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S.0 SUMMARY

This summary of the *I-71 Corridor Preliminary Draft Environmental Impact Statement (DEIS)* regarding the possible implementation of a LRT system addresses the following:

- Project description, project background and the decision-making process;
- Purpose and need for action;
- Alternatives considered;
- Summary of the environmental effects (social, environmental, economic and transportation);
- Evaluation of the alternatives; and
- Summary of public participation activities.

A discussion of issues to be resolved in future project phases and the next steps to be taken in the decision-making process are also summarized in this section.

Graphics for the Summary Chapter are included together at the end of the chapter.

S.1 PROJECT DESCRIPTION

The proposed action is the development of the light rail transit (LRT) system elements for the Interstate-71 (I-71) Corridor, a transportation corridor that extends approximately 19-miles between Covington, Kentucky and Blue Ash, Ohio. The proposed project, considers four alternatives, as shown on Figure S.1-1a and S.1-1b and includes the 19-mile LRT line with either 20 or 21 stations and a yard and shop facility. The alternative alignments and station locations and station types were identified during a collaborative effort among the residents, local governments, the business community and the I-71 Corridor Oversight Committee. The proposed LRT project also includes the improvements of both the No-Build Alternative and the Transportation System Management Alternative identified during the planning process.

S.1.1 PROJECT BACKGROUND

Several planning efforts have been undertaken for the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) region over the past 25 years. These include:

- 1981 Regional Transportation Plan;
- 1986 Cincinnati Alternatives Analysis Transitional Study;
- 1992 Cincinnati Intermodal Surface Transportation Plan;
- Managing Mobility, Year 2010 Regional Transportation Plan (November, 1993);
- 1993 Light Rail Transit for Greater Cincinnati: The Past, Present, and Future Directions, (December 1993);
- Looking Ahead: 2020 Metropolitan Transportation Plan (May, 1998);
- I-71 Corridor Transportation Study Final Report (August 1998);

- OKI 2030 Regional Transportation Plan (May 2001); and
- Southern Ohio Regional Transit Authority (SORTA) MetroMoves plan (2001).

In each document, part or all of the I-71 Corridor, as it is known today, is recognized as a priority travel corridor and recommended for further analysis.

In November 1993, the regional Long Range Transportation Plan (LRTP) for the year 2010 entitled *Managing Mobility, Year 2010 Regional Transportation Plan* was adopted by OKI. This plan established a long-range commitment to rail transit as an alternative travel mode to improve the region's mobility and to meet regional air quality goals. A total of seven corridors were recommended for further study, with the I-71 (Northeast) Corridor selected as the region's top priority corridor. The report entitled *Light Rail Transit for Greater Cincinnati: The Past, Present, and Future Directions* summarized the impacts, both physically and financially, of LRT development. This plan recommended corridor studies for the six most heavily traveled and congested corridors in the OKI region. Furthermore, the plan states that the priority corridor for development of LRT in the Cincinnati region be the corridor extending from the Florence-Greater Cincinnati/Northern Kentucky International Airport vicinity northwestward, through Covington and the Cincinnati central business district (CBD), and north generally paralleling I-71, to southwestern Warren County.

In response to the recommendations of the 1993 Regional LRTP, the I-71 Corridor Major Investment Study (MIS) was initiated in 1995. At the onset of the I-71 Corridor MIS, a committee of approximately 80 representatives from local and state government agencies, businesses, citizen groups and environmental groups was formed by OKI to guide the decision-making process and to make recommendations to the OKI Board of Trustees. This committee, named the I-71 Corridor Oversight Committee, met on a monthly basis (and more frequently when needed) to identify the goals and objectives of the study, to review and evaluate the technical analysis of a range of modal solutions, to gain feedback from the public, and to refine alternatives.

The I-71 Corridor MIS identified conceptual mode and alignment alternatives which were discussed in public meetings throughout the corridor and ultimately evaluated by the I-71 Corridor Oversight Committee. The preliminary set of alternatives resulted from an expansive public involvement effort called the "MIS Scoping Meetings". These alternatives are defined in the *I-71 Corridor Transportation Study Scoping Report (March 1996)*. These included:

1. No-Build
2. High Occupancy Vehicle Lanes on I-71
3. Exclusive Busway
4. Transportation System Management (TSM)
5. Highway Widening
6. Light Rail Transit (LRT)
7. Commuter Rail Transit (CRT)

Following three years of study, the I-71 Corridor Oversight Committee recommended to the OKI Board of Trustees that LRT in conjunction with the No-Build and TSM Alternatives, was the best solution for addressing the future transportation needs of the I-71 Corridor. The OKI Board of Trustees formally adopted this recommendation as the Locally Preferred Strategy (LPS) on March 26, 1998. This decision

was made based on the following evaluation criteria which the I-71 Corridor Oversight Committee developed (listed in priority order):

- Transportation Service
- Environmental Impacts
- Community Impacts
- Costs
- Engineering Difficulty
- Public Input
- Economic Impacts

In 1998, OKI adopted an updated regional LRTP entitled *Looking Ahead: 2020 Metropolitan Transportation Plan*. This 1998 transportation plan included a recommended regional rail concept for the Greater Cincinnati/Northern Kentucky region addressing passenger, commuter, and light rail service (see Figure S.1-2). The regional rail concept includes light rail linkages (in addition to those identified for the I-71 Corridor) to important destinations in the region, such as Newport, Northern Kentucky University, Covington and Florence in Kentucky, and Western Hills, Middletown, Mason, Fairfield and Hamilton in Ohio. The I-71 Corridor LRT project was included in the 1998-2001 Transportation Improvement Plan (TIP).

S.1.2 DECISION-MAKING PROCESS

The Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) issued regulations on October 28, 1993 that cover all steps in the conduct of planning and development of major highway and transit projects. These regulations were revised under the Transportation Equity Act for the 21st Century (TEA-21) defining the four major steps in the process as shown on Figure S.1-3. In brief, the five steps are: 1) System Planning, 2) Major Investment Study (MIS), 3) DEIS/ Preliminary Engineering/ FEIS, 4) Final Design, and 5) Construction. These steps, as they apply to the I-71 Corridor LRT Project, are as follows:

- System Planning – This step included the OKI 2030 LRTP and the 1998-2001 Transportation Improvement Plan (TIP).
- Major Investment Study - This step encompasses Regional Studies, Major Investment Studies and the Alternatives Analysis. Completion of the *I-71 Corridor Transportation Study Final Report* in August 1998, together with inclusion of the recommended program in the most recently adopted OKI *2030 Long Range Transportation Plan* and the 1998-2001 TIP, constitutes completion of this step.
- DEIS/ Preliminary Engineering/ FEIS - This step encompasses development of preliminary engineering design, preparation of a DEIS and a proposed financing plan, and preparation of the FEIS.

By letter of date, the FTA provided approval to OKI to enter the Preliminary Engineering/ Environmental Impact Statement (EIS) Phase. This DEIS addresses each of those requirements presenting preliminary engineering designs and associated cost estimates, evaluation of environmental effects, identification of mitigation measures and a proposed plan for financing this project.

The EIS process formally began with the initiation of “Scoping.” which is the first step of the EIS process, and includes public agency and community outreach to further define the scope of potential issues and the alternatives to be analyzed in the EIS. The alternatives presented or defined in the scoping process are then advanced to the analysis phase of the EIS as a result of public, agency and technical support. These alternatives and their potential effects are the subjects of this DEIS.

- Final Design and Construction - Final design and construction steps will be commenced upon completion of the requirements under the National Environmental Policy Act (NEPA) and the FTA requirements under Section 5309 New Starts Criteria.

S.1.3 DECISION AT HAND

In accordance with federal regulations, full consideration of environmental effects as disclosed during the NEPA process is required before the project can be advanced to the funding stage for final design, right-of-way acquisition, equipment and facilities and system construction. This DEIS document will be circulated for review by interested parties, including private citizens, community groups, the business community, elected officials and public agencies in accordance with federal and state requirements. A public hearing will be held to provide a forum for agency and citizen participation and comment. After consideration of the comments received during circulation of the DEIS and the public hearing, resolution of any outstanding issues, including selection of the Locally Preferred Alternative, will then be made by the I-71 Corridor Oversight Committee, in consultation with the OKI Board of Trustees, the City of Cincinnati and other advisory agencies. At some point in the NEPA process, a joint operating agreement with SORTA and the Transit Authority of Northern Kentucky (TANK) would probably be determined and SORTA/ TANK would assume the role as local project sponsor.

The result of these decisions will then be documented in the Final Environmental Impact Statement (FEIS), which will also include responses to comments received during circulation of the DEIS. Following the filing of the FEIS by FTA in conformance with NEPA, if a build alternative is selected as the Locally Preferred Alternative, a grant application will be submitted by SORTA/TANK to FTA under Section 5309 New Starts Criteria for funding of the final design and construction.

The FTA will not grant approval for the project to enter into final design until preliminary engineering is considered complete and the FTA has issued a Record of Decision (ROD), or Finding of No Significant Impact (FONSI) in the case of an Environmental Assessment, as required by NEPA. Further, the local project sponsor, SORTA/ TANK, must demonstrate to the FTA that they have the technical capability to advance the project into final design.

S.1.4 SECTION 5309 NEW STARTS CRITERIA

The U.S. Department of Transportation (USDOT) *Annual Report on New Starts* documents USDOT recommendations for the allocation of funds for fixed guideway transit projects as part of Section 5309 of Title 49, the New Starts Program. The FTA reviews the criteria for each candidate project and assigns an overall rating of highly recommended, recommended, or not recommended.

The New Starts Program reviews each project with regard to the following criteria:

- Project Justification
 - Mobility improvements;
 - Environmental benefits;

- Operating efficiencies;
- Cost effectiveness; and
- Transit supportive land use and future patterns.
- Other Factors
- Local Financial Commitment
 - Stability and reliability of the capital financing plan; and
 - Stability and reliability of the operating finance plan.

In November 2001, OKI submitted a New Starts criteria evaluation of the I-71 Corridor LRT Project. Table S.1 summarizes the quantitative measures of that submittal. Since the November 2001 submittal, additional detailed analyses have been completed for this project. The conclusions reported in Chapters 3 through 7 of this DEIS reflect the most current information available.

Table S.1: 2001 New Starts Quantitative Measures Summary

Criteria	Measure	Results for I-71 Corridor LRT Project 2001 New Starts Criteria Submittal
Mobility Improvements	Annual Travel Time Savings	4.784 million hours compared to No-Build 2.506 million hours compared to TSM
	Number of Low-Income Household within ½ mile of Stations	10,400 Households 31% of the Total Households within ½ mile of stations
Environmental Benefits	Reduction in Carbon Monoxide (CO) emitted	20 tons per year- Compared to No-Build 31 tons per year- Compared to TSM
	Reduction in Nitrogen Oxide (NO _x) emitted	-6 tons per year- Compared to No-Build 7 tons per year- Compared to TSM
	Reduction in Volatile Organic Compound (VOC) emitted	4 tons per year- Compared to No-Build 6 tons per year- Compared to TSM
	Reduction in Particulate Matter (PM ₁₀) emitted	1 ton per year- Compared to No-Build 1 ton per year- Compared to TSM
	Reduction in Carbon Dioxide (CO ₂) emitted	-4,360 tons per year- Compared to No-Build 1,969 tons per year- Compared to TSM
	Energy Savings (in millions of BTU's)	-61,120 million BTUs per year- Compared to No-Build 19,201 million BTUs per year- Compared to TSM
Operating Efficiencies	System Operating Cost per Passenger Mile	\$0.47 for No-Build \$0.46 for TSM \$0.47 for New Start Project \$0.00 Compared to No-Build \$0.01 Compared to TSM
Cost Effectiveness	Incremental Cost per Incremental Passenger	\$15.52 New Start Project compared to No-Build \$17.62 New Start Project compared to TSM

Source: URS, OKI New Starts Submittal 2001

S.2 PURPOSE AND NEED FOR ACTION

Throughout the Cincinnati/ Northern Kentucky region, economic growth, diversified economy, and the abundance of recreational attractions have fueled sustained growth in population and employment over several decades. Investments in the transportation system have not kept pace with the rate of growth and development, resulting in severe congestion on major roadways, urban sprawl and numerous transportation deficiencies. The following issues form the basis of the need for transportation improvements.

- Projected OKI regional population and employment growth of 33 and 40 percent, respectively, between 1990 and 2030, with some counties adjacent to the I-71 Corridor experiencing 70-113 percent population growth;
- Projected total travel demand increase of 15 percent for the Year 2010, with an increase of 80 percent for trips to the airport and 19 percent to downtown Cincinnati. By the year 2010, it is estimated that 22 locations will operate at congestion levels and all segments of I-71 will operate at or near traffic gridlock by the Year 2020;
- Constrained existing roadway capacity caused by disproportionate investment in roadway improvements related to regional population and employment growth;
- Limited existing transit service to serve decentralized employment centers and suburb-to-suburb destinations due to insufficient funding for current service or expansion; and
- Unsustainable, polycentric commercial and dispersed suburban-style residential land use patterns that exacerbate complex travel patterns and congestion.
- Limited short-term or visitor parking capacity in Downtown Cincinnati, restricting the commercial retail vitality of the CBD. In addition, parking throughout the corridor is important to the economic development potential of the metropolitan area.

Based on the need for transportation improvements in the I-71 Corridor, OKI has determined that the purpose of the I-71 Corridor LRT Project is to provide for:

Transportation and Mobility:

- Improve Corridor mobility by providing a balanced transportation system to efficiently and effectively move people and goods.
- Provide better access to downtown Cincinnati, Covington, and the central riverfronts.
- Provide a higher level of mobility to people who rely on public transportation.

Economic Opportunity and Investment:

- Develop a system that meets changing urban-suburban development patterns and travel behavior.
- Provide better access from the central city to the emerging suburban employment centers.
- Support economic development investments and opportunities with transportation infrastructure.

Communities and Environment:

- Develop a transportation system that enhances the physical and social environment of the Greater Cincinnati/ Northern Kentucky region.
- Improve air quality.

S.3 ALTERNATIVES CONSIDERED

The alternatives evaluated in the EIS include the No-Build Alternative, the TSM Alternative and four LRT build alternatives, including a double track configuration on both new and improved trackage, electrically powered light rail vehicles, yard and shop facility, and either 20 or 21 stations.

S.3.1 NO-BUILD ALTERNATIVE

The No-Build Alternative utilizes the existing transportation system and provides for a minimum level of transportation system expansion. It includes all projects programmed and funded in the OKI Transportation Improvement Program (TIP) for fiscal years 1998 - 2001. Significant roadway expansion components of the No-Build Alternative located within the I-71 corridor are the following:

- Adding 2 lanes on I-71 from Pfeiffer Road to State Route 48 (completed 2000)
- Reconstruction/realignment of Fort Washington Way (completed 2001)
- Reconstruction of on I-71/75 3000' south of Dixie Highway to Kyles Lane (completed 2000)
- Adding one eastbound lane on U.S. 22 between Kenwood Road and I-71
- Adding one travel lane on U.S. 22 in each direction from I-71 to Hosbrook Road.
- Reconstruction of KY1120 (12th Street in Covington) from the Licking River to I-71/75.

S.3.2 TRANSPORTATION SYSTEM MANAGEMENT (TSM) ALTERNATIVE

The TSM Alternative consists of a variety of low-cost improvements to the existing transportation system designed to improve transportation conditions in the I-71 Corridor. It includes major expansion of the current bus system, Travel Demand Management (TDM) programs such as carpooling and telecommuting, Intelligent Transportation Systems (ITS) (e.g., ARTIMIS), and traffic engineering improvements.

