding of no significant impact (FONSI) shall:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
- Have independent utility or independent significance, i.e. be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements."

The logical termini for this project are rational end points for the transportation improvement and limits for the review of the environmental impacts resulting from implementation of the improvement. The logical termini are:

- The northern terminus is the Lakefront Amtrak Station located at 200 Cleveland Memorial Shoreway, in Cleveland
- The southern terminus is a new passenger rail station to be located off of Lunken Park Drive in Cincinnati, less than 1,000 feet west of Lunken Municipal Airport.

The existing 3C Corridor is approximately 260 miles in length and traverses the entire state of Ohio from north to south, passing through urban, suburban, exurban, and rural areas. The terminus locations were selected as the logical termini for the project because they are the most northern and southern assumed station locations for 3C Quick Start Passenger Rail service as noted in this Environmental Assessment.

The northern terminus is the existing Amtrak Station serving Cleveland. At the northern terminus, the Cleveland Lakefront Amtrak Station is an urban location near parklands, recreational destinations and open space. This location will connect to existing passenger rail service to major regional destinations in the eastern half of the United States such as:

- Chicago, Illinois
- New York, New York
- Boston, Massachusetts
- Washington D.C.

Connections to other forms of transportation are also available at this site. These include a shared station location with both Blue and Green Trolley Lines in Downtown Cleveland. Existing bus transit is available within three blocks and major highway connections are available within 1.5 miles.

The southern terminus of this project in Cincinnati connects to the Oasis Line, which has been identified as the preferred rail route for local commuter service as part of the

HAM/CLE-Oasis Rail Corridor project currently under development by ODOT. This light rail commuter service is proposed to offer future local connections at the following southern and eastern locations:

- Cincinnati
- East Riverfront
- Pendleton/East End
- Columbia-Tusculum
- Newtown
- Anchor
- Milford

The 3C Quick Start Passenger Rail service southern terminus location is approximately one-half mile to a major roadway connection at Columbia Parkway (US Route 50) and SR 32. Land uses at the southern terminus in Cincinnati consist of an existing rail freight yard, light industrial businesses and the Lunken Municipal Airport. Local bus transit options will be provided to establish direct access between the assumed station location and various destinations in Cincinnati.

While this project will provide improved mobility and connections throughout the state, it does stand on its own in terms of independent utility. If development of the HAM/CLE-Oasis Rail Corridor Project is delayed, the 3C Corridor will continue to function via local bus transit options and direct connections to major highway facilities. The two projects both have independent NEPA actions and will function exclusive of each other and do not preclude any existing or future transportation networks/projects.

#### **1.4 Purpose and Need**

Purpose and need are closely linked but subtly different. The *need* is the definition of a problem and the *purpose* is an intention to address the problem. Purpose describes why the sponsoring agency is proposing an action that may have environmental impacts and provides the basis for selecting reasonable and practicable alternatives for consideration, comparing the alternatives, and selecting the preferred alternative (40 CFR § 1502.13 [“The statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action”]; see also NEPA § 102.).

#### **1.5 Purpose of 3C Quick Start Passenger Rail Service**

The purpose of reestablishing a conventional (up to 79 mph) passenger rail service in the 3C Corridor is to provide a reliable train system that links Ohio’s three largest cities (Cincinnati, Columbus, and Cleveland) and delivers predictable and consistent travel times. The service is intended to provide travel options and to develop the passenger rail market for further development in the future. This Quick Start service, once established, will allow for future improvements and expansion projects that will advance the 3C Corridor toward meeting the FRA’s definition of “Emerging High Speed Rail” with top speeds of 90 to 110 mph. Further objectives are to provide interfaces between this new passenger rail system, major commercial airports, other mass transit systems, and the highway network; and to relieve capacity constraints of the existing transportation system in a manner sensitive to and protective of Ohio’s human and natural resources.

This purpose is consistent with recent expressions of federal transportation policy, most notably those listed below.

- Vision for High-Speed Rail in America, U.S. Department of Transportation (USDOT), April 2009.
- The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (Public L.109-59; 119 Stat. 1144 [2005]).
- Transportation Equity Act for the 21st Century (TEA-21) (Pub. L. 105-178; 112 Stat. 107 [1998]), and its predecessor.
- The ISTEA (Pub. L. 102-240; 105 Stat. 1914 [1991]), that encourage public transportation investment that increases national productivity, and domestic and international competition while improving safety and social and environmental conditions.

Specifically, these policies encourage investments that offer benefits such as those listed below.

- Link all major forms of transportation
- Improve public transportation systems and services
- Provide better access to seaports and airports
- Enhance efficient operation of transportation facilities and service

ODOT and ORDC plan to establish a passenger rail system that is coordinated with the state's existing transportation infrastructure network, particularly bus lines, urban transit lines, highways, and airports. Stakeholder input, combined with ongoing engineering, planning, economic, and ridership studies have helped refine the purpose of the 3C Quick Start Passenger Rail project.

## **1.6 Goals and Objectives for the 3C Quick Start Passenger Rail Service**

A 3C Quick Start Passenger Rail/High Speed Rail Purpose and Need stakeholder workshop was held on July 7, 2009 at the Fawcett Center in Columbus, Ohio. The goal of the workshop was to obtain a broad cross section of ideas on the project's purpose and need, objectives, benefits, issues, and opportunities of both a Quick Start conventional rail service and a future higher speed system. Stakeholders from across the state convened to provide their input regarding anticipated and hoped for objectives of the short-term conventional passenger rail service and longer term efforts to achieve high speed rail. The stakeholder input gathered from this workshop was useful in identifying the desired outcomes of the stakeholders. The following list summarizes the 3C passenger rail goals and objectives developed by ORDC, ODOT, and stakeholders:

1. Improve the intercity travel experience for all Ohioans regardless of age by providing comfortable, safe, frequent, and reliable high-speed travel;
2. Refocus development opportunities along rail corridors and create opportunities to strengthen assets in the downtown cores and help to reduce sprawl;
3. Maximize intermodal transportation opportunities by locating stations and future stations to connect with local transit, airports, and highways;
4. Enhance the "image" of the 3C Corridor and Ohio thus increasing the region's competitiveness for future employers and employees;

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5. Provide a travel choice that would be desirable to many of today's younger generation that seek a less car-dependent lifestyle, and help to keep a younger workforce in Ohio;
6. Connect an aging population to health facilities generally located in the major cities;
7. Preserve environmental quality and protect Ohio's sensitive environmental resources by reducing emissions and vehicle miles traveled for intercity trips;
8. Maximize the use of existing transportation corridors and rights-of-way, to the extent feasible;
9. Attract an entirely new passenger rail support economy to Ohio and thus help to create local employment and associated benefits;
10. Enhance freight rail efficiency and operations, where possible; and
11. Support and expand tourism opportunities.

#### **1.7 Measures of Effectiveness**

Nine evaluation measures were created to address the goals and objectives. Each alternative will be evaluated against these measures in Section 2.4. The evaluation measures are listed in Table 1-1.

**Table 1-1 Evaluation Measures**

| <b>Evaluation Measure</b>   | <b>Goal(s) Addressed</b>    |
|---|-----------------------------|
| Travel Time – measures the end-to-end travel time, including station dwell time. Better travel times are more attractive to passengers and generate more ridership.                     | 1, 2, 3, 4, 6               |
| Annual Riders – measures the number of passengers estimated to ride the service. Ridership is affected by travel time, station location, and station access.                            | 1, 3, 5, 6, 7, 8            |
| Annual Passenger Miles – measures the length of passenger trips. Higher numbers represent longer passenger trips; i.e. passengers find the service more attractive for longer journeys. | 1, 3, 5, 6, 7, 8            |
| 10-Mile and 15-Mile Population/Track Miles – measures the potential market served by each alternative. Higher numbers indicate a larger population with access to the rail line.        | 1, 3, 5, 6, 7, 9, 11        |
| Reliability – measures the expected reliability of the line. Reliability is a major determinant in a person's choice to take transit.   | 1, 2, 4, 5, 6, 7, 9, 10, 11 |
| Operations and Maintenance Costs – measures the relative cost of the provided service. Reducing operating costs is important in providing a cost-effective project and service.         | 1, 5                        |
| Refocus development opportunities – measures whether the alternative can be used to help focus development in station areas, increasing potential ridership and reducing sprawl.        | 2, 4, 8                     |
| Connect to all modes – measures whether the alternative connects  | 3, 11                       |

| Evaluation Measure   | Goal(s) Addressed |
|--|-------------------|
| with existing transit services in the cities along each alignment. Providing connections to existing transit enlarges the potential market by expanding the transit network.                                     |                   |
| Connect to major health facilities – measures whether the alternative connects with major medical facilities, thereby providing another mode of transportation for Ohio residents to obtain quality health care. | 6                 |

These measures will be applied to the evaluation of alternatives in Section 2.4.

## **1.8 Purpose and Need for 3C Quick Start Conventional Passenger Rail**

The purpose of reestablishing conventional passenger rail service in the 3C Corridor is to provide a reliable train system that links Ohio's three largest cities and delivers predictable and consistent travel times. Taking into account the aforementioned stakeholder input and ongoing studies, the following lists the various needs identified for the 3C Quick Start service.

### ***Expand travel options between Ohio's largest cities***

- The three largest cities in Ohio, Cleveland, Columbus, and Cincinnati, are not currently served by passenger rail service between them. Ohio's existing intercity passenger rail service is solely long-distance service with four Amtrak trains operating along three east-west routes. This system connects 11 Ohio cities and towns with Pittsburgh, PA; Chicago, IL; Indianapolis, IN; and Buffalo, NY. Ohio station locations include Akron, Alliance, Bryan, Cleveland, Elyria, Hamilton, Sandusky, Toledo, and Cincinnati. Columbus and Dayton are not served at all with passenger rail service. The existing service is infrequent and inconvenient and does not serve the travel markets between Cincinnati, Columbus, Cleveland, and points north.
- To meet goals outlined in ACCESS OHIO 2004 – 2030, Ohio's statewide multimodal transportation plan, there needs to be a full complement of transit services with flexibility, mobility options, and intermodal connections within Ohio.
- Between 2000 and 2030, the Ohio Department of Development estimates that the State's population of those aged 65 or older will increase by approximately 750,000 people, or 49.8 percent. Ohio's population is steadily growing older and senior mobility will become increasingly important. Intercity passenger rail service is one means of providing alternative transportation options to this elderly population.
- The population within the metro areas of Cleveland, Columbus, Dayton, and Cincinnati are expected to grow by 10.4 percent in the next 20 years, from 6,280,150 in 2008 to 7,003,810 in 2030 (Table 1-2). This growth in population is expected to increase the number of person trips between the major cities over the next 20 years by as much as 33 percent, especially from and to Columbus (Table 1-3).

**Table 1-2 Population Changes in 3C Corridor Major Metropolitan Areas**

|                   | <b>2005<br/>Population</b> | <b>2030<br/>Population</b> | <b>Percent<br/>Change</b> |
|-------------------|----------------------------|----------------------------|---------------------------|
| <b>Cleveland</b>  | 2,131,880                  | 2,134,850                  | 0.14%                     |
| <b>Columbus</b>   | 1,708,410                  | 2,222,490                  | 30.09%                    |
| <b>Cincinnati</b> | 1,595,800                  | 1,810,240                  | 13.44%                    |
| <b>Dayton</b>     | 844,060                    | 836,230                    | -0.93%                    |
| <b>Total</b>      | 6,280,150                  | 7,003,810                  | 10.4%                     |

Source: Ohio Department of Development, Office of Strategic Research, March 2004

Note: The metropolitan areas are defined as follows:

Cleveland: Cleveland, Elyria, Mentor metropolitan areas, the counties of Cuyahoga, Geauga, Lake, Lorain, and Medina

Columbus: Columbus metropolitan area, the counties of Delaware, Fairfield, Franklin, Licking, Madison, Morrow, Pickaway, and Union

Cincinnati: Cincinnati-Middletown, OH-KY-IN (Ohio Part) metropolitan areas, the counties of Brown, Butler, Clermont, Hamilton, and Warren

Dayton: Dayton metropolitan area, the counties of Greene, Miami, Montgomery, and Preble

**Table 1-3 Person Trips between the 3C Corridor Major Cities 2005 – 2030**

| <b>Major City</b> | <b>Year</b> | <b>Person Trips<br/>Cleveland</b> | <b>Person Trips<br/>Columbus</b> | <b>Person Trips<br/>Cincinnati</b> |
|-------------------|-------------|-----------------------------------|----------------------------------|------------------------------------|
| <b>Cleveland</b>  | 2005        | X                                 | 5,150                            | 1,240                              |
|                   | 2030        |                                   | 6,550                            | 1,230                              |
|                   | % change    |                                   | 27%                              | -1%                                |
| <b>Columbus</b>   | 2005        | 5,080                             | X                                | 9,610                              |
|                   | 2030        | 6,620                             |                                  | 12,790                             |
|                   | % change    | 30%                               |                                  | 33%                                |
| <b>Cincinnati</b> | 2005        | 1,160                             | 9,780                            | X                                  |
|                   | 2030        | 1,190                             | 13,050                           |                                    |
|                   | % change    | 3%                                | 33%                              |                                    |
| <b>Dayton</b>     | 2005        | 800                               | 7,910                            | 5,610                              |
|                   | 2030        | 860                               | 8,930                            | 6,260                              |
|                   | % change    | 8%                                | 13%                              | 12%                                |

Source: ODOT, 2005

***Meet travel demand in the I-71 and segments of I-70 and I-75 corridors***

- Ohio contains one of the nation's largest and most heavily traveled roadway systems. Interstate-71, I-70, and I-75, experience heavy congestion, especially in the urban areas. Population growth outside of these cities has created a higher demand for capacity and increased vehicle miles traveled.



- Average daily traffic (ADT) volumes on many key links of the interstate highways connecting the 3C cities are expected to increase 15 to 83 percent over the next 20 years, increasing congestion and reducing travel times. As identified in Table 1-4, several links along the interstate system are expected to reach saturation by 2030 causing delays to intercity travel.

**Table 1-4 Daily Traffic Volumes on Key Interstate Links along the 3C Corridor**

|                        |                          |     | Daily Vehicle ADT |       | Peak Period Volume to Capacity Ratio (V/C) |      | Daily Vehicle Flow | Peak Period (V/C) |
|------------------------|--------------------------|-----|-------------------|-------|--|------|--------------------|-------------------|
| Corridor               | Location                 | Dir | 2005              | 2030  | 2005                                       | 2030 | 2005-2030          | 2005-2030         |
| Cleveland to Columbus  | I-71 South of I-80 Junc  | SB  | 44800             | 56200 | 0.37                                       | 0.48 | 25%                | 30%               |
|                        | I-71 South of I-80 Junc  | NB  | 45700             | 56700 | 0.64                                       | 0.78 | 24%                | 22%               |
|                        | I-71 South of I-271 Junc | SB  | 30200             | 41800 | 0.55                                       | 0.70 | 38%                | 27%               |
|                        | I-71 South of I-271 Junc | NB  | 33200             | 47200 | 0.57                                       | 0.91 | 42%                | 60%               |
|                        | I-71 Btw CLE & COL       | SB  | 23200             | 32500 | 0.45                                       | 0.63 | 40%                | 40%               |
|                        | I-71 Btw CLE & COL       | NB  | 26300             | 35500 | 0.52                                       | 0.70 | 35%                | 35%               |
|                        | I-71 North of I-270 Junc | SB  | 50900             | 93100 | 0.64                                       | 1.08 | 83%                | 69%               |
|                        | I-71 North of I-270 Junc | NB  | 54300             | 97400 | 0.36                                       | 0.58 | 79%                | 61%               |
| Columbus to Cincinnati | I-71 South of I-270 Junc | SB  | 51400             | 68400 | 0.49                                       | 0.68 | 33%                | 39%               |
|                        | I-71 South of I-270 Junc | NB  | 53000             | 71200 | 0.76                                       | 0.90 | 34%                | 18%               |
|                        | I-71 Btw COL & CIN       | SB  | 20800             | 27200 | 0.36                                       | 0.46 | 31%                | 28%               |
|                        | I-71 Btw COL & CIN       | NB  | 21400             | 27500 | 0.42                                       | 0.54 | 29%                | 29%               |
|                        | I-71 North of I-275 Junc | SB  | 65300             | 87600 | 0.74                                       | 1.08 | 34%                | 46%               |
|                        | I-71 North of I-275 Junc | NB  | 67000             | 89600 | 0.45                                       | 0.50 | 34%                | 11%               |
| Columbus to Dayton     | I-70 West of I-270 Junc  | WB  | 38800             | 48100 | 0.36                                       | 0.45 | 24%                | 25%               |
|                        | I-70 West of I-270 Junc  | EB  | 36400             | 45400 | 0.64                                       | 0.74 | 25%                | 16%               |

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|                      |                          |     | Daily Vehicle ADT |       | Peak Period Volume to Capacity Ratio (V/C) |      | Daily Vehicle Flow | Peak Period (V/C) |
|----------------------|--------------------------|-----|-------------------|-------|--|------|--------------------|-------------------|
| Corridor             | Location                 | Dir | 2005              | 2030  | 2005                                       | 2030 | 2005-2030          | 2005-2030         |
|                      | I-70 Btw COL & DAY       | WB  | 21600             | 24900 | 0.39                                       | 0.49 | 15%                | 26%               |
|                      | I-70 Btw COL & DAY       | EB  | 21900             | 26900 | 0.44                                       | 0.48 | 23%                | 9%                |
|                      | I-70 East of I-675 Junc  | WB  | 35900             | 42000 | 0.50                                       | 0.64 | 17%                | 28%               |
|                      | I-70 East of I-675 Junc  | EB  | 39400             | 46900 | 0.38                                       | 0.43 | 19%                | 13%               |
|                      |                          |     |                   |       |  |      |                    |                   |
| Dayton to Cincinnati | I-75 South of I-675 Junc | SB  | 61700             | 74200 | 0.50                                       | 0.60 | 20%                | 20%               |
|                      | I-75 South of I-675 Junc | NB  | 58200             | 69600 | 0.85                                       | 0.99 | 20%                | 16%               |
|                      | I-75 North of I-275 Junc | SB  | 69200             | 83700 | 0.83                                       | 1.10 | 21%                | 33%               |
|                      | I-75 North of I-275 Junc | NB  | 68700             | 81900 | 0.33                                       | 0.37 | 19%                | 12%               |

Source: ODOT, 2005

***Respond to statewide air quality concerns, work to alleviate current and future regional congestion, and help foster environmental sustainability***

- Side-by-side comparisons by USDOT show trains' overall energy consumption per passenger is nearly half that of airplanes or cars.
- Since the beginning of the Congestion Mitigation/Air Quality program in 1990, the Federal Highway Administration has documented several cases of passenger rail projects resulting in improved air quality. These include service start-ups, expansions and even purchase of higher capacity rail passenger cars. Specific project areas included Washington D.C., Baltimore, New York City and Houston.
- Passenger rail will provide an alternative to automobile and air travel, resulting in environmental benefits that include decreased energy consumption and reduced air pollutant emissions from automobiles. Reducing the amount of vehicular trips will, therefore, provide an incremental improvement to air quality and minimize impacts to ecological resources.

***Improve travel reliability in the 3C Corridor***

- Interstate travel time is impacted by many factors. Delays can be caused by weather, construction, and congestion in both car and airplane trips. Corridor trains have a relatively high on-time performance record providing greater predictability in travel time over other modes. A breakdown of peak travel speeds on key interstate links around the 3C Corridor for 2005 and 2030 are listed in Table 1-5 below. Table 1-6 identifies the interstate travel time between the major metropolitan areas along the 3C Corridor. Several key links in the interstate system are expected to reach capacity by 2030, resulting in congestion and

delays. Overall travel speeds are expected to decrease as much as 53 percent over the next 21 years, with intercity travel times increasing by as much as 10 percent for a two hour trip.

- Multi-modal connections between rail, transit rail, bus transit, roadway, bicycle and pedestrian modes will supplement the 3C Quick Start service in order to link passengers with their final destinations. Representatives from numerous transit agencies in Ohio were present at the project's second Stakeholder workshop meeting on August 20, 2009. Transit agencies from Cincinnati, Dayton, Columbus, Shelby, Akron, and Cleveland all indicated their eagerness to work with ODOT/ORDC to provide transit service to and from 3C stations. Transit system's letters of support are noted in Sections 4.1.1 and 4.3 of this document.

**Table 1-5 Peak Travel Speed on Key Interstate Links 2005 and 2030**

|                        |                          |     | Peak Travel Speed |      | Peak Travel Speed |
|------------------------|--------------------------|-----|-------------------|------|-------------------|
| Corridor               | Location                 | Dir | 2005              | 2030 | 2030              |
| Cleveland to Columbus  | I-71 South of I-80 Junc  | SB  | 62                | 61   | -2%               |
|                        | I-71 South of I-80 Junc  | NB  | 58                | 51   | -12%              |
|                        | I-71 South of I-271 Junc | SB  | 63                | 58   | -8%               |
|                        | I-71 South of I-271 Junc | NB  | 63                | 43   | -32%              |
|                        | I-71 Btw CLE & COL       | SB  | 65                | 64   | -2%               |
|                        | I-71 Btw CLE & COL       | NB  | 65                | 58   | -11%              |
|                        | I-71 North of I-270 Junc | SB  | 64                | 30   | -53%              |
|                        | I-71 North of I-270 Junc | NB  | 68                | 65   | -4%               |
| Columbus to Cincinnati | I-71 South of I-270 Junc | SB  | 66                | 61   | -8%               |
|                        | I-71 South of I-270 Junc | NB  | 57                | 46   | -19%              |
|                        | I-71 Btw COL & CIN       | SB  | 66                | 65   | -2%               |
|                        | I-71 Btw COL & CIN       | NB  | 66                | 64   | -3%               |
|                        | I-71 North of I-275 Junc | SB  | 59                | 30   | -49%              |
|                        | I-71 North of I-275 Junc | NB  | 67                | 67   | 0%                |
| Columbus to Dayton     | I-70 West of I-270 Junc  | WB  | 67                | 66   | -1%               |
|                        | I-70 West of I-270 Junc  | EB  | 63                | 58   | -8%               |
|                        | I-70 Btw COL & DAY       | WB  | 66                | 65   | -2%               |
|                        | I-70 Btw COL & DAY       | EB  | 65                | 65   | 0%                |
|                        | I-70 East of I-675 Junc  | WB  | 67                | 64   | -4%               |
|                        | I-70 East of I-675 Junc  | EB  | 68                | 67   | -1%               |

|                      |                          |     | Peak Travel Speed |      | Peak Travel Speed |
|----------------------|--------------------------|-----|-------------------|------|-------------------|
| Corridor             | Location                 | Dir | 2005              | 2030 | 2030              |
| Dayton to Cincinnati | I-75 South of I-675 Junc | SB  | 66                | 64   | -3%               |
|                      | I-75 South of I-675 Junc | NB  | 50                | 38   | -24%              |
|                      | I-75 North of I-275 Junc | SB  | 52                | 28   | -46%              |
|                      | I-75 North of I-275 Junc | NB  | 68                | 68   | 0%                |

Source: ODOT, 2005

**Table 1-6 Travel Time between Major Metropolitan Areas along the 3C Corridor**

| Origination City | Destination City | 2005 Time | 2030 Time | Percent Increase |
|------------------|------------------|-----------|-----------|------------------|
| Cleveland        | Columbus         | 146 min   | 152 min   | 4%               |
| Columbus         | Dayton           | 75 min    | 82 min    | 9%               |
| Columbus         | Cincinnati       | 115 min   | 127 min   | 10%              |
| Dayton           | Cincinnati       | 69 min    | 74 min    | 7%               |

Source: ODOT, 2005

***Create multi-modal connections between the 3C rail and bus transit systems, existing interstate rail, and alternative transportation modes***

- Linking the urban transit systems of Cleveland, Columbus, Dayton, and Cincinnati would help improve mobility options for residents of all four cities. A resident of Cleveland, for example, might be able take a light rail train to the downtown Amtrak station and transfer to a comfortable seat on an intercity train ride to Columbus or Cincinnati.

***Improve travel safety in the 3C Corridor***

- The safety advantages of rail travel over automobiles are well documented. Driver fatigue and other factors increase the potential for accidents as trip lengths increase, especially if hotel and restaurant breaks are skipped to save expense or time. In comparison to roads, where minimal safety requirements are maintained and enforcement often lacks, trains have state-of-the art safety equipment and technology, and are driven by trained professionals who are regularly required to review tests and checks. Many of the intersections and road segments with the highest crash rates in Ohio are near the 3C Corridor. Table 1-7 identifies the accidents and fatalities, by service location, that occurred along I-71, which runs between Cleveland, Columbus, and Cincinnati.
- According to FRA statistics, Ohio ranked seventh nationally in terms of collisions at railroad grade crossings and eighth nationally in the number of fatalities in 2008. Improvements associated with this project at grade rail crossings including associated warning and lighting systems throughout the corridor will enhance the overall safety for auto travelers, pedestrians, and cyclists.

**Table 1-7 Interstate Accidents and Fatalities by 3C Corridor Service Location**

| <b>Interstate</b> | <b>Location</b>            | <b>2008 Accidents</b> | <b>2008 Fatalities</b> |
|-------------------|----------------------------|-----------------------|------------------------|
| I-71              | Cleveland/Cuyahoga County  | 797                   | 2                      |
| I-71              | Columbus/ Franklin County  | 1228                  | 4                      |
| I-70              | Columbus/Franklin County   | 1137                  | 8                      |
| I-75              | Dayton/Montgomery County   | 1202                  | 1                      |
| I-75              | Cincinnati/Hamilton County | 1682                  | 4                      |
| I-71              | Cincinnati/Hamilton County | 1175                  | 3                      |

Source: Ohio Department of Public Safety, 2008

***Stimulate economic growth***

- Investment in public transportation creates jobs and puts dollars back into the community. For every \$1 invested in public transit, \$6 are generated in the local economy. (ACCESS OHIO 2004-2030, November 2004) In addition, Ohio's public transit systems employ approximately 60,000 people.
- Noted during public meetings for the Ohio's 21st Century Transportation Priorities Task Force, business owners view connecting the workforce to workplace as critical. Good jobs frequently go unfilled due to the lack of connection between those who need jobs and the businesses that have them. (Report of Ohio's 21st Century Transportation Priorities Task Force, January 2009)
- Passenger rail service and new stations encourage the development of nearby properties. The Ohio and Lake Erie Regional Rail Ohio Hub Study (July 2007) predicts that the Ohio Hub will create 16,700 permanent jobs and generate more than \$3 billion in development activity near stations. Reliable rail service in urban centers will foster establishment of commercial and retail opportunities in the form of restaurants, shops, and office space. Additionally, passenger rail service and new stations will provide thousands of construction jobs.
- The Midwest's largest cities are too far from one other—and from the small towns that separate them—to function as an efficient economic unit. Driving times are long, airfares are high, and flying time-plus-ground travel makes many airline trips almost the same amount of time as driving trips between the same destinations. Regional growth depends on region-wide collaboration. However, travel times between most Midwestern cities exceed the 2-to-3-hour "Day Trip Zone" upon which successful collaboration depends. Business thrives best when business people can visit customers and suppliers and return home within the same day. (Midwest High Speed Rail Association, <http://www.midwesthsr.org/benefits/economy.html> (2009).

**1.9 Purpose and Need Summary**

The purpose of the project is to establish a new passenger transportation system in the 3C Corridor, providing additional mobility options and an entirely new transportation mode choice for travelers, with the associated benefits. In order to successfully achieve this purpose, the project must meet the following identified needs in the 3C Corridor:

- Expand travel options between Ohio's largest cities
- Meet travel demand in the I-71 corridor and segments of the I-70 and I-75 corridors

- Respond to statewide air quality concerns, work to alleviate current and future regional congestion, and help foster environmental sustainability
- Improve travel reliability
- Improve travel safety
- Stimulate economic growth

While addressing the above discussed needs in the 3C Corridor, ODOT, and ORDC are committed to incorporating additional goals and objectives identified by the stakeholders. These considerations include improving the intercity travel experience for all Ohioans; refocusing development opportunities along rail corridors, create opportunities to strengthen downtown cores and reduce sprawl; maximizing intermodal transportation opportunities; enhancing the image of the 3C Corridor and Ohio to increase the region's and state's competitiveness; provide a desirable travel choice for those seeking a less car dependent lifestyle; connect an aging population to health facilities located in the major cities; preserve environmental quality and protect Ohio's sensitive environmental resources; maximize the use of existing transportation corridors; attract an entirely new passenger rail support economy to Ohio and create local employment; enhance freight rail efficiency and operations and support and expand tourism opportunities.

### **1.10 Decisions to be Made**

As proponents of an action supported by federal funds, ORDC, ODOT, and FRA must comply with NEPA. NEPA requires federal agencies to consider the impacts of their actions on the natural, social, economic and cultural environment and to disclose those considerations in a public document. The NEPA process is intended to help public officials make decisions based on an understanding of the environmental consequences and take actions that protect, restore, and enhance the environment (40 CFR 1500.1).

The purpose of this EA is to provide FRA, the public and review and regulatory agencies with a full accounting of the environmental impacts of the alternatives developed to meet the project purpose and need. This EA serves as the primary document to facilitate review of the proposed project by federal, state and local agencies and the public.

The EA process concludes with either a Finding of No Significant Impact (FONSI) or a determination to proceed to preparation of an Environmental Impact Statement (EIS). A FONSI is a document that presents the reasons why the agency has concluded that there are no significant environmental impacts projected to occur upon implementation of the action (CEQ 2007).

In early 2010, ODOT and ORDC expect to issue a Notice of Intent to prepare a PEIS for the proposed 3C Corridor, the Cleveland-Toledo corridor, the Toledo-Columbus corridor, and the Cleveland-Pittsburgh corridor to support the advancement of a high speed rail facility as part of the Ohio Hub System. The PEIS will be conducted in two "Tiers" with Tier 1 providing a high level environmental review to identify a corridor and sections of independent utility, while Tier 2 would be subject to detailed environmental review as part of project level NEPA documentation. The 3C Quick Start project will enable to reestablishment of passenger rail service on the 3C Corridor at speeds up to 79mph, while the future PEIS would address the establishment of high speed (110mph) passenger rail service on the 3C Corridor as well as the other identified corridors.

### **1.11 Connected Actions**

Actions are said to be “connected” if they are closely related enough to be evaluated in the same environmental analysis. Specifically, actions are connected if they:

- Automatically trigger other actions that may require NEPA documents such as an EIS;
- Cannot or will not proceed unless other actions are taken previously or simultaneously; and
- Are interdependent parts of a larger action and depend on the larger action for their justification (CFR Section 1508.25).

This project proposes reestablishing passenger rail service, adding track capacity within existing freight rail rights of way and constructing station platforms and associated infrastructure. No other connected actions require analysis in this EA.

### **1.12 Applicable Regulations and Permits**

The statutes and orders that apply to the proposed action and were considered during the preparation of this EA are listed in Section 7.0.

### **1.13 Introduction to the Tiered NEPA Process**

The Council on Environmental Quality (CEQ) regulations (40 CFR 1502.20) allow National Environmental Policy Act (NEPA) studies for large, complex transportation projects to be carried out in a tiered process. This tiered approach to transportation decision making under NEPA involves preparing a Tier One NEPA document that focuses on broad issues such as purpose and need, general location of alternatives, transportation mode composition (auto, truck, rail, utilities), and the avoidance and minimization of potential environmental effects.

This Tier One Environmental Assessment (EA) addresses the range of program decisions (i.e. cities and stations served, route alternatives, service levels, ridership projections, and type of operation – electric, diesel, speed, etc.) associated with the 260 mile high speed rail corridor from Cincinnati to Cleveland. The Tiered NEPA process is appropriate to make broad program decisions for large expansive corridor projects that are: 1) too large to be addressed in detail in one document; 2) are phased over time; 3) where future phases are not fully defined; or 4) when major routing or service alternatives need to be evaluated. The Federal Railroad Administration (FRA) has issued guidance specific to the current program. The following is excerpted from “Compliance with the National Environmental Policy Act in Implementing the High-Speed Intercity Passenger Rail Program” issued August 13, 2009.

*“In many, if not most, of the corridors around the country where substantial improvements are needed to implement significantly expanded conventional or high-speed rail services, what FRA has defined in the guidance as “Service NEPA” is an essential first step. Service NEPA (which CEQ refers to as programmatic) typically addresses the broader questions relating to the type of service(s) being proposed, including cities and stations served, route alternatives, service levels, types of operations (speed, electric, or diesel powered, etc.), ridership projections, and major infrastructure components. For a major rail corridor improvement program, this type of environmental review must be completed before any substantial investments in the corridor can be made.”*

*“Several different approaches are available to accomplish Service NEPA, including Tiered NEPA (Tier 1 environmental impact statement (EIS) or environmental assessment (EA) followed by Tier 2 EISs, EAs or categorical exclusion determinations (CE)) or non-Tiered NEPA (one EIS or EA covering both service issues and individual project components).”.....”The decision on the appropriate level of documentation for a particular proposed action would be made by the FRA in consultation with the applicant.”*

ODOT has consulted with the FRA on the 3C project and has determined that a Tier One EA is the appropriate form of documentation for this stage of project development.

Upon approval of the Tier One EA the project would then advance to Tier Two. The Tier Two NEPA process would address site-specific alignment alternatives, project impacts, costs and mitigation measures. In addition, individual properties that may be affected would be identified. The second tier generally involves the preparation of several separate NEPA documents including Environmental Impact Statements (EISs); EAs; or Categorical Exclusions (Cat Exs) for specific stand alone projects within the overall corridor that have independent utility.

**What was studied in Tier One?**

This Tier One EA addresses broad, corridor-wide issues from Cincinnati to Cleveland. Several corridor location alternatives were evaluated, including the no-build alternative, and a preferred alternative was selected. The goal of this Tier One document is to ensure that the preferred corridor location alternative adequately balances the needs of the communities, the resource agencies (i.e., the environment) and the transportation system (local, regional and state-wide). GIS mapping was used to define the limits of impact areas presented in this EA. The proposed new high speed rail service will operate on existing rail facilities, and so the environmental field studies were concentrated in areas with proposed capacity additions (in the form of sidings) and on the initial station locations identified for the start-up service. Locations were noted where additional environmental studies will be necessary during the Tier Two NEPA analyses.

**What will be studied in Tier Two?**

Once the Tier One EA is approved and a preferred alternative is identified, the project will proceed to the Tier Two NEPA process. The Tier Two NEPA processes will consist of individual environmental and engineering studies addressing location-specific design details and environmental impacts to smaller sections called Sections of Independent Utility (SIU). SIUs are portions of the preferred corridor alternative that can be constructed independently of each other. Tier Two NEPA studies will focus on individual SIUs. Once a Tier Two NEPA process is completed for a SIU, engineering plans will be developed and construction of that SIU could begin.



## **2.0 ALTERNATIVES**

### **2.1 Introduction**

A two-stage approach was used to screen a wide variety of route alignment options down to a set of alternatives retained for further study. Over 30 route options were developed throughout the project area, following different existing rail corridors and serving different populations and towns between the three major cities. These route options were screened through a two-stage comparative analysis. The Level 1 screening considered the widest array of options under consideration and used a fatal flaw analysis to reduce the number of potential route options. The Level 2 screening evaluated only route options that passed the fatal flaw analysis and used an expanded set of criteria. The resulting alternatives were retained for evaluation against the measures described in Section 1.7 Measures of Effectiveness. The route evaluation technical report is provided in Appendix A. This report provides a detailed description of the alternatives development and screening. The following sections present a summary of the alternatives developed for the 3C Quick Start Passenger Rail project and the screening process used to determine the preferred alternative.

### **2.2 Initial Screening Options**

The thirty-three route options developed for the 3C Corridor are shown in Figure 2-1 and listed below. There were 28 route options on the north segment between Cleveland and Columbus and five route options on the south segment between Columbus and Cincinnati. Each segment might have one or more sub-segments.

#### ***North Segment (Cleveland to Columbus Routes)***

1. Direct Route
2. Direct Route via Elyria
3. Direct Route via Lorain
4. Direct Route via Medina
5. Direct Route via Marion
6. Akron-Medina
7. Akron-Wadsworth
8. Akron-Barberton
- 9A. Kent-Akron-Medina (Kent-Akron via CSX)
- 9B. Kent-Akron-Medina (Kent-Akron via METRO)
- 9C. Kent-Akron-Medina (Kent-Akron via W&LE)
- 10A. Kent-Akron-Wadsworth (Kent-Akron via CSX)
- 10B. Kent-Akron-Wadsworth (Kent-Akron via METRO)
- 10C. Kent-Akron-Wadsworth (Kent-Akron via W&LE)
- 11A. Kent-Akron-Barberton (Kent-Akron via CSX)
- 11B. Kent-Akron-Barberton (Kent-Akron via METRO)
- 11C. Kent-Akron-Barberton (Kent-Akron via W&LE)
12. Akron-Medina-Marion
13. Akron-Barberton-Marion
14. Kent-Akron-Medina-Bucyrus-Marion

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- 15. Akron-Mansfield (via Abandoned Erie)
- 16. Kent-Akron-Mansfield (via Abandoned Erie)
- 17A. Akron-Canton-Mansfield (via North Canton to NS)
- 17B. Akron-Canton-Mansfield (via Hartville to NS)
- 18. Akron-Massillon-Wooster-Mansfield (via RJC/NS)
- 19A. Akron-Wooster-Mansfield (via Aband-Warwick-Orville-NS)
- 19B. Akron-Mt. Vernon (via Aband Warwick-Orville-Mt. Vernon)
- 20A. Kent-Akron-Canton-Mansfield (via North Canton to NS)
- 20B. Kent-Akron-Canton-Mansfield (via Hartville to NS)
- 20C. Kent-Canton-Mansfield (via Hartville to NS)
- 21A. Akron-Brewster-Newark (via Massillon)
- 21B. Akron-Brewster-Newark (via N. Canton and Canton)
- 21C. Akron-Brewster-Newark (via Hartville and Canton)
- 22A. Kent-Akron-Brewster-Newark (via Massillon)
- 22B. Kent-Akron-Brewster-Newark (via N. Canton and Canton)
- 22C. Kent-Akron-Brewster-Newark (via Hartville and Canton)
- 23. Kent-Akron-Brewster-Newark (Direct via Hartville, Canton)
- 24. Akron-Brewster-Zanesville-Newark (via Massillon)
- 25. Elyria-Bellevue
- 26. Elyria-Sandusky-Bellevue
- 27. Lorain-Bellevue
- 28. Lorain-Sandusky-Bellevue

#### ***South Segment (Columbus to Cincinnati Routes):***

- 29. Direct Route South-Columbus-Cincinnati (Longworth/CUT)
- 30. Direct Route-Columbus-Oasis-Cincinnati
- 31. Hamilton-Cincinnati (Longworth/CUT)
- 32. Hamilton-Cincinnati (Oasis-Boathouse)
- 33. Hamilton-Cincinnati (Longworth/CUT)

**Figure 2-1 Potential 3C Quick Start Passenger Rail Routes**



For screening purposes, the direct route in each of the north and south segments was used as baseline for comparing the options. Due to the large number of route options, screening measures were employed in phases (Table 2-1). In the Level 1 screening, a subset of the evaluation criteria was utilized to determine the viability of the route options and the appropriateness of the alignments. Options that failed in a significant way to meet one or more evaluation criteria were eliminated from further consideration. The options that were not eliminated in the Level 1 screening were developed in detail with regard to geometric characteristics of alignment and service characteristics. These options were subject to a Level 2 screening, which addressed other critical factors such as capital costs, safety, reliability, ridership forecasts, and travel time competitiveness.

**Table 2-1 Route Evaluation Criteria**

| Screening Level | Evaluation Criteria         | Measure  |
|-----------------|-----------------------------|--|
| 1               | Route Characteristics       | <ul style="list-style-type: none"> <li>Route length compared to direct route</li> <li>Percent of single vs. double track</li> <li>Percent abandoned and out-of-service track</li> <li>Percent Class 1 main vs. secondary and shortline</li> </ul>                                |
| 2               | Capital and Operating Costs | <ul style="list-style-type: none"> <li>Cost to upgrade from out-of-service, abandoned or shortline</li> <li>Right-of-way costs</li> <li>Dispatching costs</li> <li>Operating costs</li> <li>Track maintenance costs</li> </ul>   |
| 1               | Market Size                 | <ul style="list-style-type: none"> <li>Support economic development by serving major town centers/cities</li> <li>Population served within 10 miles and 15 miles of alignment</li> </ul>   |
| 2               | Travel Time                 | <ul style="list-style-type: none"> <li>Travel time at 79 mph (after accounting for recovery, dwell and handoff times)</li> </ul>   |
| 2               | Safety                      | <ul style="list-style-type: none"> <li>Number of at-grade rail crossings</li> <li>Number of at-grade road crossings</li> <li>Other safety factors</li> </ul>   |
| 2               | Reliability                 | <ul style="list-style-type: none"> <li>Number of hand-offs from Class 1 to Class 1</li> <li>Number of hand-offs from Class 1 to shortline</li> <li>Percent of joint trackage</li> <li>Extent of shared freight track usage</li> <li>Typical freight traffic</li> </ul>           |
| 2               | Other Factors               | <ul style="list-style-type: none"> <li>Commuter rail use</li> <li>Modal connections</li> <li>Special geometry issues: turnouts, crossovers, etc.</li> <li>Train control (signals and communications)</li> <li>Existing stations, terminals and maintenance facilities</li> </ul> |

### **2.2.1 Level 1 Screening of Initial Options**

The Level 1 screening considered evaluation criteria that broadly addressed the needs of the 3C Corridor. The purpose of the screening was to eliminate route options that had significant flaws with regard to route characteristics and travel markets served. All of the 33 route options (Figure 2-1) (including sub-options, where applicable) were evaluated based on the following evaluation criteria.

- Route characteristics – mileage, percentages of single and double track, percentages of Class 1 Main (owned by a large freight railroad company), secondary (line which branches off of a main line), shortline (independently owned rail line, typically operating over a smaller distance), out-of-service and abandoned track. Route characteristics are reflective of capital investments and upgrades needed for capacity addition to initiate passenger rail service.
- Market size – population served within 10 miles and 15 miles of alignment; number of town centers served.

Table 2-2 presents a summary of the Level 1 screening. The data relating to route characteristics and market size were collected by ORDC staff. The direct route for the North Segment – Option #1 and the South Segments – Option #30 was used as a baseline to compare the route options. The grey/highlighted cells in Table 2-2 indicate the characteristics that were least favorable for an option to move forward to the Level 2 screening. The Notes/Comments column in Table 2-2 presents specific information to justify a “Retain” or “Dismiss” recommendation for each option.

The options not eliminated in the Level 1 screening were carried forward to the Level 2 screening and are listed below and shown in Figure 2-2 and Figure 2-3.

***North Segment (Cleveland to Columbus Routes): (Figure 2-2)***

1. Direct Route
2. Direct Route via Elyria
3. Direct Route via Lorain
5. Direct Route via Marion
6. Akron-Medina
8. Akron-Barberton
- 9A. Kent-Akron-Medina (Kent-Akron via CSX)
- 10A. Kent-Akron-Wadsworth (Kent-Akron via CSX)
- 11A. Kent-Akron-Barberton (Kent-Akron via CSX)
13. Akron-Barberton-Marion
- 22B. Kent-Akron-Brewster-Newark (via N. Canton and Canton)
24. Akron-Brewster-Zanesville-Newark (via Massillon)
26. Elyria-Sandusky-Bellevue

***South Segment (Columbus to Cincinnati Routes): (Figure 2-3)***

29. Direct Route South-Columbus-Cincinnati
30. Direct Route-Columbus-Oasis-Cincinnati
32. Hamilton-Cincinnati

Figure 2-2 and Figure 2-3 show the options that remain and options dismissed during the Level 1 screening process for the north segment and south segment, respectively. The green lines indicate which routes remained and the red lines indicate which routes were dismissed during the Level 1 screening.

