



INTERSTATE 64 PENINSULA STUDY

SOCIOECONOMIC/LAND USE TECHNICAL MEMORANDUM



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RICHMOND, VA 23219

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ACRONYMS

ACS	American Community Survey
AFD	Agricultural/Forestral District
CBG	Census Block Group
DOI	U.S. Department of the Interior
DOT	Department of Transportation
EBL	Express Bus Lane
EIS	Environmental Impact Statement
EJ	Environmental Justice
ETL	Express Toll Lane
FHWA	Federal Highway Administration
FPPA	Farmland Policy Protection Act
GRTC	Greater Richmond Transit Company
HOT	High Occupancy/Toll
HOV	High Occupancy Vehicle
I	Interstate
LAFB	Langley Air Force Base
LOS	Level of Service
MPO	Metropolitan Planning Organization
NEPA	National Environmental Policy Act
NHS	National Highway System
NRCS	Natural Resource Conservation Service
OMB	U.S. Office of Management and Budget
USC	U.S. Code
USDHHS	U.S. Department of Health and Human Services
USDOT	U.S. Department of Transportation
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equality Act: A Legacy for Users
STRAHNET	Strategic Highway Network
SYIP	Six-Year Improvement Program
TPO	Transportation Planning Organization
UA	Urbanized Area
VDOT	Virginia Department of Transportation
VEC	Virginia Employment Commission

I. Introduction

The following report describes existing socioeconomic conditions within the study area of the Interstate 64 Peninsula Study, including demographic characteristics of the social environment. The purpose of this report is to summarize baseline conditions and trends, identify opportunities to tailor public involvement and outreach during the development process, assist in early identification of minority and low income populations, and serve as a basis for the Indirect and Cumulative Impacts Analysis.

The study area was determined based on the type of resource and is discussed in each section of *II. Existing Conditions and Potential Impacts*. Following the identification of the study area, a profile was developed to describe the population and characteristics of the area. This information was used as a basis to determine potential community issues and to reach conclusions about what effects the proposed project would have on the study area.

The following data sources provided useful information in understanding existing conditions and likely trends:

- 2010 U.S. Census data (downloaded from American FactFinder website, <http://factfinder.census.gov>).
- 2000 U.S. Census data (downloaded from American FactFinder website, <http://factfinder.census.gov>).
- Official municipality websites.
- Geographic Information Systems (GIS) and various mapping sources.

A. Project Description

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA) is evaluating options to improve the 75-mile long Interstate 64 (I-64) corridor from the Interstate 95 (I-95) (Exit 190) interchange in the City of Richmond to the Interstate 664 (I-664) (Exit 264) interchange in the City of Hampton (see **Figure 1**). This study is known as the Interstate 64 Peninsula Study (hereinafter referred to as the I-64 Study in this document).

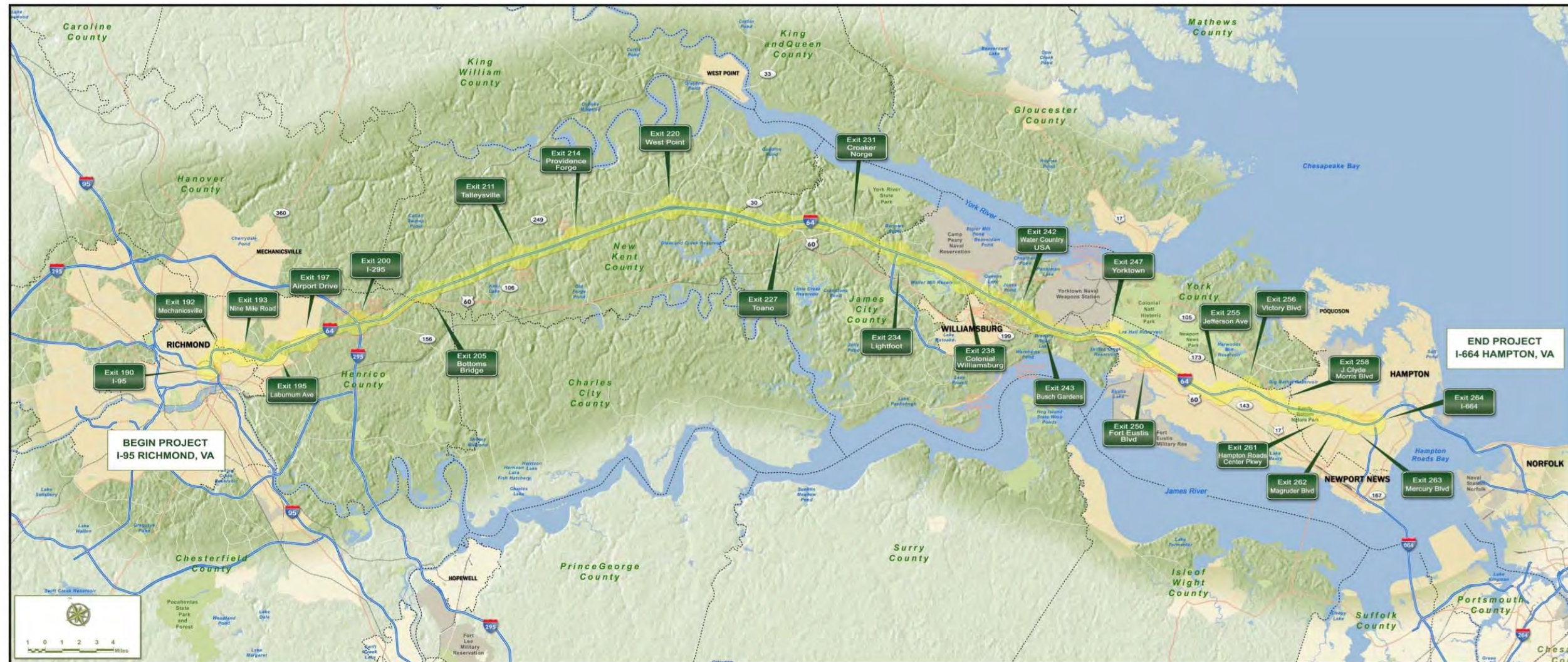
The number of lanes on existing I-64 varies through the study area. In the vicinity of the City of Richmond, from Exit 190 to Exit 197, there are generally three travel lanes in each direction. Between Exit 197 and mile marker 254, there are generally two travel lanes in each direction. Beginning at mile marker 254 and continuing east to the City of Hampton area, I-64 widens to four lanes in each direction with three general purpose lanes and one 2+ person High Occupancy Vehicle (HOV 2+) lane during the AM and PM peak periods. There are some additional lanes between closely spaced interchanges at the eastern end of the corridor to provide for easier merging of traffic on and off of the I-64 mainline.

B. Alternatives

There are a number of possible solutions to address the need for improvements along the I-64 corridor, as described in detail in the *Alternatives Development Technical Memorandum*. The goals are to develop the best and most cost effective solutions that meet the project purpose and needs while avoiding and/or minimizing impacts to the human and natural environments. The following are the alternatives being carried forward in this study:

1. No-Build Alternative

The No-Build Alternative serves as a baseline for the comparison of future conditions and impacts. The No-Build Alternative assumes that the projects currently programmed and funded in the VDOT Fiscal



I-64 PENINSULA STUDY ENVIRONMENTAL IMPACT STATEMENT

Figure 1: Project Location



Year 2013-2018 Six-Year Improvement Program (SYIP) would be implemented. In addition to the programmed VDOT projects, the Tidewater Super-Regional Model developed by VDOT and used for this study includes other projects within the corridor that are part of the Richmond Area Metropolitan Planning Organization (MPO) or Hampton Roads Transportation Planning Organization's (TPO) Constrained Long Range Plans, as well as the Rural Long Range Transportation Plans (which are not fiscally constrained) for the Richmond and Hampton Roads Planning District Commissions. Those projects form a part of the base conditions and the effects of these projects on I-64 traffic are accounted for in all 2040 No-Build analyses.

2. Alternatives 1A/1B General Purpose Lanes

These alternatives involve adding additional general purpose travel lanes to the I-64 mainline to achieve a Level of Service (LOS) C or better in the design year 2040. Although there are numerous possible combinations for adding these lanes, the analysis focused on adding all needed lanes within the existing right of way, to the greatest extent practicable, to either the outside of the existing lanes, which is Alternative 1A, or to the inside of the existing lanes within the median, which is Alternative 1B. For Alternative 1B, the lanes are also proposed in the median to the greatest extent practicable. However, not all sections of the corridor have sufficient median area to accommodate the needed additional lanes so in these areas the additional lanes are proposed to the outside. For the 25 existing interchanges within the study area corridor, geometric deficiencies were examined along with design year 2040 traffic volumes and resulting LOS at each interchange location. Conceptual designs were investigated that would accommodate the future traffic and assumptions were made and applied to each interchange to establish a study footprint that would allow for enough flexibility during the final design stage to accommodate other concepts not yet examined. Further engineering and traffic analyses would be performed at each interchange as the project progresses. During the Interchange Modification Report (IMR) process, which is required by FHWA before any changes can be made to Interstate interchanges, each of these interchange configurations would serve as a starting point to be further studied and refined with a more in-depth examination of the needs at each location, in order to produce a constructible design.

3. Alternatives 2A/2B Full Toll Lanes

These alternatives evaluate the impacts of tolling the entire facility. However, as of the time of this study, there is no federal or state agreement in place that would allow for tolling I-64 from I-95 in the City of Richmond to I-664 in the City of Hampton. Therefore, these alternatives that involve tolling may or may not ultimately be possible. Notwithstanding, because tolling could be an option in the future, alternatives that involve tolling were considered in the range of possible alternatives evaluated. For the purposes of this study, it was assumed that if the facility is tolled, the tolling would be for all vehicles, in both directions, and for the entire length of the corridor from I-95 in the City of Richmond to I-664 in the City of Hampton. It was also assumed that there would be toll collection stations, using overhead gantries and all-electronic tolling, for every interchange-to-interchange sections of I-64. If Alternative 2A or 2B is selected, subsequent studies will refine the specifics of the tolling, such as whether or not it would encompass the entire length of the I-64 corridor along with the number and placement of the toll collection stations. In order to determine the number of lanes needed for Alternatives 2A/2B, the traffic studies included a toll diversion analysis. As a result of this analysis, the tolling of I-64 is expected to have either a neutral effect or result in a decrease in traffic volumes on the I-64 mainline due to people choosing to avoid a tolled I-64 and using other parallel routes instead. The tolls are not expected to result in increased volumes at any location on the I-64 mainline. This analysis indicated possible reductions to traffic on the I-64 corridor, however these reductions are not projected to change the number of lanes needed to achieve a LOS C or better in the design year 2040 from those indicated for the General Purpose Lanes Alternatives. Therefore, the proposed disturbance limits for Alternatives 2A/2B would be the same as Alternatives 1A/1B, respectively. Although there are numerous possible combinations for adding these lanes, the analysis focused on adding all needed lanes within the existing right of way, to the greatest extent practicable, to either the outside of the existing lanes, which is Alternative 2A, or to the inside of

the existing lanes within the median, which is Alternative 2B. For Alternative 2B, the lanes are also proposed in the median to the greatest extent practicable. However, not all sections of the corridor have sufficient median area to accommodate the needed additional lanes so in these areas the additional lanes are proposed to the outside. In addition to the mainline improvements, due to only modest changes in traffic volumes, as determined in the toll diversion analysis, Alternatives 2A/2B also includes the same improvements to the 25 interchanges as described with Alternatives 1A/1B.

4. Alternative 3 Managed Lanes

This alternative involves the addition of separated, managed lanes located in the median. These managed lanes were examined for the entire length of the I-64 study area from I-95 in the City of Richmond to I-664 in the City of Hampton. As previously described, not all sections of the I-64 corridor have sufficient median area to accommodate the addition of any lanes. In these areas, the facility is proposed to be widened to the outside of the existing general purpose lanes in order to accommodate the managed lanes between the eastbound and westbound general purpose travel lanes. Managed lanes can refer to many different strategies, including:

- High Occupancy Vehicle (HOV) lanes.
- High Occupancy Toll (HOT) lanes.
- Express Toll Lanes (ETL).
- Express Bus Lanes (EBL).

For any of the managed lanes that involve toll collection (HOT or ETL lanes), traditional toll plazas were not considered. All toll collection would be conducted by overhead gantries with all-electronic tolling used to collect all tolls at highway speeds. The Environmental Impact Statement (EIS) study does not identify what type of managed lanes would be constructed. Based on the results of the capacity analysis, the lane configurations developed for Alternative 3 along the I-64 corridor are described in the *Alternatives Development Technical Memorandum*. If Alternative 3 is selected, subsequent studies would refine the specifics of the managed lanes throughout the I-64 corridor.

II. Existing Conditions and Potential Impacts

Census Data Usage - *There are several differences between the 2010 Census and previous Censuses. The Census "long form," which was used to collect data for the 2000 Census as well as previous Decennial Censuses provided a 1-in-6 population sample of demographic and socioeconomic characteristics such as educational attainment, commuting, income, housing costs, and poverty. This form is no longer collected as part of the Decennial Census, and instead has been replaced by the American Community Survey (ACS). The ACS is a nationwide, continuous survey designed to provide demographic, housing, social, and economic data every year, however it is subject to larger margins of error and is only provided for larger geographies such as counties and large cities and therefore is not available at the Census Block Group (CBG) Level. The 2010 Census data was used wherever possible, however 2000 Census data was used and noted when 2010 data was not available.*

The general boundary of the study area runs along the existing I-64, from the City of Richmond to the City of Hampton, crossing through Henrico County, New Kent County, James City County, York County, and the City of Newport News. Listed below are the 72 CBGs that make up the study area. Delineated by the United States Census Bureau, a CBG is the smallest geographic unit for which demographic data are readily available. Census block groups represent discrete populations and generally contain between 600 and 3,000 people. The 72 are distributed as follows:

- City of Richmond – 9 block groups
- Henrico County – 11 block groups
- New Kent County – 9 block groups
- James City County – 6 block groups
- York County – 8 block groups
- City of Newport News – 20 block groups
- City of Hampton – 9 block groups

A socioeconomic inventory was conducted as part of this project. This inventory included the identification of social, economic, and land use resources located within the study area. In addition, data regarding population, race, economics, and other demographics, which are available through the U.S. Census Bureau’s *2010 Census*, were compiled and evaluated. Data were collected at the block group level. The census tracts and block groups that encompass the study area are listed in **Table 1** and depicted in **Appendix A**.

Table 1: Census Tracts and Block Groups within the Study Area

Census Tracts	Block Groups	Census Tracts	Block Groups	Census Tracts	Block Groups
City of Richmond		New Kent County		City of Newport News	
109	4	7001	1,2,3	316.01	1
201	1	7002	1,2,3	316.02	4
202	1	7003	1,2,3	320.06	1
204	3	James City County		321.13	1
209	1	801.01	1	321.14	1
301	1	801.02	1	321.17	1, 2, 3
302	1,2	80401	1, 2	321.23	1
402	1	804.02	1, 2	321.24	1
Henrico County		York County		321.26	1
2010.03	3	510	1, 2, 3	321.28	1
2011.01	1, 4	509	1, 2	321.29	1,2
2011.02	2	511	1, 2, 3	321.30	3
2012.02	3	City of Hampton		321.32	4
2014.01	1, 2	103.04	1	322.12	1,3
2014.03	3	103.07	2	322.25	2
2014.04	1, 2	103.11	1, 2	324.00	1
2017.01	1	103.13	1, 2		
		105.01	1		
		105.02	1, 2		

Source: U.S. Census Bureau, *2010 Census* (American FactFinder website: <http://factfinder.census.gov>); accessed February 20, 2012.

A. Social Environment

1. Population

Table 2 provides population data from the *2010 Census* for the study area. In 2010, the combined population for the socioeconomic study area (any CBG that borders the I-64 corridor in the study area) was 128,964 residents. The Virginia Employment Commission (VEC) projects that all localities, except for the City of Richmond, would experience an increase in population by 2030. Compared to the entire Commonwealth of Virginia, with a 12.3% increase in population from the year 2010 to the year 2030, the counties would see substantial growth in populations as compared to the cities.

2. Age and Gender

As of 2010, the gender distribution within the Commonwealth of Virginia was 51% female and 49% male. All study area block group gender distribution percentages were within 12% or less of 50%. The CBGs for persons 65 years of age or older ranged from 0% - 30%, while Virginia and the total study area as a whole were both 12%. The majority of the CBGs' population was between the ages of 18 and 64, with 64% of the entire study area and 65% of Virginia falling in that age range. See **Table 3** for more detailed percentages.

Table 2: Population Trends

	Population in 2000	Population in 2010	Projected Population in 2030	Percent change from 2000 to 2010	Projected Percent change from 2010 to 2030
Virginia	7,078,515	8,001,024	9,825,019	11.3%	12.3%
City of Richmond	197,790	204,214	187,066	3.2%	-9.2%
Henrico County	262,300	306,935	379,041	14.5%	19.0%
New Kent County	13,462	18,492	29,496	27.2%	37.3%
James City County	48,102	67,009	100,294	28.2%	33.2%
York County	56,297	65,464	86,823	14.0%	24.6%
City of Newport News	180,150	180,719	183,372	0.3%	1.5%
City of Hampton	146,437	137,436	144,650	-6.6%	5.0%
Study Area	77,919*	128,964	N/A	N/A	N/A

Source: Virginia Employment Commission, *Population Projections*, http://www.vec.virginia.gov/pdf/Pop_projs.pdf.

Source: U.S. Census Bureau (2000 and 2010) (American FactFinder website: <http://factfinder.census.gov>); accessed February 20, 2012.

*Note: Census boundary changes from 2000 to 2010 do not allow for accurate comparison of data for the study area. The 2010 Study Area population numbers reflect new tracts and block groups.

3. Racial Characteristics

Table 4 provides a summary of the major racial and ethnic groups in the area and the project socioeconomic study area. Caucasian and African-American are the largest racial/ethnic groups within the study area, with all other groups in very small distribution. According to the *2010 Census*, the predominant race found within the socioeconomic study area was Caucasian, comprising 52% of the population. This percentage is lower in comparison to the State at 69%. The cities/urban areas all fall lower than the 52% overall study area rate while the counties/rural areas are much higher. The largest minority population found within the socioeconomic study area was African American, comprising 40% of the population. This percentage is higher than that of the state's at 19%. The City of Richmond African-American population is highest at 51% with the Cities of Hampton and Newport News at 50% and 41%, respectively.

For the *2010 Census*, the question on Hispanic origin was asked of individuals living in the United States. An individual's response to the Hispanic origin question was based upon self-identification. The U.S. Census Bureau collects Hispanic origin information following the guidance of the U.S. Office of Management and Budget's (OMB) 1997 Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. These federal standards mandate that race and ethnicity (Hispanic origin) are separate and distinct concepts and that when collecting these data via self-identification, two different questions must be used.

Hispanic origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. People who identify their

Table 3: Age and Gender Demographics

Census Tract	Block	Total Population	Male	Female	Under 18	18-64	65 and over
Virginia Total		8,001,024	3,925,983 (49%)	4,075,041 (51%)	1,853,677 (23%)	5,170,410 (65%)	976,937 (12%)
City of Richmond Total		204,214	97,331 (48%)	106,883 (52%)	38,009 (19%)	143,586 (70%)	22,619 (11%)
Henrico County Total		306,935	144,167 (47%)	162,768 (53%)	74,372 (24%)	194,639 (64%)	37,924 (12%)
New Kent County Total		18,429	9,373 (51%)	9,056 (49%)	4,101 (22%)	12,102 (64%)	2,226 (12%)
James City County Total		67,009	32,346 (48%)	34,663 (52%)	14,385 (21%)	38,754 (58%)	13,870 (21%)
York County Total		65,464	32,001 (49%)	33,463 (51%)	17,276 (26%)	40,254 (62%)	7,934 (12%)
City of Newport News Total		180,719	87,263 (48%)	93,456 (52%)	43,913 (24%)	117,587 (65%)	19,219 (11%)
City of Hampton Total		137,436	65,750 (48%)	71,686 (52%)	31,274 (23%)	89,306 (65%)	16,856 (12%)
Study Area Total		128,964	61,233 (47%)	67,731 (53%)	30,371 (24%)	82,926 (64%)	15,667 (12%)
Block Groups by Locality							
City of Richmond							
209	1	1,060	468/(44%)	592/(56%)	236/(22%)	664/(63%)	160/(15%)
204	3	835	350/(42%)	485/(58%)	392/(47%)	394/(47%)	49/(6%)
202	1	2,357	938/(40%)	1,419/(60%)	980/(42%)	1,202/(51%)	175/(7%)
201	1	1,669	640/(38%)	1,029/(62%)	696/(42%)	858/(51%)	115/(7%)
109	4	795	371/(47%)	424/(53%)	180/(23%)	481/(60%)	134/(17%)
302	2	508	227/(45%)	281/(55%)	6/(1%)	502/(99%)	0/(0%)
302	1	1,547	835/(54%)	712/(46%)	135/(9%)	1,345/(86%)	67/(4%)
402	1	2,495	1,118/(45%)	1,377/(55%)	115/(5%)	2,275/(91%)	105/(4%)
301	1	877	450/(51%)	427/(49%)	214/(24%)	501/(58%)	162/(18%)
Henrico County							
2014.03	3	994	485/(49%)	509/(51%)	132/(13%)	567/(57%)	295/(30%)

Census Tract	Block	Total Population	Male	Female	Under 18	18-64	65 and over
2014.04	2	2,275	1,103/(48%)	1,172/(52%)	447/(20%)	1531/(67%)	297/(13%)
2014.04	1	2,013	963/(48%)	1,050/(52%)	504/(25%)	1,263/(63%)	246/(12%)
2017.01	1	2,156	1,028/(48%)	1,128/(52%)	528/(24%)	1,331/(62%)	297/(14%)
2012.02	3	1,823	821/(45%)	1,002/(55%)	448/(25%)	1,187/(65%)	188/(10%)
2014.01	2	1,028	457/(44%)	571/(56%)	163/(16%)	629/(61%)	236/(23%)
2014.01	1	3,150	1,367/(43%)	1,783/(57%)	792/(25%)	1,954/(62%)	404/(13%)
2011.02	2	3,052	1,331/(44%)	1,721/(56%)	803/(26%)	2,039/(66%)	210/(7%)
2011.01	4	1,449	663/(46%)	786/(54%)	264/(18%)	760/(53%)	425/(29%)
2011.01	1	2,041	889/(44%)	1,152/(56%)	536/(26%)	1,218/(60%)	287/(14%)
2010.03	3	1,348	611/(45%)	737/(55%)	264/(20%)	803/(59%)	281/(21%)
New Kent County							
7003	3	3,111	1,592/(51%)	1,519/(49%)	693/(22%)	2,031/(66%)	387/(12%)
7003	2	2,234	1,291/(58%)	943/(42%)	372/(17%)	1,642/(73%)	220/(10%)
7003	1	1,408	705/(50%)	703/(50%)	362/(26%)	851/(60%)	195/(14%)
7002	3	904	447/(49%)	457/(51%)	197/(22%)	633/(70%)	74/(8%)
7002	2	1,153	556/(48%)	597/(52%)	262/(23%)	748/(65%)	143/(12%)
7002	1	2,320	1,153/(50%)	1,167/(50%)	602/(26%)	1,470/(67%)	248/(11%)
7001	3	1,443	723/(50%)	720/(50%)	310/(21%)	919/(64%)	214/(15%)
7001	2	2,590	1,266/(49%)	1,324/(51%)	604/(23%)	1,681/(65%)	305/(12%)
7001	1	1,701	838/(49%)	863/(51%)	382/(22%)	1,126/(67%)	193/(11%)
James City County							
801.02	1	1,458	912/(63%)	546/(37%)	299/(21%)	1,077/(73%)	82/(6%)
801.01	1	1,174	544/(46%)	630/(54%)	150/(13%)	509/(43%)	515/(44%)
804.02	2	3,718	1,793/(48%)	1,925/(52%)	1,004/(27%)	2,350/(63%)	364/(10%)
804.02	1	3,027	1,454/(48%)	1,573/(52%)	471/(16%)	1,703/(57%)	853/(28%)
804.01	2	3,724	1,817/(49%)	1,907/(51%)	844/(23%)	2,218/(59%)	662/(18%)
804.01	1	3,101	1,531/(49%)	1,570/(51%)	837/(27%)	1,970/(64%)	294/(9%)
York County							
509	2	1,462	665/(45%)	797/(55%)	356/(24%)	930/(62%)	176/(12%)
509	1	703	470/(67%)	233/(33%)	214/(30%)	485/(69%)	4/(1%)

