

APPENDIX J

RICHMOND AREA TURNING WYE AND SERVICE YARD ALTERNATIVES TECHNICAL MEMO



D.C. TO RICHMOND SOUTHEAST HIGH SPEED RAIL



MEMORANDUM

Date: May 15, 2018

To: Virginia Department of Rail and Public Transportation

From: DC2RVA Project Team

Subject: Richmond Area Turning Wye and Service Yard Alternatives

1.0 SUMMARY

DRPT's recommended preferred alternative in the Draft Environmental Impact Statement (EIS) for the Richmond Area, Build Alternative 6F - Full Service, Staples Mill Road/Main Street Stations, includes a new turning wye track at Hospital Street connecting the CSXT S-Line with the Buckingham Branch Railroad, and the addition of three siding tracks at the former CSXT Brown Street Yard for overnight storage and servicing of a passenger train. A turning wye and overnight storage/servicing yard are necessary to support a new passenger train roundtrip with an early morning departure from Richmond north, and an evening southbound arrival into Richmond. In response to comments on the Draft EIS and to reduce the impacts associated with the new turning wye track at Hospital Street and the passenger train storage and servicing facility at Brown Street Yard, DRPT has relocated the Richmond area turning wye and passenger train service yard to CSXT's existing Bellwood Wye and Yard, south of the James River. Relocating the proposed facility from Hospital Street/Brown Street Yard to Bellwood Yard will improve the efficiency of train operations, reduce property impacts outside of CSXT's right-of-way, and reduce the rail footprint within the culturally sensitive area of Richmond's Shockoe Valley.

2.0 BACKGROUND AND PURPOSE

The DC2RVA passenger service plan includes a new intercity passenger train roundtrip that originates in Richmond in the early morning (approximately 6:00 am) and proceeds north towards Washington, D.C. The need for an early morning departure to Washington, D.C. was identified during project scoping. A southbound train would return to the Richmond area later in the day and would be stored overnight in the Richmond area for servicing. Infrastructure improvements required to support this train include a turning wye to turn the train around and a yard with at least two siding tracks where the train can be parked overnight for servicing and storage.

In the Draft EIS description of the recommended preferred alternative for Area 6, Build Alternative 6F - Full Service Staples Mill Road/Main Street Stations, DRPT proposed construction of a new single wye track connecting the S-Line to the Buckingham Branch at Hospital Street north of Main Street Station to turn passenger trains (see Figure 1, also shown in

Figure 5.1-21 within the Draft EIS). Three siding tracks would be added at the location of the former CSXT Brown Street yard for overnight parking and servicing of the passenger train. The service yard would also need road access, staff parking, and some buildings for equipment storage and staff facilities. The Hospital Street wye would have additional utility beyond the turning of the passenger train by providing a westerly connection between the Buckingham Branch and the S-Line.

Several commenters on the Draft EIS raised concerns over property impacts from the new turning wye at Hospital Street and the overall impact of the rail system on cultural and historic resources within Shockoe Valley. DRPT's continuing analysis of the Hospital Street turning wye and Brown Street service yard configuration in response to comments received from stakeholders and the public have identified some concerns, including:

- The train movements necessary to turn and service the passenger train are not optimal. The southbound train would stop at Main Street Station for its last stop, then have to reverse northward on the S-Line, crossing the main tracks at AM Junction, then continue in reverse eastward onto the Buckingham Branch past the switch for the new Hospital Street Wye track before stopping. Once the switch to the wye track was lined, the train would then have to proceed forward onto the Hospital Street wye track, around the wye and northward onto the S-Line. Once the train had moved beyond the wye track switch, the train would stop again until the wye track switch was relined for the S-Line main track, after which the train would reverse southward on the S-Line, crossing all main tracks, and continue in reverse into the Brown Street Yard servicing facility. In the morning, the train would have to reverse from the Brown Street service yard down the main track to reach Main Street Station. These multiple reverse train movements have the potential to slow down or block other north-south train movements through this section of the corridor.
- Placing a new single-track wye at Hospital Street requires acquisition of property outside of existing CSXT right-of-way and would require relocation of a business that provides waste management services, including onsite bioremediation, physical and chemical liquids treatment, fuel recycling, and processing and disposal for a variety of industrial and environmental clean-up residuals.
- There are potential impacts to historic and cultural resources within Richmond's Shockoe Valley area. Shockoe Valley has an extensive history in Richmond's development, including areas used as a slave trading center (see Section 3.1.4 of this Final EIS for further discussion regarding Shockoe Valley historic and cultural resources).

In response to these concerns and comments, DRPT identified and evaluated additional options for a turning wye and service yard in the Richmond Area.

3.0 ADDITIONAL RICHMOND TURNING WYE AND SERVICE YARD OPTIONS

DRPT's goal in further evaluating possible Richmond area turning wye and service yard options was to identify a turning wye and service yard that met the DC2RVA Purpose and Need with more efficient train movements, less impacts to property outside the CSXT right-of-way, and a reduced rail footprint and potential impacts to cultural resources in Shockoe Valley.

DRPT identified the following additional turning wye and service yard combinations in the Richmond area for consideration (see Figure 2):

- Bellwood Wye and Service Yard
- Fulton Yard Wye/Brown Street Service Yard
- Laburnum Wye/Brown Street Service Yard
- Airport Wye #1/Brown Street Service Yard
- Airport Wye #2/Brown Street Service Yard
- Manchester Wye/South Service Yard
- Dunlop (Petersburg) Wye/Boulevard Service Yard
- Boulevard (Petersburg) Wye/Service Yard

DRPT evaluated the additional Richmond turning wye and service yard options for their train operation efficiency, potential to require property outside of existing CSXT right-of-way, and for their footprint within Shockoe Valley. The following describes the turning wye and service yard options, and DRPT's evaluations.

3.1 Bellwood Wye and Service Yard

CSXT's Bellwood Wye is 8.8 miles south of Main Street Station on the S-Line, between I-95 to the east and S.R. 301 and the U.S. Defense Supply Center to the west. The west side of the wye has a small freight support yard and the existing S-Line tracks. The east side of the wye is the beginning of the CSXT track leading to Hopewell, with existing wye tracks that direct trains coming from both from the north and the south off of the S-Line and onto the Hopewell track. The interior of the wye is largely undeveloped, with the exception of some small CSXT storage and equipment buildings adjacent to the existing yard. Access to the interior of the wye is through an at-grade crossing of the Hopewell track connecting to Shell Road. This option (see Figure 3) would use the existing wye tracks to turn the passenger trains and would add three tracks with platforms in the interior of the wye alongside the Hopewell track for overnight parking and servicing of the passenger train. The existing at-grade crossing would be relocated north, and a new turnaround added to Shell Road. The passenger train being serviced overnight would access the service yard by moving south on the S-Line from Main Street Station, proceeding just past the Bellwood Wye, reversing into the southern leg of the wye onto the Hopewell track, and then pulling north onto the northern leg of the wye and into the new service yard inside the existing wye. In the morning, the passenger train would pull north, departing the service yard and entering the S-Line to reach Main Street Station's west-side platforms.

DRPT determined that the Bellwood Wye and Service Yard would:

- Provide efficient train turning movements. The use of the existing wye allows the entire train to be turned without de-coupling the locomotive or making repetitive reverse movements or other moves on the main track.
- Minimize the need for property outside existing CSXT right-of-way. No additional property would be required.
- Minimize the rail footprint in Shockoe Valley. Both the turning wye and service yard are south of the James River, approximately nine miles from Shockoe Valley.

3.2 Fulton Yard Wye/Brown Street Service Yard

CSXT's Fulton Yard is two miles east of Main Street Station; the yard is curved and sits on a bluff above the James River. This option (see Figure 4) would add a wye at the base of the curved yard on the riverside. Due to limits on track length and curvature posed by existing track, to the existing topography adjacent to Fulton Yard, and to the proximity of an adjacent tank farm, the wye would be for turning locomotives only. Three yard tracks would be realigned in order to create room for the wye. Overnight parking and service for the passenger train would be provided at the Brown Street Yard as described above and in the Draft EIS. The passenger train would access the service yard by reversing from Main Street Station north on the S-Line to Brown Street Yard, where the locomotive would be uncoupled. The locomotive would then move south and east of Main Street Station to Fulton Yard, turn at the new wye, and proceed back past the east side of Main Street Station to the north end of Brown Street Yard where it would reverse onto the yard track to recouple with the passenger cars. In the morning, the passenger train would reverse south on the main track to Main Street Station.

DRPT determined that the Fulton Yard Wye/Brown Street Service Yard would:

- Not provide efficient train turning movements. A new wye in Fulton Yard could only turn locomotives, requiring de-coupling the locomotive at Brown Street Yard and making repetitive reverse movements and trips on the main track. In addition, the movements of the passenger locomotive between the wye and the service yard could be subject to delay, since the wye is located within an active freight yard where activities such as switching freight cars, assembling and uncoupling long freight trains, and attaching helper locomotives to trains operating northward through downtown Richmond toward Acca Yard occur routinely. These yard activities require significant yard and main track capacity. Turning the passenger locomotive within the yard would create inefficiencies both for the passenger operation and also the host freight railroad that owns the tracks. In addition, as only the locomotive would be turned, the passenger car seats would be facing the rear of the train when the passenger train left Main Street Station in the morning, a seating arrangement that is not preferred by Amtrak.
- Minimize the need for property outside existing CSXT right-of-way. No additional property would be required.
- Partially reduce the rail footprint in Shockoe Valley. The turning wye would be located outside of Shockoe Valley, however the service yard would remain on the edge of Shockoe Valley.