This Alternative would expand both local and express bus service in areas that are currently not served or under-served (Figures S.3-1a and S.3-1b) An important element would be the implementation of timed-transfer transit centers. These are locations where several bus routes converge, with synchronized schedules to permit convenient transferring among routes, similar to the hub-and spoke systems of major airlines. New service could include a wide variety of bus types including small buses for neighborhood or circulator services and large articulated buses for mainline trunk services.

Under the TSM Alternative, the following transit centers would be constructed in the vicinity of the following street intersections or shopping centers:

- Peebles Corner (Gilbert Avenue and McMillan Street)
- Anderson (possible locations include Beechmont Mall or the Anderson Township Building)

- Kenwood (Kenwood Road and I-71)
- Fields Ertel (Fields Ertel Road and I-71)
- Reading (U.S. 42 and Galbraith)
- Tri-County Mall
- Knowlton’s Corner (Hamilton Avenue and Spring Grove Avenue)
- Northgate Mall
- Western Hills Plaza
- Florence Mall
- Latonia Center, and
- Northern Kentucky University

S.3.3 BUILD (LRT) ALTERNATIVES

The LRT build alternatives utilize a standard railroad gauge double track configuration throughout the alignments with crossovers provided at regular intervals. The double tracks are generally embedded in the roadway in street running urban areas and on ballast in exclusive rights-of way in suburban sections. LRT vehicles are served via overhead electrical powered pantograph, and currently designed for 2-car trains with consideration for future expansion to accommodate 3-car trains. The alternatives each include a yard and shop facility located in Avondale neighborhood of Cincinnati with up to 21 station locations. The four possible build alternatives under consideration are shown on Figure S.1-1a and Figure S.1-1b and include:

- Alternative 1 - From Covington (at grade), no Zoo connection, to Blue Ash;
- Alternative 2 - From Covington (above grade), no Zoo connection, to Blue Ash;
- Alternative 3 - From Covington (at grade), including the Zoo connection, to Blue Ash; and
- Alternative 4 - From Covington (above grade), including the Zoo connection, to Blue Ash.

S.3.3.1 Alternative 1

The proposed Alternative 1 is shown on Figure S.1-1a and includes the double-track at grade alignment from the 13th Street in downtown Covington, Kentucky. This alternative would follow the existing topography along the CSX railroad tracks with at-grade crossings at 6th Street, 5th Street and 4th Street and crossing over 3rd Street on a new bridge structure. The alternative would then cross the Ohio River and Cincinnati Riverfront on a new and modified bridge structures into downtown Cincinnati, Ohio, where it would proceed as a split one-way pair on Main and Walnut Streets to a tunnel under Mount Auburn. From Mount Auburn, the alternative continues through the uptown area of Cincinnati on Jefferson Avenue and adjacent to Martin Luther King, Jr. (MLK) Drive, then north, generally along existing SORTA owned right-of-way, through the cities of Cincinnati, Norwood, Silverton, Deer Park, Blue Ash and Sycamore Township. The alternative includes 20 stations

S.3.3.2 Alternative 2

The proposed Alternative 2 is shown on Figure S.1-1a and is identical to Alternative 1 with the exception of small portion of the alignment in Covington. The tracks for this alternative will climb on retained fill south of Athey Street and cross over 6th Street, 5th Street, 4th Street and 3rd Street on new bridge structures.

S.3.3.3 Alternative 3

The proposed Alternative 3 is shown on Figure S.1-1b and is identical to Alternative 1 with the exception of the alignment in the uptown area of Cincinnati. The alignment proceeds north from the intersection of Jefferson Ave and MLK Drive along Vine, Erkenbrecher and then on through the Medical campus of the University of Cincinnati and then East crossing Harvey Avenue at grade and onto the south side of Hickman Avenue. The LRT will run along the south side of Hickman crossing Reading Road and Whittier at grade, then turning to the northeast to meet Fredonia Avenue at-grade and rejoining the Alternative 1 alignment.

S.3.3.4 Alternative 4

The proposed Alternative 4 is shown on Figure S.1-1b and is identical to Alternative 2 with the exception of the alignment in the uptown area of Cincinnati. The alignment proceeds north from the intersection of Jefferson Avenue and MLK Drive along Vine, Erkenbrecher and then on through the Medical campus of the University of Cincinnati and then East crossing Harvey Avenue at grade and onto the south side of Hickman Avenue. The LRT will run along the south side of Hickman crossing Reading Road and Whittier at grade, then turning to the northeast to meet Fredonia Avenue at-grade and rejoining the Alternative 2 alignment.

S.3.4 FINANCIAL ANALYSIS

Each alternative includes No-Build and TSM capital costs, plus the capital costs for the build alternative. Table S.2 presents capital costs in Year 2001 dollars for each build alternative. The build alternative costs include a 30 percent contingency for all elements, except a 10% contingency for light rail vehicles. The costs for each alternative also include expenses associated with engineering and design, construction management, project management, training, startup and insurance.

Table S.2: Summary of Total Capital Costs (Estimated in millions of 2001 dollars)

Alternative	Bus Improvements	LRT Capital Costs	Total Costs
No-Build	\$222	\$0	\$222
TSM Alternative	\$239	\$0	\$239
Alternative 1	\$236	\$816	\$1,052
Alternative 2	\$236	\$808	\$1,044
Alternative 3	\$236	\$845	\$1,081
Alternative 4	\$236	\$852	\$1,088

Source: URS, 2001

Table S.3 shows operating costs in 2001 dollars for each build alternative, including a subtotal for the bus component. The figures estimate the additional operating costs when compared to the existing bus system and assume average bus system cost for each build alternative.

Table S.3: Summary of Annual Gross Operating and Maintenance Costs* (Estimated in millions of 2001 dollars)

Alternative	Bus Component (in 2001\$)	LRT Component (in 2001\$)	Total Annual O&M Costs
No-Build Alternative	\$0	\$0	\$0
TSM Alternative	\$17	\$0	\$17
Build Alternative 1	\$14	\$816	\$830
Build Alternative 2	\$14	\$808	\$822
Build Alternative 3	\$14	\$845	\$859
Build Alternative 4	\$14	\$852	\$866

Source: Manuel Padron and Associates, 2001

*These numbers are gross operating and maintenance costs and do not include any reductions in costs based on projected fare revenues.

S.4 SUMMARY OF ENVIRONMENTAL EFFECTS

Each of the alternatives considered, including the No-Build, TSM Alternative and build alternatives, Alternative 1 through Alternative 4, has the potential to affect the residents, the economy and the environment of the I-71 Corridor. The following is a summary of the analysis of these effects categorized into four analysis factors: social, natural environment, economic and transportation. Environmental Justice effects were analyzed for each of these factors.

S.4.1 SOCIAL EFFECTS

Social effects of the No-Build, TSM and four build alternatives include an analysis and evaluation of potential adverse effects and benefits related to land use, neighborhoods, visual quality, historic and archeological resources, parklands, safety and Environmental Justice.

S.4.1.1 Land Use, Community Services and Community Cohesion Effects (Section 3.2 and 3.3)

Analysis of the potential Land Use, Community Services and Community Cohesion effects included a review of local land use and zoning plans for the potentially affected communities and a determination of the generalized pattern of existing land uses within a 2-mile corridor adjoining the proposed alignment. Land use data in Hamilton County is generalized from the County Assessor's Office data and updated based on field inspection. Land use in Covington is based on Kenton County data, refined through field inspection and aerial photograph interpretation.

Using available data, the following community facilities were inventoried and the effects evaluated for each of the alternatives considered:

- Government buildings (federal, state and local government buildings including city halls, libraries, fire stations, police stations, post offices, etc.)
- Schools, public and private

- Places of worship
- Day care centers
- Hospitals, nursing homes, other medical facilities
- Senior housing and assisted living facilities
- Nonprofit activity centers (e.g., YMCA, Girl Scout camps, American Legions, missions, shelters, etc.)
- Parks and recreation facilities
- Concentrations of employment or commercial centers

No-Build Alternative

Land Use

Under the No-Build Alternative, minor improvements to public transportation are planned to occur within the corridor. The projects are programmed in the regional Transportation Improvement Program for fiscal years 1998 – 2001 and are in various stages of construction or design and planning or have been completed. Redevelopment, displacement or relocation directly associated with this alternative has occurred or remains to be determined, but it may be anticipated that the No-Build Alternative will produce no additional effects. The No-Build Alternative would not provide an alternative mode of transit in the I-71 Corridor.

Community Facilities

Under the No-Build Alternative, minor improvements to public transportation are planned to occur within the corridor. The projects currently programmed in the regional Transportation Improvement Program for fiscal years 1998 – 2001 are in various stages of construction or design and planning or have been completed. It may be anticipated that the No-Build Alternative will produce no additional effects.

The level of traffic increase expected over the next 20 years will adversely affect the cohesion and quality of life in existing neighborhoods. Adverse effects would be especially evident in the urban neighborhoods of Covington and Cincinnati and the inner suburban communities of Norwood, Silverton and Deer Park, since these are likely to be traversed by increasing volumes of commuter traffic. None of the positive effects offered by the build Alternatives, such as improved mobility, affordable transportation, improved bicycle and pedestrian facilities/ connections, and potential development or redevelopment opportunities in the proposed station areas would be realized for the No-Build Alternative.

TSM Alternative

Land Use

The TSM Alternative includes the construction of transit centers for the region's bus systems at twelve locations, including four that lie within the I-71 Corridor. These are:

- Peebles Corner (Gilbert Avenue and McMillan Street): a neighborhood commercial intersection east of I-71, about ½ mile east of the proposed Avondale LRT station in the Walnut Hills neighborhood of Cincinnati.
- Reading (US 42 and Galbraith Road), about two miles west of the proposed Galbraith Road LRT station.

- Kenwood (vicinity of Kenwood Road and I-71): an area just south of the large Kenwood Towne Center shopping center, about a mile east and south of the proposed Silverton and Galbraith Road LRT stations.
- Fields Ertel Road and I-71, over a mile north of the proposed Cornell Park LRT station (the northern terminus of the LRT corridor)

No specific plans for these centers have as yet been developed, although it is likely that most would require some acquisition of property. Without more detailed plans, however, it cannot be determined whether properties in the vicinity of these stations would be directly impacted. There may also be some potential for intensification of existing land uses or of transit-related redevelopment in these areas. The locations and nature of the proposed transit centers are to be studied by SORTA in a second phase of its “Metro Moves” plan to be completed in 2002.

Community Facilities

The TSM Alternative includes expansion of the existing bus system and would have a generally positive effect on existing neighborhoods and community facilities by improving access and mobility for residents. However, increases in bus service will produce minor negative effects in terms of increased noise and vibration along those bus routes. Until the specific nature and location of these improvements are defined, their effects cannot be assessed in any greater detail.

Build (LRT) Alternatives

For each of the four build alternatives, most of the potential land use effects are positive in nature, either involving improved accessibility to community facilities and employment centers or potential transit-supportive development that would contribute to community cohesiveness and revitalization.

None of the alternatives would have a significant negative impact on the cohesiveness of the communities along the alternatives. In fact, the alternatives would provide enhanced access from neighborhoods served to community facilities within the station areas. Benefits would extend to employees at major employment centers and health care facilities, employees and visitors to government offices, students and faculty at schools, colleges and universities, and visitors to numerous attractions, from sports stadiums to the Cincinnati Zoo. However, potential negative impacts on community facilities with each of the build alternatives may fall into several categories:

- noise and vibration
- changes in circulation patterns that disrupt existing vehicular or pedestrian access
- partial or total removal of facilities

Alternatives 1 and 2

In terms of effects on land use and the potential for transit-supportive station area development, the two proposed Covington Riverfront station sites, located only a block apart, are essentially identical in terms of their potential for station area development. Both have substantial land available for redevelopment, and both are close to important employment and tourist centers.

Therefore, the major differences in effects are found between Alternatives 1 and 2 (the MLK Drive alignment) and Alternatives 3 and 4 (the northerly alignment that includes the Zoo Station). Alternatives 1 and 2 do not provide direct or convenient access to major medical institutions such as University Hospital, Children’s Hospital and Holmes Hospital, and provide no access to the Cincinnati Zoo.

However, they do provide access to medical and other institutions along MLK Drive (such as the Vontz

Center) and to residential neighborhoods south of MLK Drive. More land is generally available within these neighborhoods and at Reading Road for transit-supportive development.

Alternatives 3 and 4

Land use effects for Alternatives 3 and 4 would enhance direct and convenient access to major institutions and attractions such as the Cincinnati Zoo, University Hospital and Children's Hospital. However, because surrounding areas are largely built-out or because land for redevelopment is largely unavailable, these station areas have less potential for transit-supportive development. In addition, more existing land uses would be removed or displaced under these alternatives (see Economic Impacts).

S.4.1.2 Neighborhoods and Displacements (Sections 3.3 and 3.4)

The locations of neighborhoods along the I-71 Corridor were determined from available city and county data and supplemented with a pedestrian survey to determine neighborhood character and potential impacts. The analysis determined the potential effect that each of the alternatives considered may have on the neighborhood, including neighborhood cohesion, circulation and displacements of residences and businesses. The analysis included potential acquisitions due to both proposed station locations and proposed right-of-way.

Various federal statutes have been enacted to establish a uniform policy for the fair and equitable treatment of persons displaced, and from whom land is acquired as a result of programs designed and funded for the benefit of the public as a whole, including:

- 49 CFR Part 24, Department of Transportation implementing regulations for: The "Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970," as amended.
- National Environmental Policy Act (NEPA)

No-Build Alternative

Under the No-Build Alternative, minor roadway improvements are planned to occur within the corridor. Several of the projects have been completed and the remainder is in various stages of construction or design and planning. It may be anticipated that the No-Build Alternative will produce no additional direct effects to neighborhoods and require no additional displacements for these projects. Future freeway widening projects may have impacts that will need to be analyzed in conjunction with those specific project plans.

The increased level of traffic congestion expected over the next 20 years with the No-Build Alternative will likely produce indirect adverse effects to the cohesion and quality of life in existing neighborhoods. In particular, adverse impacts may occur in the urban neighborhoods of Covington and Cincinnati and the inner suburban communities of Norwood, Silverton and Deer Park, which are likely to be traversed by increasing volumes of commuter traffic. The positive impacts offered by the build alternatives, such as improved mobility, affordable transportation, improved bicycle and pedestrian facilities/connections, and potential development or redevelopment opportunities in the proposed station areas would not be realized.

TSM Alternative

Bus expansions for the TSM Alternative would include improved local and express service and the addition of transit centers where several bus routes would converge to facilitate bus transfers. Expansion of the current bus system would have a generally positive impact on existing neighborhoods and community facilities by improving access and mobility for residents. However, it may be that increases in

bus service will produce minor negative impacts in terms of increased noise and vibration along those bus routes. It is assumed that many of these improvements can be achieved without acquiring additional private property to expand the public right-of-way, except to accommodate the proposed transit centers. Specific sites for the proposed transit center improvements have not been identified at this time, making it impossible to accurately determine property acquisition requirements. It is anticipated that some of the proposed transit centers will be located at proposed LRT station sites. Until the specific nature and location of these improvements are defined, their impacts cannot be assessed in any greater detail.

Build (LRT) Alternatives

The proposed build alternatives would run through or directly adjacent to neighborhoods in the I-71 Corridor. In general effects resulting from the implementation of LRT may include acquisition of right-of-way and permanent and temporary easements including some displacements of commercial, industrial and residential structures. Potential neighborhood effects and displacements may occur in the following neighborhoods and communities:

- City of Covington (3 stations)
- Cincinnati: Riverfront, Downtown, Over-the-Rhine, Mount Auburn, Corryville, Clifton Heights, University Heights, Fairview Heights, Avondale, Evanston, Pleasant Ridge and Kennedy Heights neighborhoods
- City of Norwood
- Columbia Township
- Sycamore Township
- City of Silverton
- City of Deer Park
- City of Blue Ash

There are only minor differences among the build alternatives in terms of their impact on neighborhoods and neighborhood cohesion. Alternatives 1 and 2 (the alignment along the south edge of the Medical Campus) serve the Corryville residential neighborhood south of MLK Drive, while Alternatives 3 and 4 (the alignment that includes the Zoo Station) would serve both the Zoo and the center of the Medical Campus.