Census Tract	Block	Total Population	Male	Female	Under 18	18-64	65 and over
511	3	2,506	1,211/(48%)	1,295/(52%)	712/(28%)	1,545/(62%)	249/(10%)
511	2	2,199	1,024/(47%)	1,175/(53%)	570/(26%)	1,394/(63%)	235/(11%)
511	1	2,274	1,089/(48%)	1,185/(52%)	552/(24%)	1,237/(55%)	485/(21%)
510	3	1,315	595/(45%)	720/(55%)	192/(15%)	731/(55%)	392/(30%)
510	2	621	312/(50%)	309/(50%)	145/(23%)	399/(65%)	77/(12%)
510	1	1,674	848/(51%)	826/(49%)	394/(24%)	1,063/(63%)	217/(13%)
City of Newport News							
316.02	2	831	424/(51%)	407/(49%)	167/(20%)	592/(71%)	72/(9%)
316.01	1	2,383	1,071/(45%)	1,312/(55%)	816/(34%)	1,476/(62%)	91/(4%)
321.30	1	3,048	1,372/(45%)	1,676/(55%)	564/(19%)	1,865/(61%)	619/(20%)
320.06	2	2,440	1,093/(45%)	1,347/(55%)	526/(22%)	1,830/(75%)	84/(3%)
322.12	1	402	157/(39%)	245/(61%)	48/(12%)	203/(50%)	151/(38%)
322.12	1	1,949	873/(45%)	1,076/(55%)	526/(27%)	1,269/(65%)	154/(8%)
321.17	2	2,472	1,126/(46%)	1,346/(54%)	582/(24%)	1,714/(69%)	176/(7%)
321.17	2	2,719	1,315/(48%)	1,404/(52%)	649/(24%)	1,874/(69%)	196/(7%)
321.17	1	1,813	912/(50%)	901/(50%)	474/(26%)	1,249/(69%)	90/(5%)
321.28	2	1,992	936/(47%)	1,056/(53%)	513/(26%)	1,369/(68%)	110/(6%)
321.29	1	1,035	511/(49%)	524/(51%)	269/(26%)	694/(67%)	72/(7%)
321.29	1	1,742	826/(47%)	916/(53%)	359/(21%)	1,173/(67%)	210/(12%)
321.14	1	1,737	837/(48%)	900/(52%)	517/(30%)	1,139/(65%)	81/(5%)
321.26	1	1,396	676/(48%)	720/(52%)	272/(19%)	1,053/(76%)	71/(5%)
321.13	2	1,343	574/(43%)	769/(57%)	371/(28%)	797/(59%)	175/(13%)
322.25	4	783	410/(52%)	373/(48%)	97/(12%)	601/(77%)	85/(11%)
321.32	1	1,557	771/(50%)	786/(50%)	415/(27%)	1,095/(70%)	47/(3%)
321.24	1	1,823	796/(44%)	1,027/(56%)	631/(35%)	1,150/(63%)	42/(2%)
321.23	1	1,410	682/(48%)	728/(52%)	508/(36%)	872/(62%)	30/(2%)
City of Newport News							
105.02	2	831	424/(51%)	407/(49%)	167/(20%)	592/(71%)	72/(9%)
105.02	1	2,383	1,071/(45%)	1,312/(55%)	816/(34%)	1,476/(62%)	91/(4%)
105.01	1	3,048	1,372/(45%)	1,676/(55%)	564/(19%)	1,865/(61%)	619/(20%)

Census Tract	Block	Total Population	Male	Female	Under 18	18-64	65 and over
103.13	2	2,440	1,093/(45%)	1,347/(55%)	526/(22%)	1,830/(75%)	84/(3%)
103.13	1	402	157/(39%)	245/(61%)	48/(12%)	203/(50%)	151/(38%)
103.11	1	1,949	873/(45%)	1,076/(55%)	526/(27%)	1,269/(65%)	154/(8%)
103.11	2	2,472	1,126/(46%)	1,346/(54%)	582/(24%)	1,714/(69%)	176/(7%)
103.07	2	2,719	1,315/(48%)	1,404/(52%)	649/(24%)	1,874/(69%)	196/(7%)
103.04	1	1,813	912/(50%)	901/(50%)	474/(26%)	1,249/(69%)	90/(5%)

Source: U.S. Census Bureau (2010 Data) (American FactFinder website: <http://factfinder.census.gov>); accessed February 20, 2012.

Table 4: Racial Distributions

Census Tract	Block Group	Caucasian	Black/ African- American	Asian	American Indian/ Alaskan Native	Native Hawaiian or other Pacific Islander	Other	Two or More Races	Total Minorities	Population of Hispanic Origin
Virginia Total		5,486,852 (69%)	1,551,399 (19%)	439,890 (5%)	29,225 (<1%)	5,980 (<1%)	254,278 (3%)	233,400 (3%)	2,514,172 (31%)	631,825 (8%)
City of Richmond Total		83,288 (41%)	103,342 (51%)	4,750 (2%)	705 (<1%)	158 (<1%)	7,331 (4%)	4,640 (2%)	120,926 (59%)	282 (<1%)
Henrico County Total		181,719 (59%)	90,669 (30%)	20,052 (7%)	1,012 (<1%)	127 (<1%)	6,157 (2%)	7,199 (2%)	125,216 (41%)	15,001 (5%)
New Kent County Total		15,057 (82%)	2,484 (13%)	162 (1%)	194 (1%)	3 (<1%)	98 (1%)	431 (2%)	3372 (18%)	390 (2%)
James City County Total		53,792 (80%)	8,805 (13%)	1,506 (2%)	197 (<1%)	55 (<1%)	924 (1%)	1,730 (3%)	13,217 (20%)	3,024 (5%)
York County Total		50,031 (76%)	8,751 (13%)	3,205 (5%)	251 (<1%)	99 (<1%)	884 (1%)	2,243 (3%)	15,433 (24%)	2,892 (4%)
City of Newport News Total		88,518 (49%)	73,514 (41%)	4,956 (3%)	851 (<1%)	315 (<1%)	4,850 (3%)	7,715 (4%)	92,201 (51%)	13,590 (8%)
City of Hampton Total		58,642 (43%)	68,104 (50%)	2,992 (2%)	594 (<1%)	154 (<1%)	1,826 (1%)	5,124 (4%)	78,794 (57%)	6,241 (5%)
Study Area Total		67,606 (52%)	51,166 (40%)	2,715 (2%)	709 (1%)	174 (<1%)	2,306 (2%)	4,317 (3%)	61,387 (48%)	6,784 (5%)
Block Groups by Locality										
City of Richmond										
209	1	79/(7%)	927/(87%)	2/(<1%)	4/(<1%)	0/(<1%)	8/(1%)	40/(4%)	981/(93%)	18/(2%)
204	3	15/(2%)	799/(96%)	1/(<1%)	0/(<1%)	0/(<1%)	1/(<1%)	19/(2%)	820/(98%)	8/(1%)

Census Tract	Block Group	Caucasian	Black/ African- American	Asian	American Indian/ Alaskan Native	Native Hawaiian or other Pacific Islander	Other	Two or More Races	Total Minorities	Population of Hispanic Origin
202	1	20/(1%)	2,297/(97%)	0/(<1%)	8/(<1%)	0/(<1%)	9/(<1%)	23/(1%)	2,337/(99%)	22/(1%)
201	1	8/(<1%)	1,663/(98%)	1/(<1%)	1/(<1%)	0/(<1%)	6/(<1%)	21/(1%)	1,692/(100%)	6/(<1%)
109	4	48/(6%)	721/(91%)	1/(<1%)	3/(<1%)	0/(<1%)	4/(1%)	18/(2%)	747/(94%)	15/(2%)
302	2	211/(42%)	197/(39%)	66/(13%)	1/(<1%)	0/(<1%)	16/(3%)	17/(3%)	297/(58%)	26/(5%)
302	1	760/(49%)	648/(42%)	55/(4%)	5/(<1%)	0/(<1%)	17/(1%)	62/(4%)	787/(51%)	57/(4%)
402	1	861/(35%)	1,312/(53%)	169/(7%)	7/(<1%)	2/(<1%)	43/(2%)	101/(4%)	1,634/(65%)	122/(5%)
301	1	19/(2%)	843/(96%)	0/(<1%)	1/(<1%)	1/(<1%)	0/(<1%)	13/(1%)	858/(98%)	8/(1%)
Henrico County										
2014.03	3	869/(87%)	93/(9%)	2/(<1%)	9/(1%)	0/(<1%)	5/(1%)	16/(2%)	125/(13%)	21/(2%)
2014.04	2	2,063/(91%)	162/(7%)	16/(1%)	5/(<1%)	1/(<1%)	9/(<1%)	19/(1%)	212/(9%)	16/(1%)
2014.04	1	1,448/(72%)	487/(24%)	14/(1%)	22/(1%)	0/(<1%)	6/(<1%)	36/(2%)	565/(28%)	31/(2%)
2017.01	1	1,565/(73%)	500/(23%)	7/(<1%)	8/(<1%)	1/(<1%)	14/(1%)	61/(3%)	591/(27%)	73/(3%)
2012.02	3	663/(36%)	1,100/(60%)	12/(1%)	10/(1%)	3/(<1%)	13/(1%)	22/(1%)	1,160/(64%)	45/(2%)
2014.01	2	56/(5%)	960/(93%)	0/(<1%)	0/(<1%)	0/(<1%)	0/(<1%)	12/(1%)	972/(95%)	3/(<1%)
2014.01	1	1,009/(32%)	1,874/(59%)	36/(1%)	32/(1%)	4/(<1%)	105/(3%)	90/(3%)	2,141/(68%)	216/(7%)
2011.02	2	865/(28%)	2,044/(67%)	33/(1%)	12/(<1%)	0/(<1%)	20/(1%)	78/(3%)	2,187/(72%)	87/(3%)
2011.01	4	525/(36%)	884/(61%)	5/(<1%)	3/(<1%)	0/(<1%)	16/(1%)	16/(1%)	924/(64%)	43/(3%)
2011.01	1	143/(7%)	1,823/(89%)	20/(1%)	6/(<1%)	0/(<1%)	4/(<1%)	45/(2%)	1,989/(97%)	28/(1%)
2010.03	3	13/(1%)	1,300/(96%)	2/(<1%)	4/(<1%)	0/(<1%)	1/(<1%)	28/(2%)	1,335/(99%)	11/(1%)
New Kent County										
7003	3	2,612/(84%)	283/(9%)	41/(1%)	61/(2%)	0/(<1%)	13/(<1%)	101/(3%)	499/(16%)	69/(2%)
7003	2	1,583/(71%)	556/(25%)	15/(1%)	7/(<1%)	1/(<1%)	24/(1%)	48/(2%)	651/(29%)	68/(3%)
7003	1	992/(70%)	331/(24%)	12/(1%)	11/(1%)	0/(<1%)	21/(1%)	41/(3%)	416/(30%)	59/(4%)
7002	3	833/(92%)	22/(2%)	3/(<1%)	15/(2%)	1/(<1%)	2/(<1%)	28/(3%)	71/(8%)	19/(2%)
7002	2	773/(67%)	339/(29%)	11/(1%)	9/(1%)	0/(<1%)	2/(<1%)	19/(2%)	380/(33%)	7/(1%)
7002	1	1,866/(80%)	351/(15%)	19/(1%)	16/(1%)	0/(<1%)	15/(1%)	53/(2%)	454/(20%)	55/(2%)
7001	3	1,316/(91%)	70/(5%)	5/(<1%)	27/(2%)	0/(<1%)	2/(<1%)	23/(2%)	127/(9%)	18/(1%)
7001	2	2,275/(88%)	233/(9%)	32/(1%)	11/(<1%)	0/(<1%)	8/(<1%)	31/(1%)	315/(12%)	48/(2%)
7001	1	1,424/(84%)	196/(12%)	12/(1%)	22/(1%)	1/(<1%)	7/(<1%)	39/(2%)	277/(16%)	26/(2%)

Census Tract	Block Group	Caucasian	Black/ African- American	Asian	American Indian/ Alaskan Native	Native Hawaiian or other Pacific Islander	Other	Two or More Races	Total Minorities	Population of Hispanic Origin
James City County										
801.02	1	729/(50%)	568/(39%)	21/(1%)	23/(2%)	0/(<1%)	51/(3%)	66/(5%)	729/(50%)	108/(7%)
801.01	1	1,090/(93%)	24/(2%)	53/(5%)	0/(<1%)	0/(<1%)	1/(<1%)	6/(1%)	84/(7%)	22/(2%)
804.02	2	2,613/(70%)	883/(24%)	49/(1%)	9/(<1%)	2/(<1%)	57/(2%)	105/(3%)	1,105/(30%)	175/(5%)
804.02	1	2,656/(88%)	224/(7%)	37/(1%)	16/(1%)	0/(<1%)	31/(1%)	63/(2%)	371/(12%)	114/(4%)
804.01	2	3,203/(86%)	339/(9%)	58/(2%)	25/(1%)	1/(<1%)	25/(1%)	73/(2%)	521/(14%)	90/(2%)
804.01	1	2,506/(81%)	388/(13%)	49/(2%)	8/(<1%)	1/(<1%)	42/(1%)	107/(3%)	595/(19%)	175/(6%)
York County										
509	2	690/(47%)	653/(45%)	35/(2%)	9/(1%)	1/(<1%)	19/(1%)	55/(4%)	772/(53%)	48/(3%)
509	1	510/(73%)	121/(17%)	18/(3%)	10/(1%)	2/(<1%)	10/(1%)	32/(5%)	193/(27%)	84/(12%)
511	3	1,324/(53%)	902/(36%)	71/(3%)	16/(1%)	11/(<1%)	48/(2%)	134/(5%)	1,182/(47%)	134/(5%)
511	2	1,593/(72%)	376/(17%)	60/(3%)	20/(1%)	4/(<1%)	58/(3%)	88/(4%)	606/(28%)	130/(6%)
511	1	1,803/(79%)	257/(11%)	121/(5%)	4/(<1%)	4/(<1%)	24/(1%)	58/(3%)	468/(21%)	67/(3%)
510	3	1,053/(80%)	140/(11%)	45/(3%)	11/(1%)	0/(<1%)	33/(3%)	33/(3%)	262/(20%)	78/(6%)
510	2	499/(80%)	92/(15%)	6/(1%)	1/(<1%)	0/(<1%)	8/(1%)	15/(2%)	122/(20%)	12/(2%)
510	1	1,504/(90%)	95/(6%)	39/(2%)	4/(<1%)	2/(<1%)	2/(<1%)	29/(2%)	171/(10%)	51/(3%)
City of Newport News										
316.02	4	1,010/(74%)	250/(18%)	33/(2%)	5/(<1%)	1/(<1%)	20/(1%)	51/(4%)	360/(26%)	69/(5%)
316.01	1	1,938/(62%)	954/(30%)	63/(2%)	10/(<1%)	10/(<1%)	43/(1%)	127/(4%)	1,207/(38%)	142/(5%)
321.3	3	817/(62%)	308/(23%)	95/(7%)	1/(<1%)	6/(<1%)	23/(2%)	76/(6%)	509/(38%)	104/(8%)
320.06	1	392/(27%)	785/(53%)	34/(2%)	16/(1%)	0/(<1%)	168/(11%)	73/(5%)	1,076/(73%)	303/(21%)
322.12	3	202/(21%)	562/(59%)	36/(4%)	11/(1%)	0/(<1%)	67/(7%)	69/(7%)	745/(79%)	185/(20%)
322.12	1	306/(16%)	1337/(69%)	65/(3%)	13/(1%)	3/(<1%)	61/(3%)	143/(7%)	1,622/(84%)	326/(17%)
321.17	3	484/(68%)	163/(23%)	14/(2%)	13/(2%)	1/(<1%)	2/(<1%)	31/(4%)	224/(32%)	29/(4%)
321.17	2	1,224/(59%)	631/(31%)	94/(5%)	16/(1%)	2/(0%)	16/(1%)	79/(4%)	838/(41%)	97/(5%)
321.17	1	982/(62%)	516/(32%)	14/(1%)	1/(<1%)	7/(<1%)	22/(1%)	46/(3%)	606/(38%)	61/(4%)
321.28	1	1132/(50%)	816/(36%)	77/(3%)	6/(<1%)	2/(<1%)	140/(6%)	82/(4%)	1,123/(50%)	298/(13%)
321.29	2	792/(40%)	978/(49%)	24/(1%)	17/(1%)	4/(<1%)	69/(3%)	108/(5%)	1,200/(60%)	183/(9%)
321.29	1	548/(53%)	369/(36%)	18/(2%)	0/(<1%)	0/(<1%)	30/(3%)	70/(7%)	487/(47%)	74/(7%)

Census Tract	Block Group	Caucasian	Black/ African- American	Asian	American Indian/ Alaskan Native	Native Hawaiian or other Pacific Islander	Other	Two or More Races	Total Minorities	Population of Hispanic Origin
321.14	1	1,191/(68%)	350/(20%)	79/(5%)	3/(<1%)	2/(<1%)	47/(3%)	70/(4%)	551/(32%)	125/(7%)
321.26	1	877/(50%)	454/(26%)	61/(4%)	10/(1%)	3/(<1%)	223/(13%)	109/(6%)	860/(50%)	389/(22%)
321.13	1	731/(52%)	470/(34%)	44/(3%)	9/(1%)	2/(<1%)	71/(5%)	69/(5%)	665/(48%)	146/(10%)
322.25	2	525/(39%)	682/(51%)	35/(3%)	3/(<1%)	2/(<1%)	25/(2%)	71/(5%)	814/(61%)	138/(10%)
321.32	4	393/(50%)	291/(37%)	33/(4%)	1/(<1%)	2/(<1%)	28/(4%)	35/(4%)	390/(50%)	77/(10%)
321.24	1	521/(33%)	821/(53%)	50/(3%)	7/(<1%)	19/(1%)	57/(4%)	82/(5%)	1,036/(67%)	155/(10%)
321.23	1	542/(30%)	1,026/(56%)	56/(3%)	13/(1%)	8/(<1%)	47/(3%)	131/(7%)	1,281/(70%)	225/(12%)
324	1	808/(57%)	428/(30%)	21/(1%)	12/(1%)	25/(2%)	33/(2%)	83/(6%)	602/(43%)	169/(12%)
City of Hampton										
105.02	2	276/(33%)	443/(53%)	24/(3%)	5/(1%)	0/(<1%)	31/(4%)	52/(6%)	555/(67%)	71/(9%)
105.02	1	229/(10%)	1,991/(84%)	24/(1%)	6/(<1%)	1/(<1%)	45/(2%)	87/(4%)	2,154/(90%)	117/(5%)
105.01	1	698/(23%)	2,127/(70%)	108/(4%)	11/(<1%)	3/(<1%)	36/(1%)	65/(2%)	2,350/(77%)	115/(4%)
103.13	2	572/(23%)	1,651/(68%)	40/(2%)	7/(<1%)	0/(<1%)	76/(3%)	94/(4%)	1,868/(77%)	190/(8%)
103.13	1	150/(37%)	220/(55%)	9/(2%)	1/(<1%)	0/(<1%)	11/(3%)	11/(3%)	252/(63%)	31/(8%)
103.11	1	703/(36%)	1,089/(56%)	28/(1%)	6/(<1%)	4/(<1%)	43/(2%)	76/(4%)	1,246/(64%)	104/(5%)
103.11	2	1,018/(41%)	1,246/(50%)	75/(3%)	10/(<1%)	12/(<1%)	9/(<1%)	102/(4%)	1,454/(59%)	111/(4%)
103.07	2	1,181/(43%)	1233/(45%)	128/(5%)	13/(<1%)	3/(<1%)	41/(2%)	120/(4%)	1,538/(57%)	146/(5%)
103.04	1	677/(37%)	898/(50%)	79/(4%)	7/(<1%)	9/(<1%)	22/(1%)	121/(7%)	1,136/(63%)	91/(5%)

Source: U.S. Census Bureau (2010 Data) (American FactFinder website: <http://factfinder.census.gov>); accessed February 18, 2012.

origin as Hispanic, Latino, or Spanish may be any race. Hispanic Origin is broken out into the appropriate race columns and included in the total minority figures. A column for total Hispanic Origin is added to the end of the table and includes Hispanic Origin of any race.

As mentioned, there are 72 block groups in the study area. Of these 72 block groups, 37 have a total minority population of 50% or over. These block groups are predominately located in the Cities of Richmond, Hampton and Newport News and in Henrico County. See Table 4 for detailed racial distributions.

4. Transportation Facilities

Transportation facilities are more centralized to urbanized areas of the study area and are discussed below in two major groups, Greater Richmond and Hampton Roads.

a. Greater Richmond

The Greater Richmond area has an extensive network of interstate highways, expressways and state highways. The major east-west route is I-64 and the major north-south route is I-95. Other interstates include I-195 and I-295. The Richmond Metropolitan Authority operates the Downtown Expressway and the Powhite Parkway, which are toll roads. State Route 76, Powhite Parkway Extension (also a toll road) reaches southwest into Chesterfield County, between Chippenham Parkway (State Route 150) and State Route 288. The Richmond area does not formally have a beltway like the Hampton Roads area. However, several roads effectively form portions of a beltway. These roadways aid in providing alternative routing to circumvent the downtown area. These highways are I-295 from I-64 west of Richmond southeasterly to State Route 895 east of Richmond and State Route 288 in the southwest and western areas, between I-95 south of Richmond and I-64 west of the city.

Major U.S. highways in the Richmond area include US-1 (north portion is Washington Highway and south portion is Jefferson Davis Highway), US-33, US-60 (east of Richmond called Williamsburg Road; west of Richmond known as Midlothian Turnpike), US-250, US-301 (north portion known as Chamberlayne Road; south portion known as Jefferson Davis Highway) and US-360 (east of Richmond called Mechanicsville Turnpike and west of Richmond known as Hull Street). The Richmond area also has extensive state highways and secondary routes, some of which are state-designated Virginia byways.