3.3 Laburnum Wye/Brown Street Service Yard

There is an industrial spur track extending north of the CSXT Peninsula subdivision main track; the spur track is 5.3 miles east of Main Street Station and just west of Laburnum Avenue. The spur track can only be accessed by westbound trains from the Peninsula subdivision. The spur track is bound by Cornelius Creek to the west and multiple industrial buildings/parcels with rail access. This option (see Figure 5) would add a new wye track on the west side of the spur track and extend the existing siding parallel to the main track, allowing access by eastbound trains and a complete turning movement. The Laburnum Wye would be used for turning the locomotive only. Overnight parking and service for the passenger train would be provided at the Brown Street Yard as described in the above scenario for use of the Fulton Wye alternative. The

passenger train would access the service yard by reversing from Main Street Station north on the main track to Brown Street Yard, where the locomotive would be uncoupled. The locomotive would then move south and east of Main Street Station through Fulton Yard, turn at the new Laburnum Wye, and proceed back through Fulton Yard, past the east side of Main Street Station to the north end of Brown Street Yard to recouple with the passenger cars. In the morning, the passenger train would reverse south on the main track to Main Street Station.

DRPT determined that the Laburnum Wye/Brown Street Service Yard would:

- Not provide efficient train turning movements. A new wye at Laburnum Street could only turn locomotives, requiring de-coupling the locomotive at Brown Street Yard and making repetitive reverse movements and trips on the main track and through Fulton Yard. As a result, this option would create inefficiencies both for the passenger operation and also the host freight railroad that owns the tracks. As only the locomotive would be turned, the passenger car seats would be facing the rear of the train when the passenger train left Main Street Station in the morning, a seating arrangement that is not preferred by Amtrak.
- Somewhat reduce the need for property outside existing CSXT right-of-way. Additional property would be required for the new wye track, however no business relocations would be required.
- Reduce the rail footprint in Shockoe Valley. The turning wye would be located outside of Shockoe Valley; however, the service yard would remain on the edge of Shockoe Valley.

3.4 Airport Wye #1/Brown Street Service Yard

There is an industrial spur extending north of the CSXT Peninsula subdivision main track; the spur track is 6.1 miles east of Main Street Station and just west of Airport Drive. The spur track can only be accessed by east-bound trains from the Peninsula subdivision. This track is bounded by Airport Drive on the east and multiple industrial buildings/parcels with rail access. This option (see Figure 6) would add a new wye track to the east, shift the existing spur track, and extend the existing siding parallel to the main track, allowing access by west-bound trains and a complete turning movement. The new east arm of the wye would require a new road overpass structure at Airport Drive. The Airport Wye #1 would be used for turning the locomotive only. Overnight parking and service for the passenger train would be provided at the Brown Street Yard as described above. The passenger train would access the service yard by reversing from Main Street Station north on the main track to Brown Street Yard, where the locomotive would be uncoupled. The locomotive would then move south and east of Main Street Station through Fulton Yard, turn at the new Airport Wye #1, and proceed back through Fulton Yard, past the east side of Main Street Station to the north end of Brown Street Yard to recouple with the passenger cars. In the morning, the passenger train would reverse south on the main track to Main Street Station.

DRPT determined that the Airport Wye #1/Brown Street Service Yard would:

- Not provide efficient train turning movements. A new wye at Airport Drive could only turn locomotives, requiring de-coupling the locomotive at Brown Street Yard and making repetitive reverse movements and trips on the main track and through Fulton Yard. As a result, this option would create inefficiencies both for the passenger operation and also the host freight railroad that owns the tracks. As only the locomotive would be turned,

the passenger car seats would be facing the rear of the train when the passenger train left Main Street Station in the morning, a seating arrangement that is not preferred by Amtrak.

- Somewhat reduce the need for property outside existing CSXT right-of-way. Additional property would be required for the new wye track, however no business relocations would be required.
- Require a new road over rail structure where the turning wye track would cross Airport Drive.
- Reduce the rail footprint in Shockoe Valley. The turning wye would be located outside of Shockoe Valley, however the service yard would remain on the edge of Shockoe Valley.

3.5 Airport Wye #2/Brown Street Service Yard

There is an industrial spur extending north of the CSXT Peninsula subdivision main track; the spur track is 6.1 miles east of Main Street Station and just west of Airport Drive. The spur track can only be accessed by east-bound trains from the Peninsula subdivision. This track is bounded by Airport Drive on the east and multiple industrial buildings/parcels with rail access. North of Charles City Road, the spur track splits into two separate tracks extending north in the shape of a “Y”. This option (see Figure 7) would add a new wye track just north of Nandun Road, connecting the arms of the “Y” and allowing a complete turning movement. The new east arm of the wye would require a new road overpass structure at Lewis Road, or closure of Lewis Road where the new wye track would cross the road. The Airport Wye #2 would be used for turning the locomotive only. Overnight parking and service for the passenger train would be provided at the Brown Street Yard as described above. The passenger train would access the service yard by reversing from Main Street Station north on the main track to Brown Street Yard, where the locomotive would be uncoupled. The locomotive would then move south and east of Main Street Station through Fulton Yard, turn at the new Airport Wye, and proceed back through Fulton Yard, past the east side of Main Street Station to the north end of Brown Street Yard to recouple with the passenger cars. In the morning, the passenger train would reverse south on the main track to Main Street Station.

DRPT determined that the Airport Wye #2/Brown Street Service Yard would:

- Not provide efficient train turning movements. A new wye just north of Nandun Road could only turn locomotives, requiring de-coupling the locomotive at Brown Street Yard and making repetitive reverse movements and trips on the main track and through Fulton Yard. As a result, this option would create inefficiencies both for the passenger operation and also the host freight railroad that owns the tracks. As only the locomotive would be turned, the passenger car seats would be facing the rear of the train when the passenger train left Main Street Station in the morning, a seating arrangement that is not preferred by Amtrak.
- Reduce the need for property outside existing CSXT right-of-way. Additional property would be required for the new wye track, however no business relocations would be required.

- Reduce the rail footprint in Shockoe Valley. The turning wye would be located outside of Shockoe Valley, however the service yard would remain on the edge of Shockoe Valley.

3.6 Manchester Wye/South Service Yard

Just south of the James River, the CSXT S-Line crosses an NS spur line servicing the City's wastewater treatment facility east of the rail corridor. There is an existing connection in the southwest quadrant of the CSXT/NS crossing, connecting the westernmost CSXT main track with an NS spur line. CSXT's South Yard is another 1.7 miles south of this rail crossing. This option would add a turning wye track in the southeast quadrant of the CSXT/NS crossing, connecting the proposed east main track of the S-Line with the NS spur heading east (see Figure 8). This option would add three tracks with platforms for passenger train servicing and storage west of and adjacent to CSXT's South Yard. The evening southbound train would exit Main Street Station and proceed past the CSXT/NS crossing. The train would then reverse north on the existing westerly wye connection to the NS line, pull forward on the NS line across the S-Line tracks, and then reverse on the new easterly wye connection onto the S-Line south crossing all three main tracks to access the passenger train service tracks at the South Yard. In the morning, the passenger train would pull north along the S-Line to Main Street Station.

DRPT determined that the Manchester Wye/South Service Yard would:

- Not provide efficient train turning movements. A new wye at Manchester would require making repetitive reverse movements and trips on the main track and require crossing the S-Line using an at-grade diamond crossing on the NS track, blocking the S-Line during the crossing. As a result, this option would create inefficiencies both for the passenger operation and also CSXT freight operations.
- Not reduce the need for property outside existing CSXT right-of-way. Additional property would be required for the new wye track. The proximity of the wye connection to the S-Line would require relocation of one or more of the above-ground petroleum storage tanks.
- Minimize the rail footprint in Shockoe Valley. Both the turning wye and the service yard would be located outside of Shockoe Valley.

3.7 Dunlop (Petersburg) Wye/Service Yard

A wye was once located 25 miles south of Main Street Station on the CSXT A-Line main freight and passenger line, where East Ellerslie Avenue crosses the rail corridor. The eastern wye track, which led to Petersburg's Union Station, and the southern connector wye track no longer exist. Commercial development has occurred within the space previously enclosed by the wye along East Ellerslie Avenue. This option would reconstruct the wye track on the east to provide a sufficient length to turn a locomotive and construct a new wye track connection to the south at a slightly different curvature from the historic track placement (see Figure 9). The wye track would require reconstruction of an at-grade crossing on East Ellerslie Avenue, or alternatively, a new grade separated crossing. A service yard would be built on the east side of the main A-Line track approximately one-half mile south of the wye (see Boulevard Wye/Service Yard below). This option could support an additional stop at Petersburg, providing the proposed Petersburg

Boulevard Station¹ with an early am departure north as well. FRA's preferred alternative location for a new Petersburg Station is between the Dunlop Wye and the conceptual Boulevard Service Yard, just south of the Boulevard (US Route 1) crossing of the A-Line. The evening southbound train would leave Main Street Station, proceed south on the S-Line to Centralia, then on CSXT's A-Line to the Petersburg Boulevard Station, and then continue to the Boulevard Service yard. At the service yard, the locomotive would decouple from the passenger cars, then reverse the half-mile to the Dunlop Wye, turn around, and reverse back to the service yard. In the morning, the train would first stop at the Petersburg Boulevard Station, and then proceed to Main Street Station.

