

**SECTION 3 of JPA: PROVIDE A DESCRIPTION OF THE PROJECT, PROJECT  
PRIMARY AND SECONDARY PURPOSES, PROJECT NEED, INTENDED USE, AND  
ALTERNATIVES CONSIDERED**

**PROJECT LOCATION AND SITE CONDITIONS:**

The City's proposed Elbow Road Shoulder & Drainage Improvements project is located off of Elbow Road between Bethel Baptist Church and the Virginia Beach City line, Chesapeake, VA. This portion of Elbow Road consists of an undivided two-lane urban arterial with no shoulders and open roadside ditches. The project corridor consists of three project areas comprising approximately 5.23 acres of mostly previously disturbed right-of-way, residential frontage, some mixed hardwood uplands and forested wetlands, some herbaceous wetlands, and jurisdictional ditches bordered on the west by low density single family residential, to the east by Stumpy Lake, to the north by large areas of undeveloped forested land (Tri-Cities property) and the south by the Gum Swamp watershed. As noted on Sheet 2D of the revised project design plans (Appendix C), the project area identified as Section 1 represents the *Bethel Baptist Curve*, the project area identified as Section 2 represents the *Third Crossing* (drainage improvements), and the project area identified as Section 3 represents the *Virginia Beach City Line Curve*. For geographical reference, the *Third Crossing* is the third major curve along Elbow Road, essentially equidistant between Bethel Baptist Church and the Virginia Beach City line. The latitude/longitude coordinates provided in Section 1 of the JPA (submitted on March 5, 2013) represent the approximate center point of the project corridor (corresponding with the *Third Crossing* site).

The *Bethel Baptist Curve* site encompasses previously disturbed right-of-way, residential frontage, and jurisdictional stormwater ditches. The area of proposed land disturbance at the *Bethel Baptist Curve* extends north to the proposed right-of-way and south to the existing previously disturbed right-of-way. The vegetative cover is predominately annual grass species.

The area of proposed land disturbance at the *Virginia Beach City Line Curve* extends south to the proposed right-of-way and north to the previously disturbed existing right-of-way. The area of proposed land disturbance at the *Third Crossing* extends along an existing stormwater outfall approximately 850 linear feet south of Elbow Road. The *Virginia Beach City Line Curve* and *Third Crossing* sites are comprised predominately of herbaceous and forested upland and wetland vegetative communities. The canopy community is dominated by sweet gum, red maple, loblolly pine, black gum, American elm, tulip poplar, Southern red oak and water oak. The sub-canopy community is dominated by blue beech, paw paw, and highbush blueberry. The herbaceous community is dominated by Virginia creeper, honeysuckle, soft rush, greenbrier, poison ivy, wild grape, and giant cane. The hydrology within the upland and wetland areas is very seasonal. The aquatic environments are known as seasonally saturated/flooded wetlands. The local soil series are dominated by Acredale Silt Loam and Acredale-Chapanoke Complex. These soils are poorly drained with seasonal water tables ranging from 0" to 12" below ground surface and are associated with Coastal Plain Marine Terraces. Local surface hydrology from these sites flows generally to the south into Gum Swamp and eventually discharges into the Atlantic and Intracoastal Canal (HUC 03010205). The NRCS Soil Report was included in Appendix N of the originally submitted JPA.

Most of the *Bethel Baptist Curve*, *Third Crossing*, and *Virginia Beach City Line Curve* sites have been previously disturbed over the last ten years by various right-of-way improvements such as roadway & shoulder maintenance, maintenance of roadside ditches & stormwater outfalls, and utility installations (HRSD) and maintenance (Dominion Virginia Power). Over the last 20 years,

approximately 70 linear feet of the emergent right-of-way south of Elbow Road from 1/2-mile east of Bethel Baptist Church to the Virginia Beach City Line has been cleared and maintained as a Dominion Virginia Power easement. Within the last six years, the Hampton Roads Sanitation District (HRSD) constructed a new sanitary sewer force main approximately 300 linear feet south of Elbow Road from Centerville Turnpike to the Virginia Beach City line. This section of Elbow Road is also a Candidate Build Alternative (CBA) for VDOT's Southeastern Parkway and Greenbelt project.