The Greater Richmond Transit Company (GRTC) is a publicly owned public service company providing bus service within the Greater Richmond area. Service is limited to the City of Richmond limits and bordering areas of Henrico and Chesterfield. There is no rail mass transit service in the Greater Richmond area. There are several intercity bus services, providing routes to many destinations.

Passenger rail is offered through Amtrak and has regular service routes from Richmond to Washington, DC, Philadelphia, New York, Raleigh, Durham, Savannah, Newport News, Williamsburg and Florida. Studies are underway to improve passenger rail service to the Hampton Roads area. The Greater Richmond area is served by two major Class 1 Railroads, Norfolk Southern and CSX. A short line rail, the Buckingham Branch Railroad, also serves the City. A major commercial airport and several smaller facilities are located in the area. Richmond International Airport is served by seven airlines with non-stop flights to 21 destinations.

The Port of Richmond offers deep-water connections on the navigable portion of the James River east to Hampton Roads. Shipping to other ports on the Chesapeake Bay is also possible.

b. Hampton Roads

The Hampton Roads area also has an extensive network of Interstate Highways, including I-64, I-264, I-464, I-564 and I-664. The Hampton Roads Beltway extends 56 miles on a long loop through the region,

crossing the harbor on two toll-free bridge-tunnel facilities. These crossings are the Hampton Roads Bridge-Tunnel and the Monitor-Merrimac Memorial Bridge Tunnel. Other major east-west routes are U.S. Highway 58, U.S. Highway 60, and U.S. Highway 460. Other major north-south routes are U.S. Highway 13 and U.S. Highway 17. Another major crossing of waterways is the James River Bridge. There are also two other tunnels in the area, the Midtown Tunnel and the Downtown Tunnel joining Portsmouth and Newport, as well as the 17-mile long Chesapeake Bay Bridge Tunnel, a toll facility which links the region with Virginia's Eastern Shore.

Local public transportation in the Hampton Roads area includes bus transit, ferry service and light rail. Hampton Roads Transit and Williamsburg Area Transit offer bus service throughout the Hampton Roads area. A passenger ferry is operated on the Elizabeth River between Norfolk and Portsmouth. There is also a commuter bus route across the James River between Williamsburg and Surry County via the vehicle-carrying Jamestown Ferry system. The Tide, Virginia's first light rail system, opened for service in Norfolk on August 19, 2011. It extends 7.4 miles from the Eastern Virginia Medical Center complex east through downtown Norfolk and adjacent to I-264 to Newtown Road. Eleven stations and four park and ride lots provide access to dining, shopping and entertainment as well as the Norfolk State University and Tidewater Community College (Norfolk) campuses. Greyhound Lines and Carolina Trailways provide intercity bus service.

Amtrak provides the Hampton Roads area passenger rail, with stations in Williamsburg and Newport News. Two commercial airports service the area, the Norfolk International Airport and the Newport News/Williamsburg International Airport. The Norfolk International Airport offers service with 11 airlines and non-stop flights to 25 destinations. The Newport News/Williamsburg International Airport offers service with four airlines and many non-stop flights.

The Port of Virginia features the best natural deepwater harbor on the East Coast, with its unobstructed, ice-free harbor, 50-foot-deep channels, and a location 18 miles from the open ocean. In addition, the Port features 20 shipping lines offering weekly service to Europe and Asia and has the lowest pilferage rate on the East Coast. With its four marine terminals, the Port of Virginia is the third-largest volume port on the East Coast in terms of general cargo.

5. Environmental Justice

Title VI of the Civil Rights Act of 1964 requires that no person in the United States shall on the ground of race, color, or national origin be excluded from participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. In addition, Executive Order 12898 signed February 11, 1994: Federal Actions to Address Environmental Justice in Minority and Low Income Populations requires that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations (59 Fed Reg. 7629)." Incorporating Environmental Justice (EJ) principles throughout the transportation planning and decision-making process implements National Environmental Policy Act (NEPA) principles, as well as principles set forth in Title VI of the Civil Rights Act; the Uniform Relocation Assistance and Real Property Acquisition Policies Act as amended; the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA-LU); and other USDOT statutes, regulations and guidance that affect social, economic, environmental, public health and public involvement.

a. Methodology

Incorporating environmental justice (EJ) principles throughout the transportation planning and decision-making process implements National Environmental Policy Act (NEPA) principles set forth in Title VI of the Civil Rights Act; the Uniform Relocation Assistance and Real Property Acquisition Policies Act as

amended; and other USDOT statutes, regulations, and guidance that affect social, economic, environmental, public health and public involvement.

The EJ analysis was conducted in accordance with FHWA guidance. The study area was defined, and the demographic analysis was initiated to identify EJ populations. Census data was used at the block group level. Minorities and low income populations were identified to determine the area of potential impact, and the demographic information was examined to determine how potential impacts and benefits to the total population would affect the EJ populations. Finally, a determination was made whether or not the project would have disproportionately high and adverse impacts on the EJ populations in the study area.

A disproportionately high and adverse effect on minority and low income populations means an adverse effect that:

- is predominately borne by a minority and/or low income population; or
- will be suffered by the minority or low income community at a level that is more severe or greater in magnitude than the adverse impact that could be suffered by the non-minority or non-low income community.

The USDOT Order 5610.2(a) defines ‘minority’ in the definition section of its appendix and provides definitions of four minority groups addressed by Executive Order 12898. These groups include:

- Black/African-American – a person having origins in any of the black racial groups of Africa.
- Hispanic – a person of Mexican, Puerto Rican, Cuban, Central or South America, or other Spanish culture or origin regardless of race.
- Asian – a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
- American Indian and Alaskan Native – a person having origins in any of the original people of North America and who maintains tribal affiliation or community attachment.

It also defines ‘low income’ as a person (of any race) whose household income (or in the case of a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services (USDHHS) poverty guidelines.

Low income block groups were determined based on a review of the 2000 Census data set. This information was tabulated for block groups in the study area, as shown in **Table III.3**. This table lists each census block group, its demographics, and its EJ population status.

The first step in the I-64 study methodology involved determining whether or not census block groups within the study area had a low income and/or minority population. The total number of minority persons within each census block group was divided by each census block group’s total population. Populations were identified as minority if the minority population of the census block group exceeded 50% of the census block group’s total population.

Census block groups were identified as having low income populations when the median household income for the census block group was below the USDHHS poverty threshold, which was \$17,050 for a family of four in 2000.

b. Existing Conditions

In 2010, the total population of the I-64 corridor was 128,964. While many ethnicities are represented with the corridor, the majority of the population in 2010 was Caucasian, comprising 52%. This

percentage is lower in comparison to the state at 69%. The cities/urban areas all fall lower than the 52% overall study area rate while the counties/rural areas are much higher. The largest minority population found within the socioeconomic study area was African American, comprising 40% of the population. This percentage is higher than that of the state at 19%. The City of Richmond's African American population is highest at 51% with the Cities of Hampton and Newport News at 50% and 41% respectively.

Based on 2010 Census data, 37 of the 72 block groups have minority populations of 50% or greater. Based on the 2000 Census data, five of the 72 block groups within the study area had a median household income below \$17,050. Block Group 301 1 in the City of Richmond had the lowest median household income of \$7,220. See **Tables 5 and 6** and **Appendix A** for all EJ CBGs.

c. Potential Impacts

The purpose of the EJ analysis is to identify any disproportionately high and adverse effects on EJ populations, and to ensure that EJ populations have been included in I-64 study public involvement. All alternatives and options were considered, and all of the potential impacts that would directly affect the study area were gathered. The location and severity of anticipated impacts associated with the various options were used to determine if EJ populations would be disproportionately impacted.

No-Build Alternative:

The No-Build Alternative would not involve any project related construction, therefore, it is anticipated that the No-Build Alternative would result in no property acquisition, and therefore would not impact low income or minority populations. However, projects already programmed and funded in the VDOT SYIP would be implemented under the No-Build Alternative and could result in impacts to low income and minority populations.

Build Alternatives:

The construction and operation of the I-64 improvements associated with the build alternatives would have the potential to create a variety of impacts to EJ populations. **Table 7** notes the number of minority and low income block group populations that could be impacted by each of the build alternatives. The same EJ populations would potentially be affected by all build alternatives. Although each alternative has the potential to impact property, neighborhood cohesion and isolation, access and mobility, EJ populations would not be impacted disproportionately as compared to non-EJ groups.

In light of Executive Order 12898, a review of the potential disproportionate effects of tolling I-64 was conducted. As discussed, EJ populations exist within the project study area. If the alternative selected includes tolls, local traffic could continue to utilize the vast local road network and not be subject to tolls. Also, tolled facilities experience less congestion and therefore provide more reliable travel times. This benefits all drivers, regardless of income level because they provide better access and mobility. Tolls are not expected to have a disproportionately high and adverse impact on EJ populations.

d. Mitigation Measures

Because the No-Build Alternative and build alternatives would not result in disproportionately high and adverse effect on minority and low income populations, no EJ mitigation measures are required.

Table 5: Environmental Justice Minority Population Findings

Census Block Group		Locality	Percent Minority	Special Populations Higher than Respective City/County		Special Populations Higher than State	
				Yes	No	Yes	No
209	1	City of Richmond	93%	✓		✓	
204	3	City of Richmond	98%	✓		✓	
202	1	City of Richmond	99%	✓		✓	
201	1	City of Richmond	100%	✓		✓	
109	4	City of Richmond	94%	✓		✓	
302	2	City of Richmond	58%	✓		✓	
302	1	City of Richmond	51%	✓		✓	
402	1	City of Richmond	65%	✓		✓	
301	1	City of Richmond	98%	✓		✓	
2012.02	3	Henrico County	64%	✓		✓	
2014.01	2	Henrico County	95%	✓		✓	
2014.01	1	Henrico County	68%	✓		✓	
2011.02	2	Henrico County	72%	✓		✓	
2011.01	4	Henrico County	64%	✓		✓	
2011.01	1	Henrico County	97%	✓		✓	
2010.03	3	Henrico County	99%	✓		✓	
801.02	1	James City County	50%	✓		✓	
509	2	York County	53%	✓		✓	
320.06	1	City of Newport News	73%	✓		✓	
322.12	3	City of Newport News	79%	✓		✓	
322.12	1	City of Newport News	84%	✓		✓	
321.28	1	City of Newport News	50%	✓		✓	
321.29	2	City of Newport News	60%	✓		✓	
321.26	1	City of Newport News	50%	✓		✓	
322.25	2	City of Newport News	61%	✓		✓	
321.32	4	City of Newport News	50%	✓		✓	
321.24	1	City of Newport News	67%	✓		✓	
321.23	1	City of Newport News	70%	✓		✓	
105.02	2	City of Hampton	67%	✓		✓	
105.02	1	City of Hampton	90%	✓		✓	
105.01	1	City of Hampton	77%	✓		✓	
103.13	2	City of Hampton	77%	✓		✓	
103.13	1	City of Hampton	63%	✓		✓	
103.11	1	City of Hampton	64%	✓		✓	
103.11	2	City of Hampton	59%	✓		✓	
103.07	2	City of Hampton	57%	✓		✓	
103.04	1	City of Hampton	63%	✓		✓	

Source: U.S. Census Bureau (2010 (American FactFinder Web site: <http://factfinder.census.gov>), accessed January 18, 2012.

Table 6: Environmental Justice Low Income Population Findings

Census Block Group		Locality	Median Household Income
204	3	City of Richmond	\$10,870
202	1	City of Richmond	\$14,665
201	1	City of Richmond	\$11,484
109	4	City of Richmond	\$11,467
301	1	City of Richmond	\$7,220

Source: U.S. Census Bureau (2010 (American FactFinder Web site: <http://factfinder.census.gov>), accessed January 18, 2012.

Table 7: Environmental Justice Populations by Build Alternative

Alternative	Number of Minority Block Group Populations	Disproportionate Impacts to Minority Block Group Populations	Number of Low Income Block Group Populations	Disproportionate Impacts to Low Income Block Group Populations
Alternatives 1A/2A	37	No	5	No
Alternatives 1B/2B	37	No	5	No
Alternative 3	37	No	5	No

Source: U.S. Census Bureau (2010 (American FactFinder Web site: <http://factfinder.census.gov>), accessed January 18, 2012.

B. Economic/Employment Environment

1. Methodology

The project corridor is located in highly developed urban areas as well as very rural areas and spans seven localities. Using available census data, comprehensive plans and data from the VEC, the economic characteristics of these areas were analyzed. Table 8 provides an employment overview of all localities within the study area. The urban areas are discussed in greater detail below.

2. Existing Conditions

a. Employment

The Greater Richmond area is a magnet for labor, drawing workers from more than 40 localities. The diverse employment include 11 Fortune 1000 company headquarters, Fifth District Federal Reserve, Fourth Circuit U.S. Court of Appeals, state capital, financial and information technology services, and higher education. There are 15 four-year and 11 two-year colleges and universities in the area. Greater Richmond is located at the mid-point of the East Coast, and 55% of the nation's consumers are within two days delivery from a trucking line services. The convergence of I-64, I-95, I-85 and I-295, as well as the cargo handled at both the Richmond International Airport and the Port of Richmond make the area an ideal location for industry. CSX and Norfolk Southern provide rail service in the area, while FedEx and UPS both have district hubs located in Richmond. Richmond also offers a state-of-the-art telecommunication infrastructure with extensive fiber optic network and digital switching capability. Building costs in the Greater Richmond area are 15% below the national average.

The following is a list of the employers in the Richmond Metro area that have 1,000 or more employees: Virginia Commonwealth University, Capital One Financial Corporation, HCA, Inc., Dominion Resources, Bon Secours Richmond Health Systems, Altria Group Inc., SunTrust Banks Inc., Ukrops Super Markets Inc., Wellpoint Inc., Bank of America Corporation, Wells Fargo, Verizon Communications, Food Lion, DuPont, UPS, Federal Reserve Bank, Kroger, University of Richmond, Genworth Financial Inc., Southside Regional Medical center, Honeywell International Inc., Smurfit-Stone

Container Corporation, Supervalu Inc., BB&T, Lowes, Home Depot, Markel Corporation, CarMax Inc., Virginia State Government, Federal Government, Chesterfield County, Chesterfield County Public Schools, Henrico County, Henrico County Public Schools, City of Richmond, City of Richmond Public Schools, Hanover County, and Hanover County Public Schools.

The Hampton Roads area, much like Richmond, also offers a very diverse economy. The area is home to two national laboratories, a network of academic programs and research centers, and a technology-focused business sector. The Newport News economy is anchored by Northrop Grumman Newport News and provides a healthy mix of manufacturing, defense, research, technology and office based industries. The Oyster Point Business Park is the central business district for the entire Virginia Peninsula region. Traditionally, the defense sector has been the driving force behind the Hampton Roads area economic base; however in the last several decades the economy has become more diversified. Based on comprehensive plans and VEC data, the defense sector, which includes military bases and related support industries accounts for about 25% of the employment in the Norfolk-Virginia Beach-Newport News area. The eastern terminus of the nation's largest rail system, CSX, is located in Newport News. CSX's service area includes the industrial Midwest, the South, and parts of Canada. The Port of Virginia at Hampton Roads is the third largest container port on the U.S. East Coast, with service from more than 75 international shipping lines and more than 3,000 sailings annually to 100 countries. It has become the Mid-Atlantic load center, and has the deepest channel on the East Coast. The unified ports, operated by Virginia International Terminals, Inc. are shipping more than 14 million tons of general cargo annually and growing. Hampton Roads is a world leader in coal export shipments. Other bulk cargo includes grains and petroleum. More than 50 million tons of bulk cargo is shipped through Hampton Roads annually. Three airports also service Hampton Roads: Newport News International Airport, Norfolk International Airport and Richmond International Airport. I-64 and I-664 are the vital interstates for transporting product.

The following is a list of the employers in the Hampton Roads area that have 1,000 or more employees: Northrop Grumman Shipbuilding, Sentara Healthcare, Virginia Beach City Public Schools, Norfolk Naval Shipyard, Riverside Health Systems, Norfolk City Public Schools, Chesapeake City Public Schools, Virginia Beach City, Newport News City, Naval Medical Center Portsmouth, Smithfield Foods Inc., Newport News City Public Schools, Norfolk City, NASA Langley Research Center, Old Dominion University, Bank of America, Seaworld Parks & Entertainment/Busch Entertainment Corporation, The Colonial Williamsburg Foundation, Hampton City Public Schools, Chesapeake City, Portsmouth City, Portsmouth City Public Schools, Chesapeake Regional Medical Center, Canon Virginia, Inc., BAE Systems Norfolk Ship Repair, Bon Secours Hampton Roads Health System, GEICO Direct, Measurement Specialists, Inc., Gwaltney of Smithfield, Inc., PRA, Inc., College of William and Mary, STIHL Inc, Suffolk City Public Schools, Children's Health System, Hampton City, LTD Management Company, LLC, Amerigroup Corporation, York County Public Schools, FHC Health Systems, Eastern Virginia Medical School, United States Fifth District Coast Guard Command, Williamsburg/James City County Public Schools, MANCON, Inc., Alcoa-Howmet Hampton, Tidewater Community College, QVC Chesapeake, Inc., Hampton Veteran's Affairs Medical Center, HSBC North America, QVC Suffolk, Inc., AMSEC LLC/SAIC, James City County, Gloucester County Public Schools, USJFCOM/JTASC, Norfolk State University, Hall Automotive Group, Dominion Enterprises, AAFES Dan Daniel Distribution Center, Cox Communications, Inc., Hampton Roads Transit, and Hampton University.

Table 8: Employment Overview by Locality

Locality	Commuting Patterns	Largest Out-Commuter Destinations	Largest Classified Industry	Largest Employers
City of Richmond	Live and work in area - 51,534 In-commuters - 105,469 Out-commuters - 37,364	Henrico County; Chesterfield County	Administrative and Support and Waste Management	Virginia Commonwealth University; Medical College of Virginia; City of Richmond; Richmond City Public Schools; Veterans Affairs; Phillip Morris U.S.A., Inc.
Henrico County	Live and work in area - 75,376 In-commuters - 75,380 Out-commuters - 61,448	City of Richmond; Chesterfield County; Hanover County	Administrative and Support and Waste Management	Henrico County School Board; Capital One Bank; County of Henrico; Bon Secours Richmond Health System; Anthem
New Kent County	Live and work in area - 1,320 In-commuters - 1,232 Out-commuters - 5,508	City of Richmond; Henrico County	Construction	New Kent County School Board; County of New Kent; AHS Cumberland Hospital
James City County	Live and work in area - 9,337 In-commuters - 10,815 Out-commuters - 12,534	Williamsburg, City of Newport News, York County	Accommodation and Food Services	Busch Entertainment Corp; Williamsburg James City County Public School Board; County of James City; Eastern State Hospital
York County	Live and work in area - 6,697 In-commuters - 13,702 Out-commuters - 21,794	City of Newport News; City of Hampton	Accommodation and Food Services	York County School Board; County of York: Wal Mart; U.S. Department of Defense
City of Newport News	Live and work in area - 48,421 In-commuters - 46,369 Out-commuters - 37,555	City of Hampton; York County	Administrative and Support and Waste Management	Northrop Grumman Shipbuilding, Inc.; Riverside Regional Medical Center; Newport News Public Schools; U.S. Department of Defense; Canon; Ferguson Enterprises Inc;
City of Hampton	Live and work in area - 34,274 In-commuters - 35,329 Out-commuters - 31,637	City of Newport News; City of Norfolk	Administrative and Support and Waste Management	U.S. Department of Defense; City of Hampton; Hampton City School Board; National Aeronautics and Space Administration; Veterans Affairs

Source: Virginia Employment Commission, Community Profiles, <http://www.vec.virginia.gov>.

b. Income

As of 2010 and outlined in **Table 9**, the median household income in three of the seven localities in the project was higher than that of Virginia: New Kent County, James City County and York County. The median household income in three counties was less than that of the entire state. Henrico County was only slightly lower at \$60,114. A calculation for the entire study area is not available based on census block boundary changes from 2000 to 2010 data.

Based on availability, census data from the *Census 2000* was used at the block group level for median household income and can be found in **Table 10**.

Table 9: Income Demographics for Localities, Census 2010

Area or Census Block Group	Median Household Income
Virginia	\$61,406
City of Richmond	\$38,266
Henrico County	\$60,114
New Kent County	\$70,590
James City County	\$73,903
York County	\$81,055
City of Newport News	\$49,562
City of Hampton	\$49,815

Source: U.S. Census Bureau (2010 Data) (American FactFinder Website: <http://factfinder.census.gov>), accessed February 20, 2012.

Table 10: Income Demographics for Localities and Census Block Groups, Census 2000

Area or Census Block Group	Median Household Income	
Virginia	\$46,677	
City of Richmond	\$31,121	
Henrico County	\$49,185	
New Kent County	\$53,595	
James City County	\$55,594	
York County	\$57,956	
City of Newport News	\$36,597	
City of Hampton	\$39,532	
Study Area	\$39,205	
City of Richmond		
209	1	\$25,686
204	3	\$10,870
202	1	\$14,665
201	1	\$11,484
109	4	\$11,467
302	2	\$21,250
302	1	\$23,611
402	1	\$27,212
301	1	\$7,220
Henrico County		
2014.03	3	\$35,493
2014.04	2	\$66,198
2014.04	1	\$43,324
2017.01	1	Not Available

Area or Census Block Group		Median Household Income
2012.02	3	\$40,670
2014.01	2	\$40,139
2014.01	1	\$48,125
2011.02	2	\$36,034
2011.01	4	Not Available
2011.01	1	\$34,821
2010.03	3	\$29,344
New Kent County		
7003	3	\$45,781
7003	2	\$39,205
7003	1	\$48,333
7002	3	\$49,250
7002	2	\$47,750
7002	1	\$60,625
7001	3	\$72,361
7001	2	\$57,188
7001	1	\$57,143
James City County		
801.02	1	\$24,875
801.01	1	\$33,957
804.02	2	\$54,514
804.02	1	\$48,625
804.01	2	\$69,844
804.01	1	\$47,380
York County		
509	2	Not Available*
509	1	Not Available*
511	3	Not Available*
511	2	Not Available*
511	1	Not Available*
510	3	Not Available*
510	2	Not Available*
510	1	Not Available*
City of Newport News		
316.02	4	\$40,735
316.01	1	\$52,308
321.30	3	Not Available*
320.06	1	Not Available*
322.12	3	\$26,474
322.12	1	\$28,603
321.17	3	\$39,728
321.17	2	\$30,313
321.17	1	\$32,399
321.28	1	Not Available*
321.29	2	Not Available*
321.29	1	Not Available*

Area or Census Block Group		Median Household Income
321.14	1	\$59,440
321.26	1	Not Available*
321.13	1	\$35,268
322.25	2	Not Available*
321.32	4	Not Available*
321.24	1	\$33,644
321.23	1	\$22,226
324	1	\$42,315
City of Hampton		
105.02	2	\$32,560
105.02	1	\$31,094
105.01	1	\$41,875
103.13	2	Not Available*
103.13	1	Not Available*
103.11	1	Not Available*
103.11	2	Not Available*
103.07	2	Not Available*
103.04	1	\$51,808

Source: U.S. Census Bureau (2000 Data) (American FactFinder Web site: <http://factfinder.census.gov>), accessed February 20, 2012.