DRPT determined that the Dunlop (Petersburg) Wye/Service Yard would:

- Not provide efficient train turning movements unless service is being provided to the proposed new Petersburg Boulevard Station. A new wye at Ellerslie Avenue could only turn locomotives, requiring de-coupling the locomotive at the new Boulevard Service Yard and making two reverse movements and trips on the main track past the new Petersburg Station to/from the wye. These movements not only create inefficiencies for passenger trains, but inefficiencies for freight operations on the CSXT A-Line, including trains destined to and from the Port of Virginia, since the wye would not have a direct connection to the servicing facility, requiring the passenger locomotive to use the mainline tracks of the A-Line. As only the locomotive would be turned, the passenger car seats would be facing the rear of the train when the passenger train left Main Street Station in the morning, a seating arrangement that is not preferred by Amtrak. The distance from Main Street Station also makes this an inefficient location to turn/service the passenger train unless a stop at the new Petersburg Boulevard Station is included.
- Not reduce the need for property outside existing CSXT right-of-way. Additional property would be required for the new wye track and service yard, however no business relocations would be required.
- The new wye track would require a restoration of a prior grade crossing of Ellerslie Avenue; a grade separated road overpass may be required if the at-grade crossing cannot be restored.
- Minimize the rail footprint in Shockoe Valley. Both the turning wye and the service yard would be located outside of Shockoe Valley.

3.8 Boulevard (Petersburg) Wye/Service Yard

The Boulevard Wye and Service Yard would be developed approximately one-half mile south of the Dunlop Wye, just beyond FRA's preferred alternative location for a new Petersburg Station. This option would include a new wye and service yard (see Figure 10). The service yard would have a siding track and two service tracks. The Boulevard Wye would be capable of turning the entire train. This option could support an additional stop at Petersburg, providing the Petersburg Station with an early morning departure northbound. The southbound train would leave Main

¹ FRA is currently conducting a study to determine a new passenger station location to serve the Petersburg Area, and has released a draft of an Environmental Assessment (EA) of four possible locations for a new multimodal station for current intercity passenger rail service through Petersburg. FRA's preferred alternative identified in the Draft EA is a site on the Boulevard in Colonial Heights, however no final decisions have been made.

Street Station, proceed south to the Petersburg station, and then continue onto the east leg of the Boulevard Wye, reverse into the wye to turn the train, and then pull into the Boulevard Service yard. In the morning, the train would first stop at the Petersburg Station, and then proceed to Main Street Station.

DRPT determined that the Boulevard (Petersburg) Wye/Service Yard would:

- Not provide efficient train turning movements unless service is being provided to the proposed new Petersburg Boulevard Station. A new wye at Boulevard could be configured to turn either locomotives or passenger trains. The distance from Main Street Station makes this an inefficient location to turn/service the passenger train unless a stop at the new Petersburg Boulevard Station is included.
- Not reduce the need for property outside existing CSXT right-of-way. Additional property would be required for the new wye track and service yard, however no business relocations would be required.
- Minimize the rail footprint in Shockoe Valley. Both the turning wye and the service yard would be located outside of Shockoe Valley.

4.0 FINDINGS

DRPT evaluated eight additional turning wye and service yard combinations in comparison to the proposed Hospital Street Wye and Brown Street Service Yard combination recommended in the Draft EIS for the Richmond Area Build Alternative 6F - Full Service - Staples Mill Road/Main Street Stations. DRPT determined that the Bellwood Wye and Service Yard option best meets the DC2RVA Purpose and Need with improved train operations efficiency, minimizes property impacts outside of existing CSXT right-of-way, and minimizes the DC2RVA project footprint within Shockoe Valley. Therefore, DRPT has relocated the Richmond area turning wye and passenger train service yard to CSXT's existing Bellwood Wye, south of the James River.

