WEST STREET EXTENSION

EXTENSION OF WEST STREET ON NEW LOCATION FROM

CABARRUS STREET TO MARTIN STREET, RALEIGH, NORTH CAROLINA

TIP NO. U-5521

Administrative Action: Environmental Assessment

Submitted Pursuant to the National Environmental Policy Act, U.S.C. 4332 (2) (c)

City of Raleigh
United States Department of Transportation
Federal Railroad Administration
North Carolina Department of Transportation Rail Division

8/22/17
Date

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9/12/17
Date

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Comments on this environmental document must be received by March 30, 2018

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August 2017

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8/14/17
Date

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CABARRUS STREET TO MARTIN STREET

RALEIGH, NORTH CAROLINA
TIP NO. U-5521

PROJECT COMMITMENTS

The City of Raleigh will:

- During the right-of-way acquisition phase identify and address any potential hazardous material issues. For sites directly impacted by the Project, the City of Raleigh will submit a work plan to the NC Department of Natural Environmental Quality addressing how hazardous materials will be handled and disposed of if encountered.

- Follow NCDOT's Best Management Practices (BMP) for the management of invasive plant species.

- Ensure that an erosion control plan is developed and implemented prior to construction. The plan will incorporate measures to control non-point source impacts as recommended in the NCDOT's BMPs for Protection of Surface Waters (NCDOT, 1997). These BMPs include, but are not limited to the use of berms, dikes, silt barriers, catch basins, seeding and mulching, and conforming to proper clean-up practices.

- Ensure that during construction of the Project, all local and through traffic will be adequately and safely accommodated. All construction operations will be scheduled to keep traffic delay minimized, and the contractor should conform to the standards of the Manual of Uniform Traffic Control Devices for Streets and Highways.

- Ensure that all construction waste material generated during clearing, grubbing, and other construction phases will be removed from the project site and burned or disposed of by the contractor in accordance with state and local regulations. Litter and other general trash will be collected and disposed of at local landfill locations.

Chapter 1
Purpose and Need for the West Street Extension

1.1 INTRODUCTION AND PROPOSED ACTION

This Environmental Assessment (EA) has been prepared by the City of Raleigh (City or City of Raleigh) in coordination with the Federal Railroad Administration (FRA) and NCDOT. It is intended to satisfy the requirements of both the National Environmental Policy Act of 1969, as amended (NEPA). The document conforms to the Council on Environmental Quality (CEQ) guidelines, which implement the procedural provisions of NEPA, and FRA Procedures for Considering Environmental Impacts.[1] FRA is the lead federal agency in the NEPA Process.[2] The Federal Highway Administration (FHWA) is a cooperating agency.

The Raleigh West Street Extension Project will extend S West Street on new location from W Cabarrus Street to W Martin Street with grade separations of the North Carolina Railroad / Norfolk Southern "H" Line and "East Leg" of the Boylan Wye within the City of Raleigh in Wake County, NC (Project). The Project is identified in the North Carolina Department of Transportation (NCDOT) 2016 State Transportation Improvement Program (STIP) as U-5521. It is funded for planning and environmental study only, and is not funded for right of way acquisition or construction.

1.2 HISTORY

West Street was the original western boundary of Raleigh when the City was laid out in 1792 by surveyor William Christmas as the State's planned capital within the confines of North, East, South and West Streets. Rail transportation arrived in the City in 1840 with the Raleigh and Gaston Railroad, which ran north-south and terminated near the State Capital. In the 1850s, the state-sponsored and -owned North Carolina Railroad (NCRR) was completed from Greensboro to Raleigh. (It now extends from Charlotte to Morehead City.) The Boylan railroad "Wye" (a triangular junction of railroad tracks) was created in 1854 when the Raleigh and Gaston Railroad was extended west of the City to connect with NCRR. At that time, S West Street ran north-south crossing the NCRR H-Line through the Boylan Wye. By the late nineteenth century, the City of Raleigh had split S West Street into two segments north and south of the Boylan Wye and closed the crossing. The Boylan Wye remains in place as a key piece of railroad infrastructure where rail lines currently used by CSX, NCRR, Amtrak, and Norfolk Southern (NS) meet.

The City of Raleigh has been evaluating the extension of S West Street across the Boylan Wye as far back as the 1960s. In addition to the general need to provide better connectivity for pedestrians and motorists across the Boylan Wye, the current redevelopment of a property within the Boylan Wye for a new Raleigh Union Station, as the City's multimodal transportation center, necessitates better access to and from the Boylan Wye area. Raleigh Union Station will serve existing intercity, potential commuter, and

[1] See 64 Federal Register 28545.

[2] Early on in the scoping process (2014) FRA agreed to be the lead agency because of the Project's relationship to Raleigh Union Station, construction of which FRA is funding through grants from the Transportation Infrastructure Generating Economic Recovery program, and the consideration of an alternative that bridged the Boylan Wye.

proposed high speed rail as well as existing and expanded regional commuter and local city bus transit. In 2010, the City prepared a feasibility study that considered re-connecting the segment of S West Street north of the Boylan Wye to either S West Street or S Saunders Street south of the Wye.[3] Both options proposed crossing via bridges over the railroad tracks, or taking the road under the tracks via railroad bridges over the road. Although a S West Street to S Saunders Street road-under-rail alternative was recommended in the study, the alternative was later dismissed by City Council and staff based on the substantial impacts to the community along S Saunders Street and to a brownfields redevelopment site at 600 W Cabarrus Street. A road-over-rail alternative reconnecting the segments of S West Street was also considered but not recommended due to lack of east-west connectivity and potential neighborhood and business impacts. Therefore, the City is evaluating a No-Build Alternative and one Build alternative—a road-under -rail connection of S West Street—in this EA.

1.3 PROJECT SETTING

The Project is located within the City of Raleigh in Wake County, NC. **Figure 1-1** shows the Project location and Project Study Area, which is centered on the Boylan Wye in Downtown Raleigh (Study Area). North of the Boylan Wye, the Project Study Area is bounded by W Morgan Street to the north, S Boylan Avenue, Rosengarten Alley, and S Saunders Street to the west, W South Street to the south, S Dawson Street and S Harrington Street to the east. Land uses within and adjacent to the Study Area consist of industrial, commercial, office, and medium-density residential uses. Industrial and commercial land uses are prevalent within and adjacent to the Boylan Wye (e.g., automotive repair, equipment rental, construction, art galleries). This area is generally referred to as Raleigh's Warehouse District.

Two residential neighborhoods are located south of the Boylan Wye. The Boylan Heights neighborhood, which was developed beginning in 1907, is a historic district listed in the National Register of Historic Places (NRHP) and centered on S Boylan Avenue. Just east of Boylan Heights are the newly redeveloped Rosengarten Park/ Dorothea Gardens neighborhood, located on the remaining properties from Raleigh's 4th Ward, which was established by African-Americans prior to the Civil War.

The redevelopment of Rosengarten Park/ Dorothea Gardens began in 2008. A local developer purchased more than 20 houses and home sites dating back to the early 1900s, with the intention to renovate the existing houses and build new historically detailed homes on the vacant lots. The land purchased represented the surviving residential properties from Raleigh's 4th Ward, which had been created by African Americans prior to the Civil War and grew in population during the Jim Crow era between the mid-1870s to the mid-1950s. Most of the remainder of the 4th Ward was demolished in the 1970s. Prior to the redevelopment of Rosengarten Park/ Dorothea Gardens, the neighborhood had been in a state of decline and was known for its high crime rate. The redevelopment effort is now complete and all homes have been sold. The Project Study Area includes a portion of the Depot Historic District, which is listed on the NRHP and includes the existing Raleigh Amtrak station, Contemporary Art Museum, and several restaurant, office, and commercial businesses.

[3] https://www.raleighnc.gov/content/PlanDev/Documents/UrbanDesign/Multimodal/DowntownIntermodalFeasibilityStudy1996.pdf

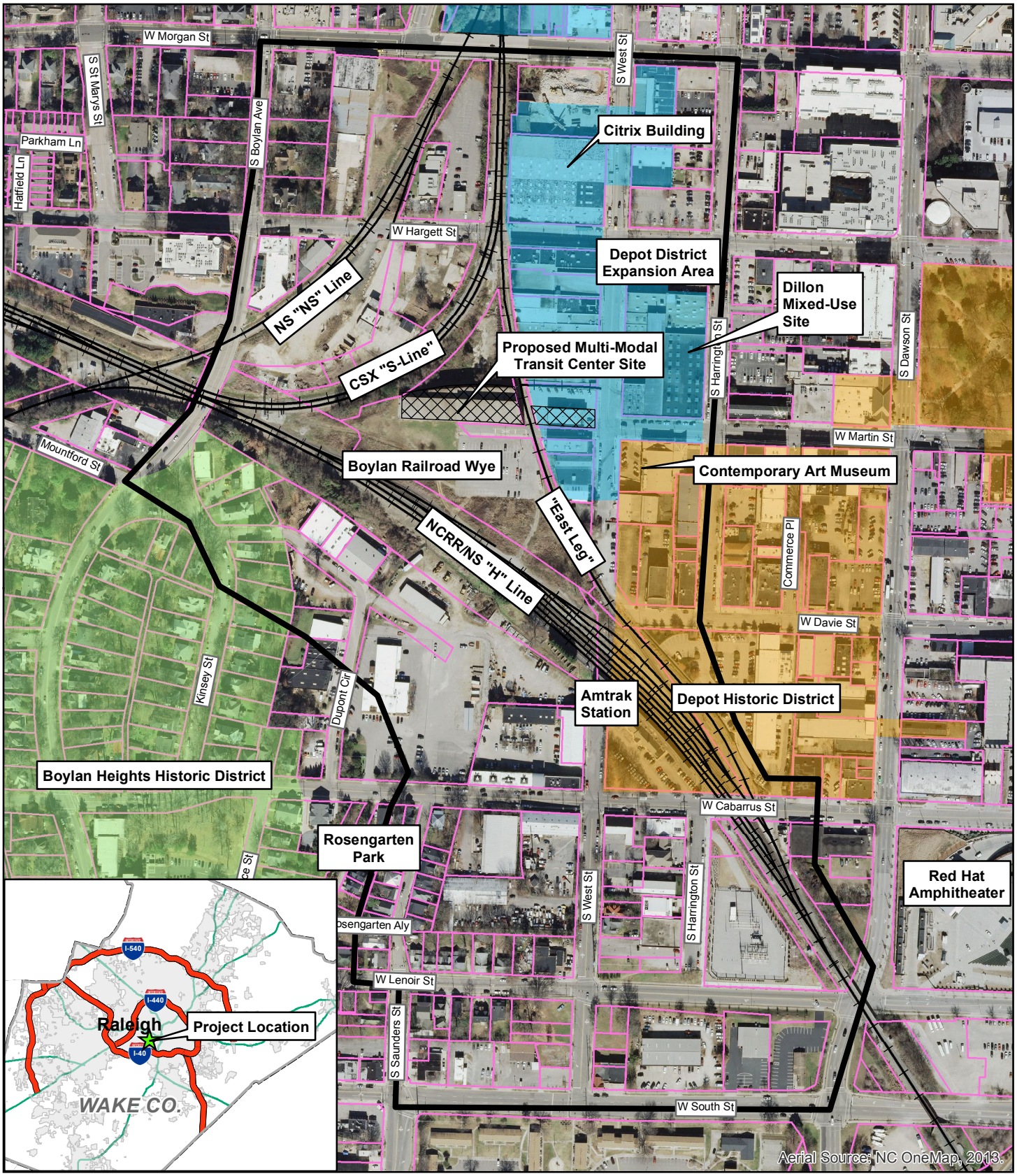

Figure 1-1. West Street Extension EA - Project Study Area

Project Study Area

Railroad Tracks

Proposed Multimodal Transit Center Site

Parcels

400 200 0 400 Feet

N

Prepared: March 27, 2017

Also within and adjacent to the Project Study Area are several condominium and apartment buildings, restaurants and bars, and churches. Immediately to the south is Heritage Park public housing community, which is administered by the Raleigh Housing Authority. The Red Hat Amphitheater, a 5,000-seat live entertainment venue, is situated just east of the Project Study Area. Central Prison, operated by the North Carolina Department of Correction, is located to the west of the Project Study Area and the Boylan Heights community. Developers have recently started construction on a 17-story mixed-use building and 900+-space parking deck at the northeast corner of S West and W Martin Streets.

1.4 NEED FOR THE PROJECT

Currently, the segments of S West Street north and south of the Boylan Wye are not connected, thus causing a gap in the City's downtown street grid system (**Figure 1-1**). Additionally, there is no north-south connection across the railroad tracks for approximately 0.4 miles between Boylan Avenue and Dawson Street. The Project is needed for the following:

- To provide better access to the western portion of Downtown Raleigh and Union Station from points southwest in the City. Currently, persons to the south wanting to access S West Street and the Warehouse District by automobile must do so primarily by S McDowell Street or Boylan Avenue because there are no other direct connections to the area from the south.
- To provide a new connection with a direct link via S West Street into the Warehouse District and Raleigh Union Station.
- To provide a safer option for cyclists that do not wish to use a major thoroughfare.
- To provide a safer, direct pedestrian link that does not cross the rail corridor or private property, such as the Depot development between W Cabarrus Street and W Davie Street.

With respect to connectivity in the area, Boylan Avenue's northern terminus is approximately 0.2 miles north of Peace Street. By comparison, N West Street continues further northward to Wade Avenue and the City's *Capital Boulevard Corridor Study* recommends extending N West Street further north to Wake Forest Road (see **Section 1.8.2)**. With the extension of S West Street, connectivity would extend 0.4 miles further north than Boylan Avenue, provide an alternative route to the Capital Boulevard/S Dawson Street/S McDowell Street corridor, and is envisioned as a transit-focused corridor in the *Wake County Transit Plan* (2015). The development of the future Raleigh Union Station multimodal transportation center also necessitates better access to and from the Boylan Wye area. The transportation center will be located at the former Dillon Supply Company Warehouse "Viaduct" building near the corner of S West Street and W Martin Street within the Boylan Wye. Raleigh Union Station will provide access to existing intercity passenger rail, potential commuter rail, future high speed rail, and existing local and regional commuter buses.

The *Raleigh Union Station – Phase I and Associated Track Improvements EA* (NCDOT Rail Division 2014) estimated that with Raleigh Union Station that Amtrak ridership will grow to 730,503 passengers in 2044 (an 8.5-percent increase per year). The City of Raleigh based this estimate on historical ridership with an 18-percent increase for the first year following the opening of the new Raleigh Union Station. Smaller ridership increases were calculated for 2027 to 2044. In 2011, the City of Raleigh estimated

192,434 passengers used the Amtrak station. More recent FY 2014 ridership data published by Amtrak[4] shows a lower ridership count of 161,342 passengers. Using the Raleigh Union Station 8.5 percent per year growth rate, 491,000 passengers would use the Station in 2035. [5]

Currently, residents in the surrounding neighborhoods must travel east across the railroad tracks and then north to restaurants, live entertainment venues, shops, and other destinations located within and around the Depot Historic District. The Art-to-Heart Greenway and Bicycle Corridor runs through the Project Study Area on W Lenoir Street, marked with shared lane markings (sharrows) and signage. The corridor is part of the East Coast Greenway, the 2,900-mile bike route in development between Maine and Florida (**Figure 1-2**). The Rocky Branch and Walnut Creek greenways run east-west just to the south, but provide no connection to the north into the Project Study Area. The nearest existing north-south greenway connection is Little Rock Trail, approximately 0.8 miles east of the Project Study Area. S West Street is designated in the Raleigh Bicycle Plan Update (2015) as having a future protected bikeway.

1.5 PURPOSE OF THE PROJECT

Based on the needs identified above, the purpose of the Project is to:

- Improve access to the future Raleigh Union Station multimodal transportation center from areas south and west of the Boylan Wye.
- Improve connectivity for motorists, pedestrians, and cyclists across the Boylan Wye and provide an additional grade-separated north-south crossing for them to use.
- Enhance safety by reducing the potential exposure for conflicts between motorists/pedestrians/ cyclists and trains on W Cabarrus Street.

The goals and objectives of the Project are listed below. These goals and objectives will be used to evaluate the ability of Project alternatives to meet the Project's purpose and need. Goals and objectives of the Project are to:

- Provide a grade-separated facility with pedestrian and cyclist accommodations on S West Street across the railroad Boylan Wye.
- Utilize existing roadway right-of-way to the extent possible.
- Keep W Martin Street and W Cabarrus Street intersections with S West Street open for motorists, pedestrians, and cyclists.
- Minimize environmental, historic, and community impacts.
- Obtain informed consent from study participants (federal, state and local agencies, members of the public) on the development of the Project.

Meet objectives outlined in the Transportation Element of the City of Raleigh's 2030 Comprehensive Plan (described in **Section 1.8.2** below).

[4] http://www.greatamericanstations.com/Stations/RGH

[5] The year 2035 is used as the project design year in order to provide consistency with regional transportation planning forecasting performed by the Capital Area Metropolitan Planning Organization (CAMPO).

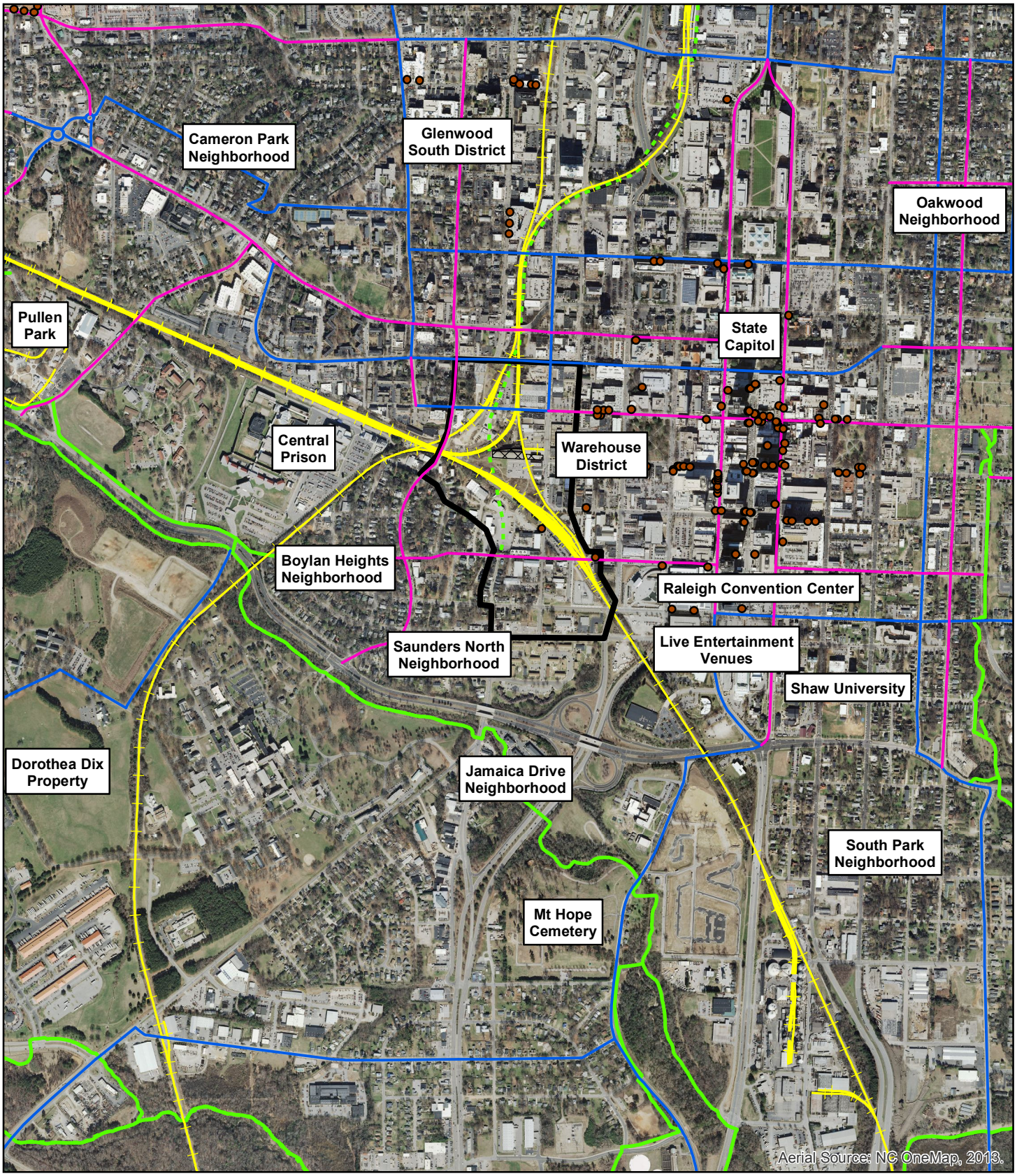

Figure 1-2. West Street Extension EA - Motorist, Pedestrian, and Cyclist Destinations

Railroad Tracks
Project Study Area
Proposed Multimodal Transit Center Site
Existing Greenways
Proposed Greenways
Existing On Bike Facilities
Preferred Bike Routes
Bike Racks

2,000 1,000 0 2,000 Feet

N

Prepared: March 27, 2017

1.6 RAIL AND ROADWAY CHARACTERISTICS

1.6.1 Existing Rail Network

There are three "legs" of the Boylan Wye **(Figure 1-3**). The "South Leg" of the Boylan Wye is the NCRR/NS "H" Line. The NCRR is a 317-mile long rail corridor that extends from Charlotte through Greensboro and Raleigh to the State Port at Morehead City. NS is the leasing freight operator of the railroad and has exclusive rights to the track as freight operator. Although NS does not own the railroad tracks or the right of way, NS is responsible for maintaining the track and signal infrastructure in order to maintain a safe rail transportation system. NS owns and operates the "NS" line just west of the Boylan Wye, which runs north and then east to Wilson and south to Fuquay-Varina.

The "West Leg" of the Boylan Wye is part of the CSX "S-Line" that serves local freight operations between Raleigh and Norlina. The 58-mile portion between Raleigh and Norlina is part of the larger former S-line that once continued north to Petersburg, VA. However, the portion between Norlina and Petersburg has been inactive since the late 1980s and the tracks have been removed.

The "East Leg" of the Boylan Wye is owned by CSX, NCDOT and NCRR, with NCDOT owning the right-of-way and CSX owning the tracks for the portion north of W Davie Street and NCRR owning the portion south of W Davie Street. This line is used by NS, CSX and Amtrak trains as a means to switch direction and travel on other lines out of the Boylan Wye (see **Figure 1-3**). NS also uses the "East Leg" to access their "Glenwood" rail yard from points south. The East Leg is currently out of service until March 2017 for construction.

1.6.2 Regional Rail and Bus Service

Typically, approximately 17 trains pass through the Project Study Area during each 24-hour period; eight of the trains are passenger trains and nine are freight trains. Currently, eight daily Amtrak-operated passenger trains (four round-trips) pass through the study area. These include two (one round-trip) New York to Charlotte Carolinian trains, four (two round-trips) Raleigh to Charlotte Piedmont trains, and two (one round-trip) New York to Miami Silver Star trains. Each train stops in the Project Study Area at the existing Amtrak station located at 320 W Cabarrus Street (Raleigh Union Station is scheduled to replace the current Amtrak station in 2018). NCDOT plans to operate two additional Piedmont trains (one round-trip) between Raleigh and Charlotte in 2017, which will increase the total daily train traffic to 19 (10 passenger and 9 freight).

The Boylan Wye is used by the freight railroads for trains passing through or stopping in Raleigh, and for local switching service. The "South Leg" of the Boylan Wye is currently the main route for freight passing through Raleigh, with the "East Leg" and "West Leg" of the Wye used for access to local freight yards and regional freight service north of the Project Study Area.

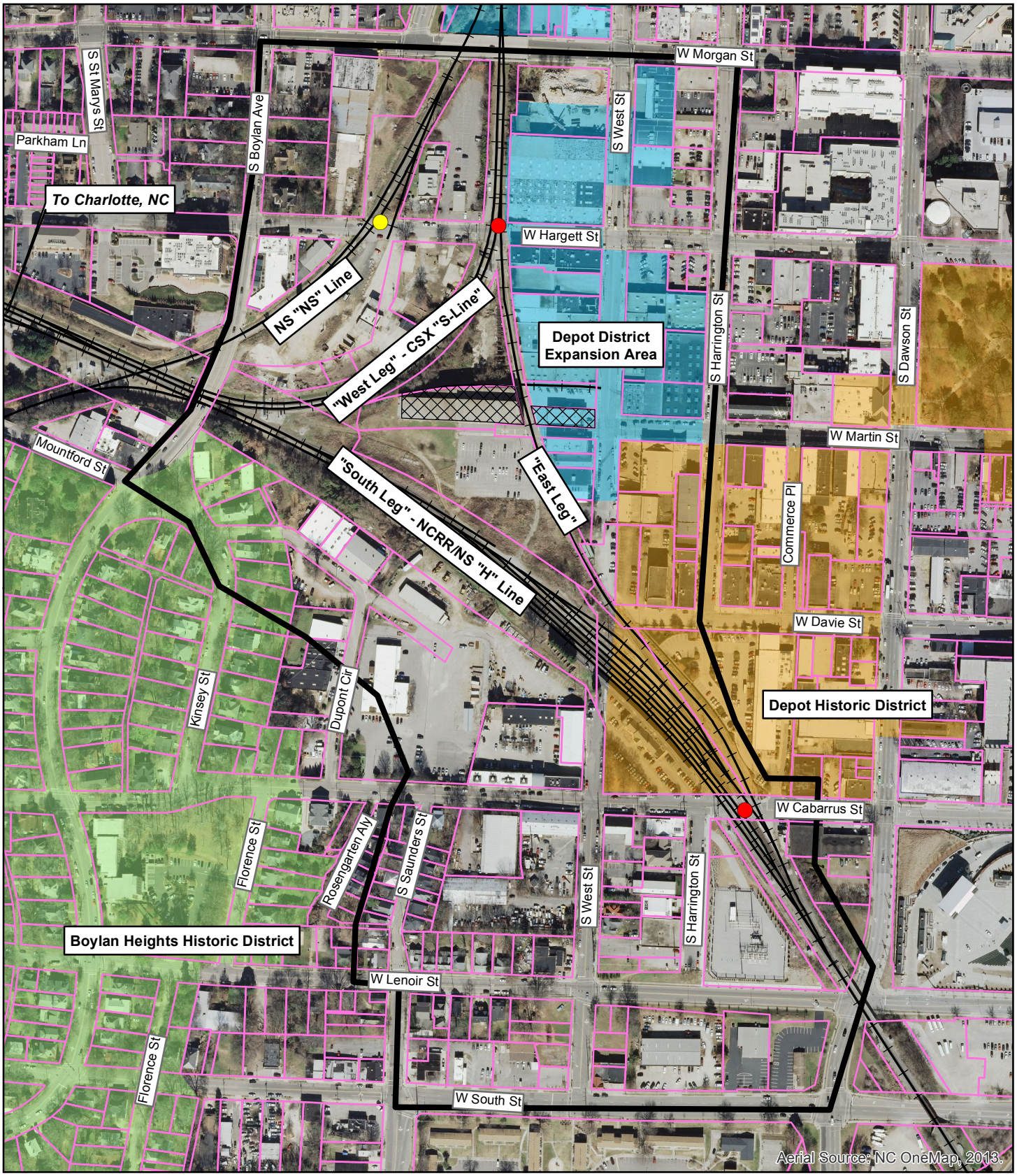

Figure 1-3. West Street Extension EA - Project Study Area Rail Lines

- Project Study Area
- Parcels
- Proposed Multimodal Transit Center Site
- Crossing of Single Rail Line
- Railroad Tracks
- Crossing of Two Rail Lines

400 200 0 400 Feet

N

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The CSX rail line through the Project Study Area is part of the preferred study corridor for the Southeast High Speed Rail (SEHSR) project. The SEHSR project would provide passenger rail service between Washington, DC, and Charlotte, NC. Although planned maximum speeds for the SEHSR are 110 mph, speeds in Downtown Raleigh are likely to be limited to 45 mph due to restrictive curves. Service eventually may extend to South Carolina, Georgia, Alabama, and Florida. The SEHSR corridor connects to the Northeast Corridor via Washington, DC, to Philadelphia, New York, and Boston.

The SEHSR corridor is one of 11 Congressionally-designated high speed rail corridors in the United States.[6] In 2002, North Carolina, Virginia, FHWA, and FRA completed the required Tier I of a two-tiered Environmental Impact Study (EIS) for the Washington, DC, to Charlotte portion of the SEHSR. The SEHSR Tier I EIS and Record of Decision (ROD) can be viewed at http://rich2hrrail.info/pages/mp_reports.html#Tier. In August 2015, North Carolina, Virginia and FRA completed the Tier II EIS for the Richmond to Raleigh portion of the SEHSR,[7] and in March 2017, FRA signed the ROD. More information can be found on the project website at www.sehsr.org.

The Wake County Transit Plan (December 2015) was the culmination of more than 250 community presentations, meetings and feedback from more than 4,3000 citizens and stakeholders.[8] It provides:

- **Stronger Regional Connections** - with more express bus services and a new, 37-mile commuter rail system from Garner to Durham, offering stops in Garner, Downtown Raleigh, NC State, Cary, Morrisville and Research Triangle Park. The commuter rail would operate in the existing NC Railroad corridor shared with freight and Amtrak trains.
- **New or improved linkages among all 12 Wake County municipalities -** with new bus connections from all towns to Downtown Raleigh, and new bus service between some smaller communities. The plan recommends longer hours, more routes that reach farther into the community and more frequent service. It also will link colleges and universities to employment centers, medical centers, dense residential areas and major downtowns.

Key components of the Plan are infrastructure investments focused on Commuter Rail Transit (CRT) and Bus Rapid Transit (BRT) corridors. The plan recommends 37 miles of CRT on the NCRR corridor from Garner, Raleigh, NC State, Cary, Morrisville, RTP, and through Durham to Duke University. Approximately two-thirds of the proposed mileage is in Wake County. The CRT line from Durham to Garner is planned to be built as one complete project, to provide the greatest usefulness and link to the existing and planned transit network in Durham.

The Plan also recommends a range of BRT speed and reliability improvements, including but not limited to dedicated busways, priority treatment at traffic signals, and fixed stations with off board fare collectors to speed boarding. Additional funds are designated for park and ride lots, bus stops and signs, sidewalks,

[6] http://www.fra.dot.gov/Page/P0140
[7] https://www.fra.dot.gov/eLib/Details/L17056
[8] http://www.waketransit.com/recommended-plan-unveiled/

and other supporting infrastructure. The majority of bus routes associated with the Plan will be oriented to Raleigh Union Station and Moore Square Station.

The Orange County Bus and Rail Investment Plan (May 2012) addresses the ongoing need to provide more options to transit riders with improved and expanded bus and rail connections.[9] Once implemented, the residents of Orange County will be able to have greater access to jobs, shopping, and activity centers such as downtown Chapel Hill and Carrboro, the University, or UNC Hospital. The Orange County Transit Plan includes plans for commuter rail and commuter bus connections with Downtown Raleigh.

The Durham County Bus and Rail Investment Plan (June 2011)[10] developed major goals for new and strengthened bus service in Durham County and better regional connections to Raleigh and other cities in the Triangle region. The Triangle Region (Research Triangle or the Triangle) refers to region in the Piedmont of North Carolina in the United States, defined by North Carolina State University, Duke University, University of North Carolina at Chapel Hill, and the cities of Raleigh and Durham and the Town of Chapel Hill. The Plan emphasized more frequent express bus trips between Durham and Raleigh and funding for a transit system that serves Durham and Wake County using Commuter Rail Technology.

1.6.3 Existing Street Network

The existing street network in the Project Study Area is shown in **Figure 1-1**. Below are descriptions of each of the streets and their functional classification based on the City of Raleigh's 2030 Comprehensive Plan (described in **Section 1.8.2** below). The thoroughfare system classifications are summarized as follows:

- Principal Arterial – At least three lanes in each direction, with medians and limitations or restrictions on driveway access; volumes typically 40,000 vehicles per day (vpd) or higher.
- Secondary Arterial – Three lanes in each direction, with medians or a center turn lane and limitations on driveway access; volumes typically between 25,000 and 45,000 vpd.
- Major Thoroughfare – Two lanes in each direction, with medians or a center turn lane and limitations on driveway access; volumes typically between 15,000 and 35,000 vpd.
- Minor Thoroughfare – At least one lane in each direction, with medians or a center turn lane; volumes typically between 8,000 and 20,000 vpd.
- Collector Street – One lane in each direction; volumes typically between 2,000 and 8,000 vpd.

The City of Raleigh has also developed a street typology which applies Unified Development Ordinance (UDO) street types to the City's thoroughfare and collector street system. Typologies for each of the Study Area streets are included in the descriptions below.

[9] http://ourtransitfuture.com/wp-content/uploads/2012/05/Orange-County-Transit-Plan-DRAFT-5-31-2012.pdf
[10] http://ourtransitfuture.com/wp-content/uploads/2014/09/FinalDurhamBusRailInvestmentPlan_June-2011.pdf

W South Street (Minor Thoroughfare): W South Street runs east-west in the southern section of Downtown Raleigh and varies from a two-way to a one-way street. In the Project Study Area, South Street is an eastbound-only street between S Dawson Street and S Saunders Street. West of S Saunders Street and east of Dawson Street, W South Street operates as a two-way facility. Each intersection with W South Street in the Project Study Area is signalized with pedestrian crosswalks. W South Street is currently striped with three eastbound lanes and has a bus stop near the intersection with S West Street. The speed limit for W South Street in the Project Study Area is posted at 25 miles per hour. W South Street had an average annual daily traffic (AADT) of 3,900 vpd between S Dawson Street and S McDowell Street in 2013 according to the maps published by the NCDOT Traffic Survey Group. The street typology for W South Street is Mixed Use – Avenue (3-Lane) with Parallel Parking.

S Saunders Street (Major/Minor Thoroughfare): S Saunders Street is a north-south route on the western side of Downtown Raleigh. It has four lanes south of the Project Study Area and tapers down to two lanes within the Project Study Area. North of W Lenoir Street, S Saunders Street is a one-lane, southbound only street. S Saunders Street has a bus stop near the intersection with Dorothea Drive, south of the Project Study Area. The speed limit for S Saunders Street south of the Project Study Area is posted at 25 miles per hour. S Saunders Street had an AADT of 9,000 vpd near the Project Study Area between Dorothea Drive and W South Street in 2013 according to the maps published by the NCDOT Traffic Survey Group. The street typology for S Saunders Street is Mixed Use – Avenue (2-Lane), Divided.

West Street (Collector Street): West Street is a north-south route in the western portion of Downtown Raleigh. West Street is currently divided into two sections, one north of the Boylan Wye and one south of the Wye. The southern portion of West Street is a two-lane, two-way street. The speed limit of West Street is not posted in the Project Study Area, meaning 35 mph is the legal speed limit. The northern portion of (North) West Street is a two-lane, two-way street with turn lanes at intersections. This part of N West Street runs from the Glenwood South area to the Warehouse District (**Figure 1-1**). West Street does not have a published AADT from the NCDOT Traffic Survey Group, but from the count data taken for this study in 2013, the northern part of West Street has approximately 1,500 vpd and the southern part of (South) West Street has approximately 900 vpd. The street typology for S West Street is Mixed Use – Main Street with Parallel Parking.

S Dawson Street (Principal Arterial): S Dawson and S McDowell Street are a one-way pair major route in Downtown Raleigh signed as US 401, US 70, and NC 50. S Dawson Street serves as the one-way southbound route and currently has four lanes in the Project Study Area and drops a lane as a right-turn only lane at the intersection with W Martin Street. S Dawson Street has several bus stops near the Project Study Area. The speed limit for S Dawson Street is not posted near the Project Study Area, but is posted 35 mph north of the Project Study Area. In 2013, S Dawson Street had AADTs varying from 19,000 vpd to 24,000 vpd in near the Project Study Area according to the maps published by the NCDOT Traffic Survey Group. The street typology for S Dawson Street is Major Street (6-Lane), Divided.

W Lenoir Street (Minor Thoroughfare): Lenoir Street is a two-lane, two-way street that runs east-west in the southern portion of Downtown Raleigh and has an underpass of the rail line east of S West Street. In the Project Study Area, there is one bus stop on W Lenoir Street near its intersection with S West Street. The speed limit on W Lenoir Street is posted as 25 miles per hour within the Project Study Area. W Lenoir Street had an AADT of 2,200 vpd between S Dawson Street and S West Street in 2013

according to the maps published by the NCDOT Traffic Survey Group. The street typology for W Lenoir Street east of S West Street is Mixed Use – Main Street with Parallel Parking. West of S West Street W Lenoir Street has a typology of Local – Neighborhood Street.

W Martin Street (Minor Thoroughfare): W Martin Street is a two-lane, two-way street that runs east-west through central Downtown Raleigh. Sections of Martin Street in the Project Study Area allow on-street parking. W Martin Street begins east of the Boylan Wye and runs to the eastern side of Downtown Raleigh. The speed limit on W Martin Street is not posted within the limits of the Study Area meaning 35 mph is the legal speed limit. W Martin Street had an AADT of 2,100 vpd near the Project Study Area in 2013 according to the maps published by the NCDOT Traffic Survey Group. The street typology for W Martin Street is Mixed Use – Main Street with Parallel Parking.

S Harrington Street (Unclassified): S Harrington Street is a two-lane, two-way street that runs north-south in the western portion of Downtown Raleigh. On-street parking is allowed on S Harrington Street in the Project Study Area. S Harrington Street begins at W Davie Street and runs northward past W Johnston Street and then ties into S West Street in northern Downtown Raleigh. Multiple bus stops are located along S Harrington Street in the Project Study Area. The speed limit on S Harrington Street is not posted within the limits of the study, meaning 35 mph is the legal speed limit. S Harrington Street does not have a published AADT from the NCDOT Traffic Survey Group, but from the count data taken for a 2014 traffic study performed for this Project, S Harrington Street has approximately 2,100 vpd assuming ten percent of daily vehicles appear during the peak hour. The street typology for S Harrington Street is Mixed Use – Main Street with Parallel Parking.

W Hargett Street (Minor Thoroughfare): W Hargett Street is a two-lane, two-way street that runs east-west in the central portion of Downtown Raleigh. On-street parking is allowed on W Hargett Street in the Project Study Area. W Hargett Street currently has two at-grade rail crossings as it traverses the Boylan Wye. W Hargett Street begins at Snow Avenue and runs westward past Raleigh City Hall and ends at Parrish Street. The speed limit on W Hargett Street is not posted in the Project Study Area, meaning 35 mph is the legal speed limit. W Hargett Street had an AADT of 2,100 vpd near the Study Area in 2013 according to the maps published by the NCDOT Traffic Survey Group. The typology for W Hargett west of S West Street is Mixed Use – Avenue (2-lane), Undivided. East of S West Street, W Hargett is Mixed Use – Main Street with Parallel Parking.

W Morgan Street (Major Thoroughfare): W Morgan Street is a two-lane, two-way street that runs east-west in the middle of Downtown Raleigh. Within the Project Study Area, W Morgan Street has two eastbound lanes and one westbound lane. On-street parking is allowed on W Morgan Street in the Project Study Area. W Morgan Street begins at Hillsborough Street on the west side of Downtown Raleigh and runs eastward past the Capitol Building and becomes New Bern Avenue. There are several bus stops along W Morgan Street in the Project Study Area. The speed limit on W Morgan Street is not posted in the Project Study Area, meaning 35 mph is the legal speed limit. W Morgan Street had AADTs in the Project Study Area varying from 5,200 vpd to 5,500 in 2013 according to the maps published by the NCDOT Traffic Survey Group. The typology for W Morgan Street is Mixed Use – Avenue (2-lane), Divided.

W Cabarrus Street (Collector): W Cabarrus Street is a two-lane, two-way street that runs east-west in the southwest portion of Downtown Raleigh. On-street parking is allowed on W Cabarrus Street in the Project Study Area. W Cabarrus Street begins in the Boylan Heights neighborhood and continues eastward to where it terminates at Salisbury Street, including an at-grade rail crossing of the rail line within the Boylan Wye. There is a bus stop along W Cabarrus Street in the Project Study Area east of S West Street. The posted speed limit on W Cabarrus Street is 35 mph within the limits; however, there are multiple 25 mph school zones in the Project Study Area along W Cabarrus Street. W Cabarrus Street does not have a published AADT from the NCDOT Traffic Survey Group, but from the count data taken for this study, W Cabarrus Street has approximately 3,700 vpd assuming ten percent of daily vehicles appear during the peak hour. The typology for W Cabarrus Street west of S West Street is Mixed Use – Avenue (2-lane), Undivided. East of S West Street, W Cabarrus is Mixed Use – Main Street with Parallel Parking.