*Note: Census Block Group data not available for Census 2000.

3. Potential Impacts

No-Build Alternative:

The No-Build Alternative would not displace any businesses. No loss of local property tax revenues would occur as a result of the No-Build Alternative. However, projects already programmed and funded in the VDOT SYIP would be implemented under the No-Build Alternative and could impact businesses and revenue.

Build Alternatives:

The proposed Build Alternatives would not have a major impact on the distribution of industries and businesses located within the corridor. The Build Alternatives are expected to have a negligible effect on property tax revenues on both the state and local level. In the *Construction Impacts* section later in this chapter, temporary impacts during construction are described. These activities would affect business operations near the alignment of the respective alternative options.

Regionally, the potential for temporary jobs would also be created for the Build Alternatives for several years during construction. This would vary by alternative but would mostly be proportional to the construction cost of the respective alternative.

4. Mitigation Measures

Impacts to the economic structure of the study corridor would continue to be minimized through careful planning and design. No major adverse impacts to the economic structure of the corridor are anticipated with any of the alternatives. Throughout the planning, design and construction phases, coordination would continue with businesses in the corridor and especially those adjacent to the Preferred Alternative, when chosen, to prevent or minimize short term or long-term disruptions.

C. Neighborhoods, Community Facilities and Services

1. Methodology

General information regarding neighborhoods and community facilities was gathered from public involvement, local comprehensive plans and reports and mapping sources (GIS data gathered from localities and VDOT, and aerial photography). This section reviews neighborhoods, community housing and community facilities that are located within and/or start within a 500-foot buffer from existing right of way on either side of I-64.

2. Existing Conditions

a. *Neighborhoods/Housing*

Neighborhoods found in the vicinity of the I-64 Study, specifically in the urban areas of the City of Richmond/Henrico County, City of Newport News and City of Hampton, are typically older, built out, and in varying stages of revitalization efforts. Neighborhoods found within close proximity to interstates tend to be located within urban settings and not rural areas; therefore these types of neighborhoods are not discussed for all areas.

As found in **Table 11**, in 2010, the study area contained about 57,678 households with a 52% owner-occupancy rate. The three cities (Richmond, Newport News, and Hampton) had owner occupancy rates lower than that of the overall study area while the county rates were higher. The Commonwealth of Virginia owner-occupancy rate is 61%. The study area CBGs and Virginia had comparable percentages of renter and vacant housing units. The study area had 11% of vacant housing while the state had 9%. The study area had 37% renter-occupied housing while the state had 30%. The urban areas had higher numbers of renters than that of the rural areas.

The Richmond area neighborhoods and housing communities include Shockoe, Jackson Ward, Church Hill, Ginger Park, Bellevue, Highland Park and Fulton. Neighborhoods and housing communities in the Newport News area that are easily accessible to I-64 include The Forest, Snidow, Hanover Heights, Courthouse Green, Turnberry, Warwick Lawns, Campbell, Kiln Creek, Village Green, Deerfield, Bayberry, Morrison, Swansea Manor, and Robinson Terrace. The City of Hampton neighborhoods and housing communities within proximity to I-64 include Northampton, Magruder, Aberdeen and Mercury Central.

b. *School, Religious, Emergency, and General Services*

The locations of community resources discussed in this section are shown on mapping found in **Appendix A** and listed below in **Table 12**. These community resources provide basic needs and services to communities and neighborhoods in and surrounding the study area. Community resources information was obtained from various sources, including locality GIS data, locality government websites and Google maps.

Most of these facilities are located within the more urban areas, primarily in and around Richmond. These services include schools, churches, cemeteries and community centers. There are no emergency services located within the 500-foot buffer.

Table 11: Housing Demographics

Census Tract	Block	Total Housing	Vacant Housing	Renter-Occupied Housing Units	Owner-Occupied Housing Units	Median Value Owner-Occupied Units
Virginia Total		3,364,939	308,881 (9%)	1,000,872 (30%)	2,055,186 (61%)	\$255,100
City of Richmond Total		98,349	11,198 (11%)	49,555 (50%)	37,596 (38%)	\$201,800
Henrico County Total		132,778	8,177 (6%)	44,162 (33%)	80,439 (61%)	\$230,000
New Kent County Total		7,295	482 (7%)	792 (11%)	6,021 (83%)	\$251,000
James City County Total		29,797	2,937 (10%)	6,431 (22%)	20,429 (69%)	\$348,600
York County Total		26,849	2,843 (11%)	5,962 (22%)	18,044 (67%)	\$324,800
City of Newport News Total		76,198	5,534 (7%)	34,588 (45%)	36,076 (47%)	\$198,500
City of Hampton Total		59,566	4,535 (8%)	23,057 (39%)	31,974 (54%)	\$191,500
Study Area		57,678	6,106 (11%)	21,340 (37%)	30,232 (52%)	Not available at Block Group Level
Block Groups by Locality						
City of Richmond						
209	1	840	380/(45%)	184/(22%)	276/(33%)	Not available at Block Group Level
204	3	329	69/(21%)	223/(68%)	37/(11%)	Not available at Block Group Level
202	1	949	93/(10%)	738/(78%)	118/(12%)	Not available at Block Group Level
201	1	656	47/(7%)	487/(74%)	122/(19%)	Not available at Block Group Level
109	4	380	60/(16%)	208/(55%)	112/(29%)	Not available at Block Group Level
302	2	29	5/(17%)	24/(83%)	0/(0%)	Not available at Block Group Level
302	1	1,018	229/(22%)	543/(53%)	246/(24%)	Not available at Block Group Level
402	1	902	82/(9%)	591/(66%)	229/(25%)	Not available at Block Group Level
301	1	529	75/(14%)	447/(84%)	7/(1%)	Not available at Block Group Level
Henrico County						
2014.03	3	478	29/(6%)	40/(8%)	409/(86%)	Not available at Block Group Level
2014.04	2	944	47/(5%)	49/(5%)	848/(90%)	Not available at Block Group Level

Census Tract	Block	Total Housing	Vacant Housing	Renter-Occupied Housing Units	Owner-Occupied Housing Units	Median Value Owner-Occupied Units
2014.04	1	883	78/(9%)	296/(34%)	509/(58%)	
2017.01	1	992	76/(8%)	242/(24%)	674/(68%)	
2012.02	3	793	44/(6%)	353/(45%)	396/(50%)	
2014.01	2	436	16/(4%)	47/(11%)	373/(86%)	
2014.01	1	1,371	62/(5%)	733/(53%)	576/(42%)	
2011.02	2	1,411	107/(8%)	822/(58%)	482/(34%)	
2011.01	4	601	40/(7%)	173/(29%)	388/(65%)	
2011.01	1	851	60/(7%)	253/(30%)	538/(63%)	
2010.03	3	607	42/(7%)	245/(40%)	320/(53%)	
New Kent County						
7003	3	1,270	80/(6%)	128/(10%)	1,062/(84%)	Not available at Block Group Level
7003	2	752	69/(9%)	95/(13%)	588/(78%)	
7003	1	545	38/(7%)	57/(10%)	450/(83%)	
7002	3	398	27/(7%)	76/(19%)	295/(74%)	
7002	2	458	20/(4%)	64/(14%)	374/(82%)	
7002	1	892	49/(5%)	72/(8%)	771/(86%)	
7001	3	583	31/(5%)	44/(8%)	508/(87%)	
7001	2	1,013	50/(5%)	74/(7%)	889/(88%)	
7001	1	680	45/(7%)	74/(11%)	561/(83%)	
James City County						
801.02	1	415	43/(10%)	70/(17%)	302/(73%)	Not available at Block Group Level
801.01	1	974	422/(43%)	34/(3%)	518/(53%)	
804.02	2	1,411	64/(5%)	306/(22%)	1,041/(74%)	
804.02	1	1,482	124/(8%)	188/(13%)	1,170/(79%)	
804.01	2	1,471	92/(6%)	134/(9%)	1,245/(85%)	
804.01	1	1,198	86/(7%)	158/(13%)	954/(80%)	
York County						
509	2	625	69/(11%)	166/(27%)	390/(62%)	Not available at Block Group Level
509	1	115	4/(3%)	109/(95%)	2/(2%)	
511	3	906	52/(6%)	141/(16%)	713/(79%)	
511	2	804	35/(4%)	113/(14%)	656/(82%)	

Census Tract	Block	Total Housing	Vacant Housing	Renter-Occupied Housing Units	Owner-Occupied Housing Units	Median Value Owner-Occupied Units
511	1	874	29/(3%)	53/(6%)	792/(91%)	
510	3	2,089	1,452/(70%)	194/(9%)	443/(21%)	
510	2	243	8/(3%)	37/(15%)	198/(81%)	
510	1	703	90/(13%)	141/(20%)	472/(67%)	
City of Newport News						
316.02	4	602	20/(3%)	186/(31%)	396/(66%)	Not available at Block Group Level
316.01	1	1,362	119/(9%)	311/(23%)	932/(68%)	
321.30	3	589	19/(3%)	163/(28%)	407/(69%)	
320.06	1	662	57/(9%)	538/(81%)	67/(10%)	
322.12	3	443	49/(11%)	227/(51%)	167/(38%)	
322.12	1	866	150/(17%)	634/(73%)	82/(9%)	
321.17	3	262	9/(3%)	34/(13%)	219/(84%)	
321.17	2	1,099	18/(2%)	622/(57%)	459/(42%)	
321.17	1	851	84/(10%)	560/(66%)	207/(24%)	
321.28	1	1,301	97/(7%)	886/(68%)	318/(24%)	
321.29	2	893	30/(3%)	721/(81%)	142/(16%)	
321.29	1	437	16/(4%)	205/(47%)	216/(49%)	
321.14	1	759	20/(3%)	429/(57%)	310/(41%)	
321.26	1	762	43/(6%)	336/(44%)	383/(50%)	
321.13	1	760	71/(9%)	580/(76%)	109/(14%)	
322.25	2	616	44/(7%)	241/(39%)	331/(54%)	
321.32	4	487	21/(4%)	365/(75%)	101/(21%)	
321.24	1	727	57/(8%)	500/(69%)	170/(23%)	
321.23	1	800	31/(4%)	735/(92%)	34/(4%)	
324	1	588	92/(16%)	416/(71%)	80/(14%)	
City of Hampton						
105.02	2	442	56/(13%)	257/(58%)	129/(29%)	Not available at Block Group Level
105.02	1	957	27/(3%)	681/(71%)	249/(26%)	
105.01	1	1,444	81/(6%)	517/(36%)	846/(59%)	
103.13	2	1,380	140/(10%)	960/(70%)	280/(20%)	
103.13	1	146	8/(5%)	136/(93%)	2/(1%)	

Census Tract	Block	Total Housing	Vacant Housing	Renter-Occupied Housing Units	Owner-Occupied Housing Units	Median Value Owner-Occupied Units
103.11	1	858	50/(6%)	543/(63%)	265/(31%)	
103.11	2	1,048	41/(4%)	173/(17%)	834/(80%)	
103.07	2	1,018	23/(2%)	95/(9%)	900/(88%)	
103.04	1	619	13/(2%)	63/(10%)	543/(88%)	

Source: U.S. Census Bureau (2010 Data) (American FactFinder website: <http://factfinder.census.gov>); accessed February 20, 2012.

Table 12: Community Facilities and Services

Facility	Address	Locality
Schools		
Armstrong High School	2300 Cool Lane	City of Richmond
Fairfield Court Elementary School	2510 Phaup Street	City of Richmond
Joseph H. Saunders Elementary School	853 Harpersville Road	City of Newport News
Thomas Nelson Community College	99 Thomas Nelson Drive	City of Newport News
Hampton Roads Academy	739 Academy Lane	City of Newport News
Calvary Community Private School	2311 Tower Place	City of Hampton
Community Housing		
Whitcomb Court Public Housing Development	2302 Carmine Street	City of Richmond
Fairfield Public Housing Development	2506 Phaup Street	City of Richmond
Creighton Court Public Housing Development	2101 Creighton Road	City of Richmond
Religious Institutions/Cemeteries		
Fairfield Jerusalem Baptist Church	2609 Selden Street	City of Richmond
Shockoe Hill Cemetery	2 nd Street and 4 th Hospital Street	City of Richmond
Oakwood Cemetery	3101 Nine Mile Road	City of Richmond
Antioch Baptist Church	3868 Antioch Church Road	Henrico County
Lakeside Church of God	853 Cloverleaf Lane	City of Newport News
Full Gospel First Church of Virginia	145 Richneck Road	City of Newport News
Calvary Community Church	2311 Tower Place	City of Hampton
General Services		
Fairfield Court Community Center	2311 N. 25 th Street	City of Richmond
Creighton Community Center	2101 Creighton Road	City of Richmond
Gill Community Center	2501 Phaup Street	City of Richmond
Preschool Development Center	2124 North 29 th Street	City of Richmond

Source: Richmond Redevelopment and Housing Authority, Housing Communities and Redevelopment & Conservation Areas, <http://www.rrha.org/html/public/09/Map08.jpg>.
Source: ESRI World Streetmap Data

3. Potential Impacts

No-Build Alternative:

The No-Build Alternative would not involve any project-related construction and therefore no impacts to neighborhoods, community facilities and services are anticipated. However, projects already programmed and funded in the VDOT SYIP would be implemented under the No-Build Alternative and could impact neighborhoods and community facilities.

Build Alternatives:

Table 13 lists the community facilities that would be impacted by the Build Alternatives. All Build Alternatives under consideration would impact the facilities to the same degree (partial acquisition vs. full acquisition). Additional information on right of way required is provided in the *Right-of-Way Technical Memorandum*.

Table 13: Community Facilities Impacts by Build Alternative

Alternative	Neighborhood/Community Facility Impacted	Type of Impact
Alternatives 1A/2A 1B/2B 3	Armstrong High School, City of Richmond	Partial Acquisition
	Fairfield Court Community Center, City of Richmond	Partial Acquisition
	Fairfield Court Elementary School, City of Richmond	Partial Acquisition
	Creighton Court Public Housing Development, City of Richmond	Partial Acquisition
	Oakwood Cemetery, City of Richmond	Partial Acquisition
	Hampton Roads Academy, City of Newport News	Partial Acquisition
	Lakeside Church of God, City of Newport News	Full Acquisition
Joseph H. Saunders Elementary School, City of Newport News	Partial Acquisition	

4. Mitigation Measures

The acquisition of property and the relocation of residents, businesses, farms, and non-profit organizations, if needed, would be conducted in accordance with all applicable Federal laws, regulations and requirements, including but not limited to, 23 CFR Part 710, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended and its implementing regulations found in 49 CFR Part 24. All persons displaced on Federally-assisted projects would be treated fairly, consistently, and equitably so that they do not suffer disproportionate injuries as a result of projects that are designed for the benefit of the public as a whole. Relocation resources would be available to all residential and business relocatees without discrimination.

D. Parks and Recreational Facilities

1. Methodology

Parks and recreation areas were identified within a 500-foot buffer from existing right of way on either side of I-64. Section 4(f) of the U.S. Department of Transportation Act (USDOT) of 1966 (23 USC 138 and 49 USC 303), requires that the proposed use of land from a significant publicly-owned public park, recreation area, wildlife and/or waterfowl refuge, or any significant historic or archaeological site, as part of a federally funded or approved transportation project, is permissible if 1) there is no feasible and prudent alternative to the use and (2) the project includes all planning to minimize harem; or if the use is a de minimis impact. Refer to the *Chapter IV – Section 4(f) Evaluation* for the Section 4(f) analysis for this study. Section 6(f) of the Land and Water Conservation Fund Act (16 USC 460) requires that the Secretary of the U.S. Department of the Interior (DOI) approve any conversion of lands purchased or developed with assistance under this act to a use other than public, outdoor recreation use. A list of the parks and recreational facilities located in the study area can be found in **Table 14** and in **Appendix A**.

Table 14: Parks and Recreational Facilities

Facility	Amenities/Activities
Waller Mill Park, James City County	Waller Mill Park houses a 360-acre reservoir owned by the City of Williamsburg. Activities include fishing, pedal boating, boating, canoeing, kayaking, hiking, picnic sites, shelters, playgrounds.
Colonial National Historic Parkway, York County	Historic Park dating to the American Revolutionary War.
Newport News Park, City of Newport News	8000 acres, largest municipal park east of Mississippi, hiking, biking, picnic sites, disc golf, 30-acre flying field, discovery center, gardens.
Sandy Bottom Nature Park, City of Hampton	Campsites, nature center, yurts, amphitheater.
Bluebird Gap Farm	Sixty-acre urban farm park, 150 domestic animals, shelter, picnic areas.

2. Potential Impacts

No-Build Alternative:

The No-Build Alternative would not involve any project-related construction and therefore no impacts would result. However, projects already programmed and funded in the VDOT SYIP would be implemented under the No-Build Alternative and could impact parks, recreational land or open space lands.

Build Alternatives:

Whenever possible, parks and recreational facilities have been avoided by the proposed alternatives. Of the five parks and recreational areas identified, three would be impacted by the proposed Build Alternatives, as summarized in **Table 15**.

3. Mitigation Measures

Mitigation measures for impacts to parks, recreational lands and open spaces could include:

- Replacement lands of equal or greater natural resource and economic value.
- Erosion and sediment control measures would be provided and strictly enforced to minimize impacts.
- Additional appropriate mitigation measures, such as landscaping (where applicable with respect to the resource), would be developed through coordination with the appropriate parties.

Additional discussions are anticipated to occur regarding the project's potential impacts to parks, recreation areas, and open space, and mitigation measures that could lessen potential impacts. Mitigation measures are outlined in Chapter VI of the *Draft EIS* for impacts to those parks and recreation areas that qualify under Section 4(f).

Table 15: Impacts to Parks and Recreational Facilities by Build Alternative

Name	Alternatives 1A/2A (acres)	Alternatives 1B/2B (acres)	Alternative 3 (acres)
Colonial National Historic Parkway, York County	3.59	3.33	2.97
Newport News Park, City of Newport News	27.05	27.06	27.05
Bluebird Gap Farm, City of Hampton	7.42	7.72	7.42

E. Land Use

1. Methodology

Land use was reviewed within a 500-foot buffer from existing right of way on either side of I-64. Establishing locality land use characteristics involved identifying existing and anticipated future land uses in the corridor. Existing general land uses can be viewed on mapping found in **Appendix B**. After establishing the baseline land use characteristics that currently exist, the proposed alternatives were evaluated to assess the potential each would have for causing direct or indirect changes to existing land use.

2. Existing Conditions

a. City of Richmond

According to the *Richmond Master Plan* (2000-2010) there are limited opportunities for new development. There are a few vacant parcels, located primarily in the southwest part of the City or within

redevelopment projects. Commercial service centers are located throughout the City and along key transportation corridors, providing convenient goods and services to adjacent neighborhoods and areas, while industrial uses are concentrated within four primary areas. Residential uses occupy more land area in the City than any other type of use. The City benefits from a well-developed radial highway system that provides easy access to Downtown and surrounding local and regional destinations. There are significant public open spaces throughout the City in the form of parks, public school grounds and cemeteries, in addition to large public spaces along the James River.

b. Henrico County

Henrico County's *Vision 2026* states that land use for the county is divided into the following categories: Rural, Residential, Mixed-Use, Office/Service/Industrial, Retail/Commercial, and Civic. The Rural land use group is characterized by agricultural uses, land maintained in a natural state and large tract residential development. Prime Farmlands and Farmlands of Statewide Importance are located within the County along the corridor. Rural areas are primarily located around the perimeter of the eastern end of the county with a few locations along the western portion of the county. These areas would likely be pressured for growth in the future but are not primary growth areas. Residential is the most dominant land use in Henrico County. Mixed-Use groups are a new land concept in Henrico County and incorporate open space, conveniences and living within a small area. The Office/Service/Industrial areas in Henrico County are strong factors in the local and regional economy and offer a wide range of employment opportunities to residents. The county is encouraging expansion of economically productive business areas in coordination with anticipated residential growth. Existing Retail/Commercial areas in the county are concentrated around significant corridors. A goal for Henrico County is to prevent vacant retail structures and encourage redevelopment. Civic uses include locations for new and existing community amenities such as government facilities, schools, churches and hospitals.

c. New Kent County

Land use in New Kent County is clustered, with commercial centers, government and institutional uses all centered around residential areas. Prime Farmlands and Farmlands of Statewide Importance are located within the County along the project corridor. According to the New Kent County Comprehensive Plan, *Vision 2020*, residents of New Kent would prefer to preserve the rural nature of the County. Future land use mapping shows several economic opportunity areas around the I-64 corridor, however approximately 70% of the County would still remain in rural lands, agriculture and forested areas, including land in Agricultural/Forestral Districts (AFDs) and environmental buffers.

d. James City County

According to the James City County *2009 Comprehensive Plan*, growth management is the most important component of land use for this locality. The 2007 Virginia Tech Citizen Survey indicated that 83% of respondents agreed that development of the land in James City County is happening too quickly. James City County has undergone continuous rapid growth since 1970, transforming the predominantly rural character of James City County into a more urban and suburban environment. Most development has occurred in and around the City of Williamsburg, though development has also spread both to the north and west areas of the County. The 1990s and the 2000s marked a period of diversification in business and industry, with large expansions to shopping, business developments and public service dwellings. Numerous opportunities for future industrial growth still exist in the County. The amount of acreage in James City County farms, around 5,831 acres, is about 6% of the County's total land area. Prime Farmlands and Farmlands of Statewide Importance are located within the County along the project corridor. James City County has instated a pattern of land use and development that reinforces and improves the quality of life for citizens and assists in achieving the goals of the Comprehensive Plan for all future land use.

e. *York County*

Based on the York County *Comprehensive Plan, Charting the Course to 2025*, of the 108 square miles contained within the County's jurisdictional limits (a figure that includes the bodies of water within the jurisdictional limits), approximately 37% of the total land area is owned by the Federal government. These federal landholdings include the various military installations – the U.S. Coast Guard Training Center, U.S. Naval Weapons Station, Cheatham Annex, and Camp Peary – which total approximately 20,400 acres, and the 3,900-acre Colonial National Historical Park. In addition to these large federal landholdings, the Cities of Newport News and Williamsburg each own reservoirs and watershed property in the County encompassing a total of 6,600 acres. The combination of federal and watershed property accounts for 30,900 acres, representing almost half (47.5%) of the land area in York County. While presenting a number of constraints for the County, these landholdings do ensure that a relatively large amount of open space would be perpetuated, thus contributing positively to the County's quality of life and the perception of a rural atmosphere. The County land use percentages are as follows: residential development, 18%; commercial development, 2.3%; industrial development, 2.5%; open space (conservation/recreation, agriculture and vacant), 43.2%; and total military, 33.7%. York County also has over 200 miles of shoreline and associated tidal areas, providing vast green areas. Prime Farmlands and Farmlands of Statewide Importance are located within the County along the project corridor. Maintaining a rural character while balancing the desire for high quality of life is the County's main challenge for land use planning.

f. *City of Newport News*

The City of Newport News *Comprehensive Plan, Framework for the Future 2030*, breaks down existing land use by type. Thirty-one percent of the City's land is developed for residential uses, and 19% is owned by the military or federally owned. Only 9.1% of City land remains vacant and undeveloped. The remaining 48.9% is broken out between commercial and office, transportation facilities, public right of way use, community facilities and parks/open space. Prime Farmlands and Farmlands of Statewide Importance are located within the City along the project corridor. Since much of the land is developed, the City has set goals to protect residential neighborhoods from incompatible infill development and commercial or industrial intrusions and instead plans to support neighborhoods with adequate public facilities. Long range land use goals include creating a safe and quality neighborhoods which enhance the natural and historic diversity of Newport News; plan for efficient growth; balanced and sustainable mixes of land use; efficient land use patterns; and revitalize historic Downtown Newport News.

g. *City of Hampton*

The *Hampton Community Plan* (2010) discusses existing and future land use for the City. Hampton has experienced a substantial amount of population growth and land development since the consolidation of Hampton, Elizabeth City County, and the town of Phoebus in 1952. The City is nearly fully developed. Infill development, redevelopment, and revitalization of existing developed areas would be the main source of growth and change within Hampton. Hampton has evolved into a city with a number of unique activity centers with distinct and often complementary functions as opposed to one single center of activity. Examples of activity centers include Downtown, Hampton Roads Center, and Coliseum Central. These centers serve both local and regional functions. Residential land is the dominant land use in the City. The City is made up of many neighborhoods providing a variety of residential settings and housing options. Residential land makes up about 40% of the City's land area. Fourteen percent of the City's land is occupied by two military bases: Langley Air Force Base (LAFB) and Fort Monroe. The City of Hampton has worked closely with LAFB to implement the Air Installation Compatible Use Zone program in areas of the city close to the Base to ensure Langley's continued existence in the City. Hampton's low inventory of vacant, developable land would continue to have important implications for revenue growth, service requirements, and future community development strategies. It is expected that infill, redevelopment, and revitalization of existing development would be the main source of growth and change within the City. The City's plan for future land use would protect residential neighborhoods,

encourage commercial investment in established centers and districts, promote revitalization in strategic areas of the City and protect environmentally sensitive areas.