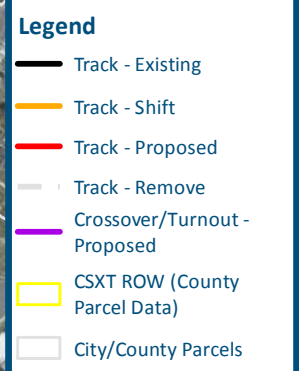
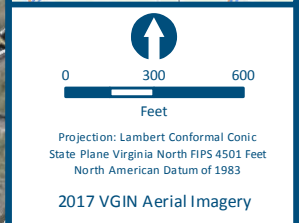
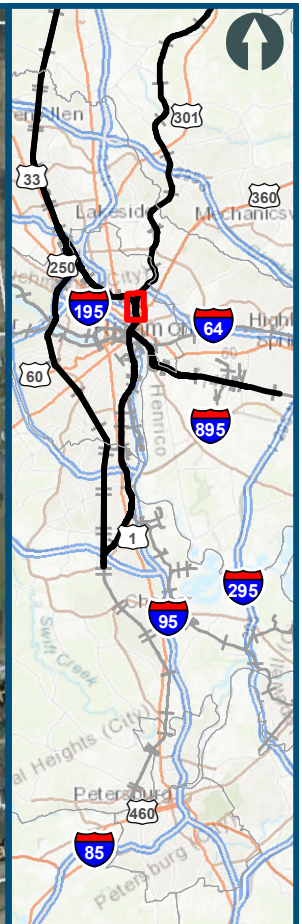
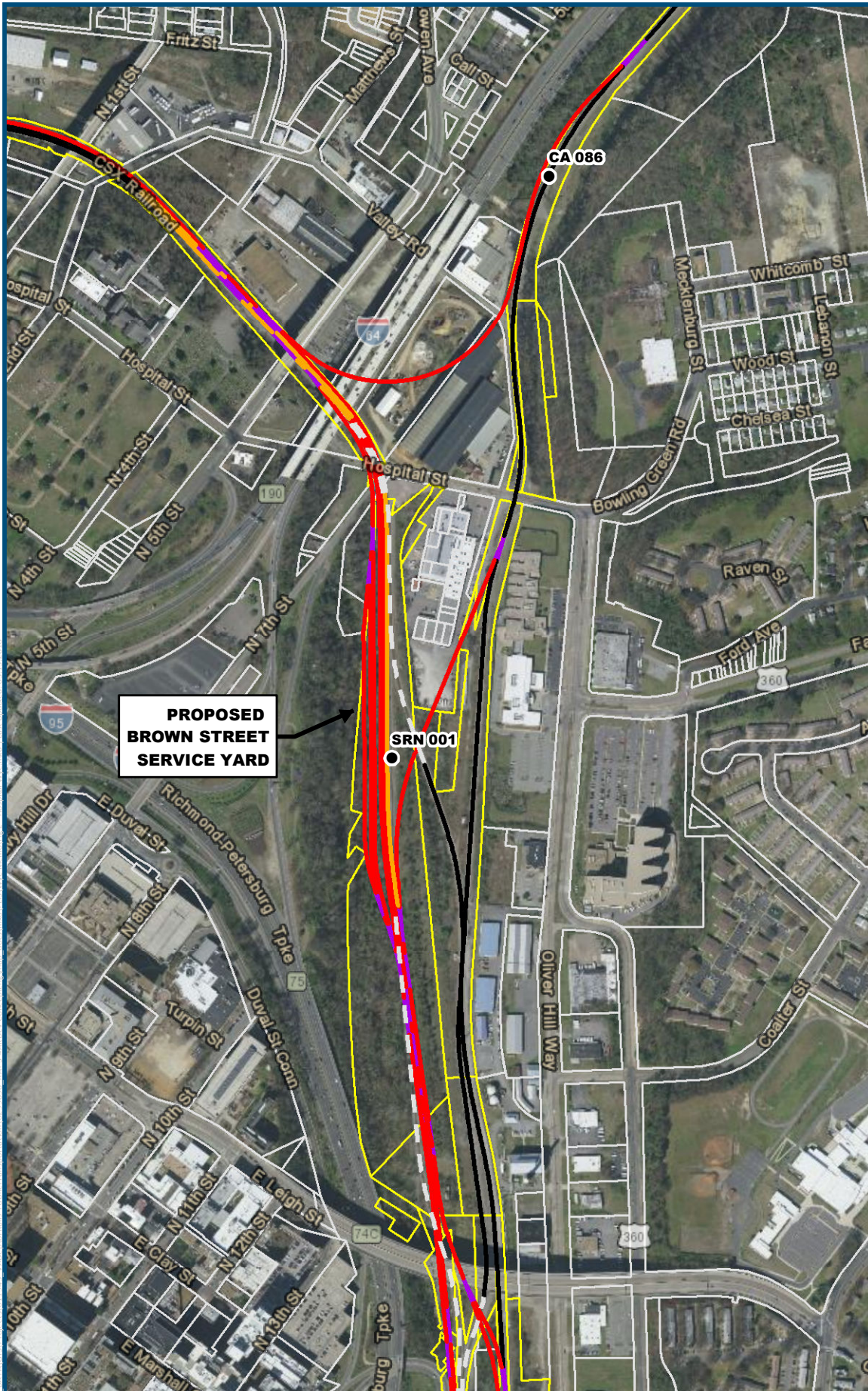
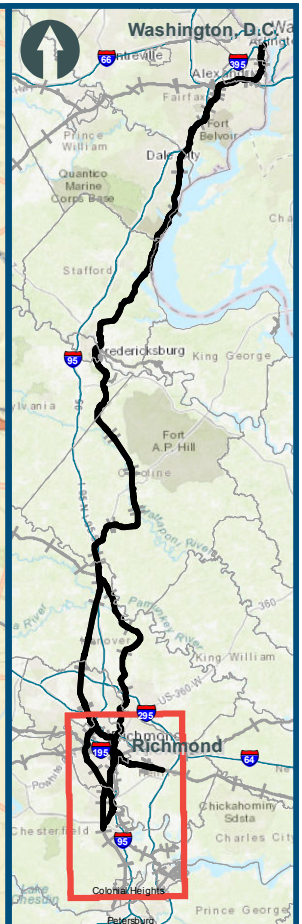
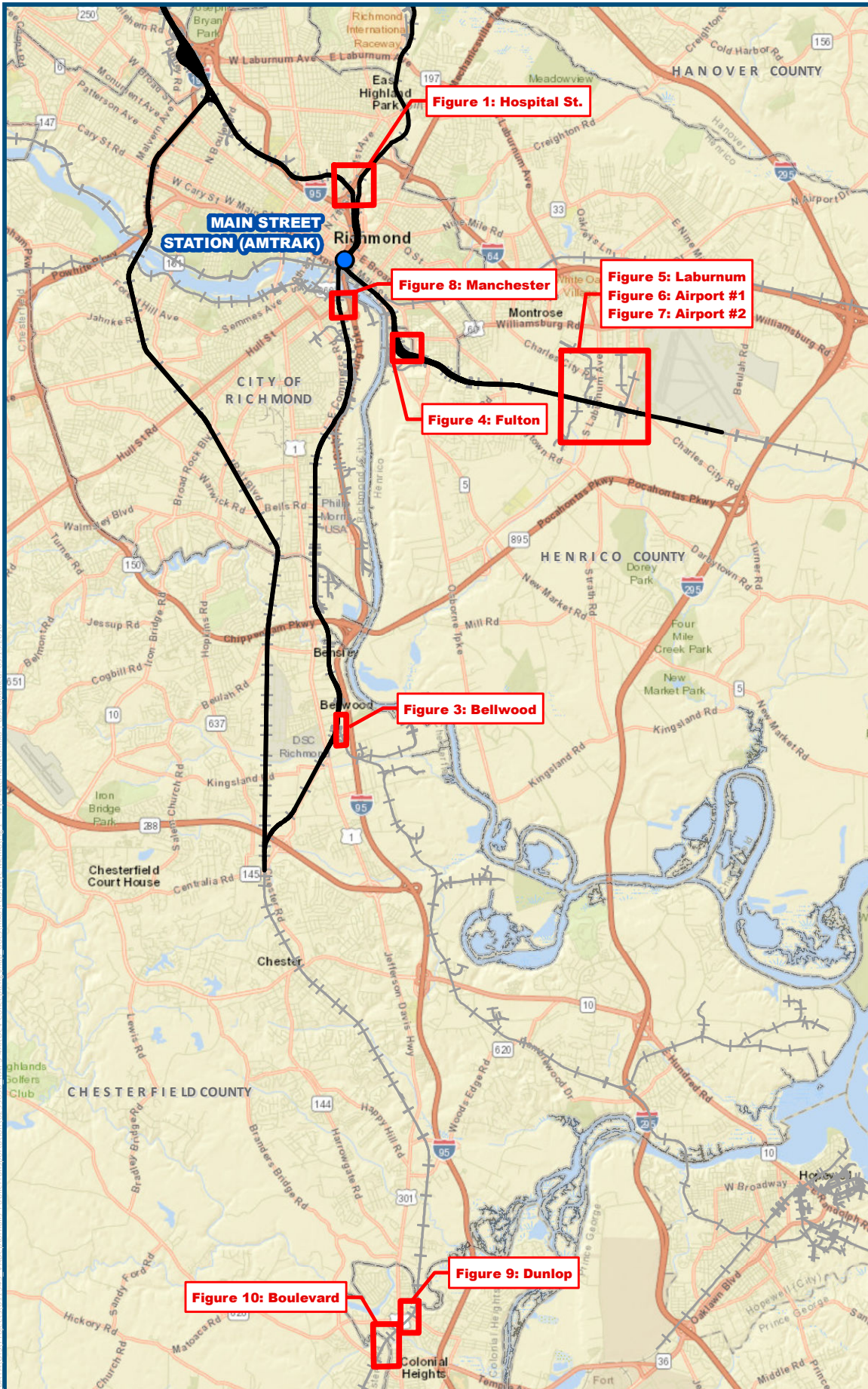
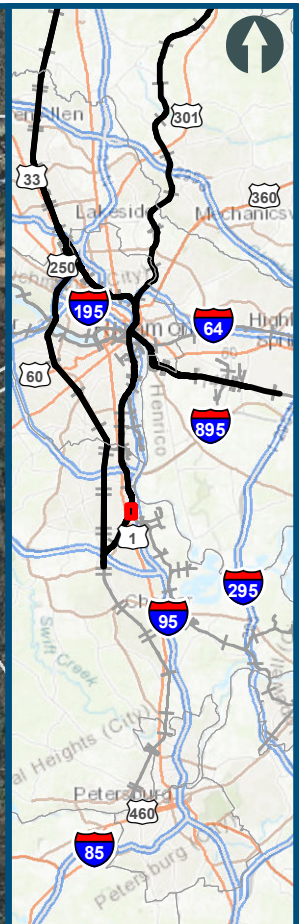
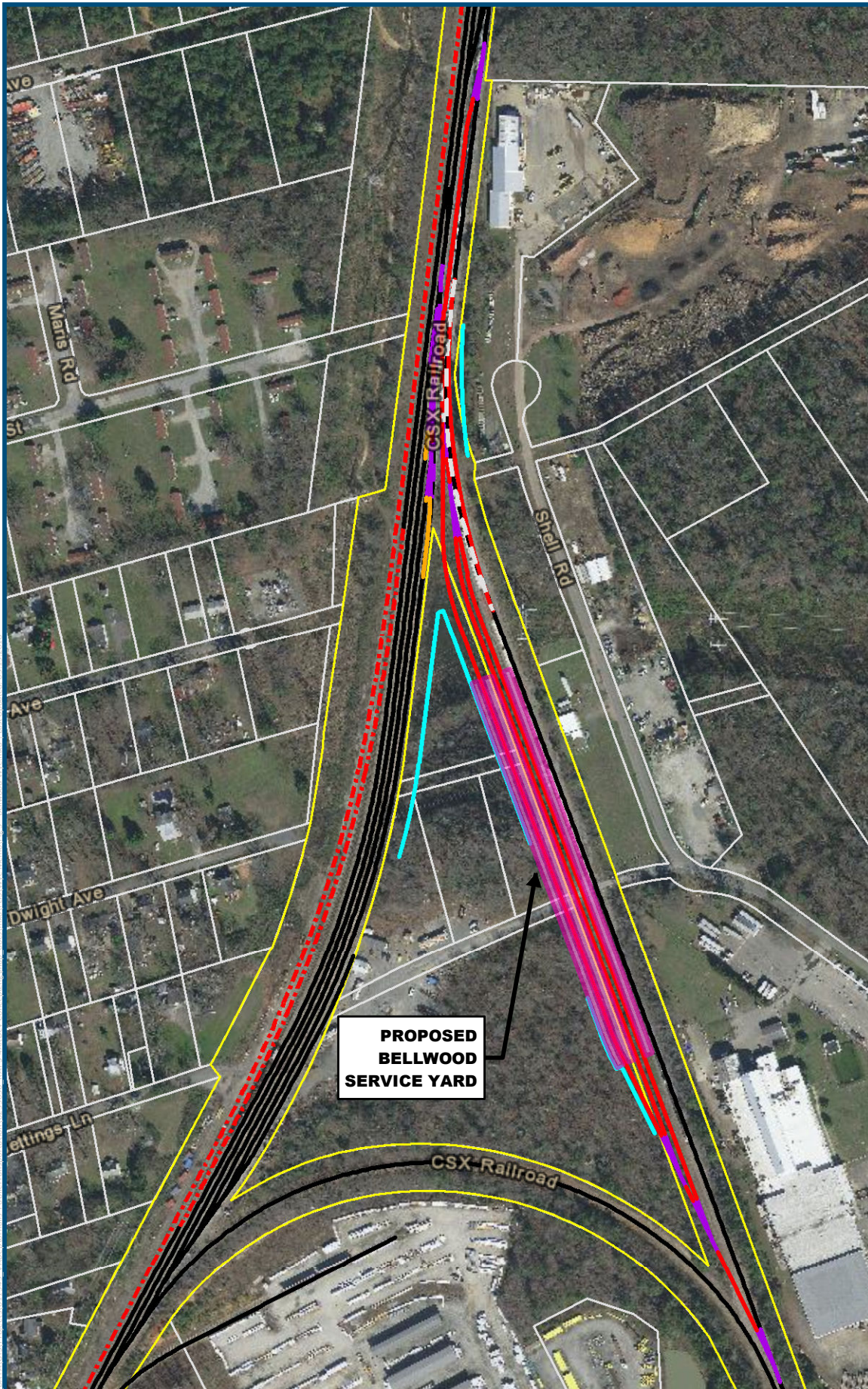