1.6.4 At-Grade Road Crossings of Rail Lines

There are four existing at-grade road crossings of six railroad tracks in the Project Study Area (**Figure 1-3**). W Hargett Street has two at-grade railroad crossings. On the west side of the Project Study Area, W Hargett Street crosses the NS rail line. On the east side, W Hargett Street crosses two sets of tracks (the "West Leg" and "East Leg" of the Boylan Wye). W Martin Street has an at-grade crossing of the "East Leg" of the Wye which is currently closed during construction of a grade separation at Raleigh Union Station. This will be the secondary vehicular entry to the station. W Cabarrus Street has an at-grade crossing of two sets of tracks (the "South Leg" and "East Leg" of the Boylan Wye). Following the construction of Raleigh Union Station there will be four sets of tracks at Cabarrus Street. Existing conditions at the at-grade crossing at W Cabarrus Street are included in Table 1-1. Future (2035) conditions at this crossing, which include trains anticipated to be added as a result of the Raleigh Union Station and SEHSR projects (described above), are included in Table 1-2.

For the passenger train counts presented in Tables 1-1 and 1-2, the state-sponsored Piedmont trains that begin or terminate their route at Raleigh Union Station will traverse both the South Leg and East Leg tracks within the W Cabarrus Street at-grade crossing. The Piedmont trains will traverse the South Leg when serving the station, then route over the East Leg when arriving from or returning to NCDOT's Capitol Yard north of Downtown Raleigh.

Table 1-1: Existing Conditions at the W Cabarrus Street At-Grade Railroad Crossing

Existing Condition	South Leg Track	East Leg Track	Total on W Cabarrus St.
Existing Train Speed	45 mph	10 mph	n/a
Average number of diesel locomotives per freight train	2	2	n/a
Average number of cars per freight train	50	50	n/a

Table 1-1: Existing Conditions at the W Cabarrus Street At-Grade Railroad Crossing

Existing Condition	South Leg Track	East Leg Track	Total on W Cabarrus St.
Average number of diesel locomotives per passenger train	1	1	n/a
Average number of cars per passenger train	7	5	n/a
Average number of freight trains per day (days per week) during normal daytime hours of 7 AM to 10 PM	7 (7)	2 (7)	9 (7)
Average number of passenger trains per day (days per week) during normal daytime hours of 7 AM to 10 PM	8 (7)	4 (7)	12 (7)
Average number of freight trains per night (nights per week) during normal nighttime hours of 10 PM to 7 AM	0 (0)	0 (0)	0 (0)
Average number of passenger trains per night (nights per week) during normal nighttime hours of 10 PM to 7 AM	0 (0)	0 (0)	0 (0)

Source: NCDOT Rail Division, 2013

Table 1-2: Future (2035) Conditions at the W Cabarrus Street Railroad Crossing

Proposed Condition	South Leg Track	East Leg Track	Total on W Cabarrus St.
Future Train Speed	45 mph	25 mph	n/a
Average number of diesel locomotives per freight train	2	2	n/a
Average number of cars per freight train	70	50	n/a
Average number of diesel locomotives per passenger train	1	1	n/a
Average number of cars per passenger train	7	5	n/a
Average number of freight trains per day (days per week) during normal daytime hours of 7 AM to 10 PM	7 (7)	2 (7)	9 (7)
Average number of passenger trains per day (days per week) during normal daytime hours of 7 AM to 10 PM	12 (7)	8 (7)	20 (7)
Average number of freight trains per night (nights per week) during normal nighttime hours of 10 PM to 7 AM	0 (0)	0 (0)	0 (0)
Average number of passenger trains per night (nights per week) during normal nighttime hours of 10 PM to 7 AM	0 (0)	0 (0)	0 (0)

Source: NCDOT Rail Division, 2013. For consistency, projected train volumes are based on estimates provided in the 2013 Raleigh Union Station EA. The SEHSR EIS projects 6 additional trains under future conditions. Traffic generated by these additional trains will be negligible.

1.7 MODAL RELATIONSHIPS

1.7.1 Bus Service

GoRaleigh (formerly Capital Area Transit) offers local bus service within the Project Study Area. Bus Route 13 (Chavis Heights) travels north-south along S Harrington Street between W Davie Street and W Hargett Street. Also, Route 7 (South Saunders), 11 (Avent Ferry), and 21 (Caraleigh) buses run east-west along Lenoir and South Streets within the Project Study Area.[11] Locations of bus stops are described in **Section 1.6.3** Road Network. The Moore Square Station Transit Mall, which is ½ mile east of the Project Study Area, serves as the pulse point for almost all GoRaleigh local and express buses currently. Ultimately, a future phase of Raleigh Union Station and Moore Square Station are both planned to serve as Downtown Raleigh's multimodal hub providing connection opportunities for local buses including connector routes between the two on W Hargett and W Martin Streets. In 2011 the City of Raleigh and a consortium of transit organizations and the City of Raleigh completed the Capital Area Bus Transit Development Plan (CABTDP). This Plan presented a framework for long-range transit service and capital investments aimed at improving mobility options for the Capital Area region. Raleigh Union Station is identified as a rail-related facility served by buses and is recommended for capital facility expenditures under the CABTDP.

According to analysis performed for a TIGER grant application for Raleigh Union Station, the extension of S West Street will further improve access by restoring a portion of the City's historic street grid and providing connectivity from surrounding neighborhoods and greenways to the station area.[12] As with most upgrades in transit service, alternatives to driving increase mobility for non-drivers and those who are economically disadvantaged or otherwise do not use automobiles (*Raleigh Union Station Phase I: TIGER Grant Application, 2012*). The Heritage Park neighborhood and points south are examples of neighborhoods that would benefit from the restored street grid.

Based on coordination with City staff, the impact of Raleigh Union Station on existing bus routes will be significant, but is not clear at this time. The County, partnering with its municipalities and transit service providers has recently finished development of the Wake County Transit Plan (December, 2015). The Plan includes bus rapid transit (BRT) routes north, south, east, and west from Downtown Raleigh. The West Street corridor between Wake Forest Road and W South Street has been identified as a logical choice for prioritized bus service, particularly for BRT routes north and west of Downtown. The corridor will likely be used by many future bus routes, particularly high-frequency routes. Greyhound offers regional and long-distance bus service from its terminal at 2210 Capital Boulevard, approximately 3.2 miles north of the Project Study Area. Passengers can travel to points along the Eastern Seaboard and beyond, as well as urban areas throughout North Carolina.

[11] http://www.raleighnc.gov/services/content/PWksTransit/Articles/CapitalAreaTransit.html

[12] The City of Raleigh submitted an application to the USDOT for funding available under the National Infrastructure Investments Act (FY 2012 TIGER Discretionary Grants) for Phase-1 of the Raleigh Union Station project, which included the West Street Extension as a component of the overall project. The USDOT ultimately selected the project for funding; however, without the West Street Extension component.

1.7.2 Amtrak

The existing Raleigh Amtrak station is located within the Project Study Area at 320 W Cabarrus Street and currently serves eight trains daily. As stated previously, projecting ridership based on the most recent Amtrak traffic counts for FY 2014, an estimated 491,000 riders will use Raleigh Union Station in 2035. The current station cannot accommodate this expected growth in ridership. Amtrak service will move to the new Raleigh Union Station multi-modal transportation center to service this increased demand. At select stations in the Amtrak system, Amtrak operates a Thruway bus service to connect to communities without rail service. In North Carolina, Amtrak currently operates a Thruway bus service from Wilson, NC to inland and coastal destinations in eastern North Carolina. Although Amtrak does not currently operate Thruway bus service to Raleigh, there is potential to implement this service in the future, if supported by ridership demand.[13]

1.7.3 Bicycle/Pedestrian

The Art-to-Heart Greenway and Bicycle Corridor runs through the Project Study Area on W Lenoir Street, marked with shared lane markings (sharrows) and signage. The corridor is part of the East Coast Greenway, the 2,900-mile bike route in development between Maine and Florida (**Figure 1-2**). The Rocky Branch and Walnut Creek greenways are located south of the Project Study Area, with no connection north into the Project Study Area. Currently, there are also no bicycle lanes in the Project Study Area other than along Hillsborough Street, as noted earlier. W Lenoir Street currently has shared lane marking, and bicycle lanes will be provided along W South Street from S Saunders Street to East Street as part of the City of Raleigh's project to convert W Lenoir Street and W South Street from one-way operation to two-way operating streets. Additional details on this project are provided in **Section 1.8.2**.

West Street is an important corridor in the BikeRaleigh and the Downtown Experience Plans. It is planned to include a separated bikeway in the BikeRaleigh plan. The Downtown Experience Plan designates it as a key bicycle connection and a pedestrian oriented street. West Street currently links the Warehouse District to the Glenwood South District in Downtown Raleigh. Alternative streets, such as Glenwood Street or S Dawson Street are much less bike friendly and/or do not have the operational flexibility for improved bike facilities. West Street links to the site of the proposed Devereux Meadows Park and Pigeon House Branch Greenway Trail located between Capital Boulevard and West Street, north of Peace Street. Two extensions of West Street are planned. The northern extension will link West Street to Fairview Road, providing more direct access for bicyclists and pedestrians between the Five Points area and Downtown Raleigh. The southern extension will cross the NCRR near Raleigh Union Station and connect the Boylan Heights Neighborhood, Dix Park, and Rocky Branch Greenway Trail to the Warehouse District of Downtown Raleigh. The southern extension of S West Street is particularly important because the alternative north-south streets in this area of Downtown Raleigh are the high-traffic

[13] https://www.amtrak.com/thruway-connecting-services-multiply-your-travel-destinations

arterials of S Dawson and S McDowell Streets. The proposed S West St extension across the NCRR will provide a vital north-south bicycle and pedestrian link on the west side of Downtown Raleigh.

The area around the Boylan Wye has sidewalks on the majority of streets (**Figure 1-4**). Within the Project Study Area, sidewalks are present on both sides of S Boylan Avenue, W Morgan Street, W Martin Street, S Harrington Street, W Cabarrus Street, W South Street, and S Saunders Street. There are also sidewalks on both sides of W Hargett Street, with the exception of the section within the Boylan Wye. Along S West Street, there are sidewalks on both sides of the street north of W Hargett Street and south of W Cabarrus Street, but no sidewalks in between.

1.8 TRANSPORTATION AND LAND USE PLANS

1.8.1 State Transportation Improvement Program

The Raleigh Union Station project (STIP No. P-5500) is the only other project located in the Project Study Area that is listed in the NCDOT 2016-2025 STIP. NCDOT, FRA, and the City of Raleigh are constructing a new multimodal transportation center and associated track improvements in Downtown Raleigh. The proposed station and adjacent track improvements are in the southern part of downtown within the Boylan Wye. The project also includes the construction of a new railroad siding in South Raleigh (crossing Tryon Road) in Wake County. The siding will replace Cabarrus Yard, an existing freight car storage facility which will be displaced by the project, and will improve rail operations, specifically the interaction of passenger and freight rail in the station vicinity. The new siding will replace rail car storage capacity lost in the Boylan Wye due to the new station platforms.

The station building is an adaptive reuse of an existing vacant structure known as the Dillon Supply Company "Viaduct Building," which is located near the corner of S West Street and W Martin Street (510 W Martin Street; **Figure 1-3**). The use of the Viaduct Building as the new station requires realignment of several sections of the Boylan Wye rail infrastructure, the construction of two new passenger loading platforms and canopies along the rail lines, and installation of underground concourses from the station to the platforms for both passengers and baggage. The project will serve to address three deficiencies associated with the existing Amtrak station. It will provide sufficient waiting space, sufficient parking spaces, and an adequate and safe platform for passengers to board and unload with space for expansion. The City is anticipating that the new Raleigh Union Station will be complete in mid-2018.

1.8.2 Local Land Use and Transportation Plans

2030 Comprehensive Plan for the City of Raleigh

The Project Study Area is included in the City of Raleigh's 2030 Comprehensive Plan as *Area Plan 6: Downtown West Gateway*. The purpose of this plan is to provide specific policies and actions to guide redevelopment within an area west of Downtown Raleigh located between the Raleigh Convention Center and the Boylan Heights residential neighborhood. The plan encompasses an area expected to experience significant redevelopment and is situated to serve as a connection between existing downtown entertainment and employment centers, residential areas, and future park and open space opportunities.

The major catalysts for change in the Downtown West Gateway include the Raleigh Convention Center, the planned multi-modal transportation center that will serve as a regional gateway to downtown, and activities associated with two redevelopment areas, including the Saunders North area described below.

The Transportation Element of the 2030 Comprehensive Plan contains policies that serve to create a well-connected, multi-modal transportation network, support increased densities, help walking become more practical for short trips, support bicycling for both short- and long-distance trips, improve transit to serve frequented destinations, conserve energy resources, reduce greenhouse gas emissions and air pollution, and do so while maintaining vehicular access and circulation. Policies that relate to the S West Street Extension project include:

- Preserving the Grid (Policy T 2.6) – This policy states that existing street grid networks should be preserved and extended where feasible and appropriate to increase overall connectivity.
- Complete Street Implementation (Policy T 3.1) – This policy incorporates Complete Street principles and design standards that provide mobility for all types of transportation modes (pedestrian, bicycle, auto, transit) and support mutually-reinforcing land use and transportation decisions.
- Promoting Transit (Policy T 4.1) – This policy promotes and supports quality transit services to enhance mobility options and to meet the needs of the City's residents and visitors, with a focus on transit-dependent households. Action T 4.1 of the 2030 Comprehensive Plan is the development of the Multi-modal Transportation Center, which would link multiple travel modes.
- Bike/Pedestrian Circulation (Policy T 5.1) – This policy serves to enhance pedestrian and bicycle circulation, access, and safety along corridors, downtown, in activity and employment centers, at densely developed areas and transit stations, and near schools, libraries, and parks.

Saunders North Area Redevelopment Plan and Rosengarten Urban Greenway

In 2003, the Raleigh City Council authorized the development of the Saunders North Area Redevelopment Plan pursuant to the area meeting blighted standards set by the State of North Carolina under Article 22, Chapter 160A Urban Redevelopment Law. This redevelopment plan describes activities to be undertaken by the City of Raleigh, as well as other public and private entities, in the area bounded generally by W Cabarrus Street on the north; Western Boulevard or W South Street on the south; the boundary of the Boylan Heights Historic District on the west; and S Saunders Street and S West Street on the west. The principal goals of the redevelopment plan are to:

- Develop new and improved housing stock;
- Create economic development and employment opportunities;
- Rehabilitate deteriorated buildings;
- Visually enhance the area with streetscape improvements;
- Improve public safety;
- Continue to develop the City's greenway system through the area;

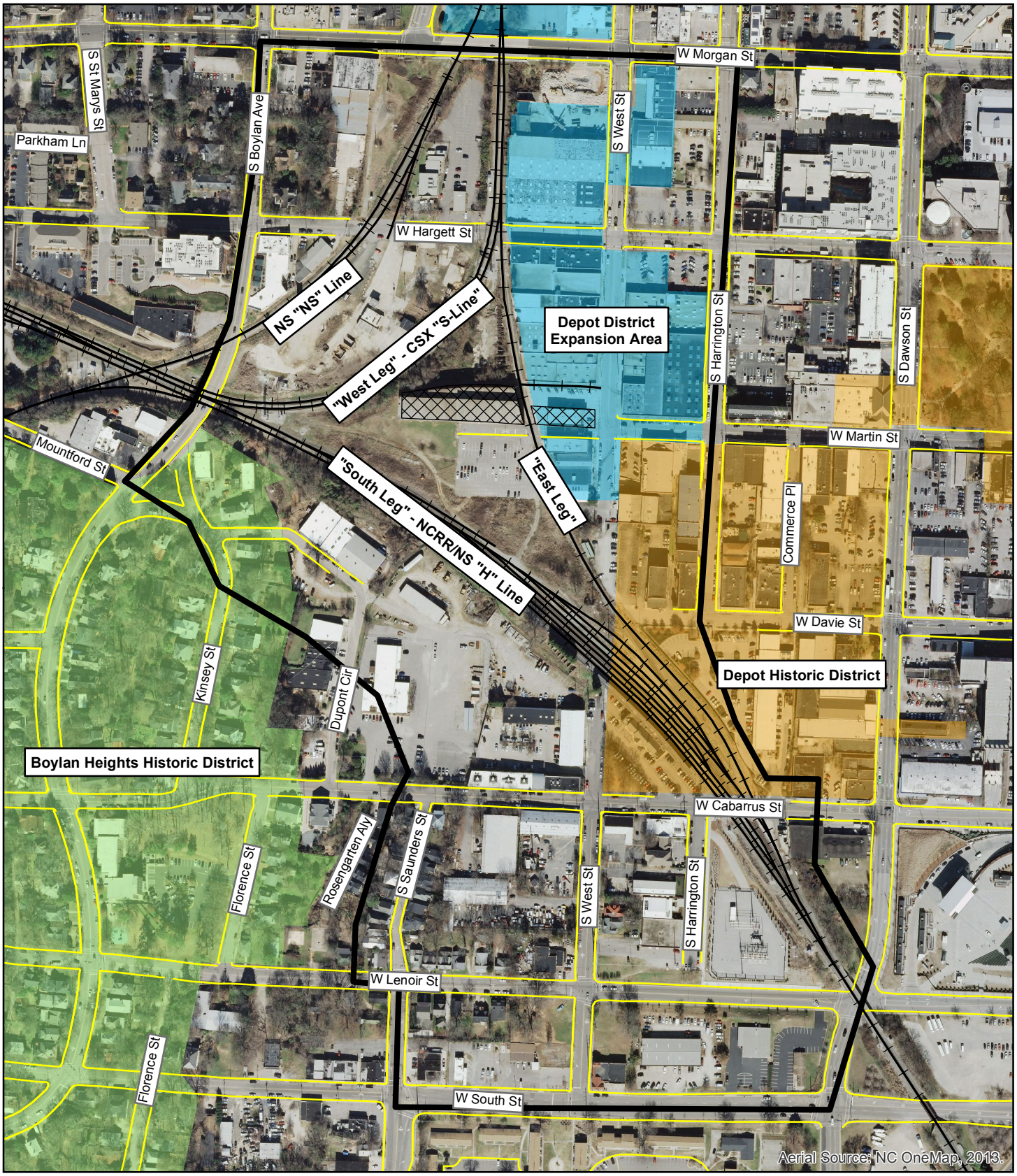

Figure 1-4. West Street Extension EA - Sidewalks in Project Study Area

Project Study Area

Sidewalks

Proposed Multimodal Transit Center Site

Railroad Tracks

400 200 0 400 Feet

N

Prepared: March 27, 2017

Develop an integrated and interconnected pedestrian, bicycle and street network in the area;

- Develop guidelines and standards for urbanization and more dense land uses in and around the multi-modal transportation center;
- Coordinate with and implement appropriate recommendations contained in the Downtown Raleigh Livable Streets Plan and Program;
- Promote development and stabilization on the western edges of downtown, especially adjacent to the new Convention and Civic Center; and
- Provide good, sound transitions between this developing/redeveloping area and the adjacent neighborhoods, especially the Boylan Heights Historic District to the west.

The Saunders North Area Redevelopment Plan calls for several improvements in the Project Study Area, including new office, retail and residential development; new townhomes; major streetscape improvements; the Rosengarten Urban Greenway; and new parking facilities. The plan notes the unique character of the houses along S Saunders Street between W Cabarrus and W Lenoir Streets and recommends that this character be retained to the maximum extent feasible, with existing houses rehabilitated where practical and new infill housing built to closely fit with the existing character of the area.

The City of Raleigh plans to construct Rosengarten Urban Greenway adjacent to Rosengarten Alley to serve as a defining and significant feature and open space for the area. The City's stated goal is for it to serve as a key pedestrian/bicycle/multipurpose transportation and recreational link between the cross-City Rocky Branch/Walnut Creek Greenway to the south and the multi-modal transportation center, and to intensify redevelopment areas to the north in the Boylan Wye area (**Figure 1-2**).

South/W Lenoir Street Two-Way Conversion: The City of Raleigh has started construction to convert W Lenoir Street and W South Street from one-way operation to two-way operating streets. The street segments that will be converted to two-way are from S Saunders Street to S Dawson Street on W South Street and from Wilmington Street to East Street along both W Lenoir and W South Streets. The project will include modification of traffic signals, turn lane improvements, installation of new pedestrian head signals, crosswalks, and raised landscaped medians. The project will also add striped bicycle lanes along W South Street from S Saunders Street to East Street and maintain the existing "sharrows" (bicycle shared use arrows) along W Lenoir from S Dawson Street to East Street. This project incorporates Complete Street principles and will enhance traffic operations and mobility for motorists, pedestrians, and cyclists. Designs are currently being developed and construction is estimated to be complete by 2017.

Capital Boulevard Corridor Study: The City of Raleigh's Capital Boulevard Corridor Study Report (as amended August 7, 2012) outlines recommendations for "transforming the most travelled gateway into Downtown Raleigh into a showcase for multimodal transportation and green infrastructure." The study recommends extending S West Street from its existing terminus at Wade Avenue north to Wake Forest Road to create a local access street with bicycle and pedestrian facilities. This would create a north-south route for walkers, cyclists, and buses that connects to greenways and downtown destinations, including

Raleigh Union Station. Recommendations for the northern extension of S West Street include sidewalks for the entire length and on-street bike lanes. Bus service would also be rerouted onto the extended street.

Southern Gateway Corridor Study: The Draft Report for the Southern Gateway Corridor Study was published for public comment in July 2016. The plan examines the transportation and street network; the bike, pedestrian and greenway connections; the market realities of this district and the region as a whole; the interface between the district and the future Dorothea Dix Park and, the potential for transformation with new private development and infrastructure improvements. The plan also identifies how plan recommendations correspond to specific elements of the City's Strategic Plan, and Downtown Experience Plan document.[14]

While West Street is not specifically mentioned in the Southern Gateway Corridor Study, the West Street extension project is consistent with the study recommendation for a dedicated transit travel-way for BRT, or other technology. According to the study, transit way and stations could be located either in the median or along the outsides of the roadway cross-section.

Downtown Plan - The Next 10 Years: The City of Raleigh Downtown Plan was approved by the City Council in 2015. The plan established the following "Framework Themes" for development in Downtown Raleigh over the next ten years:

- BREATHE: A Greener Raleigh - Create public open spaces where people can pause and breathe, gather, and relax within the city.
- MOVE: Create Connections - Make walking, biking, and transit the preferred ways to get in and around Downtown Raleigh.
- STAY: Revitalization and Redevelopment – Realize downtown's potential as a dynamic city-center neighborhood anchoring tourism, entertainment, and culture.
- LINK: Network and Partner - Align with institutional, public, and private partners to bring downtown's shared vision to life.

The extension of West Street is consistent with the Downtown Plan. Specifically the Plan states, *"Prioritize West Street as a north-south greenway connector that will eventually connect to greenways north and south of downtown."*

1.9 NO-BUILD VEHICULAR TRAFFIC OPERATIONS

Vehicular traffic operations for design year (2035) conditions without the Project (e.g., "No-Build") are discussed in the following sections. The No-Build scenario consists of the existing conditions present in the Project Study Area with a few alterations based upon anticipated modifications. By 2035, it is anticipated that the following modifications to existing conditions within the Project Study Area will have taken place:

[14] http://www.raleighnc.gov/business/content/PlanDev/Articles/UrbanDesign/SouthernGateway.html

- The SEHSR project will close the existing W Hargett Street at-grade railroad crossing (according to the Final EIS published in September 2015).[15]
- The City of Raleigh will convert W South Street to two-way traffic as described in **Section 1.8.2**.
- Citrix Systems, a multinational software company, has relocated to its 130,000-square foot office building in the City block bounded by S West, W Morgan, and W Hargett Streets.
- The Raleigh Union Station project will provide driveway access on S West Street at two locations: from an extension of W Martin Street as an eastbound only exit from the station, and with a primary entrance and exit from just south of W Martin Street.
- The City of Raleigh will remove the traffic signal at South and S West Streets.
- "The Dillon" which is currently under construction at W Martin and S West Street will include a parking deck with 980 spaces.

1.9.1 Traffic Volumes

Traffic data for the Project were collected in October and November 2012. Peak hour turning movements were collected during peak hours (7:00-9:00 AM and 4:00-6:00 PM). Based on coordination with City staff, a one-half percent per year growth rate was determined to be a realistic value for the Project Study Area due to the growth characteristics of Downtown Raleigh and the available land for development in and around the immediate area of the City of Raleigh. This rate was used to grow 2012 traffic count volumes to the analysis design year of 2035. The modifications to the existing conditions in the Project Study Area (described above) were addressed as follows:

- To account for the closure of the existing W Hargett Street at-grade railroad crossing, traffic was assumed to reroute to other locations;
- In order to accommodate the conversion of W South Street to two-way operation, fifty percent of the westbound W Lenoir Street volume was rerouted to westbound W South Street and the converted section of W South Street was assumed to be two lanes per direction;
- Trips generated by Citrix Systems locating in the Project Study Area were estimated using the 9th edition of the Institute of Transportation Engineer's Trip Generation Manual;
- Trips generated by the new Raleigh Union Station were estimated based on a Transportation Research Record article (Paper No. 99-1445) titled, "Trip Generation Study of Passenger Rail Station at Providence, Rhode Island," using 12 trains per day passing through the station (which are estimated by the NCDOT Rail Division). Although the 2015 SEHSR EIS projects an additional 6 trains per day, this analysis was performed with consistency to the Raleigh Union Station EA and traffic impact of these additional trains will be negligible;
- The trips generated by Citrix Systems and the Raleigh Union Station were distributed throughout the network and added to the rerouted volumes discussed previously.
- It is anticipated that vehicle trips associated with "The Dillon" development will result in traffic distributed throughout the network in a manner similar to Citrix Systems and will not have an adverse impact on traffic operations within the network.

[15] https://www.fra.dot.gov/eLib/Details/L17056

- Although the City of Raleigh and GoTriangle representatives have had discussions regarding the conversion of parcel formerly owned by the Dillon Steel Company to a bus terminal, there are no formal plans to convert the parcel at this time.

It should be noted that the planned development of a "brownfields" site (discussed in **Section 3.7**) at the former PSNC Energy manufactured gas plant directly south of the Boylan Wye was not specifically addressed in the traffic analysis. Although a developer plans to develop the property for potential light industrial, office, retail, high-density residential, and/or commercial uses, there was no site plan nor schedule for that project during analysis. Therefore, no separate traffic was added to account for this potential development. It was assumed to be incorporated into the annual growth rate used to reach 2035 volumes.

1.9.2 Level of Service

The No-Build traffic volumes discussed in the previous section, along with lane configurations and traffic signal information, were input into Synchro version 8 software to estimate the No-Build levels of service (LOS) for intersections in 2035. LOS describes the operating characteristics on a transportation facility with "A" being best and "F" being worst as they are perceived by motorists. The LOS criteria for signalized and stop-controlled intersections in the Project Study Area come from the 2010 Highway Capacity Manual and are shown in Table 1-3**.**

Table 1-3: Level of Service Criteria for Signalized and Stop-Controlled Intersections

Level of Service	Signalized Average Delay (seconds/vehicle)	Stop-Controlled Average Delay (seconds/vehicle)
A	0-10	0-10
B	>10-20	>10-15
C	>20-35	>15-25
D	>35-55	>25-35
E	>55-80	>35-50
F	>80	>50

Source: Transportation Research Board, 2010.

The Study Area for the West Street Extension is a part of the southern downtown roadway system. The roadway system is a traditional grid layout interrupted on the west side of the Project Study Area by the Boylan Wye rail corridor. The following streets are within, or adjacent to the Project Study Area: South Street, S Saunders Street, S West Street, S Dawson Street, W Lenoir Street, W Martin Street, S Harrington Street, W Hargett Street, W Morgan Street, Hillsborough Street, and W Cabarrus Street. Results of analysis of the 2035 No-Build conditions indicate two signalized intersections--W South Street/S Dawson Street, and W Lenoir Street/ S Dawson Street-- fail (operate below LOS E). No unsignalized intersections fail under No-Build conditions. Analysis of Project-related impacts is provided in **Section 3.0**.

1.10 PEDESTRIAN ACTIVITY

Pedestrian activity within the Project Study Area, like all of Downtown Raleigh, is substantial. In May 2011, the City of Raleigh and Downtown Raleigh Alliance commissioned a study of pedestrian activity in key downtown corridors, including the Warehouse District. Over the course of four weeks during springtime weather, counts were taken on eight weekdays and one Saturday. The counts also varied by specific time of day to capture pedestrian activity throughout a "typical" day in Downtown Raleigh. In particular, recognizing tendencies of downtown commercial activity, this report focused on a morning timeframe, the lunchtime period, the afternoon peak, and also late-night activity. Counts in the Warehouse District focused on late night entertainment hours. The highest volume location within the Project Study Area was W Davie Street at Commerce Street, where 2,077 pedestrians were observed during a six-hour count period. The study noted a distinction between the Warehouse District and Glenwood South commercial area to the north, with an "edge effect" in the Warehouse District (i.e., train tracks and residential neighborhoods border the west side of this district decreasing the possibility of pedestrian "pass-through" traffic). The City of Raleigh conducted additional pedestrian and bicycle counts at two locations within the Study Area over the course of three weekdays in June 2015. Counts were taken between 7:30 am and 12:30 am. Daily totals for the S West Street/ W Hargett Street intersection ranged between 661 – 683 pedestrians. Daily totals for the S Harrington Street/ W Martin Street intersection ranged between 770 - 1,119 pedestrians.

1.11 SAFETY

The Project would promote safer traffic operations by providing vehicles, pedestrians and bicyclists south of the Boylan Wye an alternative crossing to the at-grade railroad crossing at W Cabarrus Street, over which train frequencies are planned to increase (Sec. 1.6.4). At any location where streets intersect railroad tracks, there is the potential for motorists, pedestrians, and cyclists to be killed or injured. Trains cannot swerve to miss a vehicle or pedestrian and it takes great distances to stop. Motorists involved in railroad crossing collisions often are killed due to the difference in size between personal vehicles and locomotives. However, larger motor vehicles, such as tractor trailers, can also cause damage or derailment to trains. Derailment of a passenger train can cause serious injury or death, not only for the motorist, but also for train passengers.

Because the Project would construct a grade separation at West Street, it would enhance safety for rail passengers and motorists, pedestrians, and cyclists. The Project would also provide an alternate safe crossing for pedestrians who illegally cross Boylan Wye rail lines. Pedestrians currently cross illegally in locations other than existing at-grade or grade separated crossings. These illegal crossings have the potential to result in injuries or death for the pedestrians. The Project would provide an additional safe location for pedestrians to cross the rail lines and therefore would reduce the potential for train/ pedestrian accidents.

Chapter 2
Alternatives Considered

2.1 INTRODUCTION

This EA evaluates one Build Alternative (connecting segments of S West Street via an underpass of the tracks) and one No-Build Alternative. In 2010, the City prepared a feasibility study that considered connecting S West Street to either S West Street or S Saunders Street, both via bridges over the railroad tracks, or taking the road under the tracks. The feasibility study evaluated two corridors, one of which connected the two existing portions of S West Street (referred to as "L1"), and the other connected S West Street to S Saunders Street (referred to as "L2") (**Figure 2-1**). For both corridors, alternatives crossing over and under the railroad corridor were evaluated. Although the L2 alternative road-under-rail alternative was recommended by the study, the City Council later decided to endorse a S West Street to S West Street alternative based on the substantial impacts to the community along S Saunders Street from L2. The City considered but dismissed alternatives to improve existing roadways (other than S West Street) or to use alternative modes of transportations because they do not meet the purpose and need of the project. Other potential alternatives would result in longer indirect travel and were not practical due to the complex railroad configuration in the Project Study Area. Discussion of initial alternatives is provided below.

2.2 NO-BUILD ALTERNATIVE

This No-Build Alternative analysis assesses future conditions if the Project isn't constructed. CEQ's NEPA-implementing regulations require that project proponents consider a no-build alternative, even if the no-build alternative does not meet the purpose and need of the project.[16] This EA considers the No-Build as a baseline against which the impacts of the Build Alternative are measured. Under the No-Build Alternative, S West Street would remain in its current alignment, the northern and southern segments would remain bifurcated by the railroad, and no other improvements would occur along the nearby roadways or rail crossings in the Project Study Area. For the following reasons, the No-Build Alternative would not meet the purpose and need of the Project:

- The No-Build Alternative would not improve access to the future Raleigh Union Station multimodal transportation center from areas south and west of the Boylan Wye. Access to Raleigh Union Station would be limited because there would be no north-south connection across the railroad tracks between S Boylan Avenue and S Dawson Street. Residents would still use indirect connections provided W Cabarrus Street from S McDowell Street, or S Boylan Avenue because there are no other connections to the area from the south.
- The No-Build Alternative would not improve connectivity for motorists, pedestrians, and cyclists across the Boylan Wye, or provide an additional grade-separated north-south crossing for them.

[16] See 40 CFR 1502.14,

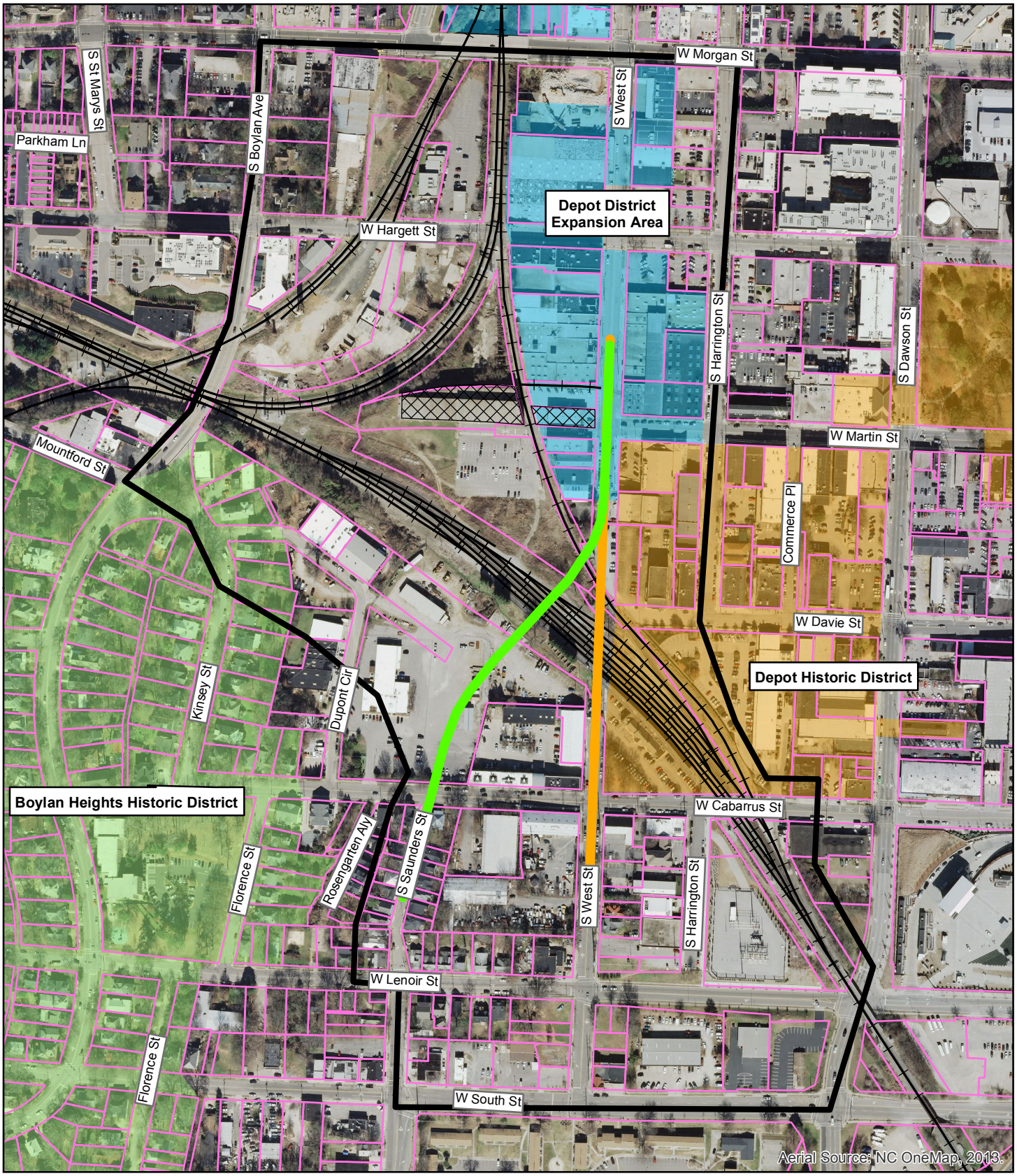

Figure 2-1. West Street Extension EA - Initial Alternative Alignments

Project Study Area

Proposed Multimodal Transit Center Site

Railroad Tracks

West St to West St "L1" Alternatives

West St to S Saunder St "L2" Alternatives

500 250 0 500 Feet

N

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- The No-Build Alternative would not enhance safety by reducing exposure or eliminating potential conflicts between motorists/pedestrians/cyclists and trains on W Cabarrus Street. Existing unsafe conditions would continue or worsen with increased future train and roadway volumes.
- Under the No-Build and Build Alternative additional traffic on the West Street area roadway network would experience elevated traffic volumes due to the construction of the "the Dillon" development. The No-Build would not alleviate traffic on West Street and adjacent intersections due to traffic from this development.

The No-Build Alternative would incur neither right-of-way nor construction costs. There would be no short-term disruptions along existing roadways during construction. There would be no impacts to natural or cultural resources, nor relocation of any residential or business properties. The existing at-grade railroad crossing at W Cabarrus Street would remain the most convenient rail crossing for many motorists, pedestrians, and cyclists traveling toward downtown from south of the Boylan Wye.

2.3 PRELIMINARY BUILD ALTERNATIVES

The City of Raleigh's 2010 feasibility study for the West Street Extension project assessed several variations of both a "Road over Rail" and "Road under Rail" option connecting the northern segment of S West Street to either S West Street or S Saunders Street south of the NCRR corridor. The S West Street to S West Street "Road over Rail" was considered but eliminated as an option in this EA because it would maintain access from W Cabarrus Street across S West Street (see **Figure 2-2**). This option would not "land-lock" the properties that currently get access through that intersection.

The L1/S West to S West Street "Road under Rail" alternative was considered and recommended as the "Road under Rail" option for this EA because it was the only S West Street to S West Street option that took S West Street under the rail. More information on these preliminary alternatives can be found on the City of Raleigh project website, found at: http://www.raleighnc.gov/business/content/PlanDev/Articles/TransPlan/WestStreetExtensionProject.html.

The 2010 feasibility study also considered alternatives connecting S West Street to S Saunders Street, and ultimately recommended a "Road under Rail" alternative connecting S West Street to S Saunders Street. However, in 2015, the City recommended and FRA approved elimination of this alternative based on the substantial impacts to the community along S Saunders Street and to a brownfields redevelopment site. More information on the elimination of the S Saunders Street alternatives is provided in **Section 2.5**.

2.4 BUILD ALTERNATIVE

In this EA, the City evaluated one Build alternative, similar to the alternative identified in the City of Raleigh's 2010 feasibility study. The "Road under Rail" alternative connecting S West Street to S West Street is based on the alignment for the "L1/West to West under Rail" feasibility study alternative (see **Figure 2-2)**.

