

19.0 RELATED PROJECTS AND CUMULATIVE IMPACTS

This chapter assesses the incremental impact of the proposed project when added to the past, present and reasonably foreseeable future actions of related projects in the area. Identified are the resources of concern, current and proposed relevant actions, potential environmental consequences that would result in serious deterioration of environmental functions and measures to avoid or minimize damage to the environment.

19.1 Applicable Legal Authority

The Council on Environmental Quality's (CEQ) regulations (40 CFR Sections 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) define cumulative effects as:

“...the impact on the environment which results from the incremental impact of the action when added to the past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

Cumulative impacts result when the effects of an action are added to or interact with other effects in a particular place and within a particular time. The combination of these effects, and any resulting environmental degradation is the focus of the cumulative impact analysis. The following analysis follows the general approach of the CEQ handbook entitled *Considering Cumulative Effects under the National Environmental Policy Act, (CEQ 1997)*.

19.2 Affected Environment

19.2.1 Resources, Ecosystems and Human Communities of Concern

The affected environment for each of the resource areas is described in previous chapters of this FEIS. The corridor for the proposed Norfolk LRT project is a combination of downtown, residential and industrialized areas. Ecosystems, associated with the estuaries and tributary streams that flow into the Eastern Branch of the Elizabeth River have been altered as a result of past development. Major manmade developments have included:

- Railroads including the Norfolk Southern Railroad’s South Beach Branch Line
- Interstate 264 and I-64
- Modernization of downtown Norfolk and surrounding residential neighborhoods
- MacArthur Center Mall and Military Circle Mall
- Norfolk State University
- Eastern Virginia Medical Center and Sentara Leigh Hospital
- Harbor Park baseball stadium

Areas of potential concern for cumulative impacts were identified during the early agency coordination and scoping process for the SDEIS. These areas of potential environmental impact are the following:

- Minority and low-income residential neighborhoods in the City of Norfolk
- Historic and archaeological resources
- Wetlands
- Traffic and traffic related impacts, such as noise and air quality
- Visual impacts

19.2.2 Boundaries for Analysis

The analysis of cumulative impacts considered the following boundaries for each of the identified areas of concern.

Neighborhoods – The minority and low-income neighborhoods adjacent to the proposed project. Minority census tracts are those with 50% or more minority population. Low-income neighborhoods are census tracts with median family incomes of 80% or less than the median family income of the City of Norfolk.

Historic architectural and archaeological resources – All historically significant architectural resources and archaeological resources found within the project Area of Potential Effect (APE) where applicable, and resources and historic districts that extend beyond the project APE.

Wetlands – Wetlands associated with the Eastern Branch Elizabeth River, Smith Creek, and Broad Creek.

Traffic – Vehicular traffic on the local street network and intersections serving downtown Norfolk, and roadways crossing the I-264 corridor, within the study corridor.

Visual Impacts – The introduction of new man-made structures visible from properties adjacent to the LRT project

19.2.3 Relevant Past, Present, and Future Actions

As described above, past developments have included the railroads, the construction and widening of the I-64/I-264 corridors, and recent downtown revitalization efforts through the conversion of vacant or

under-utilized properties to new office, commercial and residential developments. Other significant past actions include the development of the Nauticus and the USS Wisconsin museums.

The following sections identify present projects and plans for related future projects.

A. Development in the Norfolk LRT Corridor

Development and revitalization efforts in downtown Norfolk and along the proposed LRT corridor are limited predominantly to in-fill development. Several new buildings or rehabilitation of existing buildings are proposed in the downtown area. Major new proposed projects include:

- Atlantic City mixed use development at Brambleton Avenue and Colley Avenue
- The RISE Center Technology Park east of NSU and north of I-264
- Riverside Commerce Center at I-64 and Military Highway south
- New grocery store and residential condominiums at the corner of Boush Street and Tazewell Street.
- New residential development by Kotarides Development on York Street.
- Residential loft conversions on Upper Granby Street and Monticello Avenue
- Continued retail and entertainment development along Granby Street
- New hotel at the corner of City Hall Avenue and Granby Street

The City of Norfolk was awarded a \$35 million HOPE VI grant to rehabilitate Robert Village and Bowling Green public housing projects. Also, in 1999, the City of Norfolk was designated as a Federal Empowerment Zone, which provides resources to assist distressed cities in stimulating economic development and community vitality.