Figure 1
Hospital Wye & Brown Street Service Yard



- Legend**
- CSXT Mileposts
 - Existing Stations
 - DC2RVA Rail Corridor
 - Virginia Rail Lines
 - City/County Boundary

Figure 2
Richmond
Wye Alternatives



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Feet

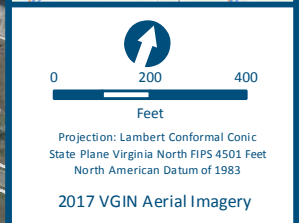
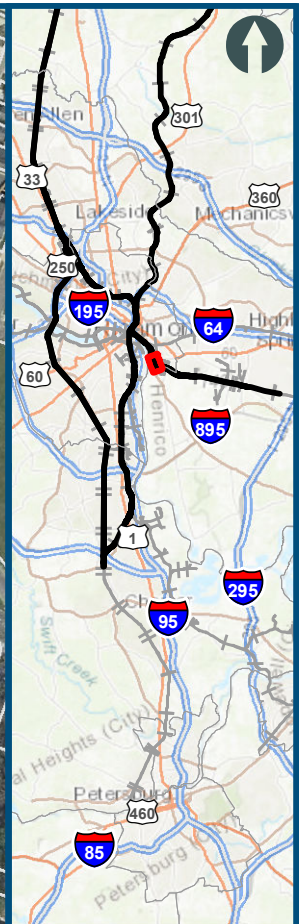
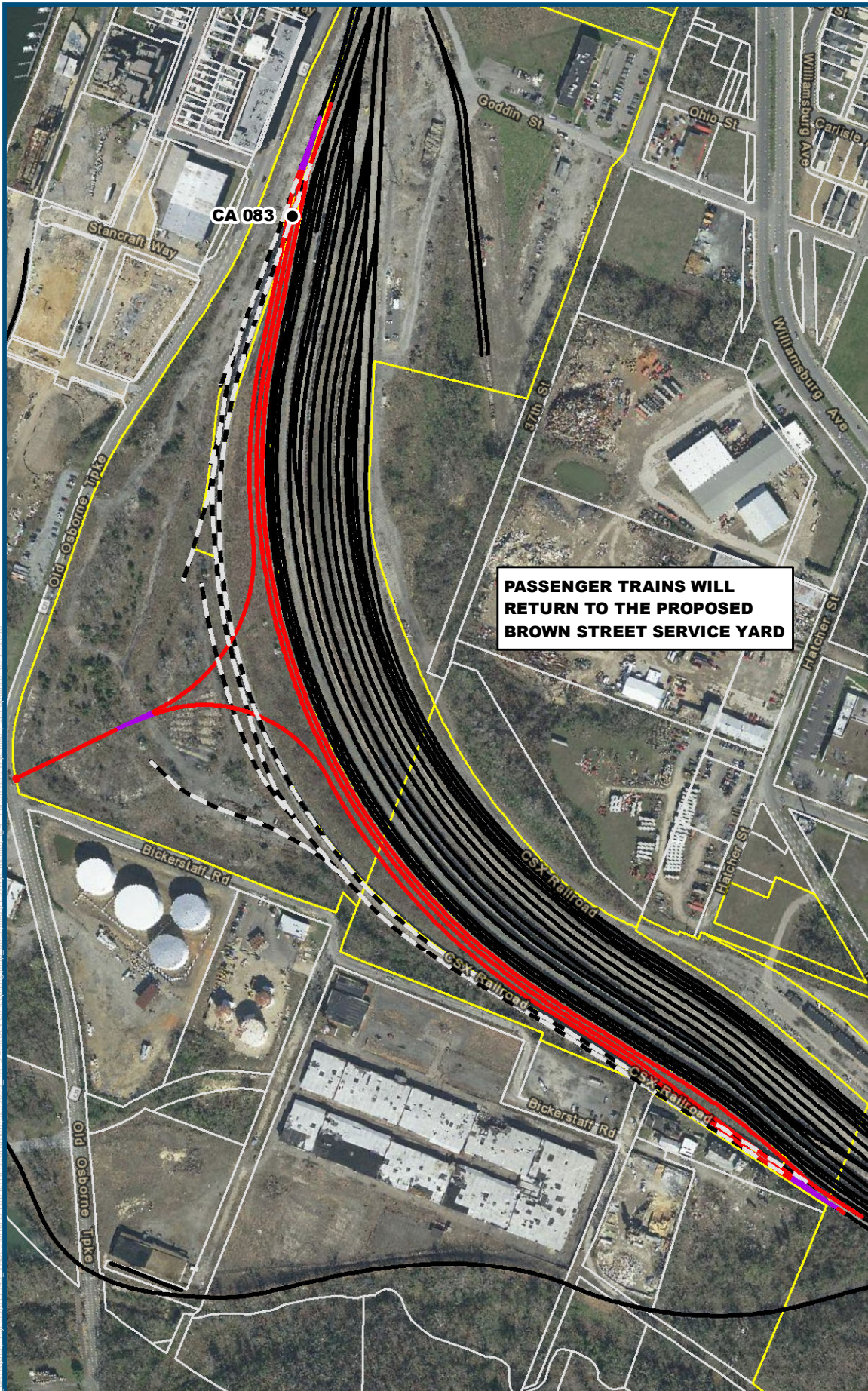
Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
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2017 VGIN Aerial Imagery

Legend

- Track - Existing
- Track - Shift
- Track - Proposed
- - - Track - Proposed by others
- - - Track - Remove
- Crossover/Turnout - Proposed
- Crossover/Turnout - Remove
- Walls
- Maintenance Platform - Proposed
- CSXT ROW (County Parcel Data)
- City/County Parcels