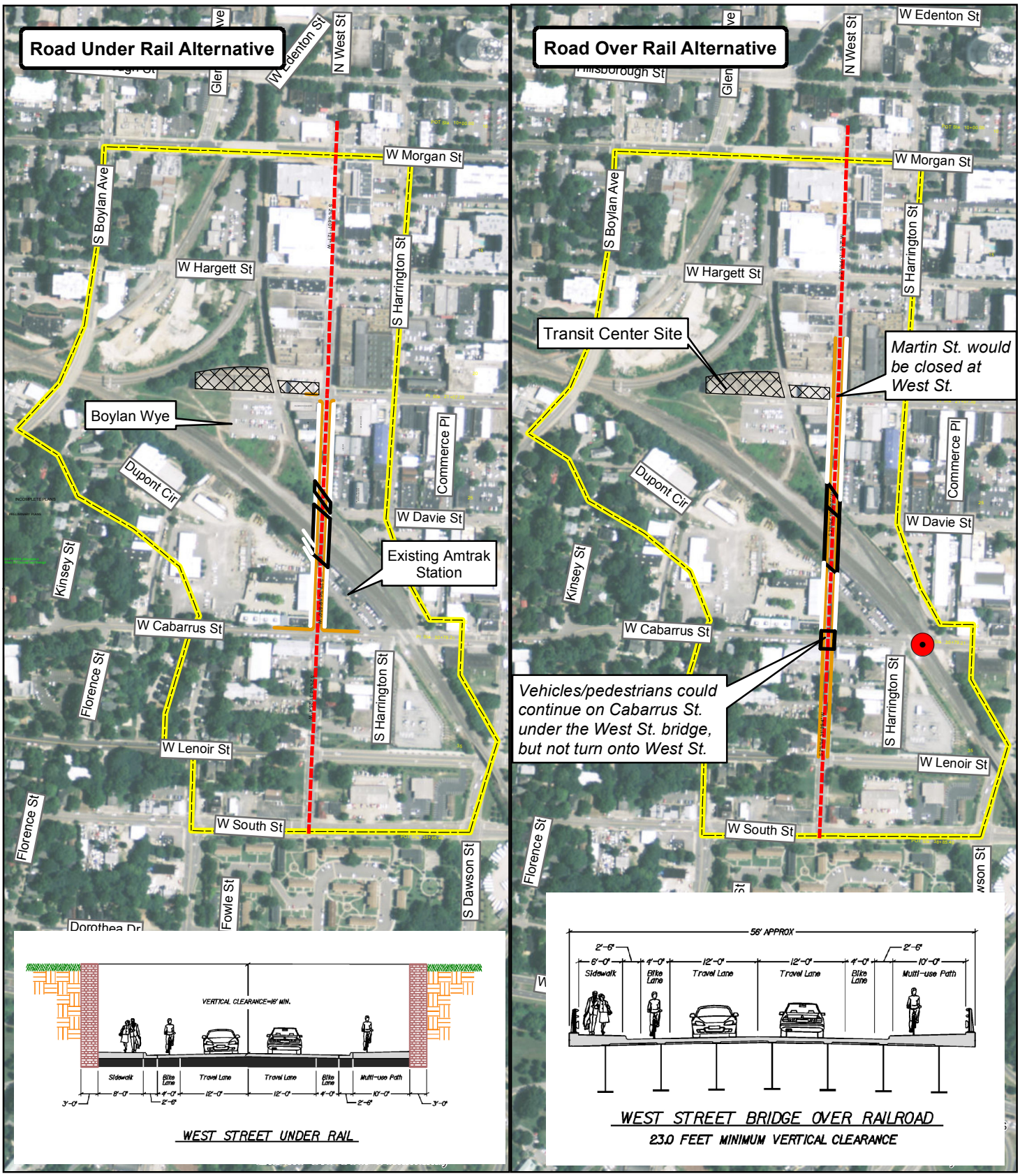

Figure 2-2. West Street Extension EA - West Street Connection Alternatives

Environmental Assessment Study Area
Proposed Road Centerline
Proposed Curb and Gutter
Proposed Multimodal Transit Center Site
Proposed Bridge
Proposed Retaining Wall

500 250 0 500 Feet

N

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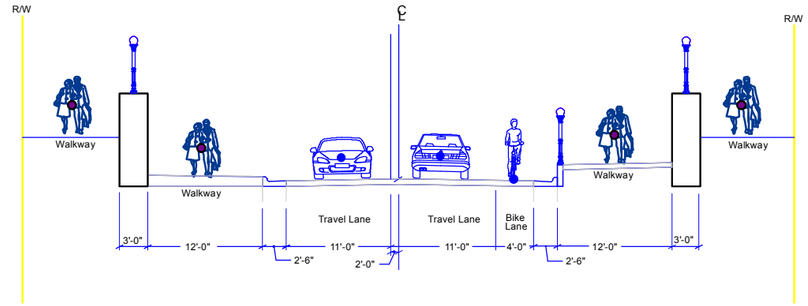
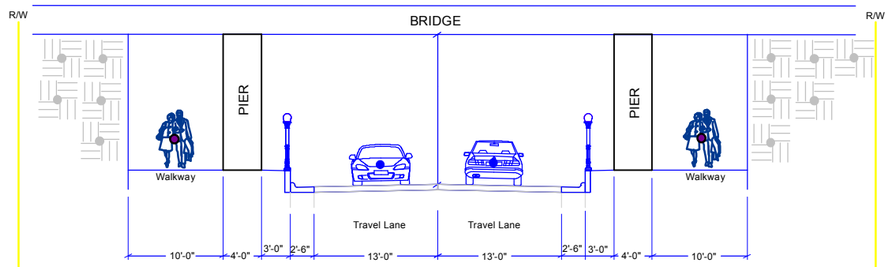
As part of the feasibility study, the City made minor changes to this alternative based on coordination with NCRR, NS, and NCDOT. The horizontal location of the rail lines shifted to slightly different alignments than assumed during the feasibility study due to construction of the Raleigh Union Station project. Therefore, the vertical alignment of this alternative was revised slightly, which steepened the maximum roadway grade and decreased the design speed from those presented in the feasibility study. Design criteria are shown in **Table 2-1** and are based on City of Raleigh standards except where superseded by American Association of State Highway and Transportation Officials (AASHTO) or NCDOT standards. The governing criteria used in the conceptual design are shown in **Table 2-1**.

The typical sections developed for the Project accommodate vehicular traffic needs while incorporating bicycle and pedestrian features appropriate for the setting (**Figure 2-3**). The City's planned Rosengarten Urban Greenway (see **Section 1.8.2**) is reflected in the typical section by incorporating a sidewalk width meeting multi-use path requirements. The typical section also assumes that it will be cost-effective to use retaining walls to avoid property impacts to the extent possible due to the highly urbanized conditions in the Project Study Area.

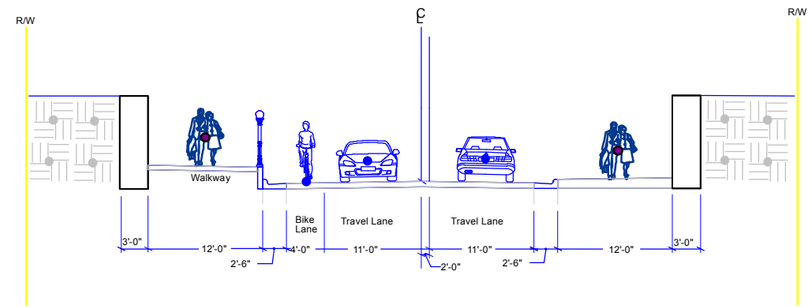
Primary concerns in the development of the vertical alignments for the Project alternatives included the ability to match the grade at the endpoints of W Martin Street and W Cabarrus Street. As **Table 2-2** and **Figure 2-2** demonstrate, a West Street "Road over Rail" alternative could not be designed to touch down at W Martin Street and/or W Cabarrus Street using established safety criteria. The "Road over Rail" option would block Martin Street and would span W Cabarrus Street, allowing access under S West Street on W Cabarrus Street, but not allowing access from W Cabarrus Street onto S West Street. However, the "Road under Rail" option can match the grade at both cross streets (because less distance is required to pass under the rail lines than to provide clearance above them).



WEST STREET NORTH OF RAIL



WEST STREET UNDER RAIL (ALTERNATE)



WEST STREET SOUTH OF RAIL

Figure 2-3. West Street Extension EA - West Street Under Railroad Typical Section

Prepared: March 27, 2017.

Table 2-1: Design Criteria

Line	Value	Reference or Comment
Classification	Main Street Parallel Parking	COR 4.3.3
Terrain Type	Rolling	RMI 1-1D
Design Speed (mph)	30	COR 4.3.3
Posted Speed (mph)	Unposted	Statutory 35 mph in City Limits
Proposed Right of Way Width (ft)	73	COR 4.3.3
Control of Access	No	---
Curb and Gutter (yes/no)	Yes	COR 6.6 (2'-6" per NCDOT Std.Dwg. No. 846.01)
Typical Section Type	2-lane 2-way	---
Land Width (ft)	12	AASHTO 04 pg.433
Sidewalks (yes/no)	Yes	COR 6.4
Bicycle Lanes (yes/no)	Yes	Also 10' multi-use path
Parking (yes/no)	No	---
Median Width (ft)	n/a	---
Grade		
Maximum	9 %	COR 6.11, Table 6.11A
Minimum	0.04%	COR 6.11, Table 6.11A
Vertical Alignment		
Minimum Vertical Curve Length (ft)	100	COR 6.11, Table 6.11A
Sag K Value	49 (50)	AASHTO 04 Ex. 3-75 (COR 4.4,Table 5)
Crest K Value	29 (50)	AASHTO 04 Ex. 3-75 (COR 4.4,Table 5)
Horizontal Alignment		
Maximum Superelevation (ft/ft)	0.04	COR 6.11, Table 6.11A
Minimum Centerline Radius (ft)	250	COR 6.11, Table 6.11A
Minimum Tangent between Reverse Curves (ft)	150	COR 6.11, Table 6.11A
Spiral (yes/no)	No	RMI 1-11
Cross-Street Intersection Angle	75° - 90°	COR 6.14
Cross Slopes		
Pavement	2.0%	RMI 1-3B
Planting Strips	2.0%	RMI 1-7D
Sidewalks	2.0%	RMI 1-7D
Vertical Clearances		
Roadway (ft)	15	RMI 6-1
Rail (ft)	23	RMI 6-1

NOTES:
COR = City of Raleigh Streets Design Manual, January 2014.
RMI = NCDOT Roadway Design Manual, Part I.
AASHTO 04 = A Policy on Geometric Design of Highways and Streets 2004 Fifth Edition.
* Per COR 6.11, at signalized intersections, the maximum grade approaching an intersection should not exceed 2% and extend a minimum distance of 200 feet in each direction measured from the outside edge of travel way of the intersecting street. For unsignalized intersections, the maximum grade approaching the intersection should not exceed 5 percent and extend a minimum distance of 100 feet in each direction.
** AASHTO 04 Ex. 3-16 Minimum Radii and Superelevation for Low-Speed Urban Streets may be applied for this project. For design speed of 35 mph, a horizontal curve radius with radius of 408 ft can be superelevated at 0.02 ft/ft. For design speed of 35 mph, a horizontal curve with radius of 510 ft can be held at normal crown.
*** Per COR 6.10, a tangent roadway section no less than 100 feet long is required approaching an intersection.

Table 2-2: Summary of Alternatives

Alternative	Crest/Sag Design Speed	Grades	Touchdown Points
Road Over Rail	25 mph	9%	- Blocks W Martin Street - Spans W Cabarrus Street
Road Under Rail	25 mph	10.5% (Maximum)	- Matches grade at W Martin and W Cabarrus Streets (approach grades are 5%)

2.5 ALTERNATIVES STUDIED, BUT NOT CARRIED FORWARD

As discussed in **Section 1.2**, the City of Raleigh completed a feasibility study assessing alternative alignments for the proposed extension of S West Street as part of their study of the proposed Raleigh Union Station multimodal transportation center. The feasibility study evaluated two corridors, one of which connected the two existing portions of S West Street (referred to as "L1"), and the other connected S West Street to S Saunders Street (referred to as "L2") (**Figure 2-1**). For both corridors, alternatives crossing over and under the railroad corridor were evaluated.

The L2 alternatives connecting S West Street to S Saunders Street were eliminated based on projected impacts to both a newly redeveloped residential neighborhood and a North Carolina Brownfields Program site and its redevelopment. The L1 Overpass alternative connecting S West Street on both sides of the rail corridor was eliminated from consideration because it would conflict with plans for Raleigh Union Station, resulted in impacts to historic resources protected by Section 106 and Section 4(f), and would impact several businesses along S West Street. Potential impacts associated with this alternative are summarized below in Table 2-3.

Table 2-3: Anticipated Impacts from Alternatives Not Carried Forward

Impacts	L1 Alternative (Connects Ends of S West Street)	L2 Alternatives (Connects S West Street to S Saunders Street)	
	Road Over Rail	Road Over Rail	Road Under Rail
Residential Displacements	0	8	8
Business Displacements	1	0	0
Impacts to Business Access North of Boylan Wye	Yes	No	No
Change in Access Circulation Patterns Based on Closure of W Martin Street/ S West Street Intersection	Yes	Yes	No
Elevated Roadway Grade Resulting in Impacts to Raleigh Union Station Access	Yes	Yes	No
Connection Between S West Street and W Cabarrus Street Removed	Yes	No	No
Impacts to Brownfield Sites	No	Yes	Yes
Adverse Impacts to Historic Resources	Yes	Yes	Yes
Section 4(f) Impacts	Yes	Yes	Yes
Compatibility to Local Planning	No	No	No

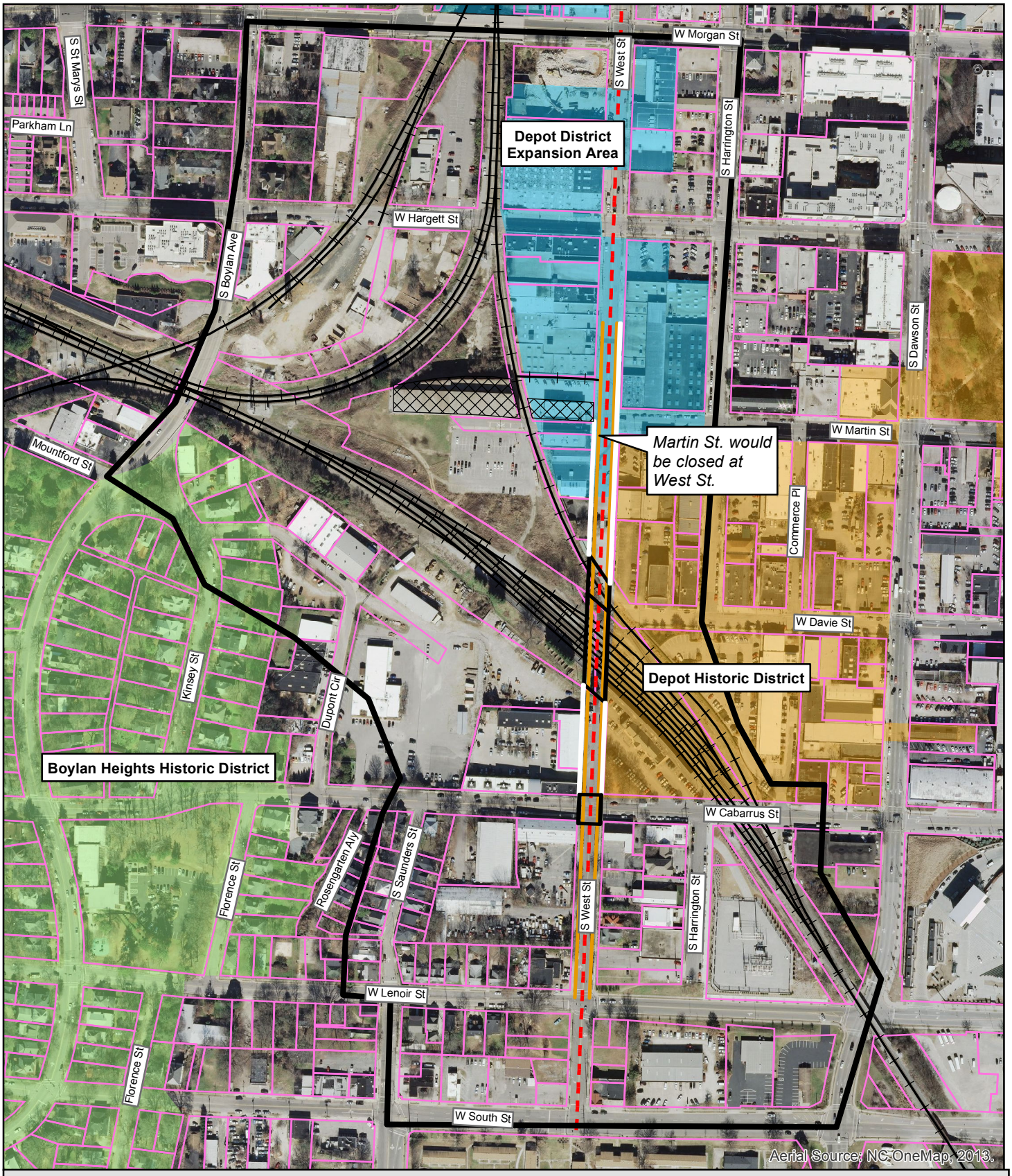


Figure 2-4. West Street Extension EA - West St to West St "Road over Rail" Alternative

- Project Study Area
- Determined Eligible for NRHP
- Listed on NRHP
- Proposed Multimodal Transit Center Site
- Parcels
- Prop. Road Centerline
- Prop. Bridge
- Prop. Curb and Gutter
- Prop. Retaining Wall

N

400 200 0 400 Feet

Prepared: March 27, 2017

Chapter 3
Environmental Resources, Impacts, and Mitigation

3.1 INTRODUCTION

This section of the EA describes the existing human, physical, and natural environments within the Study Area for the proposed West Street Extension and the potential impacts of the Build Alternative. Potential impacts of the No-Build Alternative are discussed in **Section 2.2**. The existing conditions descriptions are based on information currently available from federal, state, and local agencies; field observations; and meetings with local officials and citizens.

3.1.1 Project Study Area

The Project Study Area is the area surrounding a project that is likely to be directly affected during construction, and after project completion. For the Project, the Project Study Area is defined as the area in the immediate vicinity of the Project, as well as the surrounding area where changes in traffic patterns might occur as a result of the Project (**Figure 1-1**).

3.1.2 Demographic Study Area

The Demographic Study Area (DSA) is the collection of US Census Block Groups (BGs) that touch the Project Study Area. Census BGs are the smallest geographical unit for which the US Census Bureau publishes data. Included in the DSA for the Project are: Census Tract 501 BG 1, Census Tract 509 BG 1; and Census Tract 510 BG 1 and BG 2 (**Figure 3-1**). The four block groups contain most of Downtown Raleigh, Boylan Heights, and neighborhoods between Hillsborough and Morgan Streets west of Downtown. The purpose of the DSA is to provide demographic characteristics that provide a clear understanding of the broader community characteristics and concerns of surrounding residents and businesses. Data from the 2010 US Census Summary File 1 and 2014 American Community Survey (ACS) 5-Year Estimates were used to evaluate the DSA. The ACS is an ongoing statistical survey by the US Census Bureau, sent to approximately 250,000 addresses monthly (or 3 million per year) that regularly gathers information previously contained only in the long form of the decennial census. Due to data collection methods, the ACS is subject to larger margins of error.

3.2 SOCIAL ENVIRONMENT

3.2.1 Population Characteristics

As shown in **Table 3-1**, 2010 Census data indicate the population in the City of Raleigh and in Wake County grew between 2000 and 2010 at a much faster rate than the state population. Wake County, as well as the rest of the Triangle region, is projected to continue to be an attractive area to live and work. Data released by the US Census Bureau in July 2014 show that the City of Raleigh's population grew by 9.0 percent during the four-year period from 2010 to 2014. Among cities and towns with populations of more than 50,000, Raleigh continues to be one of the fastest-growing cities in North Carolina.

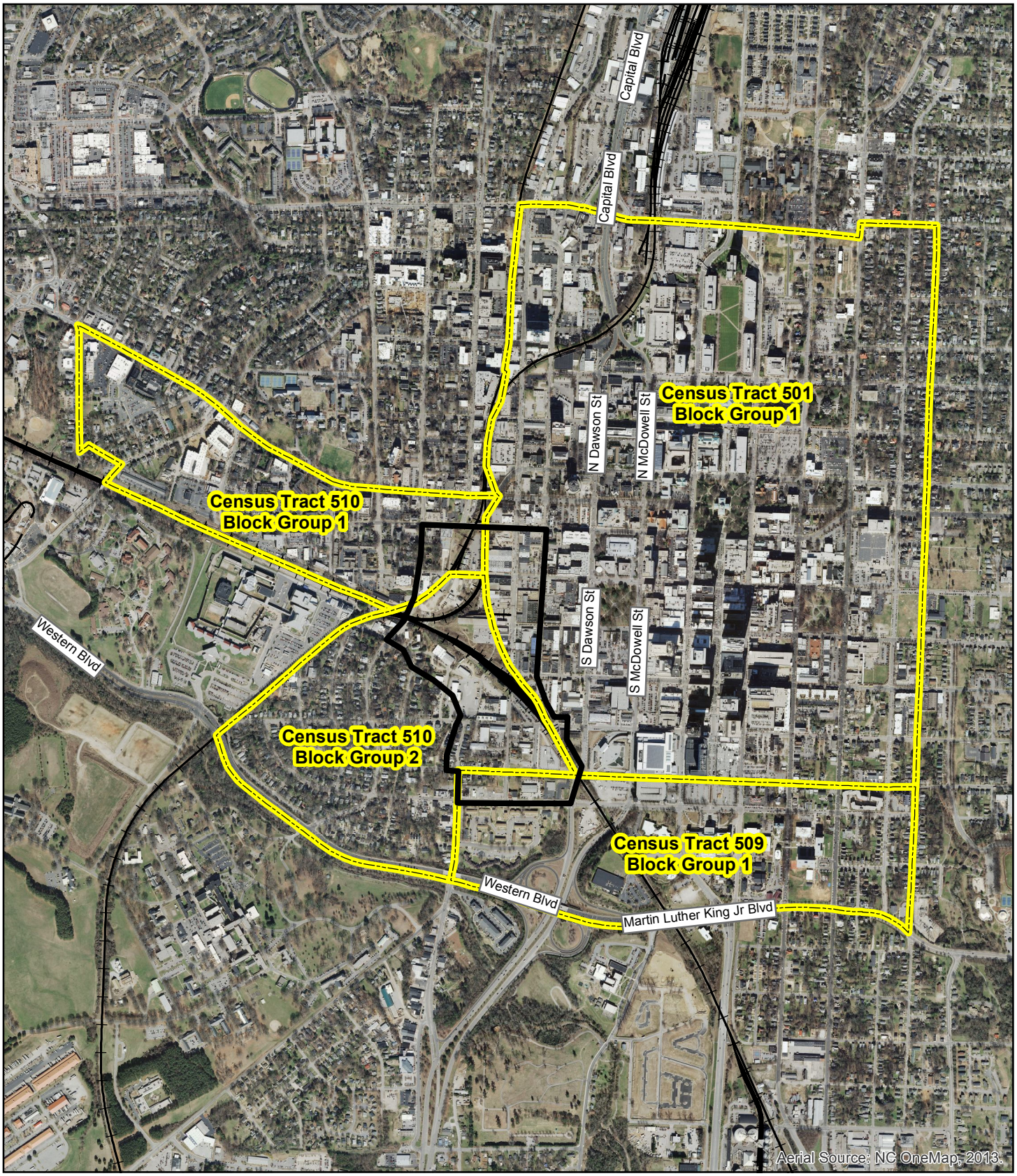


Figure 3-1. West Street Extension EA - Project Study Area & Demographic Study Area

Project Study Area

Demographic Study Area

Railroad Tracks

2,000 1,000 0 2,000 Feet

N

Prepared: March 27, 2017

By contrast, there has been little population change in the project DSA since 2000. This is likely due, in part, to the highly urbanized nature of the DSA, which has little available land for new development and includes many non-residential land uses.

Table 3-1: Population Profile of the DSA

Location	2000 Population	2010 Population	Change Total	Change Percent
North Carolina	8,049,313	9,535,483	1,486,170	18.5%
Wake County	627,846	900,993	273,147	43.5%
City Raleigh	276,093	403,892	127,799	46.3%
Tract 501, BG1	1,847*	2,823*	*	*
Tract 509, BG1	1,715*	1,526*	*	*
Tract 510, BG1	957*	929*	*	*
Tract 510, BG2	1,553*	869*	*	*
DSA Aggregate**	6,072	6,147	75	1.2%

Source: US Census Bureau, Census 2010 and Census 2000, Summary File 1 100% Data, Table P1 and P001 "Total Population"

* Population comparisons at the Census BG level are not appropriate for this Project because the boundaries of the individual BGs changed between 2000 and 2010. However, in aggregate, the boundary for the entire DSA did not change significantly, which is a useful indicator.

** Sum of data for all BGs in the DSA.

Table 3-2 shows the racial/ethnic composition of the DSA compared to Wake County and the State of North Carolina. Based on the population distribution at the Census BG level, the DSA has a much higher percent Black/African American population compared to the state or Wake County, and a lower than average percent Hispanic or Latino population. The highest concentration of Black/African American residents is in Census Tract 509 BG 1, which includes the southernmost portion of the Project Study Area along W Lenoir and W South Streets. Census Tract 501 BG 1 also has a higher-than-average percent of Black/African American residents and includes the easternmost portion of the Project Study Area. The highest percentages of White residents are located in Census Tract 510 BGs 1 and 2, which include the western portion of the Project Study Area and the Boylan Heights neighborhood.

3.2.2 Economic Characteristics

The economy of the Triangle region, including the City of Raleigh, has shifted from the agricultural and manufacturing sectors to include a range of high-tech industries, research and development, computer sciences, medical services, and higher educational institutions. The City has been working to cultivate its image as an innovation-friendly location for high-tech businesses. Several high-tech companies have recently located or plan to locate in Downtown Raleigh. Notably, the Linux software company Red Hat moved its headquarters downtown in June 2013, and Citrix Systems, another large information technology company, located its headquarters to a refurbished warehouse near the new Raleigh Union Station in 2014.

Table 3-2: Racial/Ethnic Composition of the DSA

Location	Total Popula-tion	White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino
North Carolina	9,535,483	6,223,995 (65.3%)	2,019,854 (21.2%)	108,829 (1.1%)	206,579 (2.2%)	5,259 (0.1%)	15,088 (0.2%)	155,759 (1.6%)	800,120 (8.4%)
Wake County	900,993	560,536 (62.2%)	182,793 (20.3%)	2,537 (0.3%)	48,287 (5.4%)	317 (0.0%)	1,755 (0.2%)	16,846 (1.9%)	87,922 (9.8%)
Tract 501, BG1	2,823	1,471 (52.1%)	1,146 (40.6%)*	15 (0.5%)	29 (1.0%)	0 (0.0%)	4 (0.1%)	45 (1.6%)	113 (4.0%)
Tract 509, BG1	1,526	80 (5.2%)	1,347 (88.3%)*	5 (0.3%)	1 (0.1%)	4 (0.3%)	3 (0.2%)	40 (2.6%)	46 (3.0%)
Tract 510, BG1	929	705 (75.9%)	134 (14.4%)	2 (0.2%)	17 (1.8%)	0 (0.0%)	2 (0.2%)	17 (1.8%)	52 (5.6%)
Tract 510, BG2	869	642 (73.9%)	114 (13.1%)	7 (0.8%)	9 (1.0%)	0 (0.0%)	2 (0.2%)	16 (1.8%)	79 (9.1%)
DSA Aggregate	6,147	2,898 (47.1%)	2,741 (44.6%)*	29 (0.5%)	56 (0.9%)	4 (0.1%)	11 (0.2%)	118 (1.9%)	290 (4.7%)

Source: US Census Bureau, Census 2010, Summary File 1 100% Data, Table P9 "Hispanic or Latino, and Not Hispanic or Latino by Race"

Table 3-3 shows the employment characteristics of the DSA compared to the state and Wake County. Note that the census tract is the smallest geographic level for which this information is available; therefore, the data represent a larger geographic area than the DSA boundary. **Table 3-3** indicates that Census Tract 501 is similar to Wake County in having a large percent of its workforce employed by professional, scientific, educational, health care, and other similar industries. Census Tracts 509 and 510 have higher percentages of employment in the arts, entertainment, recreation, accommodation, and food service industries than the county or state.

Table 3-3 Employment Characteristics of the DSA

Location / Employment Sector	North Carolina		Wake County		Census Tract 501		Census Tract 509		Census Tract 510	
	Estimate	%	Estimate	%	Estimate	%	Estimate	%	Estimate	%
Population 16+ years	7,717,630	---	734,963	---	3,558	---	2,376	---	1,807	---
Civilian Employed Labor Force (16+ years)	4,372,773	---	499,197	---	1,507	---	745	---	1,497	---
Agriculture, Forestry, Fishing, Hunting, Mining	60,218	1.4%	1,818	0.4%	0	0.0%	0	0.0%	0	0.0%
Construction	293,361	6.6%	26,353	5.7%	57	3.8%	52	7.0%	47	3.1%
Manufacturing	545,160	12.5%	45,546	9.1%	95	6.3%	38	5.1%	50	3.3%
Wholesale Trade	118,226	2.8%	13,952	2.8%	44	2.9%	11	1.5%	30	2.0%
Retail Trade	515,391	11.8%	53,105	10.6%	75	5.0%	133	17.9%	193	12.9%
Transportation and Warehousing, Utilities	186,947	4.3%	16,462	3.3%	19	1.3%	13	1.7%	16	1.1%
Information	79,744	1.8%	14,931	3.0%	56	3.7%	9	1.2%	26	1.7%
Finance & Insurance Real Estate & Rental Leasing	274,472	6.3%	36,347	7.3%	233	15.5%	22	3.0%	89	5.9%
Professional, Scientific, and Management, Administrative, Waste Management Services	450,619	10.1%	90,209	18.1%	375	24.9%	74	9.9%	337	22.5%
Educational Services, Health Care & Social Assistance	1,026,644	23.6%	104,802	21.0%	230	15.3%	135	18.1%	291	19.4%
Arts, Entertainment, Recreation, Accommodation and Food Services	412,692	9.4%	45,109	9.0%	238	15.8%	214	28.7%	311	20.8%
Other Services, Except Public Administration	213,647	4.9%	22,461	4.5%	37	2.5%	27	3.6%	56	3.7%
Public Administration	195,652	4.6%	25,823	5.2%	48	3.2%	17	2.3%	51	3.4%

Source 2011 – 2015 American Community Survey 5- Year Estimates, US Census Bureau.
Note – Data is only available at the census tract level.

Income levels for the DSA as compared to the State of North Carolina and Wake County are shown in **Table 3-4**. Per capita income for two of the three DSA Tracts is higher than the per capita income for North Carolina. One of the DSA Tracts (Tract 510) has a higher per capita income than Wake County. The percent of the population in the DSA living in owner occupied housing is much lower than the state and county averages, indicative of a greater number of apartments in and near downtown areas.

In both Wake County and North Carolina as a whole, workers rely most heavily on automobiles to get to their workplace. **Table 3-5** shows the means of commute for the DSA compared to the state and Wake

County. Census tracts are the smallest geographic level for which this information is available; therefore, the data represent a larger geographic area than the DSA boundary. **Table 3-5** shows that workers in the DSA generally rely more heavily on public transportation and walking than workers elsewhere in the county or state, as would be expected near a downtown core. When data for Project Study Area census tracts are summed, approximately 22 percent of workers use public transportation or walk to work compared to 2.6 percent of workers in Wake County and 2.9 percent of workers in the State.

Table 3-4 Income Characteristics

Location	Number of Households	Per Capita Income[1]	Households Below Poverty Level[2]	% Households Below Poverty Level[4]	Owner Occupied Housing[3]
North Carolina	3,742,514	$25,608	985,755	26.3%	67.8%
Wake County	355,647	$33,727	55,323	15.6%	68.2%
Tract 501, BG1	2,485	$32,367	366	26.4%	47.2%
Tract 509, BG1	659	$8,621	147	62.8%	22.7%
Tract 510, BG1	1,059	$38,072	322	42.8%	11.1%
Tract 510, BG2	938	$38,072	112	25.8%	52.5%
DSA Total	5,141	---	947	33.8%	36.2%

Source:

(1) Data only available at census tract level.
(2) Households below the poverty level were determined based on the 2014 ACS 5-year estimates and 2014 DHHS poverty threshold of $23,850 for a family / household of four persons, however ACS data is based on the nearest available income level of $24,999. This could result in a slightly higher number of households below poverty.
(3) Owner occupied housing was determined from 2010 Census Summary File 1 data.
(4) Environmental Justice Communities are identified by low income populations within the block group more than 25% of total households or more than 10% of the county average.

Table 3-5 Means of Commute to Work (Census Tract Level)

Location/ Employment Sector	North Carolina	Wake County	Census Tract 501	Census Tract 509	Census Tract 510
Workers 16+ Years	4,361,591	492,094	1,516	708	1,488
Car, Truck, or Van – Drove Alone	3,537,155 (81.1%)	392,285 (79.7%)	1,057 (69.7%)	384 (54.2%)	1,119 (75.2%)
Car, Truck, or Van – Carpooled	435,307 (10.0%)	44,559 (9.1%)	56 (3.7%)	55 (7.8%)	62 (4.2%)
Public Transportation (Excluding Taxicab)	48,600 (1.1%)	5,588 (1.1%)	60 (4.0%)	126 (17.8%)	74 (5.0%)
Walked	78,111 (1.8%)	6,730 (1.4%)	179 (11.8%)	71 (10.0%)	147 (9.9%)
Other Means	35,057 (0.8%)	3,502 (0.7%)	7 (0.5%)	32 (4.5%)	0 (0.0%)
Worked at Home	204,196 (4.7%)	36,404 (7.4%)	113 (7.5%)	16 (2.3%)	66 (4.4%)

Source: 2011-2015 ACS 5-Year estimates.
Note – Data is only available at the census tract level.

3.2.3 Neighborhoods

The Project Study Area consists of a mix of older neighborhoods and redeveloping neighborhoods (**Figure 3-2**). Located north and west of the Boylan Wye along S Boylan Avenue between W Hargett Street and Hillsborough Street is a small neighborhood with several older homes. This neighborhood (sometimes referred to as the S Boylan Avenue Historic District) was initially developed in the early-20th century. Throughout the 1900s, a majority of the Queen Anne and Colonial Revival dwellings were demolished and replaced by office and commercial buildings. Many of the residential buildings that remain were converted into multi-family dwellings in third and fourth quarters of the twentieth century. What remains of the original residential neighborhood is now surrounded by a mix of newer residential development (including the St. Mary's townhomes and the Bloomsbury Estates condominiums) and commercial and office space.

The portion of the Project Study Area north and east of the Boylan Wye includes the Warehouse District and Depot Historic District, which are predominantly commercial and industrial areas, and have no distinct residential neighborhoods. However, there are scattered residential properties within this area, often above or adjacent to commercial office or retail space. "The Dillon" is a planned mixed use development to include an 18-story office tower, with retail space and two six-story apartment buildings with an adjoining parking deck. "The Dillon" is scheduled for completion in 2018.

The portion of the Project Study Area south of the Boylan Wye includes three residential neighborhoods. The historic Boylan Heights neighborhood is centered on S Boylan Avenue with an entrance marked by the landmark Montfort Hall, one of the few mansions in Raleigh to survive the Civil War era. The neighborhood was developed beginning in 1907 and lasting through several decades. It was one of Raleigh's first planned suburbs and is notable for its curved streets lined with sidewalks and large, mature trees. The homes are representative of popular architectural styles at the time, including Queen Anne, Colonial Revival, and Craftsman. However, the most common homes are bungalow style. The neighborhood has maintained its distinctive character over the years and has an active neighborhood association. Based on 2014 ACS 5-year data, this neighborhood has a household income above the state average and is the highest within the Project Study Area.

East of Boylan Heights are the newly redeveloped Rosengarten Park/ Dorothea Gardens neighborhood. Local developers have rebuilt homes along Rosengarten Alley, S Saunders Street, and W Lenoir Street in the style of the City's historic 4th Ward. The 4th Ward was developed in the late-nineteenth and early-twentieth century with predominately frame houses initially inhabited by African American residents. As noted in **Section 2.5.1**, most of the remainder of the 4th Ward was demolished in the 1970s and the area had been in a state of decline prior to redevelopment. Twenty homes within the Rosengarten Park community have recently been restored and sold. The developer built 25 custom replica homes for the Dorothea Gardens community. As of March 2017, the developer's website (http://www.cityspacehomes.com/) indicated that Phase 1 of the project had sold all but one lot.

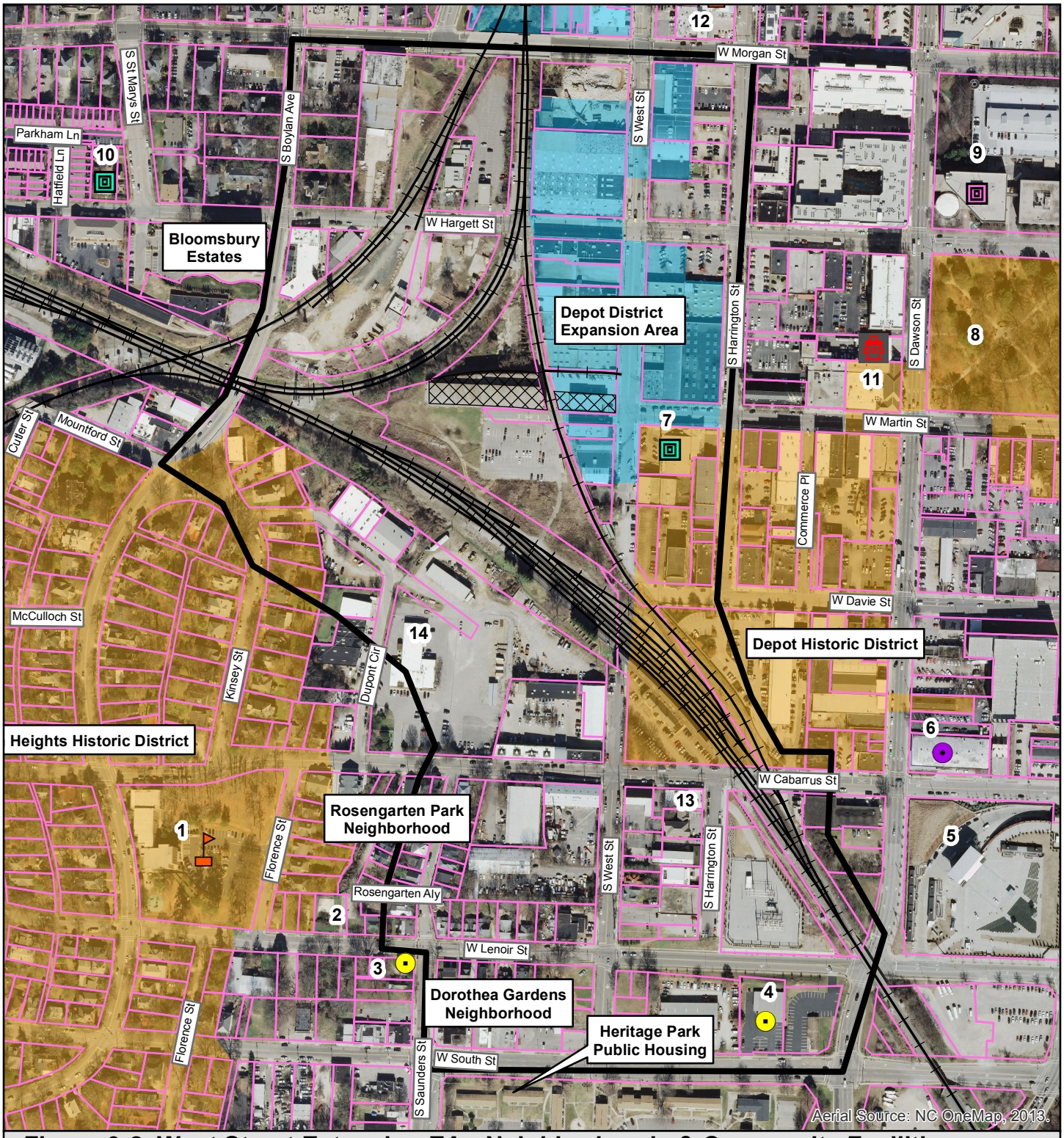


Figure 3-2. West Street Extension EA - Neighborhoods & Community Facilities

- Project Study Area
- Parks & Recreation
- Parcels
- Proposed Multimodal Transit Center Site
- Depot District Expansion
- Historic District
- Railroad Tracks
- Educational Facilities
- Municipal Building
- Museum
- Fire Station
- Police Station
- Religious Institutions
- 1 Project Enlightment School
- 2 Lenoir Street Park
- 3 Union Baptist Church
- 4 Victory Tabernacle Church
- 5 Raleigh Ampitheater
- 6 Raleigh Police Department
- 7 Contemporary Art Museum of Raleigh
- 8 Nash Square
- 9 Raleigh Municipal Building
- 10 Joel Lane House
- 11 Fire Station
- 12 Exploris Middle School
- 13 Helen Wright Center For Woman
- 14 Haven House

N

400 200 0 400 Feet

Prepared: March 27, 2017

3.2.4 Community Facilities and Services

Community facilities and services are categorized as educational facilities, religious institutions, health care facilities, government offices, public safety facilities (police, fire, and rescue), cultural facilities (e.g., libraries, museums, historic sites, etc.), and parks/recreational and community center facilities.

Educational Facilities - There are no educational facilities located within the Project Study Area. Just west of the Project Study Area is Project Enlightenment, located at 501 S Boylan Avenue (site of the former Boylan Elementary School) in the Boylan Heights neighborhood (**Figure 3-2**). Project Enlightenment is an early childhood education and intervention program of the Wake County Public School System and offers prevention and early intervention services to young children from birth through kindergarten age. North of the Project Study Area is the Exploris Middle School (401 Hillsborough Street). Exploris Middle School emphasizes a commitment to global curriculum with an emphasis on interdisciplinary projects. The proposed West Street Extension Project would not impact either school.