### **PROJECT PURPOSE AND NEED:**

Since, 2005 there have been over 100 accidents along this stretch of Elbow Road from Centerville Turnpike to the Virginia Beach City line. At least 50 injuries have resulted from these accidents from 2005 to 2007, and two of these accidents resulted in fatalities. Eighty of the reported accidents from 2005 to 2010 were contributed to side-swiping, head-on collisions or running off the road. The two fatalities were directly contributed to running off the road and a head-on collision. In addition, approximately 140 drainage-related (flooding & freezing) complaints have been documented over the last eleven years through the City's Customer Service Request (CSR) system. The frequency of these accidents was concentrated within and around the three major curves on Elbow Road. Copies of traffic data from 2005 through 2011 and copies of several citizen complaints dating as far back as 2000 were included in the originally submitted JPA.

The primary purpose of this project is to reduce the number of vehicular accidents on Elbow Road, specifically side-swipe and head-on collisions. Elongating the radius of the curves will increase the sighting distances for drivers, and widening the shoulders will provide emergency areas to avoid driving off the road. The secondary purpose of this project is to reduce flooding and freezing frequencies and duration within the curves and the approaches. Eliminating or reducing the duration of standing water within these curves will provide drivers greater control of their vehicles during and after storm events.

A video has been provided showing the drive from the VB City Line to the Bethel Baptist Curve.

### **PROJECT DESCRIPTION:**

The City proposes to construct approximately 1,260 linear feet of radius improvements along the north side of the Bethel Baptist Curve. The typical pavement width for the new alignment will be twenty-eight (28) feet (12-foot travel lanes, 2' paved shoulder + 3' gravel shoulder on south side) and curb & gutter on the north side of Elbow Road. There will be five-foot wide (2' paved and 3' gravel) shoulders with existing twelve-foot wide (top-to-top) open ditches regraded (possibly realigned) on the north and south side of the existing alignment, east and west of the realigned curve. Additional right-of-way will be required along the curve to accommodate the additional lane width, shoulder, relocated ditches and curb & gutter. In addition, four (4) driveway aprons on the north side and four (4) driveway aprons on the south side of Elbow Road will be relocated/reconfigured, and the existing 24" stormwater pipe will be extended at the ditch crossing.

In addition, the City proposes approximately 1,400 linear feet of radius improvements along the south side of the Virginia Beach City Line Curve. The typical pavement width for the new alignment will be twenty-eight (28) feet (12-foot travel lanes, 2' paved shoulders + 3' gravel shoulders) and regraded/relocated twelve-foot wide (top-to-top) open ditches on both sides of Elbow Road. The existing alignment will have transitioned improvements from existing to 2' paved and 3' gravel

shoulders and regraded (possibly realigned) open ditches on both the north and south sides of Elbow Road, west and southeast of the curve.

Finally, the City proposes to install two (2) 30" x 19" elliptical reinforced concrete pipes (ERCP) under Elbow Road at the *Third Crossing* to convey flood waters from the pavement surface into the roadside ditches. The City will also install two (2) 30" x 19" ERCP across the Dominion Virginia Power easement south of Elbow Road. These new pipes will lead to geometric improvements to 420 linear feet of historic outfall to further convey floodwaters off the roadway. The existing HRSD easement south of Elbow Road will be spanned by thirty-two (32) linear feet of 30" x 19" ERCP. All proposed pipes will be countersunk six inches, as depicted on the project plans (Appendix C).