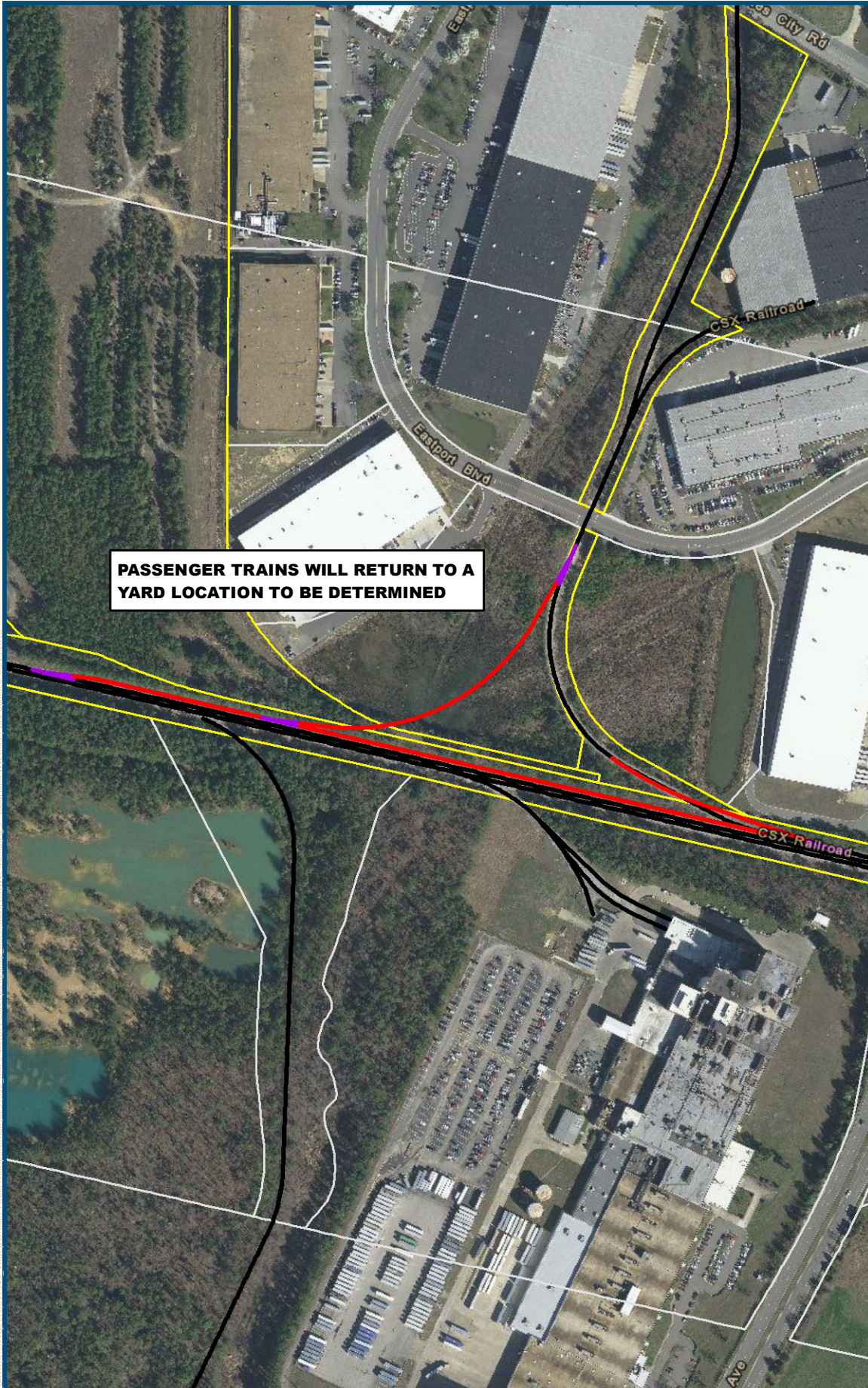
Figure 3
Bellwood Wye & Service Yard



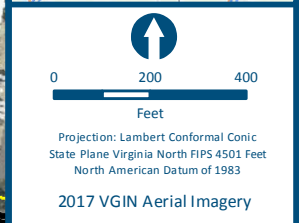
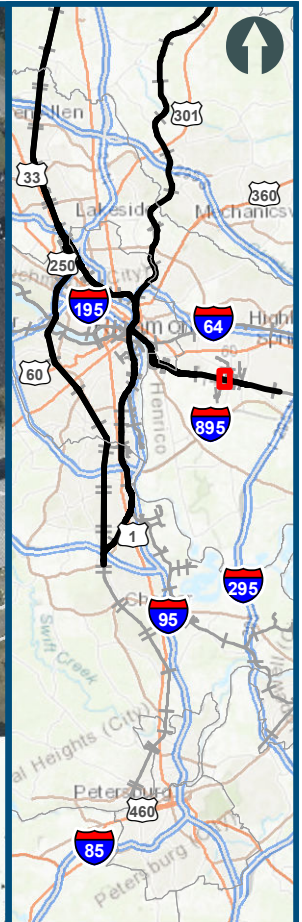
- Legend**
- CSXT Mileposts
 - Track - Existing
 - Track - Proposed
 - Track - Remove
 - Crossover/Turnout - Proposed
 - CSXT ROW (County Parcel Data)
 - City/County Parcels

Figure 4

Fulton Yard Wye

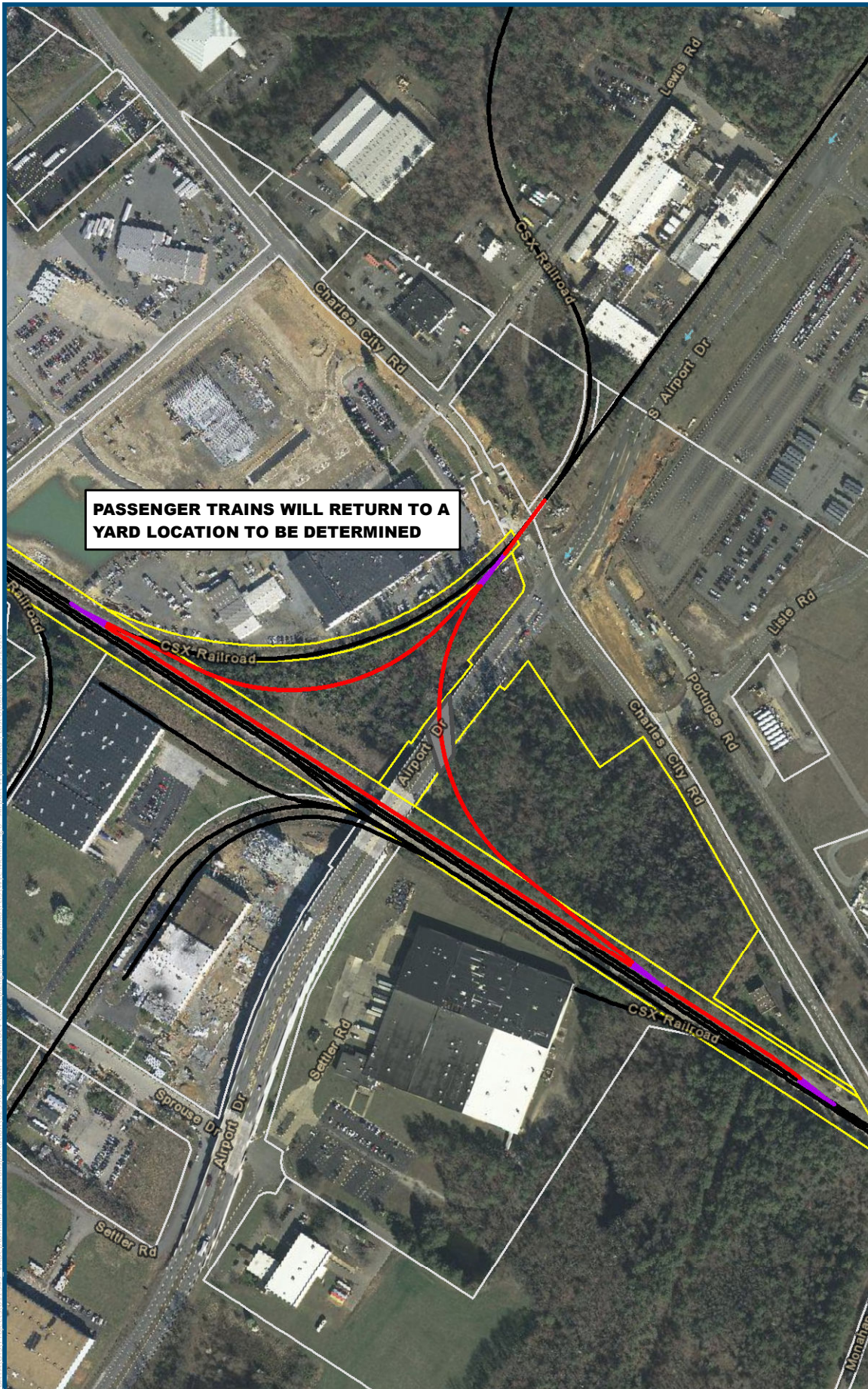


PASSENGER TRAINS WILL RETURN TO A YARD LOCATION TO BE DETERMINED

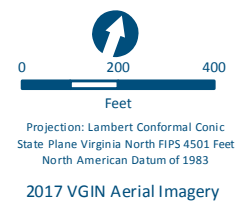
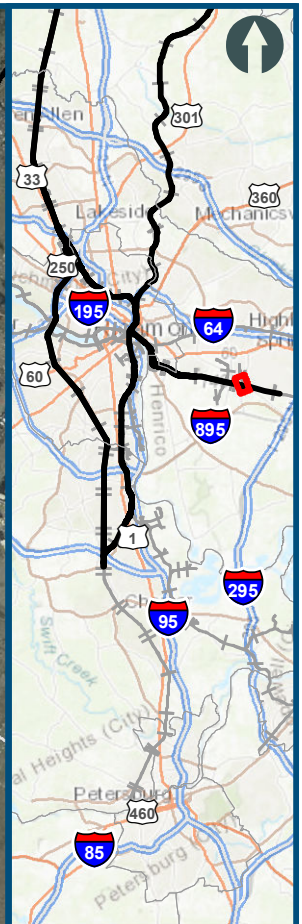


- Legend**
- Track - Existing
 - Track - Proposed
 - Crossover/Turnout - Proposed
 - CSXT ROW (County Parcel Data)
 - City/County Parcels

Figure 5
Laburnum Wye



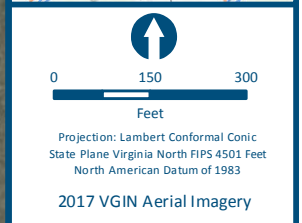
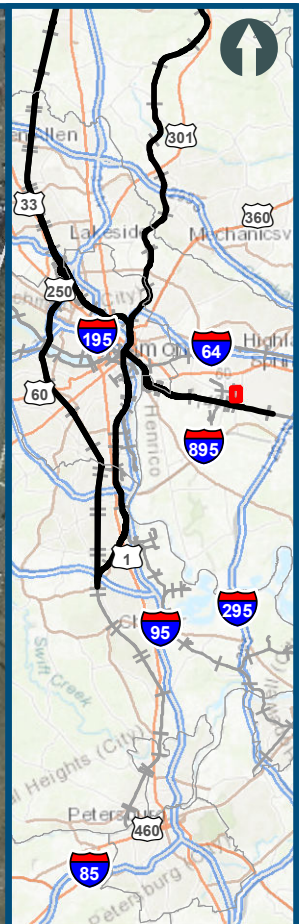
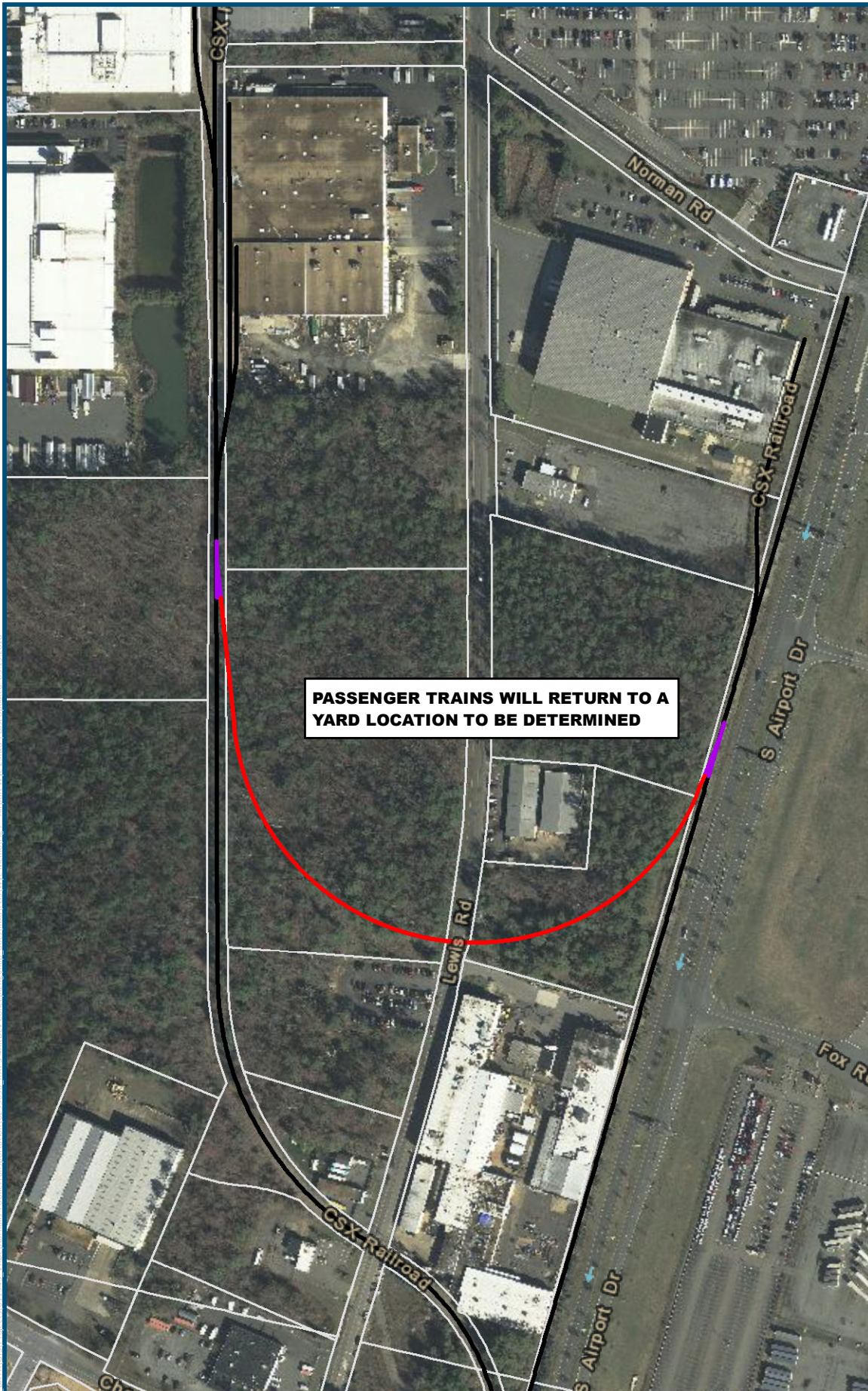
PASSENGER TRAINS WILL RETURN TO A YARD LOCATION TO BE DETERMINED