Religious Institutions - There is one religious institution within the Project Study Area, the Victory Tabernacle Church at 328 W South Street (**Figure 3-2**). In addition, the Union Baptist Church at 600 S Saunders Street is located directly across the street from the Project Study Area. The proposed West Street Extension Project would not impact either of these churches.

Healthcare Facilities - There are no major health care facilities located within the Project study area; however, several major hospitals are located elsewhere within the City of Raleigh. The Project would not impact any health care facilities.

Government and Public Facilities - There are no government or public facilities within the Project Study Area; however, there are several within close proximity. The Raleigh Fire Department Station #1 is located at 220 S Dawson Street and serves Downtown Raleigh. Wake County EMS headquarters is located at 331 S McDowell Street. The EMS headquarters also provides emergency response services to the Project Study Area. The Raleigh Downtown District police station is located at 218 W Cabarrus Street and serves 11 beats, including Downtown Raleigh, Glenwood South, and Moore Square. In addition, the City of Raleigh Municipal Building is located at 222 W Hargett Street and contains city offices and the City Council Chambers. The City of Raleigh also has various offices located at 310 W Martin Street, including their Housing and Neighborhoods Department and Raleigh Television Network studios.

The City anticipates that construction of the Project will have a beneficial impact on emergency response times. Because there is currently no access across the Boylan Wye via S West Street, once constructed, the Project will provide improved north-south connectivity for emergency vehicles across the Boylan Wye. Access to properties on S West Street immediately adjacent to the construction zone will be maintained during project construction.

Cultural Resources - There are two historic districts within the Project Study Area that are listed on the NRHP, the Boylan Heights Historic District and the Depot Historic District (**Figure 3-2**). Additional information on these districts can be found in **Section 3.10.1.** Although a portion of the Boylan Heights Historic District is within the APE, no project construction would occur within the District, and there would be no impacts to the District.

Also located within the Project Study Area is the Contemporary Art Museum (CAM) at 409 W Martin Street which is listed on the NRHP. CAM opened in April 2011 and curates contemporary works of art and design, with new exhibits about every three months. The Project would lower the elevation of S West Street adjacent to the CAM. CAM has a loading dock for the museum along this section of S West Street. Based on the preliminary designs, it will possible to maintain operation of the existing loading dock operations.

Project team members from the West Street Extension project attended two meetings with the North Carolina State Historic Preservation Office (SHPO) and Raleigh Union Station project team regarding potential impacts of the two projects on Project Study Area historic resources. These projects have partially overlapping Areas of Potential Effect (APEs). The SHPO determined the West Street Extension Project would not adversely affect Project Study Area historic resources. See **Section 3.10.1** for additional discussion on potential impacts to cultural resources.

Parks - There are no parks or recreation areas within the Project Study Area. Directly across the street from the Project Study Area at 624 W Lenoir Street is the Lenoir Street Park. This park is fenced and offers playground equipment and a basketball court. The Project will not impact this park.

The City of Raleigh is planning the Rosengarten Urban Greenway and stream restoration project. This project will provide a multi-use trail connection from Cabarrus Street in the north to the Rocky Branch Greenway trail at the intersection of S Saunders Street and Lake Wheeler Road. This trail will play an important role in linking the greenway system with downtown, Dix Park, Raleigh Union Station, Boylan Heights, and many other downtown businesses and neighborhoods. The trail proposal is scheduled to be presented to the City of Raleigh Parks, Recreation and Greenway Advisory Board in July 2017.[17]

The nearest connection to Rock Branch Greenway and Art-to-Heart Trail is located approximately 1,000 feet south of the Project Study Area, just south of Western Boulevard. Rocky Branch Greenway is a part the City of Raleigh's greenway system and provides links to Reedy Creek Trail near the western City boundary and Walnut Creek Trail, which travels to the eastern City boundary. The Art-to-Heart Trail is co-located with the Reedy Creek and Rocky Branch Greenways traveling from Blue Ridge Parkway to S Cabarrus Street near the Central Prison. The Art-to-Heart Trail connects the North Carolina Museum of Art to the heart of Downtown Raleigh.

The West Street Extension Project will have a beneficial impact on the greenways and trails discussed above. By providing a direct connection across the Boylan Wye the Project will provide a safer bicycling and walking route to downtown for users of any of the previously mentioned routes.

Support Services - Urban Ministries of Wake County operates the Helen Wright Center for Women within the Project Study Area at 401 W Cabarrus Street. The Center works to reduce homelessness by providing temporary housing and support services to about 300 women annually. Also located within the Project Study Area is Haven House, located at 600 W Cabarrus Street. Haven House is a non-profit organization which provides services to at-risk youth and their families. An additional facility within the Project Study Area is the Lesbian Gay Bisexual Transgender (LGBT) Center of Raleigh located at 324 South Harrington Street. LGBT Center of Raleigh is a non-profit organization which provides a support

[17] http://www.raleighnc.gov/parks/content/ParksRec/Articles/Projects/Rosengarten.html

and advocacy for lesbian, gay, bisexual, and transgender people. The Project would result in a beneficial impact on these facilities by providing a safer access route across the Boylan Wye.

3.2.5 Community Impacts

Neighborhood and Community Cohesion - The Project will not adversely impact community cohesion within any of the neighborhoods in the Project Study Area. Existing patterns of community interaction will not be adversely impacted, and no community facilities will be adversely impacted by the Project. The Project will provide additional connectivity between neighborhoods and businesses resulting in a benefit to quality of life for residents and improved access for businesses.

Property Acquisition – The construction of the Project would result in the acquisition of portions of two parcels south of Davie Street. The two parcels are owned by the NC Railroad and contain portions of the H-Line and the parcel occupied by the Raleigh Amtrak station (see **Figure 3-3**). The acquisition of portions of these parcels are considered a minor impact.

Relocation of Residences and Business - There would be no residential or business relocations associated with the Project. Based on the preliminary design, the "Road under Rail" alternative would not require relocation of any residences or businesses. However, the alternative would result in changes to the elevation along S West Street (i.e., the grade would need to be lowered). This may affect the operation of businesses that have driveways or loading docks adjacent to the existing street. Based on preliminary designs, the City does not anticipate that these impacts will result in any relocations and believes that it should be possible to maintain the existing driveways and loading dock operations. If required, however, the City of Raleigh will provide alternative access to the affected properties.

Travel Patterns and Accessibility - The West Street Extension will provide improved accessibility for vehicles, transit, pedestrians, and cyclists across the Boylan Wye and to the new Raleigh Union Station. The new station will serve as the City's downtown multimodal hub, providing access to Amtrak, future Southeast High Speed Rail service, GoRaleigh buses. In addition, the station will be the Raleigh hub for GoTriangle regional buses.

Possible Barriers to the Elderly or Handicapped - Two of the purposes of the West Street Extension Project are to improve pedestrian connectivity across the Boylan Wye; and to improve access to the new Raleigh Union Station, both of which can reduce automobile dependence for the elderly and handicapped population. The Project will not divide or isolate neighborhoods or create any physical barriers for pedestrian travel. Therefore, the Project will not introduce any barriers to the elderly or handicapped.

Public Health and Safety - The City does not anticipate that the Project will cause substantial impacts to air quality or noise. It will not generate substantial hazardous waste or pose a public health concern. As stated above, the Project will not adversely impact roadway travel patterns and will not introduce barriers to future bicycle or pedestrian facilities, or to mobility of the elderly or handicapped. The Project will improve opportunities for safe vehicular, bicycle, and pedestrian access across the Boylan Wye, and function as an important link to the City's planned West Street Urban Greenway corridor. Emergency response vehicles will also be provided with a faster, more direction connection to areas south of the Boylan Wye. Based on these factors, the City anticipates that the Project will have a beneficial effect on public health and safety.

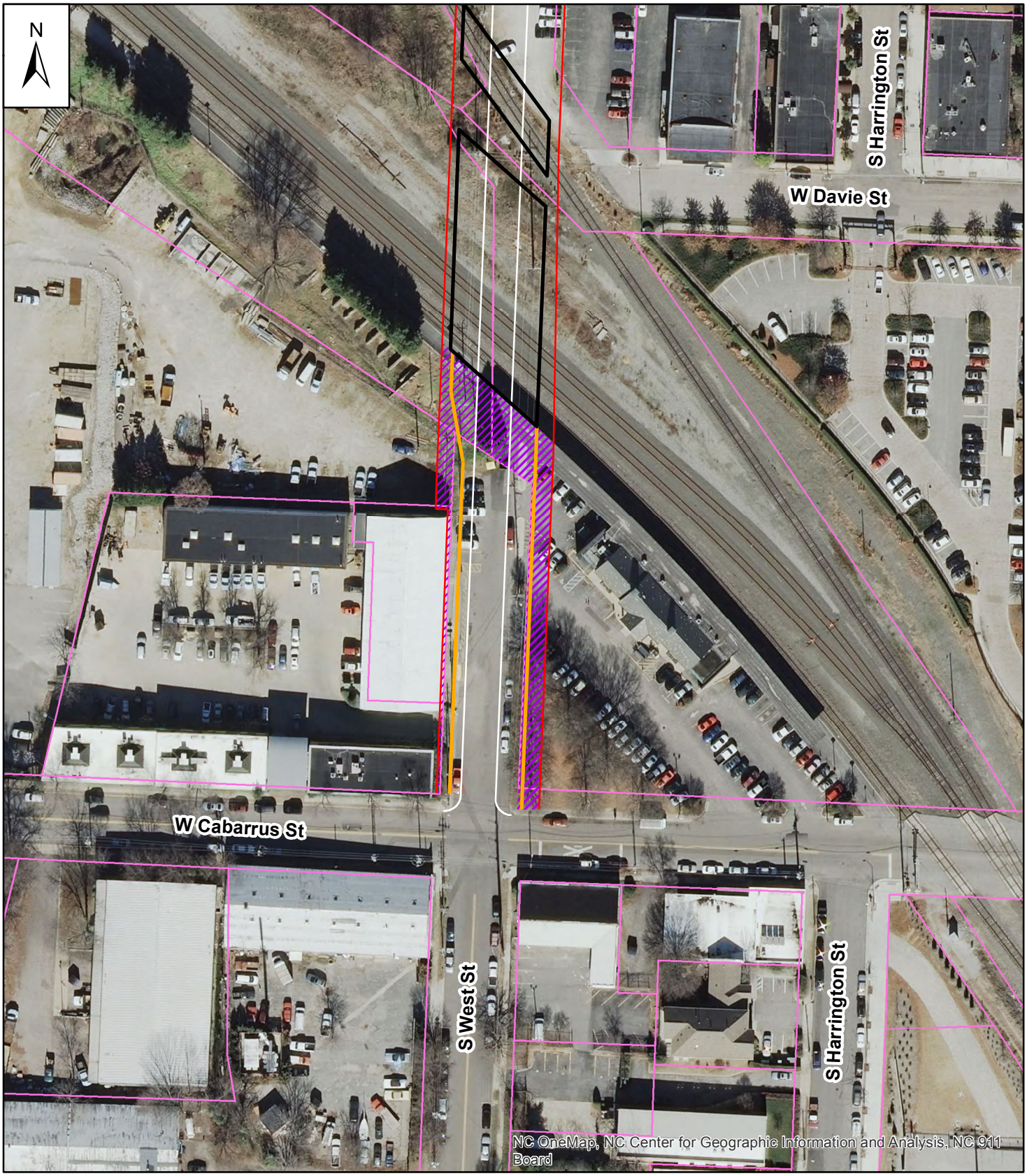


Figure 3-3. West Street Extension EA – Property Impacts

Proposed Right of Way
Proposed Retaining Wall
Proposed Bridge
Parcel Impact Area
Wake County Tax Parcels

1,000 500 0 1,000 Feet

Prepared: March 27, 2017

3.2.6 Environmental Justice

In 2012, the United States Department of Transportation (USDOT) issued an update to its guidance on carrying out Executive Order 12898 on Environmental Justice (EJ) in Minority and Low-Income Populations (USDOT, 2012). This order requires federal agencies to achieve EJ by identifying and addressing disproportionately high and adverse human health or environmental effects, including the interrelated social and economic effects of their programs, policies, and activities on minority populations and low-income populations in the United States. In 2011, FHWA issued "Guidance on Environmental Justice in NEPA" and in 2012 issued "FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This guidance expands minority definitions to match those of the US Census. Hispanic populations (an ethnicity) were added to the category of minority populations. In addition, clarifications were provided regarding identifying disproportionately high and adverse effects.

A summary of the USDOT guidance on the application of Executive Order 12898 to transportation projects includes the following points:

- Low-Income: A person whose median household income is at or below the Department of Health and Human Services (DHHS) poverty guidelines. The 2016 DHHS poverty guideline for an individual is $11,880 and a family / household of four persons is $24,300.
- Low-Income Population: Any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed USDOT program, policy, or activity.
- Minority: A person who is
    - Black: a person having origins in any of the black racial groups of Africa;
    - Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
    - Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent;
    - American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition;
    - Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands; and
- Minority Population: Any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed USDOT program, policy, or activity.
- Adverse Effects: The totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but

are not limited to: bodily impairment, infirmity, illness or death; air, noise, and water pollution and soil contamination; destruction or disruption of human-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of USDOT programs, policies, or activities.

- Disproportionately High and Adverse Effects on Minority and Low-Income Populations: Adverse effects that:
    - Are predominately borne by a minority population and/or a low-income population; or
    - Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non-low-income population.

This EJ analysis was carried out in accordance with the guidance and requirements set forth in the USDOT Order 5610.2(a), Executive Order 12898, and guidance provided by the US Council on Environmental Quality (CEQ). The locations of minority and/or low-income populations are identified and referred to as EJ communities. A minority and/or low-income population is defined as an EJ community if it meets one or both of the following criteria:

- The Census BG contains 50 percent or more minority persons and/or the Census BG contains 25 percent or more low-income persons,
- The percentage of minority and/or low-income persons in any Census BG is more than 10 percent greater than the County average.

As shown in **Table 3-2** there are two Census BGs in the Project Study Area that meet the minority criteria for EJ populations (Tract 501 BG1 and Tract 509 BG1). In addition, Tract 509 BG1 and Tract 510 BG1 meet the below poverty criteria for EJ (see **Table 3-4**). The only Census BG in the DSA that does not meet either EJ criteria is Census Tract 510 BG 2, which includes the Boylan Heights neighborhood.

3.2.7 Potential Impacts to Environmental Justice Communities

There will not be a disproportionate adverse impact to minority or low-income populations due to the Project. There will be no residential relocations, and mobility and safety for the communities in the Project Study Area will be improved. The Project will provide better access to the new Raleigh Union Station for residents of the Project Study Area, which has a large transit-dependent population. Better accessibility to the station will improve transportation options for the economically disadvantaged populations, non-drivers, senior citizens, and persons with disabilities.

To ensure the full and fair participation by all potentially affected communities in the decision-making process, the City of Raleigh undertook an extensive community involvement process for the Project (see

Chapter 4 for additional details). The following is a summary of the activities for including the public in the decision-making process:

A project website was used to keep the public informed about the Project and provide easy access to reports, maps, and other Project-related information: http://www.raleighnc.gov/business/content/PWksTranServices/Articles/WestStreetExtensionProject.html.

- A public workshop was held on March 6, 2013, in coordination with the Raleigh Union Station project, to provide information on the Project and receive input from the community.
- The Project team attended a second workshop about the Raleigh Union Station project to answer questions about the West Street Extension Project and share the maps from the March 2013 workshop on May 1, 2013.
- A mailing sent to approximately 100 addresses provided information on the Project and invited community members to attend the public workshop.

Three (3) presentations have been made to City of Raleigh elected officials to inform them of the project progress and to obtain feedback.

3.3 NOISE

3.3.1 Federal Noise Regulations

FRA is the Lead Agency for this project. FRA typically uses the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment, as well as FRA's High Speed Transportation Noise and Vibration Impact Assessment guidelines for the performance of noise impact analysis for rail-related noise. However, because this project will not have an impact on train volumes this analysis focuses on the potential impact of roadway vehicles.

Vehicular traffic noise impacts and temporary construction impacts can be a consequence of transportation projects. Under 23 CFR, Part 772 the FHWA has developed Noise Abatement Criteria (NAC) and procedures for the planning and design of highways which were followed for noise impact analysis for the Project. The purpose of 23 CFR, Part 772 is:

> "…to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways approved pursuant to Title 23 United States Code."

The abatement criteria and procedures are set forth in Title 23 CFR Part 772, which also states:

> "…in determining and abating traffic noise impacts, primary consideration is to be given to exterior areas. Abatement will usually be necessary only where frequent human use occurs and a lowered noise level would be of benefit."

3.3.2 NCDOT Traffic Noise Abatement Policy

The Project also followed the highway noise guidelines outlined in the NCDOT Traffic Noise and Abatement Policy (and Manual), revised October 6, 2016. This manual describes the NCDOT process that is used in determining traffic noise impacts and abatement measures, as well as the equitable and cost-effective expenditure of public funds for traffic noise abatement. The NCDOT abatement policy applies to all Type I (new location or substantial horizontal/vertical alteration) federal, state, or federal-aid highway projects in the state of North Carolina, including federal projects that are administered by local public agencies.

3.3.3 Noise Abatement Criteria

The two categories of traffic noise impacts are defined as (1) those that approach or exceed the FHWA Noise Abatement Criteria (NAC), as shown in **Table 3-6**, and (2) those that represent a substantial increase over existing noise levels as defined by NCDOT. An impact that represents a substantial increase (10 dB(A)) when existing noise levels [Leq(h)] are compared to predicted noise levels.

Table 3-6: Noise Abatement Criteria

Hourly Equivalent A-Weighted Sound Level decibels (dB(A))			
Activity Category	**Activity Criteria[1] $L_{eq(h)}$[2]**	**Evaluation Location**	**Activity Description**
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B [3]	67	Exterior	Residential
C [3]	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section4(f) sites, schools, television studios, trails, and trail crossings
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E [3]	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F
F	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging rehabilitation facilities, manufacturing, mining, rail yards,

Table 3-6: Noise Abatement Criteria

Hourly Equivalent A-Weighted Sound Level decibels (dB(A))			
			retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	--	--	Undeveloped lands that are not permitted.

Source: 23 CFR 772.11

[1]The Leq(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

[2]The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with Leq(h) being the hourly value of Leq.

[3]Includes undeveloped lands permitted for this activity category.

3.3.4 Highway Traffic Noise Impacts

Land uses in the vicinity of the proposed S West Street consist primarily of industrial, commercial, office space, and warehouse activities. None of the adjacent properties have exterior areas of frequent human use that constitute noise-sensitive receptors per 23 CFR 772 and NCDOT Policy. Properties investigated for potential roadway traffic noise impacts are presented in **Table 3-7** and depicted in **Figure 3-4.** Therefore, even though the Project is a Type I noise project because of "substantial vertical alteration" per NCDOT Policy, further analysis is not warranted because there are no sensitive noise receptors adjacent to the alignment as defined by NCDOT Policy.

3.3.5 Construction Noise

The dominant construction activities associated with this Project are expected to be activities related to construction of the railroad bridges and roadway extension. Temporary and localized construction noise increases may occur. Refer to **Table 3-8** for typical construction noise levels. During daytime hours 7:00 a.m. – 8:30 p.m.), the effects of these noise increases may be temporary speech interference for passers-by and those working near the project. During evening/nighttime hours (8:30 p.m. – 7:00 a.m.), if applicable, steady-state construction noise emissions may be audible. Sporadic evening and nighttime construction equipment noise emissions such as from backup alarms, lift gate closures (slamming of dump truck gates), etc., may be perceived as distinctly louder than the typical ambient noise environment. Extremely loud construction noise activities such as usage of pile-drivers and impact-hammers (jack hammer, hoe-ram) will result in sporadic and temporary construction noise impacts in the vicinity of those activities. The City will ensure that construction activities that will produce extremely loud noises be scheduled during times of the day when such noises will create as minimal disturbance as possible. NCDOT guidance recommends generally, low-cost and easy-to-implement construction noise control measures be incorporated into the project plans and specifications (e.g. work-hour limits, equipment exhaust muffler requirements, haul-road locations, elimination of "tail gate banging," ambient-sensitive backup alarms, construction noise complaint mechanisms, and consistent and transparent community communication/rapport).[18]

[18] NCDOT Traffic Noise Manual, 2016.

Table 3-7: Parcels Identified for Noise Investigation

Parcel	Owner	Site Address	Type	Business Name or Land Use	Land Code	NAC
1	Clancy & Theys Construction Co.	517 W Cabarrus St.	Prefab Warehouse	Robbie's Repair	Commercial	F
2	Research Triangle Regional Public Transit	210 S West St.	Warehouse	Dillon Supply-Industrial	Exempt	F
3	3119 Associates	518 S West St.	Warehouse	Industrial Use	Commercial	F
4	Sperry & Otto LLC	406 W Davie St.	Multi-Tenant	Gracie Raleigh/ Circa 1888	Commercial	E
5	Shimmering Oak LLC	520 S Harrington St.	Typical Office	Office	Commercial	E
6	Patterson Holdings LLC	302 S West St.	Warehouse	Flanders Gallery	Commercial	F
7	Dillon Supply Co.	218 S Harrington St.	---	Dillon Supply-Industrial	Vacant	F
8	Fairweather Properties LLC	505 S West St.	Warehouse	Office	Industrial	E
9	RST LLC	310 S West St.	Bar/Club	Bodi	Commercial	E
10	Cozart, Ortho C & Julia V	318 S Harrington St.	Warehouse	Office	Commercial	E
11	Research Triangle Regional Public Transportation Authority	200 S West St.	Warehouse	RC Builders Office	Exempt	E
12	Cozart, Ortho C & Julia V	320 S Harrington St.	Warehouse	Office	Commercial	E
13	Community Alternatives for Support	510 S Harrington St.	Typical Office	Office	Exempt	E
14	514 S Harrington St. LLC	514 S Harrington St.	Warehouse	Painting & Wallpaper	Commercial	E
15	Center Line Properties LLC	310 S Harrington St.	Warehouse	HQ-Office	Commercial	F
16	[1]Clancy Properties LLC	400 S West St.	Warehouse	Amtrak Office	Commercial	E
17	Research Triangle Regional Public Transit	230 S West St.	Warehouse	Industrial	Exempt	E
18	Research Triangle Regional Public Transit	206 S West St.	Warehouse	Dillon Office	Exempt	F
19	Urban Ministries of Wake County Inc.	401 W Cabarrus St	Typical Office	Urban Ministries Office	Exempt	E
20	Star Mass Co. Inc.	522 S Harrington St	Single Tenant	Auto Paint	Commercial	F
21	Dillon Supply Co.	410 W Martin St	---	Dillon Supply-Industrial	Vacant	F
22	Sperry & Otto LLC	323 S West St	---	Parking Lot	Vacant	F
23	NC Railroad Co.	0 W Morgan St.	---	Railroad	Commercial	F
24	City of Raleigh	510 W Martin St.	Raleigh Union Station	Train Station	Commercial	F
25	NC Railroad Co.	0 W Cabarrus St.	---	Railroad	Commercial	F
26	Sperry & Otto LLC	324 S Harrington St.	Typical Office	LBGT Center-Office	Commercial	E
27	Clancy Properties LLC	518 W Cabarrus St.	Typical Office	Office	Commercial	E
28	Cozart, Ortho C & Julia V	319 S West St.	Prefab Warehouse	Abandoned/Under Repair	Commercial	F
29	City of Raleigh	224 S West St.	---	Parking Lot	---	F
30	RST LLC	304 S West St.	Bar/Club	Bodi	Commercial	E
31	658 Maywood Ave LLC	513 S West St.	---	Parking Lot	---	F
32	Dillon Supply Co.	223 S West St.	Manufacturing	Dillon Supply-Industrial	Commercial	F
33	409 W Martin Landlord LLC	409 W Martin St	Warehouse	CAM Raleigh-Office	Commercial	E

Note:
[1]Amtrak to be removed following construction of Raleigh Union Station.

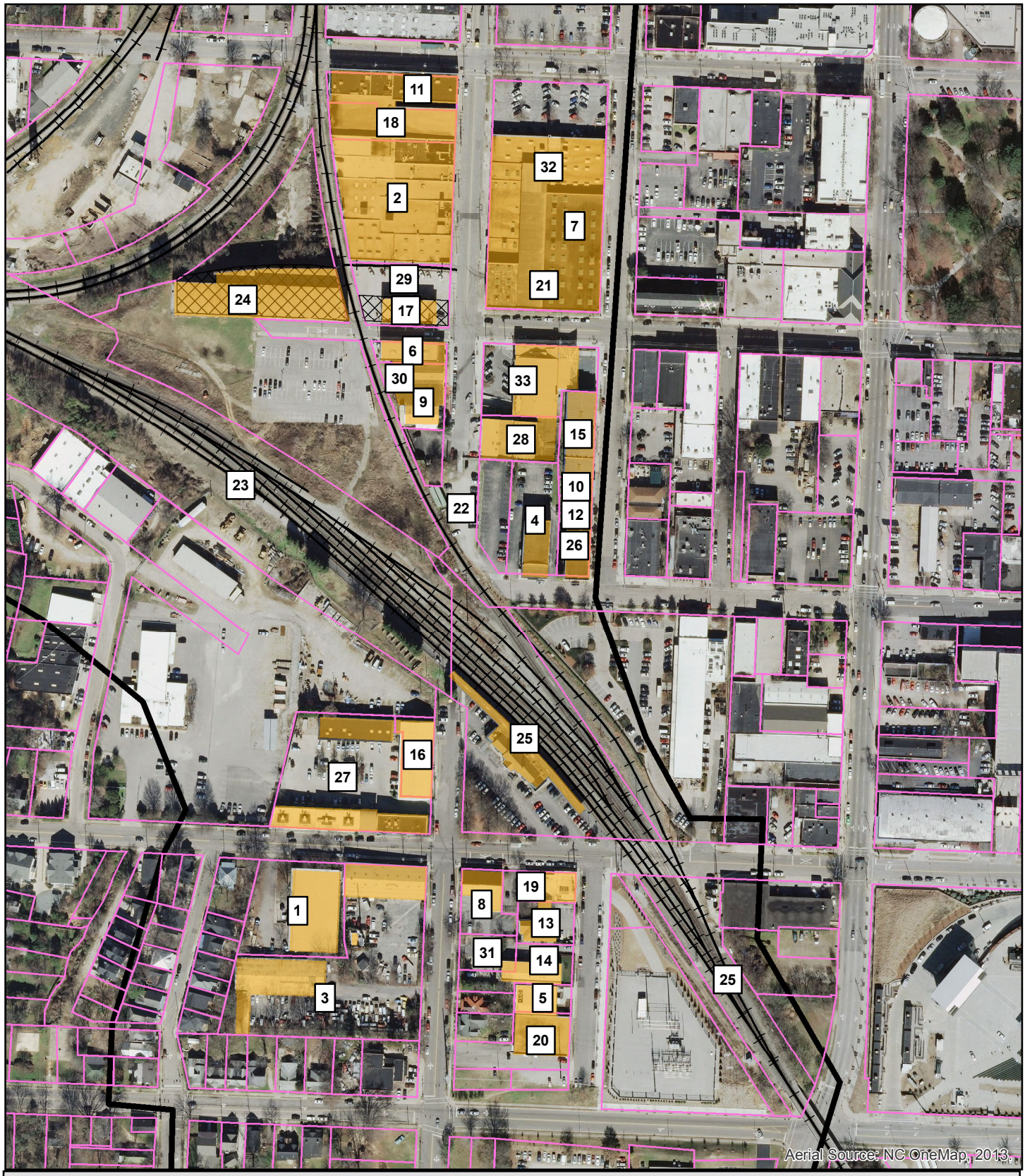


Figure 3-4. West Street Extension EA - Properties Reviewed for Noise Receptors

Project Study Area
Proposed Multimodal Transit Center Site
Railroad Tracks
Building Footprints
12 Location Numbers
Parcels

400 200 0 400 Feet

N

Prepared: March 27, 2017

Table 3-8: Construction Equipment Typical Noise Level Emissions[1]

Equipment	Noise Level Emissions (dB(A)) at 50 Feet From Equipment[2]
	70 80 90 100
Pile Driver[3]	
Jack Hammer	
Tractor	
Road Grader	
Backhoe	
Truck	
Paver	
Pneumatic Wrench	
Crane	
Concrete Mixer	
Compressor	
Front-End Loader	
Generator	
Saws	
Roller (Compactor)	

1. Adapted from *Noise Construction Equipment and Operations, Building Equipment, and Home Appliances*. U.S. Environmental Protection Agency. Washington D.C. 1971.
2. Cited noise level ranges are typical for the equipment cited. Noise energy dissipates as a function of distance between the source and the receptor. For example, if the noise level from a pile driver at a distance of 50 feet = 100 decibels (dB(A)), then at 400 feet, it might be 82 decibels (dB(A)) or less.
3. Due to project safety and potential construction noise concerns, pile driving activities are typically limited to daytime hours.

3.3.6 Traffic Noise Analysis Summary

Long-term traffic noise impacts are not anticipated and noise abatement measures are not proposed. During the construction, all reasonable efforts should be made to minimize noise level increases. Unless modifications to proposed alignment occurs or additional alignments are considered, no additional noise analysis is warranted for this Project. More detailed traffic noise analysis is provided in the Project's Traffic Noise Analysis Report, dated April 2015.

3.4 AIR QUALITY

Air pollution originates from various sources, with emissions from industry and internal combustion engines being the most prevalent sources. Highway construction projects can intensify existing air pollution problems or improve ambient air quality. Changing traffic patterns are a primary concern when determining the impact of a new or improved highway facility. Motor vehicles emit carbon monoxide (CO), nitrogen oxide (NOX), hydrocarbons (HC), particulate matter (PM), sulfur dioxide (SO2), and lead (Pb) (listed in order of decreasing emission rate). Under the Clean Air Act Amendments of 1990 (CAAA), EPA set forth National Ambient Air Quality Standards (NAAQS) for six principal pollutants – particulate matter (PM), sulfur dioxide (SO2), carbon monoxide (CO), ozone (O3), nitrogen oxides (NOx), and lead (Pb). **Table 3-9** shows the NAAQS pollutants and their respective standards.

3.4.1 Attainment Status

The Project is located in Wake County, which is within the Raleigh-Durham attainment area for CO, and the Raleigh-Durham-Chapel Hill attainment/maintenance area for O3. In 1991, Wake County was designated as a moderate non-attainment area for CO. In 2004, Wake County was designated as a non-attainment area for O3. However, due to improved monitoring data, Wake County was re-designated as an attainment area for CO and O3 on September 18, 2015, and December 26, 2007, respectively.

Section 176(c) of the CAA requires that transportation plans, programs, and projects conform to the intent of the state air quality implementation plan (SIP). The current SIP does not contain any transportation control measures for Wake County. The CAMPO 2040 Metropolitan Transportation Plan (MTP) and the 2012-2018 Transportation Improvement Program (TIP) conform to the intent of the SIP.

Because Wake County in is attainment for the above criteria pollutants, conformity determinations are not necessary. However, it should be noted that the current Research Triangle Region Conformity Determination is consistent with the final conformity rule found in 40 CFR Parts 51 and 93, has been adopted by all agencies having involvement or bearing on it, and there are no significant changes in the Project's design concept or scope, as used in the conformity analyses.

3.4.2 Carbon Monoxide

One major pollutant emitted by motor vehicles is CO, which is formed primarily by the combustion of fuel associated with transportation. Currently, there are no CO nonattainment areas in the United States. In general, CO emissions are associated with large volumes of slow-moving traffic, such as exists at highly congested intersections. Areas experiencing high levels of CO are referred to as CO "hot spots".

A "hot-spot" analysis for CO is a standard part of the NEPA process for highway projects. A hot-spot analysis is known as a "microscale" analysis because it focuses on a relatively small geographic area.

The purpose of a CO hot-spot analysis is to determine if CO emissions generated by a proposed project would cause or contribute to an exceedance of the air quality standard for CO as identified in **Table 3-9**.

The emissions factors were developed using the MOVES2014 model, EPA's tool for estimating emissions from highway vehicles. The dispersion of CO was simulated using "CAL3QHC - A Modeling Methodology for Predicting Pollutant Concentrations near Roadway Intersections" to predict the CO concentration at the worst-case sensitive receptors outside the right-of-way and where the general population has access.

For modeling purposes one of the two failing intersections within in the Study Area was chosen for modeling. This is at the intersection of W Lenoir Street and S Dawson Street, located approximately one block east and south of the proposed Project which operates at LOS F in the PM Peak under the Build and No Build. The analysis used simulated meteorological conditions designed to yield "worst-case" CO concentrations. One-hour and 8-hour concentrations were calculated to permit comparison with the NAAQS. The analyses was conducted for the 2011 existing condition, the 2015 interim year No-Build and Build Alternative and the 2035 No-Build and Build design year alternative.

The air quality analysis was conducted under simulated meteorological conditions designed to yield "worst-case" CO concentrations. These conditions include:

- Wind Speed - The wind speed was assumed to be one meter per second (1 m/sec), which represents very little, or no dispersion of the pollutants.
- Stability Class - Stability class "D" (neutral) was used to model the free-flow and hotspot receptors in the project corridor.
- Wind Angle - A wind angle search in increments of 1-degree was used for this analysis.
- Surface Roughness - Local terrain characteristics, or surface roughness, can affect the dispersion of pollutants. A roughness of 321 cm (central business district) was used.
- Mixing Height - A value of 1,000 meters (3,280 feet) was assigned.
- Background Concentrations - All CO concentrations emitted by sources other than those being modeled are considered background concentrations. The latest and highest valid 2011, 1-hour and 8-hour CO concentrations recorded in Wake Current at the nearest location (Spring Forest Road), are 1.8 and 1.4 ppm, respectively. Year 2014 values were 1.3 and 1.2 ppm, respectively (http://www.epa.gov/airdata/ad_rep_mon.html). For the purposes of this study, the higher 2011 background concentrations were used for all conditions to be conservative.

In addition to meteorological input data, the computer model requires the roadway and receptor site geometries to be defined within a Cartesian coordinate system. Roadway segments are defined as free-flow links each having a constant width, height, traffic volume, and emission factor. Receptors are located where the maximum total projected pollutant concentration is most likely to occur outside the right-of-way, as described above.

Table 3-9: National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
CO		Primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Pb		Primary and Secondary	Rolling 3 month average	0.15 μg/m[1]	Not to be exceeded
NO_2		Primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and Secondary	Annual	53 ppb[2]	Annual Mean
O_3		Primary and Secondary	8-hour	0.075 ppm[3]	Annual fourth-highest daily maximum 8-hour concentration, average over 3 years
Particle Pollution	$PM_{2.5}$	Primary	Annual	12 μg/m³	Annual mean, averaged over 3 years
		Secondary	Annual	15 μg/m³	Annual mean, averaged over 3 years
		Primary and Secondary	24-hour	35 μg/m³	98th percentile, averaged over 3 years
	PM_{10}	$PM_{2.5}$	24-hour	150 μg/m³	Not to be exceeded more than once per year on average over 3 years
SO_2		Primary	1-hour	75 ppb[4]	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: US Environmental Protection Agency.

Notes:

1. $PM_{2.5}$ – Particulate Matter less than 2.5 microns in size.
2. PM_{10} – Particulate Matter less than 2.5 microns in size.
3. Final rule signed October 15, 2008. The 1978 Pb standard (0.15μg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
4. The official level of the annual NO2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.
5. Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.
6. Final rule signed June 2, 2010. The 1971 annual and 24-hour SO2 standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

The modeling procedure described above was used to predict hourly "worst-case" CO concentrations. One-hour and eight-hour concentrations were calculated to permit comparison with NAAQS. Eight-hour concentrations were determined by subtracting the one-hour background concentration from the total one-hour concentration, then multiplying this value by the persistence factor. A persistence factor of 0.78 was used to account for the variation in traffic and meteorological conditions over an eight-hour period, based

on 2011, 1-hour versus 8-hour recorded concentrations. The background concentrations were added to the analysis total.

3.4.3 Analysis Results

As discussed in **Section 3.4.2**, CO emissions are associated with large volumes of slow-moving traffic, such as exists at highly congested intersections. Potential project-related CO impacts are discussed below.

Carbon Monoxide (Intersection Analysis)

There are no signalized (or unsignalized) intersections in the immediate vicinity of the Project with a predicted LOS D or worse. Therefore, the nearest intersection with LOS D or worse was chosen. This is at the intersection of W Lenoir Street and S Dawson Street, located one block east and south of the Project.

Base Year Condition 2011: The results of the existing condition analysis indicate that the highest predicted 1-hour concentration of CO is 2.7 ppm, while the highest 8-hour concentration is 2.1 ppm. The results indicate that the total concentrations are well below both the 1-hour (35 ppm) and 8-hour (9 ppm) NAAQS criteria.

Interim Year 2015 No-Build Alternative: The results of the analysis for the interim year No-Build Alternative indicate that the highest predicted 1-hour concentration is 2.5 ppm, while the highest 8-hour concentration is 2.0 ppm. The results indicate that the total concentrations are well below both the 1-hour (35 ppm) and 8-hour (9 ppm) NAAQS criteria. When compared to the existing condition, the predicted 1-hour and 8-hour CO concentrations for this No-Build condition are decreased, primarily as a result of improved emissions factors that offset the projected traffic volume increases.

Interim Year 2015 Build Alternative: The results of the interim year Build Alternative analysis indicate that the highest 1-hour concentration is 2.5 ppm, while the highest 8-hour concentration is 2.0 ppm, both below the NAAQS criteria. When compared to the Interim Year No-Build Alternative, the 1-hour and 8-hour CO concentrations for the Build Alternative are predicted to be the same as a result of minimal traffic volume changes.

Design Year 2035 No-Build Alternative: The results of the design year No-Build Alternative analysis indicate that the highest predicted 1-hour concentration is 2.0 ppm, while the highest 8-hour concentration is 1.6 ppm. The results indicate that the total concentrations are well below both the 1-hour (35 ppm) and 8-hour (9 ppm) NAAQS criteria. When compared to the existing condition, the predicted CO concentrations for this alternative are decreased.

Design Year 2035 Build Alternative: The results of the design year Build Alternative analysis indicate that the highest 1-hour concentration is 2.0 ppm, while the highest 8-hour concentration is 1.6 ppm, both well below the NAAQS criteria. When compared to the design year No-Build Alternative, the 1-hour and 8-hour CO concentrations for the Build Alternative are predicted to be the same because there is little change in the predicted traffic volumes. When compared to the existing condition, the CO concentrations are decreased, primarily as a result of improved emissions factors that offset the projected traffic volume increases.

PM 2.5 Analysis

The Project is located in a $PM_{2.5}$ attainment area. Therefore, no analysis is required.

Ozone Analysis

The Project is located in an area as being in maintenance of the Ozone (O_3) standard. This project is included in the NCDOT State Transportation Improvement Program (STIP) as Project U-5521 (amended, October 2014) and the CAMPO 2040 Metropolitan Transportation Plan (MTP) as Project A647. Therefore, no further analysis is required.

Carbon Monoxide (Free-Flow Analysis)

None of the maximum 1-hour CO concentrations for all the modeled scenarios (existing, interim and design years) exceed the NAAQS criteria. **Table 3-10** shows the CO concentrations for both the intersection hot-spot and free-flow analyses.

Table 3-10: Maximum 1-Hour and 8-Hour CO Concentrations (ppm)

Modeled Segment	Modeled Location	Existing Condition		Interim Year No-Build		Interim Year Build		Design Year No-Build		Design Year Build	
		1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.	1-Hr.	8-Hr.
Signalized Intersection	Intersection of W Lenoir and S Dawson Streets	2.7	2.1	2.5	2.0	2.5	2.0	2.0	1.6	2.0	1.6
Free-flow	S Dawson Street	2.3	1.8	2.2	1.7	2.2	1.7	1.9	1.5	1.9	1.5

National Ambient Air Quality Standards: 1-hour: 35.0 parts per million (ppm); 8-hour: 9.0 ppm

Background CO Concentrations: 1-hour: 1.8 ppm; 8-hour: 1.4 ppm

3.4.4 Mobile Source Air Toxics

The primary source of air pollutants associated with either construction of a new highway or the improvement of an existing highway is from motor vehicle use. Because this is a roadway project, and FRA does not have regulations which address potential Mobile Source Air Toxins (MSAT) and Greenhouse Gases (GHG), this study conformed to EPA and FHWA regulations which require that CO, $PM_{2.5}$, O_3, MSAT and GHG be studied for proposed projects as part of the National Environmental Policy Act (NEPA) and/or air quality conformity process.

A qualitative analysis of MSAT is required since as the forecasted average annual daily traffic volumes (AADT) do not reach the significantly higher threshold level requiring a quantitative analysis (140,000-150,000 AADT) and the project is not exempt from an MSAT analysis. The qualitative analysis for projects with low potential MSAT effects involves a comparison of the vehicle miles traveled (VMT) of the design year build versus No-Build conditions because the emitted MSAT is proportional to VMT.