**Figure 2-2 North Segment Level 1 Screening Results**



**Figure 2-3 South Segment Level 1 Screening Results**



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Table 2-2 Level 1 Screening Summary

✓ Cause to Retain    ✕ Cause to Dismiss    Grey/highlighted cell indicates unfavorable characteristic

| #  | Route Option                           | Route Characteristics |                                 |                |                |                |                     |              |                  |             |                              | Market Size               |                   |                    |                   |                    |                    | Recommendation (Retain/Dismiss)  |   |
|--|--|-----------------------|---------------------------------|----------------|----------------|----------------|---------------------|--------------|------------------|-------------|------------------------------|---------------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--|---|
|  |  | Miles                 | % Longer than Direct Route (DR) | % Single Track | % Double Track | % Class 1 Main | % Class 1 Secondary | % Short Line | % Out-of-service | % Abandoned | Route Characteristics Rating | Small Town Centers Served | 10 mile Pop (Mil) | 10 mile Pop % > DR | 15 mile Pop (Mil) | 15 mile Pop % > DR | Market Size Rating | Notes/Comments   |   |
| NORTH SEGMENT ROUTE OPTIONS: CLEVELAND TO COLUMBUS |  |                       |                                 |                |                |                |                     |              |                  |             |                              |                           |                   |                    |                   |                    |                    |  |   |
| 1  | Direct Route                           | 136                   | 0%                              | 54%            | 46%            | 57%            | 43%                 | 0%           | 0%               | 0%          | ✓                            | 4                         | 2.178             | 0%                 | 3.024             | 0%                 | ✓                  | Direct Route for north segment (Cleveland to Columbus) against which all other routes are compared   | ✓ |
| 2  | Direct Route via Elyria                | 144                   | 6%                              | 56%            | 44%            | 54%            | 46%                 | 0%           | 0%               | 0%          | ✓                            | 5                         | 2.188             | 0.5%               | 3.034             | 0.3%               | ✓                  | Similar to DR, no significant deficiencies - no abandoned or out-of-service tracks, relatively high percentage of Class 1 Main                         | ✓ |
| 3  | Direct Route via Lorain                | 158                   | 16%                             | 68%            | 32%            | 34%            | 63%                 | 1%           | 3%               | 0%          | ✓                            | 6                         | 2.188             | 0.5%               | 3.034             | 0.3%               | ✓                  | Similar to DR, no significant deficiencies - no abandoned tracks, relatively high percentage of Class 1 Main; provides connection to Lorain and Elyria | ✓ |
| 4  | Direct Route via Medina                | 149                   | 10%                             | 89%            | 11%            | 21%            | 55%                 | 21%          | 3%               | 0%          | ✗                            | 4                         | 2.043             | -6.2%              | 2.890             | -4.4%              | ✗                  | Market size 4-6% lower than DR; only 11% of double track   | ✗ |
| 5  | Direct Route via Marion                | 145                   | 7%                              | 25%            | 75%            | 69%            | 31%                 | 0%           | 0%               | 0%          | ✓                            | 4                         | 2.240             | 2.9%               | 3.087             | 2.1%               | ✓                  | High percentage of double track and Class 1 mainline; no shortlines, no out-of-service or abandoned  | ✓ |
| 6  | Akron-Medina                           | 182                   | 34%                             | 77%            | 23%            | 31%            | 32%                 | 30%          | 7%               | 0%          | ✓                            | 8                         | 2.527             | 16.1%              | 3.567             | 17.9%              | ✓                  | Provides service to Akron and Medina; fares better against comparable route # 7  | ✓ |
| 7  | Akron-Wadsworth                        | 181                   | 33%                             | 77%            | 23%            | 14%            | 17%                 | 61%          | 0%               | 7%          | ✗                            | 3                         | 2.735             | 25.6%              | 3.587             | 18.6%              | ✓                  | 61% on shortline needing upgrades; W&LE upgrades needed  | ✗ |
| 8  | Akron-Barberton                        | 182                   | 34%                             | 77%            | 23%            | 61%            | 32%                 | 0%           | 0%               | 7%          | ✓                            | 8                         | 2.735             | 25.6%              | 3.587             | 18.6%              | ✓                  | High percentage of Class 1 Mainline; no shortlines; provides service to Akron  | ✓ |
| 9A   | Kent-Akron-Medina (Kent-Akron via CSX) | 190                   | 40%                             | 83%            | 17%            | 30%            | 31%                 | 39%          | 0%               | 0%          | ✓                            | 7                         | 2.527             | 16.1%              | 3.567             | 17.9%              | ✓                  | Best option among 9A, 9B, and 9C; no out of service or abandoned tracks  | ✓ |

Table 2-2 Level 1 Screening Summary

✓ Cause to Retain    ✕ Cause to Dismiss    Grey/highlighted cell indicates unfavorable characteristic

| #   | Route Option                                | Route Characteristics |                                 |                |                |                |                     |              |                  |             |                              | Market Size               |                   |                    |                   |                    |                    | Recommendation (Retain/Dismiss)   |   |
|-----|---|-----------------------|---------------------------------|----------------|----------------|----------------|---------------------|--------------|------------------|-------------|------------------------------|---------------------------|-------------------|--------------------|-------------------|--------------------|--------------------|---|---|
|     |   | Miles                 | % Longer than Direct Route (DR) | % Single Track | % Double Track | % Class 1 Main | % Class 1 Secondary | % Short Line | % Out-of-service | % Abandoned | Route Characteristics Rating | Small Town Centers Served | 10 mile Pop (Mil) | 10 mile Pop % > DR | 15 mile Pop (Mil) | 15 mile Pop % > DR | Market Size Rating | Notes/Comments  |   |
| 9B  | Kent-Akron-Medina (Kent-Akron via METRO)    | 189                   | 39%                             | 89%            | 11%            | 54%            | 0%                  | 40%          | 6%               | 0%          | ✖                            | 7                         | 2.527             | 16.1%              | 3.567             | 17.9%              | ✖                  | 39% longer than DR but pop served is only 16-18% greater; 11 miles (6%) out-of-service track          | ✖ |
| 9C  | Kent-Akron-Medina (Kent-Akron via W&LE)     | 192                   | 41%                             | 90%            | 10%            | 23%            | 30%                 | 46%          | 0%               | 0%          | ✖                            | 7                         | 2.527             | 16.1%              | 3.567             | 17.9%              | ✖                  | 41% longer than DR but pop served is only 16-18% greater; indirect route; 46% on shortline            | ✖ |
| 10A | Kent-Akron-Wadsworth (Kent-Akron via CSX)   | 188                   | 38%                             | 89%            | 11%            | 30%            | 31%                 | 39%          | 0%               | 0%          | ✔                            | 7                         | 2.449             | 12.5%              | 3.587             | 18.6%              | ✔                  | Best option among A, B, and C; no out of service or abandoned tracks                                  | ✔ |
| 10B | Kent-Akron-Wadsworth (Kent-Akron via METRO) | 189                   | 39%                             | 83%            | 17%            | 22%            | 33%                 | 39%          | 6%               | 0%          | ✖                            | 7                         | 2.449             | 12.5%              | 3.587             | 18.6%              | ✖                  | 39% longer than DR but pop served is only 12-18% greater; 12 miles (6%) out of service track          | ✖ |
| 10C | Kent-Akron-Wadsworth (Kent-Akron via W&LE)  | 191                   | 40%                             | 90%            | 10%            | 24%            | 30%                 | 46%          | 0%               | 0%          | ✖                            | 7                         | 2.449             | 12.5%              | 3.587             | 18.6%              | ✖                  | 40% longer than DR but pop served is only 12-18% greater; 46% on shortline needing upgrade            | ✖ |
| 11A | Kent-Akron-Barberton (Kent-Akron via CSX)   | 190                   | 40%                             | 83%            | 17%            | 20%            | 69%                 | 11%          | 0%               | 0%          | ✔                            | 7                         | 2.449             | 12.5%              | 3.587             | 18.6%              | ✔                  | Best option among A, B, and C; no out of service or abandoned tracks                                  | ✔ |
| 11B | Kent-Akron-Barberton (Kent-Akron via METRO) | 189                   | 39%                             | 89%            | 11%            | 15%            | 63%                 | 16%          | 6%               | 0%          | ✖                            | 7                         | 2.449             | 12.5%              | 3.587             | 18.6%              | ✔                  | Kent-Akron segment on abandoned Metro needing reactivation  | ✖ |
| 11C | Kent-Akron-Barberton (Kent-Akron via W&LE)  | 192                   | 41%                             | 90%            | 10%            | 20%            | 62%                 | 18%          | 0%               | 0%          | ✖                            | 7                         | 2.449             | 12.5%              | 3.587             | 18.6%              | ✖                  | 41% longer than DR but pop served is only 12-18% greater; 18% (35 miles) on shortline needing upgrade | ✖ |
| 12  | Akron-Medina-Marion                         | 182                   | 34%                             | 64%            | 36%            | 55%            | 0%                  | 38%          | 7%               | 0%          | ✖                            | 9                         | 2.580             | 18.5%              | 3.563             | 17.8%              | ✔                  | 7% (13 miles) on abandoned track; 38% (69 miles) on shortline needing upgrade                         | ✖ |
| 13  | Akron-Barberton-Marion                      | 191                   | 40%                             | 54%            | 32%            | 61%            | 32%                 | 0%           | 7%               | 0%          | ✔                            | 8                         | 2.449             | 12.5%              | 3.587             | 18.6%              | ✔                  | High percentage of Class 1 Mainline; no shortlines or abandoned tracks; Akron to Columbus uses CSX    | ✔ |

Table 2-2 Level 1 Screening Summary

✓ Cause to Retain    ✕ Cause to Dismiss    Grey/highlighted cell indicates unfavorable characteristic

| #   | Route Option  | Route Characteristics |                                 |                |                |                |                     |              |                  |             |                              | Market Size               |                   |                    |                   |                    |                    | Recommendation (Retain/Dismiss)  |   |
|-----|---|-----------------------|---------------------------------|----------------|----------------|----------------|---------------------|--------------|------------------|-------------|------------------------------|---------------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--|---|
|     |   | Miles                 | % Longer than Direct Route (DR) | % Single Track | % Double Track | % Class 1 Main | % Class 1 Secondary | % Short Line | % Out-of-service | % Abandoned | Route Characteristics Rating | Small Town Centers Served | 10 mile Pop (Mil) | 10 mile Pop % > DR | 15 mile Pop (Mil) | 15 mile Pop % > DR | Market Size Rating | Notes/Comments   |   |
| 14  | Kent-Akron-Medina-Bucyrus-Marion                        | 205                   | 51%                             | 71%            | 21%            | 36%            | 0%                  | 59%          | 5%               | 0%          | ✖                            | 8                         | 2.580             | 18.5%              | 3.545             | 17.2%              | ✖                  | 51% longer than DR but pop served is only 17-18% greater; 59% (120 miles) on shortline needing upgrade | ✖ |
| 15  | Akron-Mansfield (via Abandoned Erie)                    | 182                   | 34%                             | 70%            | 14%            | 14%            | 32%                 | 18%          | 21%              | 15%         | ✖                            | 10                        | 2.511             | 15.3%              | 3.615             | 19.5%              | ✔                  | 21% on out of service and 15% on abandoned tracks needing upgrades                                     | ✖ |
| 16  | Kent-Akron-Mansfield (via Abandoned Erie)               | 189                   | 39%                             | 83%            | 2%             | 7%             | 31%                 | 28%          | 19%              | 15%         | ✖                            | 9                         | 2.511             | 15.3%              | 3.615             | 19.5%              | ✔                  | Several costly upgrades – 28% on shortline, 19% out of service and 15% on abandoned                    | ✖ |
| 17A | Akron-Canton-Mansfield (via North Canton to NS)         | 210                   | 54%                             | 61%            | 39%            | 14%            | 69%                 | 11%          | 6%               | 0%          | ✖                            | 11                        | 2.830             | 29.9%              | 3.878             | 28.2%              | ✔                  | 54% longer than DR with no comparable benefits; 6% (13 miles) out of service tracks                    | ✖ |
| 17B | Akron-Canton-Mansfield (via Hartville to NS)            | 213                   | 57%                             | 62%            | 38%            | 14%            | 68%                 | 12%          | 6%               | 0%          | ✖                            | 11                        | 2.830             | 29.9%              | 3.878             | 28.2%              | ✔                  | 57% longer than DR with no comparable benefits; 6% (13 miles ) out of service tracks                   | ✖ |
| 18  | Akron-Massillon-Wooster-Mansfield (via RJC/NS)          | 205                   | 51%                             | 61%            | 39%            | 21%            | 66%                 | 6%           | 6%               | 0%          | ✖                            | 10                        | 2.805             | 28.8%              | 3.854             | 27.4%              | ✔                  | 51% longer than DR with no comparable benefits; 6% (12 miles ) out of service tracks                   | ✖ |
| 19A | Akron-Wooster-Mansfield (via Aband-Warwick-Orville-NS)  | 189                   | 39%                             | 52%            | 42%            | 21%            | 67%                 | 0%           | 7%               | 5%          | ✖                            | 9                         | 2.543             | 16.8%              | 3.544             | 17.2%              | ✔                  | Costly upgrades needed - 10 miles of abandoned CAC track and 13 miles of out of service Metro          | ✖ |
| 19B | Akron-Mt. Vernon (via Aband Warwick-Orville-Mt. Vernon) | 152                   | 12%                             | 14%            | 21%            | 26%            | 0%                  | 0%           | 9%               | 65%         | ✖                            | 5                         | 1.937             | -11%               | 2.581             | -15%               | ✔                  | 65% of abandoned track needing costly upgrades   | ✖ |
| 20A | Kent-Akron-Canton-Mansfield (via North Canton to NS)    | 217                   | 60%                             | 72%            | 28%            | 8%             | 66%                 | 20%          | 5%               | 0%          | ✖                            | 10                        | 2.830             | 29.9%              | 3.878             | 28.2%              | ✖                  | 60% longer than DR but market served is less than 30% more   | ✖ |

Table 2-2 Level 1 Screening Summary

✓ Cause to Retain    ✕ Cause to Dismiss    Grey/highlighted cell indicates unfavorable characteristic

| #   | Route Option  | Route Characteristics |                                 |                |                |                |                     |              |                  |             |                              | Market Size               |                   |                    |                   |                    |                    | Recommendation (Retain/Dismiss)  |  |
|-----|---|-----------------------|---------------------------------|----------------|----------------|----------------|---------------------|--------------|------------------|-------------|------------------------------|---------------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--|--|
|     |   | Miles                 | % Longer than Direct Route (DR) | % Single Track | % Double Track | % Class 1 Main | % Class 1 Secondary | % Short Line | % Out-of-service | % Abandoned | Route Characteristics Rating | Small Town Centers Served | 10 mile Pop (Mil) | 10 mile Pop % > DR | 15 mile Pop (Mil) | 15 mile Pop % > DR | Market Size Rating | Notes/Comments   |  |
| 20B | Kent-Akron-Canton-Mansfield (via Hartville to NS)         | 220                   | 62%                             | 73%            | 27%            | 8%             | 65%                 | 21%          | 5%               | 0%          |                              | 10                        | 2.761             | 26.8%              | 3.848             | 27.2%              |                    | 62% longer than DR but market served is only 27% more                          |  |
| 20C | Kent-Canton-Mansfield (via Hartville to NS)               | 211                   | 55%                             | 72%            | 28%            | 9%             | 68%                 | 23%          | 0%               | 0%          |                              | 9                         | 2.707             | 24.3%              | 3.837             | 26.9%              |                    | 55% longer than DR but market served is only 24 to 27% more                    |  |
| 21A | Akron-Brewster-Newark (via Massillon)                     | 174                   | 28%                             | 82%            | 18%            | 15%            | 8%                  | 70%          | 7%               | 0%          |                              | 8                         | 2.685             | 23.3%              | 3.675             | 21.5%              |                    | 70% on shortline needing upgrades; does not serve Canton                       |  |
| 21B | Akron-Brewster-Newark (via N. Canton and Canton)          | 183                   | 35%                             | 86%            | 14%            | 14%            | 0%                  | 77%          | 7%               | 0%          |                              | 8                         | 2.709             | 23.8%              | 3.700             | 22.3%              |                    | 77% on shortline needing upgrades  |  |
| 21C | Akron-Brewster-Newark (via Hartville and Canton)          | 186                   | 37%                             | 56%            | 14%            | 14%            | 0%                  | 79%          | 7%               | 0%          |                              | 9                         | 2.709             | 24.4%              | 3.700             | 22.3%              |                    | 79% on shortline needing upgrades  |  |
| 22A | Kent-Akron-Brewster-Newark (via Massillon)                | 181                   | 33%                             | 94%            | 6%             | 8%             | 8%                  | 78%          | 6%               | 0%          |                              | 7                         | 2.685             | 23.3%              | 3.675             | 21.5%              |                    | 78% on shortline needing upgrades; only 6% on double track                     |  |
| 22B | Kent-Akron-Brewster-Newark (via N. Canton and Canton)     | 186                   | 37%                             | 58%            | 2%             | 8%             | 0%                  | 87%          | 6%               | 0%          |                              | 7                         | 2.709             | 24.4%              | 3.700             | 22.3%              |                    | Best option among A, B, and C; provides service to Canton – Retain for Level 2 |  |
| 22C | Kent-Akron-Brewster-Newark (via Hartville and Canton)     | 189                   | 39%                             | 51%            | 2%             | 7%             | 0%                  | 87%          | 6%               | 0%          |                              | 6                         | 2.709             | 24.4%              | 3.700             | 22.3%              |                    | 87% on shortline needing upgrades; only 2% on double track                     |  |
| 23  | Kent-Akron-Brewster-Newark (Direct via Hartville, Canton) | 180                   | 32%                             | 98%            | 2%             | 8%             | 0%                  | 92%          | 0%               | 0%          |                              | 5                         | 2.587             | 18.8%              | 3.658             | 21%                |                    | 92% on shortline needing upgrades; only 2% on double track                     |  |
| 24  | Akron-Brewster-Zanesville-Newark (via Massillon)          | 192                   | 41%                             | 83%            | 17%            | 14%            | 80%                 | 0%           | 7%               | 0%          |                              | 8                         | 2.754             | 26.4%              | 3.490             | 15.4%              |                    | 80% on Class 1 secondary and none on shortlines needing fewer upgrades         |  |

Table 2-2 Level 1 Screening Summary




✓ Cause to Retain    ✕ Cause to Dismiss    Grey/highlighted cell indicates unfavorable characteristic

| #   | Route Option   | Route Characteristics |                                 |                |                |                |                     |              |                  |             |                              | Market Size               |                   |                    |                   |                    |                    | Recommendation (Retain/Dismiss)  |   |
|---|--|-----------------------|---------------------------------|----------------|----------------|----------------|---------------------|--------------|------------------|-------------|------------------------------|---------------------------|-------------------|--------------------|-------------------|--------------------|--------------------|--|---|
|   |  | Miles                 | % Longer than Direct Route (DR) | % Single Track | % Double Track | % Class 1 Main | % Class 1 Secondary | % Short Line | % Out-of-service | % Abandoned | Route Characteristics Rating | Small Town Centers Served | 10 mile Pop (Mil) | 10 mile Pop % > DR | 15 mile Pop (Mil) | 15 mile Pop % > DR | Market Size Rating | Notes/Comments   |   |
| 25  | Elyria-Bellevue  | 161                   | 18%                             | 36%            | 64%            | 84%            | 16%                 | 0%           | 0%               | 0%          | ✕                            | 6                         | 2.273             | 4.4%               | 3.135             | 3.7%               | ✕                  | Does not serve Canton and Akron; market size only 4% more compared to route which is 18% longer than DR                                      | ✕ |
| 26  | Elyria-Sandusky-Bellevue                               | 170                   | 25%                             | 38%            | 71%            | 100%           | 0%                  | 0%           | 0%               | 0%          | ✓                            | 7                         | 2.273             | 4.4%               | 3.135             | 3.7%               | ✓                  | 100% of route on Class 1 Mainline (NS); provides service to Sandusky, Bucyrus, Marion  | ✓ |
| 27  | Lorain-Bellevue  | 166                   | 22%                             | 46%            | 51%            | 74%            | 26%                 | 0%           | 0%               | 0%          | ✕                            | 6                         | 2.218             | 1.8%               | 3.079             | 1.8%               | ✕                  | Does not serve Canton and Akron; market size only 1.8% more compared to route which is 22% longer than DR                                    | ✕ |
| 28  | Lorain-Sandusky-Bellevue                               | 175                   | 29%                             | 41%            | 59%            | 67%            | 33%                 | 0%           | 0%               | 0%          | ✕                            | 7                         | 2.218             | 1.8%               | 3.079             | 1.8%               | ✕                  | Does not serve Canton and Akron; market size only 1.8% more compared to route which is 29% longer than DR                                    | ✕ |
| SOUTH SEGMENT ROUTE OPTIONS: COLUMBUS TO CINCINNATI |  |                       |                                 |                |                |                |                     |              |                  |             |                              |                           |                   |                    |                   |                    |                    |  |   |
| 29  | Direct Route South-Columbus-Cincinnati (Longworth/CUT) | 125                   | 0%                              | 18%            | 82%            | 100%           | 0%                  | 0%           | 0%               | 0%          | ✓                            | na                        | 2.933             | 0%                 | 3.435             | 0%                 | ✓                  | 100% on Class 1 mainline; most DR  | ✓ |
| 30  | Direct Route-Columbus-Oasis-Cincinnati                 | 131                   | 5%                              | 24%            | 76%            | 88%            | 0%                  | 12%          | 0%               | 0%          | ✓                            | na                        | 2.933             | 0%                 | 3.435             | 0%                 | ✓                  | DR for south segment (Columbus to Cincinnati) against which other routes are compared ; high percentage on Class 1 mainline and double track | ✓ |
| 31  | Hamilton-Cincinnati (Longworth/CUT)                    | 130                   | 4%                              | 48%            | 52%            | 100%           | 0%                  | 0%           | 0%               | 0%          | ✕                            | na                        | 3.216             | 9.7%               | 3.718             | 8.2%               | ✓                  | Lowest percentage on double track compared to other routes   | ✕ |
| 32  | Hamilton-Cincinnati (Oasis-Boathouse)                  | 135                   | 8%                              | 33%            | 67%            | 100%           | 0%                  | 0%           | 0%               | 0%          | ✓                            | na                        | 3.216             | 9.7%               | 3.718             | 8.2%               | ✓                  | 100% on Class 1 mainline; serves Hamilton and fares better with regard to route #33  | ✓ |



Table 2-2 Level 1 Screening Summary

 Cause to Retain     Cause to Dismiss    Grey/highlighted cell indicates unfavorable characteristic

| #  | Route Option                        | Route Characteristics |                                 |                |                |                |                     |              |                  |             |   | Market Size               |                   |                    |                   |                    |   | Recommendation (Retain/Dismiss)  |   |
|----|-------------------------------------|-----------------------|---------------------------------|----------------|----------------|----------------|---------------------|--------------|------------------|-------------|---|---------------------------|-------------------|--------------------|-------------------|--------------------|---|--|---|
|    |                                     | Miles                 | % Longer than Direct Route (DR) | % Single Track | % Double Track | % Class 1 Main | % Class 1 Secondary | % Short Line | % Out-of-service | % Abandoned | Route Characteristics Rating  | Small Town Centers Served | 10 mile Pop (Mil) | 10 mile Pop % > DR | 15 mile Pop (Mil) | 15 mile Pop % > DR | Market Size Rating  | Notes/Comments   |   |
| 33 | Hamilton-Cincinnati (Longworth/CUT) | 118                   | -6%                             | 42%            | 58%            | 8%             | 0%                  | 25%          | 67%              | 0%          |  | na                        | 2.062             | -29.7%             | 2.448             | -29%               |  | 6% shorter than DR but market served is almost 30% less than DR; 67% abandoned track |  |

### **2.2.2 Level 2 Screening**

Route options that were not eliminated in the Level 1 screening were further evaluated in the Level 2 screening. The route options carried forward from the Level 1 screening were combined into full route alternatives from Cleveland to Cincinnati. Each of the north segment (Cleveland to Columbus) options uses the direct route option for the South Segment (Columbus to Cincinnati, terminating at Boathouse/Oasis) – Option #30, whereas each of the south segment options use the direct route option for the North Segment – Option #1. To this effect, the South Segment Option #30 as defined in Table 2-2 is rendered redundant (already included in north segment options) and thereby eliminated for the Level 2 screening.

Level 2 screening used the following criteria which are also referenced in Table 2-1.

- Travel time – travel time for each route including dwell time (time a train spends at a stop awaiting continued movement), recovery time (time scheduled at the end of the route before departure time of the next trip), and penalties for hand-off between different railroads. A hand-off occurs when one railroad merges with another. To be viable, travel times between cities by train need to be comparable to the time it would take traveling by automobile. The travel times were developed by considering train speed, the number of stations, the distance between stations, and the geometric constraints of the route including curvature and grading.
- Safety – the operational safety of the route examined by the number of at-grade rail and highway crossings (including private road and farm crossings).
- Reliability – measured by the number of hand-offs between Class 1 and shortline railroads that were considered along with the amount of joint trackage, (where passenger and freight rail operate on the same line) and the typical amount of freight traffic.
- Costs – measured by Capital costs and Operating costs. Capital costs took into consideration the length of the route and examined how much of that route was abandoned or out-of-service, how much of the route was single track versus double track, and the number of bridges over and under the route. Estimated costs were then developed based upon how much of the route would require new track, where the route was previously abandoned or out of service and how much of the track would need to be upgraded. Additionally track maintenance costs and operating expenses were also calculated on a rough-order-of-magnitude basis.
- Other Factors – other factors that were considered included access to other modes of transportation defined by the number of unique modal connections available at stations along each option. The modal connections are defined by trolley lines, Greater Cleveland Regional Transit Authority (GCRTA) bus routes, Southwest Ohio Regional Transit Authority (SORTA) bus routes, Greyhound stations, etc. within a quarter mile of the rail stations. Another criterion that was considered was whether the investment in passenger rail could benefit a future commuter rail service. Potential for future commuter rail use for each option was evaluated on a qualitative basis from previous studies (such as the 2001 NeoRail study that proposed a Cleveland Commuter Rail Network, and others) and measured by defining the route segment and determining the approximate mileage for applicable routes proposed in these earlier studies.

### **3C Quick Start Passenger Rail Environmental Assessment**

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Figure 2-4 and Figure 2-5 show the results of the Level 2 screening for the north and south segments, respectively. The green route lines indicate which routes remained and the red lines indicate which routes were dismissed during the Level 2 screening. As a result of the Level 2 screening, 11 alternatives were eliminated from further consideration and four alternatives were recommended for further evaluation in the Level 3 screening:

- |                  |  |
|------------------|--|
| Alternative 1 –  | North Segment 1: Direct Route Cleveland-Columbus plus South Segment 30: Direct Route-Columbus-Oasis-Cincinnati                 |
| Alternative 8 –  | North Segment 8: Cleveland-Akron-Barberton-Columbus plus South Segment 30: Direct Route-Columbus-Oasis-Cincinnati              |
| Alternative 29 – | North Segment 1: Direct Route Cleveland-Columbus plus South Segment 29: Direct Route South-Columbus-Cincinnati (Longworth/CUT) |
| Alternative 32 – | North Segment 1: Direct Route Cleveland-Columbus plus South Segment 32: Hamilton-Cincinnati (Oasis-Boathouse)                  |

Table 2-3 shows the results of the Level 2 screening. The grey/highlighted cells indicate characteristics that are least favorable for an alternative to be retained.





**Figure 2-5 South Segment Level 2 Screening Results**








Table 2-3 Level 2 Screening Summary

✓ Cause to Retain    ✕ Cause to Dismiss    Grey/highlighted cell indicates unfavorable characteristic

| #   | Route Alternative   |                | Travel Time          | Safety                            |                                      | Reliability                 |                               |  | Capital Costs         | Other Factors   |                          |                          | Recommendation (Retain/Dismiss)   |   |
|-----|---|----------------|----------------------|-----------------------------------|--------------------------------------|-----------------------------|-------------------------------|--|-----------------------|---|--------------------------|--------------------------|---|---|
|     |   | Miles          | Travel Time (hr:min) | Number of At-Grade Rail Crossings | Number of At-Grade Highway Crossings | Hand-off Class 1 to Class 1 | Hand-off Class 1 to Shortline | Freight Traffic (Ranked based on Trains/day in various route segments) | Capital Cost (\$ Mil) | Prospect for Future Commuter Rail Use (Route lengths proposed in earlier studies) | No. of Modal Connections | Key Stakeholder Interest | Notes/Comments  |   |
| 1   | Direct Route (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)                              | 136+ 131 = 267 | 6:22                 | 6+3= 9                            | 157+ 137 = 294                       | 1                           | 0                             | High-Medium (at least 2 segments with 50+ trains/day)                  | 475.5                 | Cincinnati to Dayton – 50 miles   | 10                       | High                     |   | ✓ |
| 2   | Direct Route via Elyria (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)                   | 144+131 = 275  | 6:58                 | 6+3 = 9                           | 174+ 137 = 311                       | 1                           | 0                             | High-Medium (at least 1 segment with 50+ trains/day)                   | 489.7                 | Cincinnati to Dayton – 50 miles   | 7                        | Moderate                 | Higher travel time, higher cost, and fewer connections than DR.                 | ✕ |
| 3   | Direct Route via Lorain (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)                   | 158+131 = 289  | 7:38                 | 5+3 = 8                           | 262+ 137 = 399                       | 1                           | 0                             | High (no segment with 50+ trains/day)                                  | 514.7                 | Cincinnati to Dayton – 50 miles   | 7                        | Moderate                 | High travel time, too many highway crossings; high capital costs                | ✕ |
| 5   | Direct Route via Marion (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)                   | 145+ 131 = 276 | 7:31                 | 7+3 = 10                          | 204+ 137 = 341                       | 1                           | 0                             | Medium (at least 3 segments with 50+ trains/day)                       | 491.5                 | Cincinnati to Dayton – 50 miles   | 7                        | Moderate                 | Higher travel time, more at-grade crossings, and fewer connections than DR.     | ✕ |
| 6   | Akron-Medina (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)                              | 182+ 131 = 313 | 8:12                 | 5+3 = 8                           | 249+ 137 = 386                       | 1                           | 1                             | High-Medium (at least 2 segments with 50+ trains/day)                  | 480.8                 | Cleveland to Akron – 42 miles; Cincinnati to Dayton – 50 miles                    | 8                        | Moderate                 | High travel time (compared to #8 with same mileage); too many highway crossings | ✕ |
| 8   | Akron-Barberton (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)                           | 182+ 131 = 313 | 7:53                 | 5+3 = 8                           | 212+ 137 = 349                       | 1                           | 0                             | Medium (at least 3 segments with 50+ trains/day)                       | 480.8                 | Cleveland to Akron – 42 miles; Cincinnati to Dayton – 50 miles                    | 7                        | Moderate                 | Higher travel time and cost but medium freight traffic and serves Akron         | ✓ |
| 9A  | Kent-Akron-Medina (Kent-Akron via CSX) (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)    | 190+ 131 = 321 | 8:13                 | 5+3 = 8                           | 257+ 137 = 394                       | 0                           | 4                             | High-Medium (at least 2 segments with 50+ trains/day)                  | 493.1                 | Cleveland-Hudson-Kent – 35 miles; Cincinnati to Dayton – 50 miles                 | 7                        | Moderate                 | High travel time, too many highway crossings ; too many hand-offs to shortlines | ✕ |
| 10A | Kent-Akron-Wadsworth (Kent-Akron via CSX) (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30) | 188+ 131 = 319 | 8:21                 | 5+3 = 8                           | 259+ 137 = 396                       | 0                           | 5                             | Medium (at least 3 segments with 50+ trains/day)                       | 490.0                 | Cleveland-Hudson-Kent – 35 miles; Cincinnati to Dayton – 50 miles                 | 7                        | Moderate                 | High travel time, too many highway crossings ; too many hand-offs to shortlines | ✕ |
| 11A | Kent-Akron-Barberton (Kent-Akron via CSX) (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30) | 190+ 131 = 321 | 8:26                 | 5+3 = 8                           | 185+ 137 = 322                       | 0                           | 2                             | Medium (at least 3 segments with 50+ trains/day)                       | 493.1                 | Cleveland-Hudson-Kent – 35 miles; Cincinnati to Dayton – 50 miles                 | 7                        | Moderate                 | High Travel time and higher costs. Fewer modal connections than DR.             | ✕ |
| 13  | Akron-Barberton-Marion (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)                    | 191+ 131 = 322 | 8:28                 | 6+3 = 9                           | 244+ 137 = 381                       | 1                           | 0                             | High-Medium (at least 2 segments with 50+ trains/day)                  | 494.6                 | Cleveland-Hudson-Akron – 42 miles; Cincinnati to Dayton – 50 miles                | 7                        | Moderate                 | High travel time, too many highway crossings, higher capital costs              | ✕ |

Table 2-3 Level 2 Screening Summary

 Cause to Retain     Cause to Dismiss    Grey/highlighted cell indicates unfavorable characteristic

| #   | Route Alternative   |                | Travel Time          | Safety                            |                                      | Reliability                 |                               |   | Capital Costs         | Other Factors   |                          |                          | Recommendation (Retain/Dismiss)  |   |
|-----|---|----------------|----------------------|-----------------------------------|--------------------------------------|-----------------------------|-------------------------------|---|-----------------------|---|--------------------------|--------------------------|--|---|
|     |   |                | Travel Time (hr:min) | Number of At-Grade Rail Crossings | Number of At-Grade Highway Crossings | Hand-off Class 1 to Class 1 | Hand-off Class 1 to Shortline | Freight Traffic (Ranked based on Trains/day in various route segments)  | Capital Cost (\$ Mil) | Prospect for Future Commuter Rail Use (Route lengths proposed in earlier studies) | No. of Modal Connections | Key Stakeholder Interest | Notes/Comments   |   |
| 22B | Kent-Akron-Brewster-Newark (via N. Canton and Canton) (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30) | 184+ 131 = 315 | 8:31                 | 4+3 = 7                           | 182+137 = 319                        | 0                           | 2                             | Medium (at least 1 segment with 50+ trains/day BUT additional penalty due to slow route)                                  | 461.4                 | Cleveland-Hudson-Akron – 42 miles; Cincinnati to Dayton – 50 miles                | 7                        | Moderate                 | High travel time, fewer modal connections  |    |
| 24  | Akron-Brewster-Zanesville-Newark (via Massillon) (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)      | 192+ 131 = 323 | 13:38                | 3+3 = 6                           | 181+ 137 = 318                       | 0                           | 3                             | Medium (at least 1 segment with 50+ trains/day BUT additional penalty due to slow route)                                  | 478.7                 | Cleveland-Hudson-Akron – 42 miles; Cincinnati to Dayton – 50 miles                | 7                        | Moderate                 | Very high travel time due to steep curves between Brewster and Coshocton   |    |
| 26  | Elyria-Sandusky-Bellevue (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)                              | 170+ 131 = 301 | 6:37                 | 7+3 = 10                          | 196+ 137 = 333                       | 0                           | 0                             | High-Medium (at least 2 segments with 50+ trains/day)   | 448.6                 | Cincinnati to Dayton – 50 miles   | 7                        | Moderate                 | Longer route miles than DR, leads to higher O&M costs, more rail at-grade crossings, fewer modal connections                                       |    |
| 29  | Direct Route-South Columbus-Cincinnati (Longworth/CUT) + Direct Route (Route #1) Cleveland – Columbus                           | 125+ 136 = 261 | 6:26                 | 3+6 = 9                           | 134+ 157 = 291                       | 1                           | 1                             | Low (at least 3 segments with 50+ trains per day BUT additional penalty due to high freight traffic into Cincinnati yard) | 421.5                 | North Cincinnati to Dayton – 34 miles   | 7                        | High                     | Low rating for shared freight traffic makes this alternative less desirable. Significant issues with heavy freight interference at Cincinnati yard |  |
| 32  | Hamilton-Cincinnati (Oasis Boathouse) + Direct Route (Route #1) Cleveland – Columbus  | 135+ 136 = 271 | 6:55                 | 3+6 = 9                           | 165+ 157 = 322                       | 1                           | 1                             | Medium (at least 3 segments with 50+ trains/day)  | 437.7                 | Hamilton to North Cincinnati – 16 miles   | 10                       | Moderate                 |  |  |

### **2.2.3 Level 2 Route Alternative Evaluations**

The following section summarizes the Level 2 screening evaluation for each of the 15 alternatives that advanced from the Level 1 screening.

#### **Alternative #1: Direct Route North (Cleveland-Columbus) + Direct Route South (Columbus-Cincinnati)**

North Segment: Cleveland Lake Front, Hopkins/Berea, Grafton, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Alternative #1 is the direct route in the north segment between Cleveland and Columbus and the direct route in the south segment between Columbus and Cincinnati. The route for Alternative #1 is composed of the north segment direct route of Alternative #1 from the Level 1 screening and the south segment direct route of Alternative #30 from the Level 1 screening (Figure 2-2 and Figure 2-3).

Travel Time- Alternative #1 has the lowest travel time among all alternatives.

Safety - Alternative #1 has a moderate number of rail crossings and a low number of at-grade highway crossings. Alternative #1 has safety issues comparable to the other alternatives.

Reliability - Alternative #1 has the same or fewer operational hand-offs from Class 1 to Class 1 or shortline railroads comparable to other alternatives. Alternative #1 is therefore more likely to have better reliability. Freight traffic is high-medium compared to the other alternatives.

Capital Costs - Capital costs for Alternative #1 are lower than or comparable to the other alternatives and therefore rates favorably for the Level 2 screening cost consideration.

Other Factors - Alternative #1 has opportunities for future commuter rail use on the corridor comparable to the other alternatives, has a higher number of modal connections, and has a high key stakeholder interest. Thus, in regard to other factors, this alternative rates favorably.

Thus, based on the criteria used in Level 2 Screening, Alternative #1 is recommended for further evaluation in the Level 3 screening.

#### **Alternative #2: Cleveland – Columbus (Direct Route via Elyria)**

North Segment: Cleveland Lake Front, Hopkins/Berea, Elyria, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

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Alternative #2 follows the same route as Alternative #1 with the exception of extending west to connect to Elyria instead of Grafton. This connection extends the route eight miles, but allows for this alternative to provide service to a larger population center. Elyria had a population of 55,953, while Grafton had a population of 2,302.

Travel Time - Alternative #2 has a higher travel time than Alternative #1.

Safety - Alternative #2 has more safety issues than Alternative #1; there are more highway at-grade crossings.

Reliability - Alternative #2 has the same number of operational hand-offs from Class 1 to Class 1 or shortline railroads as Alternative #1.

Capital Costs - Capital costs for Alternative #2 are higher than Alternative #1 and therefore rates unfavorably for the Level 2 screening cost consideration.

Other Factors - Alternative #2 has the same opportunities for future commuter rail use on the corridor as Alternative #1. However, the number of modal connections is less than Alternative #1 and the key stakeholder interest is moderate. Thus, in regard to other factors, Alternative #2 rates unfavorably.

Alternative #2 is recommended for dismissal for further study.

### **Alternative #3: Cleveland – Columbus (Direct Route via Lorain)**

North Segment: Cleveland Lake Front/Terminal Tower, Lakewood, Lorain, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time - Alternative #3 has a higher travel time than Alternative #1.

Safety - Alternative #3 has more significant safety issues than Alternative #1; there are a lot more at-grade highway crossings.

Reliability - Alternative #3 has the same number of operational hand-offs from Class 1 to Class 1 or shortline railroads as Alternative #1.

Capital Costs - Capital costs for Alternative #3 are higher than Alternative #1 and therefore rates unfavorably for the Level 2 screening cost consideration.

Other Factors - Alternative #3 has the same opportunities for future commuter rail use on the corridor as Alternative #1. However, the number of modal connections is less than Alternative #1 and the key stakeholder interest is moderate. Thus, in regard to other factors, Alternative #3 rates unfavorably.

Alternative #3 is recommended for dismissal for further study.

**Alternative #5: Cleveland – Columbus (Direct Route via Marion)**

North Segment: Cleveland Lake Front, Hopkins/Berea, Grafton, Shelby/Crestline/Galion, Marion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time - Alternative #5 has a higher travel time than Alternative #1.

Safety - Alternative #5 has more significant safety issues than Alternative #1; there are a lot more at-grade rail crossings.

Reliability - Alternative #5 has the same number of operational hand-offs from Class 1 to Class 1 or shortline railroads as Alternative #1.

Capital Costs - Capital costs for Alternative #5 are higher than Alternative #1 and therefore rates unfavorably for the Level 2 screening cost consideration.

Other Factors - Alternative #5 has the same opportunities for future commuter rail use on the corridor as Alternative #1. However, the number of modal connections is less than Alternative #1 and the key stakeholder interest is moderate. Thus, in regard to other factors, Alternative #5 rates unfavorably.

Alternative #5 is recommended for dismissal for further study.

**Alternative #6: Cleveland–Columbus (Akron–Medina)**

North Segment: Cleveland Lake Front/Terminal Tower, Bedford/Macedonia, Hudson, Cuyahoga Falls, Akron, Medina, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time - Alternative #6 has a significantly higher travel time than Alternative #1.

Safety - Alternative #6 has more safety issues than Alternative #1, particularly at-grade highway crossings.

Reliability - Alternative #6 has more operational hand-offs from Class 1 to Class 1 or shortline railroads than Alternative #1 and is therefore more likely to have inferior reliability.

Capital Costs- Capital costs for Alternative #6 are comparable, although slightly higher than Alternative #1.

Other Factors - Alternative #6 has better opportunities for future commuter rail use on the corridor than Alternative #1. However, the number of modal connections is less than Alternative #1 and the key stakeholder interest is moderate.

Alternative #6 is recommended for dismissal for further study.

**Alternative #8: Akron-Barberton (Cleveland-Columbus) + Direct Route South (Columbus-Cincinnati)**

North Segment: Cleveland Lake Front/Terminal Tower, Bedford/Macedonia, Hudson, Cuyahoga Falls, Akron, Barberton, Lodi, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time- Alternative #8 has a higher travel time than Alternative #1.

Safety - Alternative #8 has a comparable level of safety issues as Alternative #1.

Reliability - Alternative #8 has a number of operational hand-offs from Class 1 to Class 1 or shortline railroads comparable to Alternative #1.

Capital Costs - Capital costs for Alternative #8 are comparable but slightly higher than Alternative #1.

Other Factors - Alternative #8 has better opportunities for future commuter rail use on the corridor than Alternative #1. It provides service to Akron. The number of modal connections is the same as Alternative #1 and the key stakeholder interest is moderate.

Additionally, this alternative serves an additional travel market. The Akron-Barberton travel market could lead to higher ridership and would provide another mode option for more travelers.

Thus, based on the criteria used in Level 2 Screening, Alternative #8 is recommended for further evaluation in the Level 3 screening

**Alternative #9A: Cleveland – Columbus (A-B-C Kent–Akron–Medina)**

North Segment: Cleveland Lake Front/Terminal Tower, Bedford/Macedonia, Kent, Akron, Fairlawn, Medina, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time - Alternative #9A has a significantly higher travel time than Alternative #1.

Safety - Alternative #9A has more significant safety issues than Alternative #1, particularly with regard to highway at-grade crossings.

Reliability - Alternative #9A has more operational hand-offs from Class 1 to shortline railroads than Alternative #1 and is therefore more likely to have inferior reliability.

Capital Costs - Capital costs for Alternative #9A are higher than Alternative #1 and therefore rates unfavorably for the Level 2 screening cost consideration.



Other Factors - Alternative #9A has better opportunities for future commuter rail use on the corridor than Alternative #1. The number of modal connections is comparable to Alternative #1 and the key stakeholder interest for this alternative is moderate.

Alternative #9A is recommended for dismissal for further study.

**Alternative #10A: Cleveland–Columbus (A-B-C Kent–Akron–Wadsworth)**

North Segment: Cleveland Lake Front/Terminal Tower, Bedford/Macedonia, Kent, Akron, Wadsworth, Lodi, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time - Alternative #10A has a higher travel time than Alternative #1.

Safety- Alternative #10A has more significant safety issues than Alternative #1, particularly for at-grade highway crossings.

Reliability- Alternative #10A has more operational hand-offs from Class 1 to shortline railroads than Alternative #1 and is therefore more likely to have inferior reliability.

Capital Costs - Capital costs for Alternative #10A are higher than Alternative #1 and therefore rates unfavorably for the Level 2 screening cost consideration.

Other Factors - Alternative #10A has better opportunities for future commuter rail use on the corridor than Alternative #1. The number of modal connections is the same as Alternative #1 and the key stakeholder interest for this alternative is moderate.

Alternative #10A is recommended for dismissal for further study.

**Alternative #11A: Cleveland–Columbus (A-B-C Kent–Akron–Barberton)**

North Segment: Cleveland Lake Front/Terminal Tower, Bedford/Macedonia, Kent, Akron, Barberton, Lodi, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time - Alternative #11A has a higher travel time than Alternative #1.

Safety- Alternative #11A has safety issues comparable to Alternative #1.

Reliability- Alternative #11A has a comparable but slightly higher number of operational hand-offs from Class 1 to Class 1 or shortline railroads as Alternative #1.

Capital Costs - Capital costs for Alternative #11A are higher than Alternative #1 and therefore rates unfavorably for the Level 2 screening cost consideration.

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Other Factors - Alternative #11A has better opportunities for future commuter rail use on the corridor than Alternative #1 and the number of modal connections is the same as Alternative #1. However, key stakeholder interest for Alternative #11A is moderate.

Alternative #11A is recommended for dismissal for further study.

#### **Alternative #13: Cleveland – Columbus (Akron–Barberton–Marion)**

North Segment: Cleveland Lake Front/Terminal Tower, Bedford/Macedonia, Hudson, Cuyahoga Falls, Akron, Barberton, Lodi, Shelby/Crestline/Galion, Marion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time - Alternative #13 has a significantly higher travel time than Alternative #1.

Safety- Alternative #13 has more significant safety issues than Alternative #1.

Reliability - Alternative #13 has a number of operational hand-offs from Class 1 to Class 1 or shortline railroads comparable to Alternative #1.

Capital Costs - Capital costs for Alternative #13 are higher than Alternative #1 and therefore rates unfavorably for the Level 2 screening cost consideration.

Other Factors - Alternative #13 has better opportunities for future commuter rail use on the corridor than Alternative #1 and the number of modal connections is the same as Alternative #1. However, the key stakeholder interest for Alternative #13 is moderate.

Alternative #13 is recommended for dismissal for further study.

#### **Alternative #22B: Cleveland–Columbus (A-B-C Kent–Akron–Brewster–Newark)**

North Segment: Cleveland Lake Front/Terminal Tower, Bedford/Macedonia, Kent, Akron, Canton/Massillon, Coshocton, Newark, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time - Alternative #22B has a significantly higher travel time than Alternative #1.

Safety - Alternative #22B has safety issues comparable to Alternative #1.

Reliability - Alternative #22B has more operational hand-offs from Class 1 to shortline railroads as compared to Alternative #1 and is therefore more likely to have inferior reliability.

Capital Costs - Capital costs for Alternative #22B are comparable to Alternative #1.

Other Factors - Alternative #22B has better opportunities for future commuter rail use on the corridor than Alternative #1 and the number of modal connections is the same as Alternative #1. However, the key stakeholder interest for Alternative #22B is moderate.

Alternative #22B is recommended for dismissal for further study.

**Alternative #24: Cleveland – Columbus (Akron–Brewster–Zanesville–Newark)**

North Segment: Cleveland Lake Front/Terminal Tower, Bedford/Macedonia, Hudson, Cuyahoga Falls, Akron, Barberton, Massillon, Coshocton, Newark, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time - Alternative #24 has an extremely high travel time compared to Alternative #1.

Safety - Alternative #24 has safety issues comparable to Alternative #1.

Reliability - Alternative #24 has more operational hand-offs from Class 1 to shortline railroads than Alternative #1 and is therefore more likely to have inferior reliability.

Capital Costs - Capital costs for Alternative #24 are comparable to but higher than Alternative #1 and therefore rates unfavorably for the Level 2 screening cost consideration.

Other Factors - Alternative #24 has better opportunities for future commuter rail use on the corridor and has the same number of modal connections as Alternative #1. However, the key stakeholder interest for this alternative is moderate.

Thus, based on the criteria used in Level 2 Screening, Alternative #24 is recommended for further evaluation in the Level 3 screening

**Alternative #26: Cleveland–Columbus (Elyria–Sandusky–Bellevue)**

North Segment: Cleveland Lake Front, Hopkins/Berea, Elyria, Sandusky, Bellevue, Bucyrus, Marion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Travel Time- Alternative #26 has a higher travel time than Alternative #1.

Safety - Alternative #26 has a more significant safety issues than Alternative #1, particularly with regard to at-grade rail crossings.

Reliability - Alternative #26 has fewer operational hand-offs from Class 1 to Class 1 or shortline railroads than Alternative #1.

Capital Costs- Capital costs for Alternative #26 are comparable to Alternative #1.

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Other Factors - Alternative #26 has the same opportunities for future commuter rail use on the corridor and has the same number of modal connections as Alternative #1. However, the key stakeholder interest for Alternative #26 is moderate.

Alternative #26 is recommended for dismissal for further study.

#### **Alternative #29: Direct Route South (Columbus-Cincinnati: Longworth/CUT) + Direct Route North (Cleveland-Columbus)**

North Segment: Cleveland Lake Front, Hopkins/Berea, Grafton, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus)

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

This route uses the direct route Alternative #1 from Cleveland through Columbus to Sharonville, north of Cincinnati. The only deviation from Alternative #1 is the route from Sharonville through the Mill Creek Valley on the west side of downtown Cincinnati. The route could serve stations near the Museum Center (former Cincinnati Union Terminal and current Amtrak station) and the Longworth Hall area. These station sites have been considered in high speed and conventional speed passenger rail studies for many years.

Travel Time- Alternative #29 has a travel time comparable to Alternative #1.

Safety - Alternative #29 has safety issues comparable to Alternative #1.

Reliability - Alternative #29 has one operational hand-off from Class 1 to Class 1 which is less than Alternative #1. However, at least 3 segments have over 50 trains per day and reliability is negatively affected as a result of the high freight traffic into Cincinnati yard. Thus, overall reliability is low.

Capital Costs - Capital costs for Alternative #29 are comparable to Alternative #1.

Other Factors - Alternative #29 has opportunities for future commuter rail use on the corridor comparable to Alternative #1. Additionally, the number of modal connections is comparable to Alternative #1. Key stakeholder interest for Alternative #29 is high.

Thus, based on the criteria used in Level 2 Screening, Alternative #29 is recommended for further evaluation in the Level 3 screening.

#### **Alternative #32: Hamilton-Cincinnati (Oasis Boathouse) + Direct Route North (Cleveland-Columbus)**

North Segment: Cleveland Lake Front, Hopkins/Berea, Grafton, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, Hamilton, North Cincinnati, Cincinnati – *Oasis line between the North Cincinnati and Cincinnati stops*

Travel Time- Alternative #32 has a higher travel time than Alternative #1.

Safety- Alternative #32 has a comparable, though slightly more, significant safety issues as Alternative #1.

Reliability- Alternative #32 has more operational hand-offs from Class 1 to Class 1 or shortline railroads as Alternative #1.

Capital Costs - Capital costs for Alternative #32 are comparable to Alternative #1.

Other Factors - Alternative #32 has comparable, but shorter, opportunities for future commuter rail use on the corridor than Alternative #1. Additionally, the number of modal connections is better than Alternative #1. The key stakeholder interest for Alternative #32 is moderate.

Thus, based on the criteria used in Level 2 Screening, Alternative 32 is recommended for further evaluation in the Level 3 screening

## **2.3 Alternatives Retained for Evaluation**

Four route alternatives were retained for further study and evaluation. This section describes the alternatives. A No-Build Alternative is included against which the four Build alternatives are compared.

### **2.3.1 Alternative 1 - No-Build Alternative**

The No-Build Alternative consists of the existing, planned, and programmed intercity highway and aviation services and facilities in the Cleveland-Columbus-Cincinnati (3C) corridor. A summary of the existing plus committed intercity transportation system is provided below. The No-Build does not include establishment of an intercity passenger rail service.

- Automobile: The majority of intercity automobile travel in the 3C Corridor is accommodated on I-71, I-75, and I-70, which roughly approximates the "direct route" for the proposed passenger rail service. A typical 250 mile automobile trip between Cleveland and Cincinnati takes approximately four hours and fifteen minutes with no congestion or weather delay. Capacity-adding improvement projects and interchange improvement projects are currently committed to on the interstate corridors and are provided in Table 2-4.
- Air: Daily commuter-oriented flight service exists, serving largely as connecting flights at hubs at Cleveland Hopkins International, Port Columbus International and Cincinnati/Northern Kentucky International airports. Carriers include Continental and Delta one-way flight time between Cleveland and Cincinnati is airlines. Scheduled typically around one hour and ten minutes gate to gate.
- Bus: Greyhound Lines, Inc. and other smaller carriers operate bus service in the 3C Corridor. Of the 31 Greyhound service locations in Ohio, 17 are located within or very near to the broad project area used in the Level 1 route screening (Table 2-1). Scheduled one-way travel times between Cleveland and Cincinnati range between four hours and forty minutes and five hours and thirty minutes with one way fares approximately 50 dollars.

The No-Build Alternative will not meet the purpose and need of this project. The purpose of this proposal, as described in Section 1, is to establish a new passenger

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transportation system in the 3C Corridor, providing additional mobility options and an entirely new transportation mode choice for travelers, with all the associated benefits. As described above, the No-Build Alternative will be a continuation of existing transportation system between Ohio's largest cities. This alternative is not considered an adequate solution to meet the existing and anticipated transportation needs of the corridor. The No-Build Alternative was retained for analysis, and its consequences were developed to allow equal comparison to the preferred alternative, and to help decision-makers and the public understand the ramifications of taking no action.