B. Roadway Improvements

The following roadway improvements shown in Table 19-1 have been identified as future projects in the Hampton Roads 2026 Regional Transportation Plan.

**Table 19-1
Proposed Improvements to Streets and Highways in Norfolk**

Facility	Proposed Improvement
Hampton Roads Bridge Tunnel	Bridge Deck Rehabilitation and Tunnel Ceiling Replacement
I-264	Interchange improvements I-64 westbound ramp to I-264 eastbound
Virginia Beach Boulevard	Upgrade to 8 lanes from Military Circle Mall entrance to Newtown Road
Virginia Beach Boulevard	Upgrade to 6 lanes from Jett Street to Briar Hill Road
Military Highway	Upgrade to 8 lanes between Lowery Road and Northampton Blvd.
Boush Street	Reconstruction of 4 lanes from City Hall Avenue to Brambleton Avenue (includes Duke Street to Boush Street)
City of Norfolk Attucks Historic Pedestrian Walkway	Pedestrian walkway along Church Street, Henry Street, Virginia Beach Boulevard, and Princess Anne Road
Elizabeth River Pedestrian/Bicycle Trail	Construction of a pedestrian/bicycle trail in the Atlantic City section of southwest Norfolk
Intersection Improvements	
Intersection improvement of Ballentine Blvd. and Virginia Beach Blvd.	
Intersection improvement of Brambleton Avenue and St. Paul's Boulevard	

Source: Compiled by URS Corp., September 2004 from The Hampton Roads 2026 Regional Transportation Plan

C. Transit Improvements

Hampton Roads Transit (HRT) is the provider of public transportation in the City of Norfolk and the rest of the Hampton Roads region. HRT operates 53 fixed routes and shuttle services across the region. HRT also operates the NET -- Norfolk's downtown circulator buses, various paratransit and dial-a-ride services, and the Elizabeth River Ferry. In addition to these services, HRT is presently in the planning stages of a regional light rail transit system, which would include LRT service in Norfolk, Chesapeake, Portsmouth, Hampton, and Newport News.

19.3 Environmental Consequences

The potential cumulative impacts for each of the environmental impact areas are shown in Table 19-2. The areas of particular environmental concern for this project area are shown in bold. Refer to the affected environment sections in previous chapters for descriptions of the quality and functions of environmental resources, as well as minimum thresholds for determining significant environmental impacts. The cumulative impacts assessment identifies where resource areas have been degraded and whether the combination of the action's impacts with other impacts would result in a serious deterioration of environmental functions.

The Preferred Alternative will have minimal adverse environmental impacts on the identified areas of concern. Given the heavily urbanized and industrial/commercial land uses found, the incremental impact to the natural environment will be minimized through avoidance and mitigation measures. The Preferred Alternative will introduce a new visual element to the historical streetscapes in the downtown area,

however, due to the number of modern changes that already have occurred in this area, the construction of the Preferred Alternative will not result in an adverse effect on historic context. The potential for future station area redevelopment will be enhanced through the construction of the LRT project. This redevelopment may disrupt existing land use patterns, but will improve the long term economic viability of these areas.

The implementation of transit within the corridor will provide an alternative to the automobile, reducing traffic related cumulative impacts. In addition, current and future economic growth in the area will be served by transit. Transportation services for minority and low-income neighborhoods located adjacent to the corridor will be improved.