The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a

group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (https://www.epa.gov/iris/).

In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA). These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules. The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis, the total annual emission rate for the priority MSAT will be reduced even if vehicle-miles of travel increase.

The VMT estimated for the design year Build Alternative is slightly higher than that for the No-Build Alternative, as shown in **Table 3-11**, because the connection will draw some traffic that currently has to travel around the "disconnected" road link to get to their destinations from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the Build Alternative along the roadway corridor, along with a corresponding decrease in MSAT emissions along any parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOVES2010b model, emissions of all of the priority MSAT decrease as speed increases. Emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the Project Study Area are likely to be lower in the future in nearly all cases.

Table 3-11: MSAT Vehicle Miles Traveled

Design Year No-Build Alternative		Design Year Build Alternative	
West Street (North)	7	West Street (Contiguous)	703
West Street (South)	98		

Note: The VMT is based on ADT (daily) values.

The proposed connection of the existing West Street sections will have the effect of drawing some traffic to West Street and the nearby land uses; therefore, there may be localized areas where ambient concentrations of MSAT could be higher for the Build Alternative than the No-Build Alternative. However, the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when the Project is constructed, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No-Build Alternative, but this could be offset due to increases in speeds, which are associated with lower MSAT emissions.

Also, MSAT will be lower in other locations when traffic shifts away from these locations. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

This increase in VMT would lead to higher MSAT emissions for the Build Alternative over the No-Build Alternative. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOVES emissions model, emissions of all of the priority MSAT except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases would offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models. Because the estimated Build Alternative VMT increases by 5 percent over the No-Build Alternative, there would be no appreciable difference in overall MSAT emissions. Emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 83 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the Study Area are likely to be lower in the future in nearly all cases.

The Project may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated. MSAT emissions are projected to decrease substantially in the future as a result of new EPA programs to reduce MSAT emissions nationwide. As a result, the proposed West Street Extension Project is expected to result in low potential MSAT effects.

3.4.5 Greenhouse Gases

To date, no national standards have been established regarding Green House Gases (GHGs), nor has EPA established criteria or thresholds for ambient GHG emissions pursuant to its authority to establish motor vehicle emission standards for Carbon Dioxide (CO_2) under the CAA. However, there is a considerable body of scientific literature addressing the sources of GHG emissions and their adverse effects on climate, including reports from the Intergovernmental Panel on Climate Change, the US National Academy of Sciences, EPA, and other federal agencies. CEQ issued guidance on August 1, 2016 entitled, "Consideration of Greenhouse Gas Emissions and the Effects of Climate Change". GHGs are different from other air pollutants evaluated in federal environmental reviews because their impacts are not localized or regional due to their rapid dispersion into the global atmosphere, which is characteristic of these gases. The affected environment for CO_2 and other GHG emissions is the entire planet. In addition, from a quantitative perspective, global climate change is the cumulative result of numerous and varied emissions sources (in terms of both absolute numbers and types), each of which makes a relatively small addition to global atmospheric GHG concentrations. In contrast to broad scale actions such as actions involving an entire industry sector or very large geographic areas, it is difficult to isolate and understand the GHG emissions impacts for a particular transportation project. Furthermore, presently there is no scientific methodology for attributing specific climatological changes to a particular transportation project's emissions.

As a result of the proposed roadway connection, the project will create more of a free-flow condition and less stop-and-go conditions. Since free-flow conditions are generally considered to be better than stop-and-go/idling conditions, then it is reasonable to assume that the proposed action will reduce idling and subsequently reducing GHGs as well as other NAAQS criteria pollutants.

Additionally, the proposed action will reduce Vehicle Miles Traveled (VMT). Currently, to get from the north section of S West Street to the south section of S West Street, a vehicle would have to detour travel to W Davie Street, S Dawson Street and W Cabarrus Street, then back S West Street. Travel in the reverse direction requires the same detour route. The proposed connector eliminates the need to travel on those three additional streets and provides a direct route. Any time travel distance or VMT is reduced, the amount of emitted pollutants, including GHG is reduced.

3.4.6 Burning of Debris

During construction of the Project, all materials resulting from clearing and grubbing, demolition, or other operations will be removed from the Project site, burned, or otherwise disposed of by the contractor. Any burning will be done in accordance with applicable local laws and ordinances, as well as regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520.

3.5 FARMLANDS

The Farmland Protection Policy Act (FPPA) of 1981 (7 CFR Part 658) requires federal agencies to consider the impact of land acquisition actions and projects on prime and important farmland. Land dedicated to urban uses is exempt from the requirements of the Act. The entire West Street Extension Project Study Area is urban area and exempt from these requirements.

3.6 UTILITIES

Utility services in the Project Study Area include electrical power, telecommunication, and cable television, as well as underground natural gas, water, and sanitary sewer services. The existing major electric utilities in the Project Study Area are owned by Duke Energy. Water, sanitary, and storm sewer services are provided by the City of Raleigh Public Utilities Department. PSNC Energy provides natural gas service.

The Project may require the relocation of existing underground and overhead utilities with the possibility of short-term interruptions to service during construction; however, overall impacts to public utilities are anticipated to be low. During construction the City of Raleigh will coordinate with public utilities as necessary.

3.7 HAZARDOUS MATERIALS

Environmental Data Resources (EDR) conducted a database review of potential hazardous waste facilities in the Project Study Area. **Table 3-12** summarizes the results of the review, and the executive summary of the report is provided in **Appendix B**. The database review is drawn from several environmental databases, so there may be some overlap in terms of sites identified (e.g., the multiple listings for the

Rainbow Bakery). Also, in some cases the correct locational information of the sites is lacking or there are no records of formal parcel activities. Sites 10, 11, 15, 16, and 17 are located in the immediate vicinity of the proposed Build alignment (**Figure 3-5**).

- Site 10 (409 W Martin Street) is the current location of the Raleigh Contemporary Art Museum (CAM). The site is the former location of an electroplating operation with an underground storage tank (removed in 2010) and brownfield project which has been remediated.
- Site 11 (302 S West Street) is the former site of a leaking underground storage tank which was removed in 2009.
- Site 15 (600 W Cabarrus) is part of a former PSNC Energy manufactured gas plant (MGP). Prior to its sale to Clancy & Theys Construction Company, PSNC Energy remediated the site, razed the old operations buildings, and moved its operation outside of the City. This parcel is also the location of former Site 16, a coal gas plant.
- Site 17 (516 W Cabarrus) is a small quantity hazardous waste generator. A leaking underground storage tank was reported and removed from the site in 1989.

The City anticipates potential minor impacts to Sites 10, 11, 15, 16, and 17 as a result of the Project. The roadway elevation of S West Street will be lowered between W Martin Street and W Cabarrus Street. Although the precise elevation of S West Street at this location will be determined during final design, retaining walls will be constructed along the full length of the alignment. Retaining walls have been constructed north of the NCRR H-Line as a part of the Raleigh Union Station project. The construction of retaining walls along the alignment south of the NCRR H-Line will result in some minor encroachment upon these four parcels. Any potential hazardous material issues will be identified and addressed during the right-of-way acquisition phase. For sites directly impacted by the Project, the City of Raleigh will submit a work plan to the NC Department of Natural Resources addressing how hazardous materials will be handled and disposed of if encountered.

3.8 FLOOD HAZARD EVALUATION

The State of North Carolina, through the Federal Emergency Management Agency (FEMA) Cooperating Technical Community partnership initiative, was designated as the first Cooperating Technical State (CTS). As a CTS, the state has assumed primary ownership and responsibility of the Flood Insurance Rate Maps (FIRMs) for all North Carolina communities (except Mecklenburg County) as part of the National Flood Insurance Program (NFIP). This effort includes conducting flood hazard analyses and producing updated, digital FIRMs (DFIRMs). DFIRM data for the West Street Extension Project Study Area, based on aerial photography, were downloaded from the North Carolina Floodplain Mapping Program website. These data define floodway boundaries as a tool for floodplain management. Based on the North Carolina Floodplain Mapping Program data, there are no mapped FEMA floodplain areas in the Project Study Area. The entire Project Study Area is identified as Zone X, which has minimal flood hazard. During the final design phase of the Project, the City of Raleigh will ensure compliance with applicable floodplain management ordinances.

Table 3-12: Potential Hazardous Material Sites in the Project Study Area

Site No.	Site Name	Address	Current Status
1	Raleigh TTA Dillon Parcel A	102 S West St.	SHWS
2	Equipment Design & Services	201 S Boylan Ave.	LUST Incident Closed Out; IMD
3	Ready Mixed Concrete Curvemakers, Inc.	612-613 W Hargett St.	UST; FINDS
4	Sprint Communications Co.	608 W Hargett St.	FINDS
5	Smith Coal & Oil Co. Inc.	601 W Hargett St.	AST
6	City of Raleigh	422 W Hargett St	LUST
7	Raleigh TTA Wilson Parcel	200 S West St.	SHWS
8	Dillon Supply Co.	216 S West St.	UST; LUST; IMD; FINDS
9	Brown Roofing Co.	631/633 W Martin St.	UST; FINDS
10	Hunter Services/ Contemporary Art Foundation	409 W Martin St	LUST; SHWS; FINDS; RCRA NonGen; BROWNFIELDS
11	Patterson Holdings, LLC.	302 S West St.	LUST Incident Closed Out
12	Hartsfield Auto Service	234 S Boylan Ave.	UST
13	Rainbow Bakery	303 Kinsey St.	FINDS
14	Rainbow Bakery	303 Kinsey St.	UST; LUST; IMD
15	Raleigh Coal Gas Plant No. 2 (former)	600 W Cabarrus St.	NC HSDS
16	Public Service Co. Raleigh, Op	600 W Cabarrus St.	UST; FINDS: BROWNFIELDS; MGP
17	Clancy & Theys	516 W Cabarrus St.	UST; IMD; FINDS; RCRA-SQG; LUST Incident Closed Out; Financial Assurance
18	502 S West St.	502 S West St.	CDL
19	Clancy & They's	P.O. Box 11008	UST
20	Raleigh Coal Gas Plant No. 2	W Cabarrus St.	CERCLIS
21	Raleigh Police Dept. Complaint./M.W Woodard / Joyner Family Trust Property	520 W South St./ 530 W South St.	UST; LUST; IMD; FINDS; RCRA NonGen
22	South St. Supermarket	526 W South St.	UST; LUST; FINDS
23	Rose & Sons Auto Service, Inc.	410 W South St.	UST; LUST Incident Closed Out; IMD; FINDS; RCRA-SQG

Notes:
CERCLIS – Comprehensive Environmental Response, Compensation, and Liability Information System (Superfund site)
RCRA–SQG – Resource Conservation and Recovery Act (RCRA) listed small quantity generator
RCRA–NonGen – RCRA listed non-generator (does not currently generate hazardous waste)
CDL – Clandestine Drug Lab Location
FINDS – Facility Index System
SHWS – State Hazardous Waste Site
IMD – Incident Management Database
NC HSDS – North Carolina Hazardous Substance Disposal Sites
UST – Underground Storage Tank Site
LUST – Leaking Underground Storage Tank Site
AST – Aboveground Storage Tank Site
BROWNFIELDS- Brownfields site with or working towards an agreement for cleanup and liability control
Financial Assurance Site – sites with financial assurance for closure and post-closure care of UST sites
MGP – Manufactured Gas Plant Site

Figure 3-5. West Street Extension EA - Hazardous Material Sites

Brownfields Site
Proposed Multimodal Transit Center Site
Parcels
Project Study Area

Railroad Tracks
Proposed Road Centerline
Proposed Bridge

Proposed Curb and Gutter
Proposed Retaining Wall

400 200 0 400 Feet

N

Prepared: March 27, 2017

3.9 TRAFFIC OPERATIONS

3.9.1 Methodology

Downtown Raleigh has a grid street network system with good overall connectivity and redundancy in facilities. In the Project Study Area; however, travel is somewhat constrained by various rail lines. The southwest section of Downtown Raleigh is bounded by a rail line on the north, east, and west sides, as well as by Central Prison on the west side and Western Boulevard and Rocky Branch Creek on the south side. These are barriers to vehicular, pedestrian, and bicycle traffic. The West Street Extension will improve connectivity in this area by providing an additional north-south grade-separated crossing. This connection should also increase the ability for bicyclists and pedestrians from the north and east side of the rail lines to reach the paved greenway off of Western Boulevard to the south.

Existing signal plans and timing plans were obtained from the City of Raleigh and were used to develop a No-Build analysis, which was then incorporated into the Build scenario. The City of Raleigh determined that a growth rate of 0.5 percent per year would be a realistic value for this section of Downtown Raleigh. This rate was chosen due to the growth characteristics of Downtown Raleigh and the available land for development in the surrounding area. This rate was used to grow the 2012 count volumes to the design year of 2035. The 2035 No-Build volumes were developed by growing the 2012 traffic counts by 0.5 percent per year to the year 2035.

The proposed West Street Extension will run south from W Martin Street in front of the new Raleigh Union Station, to connect with the existing section of West Street south of the Boylan Wye. In the No-Build condition of this study, the new Raleigh Union Station is assumed to be constructed and have an access driveway on the southern end of the portion of West Street located north of the Boylan Wye.

According to the *Raleigh Union Station – Phase I and Associated Track Improvements EA* (NCDOT Rail Division 2014), under future conditions approximately 12 passenger trains per day will pass through the station. Using rates from the estimated 12 trains per day, NCDOT estimated trips for the future Raleigh Union Station. These trips were distributed throughout the network and added to the volumes discussed previously. NCDOT subsequently revised that estimate to 18 trains per day, however the City prepared this EA using the earlier estimate of 12 trains per day for consistency with the Raleigh Union Station analysis. An additional 6 trains per day would have a negligible effect on Study Area traffic.

The Raleigh Union Station project will provide driveway access on S West Street at two locations: from an extension of W Martin Street as an eastbound only exit from the station, and with a primary entrance and exit from just south of W Martin Street. For the purpose of this analysis, the vehicles turning into and out of the parking lot are assumed to find parking within this city block and were not rerouted to another parking facility. The parking within the RUS site will include 39 spaces for short-term use only. "The Dillon" which is currently under construction at W Martin and S West Street will include a parking deck with 980 spaces. The City of Raleigh will occupy 250 to 350 of the parking spaces, of which 150 will be reserved for RUS patrons.[19,20]

[19] http://thedillonraleigh.com/
[20] http://www.newsobserver.com/entertainment/arts-culture/article51319470.html

Although the City anticipates rerouting certain elements of the bus system to serve RUS directly, there are no official plans to do so at this time. The City and other regional/local transit providers are expected to undertake a separate analysis to determine how the bus system will be expanded and how RUS will be served.

Traffic analysis performed for a previous scenario, which included the closure of W Cabarrus Street, was used for the analysis of potential project-related traffic impacts. Although the closure of the W Cabarrus Street crossing is not proposed under this Project, this crossing closure is included in this analysis to present a conservative "worst case" scenario where re-routed traffic has the potential to negatively affect the performance of nearby intersections. Some of the original trips turning onto and off of W Cabarrus Street at the W Cabarrus Street and S West Street intersection and the W Cabarrus Street and S Dawson Street intersection were left unchanged to account for trips to and from parcels on W Cabarrus Street. Based on network connectivity and traffic counts, some traffic was rerouted from their current path to use the new West Street extension to perform their desired trip.

3.9.2 Potential Traffic Impacts

Analysis of Study Area signalized intersections is presented in **Table 3-13** below. As shown in the table, two signalized intersections would fail under both the No Build and Build conditions during the PM period. All other Study Area intersections operate at acceptable Levels of Service (LOS). The two failing intersections are the W South Street/ S Dawson Street intersection and the W Lenoir Street/ S Dawson Street intersection. The two intersections would both fail during the PM peak period in both the 2035 No Build and Build scenarios. These two intersections are within 300 feet of each other and fail due to southbound traffic during the PM period which coincides with commuter traffic leaving the City. Mitigation measures in the form of changes to signal timing were explored for these two intersections.

Capacity analysis of the intersection of W South Street and S Dawson Street indicates that in the 2035 No-Build and 2035 Build scenarios the overall intersection, as well as all intersection approaches, operate at LOS B or better in the AM peak hour of operation. In the PM peak hour of operation, the overall intersection operates at LOS F in each scenario. The eastbound and westbound approaches operate at LOS D or better, while the southbound approach operates at LOS F in the PM peak hour. The southbound LOS F operation is due in large part to the heavy volume traveling south on S Dawson Street. The capacity analysis results provided in **Table 3-13** show increased delays under Build conditions when compared to the 2035 No-Build conditions. The additional delay time will be 3.3 seconds in the AM period and 4.3 seconds in the PM period. Capacity analysis of the intersection of W Lenoir Street and S Dawson Street indicates that under 2035 No-Build and 2035 Build conditions, the overall intersection operates at LOS A. In the PM peak hour of operation, the overall intersection operates at LOS F in each scenario. The capacity analysis results, provided in **Table 3-13**, show increased delay (3.2 seconds during the PM period) for the Build condition when compared to the No-Build condition.

Table 3-13: 2035 Signalized Intersection Performance

Intersection	No Build		Build	
	Overall AM LOS (Seconds Delay)	Overall PM LOS (Seconds Delay)	Overall AM LOS (Seconds Delay)	Overall PM LOS (Seconds Delay)
W South Street/ S Sanders Street	B (13.0)	B (17.6)	B (13.9)	B (17.5)
W South Street/ S Dawson Street	B (10.7)	**F (102.9)**	B (14.0)	**F (107.2)**
W Lenoir Street/ S Saunders Street	A (8.5)	B (13.5)	A (8.9)	B (12.2)
W Lenoir Street/ West Street	B (12.8)	B (11.6)	B (13.3)	B (14.9)
W Lenoir Street/ S Dawson Street	A (4.5)	**F (102.4)**	A (4.3)	**F (105.6)**
W Morgan Street/ S West Street	B (13.5)	B (19.2)	B (13.9)	B (19.5)
W Morgan Street/ S Harrington Street	A (6.3)	B (11.5)	A (6.5)	B (13.5)

Analysis of Study Area unsignalized intersections is presented in **Table 3-14** below. As shown in **Table 3-14**, there are no Study Area unsignalized intersections containing approaches that would fail under both the No-Build and Build conditions.

Table 3-14: 2035 Unsignalized Intersection Performance

Intersection	No Build		Build	
	Overall AM LOS (Delay)	Overall PM LOS (Delay)	Overall AM LOS (Delay)	Overall PM LOS (Delay)
	Failing Approach? (Yes/No)		Failing Approach? (Yes/No)	
W South Street/ S West Street	No	No	No	No
S West Street/ W Cabarrus Street	No	No	No	No
W Martin Street/ S West Street	No	No	No	No
W Martin Street/ S Harrington Street	No	No	No	No
W Hargett Street/ S West Street	No	No	No	No
W Hargett Street/ S Harrington Street	No	No	No	No

3.9.3 Mitigation Measures

Potential mitigation measures for the project related traffic impacts were discussed with City of Raleigh staff during the scoping stage of the project. The City determined that mitigation would be necessary for any intersection that would have an LOS of F.

Analysis reveals two intersections that will operate at LOS F under future conditions for both the 2035 No Build and Build Alternatives. As shown in **Table 3-15** the intersections of W South Street/S Dawson Street and W Lenoir Street/ S Dawson Street require mitigation to improve operations in the PM peak hour for both the 2035 No Build and Build Alternatives. Given the design year of 2035 is 23 years

beyond the date of the downtown traffic counts, it is reasonable to assume signal timings will change from existing conditions; therefore, the first potential mitigation considered will be to adjust the cycle lengths. Because these signals are part of the Downtown Raleigh signal system one overall optimized cycle length was chosen for use at each signalized intersection. With the analysis year exceeding 20 years from the current year, the City of Raleigh determined that increasing the cycle lengths to 110 seconds was an appropriate recommendation of mitigation for the two signals. **Table 3-15** below shows that by increasing traffic signal traffic lengths to 110 seconds at the impacted intersections, the delays for these two intersections can be reduced by nearly fifty percent from the estimated 2035 No Build condition, providing for an improved LOS E at each.

Table 3-15: 2035 Intersection Performance with Mitigation

Intersection Delays					
Intersection	**Approach**	**AM Conditions**		**PM Conditions**	
		Approach AM LOS (Delay)	**Overall AM LOS (Delay)**	**Approach PM LOS (Delay)**	**Overall AM LOS (Delay)**
W South Street/ S Dawson Street					
2035 No Build	EB	D (46.0)	B (10.7)	C (33.1)	**F (102.9)**
	WB	C (22.5)		C (32.4)	
	SB	A (1.0)		F (111.5)	
2035 Build	EB	E (57.2)	B (14.0)	D (38.6)	**F (107.2)**
	WB	C (22.9)		D (35.7)	
	SB	A (1.3)		F (116.8)	
2035 Improved Build	EB	E (57.2)	B (14.0)	E (79.8)	**E (69.0)**
	WB	C (22.9)		F (87.0)	
	SB	A (1.3)		E (67.3)	
W Lenoir Street/ S Dawson Street					
2035 No Build	EB	B (15.2)	A (4.5)	C (26.4)	**F (102.4)**
	WB	C (22.7)		C (33.3)	
	SB	A (3.6)		F (105.1)	
2035 Build	EB	B (17.6)	A (4.3)	C (24.5)	**F (105.6)**
	WB	C (22.1)		C (33.4)	
	SB	A (2.9)		F (110.0)	
2035 Improved Build	EB	B (17.6)	A (4.3)	C (30.6)	**E (65.3)**
	WB	C (22.1)		D (44.0)	
	SB	A (2.9)		E (66.8)	

3.10 CULTURAL RESOURCES

3.10.1 Section 106 of the National Historic Preservation Act of 1966

This Project is subject to compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (Section 106), and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified as 36 CFR Part 800. Section 106 requires federal agencies to take into account properties included on, or eligible for inclusion on, the NRHP and to afford the Advisory Council a reasonable opportunity to comment on such undertakings. The following section identifies resources protected by Section 106 that are located within the Project Study Area. Section 106 coordination for the West Street Extension Project was conducted with the North Carolina Department of

Cultural Resources, Historic Preservation Office (SHPO). The NRHP is a list of the nation's cultural resources that are considered worthy of preservation. Listed and eligible resources must meet at least one of the four NRHP key criteria:

- Criterion A - associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B - associated with the lives of persons significant in our past; or
- Criterion C - embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D - have yielded or may be likely to yield information important in prehistory or history.

A historic architectural survey was conducted within the area of potential effects (APE) for the West Street Extension project to determine if any historic resources within the APE are listed, or have the potential to be listed, on the NRHP. The APE boundary was established to coincide with the Project Study Area. By letter dated January 11, 2013, the SHPO concurred with the APE. A copy of this letter is included in **Appendix A.** The historic architectural evaluation was completed in two phases. The first phase included a reconnaissance architectural survey and creation of a building inventory within the Project APE. Fieldwork for this reconnaissance survey, conducted in December 2012, identified 12 architectural properties over 50 years in age.

In a letter dated March 18, 2013, the SHPO determined that two resources partially within the APE (Boylan Heights Historic District and Depot Historic District) are eligible for the NRHP; eight resources are not eligible for the NRHP; and two other resources (Woodard's Gulf Service Station at 520 W South Street, and a warehouse at the corner of 411 W Morgan Street/ 117 S West Street) warranted additional research (**Figure 3-6**). Additional investigation was conducted, and on August 5, 2013 the SHPO determined Woodard's service station and the warehouse were not eligible for the NRHP (see **Appendix A**):

- **Boylan Heights Historic District** - The Boylan Heights Historic District is located southwest of the Norfolk and Southern Railroad in Raleigh. The neighborhood was initially developed in 1907 and designed with curvilinear streets and irregularly shaped lots. The dwellings constructed on the parcels are representative of popular architectural styles at the time, including Queen Anne, Colonial Revival, and Craftsman. Previous studies note this district is representative of a "major documented attempt by the city's controlling interest to accommodate the rapidly growing white middle class of the early 20th century Raleigh". The Boylan Heights Historic District was listed on the NRHP in 1985 under Criteria A, B, and C. Although some alterations have affected individual houses within the Boylan Heights neighborhood, the district as a whole as undergone minor modifications in recent decades. As state previously, although a portion of the Boylan Heights Historic District is within the APE, no project construction would occur within the District, and there would be no impacts to the District.

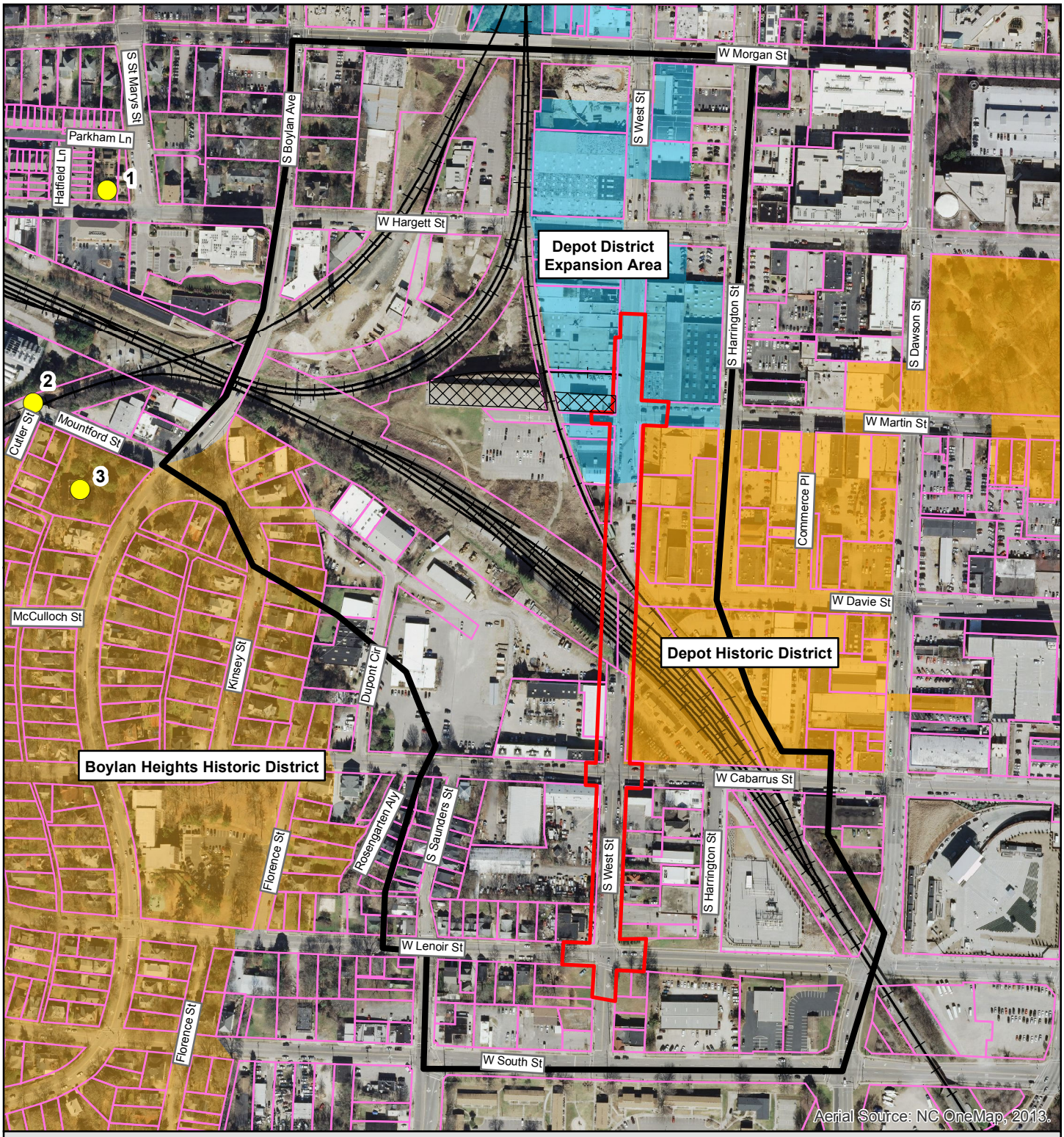


Figure 3-6. West Street Extension EA - Cultural Resources and APE

- Study Area NRHP Sites
- Archaeological Area of Potential Effects (APE)
- Proposed Multimodal Transit Center Site
- Project Study Area
- Determined Eligible for NRHP
- Listed on NRHP
- Railroad Tracks
- Parcels

1 Joel Lane House
2 Historic Bridge
3 Montford Hall

N

400 200 0 400 Feet

Prepared: March 27, 2017

- **Depot Historic District (including the expansion area generally between S Harrington Street and the railroad tracks)** – The Depot Historic District was listed on the NRHP in 2002 and determined to be locally significant under Criterion A for its role in industry, transportation, and commerce as the City of Raleigh's distribution center at the junction of three railroads, and also under Criterion C for its significant concentration of commercial, industrial, and rail-related architecture. The period of significance established for this resource extends from the 1880s until 1952, highlighting the rail-related buildings, factories, and warehouses in Raleigh from the period when railroads predominated in freight transportation. In early 2013, SHPO approved a boundary expansion for the Depot Historic District as presented in a report completed for the Raleigh Union Station project. This expansion added 10 historic properties to the District, all of which are located on the east side of the Boylan Wye. These resources consist of one- and two-story distribution warehouses and commercial buildings constructed between 1914 and the late 1940s.

- **Expanded Depot Historic District (US Post Office W Morgan Street Station and Capital Coca-Cola Bottling Company Garage)** – The former W Morgan Street Station of the US Post Office (411 W Morgan Street and 117 S West Street) and the former office and garage building for the Capital Coca-Cola Bottling Company (117–121 S West Street) were determined not eligible for individual listing on the NRHP. However, both of these resources were constructed within the period of significance for the Depot Historic District, and each property retains many of the character-defining architectural features contained within it. In August 2013, SHPO concurred that these resources are contributing elements of the Depot Historic District, and that the District boundaries should be expanded to include them.

The Project team attended a meeting with the SHPO on December 16, 2013. The SHPO found that, based on the ability of the "Road under Rail" alternative to maintain access to properties along S West Street and retain the existing intersection of W Martin Street at S West Street, the "Road under Rail" alternative would have No Adverse Effect on the Depot Historic District under Section 106 of the NHPA. The SHPO also found that the "Road over Rail" alternative, would result in an Adverse Effect to the Depot Historic District under Section 106 of the NHPA due to property relocations, altered access to contributing elements, and the closure of W Martin Street at S West Street (see **Figure 2-2**).

Representatives from the West Street Extension project attended a second meeting with SHPO on May 19, 2014 to review preliminary designs for the L1 Underpass alternative. At this Effects Determination Meeting, SHPO reconfirmed the Adverse Effects determination of the RUS, including those impacts from lowering S West Street from W Martin Street to just south of the southern entrance to the station with the first Phase of RUS construction. The SHPO also determined there would be No Adverse Effect from closing the railroad crossing at W Cabarrus Street with specific conditions.

Subsequent to the December 2013 meeting with the SHPO, the "Road under Rail" alternative was revised to remove the W Cabarrus Street crossing closure. The "Road under Rail" alternative would, however, require acquisition of approximately 3,600 square feet of land from the Depot Historic District fronting the east side of S West Street south of the H-Line track. Despite this acquisition, FRA determined that the Project would have No Adverse Effect on historic resources, and on February 3, 2017 the SHPO

concurred with FRA's determination. The determination of effects signed by FRA, the City and SHPO is in **Appendix A**.

In a letter dated January 11, 2013, SHPO explained that if ground disturbing activities associated with the West Street Extension Project are confined to the APE (**Figure 3-6**), no archaeological investigations were warranted. Therefore, no archaeological investigations were completed for this Project. A copy of this letter is included in **Appendix A**.

3.10.2 Section 4(f) of the Department of Transportation Act of 1966

Section 4(f) of the Department of Transportation Act of 1966[21] protects publicly owned parks, recreation areas, and wildlife/waterfowl refuges, as well as historic sites listed or eligible for listing in the NRHP. These lands can only be used for a federally-funded transportation project if there is no other feasible and prudent alternative, and the project incorporates all possible planning to minimize harm.

For Section 4(f) issues FRA first considers the statute itself and if an issue is not clearly addressed by the statute FRA considers other DOT agency guidance. This document was prepared in accordance with FRA's Procedures for Considering Environmental Impacts (64 FR 28545 (May 26, 1999)). In addition, this document also follows the procedures for implementing Section 4(f) outlined in 23 CFR 774 (March 12, 2008), which applies to the FHWA and Federal Transit Administration (FTA). Although FRA is not directly subject to this rule, the FRA has determined these procedures are appropriate for use for the West Street Extension Project. A Section 4(f) use, as defined in 23 CFR 774.17, occurs in the following cases:

- Land is permanently incorporated into a transportation facility through partial or full acquisition (i.e., "use")
- There is temporary occupancy of land that is adverse in terms of the preservationist purpose of Section 4(f) (i.e., "temporary use")
- There is no permanent incorporation of land, but the proximity of a transportation facility results in impacts so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired (i.e., "constructive use"). Examples of constructive use include substantial increases in noise levels at an outdoor amphitheater, impairment to aesthetics, and restrictions on access to a resource.

If the use of a Section 4(f) resource would occur due to a proposed action, a Section 4(f) evaluation must be prepared. The Section 4(f) evaluation determines whether there is no feasible and prudent alternative to the use of the Section 4(f) resource and whether the proposed action includes all possible planning to minimize harm to the resource resulting from its use.

There are no public parks, recreation areas or wildlife/waterfowl refuges in the Project Study Area. There are two Section 4(f) properties located within the Project Study Area and both are Section 106 historic resources - a small portion of the Boylan Heights Historic District and the Depot Historic District (including the expansion area). There would be no construction activities within, and no impacts to, the

[21] 49 U.S.C. § 303

Boylan Heights Historic District under the proposed project. As discussed in **Section 3.10.1** of this document, the SHPO has determined effects from the Raleigh Union Station project on the Depot Historic District are in part due to the lowering of S West Street from W Martin St. to just south of the southern entrance to the station during the first construction phase. The SHPO has also concurred that the S West Street "Road under Rail" alternative would have No Adverse Effect on the Depot Historic District.

Based on coordination performed with the SHPO, FRA has determined that north of the NCRR H-Line track there will be no use of Section 4(f) property under the proposed West Street extension project. The lowering of the S West Street roadway profile and retaining walls installed as part of the Raleigh Union Station project have been incorporated in the design of the S West Street "Road under Rail" alternative.

South of the H-Line track a retaining wall is proposed on property within the Depot Historic. FRA has determined that the need to acquire a small amount of land fronting the east side of S West Street south of the H-Line track for the "Road under Rail" alternative would result in a Section 4(f) use of the Depot Historic District. Under 36 CFR Part 800 a "*de minimis*" impact involves the use of Section 4(f) land where the impact is generally minor in nature. For historic properties, a *de minimis* impact is one that results in a Section 106 determination of "no adverse effect" or "no historic properties affected."

FRA has determined that this use would result in a de minimis impact on the property containing the current Amtrak Station, a contributing element to the Depot Historic District. According to guidance provided by FHWA, [22] a determination of de minimis on a historic site may be made when all three of the following criteria are satisfied:

1. The process required by Section 106 of the National Historic Preservation Act (NHPA) results in the determination of "no adverse effect" or "no historic properties affected" with the concurrence of the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer (THPO), and Advisory Council on Historic Preservation (ACHP), if the ACHP is participating in the Section 106 consultation;
2. The SHPO and/or THPO, and ACHP, if the ACHP is participating in the Section 106 consultation, is informed of U.S. DOT's intent to make a *de minimis* impact determination based on their written concurrence in the Section 106 determination; and
3. U.S. DOT has considered the views of any consulting parties participating in the Section 106 consultation.

As described above, FRA has determined and SHPO has concurred that the Project would result in No Adverse Effect to historic resources. (see **Appendix A**). Based on this determination, on March 2, 2017 FRA notified the SHPO of FRA's de minimis determination and SHPO did not object. Additional details of the coordination that occurred with the SHPO is discussed in **Section 3.10.1** of this EA. Likewise, the City, a consulting party in the Section 106 process, did not object to FRA's determination.

[22] https://www.environment.fhwa.dot.gov/section4f/use_deminimis.aspx

3.11 PARKS AND SECTION 6(F) RESOURCES

3.11.1 Parks, Recreational Lands, and Wildlife Refuges

There are no parks, designated wild and scenic rivers, state/national forests, game lands, or preservation areas located within the Project Study Area.

3.11.2 Section 6(f) of the Land and Water Conservation Act

Section 6(f) of the Land and Water Conservation Act applies to the conversion of recreation lands that have received Land and Water Conservation Fund (LWCF) funds to non-recreation purposes. There are no Section 6(f) lands or facilities in the Project Study Area.

3.12 LAND USE AND TRANSPORTATION PLANNING

3.12.1 Land Use Plans

This section presents a description of the existing land use, zoning designations/land use controls, future land use, and transportation improvement plans that pertain to the West Street Extension Project Study Area. Land use planning documents and GIS data reviewed for this section include the following:

- City of Raleigh 2030 Comprehensive Plan;
- City of Raleigh existing zoning GIS data; and
- City of Raleigh 2030 future land use GIS data.

Zoning in the West Street Extension Project Study Area consists of industrial, commercial, office, and medium density residential uses (see **Figure 3-7**). The majority of the Study Area is zoned as Downtown Mixed Use (DX) where building types allowed include residential, general, mixed use, civic, and open lots. The remainder of the Study Area is primarily zoned as Industrial Mixed Use (IX). General, mixed use, civic and open lot construction is permitted within Industrial Mixed use districts.

In the southwest portion of the Project Study Area, there is an area zoned as Neighborhood Mixed Use (NX). Neighborhood Mixed Use areas accommodate residential, general, mixed use, civic buildings, and open lots. Future land uses for the Project Study Area as identified in the City of Raleigh's 2030 Comprehensive Plan are shown in **Figure 3-8**. These are generally consistent with existing zoning. The majority of the Project Study Area is identified as Central Business District, which is intended to enhance Downtown Raleigh as a mixed-use urban center. It supports a mix of high-intensity office, retail, housing, government, institutional, visitor-serving, cultural, and entertainment uses.

Other future land uses in the Project Study Area include Office and Residential Mixed Use, Moderate Density Residential, and Neighborhood Mixed Use. These uses are consistent with existing land uses, the Boylan Heights neighborhood, and identify with the City's goals for redevelopment of the surrounding areas. The 2030 Comprehensive Plan indicates this area should serve as a connection between existing downtown entertainment and employment centers, residential areas, and future park and open space opportunities.