**Table 2-4 Capacity-Adding Improvement Projects and Interchange Improvement Projects  
Currently Committed to on the Interstate Corridors**

| <b>Project by<br/>County/Route</b> | <b>Description of Work</b>   | <b>Construction Schedule</b>                           |
|------------------------------------|--|--|
| Montgomery I-75/Austin Pike        | Construct a new interchange at Austin Pike and I-75                                      | Construction currently underway                        |
| Butler/Warren I-75                 | Add lane from SR 129 to SR 122; upgrade I-75 and SR 63 interchange                       | Construction currently underway                        |
| Clark I-70                         | Add lane from Enon Rd to SR 54   | Construction currently underway                        |
| Montgomery I-75                    | Interchange upgrade at SR 4, Main St and Grand Ave (Downtown Dayton) Phase 1A            | Construction currently underway                        |
| Montgomery I-75                    | Add third continuous lane on I-75 through the US 35 Interchange Phase 1B                 | Construction currently underway                        |
| Warren I-75                        | Add lane from SR 122 to MOT county line and upgrade SR 122 interchange                   | Construction currently underway                        |
| Cuyahoga I-71/90                   | East 55th St.  | Construction currently underway                        |
| Hamilton I-75                      | Mitchell Ave. Tight Diamond  | Construction Begins in 2010                            |
| Hamilton I-75                      | Monmouth Overpass, Removal of Bates and Pedestrian bridge                                | Construction Begins in 2010                            |
| Franklin I-70/I-71                 | I-70/71 Split reconstruction   | Construction Begins in 2011                            |
| Hamilton I-75                      | Colerain/Beekman/I-74 Full Movement Interchange  | Construction Begins in 2011                            |
| Hamilton I-75                      | RR Spur South of SR 562  | Construction Begins in 2011                            |
| Cuyahoga I-71/I-90                 | Innerbelt Bridge Group 1 - Construct new WB bridge and approaches I-71 to Carnegie Curve | Construction Begins in 2011                            |
| Hamilton I-75                      | I-75 between Western Hills and Mitchell  | Construction Begins in 2012                            |
| Hamilton I-75                      | RR Line East of I-75 over SR 562; RR Spur North of SR 562                                | Construction Begins in 2012                            |
| Hamilton I-75                      | I-75 SR 562 to Mitchell NB/SB 4th Lane   | Construction Begins in 2013                            |
| Hamilton I-75                      | I-75 between Glendale-Milford and Shepherd; Shepherd Lane tight Diamond                  | Construction Begins in 2013                            |
| Montgomery I-75                    | Upgrade I-75 interchanges from US 35/75 to Monument Ave Phase 2                          | Construction Begins in 2013                            |
| Franklin I-71                      | Add lane on I-71 from Pickaway /Franklin County Line to I-270                            | Project under development, Construction not yet funded |
| Franklin I-71                      | Grove City Interchange   | Project under development, Construction not yet funded |

| <b>Project by<br/>County/Route</b> | <b>Description of Work</b>   | <b>Construction Schedule</b>                              |
|------------------------------------|--|---|
| Franklin SR 315/<br>I-70/I-71      | Upgrade SR315/I-70/I-71 Interchange  | Project under development,<br>Construction not yet funded |
| Montgomery I-75                    | Complete four missing movement on I-75 at West<br>Carrolton                  | Project under development,<br>Construction not yet funded |
| Clark I-70                         | Add lane from Enon Rd to SR 54   | Project under development,<br>Construction not yet funded |
| Hamilton I-75                      | Reconfiguration of Ohio approaches to Brent<br>Spence Bridge                 | Project under development,<br>Construction not yet funded |
| Hamilton I-75                      | Reconstruction I 75 /interchanges Towne and 562                              | Project under development,<br>Construction not yet funded |
| Hamilton I-75                      | Reconstruction I-75 from SR 4 to I-275                                       | Project under development,<br>Construction not yet funded |
| Hamilton I-75                      | I-75 SB to I-275 SB Flyover ramp; I-275 EB to I-75<br>NB Flyover Ramp        | Project under development,<br>Construction not yet funded |
| Hamilton I-75/I-275                | Improvements to I 75 / 275 interchange                                       | Project under development,<br>Construction not yet funded |
| Cuyahoga I-71/I-90                 | Innerbelt Overhead Roadway; Group 4;<br>Reconstruct overhead roadway bridges | Project under development,<br>Construction not yet funded |
| Cuyahoga I-71I-90                  | Innerbelt Trench; Group 6  | Project under development,<br>Construction not yet funded |
| Cuyahoga - Innerbelt<br>Curve      | Innerbelt Upgrade I-71/I-90 at Curve; Group 7                                | Project under development,<br>Construction not yet funded |
| Warren I-75                        | Western Row Road Interchange Improvement                                     | Project under development,<br>Construction not yet funded |
| Warren I-75                        | Fields-Ertel Road/Mason-Montgomery Road<br>Interchange Improvement           | Project under development,<br>Construction not yet funded |

### **2.3.2 Alternative 2 – North Segment 1: Direct Route Cleveland-Columbus plus South Segment 30: Direct Route-Columbus-Cincinnati**

This alternative consists of track and capacity improvements (described in section 2.4.3) along existing freight rail lines from Cleveland through Columbus and Dayton to Cincinnati, through intermediate towns of Berea, Olmstead, Grafton, Shelby, Crestline, Galion, Delaware, Springfield, Fairborn, Middletown, and Sharonville. (Station locations are analyzed in a later section.) The operating plan consists of three round trips per day.

### **2.3.3 Alternative 3 – North Segment 8: Cleveland-Akron-Barberton-Columbus plus South Segment 30: Direct Route-Columbus-Oasis-Cincinnati**

This alternative consists of track and capacity improvements along existing freight rail lines from Cleveland through Columbus and Dayton to Cincinnati, through intermediate towns of Bedford, Macedonia, Hudson, Cuyahoga Falls, Akron, Barberton, Wadsworth, Lodi, Shelby, Crestline, Galion, Delaware, Springfield, Fairborn, Middletown, and Sharonville. The operating plan consists of three round trips per day.

**2.3.4 Alternative 4 – North Segment 1: Direct Route Cleveland-Columbus plus  
South Segment 29: Direct Route South-Columbus-Cincinnati  
(Longworth/CUT)**

This alternative consists of track and capacity improvements along existing freight rail lines from Cleveland through Columbus and Dayton to Cincinnati, through intermediate towns of Berea, Olmstead, Grafton, Shelby, Crestline, Galion, Delaware, Springfield, Fairborn, Hamilton, and Sharonville. The operating plan consists of three round trips per day.

**2.3.5 Alternative 5 – North Segment 1: Direct Route Cleveland-Columbus plus  
South Segment 32: Hamilton-Cincinnati**

This alternative consists of track and capacity improvements along existing freight rail lines from Cleveland through Columbus and Dayton to Cincinnati, through intermediate towns of Berea, Olmstead, Grafton, Shelby, Crestline, Galion, Delaware, Springfield, Fairborn, Middletown, and Sharonville. The only difference between this alternative and Alternative 2 is the entry into the city of Cincinnati. The operating plan consists of three round trips per day.

Figure 2-6 shows the four build alternatives in their entirety.



**Figure 2-6 Alternatives Retained for Further Study**



## **2.4 Evaluation of Alternatives**

Each of the four build alternatives were evaluated using the measures listed in Section 1.7 and described below:

- Travel time – Travel time for each route included dwell time (time a train spends at a stop awaiting continued movement), recovery time (time scheduled at the end of the route before departure time of the next trip), and penalties for hand-off between different railroads. To be viable, travel times between cities by train need to be comparable to the time it would take traveling by automobile. The travel times were developed by considering train speed, the number of stations,

- the distance between stations, and the geometric constraints of the route including curvature and grading.
- Annual Riders (Market) – Annual riders are presented for local 79 mph service. Ridership is affected by travel time, station location, and station access.
  - Annual passenger Miles (Market) – Passenger miles are presented for local 79 mph service, and measures the length of passenger trips. Higher numbers represent longer passenger trips; i.e. passengers find the service more attractive for longer journeys. Passenger miles also drive revenue forecasts; therefore, they are given considerable weight for financing operations.
  - 10-Mile and 15-Mile Population/Track Miles – measures the potential market served by each alternative. Higher numbers indicate a larger population with access to the rail line.
  - Reliability – Measured qualitatively by significance of operational issues concerning existing conditions such as fleeting of trains, north-south operations, typical amount of freight traffic, and storage and staging issues for yard considerations. Reliability is a major determinant in a person's choice to take transit.
  - Operations and Maintenance Costs – measures the relative cost of the provided service. Reducing operating costs is important in providing a cost-effective project and service. Dispatching costs, track maintenance costs, and operating expenses were estimated on a rough-order-of-magnitude basis.
  - Refocus development opportunities – measures whether the alternative can be used to help focus development in station areas, increasing potential ridership and reducing sprawl.
  - Connect to all modes – measures whether the alternative connects with existing transit services in the cities along each alignment. Providing connections to existing transit enlarges the potential market by expanding the transit network.
  - Connect to major health facilities – measures whether the alternative connects with major medical facilities, thereby providing another mode of transportation for Ohio residents to obtain quality health care.

Table 2-5 presents the results of the evaluation of the four alternatives. The grey/highlighted cells indicate the characteristics that are least favorable for an alternative to be recommended as a preferred alternative.

Table 2-5 Evaluation of Alternatives

✓ Cause to Retain    ✕ Cause to Dismiss    Grey/highlighted cell indicates unfavorable characteristic

| # | Route Alternative   |                | Travel Time          | Market  |                               |                                |                                | Reliability        | O&M Costs           | Other Factors                     |  |                         | Recommendation (Retain/Dismiss)  |   |
|---|---|----------------|----------------------|---|-------------------------------|--------------------------------|--------------------------------|--------------------|---------------------|-----------------------------------|--|-------------------------|--|---|
|   |   | Miles          | Travel Time (hr:min) | Annual Riders (Draft Forecast for 2014, Prepared Sept. 8, 2009) | Annual Passenger Miles (2014) | 10-Mile Pop / Track Mile 000's | 15-Mile Pop / Track Mile 000's | Operational Issues | O&M Cost (Estimate) | Refocus Development Opportunities | Connect to all modes & major health facilities | Key Stakeholder Support | Notes/Comments   |   |
| 2 | Direct Route (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)                | 136+ 131 = 267 | 6:22                 | 885000  | 118370000                     | 16.0                           | 22.2                           | Minimal            | Lower               | Yes                               | Yes  | High                    | Build alternative  | ✓ |
| 3 | Akron-Barberton (Cleveland-Columbus) + Direct Route South-Columbus-Cincinnati (Route #30)             | 182+ 131 = 313 | 7:53                 | 569000  | 82350000                      | 15.0                           | 19.7                           | Minimal            | Higher              | Yes                               | Yes  | Low                     | Significantly higher travel time with minimal increase in market served. Lower riders and passenger mile forecast than DR. Lower population served per track mile. | ✕ |
| 4 | Direct Route-South Columbus-Cincinnati (Longworth/CUT) + Direct Route (Route #1) Cleveland – Columbus | 125+ 136 = 261 | 6:26                 | na  | na                            | na                             | na                             | Extensive          | Lower               | Yes                               | Yes  | Moderate                | Low rating for shared freight traffic makes this alternative less desirable. Extensive railroad operational issues. Storage and staging                            | ✕ |
| 5 | Hamilton-Cincinnati (Oasis Boathouse) + Direct Route (Route #1) Cleveland – Columbus                  | 135+ 136 = 271 | 6:55                 | 884000  | 115860000                     | na                             | na                             | Extensive          | Lower               | Yes                               | Yes  | Low                     | Travel time higher than DR with no incremental markets served. Major operating issues. Lower riders and passenger mile forecast than DR.                           | ✕ |

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#### **2.4.1 Alternative Evaluations**

The following sections summarize the evaluation for each of the four alternatives that were retained from the Level 2 screening (Figure 2-6). Additional information on public involvement can be found in Appendix L.

##### **2.4.1.1 Alternative 2: Direct Route North (Cleveland-Columbus) + Direct Route South (Columbus-Cincinnati)**

North Segment: Cleveland Lake Front, Hopkins/Berea, Grafton, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Alternative 2 is the direct route in the north segment between Cleveland and Columbus (route option 1) and the direct route in the south segment between Columbus and Cincinnati (route option 30). See the maps of the north segment (Figure 2-2) and the south segment (Figure 2-3) for additional detail.

Travel Time - Alternative 2 has the lowest travel time among the remaining alternatives.

Market Size (town centers served, economic development, ridership) - Annual riders in horizon year 2014 for Alternative 2 are the highest among all alternatives. Additionally, annual passenger miles in 2014 are also the highest among all alternatives.

Reliability - From Columbus, Alternative 2 primarily uses CSX trackage rights in addition to Norfolk Southern (NS) and I&O trackage rights.

No significant operational issues exist for Alternative 2. Proposed service would operate the most reliably for Alternative 2 as compared to other remaining alternatives.

Operating and Maintenance Costs - Operating costs for Alternative 2 are comparable to the capital costs of the other remaining alternatives.

Other Factors - All four alternatives meet the goal of refocusing development opportunities in the communities served, connect to all modes, and adequately connect major health facilities.

Thus, based on the reasons noted above, Alternative 2, Direct Route, is recommended as the preferred alternative.

##### **2.4.1.2 Alternative 3: Akron-Barberton (Cleveland-Columbus) + Direct Route South (Columbus-Cincinnati)**

North Segment: Cleveland Lake Front/Terminal Tower, Bedford/Macedonia, Hudson, Cuyahoga Falls, Akron, Barberton, Lodi, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

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Travel Time - Alternative 3 has a significantly higher travel time than Alternative 2.

Market Size (town centers served, economic development, ridership) - Annual forecasted riders in horizon year 2014 are low for Alternative 3 compared to the other three alternatives. Annual forecasted passenger miles in 2014 are also correspondingly low compared to the other alternatives. Additionally, Alternative 3 offers a minimal increase in market size served compared to Alternative 2, which has a significantly lower travel time.

Reliability - Operational issues are not a significant issue with Alternative 3.

Operating and Maintenance Costs - Operating costs for Alternative 3 are comparable to the capital costs of other remaining alternatives.

Other Factors - All four alternatives meet the goal of refocusing development opportunities in the communities served, connect to all modes, and adequately connect major health facilities.

Alternative 3 is recommended for dismissal from further evaluation.

#### **2.4.1.3 Alternative 4: Direct Route South (Columbus-Cincinnati: Longworth/CUT) + Direct Route North (Cleveland – Columbus)**

North Segment: Cleveland Lake Front, Hopkins/Berea, Grafton, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, North Cincinnati, Cincinnati

Alternative 4 uses the direct route Alternative 2 from Cleveland through Columbus to Sharonville, north of Cincinnati. The only deviation from Alternative 2 is the route from Sharonville through the Mill Creek Valley on the west side of downtown Cincinnati. This route could serve stations near the Museum Center (former Cincinnati Union Terminal, and current Amtrak station) and the Longworth Hall area. These station sites have been considered in high speed and conventional speed passenger rail studies for many years.

Travel Time - Alternative 4 has slightly higher travel than Alternative 2.

Market Size (town centers served, economic development, ridership) - Annual riders and annual passenger miles were not modeled in horizon year 2014 for Alternative 4, as they would be nearly identical to those modeled for Alternative 2. While ridership would be near the highest among all alternatives, it could be lower due to a slightly higher travel time. However, when operational issues discussed below are factored into the ridership and passenger mileage forecasts, accurate travel times would be less reliable. Therefore this alternative had some notable concerns compared to Alternative 2.

Reliability - From Columbus, Alternative 4 uses the NS Cincinnati mainline to and beyond Sharonville. NS ownership ends at the NS Tower, several miles south of Sharonville, where the line enters CSX trackage rights. See the maps of the north segment (Figure 2-2) and the south segment (Figure 2-3) for additional detail.

NS, and predecessor Conrail, have long held trackage rights from NA south past Mitchell (Winton Place) to Colerain Avenue, one of the major interlockings near Queensgate Yard. Heavy traffic continues south to Tower A near the Museum Center.

This distance, about seven miles, is one of the busiest and most significant freight routes in the country. Although owned by CSX, RailAmerica and Norfolk Southern operate the trains. In 2009, CSX reported that 70 to 80 trains per day typically use the segment from Colerain to Winton Place, where one of two routes to Hamilton diverges. From Winton Place to NA Tower, 35 to 40 trains per day operate, and almost as many on the segment north from NA Tower to Evandale (known as CP Mill by NS), where a second route to Hamilton diverges.

The segment from NA Tower to Tower A is largely grade separated, and primarily double track, with several crossovers and partial third main track. Owned by NS, this additional track was constructed with state assistance. The line experiences high levels of congestion because of trains moving at slow speeds to enter/leave yard trackage, and because of trains waiting on main trackage outside the yard for clearance to enter.

Amtrak Cardinal service currently operates a portion of this route, making a station stop at Museum Center. This train operates three times weekly during night hours, and has a poor history of on-time performance. Quick Start service would introduce six additional daily time-sensitive passenger movements.

Operating and Maintenance Costs - Operating costs for Alternative 4 are comparable to the capital costs of the other remaining alternatives.

The consideration of improvements that would increase capacity and make the route suitable for additional passenger service is a complex process that would most likely significantly raise the capital cost of this alternative to significantly higher than the other alternatives.

Other Factors - Key project stakeholders expressed particular interest in Alternative 4; therefore, it was carried forward to the Level 3 screening, despite some technical and characteristic issues. These technical and characteristic issues are significant, when compared to the other three alternatives and are reason to eliminate this alternative from further study.

All four alternatives meet the goal of refocusing development opportunities in the communities served, connect to all modes of transportation, and adequately connect major health facilities.

Alternative 4 cannot be recommended for Ohio's initial Quick Start service because:

- Current freight operations tax the existing capacity.
- The high levels of rail congestion would make the operation of passenger service unreliable.
- CSX is not supportive of the introduction of passenger service. Amtrak, the proposed operator, shares similar concerns as CSX.

- The consideration of improvements that would increase capacity and make the route suitable for additional passenger service is a complex process that would most likely significantly raise the capital cost of this alternative to several times higher than the other alternatives.

It is recommended that if the City of Cincinnati deems stations desirable near Museum Center, Longworth Hall, or other locations west of downtown Cincinnati, Alternative 4 should be considered for future phases of conventional passenger service and for high-speed rail service. Such a consideration should include the development of a sophisticated rail operations simulation tool such as Rail Traffic Controller (RTC), and include extensive analysis of potential improvements that might meet the service requirements. Agreements with CSX and the other railroads operating in the corridor will be required. The provision of additional capacity could be expensive, given the difficult terrain, restrictions resulting from existing rail lines, highways, development, and the possible need to extensively bridge or relocate Mill Creek.

Thus, based on the reasons noted above, Alternative 4 is recommended for dismissal from further evaluation.

#### **2.4.1.4 Alternative 5: Hamilton-Cincinnati + Direct Route North (Cleveland – Columbus)**

North Segment: Cleveland Lake Front, Hopkins/Berea, Grafton, Shelby/Crestline/Galion, Delaware, North Columbus, Columbus

South Segment: Columbus, Springfield, Fairborn, Dayton, Middletown, Hamilton, North Cincinnati, Cincinnati – *Oasis line between the North Cincinnati and Cincinnati stops*

Travel Time - Alternative 5 has a higher travel time than Alternative 2.

Market Size (town centers served, economic development, ridership) - Annual forecasts riders in horizon year 2014 for Alternative 5 are comparable to Alternative 2. Annual forecast passenger miles in 2014 for Alternative 5 are also comparable to Alternative 2. However, Alternative 5 has minimal opportunity for increase in market size served as compared to Alternative 2 while having a higher travel time. Finally, a similar market would be served while also putting reliability at risk.

Reliability - Operational issues are extensive for Alternative 5. Norfolk Southern and CSX have trackage rights agreements on their respective tracks in the area southeast of Hamilton. CSX operates tracks southbound from Hamilton while NS operates northbound; both carriers fleet their trains on each other's respective tracks in the agreed upon directions. Alternative 5 proposes to use the NS tracks, which currently operate in one direction. Operating passenger rail under such an agreement is not feasible due to the need for a single station to be located in the same location in both directional trips when serving a particular community. Reverting to dual direction for both railroads would cause significant inefficiencies and operational issues for freight and passenger rail, which would require substantial capital improvements.

Operating and Maintenance Costs - Operating costs for Alternative 5 are comparable to the capital costs of other remaining alternatives.



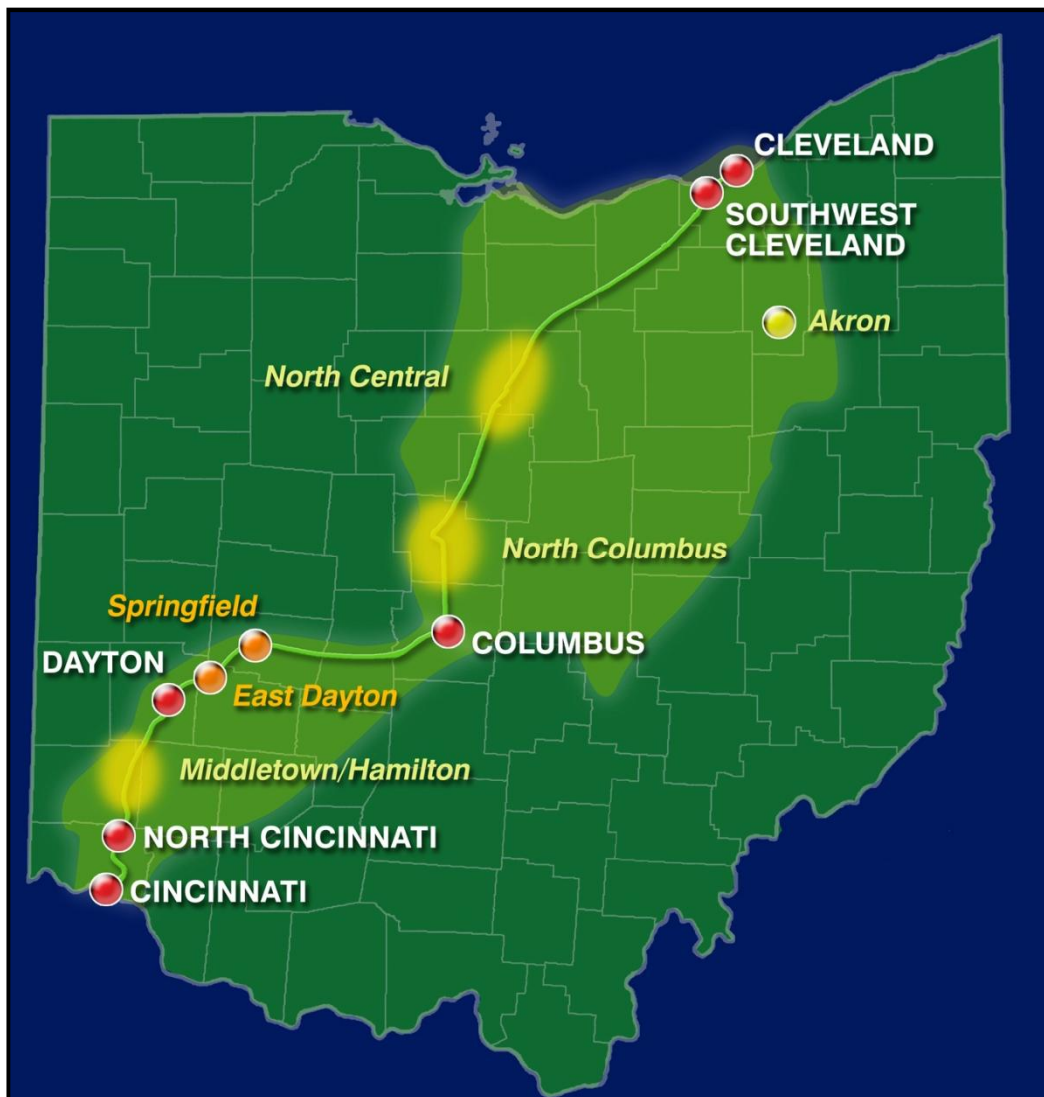
Other Factors - All four alternatives meet the goal of refocusing development opportunities in the communities served, connect to all modes, and adequately connect major health facilities.

Thus, based on reasons noted above, Alternative 5 is recommended for dismissal for further evaluation.

#### **2.4.2 Recommended Preferred Alternative**

As shown in Table 2-5 and subsequent supportive analysis, Alternatives 3, 4, and 5 are recommended for dismissal for various reasons including longer travel time, smaller market potential, and extensive operational issues. Thus, the recommended preferred alternative for the route evaluation process is Alternative 2 (from Sections 2.3 and 2.4) Direct Route North (Cleveland-Columbus) and the Direct Route South (Columbus-Cincinnati) (Figure 2-7). From this point on, Alternative 2 (from Section 2.3 and 2.4) will be referred to as the Preferred Alternative and this Preferred Alternative will move forward in evaluation for the selection of station locations.

**Figure 2-7 Preferred Alternative 2, Direct Route**



#### **2.4.3 Alignment Alternatives including Proposed Capacity Improvements**

In early 2009, ORDC and ODOT commissioned a study to identify and provide recommendations for capacity improvements on the 246 mile rail corridor between the Cleveland Lakefront Amtrak Station Cleveland and the Indiana and Ohio Railway Undercliff Yard in Cincinnati.

This study provided preliminary recommendations for 11 improvements that would provide the additional capacity needed to establish passenger service in the 3C Corridor. Detailed mapping of the yards and capacity improvement locations is provided in Appendix B.

The proposed Project would be located within and adjacent to existing railroad rights-of-way. Within the 246 mile corridor for the preferred alternative for the Project, the existing rail rights-of-way are distinguished by the following segments:

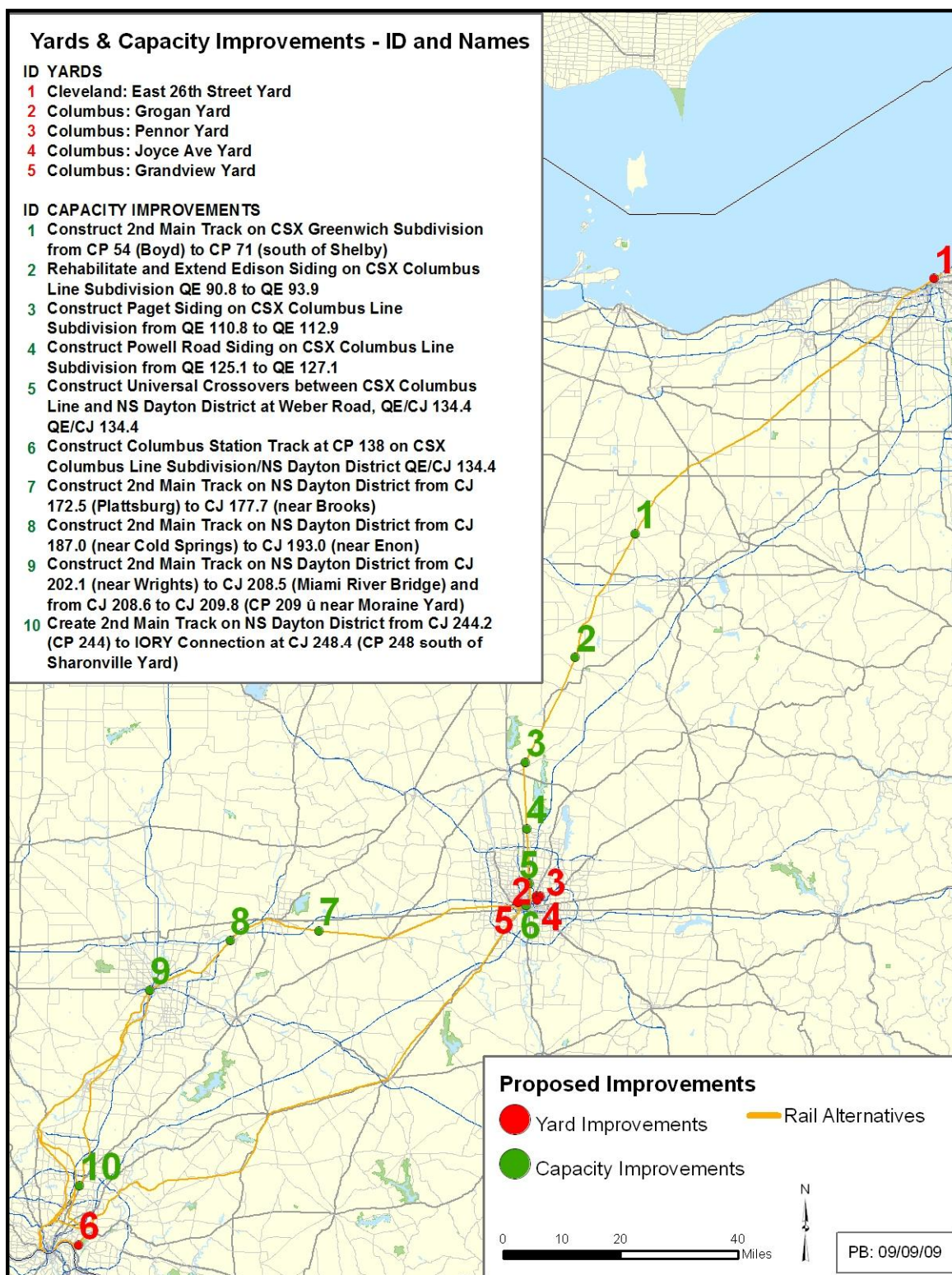
- NS Chicago Line between Cleveland and Berea, which currently carries 69 freight trains per day.
- CSX Cleveland shortline Subdivision: Berea to CP 13, which currently carries 56 freight trains per day.
- CSX Greenwich Subdivision: CP13 (south of Berea) to CP 56 (Galion), which currently carries 78 freight trains per day.
- CSX Columbus Line Subdivision: CP 80 (Galion) to CP 136 (Columbus), which currently carries 12 freight trains per day.
- NS Dayton District: CP 138 (Columbus) to CP 248 (I&ORY Connection), which currently carries 25 freight trains per day.
- I&ORY Oasis Line: Mill to Sawyer Point/Boathouse (MP 16.4 to MP 0)

Eleven capacity improvements are proposed as the Preferred Alternative. Detailed mapping of the yards and capacity improvement locations is provided in Appendix B of the EA. These projects include:

- Construct Berea Front Street Station Track between NS Chicago Line and CSX Cleveland shortline at Berea Interlocking, which will include new connecting track and crossovers.
- Construct 17 miles of second main track on CSX Greenwich Subdivision from CP 54 (Boyd) to CP 71 (south of Shelby)
- Rehabilitate and extend the existing 0.8 mile Edison siding to a total length of 3.2 miles on CSX Columbus Line Subdivision QE 90.8 to QE 93.9.
- Construct 2.1 mile Paget Siding on CSX Columbus Line Subdivision from QE110.8 to QE 112.9.
- Construct 2.0 mile Powell Road Siding on CSX Columbus Line Subdivision from QE 125.1 to QE 127.1.
- Construct universal crossovers between CSX Columbus Line Subdivision and NS Dayton District at Weber Road QE/CJ 134.4
- Construct Columbus Station Track at CP 138 on CSX Columbus Line Subdivisions/NS Dayton District, which will include new connecting track and crossovers.
- Construct 5.2 miles of second main track on NS Dayton District from CJ 172.5 (Plattsburg) to CJ 177.7 (near Brooks).
- Construct 6.0 miles of second main track on NS Dayton District from CJ 187.0 (near Cold Springs) to CJ 193.0 (near Enon).

- Construct 7.7 miles of second main track on NS Dayton District from CJ 202.1 (near Wrights) to CJ 208.5 (Miami River Bridge) and from CJ 208.6 to CJ 209.8 (near Moraine Yard).
- Construct 4.6 miles of second main connecting track on NS Dayton District from CJ 244.2 (CP 244) to IORY Connection at CJ 248.8 (south of Sharonville Yard) to allow train movement to and from the Oasis Line.

**Figure 2-8 Yards and Capacity Improvements**



## **2.5 Detailed Station Alternatives**

### **2.5.1 Stations**

There are 12 service locations under consideration with 32 possible station sites. The service locations and station sites are summarized in Table 2-6 and shown in Figure 2-9. Detailed mapping of the 32 station sites is provided in Appendix C.

Six service locations, including Cleveland, Southwest Cleveland, Columbus, Dayton, North Cincinnati, and Cincinnati, are considered for **Initial Proposed 3C Quick Start Passenger Rail** service (shown in black on Figure 2-9). A proposed station site for each of the initial service locations has been assumed for cost, environmental assessment, and ridership purposes. These proposed and alternate station sites, where applicable, are shown in Table 2-6 and on Figure 2-9. Detailed descriptions of these service locations are in Appendix D.

Two additional service locations, including Springfield and East Dayton, are considered for **Phased Proposed 3C Quick Start Passenger Rail** service (shown in blue on Figure 2-9). One station site is proposed for each of the phased service locations; they have been assumed for cost, environmental assessment, and ridership purposes. These proposed station sites are shown in Table 2-6 and can be found on Figure 2-9 by referencing the index number. These service areas are currently under review for usage in the Initial 3C Quick Start Passenger Rail service. Detailed descriptions of these service locations are in Appendix D.

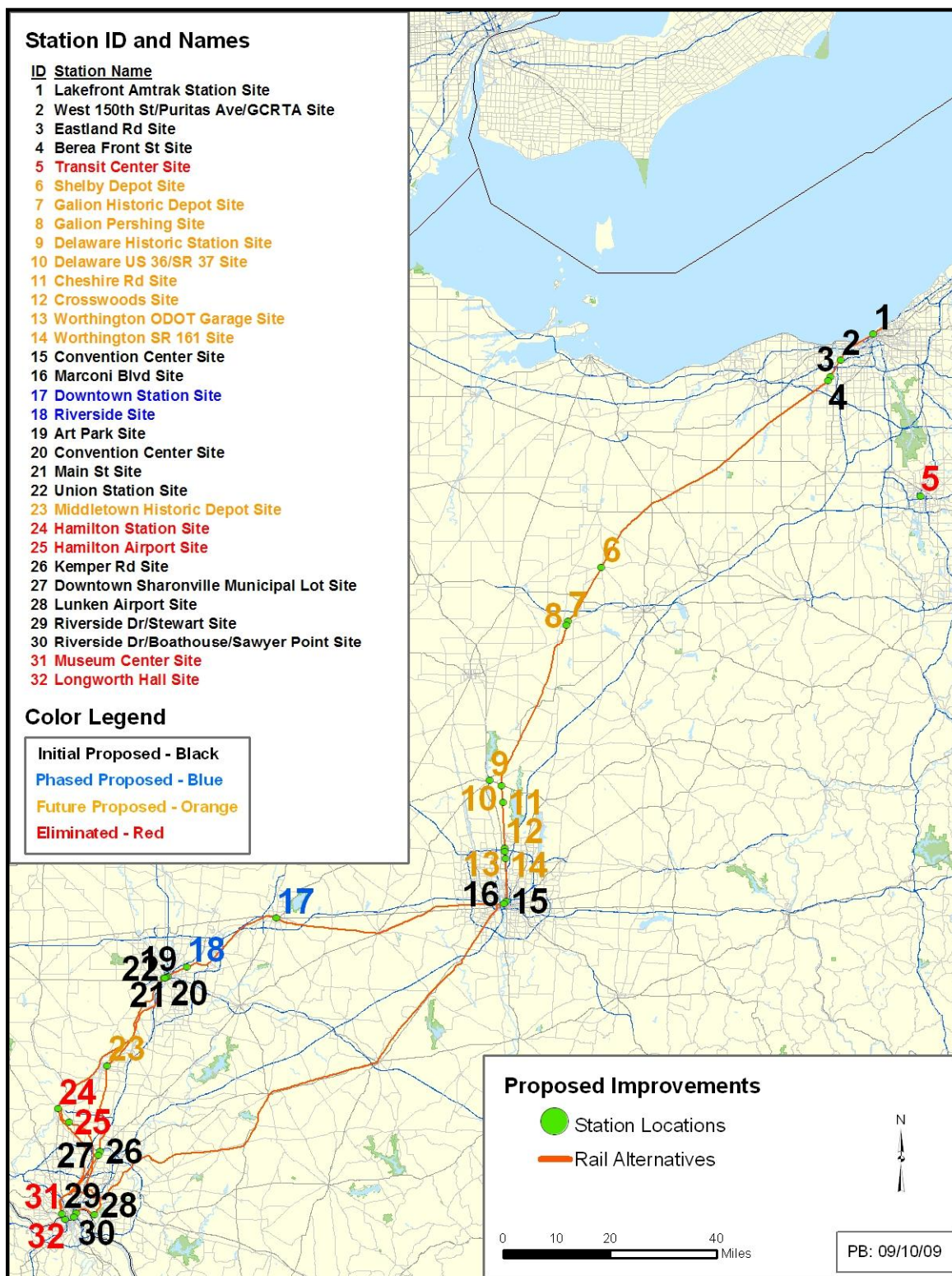
Three additional service locations including North Central, North Columbus, and Middletown/Hamilton, are considered for **Future Proposed 3C Quick Start Passenger Rail** service (shown in orange on Figure 2-9). There is a proposed station site for each of these future Quick Start service locations. These future Quick Start station sites are shown in Table 2-6 and can be found on Figure 2-9 by referencing the index number. Detailed descriptions of these service locations are in Appendix D.

One service location, Akron and its one station site, has been **eliminated from Quick Start consideration** (shown in red on Figure 2-9). This service location would be considered in future high speed rail studies.

Detailed descriptions of stations eliminated from consideration are in Appendix D.



**Figure 2-9 Station Index Map**



**Table 2-6 Station Summary**

| SERVICE LOCATION    | STATION LOCATION and INDEX NUMBER                      | CATEGORY                     | STATUS         | REMARKS                        |
|---------------------|--|------------------------------|----------------|--------------------------------|
| CLEVELAND           | 1- Lakefront Amtrak Station                            | Initial Proposed Quick Start | <b>Assumed</b> |                                |
| SOUTHWEST CLEVELAND | 2- West 150 <sup>th</sup> St/Puritas Avenue/GCRTA Site | Initial Proposed Quick Start | <b>Assumed</b> |                                |
|                     | 3- Eastland Road Site                                  | Initial Proposed Quick Start | Alternate      |                                |
|                     | 4-Berea Front Street Site                              | Initial Proposed Quick Start | Alternate      |                                |
| AKRON               | 5- Transit Center Site                                 | Eliminated from Quick Start  | -              | Considered for future HSR only |
| NORTH CENTRAL       | 6- Shelby Depot Site                                   | Future Proposed Quick Start  | Alternate      |                                |
|                     | 7- Galion Historic Depot Site                          | Future Proposed Quick Start  | Alternate      |                                |
|                     | 8- Galion Pershing Site                                | Future Proposed Quick Start  | <b>Assumed</b> |                                |
| NORTH COLUMBUS      | 9- Delaware Historic Station Site                      | Future Proposed Quick Start  | Alternate      |                                |
|                     | 10- Delaware US 36/SR 37 Site                          | Future Proposed Quick Start  | Alternate      |                                |
|                     | 11- Cheshire Road Site                                 | Future Proposed Quick Start  | Alternate      |                                |
|                     | 12- Crosswoods Site                                    | Future Proposed Quick Start  | <b>Assumed</b> |                                |
|                     | 13- Worthington ODOT Garage Site                       | Future Proposed Quick Start  | Alternate      |                                |

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| SERVICE LOCATION        | STATION LOCATION and INDEX NUMBER           | CATEGORY                     | STATUS         | REMARKS                        |
|-------------------------|---|------------------------------|----------------|--------------------------------|
|                         | 14- Worthington SR 161 Site                 | Future Proposed Quick Start  | Alternate      |                                |
| COLUMBUS                | 15- Convention Center Site                  | Initial Proposed Quick Start | <b>Assumed</b> |                                |
|                         | 16- Marconi Boulevard. Site                 | Initial Proposed Quick Start | Alternate      |                                |
| SPRINGFIELD             | 17- Downtown Station Site                   | Phased Proposed Quick Start  | <b>Phased</b>  | Still under review             |
| EAST DAYTON             | 18- Riverside Site                          | Phased Proposed Quick Start  | <b>Phased</b>  | Still under review             |
| DAYTON                  | 19-Art Park Site                            | Initial Proposed Quick Start | Alternate      |                                |
|                         | 20- Convention Center Site                  | Initial Proposed Quick Start | Alternate      |                                |
|                         | 21- Main Street Site                        | Initial Proposed Quick Start | <b>Assumed</b> |                                |
|                         | 22- Union Station Site                      | Initial Proposed Quick Start | Alternate      |                                |
| MIDDLETOWN/<br>HAMILTON | 23- Middletown Historic Depot Site          | Future Proposed Quick Start  | <b>Assumed</b> |                                |
|                         | 24- Hamilton Station Site                   | Eliminated from Quick Start  | -              | Considered for future HSR only |
|                         | 25- Hamilton Airport Site                   | Eliminated from Quick Start  | -              | Considered for future HSR only |
| NORTH CINCINNATI        | 26- Kemper Road Site                        | Initial Proposed Quick Start | <b>Assumed</b> |                                |
|                         | 27- Downtown Sharonville Municipal Lot Site | Initial Proposed Quick Start | Alternate      |                                |



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| SERVICE LOCATION | STATION LOCATION and INDEX NUMBER                                   | CATEGORY                      | STATUS         | REMARKS                     |
|------------------|---|-------------------------------|----------------|-----------------------------|
| CINCINNATI       | 28- Lunken Airport Site   | Initial Proposed Quick Start  | <b>Assumed</b> | Oasis Line                  |
|                  | 29- Riverside Drive/Stewart Site                                    | Initial Proposed Quick Start  | Alternate      | Oasis Line                  |
|                  | 30- Riverside Drive/Boathouse/Sawyer Point Site (Sawyer Point Site) | Initial Proposed Quick Start  | Alternate      | Oasis Line                  |
|                  | 31- Museum Center Site  | Eliminated from Quick Start   | Alternate      | Mill Creek Line             |
|                  | 32- Longworth Hall Site   | Eliminated from Quick Start   | Alternate      | Mill Creek Line             |
|                  | Bond Hill   | Proposed After Public Hearing | Alternate      | Will be reviewed in Tier II |
|                  | Fairfax   | Proposed After Public Hearing | Alternate      | Will be reviewed in Tier II |

Note: HSR – High Speed Rail

Note: Locations highlighted in light green indicate “phased” or “assumed” stations as part of the initial proposed quick start project.

### 2.5.2 Yard and Shop Alternatives

Several operational options exist when considering the location of yard and shop facilities along the 3C Corridor. For Cleveland, Columbus, and Cincinnati, various levels of facilities were considered. For operational efficiency, a train storage and maintenance facility would be required at each of these locations. Several factors that weigh into the decisions related to the yard and shop locations include schedules, storage, staging, and varying levels of maintenance. Additionally, appropriate land availability, proximity, and access are other important considerations. Non-revenue service is to be minimized while also accounting for these other factors. The facilities must also accommodate workers and consider the ability for future site expansion. Several sites were considered in both Columbus and Cleveland while there were limitations on site selection in Cincinnati. The following is a description of the proposed yard and shop facilities. Detailed mapping of the yard sites is provided in Appendix B.

#### **Storage and Maintenance Facilities**

Three train storage and maintenance facilities are assumed to be included in the project. The facilities in Columbus and Cincinnati are single-ended storage yards large enough to hold two, 5-car trains each. For these properties to be utilized the properties would need to be acquired, and site work would need to be completed, including the

development of two turnouts, the addition of 1,040 feet of new track, as well as the installation of two concrete pads where locomotives will be re-fueled via a tanker truck. Additionally, two 480V standby power cabinets, a railcar toilet dump system, and a small building for crew welfare facilities and train cleaning supplies would all need to be added to the sites.

The facility at Cleveland is assumed to be a “medium-duty” maintenance facility that can handle minor repairs to locomotives and railcars, as well as provide routine train servicing. The facility is assumed to have three, single-ended tracks, each capable of storing one train, a double-ended track passing through a service and inspection (S&I) building, and a double-ended lead and runaround track. The S&I building includes a 540 foot-long, enclosed structure in which a five car train including the locomotive can be located for maintenance. The track in the S&I building is on a continuous inspection pit between the rails. The S&I building also includes fuel and lubrication storage and delivery systems, 480V standby power connections, a compressed air system, a railcar toilet dump system, a wheel truing station, heavy jacks for raising locomotives and railcars, an office area, a material control area. Property acquisition and site work to construct the facility will also be required.

## **2.6 Preferred Alternative**

Criteria for the evaluation of potential station locations have been established in order to compare and analyze them for the greatest utility. These criteria include:

- Basic requirements for locating a station
- Accessibility to transportation and population density
- Ease of implementation
- Long-term development potential
- Impacts to adjacent properties, traffic patterns and freight rail operations
- Safety and security
- Local input

Initial stopping locations were determined based on the need to provide a service competitive to other modes of transportation in terms of time, proximity, and other technical issues. In addition, previous studies identified business travelers as a prime target audience for 3C passenger rail service. Providing an express style service with stops in downtown Cleveland, Southwest Cleveland, Columbus, Springfield, East Dayton, Dayton, North Cincinnati, and downtown Cincinnati would allow the initial project to be a first step that is simplified from an operational standpoint and reliable to potential riders. Figure 2-7 identifies the preferred alternative route. The following sections provide a summary of the service location sites.

Additional stops can be phased in as passenger rail service in the 3C Corridor expands and grows. This would also allow time for complex local decisions to be made about specific station locations in those area not served by the initial Quick Start service.

### **2.6.1 Service Location: Cleveland**

#### **(1) Lakefront Amtrak Station:**

Cleveland's existing Amtrak station is located at 200 Cleveland Memorial Shoreway. This facility serves Amtrak passengers on the Lake Shore Limited between New York and Chicago and the Capitol Limited between Chicago and Washington D.C. The station is generally open during the overnight and morning hours. Existing on-site parking is available. Connections to other forms of public transportation are available at this location, or a short distance away.

This station site could also have long-term development opportunities as part of master planning activities being developed by the Cleveland-Cuyahoga County Port Authority. The Port is advancing an aggressive waterfront redevelopment plan that would locate additional local destinations near this station. The plans for this development accommodate future local and regional rail transportation options.

Initial studies undertaken by ORDC have indicated that an additional track or track upgrades may be needed to accommodate trains that originate in Cleveland. A new or improved platform to accommodate additional passengers may also be needed. Further study will be needed to determine final requirements for this facility based on the number of additional passengers using the 3C Corridor service.

Some level of additional safety improvements will be needed for 3C passengers who need to cross the GCRTA Waterfront light rail line in order to get from the station building to 3C passenger rail trains.

Because minimal construction work would likely be needed to establish 3C passenger service at this location, and because it is the current inter-city passenger rail station, it is recommended that the Lakefront Amtrak Station be considered as the assumed location for 3C Passenger Rail Quick Start service to downtown Cleveland.

### **2.6.2 Service Location: Southwest Cleveland**

#### **(2) West 150th Street/Puritas Avenue GCRTA Site:**

The GCRTA owns the facility at this site. Having this parcel under public ownership could assist the right-of-way acquisition process for locating a 3C passenger rail station at this site. A rehabilitation project, currently under construction, will provide an overhead bridge that crosses the proposed 3C passenger rail platform location between the NS mainline tracks. The bridge is a pre-fabricated structure that cannot be modified to provide stairs and elevators to the proposed 3C passenger rail platform location. Because of this, a new bridge will be needed to provide adequate passenger access to both services.

GCRTA engineering staff has indicated that the station could be reconfigured to accommodate 3C passenger service and has indicated its willingness to work with ORDC to further investigate the concept of locating a 3C station at this site. The GCRTA Red Line connects Cleveland Hopkins International Airport to Tower City. Locating 3C and GCRTA stations at the same location would provide a seamless transition between transit and intercity rail modes.

The existing West 150<sup>th</sup> Street/Puritas Avenue transit platform is located above a pedestrian tunnel, which provides vertical passenger access up to a center platform

between the double track transit lines. The pedestrian access tunnel also runs under the NS tracks and serves the parking lot and bus and auto drop-off areas on the east side of the railroad. At this location, there are two NS mainline tracks and an additional yard lead. The three NS tracks run parallel and adjacent to the transit line on its east side.

Connections to other forms of public transportation are available at this site, including rail and bus service. Adequate parking is adjacent to the I-71 interchange at 150<sup>th</sup> Street. This station is within two miles of I-480.

In order to serve a 3C passenger rail station platform located east of the NS tracks, some track work might be necessary including the construction of new crossovers and turnouts to enable 3C trains to access the side track/yard lead that runs adjacent to the GCRTA station site. Conflict with freight operations might also be a consideration if track improvements are not made. More information is needed to determine the exact impacts.

Compared to other potential sites, less construction work would be needed to adapt the existing transit station to include 3C passenger service. This station also provides the most connectivity to the existing transportation system in comparison with other locations considered for Southwest Cleveland. Because of these factors, it is recommended that the West 150<sup>th</sup> Street/Puritas Avenue GCRTA site be considered as the proposed location for 3C Passenger Rail Quick Start service for Southwest Cleveland.

### **2.6.3 Service Location: Columbus**

#### **(15) Convention Center Site:**

The Columbus Convention Center was constructed on the former site of the Columbus Union Station. The original station tracks and the adjacent freight yard complex have been removed and only the two mainline tracks remain. The City of Columbus has stated its preference for a station to be developed at this location.

The site was originally designed to accommodate a high speed rail station as a part of the Convention Center project's first phase in the late 1980s. Knock out walls were to accommodate a future passenger station north of the tracks on a site that could be linked directly to the south side facility.

In the mid 1990's the Greater Columbus Convention Center Facilities Authority constructed its second phase with a large exhibit hall on the north side of the track, precluding the original concept for constructing a passenger station on this site. However, the Convention Center is currently undertaking another expansion and renovation project that could be amended to better accommodate passenger rail service. Convention Center officials have also indicated that they would welcome a station at the convention center complex.

Specific ideas for this station include utilizing the knock out walls on the south side facility, or by developing an alternative plan that utilizes available space.

The Convention Center facility, occupying space on both sides of the tracks, limits options for new tracks, but also provides options for creative use of existing buildings. In addition to the knock out walls in the south facility, there is a generous pedestrian

walkway between the north and south side buildings. Stair and elevator connections can be made to platforms next to either or both existing mainline tracks. Potential also exists to reach a platform on the south side of the existing south track. Another alternative would provide a pocket track and platform along the knock out walls to create space for service to the south side of the facility. Further evaluation to determine the impact of providing a pocket track will be necessary to determine the affect on freight operations at this location.

Operation of the double track mainline for freight operations in this area is critical to the overall operation of the Columbus railroad terminal. In order to make this site feasible for locating a passenger rail station, it will be essential to identify solutions that will maximize operating capacity. It will be necessary to identify and define the necessary track, crossovers and signal improvements needed for capacity and flexibility.