The proposed Zoo station would displace a number of residential units along Vine Street, thereby lessening the cohesion of that small residential enclave (already surrounded by large institutional uses). This alignment through the Medical Campus also removes additional buildings and dwelling units at the proposed Avondale (A) station site.

However, the impacts of right-of-way acquisition through the University of Cincinnati segment would be greater under Alternatives 1 and 2 – a total of 97 dwelling units would be removed (most of them in one multi-family building along MLK Drive) compared to 23 under Alternatives 3 and 4.

Table S.4 depicts the potential property acquisition and displacements associated with each of the build alternatives.

Table S.4: Station Area Property Acquisition

Alternative	Land to be Acquired (s.f.)	Building Removal		
		Non-Residential	Residential	Dwelling Units
1	2,885,200	56	15	65
2	2,820,300	53	15	65
3	2,899,000	56	26	79
4	2,834,100	53	26	79

Source: URS, 2001

Table S.5 depicts the potential property acquisitions and displacements associated with the proposed trackways for each of the build alternatives.

Table S.5: Trackway Property Acquisition

Alternative	Land to be Acquired (s.f.)	Building Removal		
		Non-Residential	Residential	Dwelling Units
1	2,779,000	30	42	140
2	2,711,000	29	42	140
3	2,731,000	28	29	73
4	2,799,000	27	29	73

Source: URS, 2001

S.4.1.3 Visual and Aesthetic Conditions (Section 3.5)

The analysis included a description of the visual environments throughout the I-71 Corridor, and an analysis of the potential effect on the visual and aesthetic character for each of the alternatives considered. The analysis considered proposed design elements that may have high visual or aesthetic impact, including: substantial construction, elevated tracks/ stations, park-and-ride lots, substantial property acquisition, and location away from an existing rail corridor. Elements that were considered to have moderate visual and aesthetic impact include: minimal construction, at-grade tracks/stations, drop-off parking only, minimal property acquisition, and location adjacent to an existing rail corridor. Elements that were considered to have low visual and aesthetic impact include: minimal construction, underground tracks/ stations, no parking/ drop-off, no property acquisition, and location on existing railroad tracks.

No-Build Alternative

The No-Build Alternative would have no additional visual/ aesthetic effect.

TSM Alternative

In general the roadway improvements for the TSM Alternative would have low visual effects because the improvements are within existing transportation corridors, although additional visual effects may occur near some of the proposed transit hub locations. The proposed hub locations for the TSM Alternative have not been sufficiently identified and described to assess visual and aesthetic effects at this time.

Build (LRT) Alternatives

Visual and aesthetic effects resulting from the build alternatives range from minor and hardly noticeable to fairly substantial, and impacts could be positive as well as negative. Visual and aesthetic effects may be permanent due to proposed appurtenances, including tracks and stations and may be temporary, occurring during the construction period. Probably the most significant visual construction impact would result from the construction of a proposed new bridge crossing the Ohio River.

The following is a summary of the potential visual and aesthetic effects for each of the four build alternatives relative to the various LRT elements.

Surface LRT Track Visual Impacts

Surface LRT tracks may have a moderate to high visual impact where new alignments are not within or adjacent to an existing rail corridor (except tunnel alignments). This condition would occur for all alternatives on Second and Third Streets, and Main and Walnut Streets in downtown Cincinnati continuing to one-half block north of Liberty Street. It would also occur in both proposed alternatives from the University of Cincinnati Station east to Fredonia Avenue where the LRT alignment joins the existing railroad corridor. The four build alternatives also diverge from the SORTA owned former I&O Railroad right-of-way north of the Pfeiffer Station to the end of the proposed alignment at the Cornell Park Station.

Elevated LRT Track Visual Impacts

Elevated track sections are proposed for the Covington Riverfront area for Alternative 2 and Alternative 4. The proposed bridge over the Ohio River and the crossing of the Norwood Lateral in Norwood are elevated for all build alternatives. The MLK Drive crossing is elevated for Alternative 1 and Alternative 2.

Overhead Contact Wires and Supports

The overhead contact wires and supports system will be visible throughout the entire I-71 LRT Corridor, with the exception of the tunnel areas for all four of the proposed build alternatives.

LRT Stations

The proposed LRT stations for the four build alternatives may consist of one platform in the center of the tracks or one platform on each side of the tracks. The platforms may be 14 inches in height and from 12 to 24 feet in width and approximately 200 feet in length. Each platform may have access ramps at one or both ends that are approximately 24-feet long. Stations may include canopy structures that may cover approximately 25 to 50 percent of the station platform area.

Of all the station elements, the park-and-ride lots may have the highest visual and aesthetic impact. All four of the proposed build alternatives include park-and-ride lots at 12th Street, Xavier/ Evanston, Ridge, Silverton, Galbraith, Pfeiffer, and Cornell Park.

LRT Yard and Shop Facility

The proposed yard and shop facility for the four build alternatives is located south of Ridgeway Avenue, between Fredonia Avenue and Blair Court. The yard and shop facility may accommodate storage, maintenance, and repair of the LRT vehicles and equipment, and may include rail sidings, maintenance and repair shops, storage areas, and administrative buildings.

S.4.1.4 Historic and Archeological Resources (Section 3.6)

Federal legislation requires governmental agencies to consider their impacts to historic and archaeological resources before undertaking a project. A historic property is defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for, inclusion in the National Register of Historic Places (NRHP). The analysis included in Section 3.6 included consultation with the Ohio Historic Preservation Office (OHPO) and the Kentucky Heritage Council (KHC). An inventory of historic and archaeological resources was performed for the area within 500 feet of the proposed alternatives in an effort to identify the effects to potentially eligible resources. The analysis of the historic and archaeological resources within the Mount Auburn Tunnel or Cincinnati Zoo segments has not yet been completed.

Archaeological Resources

No-Build Alternative

The No-Build Alternative includes improvements currently programmed in the regional TIP for fiscal years 1998 through 2001. It is assumed that their impacts to archaeological resources have been accounted for. The No-Build Alternative for this LRT project would have no additional adverse effects on the archaeological resources in the I-71 Corridor.

TSM Alternative

The TSM Alternative generally consists of improvements to existing transportation infrastructure within already disturbed public right-of-way, with the exception of the proposed transit centers for which specific locations have not yet been finalized. For this analysis, it is assumed that many of these improvements can be achieved without acquiring additional private property to expand the public right-of-way, except to accommodate the proposed transit centers. When specific locations for these transit centers, as well as the nature of the other planned improvements, have been finalized it is anticipated that those projects utilizing federal funds or requiring federal permits would be subject to the requirements of Section 106 of the NHPA. The TSM Alternative for this LRT project would have no additional adverse effects on the archaeological resources in the I-71 Corridor.

Alternative 1

A total of 57 areas would require field testing during the Final Environmental Impact Statement (FEIS) phase of the project to determine if significant, intact archaeological resources are present and if they would be directly impacted by this alternative.

Alternative 2

The same 57 areas identified under Alternative 1 would require field testing during the FEIS, however, in the area of Covington where the proposed track would be above grade, only the specific locations of the elevated track piers would require testing in these identified areas.

Alternative 3

The same 57 areas identified under Alternative 1 would require field testing during the FEIS phase of the project. Additional areas may be identified upon completion of the initial survey for the Mount Auburn Tunnel segment and the Zoo Alignment option.

Alternative 4

The same 57 areas identified under Alternative 2 would require field testing during the FEIS phase of the project. Additional areas may be identified upon completion of the initial survey for the Mount Auburn Tunnel segment and the Zoo Alignment option.

Historic Resources

All historic properties for all alternatives are subject to eligibility review by the appropriate SHPO. Should the SHPO determine any properties eligible, demolition would be viewed as an adverse effect and require mitigation. Determination of effects and discussion of mitigation would occur in consultation with the SHPO in later project phases. Until these eligibility determinations have been made and alignment options finalized, a detailed evaluation of impacts cannot be completed. Any proposed acquisition of historic properties considered as Section 4(f) properties will also require a determination of applicability under Section 4(f) of the U.S. Department of Transportation Act of 1966. The FEIS will include the Section 4(f) properties' determination, avoidance alternatives, efforts to minimize impacts, and proposed mitigation measures.

No-Build Alternative

The No-Build Alternative includes improvements currently programmed in the regional TIP for fiscal years 1998 through 2001. It is assumed that their impacts to historic resources have been accounted for. The No-Build Alternative for this LRT project would have no additional adverse effects on the historic resources in the I-71 Corridor.

TSM Alternative

The TSM Alternative generally consists of improvements to existing transportation infrastructure within already disturbed public right-of-way, with the exception of the proposed transit centers for which specific locations have not yet been finalized. For this analysis, it is assumed that many of these improvements can be achieved without acquiring additional private property to expand the public right-of-way, except to accommodate the proposed transit centers. When specific locations for these transit centers, as well as the nature of the other planned improvements, have been finalized it is anticipated that those projects utilizing federal funds or requiring federal permits would be subject to the requirements of Section 106 of the NHPA. The TSM Alternative for this LRT project would have no additional adverse effects on the historic resources in the I-71 Corridor.

Alternative 1

The following is a listing of the potential effects to known historic and potentially historic resources by corridor segment for Alternative 1.

Covington Segment

Known Potential Effect. The Covington Segment includes the 12th Street, Pike Street and Covington Riverfront (at-grade) stations, at-grade and above-grade track, substations near 109 W. 11th Street and near the proposed Riverfront Station, eight new bridges and approximately 20 demolitions.

Potential Historic Resources Effects. The Covington segment of the I-71 alignment is largely contained within National Register districts. The Kentucky Heritage Council has reviewed the recommendations for the Covington Segment and found that there will be an Adverse Effect to five National Register Historic Districts, and an Adverse Effect on two individually listed buildings. Of the approximately 20 proposed demolitions, 14 are contributing properties within National Register districts. Another 82 buildings will have effects from changes to their viewshed and/ or historic character (Table 3.6.5). The effects are concentrated in the areas surrounding the 12th Street and Pike Street stations. For architectural resources, neither the elevated or at-grade Covington Riverfront stations have any adverse effects.

Ohio River Crossing Segment

Known Potential Effects. The construction of a new river crossing located east of the Clay Wade Bailey Bridge will require a minimum of four new bridges and other design elements to connect the actual river crossing with the northbound and southbound alignments in the Riverfront segment

Potential Historic Resources Effects. Consideration should be given to any impacts on the viewshed or setting of a 1930's railroad bridge on the west side of the Clay Wade Bailey Bridge and the NRHP Roebling Suspension Bridge approximately one-half mile east of the proposed crossing, as design work proceeds.

Cincinnati Riverfront Segment

Known Potential Effects. The proposed northbound Banks Station, the corresponding southbound Banks Station and a proposed substation at the southeast corner of Walnut and Second Streets are known potential effects.

Potential Historic Resources Effects. No architectural resources have been identified for demolition in this segment.

Downtown Cincinnati Segment

Known Potential Effects. The proposed northbound and southbound Government Square stations, the northbound and southbound Courthouse stations and the traction power substation are known potential effects.

Potential Historic Resources Effects. No architectural resources have been identified for demolition in this segment.

Over-the-Rhine Segment

Known Potential Effects. Both northbound and southbound enter in a tunnel portal north of Liberty and Main streets, in the vicinity of Mulberry Street, within the Mount Auburn Tunnel segment. The northbound Over-the-Rhine Station is located on the west side of Main Street between East Fourteenth and Melindy Streets. The southbound station is primarily located in existing parking lots south of Liberty Street between Walnut and Main Streets. Additionally the intersection of Liberty, Main and McMicken Streets will be reconstructed. Access between Main Street and McMicken Street will be closed.

The two parallel routes in this segment join at the junction of Main and East Liberty Streets. This turn will necessitate the demolition of buildings addressed 1414 through 1432 on the east side of Walnut Street, and two buildings on Clay Street.

Potential Historic Resources Effects. The entirety of Over-the-Rhine is listed in the NRHP. In addition, the portion of Over-the-Rhine south of Liberty Street is a locally designated historic district. Six buildings included in the NRHP district and the local historic district are proposed for demolition (Table 3.6.6). The demolition of properties within National Register historic districts are reviewed by the SHPO and a determination of effects and discussion of mitigation would occur in consultation with the SHPO in later project phases. Demolitions or exterior changes to buildings within local historic districts are reviewed and approved by the Historic Conservation Board (HCB) in Cincinnati.

Mount Auburn Tunnel Segment

Known Potential Effects. In the southern portion of the segment demolition of five buildings at the intersection of East Liberty, Main, and McMicken Street, as well as four buildings facing Main Street and two facing Mulberry Street is proposed. The proposed alignment in this area will also result in the creation of a new cul-de-sac at Antique and Peete Streets and a transit power substation will be located at Antique Street and Clifton Avenue, resulting in the demolition of four buildings. The potential staging area for the Mount Auburn Tunnel construction will occupy the half block bounded by Main, Mulberry, Schiller and Hughes Streets.

Phase I survey was not conducted in the areas to the north of this segment (the tunnel under Mount Auburn) during this phase of the investigation because the extent of the effects were not known to the degree necessary to determine the appropriate survey methods or extent of the area of potential effects (APE). The results of survey for the remainder of the segment will be presented in an addendum report.

Potential Historic Resources Effects. Buildings proposed for demolition in this segment are all located in the Over-the-Rhine NRHP district. A local historic district for Over-the-Rhine north of Liberty Street was designated in late September 2001. Demolitions or exterior changes to buildings within local historic districts are reviewed and approved by the Historic Conservation Board (HCB) in Cincinnati and demolition of properties within National Register historic districts are reviewed by the SHPO. Demolition of properties or taking of land within historic districts is typically viewed as an adverse effect and would require mitigation if the project proceeds as proposed.

Effects resulting from boring procedures needed for the tunnel may also have impacts on architectural resources; these potential effects will be determined after determination of eligibility and in consultation with the SHPO in later project phases.

University of Cincinnati Segment

Known Potential Effects.

- Proposed paired stations located in the center of Jefferson Avenue.
- A substation located within the University of Cincinnati right-of-way.
- The proposed demolition of 12 buildings along the alignment adjacent to Jefferson Avenue and MLK Drive.
- Tunnel at the intersection of Jefferson Avenue and MLK Drive.
- Bridges at Eden Avenue, Highland Avenue and Burnet Avenue.
- The proposed Medical Center Station (Option B) located between Bellvue and Highland Avenues.
- Other proposed changes include retaining walls, and street infrastructure changes including reconstructed sidewalks, curbs and gutters.

Potential Historic Resources Effects. There are 16 buildings proposed for demolition in this segment. None of these buildings are located in the proposed Corryville Jefferson Avenue/ Vine Street Historic District being evaluated for eligibility. Two of the buildings proposed for demolition are post-1960 and do not meet eligibility qualifications. Other buildings proposed for demolition were inventoried, however none have been recommended eligible. The most distinctive building is the Clifford Memorial Chapel (HAM-1905-2) at 3028 Vine Street; it has been officially determined not eligible by the SHPO.

Avondale to Norwood Segment

For architectural resources, this segment has been further subdivided into Avondale/Evanston and the City of Norwood because of a large number of properties in the City of Norwood.

- Avondale/Evanston

Known Potential Effects.

- The proposed Avondale Station B is located at the northwest corner of MLK Drive and Reading Road.