- Legend**
- Track - Existing
 - Track - Proposed
 - Crossover/Turnout - Proposed
 - Roadway
 - CSXT ROW (County Parcel Data)
 - City/County Parcels

Note: Service yard to be determined.

Figure 6
Airport Wye #1



- Legend**
- Track - Existing
 - Track - Proposed
 - Crossover/Turnout - Proposed
 - City/County Parcels

Figure 7

**Airport Wye
#2**

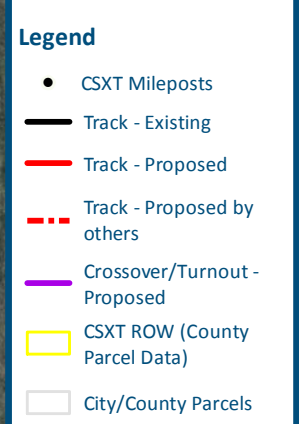
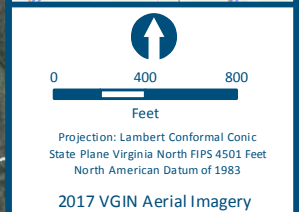
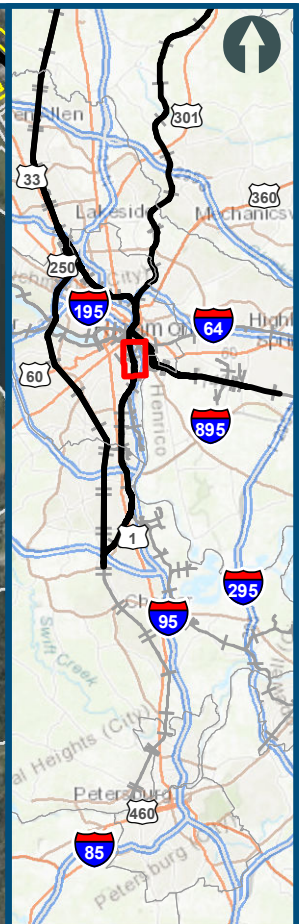
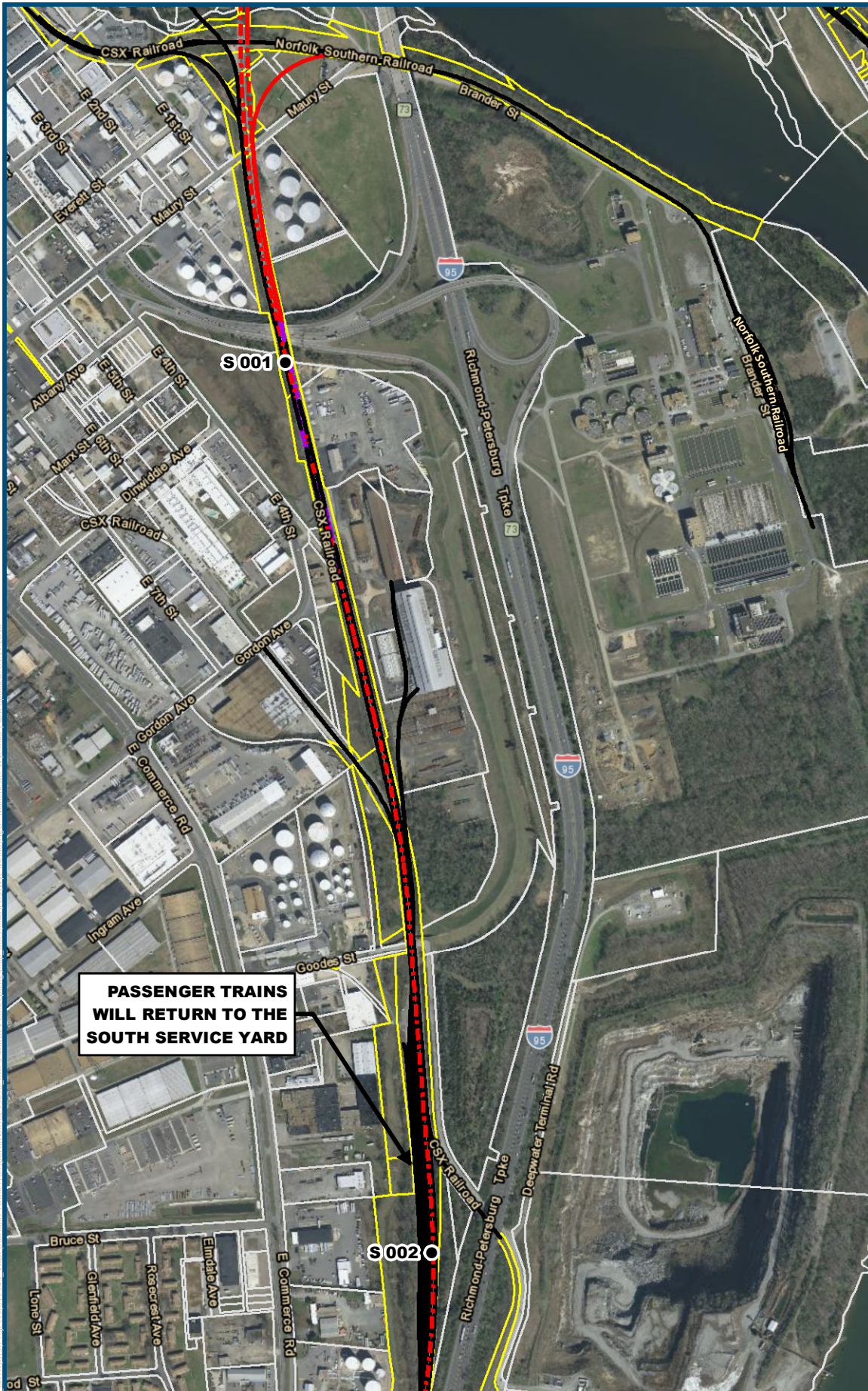