Past efforts have identified the NS Grandview Yard on the Buckeye Line as a potential site to layover the trains and conduct light service. The Grandview Yard is located on the west side of downtown; it would require crossing a CSX mainline.

Alternatively, additional yard sites east of downtown, including the Joyce Avenue Yard, the Pennor Yard, and the Grogan Yard, provide layover and maintenance facilities. More evaluation will be needed on each of these potential sites to determine their viability for use.

Several connections to public transportation, providing access to all parts of the City, are available at this location. This site is located less than one half mile from I-670 and SR 315 and approximately 1.5 miles to I-70/I-71. This site is within walking distance to both the Arena District and Short North entertainment district and residential neighborhood. It also features existing amenities such as lodging, shopping, dining, and other available attractions.

Because of its central location, available connections, local support, and on-site amenities, the Convention Center site is recommended to serve as a proposed station site to serve downtown Columbus as part of the 3C Quick Start Passenger Rail project.

#### **2.6.4 Service Location: Springfield (*phased*)**

##### **(17) Downtown Station Site:**

This location is near the main transit center for Springfield City Area Transit, which provides fixed route bus service to destinations throughout the City. Public transit service could easily be provided at this location. A bicycle/pedestrian trail is located adjacent to this site. There is a high volume of pedestrian activity in this area as well as housing for the elderly.

The Springfield Clark County Transportation Coordinating Committee (SCTCC) has looked at possible intercity passenger stations locations for years. This proposed station location is situated along a short stretch of single track mainline in downtown Springfield within the Washington Street corridor. The mainline track runs where Washington Street used to be in downtown. The City of Springfield has indicated that this site could host a station in such a manner that the short-term blockage of streets with stopped passenger trains will not be an issue for local traffic.

Because of its central location and the availability of other local connections and services, this location is recommended to be advanced as a proposed station location to serve Springfield as part of the 3C Quick Start Passenger Rail project.

#### **2.6.5 Service Location: East Dayton (*phased*)**

##### **(18) Riverside Site:**

Positive aspects of this station location include its proximity to major destinations such as the United States Air Force Museum, which draws more than one million visitors annually; the Wright-Patterson Air Force Base, which employs 22,000; and Wright State University, where approximately 17,000 students attend.

This site includes an entrance road and paved parking along the single track NS mainline, which has been identified as the direct route for 3C passenger service. The City of Riverside plans to develop the site with compatible uses including a new mixed-use commercial development and a ceremonial entrance drive to the Air Force Museum. The City of Riverside is interested in helping develop a station at this location.

Because of the proximity of this potential site to tourist, businesses, and educational destinations, this location is recommended as a proposed station location to serve East Dayton as part of the 3C Quick Start Passenger Rail project.

#### **2.6.6 Service Location: Dayton**

##### **(21) Main Street Site:**

This site is located just west of the intersection of Main and Sixth streets in downtown Dayton. It is approximately one block west of the proposed Dayton Convention Center location. Similar to the Dayton Convention Center site, railroad tracks are elevated and a new station structure would be needed to construct a station on this site.

A number of the design issues present at the Dayton Convention Center location are not encountered at this location. The Holden House residential development, which provides housing to low income and elderly populations, is near this station.

Connections to local public transit and the local and regional roadway network are readily accessible at this location. Adequate parking and space for station building development are available at this location.

Because of the connections and infrastructure available at this site, this location is recommended as a proposed station location to serve East Dayton as part of the 3C Quick Start Passenger Rail project.

#### **2.6.7 Service Location: North Cincinnati**

##### **(26) Kemper Road Site:**

This potential station is located on a former manufacturing plant site on Kemper Road between Reading Road and US Route 42. The Park 42 business park occupies this property. The City of Sharonville has stated its preference for a north Cincinnati station at this location.

Connections to public transit and the local and regional roadway network are readily available. This site has available space for adequate station location, parking, and development of future passenger amenities.

Since this site is located on an NS double-tracked mainline, a pedestrian overpass will be needed.

Because of the available space for future development at this location, it is recommended as a proposed station to serve North Cincinnati on the 3C Quick Start Passenger Rail project.

#### **2.6.8 Service Location: Cincinnati**

Several potential station locations were evaluated in the Cincinnati area including sites at Sawyer Point/, Stewart Industries, Lunken Airport, Union Terminal/Museum Center and Longworth Hall. Additional sites have been identified during the public comment period as potential station locations. These include sites in Bond Hill and Fairfax. Information on these sites can be found in Appendix D and Appendix L.

Potential station locations listed below would align 3C Quick Start service with other initiatives currently in planning by ODOT. The Eastern Corridor project in Cincinnati identified the Oasis Line for light rail service through its Tier I Record of Decision (ROD).

Additional analysis of the identified potential station sites and a final determination of the station location in Cincinnati will be a part of Tier II study efforts.

##### ***(28) Lunken Airport Site (near Lunken Airport):***

This site is located on Lunken Park Drive, about 1,000 feet west of the boundaries of Cincinnati Municipal Lunken Airport and approximately five miles east of downtown Cincinnati. This site is located on the Oasis Line, owned by the SORTA and operated by RailAmerica. The line connects to the NS main line at CP Mill, south of downtown Sharonville approximately 11 miles north of the site.

The Undercliff Yard, which is more than 2,500 feet in length and includes six siding tracks, is owned by RailAmerica. The yard is underutilized and serves primarily staging and sorting functions for freight service to area industries. It is assumed that the yard property is sufficient for the development of a station facility, platform, parking and vehicular access. It will be the location for a train layover and limited maintenance and inspection of equipment.

Connections to the local roadway network are available at US Route 50 (Columbia Parkway), which is less than one half mile away.

This site also provides a location for the development of a station that would be surrounded by compatible light industrial uses. A station at this site is consistent with local desires to preserve the Oasis Line for potential light rail service to points east and south of this location, ensuring that the facility is compatible with local development goals.

**(30) Sawyer Point Site:**

This site is approximately located at 925 Riverside Drive, on property under City of Cincinnati control, adjacent to the Montgomery Inn at the Boat House restaurant. This site is adjacent to tennis courts in Sawyer Point Park, Theodore M. Berry Friendship Park, and large parking lots used for access to both parks and the Montgomery Inn restaurant. This location is visible from I-471 and less than one mile from several freeway interchanges connecting to I-71, I-75, US 50 (Columbia Parkway), and I-471.

This site is located on the Oasis Line in Cincinnati, owned by the SORTA, which connects to the NS Sharonville Yard on the north. Connections to other forms of transportation available at this location are:

- Less than one mile from several expressway interchange points connecting to I-71, I-75, I-471, and US 50 (Columbia Parkway)
- Accessible by Metro Routes 28 and 81X (Downtown to East Side)
- Approximately one mile to Greyhound Station
- Approximately 15 miles to Cincinnati-Northern Kentucky International Airport and approximately five miles to Lunken Municipal Airport

A station at this site is also consistent with local desires to preserve the Oasis Line for potential light rail service to points East and South of this location, ensuring that the facility is compatible with local development goals.

## **2.7 Next Steps/Construction Phasing**

The Preferred Alternative consists of track and capacity improvements along an existing rail freight corridor from Cleveland (Cleveland Amtrak Station) through Columbus and Dayton to Cincinnati (Indiana and Ohio Railway Undercliff Yard), through the intermediate towns of Berea, Olmstead, Grafton, Shelby, Crestline, Galion, Delaware, Springfield, Fairborn, Middletown, and Sharonville. The operating plan consists of three round trips per day.

The 3C Quick Start Passenger Rail project contains five independent phased projects that each have the ability to perform independently upon construction (Figure 2-10). Each of the projects include: track infrastructure capacity, signals, track speed improvements, grade crossing safety improvements, stations, service & inspection and layover facilities. All could commence simultaneously as one phase in a best case scenario. However, actual construction phasing will be developed in coordination with the host railroads and be finalized in the Master Agreement. Construction phasing will be contingent upon material (ties, rail, etc.) and workforce (labor) availability including expertise needed for any signal upgrades.

The corridor has been broken down into these individual phases and are shown below (with station descriptions; layover, maintenance, service site options; and recommended capacity improvements) for each.



Figure 2-10 Construction Phasing



### 2.7.1 Segment 1 (Cleveland to Columbus)

#### Line Segments:

- *NS Chicago Line between Cleveland and Berea* - This segment carries 69 freight trains per day.
- *CSX Cleveland shortline Subdivision: Berea to CP 13 (south of Berea)* - This segment carries 56 freight trains per day.
- *CSX Greenwich Subdivision: CP13 (south of Berea) to CP 56 (Galion)*. This segment carries 78 freight trains per day.
- *CSX Columbus Line Subdivision: CP 80 (Galion) to CP 136 (Columbus)*. This freight line carries 12 freight trains per day.

**Stations:**

*Cleveland Lakefront Amtrak Station* - Cleveland's existing Amtrak station is located at 200 Cleveland Memorial Shoreway. This facility serves Amtrak passengers on the Lake Shore Limited between New York and Chicago and the Capitol Limited between Chicago and Washington D.C. The station is generally open during the overnight and morning hours. Existing on-site parking is available. Connections to other forms of public transportation are available at this location, or a short distance away.

Initial studies have indicated that an additional track or track upgrades may be needed to accommodate trains that originate in Cleveland. A new or improved platform to accommodate additional passengers may also be needed. Further study will be needed to determine final requirements for this facility based on the number of additional passengers using the 3C Corridor service. Additional safety improvements will be needed for 3C passengers who need to cross the GCRTA Waterfront light rail line in order to get from the station building to 3C passenger rail trains. Minimal construction work would be needed to establish 3C passenger service at this location, and as it is the current inter-city passenger rail station, it is the assumed location for 3C Passenger Rail Quick Start service to downtown Cleveland.

*Cleveland West 150th Street/Puritas Avenue GCRTA Site* - The Greater Cleveland Regional Transit Authority (GCRTA) owns the facility at this site. A rehabilitation project, currently under construction, will provide an overhead bridge that crosses the proposed 3C passenger rail platform location between the NS mainline tracks. The bridge is a pre-fabricated structure that cannot be modified to provide stairs and elevators to the proposed 3C passenger rail platform location and requires a new bridge to provide adequate passenger access to both services.

Connections to other forms of public transportation are available at this site, including rail and bus service. The GCRTA Red Line connects Cleveland Hopkins International Airport to Tower City which would provide a seamless transition between transit and intercity rail modes. The existing West 150<sup>th</sup> Street/Puritas Avenue transit platform is located above a pedestrian tunnel, which provides vertical passenger access up to a center platform between the double track transit lines.

A pedestrian access tunnel also runs under the NS tracks and serves the parking lot and bus and auto drop-off areas on the east side of the railroad. Adequate parking is adjacent to the I-71 interchange at 150<sup>th</sup> Street. This station is within two miles of I-480.

In order to serve a 3C passenger rail station platform located east of the NS tracks, some track work may be necessary including the construction of new crossovers and turnouts to enable 3C trains to access the side track/yard lead that runs adjacent to the GCRTA station site.

*Columbus - Convention Center Site* - The Columbus Convention Center was constructed on the former site of the Columbus Union Station. The original station tracks and the adjacent freight yard complex have been removed and only the two mainline tracks remain.

The Convention Center facility, occupying space on both sides of the tracks, limits options for new tracks, but also provides options for creative use of existing buildings. In addition to the knock out walls in the south facility, there is a generous pedestrian

walkway between the north and south side buildings. This offers the potential to make stair and elevator connections to platforms next to either or both existing mainline tracks. Previous studies have also concluded that there is potential to reach a platform on the south side of the existing south track from the south side facility. Another alternative provides a pocket track and platform along the knock out walls to create space for service to the south side of the facility. Several connections to public transportation, providing access to all parts of the City, are available at this location. This site is located less than one half mile from I-670 and SR 315 and approximately 1.5 miles to I-70/I-71. This site is within walking distance to both the Arena District and Short North entertainment district and residential neighborhood. It also features existing amenities such as lodging, shopping, dining, and other available attractions.

**Layover, Maintenance, Service Site Options:**

Operation of the double track mainline for freight operations in this area is critical to the overall operation of the Columbus railroad terminal. In order to make this site feasible for locating a passenger rail station, it will be essential to identify solutions that will maximize operating capacity. It will be necessary to identify and define the necessary track, crossovers and signal improvements needed for capacity and flexibility.

Past efforts have identified the NS Grandview Yard on the Buckeye Line as a potential site to layover the trains and conduct light service. The Grandview Yard is located on the west side of downtown; it would require crossing a CSX mainline. Alternatively, additional yard sites east of downtown, including the Joyce Avenue Yard, the Pennor Yard, and the Grogan Yard, provide layover and maintenance facilities.

**Recommended Capacity Improvements:**

- At Berea Interlocking - Construct Berea Front Street Station track between NS Chicago line and CSX Cleveland shortline (new connecting track and crossovers for the movement of passenger trains between NS and CSX)
- Construct 17.0 miles of new second main track on CSX Greenwich Subdivision from CP 54 (Boyd) to CP 71 (south of Shelby).
- Rehabilitate and extend the existing 0.8 mile Edison siding to a total length of 3.1 miles on CSX Columbus Line Subdivision QE 90.8 to QE 93.9.
- Construct new 2.1 mile Paget Siding (near Delaware loop track) on CSX Columbus Line Subdivision from QE 110.8 to QE 112.9.
- Construct new 2.0 mile Powell Road Siding (east of Worthington) on CSX Columbus Line Subdivision from QE 125.1 to QE 127.1.
- Install new crossovers to create a paired track arrangement for use by both CSX and NS trains between CSX Columbus Line Subdivision and NS Dayton District at Weber Road QE/CJ 134.4
- Construct a new Columbus station track and crossover to serve a Convention Center station at CP 138 on CSX Columbus Line Subdivisions/NS Dayton District.

ODOT and ORDC currently expect this phase to involve the preparation of an Environmental Assessment or a Categorical Exclusion to satisfy National Environmental Policy Act requirements. Further consultation with FRA will result in the appropriate NEPA document type for this phase.

### **2.7.2 Segment 2 (Columbus to North Cincinnati)**

#### **Line Segment:**

- NS Dayton District: CP 138 (Columbus) to CP 248 (Undercliff Yard). This segment carries 25 freight trains per day.

#### **Stations:**

*(Phased location) Downtown Springfield Station Site* - This location is near the main transit center for Springfield City Area Transit, which provides fixed route bus service to destinations throughout the city. Public transit service could easily be provided at this location and a bicycle/pedestrian trail is located adjacent to this site. There is a high volume of pedestrian activity in this area as well as housing for the elderly. This proposed station location is situated along a short stretch of single track mainline in downtown Springfield within the Washington Street corridor. The mainline track runs where Washington Street used to be in downtown. This site could host a station so that the short-term blockage of streets with stopped passenger trains will not be an issue for local traffic.

*(Phased location) Dayton East, Riverside Station Site* - Positive aspects of this station location include its proximity to major destinations such as the United States Air Force Museum, which draws more than one million visitors annually; the Wright-Patterson Air Force Base, which employs 22,000; and Wright State University, where approximately 17,000 students attend. This site includes an entrance road and paved parking along the single track NS mainline, which has been identified as the direct route for 3C passenger service. The City of Riverside plans to develop the site with compatible uses including a new mixed-use commercial development and a ceremonial entrance drive to the Air Force Museum. The City of Riverside is interested in helping develop a station at this location.

*Dayton - Main Street Site* - This site is located just west of the intersection of Main and Sixth streets in downtown Dayton. It is approximately one block west of the proposed Dayton Convention Center location. Similar to the Dayton Convention Center site, railroad tracks are elevated and a new station structure would be needed to construct a station on this site. The Holden House residential development, which provides housing to low income and elderly populations, is near this station. Connections to local public transit and the local and regional roadway network are readily accessible at this location. Adequate parking and space for station building development are available at this location.

*North Cincinnati – Kemper Rd. Site* - Located on a former manufacturing plant site on Kemper Road between Reading Road and US Route 42, the Park 42 business park currently occupies this property. Connections to public transit and the local and regional roadway network are readily available. This site has available space for adequate station location, parking, and development of future passenger amenities. Since this site is located on an NS double-tracked mainline, a pedestrian overpass will be needed.

#### **Recommended Capacity Improvements:**

- Construct 5.2 miles of second main track from Plattsburg to Brooks on NS Dayton District from CJ 172.5 (Plattsburg) to CJ 177.7 (near Brooks).

- Construct 6.0 miles of second main track from Riverside to Dayton plus one set of universal crossovers on NS Dayton District from CJ 187.0 (near Cold Springs) to CJ 193.0 (near Enon).
- Construct 7.7 miles of second main track plus one set of universal crossovers on NS Dayton District from CJ 202.1 (near Wrights) to CJ 208.5 (Miami River Bridge) and from CJ 208.6 to CJ 209.8 (near Moraine Yard).

This phase is expected to require an Environmental Assessment (EA) of a Categorical Exclusion (CE) document to satisfy the National Environmental Policy Act (NEPA) requirements.

### **2.7.3 Segment 3 (North Cincinnati to Cincinnati)**

#### **Line Segment:**

- NS Dayton District: CP 138 (Columbus) to CP 248 (I&ORY Connection), which currently carries 25 freight trains per day.
- 
- I&ORY Oasis Line: Mill to Sawyer Point/Boathouse (MP 16.4 to MP 0)

#### **Potential Stations:**

*Cincinnati – Lunken Airport Site (near Lunken Airport)* - This site is located on Lunken Park Drive, about 1,000 feet west of the boundaries of Cincinnati Municipal Lunken Airport and approximately five miles east of downtown Cincinnati. This site is located on the Oasis Line, owned by the SORTA and operated by RailAmerica. The line connects to the NS main line at CP Mill, south of downtown Sharonville, 11 miles north of the site.

*Cincinnati - Sawyer Point Site* - This site is approximately located at 925 Riverside Drive, on property under City of Cincinnati control, adjacent to the Montgomery Inn at the Boat House restaurant. This site is adjacent to tennis courts in Sawyer Point Park, Theodore M. Berry Friendship Park, and large parking lots used for access to both parks and the Montgomery Inn restaurant. This site is located on the Oasis Line in Cincinnati, owned by the SORTA, which connects to the NS Sharonville Yard on the north.

After the public hearing held on September 17, 2009, additional station sites were proposed for assessment including Bond Hill and Fairfax. Both will be studied along with Lunken Airport and Sawyer Point sites to identify a preferred location during Tier II.

**Layover, Maintenance, Service Site Options:** The Undercliff Yard, which is more than 2,500 feet in length and includes about six siding tracks, is owned by RailAmerica. The yard is underutilized, and serves primarily staging and sorting functions for freight service to area industries. The yard property is sufficient for the development of a station facility and platform, parking and vehicular access. It will be the location for a train layover and limited maintenance and inspection of equipment. Connections to the local roadway network are available at via US Route 50 (Columbia Parkway), which is less than one half mile away. Work would include converting the existing yard lead to the second main; constructing 2.1 mile by-pass track through Sharonville Yard; installing three crossovers and constructing a new bridge.

**Recommended Capacity Improvements:**

- Create second main (connecting) track on NS Dayton District from CJ 244.2 (CP 244) to IORY Connection at CJ 248.8 (south of Sharonville Yard) to allow train movement to and from the Oasis Line.

This phase is expected to require an Environmental Assessment (EA) of a Categorical Exclusion (CE) document to satisfy the National Environmental Policy Act (NEPA) requirements.

## 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section presents the existing resources within the project area and analyzes the potential beneficial and adverse impacts to these resources from the Build and No-Build Alternative. For certain subject areas or resources, such as noise, vibration, air quality, public health and safety, Environmental Justice, Section 4(f) resources, secondary and cumulative impacts, the project assessment area included areas adjacent to the entire rail corridor, as well as proposed stations and yards. Resources and subject areas that could only be possibly affected by actual physical construction such as wetlands, floodplains or hazardous materials were limited to the approximately 40 miles of capacity improvements planned to be within the existing railroad right of way, stations and yards.

The Environmental Assessment (EA) focuses only on those resources that have a reasonable likelihood to be affected by, or to affect, the proposed action. Because the proposed action would not affect geology, soils, or farmlands, these resources were not inventoried or analyzed.

### 3.1 Physical Environment

#### 3.1.1 Air Quality

Air quality describes the level of pollution in the air. Individual air pollutants degrade the atmosphere by reducing visibility, damaging property, reducing the productivity or vigor of crops or natural vegetation, or harming human or animal health.

As required by the Clean Air Act (CAA) and the 1990 Clean Air Act Amendments (CAAA), the U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) for six major air pollutants, as shown in Table 3-1. These pollutants, known as criteria pollutants, are carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM<sub>10</sub>, PM<sub>2.5</sub>), sulfur dioxide (SO<sub>2</sub>), and lead (Pb). The "primary" standards have been established to protect the public health. The "secondary" standards, intended to protect the nation's welfare, account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

**Table 3-1 National Ambient Air Quality Standards**

| Pollutant                               | Primary Standards                          |  | Secondary Standards |                |
|---|--|--|---------------------|----------------|
|   | Level                                      | Averaging Time                             | Level               | Averaging Time |
| Carbon Monoxide                         | 9 ppm<br>(10 mg/m <sup>3</sup> )           | 8-hour <sup>(1)</sup><br>—                 | None                |                |
|   | 35 ppm<br>(40 mg/m <sup>3</sup> )          | 1-hour <sup>(1)</sup><br>—                 |                     |                |
| Lead                                    | 0.15 µg/m <sup>3</sup> <sup>(2)</sup><br>— | Rolling 3-Month<br>Average                 | Same as Primary     |                |
|   | 1.5 µg/m <sup>3</sup>                      | Quarterly Average                          | Same as Primary     |                |
| Nitrogen Dioxide                        | 0.053 ppm<br>(100 µg/m <sup>3</sup> )      | Annual<br>(Arithmetic Mean)                | Same as Primary     |                |
| Particulate Matter (PM <sub>10</sub> )  | 150 µg/m <sup>3</sup>                      | 24-hour <sup>(3)</sup>                     | Same as Primary     |                |
| Particulate Matter (PM <sub>2.5</sub> ) | 15.0 µg/m <sup>3</sup>                     | Annual <sup>(4)</sup><br>(Arithmetic Mean) | Same as Primary     |                |

### 3C Quick Start Passenger Rail Environmental Assessment

| Pollutant      | Primary Standards      |                          | Secondary Standards               |                       |
|----------------|------------------------|--------------------------|-----------------------------------|-----------------------|
|                | Level                  | Averaging Time           | Level                             | Averaging Time        |
|                | 35 µg/m <sup>3</sup> * | 24-hour <sup>(5)</sup>   | Same as Primary                   |                       |
| Ozone          | 0.075 ppm (2008 std)   | 8-hour <sup>(6)</sup>    | Same as Primary                   |                       |
|                | 0.08 ppm (1997 std)    | 8-hour <sup>(7)</sup>    | Same as Primary                   |                       |
|                | 0.12 ppm               | 1-hour <sup>(8)</sup>    | Same as Primary                   |                       |
| Sulfur Dioxide | 0.03 ppm               | Annual (Arithmetic Mean) | 0.5 ppm (1300 µg/m <sup>3</sup> ) | 3-hour <sup>(1)</sup> |
|                | 0.14 ppm               | 24-hour <sup>(1)</sup>   |                                   |                       |

(1) Not to be exceeded more than once per year.

(2) Final rule signed October 15, 2008.

(3) Not to be exceeded more than once per year on average over 3 years.

(4) To attain this standard, the 3-year average of the weighted annual mean PM<sub>2.5</sub> concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m<sup>3</sup>.

(5) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m<sup>3</sup> (effective December 17, 2006).

(6) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)

(7) (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

(b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

(8) (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.

(b) As of June 15, 2005 EPA has revoked the [1-hour ozone standard](#) in all areas except the fourteen 8-hour ozone nonattainment [Early Action Compact \(EAC\) Areas](#). For one of the 14 EAC areas (Denver, CO), the 1-hour standard was revoked on November 20, 2008. For the other 13 EAC areas, the 1-hour standard was revoked on April 15, 2009.

\* For the purpose of demonstrating compliance with the Conformity Rule, EPA's previous 24-hour PM<sub>2.5</sub> standard of 65 µg/m<sup>3</sup> still applies.

Source: U.S. EPA Office of Air Quality Planning and Standards (OAQPS), April 2010

In addition to the criteria pollutants, EPA also regulates air toxics. Mobile source air toxics (MSATs) are compounds emitted from highway vehicles and nonroad equipment which are known or suspected to cause cancer or other serious health and environmental effects. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., trains), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

Also of concern are greenhouse gases (GHG), which trap heat in the atmosphere, and keep the planet's surface warmer than it otherwise would be. As concentrations of greenhouse gases increase, however, the Earth's temperature rises. This is known as the "Greenhouse Gas Effect". Effects of these rising temperatures include climate change and volatile weather patterns.



The potential air quality effects of the proposed increases in rail operations on criteria pollutants and MSAT concentrations, and GHG emissions are described in this section. The criteria pollutants of concern associated with this project are NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> due to the diesel train emissions; CO due to emissions from roadway vehicles, and O<sub>3</sub> precursors (volatile organic compounds [VOCs] and nitrogen oxides [NO<sub>x</sub>]) due to both roadway vehicles and trains. NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> impacts are usually evaluated on a localized basis with pollutant concentrations estimated at affect sensitive land uses. Ozone, which is a regional pollutant that is formed in the atmosphere in the presence of sunlight downwind of actual pollutant sources, is usually evaluated on a region wide basis. MSATs and GHG, which are also a concern due to emissions from roadway vehicles, diesel trains, and related facilities, were also considered.

### 3.1.1.1 Existing Conditions

#### ***Attainment Status/Regional Air Quality Conformity***

The USEPA publishes a list of all geographic areas in compliance with the NAAQS, as well as those areas not in attainment of the NAAQS. The designation of an area is made on a pollutant-by-pollutant basis as follows:

- Areas classified as “attainment areas” are in compliance with the applicable NAAQS;
- Areas once classified as nonattainment but have since demonstrated attainment of the NAAQS are classified as “maintenance areas,” and
- Areas not in compliance with the NAAQS are classified as “nonattainment areas”.

The attainment status of each area affected by the proposed project is provided in Table 3-2. As shown, all of counties affected by the project are classified as attainment areas for CO and PM<sub>10</sub>, with the exception of Cuyahoga County, which is classified as a maintenance area for both pollutants. Many of the counties, however, are classified as nonattainment for O<sub>3</sub> and PM<sub>2.5</sub>.

**Table 3-2 County Attainment Status**

| County     | CO          | Ozone                | PM <sub>10</sub> | PM <sub>2.5</sub>    | SO <sub>2</sub>   |
|------------|-------------|----------------------|------------------|----------------------|-------------------|
| Butler     | Attainment  | <b>Nonattainment</b> | Attainment       | <b>Nonattainment</b> | <b>Attainment</b> |
| Clark      | Attainment  | <b>Maintenance</b>   | Attainment       | <b>Nonattainment</b> | <b>Attainment</b> |
| Crawford   | Attainment  | Attainment           | Attainment       | Attainment           | <b>Attainment</b> |
| Cuyahoga   | Maintenance | Maintenance          | Maintenance      | <b>Nonattainment</b> | Maintenance       |
| Delaware   | Attainment  | <b>Maintenance</b>   | Attainment       | <b>Nonattainment</b> | <b>Attainment</b> |
| Franklin   | Attainment  | <b>Maintenance</b>   | Attainment       | <b>Nonattainment</b> | <b>Attainment</b> |
| Greene     | Attainment  | <b>Maintenance</b>   | Attainment       | <b>Nonattainment</b> | <b>Attainment</b> |
| Hamilton   | Attainment  | <b>Nonattainment</b> | Attainment       | <b>Nonattainment</b> | <b>Attainment</b> |
| Huron      | Attainment  | Attainment           | Attainment       | Attainment           | <b>Attainment</b> |
| Lorain     | Attainment  | Maintenance          | Attainment       | <b>Nonattainment</b> | Maintenance       |
| Madison    | Attainment  | <b>Maintenance</b>   | Attainment       | Attainment           | <b>Attainment</b> |
| Montgomery | Attainment  | Maintenance          | Attainment       | <b>Nonattainment</b> | <b>Attainment</b> |
| Morrow     | Attainment  | Attainment           | Attainment       | Attainment           | <b>Attainment</b> |
| Richland   | Attainment  | Attainment           | Attainment       | Attainment           | <b>Attainment</b> |
| Warren     | Attainment  | <b>Nonattainment</b> | Attainment       | <b>Nonattainment</b> | <b>Attainment</b> |

\* Based on 1997 ozone standard. The current standard is being reconsidered. For more information, see [http://www.epa.gov/air/ozonepollution/pdfs/O3\\_Reconsideration\\_FACT%20SHEET\\_091609.pdf](http://www.epa.gov/air/ozonepollution/pdfs/O3_Reconsideration_FACT%20SHEET_091609.pdf)

The CAAA requires federal agencies to ensure that their actions conform to the appropriate State Implementation Plan (SIP). The SIP is a plan that provides for implementation, maintenance, and enforcement of the NAAQS. Prior to approval or funding by a federal agency,

a proposed project must demonstrate compliance with USEPA's Conformity Rule by determining that it would not cause or exacerbate an exceedance of a NAAQS.

As a project being developed under the Federal Railroad Administration (FRA), this project falls under the General Conformity Rule, which requires a conformity determination for each pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a federal action would equal or exceed USEPA-specified significant threshold values. General Conformity's *de minimis* values for the project area are 100 tons per year for PM<sub>2.5</sub>, O<sub>3</sub> precursors (VOCs and NO<sub>x</sub>), SO<sub>2</sub> and CO.

Since the proposed project does not currently appear on any Long Range Plan or Transportation Improvement Program (TIP) at the Metropolitan Planning Organization (MPO) level, ORDC and ODOT will work in close coordination with the appropriate MPO agencies to include this project on these planning tools.

### **3.1.1.2 Potential Impacts**

The 3C Quick Start Passenger Rail project would introduce travel options between Ohio's largest cities. While diesel train emissions from the additional service would be offset by decreases in regional roadway vehicle miles travelled (VMT) and vehicular congestion, the project elements that could adversely affect air quality levels along the 3C Corridor include increases in emissions from:

- Increased diesel train service;
- Roadway vehicles operating near affected stations; and
- Train operations and associated service at maintenance and/or storage facilities.

The potential impacts of these emissions, both on a regional and local level, are discussed in the following sections.

#### ***Potential Regional Impacts***

The project is anticipated to slightly reduce regional mobile source VMT and increase travel speeds. This is expected to have a beneficial effect on regional criteria pollutant and MSAT levels and GHG emissions. This benefit would be offset by emissions generated by the diesel locomotives.

To determine if the project could potentially exceed the applicable General Conformity *de minimis* levels, a regional emission burden analysis was conducted within each nonattainment area affected by the project. The analysis is based on preliminary scheduling information, which assumes three train round trips a day.

Currently decreases in regional mobile source emissions due to the project's affect on regional mobile source VMT has not been calculated and has therefore not been included in this analysis. As such, the result of this preliminary analysis is conservative as it only includes the increase in diesel locomotive emissions from the increased train operation. Train emissions were calculated based on Amtrak locomotive information and EPA's required line haul emission factors. An average emission factor was calculated based on the fuel consumption in various throttle notch positions during an average train trip. The results of the emission analysis are shown in Table 3-3. As highlighted in this table, the project is not anticipated to exceed the General Conformity *de minimis* levels.

**Table 3-3 Regional Emission Burden Estimates in Nonattainment/Maintenance Areas**

| County                                       | Emission Burden (tons per year) |            |            |                  |                   |                 |                 |
|--|---------------------------------|------------|------------|------------------|-------------------|-----------------|-----------------|
|  | VOC                             | NOx        | CO         | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub> | CO <sub>2</sub> |
| Cuyahoga                                     | 1                               | 25         | 4          | 1                | 1                 | 1               | 1,691           |
| Lorain                                       | 1                               | 27         | 5          | 1                | 1                 | 1               | 1,817           |
| Butler                                       | 1                               | 24         | 4          | 1                | 1                 | 1               | 1,665           |
| Warren                                       | 0                               | 1          | 0          | 0                | 0                 | 0               | 76              |
| Hamilton                                     | 1                               | 23         | 4          | 1                | 1                 | 0               | 1,578           |
| <b>General Conformity Emission Threshold</b> | <b>100</b>                      | <b>100</b> | <b>100</b> | <b>100</b>       | <b>100</b>        | <b>100</b>      | <b>NA</b>       |

As the train schedule is refined and regional vehicular travel estimates are made, the regional emission impacts should be re-estimated. However, it is anticipated that project-related emission increases would not exceed the applicable General Conformity thresholds. As such, General Conformity requirements are not applicable to this project. In addition, the project is not anticipated to measurably MSAT or GHG emissions. In addition MSAT emissions are projected by EPA to substantially decrease in the future due to stricter engine and fuel regulations.

### **Potential Local Impacts**

Along the Rail Right-of-Way: The project would increase diesel emissions (especially particulates) along the train tracks. Assuming that four roundtrips occur per day, an analysis was conducted, using USEPA's emission standards for diesel locomotives and USEPA's AERMOD dispersion algorithm, to estimate the potential impacts of moving train emissions at representative sensitive land uses (residences, schools, parks, etc.) near the rail line. The result of this analysis is that project-related emissions are not predicted to measurably increase pollutant concentrations (predicted PM<sub>2.5</sub> and NO<sub>2</sub> impacts would be less than 0.1 percent of the applicable NAAQS at sensitive land uses that may abut the rail right-of-way, which is conservatively estimated to be a distance of 50 feet from the centerline of the track).

An analysis of the potential air quality impacts at actual sensitive receptor locations along the project corridor will be completed for the TIER II EIS to confirm this finding.

At Train Stations: The project is anticipated to increase vehicular traffic near the proposed station locations. However, given the small projected increase in train service, it is anticipated that these increases would not measurably impact localized air quality levels. The commuter rail operations are also not anticipated to measurably increase roadway diesel-fueled vehicular traffic (i.e., buses and trucks) near the affected stations and parking lots. As such, the project is not anticipated to measurably increase criteria pollutant, MSAT, or GHG emissions on local roadways near these facilities. An analysis of the potential air quality impacts near at least one affected station will be completed for the TIER II EIS to confirm this finding.

At-Grade Crossings: The project may increase vehicular delays at some at-grade crossings. Given the frequency of train service, however, it is not anticipated that these delays would result in measurable air quality impacts.

A screening level analysis of the potential air quality impacts near at least one affected at-grade crossing will be completed for the TIER II EIS to confirm this finding.

Maintenance/Storage Yards: The additional trains associated with this action will increase maintenance and storage requirements and possibly increase train operations at these yards. Emissions from idling and moving trains could impact nearby sensitive land uses. Given the small increase in the number of trains to be serviced and stored at these facilities, however, it is anticipated that these operations would not result in measurable air quality impacts at nearby sensitive land uses.

An analysis of the potential air quality impacts near at least one major affected station will be completed for the TIER II EIS to confirm this finding.

#### **3.1.1.3 Construction Impacts**

In general, construction-related effects of the project would be limited to short-term increased fugitive dust and mobile-source emissions during construction. State and local regulations regarding dust control and other air quality emission reduction controls would be followed.

GHG emissions will also be generated during the construction phase of the project, though these emissions are likely to be relatively minor given the nature and size of the project, and the limited duration of construction activities.

#### **3.1.1.4 Conclusion**

The project is unlikely to cause or exacerbate a violation of any applicable NAAQS or measurably increase GHG or MSAT levels. It is also unlikely that the construction of the project, which will follow state and local regulations regarding construction activities and equipment, would cause a violation of the applicable standards. It is currently anticipated that the project would not generate emissions above General Conformity *de minimis* levels. As such, General Conformity requirements are not applicable to this project.

It is recommended that:

- A regional analysis be conducted once roadway volumes and train service has been estimated to quantify the project's impact on regional air pollutants and GHG emission burdens.
- Upon availability of local traffic estimates, station locations and parking facilities be screened to insure that the project will not cause a violation of the applicable NAAQS.
- Upon location of storage and maintenance facilities, a screening level study be conducted at these locations to determine the project's impact on MSAT levels and to insure that the project does not cause a violation of applicable NAAQS.

#### **3.1.2 Energy**

Transportation energy is the energy required to move people and goods from place to place. It accounts for a major portion of the energy consumed in the Ohio and is often divided into indirect and direct energy usage. Direct energy usage reflects the energy consumed by vehicles using a facility. Indirect energy is the energy used to construct and maintain a transportation facility.

#### **3.1.2.1 Direct Energy Potential Impacts**

The 3C Quick Start Passenger Rail project is expected to reduce roadway vehicle miles travelled (VMT) and reduce congestion, resulting in a decrease in overall fuel usage. Diesel fuel however would be required to propel the train and energy would be required for stations, maintenance yards, and storage facilities. It is unlikely that the project will have significant impacts (positive or negative) on energy usage in the project area.

#### **3.1.2.2 Indirect (Construction) Energy Potential Impacts**

The construction of the project would result in a one-time energy expenditure that cannot be quantified at this time. All rules and regulations regarding construction and conservation of energy (such as limiting idling) would be adhered to.

#### **3.1.2.3 Conclusion**

The project is unlikely to have a significant impact on direct energy use. The project would cause a one-time indirect (construction) energy expenditure. It is anticipated that indirect energy expenditure would be minimized with the application of energy conservation methods.

### **3.1.3 Noise and Vibration**

This section presents the results of a preliminary investigation into the potential noise impacts to residential neighborhoods in the vicinity of the proposed intercity passenger rail service proposed between the cities of Cleveland, Columbus, and Cincinnati. The proposed 3C Quick Start Passenger Rail service would use the existing freight train tracks. The purpose of this section is to provide an estimate of the distance from the freight tracks to where noise and vibration impacts would occur.

#### **3.1.3.1 Sound Descriptors**

Noise levels are measured in units called decibels. Since the human ear does not respond equally to all frequencies (or pitches), measured sound levels (in decibels at standard frequency bands) often are adjusted or weighted to correspond to the frequency response of human hearing and the human perception of loudness. The weighted sound level is expressed in single-number units called A-weighted decibels (dBA) and is measured with a calibrated noise meter.

Road traffic noise and other noises found in communities tend to fluctuate from moment to moment, depending on whether a noisy truck passes by, an airplane flies over, a horn blows, or children scream as they play in a nearby schoolyard. To measure this noise accurately, noise energy (expressed in dBA) produced by different activities are averaged over a period of time in order to obtain a single number. This single number is called the equivalent continuous noise level, or Leq. Another noise measure considers people's increased sensitivity to noise during sleeping hours. This measure is calculated by measuring noise levels over a 24-hour period to calculate what is called the day-night sound level, or Ldn.

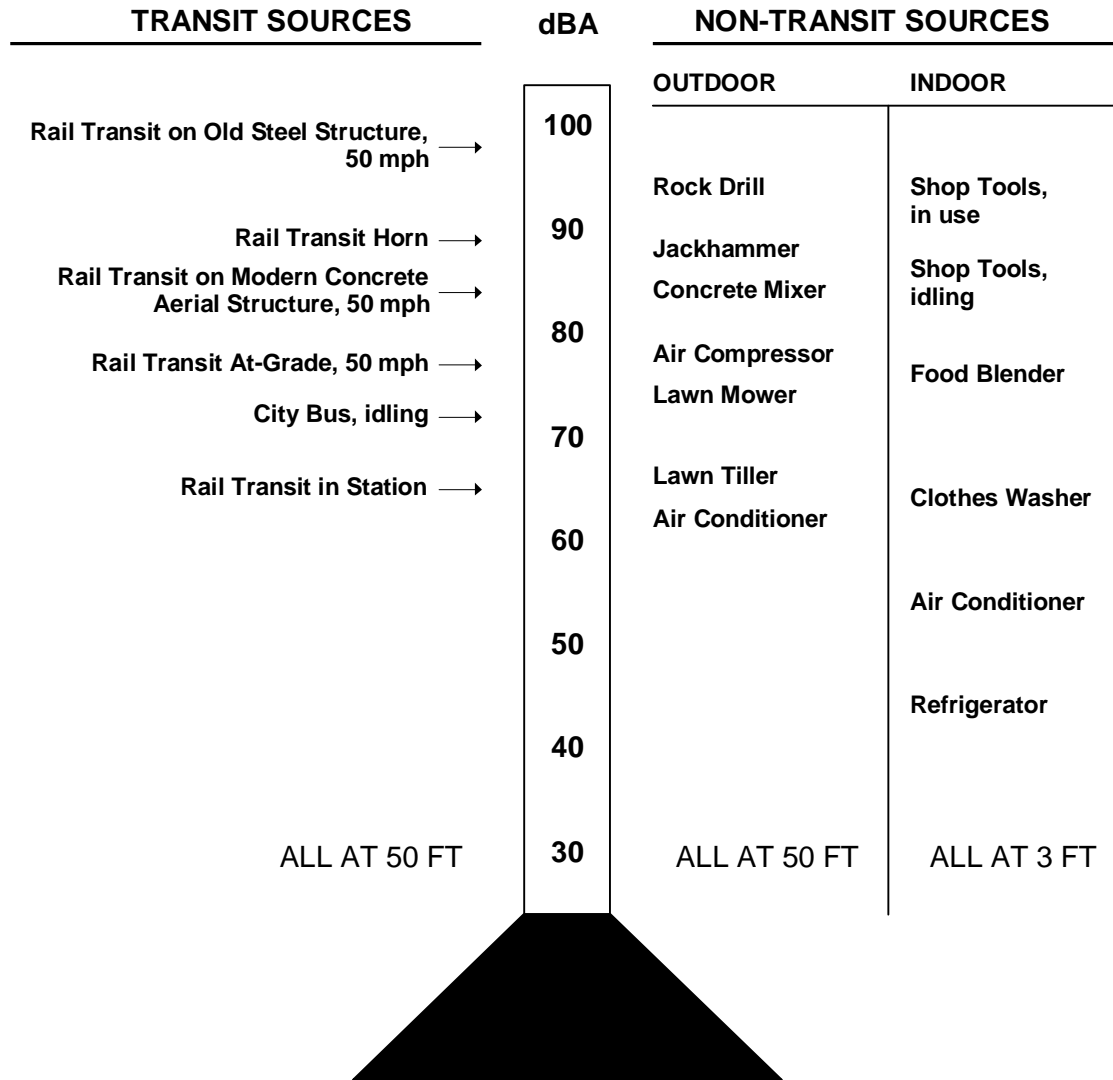
The Federal Transit Administration (FTA) uses both Leq and Ldn to evaluate transit noise effects. Use of Leq and Ldn is appropriate because these levels are sensitive to the frequency of occurrence and duration of noise events, including transit operations, which may be characterized by infrequent noise. This noise report evaluates impacts using only the Ldn descriptor which focuses on land uses which have high noise sensitive during nighttime hours

such as residential properties and other land uses where noise during sleeping hours is utmost importance.

### **3.1.3.2 Human Perception of Changes in Noise Levels**

The average individual's ability to perceive change in noise levels is well documented. Generally, change in noise levels less than 3 dBA will barely be perceived by most listeners, whereas a 10-dBA change normally is perceived as a doubling (or halving) of noise levels. The general principle on which most noise acceptability criteria are based is that a change in noise is likely to cause annoyance whenever it intrudes upon the existing ambient noise (i.e., annoyance depends upon the noise that exists before the start of a new noise-generating project or expansion of an existing project). Community noise levels in urban areas usually range between 45 dBA, the daytime level in a typical quiet living room, and 75 dBA, the approximate noise level near a sidewalk adjacent to heavy traffic. For reference and orientation to the decibel scale, representative environmental noises and their respective dBA levels are shown in Figure 3-1.

**Figure 3-1 Common Indoor and Outdoor Noise Levels**



Source: *Guidance Manual for Transit Noise and Vibration Impact Assessment, FTA, May 2006*

### **3.1.3.3 FTA Noise Criteria for Transit Projects**

FTA noise emission levels are used for this analysis as they are more characteristic and would provide a more representative estimate of future projected noise exposure that would occur from the 3C Quick Start Passenger Rail service. The basic goals of noise criteria, as they apply to transit projects, are to minimize the adverse noise and vibration impacts on the community and to provide feasible and reasonable noise control where necessary and appropriate. Several types of criteria are used to assess the impacts of noise and vibration from transportation projects. These include Federal Highway Administration (FHWA) highway traffic noise abatement criteria and FTA transit noise guidelines.

Both the FHWA and FTA criteria are based on land use categories. For this study, the proposed intercity passenger rail does not include any modification or expansions to existing roadways and, therefore, impact assessment can be evaluated based solely using FTA guidelines. The FTA impact assessment guidelines groups sensitive areas into three specific land use categories and the noise descriptor used complete the impact assessment is chosen based on that land use type. The noise impact assessment completed for this effort was restricted to Category 2 land use activities consisting of basically buildings where people normally sleep and the sensitivity to noise is of the utmost importance, such as residential buildings, hotels, and hospitals. A summary of the description of each of the three land use categories is provided in Table 3-4.

**Table 3-4 FTA Guidelines Land Use Categories and Metrics for Transit Noise**

| <b>Land Use Category</b> | <b>Noise Metric (dBA)</b> | <b>Description of Land Use Category</b>   |
|--------------------------|---------------------------|---|
| 1                        | Outdoor Leq (h)*          | Tract's of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and such land used as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. |
| 2                        | Outdoor Ldn               | Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.  |
| 3                        | Outdoor Leq (h)*          | Institutional land uses with primary daytime and evening use. This category includes schools, libraries, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material.                                   |

\* Leq for the noisiest hour of transit-related activity during hours of noise sensitivity.

### **3.1.3.4 FTA Impact Assessment Based on Project Noise Exposure**

FTA guidelines are based on relative impact criteria whereby noise impacts are determined by comparing the estimated future noise levels generated solely by the proposed 3C Quick Start Passenger Rail project, against the existing ambient noise exposure levels without the project. The FTA noise impact criteria, categorizes project noise levels into three principle levels of impact defined as “No Impact”, “Moderate Impact”, or “Severe Impact”. A summary of the impact criteria thresholds based on the existing noise exposure as defined and applied by the three land use categories is presented in Table 3-5.



**Table 3-5 Noise Levels Defining Impact for Transit Projects**

| Existing Noise Exposure*<br>Leq (1-hr) or Ldn (dBA) | Project Noise Impact Exposure, * Leq (1-hr) or Ldn (dBA) |                 |               |                  |                 |               |
|---|--|-----------------|---------------|------------------|-----------------|---------------|
|   | Category 1 or 2 Sites                                    |                 |               | Category 3 Sites |                 |               |
|   | No Impact  | Moderate Impact | Severe Impact | No Impact        | Moderate Impact | Severe Impact |
| 51  | <54  | 54-60           | >60           | <59              | 59-65           | >65           |
| 52  | <55  | 55-60           | >60           | <60              | 60-65           | >65           |
| 53  | <55  | 55-60           | >60           | <60              | 60-65           | >65           |
| 54  | <55  | 55-61           | >61           | <60              | 60-66           | >66           |
| 55  | <56  | 56-61           | >61           | <61              | 61-66           | >66           |
| 56  | <56  | 56-62           | >62           | <61              | 61-67           | >67           |
| 57  | <57  | 57-62           | >62           | <62              | 62-67           | >67           |
| 58  | <57  | 57-62           | >62           | <62              | 62-67           | >67           |
| 59  | <58  | 58-63           | >63           | <63              | 63-68           | >68           |
| 60  | <58  | 58-63           | >63           | <63              | 63-68           | >68           |
| 61  | <59  | 59-64           | >64           | <64              | 64-69           | >69           |
| 62  | <59  | 59-64           | >64           | <64              | 64-69           | >69           |
| 63  | <60  | 60-65           | >65           | <65              | 65-70           | >70           |
| 64  | <61  | 61-65           | >65           | <66              | 66-70           | >70           |
| 65  | <61  | 61-66           | >66           | <66              | 66-71           | >71           |
| 66  | <62  | 62-67           | >67           | <67              | 67-72           | >72           |
| 67  | <63  | 63-67           | >67           | <68              | 68-72           | >72           |
| 68  | <63  | 63-68           | >68           | <68              | 68-73           | >73           |
| 69  | <64  | 64-69           | >69           | <69              | 69-74           | >74           |
| 70  | <65  | 65-69           | >69           | <70              | 70-74           | >74           |
| 71  | <66  | 66-70           | >70           | <71              | 71-75           | >75           |
| 72  | <66  | 66-71           | >71           | <71              | 71-76           | >76           |
| 73  | <66  | 66-71           | >71           | <71              | 71-76           | >76           |
| 74  | <66  | 66-72           | >72           | <71              | 71-77           | >77           |
| 75  | <66  | 66-73           | >73           | <71              | 71-78           | >78           |
| 76  | <66  | 66-74           | >74           | <71              | 71-79           | >79           |
| 77  | <66  | 66-74           | >74           | <71              | 71-79           | >79           |
| >77   | <66  | 66-75           | >75           | <71              | 71-80           | >80           |

Source: *Transit Noise and Vibration Impact Assessment, FTA, May 2006*

\* Ldn is used for land use where nighttime sensitivity is a factor; Leq during the hour of maximum transit noise exposure is used for land use involving only daytime activities.\*

### 3.1.3.5 Noise Prediction Methodology

The noise exposure calculations were completed following the procedures and methodologies described in the FTA document entitled "Transit Noise and Vibration Assessment Manual (FTA report FTA-VA-90-1003-06, May 2006).