3. Potential Impacts

No-Build Alternatives:

Changes in existing and planned land use would not be expected with the No-Build Alternative. It is assumed that any locality approved projects and land uses would develop as planned (according to specific comprehensive plans). There would be no impacts to Prime Farmland, Farmland of Statewide Importance, or AFDs associated with the No-Build Alternative. However, the increasing travel-time delays associated with the No-Build Alternative would not benefit the planned development along the I-64 corridor.

Build Alternatives:

The proposed Build Alternatives could potentially affect existing and future land use in several ways. These include directly converting land from its existing use to transportation use; limiting or precluding planned future developments from occurring; and indirectly inducing unplanned development as well as supporting and enhancing planned development. However, because the Build Alternatives would involve acquiring right of way along an existing interstate corridor, none of the Build Alternatives are expected to make more than minor changes in land use, population density, or growth rate. There are Prime Farmlands and/or Farmlands of Statewide Importance located in the Counties of Henrico, New Kent, James City, and York that would be impacted by the Build Alternatives. Based on coordination with Natural Resource Conservation Service (NRCS), there are Prime Farmlands and Farmlands of Statewide Importance identified in the corridor, however, impacts are not significant to these resources since they are currently alongside the existing corridor (**Tables 16 and 17**) and **Appendix A**. Also, some areas are located in Census designated Urbanized Areas (UAs) and are not protected under the Farmland Protection Policy Act (FPPA). UAs are areas designated to have over 50,000 people within a Census designated boundary. There would be impacts to three AFDs, two in New Kent County and one in James City County, shown in **Appendix A**. See **Table 18** for impact amounts by build alternative.

Table 16: Impacts to Prime Farmlands by Build Alternative

Name	Alternatives 1A/2A (acres)	Alternatives 1B/2B (acres)	Alternative 3 (acres)
New Kent County	5.14	5.15	5.14
James City County	23.65	23.63	23.63
York County	36.63	36.40	36.40

Table 17: Impacts to Farmlands of Statewide Importance by Build Alternative

Name	Alternatives 1A/2A (acres)	Alternatives 1B/2B (acres)	Alternative 3 (acres)
Henrico County	0.00	0.01	0.00
New Kent County	4.13	4.13	4.13
James City County	10.01	10.01	10.01
York County	22.93	22.86	22.86

Table 18: Impacts to Agricultural/Forestal Districts by Build Alternative

Name	Alternatives 1A/2A (acres)	Alternatives 1B/2B (acres)	Alternative 3 (acres)
Ashland Farm,	1.28	0.48	1.22

New Kent County			
Springfield Natts, New Kent County	0.12	0.00	0.02
Barnes Swamp, James City County	0.66	0.66	0.66

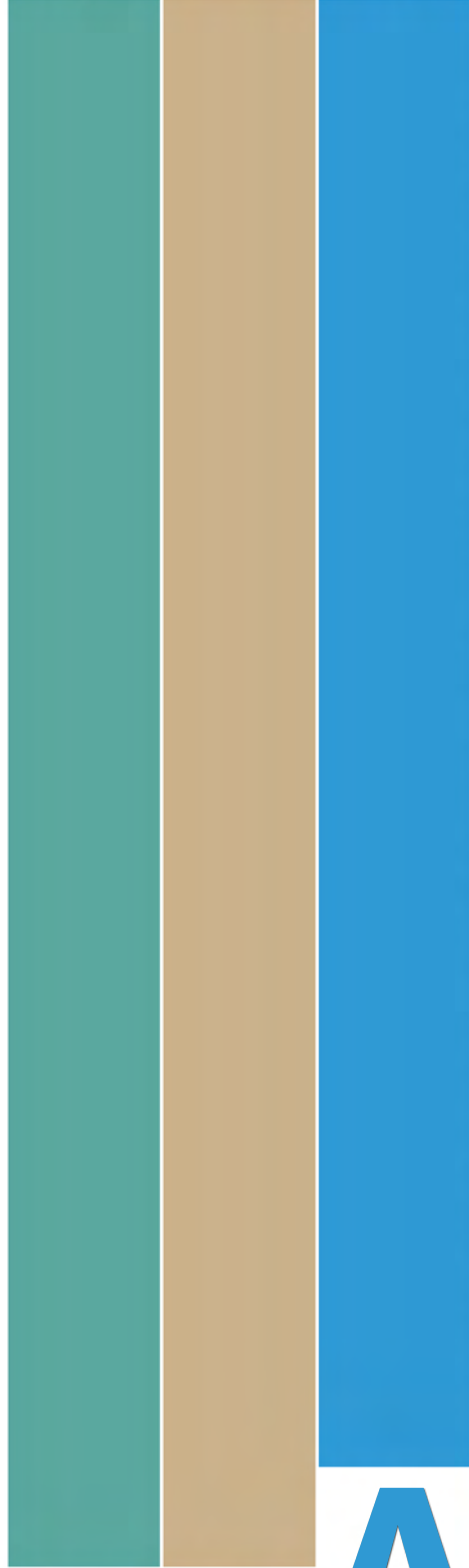
4. Mitigation Measures

Close coordination with appropriate localities, agencies, and affected property owners would be required to ensure that land use conversions are consistent with local land use policies and plans. Impacts to AFDs would be coordinated with each of the localities prior to project commencement.

REFERENCES

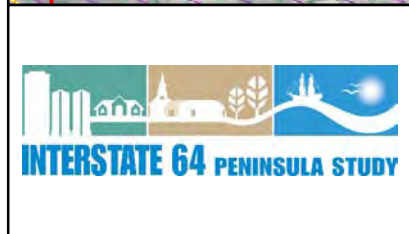
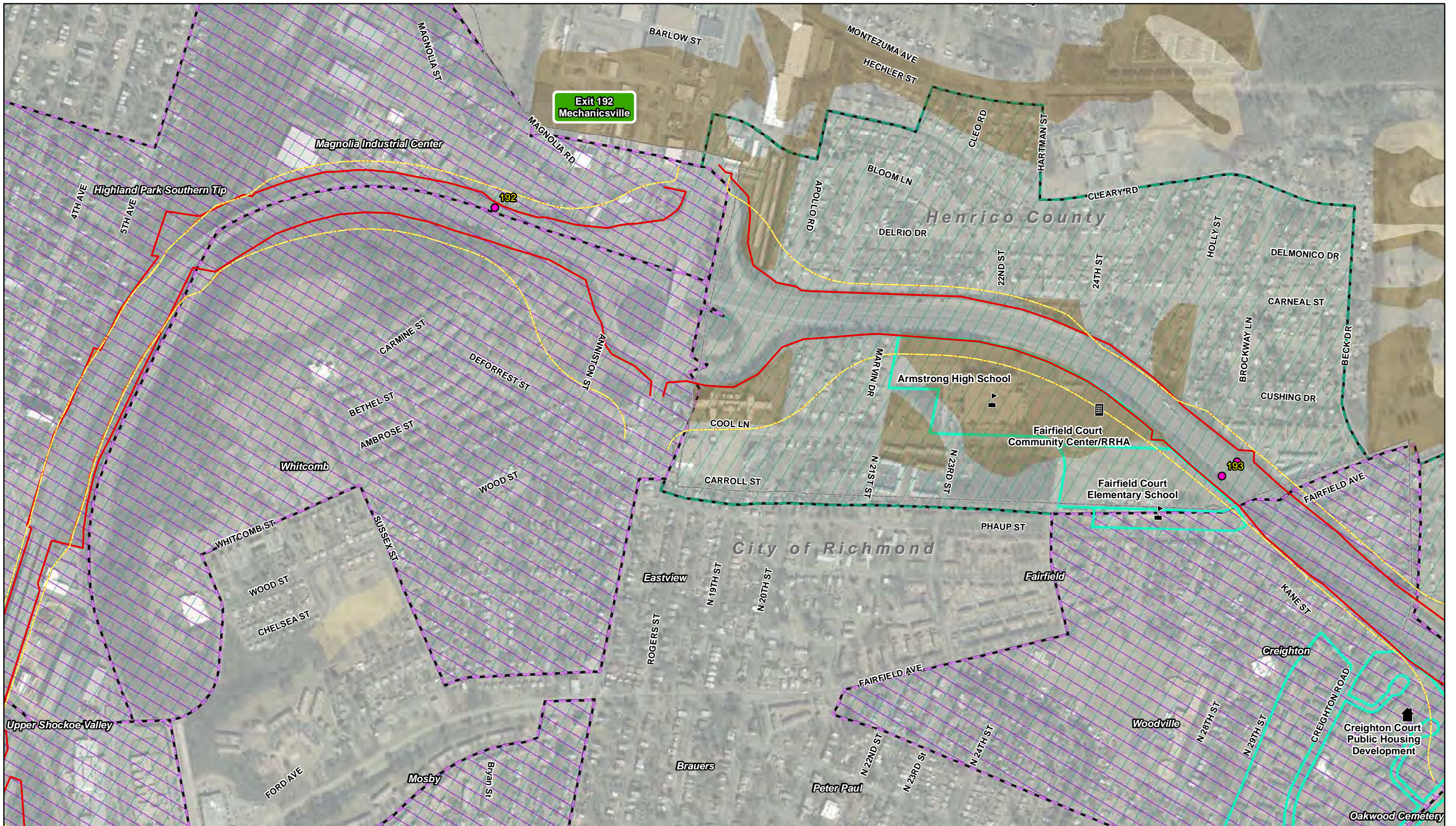
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INTERSTATE 64 PENINSULA STUDY



Census Areas, Community Facilities, Agricultural/Forestral Districts & Farmlands

APPENDIX A



Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
Map 2 of 43

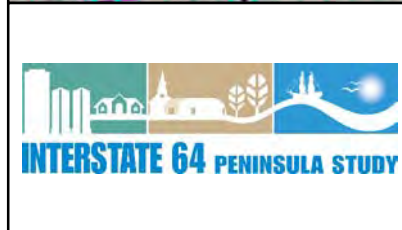
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Exit 193
Nine Mile Road



Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

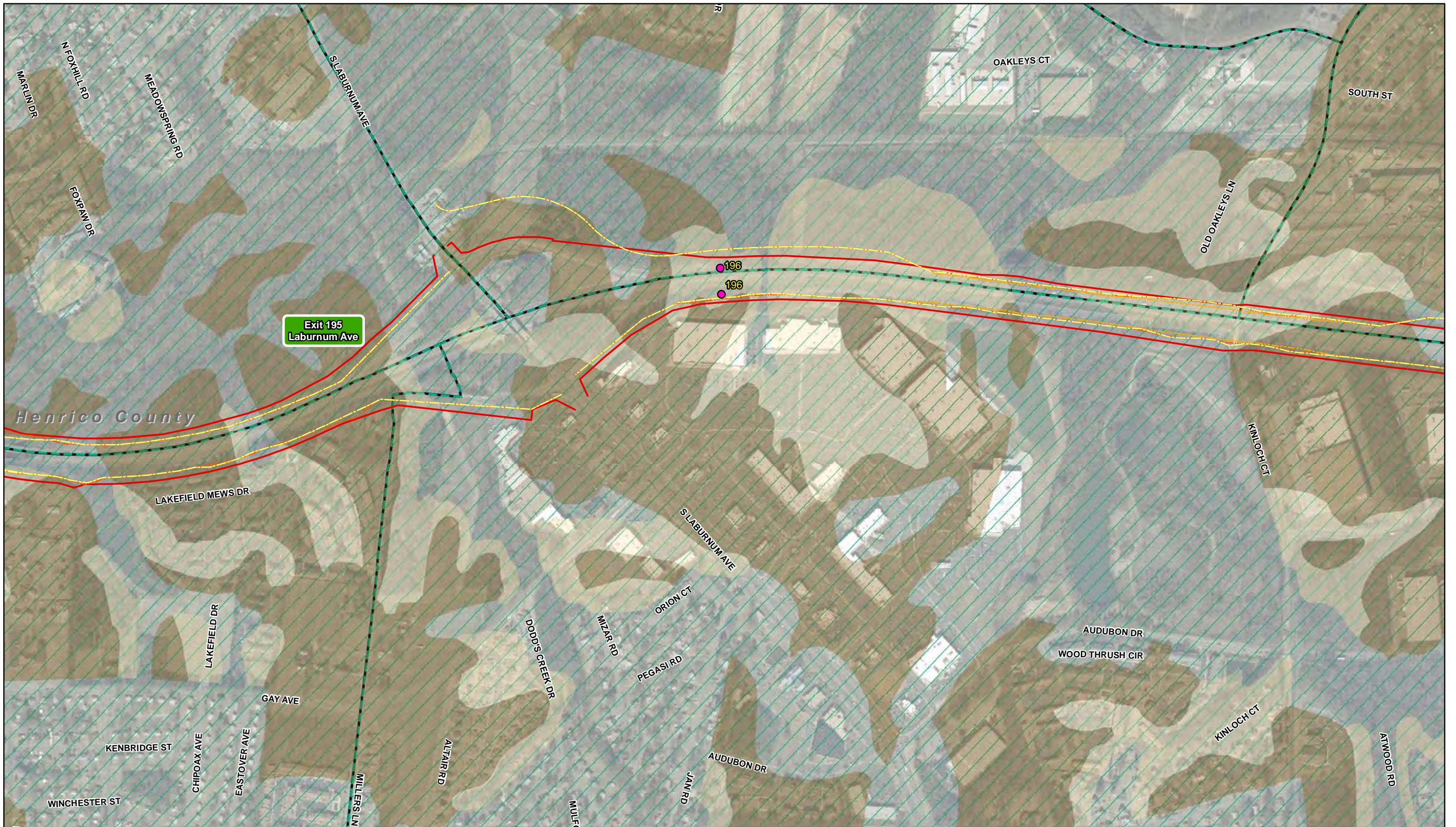
Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands

Map 3 of 43

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Exit 195
Laburnum Ave

Henrico County





- | | | | |
|-----------------------------|--------------------------|---|-----------------------------|
| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 4 of 43

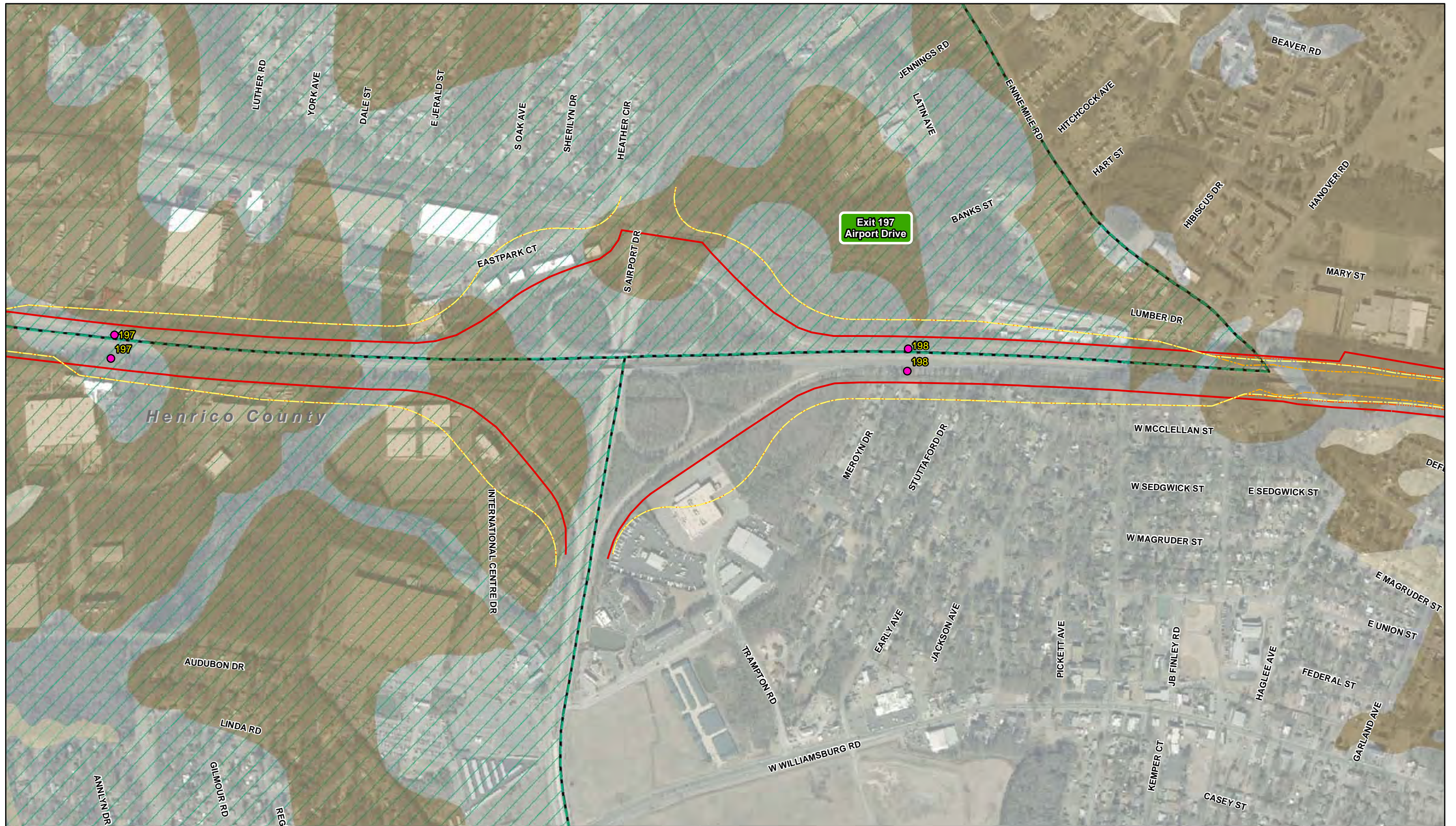
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Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