### **ALTERNATIVES ANALYSIS and AVOIDANCE & MINIMIZATION:**

The City has conducted various phases of roadway and drainage improvements along this same stretch of Elbow Road over the past several years. Appendix H of the original JPA (submitted on March 5, 2013) includes a copy of Corps Permit Number NAO-2006-7432 (06-V0386) issued on December 21, 2006, which authorized the regrading of roadside ditches along a portion of Elbow Road and regrading of two outfall ditches. Appendix H also included descriptions of work previously conducted by the City, in an attempt to address the safety and flooding issues on this stretch of Elbow Road. These activities have provided temporary relief from some of the flooding issues; however, the roadway, shoulder and drainage improvements proposed in this current JPA will help to address these issues on a more permanent and long-term basis.

The proposed Southeastern Parkway and Greenbelt (SEPG) project has been under review by the Va. Dept. of Transportation (VDOT) and Federal Highway Administration (FHWA) since the late 1980's. This proposal is to construct a large highway, varying between four, six and eight lanes, to begin at the interchange of Interstates 64 and 464 in Chesapeake, and then proceed generally east and then northeast, terminating at Interstate 264 east of Naval Air Station - Oceana, between Virginia Beach Blvd. and Laskin Road, in the City of Virginia Beach. In December 2008, the Final Environmental Impact Statement (FEIS) was published by FHWA and VDOT. This document identifies over 200 acres of wetland impacts and over 8,700 linear feet of stream impacts associated with the preferred alternative for the SEPG project. Excerpts from the FEIS were included in Appendix I of the originally submitted JPA. The Environmental Protection Agency (EPA) has not approved this proposal and the likelihood of the SEPG being constructed is very low, primarily due to the exorbitant environmental (wetland and stream) impacts that would result. Therefore, the City of Chesapeake is proposing to conduct the improvements set forth in this JPA along the existing Elbow Road alignment, in order to address the safety and drainage issues on this roadway, while keeping the wetland/waters impacts minimized to the maximum extent practicable and feasible.

Section 1 of the proposed project (*Bethel Baptist Curve*) will result in 459 square feet of permanent impacts and 124 square feet of temporary impacts to jurisdictional waters (palustrine unconsolidated bottom = PUB). The proposed curve radius was selected in order to minimize those impacts, and to avoid potential impacts to an historic resource (Bethel Baptist Church) and the need for additional right-of-way acquisition. We feel that we have avoided and minimized surface water impacts to the maximum extent practicable and feasible at this impact area.

Section 2 of the proposed project (*Third Crossing*) will result in a total of 8290 square feet (0.19 acres) of permanent impacts to jurisdictional waters (PFO). The current design for this drainage improvement represents the least environmentally damaging and practicable alternative to achieve

the project purpose of routing stormwater off the roadway after rain events. Plans for the originally proposed outfall were submitted with the JPA on March 5, 2013. The “Centerville Properties” plans (dated March 21, 2000) and the currently proposed plans are included herein (Appendices G and C, respectively). Ellipse equations were run on all three of these alternatives, to determine the potential lateral drainage effect on the surrounding wetlands. The following table identifies these 3 different alternatives and the wetland impacts associated with each alternative (including secondary impacts due to lateral drainage effects):

<b>ALTERNATIVES FOR SECTION 2 OF PROJECT</b>	<b>DIRECT WETLAND IMPACTS</b>	<b>SECONDARY LATERAL DRAINAGE IMPACTS</b>	<b>TOTAL WETLAND IMPACTS</b>
“Centerville Properties” Alternative (plans dated March 21, 2000)	2.47 acres	0.5 acres	2.52 acres
Originally Proposed Outfall (plans dated January 29, 2013 submitted with JPA on March 5, 2013)	0.68 acres	0.02 acres	0.70 acres
Currently Proposed Outfall (plans dated October 1, 2013)	0.17 acres	0.02 acres	0.19 acres

After meeting on site with Corps and DEQ staff on April 4, 2013, it was clear that the originally proposed outfall location would not be feasible, due to the amount of standing water present in this area. It was suggested that we move the proposed outfall approximately 30 feet to the east and utilize the existing unimproved road, which will then be incorporated into our proposed access and drainage easement. We have incorporated these suggestions into the currently proposed design. Additionally, we have reduced the proposed drainage easement width from 60’ to 35’ in order to minimize impacts to wetlands.