The FTA manual provides detail procedures to estimate vehicle noise emissions and quantifies the attenuation of sound as it travels from the vehicle to noise-sensitive receptor locations along the right-of-way. In this study, residential properties and other places where people sleep along the ROW are the primary focus. Schools, churches, libraries, and parkland are also of concern, but these primarily daytime uses will be evaluated as part of the more refined Tier II environmental analysis.

Every noise prediction must characterize three elements: the noise source, the sound propagation path, and the affected noise receptor. For a given type of vehicle, noise emissions depend upon the operating conditions. Noise generated by line operations movements along the proposed 3C Quick Start Passenger Rail service were determined

using pass-by frequency (headway) and vehicle travel speed data provided long each segment of the transit corridor.

#### **3.1.3.6 Ground-Borne Vibration and Criteria**

The analysis of ground-borne vibration requires a discussion of both ground-borne vibration levels and interior noise levels resulting from ground-borne vibration. Ground-borne noise refers to the noise effects that are caused by ground-borne vibration. For example, ground-borne vibration from a passing train can cause building floors and walls to vibrate and produce sound. The noise levels resulting from this effect depend on the amplitude and frequency of the vibration produced; the path of vibration propagation, and the acoustical characteristics of the structure and the receiving room. Additionally, the greater the acoustical absorption in the room, the lower the overall noise level.

Several factors can influence vibration levels at a receiver location. The important physical parameters associated with rail activity that can influence vibration levels fall into the following four categories:

- **Operational and vehicle factors:** speed, vehicle suspension, and flat or worn wheels;
- **Guide-way factors:** rail conditions, guide-way type, rail support system, and the mass and stiffness of the guide-way structure;
- **Geological factors:** stiffness and internal damping of the soil and the depth to bedrock; and
- **Receiver factors:** coupling of the building foundation to the soil and the propagation of vibration through the building.

Ground-borne vibration and ground-borne noise from light rail transit operations are governed by the criteria shown in Table 3-6. These criteria address maximum vibration levels associated with a single event, unlike noise levels, which are associated with cumulative exposure within a 24-hour period. To address the cumulative effects of multiple vibration events the criteria are divided into “Frequent,” “Occasional”, and “Infrequent” event categories. The 3C Quick Start Passenger Rail service proposed for the entire is classified as a corridor which will experience less than 30 vibration events per day and therefore can be classified under the “Infrequent Events” category which for the FTA Category 2 land uses establishes an 80 VdB vibration impact threshold.

**Table 3-6 FTA Ground-Borne Vibration and Noise Impact Criteria**

| Land Use Category   | Ground-Borne Vibration Impact Levels |                                | Ground-Borne Noise Impact Levels |                                |
|---|--------------------------------------|--------------------------------|----------------------------------|--------------------------------|
|   | Frequent Events <sup>2</sup>         | Infrequent Events <sup>3</sup> | Frequent Events <sup>2</sup>     | Infrequent Events <sup>3</sup> |
| <b>Category 1:</b><br>Buildings where low ambient vibration is essential for interior operations. | 65 V dB <sup>4</sup>                 | 65 V dB <sup>4</sup>           | NA <sup>5</sup>                  | NA <sup>5</sup>                |
| <b>Category 2:</b><br>Residences and buildings where people normally sleep.                       | 72 V dB                              | 80 V dB                        | 35 dBA                           | 43 dBA                         |
| <b>Category 3:</b><br>Institutional land uses with primarily daytime use.                         | 75 V dB                              | 83 V dB                        | 40 dBA                           | 48 dBA                         |

Source: *Transit Noise and Vibration Impact Assessment (FTA, May 2006)*

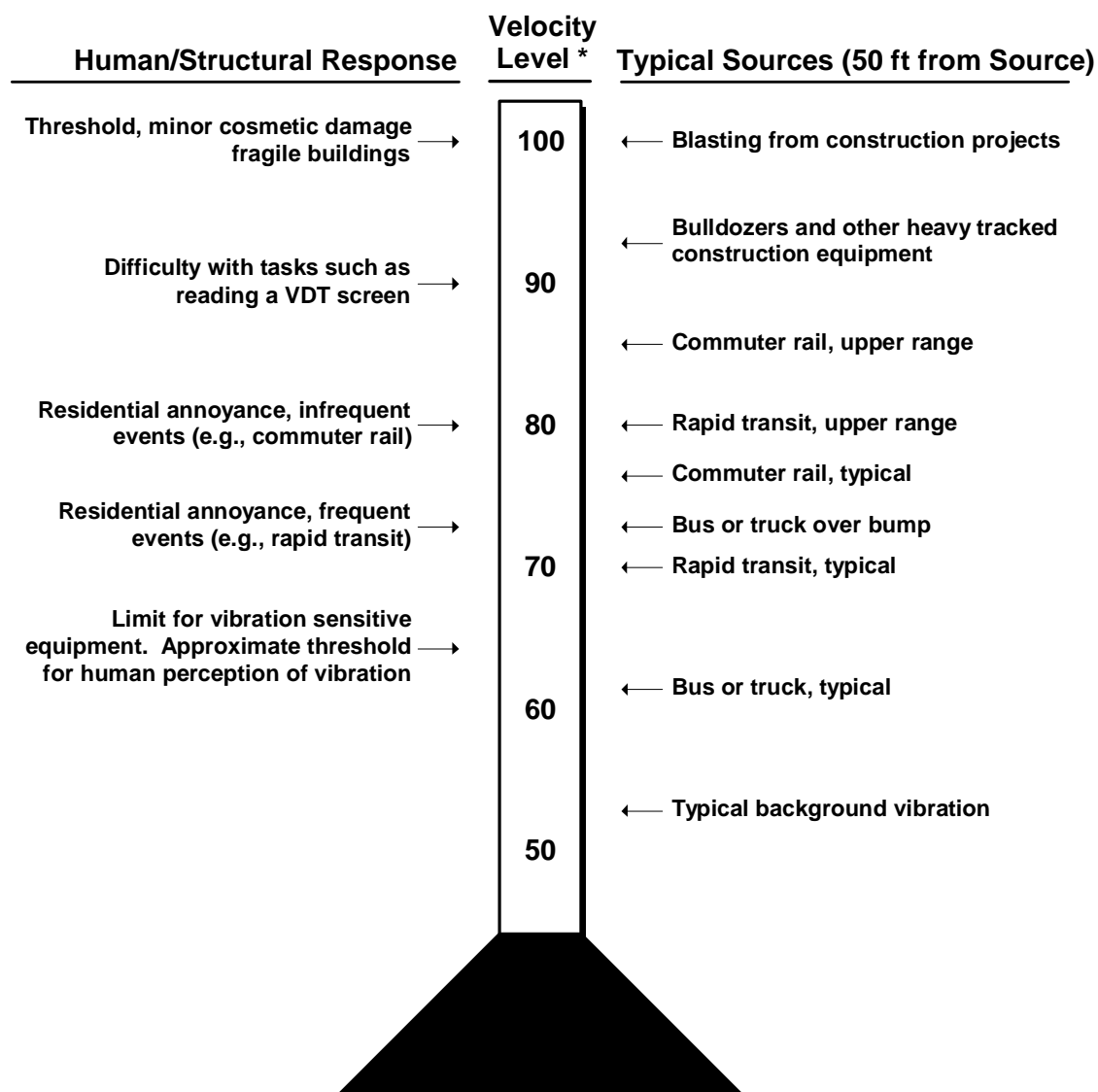
**Notes:** Vibration levels expressed in V dB are 1 micro inch/sec and noise levels expressed in dBA.

1. "Frequent Events" are defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.
2. "Infrequent Events" are defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
3. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the heating/ventilation/air conditioning (HVAC) systems and stiffened floors.
4. Vibration-sensitive equipment is not sensitive to ground-borne noise.

### **3.1.3.7 Vibration Prediction Methodology**

Distance based vibration impact zones were determined for the proposed 3C Quick Start Passenger Rail service trains traveling at their operating speeds. Estimated vibration levels were determined followed procedures contained in Chapter 10 of the FTA Manual. Figure 3-2 lists some common sources of vibration and the velocity levels of the vibrations emanating from these sources.

**Figure 3-2 Common Vibration Sources and Levels**



*\* RMS Vibration Velocity Level in VdB relative to 10 inches/second*

### 3.1.3.8 Existing Noise Levels

The existing ambient noise environment along the project study area corridor is dominated by noise generated from freight train pass-bys traveling on the same tracks where the proposed intercity passenger rail service will run. Existing noise levels were derived based on existing freight service data provided for the study area. Freight train service data was broken into six primary segments along the 3C Corridor, identified in Table 3-7 and Table 3-8. For each segment average daytime (L day) and night (L night) noise levels were derived and then the day-night noise level (Ldn) dBA was determined following calculation procedure described the Chapter 6 of the "Transit Noise and Vibration Assessment Manual (FTA report FTA-VA-90-1003-06, May 2006).

A summary of the estimated existing day-night noise levels (Ldn) dBA are presented in Table 3-7 and Table 3-8 without and with horn noise respectively. Most of the approximately 260 mile long corridor is not subject to horn noise and noise levels shown in Table 3-7 are more representative of existing noise conditions typically found throughout the project study area. However, as indicated in Table 3-8, communities located within 1,000 feet of track length approaching an existing at grade crossing are exposed to considerably higher noise levels.

As shown in Table 3-7, in areas not exposed to freight horn noise, existing day-night (Ldn) noise levels ranged from 70 to 75 dBA at 50 feet and 71 to 65 dBA at 100 feet and dropped off at a rate of 3 to 4.5 dB per doubling of distance beyond those distances. As indicated in Table 3-8, day-night noise levels in excess of 70 dBA in communities exposed to horn noise extended much further from the freight tracks, penetrating beyond 200 feet along some study area segments. In general, day-night (Ldn) levels of 70 to 75 dBA are considered relatively high causing considerable annoyance, but are typical of ambient conditions experienced adjacent active freight lines. Additionally, in the case of communities exposed to existing freight horn noise long term exposure to levels above 80 dBA can potentially result in hearing impairment.

**Table 3-7 Summary of Estimated Noise Levels and FTA Impact Assessment for the  
Proposed 3C Quick Start Passenger Rail Service (No Horn Blown)**

| Corridor Segment Description | Approximate Distance to Track Centerline (feet) | Estimated 2009 Existing Day-Night Noise Level (Ldn dBA) Without Horn | Estimated Passenger Rail Generated Day-Night Noise Level (Ldn dBA) Without Horn (FTA Impact Condition) |
|------------------------------|---|--|--|
| Cleveland to Columbus        | 25  | 80   | 62 (No Impact)   |
|                              | 50  | 75   | 57 (No Impact)   |
|                              | 100   | 71   | 53 (No Impact)   |
|                              | 200   | 68   | 50 (No Impact)   |
| Columbus to Springfield      | 25  | 76   | 62 (No Impact)   |
|                              | 50  | 72   | 57 (No Impact)   |
|                              | 100   | 67   | 53 (No Impact)   |
|                              | 200   | 64   | 50 (No Impact)   |
| Springfield to East Dayton   | 25  | 75   | 62 (No Impact)   |
|                              | 50  | 71   | 57 (No Impact)   |
|                              | 100   | 66   | 53 (No Impact)   |
|                              | 200   | 63   | 50 (No Impact)   |
| East Dayton To Dayton        | 25  | 77   | 62 (No Impact)   |
|                              | 50  | 73   | 57 (No Impact)   |
|                              | 100   | 68   | 53 (No Impact)   |
|                              | 200   | 65   | 50 (No Impact)   |
| Dayton to North Cincinnati   | 25  | 77   | 62 (No Impact)   |
|                              | 50  | 73   | 57 (No Impact)   |
|                              | 100   | 68   | 53 (No Impact)   |
|                              | 200   | 65   | 50 (No Impact)   |

**3C Quick Start Passenger Rail  
Environmental Assessment**

| Corridor Segment Description   | Approximate Distance to Track Centerline (feet) | Estimated 2009 Existing Day-Night Noise Level (Ldn dBA) Without Horn | Estimated Passenger Rail Generated Day-Night Noise Level (Ldn dBA) Without Horn (FTA Impact Condition) |
|--------------------------------|---|--|--|
| North Cincinnati to Cincinnati | 25  | 74   | 59 (No Impact)   |
|                                | 50  | 70   | 54 (No Impact)   |
|                                | 100   | 65   | 50 (No Impact)   |
|                                | 200   | 62   | 47 (No Impact)   |

**Table 3-8 Summary of Estimated Noise Levels and FTA Impact Assessment for the Proposed 3C Quick Start Passenger Rail Service (Horn Blown)**

| Corridor Segment Description   | Approximate Distance to Track Centerline (feet) | Estimated 2009 Existing Day-Night Noise Level (Ldn dBA) With Horn | Estimated Passenger Rail Generated Day-Night Noise Level (Ldn dBA) With Horn (FTA Impact Condition) |
|--------------------------------|---|---|---|
| Cleveland to Columbus          | 25  | 85  | 73 (Moderate Impact)  |
|                                | 50  | 82  | 68 (Moderate Impact)  |
|                                | 100   | 79  | 64 (No Impact)  |
|                                | 200   | 76  | 61 (No Impact)  |
| Columbus to Springfield        | 25  | 81  | 73 (Moderate Impact)  |
|                                | 50  | 78  | 68 (Moderate Impact)  |
|                                | 100   | 75  | 64 (No Impact)  |
|                                | 200   | 72  | 61 (No Impact)  |
| Springfield to East Dayton     | 25  | 80  | 73 (Moderate Impact)  |
|                                | 50  | 77  | 68 (Moderate Impact)  |
|                                | 100   | 74  | 64 (No Impact)  |
|                                | 200   | 70  | 61 (No Impact)  |
| East Dayton to Dayton          | 25  | 82  | 73 (Moderate Impact)  |
|                                | 50  | 79  | 68 (Moderate Impact)  |
|                                | 100   | 76  | 64 ((No Impact)   |
|                                | 200   | 73  | 61 (No Impact)  |
| Dayton to North Cincinnati     | 25  | 82  | 73 (Moderate Impact)  |
|                                | 50  | 79  | 68 (Moderate Impact)  |
|                                | 100   | 76  | 64 ((No Impact)   |
|                                | 200   | 73  | 61 (No Impact))   |
| North Cincinnati to Cincinnati | 25  | 79  | 73 (Moderate Impact)  |
|                                | 50  | 76  | 68 (Moderate Impact)  |
|                                | 100   | 73  | 64 ((No Impact)   |
|                                | 200   | 70  | 61 (No Impact)  |

### **3.1.3.9 Impact Assessment**

This section describes the potential impacts associated from the line operations of the proposed 3C Quick Start Passenger Rail service along the six primary segments identified in Table 3-7 and Table 3-8. Passenger rail noise level calculations and impact assessment were completed following the procedures described and outlined in the FTA document entitled “Transit Noise and Vibration Assessment Manual (FTA report FTA-VA-90-1003-06, May 2006).

#### **3.1.3.10 Noise Impact Assessment for Proposed 3C Quick Start Passenger Rail Service**

FTA guidelines are based on relative impact criteria whereby project noise impacts are determined by comparing the future day-night (Ldn) noise level generated solely from the proposed 3C Quick Start Passenger Rail service against the existing day-night (Ldn) noise exposure without the project. Project impacts are categorized as “No Impact”, “Moderate Impact”, or “Severe Impact” as determined using the project criteria presented in Table 3-5.

Noise generated from the proposed 3C Quick Start Passenger Rail service was determined without and with horn noise and these estimated noise levels are provided in summary Table 3-7 and Table 3-8 respectively. Most of the approximately 260mile long corridor is not exposed to whistle blowing horn noise. Therefore, the noise levels shown in Table 3-7 are more representative of typical existing and future projected noise levels that will likely occur throughout the project study area.

The noise analysis findings presented in Table 3-7 indicate that noise generated from the proposed passenger rail service will result in no impacts at any FTA Category 2 land uses (residential properties and other places where people normally sleep) which are located 25 feet or greater away from the centerline of the existing freight tracks. However as indicated in Table 3-8, residential properties within 1,000 feet track length of an at grade crossing that are located 50 feet or less from the centerline of the existing freight tracks will experience “moderate impacts” from horn noise whistle warnings. Beyond 50 feet noise generated from horn noise will be below the FTA impact threshold and therefore no horn noise impacts from the 3C Quick Start Passenger Rail service are expected beyond this immediate 50 foot impact zone.

#### **3.1.3.11 Noise Mitigation**

FTA requires that mitigation be evaluated for all areas where an impact is expected to occur, although consideration of factors such as cost-effectiveness, feasibility, and reasonableness can be incorporated into the decision regarding whether to specific mitigation for a particular location. Mitigation normally would be specified for areas expected to experience a FTA “severe impact”, unless there is no practical method of achieving a reduction in noise level.

The projected noise levels associated with operation of the proposed 3C Quick Start Passenger Rail service were found not to exceed the FTA criteria for a “moderate impact” or “severe impact” at any of the six primary segments evaluated. Therefore, no noise mitigation measures associated with 3C Quick Start Passenger Rail service operations are necessary. However, FTA “moderate impacts” identified within a 50 feet impact zone as passenger trains approach at grade crossings, will be reviewed in

greater detail in the Tier II environmental impact assessment. The Tier II assessment will include a review of land use maps along the entire length of the project study area to determine if there are any noise sensitive properties adjacent to at-grade crossings within the identified 50-foot impact zone which would warrant further analysis. Impact reassessment would be accomplished by replacing the calculated existing day-night (Ldn) noise level determined from the freight service data with actual field collected 24 hour noise measurements recorded at the identified noise sensitive property. A second re-evaluation using the FTA transit noise impact criteria would then be completed. Any noise impacts identified under the Tier II evaluation would be addressed by specific mitigation measures applicable to the sensitivity of the land use in question and magnitude of the impact identified.

#### **3.1.3.12 Vibration Analysis Findings from 3C Quick Start Passenger Rail Operations**

Estimated vibration levels and impact assessment from the proposed 3C Quick Start Passenger Rail service were determined by following the methodology described in Chapter 10 of the FTA Manual. The 3C Corridor is classified as a corridor which will experience six to eight vibration events per day and therefore can be classified under the “Infrequent Events” category of fewer than 30 events per day, which for the FTA Category 2 land uses establishes an 80 V dB vibration impact threshold as shown in Table 3-6.

The analysis findings presented in Table 3-9 indicate that at proposed peak operating speeds, the proposed 3C Quick Start Passenger Rail service in areas where the tracks are at grade will result in potential vibration impacts in at distances of up to 125 feet away from the centerline of the freight tracks. Vibration impact zone for tracks on aerial structures will result in much smaller potential impact zones extending up to 40 feet away from the existing freight lines. Potential long-term effects to vibration sensitive structures located within these impact zones include structural damage to buildings and annoyance to occupants.

The impact zones identified in Table 3-9 represent conservative estimates based on peak passenger rail operating speeds. Optimized transit designed operating speeds along many segments will be lower than the 79 mph assumed along the majority of the corridor. Lower train traveling speeds will result in lower ground-borne vibration levels and thus smaller vibration impact zones. Part of the Tier II environmental impact assessment will include a vibration impact assessment using more precise travel speeds at various points along the corridor. The findings here provide a good first order magnitude of potential areas where ground borne vibration could be of concern.

**Table 3-9 Estimated Vibration Impact Zone from Proposed 3C Quick Start Passenger Rail Operations**

| Corridor Segment Description | Estimated Vibration Impact Zone <sup>(1)</sup> Based on 80 V dB Impact Criteria <sup>(1)</sup> |                                   |
|------------------------------|--|-----------------------------------|
|                              | Tracks At Grade (feet)   | Tracks on Aerial Structure (feet) |
| Cleveland to Columbus        | 125  | 80                                |
| Columbus to Springfield      | 125  | 80                                |
| Springfield to East Dayton   | 125  | 80                                |



| Corridor Segment Description   | Estimated Vibration<br>Impact Zone <sup>(1)</sup> Based on 80 V dB Impact Criteria <sup>(1)</sup> |                                      |
|--------------------------------|---|--------------------------------------|
|                                | Tracks At Grade<br>(feet)   | Tracks on Aerial Structure<br>(feet) |
| East Dayton to Dayton          | 125   | 80                                   |
| Dayton to North Cincinnati     | 125   | 80                                   |
| North Cincinnati to Cincinnati | 40  | 25                                   |

(1) The impact zone is based on an 80 V dB impact threshold for FTA Category 2 Land Uses which are defined as residential properties and other places where people normally sleep. Impact distances are measured from track centerline. The proposed 3C Quick Start Passenger Rail service would be classified under the "Infrequent Events" impact assessment category defined as fewer than 70 vibration events per day resulting in an impact threshold of 80 V dB for FTA Category 2 Land Uses as indicated in Table 3-6.

### 3.1.3.13 General Vibration Mitigation Measures

The major source of vibration is the rolling interaction of the car wheels on the track; the vibration resulting from this interaction increases with greater speeds. Factors that influence the amplitudes of ground-vibration include car suspension parameters, condition of the wheels and rails, type of track, track support system, type of building foundation, and the properties of the soil and rock layers through which the vibration propagates. Use of continuously welded rail eliminates wheel impacts at rail joints and results in significantly lower vibration levels than with jointed track. Adequate wheel and rail maintenance also is an important preventive measure in controlling levels of ground-borne vibration. Further reductions in ground-borne vibration levels typically involve special track support systems, vehicle modifications, building modifications, operational changes, or adjustments to the vibration transmission path. To be effective, many of these measures must be optimized or tuned for the frequency spectrum of the vibration. A general rule of thumb is that the lower the vibration frequency the harder it is to mitigate excessive ground-borne vibration levels using standard approaches and vibrations below about 20 Hz are difficult to control in a cost-effective manner.

### 3.1.4 Visual Resources

Visual and aesthetic quality in the project area was assessed in accordance with Federal Highway Administration (FHWA) guidance titled *Visual Impact Assessment for Highway Projects* (US Department of Transportation [USDOT] 1983). The FRA has no guidance specific to visual and aesthetic quality.

Since many of the station sites, rail yards, and railroad rights-of-way exist within areas that are industrial, transportation, or rural, only those with the potential to affect residential or other relatively long duration viewers were assessed. The approximately 260 mile 3C Corridor would add new passenger rail service on existing rail right-of-way and is considered a very minor change to the existing condition, and therefore, the impact to potential receptors would be minimal. The rail yards being considered are existing yards and are within industrial areas and no visual impact is expected. The focus of this assessment was therefore on the proposed stations.

#### 3.1.4.1 Existing Conditions

The following eight station sites were surveyed for visual resource conditions and potential impacts.

**(1) Lakefront Amtrak Station, Cleveland**

This site is an existing Amtrak Station platform located just north of downtown Cleveland. Adjacent land uses observed include: an eight lane highway to the north with park uses and Lake Erie beyond; a number of additional parking lots to the east; six railroad tracks to the south with medium and high rise office buildings beyond; and a six lane urban arterial street to the west with landscaped areas beyond. There are no residential uses nearby or uses that would have relatively long duration views of the site. Additionally, no construction is proposed at this area under the project, rather an increase in utilization of the existing facility. Therefore, there is no potential for visual resource impacts.

**(2) West 150<sup>th</sup> St./Puritas/GCRTA, Southwest Cleveland**

This site is an existing GCRTA station located approximately 2.25 miles northeast of the Cleveland Hopkins Airport. It is a large parking lot with a kiosk and concrete shelter in its western portion near the railroad tracks. Adjacent land uses observed include: an industrial and office use that appears to be undergoing redevelopment to the north; a La Quinta Inn hotel with open landscape areas beyond to the east; the eight lane I-71 with residential uses to the south; and six railroad tracks to the west with residential uses beyond. The residential uses are well screened from the site by trees and other vegetation. No other receptors have long duration views. No new construction is proposed for this station; but an increase in utilization of an existing facility. Therefore, there is no potential for visual resource impacts.

**(15) Convention Center Site, Columbus**

This site is located within a railroad facility containing up to four tracks running through a large urban trench through downtown Columbus. Within the site there are no uses other than railroad tracks and the concrete structures that support the buildings and roadways above. Adjacent land uses include the following: the Columbus Convention Center, highway right of way, multiple commercial, light industrial and redeveloped industrial uses beyond to the north, two large industrial buildings to the east, a large parking lot and high rise office buildings above the grade of the railroad to the south and parking lots and parking structures to the west. Since no residential uses or other views having relatively long duration view are present within the area, new construction at this site would fall within the highly urbanized urban look and would not have the potential for visual impacts.

**(17) Downtown Station Site, Springfield (phased)**

This site is a large lot that appears to have been cleared of other uses within the last five years, as evidenced by broken concrete from former foundations and portions of former sidewalks. The proposed 3C corridor rail line runs along the site's southern extent and one two story building is located at the site's western side with its parking area at the site's far western extent. Railroad ties and rails lie in piles along the southern portion of the site. Adjacent land uses include: a warehouse facility, a church to the north; another railroad property that appears to have been converted to a park with more rail property beyond to the east; a large industry facility with residential uses beyond to the south; and South Spring Street (on bridge above grade) with an office building and parking lot beyond to the west. One high rise residential building north of the site has views of the site. The visual quality of this site is as follows:

- Vividness - The vividness of this site is low. The reason for this is because the visual setting is disturbed by a number of urban uses in various stages of maintenance or disrepair.
- Intactness - The intactness of this site is low because there are a number of different land uses in all quarters.
- Unity - The unity of this area is low because all of the attributes in view have very low interrelation and compositional harmony.

Because the site is located in an area of relatively low visual quality, station construction would have low potential to result in visual resource impacts.

**(18) Riverside Site, East Dayton (phased)**

This site is a large partially wooded lot that flanks the existing railroad tracks. The area north of the tracks is nearly entirely wooded, while the area south of the tracks is partially wooded and includes a large asphalt parking lot. Adjacent land uses include: what appears to be a roadway maintenance facility; residential uses to the east; vacant land, residences, and a hotel within Wright-Patterson Air Force Base (AFB) to the south; and vacant land and Harshman Avenue to the west. The residences near this site are well within nearby visual range, and many have no screening from the site. The visual quality of this site is as follows:

- Vividness - The vividness of this site is low. The reason for this is the site's juxtaposition between the maintenance facility and Wright-Patterson Air Force Base (AFB).
- Intactness - The intactness of this site is low because the visual order is disturbed by very obvious presence of the facilities on Wright Patterson AFB.
- Unity - The unity of this area is low because the different land use types have a very low compositional harmony or compatibility.

Because the site is located in an area of relatively low visual quality, station construction would have low potential to result in visual impacts.

**(21) Main Street Site, Dayton**

This site currently contains a large parking lot on its north side with two active railroad tracks and three areas of former track on its south side. Adjacent uses include: an institutional use to the north; S. Wilkinson Street with office and parking lot uses to the east; industrial uses and a transformer station to the south; and industrial uses and parking areas to the west. Because there are no residences or other uses having relatively long duration views of the site, construction on the site will have no potential for visual resource impacts.

**(26) Kemper Road Site, North Cincinnati**

This site is currently an "L" shaped parcel that contains a vacant maintained grass area in its eastern portion, an apparently redeveloped brick building in its middle portion and gravel and paved parking lots in its western portion. The grass area (along Kemper Avenue) appears to have been prepared and intended to be used to develop an office building. Adjacent land uses observed include: Kemper Avenue with office uses beyond to the north; a mini storage facility with Lebanon Road beyond to the east; a re-developed industrial use with other smaller industrial uses beyond to the south; and railroad with auto repair and other industrial facilities beyond to the west. No residential

uses are present within the area of this site, and there are no other uses having relatively long duration views. For this reason, no impacts to visual resources are anticipated.

**(28) Lunken Airport Site, Cincinnati**

This site is within the railroad right of way with a portion of the eastern side being an access road to businesses. Adjacent land uses include the following: rail uses to the north; an industrial park with airport uses beyond to the east; rail uses with industrial uses beyond to the south; and residential uses to the west. The visual quality of this site is as follows:

- Vividness - The vividness of this site is low. The reason for this is because the visual setting is marked by older residences on the track's west side and an assortment of industrial uses on the south side. Vegetation along the track is comprised of lower trees and scrubby vegetation.
- Intactness - The intactness of this site is low because the visual order is disturbed by the dissimilar land uses in the area.
- Unity - The unity of this area is low because the different land use types have a very low compositional harmony or compatibility.

Because the site is located in an area of low visual quality, it is assumed that the construction of a passenger rail facility at this site would have low potential for visual impacts.

**3.1.5 Potential Impacts**

Eight station sites were analyzed for visual resource conditions. Five would have no potential for visual impacts. These sites are the (1) Lakefront Amtrak Station, (2) West 150<sup>th</sup> St./Puritas Avenue/GCRTA, (15) Convention Center Site, (21) Main Street Site, and (26) Kemper Road Site. Three would have low potential for visual impacts. These include: (17) Downtown Station site in Springfield because it is located in an area of low visual quality. (18) Riverside Site, East Dayton (phased) because it is located in an area of industrial and airport uses; and (28) Lunken Airport Site because it is located in an area of low visual quality. Because the site is located in an area of relatively low visual quality, station construction would have low potential to result in visual resource impacts.

**3.1.6 Conclusion**

Three out of the eight station sites discussed above would have low potential for visual impacts, and the potential impacts may be mitigate to the point of being negligible with implementation of the mitigation designs indicated above. The No-Build Alternative would not create changes or impacts to the project area's visual quality.

**3.2 Ecological Systems**

**3.2.1 Floodplains**

The National Flood Insurance Program defines 100-year floodplains as "areas that will be inundated by the flood event having a one percent chance of being equaled or exceeded in any given year". Executive Order 11988 (Floodplain Management) and 23 CFR 650.11 require that federal actions, to the extent possible, avoid short-and long-term impacts to floodplains and avoid direct or indirect support of floodplain development where a practicable alternative exists. The 100-year floodplains were located within the

project area using the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM).

Below is a summary of existing conditions and potential impacts. The summary tables and maps identifying the Floodplain location are provided in Appendix E.

### **3.2.1.1 Capacity Improvements**

#### **Construct second main track on CSX Greenwich Subdivision from CP 54 (Boyd) to CP 71 (south of Shelby).**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

#### **Rehabilitate and extend Edison siding on CSX Columbus Line Subdivision QE 90.8 to QE 93.9.**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

#### **Construct Paget Siding on CSX Columbus Line Subdivision from QE 110.8 to QE 112.9.**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

#### **Construct Powell Road Siding on CSX Columbus Line Subdivision from QE 125.1 to QE 127.1.**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

#### **Construct universal crossovers between CSX Columbus Line Subdivision and NS Dayton District at Weber Road QE/CJ 134.4.**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

#### **Construct Columbus Station Track at CP 138 on CSX Columbus Line Subdivision/ NS Dayton District.**

No water features were found within this capacity improvement section so there will be no impacts to any waterways associated with this feature.

#### **Construct second main track on NS Dayton District from CJ 172.5 (Plattsburg) to CJ 177.7 (near Brooks).**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

#### **Construct second main track on NS Dayton District from CJ 187.0 (near Cold Springs) to CJ 193.0 (near Enon).**

Approximately 59.7 acres of floodplain were located within the capacity improvement area. It is not anticipated that the development of this area will fill the floodplain and require either a CLoMR or a LoMR. If fill of the floodplain needs to occur compensatory flood storage will be created to mitigate for any such impacts. This capacity is located within the Great Miami River Watershed (HUC # 05080002) which drains to the Ohio River and covers 5,373 square miles in southwest Ohio.

**Construct second main track on NS Dayton District from CJ 202.1 (near Wrights) to CJ 208.5 (Miami River Bridge) and from CJ 208.6 to CJ 209.8 (near Moraine Yard).**

Approximately 13.8 acres of floodplain were located within the capacity improvement area. It is not anticipated that the development of this area will fill the floodplain and require either a CLoMR or a LoMR. If fill of the floodplain needs to occur compensatory flood storage will be created to mitigate for any such impacts. This capacity is located within the Great Miami River Watershed (HUC # 05080002).

**Create second main track on NS Dayton District from CJ 244.2 (CP 244) to IORY Connection at CJ 248.8 (south of Sharonville Yard).**

Approximately 39.7 acres of floodplain were located within the capacity improvement area. It is not anticipated that the development of this area will fill the floodplain and require either a CLoMR or a LoMR. If fill of the floodplain needs to occur compensatory flood storage will be created to mitigate for any such impacts. This capacity is located within the Mill Creek Watershed (HUC # 05090203) drains to the Ohio River and encompasses 164 square miles in southwest Ohio.

### **3.2.1.2 Stations**

**Lakefront Amtrak Station, Cleveland**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

**West 150th Street/Puritas Avenue/GCRTA Site, Southwest Cleveland**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

**Convention Center Site, Columbus**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

**Downtown Station Site, Springfield (*phased*)**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

**Riverside Site, East Dayton (*phased*)**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

**Main Street Site, Dayton**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

**Kemper Road Site, North Cincinnati**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

### **Lunken Airport Site, Cincinnati**

No floodplains features were found within this capacity improvement section so there will be no impacts to any floodplains associated with this feature.

#### **3.2.1.3 Rail Yards**

No new construction will occur at these locations on areas not otherwise already developed as rail yards; therefore no impacts will occur to floodplains located near these locations.

#### **3.2.1.4 Potential Impacts**

No impacts to the floodplains capacity are anticipated as indicated in Table 3-11, nor is it anticipated that modifications will occur to the floodplain. If fill of the floodplain needs to occur for the development of the rail line compensatory flood storage will be created to mitigate for any such impacts.

**Table 3-10 Summary of Floodplains within Improvement and Station**

| <b>Improvement or Station</b>   | <b>Floodplain</b> | <b>Watershed</b>   |
|---|-------------------|--|
| <b>Capacity Improvement</b>   |                   |  |
| Construct second main track on CSX Greenwich Subdivision from CP 54 (Boyd) to CP 71 (south of Shelby)   | 0                 | Mohican, Huron, and Vermillion Watersheds                            |
| Rehabilitate and extend Edison siding on CSX Columbus Line Subdivision QE 90.8 to QE 93.9   | 0                 | Rocky River  |
| Construct Paget Siding on CSX Columbus Line Subdivision from QE 110.8 to QE 112.9   | 0                 | Rocky River  |
| Construct Powell Road Siding on CSX Columbus Line Subdivision from QE 125.1 to QE 127.1   | 0                 | Scioto River Watershed (encompasses Olentangy and Big Darby)         |
| Construct universal crossovers between CSX Columbus Line Subdivision and NS Dayton District at Weber Road QE/CJ 134.4   | 0                 | Scioto River Watershed (encompasses Olentangy and Big Darby)         |
| Construct Columbus Station Track at CP 138 on CSX Columbus Line Subdivisions/NS Dayton District   | 0                 | Scioto River Watershed (encompasses Olentangy and Big Darby)         |
| Construct second main track on NS Dayton District from CJ 172.5 (Plattsburg) to CJ 177.7 (near Brooks)  | 0                 | Great Miami River Watershed (encompasses Mad River and Warden Ditch) |
| Construct second main track on NS Dayton District from CJ 187.0 (near Cold Springs) to CJ 193.0 (near Enon)   | 59.7 acres        | Great Miami River Watershed (encompasses Mad River and Warden Ditch) |
| Construct second main track on NS Dayton District from CJ 202.1 (near Wrights) to CJ 208.5 (Miami River Bridge) and from CJ 208.6 to CJ 209.8 (near Moraine Yard) | 13.8 acres        | Great Miami River Watershed (encompasses Mad River and Warden Ditch) |
| Create second main track on NS Dayton District from CJ 244.2 (CP 244) to IORY Connection at CJ 248.8 (south of Sharonville Yard)                                  | 39.7 acres        | Mill Creek Watershed (encompasses Sharon Creek)                      |

### **3C Quick Start Passenger Rail Environmental Assessment**

| Improvement or Station   | Floodplain | Watershed            |
|--|------------|----------------------|
| <b>Station</b>   |            |                      |
| Lakefront Amtrak Station, Cleveland  | 0          | Lake Erie            |
| West 150 <sup>th</sup> Street/Puritas Avenue/GCRTA Site, Southwest Cleveland | 0          | Lake Erie            |
| Convention Center Site, Columbus   | 0          | Scioto River         |
| Downtown Station Site, Springfield ( <i>phased</i> )                         | 0          | Great Miami River    |
| Riverside Site, East Dayton ( <i>phased</i> )                                | 0          | Great Miami River    |
| Main Street Site, Dayton   | 0          | Great Miami River    |
| Kemper Road Site, North Cincinnati   | 0          | Mill Creek Watershed |
| Lunken Airport Site, Cincinnati  | 0          | Ohio River           |

#### **3.2.1.5 Conclusions**

Under Tier 2 evaluation a flood storage evaluation (i.e. HEC-RAS and/or HEC-RMS) will be conducted to determine if the floodplain will be impacted by the development of the proposed capacity improvements. If during the design phase any floodplain encroachment is found to be required, measures to minimize and mitigate impacts will be conducted. If permits need to be obtained they will be conducted in compliance with the National Flood Insurance Program (NFIP) which is administered through the Federal Emergency Management Agency (FEMA) and Ohio Department of Natural Resources (ODNR) Division of Water's Floodplain Management Program. The No-Build Alternative would not impact water bodies and waterways.

#### **3.2.2 Wetland, Waterbody, and Waterway Permits**

A variety of permits and consultations would be required for construction of Build Alternatives on the 3C Quick Start Passenger Rail project. These authorizations assure that proper coordination pursuant to federal and state legislation has been satisfied. The anticipated waterway, and stormwater permits and consultations required as part of the 3C Quick Start Passenger Rail project include:

- Section 401 Water Quality Certification - Section 401 of the CWA requires that an applicant for a permit that may result in a discharge to Waters of the U.S. must first obtain certification from the state. The Ohio EPA issues a Section 401 Water Quality Certification when the project is shown to comply with state water quality standards. Typically, the 401 Water Quality Certification would be issued by the Ohio EPA prior to or concurrently with the ACOE 404 permit.
- Section 404 of the Clean Water Act - The USACE administers Section 404 of the CWA on behalf of the U.S. Environmental Protection Agency. Section 404(b)(1) regulates activities in Waters of the United States, defined as navigable waterways and their tributaries. Waters of the United States can include wetlands.



- Ohio EPA Isolated Wetlands Permit - Isolated wetlands (wetlands that are not subject to USACE jurisdiction) are regulated by the Ohio EPA. Permit reviews are based on projects requiring fill of an isolated wetland. A level one, two, or three permit review will be required depending on the wetland impact.
- National Pollutions Discharge Elimination System (NPDES) – This permit is required for stormwater discharge at construction sites. This permit application will be submitted to the Ohio EPA. The Ohio EPA has developed a General NPDES permit especially for work done in the Big Darby Creek (permit # OHCD00001) and Olentangy River (permit # OHCO00001) watersheds. Any work within these watersheds will require their corresponding General permit.
- Flood Hazard Development Permit – Since the project traverses floodplains, coordination with local floodplain administrators will be required to determine if a floodplain permit is required prior to any construction activities.
- Ohio Costal Management Program- The Lakefront Amtrak Station in Cleveland is located within the ODNR Ohio Costal Management Program and must adhere to Ohio Revised Code 1506 Costal Management Plan and ORC 1507-1521 Soil Erosion Plans.
- Section 10 Rivers and Harbors Act—A Section 10 River and Harbors permit will be required for all work and structures (exclusive of bridges), below the ordinary high water mark, in, adjacent to and across navigable waters of the US.. Permits are issued through the USACOE.

The following waterway permit is not expected for this project:

- Section 9 Rivers and Harbors Act – This permit is not needed for this project since no new bridges are to be constructed over a navigable waterway.

Based on field reviews and secondary source information, waterway permits will be required for locations where waterbodies and waterways are present. Waterbodies and waterways are present at station locations and along capacity improvement locations.

The No-Build Alternative would not impact water bodies and waterways.

### **3.2.3 Wetlands, Waterbodies, and Waterways**

For the purpose of identifying potential wetlands, the routine procedures set forth by the 1987 Corps of Engineers Wetland Delineation Manual and Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (September 2008) was utilized for this project. The manuals outline that a three (3) parameter approach must be utilized to identify wetlands, this requires the presence of hydrophytic vegetation, hydric soils, and wetland hydrology, unless a man-induced wetland is created and then only two of the parameters hydrophytic vegetation and wetland hydrology are utilized.

In order to establish areas that have potential wetland characteristics a search of available secondary information was conducted to identify ecological resources within the survey areas. This secondary literature included county soil survey maps, National Wetland Inventory (NWI) maps, Ohio Wetland Inventory (OWI) map, floodplain maps, and watershed information from information provided through the Ohio Department of Natural Resources (ODNR), Division of Natural Areas and Preserves and the U.S. Fish

and Wildlife Service. Since access to some of the wetland areas off the proposed corridor could not be attained at the time the field visits were conducted the wetlands were visually field verified from roadway right-of-ways. Wetland boundaries were approximated utilizing aerial photography and the above mentioned secondary sources.

In order to categorize the quality of wetlands in relation to habitat and level of disturbance, the Ohio Rapid Assessment Method for Wetlands (ORAM) v. 5.0, was utilized when wetlands could be visually observed (OEPA 2001). This method, developed by the OEPA, assigns a numeric score (on a 100-point scale) which is used to determine how stringently a wetland should be regulated and/or protected according to its quality. The ORAM categorizes wetlands as Category 1, 2, or 3. A Category 1 wetland is defined as a low quality wetland that has been significantly disturbed, while a Category 3 wetland is defined as an excellent quality wetland with little to no evidence of disturbance.

The term *body of water* most often refers to large accumulations of water, such as oceans, seas, and lakes, but it may also include smaller pools of water such as ponds, puddles, rivers, streams, and canals. In addition to natural formations through the transport of surface water artificial bodies of water such as reservoirs or farm ponds will be included in this section of the report.

Each waterbody in the state is assigned one or more aquatic life habitat use designations. Each waterbody may be assigned one or more water supply use designations and/or one recreational use designation. Waterbodies are assigned use designations under rules 3745-1-08 to 3745-1-32 of the Ohio Administrative Code. These designations for streams include Warm Water Habitat (WWH), Limited Warm Water Habitat (LWWH), Exceptional Warm Water (EWW), Modified Warm Water (MWW), Limited Resource Water (LRW), Seasonal Salmonid (SS), and/or Coldwater (CWH). Water supplies are designated as public, agricultural, and/or industrial. Additionally, recreational lakes are considered "bathing waters, primary contact, or secondary contact" waters, dependent on public health requirements.

Below is a summary of existing conditions and potential impacts by improvement. The summary tables and maps identifying the location of wetlands, water bodies, and waterways are provided in Appendix E.

#### **3.2.3.1 Capacity Improvements**

##### **Construct second main track on CSX Greenwich Subdivision from CP 54 (Boyd) to CP 71 (south of Shelby).**

This capacity improvement is located within the Mohican (HUC # 05040002), Huron and Vermillion River watersheds (HUC # 04100012). While the Mohican drains south to the Walhonding River, the Huron and Vermillion drain north to Lake Erie. The Mohican watershed covers 999 square miles in north-central Ohio while the Huron and Vermillion cover 674 square miles within north Ohio. The Mohicans high magnitude impairment sources include major industrial point source, major municipal point source and urban run-off. While the Huron and Vermillion's high magnitude impairment sources include major municipal point source, non-irrigated crop production and channelization development. This capacity improvement contains portions of the Black Fork Mohican River, which drains to the Mohican River and portions of both the West Branch Huron River and of the Southwest Branch Vermillion River and tributaries to each.

The Black Fork Mohican River within the project area does not have an aquatic life use designation due to the close proximity of the Shelby Wastewater Treatment Plant. The plant is immediately upstream of the railway bridge. The water supply uses include primary, industrial and agricultural water supply. The river is considered primary contact water for recreation purposes (OAC 3745-1-24).

The West Branch Huron River within the project area has an aquatic life use designation of Warm Water Habitat (WWH). The water supply uses include industrial and agricultural water supply. The river is considered primary contact water for recreation purposes (OAC 3745-1-19).

The Southwest Branch Vermilion River within the project area has an aquatic life use designation of is at partial attainment of its aquatic life use designation of Warm Water Habitat (WWH). The water supply uses include industrial and agricultural water supply. The river is considered primary contact water for recreation purposes (OAC 3745-1-28).

The Mohican, Huron, and Vermillion rivers have 183 miles of stream and 18,971 acres of wetland associated with the watershed. It is anticipated that approximately 6,570 linear feet (or 1.24 miles) of channel and 0.64 acre of wetland will potentially be impacted for this capacity improvement. Therefore, no negative impact to water quality is expected due to this action.

**Rehabilitate and extend Edison siding on CSX Columbus Line Subdivision QE 90.8 to QE 93.9.**

This capacity improvement is located within the Rocky River Watershed (HUC # 04110001) which drains north to Lake Erie. The watershed covers 294 square miles and is located in north Ohio. Its high magnitude impairment sources include major municipal point source, highway/bridge/sewer line pollution and land development/suburbanization.

The Rocky River Watershed has 48 miles of stream and 21,318 acres of wetland associated with the watershed. It is anticipated that approximately 792 linear feet (or 0.15 mile) of channel and 0.007 acre of wetland will potentially be impacted for this capacity improvement. Therefore, no negative impact to water quality is expected due to this action.

**Construct Paget Siding on CSX Columbus Line Subdivision from QE 110.8 to QE 112.9.**

No water features were found within this capacity improvement section so there will be no impacts to any waterways associated with this feature.

**Construct Powell Road Siding on CSX Columbus Line Subdivision from QE 125.1 to QE 127.1.**

This capacity improvement is located within the Scioto River Watershed (HUC # 0506001) which drains south to the Ohio River. The watershed basin encompasses 6,517 square miles in central and south-central Ohio. Its high magnitude impairment sources include municipal point source, non-irrigated crop production and land development/suburbanization.

The Scioto River within the project area is at full attainment of its aquatic life use designation of Modified Warm Water Habitat (MWH). The water supply uses include industrial and agricultural water supply. The river is considered primary contact water for recreation purposes (OAC 3745-1-09).

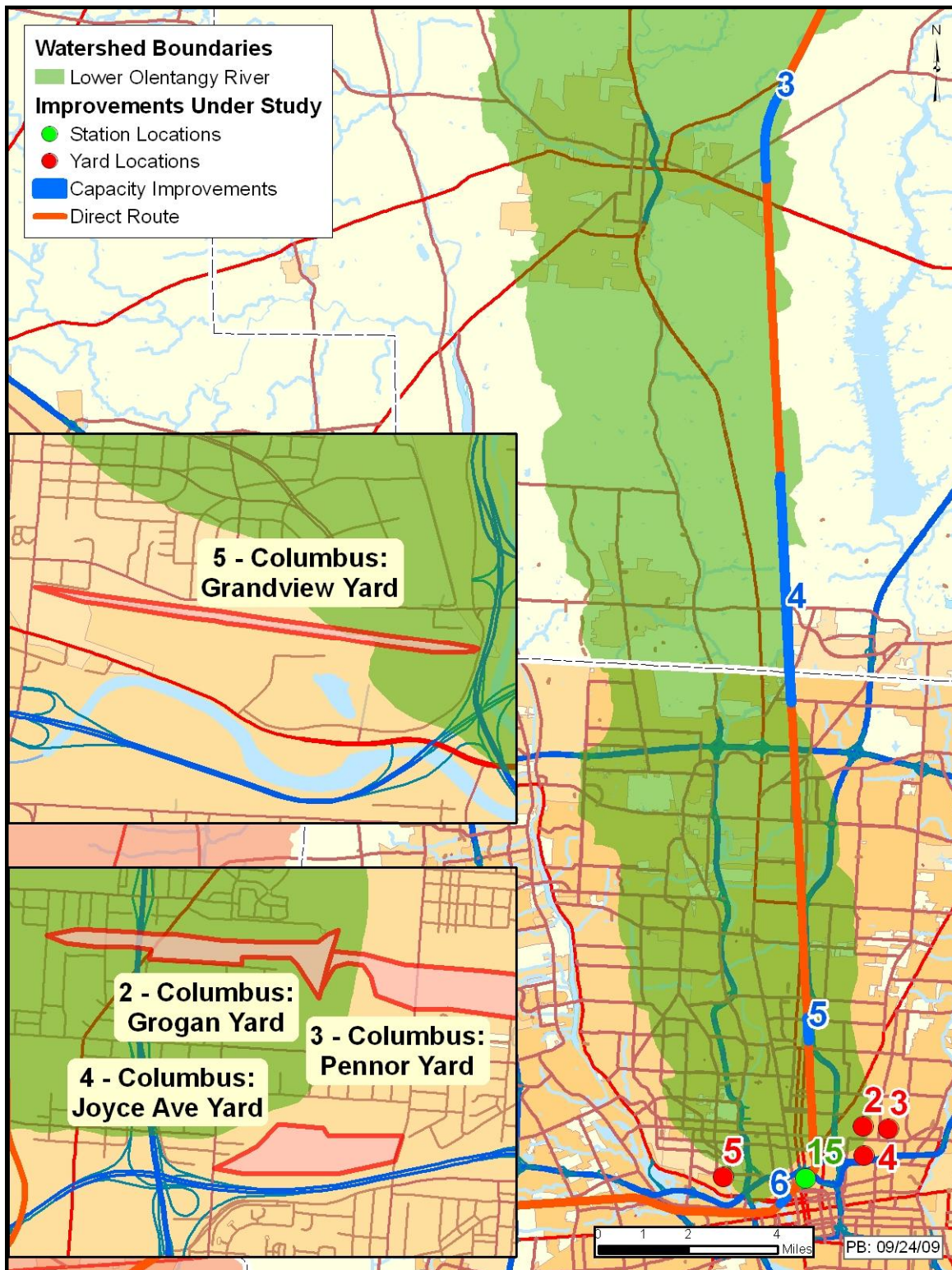
This river system drains Ohio's first and sixth most rapidly populating counties - Delaware and Morrow, respectively. Delaware County's most rapidly developing townships - Delaware, Liberty and Orange - overlap the river's State Scenic River section. Areas of the Whetstone Creek sub-watershed, located within Morrow County, are designated as Exceptional Warm Water Habitat (EWH) with two tributaries being designated as Coldwater Habitat (CWH). Approximately two miles of the Olentangy River is designated as EWH within Franklin County. This area is currently receiving the greatest pressure for development within Franklin County's portion of the watershed.