- Proposed cul-de-sac changes at Borrman Street and Savoy Place, including six demolitions.
- A proposed substation at Van Buren, located north of MLK Drive.
- A proposed new bridge over the LRT right-of-way at Whittier Street.
- Proposed Yard and Shop facility at Fredonia and Melbourne Avenues, including demolition of several early twentieth century industrial buildings.
- The proposed Xavier Station and traction power substation, located east of Dana Avenue.

Potential Historic Resources Effects. There are 10 buildings proposed for demolition in this segment, two of which are post-1970 and do not meet eligibility qualifications. Other buildings proposed for demolition were inventoried, however none have been recommended eligible.

The former Coca-Cola Bottling Plant, the single NRHP property, is located just north of the proposed right-of-way. Any potential effects to this building or any others determined eligible would be discussed in consultation with the SHPO in later project phases.

- City of Norwood

Known Potential Effects.

- The proposed Norwood Station at Smith Road and Lafayette Avenue.
- The proposed traction power substations at Forest and Harris Avenues, and Highland Avenue near Beech Street.
- The proposed CSX Railroad crossing.
- The proposed demolition of six recently constructed residential structures on Mentor Street.
- Other proposed changes, including sound walls, retaining walls, modified roadways and grade crossings.

Potential Historic Resources Effects. There are 13 properties proposed for demolition in the City of Norwood. Eight of these properties date from 1980 or later and are not eligible. The other properties have been inventoried; none of them has been declared eligible. None of the proposed demolitions are buildings included in the proposed Norwood Industrial Properties Multiple Property designation.

Norwood to Blue Ash Segment

Known Potential Effects.

- The proposed Ridge Avenue Station at Ridge Avenue.
- The proposed Silverton Station at Montgomery Road.
- The proposed Galbraith Station at Galbraith and Blue Ash Roads.
- The proposed traction power substation located adjacent to Silverton Station.
- The proposed traction power substation located near Elizabeth Place.
- Other potential changes include sound walls, grade crossings, retaining walls, a new frontage road, and new bridges.

Potential Historic Resources Effects. There are nine properties recommended for demolition in the Norwood to Blue Ash segment. All properties were inventoried; none were recommended eligible.

Blue Ash Segment

Known Potential Effects. Four stations are proposed for this segment, including the Cooper Station at Blue Ash Road; Pfeiffer Road Station north of Pfeiffer Road and Lake Forest; Reed Hartman Station at Osborne Boulevard, and Cornell Park Station at the Sharon Woods Technical Center. Traction power substations are proposed at Kenwood Road; Pfeiffer Road Station parking lot; and in the parking lot of the Cornell Park Station. Other potential changes proposed for this segment may include sound walls, grade crossings, road improvements, retaining walls, and new bridges.

Potential Historic Resources Effects. Three demolitions have been identified in this segment; all three properties are of recent construction and do not meet eligibility criteria. None of the properties are included in the proposed Aldine Drive and Kenwood Road Historic District.

Alternative 2

Impacts for architectural resources are the same as detailed for Alternative 1. Neither the above-grade or at-grade stations in the Covington segments will have any effect on architectural resources.

Alternative 3

Impacts for architectural resources are the same as detailed for Alternative 1. Impacts are subject to change pending an inventory and recommendations on eligibility of architectural resources in the Zoo alignment option and the Mount Auburn Tunnel segment.

Zoo Alignment Option. Phase I survey was not conducted in this segment during this phase of work because the extent of the effects was not known to the degree necessary to determine the appropriate survey methods or extent of the APE. The results of survey for this segment will be presented in an addendum report.

Alternative 4

Impacts for architectural resources are the same as detailed for Alternative 3. Impacts are subject to change pending an inventory and recommendations on eligibility of architectural resources in the Zoo alignment option and the Mount Auburn Tunnel segment.

S.4.1.5 Parklands (Section 3.7)

The analysis included an inventory and pedestrian survey of park and recreation facilities within ½-mile of the proposed I-71 Corridor LRT alignments. There is a total of 38 parks identified for the I-71 Corridor, and each was analyzed for potential effects for each of the alternatives under consideration. Potential effects included direct effects as well as indirect effects (proximity effects) based on available information obtained from community officials. Direct effects are impacts that are the direct result of the proposed action, such as when land is acquired from a park site and permanently incorporated into the transportation facility. Proximity effects are those impacts related to the project proximity, which are so severe that the activities, features, or attributes, which qualify a park for protection under Section 4(f) of the Department of Transportation Act of 1966, are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the parks are substantially diminished. A matrix summarizing the potential effects at each park is provided on Table 3.7.1.

No-Build Alternative

The proposed No-Build Alternative would have no additional adverse effects on parks and recreation lands located along the proposed I-71 LRT Corridor.

TSM Alternative

The proposed TSM Alternative would have no adverse impacts on parks and recreation lands located along the proposed I-71 LRT Corridor.

Build (LRT) Alternatives

Direct Effects

As currently proposed, two parks and the Cincinnati Zoo would be directly affected by right-of-way acquisition or permanent easements associated with all the proposed alignments. These include:

- *Annie Hargreaves* – The proposed LRT alignment will pass through the east side of the park and require relocation of an existing basketball court, play structure and picnic tables.
- *Central Riverfront* – The proposed LRT alignment will pass over the western portion of this park on a new Ohio River LRT bridge. Some easements will be required for construction of bridge piers.
- *Cincinnati Zoo* – The proposed LRT alignment for Alternatives 3 and 4 will be located on Erkenbrecher Avenue along the south edge of the Cincinnati Zoo. Approximately eight feet of Zoo property will need to be acquired for street widening to accommodate the proposed LRT trackway. This will reduce the green space at its border with Erkenbrecher Avenue, but will not directly impact any of the Zoo facilities or exhibits.

Indirect Effects

As currently proposed, eight parks and the Cincinnati Zoo could experience indirect effects due to proximity to the proposed alternative alignments. Indirect effects may include noise, air quality, visual, vibration, or access impacts that substantially impair or diminish the protected activities, features, or attributes of the parks. These parks include:

- *Annie Hargreaves* – The introduction of an additional track and LRT service adjacent to the existing rail corridor is not anticipated to increase the indirect effects that park users currently experience and should not interfere with use of the park or its facilities following construction.
- *Central Riverfront* – The proposed LRT alignment will cross the Ohio River on a new Ohio River LRT bridge that will pass over the western portion of this park. This portion of the park is proposed to include walking paths, informal landscaped areas, and recreation fields. The proposed new LRT bridge will be adjacent to the Clay Wade Bailey Bridge and CSX Railroad Bridge. While there may be some additional visual, noise, or vibration effects resulting from the proposed LRT and new bridge, the introduction of new rail service and the new bridge are not anticipated to result in any significant adverse impacts to the park below. However, to minimize visual effects, the new LRT bridge should be designed to be aesthetically compatible with the existing Clay Wade Bailey Bridge.
- *Cincinnati Zoo* – The proposed LRT alignment for Alternatives 3 and 4 will be located on Erkenbrecher Avenue along the south edge of the Cincinnati Zoo. The road is proposed to be widened by eight-feet to accommodate the LRT track. The widening will bring the road

closer to the existing Zoo facilities and exhibits. As a result, additional effects from noise and vibration from road traffic and the proposed LRT service may increase on some Zoo exhibits, particularly the elephant exhibit.

- *Victory Parkway/Victory/ Woodward* – The proposed LRT alignment is located in SORTA owned right-of-way and crosses Victory Parkway on an existing railroad bridge. There will not be any permanent property acquisition required, however, there will likely be temporary disruptions to traffic on Victory Parkway to accommodate construction modifications on the existing railroad bridge to retrofit it for the proposed LRT track. While there may be some visual, noise, or vibration impacts resulting from the proposed LRT, the introduction of new rail service into the existing rail corridor is not anticipated to result in any additional adverse effects to the park located below.
- *Woodford/ Lang Field* - The proposed LRT alignment is located in SORTA owned right-of-way that runs along the north side of these parks. The freight operations remain active in this area, but the introduction of LRT into the existing rail corridor is not anticipated to result in any additional adverse effects to these adjacent parks.
- *Kennedy Heights Park* - The proposed LRT alignment is located on SORTA owned right-of-way and the freight operations remain active in this area. Some existing vegetation may be removed, temporarily making the existing rail corridor more visible from the park. While there may be some visual, noise, or vibration impacts resulting from the proposed LRT, the introduction of LRT service into the existing rail corridor is not anticipated to result in any additional adverse effects to the park.
- *Chamberlain Park* – The proposed LRT alignment is located on SORTA owned right-of-way that runs along the southeast side of this park. The freight operations remain active in this area. Some temporary visual and access impacts may occur as a result of vegetation removal and sidewalk reconstruction. A fence is proposed between the rail tracks and the park, which will limit pedestrian access to the park from the east to specified locations. While there may be some visual, noise, or vibration impacts resulting from the proposed LRT, the introduction of LRT into the existing rail corridor is not anticipated to result in any major additional adverse effects to the park.
- *Highland Grove* – The proposed LRT alignment will abut the west edge of this park. The park is currently in the design phase and the design currently incorporates a railroad theme. The proposed Pfeiffer Road LRT station was planned to accommodate this park and should not result in any adverse effects to the new park.

Section 6(f) Effects

Section 6(f) of the Land and Water Conservation Fund Act of 1965 (LAWCON) protects land planned, developed or improved with LAWCON funds from being converted to uses other than outdoor recreational use. No such conversions are allowed unless replacement land of at least equal fair market value and reasonably equivalent usefulness is provided. The analysis determined that direct acquisition for the proposed LRT facilities would only impact two parks and the Cincinnati Zoo. Therefore these are the only parks with potential Section 6(f) involvement. Potential impacts include:

- *Annie Hargreaves* – All build alternatives will need to consider the effects to this park under LAWCON.
- *Central Riverfront* - The City of Cincinnati is in the process of acquiring all the land for the proposed 55-acre Central Riverfront Park. To date, the westerly 15-acres of the proposed park, which would be directly impacted by permanent easements for the proposed LRT, have

not been purchased. The City is currently seeking State and Federal funding to complete acquisition and help fund park improvements. While no LAWCON funds have been used on the park so far, the City will consider all funding sources available for future acquisition and improvements, and all build alternatives will need to be considered under LAWCON.

- *Cincinnati Zoo* – The proposed LRT alignment for Alternative 3 and Alternative 4 will need to be considered under LAWCON.

S.4.1.6 Safety and Security (Section 3.8)

Personal, property, pedestrian, and vehicular safety would not be impacted by the No-Build and TSM Alternatives. Under the build alternatives, increases in the potential for theft, vandalism, and other emergency services could potentially develop at rail stations. The build alternatives would improve personal safety at station platforms through the use of lighting, natural surveillance, increased police patrol, and emergency phones.

This project falls under the Federal Transit Administration's Rail *Fixed Guideway System State Safety Oversight Regulation*, (49 CFR Part 659). This regulation requires that the effected states, (Ohio and Kentucky) designate an oversight agency to oversee the safety of the rail transit systems operating within their borders. SORTA/ TANK as the operating agencies for this proposed I-71 Corridor LRT system will be required to submit a *System Safety Program Plan*, (SSPP) and a *Security Plan*.

It is anticipated that a portion of the proposed I-71 Corridor LRT system will operate on the general railroad system, (I&O Railroad-Blue Ash Subdivision) Therefore, additional safety requirements may be imposed by the Federal Railroad Administration (FRA). Waivers of some FRA safety regulations may be considered in accordance with the joint *FRA/ FTA Policy on Use of the General Railroad System by Light Rail Transit*, (7/10/2000). This policy covers 49 CFR Parts 209 and 211. The proposed joint use of the tracks by the proposed LRT system and the I&O Railroad assumes temporal separation between light rail and conventional railroad freight operations.

As part of preliminary engineering a preliminary hazard analysis will be performed to identify, assess and resolve potential hazards to safety and security. Hazard analysis should be conducted in accordance with the *Hazard Analysis Guidelines for Transit Projects* as published by the FTA Office of Safety and Security.

All applicable federal, state and municipal laws regulating passenger rail system design and operating procedures would be followed to ensure pedestrian, bicycle and vehicular safety. These include sidewalks access, bicycle paths, grade-crossing warning systems with and without gates, and signage.

S.4.2 ENVIRONMENTAL EFFECTS

Environmental effects of the No-Build, TSM and four build alternatives include an analysis and evaluation of potential adverse effects and benefits related to soils, hazardous wastes, air quality, noise, vibration, ecology and habitat, water resources, and energy. The I-71 Corridor alternatives lie in an area that varies between existing 19th century pedestrian oriented urban development and dispersed auto-oriented suburban land development. All project-related activity would adhere to appropriate federal, states and local standards and applicable permitting requirements. Applicable state agencies include Kentucky Natural Resources and Environmental Protection Cabinet, Ohio Environmental Protection Agency, and Ohio Department of Natural Resources.

S.4.2.1 Soils, Geology and Topography (Section 4.1)

The proposed I-71 Corridor LRT alignment area lies within six general soil associations as mapped by the U.S. Soil Conservation Service (SCS), now the Natural Resources Conservation Service (NRCS). General soil units are indicative of stream bottoms, terraces, outwash plains and uplands in Kenton County, Kentucky and Hamilton County, Ohio. All of the soil units have in some form or other been disturbed by the use of the land for urban practices. Urban practices generally include some form of disturbance or removal due to excavation or construction of buildings and pavement. The No-Build and TSM Alternatives are not expected to significantly impact soils.

Anticipated modifications related to soils under the build alternatives would include cut and fill associated with new rail bed construction and development of station areas. Urban Land-Huntington soils are frequently flooded and may impact the proposed LRT alignment. Rossmoyne soils are subject to wetness in winter, spring, and other extended wet periods. Several of the soil types pose severe limitations to site development due to slope, shrink-swell potential, frost action, and corrosivity to steel and or/ concrete. Exposed bedrock may impact the proposed build alternatives in areas along the Corridor.

Mitigation measures would include bank stabilization near the river and creek crossings and culverts. Soil erosion and the pollution of surface water during construction caused by stormwater runoff would be addressed in the facility design and permitting phase. Project construction would not be expected to effect existing structural foundations in and around the proposed LRT corridor.

S.4.2.2 Hazardous Materials Contamination (Section 4.2)

No-Build Alternative

The projects currently programmed in the regional Transportation Improvement Program for fiscal years 1998 – 2001 are in various stages of construction or design and planning or have been completed. It is uncertain if No-Build Alternative will produce additional hazardous material effects.

TSM Alternative

Until the specific nature and location of the transit stations included in the TSM Alternative are defined, their effects cannot be assessed in any greater detail.

Build (LRT) Alternatives

A total of 258 sites are reported as having the potential for hazardous material contamination that could impact the proposed build alternatives. These sites primarily include hazardous materials, petroleum products, or a combination of the two. Of these sites, 19 have been ranked as having a “HIGH” potential for contamination, 6 ranked “MEDIUM” and 161 ranked “LOW”. The total number of sites that have a potential to impact the proposed I-71 Corridor LRT alignment are summarized in Table S.6 and illustrated on Figure 4.2-1a to Figure 4.2-1c.

Table S.6: Hazardous Material Contamination Sites

<i>Alternative and Design Options</i>	Ranking Totals		
	High	Med.	Low
Covington Segment	0	0	11
Ohio River Crossing Segment	0	0	3
Cincinnati Riverfront Segment	1	0	7
Downtown Cincinnati Segment	0	0	18
Over-the-Rhine Segment	0	1	10
Mount Auburn Tunnel Segment	0	1	7
University of Cincinnati Segment			
• Alternatives 1 and 2	4	2	14
• Alternatives 3 and 4	5	2	20
Avondale to Norwood Segment	5	2	42
Norwood to Blue Ash Segment	5	0	24
Blue Ash Segment	1	0	17
Total¹	19	6	161

Source: URS, 2001

¹Several of the sites within the University of Cincinnati Segment may be considered hydraulically upgradient from one or all of the alignment options but the totals represent the individual number of ranked sites.