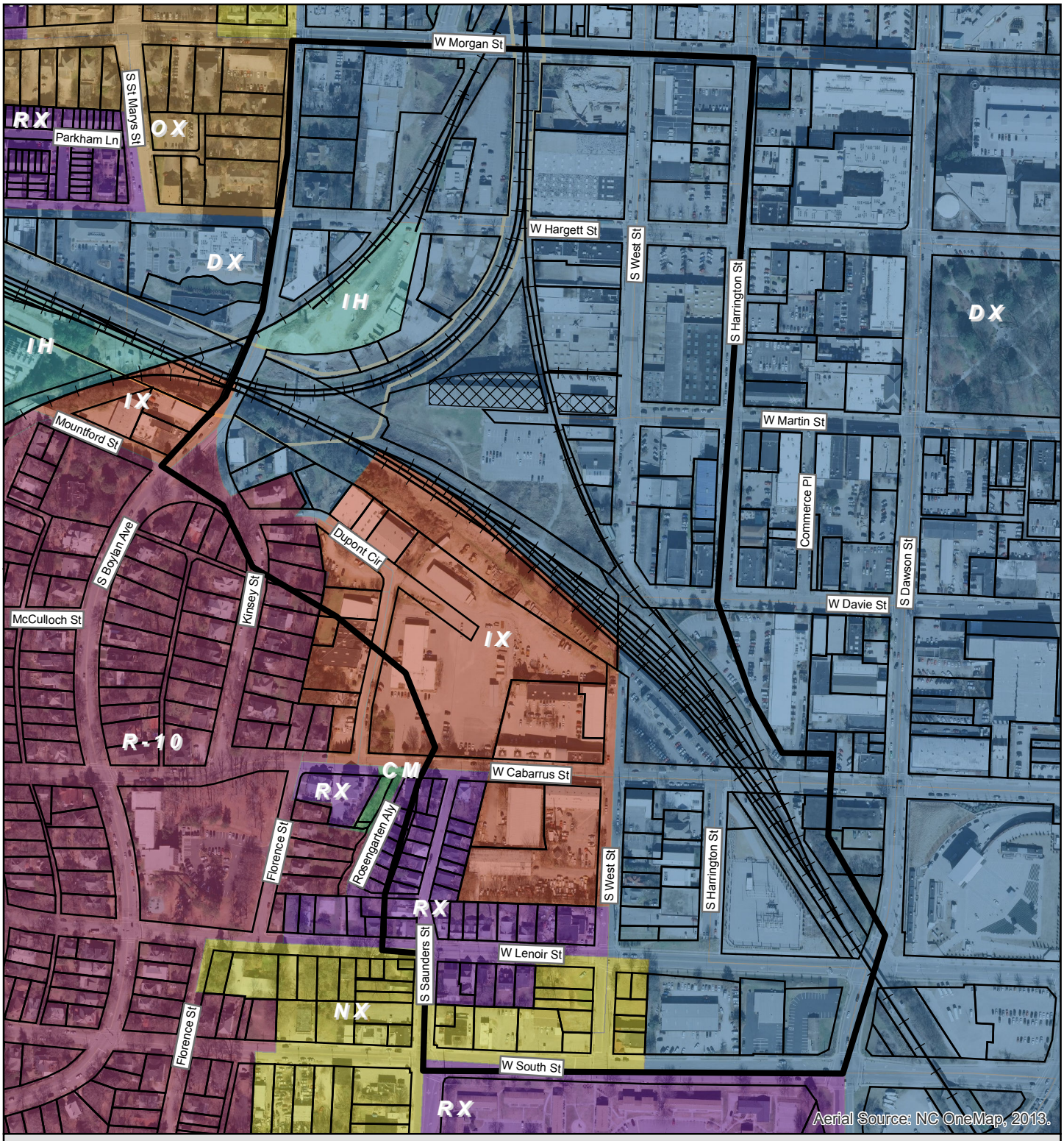


Figure 3-7. West Street Extension EA - Existing Zoning

- Project Study Area
- Proposed Multimodal Transit Center Site
- Parcels
- Railroad Tracks
- CM-Conservation Management
- DX-Downtown Mixed Use
- IH-Heavy Industrial
- IX-Industrial Mixed Use
- IND-2-Industrial
- NX-Neighborhood Mixed Use
- OX-Office Mixed Use
- RX-Residential Mixed Use
- R-10-Medium Density Residential (10 Units Per Acre)

400 200 0 400 Feet

N

Prepared: March 27, 2017

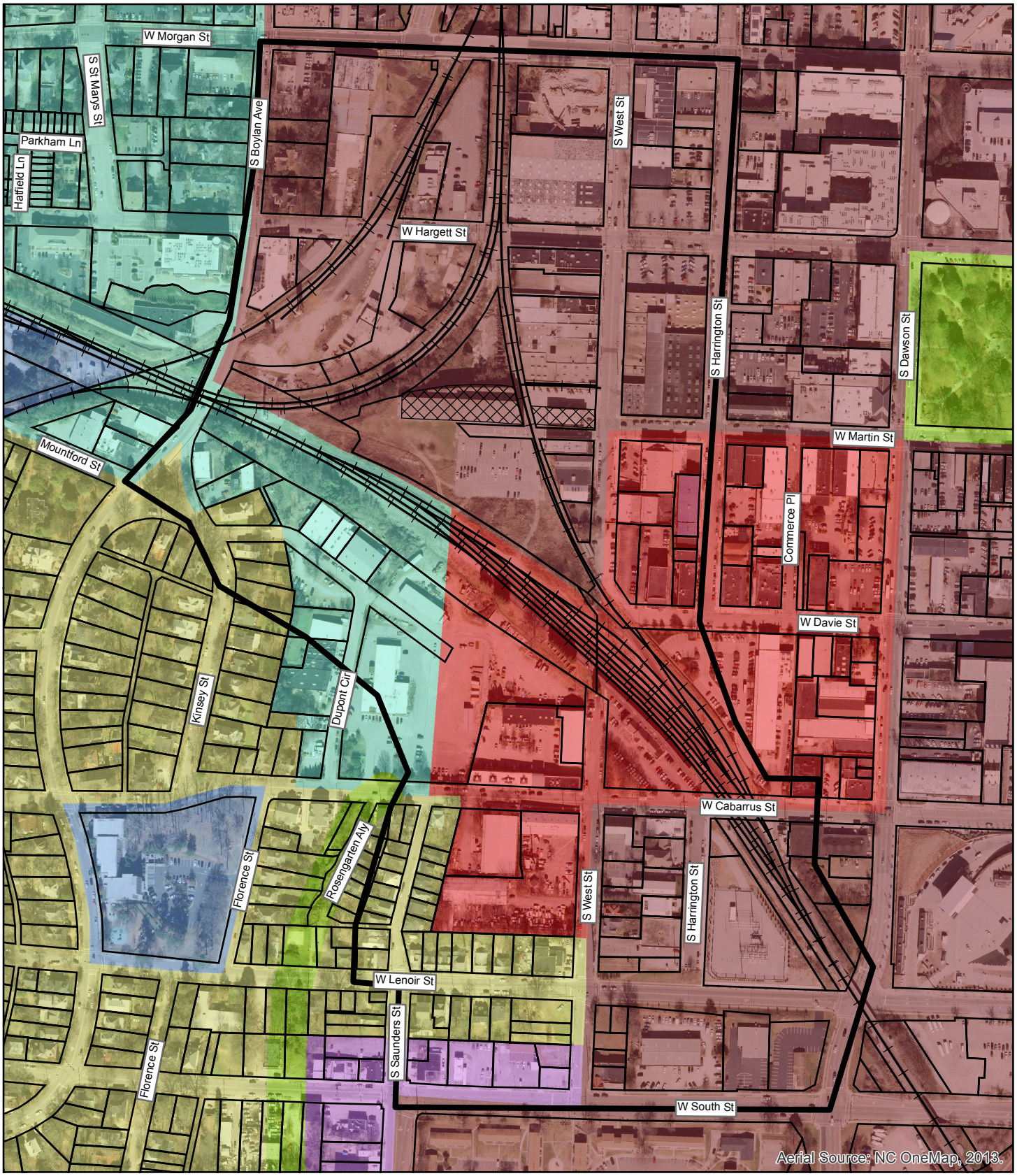


Figure 3-8. West Street Extension EA - Future Land Use

- Proposed Multimodal Transit Center Site
- Project Study Area
- Railroad Tracks
- Parcels
- Central Business District
- Community Mixed Use
- Medium Density Residential
- Moderate Density Residential
- Neighborhood Mixed Use
- Office & Residential Mixed Use
- Public Facilities
- Public Parks & Open Space

400 200 0 400 Feet

N

Prepared: March 27, 2017

As discussed in **Section 1.8.2**, the West Street Extension Project is compatible with the City of Raleigh's land use plans. The Project will improve connectivity to Raleigh Union Station and encourage more pedestrian, bicycle, and transit-friendly communities, which is one of the goals of the 2030 Comprehensive Plan.

As noted in **Section 1.8.2**, the only other planned transportation or infrastructure projects in the Project Study Area are the new Raleigh Union Station and the conversion of W Lenoir Street and W South Street from one-way operation to two-way operating streets. These projects will not introduce any new access to the Project Study Area and are, therefore, not expected to result in changes to the existing land use patterns within the project vicinity.

3.12.2 Transportation Plans

As discussed in **Section 1.8.2**, the West Street Extension Project is compatible with the City of Raleigh and NCDOT's transportation plans. The Project would improve mobility for all modes of transportation by establishing a connection across the Boylan Wye, promote multi-modal transportation by improving access to Raleigh Union Station, and improve bicycle and pedestrian circulation. The Transportation Element of the 2030 Comprehensive Plan contains policies that serve to create a well-connected, multi-modal transportation network, support increased densities, help walking become more practical for short trips, support bicycling for both short- and long-distance trips, improve transit to serve frequented destinations, conserve energy resources, reduce greenhouse gas emissions and air pollution, and do so while maintaining vehicular access and circulation. The Project is consistent with these goals. The West Street Extension Project is included in both the City's Street Plan and the Capital Area MPO's Metropolitan Transportation Plan.

As discussed in **Section 1.7.1**, Wake County partnered with its municipalities and transit service providers on the Wake County Transit Plan (December 2015). The Plan includes BRT routes north, south, east, and west from Downtown Raleigh. The Project is consistent with the Plan's goal to use the West Street corridor between Wake Forest Road and W South Street for prioritized bus service, particularly for BRT routes. As stated previously, although the City anticipates rerouting elements of the bus system to serve RUS, there are no official plans to do so at this time.

West Street is an important corridor in the BikeRaleigh and the Downtown Experience plans. It is planned to be a separated bikeway in the BikeRaleigh plan. The Downtown Experience Plan designates it as a key bicycle connection and a pedestrian-oriented street. It currently links the Warehouse District to the Glenwood South District in Downtown Raleigh. Alternative streets, such as Glenwood or Dawson Streets, are much less bike friendly and/or do not have the operational flexibility to construct improved bike facilities. West Street currently links to the site of the proposed Devereux Meadows Park and Pigeon House Branch Greenway Trail located between Capital Boulevard and West Street, north of Peace Street.

With the proposed Project and another planned extension north to Fairview Road, West Street will provide more direct and comfortable access for bicyclists and pedestrians between the Five Points area and Downtown Raleigh. The Project is particularly important because the alternative north-south streets in this area of Downtown Raleigh are the high-traffic arterials of Dawson and McDowell Streets. The

proposed West Street extension across the NCRR provides a vital north-south bicycle and pedestrian link on the west side of Downtown Raleigh.

That bicycle/pedestrian facility on West Street then links to the Rosengarten Urban Greenway. The City's stated goal is for Rosengarten Urban Greenway to serve as a key pedestrian/bicycle/ multipurpose transportation and recreational link between the cross-city Rocky Branch/Walnut Creek Greenway to the south and the multi-modal transportation center. The Rosengarten Urban Greenway will provide connections for redevelopment areas to Raleigh Union Station and Downtown Raleigh. The Project is consistent with the goals of the Greenway plan.

The City of Raleigh's Capital Boulevard Corridor Study Report (as amended August 7, 2012) outlines recommendations for "transforming the most travelled gateway into Downtown Raleigh into a showcase for multimodal transportation and green infrastructure." The study recommends extending S West Street from its existing terminus at Wade Avenue north to Wake Forest Road to create a local access street with bicycle and pedestrian facilities. The Project is consistent with these recommendations.

The proposed **"**Road under Rail" alternative is also fully compatible with the Raleigh Union Station project, which would lower the elevation of S West Street to provide access to the planned parking area immediately south of the station. Access to the station from points north and east would remain the same as without the West Street Extension Project, while access to the station from points south would be improved with the Project.

The Project is also consistent with the Saunders North Area Redevelopment Plan. The Saunders North Area Redevelopment Plan generally bounded by W Cabarrus Street, Florence Street, S West Street, and Dorothea Drive, calls for several improvements in the Project Study Area, including new office, retail and residential development; new townhomes; major streetscape improvements; the Rosengarten Urban Greenway; and new parking facilities. Through the development of the "Road under Rail" alternative, the Project will avoid impacts to the redevelopment plan area.

3.13 VISUAL ENVIRONMENT

The terrain within the Project Study Area is generally flat with gently rolling hills. There are no visually significant water features or natural habitats. With the exception of residential yards, the Project Study Area is almost entirely built out. The Project Study Area is an urban landscape with distinct areas of industrial and commercial development and medium density residential development. The industrial and commercial environment is most prevalent in the area within and adjacent to the Boylan Wye, which hosts several automotive and construction related businesses, as well as other businesses housed in refurbished warehouses and other industrial buildings. The Depot Historic District is located northeast of the Boylan Wye and is composed of warehouses and industrial buildings that date from the 1880s to the mid-twentieth century. The visual feeling of this area has a strong association with the development of transportation and industry in Raleigh, dating to the period when the railroads dominated freight transportation. Notable visual features in the industrial and commercial portion of the Project Study Area include the Boylan Wye (which can be viewed from both street-level as well as from the bridge over the railroad tracks on S Boylan Avenue), the CAM, and the rail-related warehouses and commercial buildings along S West Street.

As described above in **Section 3.2.3**, the residential neighborhoods within the Project Study Area are primarily comprised of historic homes with scattered newer development. Within the Boylan Heights neighborhood, the architecture of the homes includes the Queen Anne, Colonial Revival, and Craftsman styles. The streets have sidewalks and are lined with large, mature trees. In the redeveloping Rosengarten Park and Dorothea Gardens neighborhoods, the new homes are of an "urban cottage" design, which seeks to integrate new construction into the existing infrastructure and streetscape. The homes mimic designs from the 1900s to 1920s and maintain tree-lined sidewalks. By lowering the elevation of S West Street to pass under the railroad corridor, the Project would have minimal visual impacts on the surrounding area. The extension of S West Street would only be visible in the immediate vicinity of the Project and would not introduce any visual barriers to the surrounding community or add a new feature to the "viewscape." As stated in **Section 3.10.1** the SHPO concurred that the Project would have No Adverse Effect on the Depot Historic District. Visual impacts were considered in this SHPO concurrence review. The Project will result in no visual impacts.

3.14 ECONOMIC IMPACTS

The City expects that the West Street Extension Project will have an overall positive economic impact on Downtown Raleigh area by providing connectivity across the Boylan Wye and better access to the new Raleigh Union Station. This improved connectivity will allow improved access for workers and businesses across the Boylan Wye. There would be no business takings as the result of the Project. Potential economic impacts to the community during construction include disturbance of commercial properties, increased traffic delays, and interruption of utility services. The project would not result in permanent negative economic impacts to existing businesses in the Project Study Area.

3.15 NATURAL ENVIRONMENT

The Project Study Area is within a fully developed environment with no natural areas. Based on a preliminary evaluation, there are no streams, wetlands, or protected species in the highly-urbanized Project Study Area.

3.15.1 Geology/Topography/Soils

The geology of the Project Study Area consists of biotite gneiss and schist dating to the Cambrian Period (around 500 million years old), typically called the Raleigh Belt. It is characterized by high-grade metamorphic rock, with granitic intrusions. The Project Study Area lies within the Northern Outer Piedmont ecoregion of the Piedmont physiographic region of North Carolina. In general, rocks in this region weather into acidic soils (LeGrand, 2003). It is not anticipated that the geology of the Project Study Area will have a substantial effect on the practicality of the proposed project. Topography within the Project vicinity is relatively flat, consisting of low, rounded hills and ridges, and low- to moderate-gradient streams with mostly cobble, gravel, and sandy substrates. Elevations within the Project Study Area range from about 270 feet to 350 feet above sea level, with a slight trend of decreasing elevation from north to south. Site topography could affect overall project costs, and would have some influence on the impacts of the Project.

As shown in **Figure 3-9**, soils in the Project Study Area are predominantly Cecil sandy loam, 2 to 6 percent slopes, moderately eroded (CeB2) and Cecil sandy loam, 6 to 10 percent slopes, moderately eroded (CeC2). CeB2 soils form on broad, smooth, inter-stream divide areas. These soils have fair infiltration rates and medium surface runoff characteristics with a moderate hazard for erosion. CeC2 soils have similar infiltration rates, but have more rapid runoff and a greater tendency for erosion. Both soils have low shrink swell potential. Limitations for road construction include high plasticity and low strength and stability. However, it is not anticipated that the soil types will have a substantial impact on the alternative chosen or the costs of construction (NRCS, 1970).

3.15.2 Biotic Communities and Wildlife

The entire West Street Extension Project Study Area contains no natural areas and is located within land that is currently classified as maintained/disturbed. A nearby and related project, the Raleigh Union Station project included portions of the West Street Extension Project Study Area. The portions that are not within the Raleigh Union Station project are currently maintained/disturbed or paved. For this reason, the discussion below is reliant on the Raleigh Union Station natural resources work.

Plant Species – As indicated above, the Project Study Area consists primarily of maintained and disturbed lands. These are found along the margins of the roadway, parking lots, rail lines, and within the industrial uses. These lands are likely to include the following common plant species and communities.

- Canopy trees – Including loblolly pine, sycamore, water oak, silver maple, black walnut, red mulberry and tulip tree.
- Sapling Trees and Shrubs – Including American elm, sweet-gum, black cherry, post oak, box elder, southern magnolia, red maple, eastern red cedar, black willow, crepe myrtle, blackjack oak, mockernut hickory, winged sumac and groundsel tree.
- Vines – Including poison ivy, trumpet creeper, Virginia creeper, blackberries, saw greenbrier, common greenbrier and muscadine grape.
- Herbs – Including common mullein, bracken fern, bristlegrass, oxeye daisy, broomsedges, lespedeza, goldenrods, Queen Anne's lace, buttercup, red clover, ebony spleenwort, elderberry, pokeberry, dog fennel, wild onion, switchgrass, crab grasses and cassias.

Invasive Plant Species - Ten species from the NCDOT list of Invasive Exotic Plants of North Carolina were observed in the Raleigh Union Station project area and have high potential to be found within the West Street Extension Project area. The aforementioned list includes three threat levels: Threat Level 1 is a threat to habitat and natural areas; Threat Level 2 is a moderate threat to habitat and natural areas; and Threat Level 3 means that the invading species is on the state's watch list. The invasive plant species observed include the five Level 1, four Level 2 and one Level 3 species presented below.

- Canopy trees – None.
- Sapling Trees and Shrubs – Including Chinese privet, multiflora rose, mimosa, and Russian olive. These species are shown as being Threat Levels 1, 1, 2 and 3, respectively

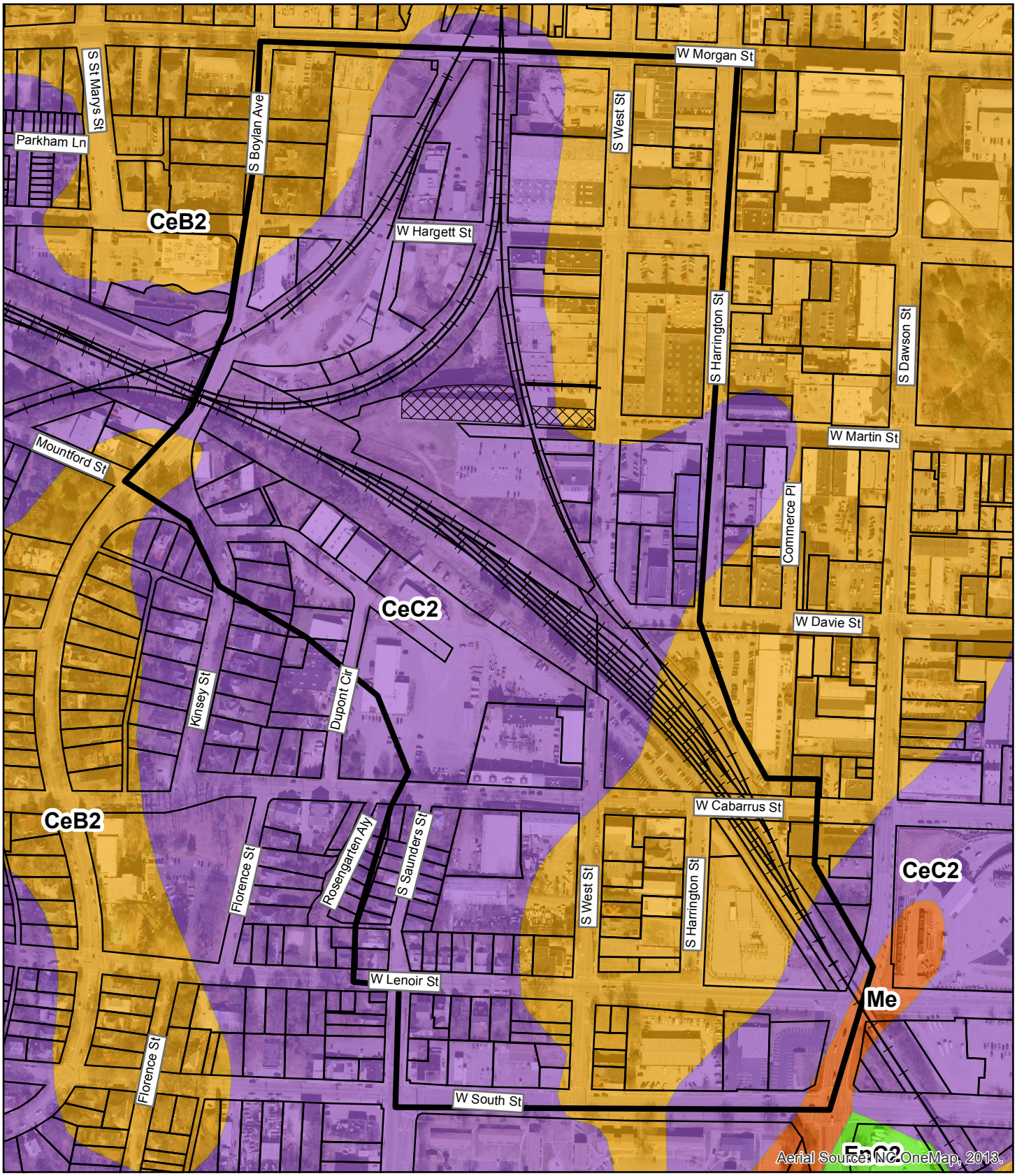


Figure 3-8. West Street Extension EA - Soils Map

Project Study Area
Proposed Multimodal Transit Center Site
Railroad Tracks
Parcels

ApB2
CeB2
CeC2
Cm
EnC2
Me

400 200 0 400 Feet

N

Prepared: March 27, 2017

- Vines – Japanese honeysuckle, kudzu and English ivy. These species are shown as being Threat Levels 2, 1 and 2, respectively
- Herbs – Japanese stilt grass, Japanese knotweed, and Johnson grass. These species are shown as being Threat Levels 1, 1 and 2, respectively

Animal Species – Animal species known to inhabit urbanized areas that have potential to be in the Project Study Area include those listed below. Those with an asterisk were observed during the surveys performed to identify plant and animal species for the Raleigh Union Station project.

- Mammals – Including gray squirrel, eastern cottontail, raccoon, red fox*, white-tailed deer*, and Virginia opossum.
- Birds – Including American crow*, gray catbird*, cedar waxwing*, pine warbler*, prairie warbler*, yellow-throated warbler*, blue jay*, Carolina chickadee, tufted titmouse*, Carolina wren*, northern mockingbird*, sharp-shinned hawk, common yellow-throat, indigo bunting*, eastern towhee*, northern cardinal*, red-bellied woodpecker, and white-eyed vireo. Birds that may use the open habitat within the Project Study Area include house finch*, chimney swift*, barn swallow*, American kestrel, American robin, European starling*, mourning dove, great crested flycatcher, eastern bluebird, field sparrow, eastern meadowlark, red-tailed hawk, and turkey vulture.
- Reptiles and Amphibians - Include bullfrog, marbled salamander, American toad, gray treefrog, painted turtle, eastern box turtle, eastern fence lizard, five-lined skink, black racer, rat snake, northern water snake, eastern ribbon snake, eastern garter snake, and copperhead.

The Project will alter land currently classified as maintained/disturbed. Changes to the maintained/disturbed land will primarily involve earthwork (i.e., the placement of fill material, grading, etc.) associated with the construction of the grade separation and roadway improvements. Minimal impacts to the above biotic communities and wildlife are anticipated. Additionally, The City of Raleigh will follow NCDOT's BMPs for the management of invasive plant species. Therefore, the City anticipates no impacts.

3.15.3 Protected Species

As of July 10, 2017, the United States Fish and Wildlife Service (USFWS) lists three federally protected species as either threatened (T) or endangered (E) in Wake County (see **Table 3-16** below). There are currently no USFWS candidate plant or animal species for Wake County. In addition Bald and Golden Eagles are protected species investigated for this project.

Table 3-16: Project Study Area Protected Species

Common Name	Scientific Name	Federal Status	Habitat Present
Alasmidonta heterodon	Dwarf wedgemussel	E	No
Picoides borealis	Red-cockaded woodpecker	E	No
Rhus michauxii	Michaux's sumac	E	Yes

Dwarf wedgemussel - The dwarf wedgemussel has been found in rivers, creeks and drainages associated with the Tar and Neuse rivers. This mussel species lives in well oxygenated waters in areas with slow to

moderate stream velocities and firm gravel, sand or silt bottoms. There is no potential habitat present for this mussel species because there are no streams or wetlands within the S West Street Extension Project Study Area.

Red-Cockaded Woodpecker - The red-cockaded woodpecker (RCW) generally roosts, nests and forages amongst mature stands of long leaf southern pines. RCWs have been found to largely prefer carving cavities in living pines that are at least 60 years old, in pine stands that are at least 30 years old for their foraging areas. RCW foraging habitats are normally less than 0.5 mile from their nests. The S West Street Extension Project Study Area is located in primarily urban and industrial land uses, lacking suitably sized contiguous stands of pines for RCW roosting, nesting and/or foraging habitats. Additionally, areas similar to this do not exist with 0.5 mile of the project site. Therefore, there is no potential for impacts to RCW with the Project.

Michaux's Sumac - Michaux's sumac grows in the central Piedmont in areas of clayey soils derived from mafic rocks. Because it is a shade-intolerant plant, it grows best in disturbed areas where an open habitat is maintained. Suitable habitat for Michaux's sumac occurs nearby the Project Study Area along the margins of the rail lines and woodland edges. However, Michaux's sumac is not anticipated to be in the Project Study Area for the following reasons: surveys performed for Michaux's sumac for the Raleigh Union Station project resulted in the observation of no individuals of this species; a review of NCNHP records indicates no known Michaux's sumac occurrences within 1.0 mile of the Project study area; and the West Street Project area is considerably disturbed by ongoing urban development and use.

Bald and Golden Eagle Protection Act - The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), prohibits anyone from "taking" bald or golden eagles, including their parts, nests, or eggs without a permit issued by the Secretary of the Interior. Habitat for bald eagles primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within 1.0 mile of open water.

Lake Raleigh and Lake Johnson (1.8 and 3.4 miles from the Project Study Area, respectively) may be large enough or sufficiently open to be considered potential feeding sources for bald eagles. Lake Wheeler and Lake Benson (within 7 miles from the Project study area) have recorded bald eagle nesting sites. Local residents and photographers have documented bald eagle sightings at the lakes. Additionally, a review of NCNHP records updated October 2014 indicates a known occurrence (2011-2012) of bald eagles at Lake Raleigh. While bald eagles may be present in the Project Study Area, suitable habitat for bald eagles does not exist within the Project Study Area and minimal tree clearing activities, if any, are required.

3.15.4 Water Resources and Jurisdictional Issues

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The predecessor to the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained.

No streams, wetlands, water bodies, CWA Waters of the United States, River and Harbors Act Section 10 Navigable Waters, or other jurisdictional features or water resources are present in the Project Study Area. In response to scoping letter dated October 9, 2012, NCDEQ confirmed "no streams/wetlands in study area." Consequently the Project will not impact water resources and requires no Clean Water Act permits or wetland or stream mitigation.

3.16 ENERGY IMPACTS

The Project will initially result in an increase of energy use during the construction phase. Once the roadway connection is completed the Project will have a slight benefit on energy use. Currently vehicles traveling north and south on S West Street must detour to a nearby crossing of the Boylan Wye to continue in their desired direction. After the Project is completed vehicles traveling across the Boylan Wye on S West Street will be afforded a more energy-efficient direct connection without detouring to a nearby crossing. This is particularly true for the residents of the Rosengarten Park and Dorothea Gardens neighborhoods.

3.17 INDIRECT AND CUMULATIVE EFFECTS

Assessment of indirect and cumulative effects of projects is required under NEPA, the CEQ regulations implementing NEPA, FRA's Procedures for Considering Environmental Impacts, and the North Carolina Policy Act of 1976 (NCEPA), which generally adopted the federal definitions of indirect and cumulative impacts. In addition to the NEPA and NCEPA guidelines, rules for the 401 Water Quality Certification Program (15A NCAC 2H .0506(b)(4) and (c)(4), as well as those for the Isolated Wetland Permit Program (15A NCAC 2H .1300), require that the North Carolina Division of Water Quality (NCDWQ) determines that a project "does not result in cumulative impacts, based upon past or reasonably anticipated future impacts, that cause or will cause a violation of downstream water quality standards."

NEPA defines indirect effects as "impacts on the environment which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" (40 CFR 1508.8). Induced development or altered growth patterns are typically the most common forms of indirect impacts. The rate and type of development, however, is usually influenced by the availability of access and infrastructure, the market for development, and public policy. Cumulative impacts are defined as those "…which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR 1508.7).

The Project was evaluated through application of the Indirect and Cumulative Impact (ICI) Pre-Screening Procedure as set forth in Section II (Pre-Screening Projects for Applying Indirect and Cumulative Impact Assessment) of the *North Carolina Department of Transportation/North Carolina Department of Environment and Natural Resources Guidance for Assessing the Indirect and Cumulative Impacts of Transportation Projects in North Carolina – Volume II: Practitioner's Handbook* (NCDOT/NCDENR,

2004).[23] The factors evaluated in pre-screening relate to the project design concept and scope, area demographic trends, and local land use policy and enforcement.

Based on the ICI pre-screening applied to the Project, the City of Raleigh concluded that the Project does not have the potential to result in significant indirect and cumulative impacts as defined by NEPA. This conclusion is based on evaluation of the Project's design concept and scope, including purpose and need, type, and facility function, in combination with evaluation of the demographic, land use and planning trends of the Project Study Area. Factors supporting the conclusion of the ICI pre-screening include:

- **Functional classification** – S West Street is a collector street in the City of Raleigh roadway system. The collector-level street system provides both land access and traffic circulation within residential neighborhoods and commercial/industrial areas. According to the ICI pre-screening procedure, projects on urban roadways with functional classifications lower than principal arterial or minor arterial generally do not warrant project specific ICI assessment because they do not have a substantial influence on land use over a broad area.
- **Land use** – Existing land use in the Project Study Area is highly urbanized with little available land for development. The changes in land use forecast in the Project Study Area are re-development, primarily from former industrial uses to commercial uses.
- **Changes in travel time** – Although the Project would improve accessibility across the Boylan Wye and to the new Raleigh Union Station, travel times between residential and employment centers will not be reduced by more than five minutes. The ICI pre-screening notes that five minutes is generally the time savings associated with a change in the attractiveness of an area for development.
- **Growth management** – The City of Raleigh has extensive policies for management of development.
- **Population trends** – As indicated in **Section 3.2.1**, population growth in the DSA has been limited due to the limited development potential.

As noted in **Section 1.8.2**, the only other planned transportation or infrastructure projects in the Project Study Area are the new Raleigh Union Station and the conversion of W Lenoir Street and W South Street from one-way operation to two-way operating streets. These projects will not introduce any new access to the Project Study Area and are, therefore, not expected to result in changes to the existing land use patterns within the project vicinity. Cumulatively, the incremental impact of these projects on the human, physical, and natural environments of Downtown Raleigh is not anticipated to be significant.

3.18 CONSTRUCTION IMPACTS

The construction activities associated with the Project are generally short-term in nature, and can be controlled, minimized, or mitigated through conformance with BMPs and standard NCDOT procedures.

23 https://connect.ncdot.gov/resources/Environmental/Compliance%20Guides%20and%20Procedures/Volume%2002%20Assessment%20Guidance%20Practitioners%20Handbook.pdf

The City will ensure that the Project is constructed in accordance with all applicable BMPs and NCDOT procedures.

3.18.1 Air Quality

Construction activities could have a short-term impact on air quality, primarily during site preparation. Particulate matter (dust) is the pollutant of primary concern during the construction period. Dust will be generated during earth moving activities, handling of cement, asphalt, or aggregate, and equipment. Wind erosion of exposed areas and material stockpiles will also generate particulate matter.

The amount of dust generated will vary, depending on the construction activity and local weather conditions. Where excess dust is anticipated to be a problem, the City will ensure that effective dust control measures will be implemented in accordance with standard NCDOT procedures. Dust control will be the responsibility of the contractor and may include the following:

- Minimizing exposed earth surface;
- Temporary and permanent seeding and mulching;
- Watering work and haul areas during dry periods; and
- Covering, shielding, or stabilizing material stockpiles;
- Using covered haul trucks.

Emissions from construction equipment are regulated by federal standards. During construction of the Project, all materials resulting from clearing and grubbing, demolition, or other operations will be removed from the Project site, burned, or otherwise properly disposed of by the contractor. Any burning will be done in accordance with applicable local laws and ordinances, as well as regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520.

3.18.2 Noise and Vibration

Construction of the Project will result in temporary increases in noise levels in the vicinity of the Project. Noise will be generated primarily from heavy equipment used to transport materials and to excavate earth below the existing rail line. There are no sensitive receptors located near site of anticipated construction activities, however non-sensitive receptors may temporarily experience increased noise levels.

Regulating the hours of construction and equipping machinery with noise reduction devices can control construction noise. Certain construction activities could also be limited during the evening, weekends, and holidays. Storage and staging areas will be located as far from noise sensitive areas as practicable.

Construction of the Project could result in short-term increases in vibration levels at the properties in the immediate vicinity of construction activities. Common vibration-producing equipment includes jackhammers, pavement breakers, hoe rams, auger drills, bulldozers and backhoes. Typical vibration source levels for construction equipment range from 58 -104 vibration decibels (VdB). Pavement breaking and soil compaction will likely produce the highest levels of construction-related vibration. Generally, annoyance effects may be expected during construction near sensitive sites within

approximately 200 feet of the construction activity. Actual distances at which the effects will occur will depend on the type of construction equipment used and the soil characteristics of the area.

3.18.3 Water Quality

Erosion and sedimentation caused by construction activities will affect drainage patterns and water quality. In accordance with the North Carolina Sedimentation Pollution Control Act (15A NCAC 4B .0001 through .0027), prior to construction, the City will ensure that an erosion control plan is developed and implemented. The plan will incorporate measures to control non-point source impacts as recommended in the NCDOT's BMPs for Protection of Surface Waters (NCDOT, 1997). These BMPs include, but are not limited to, the use of berms, dikes, silt barriers, catch basins, seeding and mulching, and conforming to proper clean-up practices.

3.18.4 Maintenance of Traffic

During Project construction, all local and through-traffic will be adequately and safely accommodated. All construction operations will be scheduled to keep traffic delay minimized, and the City will ensure that the contractor follows the standards of the Manual of Uniform Traffic Control Devices for Streets and Highways.

Construction will be performed to comply with all federal, state, and local laws governing safety, health, and sanitation. Procedures will apply all safeguards, safety devices, protective equipment, and any other action reasonably necessary to protect the life and health of employees on the job, the safety of the public, and the property in connection with the performance of the work. The following items will be utilized, where necessary, to maintain public safety and the flow of traffic:

- Constructing and maintaining temporary detours, temporary structures, temporary approaches, crossings, and intersections with streets and roads, as well as using aggregates for the maintenance of traffic and water for use as a dust palliative.
- Furnishing flaggers, pilot trucks, and drivers.
- Furnishing, erecting, and maintaining warning devices such as signs, auxiliary barriers, channelizing devices, hazard warning lights, barricades, flares, and reflective markers. If a street must be closed to traffic, traffic control devices will be illuminated during hours of darkness.

3.18.5 Construction Materials and Waste

All construction waste material generated during clearing, grubbing, and other construction phases will be removed from the Project site and burned or disposed of by the contractor in accordance with state and local regulations. Litter and other general trash will be collected and disposed of at local landfill locations.

3.19 SUMMARY OF IMPACTS

Below is a summary of the environmental effects discussed in **Table 3-17** below:

Table 3-17: Summary of Impacts for the Recommended Alternative

Section of EA	Summary of Impacts	Proposed Mitigation
Community Impacts	No schools, parks, recreation areas, churches or emergency services facilities will be adversely impacted by the Project. The Project will provide additional connectivity between neighborhoods and businesses resulting in a benefit to quality of life for residents and potential increased customer access for businesses.	Not Applicable.
Relocations and Acquisition	There would be no relocations as the result of the Project. There will be small amount of property acquisition from portions of two parcels owned by NCRR. One of the parcels contains the Raleigh Amtrak Station, the second a portion of the H-Line.	Not Applicable.
Public Health and Safety	The project will improve opportunities for safe vehicle, bicycle, and pedestrian access across the Boylan Wye, and will not result in barriers to the handicapped or elderly. Based on these factors, the Project is anticipated to have a beneficial effect on public health and safety.	Not Applicable.
Environmental Justice	There are minority and low income populations within the study area; however, the Project will not divide any communities or result in residential relocations or impacts to community facilities. Therefore, the Project would not result in disproportionate effects to minority or low-income populations. In addition, the extension of S West Street is expected to benefit all communities by providing a safer route to Raleigh Union Station and Downtown Raleigh.	Not Applicable.
Noise	Because there are no noise-sensitive receptors along the project alignment, noise impacts are not anticipated and mitigation measures are not warranted.	Not Applicable.
Air Quality	The Project is located within the Raleigh-Durham-Chapel Hill area that was redesignated as a maintenance area for carbon monoxide (CO) on September 18, 1995 and re-designated as a maintenance area for ozone (O3) under the NAAQS eight-hour standard on December 26, 2007. The City does not anticipate that the Project will create any adverse effects on the air quality of this maintenance area.	Not Applicable.
Farmlands	The FPPA is intended to minimize the impact Federal programs have on the conversion of farmland to	Not Applicable.

Table 3-17: Summary of Impacts for the Recommended Alternative		
Section of EA	**Summary of Impacts**	**Proposed Mitigation**
	nonagricultural uses. "Farmland" does not include land already in or committed to urban development. Because the Study Area is in an urban environment it is exempt from the FPPA Farmland Conversion Impact Form. There are no farms within the Project Study Area that would be impacted.	
Utilities	The Project may require the relocation of existing underground and overhead utilities with the possibility of short-term interruptions to service during construction; however overall impacts to public utilities are anticipated to be low.	Utilities location and coordination will be conducted during final design and right-of-way acquisition phases.
Hazardous Materials	The construction of retaining walls along the alignment will result in some minor encroachment upon four parcels that currently or previously contained hazardous materials. Any potential hazardous material issues will be identified and addressed during the right-of-way acquisition phase.	For sites directly impacted by the Project, the City will submit a work plan to the NC Department of Natural Resources addressing how hazardous materials will be handled and disposed of.
Flood Hazards	There are no flood hazard areas within the Project Study Area. Therefore, no floodplain impacts are anticipated.	Not Applicable.
Traffic Operations	The project will cause beneficial impacts to traffic operations for motorists, pedestrians and cyclists by improving access to Raleigh Union Station, improving connectivity across the Boylan Wye, and enhancing safety by reducing the chance for conflicts with trains. Two intersections will fail (LOS F) under the No Build and Build Alternatives. The City of Raleigh proposes to mitigate traffic impacts by optimizing traffic signal cycles and lengths.	Not Applicable
Cultural Resources	There are two Section 106 historic resources - the Depot Historic District and the Boylan Heights Historic District - in the APE potentially impacted by the proposed Project. FRA determined and SHPO concurred that the Project will have No Adverse Effect on the Depot Historic District. In addition there would be no construction within, and, therefore, the Project would have No Effect on the Boylan Heights Historic District.	Not Applicable.
Section 4(f) Resources	There are two Section 4(f) resources - the Boylan Heights Historic District and Depot Historic District - within the project study area. FRA has determined that there would be a *de minimis* impact to the Depot Historic District under the proposed project. There	Not Applicable.

Table 3-17: Summary of Impacts for the Recommended Alternative		
Section of EA	**Summary of Impacts**	**Proposed Mitigation**
	would be no impact to the Boylan Heights Historic District.	
Parks and Section 6(f) Resources	There are no parks, designated wild and scenic rivers, state/national forests, game lands, or preservation areas located within the Project Study Area.	Not Applicable.
Land Use and Transportation Planning	The Project is consistent with local land use and regional transportation plans.	Not Applicable.
Visual Environment	By lowering the elevation of S West Street to pass under the railroad corridor, the Project would have minimal visual impacts on the surrounding area.	Not Applicable.
Economic Impacts	The West Street Extension Project is expected to have an overall positive economic impact on Downtown Raleigh area by providing connectivity across the Boylan Wye and better access to the new Raleigh Union Station. This improved connectivity will allow improved access for workers and businesses across the Boylan Wye.	Not Applicable.
Biotic Communities and Wildlife	The Project Study Area has only one community type; maintained/disturbed land. The construction of this Project would impact maintained /disturbed land, primarily involving the clearing of vegetation and earthwork (i.e., the placement of fill material, grading, etc.).	Not Applicable.
Water Resources and Jurisdictional Issues	There are no streams/wetlands in the Project Study Area, consequently the Project will not impact water resources and require no Clean Water Act permits or wetland or stream mitigation.	Not Applicable.
Projected Species	There are three federally-protected species listed for Wake County: Michaux's sumac, dwarf wedgemussel, and red-cockaded woodpecker. Due to the lack of habitat, known occurrences, and minimal impact anticipated for this project, this project will not affect any protected species.	Not Applicable.
Energy Impacts	The Project will initially result in an increase of energy use during construction phase. Once the roadway connection is completed the project will have a slight benefit on energy use. After the project is completed vehicles traveling on S West Street will be afforded a more energy-efficient direct connection without detouring to a nearby crossing.	Not Applicable.