Figure 8
Manchester Wye & South Service Yard

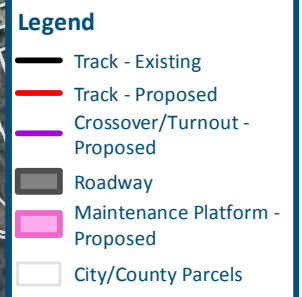
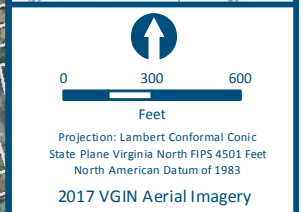
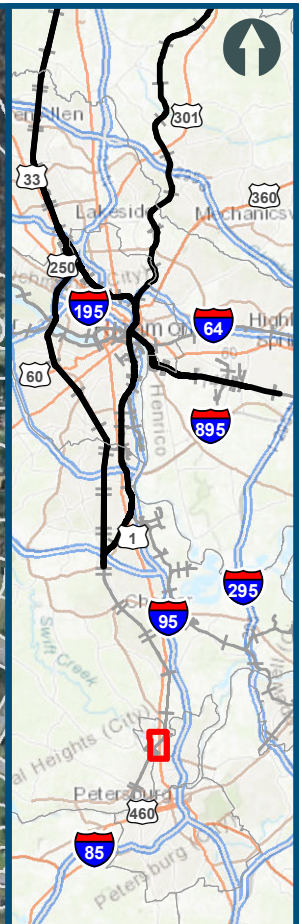
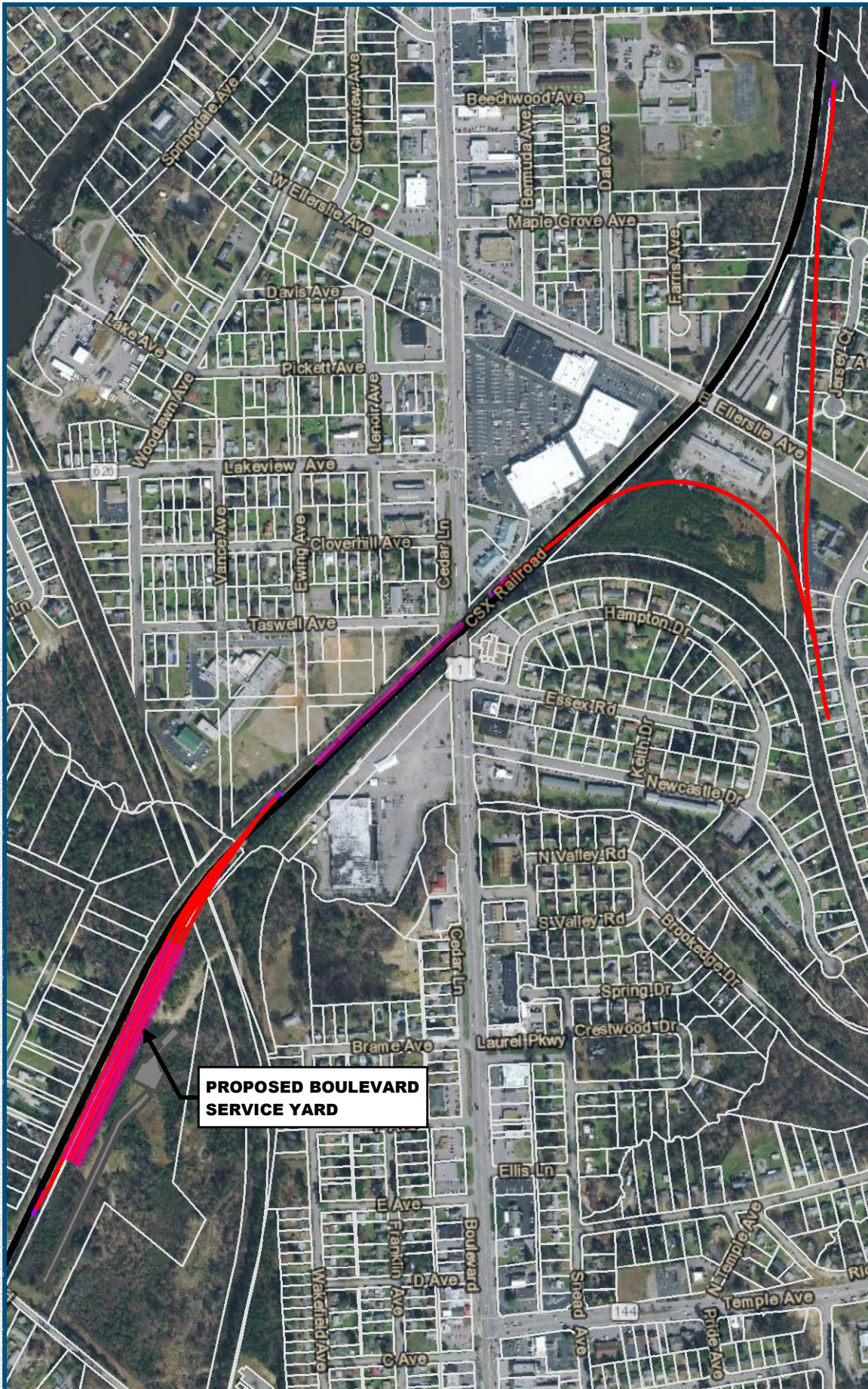
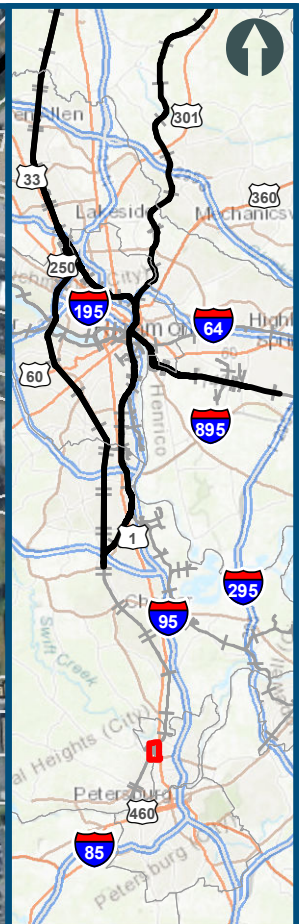
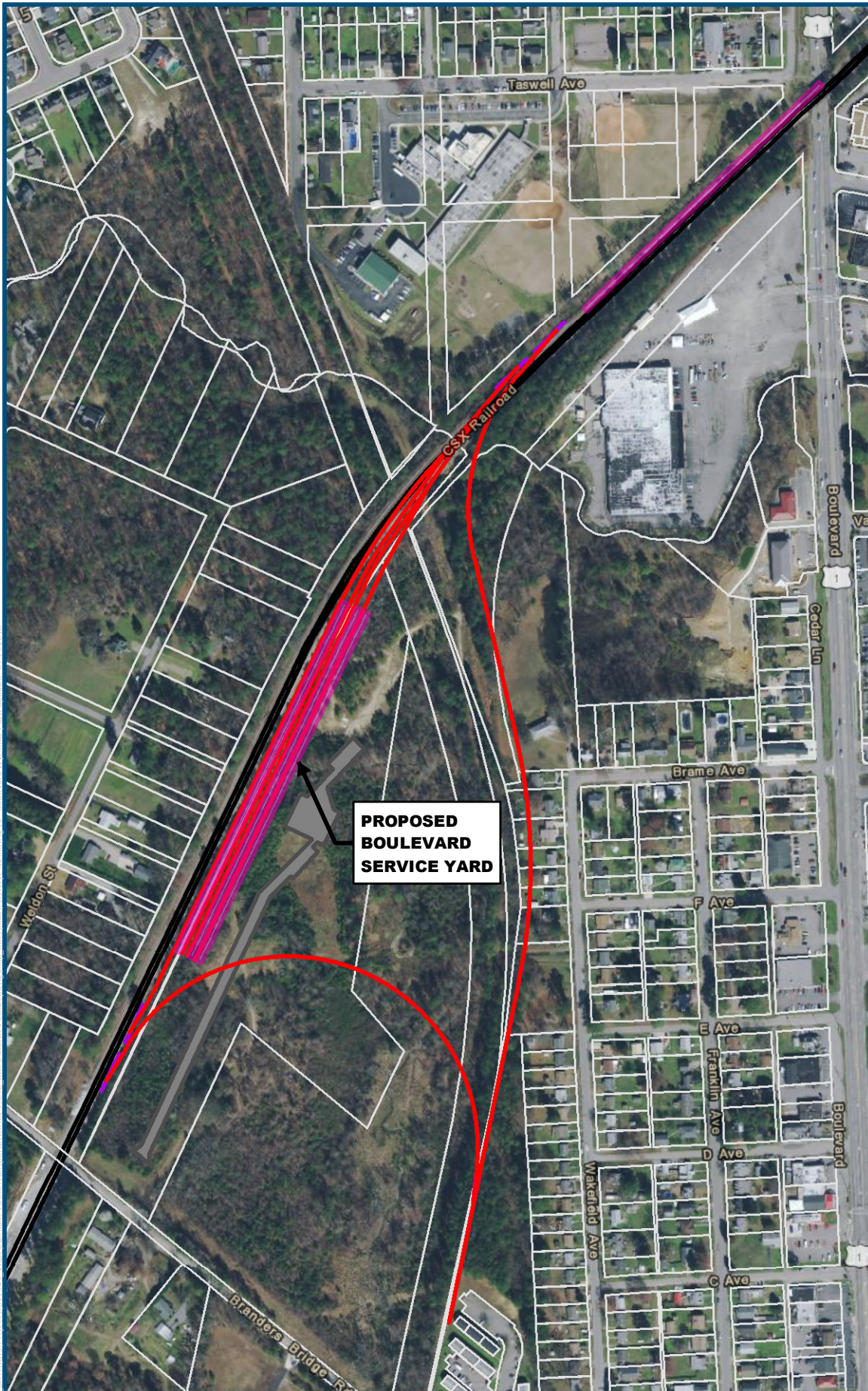


Figure 9
Dunlop (Petersburg)
Wye & Boulevard
Service Yard



↑

0 200 400
Feet

Projection: Lambert Conformal Conic
State Plane Virginia North FIPS 4501 Feet
North American Datum of 1983
2017 VGIN Aerial Imagery

Legend

- Track - Existing
- Track - Proposed
- Crossover/Turnout - Proposed
- Roadway
- Maintenance Platform - Proposed
- City/County Parcels

Figure 10
Boulevard (Petersburg) Wye & Service Yard