Potential contaminated sites identified in the project corridors would be subject to additional site search as well as soil and groundwater testing to determine appropriate remedial action. Mitigation measures and magnitude would be determined following the selection of the Locally Preferred Alternative and further investigations.

S.4.2.3 Air Quality (Section 4.3)

The I-71 LRT Corridor lies mostly within Hamilton County, which is monitored by the Hamilton County Department of Environmental Services. The I-71 corridor also lies partly within Kentucky, which is monitored by the Commonwealth of Kentucky Division for Air Quality. Based on 1988-1990 air quality monitoring data for the Ohio-Kentucky-Indiana Council of Governments (OKI) region, the U.S. Environmental Protection Agency (EPA), pursuant to provisions of the 1990 CAAA, has determined the region to be a moderate nonattainment area for ozone.

On July 5, 2000 EPA determined that the region had attained the one-hour ozone standard based on three consecutive years without a violation of the standard. The region was redesignated to a maintenance area and must continue to monitor for exceedances of the one-hour ozone standard in order to ensure compliance. The ten-year maintenance plans submitted by both Ohio and Kentucky contain emissions budgets for both Volatile Organic Compounds (VOC) and NO_x. These budgets establish a maximum allowable limit on future emissions from vehicles (mobile sources). Through the conformity process, OKI's transportation plans and programs must be shown not to exceed those established budgets.

Currently, the OKI region meets all requirements for air quality conformity. A report titled *Amendment 2 to Looking Ahead: 2020 Metropolitan Transportation Plan*, OKI, November, 1999, Revised April, 2000, shows that estimated VOC and NO_x emissions are within the EPA-approved Emissions Budgets.

In 1997, EPA completed its review of the national air quality standard for ozone and replaced the one-hour 0.12 parts per million standard with a new eight-hour average 0.08 parts per million standard. A violation of the eight-hour national air quality standard for ozone occurs when the three-year average of

the annual 4th highest daily maximum eight-hour concentration exceeds 0.08 parts per million. All seven counties in the current maintenance area have been recommended for inclusion in a new ozone nonattainment area under the eight-hour standard. As of November 2000, EPA's authority to enforce the eight-hour ozone standard was under federal judicial review and an EPA timetable for designating nonattainment areas under the new standard was uncertain.

Ongoing air quality monitoring throughout the OKI region indicates that ambient CO concentrations have been decreasing during the past decade. These reductions are due primarily to improved emission controls on motor vehicles, which account for a majority of the CO emissions in the region.

The results of the emissions inventory (Table S.7) for this project demonstrated a reduction in emissions with each of the build alternatives in relation to the No-Build and TSM Alternatives.

**Table S.7: Year 2020 Regional Air Quality Impact Analysis and Results
Relative to the No-Build Alternative**

Project Alternative	Annual VMT Reduction (veh-mi)	Carbon Monoxide (CO)		Hydrocarbons (NOx)		Volatile Organic Compounds (VOC)	
		Emission Factor (g/veh-mi)	Emission Reduction (tons/year)	Emission Factor (g/veh-mi)	Emission Reduction (tons/year)	Emission Factor (g/veh-mi)	Emission Reduction (tons/year)
No-Build	0.00	2.24	0.00	0.49	0.00	0.76	0.00
TSM	-1,717,025	2.24	-4.231	0.49	-0.925	0.76	-1.435
LRT Build	12,620,322	2.24	31.099	0.49	6.803	0.76	10.552

Source: URS, OKI New Starts November 2001

The results of the hot spot analysis at worst case intersections determined that no violations of the current CO standards are projected under the No-Build or build alternatives. In addition, CO concentrations in the horizon year (2020) are expected to be lower than the current year 2000 concentrations. As a result, the implementation of one of the build alternatives would have no significant air quality impacts at these locations. Because the selected intersections represent the worst locations in the corridor in terms of traffic volume and vehicular delay, it is reasonable to conclude that other locations in the study area would not experience significant air quality impacts as a result of one of the build alternatives.

S.4.2.4 Noise and Vibration (Section 4.4)

Noise Effects

The FTA guidance manual states that mitigation must be considered for any site that falls within the impact range and mitigation measures should be employed if they are feasible and prudent. During Preliminary Engineering, a Detailed Noise Analysis will be conducted for each receiver determined to have an impact in Table 4.4.7. This Detailed Noise Analysis will evaluate effective mitigation methods that would eliminate or reduce potential noise impact. In addition, the detailed assessment will evaluate the impacts of specific operational characteristics such as horn warnings, emergency ventilation shafts or wheel squeal on nearby receivers.

Mitigation techniques can be applied to the noise source (the light rail vehicle), the sound path, or the receiver. Light rail vehicle specifications prior to purchase can include treatments to ensure lower sound levels and can include options such as vehicle skirts (6-10 dB reduction), undercar absorption (5 dB), wheel treatments such as resilient and dampened wheels (2dB reduction). The sound path can be altered by the erection of noise barriers that can achieve a reduction between 6 and 10 dB or the use of ballast

along the tracks can reduce noise up to 3 decibels. Sound insulation can also be provided at the receiver and has a varied sound reduction dependent upon the type of building construction and methods employed.

Vibration Effects

The base curve provided in the FTA guidance manual was used to determine if nearby sensitive areas have the potential to be impacted by the build alternatives. No adjustments were made to the base curve during the general assessment. The base curve defines that a potential for vibration impact for a Light Rail project could occur within 450 feet for Category 1 land uses, 150 feet for Category 2 land uses, and 100 feet for Category 3 land uses.

No-Build Alternative

The projects included in the No-Build Alternative are in various stages of construction or design and planning, or have been completed. It may be anticipated that the No-Build Alternative will produce no additional noise and vibration effects.

TSM Alternative

Until the specific nature and location of the improvements are defined for the TSM Alternative, their effects cannot be assessed in any greater detail. It may be anticipated that the TSM Alternative will produce no additional noise and vibration effects.

Build (LRT) Alternatives

There are four additional potential sensitive vibration receivers located in the Cincinnati Zoo alignment for Alternatives 3 and 4. There are no differences in identified impacted sensitive vibration receivers between the four alternatives.

If necessary, mitigation measures would be determined following the selection of the Locally Preferred Alternative and more detailed investigations. Potential mitigation actions that could be employed in sensitive areas include ballast mats, high resilience rail fasteners and supported ties, and floating slab trackbed.

S.4.2.5 Ecology and Habitat (Section 4.5)

The ecology and habitat analysis considered an area 500 feet either side of the proposed alignments and included consideration of ecological resources in the study area, including upland habitats, wetland and aquatic habitats, plant and animal inventories, and reported occurrences of threatened and endangered species or critical habitats.

Upland Habitat

No-Build Alternative

All road projects included in the No-Build Alternative are in various stages of construction or design and planning or have been completed. It may be anticipated that the No-Build Alternative will produce no additional upland habitat effects.

TSM Alternative

The locations of the proposed transit centers have not been identified for the TSM Alternative; therefore, no upland habitat effects can be measured.

Build (LRT) Alternatives

In general, for the four build alternatives, station construction and track installation and/ or realignment will have little to no impact to wildlife habitat within the construction limits since the plants are generally sparse and/ or dominated by disturb-tolerant species. The majority of the station sites are located in areas where the cover type is 100 percent impervious and would not affect upland habitat.

In areas where clearing of the vegetation is unavoidable, a resultant loss of upland habitat is not anticipated based on the low quality of vegetation removed and the surrounding urban environment. These conditions are not conducive to supporting upland habitat.

To accommodate any substantial loss of vegetation and to potentially improve urban wildlife habitat, landscape design would include planting native trees and shrubs.

For Alternatives 3 and 4 that follow the Zoo alignment in the University of Cincinnati segment, Levine Park would be completely reconstructed to accommodate the development of the Medical Center Station. Additionally, Area B would have some woody vegetation cleared in order to install track. There is little to no upland habitat within these areas; therefore, no adverse effects are anticipated.

Ohio River and Stream Habitat

No-Build Alternative

All road projects included in the No-Build Alternative are in various stages of construction or design and planning or have been completed. It may be anticipated that the No-Build Alternative will produce no additional Ohio River and stream habitat effects.

TSM Alternative

The locations of the proposed transit centers have not been identified for the TSM Alternative; therefore, no additional Ohio River and stream habitat effects can be measured.

Build (LRT) Alternatives

All four build alternatives include proposed construction of a new bridge over the Ohio River, reconstruction of the bridge over Catulpa Creek, and several culvert extensions and replacements at three drainageway crossings. Habitat within the Ohio River would have temporary effects due to sedimentation due to construction activities on and adjacent to the river. Best management practices will be used to minimize impacts, such as, installation of silt fences, installation of cofferdams for pier construction, and prompt revegetation of slopes once construction is complete. To control sediment loading where culverts are to be extended, silt fences would be installed and slopes would be revegetated.

Wetlands

National Wetland Inventory (NWI) maps were reviewed to identify potential wetland areas present within 200 feet on either side of the proposed build alternatives. An on-site field review was conducted in September 2001 to verify this recorded information and to identify other existing wetland resources. One area within the Study Area meets all three wetland criteria; it is located at Drainageway #6.

No-Build Alternative

All road projects included in the No-Build Alternative are in various stages of construction or design and planning or have been completed. It may be anticipated that the No-Build Alternative will produce no additional wetland effects.

TSM Alternative

The locations of the proposed transit centers have not been identified for the TSM Alternative; therefore, no additional wetland effects can be measured.

Build (LRT) Alternatives

The existing wetland at Drainageway #6 is within the proposed construction limits of the four build alternatives. The rail bed would need to be widened which would require extending the existing culvert, with temporary wetland impacts as a result of this activity. The existing railway currently crosses the drainageway; therefore, avoiding the wetland is not feasible since proposed construction activities intend to follow the rail right-of-way. During the final design, coordination with U.S. Army Corps of Engineers (USACOE) will determine if replacing any wetland losses is necessary. Nationwide permits are being re-evaluated at this time, so potential wetland replacement will depend on what has been approved at the time of the application submittal.

Rare, Threatened and Endangered Species

The analysis included review of the federal Endangered Species Act (ESA) and consultation with the U.S. Fish and Wildlife Service. There are no specific state regulations in either Ohio or Kentucky on elements with no federal or state status (i.e., potentially threatened, special concern); however, these elements are viewed as rare or unique and should be avoided if possible.

No-Build Alternative

All road projects included in the No-Build Alternative have been completed and there would be no additional effects to the rare, threatened and endangered species under the No-Build Alternative.

TSM Alternative

The locations of the proposed transit centers have not been identified; therefore, no effects can be measured.

Build (LRT) Alternatives

For the four build alternatives within the study area, the existing habitat within the construction limits would not support any of the federal or state listed terrestrial species, and no adverse effects to terrestrial species are anticipated.

For the federal or state aquatic species, potential impacts would be related to bridge construction on the Ohio River for the four build alternatives. Specifically impacts may occur due to erosion and sedimentation within the river channel. Minimization of potential effects will be implemented through best management practices such as construction timing restrictions (no construction during spawning) and erosion/ sedimentation control.

Water Quality and Floodplains

For purposes of the Water Quality and Floodplains review, the I-71 Corridor LRT study area was determined to include 500-feet either side of the proposed corridor. This section includes an analysis of water resources within the study area, including navigable waterways and water quality. The required permits from Ohio EPA Division of Surface Water and USACOE would be acquired for all build alternatives prior to commencement of construction activities.

No-Build Alternative

All road projects included in the No-Build Alternative have been completed and there would be no additional effects to surface water quality under the No-Build Alternative.

TSM Alternative

The locations of the proposed transit centers have not been identified; therefore, no effects can be measured.

Build (LRT) Alternatives

Potential surface water quality effects are the same for the four build alternatives, and are summarized per proposed LRT segment.

Covington Segment - No surface water exists within this segment of the corridor; therefore, construction within this segment is not anticipated to impact surface water quality. The required NPDES permits from the (NREPC), Division of Water would be acquired prior to commencement of construction activities.

Ohio River Crossing Segment - Stormwater runoff to the Ohio River is anticipated to be insignificant, with only a minor addition of impervious surface area draining directly into the Ohio River. Effects to the Ohio River water quality are also anticipated to be insignificant, however, runoff from the proposed LRT bridge could introduce small amounts of sediment, petrochemicals or other chemical pollutants to the Ohio River. If the bridge is constructed of steel, potential contamination with paint, paint chips, sand and steel exists during sandblasting and painting activities, but these risks could be minimized. The greatest potential impacts to the water quality of the Ohio River would occur during construction and would involve increased turbidity associated with excavation and construction of the cofferdams and foundations for the two river piers as well as the temporary falsework potentially needed for steel erection.

Modification to the soils along the river banks is anticipated to be minimal with no significant changes in compaction or permeability. Vegetation would be removed and erosion control measures, likely consisting of rip-rap, would be implemented on both of the river banks and along the Covington floodwall.

No effects to the municipal water sources for the area are anticipated as the Ohio River water source intakes for the Cincinnati and Northern Kentucky Water District waterworks are located approximately eight miles upstream of the proposed project.

Cincinnati Riverfront Segment - Avondale to Norwood Segment - No surface water exists within these segments of the corridor; therefore, proposed construction within these segments is not anticipated to impact surface water quality. The required NPDES permits from Ohio EPA Division of Surface Water would be acquired prior to commencement of construction activities.

Norwood to Blue Ash Segment - The intermittent stream, which flows parallel on the eastern side of the existing tracks and proposed LRT alignment, is the only surface water within this segment of the proposed project. The stream is not navigable or a drinking water source. Due to the small size of the contributing drainage area associated with the proposed project, the associated runoff would have very minor impacts on the aquatic environment. Best Management Practices (BMPs) for stormwater management would be implemented via the NPDES permits for this area to minimize the effects during construction.

Blue Ash Segment – The culverts at #2, #3, #5 and #6 drainageway crossings will be replaced and/ or extended as necessary to maintain flow conditions, per Ohio Department of Transportation standards and/ or local jurisdictions. None of these streams are navigable or drinking water sources. Modifications to these crossings will be coordinated with existing stormwater facilities and proposed developments.

Due to the small size of the contributing drainage areas associated with the proposed project, the associated runoff would have very minor impacts on the aquatic environment. BMPs for stormwater management would be implemented via the NPDES permits for this area to minimize the effects during construction. The required permits from Ohio EPA Division of Surface Water and the USACOE would be acquired prior to commencement of construction activities.

Floodways

Rivers and streams where Federal Emergency Management Agency (FEMA) has prepared detailed engineering studies may have designated floodways. For most waterways, the floodway is defined as the area where floodwaters are likely to run deepest and fastest. It is the area of the floodplain that should be reserved (kept free of obstructions) to allow floodwaters to move downstream. Placing fill or buildings in a floodway may block the flow of water and increase flood heights. Such activities in the floodway are generally restricted and require mitigation in the form of compensatory volume to offset lost floodway storage. Potential effects to floodways will be determined for the Locally Preferred Alternative and mitigated during subsequent project design phases.

Floodplains

No-Build Alternative

All road projects included in the No-Build Alternative are in various stages of construction or design and planning or have been completed. It may be anticipated that the No-Build Alternative will produce no additional floodplain effects.

TSM Alternative

The locations of the proposed transit centers have not been identified for the TSM Alternative; therefore, no additional floodplain effects can be measured.

Build (LRT) Alternatives

Potential effects to floodplains are the same for the four build alternatives, and are summarized per proposed LRT segment.

Covington Segment - No floodplains exist within this segment of the corridor; therefore, there would be no effect to floodplains within this segment.