Table 3-17: Summary of Impacts for the Recommended Alternative		
Section of EA	**Summary of Impacts**	**Proposed Mitigation**
Indirect and Cumulative Impacts	Based on the ICI pre-screening applied specifically to the West Street Extension Project, the project does not have the potential to result in significant indirect and cumulative impacts as defined by NEPA or NCEPA. Cumulatively, the incremental impact of planned and recent projects on the human, physical, and natural environments of Downtown Raleigh will not be significant.	Not Applicable.
Construction Impacts	The Project will cause short-term air quality, noise, and water quality impacts due to construction activities.	Air quality impacts will be mitigated by minimizing exposed earth surfaces, seeding and mulching, watering of soils, covering and shielding of stockpiles, and using covered haul trucks. Noise impacts will be mitigated by regulating the hours of construction and equipping machinery with noise reduction devices that can control construction noise; and by limiting work to non-sleep hours. Water quality impacts will be mitigated through the use of NCDOT's BMPs for Protection of Surface Waters including, but not limited to, the use of berms, dikes, silt barriers, catch basins, seeding and mulching, and conforming to proper clean-up practices

Chapter 4
Public Involvement and Agency Coordination

4.1 PUBLIC INVOLVEMENT

The City has used several methods to engage the public on the West Street Extension Project and solicit information on the development of the project alternatives and their potential impacts.

4.1.1 Mailings

The City mailed a notification letter for the public workshop on March 6, 2013, to a mailing list of approximately 100 citizens and property owners within the Project Study Area. This letter, along with a map of the Project Study Area, is included in **Appendix C**.

4.1.2 Phone and Email Correspondence

Project mailings and the Project website directed the public to use the phone number or email address for Eric J. Lamb, PE, the City of Raleigh's Manager of Transportation Planning and Development to provide input or request information on the West Street Extension project. To date, the City has received a total of five emails regarding the Project from the community.

4.1.3 Project Website

A Project website was used to keep the public informed about the Project and provide easy access to reports, maps, and other Project-related information: http://www.raleighnc.gov/business/content/PWksTranServices/Articles/WestStreetExtensionProject.html.

4.1.4 Media

Notices of public workshops were posted in the local media. The project has been actively reported about by several local newspapers and television stations.

4.1.5 Public Workshops

The City held a public workshop for the Project on March 6, 2013, at the Meymandi Concert Hall Lobby at the Progress Energy Center for the Performing Arts in Downtown Raleigh. More than 175 citizens attended. The workshop was held in conjunction with the Raleigh Union Station project, which also presented conceptual designs and sought public input at the same venue. Attendees were clearly directed to different tables to learn more about each of the projects individually and comment forms specific to each project were available. An informal "open house" style was used to share information on the West Street Extension, with project representatives available to answer questions and share maps of the project alternatives. Attendees completed 40 comment forms for the West Street Extension project and other six comments were received via phone calls, email, or regular mail prior to and subsequent to the meeting.

The comments have been categorized and tallied to provide an overall picture of the responses and the corresponding citizens' preferences (see **Section 4.1.6**).

In addition, representatives of the West Street Extension Project attended a second public workshop for the Raleigh Union Station project on May 1, 2013, at the Contemporary Art Museum in Downtown Raleigh. News releases for the Raleigh Union Station workshop indicated that the public could also learn more about the West Street Extension Project at the workshop. West Street Extension representatives were available to answer questions and share maps of the project alternatives.

4.1.6 Neighborhood and Small Group Meetings

On January 16, 2013, members of the Project team met with representatives of the NCRR, Norfolk Southern, and NCDOT Rail Division at the NCDOT Rail Capital Yard in Raleigh to discuss the Project. Attendees were given an update on the status of the Project and asked to present any concerns or issues that would assist in evaluating the project alternatives. The primary concern of the railroad representatives was that the Project might limit future track expansion within the Boylan Wye. Asked about additional issues (beyond future capacity) that would be needed to be considered evaluating alternatives, the following were mentioned by the meeting participants: location of bridge piers; ability of piers to withstand impact during derailment; speed (passenger and freight); interlockings (arrangements of signal apparatus that prevent conflicting movements through an arrangement of tracks such as junctions or crossings); accessibility to stations; and maintaining existing rail service during construction (passenger and freight). The meeting attendees agreed that although several of the issues raised were noteworthy, they did not believe at that time that any of them could not be resolved for either Project alternative.

A representative of the City (Eric J. Lamb) met with the Boylan Heights Neighborhood Association at their request on April 18, 2013, at Project Enlightenment in Downtown Raleigh to give an overview of the West Street Extension Project, and the NCRR study of adding a second main track on its rail corridor between W Cabarrus Street and the Tryon Road Extension in south Raleigh. Members of the neighborhood association expressed concerns about the potential closure of the at-grade crossing of railroad corridor on W Cabarrus Street as part of the West Street Extension project. The City provided an explanation of the benefits of the crossing closure, including improving safety and increasing rail capacity, but subsequently removed the closure of W Cabarrus Street from the Project.

4.1.7 Summary of Public Comments

Appendix C includes all public comments received during the March 6, 2013 public workshop. In general, the following issues and concerns were most commonly cited by the public in their comments:

- Preference for the "Road under Rail" alternative (40 comments compared to 3 supporting the "Road over Rail" alternative); reasons stated for this support include:
    - Less visual impact;

    - Better connectivity because intersection of S West Street and W Martin Street and intersection of S West Street and S W Cabarrus Street would remain open; and
    - Fewer property impacts
- Concerns about the impacts of the closure of the existing at-grade railroad crossing on W Cabarrus Street (e.g., additional travel time, sense of being "cut off" from the Warehouse District)
- Requests for pedestrian/bicycle access at W Cabarrus Street or, alternatively, W Davie Street
- Requests to "daylight" a "Road under Rail" option for improved safety

4.2 PUBLIC MEETING

The City will conduct a combined NEPA/design public meeting following public circulation of the EA document. During this meeting, the City will present the detailed designs and associated impacts for the two project alternatives. The attendees will be invited to provide oral or written comments regarding the Project.

4.3 AGENCY COORDINATION

4.3.1 Scoping Letter

During project initiation, the City provided "scoping" letters requesting input from the following federal, state and local agencies. Written comments were received and considered from agencies noted with an asterisk (*) during the preparation of this EA. These "scoping" letters, along with the agencies' initial concerns, are included in **Appendix A.**

- US Army Corps of Engineers
- US Fish and Wildlife Service – Eastern
- US Environmental Protection Agency – Region 4*
- NC Department of Administration State Environmental Review Clearinghouse, who provided the letter to the following agencies:
    - NC Department of Cultural State Historic Preservation Office*
    - NC Department of Environment and Natural Resources*
        - Division of Environmental Health
        - Division of Forest Services
        - Division of Water Quality*
        - NC Wildlife Resources Commission
        - Raleigh Regional Office

- NC Division of Emergency Management Floodplain Management Program

4.3.2 Cooperating Agencies

The Federal Highway Administration (FHWA) accepted the invitation of FRA to be a cooperating agency for the preparation of the EA for the Project.

APPENDIX A

SECTION A1

PROJECT SCOPING LETTERS

City of Raleigh
North Carolina

September 25, 2012

State Environmental Review Clearinghouse
1301 Mail Service Center
Raleigh, North Carolina 27699-1301

SUBJECT: Start of Study Letter for the proposed West Street Extension project: Extension of West Street on New Location from Cabarrus Street to Martin Street with Grade Separation at North Carolina Railroad / Norfolk Southern "H" Line, Raleigh, Wake County, State Transportation Improvement Program (STIP) Project U-5521

To Whom It May Concern:

The City of Raleigh (City), in cooperation with the Federal Railroad Administration (FRA) and the North Carolina Department of Transportation (NCDOT), has started project development, engineering, and National Environmental Policy Act (NEPA) studies for the proposed West Street Extension project. The City has been evaluating the extension of West Street across the Boylan railroad wye as far back as the 1960s. In addition to the need to provide better connectivity for pedestrians and vehicles across the wye, the recent proposed redevelopment of a property within the wye for use as a multimodal transit center (light and intercity rail, commuter busses, and high speed rail) necessitates better access to and from the wye area.

In 2010, the City prepared a feasibility study that considered connecting West Street to either West Street or South Saunders Street, both via bridges over the railroad tracks, or taking the road under the tracks. Although a West Street to South Saunders Street road-under-rail alternative was recommended by the study, the City Council later decided to move forward with a West Street to West Street alternative based on the substantial impacts to the community along South Saunders Street. Therefore, the City proposes to evaluate two alternatives in the West Street Extension NEPA document – road-over-rail and road-under-rail connecting West Street and West Street (see Figure 1). The project would also close the existing at-grade railroad crossing of Cabarrus Street.

Based on a preliminary evaluation, there are no streams, wetlands, or protected species in the highly urbanized project study area. A review of the Natural Heritage Program Database showed no federally listed species have been found within two miles of the project study area.

OFFICE OF TRANSPORTATION PLANNING
ONE EXCHANGE PLAZA, SUITE 727 • POST OFFICE BOX 590 • RALEIGH, NORTH CAROLINA 27602

Several historic resources listed in or previously determined eligible for the National Register of Historic Places (NRHP) are located within the West Street Extension project study area, as well as several state study list resources. Cultural resource studies for the project will involve an architectural reconnaissance study and intensive-level architectural evaluation (if required), as well as coordination with the North Carolina State Historic Preservation Office (NC-HPO). Investigations shall comply with the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, and the North Carolina Department of Transportation's current *Guidelines for Survey Reports for Historic Architectural Resources*. Pending agreement from the Office of State Archaeology, it is presumed no archaeological investigations will be required for the project due to its highly urbanized project study area.

The City anticipates that the document will be processed as an Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). If during the data collection phase of the project, significant impacts are encountered, an Environmental Impact Statement will be prepared, in accordance with NEPA. We would appreciate any information you might have that would be helpful in determining potential resources in the project study area. Also, please identify any permits or approvals that may be required by your agency.

The City requests that your agency respond by October 26, 2012. Your response should be mailed to:

Mr. Eric J. Lamb, PE
City of Raleigh Office of Transportation Planning
PO Box 590
Raleigh, North Carolina 27602

Should you have any questions concerning the proposed project, please call me at (919) 996-2161 or email me at eric.lamb@raleighnc.gov.

Sincerely,

Eric J. Lamb, PE
Manager, Office of Transportation Planning

Attachment

Cc: John Winkle, FRA
Eric Midkiff, PE, NCDOT Project Development and Environmental Analysis (PDEA)
Leza Mundt, AICP, NCDOT PDEA
Marc Hamel, NCDOT Rail Division
Kristina Solberg, PE, NCDOT Rail Division

City of Raleigh
North Carolina

September 25, 2012

Mr. Eric Alsmeyer
US Army Corps of Engineers
Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

SUBJECT: Start of Study Letter for the proposed West Street Extension project: Extension of West Street on New Location from Cabarrus Street to Martin Street with Grade Separation at North Carolina Railroad / Norfolk Southern "H" Line, Raleigh, Wake County, State Transportation Improvement Program (STIP) Project U-5521

Dear Mr. Alsmeyer:

The City of Raleigh (City), in cooperation with the Federal Railroad Administration (FRA) and the North Carolina Department of Transportation (NCDOT), has started project development, engineering, and National Environmental Policy Act (NEPA) studies for the proposed West Street Extension project. The City has been evaluating the extension of West Street across the Boylan railroad wye as far back as the 1960s. In addition to the need to provide better connectivity for pedestrians and vehicles across the wye, the recent proposed redevelopment of a property within the wye for use as a multimodal transit center (light and intercity rail, commuter busses, and high speed rail) necessitates better access to and from the wye area.

In 2010, the City prepared a feasibility study that considered connecting West Street to either West Street or South Saunders Street, both via bridges over the railroad tracks, or taking the road under the tracks. Although a West Street to South Saunders Street road-under-rail alternative was recommended by the study, the City Council later decided to move forward with a West Street to West Street alternative based on the substantial impacts to the community along South Saunders Street. Therefore, the City proposes to evaluate two alternatives in the West Street Extension NEPA document – road-over-rail and road-under-rail connecting West Street and West Street (see Figure 1). The project would also close the existing at-grade railroad crossing of Cabarrus Street.

Based on a preliminary evaluation, there are no streams, wetlands, or protected species in the highly urbanized project study area. A review of the Natural Heritage Program Database showed no federally listed species have been found within two miles of the project study area.

OFFICE OF TRANSPORTATION PLANNING
ONE EXCHANGE PLAZA, SUITE 727 • POST OFFICE BOX 590 • RALEIGH, NORTH CAROLINA 27602

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The City anticipates that the document will be processed as an Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). If during the data collection phase of the project, significant impacts are encountered, an Environmental Impact Statement will be prepared, in accordance with NEPA. We would appreciate any information you might have that would be helpful in determining potential resources in the project study area. Also, please identify any permits or approvals that may be required by your agency.

The City requests that your agency respond by October 26, 2012. Your response should be mailed to:

Mr. Eric J. Lamb, PE
City of Raleigh Office of Transportation Planning
PO Box 590
Raleigh, North Carolina 27602

Should you have any questions concerning the proposed project, please call me at (919) 996-2161 or email me at eric.lamb@raleighnc.gov.

Sincerely,

Eric J. Lamb, PE
Manager, Office of Transportation Planning

Attachment

Cc: John Winkle, FRA
Eric Midkiff, PE, NCDOT Project Development and Environmental Analysis (PDEA)
Leza Mundt, AICP, NCDOT PDEA
Marc Hamel, NCDOT Rail Division
Kristina Solberg, PE, NCDOT Rail Division

City of Raleigh
North Carolina

September 25, 2012

Mr. Gary Jordan
US Fish and Wildlife Service – Eastern
P.O. Box 33726
Raleigh, NC 27636-3726

SUBJECT: Start of Study Letter for the proposed West Street Extension project: Extension of West Street on New Location from Cabarrus Street to Martin Street with Grade Separation at North Carolina Railroad / Norfolk Southern "H" Line, Raleigh, Wake County, State Transportation Improvement Program (STIP) Project U-5521

Dear Mr. Jordan:

The City of Raleigh (City), in cooperation with the Federal Railroad Administration (FRA) and the North Carolina Department of Transportation (NCDOT), has started project development, engineering, and National Environmental Policy Act (NEPA) studies for the proposed West Street Extension project. The City has been evaluating the extension of West Street across the Boylan railroad wye as far back as the 1960s. In addition to the need to provide better connectivity for pedestrians and vehicles across the wye, the recent proposed redevelopment of a property within the wye for use as a multimodal transit center (light and intercity rail, commuter busses, and high speed rail) necessitates better access to and from the wye area.

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The City requests that your agency respond by October 26, 2012. Your response should be mailed to:

Mr. Eric J. Lamb, PE
City of Raleigh Office of Transportation Planning
PO Box 590
Raleigh, North Carolina 27602

Should you have any questions concerning the proposed project, please call me at (919) 996-2161 or email me at eric.lamb@raleighnc.gov.

Sincerely,

Eric J. Lamb, PE
Manager, Office of Transportation Planning

Attachment

Cc: John Winkle, FRA
Eric Midkiff, PE, NCDOT Project Development and Environmental Analysis (PDEA)
Leza Mundt, AICP, NCDOT PDEA
Marc Hamel, NCDOT Rail Division
Kristina Solberg, PE, NCDOT Rail Division

City of Raleigh
North Carolina

September 25, 2012

Mr. Chris Militischer
US Environmental Protection Agency - Region 4
61 Forsysth Street, SW
Atlanta Federal Center – 13th Floor, NPO
Atlanta, GA 30303

SUBJECT: Start of Study Letter for the proposed West Street Extension project: Extension of West Street on New Location from Cabarrus Street to Martin Street with Grade Separation at North Carolina Railroad / Norfolk Southern "H" Line, Raleigh, Wake County, State Transportation Improvement Program (STIP) Project U-5521

Dear Mr. Militischer:

The City of Raleigh (City), in cooperation with the Federal Railroad Administration (FRA) and the North Carolina Department of Transportation (NCDOT), has started project development, engineering, and National Environmental Policy Act (NEPA) studies for the proposed West Street Extension project. The City has been evaluating the extension of West Street across the Boylan railroad wye as far back as the 1960s. In addition to the need to provide better connectivity for pedestrians and vehicles across the wye, the recent proposed redevelopment of a property within the wye for use as a multimodal transit center (light and intercity rail, commuter busses, and high speed rail) necessitates better access to and from the wye area.

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The City requests that your agency respond by October 26, 2012. Your response should be mailed to:

Mr. Eric J. Lamb, PE
City of Raleigh Office of Transportation Planning
PO Box 590
Raleigh, North Carolina 27602

Should you have any questions concerning the proposed project, please call me at (919) 996-2161 or email me at eric.lamb@raleighnc.gov.

Sincerely,

Eric J. Lamb, PE
Manager, Office of Transportation Planning

Attachment

Cc: John Winkle, FRA
Eric Midkiff, PE, NCDOT Project Development and Environmental Analysis (PDEA)
Leza Mundt, AICP, NCDOT PDEA
Marc Hamel, NCDOT Rail Division
Kristina Solberg, PE, NCDOT Rail Division

Lamb, Eric

From: Chris Militscher <Militscher.Chris@epamail.epa.gov>
Sent: Monday, October 15, 2012 8:33 AM
To: Lamb, Eric
Subject: EPA Review of Scoping Notice for U-5521, Raleigh, Wake County

Mr. Lamb: EPA has reviewed the 9/25/12 Start of Study notice for the proposed West Street Extension project in Raleigh, Wake County. EPA has not identified any significant environmental issues. For consistency review with other NCDOT projects, EPA requests a copy of the Environmental Assessment for U-5521 when it becomes available. Thank you.

Christopher A. Militscher, REM, CHMM
USEPA Region 4 NEPA Program Office
AFC 13th floor
61 Forsyth Street, SW
Atlanta, GA 30303-8960

404-562-9512
919-856-4206

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

TO: Crystal Best
State Clearinghouse

FROM: Lyn Hardison
DEAO Permit Assistance & Project Review Coordinator

RE: 13-0105 Scoping
Proposed West Street Extension from Cabarrus Street to Martin Street – STIP U-5521
Wake County

Date: October 24, 2012

The Department of Environment and Natural Resources has reviewed the proposal for the referenced project. The comments are attached for the applicant's consideration..

The Department will provide more specific comments during the environmental review process.

Thank you for the opportunity to respond.

Attachment

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-707-8600 \ Internet: http://portal.ncdenr.org

State of North Carolina
Department of Environment and Natural Resources

Reviewing Office: Raleigh

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

Project Number: 13-0105 Due Date:

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
☐	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
☐	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
☐	Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
☐	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
☐	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
☐	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
☐	Permit to construct & operate Transportation Facility as per 15 A NCAC (2D.0800, 2Q.0601)	Application must be submitted at least 90 days prior to construction or modification of the source.	90 days
☒	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
☐	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950.		
☐	Complex Source Permit required under 15 A NCAC 2D.0800		
☒	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) At least 30 days before beginning activity. A fee of $65 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
☐	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.		(30 days)
☐	Mining Permit	On-site inspection usual. Surety bond filed with ENR Bond amount varies with type mine and number of acres of affected land. Any arc mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
☐	North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
☐	Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
☐	Oil Refining Facilities	N/A	90-120 days (N/A)
☐	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of $200.00 must accompany the application. An additional processing fee based on a percentage or the total project cost will be required upon completion.	30 days (60 days)

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
☐	Permit to drill exploratory oil or gas well	File surety bond of $5,000 with ENR running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations.	10 days N/A
☐	Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
☐	State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15-20 days N/A
☐	401 Water Quality Certification	N/A	60 days (130 days)
☐	CAMA Permit for MAJOR development	$250.00 fee must accompany application	55 days (150 days)
☐	CAMA Permit for MINOR development	$50.00 fee must accompany application	22 days (25 days)
☐	Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, NC 27611		
☐	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
X	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
☐	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
☐	Tar Pamlico or Neuse Riparian Buffer Rules required.		

* Other comments (attach additional pages as necessary, being certain to cite comment authority)

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

☐ **Asheville Regional Office**
2090 US Highway 70
Swannanoa, NC 28778
(828) 296-4500

☐ **Fayetteville Regional Office**
225 North Green Street, Suite 714
Fayetteville, NC 28301-5043
(910) 433-3300

☐ **Mooresville Regional Office**
610 East Center Avenue, Suite 301
Mooresville, NC 28115
(704) 663-1699

☐ **Raleigh Regional Office**
3800 Barrett Drive, Suite 101
Raleigh, NC 27609
(919) 791-4200

☐ **Washington Regional Office**
943 Washington Square Mall
Washington, NC 27889
(252) 946-6481

☐ **Wilmington Regional Office**
127 Cardinal Drive Extension
Wilmington, NC 28405
(910) 796-7215

☐ **Winston-Salem Regional Office**
585 Waughtown Street
Winston-Salem, NC 27107
(336) 771-5000

Department of Environment and Natural Resources
Project Review Form

Project Number: 13-0105 **County: Wake** **Date Received: 10/04/2012**

Due Date: 10/22/2012

Project Description: Scoping - Proposed project is for the West Street Extension from Cabarrus Street to Martin Street with grade separation at NCR/Norfolk Southern H Line. STIP U-5521.

This Project is being reviewed as indicated below:

Regional Office	Regional Office Area	In-House Review
___ Asheville	✓ Air	___ Marine Fisheries
___ Fayetteville	✓ Water	___ Coastal Management
___ Mooresville	___ Aquifer Protection	___ Water Resources Mgmt
✓ Raleigh	✓ Land Quality Engineer	___ Water Supply Section
___ Washington	✓ UST	___ Parks & Recreation
___ Wilmington		___ Water Quality
___ Winston-Salem		✓ Water Quality - DOT
		___ Wildlife
		✓ Wildlife – DOT Travis Wilson
		___ Waste Mgmt
		___ Air Quality

Manager Sign-Off/Region:	Date:	In-House Reviewer/Agency:

Response (check all applicable)

✓ No objection to project as proposed. ___ No Comment

___ Insufficient information to complete review ___ Other (specify or attach comments)

RECEIVED
OCT - 8 2012
DENR - WATER QUALITY
WETLANDS AND STORMWATER BRANCH

If you have any questions, please contact:
Lyn Hardison at lyn.hardison@ncdenr.gov or (252) 948-3842.

No streams / wetlands in Study area.

Rob Ridings, DWQ

SECTION A2

STATE HISTORIC PRESERVATION OFFICE

CORRESPONDENCE

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Pat McCrory, Governor
Susan W. Kluttz, Secretary
Kevin Cherry, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

January 11, 2013

Eric Lamb
City of Raleigh Office of Transportation Planning
PO Box 590
Raleigh, NC 27602

Re: Expansion of West Street on New Location from Cabarrus Street to Martin Street With Grade Separation at NC Railroad/Norfolk Southern "H" Line, Raleigh, U-5521, Wake County, CH 12-1829

Dear Mr. Lamb:

Thank you for your letter of November 26, 2012, concerning the above cited project and our letter of November 8, 2012, recommending archaeological investigations. We have reviewed the additional information accompanying your letter and offer the following comments.

Our comments regarding potential effects to archaeological site 31WA1446** and the recommendation for additional investigations were based on the area of potential effect (APE) delineated by your office. The site is located within that area and the potential for effects to additional resources related to the industrial and transportation history of Raleigh can also be expected to be located within your APE.

If the area of ground disturbing activities associated with the proposed project are confined to the area you have depicted as the "Proposed Archaeological APE", then we concur that archaeological investigations are not warranted. In future, you may want to delineate separate APEs at the outset of the project planning in order to avoid duplication of effort and misunderstandings.

The revised Area of Potential Effect (APE), as shown in your Attachment 1, appears to be appropriate. When available, we look forward to reviewing the results of the historic architectural survey report.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona M. Bartos

cc: Clearinghouse

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Pat McCrory, Governor
Susan W. Kluttz, Secretary
Kevin Cherry, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

March 18, 2013

Eric Lamb
Office of Transportation Planning
PO Box 590
Raleigh, NC 27601
eric.lamb@raleighnc.gov

Re: Draft Historic Architectural Resources Survey, West Street Extension from Cabarrus Street to Martin Street, Raleigh, U-5521, Wake County, CH 12-1829

Dear Mr. Lamb:

On February 28, 2013, Suzanne Unger Young from Michael Baker Engineering, Inc. transmitted the draft survey report prepared by Dovetail Cultural Resources for the City of Raleigh for the above project.

For the purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following properties are currently listed in, and remain eligible for listing in, the National Register of Historic Places under the criteria cited, and that the existing National Register boundaries remain appropriate:

- **Boylan Heights Historic District** (WA 0195), Criterion A for community planning and education, Criterion B for its association with Frank Ellington and J. Stanhope Wynne, and Criterion C for architecture.

We concur that the existing boundaries of the **Depot Historic District** (WA 0724), currently listed in the National Register, and the 2013 expansion of the historic district (see Mattson, Alexander, and Associates' Final Historic Architectural Resources Survey Report for the Raleigh Rail Union Station-Phase I and Track Improvements, P-5500, ER 12-0560) are eligible for listing in the National Register under Criterion A for industry, transportation, and commerce, and Criterion C for architecture. However, we believe that the buildings at **411 West Morgan Street** and **117 South West Street** (identified collectively in the report as Property #11) warrant additional research to determine if they are eligible for inclusion in a possible expansion of the Depot Historic District. The 1950 Sanborn maps show these buildings as the US Post Office, Morgan Street Branch and as a garage for the Coca-Cola Company respectively.

At this time, we believe that the **Old Fourth Ward Historic District** (WA 4082) is not eligible for listing in the National Register and additional research on this district is not recommended. Although the district was placed on the State Study List in 1989, the non-residential properties near the intersection of Cabarrus and West Streets were found ineligible in the 2013 Mattson Report. In 2010, a separate Study List Application for Rosengarten Park (generally along Saunders Street, between Lenoir and Cabarrus Streets) was submitted to our office. After review by staff, it was determined that this area lacked sufficient integrity, primarily as a result of numerous demolitions over the years. The integrity of the remaining portions of the Old Fourth Ward Historic District has also been severely compromised since it was placed on the Study List.

We recommend that additional research be conducted regarding the **Gas Station** (Property #8) at 520 West South Street. In May 2012, our office reviewed an architectural survey report prepared by Dovetail for NCDOT for the replacement of bridges along Capital Boulevard. At that time, we identified several oblong box form gas stations, including: Gibbon's Esso Service Station (WA 2887, built circa 1935) at 623 West Hillsborough Street, Wilmont Service Station (WA 2902, built circa 1940) at 3120 Hillsborough Street, the former service station at 501 West Morgan (WA 3008, built circa 1930), the service station at 630 Hillsborough Street (built circa 1952), the former service station at 600 West Peace Street (unknown date), and the service station at 2001 Wake Forest Road (built circa 1940). Based on the submitted photograph and the Google StreetView images—which do not show the existing bay doors—this gas station appears to retain as much or more integrity than the other previously identified stations.

We concur that, barring additional information to the contrary, the following properties are *not* eligible for listing in the National Register and that no additional study is recommended:

- **South Boylan Avenue Historic District** (WA 4185);
- **Commercial Building**, 320 West South Street;
- **Commercial Building**, 416 West South Street;
- **Commercial Building**, 518 West South Street;
- **Office Building**, 600 West Cabarrus;
- **Warehouse**, 414 Dupont Circle; and,
- **Commercial Building**, 100 South Harrington Street.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona M. Bartos

cc: Martha Lauer, Raleigh Historic Development Commission, martha.lauer@rhdc.org
Mary Pope Furr, NCDOT
Dovetail Cultural Resources

North Carolina Department of Cultural Resources
State Historic Preservation Office
Ramona M. Bartos, Administrator

Pat McCrory, Governor
Susan Kluttz, Secretary
Kevin Cherry, Deputy Secretary

Office of Archives and History
Division of Historical Resources

August 5, 2013

Suzanne Unger Young
Michael Baker Engineering, Inc.
8000 Regency Parkway, Suite 600
Cary, NC 27518

Re: West Street Extension Project, Historic Architectural Resources Survey, Raleigh, Wake County, CH 12-1829

Dear Ms. Young:

Thank you for your letter dated June 24, 2013, transmitting the above survey report prepared by Dovetail Cultural Resource Group.

For the purpose of compliance with Section 106 of the National Historic Preservation Act, we concur with the report's findings that the **U.S. Post Office, Morgan Street Station** and the **Capital Coca-Cola Bottling Company Garage** are each eligible for listing in the National Register of Historic Places as contributing resources of an expanded Depot Historic District. The proposed expansion of the district's National Register boundaries appears appropriate.

As you know, we previously concurred that the Boylan Heights Historic District and the existing Depot Historic District (including the expansion area generally between Harrington Street and the railroad tracks) remain eligible for listing in the National Register.

We also concur, that barring additional information to the contrary, that **Woodard's Gulf Service Station** is *not* eligible for listing in the National Register due to alterations to the site (most notably the addition of the canopy) and a loss of its historic integrity. The remaining properties within the project's area of potential effect are also *not* eligible for listing in the National Register.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or renee.gledhill-

earley@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

Ramona M. Bartos

cc:

Kerri Barile, Dovetail Cultural Resource Group	kbarile@dovetailcrg.com
Mary Pope Furr, NCDOT	mfurr@ncdot.gov
Ryan White, NCDOT/Rails	rlwhite@ncdot.gov
Martha Lauer, Raleigh HCD	martha.lauer@rhdc.org

North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office
Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary Susi H. Hamilton

Office of Archives and History
Deputy Secretary Kevin Cherry

February 24, 2017

William Kerr
Michael Baker International
8000 Regency Parkway, Suite 600
Cary, NC 27518

Re: Concurrence Form for Assessment of Effects, U-5521, Wake County, CH 12-1829

Dear Mr. Kerr:

Thank you for your email of January 29, 2017, submitting the effects signature page for the above project. I have signed the form and am forwarding back to you for the remaining signatures.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

Renee Gledhill-Earley
Environmental Review Coordinator

NCDOT STIP# U-5521 (Not in Federal Aid System) *County: Wake*

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Extension of West Street under the Boylan Railroad Wye between Raleigh Union Station Entry Drive and W Cabarrus Street with a grade separation of the North Carolina Railroad (NCRR) / Norfolk Southern (NS) "H" Line.

On January 25 2017, representatives of the North Carolina State Historic Preservation Office (NC-HPO) and City of Raleigh (COR) reviewed the subject project and agreed to the effects findings listed within the tables attached in this signature page.

Signed:

for Renee Gledhill-Earley ebe — 2.3.17

State Historic Preservation Officer — Date

This signed NC-HPO concurrence form and the attached table were subsequently provided to representatives from North Carolina Department of Transportation (NCDOT) and Federal Railroad Administration (FRA) for consideration, agreement and concurrence to these same findings.

Signed:

James F. Bridges — 2 Mar 2017

Representative, NCDOT — Date

Thomas A Nitchie — March 2, 2017

Federal Railroad Administration — Date

STIP U-5521: West Street Extension (W Martin Street to W Cabarrus Street)
Section 106 Effects Determination Summary (January 30, 2017)

Property and Status	Proposed Action / Alternative	Effect Determination	Comments
Depot Historic District (National Register, Criteria A and C)	Grade separation of S West Street and NCRR/ NS "H" Line and installation of a retaining wall on the east side of S West Street between the W Cabarrus Street and the NCRR/ NS "H" Line.	No Adverse Effect	The construction of the retaining wall will require the acquisition of 3,616 square feet of land from the Depot Historic District (see Figure 2). The wall will not adversely affect the characteristics that make the district eligible for listing.

FRA intends to use NC-HPO's concurrence as a basis of a "de minimis" finding pursuant to Section 4(f).

FRA Initials _____

APPENDIX B

HAZARDOUS MATERIAL REPORT SUMMARY

West Street Extension
Raleigh, NC 27601

Inquiry Number: 3413288.1s
September 19, 2012

EDR DataMap™ Area Study

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

RALEIGH, NC 27601
RALEIGH, NC 27601

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
LIENS 2	CERCLA Lien Information
CORRACTS	Corrective Action Report
RCRA-TSDF	RCRA - Treatment, Storage and Disposal
RCRA-LQG	RCRA - Large Quantity Generators
RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generator
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
DOT OPS	Incident and Accident Data
US BROWNFIELDS	A Listing of Brownfields Sites
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
LUCIS	Land Use Control Information System
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ODI	Open Dump Inventory
MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database

RAATS RCRA Administrative Action Tracking System
COAL ASH EPA Coal Combustion Residues Surface Impoundments List
SCRD DRYCLEANERS State Coalition for Remediation of Drycleaners Listing
US HIST CDL National Clandestine Laboratory Register
PCB TRANSFORMER PCB Transformer Registration Database
FEDERAL FACILITY Federal Facility Site Information listing
US FIN ASSUR Financial Assurance Information
EPA WATCH LIST EPA WATCH LIST
PRP Potentially Responsible Parties
2020 COR ACTION 2020 Corrective Action Program List
COAL ASH DOE Steam-Electric Plant Operation Data
FEMA UST Underground Storage Tank Listing

STATE AND LOCAL RECORDS

SWF/LF List of Solid Waste Facilities
OLI Old Landfill Inventory
UIC Underground Injection Wells Listing
SWRCY Recycling Center Listing
HIST LF Solid Waste Facility Listing
LAST Leaking Aboveground Storage Tanks
INST CONTROL No Further Action Sites With Land Use Restrictions Monitoring
VCP Responsible Party Voluntary Action Sites
DRYCLEANERS Drycleaning Sites
NPDES NPDES Facility Location Listing
COAL ASH Coal Ash Disposal Sites

TRIBAL RECORDS

INDIAN RESERV Indian Reservations
INDIAN ODI Report on the Status of Open Dumps on Indian Lands
INDIAN LUST Leaking Underground Storage Tanks on Indian Land
INDIAN UST Underground Storage Tanks on Indian Land
INDIAN VCP Voluntary Cleanup Priority Listing

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 12/27/2011 has revealed that there is 1

CERCLIS site within the searched area.

Site	Address	Map ID	Page
RALEIGH COAL GAS PLANT NO. 2	***W. CABARRUS ST***	***20***	***34***

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/15/2012 has revealed that there are 2 RCRA-SQG sites within the searched area.

Site	Address	Map ID	Page
CLANCY & THEYS	***516 W CABARRUS ST***	***17***	***26***
ROSE & SONS AUTO SERVICE INC	***410 W SOUTH ST***	***23***	***47***

RCRA-NonGen: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA-NonGen list, as provided by EDR, and dated 03/15/2012 has revealed that there are 2 RCRA-NonGen sites within the searched area.

Site	Address	Map ID	Page
HUNTER SERVICES	***409 W MARTIN ST***	***10***	***15***
RALEIGHPOLICE DEPT. COMPLAINT	520 W SOUTH STREET	21	37

US CDL: A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

A review of the US CDL list, as provided by EDR, and dated 03/16/2012 has revealed that there is 1 US CDL site within the searched area.

Site	Address	Map ID	Page
502 SOUTH WEST STREET	502 SOUTH WEST STREET	18	34

EXECUTIVE SUMMARY

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 10/23/2011 has revealed that there are 14 FINDS sites within the searched area.

Site	Address	Map ID	Page
READY MIXED CONCRETE	613 WEST HARGETT STREET	3	5
CURVEMAKERS INCORPORATED	612 WEST HARGETT STREET	3	7
SPRINT COMMUNICATIONS COMPANY	608 WEST HARGETT STREET	4	7
DILLON SUPPLY CO	216 SOUTH WEST STREET	8	14
BROWN ROOFING CO	631/633 WEST MARTIN STR	9	14
HUNTER SERVICES	***409 W MARTIN ST***	***10***	***15***
RAINBOW BAKERY	303 KINSEY STREET	13	21
PUBLIC SERVICE CO RALEIGH OPE	600 WEST CABARRUS STREE	16	25
CLANCY & THEYS	***516 W CABARRUS ST***	***17***	***26***
RALEIGH COAL GAS PLANT NO. 2	***W. CABARRUS ST***	***20***	***34***
RALEIGHPOLICE DEPT. COMPLAINT	520 W SOUTH STREET	21	41
M.W. WOODARD (FORMERLY)	530 WEST SOUTH STREET	21	41
SOUTH STREET SUPERMARKET	516 WEST SOUTH STREET	22	44
ROSE AND SONS AUTO SERVICE. IN	410 WEST SOUTH STREET	23	51

STATE AND LOCAL RECORDS

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Environment & Natural Resources' Inactive Hazardous Sites Program.

A review of the SHWS list, as provided by EDR, and dated 05/25/2012 has revealed that there are 3 SHWS sites within the searched area.

Site	Address	Map ID	Page
RALEIGH TTA-DILLON PARCEL A	102 S WEST ST	1	3
RALEIGH TTA-WILSON PARCEL	200 S WEST ST	7	10
CONTEMPORARY ART FOUNDATION.	***409 W. MARTIN STREET***	***10***	***16***

IMD: Incident Management Database.

A review of the IMD list, as provided by EDR, and dated 07/21/2006 has revealed that there are 6 IMD sites within the searched area.

Site	Address	Map ID	Page
EQUIPMENT DESIGN & SERVICES	***201 S. BOYLAN AVE***	***2***	***3***
DILLON SUPPLY COMPANY	***216 S. WEST STREET***	***8***	***10***

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
RAINBOW BAKERY	***303 KINSEY STREET***	***14***	***21***
CLANCY & THEYS	***516 W CABARRUS ST***	***17***	***26***
JOYNER FAMILY TRUST PROPERTY (	***520 W SOUTH ST***	***21***	***38***
ROSE & SONS AUTO SERVICE INC	***410 W SOUTH ST***	***23***	***47***

NC HSDS: The Hazardous Substance Disposal Sites list contains locations of uncontrolled and unregulated hazardous waste sites. The file contains sites on the national priority list as well as the state priority list. The data source is the North Carolina Center for Geographic Information and Analysis.

A review of the NC HSDS list, as provided by EDR, and dated 08/09/2011 has revealed that there is 1 NC HSDS site within the searched area.

Site	Address	Map ID	Page
RALEIGH COAL GAS PLANT NO. 2		15	24

LUST: The Leaking Underground Storage Tank Incidents Management Database contains an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environment, & Natural Resources' Incidents by Address.

A review of the LUST list, as provided by EDR, and dated 08/10/2012 has revealed that there are 10 LUST sites within the searched area.

Site	Address	Map ID	Page
EQUIPMENT DESIGN & SERVICES	***201 S. BOYLAN AVE***	***2***	***3***
Incident Phase: Closed Out			
CITY OF RALEIGH	422 W. HARGETT STREET	6	8
DILLON SUPPLY COMPANY	***216 S. WEST STREET***	***8***	***10***
Incident Phase: Response			
CONTEMPORARY ART FOUNDATION.	***409 W. MARTIN STREET***	***10***	***16***
PATTERSON HOLDINGS, LLC PROPER	302 S. WEST STREET	11	18
Incident Phase: Closed Out			
RAINBOW BAKERY	***303 KINSEY STREET***	***14***	***21***
Incident Phase: Closed Out			
CLANCY & THEYS	***516 W CABARRUS ST***	***17***	***26***
Incident Phase: Closed Out			
JOYNER FAMILY TRUST PROPERTY (	***520 W SOUTH ST***	***21***	***38***
Incident Phase: Response			
SOUTH STREET SUPERMARKET	***516 WEST SOUTH STREET***	***22***	***44***
ROSE & SONS AUTO SERVICE INC	***410 W SOUTH ST***	***23***	***47***
Incident Phase: Closed Out			

EXECUTIVE SUMMARY

LUST TRUST: This database contains information about claims against the State Trust Funds for reimbursements for expenses incurred while remediating Leaking USTs.

A review of the LUST TRUST list, as provided by EDR, and dated 07/16/2012 has revealed that there are 2 LUST TRUST sites within the searched area.

Site	Address	Map ID	Page
DILLON SUPPLY COMPANY	***216 S. WEST STREET***	***8***	***10***
CLANCY & THEYS	***516 W CABARRUS ST***	***17***	***26***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environment & Natural Resources' Petroleum Underground Storage Tank Database.

A review of the UST list, as provided by EDR, and dated 08/10/2012 has revealed that there are 11 UST sites within the searched area.