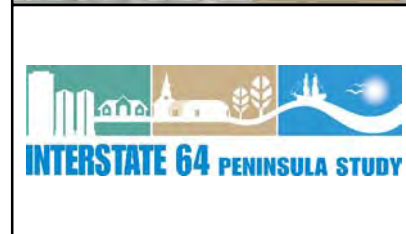
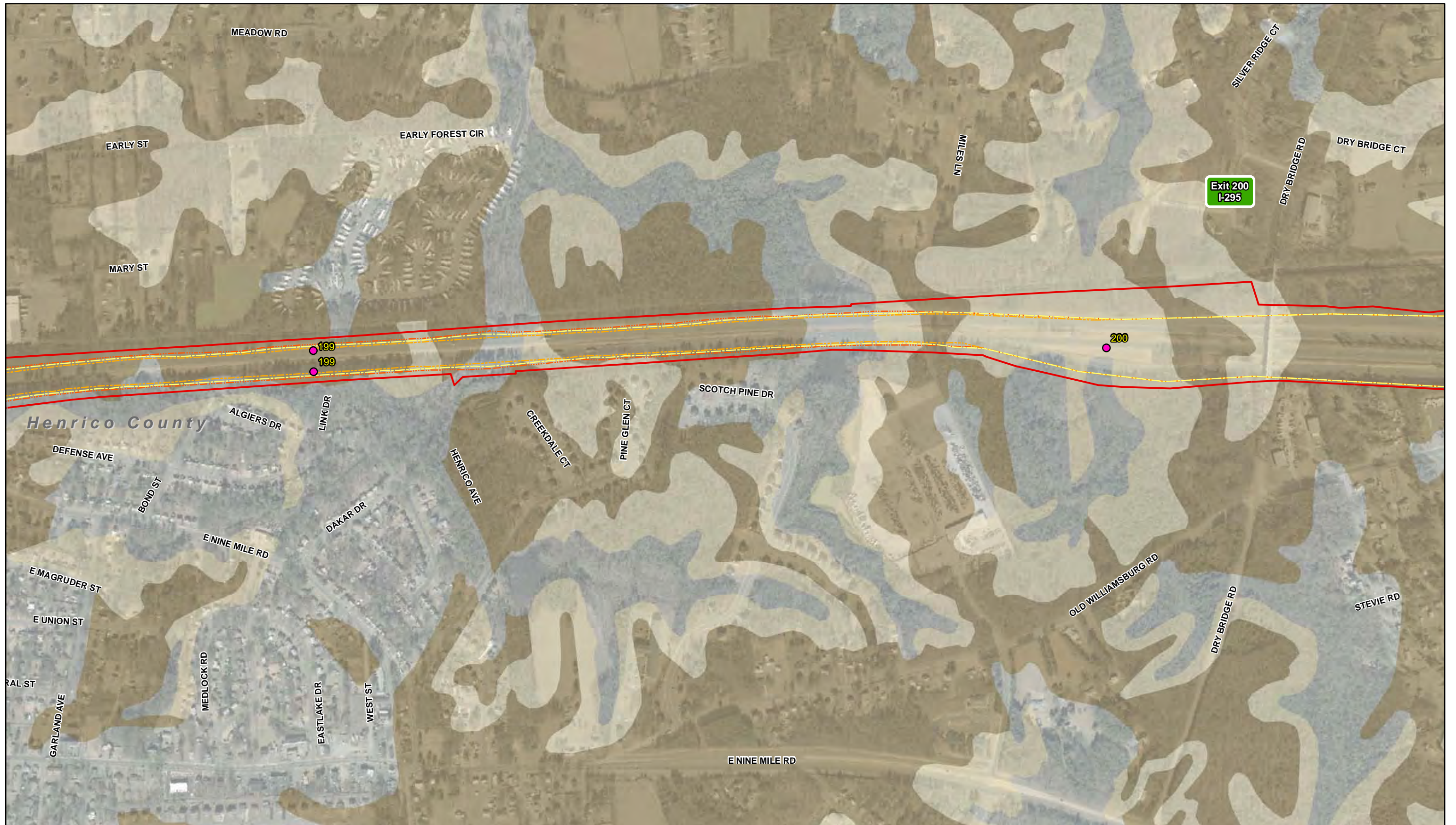
Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
Map 5 of 43
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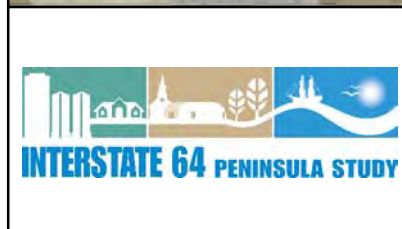
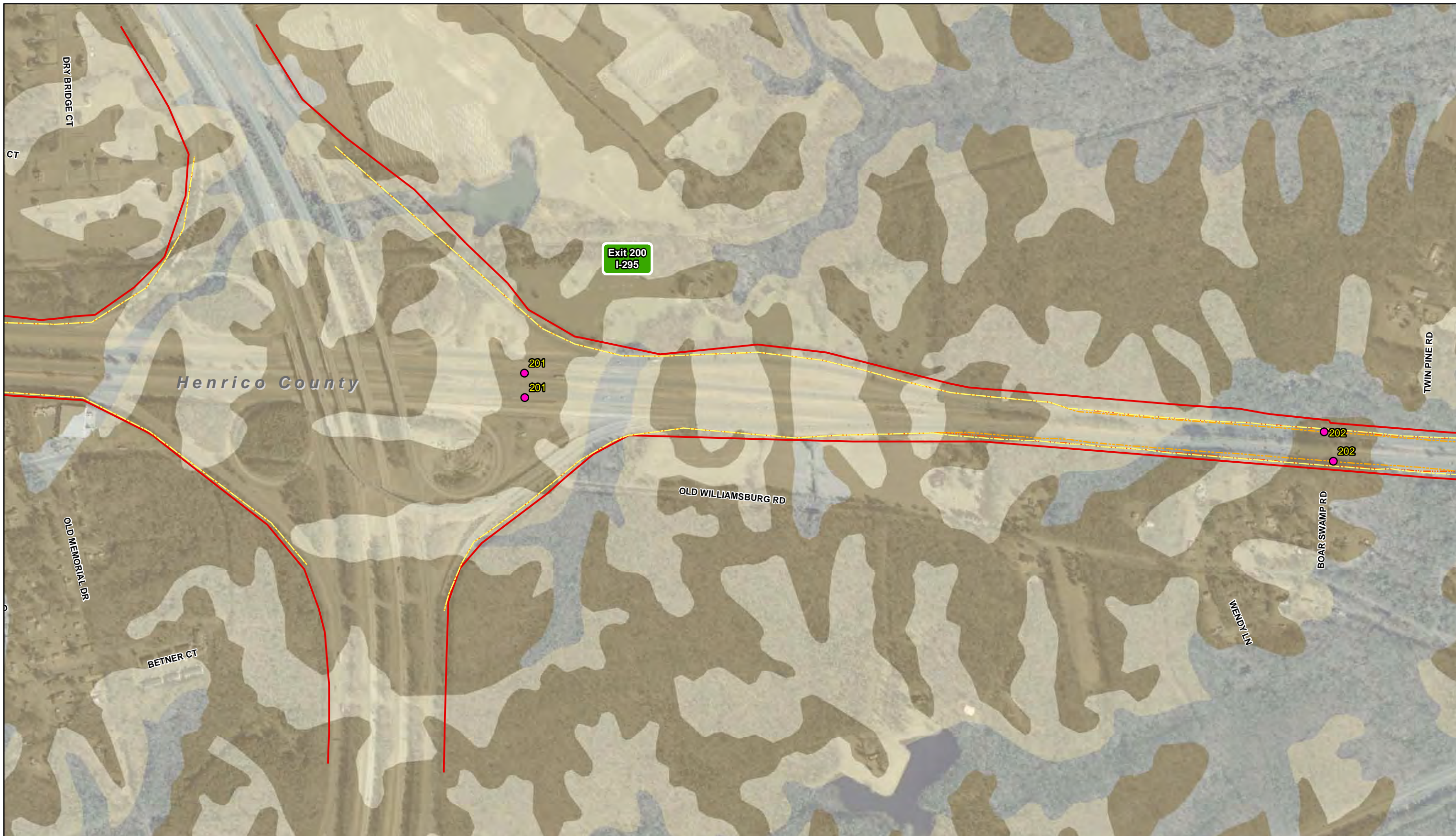


Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
Map 6 of 43
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Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
Map 7 of 43

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|-----------------------------|--------------------------|---|-----------------------------|
| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 8 of 43

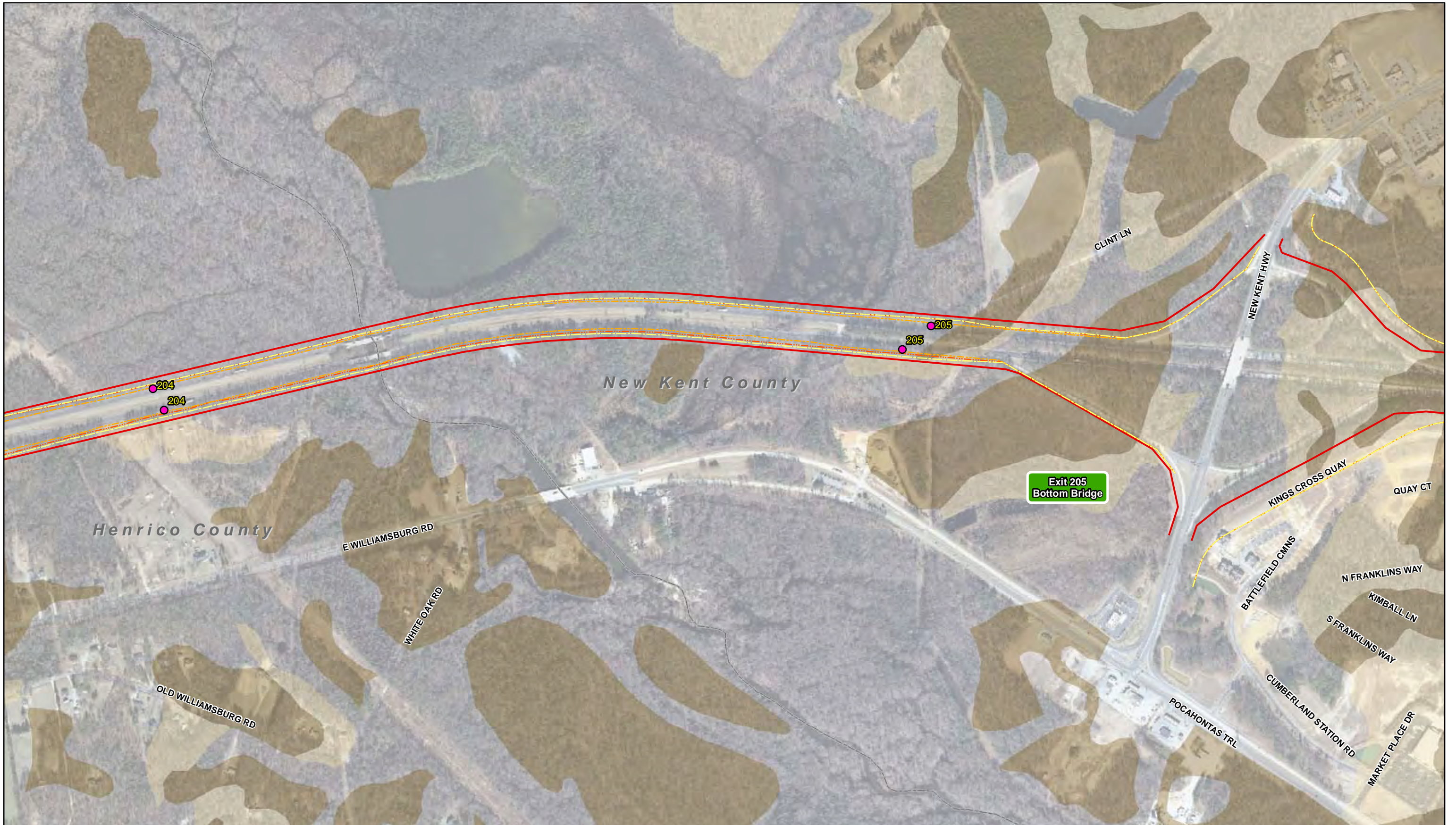
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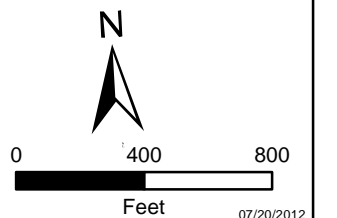


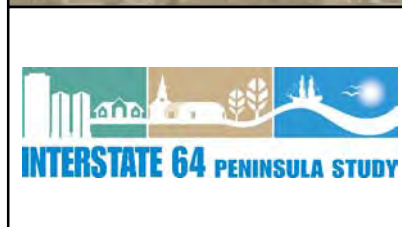
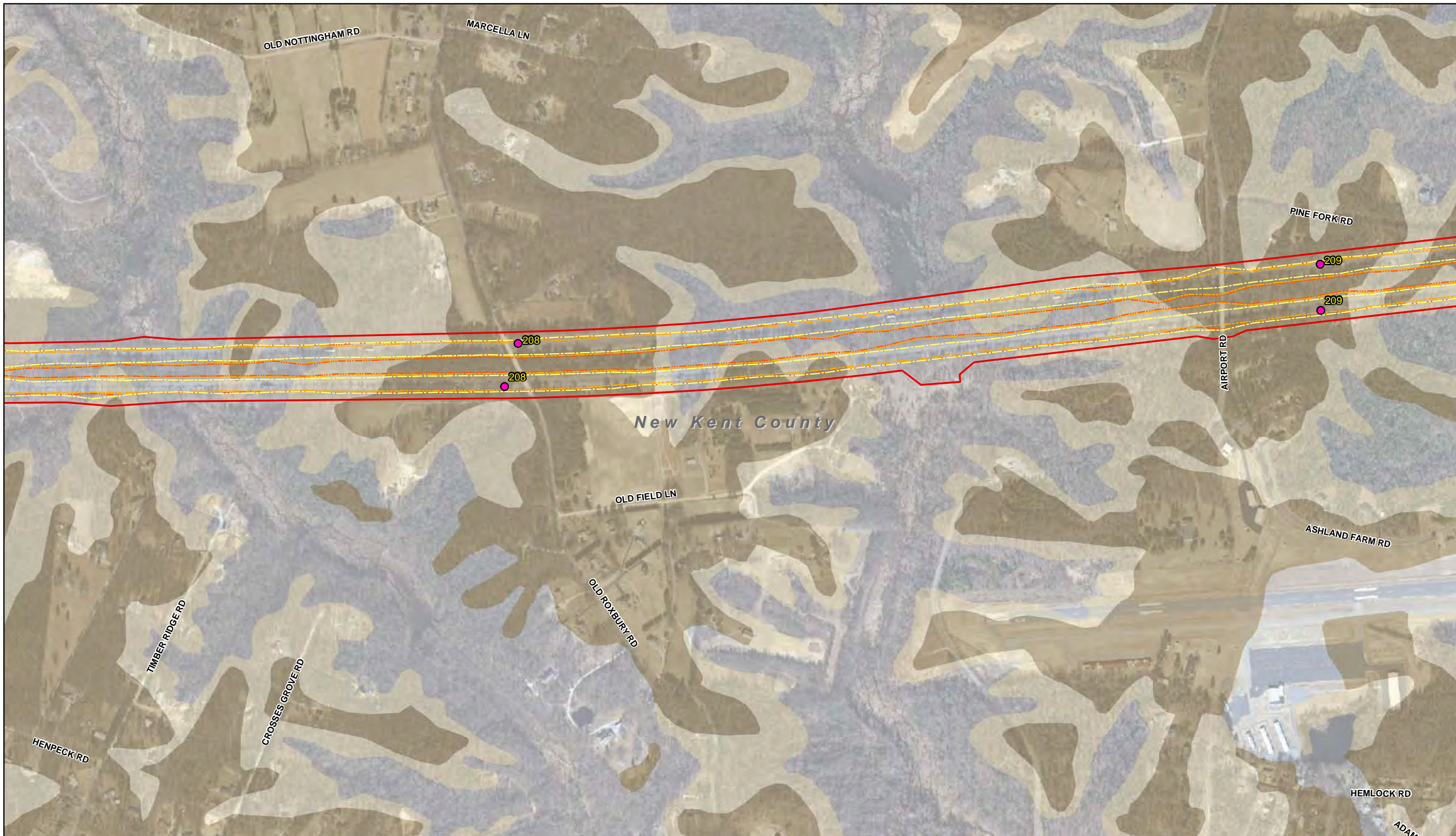
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|-----------------------------|--------------------------|---|-----------------------------|
| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 9 of 43

Notes:
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Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands

Map 11 of 43

Notes:
 Water features courtesy of National Hydrographic Dataset.
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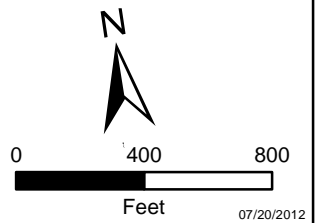


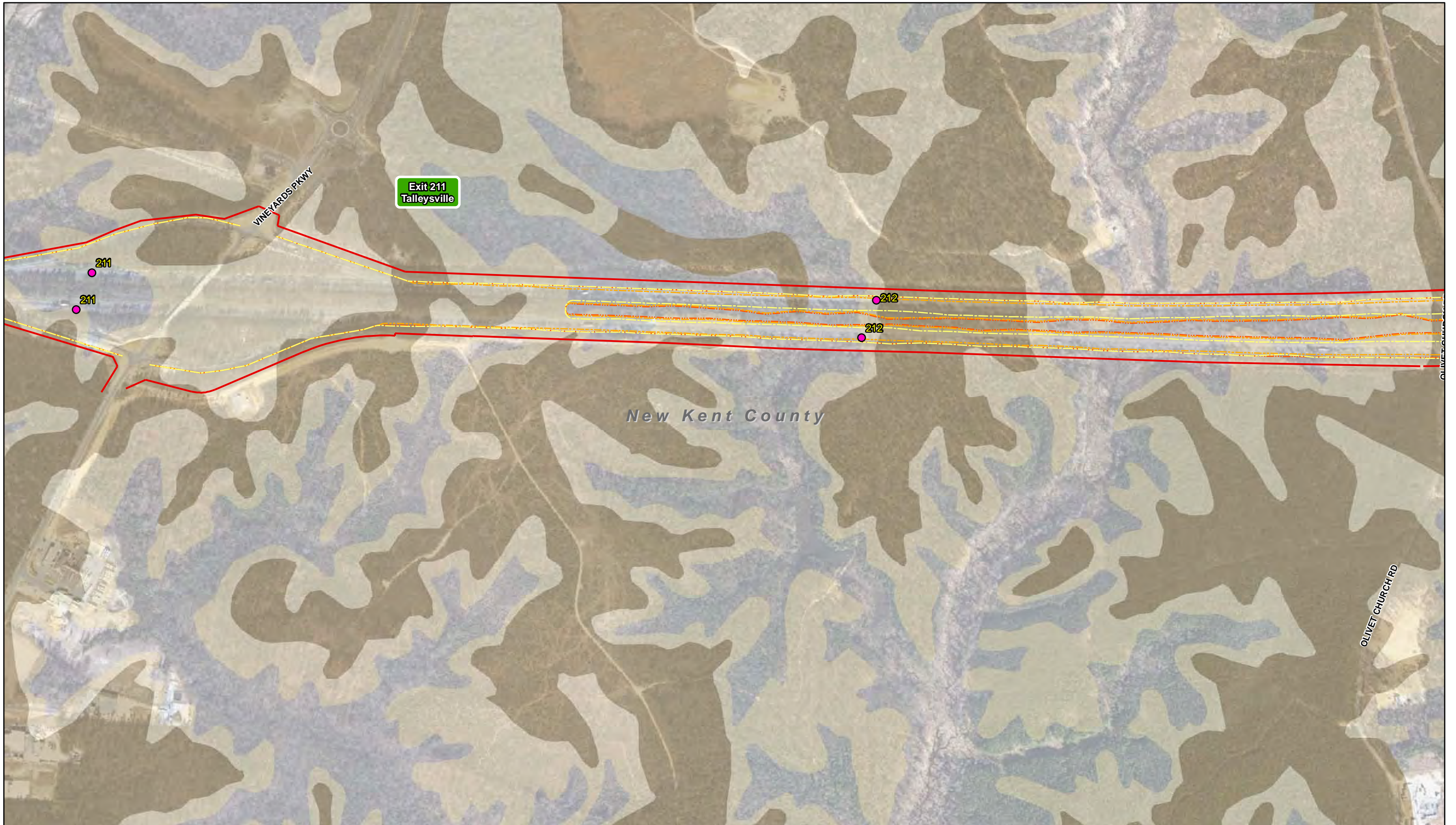
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| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 12 of 43

Notes:
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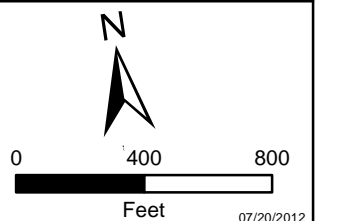


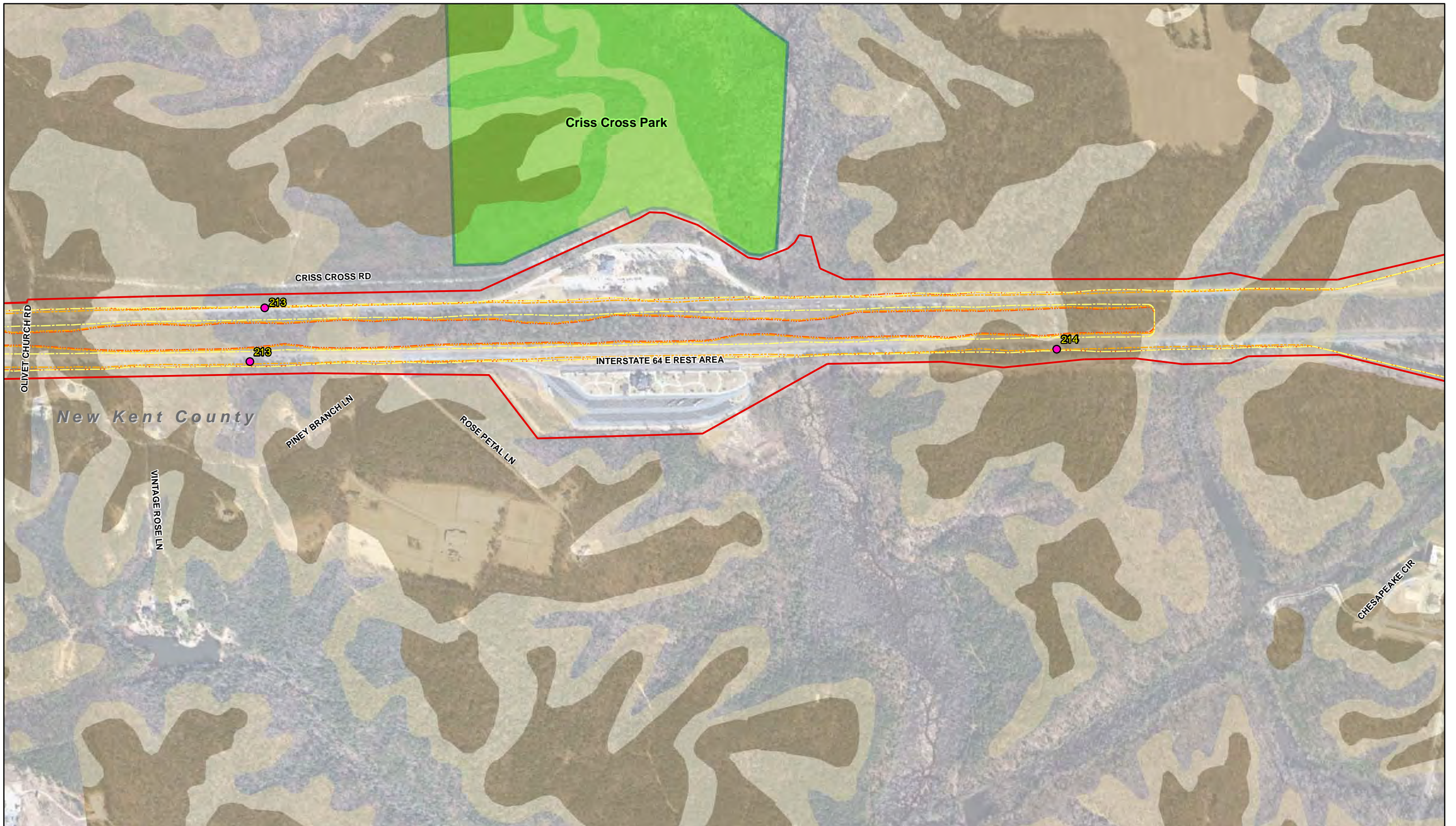
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| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 13 of 43

Notes:
Water features courtesy of National Hydrographic Dataset.
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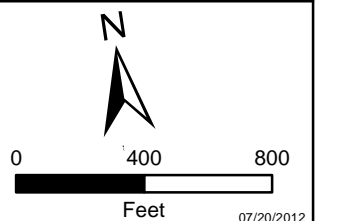