Ohio River Crossing Segment – For the four build alternatives, the design of the proposed LRT bridge will accommodate the 100-year flood. The Kentucky approach to the proposed LRT bridge over the Ohio River will be protected by the floodwall and will not be located in the 100-year floodplain. The Ohio approach to the proposed LRT bridge will be elevated above the 100-year floodplain on several new and existing bridge structures. The piers of the proposed bridge will be located within the 100-year floodplain, however, minimal impact to the 100-year flood elevation is anticipated. The floodway opening provided by the proposed LRT bridge will be equal to, or larger than, that provided by the adjacent Clay Wade Bailey and CSX Railroad Bridges. It is not anticipated that the LRT bridge would have any effect on the 100-year flood elevation.

Cincinnati Riverfront Segment – Blue Ash Segment - No floodplains exist within these segments of the corridor; therefore, there would be no effect to floodplains within these segments.

Drainage Basins and Potable Water Supply

The study area extends across four different drainage basins. All of the LRT segments in Ohio are located within the Mill Creek Basin except for the Norwood to Blue Ash segment, which lies in the Little Miami River Basin. The Covington segment in Kentucky is located within the Licking River Basin (EPA, 2001). All of these drainage basins drain to the Ohio River. The Mill Creek and Licking River basins combine at the Ohio River to create the Central Basin, which extends through the majority of the downtown area and into Newport (Potter, 1996).

Although many residential and industrial groundwater wells are located within the study area, municipal water suppliers supply potable water to the entire area. These suppliers are the City of Cincinnati Water Works and the Northern Kentucky Water District (CWW 2001).

No-Build Alternative

All road projects included in the No-Build Alternative are in various stages of construction or design and planning or have been completed. It may be anticipated that the No-Build Alternative will produce no additional drainage basin and potable water supply effects.

TSM Alternative

The locations of the proposed transit centers have not been identified for the TSM Alternative; therefore, no additional drainage basin and potable water supply effects can be measured.

Build (LRT) Alternatives

Potential effects to drainage basins and potable water supply are the same for the four build alternatives, and subsequent phases of the project will determine potential effects, including:

- Contamination from accidental spills of petroleum products or hazardous substances which migrate from the ground surface or other point of release to the water table.
- Dewatering needed for foundation or tunnel construction.

Although groundwater is not anticipated to serve as a resource for potable water supply (based on availability of municipal water supply, not on any wellhead research), the potential for groundwater impacts will need to be mitigated during project construction. The greatest potential for existing groundwater usage in the vicinity of the study area exists in the Covington, Downtown Cincinnati, and Norwood segments where the corridor crosses more permeable valley fill deposits. Because of the nature of the underlying deposits, these areas are also the most vulnerable to contamination by releases of petroleum products or hazardous substances during construction.

S.4.2.7 Energy (Section 4.7)

The electrical generating capacity and demand for the states of Kentucky and Ohio have been summarized in Table S.8. The information was collected by the Energy Information Administration for the year 1998 and 1999. Although the information is from different years, the change from 1998 to 1999 is likely to be small compared to the excess capacity.

Table S.8: Electricity Capacity and Demand (MW)

	Kentucky	Ohio
Generation Capacity (1998)	32,014	54,191
Average Demand (1999)	9,023	18,739
Excess Capacity	22,990	35,451

The average price of electricity in Kentucky was \$0.0416 per kWh in 1998. The average price of electricity in Ohio was \$0.0638 per kWh in 1998.

No-Build Alternative

The No-Build Alternative is estimated to generate 15,916 million annual VMT and would consume 116,078,702 million British Thermal Units (BTUs) of energy annually.

TSM Alternative

The TSM Alternative includes enhanced bus transit service that would generate an estimated 15,918 million annual VMT and would result in the consumption of 116,159,024 million annual BTUs. The enhanced bus transit service would be responsible for approximately 614,099 million BTUs of the total amount.

Build (LRT) Alternatives

The results of the change in energy consumption for the build alternative compared to the No-Build and TSM Alternatives are summarized in Table S.9. The Build Alternative would result in the total consumption of 116,139,822 million BTUs of energy annually. Operation and maintenance activities of the LRT transit system would be responsible for consuming 54,193 million BTUs of the total amount. The energy consumption associated with the Build Alternative would increase by 61,120 million BTU when compared to the No-Build Alternative. The savings in energy consumption associated with the Build Alternative would amount to 19,202 million BTU when compared to the TSM Alternative.

Table S.9: Change in regional energy consumption (millions of BTU/ Year)

Modal Technology	Build Alternatives vs. No-Build	Build Alternative vs. TSM
Passenger Vehicles <i>auto, van, truck</i>	-93,723	-92,175
Bus Improvements <i>all vehicle types</i>	100,650	18,780
LRT Electric	54,193	54,193
Total Change	61,120	-19,202

Source: BRW, Inc. and Burgess & Niple, Ltd.

S.4.3 ECONOMIC EFFECTS

Economic effects of the No-Build, TSM and four build alternatives include an analysis and evaluation of potential adverse effects and benefits related to economic conditions, station sites, station planning areas and development effects.

S.4.3.1 Economic Conditions (Section 5.1)

In the past 25 years, the metropolitan area of Cincinnati has experienced considerable growth and changes in employment, population, and development patterns. The employment pattern in the metropolitan area has shifted over the past few decades with a decline in manufacturing and rise in service sector employment, similar to the national trend. Manufacturing employment is expected to remain flat and even

decline slightly over the next 50 years. Likewise, the largest employment gains over the next 50 years are expected in the service sector¹.

Greater Cincinnati enjoys a diverse economy and no one industry dominates the area. According to the Ohio Bureau of Employment Services (1999), the top four employment sectors in Greater Cincinnati include: Services (29.6 percent), Wholesale & Retail (25.3 percent), Manufacturing (16.4 percent), and Government (12.2 percent). Greater Cincinnati is ranked as a world leader in the manufacture of soap products and a national leader in production of machine tools and playing cards. Some of the largest employers in the metropolitan area include: Procter & Gamble, the U.S. Government, the University of Cincinnati, Kroger (the nation's largest grocery chain), and GE Aircraft Engines.

The I-71 Corridor, from Covington to Blue Ash, is highly-developed with a variety of land uses: offices and industry; major institutions including universities and medical centers; moderate to high density residential areas; cultural institutions, sports arenas; and parks. Thirty percent of the region's jobs are located within the corridor. The I-71 Corridor serves the region's three largest employment centers:

1. *Downtown Cincinnati* – Cincinnati's CBD is the largest traffic generator in the metropolitan area, as it is host to approximately 90,000 jobs and an increasingly popular residential market. Downtown is also the area's focus of culture, entertainment, and sports.
2. *Uptown Cincinnati* – Located a few miles north of the CBD, this area is the focus of higher education and medical services in the region. It is a densely developed area with over 50,000 employees. Its three anchor activity centers are the over 30,000-student University of Cincinnati campus, the multi-institution medical center campus, and the Cincinnati Zoo.
3. *Blue Ash* – This is one of the region's largest suburban employment centers with a daytime employment population of over 50,000. Blue Ash is currently in the midst of a development boom, and warehouse and higher density office buildings are replacing light industrial facilities.

Approximately seven square miles in the Cincinnati area is designated as an Empowerment Zone under the U.S. Department of Housing and Urban Development. The Zone includes a population of almost 50,000 (1990 Census) and covers all or portions of nine existing neighborhoods: Avondale, Walnut Hills, Over-the-Rhine, Evanston, Mount Auburn, Corryville, Fairview-Clifton Heights, West End and Queensgate.

In 1984 the Kentucky Enterprise Zone authority designated certain areas of Covington as an Enterprise Zone. The Zone covers most of Covington from the Ohio River to south of I-275. The Zone was created to provide tax incentives for a twenty-year period to encourage business formation and increase employment opportunities. Since 1984, more than 220 firms have become qualified to receive Covington Enterprise Zone benefits.

The population of the eight-county region is expected to continue to increase between 1995 and 2020 by 17.0 percent. In addition to the population of the eight-county region, the number of people employed in the region is expected to increase by 19.2 percent in the same time period, as shown in Table S.10.

¹ *Greater Cincinnati's Target Industries*, Economics Research Group, Center for Economic Education, University of Cincinnati, September 17, 1996

Table S.10: Regional Forecast Population and Employment for Year 2020

	Base Year 1995	Forecast Year 2020	Percent Change
Metropolitan Area			
Total Population	1,851,200	2,166,000	17.0
Total Employment	942,700	1,123,700	19.2

Source: New Starts Data

S.4.3.3 Economic Effects (Section 5.3)

This section describes the various economic consequences that may result from implementation of the transportation alternatives. First are the measurable direct and indirect economic effects related to construction, maintenance and operation of each alternative. These also include costs associated with potential property acquisition and subsequent tax base impacts, property acquisitions and displacement, and tax base impacts and capital and operating costs.

Tax Base Effect

No-Build Alternative

This No-Build Alternative utilizes the existing transportation system and includes improvements programmed in the regional TIP for fiscal years 1998 through 2001. Because these roadway improvement projects have been completed, it is assumed that their impacts are accounted for as part of the existing environment. Subsequently, this alternative will not require acquisition of any additional private property to expand the public right-of-way and should therefore not significantly impact the existing tax base or result in residential or commercial business displacements.

Future freeway widening projects may have impacts that will need to be analyzed in conjunction with those specific project plans.

TSM Alternative

This alternative utilizes a variety of low-capital-cost improvements to the existing transportation system designed to improve transportation conditions in the I-71 corridor. It would include major expansion of the current bus system, TDM programs such as carpooling and telecommuting, Intelligent Transportation Systems (ITS) (e.g. ARTIMIS), and traffic engineering improvements.

Bus expansions for the TSM alternative would include improved local and express service and the addition of transit centers where several bus routes would converge to facilitate bus transfers. It is assumed that many of these improvements can be achieved without acquiring additional private property to expand the public right-of-way, except to accommodate the proposed transit centers. Therefore, resulting impacts to the existing tax base should be minimal. Likewise, residential and/ or commercial displacement is not anticipated to be significant on a regional basis.

Specific sites for the proposed transit center improvements have not been identified at this time, making it impossible to accurately determine property acquisition requirements. It is anticipated that some of the proposed transit centers will be located at proposed LRT station sites.

Build (LRT) Alternatives

Alternative 1 and Alternative 2 include 20 potential stations and Alternative 3 and Alternative 4 include 21 potential stations. All of the stations are within established or developing portions of the Cincinnati metropolitan area. As a result, in many locations, station area construction would require removing buildings and displacing businesses and residents. In some cases, particularly public and railroad properties, permanent easements may need to be obtained if the property cannot, or need not, be acquired outright. In addition, temporary easements may be needed to accommodate anticipated construction and associated staging activities. However, until the system design is further refined, traffic control and access requirements cannot be clearly defined and are included in this report only as rough estimates.

Impacts in this section are evaluated for each *station site plan assessment zone*, as defined in the text, and also evaluated for parcels that may be acquired for the proposed trackway and rail yard areas. The assessed market value of the land and improvements on parcels to be acquired for each station site and track segment was compiled to identify potential impacts to the tax base. While assessed market values were compiled for affected public properties, tax exempt properties were subtracted to determine the total value of taxable property impacted by this alternative. It should be noted that the total taxable value in Kenton County is based on 100 percent of the property market value whereas in Hamilton County is based on 35 percent of the market value. Market value information was derived from the most current information available (June 2001) through the Hamilton County Auditor's Office and Kenton County Property Valuation Administrator.

A comparison of tax base impacts of the four alternatives is shown in the detailed text. In summary, Alternative 1 would have the greatest impact on the tax base. It would result in the most land acquisition (5,664,000 S.F.), the highest amount of taxable property removed from the tax base (\$27.1 million), displacement of 205 residential dwelling units (same as Alternative 2), and removal of 86 non-residential buildings. On the other hand, Alternative 4 would have the least impact on the tax base. While potential land acquisition (5,633,100 S.F.) is higher than Alternatives 2 and 3, it would result in the least amount of taxable property removed from the tax base (\$21.2 million), displacement of 152 residential dwelling units (same as Alternative 3), and removal of 80 non-residential buildings.

However, the difference between the alternatives is relatively small. Overall, given the relatively small amount of property impacted by the proposed LRT improvements, the total impact on the tax base of the Cincinnati metropolitan area will be minor.

Benefit Cost Analysis

This section summarizes the findings of the cost-benefit analysis of the transportation alternatives presented by HLB Decision Economics Inc. in their report *Moving Forward: The Economic and Community Benefits of Transportation Options for Greater Cincinnati*, (April 2, 2001). HLB was retained by the Metropolitan Mobility Alliance to conduct an economic benefit-cost analysis of three hypothetical transportation improvement options, including:

- A widening of I-71 (one lane in each direction) for the entire length of the corridor (which HLB refers to as the "Highway Capacity" option)
- A TSM option (which HLB refers to as the "base case" option)
- A LRT option, based on the proposed I-71 Corridor LRT Alternative #1

Note that these three options are not identical to the No-Build, TSM, and Build (LRT) alternatives described in other sections of this document.

No-Build Alternative

HLB Decision Economics Inc. (HLB) in their report *Moving Forward: The Economic and Community Benefits of Transportation Options for Greater Cincinnati*, (April 2, 2001), estimated total benefits, costs, and net benefits of the Highway Widening Option using the Transportation Research Board's "StratBencost" model. Their analysis concludes that the benefits of adding lanes on I-71 should exceed the costs by \$156 million in present-day (2001) value, over the 30-year life of the project (2008-2037).

TSM Alternative

HLB defined this alternative as the "base case" for measuring the benefits and costs of the other alternatives. Therefore, they did not complete a benefit-cost analysis of this alternative.

Build (LRT) Alternatives

The HLB report analyzed a LRT alignment similar to the proposed I-71 LRT Corridor Alternative 1 alignment described in this document. The HLB report assumes the LRT system will be in operation by 2008. Benefits and costs of this alternative are described in terms of the time frame 2008-2037, representing the first 30-years of operation. The HLB report included a benefit-cost analysis for the following elements.

- Congestion Management - The present value of congestion management savings over 30 years (2008-37) could amount to \$1,153 million in 2001 dollars.
- Affordable mobility - In the first year of operations (2008), LRT in the I-71 corridor is expected to result in savings of \$990 per household. Such savings could rise to \$1,127 per household (in constant 2000 dollars) in 2020 with total mobility benefits valued at \$323 million (in present-day value, 2001 dollars) over the first 30 years of LRT operation.
- Community Development Benefits - The 21 LRT stations in the I-71 corridor would generate \$354 million in community development benefits over 30 years (in present-day value).
- Macro-Economic Effects - Construction of the LRT system would generate 3,070 full-time jobs a year during the assumed three-year construction period. It is also estimated that direct and re-spending effects of the system would involve an estimated 530 full-time equivalent jobs every year.
- Infrastructure Cost Savings - Infrastructure savings over 30 years might reach \$109 million (present-value over 30 years, in constant 2001 dollars).
- Costs - Relative to the TSM "base case," the present-day value of benefits are expected to exceed the present-day value of its costs by \$786.6 million over the 30-year life span of the project (2008-2037). This represents an average annual rate of return on the investment of 8.1 percent, which is more than double the four percent rate required to consider the project economically worthwhile for the Cincinnati region.

Development Potential

No-Build Alternative

Land development and redevelopment will likely occur along with changes in population and employment consistent with previous forecasts from regional, county, and local units of government. Because the No-Build Alternative will not create concentrations of users (e.g. commuters) such as occurs around transit centers or stations, it is assumed that existing development patterns and local market trends will not be greatly influenced by this alternative. However, to the extent that this alternative reduces work-trip travel times, some additional growth may occur in suburban and rural locations. It should also be noted that current plans are underway for development projects that will benefit from the

improvements planned as part of this alternative. Most notably, the reconfiguration of Fort Washington Way, and the planned redevelopment of the Cincinnati Riverfront.