Site	Address	Map ID	Page
SOUTHERN EQUIPMENT CO., INC.	613 WEST HARGETT STREET	3	6
DILLON SUPPLY CO	216 SOUTH WEST STREET	8	13
BROWN ROOFING CO	631/633 W MARTIN STREET	9	14
HARTSFIELD AUTO SERVICE	SOUTH AVENUE	12	20
RAINBOW BAKERY	***303 KINSEY STREET***	***14***	***21***
PUBLIC SERV CO RALEIGH OPER CT	600 W CABARRUS ST	16	25
CLANCY & THEYS CONSTRUCTION CO	***516 WEST CABARRUS STREE***	***17***	***32***
CLANCEY & THEY	P.O. BOX 11008	19	34
M.W. WOODARD (FORMERLY)	530 WEST SOUTH STREET	21	41
SOUTH STREET SUPERMARKET	***516 WEST SOUTH STREET***	***22***	***44***
ROSE & SONS AUTO SERVICE INC	***410 W SOUTH ST***	***23***	***47***

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the Department of Environment, Health, & Natural Resources' Petroleum Aboveground Storage Tank Database.

A review of the AST list, as provided by EDR, and dated 06/21/2012 has revealed that there is 1 AST site within the searched area.

Site	Address	Map ID	Page
SMITH COAL & OIL CO INC	601 W HARGETT ST	5	8

BROWNFIELDS: A brownfield site is an abandoned, idled, or underused property where the threat of environmental contamination has hindered its redevelopment. All of the sites in the inventory are working toward a a brownfield agreement for cleanup and liabitliy control.

A review of the BROWNFIELDS list, as provided by EDR, and dated 09/30/2010 has revealed that there are 2 BROWNFIELDS sites within the searched area.

Site	Address	Map ID	Page
CONTEMPORARY ART MUSEUM	409 WEST MARTIN ST.	10	15
RALEIGH MGP	600 WEST CABARRUS STREE	16	24

EXECUTIVE SUMMARY

FINANCIAL ASSURANCE: A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

A review of the FINANCIAL ASSURANCE list, as provided by EDR, and dated 09/23/2011 has revealed that there is 1 FINANCIAL ASSURANCE site within the searched area.

Site	Address	Map ID	Page
CLANCY & THEYS CONSTRUCTION CO	***516 WEST CABARRUS STREE***	***17***	***32***

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

A review of the Manufactured Gas Plants list, as provided by EDR, has revealed that there is 1 Manufactured Gas Plants site within the searched area.

Site	Address	Map ID	Page
RALEIGH MGP NO. 2	600 WEST CABARRUS STREE	16	25

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	1
CERC-NFRAP	0
LIENS 2	0
CORRACTS	0
RCRA-TSDF	0
RCRA-LQG	0
RCRA-SQG	2
RCRA-CESQG	0
RCRA-NonGen	2
US ENG CONTROLS	0
US INST CONTROL	0
ERNS	0
HMIRS	0
DOT OPS	0
US CDL	1
US BROWNFIELDS	0
DOD	0
FUDS	0
LUCIS	0
CONSENT	0
ROD	0
UMTRA	0
DEBRIS REGION 9	0
ODI	0
MINES	0
TRIS	0
TSCA	0
FTTS	0
HIST FTTS	0
SSTS	0
ICIS	0
PADS	0
MLTS	0
RADINFO	0
FINDS	14
RAATS	0
COAL ASH EPA	0
SCRD DRYCLEANERS	0
US HIST CDL	0
PCB TRANSFORMER	0
FEDERAL FACILITY	0
US FIN ASSUR	0
EPA WATCH LIST	0
PRP	0

MAP FINDINGS SUMMARY

Database	Total Plotted
2020 COR ACTION	0
COAL ASH DOE	0
FEMA UST	0
STATE AND LOCAL RECORDS	
SHWS	3
IMD	6
NC HSDS	1
SWF/LF	0
OLI	0
UIC	0
SWRCY	0
HIST LF	0
LUST	10
LUST TRUST	2
UST	11
LAST	0
AST	1
INST CONTROL	0
VCP	0
DRYCLEANERS	0
BROWNFIELDS	2
NPDES	0
FINANCIAL ASSURANCE	1
COAL ASH	0
TRIBAL RECORDS	
INDIAN RESERV	0
INDIAN ODI	0
INDIAN LUST	0
INDIAN UST	0
INDIAN VCP	0
EDR PROPRIETARY RECORDS	
Manufactured Gas Plants	1

NOTES:

Sites may be listed in more than one database

1 **RALEIGH TTA-DILLON PARCEL A** **SHWS** **S106916921**
102 S WEST ST **N/A**
RALEIGH, NC

SHWS:

Facility ID:	NONCD0001125
Lat/Longitude:	35.779679 / -78.64614
Geolocation Method:	GEOCODING

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2 **EQUIPMENT DESIGN & SERVICES** **IMD** **S101573445**
201 S. BOYLAN AVE **LUST** **N/A**
RALEIGH, NC

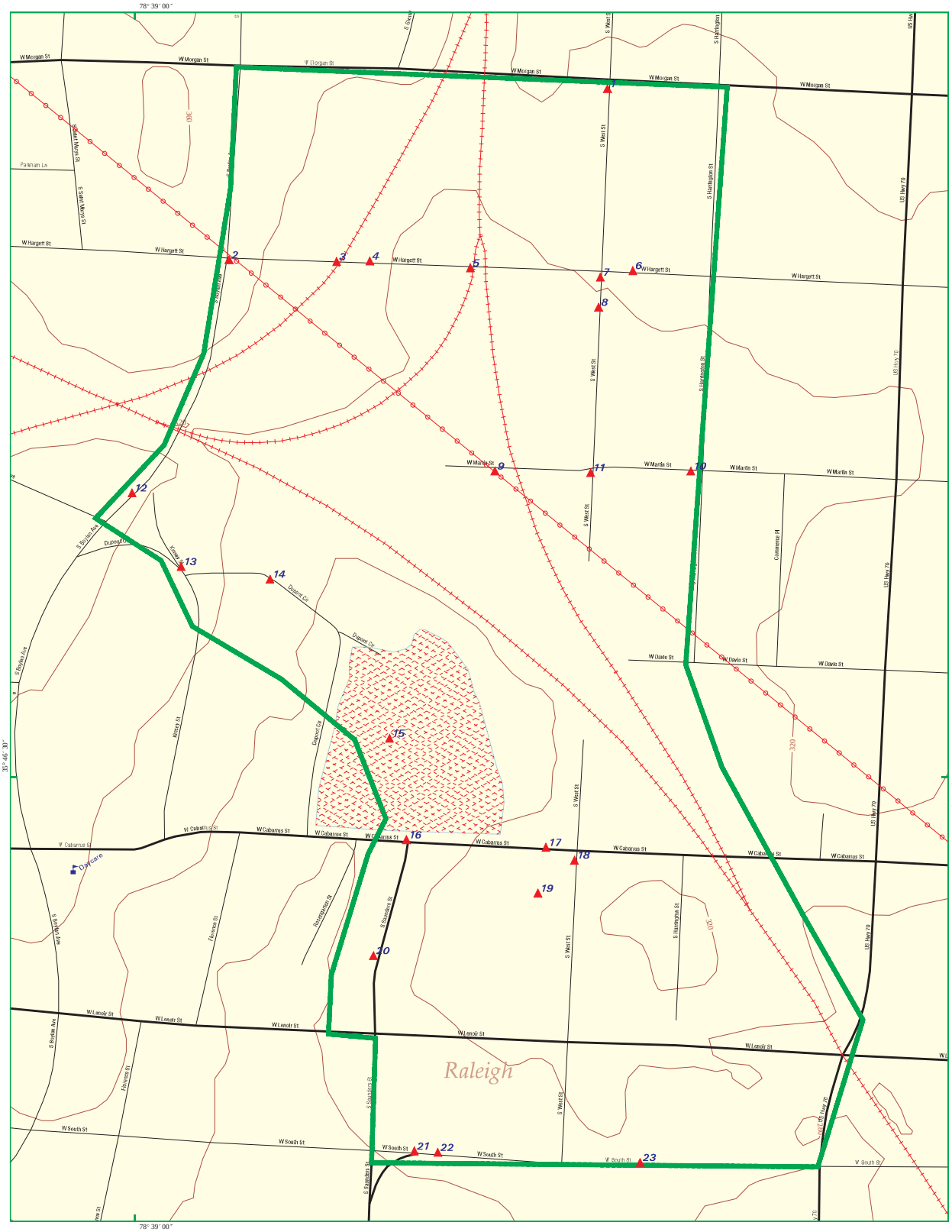
IMD:

Region:	RAL
Facility ID:	11678
Date Occurred:	10/24/1993
Submit Date:	2/8/1994
GW Contam:	No Groundwater Contamination detected
Soil Contam:	Yes
Incident Desc:	550 GAL. UST REMOVED; SOIL CONTAM. 1200 PPM.
Operator:	BRAD K. CUNE
Contact Phone:	2145081561
Owner Company:	NATIONS BANK
Operator Address:	901 MAIN ST.
Operator City:	DALLAS
Oper City,St,Zip:	DALLAS, TX
Ownership:	Private
Operation:	Commercial
Material:	#2 FUEL OIL
Qty Lost 1:	Not reported
Qty Recovered 1:	Not reported
Source:	Leak-underground
Type:	Gasoline/diesel
Location:	Facility
Setting:	Industrial
Risk Site:	Not reported
Site Priority:	30E
Priority Code:	E
Priority Update:	Not reported
Dem Contact:	WDP
Wells Affected:	Not reported
Num Affected:	0
Wells Contam:	Not reported
Sampled By:	Not reported
Samples Include:	Not reported
7.5 Min Quad:	Not reported
5 Min Quad:	Not reported
Latitude:	35.77638888
Longitude:	-78.65222222
Latitude Number:	354635
Longitude Number:	783908
Latitude Decimal:	35.7763888888889
Longitude Decimal:	78.6522222222222
GPS:	NOD
Agency:	DWM
Facility ID:	11678
Last Modified:	3/14/1995
Incident Phase:	Closed Out
NOV Issued:	Not reported

EQUIPMENT DESIGN & SERVICES (Continued) **S101573445**

NORR Issued: Not reported
45 Day Report: Not reported
Public Meeting Held: Not reported
Corrective Action Planned: Not reported
SOC Sighned: Not reported
Reclassification Report: Not reported
RS Designation: Not reported
Closure Request Date: Not reported
Close-out Report: 3/8/1995

LUST:
Facility ID: Not reported
UST Number: RA-1911
Incident Number: 11678
Contamination Type: Soil
Source Type: Leak-underground
Product Type: PETROLEUM
Date Reported: 10/15/1993
Date Occur: 10/24/1993
Cleanup: Not reported
Closure Request: Not reported
Close Out: 03/08/1995
Level Of Soil Cleanup Achieved: Not reported
Tank Regulated Status: Non Regulated
Of Supply Wells: 0
Commercial/NonCommercial UST Site: NON COMMERCIAL
Risk Classification: Not reported
Risk Class Based On Review: L
Corrective Action Plan Type: Not reported
NOV Issue Date: Not reported
NORR Issue Date: Not reported
Site Priority: 0
Phase Of LSA Req: Not reported
Site Risk Reason: Not reported
Land Use: Not reported
MTBE: No
MTBE1: Unknown
Flag: No
Flag1: No
LUR Filed: Not reported
Release Detection: 0
Current Status: File Located in Archives
RBCA GW: Not reported
PETOPT: 4
RPL: False
CD Num: 27
Reel Num: 60
RPOW: False
RPOP: False
Error Flag: 0
Error Code: N
Valid: False
Lat/Long: 354635 783908
Lat/Long Decimal: 0 0
Testlat: Not reported
Regional Officer Project Mgr: WDP



EDR Environmental Data Resources Inc

EDR DataMap® - Area Study

West Street Extension

Raleigh, NC

- Listed Sites
- Earthquake Epicenters (Richter 5 or greater)
- Search Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Pipelines
- Powerlines
- Fault Lines
- Water
- Superfund Sites
- Haz. Sub. Disp. Sites
- Federal DOD Sites
- Indian Reservations BIA

N

0 1/32 1/16

Scale in Miles

3413288.1s - 19 Sep 12

APPENDIX C

PUBLIC INVOLVEMENT

City of Raleigh
North Carolina

February 27, 2013

SUBJECT: Public Workshop for the Proposed West Street Extension Project

Dear Property Owner:

You are invited to attend a public workshop for the Proposed West Street Extension Project. You are receiving this invitation because you own property in the City of Raleigh located within the project study area. Please feel free to share this information with your neighbors. If you rent out this property, please share this information with your tenants.

West Street Extension Project Public Workshop
(in coordination with the Raleigh Union Station Public Workshop)
Wednesday, March 6, 2013
6:00 p.m. to 8:00 p.m.
Meymandi Concert Hall Lobby at the Progress Energy Center for the Performing Arts
2 East South Street, Raleigh, NC 27601

The City of Raleigh is completing National Environmental Policy Act (NEPA) studies for the proposed West Street Extension project in cooperation with the Federal Railroad Administration and the North Carolina Department of Transportation (NCDOT). In addition to the need to provide better connectivity for pedestrians and vehicles across the wye, the future Raleigh Union Station multimodal transit center necessitates better access to and from the wye area. The City is currently evaluating two alternatives in the West Street Extension NEPA document – road-over-rail and road-under-rail connecting West Street and West Street. The project would also close the existing at-grade railroad crossing of Cabarrus Street.

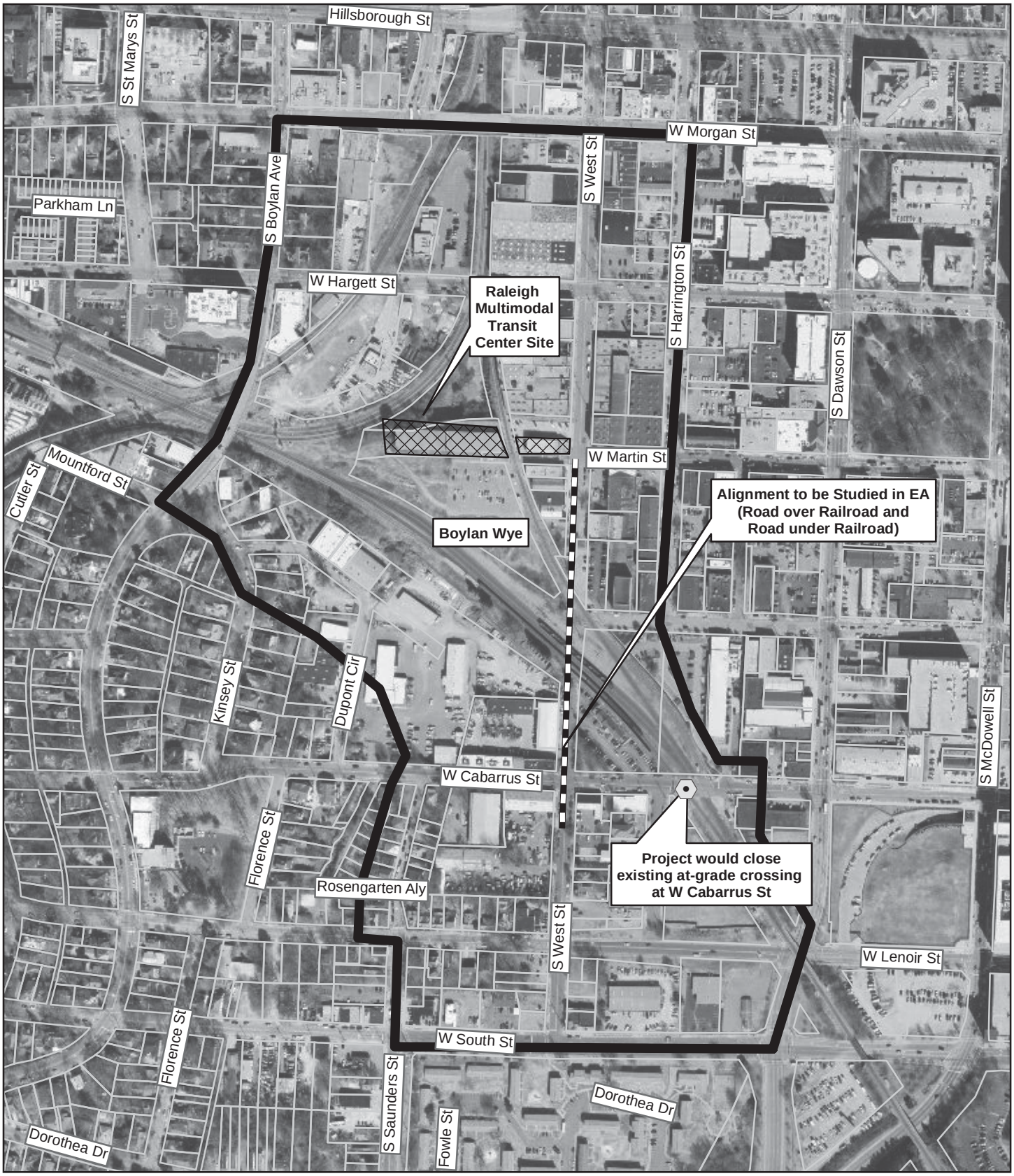
To learn more, please stop by the public workshop anytime between 6:00 p.m. and 8:00 p.m. The workshop will be informal "open house" style, with project representatives available to answer questions and share maps of the project alternatives. In coordination with this event, the NCDOT Rail Division and the City of Raleigh will also be presenting conceptual diagrams and plans for the future Raleigh Union Station. Public comments provided at the workshop will be used to advance the design of the station.

Should you have any questions in the interim, please call me at (919) 996-2161 or email me at eric.lamb@raleighnc.gov.

Sincerely,

Eric J. Lamb, PE
Manager, Office of Transportation Planning

OFFICE OF TRANSPORTATION PLANNING
ONE EXCHANGE PLAZA, SUITE 727 • POST OFFICE BOX 590 • RALEIGH, NORTH CAROLINA 27602



City of Raleigh - West Street Extension

Environmental Assessment Study Area

Wake County Parcel Data

500 250 0 500 Feet

N

Revised: January 16, 2013

West Street Extension Public Comment Form

Your opinion is important to us! Please use this form to provide comments on the proposed extension of West Street across the Boylan Railroad "Wye" in downtown Raleigh.

Please tell us about yourself. Note that the information you provide is subject to state and federal information laws. Only your zip code is required; however, providing your contact information will allow us to better respond to any questions or concerns you raise. **PLEASE PRINT**

First Name: MARC Last Name: HOECKER Company/Organization: NS

Street Address: ~~4115 Stevens~~ City: NORFOLK State: VA Zip:* 23518

* *Required Information* 3 Commercial Pl. (757.629.2894)

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☐ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

↑ NS WILL COMMENT ON THESE ALTERNATIVES.

2. Other comments:

GENERAL - RE: STATION

Don't underestimate the importance of good signage, i.e., the dynamic signage that synchronizes what a customer sees in the station with what is going on on the platform. For example, if I'm standing on the west end of the platform next to a parked passenger train, how do I know what train that is.

Great stations in Europe, Japan, and the few in the U.S. do this very well, and you should use these as examples. The flow of people through the facility, knowing where they are, where they need to be, and where on the platform they should stand is essential to station efficiency and convenience On Time Performance.

Signage needs to be an important input on the design process — early — and not an afterthought.

GOOD SESSION. GOOD PRESENTATION. WELL DONE.

M.

Additional space for your comments is provided on the other side

West Street Extension Public Comment Form

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First Name: Dan Last Name: Meyer Company/Organization: _____

Street Address: 507 S Saunders St. City: Raleigh State: NC Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

- Please keep E/W access open on Cabarrus St.
- I like the project. Good work y'all.

Additional space for your comments is provided on the other side

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First Name: George Last Name: Adler Company/Organization: (Local resident)

Street Address: 305 Calvin Rd City: Raleigh State: NC Zip:* 27605

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Going under the rail seems the prefered optim. It looks more compatible with the City's vision for the train station. However, the stretch of street that goes below grade must be well lit and attractive so as not to be intimidating for pedestrians.

Please put me on an email list to keep me informed: george.adler@raleighnc.gov.

Thank you.

Additional space for your comments is provided on the other side

West Street Extension Public Comment Form

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First Name: Robert Last Name: Blackman Company/Organization: Citizen

Street Address: 519 W Lenoir St City: Raleigh State: NC Zip:* 27601

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

I question the safety of pedestrians walking under the train due to the Cabarrus St. Closing. Lots of Depot/Warehouse district patrons walk over Cabarrus St. from Boylan Heights / Rosengarten area.

Could we put some sort of pedestrian bridge over Cabarrus St. or nearby.

South St should be 2 way to ease congestion on Lenoir St.

Thanks,

Additional space for your comments is provided on the other side

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First Name: Brad Last Name: Murray Company/Organization: Boylan Heights Resident
Street Address: 619 W. Lenoir City: Raleigh State: NC Zip:* 27601

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Road over rail may be an eyesore to current residents as well as effect property values in surrounding neighborhoods

Traffic pattern needs to be increased on south st. to accomodate the increase in traffic flow from Lake Wheeler

Road under rail may cause safety risk to pedestrians. Walkers may not feel safe to go under ground just to walk to a restaurant and this is the appeal of living downtown.

Could we propose a pedistrian bridge over the Cabarrus St. where the street is planned to be closed. It may bring up construction + bring more business to the depot area from Boylan Heights Residents

Additional space for your comments is provided on the other side

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First Name: MARY Last Name: LYDA Company/Organization: HOMEOWNER

Street Address: 523 W. LENOIR City: RALEIGH State: NC Zip:* 27601

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

* (1) PEDESTRIAN BRIDGE OVER CABARRUS - DON'T CLOSE OFF THE NEW RESTAURANTS WE WALK TO AND SUPPORT

(2) 2 WAY ON SOUTH STREET - CRITICAL

(3) CONSIDER PEDESTRIAN/BIKE OVER THE TRACKS WITH CARS & BUSES UNDER THE RAIL - SAFETY

(4) ROAD OVER RAIL WILL NOT BE AESTHETICALLY APPEALING TO OUR DOWNTOWN RAUIGHT

(5) WARD 4 IS [illegible] - DON'T CUT US OFF FROM WALKIN6.

Additional space for your comments is provided on the other side

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First Name: Jean Last Name: Schnaar Company/Organization: Citizen

Street Address: 710 Independence Place City: Ral State: ___ Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

- ☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or
- ☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

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First Name: PAUL Last Name: Leone Company/Organization: _____

Street Address: 1324 Mayfield City: Raleigh State: NC Zip:* 27606

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Road Under Rail is much less disruptive to the overall area & is more integrated & seamless of design. The initial cost may be higher, but the steady-state cost should be significantly lower when factoring in maintenance, etc.

Additional space for your comments is provided on the other side

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First Name: Josh Last Name: Maclow Company/Organization: _____

Street Address: 728 S Boylan City: Raleigh State: NC Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

I think the under option promotes more connectivity and preserves the city skyline better.

Additional space for your comments is provided on the other side

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First Name: Ryan Last Name: Smith Company/Organization: ______

Street Address: 512 S. Saunders St City: Raleigh State: NC Zip:* 27603

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

I prefer the road under rail concept because it helps maintain some connectivity for Cabarrus street to downtown via the underpass. If a bridge is used, pedestrian access from Cabarrus must have a way to get to the warehouse district.

Additional space for your comments is provided on the other side

West Street Extension Public Comment Form

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First Name: Andrew Last Name: Stewart Company/Organization: Empire Properties

Street Address: 711 S Bloodworth City: Raleigh State: NC Zip:* 27601

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Seems to me that the "over" scenario misses the point of connectivity of West to Cabarrus & Martin. The "under" scenario preserves connectivity to downtown as much as possible. Seems highly preferable to me

Additional space for your comments is provided on the other side

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First Name: CHRIS Last Name: ANDERSON Company/Organization: _____

Street Address: 1249 N BLOUNT ST City: RALEIGH State: NC Zip:* 27604

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

I THINK LEAVING THE MARTIN & WEST AND CABARRUS & WEST INTERSECTIONS OPEN IS IMPORTANT TO THE VITALITY OF THE SURROUNDING NEIGHBORHOODS & BUSINESSES

Additional space for your comments is provided on the other side

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First Name: Matthew Last Name: Staton Company/Organization: _____

Street Address: 620 W. Cabarrus City: Raleigh State: NC Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

- Concerned about vehicle + pedestrian connectivity from Cabarrus
- please look at pedestrian exit [redacted] @ Davie st.
- [redacted] want more info on Cabarrus closing understand safety concerns but don't see heightened risk with this project + would prefer to retain connectivity.
- Comp. plan calls out flyover as > bad idea, AND I AGREE!
-

Additional space for your comments is provided on the other side

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First Name: ROGER Last Name: LEESON Company/Organization: BBH DESIGN

Street Address: BROWNEGG DR. City: RAL State: NC Zip:*

* *Required Information*

rleeson@bbhdesign.com

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☒ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☐ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

OVERPASS NEEDS TO BE A VISUAL & PHYSICAL AMENITY - THINK "HIGHLINE" IN NYC.

Additional space for your comments is provided on the other side

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First Name: Cindy Last Name: Camarda Company/Organization: _____

Street Address: _____ City: _____ State: ____ Zip:* _____

* *Required Information*

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☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Support road under
less visual impact
of intrusion onto
landscape

Additional space for your comments is provided on the other side

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First Name: JENN Last Name: PEELER Company/Organization: PNBE & HILBURN / NCSU student

Street Address: 857 TILTON HILL DR City: RALEIGH State: NC Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

any road plan that facilitates rail station access from south & west to support growth around Dorothea Dix park is my preferred plan. Keep up the good work!

Additional space for your comments is provided on the other side

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First Name: Erin Last Name: Wynia Company/Organization: Rosengarten Park HOA

Street Address: 504 S. Saunders St City: Raleigh State: NC Zip:* 27603

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

This option has less impact on surrounding neighbors, from aesthetics to possible condemnation of nearby property. Because either option cuts off our typical route to the city's north-south through streets (we take Cabarrus to Dawson/McDowell now, but couldn't under either of these proposals), having the ability to access West St. from Cabarrus by vehicle is critical.

Additional space for your comments is provided on the other side

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First Name: Anna Last Name: Lynch Company/Organization: Stroud Pence

Street Address: 506 S. Saunders St. City: Raleigh State: NC Zip:* 27603

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Need to keep a pedestrian bridge over Cabarrus. Currently cutting our access to the Depot.

Additional space for your comments is provided on the other side

West Street Extension Public Comment Form

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Please tell us about yourself. Note that the information you provide is subject to state and federal information laws. Only your zip code is required; however, providing your contact information will allow us to better respond to any questions or concerns you raise. **PLEASE PRINT**

First Name: CLIF. Last Name: LAVENHOUSE Company/Organization: SELF

Street Address: 2539 CRESCENT FOREST PL City: RALEIGH State: NC Zip:* 27610

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

ANSWERS TO PARKING AT STATION, AS WELL AS TTA PLANS FOR TRANSIT FROM POOLE RD DEPOT. DETAILS AS SOON AS POSSIBLE.

WALKING COMMUNITY NEEDS VIEW TO HOTELS AND ENTERTAINMENT. VIA BUS PAID AND FREE.

REMEMBER: IN by TRAIN OUT by PLANE.
IN by PLANE OUT by TRAIN > CONNECTION

Additional space for your comments is provided on the other side

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First Name: Erik Last Name: Dyke Company/Organization: _____

Street Address: 901 Canterbury City: Raleigh State: NC Zip:* 27607

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☑ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☐ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Why preserve old "Viaduct" Building?

Why not start with new construction?

Additional space for your comments is provided on the other side

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First Name: Michael Last Name: Mahaffey Company/Organization: resident

Street Address: 906 W. South City: Raleigh State: NC Zip:* 27603

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

strongly prefer for tunnel to preserve visual flow of station and adjacent properties. thirty foot bridge would be an eyesore.

Additional space for your comments is provided on the other side

West Street Extension Public Comment Form

Your opinion is important to us! Please use this form to provide comments on the proposed extension of West Street across the Boylan Railroad "Wye" in downtown Raleigh.

Please tell us about yourself. Note that the information you provide is subject to state and federal information laws. Only your zip code is required; however, providing your contact information will allow us to better respond to any questions or concerns you raise. **PLEASE PRINT**

First Name: Julie Last Name: Murphy Company/Organization: Natural Learning Initiative

Street Address: 5544 Kaplan Dr. City: Raleigh State: NC Zip:* 27606

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Either one - prioritize pedestrians! place broad, comfortable sidewalks along the bridge or underpass - as separated from traffic as possible. Please don't create a bridge/underpass with a screwny 4' wide sidewalk on one side.

Additional space for your comments is provided on the other side

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First Name: STEVE Last Name: BRYAN Company/Organization: BOYLAN HEIGHTS ASSOCIATION

Street Address: 406 KINSEY STREET City: RALEIGH State: ___ Zip:* 27603

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

MULTIPLE FACTORS TO MY PREFERENCE
- VISUAL ASPECTS FROM NEARBY NEIGHBORHOODS
- LESS IMPACT TO NEARBY BUSINESSES
- KEEPS INTERSECTIONS OPEN AT CABARRUS* & MARTIN

* VERY IMPORTANT W/ CLOSURE OF CABARRUS AT RAIL CROSSING

Additional space for your comments is provided on the other side

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First Name: _____ Last Name: _____ Company/Organization: _____

Street Address: _____ City: _____ State: ____ Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

The bridge is a terrible idea. It creates a blockage between the warehouse district and neighborhoods South of the tracks.

Additional space for your comments is provided on the other side

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First Name: MARTIN Last Name: STANKUS Company/Organization: _____

Street Address: 934 N. BOYLAN City: RALEIGH State: ___ Zip:* 27605

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

- Rail over interrupts view to station from Martin St
- Prevents Martin St. connection under tracks to parking
- Retaining wall creates poor space dynamics
- Even though more expensive, rail under wins!

Additional space for your comments is provided on the other side

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First Name: Joseph Last Name: Huberman Company/Organization: _____

Street Address: Boylan Heights City: _____ State: ____ Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

→ ☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

(1) Access to Davy St from Tunnel for People + Bikes

(2) Access over or under CABARRUS ST CROSSING — Do not close for People & Bikes

Additional space for your comments is provided on the other side

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First Name: Ruth Last Name: Bromer Company/Organization: _____

Street Address: 904 Dorothea Dr City: Raleigh State: NC Zip:* 27603

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

The road going under has the least impact on the roads. Don't eliminate access from Cabarrus to West.
Have a pederstrian / bike crossing over Cabarrus St. Don't close it off. Pedestrians from Boylan Heights will no longer have a convenient way to get to the Warehouse District restaurants, and

Additional space for your comments is provided on the other side

RALEIGH UNION STATION PUBLIC SESSION 03.06.2013

triangle transit

name: Joseph Huberman

address:

email: Joseph@TREKLITE.com

phone:

COMMENTS:

DO NOT CLOSE CABARRUS CROSSING FOR BIKES AND PEDESTRIANS

CLEARSCAPES
ARCHITECTURE + ART

Comments may also be emailed to unionstation@clearscapes.com

West St

~~RALEIGH UNION STATION PUBLIC~~ SESSION

03.06.2013

name: Carter Worthy

address:

email: carter@carterworthy

phone:

COMMENTS:

Dupont Circle prop. owner

prefer West St UNDER

CLEARSCAPES
ARCHITECTURE + ART

Comments may also be emailed to unionstation@clearscapes.com

RALEIGH UNION STATION PUBLIC SESSION

03.06.2013

triangle transit

name: Ruth Broomer
address: 904 Dorothea Dr
Raleigh, NC 27603

email: ruth@treklite.com
phone:

COMMENTS:

Don't cut Boylan Heights off. Keep pedestrian access available for us.
At Cabarrus st + Davy st

CLEARSCAPES
ARCHITECTURE + ART

Comments may also be emailed to unionstation@clearscapes.com

West Street Extension Public Comment Form

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First Name: _____ Last Name: _____ Company/Organization: _____

Street Address: _____ City: _____ State: ____ Zip:* 27615

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

FAVOR UNDERPASS SINCE IT WILL BE LESS DETRIMENTAL TO THE SKYLINE
BUT
DECISION SHOULD BE MADE CONSIDERING MANY FACTORS PRIMARILY COSTS, NOT ONLY CONSTRUCTION BUT MAINTENANCE & LIGHTING FOR EXAMPLE. ALSO IF COSTS CAN BE DEFERRED TO THE RAILS INSTEAD OF THE CITY THAT IS PREFERRED

ENVIRONMENTAL IMPACT, REDUCING OR AVOIDING ANY OTHER STREET CLOSURES IS ALSO IMPORTANT

Additional space for your comments is provided on the other side

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First Name: Joel Last Name: Adams Company/Organization: Retired

Street Address: 301 Fayetteville St. #3108 City: Raleigh State: NC Zip:* 27601

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

(1) The road under rail would be more aesthetically pleasing - would not be obtrusive/as a long high bridge would be.

(2) Also, the road under rail still allows access from West St. to Cabarrus St., which the road over rail does not allow.

(3) The road over rail would place the beginning rise of the bridge squarely in front of the east side of Union Station, where, according to newspaper reports, will be an expansive glass wall providing views of the downtown skyline. It seems this bridge would interfere.

PS I ride the trains a lot, as well as city buses. I live downtown (PNC Plaza Residences) and can hardly wait to see this project & Union Station completed. How may I help?

Additional space for your comments is provided on the other side

Joel Adams

3/6/13

West Street Extension Public Comment Form

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First Name: William Last Name: Duke Company/Organization: _____

Street Address: 5308 Deep Valley Run City: Raleigh State: NC Zip:* 27606

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street), or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

I support the ROAD under rail plan. The bridge would prevent traffic from access to west street from CABARRUS. Any traffic going EAST on CABARRUS would have to turn on SAUNDERS or Florence to continue down town. Property owners on the block of west street between Lenoir and CABARRUS would lose STREET access dramatically affecting property values.

Additional space for your comments is provided on the other side

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First Name: Sara Lynn Last Name: Wood Company/Organization: _____

Street Address: 509 Cutler St, #B City: Raleigh State: NC Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Keep Cabarrus St. open to vehicular, bicycle, + foot traffic.

Additional space for your comments is provided on the other side

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First Name: DONALD Last Name: PALMER Company/Organization: _____

Street Address: 414 S. BOYLAN City: RALEIGH State: NC Zip:* 27603

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☐ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Keep Cabarrus open (to vehicles + pedestrians, preferably, but at least to pedestrians + cyclists).

Additional space for your comments is provided on the other side

West Street Extension Public Comment Form

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First Name: Thomas Last Name: Bennager Company/Organization: _____

Street Address: 914 W. South St City: Raleigh State: NC Zip:* 27603

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

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First Name: Leslie Last Name: Kellenberger Company/Organization: _____

Street Address: 610 S. BOYLAN AVE City: RALEIGH State: NC Zip:* 27603

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

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First Name: Dominic Last Name: Ireland Company/Organization: Rosengarten Park

Street Address: 505 Rosengarten Alley City: Raleigh State: NC Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Our neighborhood—though very excited about the ease and access of transportation to other cities and to far away places that building a centralized station will provide — any impact on movement, living conditions and lifestyle within the downtown is of higher priority. Any project such as this that will destroy, hamper, inconvenience or make our ability to enjoy the downtown living lifestyle will not only be a detriment to those that have chosen to make downtown Raleigh their home but it will also make it a less desirable place for future residents.

The closing of Cabarrus access to foot and bike traffic between the Southwest neighborhoods and businesses should not and should never be a plan option or consideration. Vehicle traffic is somewhat understandable but it is absurd to create a method to get folks from here to far away and from far to here while at the same time cutting off access to the very downtown we are accustomed to walking freely about. An option to walk 3 blocks out of the way in the direction of preplanned Raleigh "Project" is not a solution.

The Road over option is as bad an idea as closing Cabarrus completely due to it forcing more traffic, both foot + vehicle, south even further.

Additional space for your comments is provided on the other side

Cabarrus borders the Raleigh Amphitheater to the North is the beginning of both Rosengarten Alley and Sander of Rosengarten Park and splits Boylan Heights in half. To say it is not the middle Road and access Road to Downtown and directly to Fayetteville St. The Convention Center and points to the North and Beyond including the R-Line would be to Pull a fast one on the neighbors that already live here. An overpass Road and a cut off of Cabarrus to forces these established neighborhoods to travel South first to go North or East to enjoy downtown all for the sake of a transportation depot is ludicrous seems to be an unprofessional and uncaring move Lets hope decisions are made with the current residents in mind not big business.

Please place this form in the comment box at the workshop, or return by mail by April 5, 2013. To send by mail, fold where indicated and seal with tape. Be sure to add a stamp.

(Fold here)

(Fold here)

U.S. Postage Required

West Street Extension Comments
c/o Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, NC 27518

West Street Extension Public Comment Form

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First Name: Debra Last Name: Freland Company/Organization: _____

Street Address: 505 Rosengarten City: Raleigh State: ____ Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

My neighbors and I are concerned that the closing of the at-grade crossing on Cabarrus to all non-rail traffic will negatively effect our connectivity to downtown and the Warehouse District. We hope that some sort of pedestrian and bicycle friendly solution, such as a bridge or tunnell on Cabarrus, could mitigate the negative effect the closing will have on the neighborhoods to the west of downtown.

We also Strongly Support the Road Under Rail option for the West Street extension. We feel that this option offers the best connectivity with fewer impacts to adjacent properties. It is especially important to allow access to West Street from Cabarrus due to the closure of the at-grade crossing. We are also concerned that the Road Over Rail option will result in more traffic noise for residents in close proximity.

Additional space for your comments is provided on the other side

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First Name: Jimmy Last Name: Creech Company/Organization: _____

Street Address: 412 S. Boylan Ave. City: Raleigh State: NC Zip:* 27603-1910

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

- ☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or
- ☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

Please Keep Cabarrus Stree open for vehicular and pedestrian traffic.

Thank you!

Jimmy Creech

Additional space for your comments is provided on the other side

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First Name: Sandra Last Name: Gisler Company/Organization: Boylan Heights

Street Address: 805 W Lenoir St. City: Raleigh State: NC Zip:* 27603

* *Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☒ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

- The underpass needs safe, wide pedestrian and bicycle facilities on both sides of the road.
- The underpass needs to be designed with as much daylight as possible, and with good lighting at night, and needs to feel "safe". (CPTED principles)
- The underpass needs to provide direct access to Davie Street with a perpendicular ramp, so that pedestrians going from Cabarrus to Davie don't need a long detour.

Additional space for your comments is provided on the other side

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First Name: SARA Last Name: GILSLER Company/Organization: _____

Street Address: 805 W. VANOIR ST. City: RALEIGH State: NC Zip:* 27603

** Required Information*

1. Alternative Preference: Based upon the designs presented at the workshop, which do you prefer?

☐ ROAD OVER RAIL (a bridge over the railroad corridor on West Street); or

☑ ROAD UNDER RAIL (an underpass of the railroad corridor on West Street).

2. Other comments:

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HISTORIC BOYLAN HEIGHTS

Raleigh, North Carolina

March 23, 2013

West Street Extension Comments
c/o Michael Baker Engineering
8000 Regency Parkway, Suite 600
Cary, NC 27518

COMMENTS on West Street Extension

To Whom It May Concern:

The Boylan Heights neighborhood, as a direct neighbor of the Boylan Wye, is closely monitoring the development of the Raleigh Union station and the related West Street Extension. Overall, we are excited about the construction of a multi-modal center and the positive impact it will have on our neighborhood and downtown in general, and we welcome the Viaduct building in the Wye as great choice for the location and as a new aesthetic anchor for the warehouse district and the surrounding area.

We would like to comment on a few specific points of the West Street Extension:
- **We strongly favor the ROAD UNDER RAIL variant**
- it is highly important that **good pedestrian and bike lanes MUST be included on both sides of the road** as is currently proposed, both for access to the station and for a safe and direct connection between Boylan Heights and the Warehouse District and downtown in general
- Pedestrian and bicycle access through the West Street Extension must be easy from all directions and **feel safe around the clock** (unlike for example greenway tunnels which are "closed" at night.)
- The underpass must be designed to **maximize daylight and have good lighting around the clock**, and utilize CPTED principles to minimize crime and foster safety. Maintenance of the underpass (light repair, trash cleanup) must be clearly defined to ensure a safe environment.
- Ideally, **direct access for pedestrians and cyclists from Davie St.** to the east-side sidewalk through a stair or a ramp should be considered to limit a two-block detour for pedestrians and cyclists.

- The impact of traffic on the routes West St–South St/Lenoir St./Cabarrus St.–Boylan Ave–Western Blvd W and Hargett St–Boylan Ave–Western Blvd W should be studied and if appropriate, traffic along West St wishing to travel west should be routed away from Boylan Ave using South St to Dawson St to Western Blvd using appropriate signing & traffic signals

Sincerely,
Boylan Heights Neighborhood Association
(Representing the over 600 residents and homeowners in the Boylan Heights Historic District; topics for this letter approved at the association meeting on 3/19/2013 and approved by the board on 3/23/2013)

Contact for questions or feedback regarding this submission of comments:
Sandro Gisler, 805 W Lenoir St., Raleigh, NC 27603
919-355-8703 sandrogisler@sandrogisler.com