Based on the results of the ellipse equation calculations, we do not anticipate any measurable drainage effects to the wetlands on the north side of the road. The elevation of the proposed pipes and proposed roadside ditch regrading (from existing 12” RCP to proposed dual RCP’s on both sides of Elbow Road) will allow stormwater to sheetflow off the road, into the roadside ditches, eventually discharging through the new pipes and outfall ditch. We will not be proposing “partial plugs” in any of the old ditches on the north side of the road because the City would become liable for potential damages upstream, due to the fact that we would be effectively impounding water on their private property.

Elevating the roadway at the *Third Crossing* would require the installation of large box culverts and construction of a significantly wider outfall ditch, thereby resulting in additional wetland impacts. Also, raising the elevation of the road would involve new cut & fill slopes, which would require that the roadway and roadside drainage ditches be widened, thereby resulting in additional forested wetland impacts on both the north and south side of Elbow Road.

Section 3 of the proposed project (*VB City Line Curve*) will result in 32,005 square feet of permanent impacts to jurisdictional waters (POW and PFO). The curve radius of the new road alignment was

reduced as much as possible to minimize wetland/waters impacts to the maximum extent practicable and feasible, while still achieving the purpose of making this curve safer for vehicles to navigate. Additionally, the proposed lane and shoulder widths were reduced, which resulted in less wetland/waters impacts. Sheet 6 of 6 of the Environmental Impact Exhibits dated October 10, 2013, shows the alternative alignments considered for this section of the project. A table is included on that sheet which identifies the reduction in wetland impacts associated with the chosen alignment.

### **PROJECT IMPACTS AND COMPENSATION:**

Avoidance and minimization measures have resulted in a 35% reduction in wetland impacts. The **total permanent non-tidal wetland impacts have been significantly reduced from 1.45 acres to 0.94 acres.** There will be a total of 161 square feet of temporary non-tidal wetland impacts associated with Section 1 (*Bethel Baptist Curve*) and Section 3 (*VB City Line Curve*); however, those areas will be restored with wetland seed mix after construction is complete.

The proposed permanent wetland impacts can be broken down as follows: 32,005 square feet (0.73 acres) of impacts to a combination of forested wetlands and open water (*VB City Line Curve*); 8290 square feet (0.2 acres) of impacts to forested wetlands (*Third Crossing*); and 459 square feet (0.01 acres) of impacts to open water and/or unconsolidated bottom (*Bethel Baptist Curve*). These impacts are a result of a combination of excavation and fill for drainage infrastructure (Section 2 = *Third Crossing*) and realignment of the roadway at the *Bethel Baptist* and *VB City Line Curves* (Sections 1 and 3, respectively). The wetland impacts are categorized in Section 9 (revised) of the JPA. The City proposes to compensate for unavoidable impacts to wetlands via the purchase of 1.82 wetland credits from the Dover Farm Mitigation Bank. A revised letter of credit availability and price quote from Dover Farm Mitigation Bank is included in Appendix F. A ratio of 2:1 was used for 0.88 acres of permanent impacts to forested wetlands. A ratio of 1:1 was used for 0.05 acres of conversion impacts (forested to emergent/open water) associated with the *Third Crossing*, as well as for 0.01 acres of impacts to open water areas associated with the *VB City Line Curve*. Compensation is not being proposed for 0.01 acres of impacts to palustrine unconsolidated bottom (PUB) associated with the *Bethel Baptist Curve*.

### **COMPENSATION FOR IMPACTS TO THREATENED/ENDANGERED SPECIES HABITAT:**

In addition to the standard wetland compensation being provided, the City also proposes to purchase 1 acre of preservation from Dover Farm Mitigation Bank, to compensate for impacts to canebrake rattlesnake habitat. This mitigation bank is known to support this species and this preservation proposal has been approved by Amy Ewing at Va. Dept. of Game & Inland Fisheries. A copy of her email dated April 22, 2013, is included in Appendix F.