TSM Alternative

Local bus service on city streets generally has minimal effect on land use, development, or property values because ridership is not concentrated at stations, and because the lack of a fixed guideway and stations fosters a perception among property developers and investors that bus service could change at any time. Development of transit centers could, however, result in a concentration of riders much like occurs around LRT stations. Some of the proposed transit centers may be located in conjunction with proposed LRT stations, however, specific locations have not been identified. As a result of concentrated ridership, some new development may occur in the immediate vicinity of a transit center.

Outside of proposed transit centers, land development and redevelopment will likely occur along with changes in population and employment consistent with previous forecasts and plans from regional, county, and local units of government. No significant redevelopment or new development is anticipated to occur as a direct result of implementation of this alternative, although some additional growth may occur in locations served by improved bus transit, particularly around proposed transit centers. Similarly, to the extent that this alternative reduces work-trip travel times, some additional growth may occur in suburban and rural locations. It should also be noted that current plans are underway for development projects that will benefit from the improvements planned as part of this alternative. Most notably, the reconfiguration of Fort Washington Way, and the planned redevelopment of the Cincinnati Riverfront. These improvements include the Riverfront Transit Center (currently under construction), a SORTA bus facility intended to accommodate bus staging during special events at riverfront venues.

Build (LRT) Alternatives

The firm of Basile Baumann Prost & Associates, Inc. (BBPA) was retained by the Metropolitan Mobility Alliance to assess the potential for transit-oriented development (TOD) surrounding each proposed transit station along the I-71 LRT corridor.² Each station was rated according to the station area development potential and the results are summarized in Table S.11 for each of the four build alternatives.

Table S.11: Summary of Station Area Development Potential Rank, by LRT Alternative

Alternative	Rank of Development Potential (# stations)				
	High	High/Med.	Medium	Med./Low	Low
LRT – 1	3	6	7	3	1
LRT – 2	3	6	7	3	1
LRT – 3	3	5	8	4	1
LRT – 4	3	5	8	4	1

Source: Basile Baumann Prost & Associates, Inc. report Station Area Analysis for the I-71 Corridor LRT Transit Oriented Development Opportunities, February 23, 2001, with selective modifications by URS Corporation based on information obtained from affected municipalities.

² Their assessment is described in the report: *Station Area Analysis for the I-71 Corridor LRT: Transit Oriented Development Opportunities*, February 23, 2001, Basile Baumann Prost & Associates, Inc.

S.4.4 TRANSPORTATION IMPACT ANALYSIS

The transportation impact analysis includes an evaluation of the potential impacts of the Alternatives in relation to roadway operations, bus transit operations, rail transit ridership and operating costs, regional travel demand, parking, railroad facilities, pedestrian and bicycles, utilities, and rail transit construction.

S.4.4.1 Roadway Operations (Section 6.1)

The existing roadway system in the I-71 Corridor includes a complex system of limited access roadways, principal and minor arterial streets, collector streets, and local streets. Many of the improvements recommended in the 2020 and 2030 Draft LRTPs are minor highway expansion and operational improvements. Overall, OKI's LRTP goal is to improve the operating efficiency and utilization of the existing network without the need for large, capital-intensive highway capacity expansions. To comprehensively assess the impacts to the existing and planned roadway system in the I-71 Corridor, 25 roadway segments, 52 intersections, 26 grade crossings, and 7 park-and-ride facilities were analyzed for the Alternatives. Most of the roadway segments and intersections that were identified for analysis have an existing level of service (LOS) of D or better.

No-Build Alternative

The No-Build Alternative is expected to decrease the LOS on five roadway segments and eighteen intersections. Only one roadway segment, Cornell Road, is expected to operate at LOS E or worse for the forecasted No-Build Alternative. At the intersections where a decrease in LOS is expected, there are eleven intersections in the AM peak hour and fifteen intersections in the PM peak hour (eight intersections are expected in both the AM and PM peak hours). Many of the intersections in the Blue Ash area are expected to operate below the acceptable LOS D in the forecasted no-build conditions. Of the eighteen intersections that are estimated to decrease in LOS, five intersections in the AM peak hour are expected to decrease below LOS D and six in the PM peak hour due to forecasted growth. These intersections include:

- AM Peak Hour
 - Reed Hartman Highway/Cornell Road
 - Reed Hartman Highway/Pfeiffer Road
 - Kenwood Road/Cooper Road
 - Erkenbrecher Avenue/Vine Street
 - Vine Street/W. Nixon Street/Ruth Lyons Way
- PM Peak Hour
 - Reed Hartman Highway/Creek Road
 - Reed Hartman Highway/Pfeiffer Road
 - Reed Hartman Highway/West Lake Forest Drive
 - Pfeiffer Road/Kenwood Road
 - Kenwood Road/Kemper Road
 - Pike Street/Russell Street

TSM Alternative

No significant differences in roadway operations are expected due to the TSM Alternative.

Build (LRT) Alternatives

Overall, the four build alternatives are expected to decrease the LOS from the No-Build and TSM Alternatives at nine intersections in the I-71 Corridor. Four of these intersections can be expected to decrease the LOS below the acceptable LOS D: Reed Hartman Highway/Cornell Road (LOS F), Reed Hartman Highway/Creek Road (LOS F), Blue Ash Road/Kugler Mill Road (LOS F), and MLK Drive/Reading Road (LOS E). A total of fourteen intersections are expected to operate below LOS D in the forecasted build alternatives, in which only four of these can be expected to be directly associated to the building of an LRT system. No roadway segments are expected to decrease in LOS, due to any of the build alternatives. One segment, Cornell Road in Blue Ash, is expected to operate at LOS E for all of the forecasted alternatives. The grade crossing at 5th Street in Covington, Kentucky is the only crossing that attained a Threshold Number 4, which means that an at-grade crossing is would probably not be feasible at this location.

Station generated traffic at park-and-ride facilities is expected to account for over 10 percent of the peak hour traffic on five streets, serving four of the seven proposed park-and-ride facilities. Lake Forrest Drive and Pfeiffer Road, serving the Pfeiffer Road Station, are expected to generate 49 percent and 12 percent of the peak hour traffic capacity respectively. At the Cornell Park Station, 44 percent of the peak hour capacity on Cornell Park Drive is expected to be generated by the park-and-ride facility. On Ridge Avenue, 15 percent of the peak hour capacity is expected to be from the Ridge Avenue Station. At the Galbraith Station, 10 percent of the peak hour capacity on Galbraith Road is expected to be generated by the station site.

Mitigation measures, related to safety and operational improvements, included crossing protection systems and the addition of some traffic engineering improvements. The addition of turn lanes and bays on many of the intersections could be expected to improve the operations at many of the intersections that are expected to operate below the acceptable LOS.

Alternative 1

Alternative 1, which operates at-grade in Covington and on MLK Drive in the University of Cincinnati area, is expected to cause three intersections to operate below LOS D in the AM peak hour and two intersections in the PM peak hour. As noted above, the intersection of MLK Drive and Reading Road is expected to operate at LOS E in the AM peak hour. This intersection is the only one below LOS D that distinguishes this alternative from the other three build alternatives. In addition, the grade crossing at 5th Street in Covington attained a Threshold Number 4, so an at-grade crossing is probably not feasible at this location.

Alternative 2

Alternative 2, which is proposed to operate above grade in Covington and on MLK Drive in the University of Cincinnati area, is expected to have three intersections operate below LOS D in the AM peak hour and two intersections in the PM peak hour. Again, the only intersection that distinguishes this Alternative from the other build alternatives is the intersection of MLK Drive and Reading Road (LOS E in the AM peak hour). Because this Alternative is proposed to operate above grade in Covington, all grade crossings are expected to be feasible with some minor mitigation measures.

Alternative 3

Alternative 3, which operates at-grade in Covington and serves the Cincinnati Zoo in the University of Cincinnati Segment, is expected to cause two intersections to operate below LOS E in the AM peak hour and two intersections in the PM peak hour. The intersections of Erkenbrecher Avenue/ Vine Street (LOS F in the AM peak) and Vine Street/ West Nixon Street/ Ruth Lyons Way (LOS F in both AM and PM peaks) are expected to operate below the acceptable LOS D. These intersections are the only ones that

distinguish Alternative 3 from the other build alternatives. In addition, the grade crossing at 5th Street in Covington attained a Threshold Number 4, so an at-grade crossing is probably not feasible at this location.

Alternative 4

Alternative 4, which operates above grade in Covington and serves the Cincinnati Zoo in the University of Cincinnati area, is expected to have two intersections operate below LOS E in the AM peak hour and two intersections in the PM peak hour. The intersections of Erkenbrecher Avenue/ Vine Street (LOS F in the AM peak) and Vine Street/ West Nixon Street/ Ruth Lyons Way (LOS F in both AM and PM peaks) are expected to operate below the acceptable LOS D. These intersections are the only ones that distinguish Alternative 4 from the other build alternatives. Because this alternative is proposed to operate above grade in Covington, all grade crossings are expected to be feasible with some minor mitigation measures.

S.4.4.2 Bus Transit Operations (Section 6.2)

To be completed.

S.4.4.3 Rail Transit Operations (Section 6.3)

Rail transit operating hours for each of the build alternatives is assumed 5:30 AM to 12:00 AM with variations in headways as follows:

- Weekday:

Early Morning	5:30 to 6:30 AM	15 minutes
AM Peak	6:30 to 9:00 AM	7.5 minutes
Midday	9:00 to 4:00 PM	15 minutes
PM Peak	4:00 to 6:30 PM	7.5 minutes
Early Evening	6:30 to 9:00 PM	15 minutes
Late Evening	9:00 to Midnight	30 minutes
- Weekends:

Early Morning	5:30 to 9:00 AM	30 minutes
Midday	9:00 to 9:00 PM	15 minutes
Late Evening	9:00 to Midnight	30 minutes

Light Rail operating statistics have been forecasted for each of the build alternatives and are provided in Table S.12.

Table S.12: Forecast Light Rail Operating Statistics

	Alternate 1	Alternate 2	Alternate 3	Alternate 4
NB Travel Time	48:35	47:35	52:25	51:35
SB Travel Time	50:19	49:29	54:09	53:19
Proposed Layover Time	21:06	15:16	20:56	21:36
Total Cycle Time	120:00	120:00	127:30	127:30
Trains Required	16	15	17	17
Cars per Train	2	2	2	2
Peak Cars Required	32	30	34	34
Fleet Cars Required	39	36	41	41
Opening Year Ann. Rev. Car-Miles	1,977,000	1,976,300	2,032,500	2,031,800
Opening Year Ann. Rev. Train-Hours	58,190	56,920	64,950	64,950

Source: Manuel Padron and Associates, 2001

Assumes an opening year line load slightly lower than 2020 peak hour forecast of 2100, 1.67 load standard of 75 seated and 50 standing passengers (i.e., 125 passengers per rail car) and a 20% spare ratio. One additional fleet car will be required by 2020 to enable a peak hour three-car train to operate and maintain the 1.67 load standard.

S.4.4.4 Regional Travel Demand (Section 6.4)

To be completed.

S.4.4.5 Parking (Section 6.5)

Areas where parking are of major issues of concern in the I-71 Corridor include Covington, Downtown Cincinnati, University of Cincinnati, and Deer Park. Much of the remaining Corridor is proposed to operate in existing railroad right-of-way, which will have minimal impacts on the existing parking facilities. Parking, both on and off-street, is considered to be valuable to the economic vitality of many of the businesses in the I-71 Corridor.

No-Build Alternative

There will be no impacts to existing parking facilities for the No-Build Alternative.

TSM Alternative

There will be no impacts to existing parking facilities for the TSM Alternative.

Build (LRT) Alternatives

Overall, approximately 1,300 parking spaces are expected to be impacted due to the four build alternatives. In Covington, 60 public parking spaces can be expected to be eliminated from the municipal surface lot at the corner of Washington and 8th Streets due to the build alternative. In addition, other minimal impacts to on-street parking spaces can be expected but the impact of these spaces are negligible. In the Cincinnati Riverfront area, 120 parking spaces will be displaced from the City of Cincinnati's Third and Central Parking Lot, which is approximately 15% of this facility.

In Downtown Cincinnati, there are currently 23,000 off-street parking spaces available. The proposed build alternatives would displace existing curbside uses on the west side of Main Street and the east side of Walnut Street through downtown Cincinnati and the Over-the-Rhine District. The build alternatives would be expected to result in a total of 168 metered spaces and 64 designated loading zones being displaced. Some reconfiguration of the other on-street uses may provide for replacement loading areas or short-term parking needs. The City of Cincinnati has plans to construct three proposed parking garages in the downtown area, which will provide 1,700 new parking off-street parking spaces.

In the University of Cincinnati area, 48 on-street metered parking spaces on Jefferson Avenue would be displaced for the four build alternatives. In the Deer Park area, 400 head-in parking stalls located along Blue Ash Road are expected to be displaced, though it is proposed to shift 360 of these spaces to the western side of the railroad right-of-way. Forty of the parking spaces in front of the Galbraith Station will be eliminated.

Other parking spaces may be impacted in other sections of the Corridor, though the impact of many of these displaced spaces are expected to be negligible. Mitigation measures that could minimize the impacts of those displaced spaces could include the construction of new surface lots, parking garages, or through diverting these spaces to adjacent streets. Park-and-ride facilities are proposed at seven of the station sites. This will provide an additional 3,965 parking spaces to users of the LRT system.

Parking spaces that may be impacted that distinguish between the build alternatives are documented below.

Alternative 1

The private parking facilities in the 4th and 5th Street area of Covington will be displaced due to the at-grade crossing of the LRT. The loss of these parking spaces will have limited impacts though, because the businesses they serve will be displaced with an at-grade crossing. The MLK Drive alignment through the University of Cincinnati segment is also expected to have minimal impacts to on-street parking. 430 parking spaces in surface lots are expected to be displaced due to this proposed alignment. A new 1,300 space parking structure is currently being constructed for the Health Alliance, which may minimize the loss of the spaces in the surface lots.

Alternative 2

Minimal impacts to parking can be expected in the Covington segment, because the Alternative is proposed to operate above grade through the 4th and 5th Street area. The MLK Drive alignment through the University of Cincinnati segment is expected to have minimal impacts to on-street parking, 430 parking spaces in adjacent surface lots will be displaced. Some of these surface lots may be reconfigured to minimize the loss of these spaces. A new 1,300 space parking structure is currently being constructed for the Health Alliance, which will minimize the loss of the spaces in the surface lots.

Alternative 3

The private parking facilities in the 4th and 5th Street area of Covington will be displaced due to the at-grade crossing of the LRT. The loss of these parking spaces will have limited impacts though, because the businesses they serve will be displaced with an at-grade crossing. The Cincinnati Zoo alignment is expected to displace 92 on-street parking spaces and 252 off-street spaces in the existing parking lots. Parking spaces that are expected to be displaced adjacent to the Veterans Administration Medical Center will have to be mitigated, as it has been indicated that the facility is required to provide parking at no cost to its patients and visitors.

Alternative 4

Minimal impacts to parking can be expected in the Covington segment, because the Alternative is proposed to operate above grade through the 4th and 5th Street area. The Cincinnati Zoo alignment, on the other hand, is expected to displace 92 on-street parking spaces and 252 off-street spaces in the existing parking lots. Again, parking spaces that are expected to be displaced adjacent to the Veterans Administration Medical Center will have to be mitigated, as the facility is required to provide parking at no cost to its patients and visitors.

S.4.4.6 Railroad Facilities and Services (Section 6.6)

There are two Class I Railroads, CSX Transportation (CSX) and Norfolk Southern (NS), and one regional railroad, Indiana and Ohio Railroad, a subsidiary of RailAmerica Corporation (I&O), that serve the corridor. The relationship to and impacts resulting from the construction and operation of the proposed I-71 Corridor LRT will vary throughout the alignment for the alternatives considered.