19.4 Mitigation Measures

The success of minimizing adverse cumulative impacts on the environment will require coordination of the proposed Norfolk LRT project with the other development projects in the area. HRT is actively working with the City of Norfolk to develop planning and zoning strategies that will minimize the potential cumulative impacts of development projects in the corridor. These include proposed joint development strategies, station area development strategies, and a downtown parking strategy. In addition, HRT has identified current and potential future private land developers in the corridors, outlining HRT's desires for transit oriented development that will minimize future cumulative impacts in the stations.

**Table 19-2
Potential Cumulative Effects**

Potential Impact Area (area of concern in bold)	Preferred Alternative	Past Actions	Other Present Actions	Future Actions	Cumulative Impact with Proposed Action
Land Use	Compatible	Natural areas turned to residential and urban/industrial uses	Revitalizing land uses	Revitalizing land uses	Vacant and under utilized uses being developed with compatible uses
Neighborhoods/ Environmental Justice	No disruption, provides access to jobs for minority/low income communities	Neighborhoods developed along transportation corridors	Economic development grants assisting in redevelopment of neighborhoods	Continued economic development to assist neighborhoods	Transit access improvement to local jobs for local minority and low-income neighborhoods
Traffic/ Transportation	Alternative to automobile	Major freight rail and highway development	Expansion of highway capacity, vehicular volumes increasing on highway and local street system,	Growth of ferry service, regional light rail, and local and highway improvements	Proposed action would reduce vehicles on local streets and adjacent highways. Other actions would have potential adverse traffic impacts on street system.
Visual Impacts	Introduces new visual elements – overhead wires, supports poles & stations	Downtown Norfolk redevelopment added many new structures to visual context	Continued economic development	Continued economic development	Potential adverse visual impact to historic districts without mitigation.
Noise	Potential impacts mitigated.	Raised ambient noise levels	Noise levels may increase without mitigation	Noise levels may increase without mitigation	Potential adverse noise impacts without mitigation measures.
Air Quality	Benefit	Degraded	Transportation projects proposed to improve air quality	Transportation projects proposed to improve air quality	Transit would provide reduction in vehicular trips, with benefit to air quality
Wetlands	1.4 acres used	Filled/Degraded	Protection and Restoration as regulated by VA DEQ	Protection and Restoration as regulated by VA DEQ	Opportunity to protect and restore wetlands
Floodplains	No adverse impact	Fill/Disruption			No adverse incremental impact
Ground / Surface Water	No adverse impact	N/a	N/a	N/a	No adverse incremental impact
Vegetation/ Wildlife/ Endangered Species	3.5 acres wooded lot impacted	Disrupted	Protection and Restoration as regulated by VA DEQ	Protection and Restoration as regulated by VA DEQ	No adverse incremental impact

Potential Impact Area (area of concern in bold)	Preferred Alternative	Past Actions	Other Present Actions	Future Actions	Cumulative Impact with Proposed Action
Historic Architectural Resources	Adverse effect on 2 historic districts from visual impacts.	Urbanization of Norfolk and construction of highways and railroad have destroyed historic resources	Potential destruction protected by Virginia SHPO	Potential destruction protected by Virginia SHPO	Cumulative impacts of other actions on historic character of the area have been altered due to a number of modern intrusions in both the historic districts and the area in general.
Archaeological Resources	No impact to archaeological resources	Sites may have been destroyed.	N/a	N/a	Determination of Effects for proposed project will identify potential adverse impacts.
Parkland	No parkland used. Visual impact on one park.	N/a	Potential destruction protected under Section 4(f) and Section 6(f) and NJ Green Acres	Potential destruction protected under Section 4(f) and Section 6(f)	No adverse incremental impact
Contamination	6 known contamination sites, displaced properties and station areas reviewed	Contributed to contamination sites	Mitigation regulated by VA DEQ	Mitigation regulated by VA DEQ	No adverse incremental impact

Source: URS Corp., 2005