As a result, Ohio EPA has developed an alternative general permit for storm water associated with construction activity specific for portions of the Olentangy River and Big Darby Creek watersheds. This alternative permit implements many of the basic recommendations regarding the programs, activities and Best Management Practices developed through the Total Maximum Daily Load process, the State Water Quality Management Plan and the 208 plan for the Big Darby Creek Watershed. These plans usually require mitigation for impacts to buffer zones adjacent to the waters within the watershed and mitigation in the Big Darby Creek watershed for impacts to groundwater. Ohio EPA believes implementation of these recommendations is necessary to protect the unique water quality and biological integrity of the Olentangy River and the Big Darby Creek watersheds.

The Scioto River Watershed contains the Olentangy State Scenic River and the Big Darby State and National Scenic River. It should be noted that capacity improvement area, Construct Paget Siding on CSX Columbus Line Subdivision from QE110.8 to QE 112.9, Construct Powell Road Siding on CSX Columbus Line Subdivision from QE 125.1 to QE 127.1., and Construct universal crossovers between CSX Columbus Line Subdivision and NS Dayton District at Weber Road QE/CJ 134.4., are located within the Olentangy River Watershed. Additionally, Gorgan yard and part of Grandview yard are also located within the Olentangy River Watershed, Figure 3-1.

The Scioto River Watershed which encompasses the Olentangy and Big Darby contain approximately 398 miles of stream and 73,718 acres of wetlands. It is anticipated that approximately 183 linear feet (or 0.03 mile) of channel and 0.2 acre of wetland will potentially be impacted for this capacity improvement. Therefore, no negative impact to water quality is expected due to this action.

Figure 3-3 Lower Olentangy River, Big and Little Darby Creek Watershed Boundaries



**Construct universal crossovers between CSX Columbus Line Subdivision and NS Dayton District at Weber Road QE/CJ 134.4.**

This capacity improvement is also located within the Scioto River Watershed (HUC # 0506001) there will be an anticipated impact of 71 linear feet. No additional wetland impacts are anticipated for this capacity improvement. Therefore, no negative impact to water quality is expected due to this action.

**Construct Columbus Station Track at CP 138 on CSX Columbus Line Subdivision/ NS Dayton District.**

No water features were found within this capacity improvement section so there will be no impacts to any waterways associated with this feature.

**Construct second main track on NS Dayton District from CJ 172.5 (Plattsburg) to CJ 177.7 (near Brooks).**

This capacity improvement is located within the Great Miami River Watershed (HUC # 05080002) which drains to the Ohio River and covers 5,373 square miles in southwest Ohio. Its high magnitude impairment sources include industrial point sources, landfills, and contaminated sediments.

The Mad River within the project area has an aquatic life use designation of WWH. The water supply uses include industrial and agricultural water supply. The river is considered a primary contact water for recreation purposes (OAC 3745-1-21).

The Great Miami River Watershed which encompasses the Mad River and Warden Ditch contain approximately 232 miles of stream and 45,826 acres of wetlands. It is anticipated that approximately 4,530 linear feet (or 0.86 mile) of channel and 0.246 acre of wetland will potentially be impacted for this capacity improvement. Therefore, no negative impact to water quality is expected due to this action.

**Construct second main track on NS Dayton District from CJ 187.0 (near Cold Springs) to CJ 193.0 (near Enon).**

The Great Miami River Watershed (HUC # 05080002) drains to the Ohio River and covers 5,373 square miles in southwest Ohio. Its high magnitude impairment sources include industrial point sources, landfills, and contaminated sediments. Capacity Improvements #10 and 11, and the Dayton: Union Station site ID (#22) contain portions of the Great Miami River and the Mad River, which drains to the Great Miami River.

The Great Miami River within the project area has an aquatic life use designation of WWH. The water supply uses include industrial and agricultural water supply. The river is considered a primary contact water for recreation purposes (OAC 3745-1-21).

The Mad River within the project area has an aquatic life use designation of WWH. The water supply uses include industrial and agricultural water supply. The river is considered a primary contact water for recreation purposes (OAC 3745-1-21).

This capacity improvement is also located within the Great Miami River Watershed (HUC # 05080002) there will be an anticipated impact of 1,092 linear feet of channel and 2.8 acres of wetlands. Therefore, no negative impact to water quality is expected due to this action.

**Construct second main track on NS Dayton District from CJ 202.1 (near Wrights) to CJ 208.5 (Miami River Bridge) and from CJ 208.6 to CJ 209.8 (near Moraine Yard).**

The Great Miami River Watershed (HUC # 05080002) drains to the Ohio River and covers 5,373 square miles in southwest Ohio. Its high magnitude impairment sources include industrial point sources, landfills, and contaminated sediments. This capacity improvement contains portions of the Great Miami River and the Mad River, which drains to the Great Miami River.

The Great Miami River within the project area has an aquatic life use designation of WWH. The water supply uses include industrial and agricultural water supply. The river is considered primary contact water for recreation purposes (OAC 3745-1-21).

Warden Ditch occurs within this capacity improvement near Springfield, Ohio. Warden Ditch drains to Smith Ditch, which then drains to the Mad River. No water quality information regarding this waterway is available in the Ohio Administrative Code.

This capacity improvement is also located within the Great Miami River Watershed (HUC # 05080002) there will be an anticipated impact of 518 linear feet of channel and 0.305 acres of wetlands. Therefore, no negative impact to water quality is expected due to this action.

**Create second main track on NS Dayton District from CJ 244.2 (CP 244) to IORY Connection at CJ 248.8 (south of Sharonville Yard).**

The Mill Creek Watershed (HUC # 05090203) drains to the Ohio River and encompasses 164 square miles in southwest Ohio. Its high magnitude impairment sources include industrial point source, major municipal point source and combined sewer overflow (CSO). This capacity improvement contains portions of Mill Creek and Sharon Creek, which drains to Mill Creek.

Mill Creek within the project area has an aquatic life use designation of WWH. The water supply uses include Industrial and agricultural water supply. The creek is considered primary contact water for recreation purposes (OAC 3745-1-30).

Sharon Creek within the project area has an aquatic life use designation of WWH. The water supply uses include Industrial and agricultural water supply. The creek is considered a primary contact water for recreation purposes (OAC 3745-1-30).

The Mill Creek Watershed which encompasses Sharon Creek contain approximately 34 miles of stream and 4,536 acres of wetlands. It is anticipated that approximately 3,984 linear feet (or 0.75 mile) of channel and 2.2 acre of wetland will potentially be impacted for this capacity improvement. Therefore, no negative impact to water quality is expected due to this action.

**3.2.6.2 Stations**

**Lakefront Amtrak Station, Cleveland**

No water features were found within this capacity improvement section so there will be no impacts to any waterways associated with this feature. This station falls within the Lake Erie watershed which is comprised of all rivers systems in the state that drain north to Lake Erie. However, Lake Erie itself is designated as an Exceptional Warm Water Habitat (EWH) river and contains superior high quality water. Water supply uses include



public water supply, agricultural water supply, industrial water supply and bathing waters (OAC 3745-1-31). Additionally, this site is located within the Ohio Costal Management Zone and will be required to adhere to the regulations set forth under ORC 1506, 1507-1521, and attain all permits required under the Lake Erie Costal Management Plan.

**West 150th Street/Puritas Avenue/GCRTA Site, Southwest Cleveland**

No water features were found within this capacity improvement section so there will be no impacts to any waterways associated with this feature.

**Convention Center Site, Columbus**

No water features were found within this capacity improvement section so there will be no impacts to any waterways associated with this feature.

**Downtown Station Site, Springfield (*phased*)**

No water features were found within this capacity improvement section so there will be no impacts to any waterways associated with this feature.

**Riverside Site, East Dayton (*phased*)**

No water features were found within this capacity improvement section so there will be no impacts to any waterways associated with this feature.

**Main Street Site, Dayton**

No water features were found within this capacity improvement section so there will be no impacts to any waterways associated with this feature.

**Kemper Road Site, North Cincinnati**

No impacts are anticipated for this site so there should be no impact to the Mill Creek watershed based on potential activities at this site.

**Lunken Airport Site, Cincinnati**

No water features were found within this capacity improvement section so there will be no impacts to any waterways associated with this feature.

**3.2.3.2 Rail Yards**

No new construction will occur at these locations on areas not otherwise already developed as rail yards; therefore no impacts will occur to water features located near these locations.

**3.2.3.3 Potential Impacts**

Wetlands impacts were derived utilizing field verification. When access to an area was not attainable aerial photographs, soils maps with hydric soil verifications, OWI, and NWI maps were utilized when determining wetland boundaries. Since some wetlands were placed on the map without verifying plant communities it is anticipated that there may be a reduction in wetland size once site access is granted and a full delineation of the wetlands can occur. Of the 90,651.29 acres of wetlands located within the watersheds assessed it is anticipated that a total of 13.66 acres of wetlands could be impacted by the development of the proposed capacity improvements (see Table 3-12 for wetland impacts).



The preliminary ORAM scoring was based on size, location, and general features of the wetland areas. Since water levels, special features and vegetation could not be field verified on some of the wetlands evaluated, the ORAM scores should be treated as an approximation of the wetland features found. When site access is available full ORAM scoring forms can be provided.

Waterbody and waterway impacts are anticipated at capacity improvement locations along the 3C Corridor. Of the 894.6 miles of streams located within the watersheds assessed it is anticipated that a total of 18,258 linear feet (or 3.45 miles) of channel could be impacted by the development of the proposed capacity improvements (see Table 3-12 for stream impacts).

**Table 3-11 Summary of Wetland or Waterbody Impact by Improvement and Station**

| Improvement or Station  | Wetland Impacts | Waterbody Impacts                    | Watershed  |
|---|-----------------|--------------------------------------|--|
| <b>Capacity Improvement</b>   |                 |                                      |  |
| Construct second main track on CSX Greenwich Subdivision from CP 54 (Boyd) to CP 71 (south of Shelby)                 | 0.64 acre       | 6,570 linear feet<br>(or 1.24 miles) | Mohican, Huron, and Vermillion Watersheds<br>Total Rivers/Streams 183 miles<br>Total Wetlands 18,971 acres                         |
| Rehabilitate and extend Edison siding on CSX Columbus Line Subdivision QE 90.8 to QE 93.9                             | 0.007 acre      | 792 linear feet<br>(or 0.15 mile)    | Rocky River<br>Total Rivers/Streams 48 miles<br>Total Wetlands 21,318  |
| Construct Paget Siding on CSX Columbus Line Subdivision from QE 110.8 to QE 112.9                                     | 0               | 0                                    | Rocky River<br>Total Rivers/Streams 48 miles<br>Total Wetlands 21,318  |
| Construct Powell Road Siding on CSX Columbus Line Subdivision from QE 125.1 to QE 127.1                               | 0.2 acre        | 183 linear feet<br>(or 0.03 mile)    | Scioto River Watershed<br>(encompasses Olentangy and Big Darby)<br>Total Rivers/Streams 398 miles<br>Total Wetlands 73,718         |
| Construct universal crossovers between CSX Columbus Line Subdivision and NS Dayton District at Weber Road QE/CJ 134.4 | 0               | 71 linear feet<br>(or 0.01 mile)     | Scioto River Watershed<br>(encompasses Olentangy and Big Darby)<br>Total Rivers/Streams 398 miles<br>Total Wetlands 73,718         |
| Construct Columbus Station Track at CP 138 on CSX Columbus Line Subdivisions/NS Dayton District                       | 0               | 0                                    | Scioto River Watershed<br>(encompasses Olentangy and Big Darby)<br>Total Rivers/Streams 398 miles<br>Total Wetlands 73,718         |
| Construct second main track on NS Dayton District from CJ 172.5 (Plattsburg) to CJ 177.7 (near Brooks)                | 0.246 acre      | 4,530 linear feet<br>(or 0.86 mile)  | Great Miami River Watershed<br>(encompasses Mad River and Warden Ditch)<br>Total Rivers/Streams 232 miles<br>Total Wetlands 45,826 |
| Construct second main track on NS Dayton District from CJ 187.0 (near Cold Springs) to CJ 193.0 (near Enon)           | 2.8 acres       | 1,092 linear feet<br>(or 0.20 mile)  | Great Miami River Watershed<br>(encompasses Mad River and Warden Ditch)<br>Total Rivers/Streams 232 miles<br>Total Wetlands 45,826 |

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| Improvement or Station  | Wetland Impacts | Waterbody Impacts                | Watershed   |
|---|-----------------|----------------------------------|---|
| Construct second main track on NS Dayton District from CJ 202.1 (near Wrights) to CJ 208.5 (Miami River Bridge) and from CJ 208.6 to CJ 209.8 (near Moraine Yard) | 0.305 acre      | 518 linear feet (or 0.10 mile)   | Great Miami River Watershed (encompasses Mad River and Warden Ditch)<br>Total Rivers/Streams 232 miles<br>Total Wetlands 45,826 |
| Create second main track on NS Dayton District from CJ 244.2 (CP 244) to IORY Connection at CJ 248.8 (south of Sharonville Yard)                                  | 2.2 acre        | 3,984 linear feet (or 0.75 mile) | Mill Creek Watershed (encompasses Sharon Creek)<br>Total Rivers/Streams 33.6 miles<br>Total Wetlands 4,536 acres                |
| Station   |                 |                                  |   |
| Lakefront Amtrak Station, Cleveland   | 0               | 0                                | Lake Erie   |
| West 150 <sup>th</sup> Street/Puritas Avenue/GCRTA Site, Southwest Cleveland  | 0               | 0                                | Lake Erie   |
| Convention Center Site, Columbus  | 0               | 0                                | Scioto River  |
| Downtown Station Site, Springfield ( <i>phased</i> )  | 0               | 0                                | Great Miami River   |
| Riverside Site, East Dayton ( <i>phased</i> )   | 0               | 0                                | Great Miami River   |
| Main Street Site, Dayton  | 0               | 0                                | Great Miami River   |
| Kemper Road Site, North Cincinnati  | 0               | 0                                | Mill Creek Watershed  |
| Lunken Airport Site, Cincinnati   | 0               | 0                                | Ohio River  |

Based on the size and scope of this project, it is anticipated that there will be low impacts to wetlands and waterbodies within the proposed project area. Since anticipated mitigation measures will be taken, no negative impacts to overall water quality will occur.

### 3.2.3.4 Conclusions

Under Tier 2 coordination an avoidance and minimization analysis will be conducted to determine if the project can reduce its proposed impacts to wetlands and waterbodies. Avoidance is when the project has been designed to avoid impacts to wetlands and waterbodies to the extent practicable to still accomplish the projects goals. After the avoidance analysis has been conducted a Minimization analyses for project impacts must be assessed to determine where design elements can reduce effect and still accomplish the projects goals.

Compensatory mitigation for impacts to wetlands and waterbodies will be conducted in accordance with 33 CFR 332.2 and Ohio's anti-degradation rule OAC 3745-1-54. Compensatory mitigation for wetlands typically includes creation, restoration, enhancement and/or a combination of all three so that there is a no net loss to wetlands within the same watershed. Mitigation for streams usually requires restoration or rehabilitation of existing streams within the same watershed. Prior to the

commencement of any construction all required permits will be obtained and mitigating measures will be outlined and agreed upon with the regulatory authority.

### **3.2.4 Threatened and Endangered Species**

To evaluate the potential effects of the Preferred Alternative on State and Federally-listed protected species, the following activities were conducted:

- A review of the April 2009 the US Fish and Wildlife Service's (USFWS) list of Federally-Listed Species by County in Ohio, which indicates endangered, threatened, candidate, species of concern and critical habitat.
- A review of the Ohio Department of Natural Resource's (ODNR) Natural Heritage Database for State listed species (endangered, threatened, potentially threatened and species of concern and special interest) located within one mile of the project area.

The project consists of the various individual capacity improvement projects along the corridor as well as the eight station locations. Railroad yards were examined; however no new construction beyond yard limits is anticipated.

No field work was performed specific to protected species or their possible habitats. However data on general project area conditions obtained from other research was considered where applicable. Consultation with the USFWS is required for any effect (even beneficial) to Federally-listed threatened or endangered species, or suitable habitat (i.e Indiana bat). As each individual improvement project and station is evaluated with more detailed field information, projects with effects will require consultation the USFWS.

Table 3-13 provides an overview of the State and Federally-listed species that have been recorded within one mile of the new station or capacity improvement locations as well as the Federally-listed species that are possible in each project area county. Also included are the species where site-specific surveys would likely be conducted during Tier 2 environmental documentation. Refer to Appendix F for more detailed species descriptions, official protection status and occurrence information in relation to the various improvements.

**Table 3-12 Summary of State and Federally-Listed Species by Improvement and Station**

| County                      | Improvement or Station  | State and Federally-listed species recorded within 1 mile of project feature | Federally- listed species possible in the county | Site specific survey/agency coordination recommendations      |
|-----------------------------|---|--|--|---|
| <b>Capacity Improvement</b> |   |  |  |   |
| Richland                    | Construct second main track on CSX Greenwich Subdivision from CP 54 (Boyd) to CP 71 (south of Shelby) | Nodding Rattlesnake-Root   | Indiana Bat, Bald Eagle, and Eastern Hellbender  | Nodding Rattlesnake-Root, Indiana Bat, and Eastern Hellbender |
| Morrow                      | Rehabilitate and extend Edison siding on CSX Columbus Line Subdivision QE 90.8 to QE 93.9             | None   | Indiana Bat and Bald Eagle                       | Indiana Bat   |

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| County                | Improvement or Station  | State and Federally-listed species recorded within 1 mile of project feature | Federally- listed species possible in the county   | Site specific survey/agency coordination recommendations                       |
|-----------------------|---|--|--|--|
| Delaware              | Construct Paget Siding on CSX Columbus Line Subdivision from QEQE110.8 to QE 112.9                                    | None   | Indiana Bat, Clubshell Mussel, Snuffbox Mussel, Rayed Bean Mussel and Bald Eagle                                       | Indiana Bat  |
| Delaware and Franklin | Construct Powell Road Siding on CSX Columbus Line Subdivision from QE 125.1 to QE 127.1                               | Spotted Coral-Root   | Indiana Bat, Clubshell Mussel, Scioto Madtom, Northern Riffleshell, Snuffbox Mussel, Rayed Bean Mussel, and Bald Eagle | Indiana Bat  |
| Franklin              | Construct universal crossovers between CSX Columbus Line Subdivision and NS Dayton District at Weber Road QE/CJ 134.4 | Bluebreast Darter  | Indiana Bat, Clubshell Mussel, Scioto Madtom, Northern Riffleshell, Snuffbox Mussel, Rayed Bean Mussel, and Bald Eagle | Indiana Bat  |
| Franklin              | Construct Columbus Station Track at CP 138 on CSX Columbus Line Subdivisions/NS Dayton District                       | Pondhorn Mussel and Peregrine Falcon   | Indiana Bat, Clubshell Mussel, Scioto Madtom, Northern Riffleshell, Snuffbox Mussel, Rayed Bean Mussel, and Bald Eagle | None   |
| Clark                 | Construct second main track on NS Dayton District from CJ 172.5 (Plattsburg) to CJ 177.7 (near Brooks)                | None   | Indiana Bat, Eastern Prairie Fringed Orchid and Eastern Massasauga Rattlesnake   | Indiana Bat, Eastern Prairie Fringed Orchid and Eastern Massasauga Rattlesnake |
| Clark                 | Construct second main track on NS Dayton District from CJ 187.0 (near Cold Springs) to CJ 193.0 (near Enon)           | Tonguetied Minnow  | Indiana Bat, Eastern Prairie Fringed Orchid and Eastern Massasauga Rattlesnake   | Indiana Bat, Eastern Prairie Fringed Orchid and Eastern Massasauga Rattlesnake |

**3C Quick Start Passenger Rail  
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| County                | Improvement or Station  | State and Federally-listed species recorded within 1 mile of project feature  | Federally- listed species possible in the county   | Site specific survey/agency coordination recommendations                                 |
|-----------------------|---|---|--|--|
| Montgomery and Greene | Construct second main track on NS Dayton District from CJ 202.1 (near Wrights) to CJ 208.5 (Miami River Bridge) and from CJ 208.6 to CJ 209.8 (near Moraine Yard) | Yellow-Crowned Night-Heron, Eastern Massasauga Rattlesnake, River Redhorse, Plains Clubtail, Pondhorn Mussel, Lesser Ladies'-Tresses, Indiana Bat, Peregrine Falcon, Elktoe Mussel and Bald Eagle | Indiana Bat, Clubshell Mussel, Eastern Massasauga Rattlesnake, Snuffbox Mussel, Rayed Bean Mussel and Bald Eagle | All species listed   |
| Hamilton              | Create second main track on NS Dayton District from CJ 244.2 (CP 244) to IORY Connection at CJ 248.8 (south of Sharonville Yard)                                  | Missouri Gooseberry and Deam's Three-Seeded Mercury   | Indiana Bat, Snuffbox Mussel, Sheepnose Mussel, Bald Eagle and Running Buffalo Clover                            | Missouri Gooseberry, Deam's Three-Seeded Mercury, Indiana Bat and Running Buffalo Clover |
| <b>Station</b>        |   |   |  |  |
| Cuyahoga              | Lakefront Amtrak Station, Cleveland   | No new construction will occur at this location; therefore no impacts will occur to state or federally- listed species.   |  |  |
| Cuyahoga              | West 150 <sup>th</sup> Street/Puritas Avenue/GCRTA Site, Southwest Cleveland  | No new construction will occur at this location; therefore no impacts will occur to state or federally- listed species.   |  |  |
| Franklin              | Convention Center Site, Columbus  | No new construction will occur at this location on areas not otherwise already developed; therefore no impacts will occur to state or federally- listed species.                                  |  |  |
| Clark                 | Downtown Station Site, Springfield ( <i>phased</i> )  | Tonguetied Minnow   | Indiana Bat, Eastern Prairie Fringed Orchid and Eastern Massasauga Rattlesnake                                   | None   |
| Montgomery            | Riverside Site, East Dayton ( <i>phased</i> )   | Indiana Bat and Bald Eagle  | Indiana bat, Eastern Massasauga Rattlesnake, Snuffbox Mussel, Rayed Bean Mussel and Bald Eagle                   | Indiana Bat , Bald Eagle and Eastern Massasauga Rattlesnake                              |
| Montgomery            | Main Street Site, Dayton  | Peregrine Falcon and Elktoe Mussel  | Indiana Bat, Eastern Massasauga Rattlesnake, Snuffbox Mussel, Rayed Bean Mussel and Bald Eagle                   | None   |

**3C Quick Start Passenger Rail  
Environmental Assessment**

| County   | Improvement or Station             | State and Federally-listed species recorded within 1 mile of project feature | Federally- listed species possible in the county                                      | Site specific survey/agency coordination recommendations                                 |
|----------|------------------------------------|--|---|--|
| Hamilton | Kemper Road Site, North Cincinnati | Missouri Gooseberry and Deam's Three-Seeded Mercury                          | Indiana Bat, Snuffbox Mussel, Sheepnose Mussel, Bald Eagle and Running Buffalo Clover | Missouri Gooseberry, Deam's Three-Seeded Mercury, Indiana Bat and Running Buffalo Clover |
| Hamilton | Lunken Airport Site, Cincinnati    | Loggerhead Shrike and River Darter   | Indiana Bat, Snuffbox Mussel, Sheepnose Mussel, Bald Eagle and Running Buffalo Clover | Running Buffalo Clover   |

### 3.2.4.1 Conclusion

Ohio has 22 federally listed endangered, threatened and candidate species. Additionally, there are numerous other species listed "species of concern" with the Bald Eagle being perhaps the most familiar. Based on a review of the county lists and new station or capacity improvement locations, seven federally listed endangered, threatened and candidates species and four Federal species of concern were evaluated.

Of the 279 species that the ODNR lists as either State - endangered, threatened or species of concern, 19 species have been recorded within one mile of a proposed new station or capacity improvement.

The Natural Heritage Database search revealed that there are no occurrences or records of State or Federally-listed species identified within any of the proposed station areas or capacity improvement areas. However, the search did reveal at least one record of State and/or Federally-listed species within one mile of five of the proposed station locations and seven of the ten capacity improvement areas. Per ODOT's standard procedures, additional survey during Tier 2 environmental documentation will likely be required for the station areas and capacity improvement areas indicated on Table 3-13.

While not expected, if trees possessing suitable Indiana bat habitat will be impacted, the level of impact will be determined and the appropriate avoidance and minimization techniques will be used to minimize impacts to the species. Prior to construction of any project affecting the Indiana bat, consultation will be required with the USFWS in accordance with the Biological Opinion on ODOT's Statewide Transportation Program for the federally-listed Indiana Bat, (June 2007). Similarly, any project affecting a federally listed mussel species will undergo consultation with the USFWS prior to construction. Lastly, in the case of the Bald Eagle, coordination will likely need to occur with ODNR and the USFWS to develop a plan to ensure that the species will not be harmed or harassed during construction of, or as a result of, the proposed project.

The No-Build Alternative would not affect State or Federally-listed species.

### **3.3 Human Environment**

#### **3.3.1 Transportation**

Existing transportation options and operations within the 3C Corridor were identified. The available options are freight rail, bus transit, and roadways. Passenger rail is not currently available within the 3C Corridor.

##### **3.3.1.1 Existing Conditions**

###### **Freight Rail Operations**

Existing freight traffic in this corridor is mainly operated by Norfolk-Southern Railroad and CSX Transportation. Several other shortline and regional operators either utilize or cross various parts of the corridor as well. These carriers include the Wheeling & Lake Erie Railroad, RJ Corman Railroad, Ashland Railway Company, Indiana and Ohio Railway, and the Chicago, Fort Wayne & Eastern Railroad.

Freight railroads in Ohio annually originate and terminate more than 170 million tons of freight. When through trains are considered, the freight increases to more than 315 million tons and nearly 7 million carloads. These freight rail carriers haul raw materials, parts, and finished goods for the energy, construction, automotive, agriculture, distribution and trade industries. They employ more than 8,000 workers and pay approximately \$500 million in wages across the state.

The largest category of shipments is more than 45 million tons of coal terminated at coal-fired electric utility plants throughout Ohio. Railroads support other key Ohio industries, including agriculture, construction, automotive, and distribution and retailing of consumer goods. The railroads also haul bulk minerals, ores, and construction stone that are impractical to move by truck.

###### **Passenger Rail**

Inter-city passenger rail service does not exist in the 3C corridor. In fact, the 3C Corridor is the most densely populated corridor in the United States without inter-city passenger service. Three current Amtrak routes provide service to locations within Ohio's 3C Corridor. They are:

- Lake Shore Limited between New York and Chicago (serving Cleveland)
- Capitol Limited between Chicago and Washington D.C. (serving Cleveland)
- Cardinal/Hoosier State between Washington D.C. and Chicago (serving Cincinnati)

Existing transit operators have expressed support of passenger rail in the 3C Corridor. Operators have indicated their willingness to work on connections to use their existing and future network lines.

Cleveland is the only city in Ohio that provides local passenger rail transportation. The Greater Cleveland Regional Transit Authority (GCRTA) operates a series of heavy rail, light rail, Bus Rapid Transit and trolley lines that serve the city and its surrounding areas. The Preferred Alternative would be well connected to this system with a shared station location on the GCRTA Red Line in southwest Cleveland and a shared location on the Green Trolley Line downtown.

The cities of Columbus, Dayton, and Cincinnati all have rail transportation plans under various stages of development. The Preferred Alternative has also been developed with long-term coordination of these efforts in mind.

### **Regional Roadway Network**

For vehicular traffic, I-71 is the most direct route between Cleveland and Cincinnati. This route is approximately 240 miles. The typical vehicular trip between Cleveland and Cincinnati using this direct route takes between four and five hours accounting for traffic and stops for rest, food or gas.

Connecting to Dayton from Cleveland would require traveling on I-70 and I-675 from Columbus and linking to I-75 to make the connection south to Cincinnati. Connection to downtown Dayton would require using the US 35 expressway between I-675 and I-75. This route would add approximately 20 miles to the vehicular route for an approximate whole-corridor total of 260 miles. This routing could add as much as an hour to the overall trip by car for a total one way trip between five and six hours.

### **Other Transportation Options**

Inter-city bus transportation is provided in the corridor by Greyhound Lines, Inc. and other smaller carriers operate bus service in the 3C Corridor. Of the 31 Greyhound service locations in Ohio, 17 are located within or very near to the broad project area used in the Level 1 route screening (Table 2-1). Scheduled one-way travel times between Cleveland and Cincinnati range between four hours and forty minutes and five hours and thirty minutes with one way fares approximately 50 dollars.

#### **3.3.1.2 3C Corridor Station Locations and Local Amenities**

Identified station locations on the Preferred Alternative have been identified with basic service needs in mind. These include available parking, space available for a passenger platforms and station buildings and connections to the local multi-modal transportation system.

- Cleveland: Both downtown and suburban locations are shared rail station locations with other providers. Parking and access to other local transit and roadway facilities are readily available. The preferred downtown location is the Amtrak station for existing service and the southwest Cleveland location would be co-located with an existing rail transit station.
- Columbus: The Convention Center location downtown provides more than adequate parking and connection to transit and roadway networks. The facility was originally constructed without the ability to accommodate a future passenger station.
- Springfield: The preferred station location (phased) provides connections to all local modes of transportation, including a nearby link to the area's renowned bicycle/pedestrian network. Ample parking is also available.
- Dayton: The East Dayton location (phased) provides a direct link to the United State Air Force Museum, which is Ohio's largest free tourist attraction. Ample parking and connections to other modes are readily available at both East Dayton and downtown locations.
- Cincinnati: Both North Cincinnati and Lunken Airport station locations on the Preferred Alternative serve densely populated areas. Ample parking and easy connections to the local multi-modal transportation system are easily made.



### **3.3.1.3 Potential Impacts**

The Preferred Alternative would have a positive impact on access and mobility in Ohio by offering a safe and convenient choice for commuters, residents and, tourists who otherwise rely primarily on vehicular travel.

Other potential impacts such as increased traffic and demand for parking at assumed station locations would be minimal. Proposed station locations in Cleveland, Southwest Cleveland, Columbus, East Dayton, Dayton, and North Cincinnati already have ample parking available on-site. Springfield and Cincinnati station locations have ample space to develop necessary parking to serve those facilities. The station sites are located in urban and sub-urban neighborhoods and the local communities are working to accommodate any additional traffic as a result of passenger rail service coming to the corridor.

If it is determined that further site specific studies are necessary to better define impacts and mitigation strategies for assumed station areas, that work will be undertaken as part of Tier 2 environmental documentation efforts for this project.

In addition, a number of safety improvements at assumed station locations would also be realized as part of this project. This includes lighting, sidewalks, security cameras and traffic signals, if warranted.

### **3.3.1.4 Conclusions**

The Preferred Alternative would require some coordination with freight rail operators within the corridor. A number of logistical issues would need to be addressed, particularly in the urban areas of Cleveland, Columbus, and Cincinnati. However, passenger rail planning efforts have been in various stages of development over the last 30 years. Those issues are well-defined and there has been coordination between government officials on the state and local levels and freight operators in Ohio. Existing transit operators have indicated they would be willing to work on connections to use their existing and future network lines.

The No-Build Alternative would not directly impact freight rail operations, however the possible mutual benefits of the capacity improvements required by the Build Alternative would not be realized.

The No-Build Alternative would not directly impact existing passenger (Amtrak) and commuter rail (GCRTA) operations, however the possible future mutual benefits of the capacity improvements required by the Build Alternative would not be realized.

No-Build Alternative would result in some impact the interstate corridors in the 3C Corridor. Over time, vehicular congestion would increase on the roads and highways between Cleveland and Cincinnati. An alternate form of transportation, intercity passenger rail, would not be available to residents and visitors in Ohio's largest cities.

### **3.3.2 Land Use**

The 3C Quick Start Passenger Rail Corridor is approximately 260 miles long and connects the four largest cities in Ohio (Cleveland, Columbus, Dayton, and Cincinnati). Initial service includes stops at six locations (Cleveland, Southwest Cleveland, Columbus, Dayton, North Cincinnati, and Cincinnati), with two additional stations to be phased in at a later date (Springfield and East Dayton). Potential station locations were identified through previous studies, community input, and project team analysis.

Existing land uses within the corridor and surrounding the station locations were identified through review of available aerial photography and field reviews. .

#### **3.3.2.1 Existing Socioeconomic Conditions**

The existing 3C Corridor traverses the state of Ohio from northeast to the southwest, passing through 15 counties and numerous communities as noted below:

- Cuyahoga County: Cleveland, Berea
- Lorain County: Olmstead Falls, Eaton, Grafton, LaGrange, Wellington, Rochester
- Huron County: New London, Greenwich
- Richland County: Shiloh, Shelby
- Crawford County: Crestline, Galion
- Morrow County: Cardington
- Delaware County: Ashley
- Franklin County: Worthington, Columbus
- Madison County: West Jefferson, London
- Clark County: Plattsburg, Springfield, Green Meadows, Holiday Valley
- Greene County: Fairborn
- Montgomery County: Riverside, Dayton, Moraine, West Carrollton, Miamisburg
- Warren County: Chautauqua, Carlisle
- Butler County: Middletown, West Chester
- Hamilton County: Sharonville, Evendale, Reading, Cincinnati

Land development patterns along the approximately 260-mile existing rail corridor vary from urban, suburban, exurban, and rural development. The land use mix in rural and suburban areas tends to be consistent; the land use mix for urban station areas varies from location to location.

As noted above, eight station locations are under consideration for the Quick Start project (Cleveland, Southwest Cleveland, Columbus, East Dayton, Dayton, Springfield, North Cincinnati, and Cincinnati). The land use characteristics of the proposed station sites are described below. With the exception of the Riverside Site in East Dayton, stations would be situated in locations with high development densities.

#### **Lakefront Amtrak Station, Cleveland**

The existing Lakefront Amtrak Station is located between the dense urban mixed-use area of downtown Cleveland and Lake Erie. Downtown Cleveland is home to several regional and national headquarters, including Eaton and BP. The Lakefront Area is

home to several venues including the Cleveland Browns Stadium (National Football League), the Cleveland Science Center, the Rock and Roll Hall of Fame and Museum and Voinovich Park. The proposed station site is now used by AMTRAK for the Lake Shore Limited and Capitol Limited routes. The Lakefront Amtrak station is shown in Figure 3-2 through Figure 3-4. A large surface parking area currently serves the AMTRAK station and the Greater Cleveland Rapid Transit Authority Waterfront Light Rail Line. US Route 6 is to the north as is Burke Lakefront Airport. To the south of the station site are office buildings and employee surface parking lots.

**Figure 3-4 Aerial of Lakefront Amtrak Station, Cleveland**



**Figure 3-5 Facing East from the Lakefront  
Amtrak Station**



**Figure 3-6 Facing Lakefront Amtrak Station  
from Tracks**





**West 150<sup>th</sup> Street/Puritas Avenue/GCRTA, Cleveland.**

The West 150<sup>th</sup> Street/Puritas Ave/GCRTA Site is located near the intersection of West 150<sup>th</sup> Street and West 154<sup>th</sup> Street. Like the Lakefront AMTRAK Station site, the parcel is currently used as a rail station supporting GCRTA's Red Line light rail transit route. The site includes a large surface parking area as shown in Figure 3-5 to Figure 3-7. Adjacent land uses include industrial and office uses with access to I-71 to the south. The site is bordered by railroad tracks and the RTA line to the northwest side, beyond which is a residential subdevelopment. The I-71 corridor runs along the southern border of the property. Immediately southeast of the parking area is a hotel and to the north, land uses include a mix of commercial, office space, and industrial uses.

**Figure 3-7 Aerial of West 150<sup>th</sup> Street/Puritas Avenue/GCRTA, Cleveland**



**Figure 3-8 Facing East from West 150<sup>th</sup>  
Street/Puritas Avenue/GCRTA**



**Figure 3-9 Facing Southwest from  
Neighborhood West of Station**





### **Convention Center Site, Columbus**

The Columbus Convention Center station site is the site of the former Columbus Union Station. The Convention Center, which was originally constructed in the 1980s, was originally designed to accommodate high speed rail. However, subsequent expansions of the building did not allow for these plans and renovations would now be required for construction of a rail station. As shown in Figure 3-8 to Figure 3-10, the proposed station location is situated within an urbanized area with connections to I-670, US 23, Ohio Central Way, High Street and Nationwide Boulevard. The station itself would be located between the convention center to the northwest and a hotel and a large surface parking lot to the southeast. While there are no residential uses in close proximity to the proposed station site, the location is within walking distance of the Arena District and the Short North Entertainment District.

**Figure 3-10 Aerial of Convention Center Site, Columbus**



**Figure 3-11 Facing Southwest from the  
North Side of the Tracks**



**Figure 3-12 Facing East from High Street**





**Downtown Station Site, Springfield**

This proposed station location is situated in Downtown Springfield adjacent to the Washington Street corridor. As shown in Figure 3-11 through Figure 3-13, the site is predominantly vacant with remnants of former structures present. One two-story building and a surface parking area are present on the site. The building and the parking area would not be affected by the project. The site is bordered by the rail line to the south, beyond which are industrial uses. To the west lies SR 72 with office buildings and surface parking lots. To the north are warehouses and a church. There is land to the east of the site which contains remnants of former rail facilities.

**Figure 3-13 Aerial of Downtown Station Site, Springfield**



**Figure 3-14 Facing West, Downtown Station Site, Springfield**



**Figure 3-15 Facing North Residential Areas, Downtown Station Site, Springfield**





### **Riverside Site, East Dayton**

A station is proposed in East Dayton to serve nearby major destinations such as the US Air Force Museum, Wright Patterson Air Force Base (AFB), and Wright State University. The site is predominantly vacant land as shown in Figure 3-14 through Figure 3-16. The site includes some wooded areas as well as pavement. To the north are industrial facilities and to the east of the site is a residential area. An area immediately adjacent to site on the west has been subdivided but not yet developed. A hotel is located to the south beyond which is Wright Patterson Air Force Base. Vacant land is located to the west along the opposite side of Harshman Road.

**Figure 3-16 Aerial of Riverside Site, East Dayton**



**Figure 3-17 Facing West Along Existing  
Railroad**



**Figure 3-18 Facing Southeast Towards  
Parking Lot, Residential Areas, and Wright-  
Patterson Air Force Base**

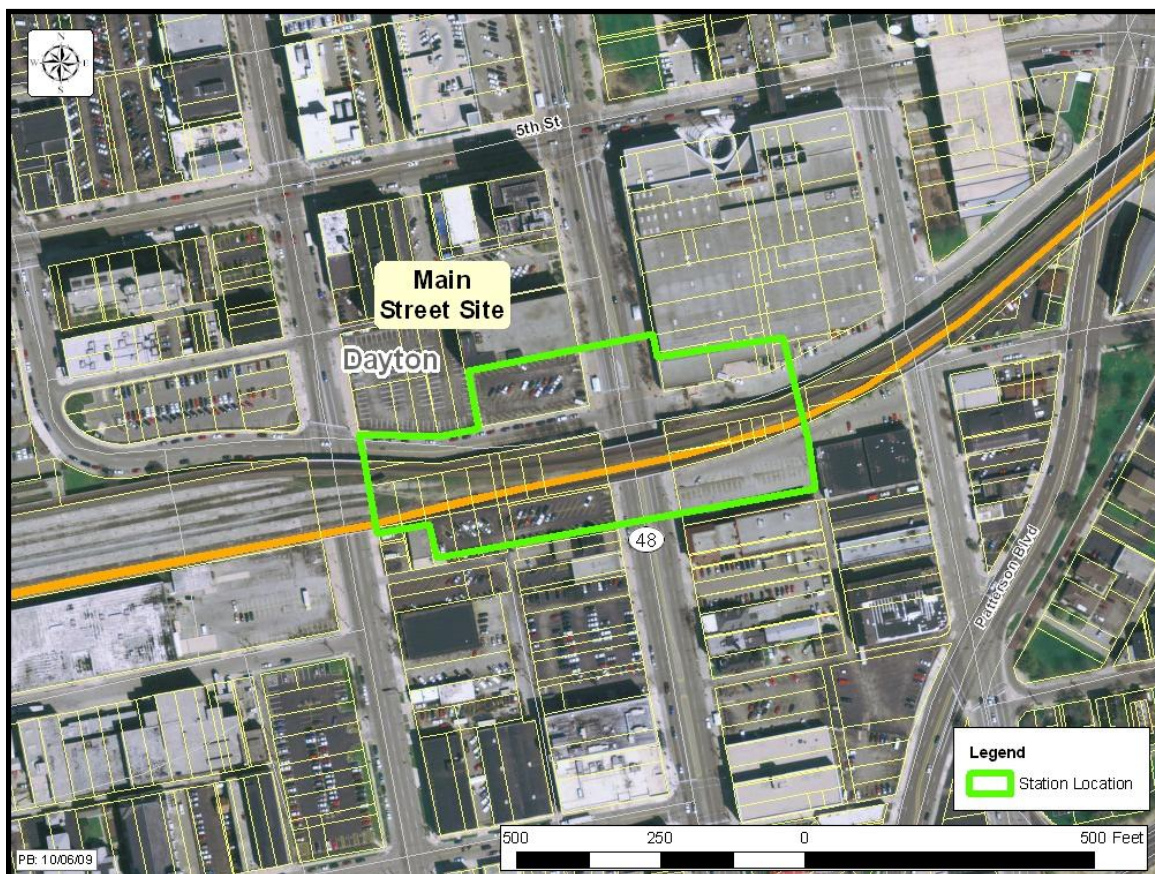




**Main Street Site, Dayton**

A station is also proposed for Downtown Dayton along Main Street in the vicinity of the proposed Dayton Convention Center see Figure 3-17 through Figure 3-19. The Main Street site is currently the student parking lot for Sinclair Community College. Surrounding land uses include institutional (Sinclair Community College) to the north, office and surface parking to the east, industrial uses to the south, and parking areas and industrial uses to the west.

**Figure 3-19 Aerial of Main Street Site, Dayton**



**Figure 3-20 Facing North; Sinclair  
Community College; Residences**



**Figure 3-21 Facing South; Existing Elevated  
Railroad**





**Kemper Road Site, North Cincinnati**

The Kemper Road station site is located in Sharonville, near the intersection of Kemper Road and Reading Road. The site is currently used for surface parking. As shown in Figure 3-20 to Figure 3-22, the proposed station would be located in an industrial and office park. The site is adjacent to large commercial and industrial buildings to the south, north, and east, and mixed commercial and industrial uses between the rail corridor and Reading Road to the west.

**Figure 3-22 Aerial of Kemper Road Site, North Cincinnati**



**Figure 3-23 Facing South; Surface Parking  
for Rental Business**



**Figure 3-24 Facing East, Open Space**

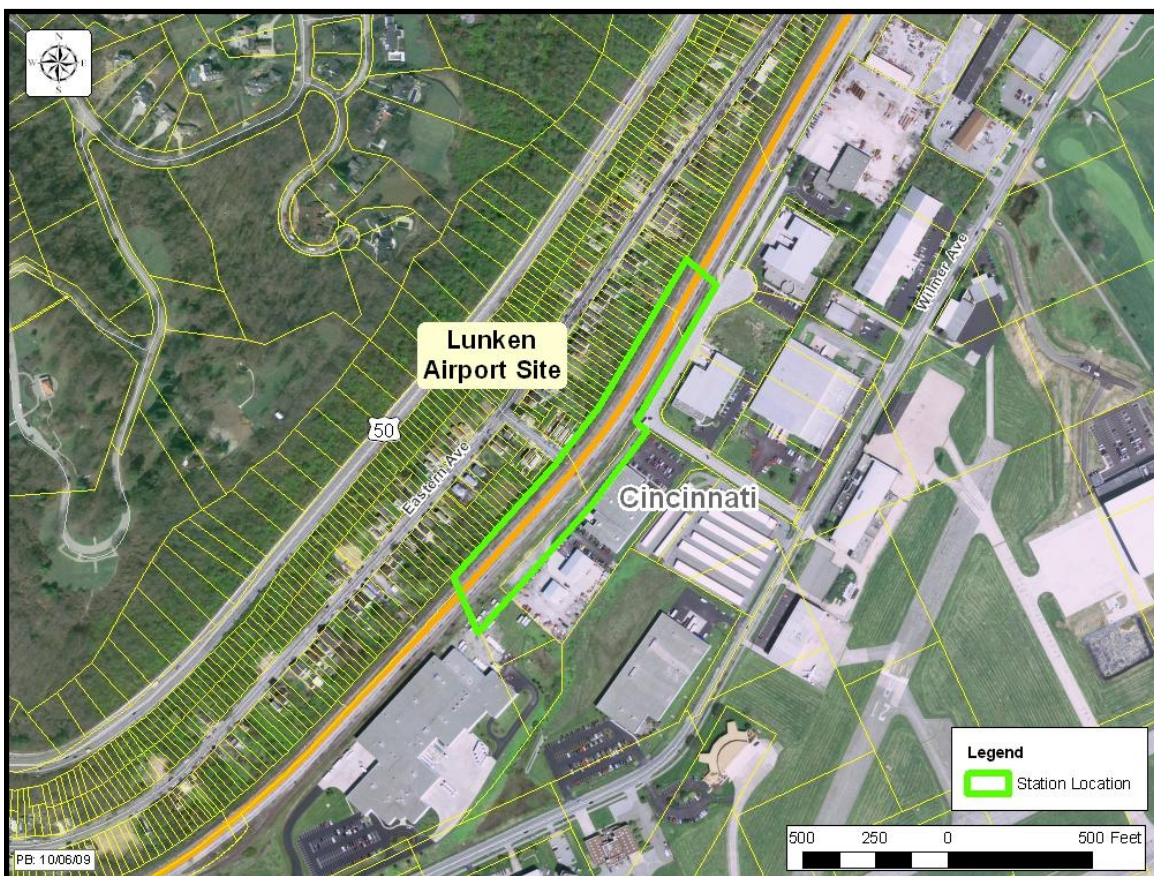




**Lunken Airport Site, Cincinnati**

The proposed Lunken Airport site is located along Lunken Park Drive, roughly 1,000 feet west of the Cincinnati-Lunken Municipal Airport. Adjacent land uses include mixed residential and commercial development to the northwest of the rail corridor; industrial facilities to the northeast and east; and industrial and office space to the southeast as shown in Figure 3-23 and Figure 3-24.

**Figure 3-25 Aerial of Lunken Airport Site, Cincinnati**



**Figure 3-26 Facing Southwest Along Existing  
Railroad and Industrial Uses**



### **3.3.2.2 Potential Impacts**

The proposed 3C Quick Start Project would provide rail service within existing rail corridors. It is anticipated that property to be acquired for improvements needed to support 3C rail service will be limited to minor strip takes in areas recommended for capacity improvements. Proposed stations would be located on sites that are now used as transportation facilities or are currently vacant, with the exception of the Convention Center Site in Columbus. The convention center was originally designed to accommodate high speed rail and construction of a station at this location would achieve local economic development goals. Current land uses immediately adjacent to the proposed station locations include industrial and/or transportation-related facilities. The provision of rail service and development of stations in such areas would be compatible with or in support of current land uses.

The No-Build Alternative would have no effect on the existing rail corridor or the surrounding land uses.

### **3.3.2.3 Conclusions**

The proposed action would result in very minor changes in existing land uses patterns, at station locations. The effect would be minimal because stations would be located within existing railroad right-of-way. Finally, as the proposed project would utilize existing active railroad lines along the entire 260-mile corridor, the project would not result in changes in land use, such as those that would occur with the construction of a new intrastate highway transportation facility.

### **3.3.3 Environmental Justice**

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (EO 1994), directs federal agencies to "promote nondiscrimination in federal programs substantially affecting human health and the environment, and provide minority and low-income communities access to public information on, and an opportunity for public participation in matters relating to human health or the environment." The EO directs agencies to use existing laws to ensure that when they act:

- They do not discriminate on the basis of race, color, or national origin;
- They identify and address disproportionately high and adverse human health or environmental effects of their actions on minority and low-income communities; and
- They provide opportunities for community input during the National Environmental Policy Act (NEPA) process, including input on potential effects and mitigation measures.

Executive Order 12898 does not define the terms "minority" or "low-income." However, guidance provided by the Council on Environmental Quality (CEQ) describes these terms in the context of an environmental justice (EJ) analysis. These definitions are unique to EJ analysis and are the basis for the methodology that follows:

- Minority Individual - A Minority individual is classified by the US Census Bureau as belonging to one of the following groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black (not of Hispanic Origin), and Hispanic.

- Minority Populations - According to the CEQ Guidelines, minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.
- Low-income Population - Low-income populations are identified where individuals have incomes below the US Department of Health and Human Services poverty guidelines. A low-income population is either a group of low-income individuals living in proximity to one another or a set of individuals who share common conditions of environmental exposure or effect.