No-Build Alternative

All road projects included in the No-Build Alternative are in various stages of construction, design or planning or have been completed. It may be anticipated that the No-Build Alternative will produce no additional railroad facilities and services effects.

TSM Alternative

Until the specific nature and location of the TSM Alternative improvements are defined railroad facilities and services effects cannot be assessed. Effects will be limited to the transit center locations, some of which will be the same as the proposed LRT stations.

Build (LRT) Alternatives

The operations of the four proposed build alternatives would require interface with the following railroads in the following segments. The relationship to and impacts resulting from the construction and operation of the proposed I-71 Corridor LRT will vary throughout the alignment.

A portion of the proposed LRT alignment will occupy the SORTA owned former I&O Blue Ash Subdivision Railroad right-of-way. The proposed LRT operations will be initiated in right-of-way currently used by the I&O Railroad for freight operations for 6.9 miles from Lester Road, north of Glendale-Milford Road. LRT and freight will be a temporally separated joint operation.

Covington Segment

- CSX Transportation rights of way from 13th Street to 4th Street designated as CSX Louisville Division, Cincinnati Terminal Railway Subdivision, MP CA-663 to CA-664.5.

Ohio River Crossing Segment

- CSX Transportation rights of way.

Cincinnati Riverfront Segment

- CSX Transportation rights of way.
- Spur to the Crosset Company at 3rd Street and Central Avenue.

Downtown Cincinnati, Over-the-Rhine, Mount Auburn Tunnel, and University of Cincinnati Segments

- There are currently no existing or planned railroad facilities in these segments.

Avondale to Norwood Segment

- SORTA owned former Conrail right-of-way.
- Norfolk Southern (NS) owned right-of-way.
- CSX Transportation right-of-way identified as CSX Louisville Division, Cincinnati Terminal Railway Subdivision, MP-BB 10.68.
- SORTA owned OASIS railroad line operated by the Indiana & Ohio Railroad.
- Norfolk Southern trackage rights on the CSXT tracks.
- Indiana & Ohio Railroad right-of-way from Norwood Avenue to Highland Avenue, identified as I&O MP-50.7 to MP-50.2.

Norwood to Blue Ash and Blue Ash Segments

- Indiana & Ohio Railroad right-of-way from Highland Avenue to Lester Road (McCullough Yard Easements).
- SORTA owned former I&O Blue Ash Subdivision Railroad right-of-way, currently used by the I&O Railroad for freight operations, I&O MP-49.6 to MP-42.7.

S.4.4.7 Pedestrian and Bicycle Environment (Section 6.7)

No-Build Alternative

The No-Build Alternative would have no positive or negative effects on pedestrian or bicyclist systems in the I-71 Corridor.

TSM Alternative

The TSM Alternative would have no positive or negative effects on pedestrian or bicyclist systems in the I-71 Corridor.

Build (LRT) Alternatives

Along most of its length, the proposed LRT tracks would be in a current railroad right-of-way, along which permissible crossings have already been established in conjunction with the street system. In that portion of the project, there would be no change to the locations of pedestrian or bicyclist crossings and, hence, no change in mobility. The segments in which there would be some change in pedestrian or bicyclist mobility are described below.

In the Covington segment, the proposed LRT tracks and stations would be at-grade, elevated or depressed. With the exception of the closure of the 7th and Pershing Streets underpasses, the proposed LRT tracks would not create any interruptions to the to the pedestrian or bicyclist systems, which are

entirely along streets. Pedestrians and bicyclists would be able to cross the LRT tracks at any street crossing.

In the Ohio River segment, the proposed LRT tracks would be elevated and would not create any interruptions to the to the pedestrian or bicyclist systems.

In the Riverfront segment, not including the bridge structures to and from the proposed Ohio River LRT bridge, the tracks would be located at-grade along Second and Third Streets, where crossings would be permitted at any cross walk.

In downtown Cincinnati and the Over-the-Rhine District proposed segments, pedestrians and bicyclists would be able to cross the at-grade tracks at any crosswalk location except the stations.

In part of the proposed Mount Auburn segment, the route would be underground, presenting no barrier except at the ramps into and out of the tunnels.

In the proposed University of Cincinnati segment, there would likely be fences along the tracks, limiting pedestrian and bicyclist crossings to crosswalks at intersections. There may be a few exceptions to that design, however, because of the high number of pedestrians on the university campus.

S.4.4.8 Utilities (Section 6.8)

Key utilities in all alternatives considered include overhead or buried gas, steam, water, sewer, telephone, electric, and cable television lines. The subsequent design phase will determine specific effects to utilities by contacting potential utilities in the area, including the following.

- AT&T
- Cincinnati Bell, a subsidiary of Broadwing Communications
- Cinergy
- Insight Communications
- MCI Worldcom
- Metropolitan Sewer District of Greater Cincinnati
- Northern Kentucky Water District
- Sanitation District Number 1, Kenton County, Kentucky
- Sprint
- Time Warner
- Trigen Cinergy Solutions, a subsidiary of Cinergy
- University of Cincinnati

No-Build Alternative

It is likely that the roadway projects included in the No-Build Alternative would include potential utility conflicts. Without more detailed plans, however, it cannot be determined whether there would be

additional effects with the No-Build Alternative. It is anticipated that many of the roadway projects will be at or nearing completion.

TSM Alternative

Until the specific nature and location of the improvements included in the TSM Alternative are defined, their effects cannot be assessed in any greater detail.

Build (LRT) Alternatives

Water

It is anticipated that the proposed build alternatives will have minimal impact to water mains in the Covington Segment, with the exception of waterlines located in a retained cut or tunnel section.

The proposed Build Alternatives have the potential to significantly impact a 42-inch subsurface water main that runs below Burnett Avenue in the University of Cincinnati Segment. This line may need to be relocated because the proposed LRT alignment is in a retained cut or tunnel at this location. Additional relocations will be required near the University of Cincinnati at all intersections affected by the construction of the two proposed cut and cover tunnels, including a 24-inch water main located at the intersection of MLK Drive and Jefferson Avenue. No information on potential conflicts within the City of Norwood has been received.

Sewer Services

The proposed build alternatives are suspected to significantly impact existing sanitary sewer service during construction of a proposed tunnel near Tenth Street in the Covington Segment and the Mount Auburn Tunnel and the two proposed cut and cover tunnels in the near the University of Cincinnati Segment.

Storm sewers will be impacted by the proposed build alternatives during street reconstruction. Catch basins and manholes may have to be adjusted or relocated. Drainage from proposed bridge and tunnel structures, station platforms and parking facilities will be introduced to existing storm sewer systems. Some parking associated with the proposed stations may require stormwater detention basins or structures.

Long Distance Telephone

The proposed build alternatives may impact Sprint underground long distance communication cable in Covington, Kentucky. The underground cable in the vicinity of Tenth Street may need to be temporarily relocated during construction of a tunnel under the CSX Railroad.

Information on the Cincinnati Bell transmission lines was requested, but has not been received, and the potential effects due to the proposed build alternatives are unknown.

The proposed LRT alignment is not suspected to conflict with underground AT&T core cables, however the access point at the following locations may require relocation:

- Third Street between Central Avenue and Plum Street in the Cincinnati Riverfront segment.
- Walnut Street between Court Street and Twelfth Street in the Over-the-Rhine segment.
- The intersection of Seventh Street and Walnut Street, and Seventh Street and Main Street in the Downtown Cincinnati segment.

- The intersection of Twelfth Street and Main Street in the Over-the-Rhine segment.
- The Montgomery Road intersection in the Norwood to Blue Ash segment.

Aside from relocating or restricting manhole access, minimal impact to MCI Worldcom long distance cables may be anticipated for the proposed build alternatives.

The potential exists for the proposed LRT alignment to impact the following telecommunication company cables until their specific locations are identified:

- Level 3 Communications
- Intermedia Communications
- ICG Communications
- Communication Technology Systems.

Electric and Gas

Electric and Gas utility effects may occur due to the proposed build alternatives at the following locations.

- Cinergy's Avondale electrical substation located at the northeast intersection of Vine Street and Shield Street in the University of Cincinnati segment may be impacted.
- The proposed Galbraith Station may impact Cinergy's Deer Park electrical substation at the northwest corner of Galbraith Road and Blue Ash Road in the Norwood to Blue Ash segment.
- Electrical connections from the northwest to the substation located at the intersection of Red Bank Road and Standish Road in the Norwood to Blue Ash segment may be impacted.
- The electrical substation at the intersection of Jefferson Avenue and MLK Drive in the University of Cincinnati segment may be impacted.
- The Cinergy electric transmission lines near Woodburn Avenue and Idlewild Avenue in the Avondale/ Evanston Segment may need to be relocated due to a possible Electromagnetic Interference (EMI) concern.
- The Cinergy overhead electric high voltage lines near Norwood Lateral in the City of Norwood Segment may be impacted. An EMI concern may exist with the LRT overhead contact system, which would require relocation of Cinergy's lines.

Cinergy is still researching the locations of their gas facilities. Cinergy retains a utility easement on the SORTA owned former I&O Railroad right of way that allows for the installation of gas and electrical utilities, and implementation of LRT may restrict the ability of Cinergy to exercise its rights under this easement.

Hazardous Liquid and Petroleum Pipelines

No hazardous liquid or petroleum pipelines are known to exist in proximity to the proposed build alternatives.

Additional Utilities

The build alternatives would significantly impact various utilities that serve both the west (academic) and east (medical) campuses of the University of Cincinnati and private medical institutions. This would include the relocation of the subsurface utility tunnel under Jefferson Avenue linking the west campus of the University with the powerhouse on Rochelle Street.

The text describes possible effects to other utilities due to the proposed build alternatives.

S.4.4.9 Effects Due to Construction (Section 6.9)

No-Build Alternative

All road projects included in the No-Build Alternative are in various stages of construction, design or planning or have been completed. It may be anticipated that the No-Build Alternative will produce no additional construction effects.

TSM Alternative

Until the specific nature and location of the TSM Alternative improvements are defined, additional construction effects cannot be assessed in any greater detail.

Build (LRT) Alternatives

The implementation of the build alternatives would result in construction of capital improvements including tracks, stations, and maintenance facilities. The construction of these new facilities may cause related effects such as noise, vibration, traffic distribution and access effects, and the generation of debris and spoil. Any effects related to construction would be short-term and limited to the construction period. All applicable local and state permitting requirements would be met.

S.4.5 ENVIRONMENTAL JUSTICE (SECTIONS 3.9, 4.8, 5.4, 6.10)

Positive impacts offered by the build alternatives, such as increased access to transit, affordable transportation and opportunities for transit-related redevelopment would not be provided with the No-Build and TSM Alternatives. Impacts would be borne by minority, low income, elderly, mobility limitation and no vehicle populations in terms of benefits forgone, such as increased mobility, improved access to local businesses and educational facilities, visual enhancements provided in station areas and potential improvements to pedestrian and bicycle connections.

The build alternatives serve high concentrations of minority, low income and no vehicle populations primarily in the southern portion of the alignment. For all build alternatives, benefits and adverse impacts to protected populations and the general population are representative of the communities within and adjacent to the project corridor. Opportunities for design option choices that minimize adverse effects to minority, low income, elderly, mobility limitation and no vehicle populations are low due to the significant number of those populations within the project corridor.

All impacts identified in this document would be mitigated, if possible, to avoid adverse impacts, with special concern and emphasis with regard to minority, low income, elderly, mobility limitation and no vehicle populations. Active public involvement in the corridor would continue to be a goal through design and implementation. Public engagement activities for all communities in the corridor would continue through the length of this project and is explained in detail in Chapter 8.

S.5 PUBLIC PARTICIPATION

The purpose of the I-71 Corridor LRT Public Involvement Plan (PIP) is to support decision-making efforts and encourage an open, collaborative approach to the project. The PIP utilized a proactive approach, designed to engage individuals, groups, agencies, and public officials who would be affected by or are interested in the transportation improvements associated with the project. The PIP is consistent with the federal guidelines for public participation required under NEPA.

S.5.1 MIS PROCESS

The Public Involvement Plan for the MIS was developed in four stages, to ensure and enhance the quality of the public involvement as the study progressed from the initial broad scope to the narrow refinement and choosing a Locally Preferred Strategy. The following are the key activities of the public participation phases during the MIS.

MIS Phase I

- Distributing of a approximately 1,000 initial information kits to OKI Board of Trustees and committee members, Oversight Committee members, elected and appointed officials, leaders in the community, business and industry, environmental and other special interest groups, education and health care professionals, transportation providers, and media representatives.
- Conducting key individual interviews, and hosting six community open house/ workshops in August of 1995.
- Conducting 80 key individual interviews, with the essential stakeholders throughout the I-71 Corridor for comments on the study.
- Conducting six open house/ workshops for the public to obtain information about the Study and discuss their thoughts and information openly with the project team.

MIS Phase II

- Hosting twelve evening workshops throughout the I-71 Corridor to give the public the opportunity to view exhibits of the study and discuss the project with the staff and consultant team.
- Conducting a summer outreach program that included presentations and informational exhibits at regional malls and selected community events such as “The Taste of Blue Ash,” “Day in Eden,” and Montgomery’s “Bastille Day.”

MIS Phase III

- Hosting thirteen open house workshops to solicit feedback concerning the various alignments and alternatives.
- Conducting a random survey of over 900 citizens throughout the metropolitan area to measure the residents’ knowledge of the study and to adjust the Public Involvement Plan accordingly to reach more citizens.

MIS Phase IV

- Hosting ten workshops and open houses to solicit public input on the refined strategies before the strategy was chosen. These workshops gave the public the most up to date information about the proposed alternatives, such as the costs, the modes being studied, travel-time savings statistics, transportation system improvement figures, selected alignments, transit station locations, and some of the environmental, community, and economic effects of each mode.

S.5.2 EIS SCOPING PROCESS

The initiation of the EIS began with a formal scoping process. The Notice of Intent to prepare an EIS was published in the Federal Register on April 6, 1999 and the scoping comment period closed on June 15, 1999. The Notice of Availability of the Scoping Booklet and announcements of the Scoping Meetings were placed on the project webpage, in the newspapers, and on radio and television news programs and in number of local publications. Three types of scoping meetings were held to solicit comments from the public and regulatory agencies during the EIS scoping process.

- Four public Scoping Meetings were held at the following locations: Covington, Kentucky, Cincinnati (downtown and Evanston neighborhoods) and Blue Ash, Ohio on May 10, 1999, May 11, 1999, May 12, 1999 and May 18, 1999.
- One Interagency Scoping Meeting was held at the OKI offices on May 10, 1999.
- Additional community meetings were held during the scoping process as requested by community groups as a follow-up to the public scoping meetings. These included: Mount Auburn Community Council, African American Chamber of Commerce, Corryville Family Resource Center, Corryville Community Council, Walnut Hills Area Community Council, Mulberry Hill Neighborhood Association, Kennedy Heights Community Council and the American Council for the Blind.

S.5.3 OTHER PUBLIC INVOLVEMENT TOOLS

Other public involvement tools were used throughout the process to try to reach as many of the residents as possible. These included:

- 3,000 copies of *FutureLink* (6 issues).
- 24-hour telephone hotline.
- Computer bulletin board service.
- Direct mail campaign throughout the I-71 Corridor, involving over 20,000 pieces of literature.
- Over 100 presentations for groups, schools, and other organizations.
- Over 200 newspaper articles and more than 100 television and radio news features.
- Four milestone meetings were video taped and shown on the CitiCable channel.
- Established www.cincylightrail.org with links for public input.
- Audio/ video presentation of the study and potential alternatives.
- “Rail Blazer” bus highlighting the I-71 Corridor study was provided as an informational tool at various venues throughout the region.