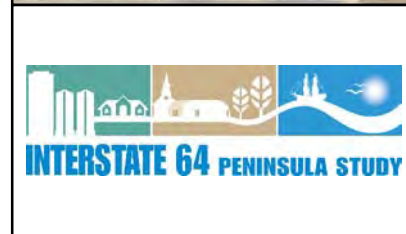
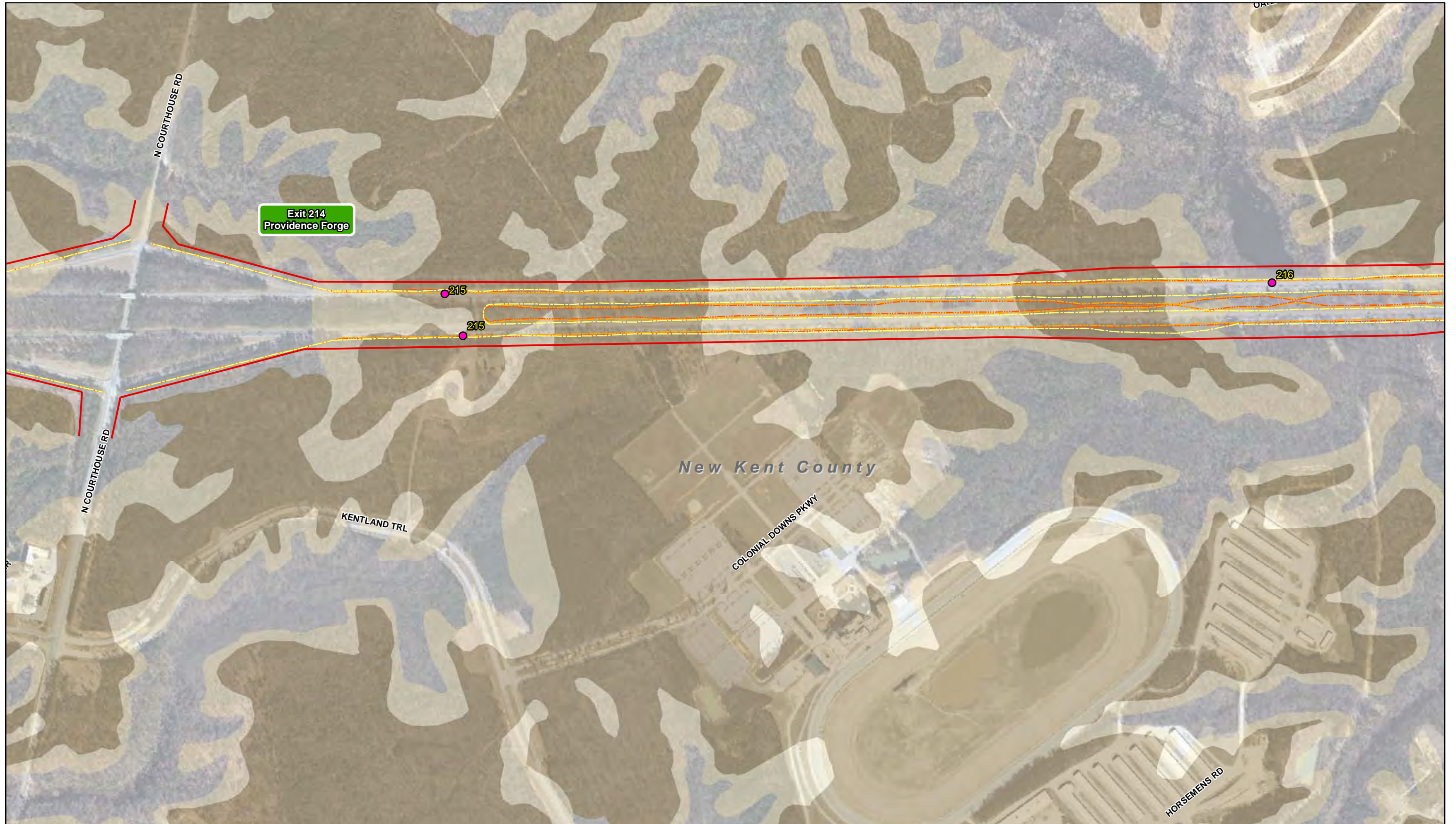
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|-----------------------------|--------------------------|---|-----------------------------|
| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 14 of 43



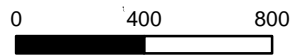
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Water features courtesy of National Hydrographic Dataset.
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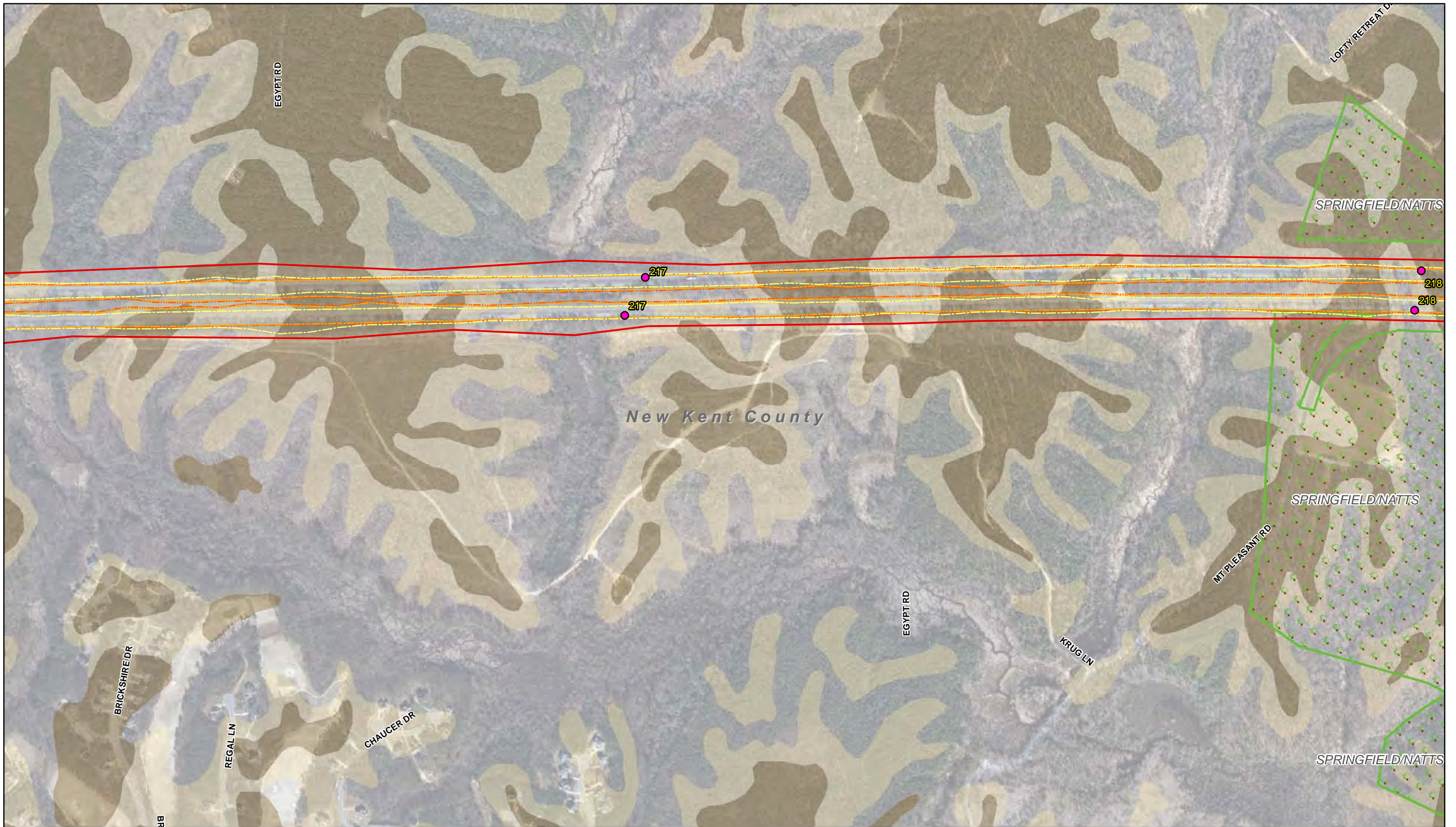
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Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
 Map 15 of 43
 Notes:
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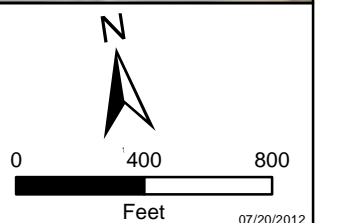


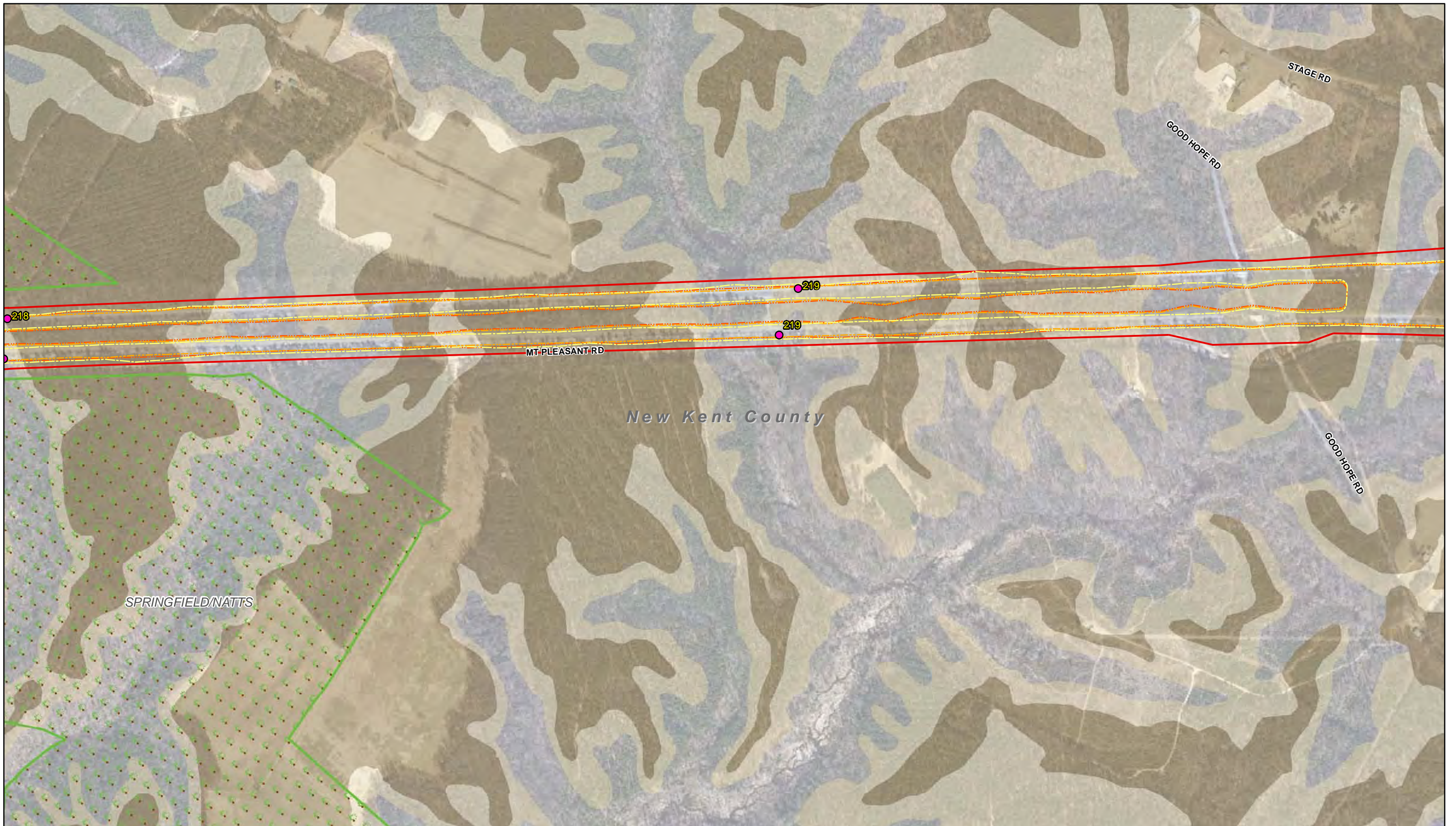
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| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 16 of 43

Notes:
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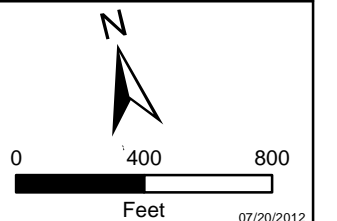


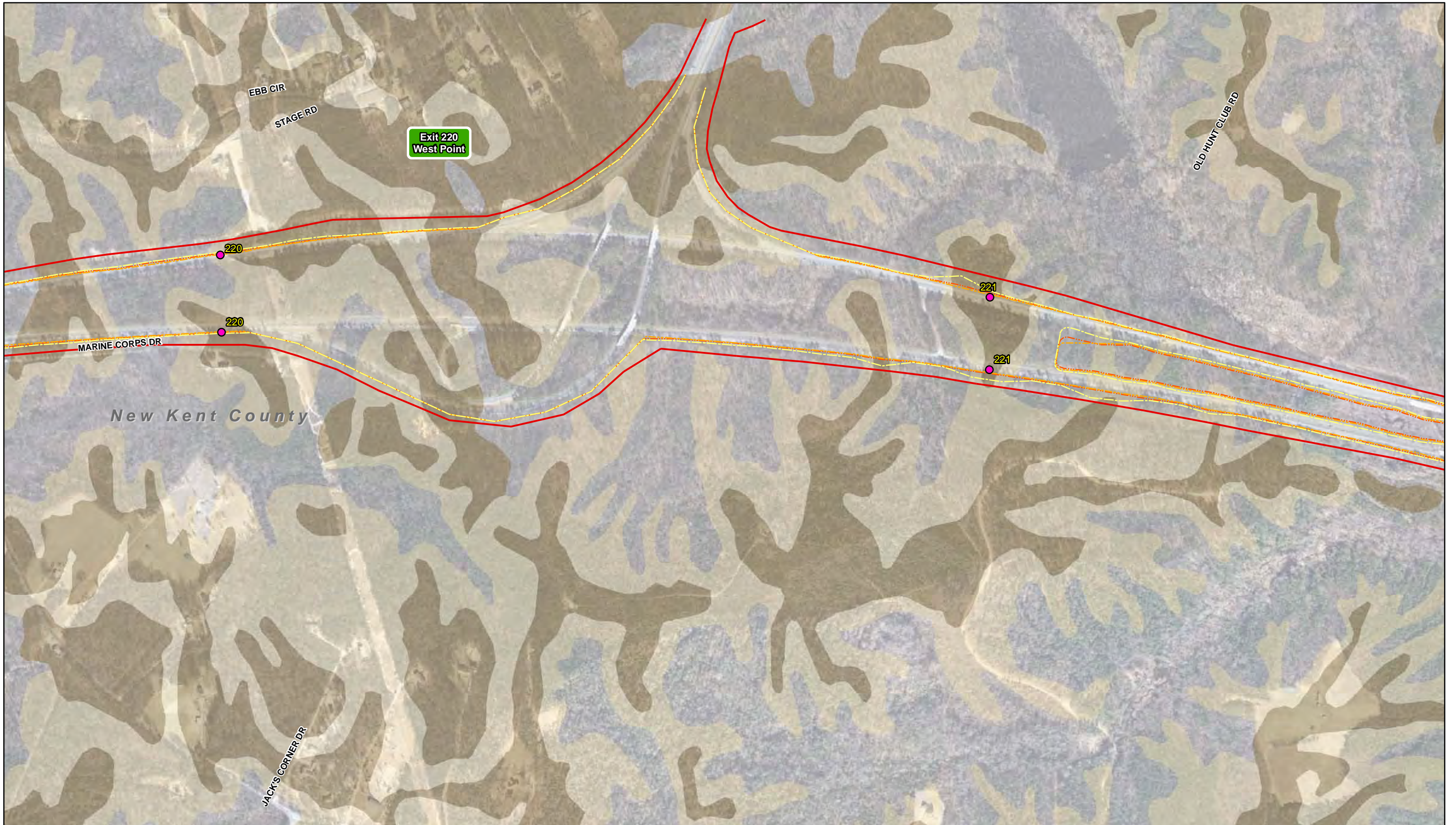
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|-----------------------------|--------------------------|---|-----------------------------|
| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 17 of 43

Notes:
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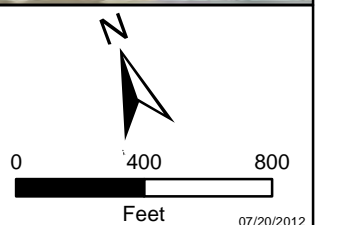


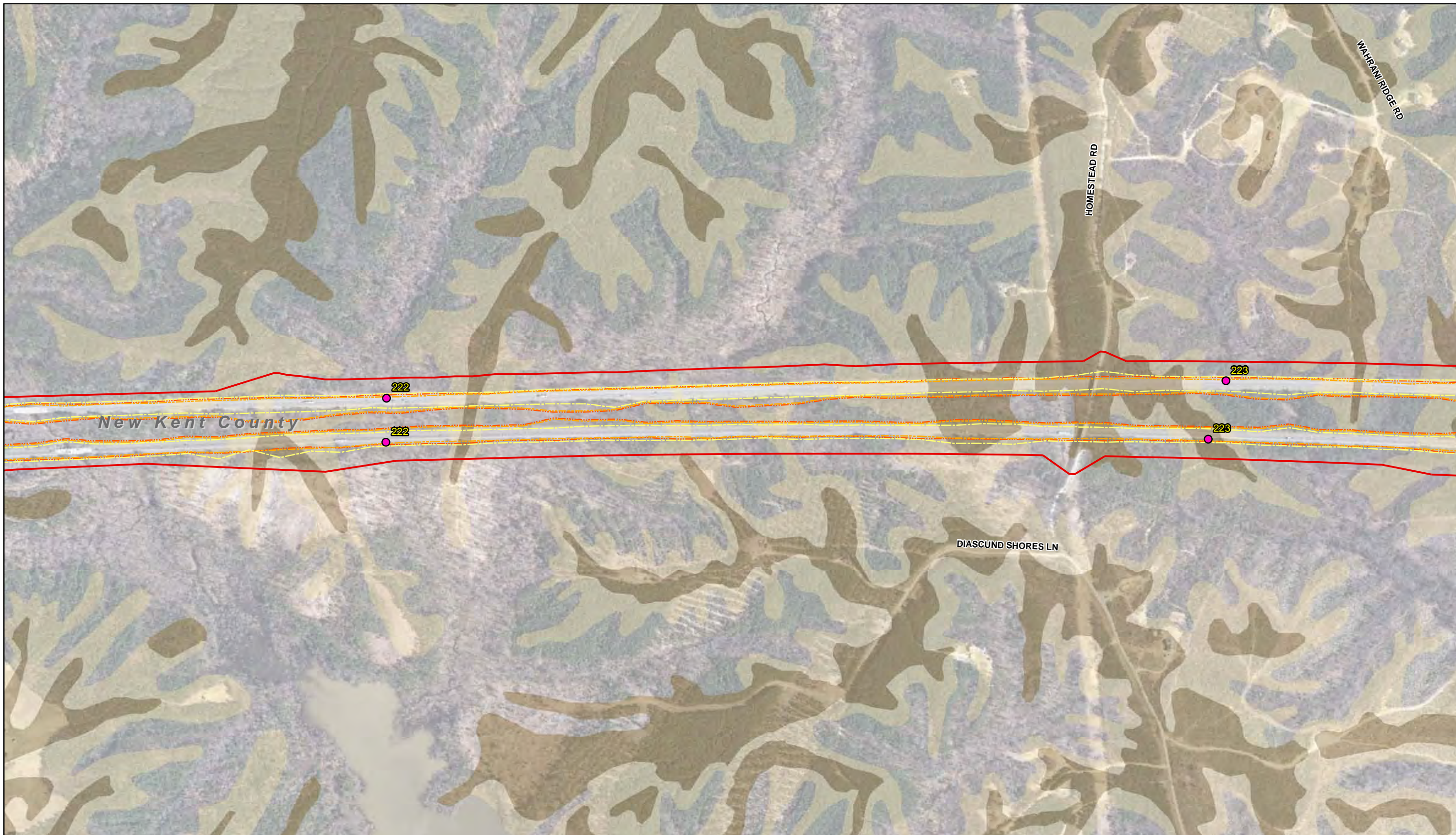
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|-----------------------------|--------------------------|---|-----------------------------|
| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestal Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

Census Areas, Community Facilities, Agricultural/Forestal Districts, & Farmlands

Map 18 of 43

Notes:
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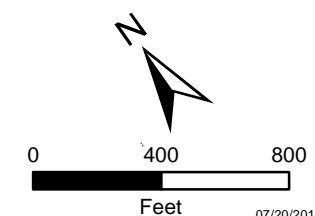


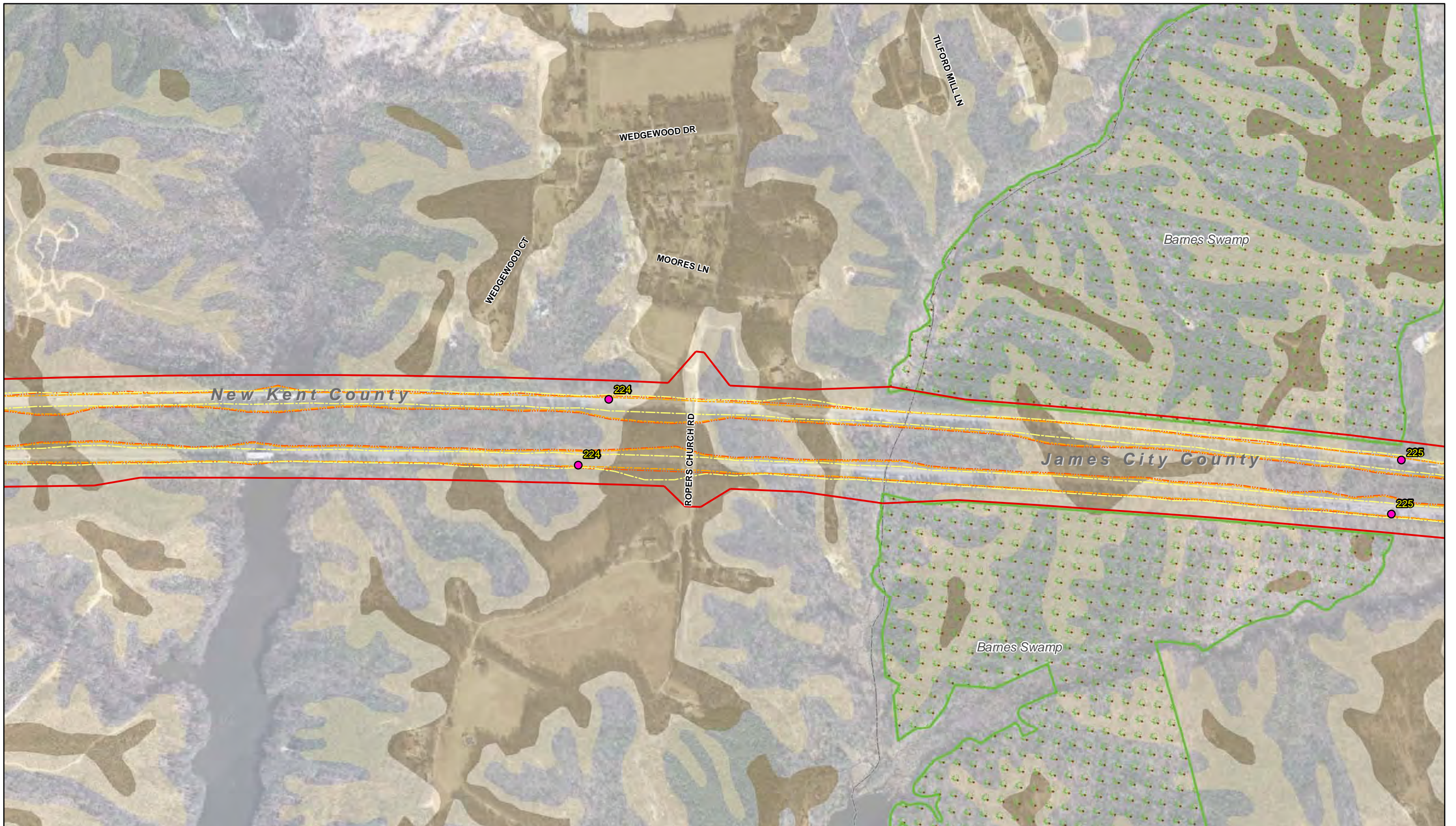
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|-----------------------------|--------------------------|---|-----------------------------|
| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 19 of 43