### **3.3.3.1 Existing Conditions**

The approximately 260-mile 3C Quick Start rail corridor passes through 15 counties and numerous communities as noted below:

- Cuyahoga County: Cleveland, Berea
- Lorain County: Olmstead Falls, Eaton, Grafton, LaGrange, Wellington, Rochester
- Huron County: New London, Greenwich
- Richland County: Shiloh, Shelby
- Crawford County: Crestline, Galion
- Morrow County: Cardington
- Delaware County: Ashley
- Franklin County: Worthington, Columbus
- Madison County: West Jefferson, London
- Clark County: Plattsburg, Springfield, Green Meadows, Holiday Valley
- Greene County: Fairborn
- Montgomery County: Riverside, Dayton, Moraine, West Carrollton, Miamisburg
- Warren County: Chautauqua, Carlisle
- Butler County: Middletown, West Chester
- Hamilton County: Sharonville, Evendale, Reading, Cincinnati

The combined total population (2008 estimate) of all counties through which the 3C Passenger Rail Corridor passes is 5.4 million persons, roughly 48 percent of the total population of the State of Ohio. The percentage of minorities residing within each county averages 13.5 percent. Across the project area counties, this varies substantially from 3.2 percent (Morrow County) to 37.7 percent (Cuyahoga County). Consistent with national statistics, the counties with higher percentages of minority populations are those associated with large metropolitan areas, i.e., Cuyahoga (Cleveland), Franklin (Columbus), Montgomery (Dayton), and Hamilton (Cincinnati).

The percentage of people living below poverty within the state of Ohio is 13.1 percent. The percentage of people living below poverty within which the 3C Passenger Rail Corridor counties average 11.0 percent of the total population. Within the individual counties, the percentage ranges from 4.5 percent (Delaware County) to 16.2 percent (Franklin County). Several counties exceed the average in the project area counties:

Cuyahoga (15.7), Richland (11.9 percent), Crawford (12.8 percent), Franklin (16.2 percent), Clark (15.5 percent), Montgomery (14.8 percent), and Hamilton (13.0 percent).

A review of census data (block level data) for the immediate area surrounding the 3C rail corridor shows that the corridor passes through areas where the percentage of minority population and/or the percentage of persons living below the poverty level exceed the state and corridor averages.

In addition to review of census data and identification of communities and neighborhoods with EJ concerns, an extensive public outreach program has been implemented by ODOT and ORDC for this project. One function of the public outreach program is to provide a forum for collecting input on the project from all applicable state and federal agencies, railroads, local governments, transit agencies, local/regional/statewide interest groups, and the general public. Efforts were made to actively engage all potentially affected stakeholders regardless of income, race, ethnicity, religion, sex, age, or disability in the project development process. Additionally, ODOT has ongoing discussions and coordination with individual communities in terms of their land use and development plans and will continue to work with them throughout project development and implementation. Section 4 discusses the public involvement and agency coordination efforts undertaken to date.

### 3.3.3.2 Potential Impacts

Given that the proposed undertaking is situated, for the most part, within an active railroad corridor, the impact on adjacent communities would be minimal and limited to areas where stations, yards, and sidings are proposed. For the proposed action, stations are proposed only within the urbanized areas, i.e., Cleveland, Southwest Cleveland, Columbus, Springfield (phased), East Dayton (phased), Dayton, North Cincinnati, and Cincinnati. These are described in Sections 2.5 and 3.3.2 of this EA and summarized in Table 3-8.

**Table 3-13 Preferred Alternative Station Summary of EJ Screening**

| Service Location    | Station Location  | Category                     | Status                    | Results of EJ Screening   |
|---------------------|---|------------------------------|---------------------------|---|
| CLEVELAND           | 1- Lakefront Amtrak Station                                 | Initial Proposed Quick Start | <i>Preferred Location</i> | Poverty and minority community exceeding county levels between Davenport. Avenue and Lakeside Avenue.<br>Uses existing AMTRAK Station with on-site parking. |
| SOUTHWEST CLEVELAND | 2- West 150 <sup>th</sup> Street/Puritas Avenue/GCRT A Site | Initial Proposed Quick Start | <i>Preferred Location</i> | No populations of concern in immediate vicinity of station.<br>Uses existing RTA station with on-site parking   |
| COLUMBUS            | 15- Convention Center Site                                  | Initial Proposed Quick Start | <i>Preferred Location</i> | Poverty exceeds county levels for area surrounding station site.<br>Site is within the Columbus Convention Center.  |
| SPRINGFIELD         | 17- Downtown Station Site                                   | Phased Proposed Quick Start  | <i>Phased (Future)</i>    | Poverty and minority community exceeding county levels areas adjacent to site.<br>Poverty exceeds county levels for   |

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| Service Location | Station Location       | Category                     | Status                    | Results of EJ Screening   |
|------------------|------------------------|------------------------------|---------------------------|---|
|                  |                        |                              |                           | areas beyond the immediate station area.<br>Site is situated on predominantly undeveloped land.   |
| EAST DAYTON      | 18-Riverside Site      | Phased Proposed Quick Start  | <i>Phased (Future)</i>    | Poverty exceeds county levels for area surrounding station site.<br>Site is located on undeveloped land.  |
| DAYTON           | 21- Main Street Site   | Initial Proposed Quick Start | <i>Preferred Location</i> | Poverty and minority community exceeding county levels areas adjacent to site.<br>Surrounding area is developed for commercial/industrial uses.   |
| NORTH CINCINNATI | 26- Kemper Road Site   | Initial Proposed Quick Start | <i>Preferred Location</i> | Minority community exceeding county levels for one city block located across rail line and extending to Reading Road.<br>Site is located on partially undeveloped land; development is limited to surface parking lots.   |
| CINCINNATI       | 28-Lunken Airport Site | Initial Proposed Quick Start | <i>Preferred Location</i> | Poverty exceeds county levels for area surrounding station site.<br>Site and rail line are adjacent to EJ neighborhood. To the northwest.<br>Cincinnati Municipal Airport is located directly southeast of rail corridor. |

One rail station location is in close proximity to a neighborhood with poverty levels that exceed county and corridor thresholds and that is the Lunken Airport Site in Cincinnati. The proposed action would increase rail service in the corridor and add six service trains a day, each consisting of one locomotive, one non-powered control unit, and six cars. Today, the adjacent rail line carries less than one train per day.

The proposed action is not anticipated to result in disproportionate impacts on minority or low-income populations in the study area. The proposed action does not require the acquisition of land or displacement of residences, businesses, or community facilities. Similarly, the project would not result in changes in air quality levels, substantial increases in ambient noise levels, or changes in access to neighborhoods, residential properties, commercial districts and community facilities. The proposed action would be wholly contained within existing railroad rights-of-way. Stations would be constructed at currently undeveloped locations or those that are currently used as transportation facilities with the exception of the proposed station at the Columbus Convention Center.

Disproportionate adverse impacts on minority or low income populations would not occur with the No-Build Alternative. However, Preferred Alternative would provide opportunities for increased public transportation choices of value to low-income residents not otherwise able to afford reliable personal transportation.

### **3.3.3.3 Conclusions**

Many station locations are situated within areas where the percentages of people living below the poverty levels and percentage of minorities comprising the population exceed the county-wide levels. However, the project would not result in residential, business, or community facility displacements or impacts. The project would not result in degradation of air quality, substantial changes in ambient noise levels, or changes in access to neighborhoods, businesses, or community facilities and services.

The placement of stations in communities with EJ concerns could be beneficial to the affected communities and the low-income and minority populations residing within these communities. Several primary benefit include improved regional access to major metropolitan areas within the state of Ohio and the provision of an alternative form of transportation to highway or air travel. A key benefit of the 3C Quick Start Passenger Rail project is the employment opportunities created within the affected communities. Jobs would include those related to construction of the project as well as service-related jobs required to support 3C passenger rail service. Jobs would also be created through spin-off development in the areas surrounding the rail stations.

### **3.3.4 Public Health and Safety**

#### **3.3.4.1 Existing Conditions**

The 3C Corridor consists of operating passenger rail service over approximately 260 miles of existing freight rail lines between Cleveland and Cincinnati. The route crosses numerous two- to four-lane state and local roads. These crossings have various forms of control, from actively protected grade crossing predictor technology with gates and flashing light signals to passively protected lights- and bells-only crossing signals. The ORDC and freight railroad companies are working to upgrade and or grade-separate these crossings as funds become available to prevent collisions. The No-Build Alternative would not impact public health and safety.

#### **3.3.4.2 Potential Impacts**

The Preferred Alternative would not have an appreciable negative impact on public health and safety by adding approximately four round trips on an existing, active rail line. Near downtown Cincinnati, freight traffic is more infrequent than on the remainder of the corridor.

#### **3.3.4.3 Station Safety**

Stations located along rail lines used for freight need to take precaution to protect the safety of the passenger waiting for their train. Standard safety precautions such as textured warning strips along platform edges, security cameras, public address system designed to articulate announcements in a noisy environment, properly designed lighting and adequate platform depth to allow passengers to stand away from active tracks will all be considered. Attention will be given to avoiding dark shadows or isolated and hidden areas in or around the station site. In some stations where freight trains operate next to the boarding platform, consideration will be given to keeping the platform closed to the public until the passenger train approaches.



#### **3.3.4.4 Conclusions**

All measures will be taken during the engineering design phases to meet or exceed all rail operation safety standards in this area as well as the remainder of the corridor. By diverting traffic from the interstate system and local roads between Ohio's major cities, the Preferred Alternative is anticipated to help reduce the rate of congestion growth and improve safety on the roads and highway. Additional grade separations and railroad crossing upgrades would further minimize the potential for collisions.

#### **3.3.5 Hazardous Materials**

A screening level hazardous material survey was completed for the existing and potential station areas within the project area. Hazardous material conditions within the project area were surveyed using a limited approach of the guidance found in the American Society of Testing and Materials International (ASTM) guidance *ASTM E-1527-05*. Survey activities for hazardous material conditions included: visual survey of existing conditions; review of government environmental databases; review of historic aerial photos; and review of Sanborn™ fire insurance maps. Information provided in this section is intended as screening level information, and recommendations made for further study include the completion of full Phase I Environmental Site Assessments (ESA) in compliance with ASTM E-1527-05. Refer to Appendix G for additional information on hazardous materials.

##### **3.3.5.1 Existing Conditions**

The following Preferred Alternative station sites were surveyed for obvious or suspect hazardous materials conditions.

##### **(1) Lakefront Amtrak Station, Cleveland**

This site is an operating Amtrak station platform located just north of downtown Cleveland. The project proposes only to increase passenger rail service at this facility and no other physical changes. Because of this, hazardous material conditions are not a concern at this site.

##### **(2) West 150<sup>th</sup> Street/Puritas Avenue/GCRTA Site, Southwest Cleveland**

This site is an operating GCRTA passenger rail station platform located approximately 2.25 miles northeast of downtown Cleveland. The project proposes only to increase passenger rail service at this facility and no other physical changes. Because of this, hazardous material conditions are not a concern at this site.

##### **(15) Convention Center Site, Columbus**

This site is currently a railroad facility containing up to four tracks running through a large urban trench through downtown Columbus. This site would be developed with some form of passenger serving structure. The items of potential environmental concern observed for this site include those found in the government database report, historic aerial photos and Sanborn™ fire insurance maps that were reviewed because of the need to build upon the site. These resources indicated; the site was formerly a large rail yard from at least 1938 to 1971,<sup>3</sup> and there are 61 locations with hazardous material

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<sup>3</sup> Railroad yards often include large fuel tanks, heavy duty mechanical repair and material transfer operations, thereby increasing potential for site contamination from accidental releases or leaks.



concerns within one mile of the site that may have potential to affect the site.<sup>4</sup> These locations are shown in Appenix G.

**(17) Downtown Station Site, Springfield (*phased*)**

This site is a large lot that has been cleared of other uses at least within the last five years, as evidenced by broken concrete from former foundations and portions of former sidewalks. The railroad track that would be part of the 3C corridor runs along this site's southern extent and one two story building is located at the site's western side with its parking area at the site's far western extent. This site would be developed with some form of passenger serving structure. The items of potential environmental concern observed for this site include those found in the government database report, historic aerial photos and fire insurance maps that were reviewed because of the need to build upon the site. These resources indicated: the site was a rail yard from at least 1910 to 1971; factory uses existed to the immediate south of the site from at least 1950 to 1971; and there are 117 locations with hazardous material concerns within one mile of the site that may have potential to affect the site. These locations are shown in Appenix G.

**(18) Riverside Site, East Dayton (*phased*)**

This site is a large partially wooded lot that flanks the existing railroad tracks that would be used as part of the 3C corridor. Its area north of the tracks is nearly entirely wooded. The area south of the tracks is partially wooded and includes a large asphalt parking lot. This site would be developed with some form of passenger serving structure. The site appeared to be free of items of potential environmental concern. However, it is located approximately 1,700 feet west of the nearest structure on Wright-Patterson Air Force Base, which, although not investigated as part of this project, could have hazardous material concerns of its own based on the environmental track records of military bases around the country. Depending on groundwater flow direction, potential contaminants can move offsite from military bases onto nearby properties.

**(21) Main Street Site, Dayton**

This site currently contains a large parking lot on its north side with two active railroad tracks (one that would be used as part of the 3C corridor) and three areas of former track on its south side. Although the site was observed to be free of on-site environmental concerns, adjacent concerns include an electrical transformer station to the southwest. This site would be developed with some form of passenger serving structure. Because of this, environmental database reports, historic aerial photos and fire insurance maps were reviewed. These resources indicate; a large pile of coal was stored on-site from at least 1918 to 1962; the site's former use was a large rail yard; the aforementioned southwest adjacent electrical transformer station dating back as early as 1962, with earlier bulk oil storage at the same location dating back to at least 1950; a west adjacent gasoline station between 1950 and there are 82 locations with hazardous material concerns within one mile of the site that may have potential to affect the site.<sup>5</sup> These locations are shown in Appenix G.

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<sup>4</sup> It is important to note that although a number of off site locations may be shown in the environmental database report, some or all may not represent environmental concerns, because of distance, groundwater flow direction away or past the site, or closure status.

<sup>5</sup> Long-term coal storage operations (and associated coal ash disposal/storage) often contaminates the underlying ground by leaching of elements from the coal. Such contaminants may include trace metals, polyaromatic hydrocarbons and semi-volatiles

**(26) Kemper Road Site, North Cincinnati**

This site is currently an “L” shaped parcel that contains a vacant maintained grass area in its eastern portion, a redeveloped brick building in its middle portion and gravel and paved parking lots in its western portion. No indications of on-site environmental concern were observed. However, west adjacent land uses of environmental concern observed included automotive repair shops and other industrial facilities. Because the site would be developed, environmental database reports, historic aerial photos and fire insurance maps were reviewed. The items of potential environmental concern found in these resources include: a medium sized above ground storage tank (AST) on the site’s western extent as observed in the 1956 and 1962 aerial photos; a former industrial building in the current grass area, and 41 locations with hazardous material concerns within one mile of the site that may have potential to affect the site. These locations are shown in Appendix G.

**(28) Lunken Airport Site, Cincinnati**

This site is mostly railroad right-of-way with a portion of the eastern side being an access road to businesses. No indications of on-site environmental concern were observed. However, east adjacent land uses of environmental concern include industrial facilities. Because the site would be developed, environmental database reports, historic aerial photos and fire insurance maps were reviewed. The items of potential environmental concern found in these resources include: The site’s former use as a large rail yard from at least 1922 to 1977; two large ASTs within 500 feet to the south-southeast of this site from at least 1962 to 1994; and 16 locations with hazardous material concerns within one mile of the site that may have potential to affect the site. These locations are shown in Appendix G.

**3.3.5.2 Potential Impacts**

**(1) Lakefront Amtrak Station, Cleveland**

No hazardous material impacts would occur with this site because no physical changes are proposed for it with the project.

**(2) West 150<sup>th</sup> Street/Puritas Avenue/GCRTA Site, Southwest Cleveland**

No hazardous material impacts would occur with this site because no physical changes are proposed for it with the project.

**(15) Convention Center Site, Columbus**

Based on the number of environmental database listed sites within one mile of the site and the site’s former use as a large railroad yard, a full Phase I ESA will need to be completed for this site. The Phase I ESA will be completed prior to any construction.

**(17) Downtown Station Site, Springfield (*phased*)**

Based on the number of environmental databases listed sites within one mile of the site and the site’s former use as a large railroad yard, a full Phase I ESA will need to be completed for this site. The Phase I ESA will be completed prior to any construction.

**(18) Riverside Site, East Dayton (*phased*)**

Although this site appears free of on site items of environmental concern, an environmental database report will need to be reviewed to indicate the likelihood of any potential contaminants from the Air Force base reaching the site. The database review will be completed prior to any construction.

**(21) Main Street Site, Dayton**

Based on the on-site coal storage and the number of adjacent and surrounding locations of potential hazardous material concern, a full Phase I ESA will need to be completed for this site. The Phase I ESA will be completed prior to any construction.

**(26) Kemper Road Site, North Cincinnati**

Based on this site's former use as an industrial facility, former presence of ASTs with unknown contents and number of locations of potential environmental concern in the surrounding area, a full Phase I ESA will need to be completed for this site. The Phase I ESA will be completed prior any construction

**(28) Lunken Airport Site, Cincinnati**

Based on this site's former use as a large railroad yard, former presences of two large ASTs nearby for over 32 years, and the fact that it is located near some locations of environmental concern, a database report will need to be reviewed to indicate listed hazardous material concerns nearby. The database review will be completed prior any construction.

**3.3.5.3 Conclusions**

The Preferred Alternative adds passenger rail service with no physical changes at existing railroad stations (Lakefront Amtrak Station in Cleveland and West 150<sup>th</sup> Street/Puritas Avenue/GCRTA Site in Southwest Cleveland), and will add passenger rail service and passenger serving structures at sites that have no existing station. At existing stations, the project has no potential for hazardous material impacts because no physical changes are proposed to the existing facilities. At the sites where passenger serving structures are proposed, Phase I ESAs will be completed prior any construction. The No-Build would not impact known contaminated sites or hazardous waste.

**3.3.6 Cultural Resources**

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, requires that federal actions be reviewed for their impact to significant historic resources; the term "historic" includes architectural and archaeological resources. A significant historic resource is one that is either listed or determined eligible for listing on the National Register of Historic Places (NRHP).

Several factors were taken into consideration to determine the scope of the Section 106 identification efforts: the magnitude and scale of the undertaking; previous disturbance associated with the existing transportation right-of-way; and current design standards for conventional, low-speed, passenger rail service. Based on these factors, the area of potential effects (APE), as defined in 36 CFR § 800.16(d), is limited to the project footprint, which includes existing rail line; station locations; maintenance, service, inspection, and layover facilities; and proposed capacity addition areas. Previously documented cultural resources were identified utilizing the Ohio State Historic Preservation Office (OSHPO) on-line database in combination with field investigations.

**3.3.6.1 Existing Conditions, Historic Resources**

Section 106 identification efforts resulted in significant historic resources being identified adjacent to the APE of two of the eight initial passenger depot stations (Table 3-14). The Harshman Weiffenbach House (MOT-239-10), determined eligible for inclusion on the

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NRHP, is located adjacent to the APE of the East Dayton, Riverside site. The Cleveland Mall, listed on the NRHP, is located adjacent to the Lakefront Amtrak Station, in Cleveland. No other previously identified significant historic resources were identified within the APE of the initial depot locations.

**Table 3-14 NRHP Properties Identified for Passenger Rail Station Sites**

| <b>Location</b>         | <b>Passenger Rail Station Sites</b>            | <b>NRHP Properties Identified</b>                 |
|-------------------------|--|---|
| Cleveland               | (1) Lakefront Amtrak Station                   | Adjacent to APE:<br>Cleveland Mall                |
| Southwest<br>Cleveland  | (2) West 150 Street/Puritas Ave./GCRTA<br>Site | None  |
| Columbus                | (15) Convention Center Site                    | None  |
| Springfield<br>(phased) | (17) Downtown Station Site                     | None  |
| East Dayton<br>(phased) | (18) Riverside Site                            | Adjacent to APE:<br>Harshman Weiffenbach<br>House |
| Dayton                  | (21) Main Street Site                          | None  |
| North Cincinnati        | (26) Kemper Road Site                          | None  |
| Cincinnati              | (28) Lunken Airport Site                       | None  |

Six proposed maintenance, service, inspection, and layover facilities will be in close proximity to depot sites. No significant historic resources were identified within the APE of the six proposed maintenance, service, inspection, and layover facilities sites.

Significant historic resources were identified adjacent to two of the ten capacity improvement sites: Weber Road site in Columbus and Wright/Moraine Yard site in Dayton (Table 3-15). The Glen Echo Historic District is located adjacent to the Weber Road crossover connection improvement site. The Wright/Moraine Yard siding rehabilitation site features the following significant historic resources adjacent to the APE: Dayton Power and Light Building Group; Dayton Motor Car Company Historic District; Oregon Historic District; Independent Order of Oddfellows; the Dayton Terra-Cotta Historic District.

**Table 3-15 NRHP Properties Identified for 3C Proposed Capacity Addition Sites**

| <b>Location</b>           | <b>Work Description</b>               | <b>NRHP Properties Identified</b>                    |
|---------------------------|---------------------------------------|--|
| Boyd-Greenwich Connection | Line rehabilitation<br>and new siding | None   |
| Edison Siding             | Siding rehabilitation                 | None   |
| Paget Siding              | New siding                            | None   |
| Powell Siding             | New siding                            | None   |
| Weber Road                | Crossover<br>connection               | Adjacent to APE:<br>Glen Echo Historic District (HD) |

| <b>Location</b>                         | <b>Work Description</b> | <b>NRHP Properties Identified</b>   |
|---|-------------------------|---|
| Columbus Station Tracks                 | New rail line           | None  |
| Plattsburg/Brook 2 <sup>nd</sup> Track  | New siding              | None  |
| Enon/Cold Springs 2 <sup>nd</sup> Track | New siding              | None  |
| Wright/Moraine Yard                     | Siding Rehabilitation   | Adjacent to APE:<br>Dayton Power & Light Bldg Group<br>Dayton Motor Car Co. HD<br>Oregon HD<br>Independent Order of Oddfellows<br>Dayton Terra-Cotta HD |
| Sharonville Yard                        | Track Upgrade           | None  |

### **3.3.6.2 Archaeological Resources**

Archaeological investigations conducted within the 3C Corridor demonstrated that no known or previously recorded archeological resources or NRHP listed or eligible archaeological resources will be impacted. These investigations have demonstrated that agricultural activities or high levels of urban development have disturbed the 3C Corridor. All lowland and lake front areas crossed by the rail corridor have also been disturbed by previous episodes of railway construction and mixed urban development.

### **3.3.6.3 Potential Impacts**

As a result of identification and evaluation and in accordance with 36 CFR Part 800.4(d)(1), it was concluded that no significant historic resources would be affected by the undertaking. No land from within the NR boundaries of the significant historic resources identified as the Harshman Weiffenbach House (MOT-239-10), the Cleveland Mall, Glen Echo Historic District, Dayton Power and Light Building Group, Dayton Motor Car Company Historic District, Oregon Historic District, Independent Order of Oddfellows, and the Dayton Terra-Cotta Historic District will be incorporated into the proposed improvements. No contributing features or components will be altered or removed by the proposed improvements at these locations.

None of the resources located adjacent to the APEs of the six stations would be altered by the construction of the proposed temporary depots. No land within the NRHP boundaries would be incorporated into the proposed facilities and no new facilities would be incorporated into the historic boundaries.

Impacts to significant archeological resources are unlikely because of widespread disturbance and the negative affect modern land use has had on the landscape. Proposed rail elements including stations, sidings, and maintenance facilities will be constructed in areas previously disturbed by modern development. At these locations, no further archaeological investigations are recommended. However, further archaeological investigations are recommended if new right-of-way is needed for capacity additions in more rural upland areas including: Greenwich/Boyd Connection; and/or the Edison, Paget, Powell, or Plattsburg sidings. These siding/double track areas will be addressed further if final design plans show the need for additional right-of-way.

#### **3.3.6.4 Conclusions**

On September 9, 2009, the Ohio State Historic Preservation Office (OSHPO) concurred in accordance with the Advisory Council on Historic Preservation's current guidelines and 36 CFR Part 800.4(d)(1), a finding of "no historic properties affected" is applicable to the subject undertaking (Appendix K).

Upon receipt and review of detailed design or if the scope of the undertaking changes and has the potential to effect significant cultural resources, additional consultation will be initiated. On September 18, 2009, the Section 106 Consulting Parties were provided a copy of the OSHPO determination for review and comment (Appendix K).

The No-Build Alternative would not impact known cultural resources.

### **3.4 Section 4(f) Resources**

Section 4(f) of the Department of Transportation Act of 1966, which is now codified at 49 U.S.C. § 303 grants special protection to publicly owned parks, parklands and recreation areas, and wildlife and waterfowl refuges; and historic sites whether publicly or privately owned. For purposes of Section 4(f), historic sites are protected if they are listed on or determined eligible for inclusion on the National Register of Historic Places (NRHP). Properties protected by Section 4(f) are referred to as "Section 4(f) resources".

The Secretary of the US Department of Transportation (USDOT) may approve a transportation project or program that "uses" a Section 4(f) resource only if the Secretary makes the following findings:

- There is no feasible and prudent alternative to the use of the Section 4(f) resources; and
- The project includes all possible planning to minimize harm to the Section 4(f) resource resulting from the use [see 49 U.S.C. § 303(c)].

In general, a Section 4(f) "use" occurs with a transportation project or a program when:

- Section 4(f) land is permanently incorporated into a transportation facility;
- There is a temporary occupancy of Section 4(f) land that is adverse to the protected activities, features, or attributes that qualify the resource for protection under Section 4(f); or
- Land from a Section 4(f) resource is not incorporated into the project but the proximity effects of the project or program are so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired.

An alternative is not considered to be prudent if it does not meet the project need, or if it involves truly unusual factors; unique problems; or environmental impacts, cost or community disruption reaching an extraordinary magnitude. An alternative is not considered to be feasible if it cannot be constructed in accordance with sound engineering practices.

#### **3.4.1 Existing Conditions**

Section 4(f) resources were identified along the entire 3C Corridor through review of available GIS mapping and databases, secondary data source review and limited field verification. A list of these resources is provided in Section 7.0.

A 500-foot buffer around the 3C Corridor was used to identify recreational lands, recreational areas, public parklands, and wildlife/waterfowl refuges that could be potentially affected by the 3C Quick Start Passenger Rail project. Numerous recreational-type resources that could potentially qualify for Section 4(f) protection were identified within the study area. These resources, shown in Figure 3-2 and Figure 3-3 include public parklands, recreation areas, and recreation centers. A total of 64 public parklands, recreation areas, and recreation centers are located within 500 feet of the centerline of the railroad corridor. More detailed mapping and additional information on these resources is found in Appendix H.

The Area of Potential Effects (APE) set for identification of previously documented historic properties was established as the project footprint. The eight proposed passenger stations would be located in urban areas adjacent to existing rail lines. Significant historic resources were identified in areas adjacent to the APE for two of the eight rail stations. The Cleveland Mall, which is listed on the NRHP, is located adjacent to the Lakefront Amtrak Station. The Harshman Weiffenbach House (MOT-239-10), which is eligible for inclusion in the NRHP is located adjacent to Riverside Station Site in East Dayton.

Additionally, significant historic properties are located near the proposed footprint for two of the ten 3C capacity addition locations. In Columbus, the Weber Road crossover connection is in close proximity to the Glen Echo Historic District. The proposed Wright / Moraine Yard in Dayton is located in close proximity to the several resources including the Dayton Power and Light Building Group, Dayton Motor Car Company Historic District, Oregon Historic District, Independent Order of Oddfellows, and the Dayton Terra-Cotta Historic District.

On September 9, 2009, the Ohio State Historic Preservation Office (OSHPO) concurred with a finding of “no historic properties affected” for this project. Therefore, the potential for the 3C Quick Start Passenger Rail project will not result in a 4(f) use of significant historic properties.

### **3.4.2 Potential Impacts**

Existing rail corridors will be used for the project, which reduces the potential for Section 4(f) uses through avoidance these resources. For most of the Section 4f resources identified in the study area, sufficient distance exists to protect the resources from impact. In several cases, the rail line is separated from the sensitive resources by buildings and major roadways. Furthermore, the rail corridors proposed for the 3C project are now actively used for freight movement. In combination, these factors substantially minimize the potential for uses on the resources such as alteration of view sheds, increased noise levels from the proposed commuter rail service, and access changes that would substantially diminish or impair the functions, values, and attributes of the Section 4(f) properties.

There are locations, however, where Section 4(f) resources abut the existing railroad corridor. Additionally, the expansion of the existing rail infrastructure is proposed at specific locations along the approximately 260-mile corridor for station areas, rail yards,

and capacity additions needed to support passenger rail service. Overall, there will be no impact on Section 4(f) resources as a result of station and rail yard development or construction of additional track or sidings at select locations along the corridor.

The No-Build Alternative would not impact Section 4(f) resources.

### **3.4.3 Conclusions**

The 3C Quick Start Passenger Rail project would not require the acquisition of land from any Section 4(f) resources.

The project will have no effect on the visual environment for any of the Section 4(f) resources because the rail corridor is an existing feature in viewsheds.

The project may have a very minor effect on access through temporary delays at rail crossings when a train passes through. For the 3C project, it is proposed that the trains will consist of two locomotives and six rail cars with six trips per day between Cleveland and Cincinnati. Logically, 3C service will cause minimal delay at the at-grade crossings throughout the corridor.

Noise impacts on Section 4(f) resources are not anticipated because the rail line is active. The number of trains per day varies greatly between the major cities within the 3C corridor, and is significantly more frequent between Galion and Cleveland (69 to 78 trains per day) as compared to the section between Cincinnati and Galion (12 to 25 trains per day). Existing service consists mainly of freight service with the typical train configuration consisting of three locomotives and 100 rail cars with the exception of the Oasis Line, where the configuration is two locomotives and 30 cars. With the small number of trips proposed for the 3C project, the incremental increase in noise levels will be negligible and will not result in noise impacts on Section 4(f) resources.

As the 3C Quick Start Rail Project proceeds into the next phase of analysis, additional studies will be completed on Section 4(f) resources in close proximity to rail corridors. This will include verification of property boundaries and relevant features of the resource relative to the rail corridor and coordination with property owners and/or agencies with jurisdiction authority over the resources. Although Section 4(f) uses are not anticipated, the proposed additional analysis may include, but is not limited to analysis of visual effects, changes in access to 4(f) resources, and changes in ambient noise/vibration impacts. Avoidance of any possible impacts to Section 4(f) resources will be a primary goal of future design studies for the 3C Quick Start project. If impacts can not be avoided, strategies to minimize and/or mitigate impacts will be evaluated. Additional coordination will be undertaken with jurisdictional agencies in the development and evaluation of minimization and mitigation strategies. Additional documentation will be developed, as appropriate, for further approval of the proposed action.

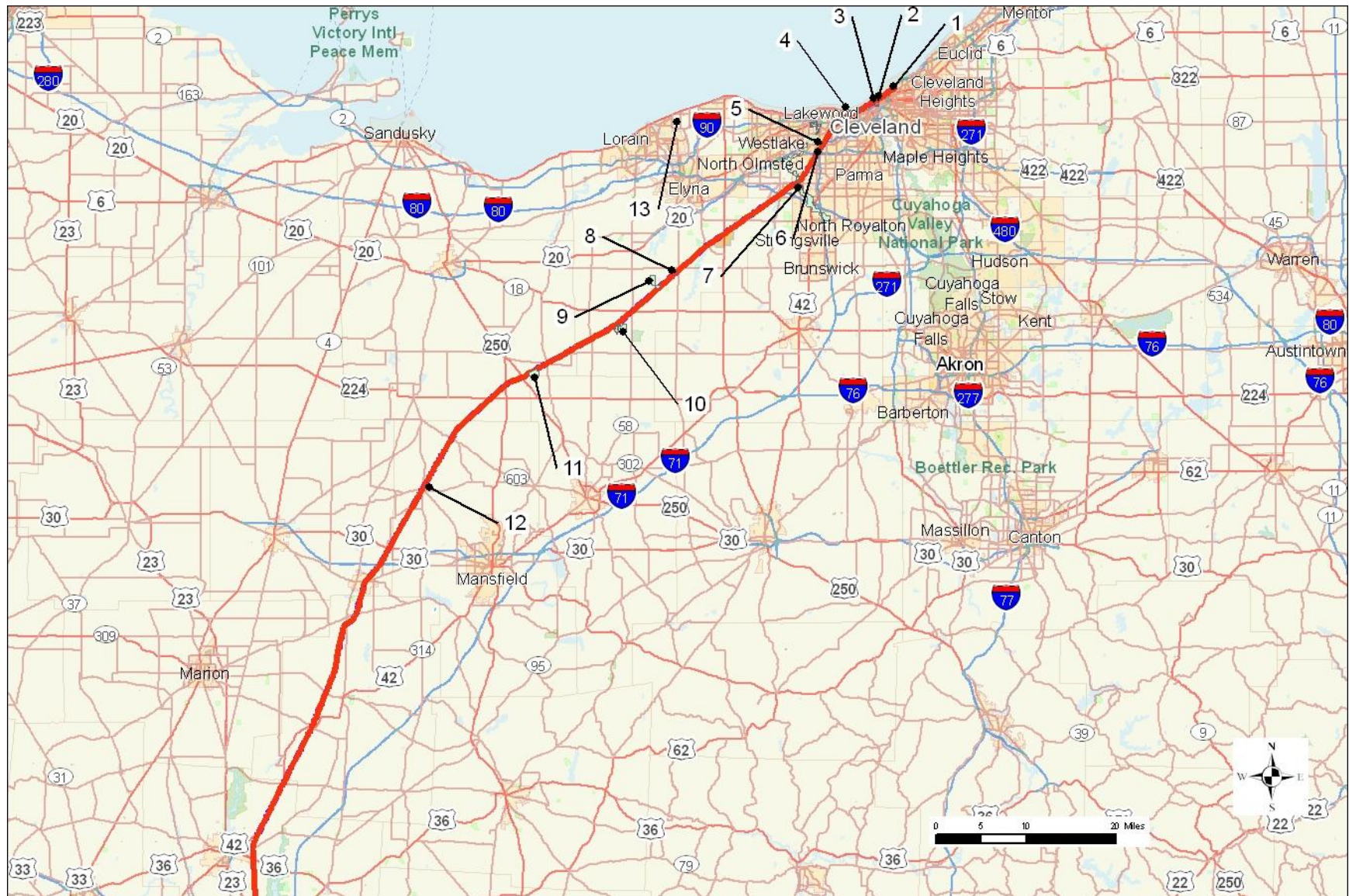
### **3.4.4 Section 6(f) Resources**

Section 6(f) resources are recreational resources that have been developed with funding authorized under the Land and Conservation Fund Act (LWCF) of 1965, as amended; Public Law 88-578; 16 U.S.C.4601-4 et seq. The intent of this act is to stimulate a nationwide program to create and maintain high quality outdoor recreation resources. The LWCF program is administered by states and local governments with funding made available through the National Park Service. The identification of 6(f) resources was completed through a review of county lists maintained by the National Park Service



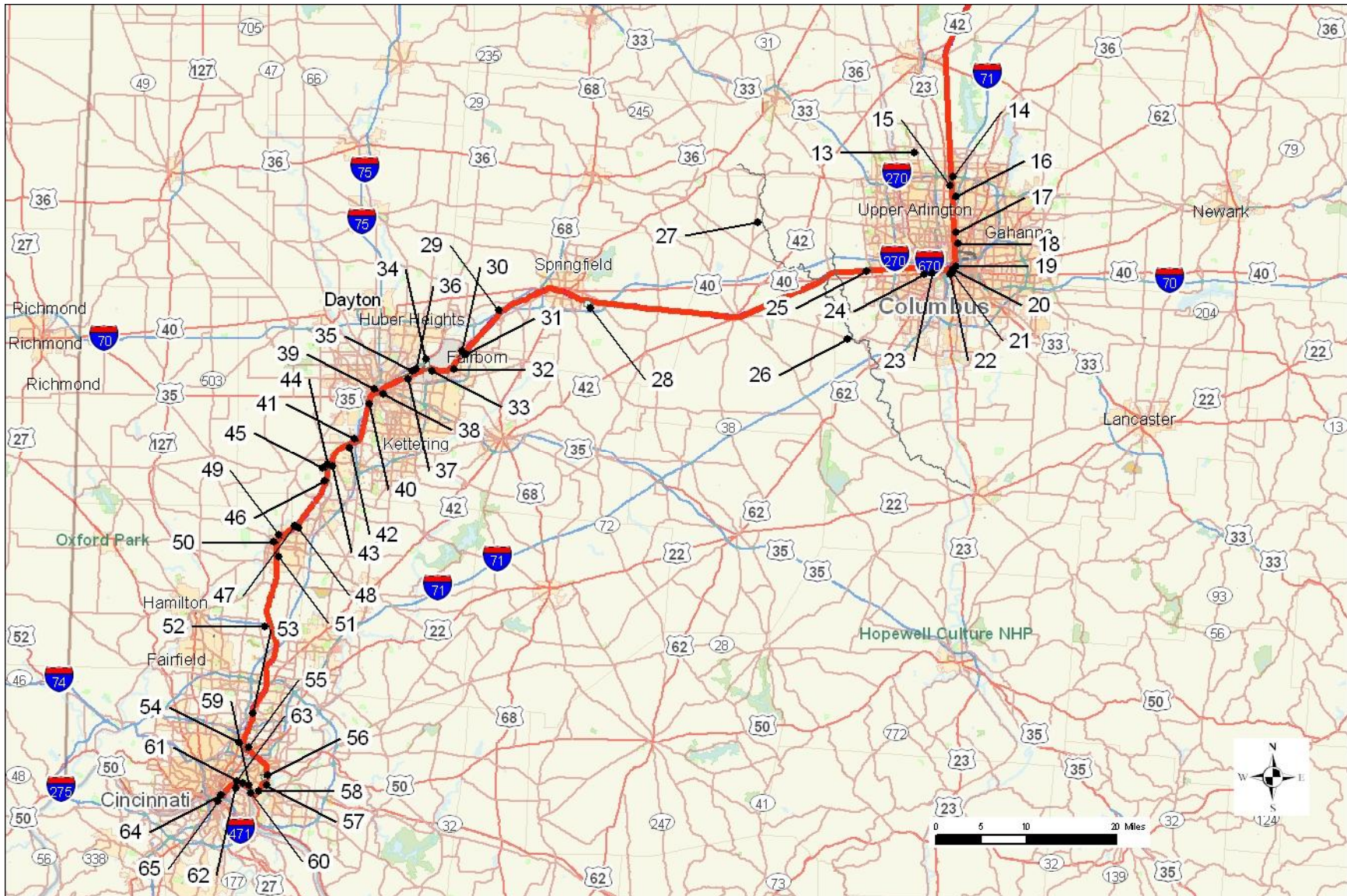
(<http://waso-lwcf.ncrc.nps.gov/public/index.cfm>). Six recreational resources in the project area are 6(f) resources: Edgewater Park (Cleveland), Rocky River Reservation (Berea), New London Reservoir (New London), McBride Park (Shelby), New Reid Memorial Park (Springfield), and Miamisburg Community Park (Miamisburg). None of these resources will be affected by the 3C Quick Start project.

**Figure 3-27 Section 4(f) Resources within the Northern Section of the Project Area**





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**Table 3-16 Section 4(f) Resources in the Project Area (within 500 feet of the 3C Rail Corridor Centerline)  
identified for Further Examination**

| Map # | Name   | Type        | Distance from Rail Corridor (feet) | Size (acres) | Features  | Impact Analysis  |
|-------|--|-------------|------------------------------------|--------------|---|--|
| 1     | Kirtland Park  | Public Park | adjacent                           | 13           | <ul style="list-style-type: none"> <li>• Playground</li> <li>• Baseball field</li> <li>• Park station</li> <li>• Amphitheater</li> </ul>  | <ul style="list-style-type: none"> <li>• Noise sensitive land use; noise impacts not expected because distance to amphitheater is greater than 300 feet</li> <li>• Park is situated between rail line and US Route 6</li> <li>• Existing rail corridor carries 69 trains per day.</li> </ul> |
| 2     | Willard Park   | Public Park | 18                                 | 1.8          | <ul style="list-style-type: none"> <li>• Free Stamp Sculpture</li> </ul>  | <ul style="list-style-type: none"> <li>• Lakefront Amtrak Station is on opposite side of East 9th Street from park</li> <li>• Existing rail corridor carries 69 trains per day.</li> </ul>   |
| 4     | Edgewater Park<br>(part of Cleveland Lakefront State Park) | Public Park | 0                                  | 131          | <ul style="list-style-type: none"> <li>• Boat docks</li> <li>• Launch ramp</li> <li>• Fishing</li> <li>• Swimming</li> <li>• Picnic areas</li> <li>• Picnic shelters</li> <li>• Playgrounds</li> <li>• Concession</li> <li>• Bathhouse</li> <li>• Bike trail</li> </ul> | <ul style="list-style-type: none"> <li>• US Route 6 separates rail corridor from parkland, except for small area on northeastern end</li> <li>• Existing rail corridor carries 69 trains per day.</li> </ul>   |

| Map # | Name                                     | Type                     | Distance from Rail Corridor (feet) | Size (acres) | Features   | Impact Analysis  |
|-------|--|--------------------------|------------------------------------|--------------|--|--|
| 7     | Rocky River Reservation                  | Public Park              | adjacent                           | 3,196.5      | <ul style="list-style-type: none"> <li>• Nature center</li> <li>• Golf courses (3)</li> <li>• Trails</li> <li>• Ball field</li> <li>• Picnic areas</li> <li>• Boat launch ramp</li> <li>• Boating area</li> <li>• Fishing area</li> <li>• Refreshments</li> <li>• Shelterhouse</li> <li>• Sledding area</li> <li>• Waterfowl area</li> <li>• Wildlife management area</li> </ul> | <ul style="list-style-type: none"> <li>• Valley Parkway Trail (all-purpose trail) crosses rail line; near Bagley Road</li> <li>• Existing rail corridor carries 69 trains per day</li> </ul> |
| 8     | LaGrange Community Park (aka Lions Park) | Public Recreation Center | adjacent                           | 15.6         | <ul style="list-style-type: none"> <li>• Picnic shelters</li> <li>• Baseball/softball fields</li> <li>• Soccer Fields</li> <li>• Lakes</li> <li>• Concession stand</li> <li>• Walking trails</li> </ul>  | <ul style="list-style-type: none"> <li>• Additional recreational development proposed within park property</li> <li>• Existing rail line carries 78 trains per day</li> </ul>                |
| 10    | Caley Reservation                        | Public Park              | adjacent                           | 507          | <ul style="list-style-type: none"> <li>• Wetlands, forest and field habitats</li> <li>• Two large ponds</li> <li>• Wildflower hikes</li> <li>• Fishing</li> </ul>  | <ul style="list-style-type: none"> <li>• Existing rail line carries 78 trains per day</li> </ul>   |

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| Map # | Name  | Type  | Distance from Rail Corridor (feet) | Size (acres) | Features   | Impact Analysis  |
|-------|---|---|------------------------------------|--------------|--|--|
| 11    | New London Reservoir Park                             | Public Park                                       | adjacent                           | 368          | <ul style="list-style-type: none"> <li>Fishing</li> <li>Swimming</li> <li>Camping</li> <li>Basketball</li> <li>Volleyball</li> <li>Horseshoe facilities</li> <li>Playground</li> </ul> | <ul style="list-style-type: none"> <li>Existing rail line carries 78 trains per day</li> </ul>   |
| 17    | Glen Echo Park  | Public Park<br>NRHP-Listed<br>Historic District   | 51                                 | 4.2          | <ul style="list-style-type: none"> <li>River/creek access</li> <li>Picnicking</li> <li>Woods &amp; wildlife area</li> <li>Historic District</li> </ul>                                 | <ul style="list-style-type: none"> <li>Adjacent to proposed Weber Road crossover</li> <li>Existing rail line carries 12 trains per day</li> </ul>                          |
| 18    | Indianola Math, Science, and Technology Middle School | Public School<br>NRHP-Listed<br>Historic Resource | 11                                 | 11.0         | <ul style="list-style-type: none"> <li>Playground</li> <li>Fields</li> <li>Historic Resource</li> </ul>  | <ul style="list-style-type: none"> <li>Playground and field adjacent to rail line</li> <li>Existing rail line carries 12 trains per day</li> </ul>                         |
| 26    | Big Darby Creek                                       | State Scenic River                                | adjacent                           | N/A          | <ul style="list-style-type: none"> <li>Scenic river (State designation)</li> </ul>   | <ul style="list-style-type: none"> <li>No bridge work required for project</li> <li></li> </ul>  |
| 27    | Little Darby Creek                                    | State Scenic River                                | adjacent                           | N/A          | <ul style="list-style-type: none"> <li>Scenic river (State designation)</li> </ul>   | <ul style="list-style-type: none"> <li>No bridge work required for project</li> <li></li> </ul>  |
| 37    | Eastwood MetroPark                                    | Public Park                                       | adjacent                           | 437          | <ul style="list-style-type: none"> <li>185-acre lake</li> <li>Nature trails</li> <li>Picnic areas/shelters</li> <li>Boating</li> <li>Fishing</li> <li>Green space</li> </ul>           | <ul style="list-style-type: none"> <li>Existing rail line carries 25 trains per day</li> <li>Adjacent to section proposed for Wright/Moraine capacity expansion</li> </ul> |

| Map # | Name                      | Type        | Distance from Rail Corridor (feet) | Size (acres) | Features  | Impact Analysis   |
|-------|---------------------------|-------------|------------------------------------|--------------|---|---|
| 42    | Weidner Park              | Public Park | 19                                 | 12.3         | <ul style="list-style-type: none"> <li>• Picnic shelter</li> <li>• Playground</li> <li>• Basketball court</li> <li>• Ballfield</li> <li>• Tennis court</li> </ul>   | <ul style="list-style-type: none"> <li>• Existing rail line carries 25 trains per day</li> </ul>  |
| 44    | Miamisburg Community Park | Public Park | adjacent                           | 42           | <ul style="list-style-type: none"> <li>• Basketball courts</li> <li>• Bikeway</li> <li>• BMX Trail</li> <li>• Nature walk</li> <li>• Picnic tables</li> <li>• Playground (ages 2-5)</li> <li>• Playground (ages 6-12)</li> <li>• Pond</li> <li>• Skatepark</li> </ul> | <ul style="list-style-type: none"> <li>• Existing rail line bisects park (no expansion of facilities proposed)</li> <li>• Existing rail line carries 25 trains per day</li> </ul> |
| 47    | Miami River County Park   | Public Park | adjacent                           | 14.4         | <ul style="list-style-type: none"> <li>• Proposed bike trail</li> </ul>   | <ul style="list-style-type: none"> <li>• Existing rail line carries 25 trains per day</li> </ul>  |
| 48    | Dixie Heights Park        | Public Park | adjacent                           | 8.0          | <ul style="list-style-type: none"> <li>• Playground</li> <li>• Picnic tables</li> <li>• Basketball court</li> <li>• Ball diamond</li> </ul>   | <ul style="list-style-type: none"> <li>• Existing rail line carries 25 trains per day</li> </ul>  |

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| Map # | Name                               | Type                   | Distance from Rail Corridor (feet) | Size (acres) | Features  | Impact Analysis  |
|-------|------------------------------------|------------------------|------------------------------------|--------------|---|--|
| 53    | Bemmes Park/Reading Community Pool | Public Recreation Area | adjacent                           | 7.6          | <ul style="list-style-type: none"> <li>• Playground equipment</li> <li>• Soccer goals</li> <li>• Baseball/Softball Fields</li> <li>• Football stadium</li> <li>• Track</li> <li>• Community Pool</li> <li>• Used for Ohio High School Athletic Association and Sandlot America competition</li> </ul> | <ul style="list-style-type: none"> <li>• Baseball fields adjacent to track</li> <li>• Existing rail line carries 6 trains per day</li> </ul> |
| 54    | Roselawn Park                      | Public Recreation Area | adjacent                           | 35.6         | <ul style="list-style-type: none"> <li>• Baseball field</li> <li>• Basketball court</li> <li>• Picnic shelter</li> <li>• Playground</li> </ul>  | <ul style="list-style-type: none"> <li>• Existing rail line carries 6 trains per day</li> </ul>  |
| 55    | Fenwick Park                       | Public Park            | adjacent                           | 25.6         | <ul style="list-style-type: none"> <li>• Playground equipment</li> <li>• Covered picnic area</li> <li>• Basketball court</li> <li>• Baseball field</li> <li>• Soccer field</li> </ul>   | <ul style="list-style-type: none"> <li>• Existing rail line carries 6 trains per day</li> </ul>  |
| 57    | Linwood Field                      | Public Recreation Area | adjacent                           | 8.5          | <ul style="list-style-type: none"> <li>• Soccer field</li> </ul>  | <ul style="list-style-type: none"> <li>• Existing rail line provides minimal service (less than daily)</li> </ul>                            |



### **3.5 Construction Impacts**

Impacts from construction will vary dependent on the type of activity performed and potential resources impacted; most construction impacts will cease immediately after the construction activity in an area as it is completed. Specific construction impacts cannot be estimated at this time because they depend on several factors that are determined either during Tier 2 analysis which will aid in the development of the final design and direct the efforts of the contractor before and during construction. Actions that could have potential additional effects outside of final design drawings include: location for staging and stockpiling equipment and materials, the timing and sequencing of construction, specific construction methods and materials and equipment to use, and areas for the disposal of debris and excess soil stockpile.

Construction activities involve the development of station buildings and platforms and the construction of new track or the installation of special trackwork (i.e. turnouts). Based on the EA investigation the Preferred Alternative construction activities would not result in any significant impacts to the environment.

The Preferred Alternative would create temporary construction impacts to traffic, air quality, noise, and vibration during construction from the operation of equipment and the potential temporary short-term closure of streets crossing the rail line during upgrades of crossing surfaces or localized track rehabilitation. Installation and rehabilitation of station facilities would create temporary construction impacts typical of urban low-rise building construction.

Implementation and maintenance of industry-standard control measures (e.g., traffic control, dust/erosion and sedimentation controls, properly fitted emission control devices and mufflers, etc.) would be used to minimize the temporary impacts. Project construction activities would comply with local noise control ordinances where applicable, and may be controlled in a practicable manner by applying construction contract Special Provisions for Noise Control. These minor temporary impacts would cease upon completion of construction.

Temporary impacts would be minimized by using best management practices (BMPs) and would cease immediately after the activity is completed. Construction activities would comply with all applicable federal, state, and local statutes, regulations, and ordinances. Proper permits would be obtained where required. Following construction, temporarily impacted floodplains, wetlands, streams, and surrounding stream banks would be restored to their natural condition.

Track improvements required for the Preferred Alternative will require the replacement of some rail, crossties, and track ballast, plus other improvements to trackside equipment. These procedures are restricted to the current right-of-way and are generally considered maintenance procedures. A limited degree of new track construction is also required. Where a new second track is added, extension of culvert or bridge structures may be required with temporary construction impacts to the stream or bank. New track installation will also require subgrade preparation earthwork. If permanent impacts are to occur during the construction of the Preferred Alternative's improvements they will be mitigated in accordance with required State and Federal regulations.

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The Preferred Alternative is divided into 5 phases. Phase 1 would include the purchase of train equipment and would not have construction impacts. Phase 2 would involve the station and track improvements and additions between Cleveland and Columbus. Phases 3, 4 and 5 would consist of mostly track construction on existing railroad right of way. Phases 2, 3, 4, and 5 would all require a Tier 2 environmental document for which more detailed information would be developed. This information would be used to determine site specific conditions, assess potential construction impacts, and identify potential mitigation strategies.

The Table 3-18 delineates potential impacts that may be associated with identified construction activities in the Preferred Alternative.

**Table 3-17 Potential Impacts Associated with the Preferred Alternative**

| <b>Item</b>  | <b>Potential Impacts</b>   |
|--|--|
| Phase 2:<br>Cleveland Lakefront<br>Station (existing)            | Construction likely limited to installation of a new track to stage originating train, improvements to passenger platform and pedestrian safety improvements. No new right of way to be acquired. Construction challenge is safety of rail patrons at this currently active Amtrak station. No special construction impacts anticipated.   |
| Phase 2:<br>W 150 <sup>th</sup> Street/Puritas<br>Avenue Station | Construction may be limited to installation of passenger platform on east side of freight tracks, construction of a pedestrian overhead walkway and installation of special trackwork. Construction challenge is protecting safety of public transit patrons using adjacent GCRTA Rapid station. No special construction impacts anticipated.  |
| Phase 2:<br>Berea Crossover                                      | Potential new track and trackwork through currently undeveloped tract surrounded by light industrial uses. The tract may be associated with local drainage patterns. Conventional precautions against silt runoff may be needed at this location. No special construction impacts anticipated.   |
| Phase 2:<br>Boyd to Shelby Second<br>Main Track                  | New track, adjacent to the existing main track traverses generally level and open farm land. Located within the Mohican, Huron, and Vermillion Watersheds, it was identified that approximately 0.64 acres of wetlands and 6,570 linear feet of channel may potentially be impacted by the development of the new capacity improvement. * No special construction impacts are anticipated.             |
| Phase 2:<br>Edison Siding  | 0.8 mile extension to existing siding in an area of open and level farmland located within the Rocky River watershed. Approximately 0.007 acres of wetlands and 792 linear feet of channel were identified that may be impacted by the development of the new capacity improvement.* Conventional runoff and silt protection will likely be needed. No special construction impacts anticipated.       |
| Phase 2:<br>Paget Siding   | Construction of a new 2.1 mile siding in an area of open and level farmland. No stream crossings are evident. No special construction impacts anticipated.   |
| Phase 2:<br>Powell Road Siding                                   | Construction of a new 2.0 mile siding in a residential area but with more than adequate setback from the existing track. Evidence on ground of former second track reduces potential of impact. Located in the Scioto watershed (encompasses Big Darby and Olentangy River), Ohio requires an alternate runoff permit that specifies measures to be taken to protect sensitive areas from construction |

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| Item  | Potential Impacts  |
|---|--|
|   | impacts. It is anticipated that approximately 0.2 acres of wetland and 183 linear feet of channel may be impacted by the development of the new capacity improvement.* No unusual circumstances seem to exist that would require further than standard measures.   |
| Phase 2:<br>Weber Road<br>Crossovers                                    | Located in the Scioto watershed (encompasses Big Darby and Olentangy River). Ohio requires an alternate runoff permit in this area that mandates certain runoff protection measures. While stringent in its requirements, the permit requires accepted industry practices be employed. It is anticipated that approximately 71 linear feet of channel may be impacted by the new capacity improvement.* No special construction impacts are anticipated.                     |
| Phase 2:<br>Columbus Convention<br>Center Station                       | Although the convention facility was originally designed to accommodate a train station, subsequent expansions have removed the special provisions once present. A current Convention Center remodeling can make provisions again for a station. Some new trackwork will be required within the existing right-of-way to accommodate train movements in and out of the station. No special construction impacts beyond those associated with the remodeling are anticipated. |
| Phase 3:<br>Plattsburg to Brooks<br>Second Main Track                   | Construction of a new 5.2 mile second main track in an area of open and level farmland. Located within the Great Miami Watershed, it was identified that approximately 0.246 acres of wetlands and 4,530 linear feet of channel may potentially be impacted by the development of the new capacity improvement.* No special construction impacts anticipated.  |
| Phase 3:<br>Springfield Downtown<br>Station                             | Construction of station and platform is within a former street right-of-way located immediately adjacent to the Central Business District. No unusual circumstances although movements of machinery and material into the construction site will require adherence to standard safety practices. No special construction impacts anticipated.  |
| Phase 3:<br>Riverside to Dayton<br>Second Main Track<br>with Crossovers | A new second main track is to be constructed through undeveloped or industrial land uses. In some locations, the Mad River (a drinking water source) runs parallel to the right of way necessitating mandating certain runoff protection. Located within the Great Miami Watershed, approximately 2.8 acres of wetlands and 1,092 linear feet of channel may be impacted by the development of the new capacity improvement.* No special construction impacts anticipated.   |
| Phase 3:<br>Dayton Main Street<br>Site                                  | Proposed location is in an underutilized commercial area where the main track is elevated above street level. No special construction impacts anticipated.   |
| Phase 4:<br>Wrights to Moraine<br>Yard Second Main<br>Track             | Construction of a 7.7 mile second main track is through a manufacturing and industrial area. No unusual conditions exist within the immediate area of construction. Located within the Great Miami Watershed, it was identified that approximately 0.305 acres of wetlands and 518 linear feet of channel may potentially be impacted by the development of the new capacity improvement.* No special construction impacts anticipated.                                      |
| Phase 4:<br>North Cincinnati<br>Kemper Road Station                     | Station construction on a former factory site will present no unusual construction requirement or impacts.   |
| Phase 5:  | 4.6 miles of new main track through mixed residential and industrial   |

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| <b>Item</b>                                       | <b>Potential Impacts</b>  |
|---|---|
| Sharonville Second Main Track                     | land. No unusual circumstances exist in the area of construction. Located within the Mill Creek Watershed, approximately 2.2 acres of wetlands and 3,984 linear feet of channel may be impacted by the development of the new capacity improvement.* No special construction impacts anticipated. |
| Phase 5: Cincinnati Lunken Station and layup yard | Proposed station and layover facility are on an underutilized rail yard. No special construction impacts anticipated.   |

\* Order of magnitude of impact area identified in Section 3.2.3.

The No-Build Alternative would not create temporary construction impacts.

### **3.6 Secondary and Cumulative Impacts**

This section considers impacts that are not directly related to the project, but that could be contributed to by the project. The President's CEQ regulations for environmental impact documentation (CFR, Title 40, Section 1508(1)) includes definitions for secondary (indirect) and cumulative impacts. These definitions are:

Indirect effects are those "which are caused by the [proposed] action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include induced growth and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." (40 CFR 1508.8(b))

"Cumulative impact is the impact on the environment which results from the incremental impact of the [proposed] action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.7)

The No-Build Alternative would not have a contribution to secondary or cumulative impacts.

#### **3.6.1 Project Area**

The secondary and cumulative impact project area consists of:

- The project corridor (initial and future) and its track work improvement, yard and shop, and station location alternatives.
- The area surrounding each of the proposed alternative station locations. This area was selected because induced development can be associated with the improved accessibility offered by transportation improvements. In the case of passenger rail service improved accessibility would only be expected occur at stations.

In terms of temporal considerations, since the areas surrounding the stations are with few exceptions fully developed, consideration of past actions is relevant only to the extent that recent redevelopment has occurred and is expected to continue based on

area land use and economic development goals. The present is represented in this assessment by existing development and associated activities in station areas. The future is reflected in the land use planning goals found in area land use and economic development plans, known planned development, and the project (initial and future).

### **3.6.2 Project Area Features and Goals**

Key features and goals relevant to the secondary and cumulative impact assessment are shown for the areas surrounding each station alternative in Table 3-18. These also are the primary factors in determining the potential for secondary and cumulative impacts. Project implementation timing (initial and future projects), location of a station in an urbanized area, and development or redevelopment plans (known projects or land use plan goals) all would be associated with the potential for additional reasonably foreseeable actions that, combined with the project, could result in secondary and cumulative impacts. Primary land use, historic resources, sensitive natural resources, and special population groups (e.g. low income and minority) are the sensitive notable features that could be affected by reasonably foreseeable impact causing activities.

Land use, historic resources, sensitive natural resources, special populations groups, and other notable development within the project's direct impact area (initial and future), including yard and shop locations and capacity additions are presented in their respective direct impact discussions in this EA.

**Table 3-18 Secondary and Cumulative impact Project Area Features and Goals**

| No. | Station   | Timing <sup>1</sup> | Characteristics of Surroundings      |                      |   |                    |                             |                                    |
|-----|---|---------------------|--------------------------------------|----------------------|---|--------------------|-----------------------------|------------------------------------|
|     |   |                     | Primary Land Uses                    | In an Urbanized Area | Development or Redevelopment Plans  | Historic Resources | Sensitive Natural Resources | Special Population Groups          |
| 1   | Lakefront Amtrak Station                            | I                   | Business                             | Yes                  | No  | No                 | No                          | No                                 |
| 2   | West 150 <sup>th</sup> St/<br>Puritas Ave/<br>GCRTA | I                   | Residential/ Industrial              | Yes                  | Yes, currently developing a new train station but no for surrounding lands. | No                 | No                          | No                                 |
| 15  | Convention Center                                   | I                   | Business/ Industrial                 | Yes                  | Yes, currently expanding the convention center                              | No                 | No                          | No                                 |
| 17  | Downtown Station<br>(Springfield – <i>phased</i> )  | I                   | Residential/ Business                | Yes                  | No  | No                 | No                          | Yes, elderly housing               |
| 18  | Riverside<br>(East Dayton – <i>phased</i> )         | I                   | Rural/Air Force Base                 | No                   | Yes, sign indicating new development  | Potential          | Yes, ponds                  | No                                 |
| 21  | Main Street   | I                   | Business                             | Yes                  | Yes, construction occurring in the area                                     | Possibly           | No                          | Yes, elderly; minority; low-income |
| 26  | Kemper Road   | I                   | Residential/<br>Business/ Industrial | Yes                  | No (nothing identified)   | No                 | Potential wetlands          | Possible minority                  |
| 28  | Lunken Airport                                      | I                   | Residential/ Industrial              | Yes                  | Not likely  | No                 | No                          | Yes, low-income                    |

<sup>1</sup>I=Initial station

Note: Locations highlighted in light green indicate “phased” or “assumed” stations as part of the initial proposed quick start project.

### **3.6.3 Reasonably Foreseeable Impact-Causing Activities**

Reasonably foreseeable impact causing activities are:

- The initial project, including its construction, operation, and use (included in the direct impact assessment).
- Future passenger rail improvement projects (included in the direct impact assessment).
- Other currently known development or redevelopment projects in station areas.
- Induced development and its associated impacts under certain conditions. Induced development is considered to be reasonably foreseeable if these conditions are met:
  - It occurs in a station area because that is the sole location where accessibility is improved, providing an incentive for public or private investment.
  - Local land use plans call for or have encouraged development or redevelopment in the station areas in the past or present.
  - The station would be a major passenger origin or destination in a community that already attracts substantial intercity travelers. Under these conditions, the improved accessibility to the area around a station could attract new development to service intercity travelers, just as an airport can attract hotels, office buildings, and other travel-related development. Stations in smaller communities are unlikely to induce notable new development because few passengers would originate at small communities, creating little demand for public or private services. As a destination, small communities lack existing support services for intercity travelers, as well as initiatives to attract substantial economic development. It is not considered reasonably foreseeable to expect that the improved accessibility alone would attract notable new development to smaller communities.

### **3.6.4 Secondary Impacts**

In order for secondary impacts to occur, there first must be a notable feature sensitive to impact within the impact area. This is defined in this assessment as an area having a residential land use, containing historic resources, containing sensitive natural features, or containing special population groups. Second, the impact area must be in an urbanized area and have known new development or redevelopment projects in the station area or land use plans setting redevelopment or new development as a goal. Based on the information found in Table 3-18, this combination of factors does not occur at any of the possible station areas.

### **3.6.5 Cumulative Impacts**

Cumulative impacts considers the question of: Would the combination of existing development, the project (initial and future), induced development, and other known reasonably foreseeable development projects together create a substantial loss to a sensitive resource where the individual losses are not substantial. Cumulative impacts would not be substantial for the following reasons:

- The scale of the direct construction impacts associated with the initial project are generally expected to be low because, except for stations, the project (initial and future) generally would be confined to an existing railroad right-of-way. Thus, it is

not likely that the impact of the project to a sensitive environmental resource, when added to existing and forecast conditions, would be of greater severity than that described in the direct impact assessment.

- In terms of direct operational impacts (noise and traffic), the impact of project traffic added to forecast traffic in station areas and project noise (up to the future 100 mph) when added to that of freight traffic are accounted for in the direct impact assessment.
- The secondary impact assessment found that other currently known development or redevelopment projects, as well as induced development, in station areas with sensitive resources would not cause a substantial impact to those resources.



## **4.0 COORDINATION AND CONSULTATION**

The public involvement effort for the 3C Quick Start Passenger Rail project was led by the Ohio Department of Transportation (ODOT) and the Ohio Rail Development Commission (ORDC). Input was sought from all applicable state and federal agencies, railroads, local governments, transit agencies, local/regional/statewide interest groups and the general public. Involvement was proactively sought from all potentially affected stakeholders regardless of income, race, ethnicity, religion, sex, age, or disability. This chapter summarizes the public involvement and agency coordination efforts.

Outreach efforts for this project included stakeholder workshops, public meetings, community presentations, statewide radio and newspaper advertising, social media outreach, project website, e-mail alerts, toll-free telephone hotline, on-line public meetings, press releases, media interviews, mailings and postcard distributions, among other efforts.

In addition, it should be noted that other grassroots advocacy organizations, not involved as project sponsors, also volunteered their resources to help spread the word about the 3C Quick start Passenger Rail project. These organizations have continued their advocacy efforts beyond the scope of public involvement efforts taken by ODOT and ORDC for this project.

Public response to this project was both tremendous and overwhelmingly positive. This response encompassed approximately 350 attendees to stakeholder workshops, nearly 300 attendees at public meetings and more than 220,000 website visits. A Facebook site for the project was established on September 25, 2009 and nearly 1,000 people had signed up as fans of the project within the first week. More than 7,000 on-line surveys were also filled out on the project website, with 93% of respondents indicating support.

### **4.1 Public Involvement Plan**

The Public Involvement Plan (PIP) (Appendix I) outlined an array of methods to ensure widespread awareness and engagement in the project from the public. Table 4-1 indicates the methods used and their purposes. These are discussed in detail below.

**Table 4-1 Public Involvement Methods and Purposes**

| <b>Methods</b>                   | <b>Purpose</b>  |
|----------------------------------|---|
| Stakeholder workshops            | To meet and actively obtain input from elected officials, agencies, and general public on the project purpose and need and alternative selection. |
| Stakeholder briefings            | To individually inform stakeholders of project status and actions.  |
| Agency coordination              | To inform agencies of project status and actions and provide them a forum for review and comment.   |
| Railroad coordination            | To inform the railroad companies of project status and actions and provide them a forum for review, comment and response.                         |
| Consulting party engagement      | To obtain input from persons desiring to be consulting parties for various aspects of the project (i.e. historic resources).                      |
| Public information materials and | To actively inform the public on the project and its open forum for   |

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| <b>Methods</b>  | <b>Purpose</b>  |
|---|---|
| email notifications   | providing input.  |
| Public involvement open-house meetings                      | To provide a forum for public commentary and feedback on the project.   |
| Grassroots and social media outreach                        | To use the assistance of individuals and local and statewide interested organizations in disseminating project information. |
| Media relations and news coverage                           | To inform the public of the project through free media coverage.  |
| Statewide radio public education campaign and newspaper ads | To reach a wide variety of audience types through paid media sources.   |
| Project website & email address                             | To distribute available project materials and obtain public feedback.   |
| Toll-free project hotline                                   | To obtain public comments.  |
| On-line public meetings                                     | To disseminate project information and seek input from persons unable to attend live meetings.                              |

#### **4.1.1 Informed Stakeholder Workshops**

Three workshops were held for elected officials and/or representatives of 325 jurisdictions and agencies located along the proposed 3C Corridor. These workshops were also open to the public. Elected officials and representatives were invited by letter and email. The public was informed of the workshops by news releases and media coverage. These three workshops were held and their purposes are summarized below. The number of participants indicated for each meeting reflects how many people signed in; it is estimated that at least several additional people attended each meeting without signing in.

Workshop #1 – This workshop was held on July 7, 2009, with at least 191 attendees representing 122 municipalities along the 3C Corridor. Its purpose was to obtain stakeholder input on: project overview; 33 proposed route alternatives; and the purpose and need elements for both the 3C Quick Start Passenger Rail and high-speed passenger rail. The 3C “Quick Start” purpose and need was drafted using this input.

Workshop #2 – This workshop was held on August 20, 2009 for an audience of approximately 105 attendees. Its purpose was to obtain stakeholder input on the draft purpose and need and the technical fatal flaw analysis used to narrow the remaining route alternatives. Eighteen comments were received and six organizations identified themselves as consulting parties. The comments were generally positive regarding the process used to date and the emerging route alternatives. Representatives from transit agencies in Cincinnati, Dayton, Columbus, Shelby, Akron and Cleveland also stated they were eager to work with ODOT/ORDC to provide transit service to and from 3C stations. These transit systems and others followed up with letters of support. East Dayton (Riverside), Springfield, Shelby, Crestline, Edison, Middletown and Hamilton representatives urged planners to consider stations in their communities. As a result of this feedback, additional analysis was conducted. Based on environmental findings and ridership results, it was determined that station locations at East Dayton and Springfield are viable options for inclusion on the recommended preferred Quick Start route. At this

time it is recommended that these two stations be phased into the service shortly after initial service begins.

Workshop #3 – This workshop was held on September 15, 2009 with approximately 44 attendees. Its purpose was to obtain stakeholder input on the draft recommended preferred alternative and proposed station locations. Eighteen written comments and three letters were received. The comments, in general, indicated support for the process used to arrive at the proposed recommendations and provided input on preferred station locations. Two of the letters challenged the proposed service and in one case criticized the process; the other letter offered support.

Meeting summaries and sign-in sheets for all three workshops are in Appendix J.

#### **4.1.2 Stakeholder Briefings**

Stakeholder briefings on the project were held throughout the summer and fall, 2009. **Error! Reference source not found.** summarizes the stakeholder briefing held for the project.

**Table 4-2 Other Stakeholder Briefings**

| <b>Date</b> | <b>Stakeholder</b>   | <b>Purpose</b>  |
|-------------|--|---|
| 6/4/09      | State Sen. Bill Seitz  | 3C Quick Start and Amtrak study status  |
| 6/9/09      | State Sen. Gary Cates, City of Hamilton                                  | Opportunity for rail service and station sites in Hamilton                        |
| 6/9/09      | State Sen. Robert Schuler  | 3C Quick Start and Amtrak study status  |
| 6/16/09     | Cincinnati City Council  | 3C Quick Start study status; sought input on station sites                        |
| 6/18/09     | State Rep. Ron Amstutz   | 3C Quick Start and Amtrak study status  |
| 7/6/09      | Ohio Dominican University students                                       | 3C Quick Start study status and outreach efforts                                  |
| 7/27/09     | Toledo Metropolitan Area Council of Governments Passenger Rail Committee | 3C Quick Start and high speed rail Programmatic Environmental Impact Study status |
| 8/6/09      | Central Ohio Transit Authority (William Lhota, CEO)                      | 3C Quick Start study status and local transit access                              |
| 8/19/09     | L&E Group (Scott Owens & Erin Synk)                                      | Opportunity for rail service and station sites in Butler County                   |
| 8/25/09     | Business leaders from Cleveland, Columbus and Cincinnati                 | 3C Quick Start and high speed rail Programmatic Environmental Impact Study status |
| 8/25/09     | Columbus Chamber of Commerce   | 3C Quick Start and high speed rail Programmatic Environmental Impact Study status |
| 8/26/09     | Gov. Strickland staff, Ohio Congressional delegation                     | 3C Quick Start and Amtrak study status  |
| 8/27/09     | City of Middletown   | Opportunity for rail service and station sites in Middletown                      |
| 9/3/09      | Cincinnati Chamber of Commerce Transportation Committee                  | 3C Quick Start study status; sought input on station sites                        |

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| <b>Date</b> | <b>Stakeholder</b>  | <b>Purpose</b>  |
|-------------|---|---|
| 9/8/09      | City of Springfield, Clark County/Springfield Transportation Coordinating Committee | Opportunity for rail service and station sites in Springfield                                     |
| 9/14/09     | East End Community Council in Cincinnati  | 3C Quick Start study status; sought input on station sites and eastern Cincinnati route alignment |
| 9/14/09     | Gov. Strickland webinar briefing to elected officials throughout the 3C corridor    | 3C Quick Start study status   |
| 9/21/09     | Gov. Strickland webinar briefing to foundations                                     | 3C Quick Start study status   |

#### **4.1.3 Agency Coordination**

Interagency coordination on the 3C Quick Start Passenger Rail project was conducted in accordance with the National Environmental Policy Act (NEPA) guidelines to ensure the appropriate agencies were informed and had the opportunity to comment on the Environmental Assessment (EA). On August 24, 2009, ODOT and ORDC hosted a meeting and conference call with federal and state environmental and regulatory agencies to provide them with a study overview, and to solicit their agreement to review and comment on the draft EA within the project's compressed schedule. The agencies agreed and were informed that additional opportunities for review and comment would be provided in the future if the proposed 3C Quick Start effort were to move forward. Meeting summaries and copies of agency responses are in Appendix K. ODOT and ORDC also conducted several teleconferences with the FRA, and met with FRA officials in Washington, D.C. on August 21, 2009. Agencies coordinated with included:

- Amtrak
- Federal Railroad Administration
- Ohio Department of Natural Resources
- Ohio Department of Transportation
- Ohio Environmental Protection Agency
- Ohio Rail Development Commission
- Ohio State Historic Preservation Office
- US Army Corps of Engineers, Huntington and Buffalo Offices
- US Environmental Protection Agency
- US Fish and Wildlife Service

#### **4.1.4 Railroad Coordination**

Since the project's inception, ORDC has included the owners and operators of the freight rail lines within the project area in project dialogue. Formal written documentation demonstrating this was included with the October 2, 2009 application. At the behest of Amtrak and the freight railroads, ORDC has engaged a railroad traffic controller (RTC) modeling firm to conduct the analysis to confirm that there will be no passenger and freight rail conflicts throughout the corridor on the freight rail lines identified. Additionally, ORDC and the freight railroads are in the process of drafting Memorandums of

Understanding (MOUs) outlining the cost and assignment of responsibilities for the operation of passenger rail on the freight rail lines.

#### **4.1.5 Consulting Party Engagement**

In accordance with Section 106 of the National Historic Preservation Act and implementing regulations of 36 CFR Part 800, ODOT/ORDC initiated a consultation process for evaluating the impact of 3C Quick Start project on historic properties listed on or eligible for listing on the National Register of Historic Places (NRHP). ODOT and ORDC sought participants in this process by distributing a sign-up form at workshop #2 held on August 20, 2009 (see subsection 4.1.1) and mailing invitations to interested stakeholders. This opportunity was also publicized in public meeting promotional materials. By September, 2009 43 individuals and organizations indicated their desire to be consulting parties for the project. These individuals and organizations were sent thank you letters and invitations to attend the public meetings, review materials online, review and comment on the Section 106 Consultation and to review and comment on the draft EA. A list of consulting parties and correspondence is in Appendix K.

#### **4.1.6 Public Information Materials**

Ten thousand postcards announcing the launch of the 3CisMe website were distributed in August, 2009. In September, another 10,000 postcards were mailed, emailed and distributed to promote the website, on-line survey, hotline, three public meetings and the online version of the public meeting. All printed materials directed the reader to additional information on the 3CisMe website, where they could submit general comments, respond to an online survey or answer a questionnaire specific to information provided in the online public meeting. Fact sheets and comment forms were distributed widely at public meetings and through email distribution to key stakeholders.

#### **4.1.7 Public Involvement Open-House Meetings**

Three public meetings were conducted during September 2009. The deadline for public comments was September 25, 2009. These meetings and their outcomes included:

- September 15<sup>th</sup> in Columbus, with 80 attendees. Forty public comment forms and two consulting party comment forms were received as of September 25. Respondents indicated station preferences and general support for the proposed route and decision-making process. Questions and comments were received about capital and operating costs, opportunities for high speed rail and additional routes/stations in the future, and how local transportation would connect with intercity passenger rail.
- September 16<sup>th</sup> in Cleveland with 90 attendees. Thirty-two public comment forms were returned as of September 25, indicating station preferences and comments on the route and decision-making process, which were positive in general. Questions and comments were received about capital and operating costs, ridership projections, the proposed timetable, future connections to other cities, and opportunities for public involvement and media coverage throughout the decision-making process.
- September 17<sup>th</sup> in Cincinnati; with 120 attendees. Twenty-one written comment forms and four letters were received as of September 25. Two of the letters echoed public sentiment at the meeting, which supported the 3C proposal overall but preferred the west alignment into Cincinnati, with an expanded passenger rail

station at the Cincinnati Union Terminal, rather than the east-side alignment along Riverside Drive at the Boat house/Sawyer Point location. Citizens identified their community preference for planning that is already underway for urban light rail on the Oasis line. The Mt. Adams community outlined how their area is developing in a manner consistent with the transit-oriented development vision of a light rail system. Residents from the East End also expressed their concerns about possible noise and view shed impacts of heavy rail at the Boat House/Sawyer Point alternate location as well as possible impacts on a local park. These issues will require more analysis, which will be addressed with the Oasis Line's NEPA process for local passenger rail service. The assumed station location for the Quick Start project is at Lunken Park Drive.

These meetings were conducted in an open house format with at least one presentation about the project, followed by a facilitated discussion with the audience that included an opportunity for public questions and comments (two presentations were provided in Cleveland and Cincinnati.) Project information presented to the public was consistent for all three meetings. Participants were invited to provide comments and feedback on: the project's purpose and need; the draft recommended preferred alternative; proposed and alternate station locations; environmental and technical analysis; and the process leading to the recommendations made. Opportunities were also presented to comment on cultural and historic resources, consistent with Section 106 requirements. Specific questions were answered at each information station.

Public meetings were held at well-known local venues with ample parking available, nearby local transit service stops, and easy access for people with disabilities. The meetings were promoted by newspaper and radio advertisements which informed interested persons of the location of the meeting and directed them to the hotline and website for more information. Approximately 10,000 postcards were distributed by local jurisdictions and organizations, including 2,000 postcards that were distributed to 20 minority churches in Cleveland and Columbus. Additionally, grassroots organizations, agencies and jurisdictions forwarded electronic copies of the postcard invitation through their own email distribution lists. It is estimated that email alerts were sent to at least 75,000 individuals, although it is likely there was some duplication among distribution lists. There were also more than 220,000 website visits to learn more about the meetings via various constituent groups' sites, including local transit systems, metropolitan planning organizations, chambers of commerce, All Aboard, PolicyMatters, Sierra Club, Urban Ohio, Young Professionals of Columbus, ColumbusUnderground, MORPC, Ohio Contractors Association and others.

An online version of the public meetings was also made available on the project website so that persons not able to attend could "virtually" attend a meeting by following a PowerPoint presentation on their computers at home or in a public library. These included an electronic survey to collect input. Forty-nine individuals had responded to the online meeting questionnaire; 73 percent indicated they were satisfied or very satisfied with the 3C public process with many of those commenting advocating for station stops in Shelby, East Dayton, and Springfield. For a summary of each public meeting and the written and online comments collected, see Appendix L.

#### **4.1.8 Grassroots Outreach and Social Media**

As mentioned in section 4.1.6, 20,000 postcards promoting the multiple opportunities to provide input were distributed with the assistance of stakeholders located along the 3C Corridor. Statewide and local coalitions also assisted with disseminating the postcards, emails and announcements on their websites and Facebook pages, encouraging citizens to participate in this effort. As of October 14, 1,595 people had signed up on Facebook as “fans” of the 3C Quick Start Passenger Rail project. Grassroots information dissemination included the organizations identified in **Error! Reference source not found..**

**Table 4-3 Grassroots Organizational Outreach**

| Organization   | Number of Postcards or Letters | Email Distribution |
|--|--------------------------------|--------------------|
| <b>Statewide and/or Entire 3C Corridor</b>   |                                |                    |
| ORDC Public Information Officer stakeholder email list   |                                | 5,000+             |
| ODOT Districts   | 700                            | 800                |
| 3C Quick Start stakeholder list  | 700                            | 1,000              |
| All Aboard Ohio  | 400                            | 200-               |
| Environment Ohio   |                                | 1,000              |
| Ohio Contractors Association   |                                | 1,500              |
| Greater Ohio   |                                | 500                |
| Ohio Environmental Council   | 2,000                          | 3,000              |
| Ohio Planning Conference   |                                | 750                |
| Policy Matters Ohio (includes emails to the Have a Heart Ohio Coalition, the Ohio Apollo Alliance Steering Committee and the C Campaign) | 2,000                          | 10,000             |
| Sierra Club, Ohio Chapter  |                                | 28,000             |
| Urban Ohio Transportation Forum  |                                | 3,400              |
| <b>Cincinnati</b>  |                                |                    |
| City of Cincinnati   | 200                            | 500                |
| Ohio-Kentucky-Indiana Council of Governments   |                                | 200                |
| Alliance for Regional Transit  | 500                            | 4,500              |
| Local neighborhood events  | 330                            |                    |
| <b>Dayton</b>  |                                |                    |
| Greater Dayton Regional Transit Authority  |                                | 1,000              |
| Miami Valley Regional Planning Commission  |                                | 220                |
| Local neighborhood events  | 330                            |                    |

### **3C Quick Start Passenger Rail Environmental Assessment**

| Organization                                 | Number of Postcards or Letters | Email Distribution |
|--|--------------------------------|--------------------|
| <b>Columbus</b>                              |                                |                    |
| 1000 Friends of Central Ohio                 |                                | 250                |
| Central Ohio Transit Authority               |                                | 500                |
| City of Columbus Urban Policy Group          |                                | 450                |
| Columbus Streetcar Advocates                 |                                | 700                |
| Columbus Young Professionals                 |                                | 2,800              |
| Consider Biking                              |                                | 500                |
| Downtown Residents Association               |                                | 250                |
| Mid-Ohio Regional Planning Commission        | 2,000                          | 12,300             |
| Pedal Instead                                |                                | 1,000              |
| Women's Transportation Seminar               |                                | 250                |
| Local neighborhood events                    | 330                            |                    |
| <b>Cleveland</b>                             |                                |                    |
| Greater Cleveland Regional Transit Authority |                                | 6,800              |
| Northeast Ohio Areawide Coordinating Agency  |                                | 500                |

#### **4.1.9 Media Relations and News Coverage**

News releases were distributed to at least 180 media outlets throughout the state to alert them of: stakeholder workshops; public meetings; the launch of the 3CisMe website; and public input opportunities via telephone, online survey and public meetings. Additionally, ORDC and ODOT responded to numerous media inquiries, resulting in at least 155 newspaper and internet articles and 122 broadcasts (broadcast coverage is estimated at \$451,000 in publicity value according to Media Library, Inc.) News releases and excerpts of media coverage are in Appendix M.

#### **4.1.10 Statewide Radio Public Education Campaign**

From August 23 to September 20, 2009 approximately 200 Ohio radio stations, as part of a collaborative public education program with the Ohio Association of Broadcasters aired a 30 second advertisement introducing the 3C Quick Start initiative. The advertisement directed listeners to the 3CisMe website and telephone hotline. This low-cost radio partnership resulted in more than \$172,000 in free advertising, making listeners aware of public meetings and the opportunity to take part in the online survey. One of the benefits of using radio media is its ability to reach a wide listener base, which may include persons living in Environmental Justice concern areas. Additionally, radio has the ability to reach persons with limited to no internet skills and persons with limited literacy.



#### **4.1.11 Project Website and Email Address**

The <http://3CisMe.Ohio.gov> website was developed by ODOT and ORDC to serve as a distribution resource for all publicly available materials. The website went live on July 1, 2009 and had received more than 23,440 hits by October 6th. The website includes a highly visible link to the 3C Quick Start EA project site which includes: a calendar of public meetings; online versions of the public meetings; briefing documents; major deliverables; contact information for questions; responses to frequently-asked questions; and online surveys to solicit public comments throughout the study process. From July 24 to August 24 visitors could provide general comments. During this time period 163 comments were received; 86 percent indicated positive reactions to the proposal. By October 6, there were 9,730 online surveys completed. Ninety-two percent of the respondents indicated support for introducing safe, convenient, and cost-efficient passenger rail service from Cleveland to Cincinnati. Appendix N includes a summary of the online survey and other website metrics.

#### **4.1.12 Toll-Free Project Hotline**

A 24-hour project hotline at 1-877-3CisME was developed by ODOT and ORDC to serve as a method for obtaining public comment. The caller is greeted by a recorded message that asks for his or her name, contact information and comments or questions. The project team documented the feedback and added the names to the email and postage mail database. By October 6, 2009 there were 121 messages left on the hotline, with about 73 percent indicating support. Those opposed indicated they did not support using taxpayer funds to support passenger rail service, or did not believe the expected ridership justified the cost. Appendix O includes a summary of these calls.

### **4.2 Environmental Justice**

A number of communities that are diverse in racial, ethnic and socio-economic backgrounds are located along the project corridor. Care was taken to ensure that these communities were given equal opportunity for participation, as outlined in *Title VI of the Civil Rights Act of 1964* and *Executive Order 12898* on Environmental Justice. The statewide radio advertisement that is discussed above was one technique for reaching these populations directly.

Additionally, representatives from the 300+ jurisdictions located along the proposed routes were asked to distribute informational postcards that advertised the hotline, website and public meetings. Jurisdictions were requested to distribute the postcards at public libraries, local grocery stores, social service agencies, churches and other organizations that would have potential to be frequented by minorities and/or low income persons. Two thousand postcards were distributed directly to 20 minority churches located in Cleveland and Columbus; additional postcards were distributed in minority neighborhoods and at neighborhood events in Cleveland, Columbus, Dayton and Cincinnati.

On September 14<sup>th</sup> the project team briefed and sought input from the East End Community Council in Cincinnati, a civic organization that represents many diverse neighborhoods along the proposed Eastern Cincinnati alignment. Feedback received indicated a preference for not bringing the proposed service as far south and west as the Riverside Dr./Boat House/Sawyer Point station location. Concerns were expressed about possible impacts to the residents' view of the river, the local park and overall

property values. Residents expressed skepticism about the ability of conventional intercity passenger rail to stimulate transit oriented development around the proposed station and along the eastern route alignment.

ODOT and ORDC continue to welcome opportunities to meet with individuals and groups to hear their feedback on the proposed 3C Quick Start service.

### **4.3 Support Letters and Resolutions**

As a result of extensive public involvement efforts, as of October 6<sup>th</sup> numerous letters, news releases, emails, and resolutions of support had been received from individuals, local governments and organizations. These are included in Appendix P.

### **4.4 Response to Public Comments**

The summary below highlights key themes that emerged from: comment forms and letters returned at the public meetings (95 comments), online public meeting survey responses (49), general comments provided via the web site (163), and responses to the online "3C is Me" survey (7,225 comments included among 9,730 survey responses). In total, as many as 7,500 total specific comments, calls, emails and letters were received during the EA process.

#### **4.4.1 Support for the Project**

Of the 9,730 respondents to the online survey, 92 percent indicated support for 3C Quick Start proposal. Of approximately 7,500 written comments received, at least 4,800 comments – 64 percent -- expressed strong support for the introduction of 3C Quick Start passenger rail service. Some used the word "exciting" and "fabulous" and "love it" while others said this project is "long-overdue" or "can't happen soon enough" or it needs to start "ASAP." A common theme underpinning that excitement was concern over the future of gas prices, the environment, having to drive everywhere, or dealing with traffic.

#### *ODOT/ORDC Response:*

*A Quinnipiac public opinion poll in March, 2009 indicated 64 percent of Ohioans surveyed support passenger rail. As noted above, the 3C Quick Start passenger rail proposal generated significant media interest, more than 9,700 responses to an online survey – with 92 percent indicating support -- and 7,500 written comments with at least 61 percent voicing support for passenger rail in these admittedly non-scientific surveys. Clearly, there is significant interest and demand for passenger rail transportation. Freight and passenger rail services are critical pieces in a more multi-modal, strategic approach to moving goods and services more efficiently. Our agencies intend to be responsive to this public demand and business need.*

#### **4.4.2 Routes and Stops**

About 700 respondents made suggestions on the location of the recommended route and proposed stations. Regarding proposed routing, most indicated preference for the Akron route or a more direct route between Columbus and Cincinnati or direct, high speed routes to Chicago. Station comments were focused on which cities should have stations and where. A number of Cincinnati-area citizens voiced support for the Riverside Drive/Boat House/Sawyer Point station option but those who opposed it did so strongly, citing concerns about impacts to a local park and view shed for the Ohio River. Many residents cited a preference for the proposed light rail line along the Oasis Line.

Some respondents preferred the Lunken Field site. Others wrote that they wanted Cincinnati Union Terminal to be the 3C station even though it was not determined to be a viable Quick Start route option during the screening process.

ODOT/ORDC Response:

*The recommended station location near downtown Cincinnati on the Oasis Line is located on Lunken Park Drive. This station location better aligns 3C Quick Start service with other planning efforts currently underway by ODOT. The Eastern Corridor project in Cincinnati has already identified the Oasis Line for light rail service through its Tier I Record of Decision (ROD). A 3C Quick Start station at this location better supports the conclusions of that ROD. This site provides a location for the development of a station that would be surrounded by compatible light industrial uses. It is also consistent with local desire to preserve the Oasis Line for potential light rail service.*

Debate was strong over other station locations, too, especially where there were distinct choices to be made (ie: Shelby or Galion? Hamilton or Middletown?). The public comments appeared to be evenly split. Other feedback questioned why their region/community was not included in the first phase of service, such as Springfield, East Dayton/Riverside and North Columbus.

ODOT/ORDC Response:

*Regarding routes: Through its work through the years with Galion, Shelby, Hamilton, Middletown and many other cities along various proposed rail routes, ORDC was aware of their strong desire to be served by passenger rail. Alignments that would serve those cities were considered throughout the technical screening process. During the Levels 1 and 2 technical screening process, it was determined that it was not viable to serve the west side of Cincinnati or the cities of Hamilton, Shelby or Akron at this time. However, future analysis and freight railroad agreements may make this possible at a later date. It is anticipated these questions will be resolved during future environmental study phases.*

*Regarding stations: During the Level 3 technical analysis, additional station stops along the recommended route were analyzed for potential ridership, environmental impacts and cost, as requested by various communities. It was determined that the East Dayton/Riverside and Springfield stations would, indeed, generate additional ridership at minimal costs and with no environmental impacts. As a result, these station stops are recommended to be included at start-up service, or shortly thereafter, pending the availability of funds to develop these specific stations. Ridership would also significantly increase with additional stops in Middletown, North Columbus and in the Galion area, thus they are recommended to be included in future improvements to Quick Start service. A station in Hamilton, conversely, would make the overall trip longer and not generate significant additional ridership. Thus a station stop in Hamilton is not recommended at this time.*

#### **4.4.3 Service**

There were about 675 comments related to service. Many challenged the estimated travel time of more than six hours between Cleveland to Cincinnati, indicating they wanted faster traveling speeds as soon as possible. Others said the 3C Quick Start service proposal was a good starting point. Many comments supported the incremental approach of developing and improving services to high-speed, although there were

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differing opinions of what "high speed" actually meant. Others recognized that using the train was a more productive use of travel time. Many wanted to know if investments made in the Quick Start service would be transferrable to high speed rail.

#### ODOT/ORDC Response:

*Top speeds of 3C Quick Start will be 79 mph. Plans will soon be developed for increasing train speeds up to 110 mph. Even among the world's premier high-speed rail systems, nations did not make the leap from zero to 200-plus mph in a single step. While there are different planning and engineering requirements for the various speed scenarios, all began with systems operating at conventional speeds and incrementally improved performance. For services up to 90 mph, likely all of the 3C Quick Start investments are transferable. For services up to 110 mph, new passenger-only tracks will be needed, but these can be built along existing freight lines to serve stations and train servicing facilities built for the 3C Quick Start. Also, trains newly built for 3C Quick Start service can have high-speed capabilities. If modernized trains are used for Quick Start these can be used in high-speed service as reserve equipment for peak travel periods, maintenance or emergencies.*

Respondents requested that the trains include food service, provide a place on-board for bikes and pets, and provide free Wi-Fi.

#### ODOT/ORDC Response:

*Quick Start passenger rail service is intended to be convenient and comfortable, with amenities like food service, plug-in access for personal electronic equipment and more. ODOT/ORDC will examine best practices on passenger rail systems throughout the U.S. and around the world to determine what might work best here in Ohio.*

Respondents said that more stations needed to be provided or that the schedules needed to be designed more for commuters to improve weekday ridership. Weekend ridership was assumed to be stronger, attracting college students, families or vacationers.

#### ODOT/ORDC Response:

*Ridership experience in other cities and states indicate it is a fine balance between how many stations are provided, which provide access and convenience for more people, versus how quickly the train travels from the beginning to the end of an individual's destination. If the trip has too many stops, individuals will find it faster to use other commuting alternatives, which, in turn, will decrease overall ridership. Some states have tackled this challenge by providing "express" rail trips, with few station stops, as well as "local" rail service, with more station stops. Ohio will consider both approaches as additional funding resources become available. Passenger rail service in other states has, indeed, been shown to attract college students and families as well as business travelers.*

Some respondents indicated that fares should be affordable, and be competitively priced to automobiles and other modes of travel, including bus and air.

#### ODOT/ORDC Response:

*Fares have not yet been established for the 3C Quick Start service, but fares between Midwest cities on Amtrak are typically 14 cents per mile, or about \$20 one-way from Cleveland to Columbus, and \$18 from Cincinnati to Columbus. Compare this to \$0.54 cents per mile to own and operate a motor vehicle, and the ability to be more productive with travel time.*

#### **4.4.4 Opposition**

There were about 650 comments indicating the project is a waste of money, will not generate the estimated ridership or is just not a good idea. They primarily questioned the ridership estimates based on the proposed six-hour travel time between Cleveland and Cincinnati. They also questioned whether people could be enticed out of their cars, or if Ohio had the population sufficient to make the train service a success. They also expressed concerns that passenger rail service would drain resources away from maintaining highways and bridges, and would increase the state's current budget problems.

##### ODOT/ORDC Response:

*Regarding ridership: Nearly 6 million Ohioans live within 15 miles of the 3C Corridor, a federally-designated high speed rail corridor and one of the most densely-populated corridors in the U.S. without passenger rail service. Early Amtrak projections on ridership were completed using conservative modeling techniques required by federally-funded transportation investments.*

*Regarding ongoing funding for highways and bridges and impact on the state budget: Ohio is requesting 100 percent federal stimulus funding to pay for capital expenses such as railroad track and signal system improvements and vehicles. Annual operating costs are expected to be \$29 million annually. Ticket fare collections are expected to generate about \$12 million, and the state has identified several funding sources to pay for the remaining \$17 million needed each year to operate Quick Start. ODOT/ORDC intends to use non-gas-tax dollars for operating funds, complementing the state's historic investment in highways and bridges.*

*Regarding other economic benefits: Nationally, studies have shown that land values around stations increasing as much as 30 percent in the 14 other states that currently operate passenger rail service. Passenger rail provides place-making opportunities by creating comfortable, connected, memorable places. That leads to new prospects for small business and vibrant urban cores which attract and retain today's talented professionals.*

Some respondents said the survey questions were confusing and/or seemed "guided" to elicit certain responses.

##### ODOT/ORDC Response:

*There were multiple opportunities for public comment, including the telephone hotline, online survey, public meetings and comment forms. These were unscientific means of soliciting input, so responses should be considered qualitative and anecdotal rather than a scientifically representative sample of the public at large. While many of these written opportunities provided questions with multiple responses, respondents were also invited to provide unprompted comments.*

#### **4.4.5 Connectivity**

There were approximately 475 respondents who indicated that connecting local transportation (airports, bus and connecting rail service, taxis, bike and pedestrian access) to local destinations was very important to the overall success of passenger rail. A Southwest Cleveland station located at the Puritas/West 150th Rapid station, for example, was strongly favored based on its connectivity to Cleveland's rapid transit system and the airport. Similarly, convention center sites at Columbus and Dayton were strongly favored for reasons of access and connectivity.

##### ODOT/ORDC Response:

*Our agencies strongly concur that passenger rail stations must be served by local transportation services to meet the access and convenience goals of Quick Start. Additionally, local stations should be developed in a manner that promotes local economic growth and is accessible by transit, pedestrians and bicyclists. During the three stakeholder workshops, the transit agencies located in the counties served by each passenger rail station made their commitment to coordinating closely with 3C Quick Start service. Their support letters, included in Appendix P, further reiterate this commitment.*

Other respondents indicated that the 3C route should connect to other cities outside the state, such as Chicago, Pittsburgh and other destinations.

##### Response:

*The 3C Quick Start passenger rail plan is only the first step in Ohio's larger vision to connect with Chicago, Pittsburgh, Detroit, New York City, and other major destinations in the Midwest, East Coast and elsewhere.*

#### **4.4.6 Miscellaneous Suggestions**

At least 250 respondents and meeting attendees offered suggestions on how to make the service more attractive. They ranged from suggesting that the service be run by efficient companies rather than by "government bureaucrats", to others who said the service should be run by government rather than by greedy companies. Others suggested that multi-ride tickets or passes be offered, that the involvement of Ohio or USA companies for economic stimulus be demonstrated, that an educational/advertising campaign to inform Ohio travelers about the benefits of train travel be undertaken, and that service to more Ohio cities be offered.

##### ODOT/ORDC Response:

*We welcome the enthusiasm and creativity of Ohio citizens. As 3C Quick Start moves ahead, ODOT/ORDC remain committed to considering the public its partner in developing safe, convenient passenger rail service in Ohio.*

## **5.0 LIST OF PREPARERS**

Parsons Brinckerhoff (PB) prepared this Environmental Assessment (EA) at the behest of the Ohio Department of Transportation (ODOT) for the Federal Railroad Administration (FRA). AECOM provided ridership and revenue analysis, Engage Public Affairs, LLC developed and implemented the public involvement plan. Persons comprising the EA team are included in the list below. Persons cited below for the FRA and ODOT were the reviewers of the EA.

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## **5.4 Parsons Brinckerhoff**

Persons within the PB portion of the EA team are cited below by name, title within the PB organization and their role in the project.

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| Mark Cheskey, Senior Supervising Planner                                | Environmental Task Manager           |
| Phil Pasterak, PE, Vice President and Regional Manager Transit and Rail | Deputy Project Manager and Rail Lead |
| Jennifer Graf, Vice President and Principal Project Manager             | Project Review                       |

### **5.4.2 EA Section Development**

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| William Rice, REA, CEI, Supervising Planner   | Hazardous Materials and Visual Resources   |
| Todd Steiss, AICP, Senior Planner   | Project Geographic Information Systems (GIS), Floodplains, Noise, Vibration, and Environmental Justice |
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Northeast Ohio Areawide Coordinating Agency  
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Cleveland, OH 44114-3204

Mid-Ohio Regional Planning Commission  
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Miami Valley Regional Planning Commission  
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Clark County – Springfield Transportation Coordinating Committee  
76 East High Street  
Springfield, OH 45502

Richland County Regional Planning Commission  
35 North Park Street  
Mansfield, OH 44902

## **7.0 REFERENCES**

- 16 USC 470. Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.
- 16 USC 460. Section 6(f) of the Land and Water Conservation Act of 1965.
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- 40 CFR 1500. Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act. November 29, 1978.
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## **8.0 APPENDICES**

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