Notes:
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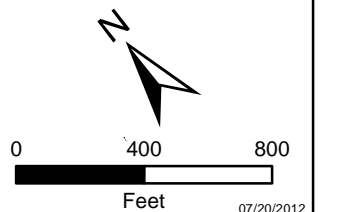
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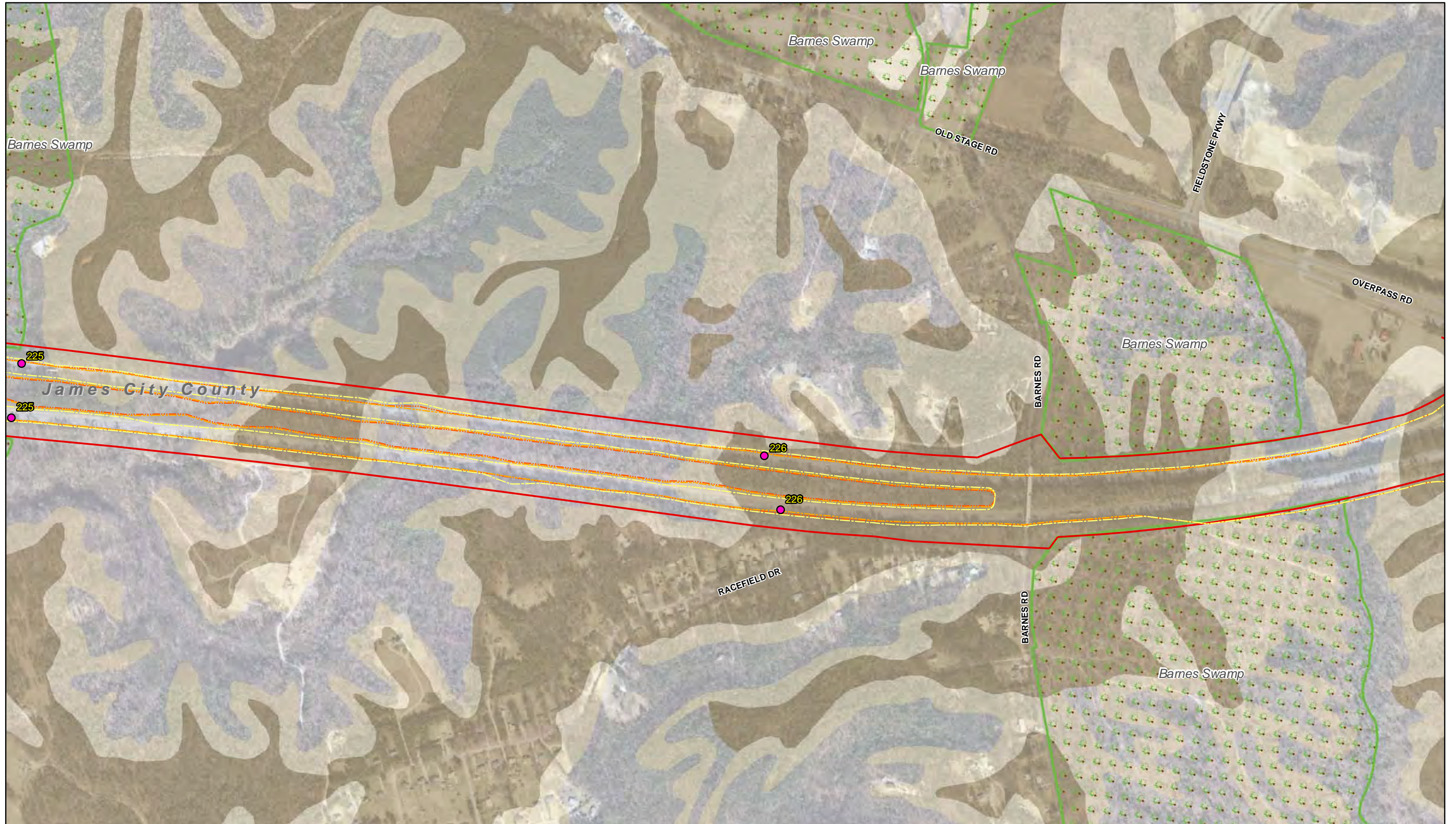
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|-----------------------------|--------------------------|---|-----------------------------|
| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 20 of 43

Notes:
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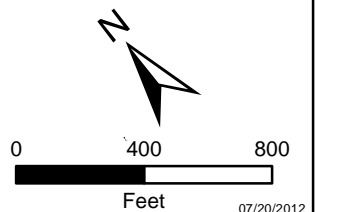


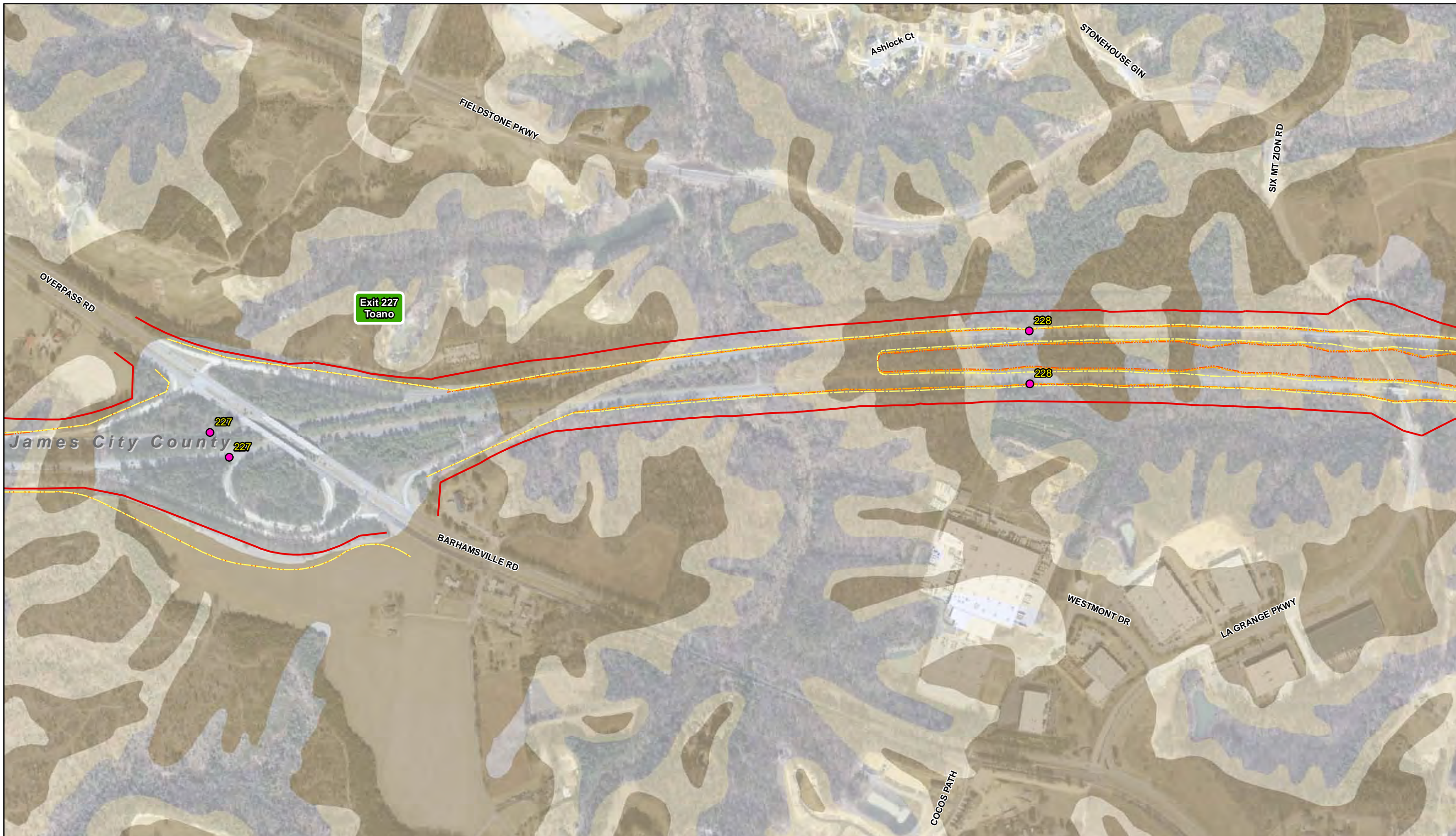
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| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 21 of 43

Notes:
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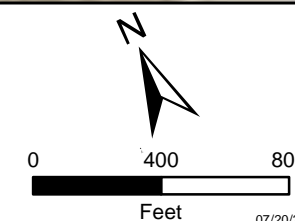


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| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 22 of 43

Notes:
Water features courtesy of National Hydrographic Dataset.
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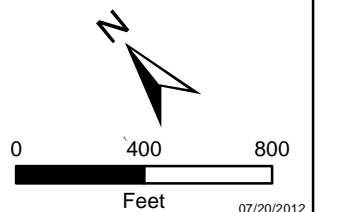


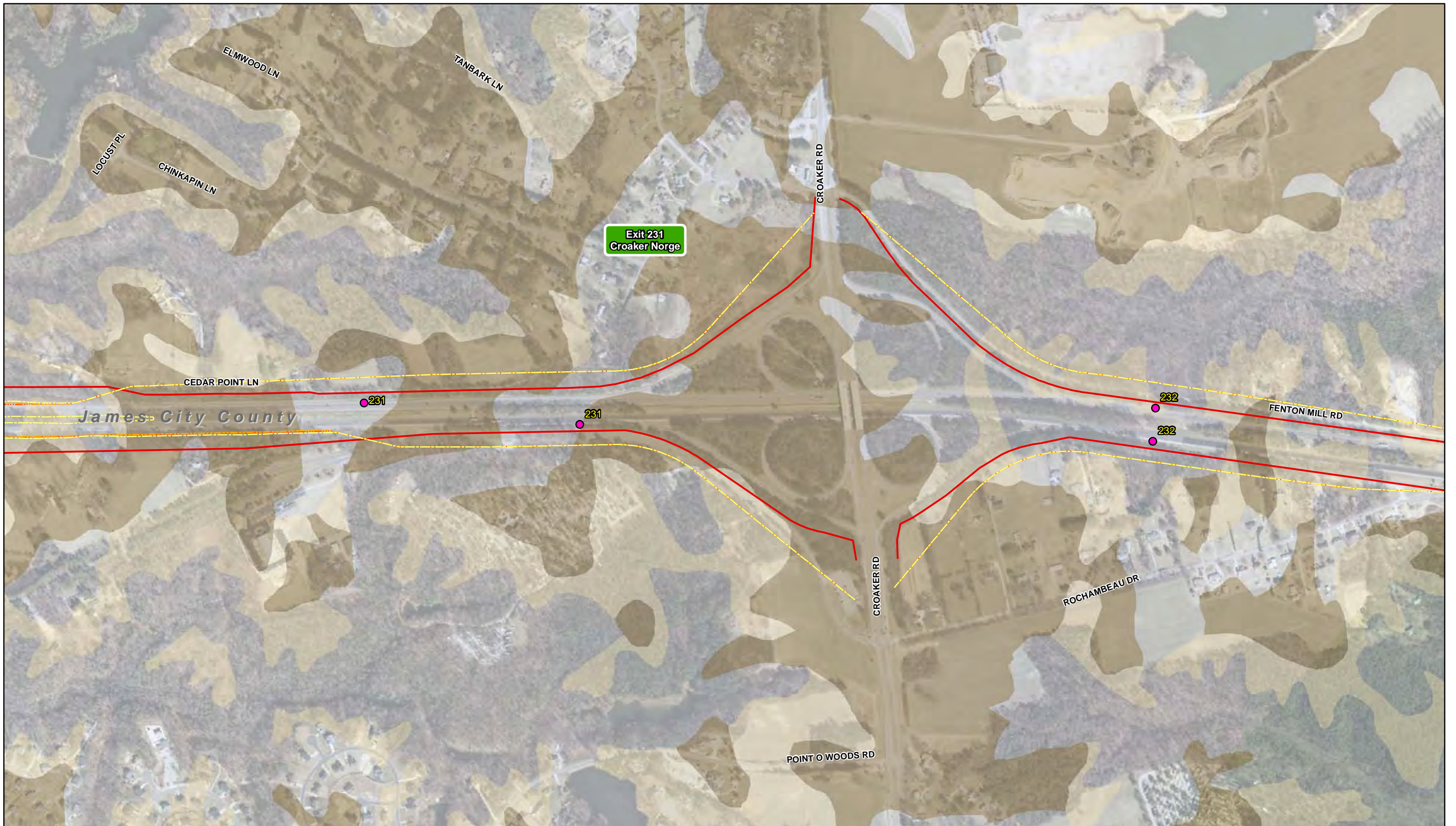
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| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands

Map 23 of 43

Notes:
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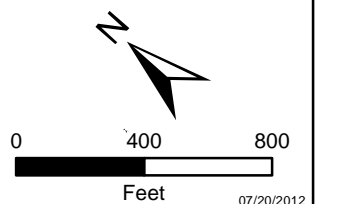


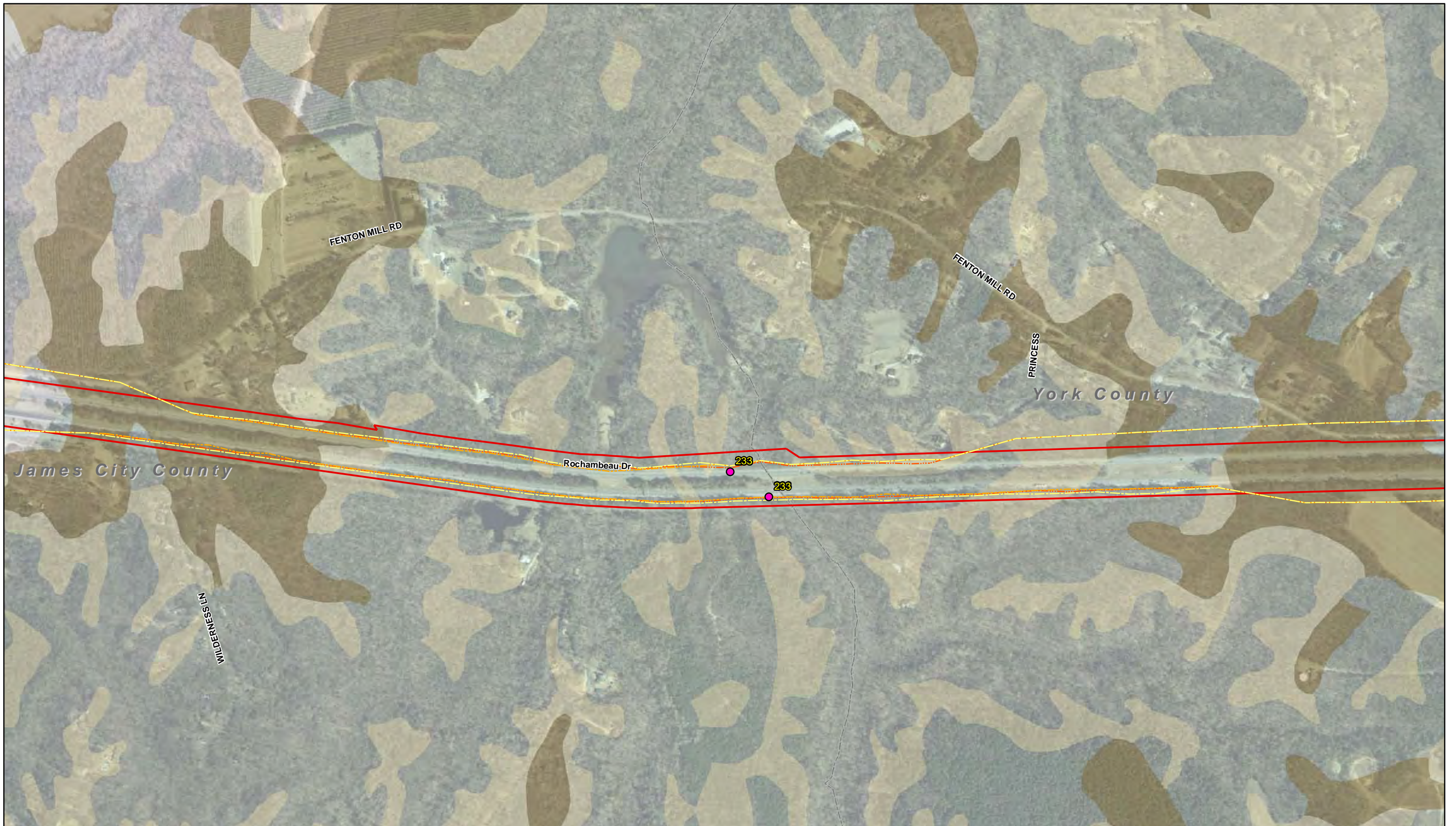
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| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 24 of 43

Notes:
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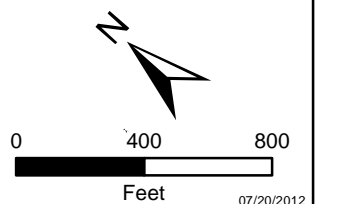


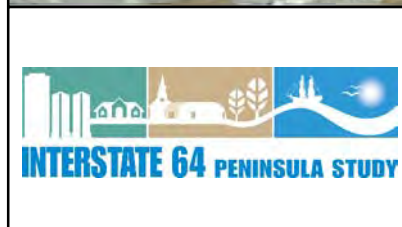
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| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 25 of 43

Notes:
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Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
Map 26 of 43
Notes:
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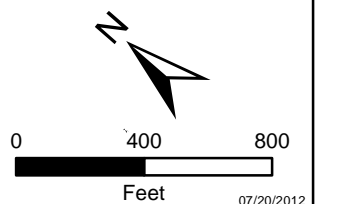


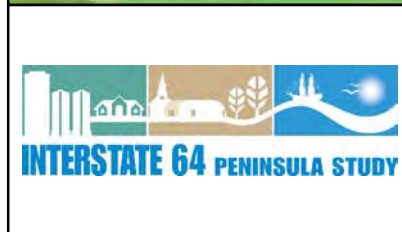
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| Community Facility Boundary | Existing Right of Way | Parks | Limits of Alternative 1A/2A |
| Community Centers | Locality Jurisdiction | Agricultural/Forestral Districts | Limits of Alternative 1B/2B |
| Churches | Minority Census Blocks | Prime Farmland
NCRS SSURGO Soils | Limits of Alternative 3 |
| Schools | Low Income Census Blocks | Farmland of Statewide Importance
NCRS SSURGO Soils | |
| Cemeteries | | | |
| Public Housing | | | |

**Census Areas, Community Facilities,
Agricultural/Forestral Districts, & Farmlands**

Map 27 of 43



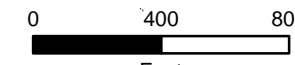
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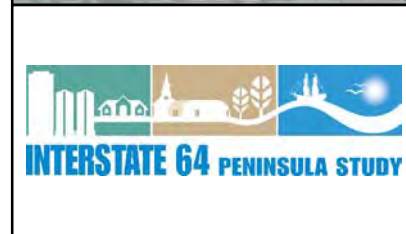
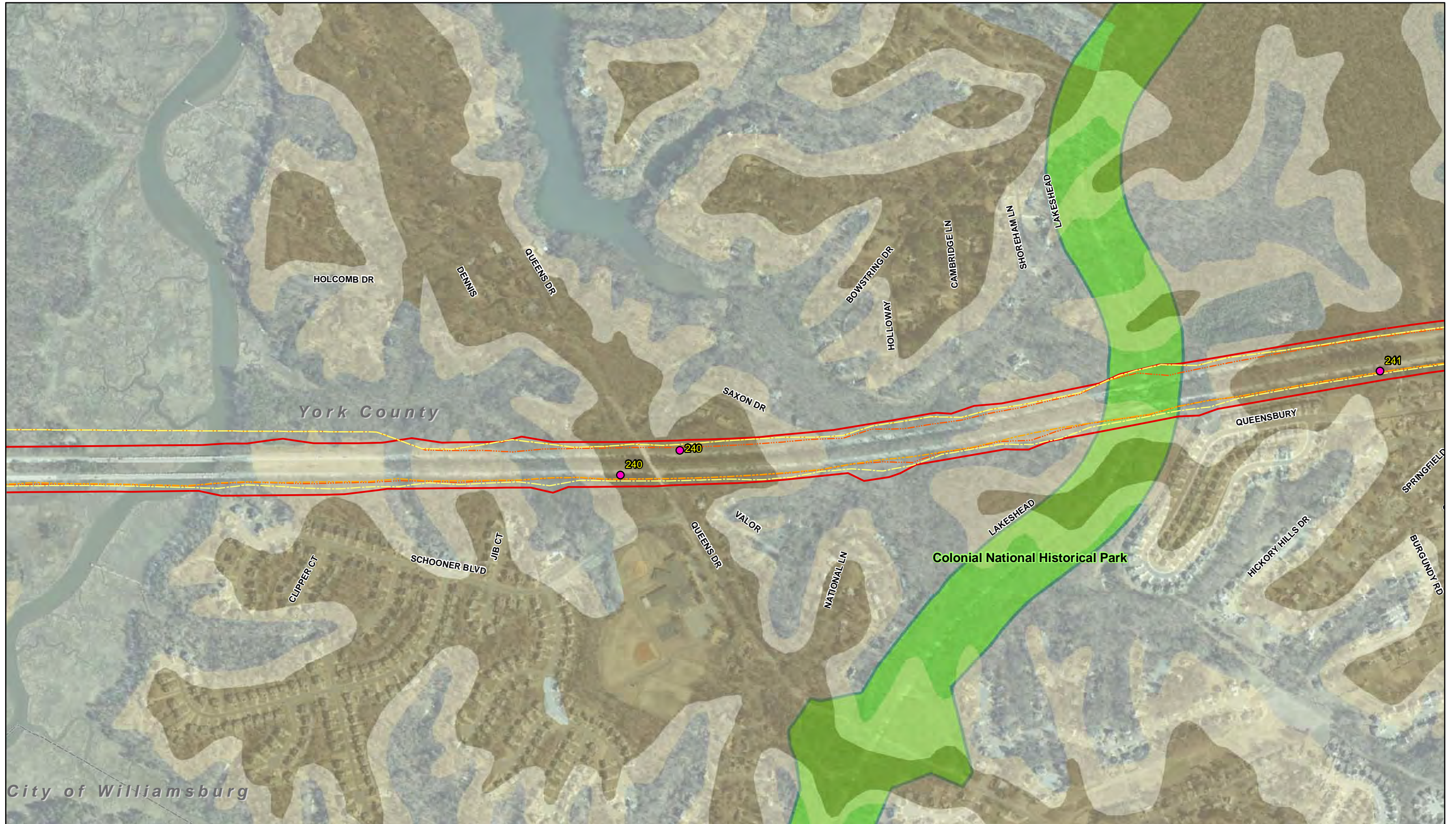
Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestal Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestal Districts, & Farmlands
Map 28 of 43
Notes:
 Water features courtesy of National Hydrographic Dataset.
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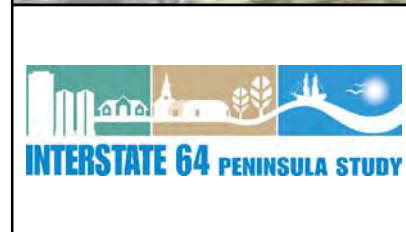
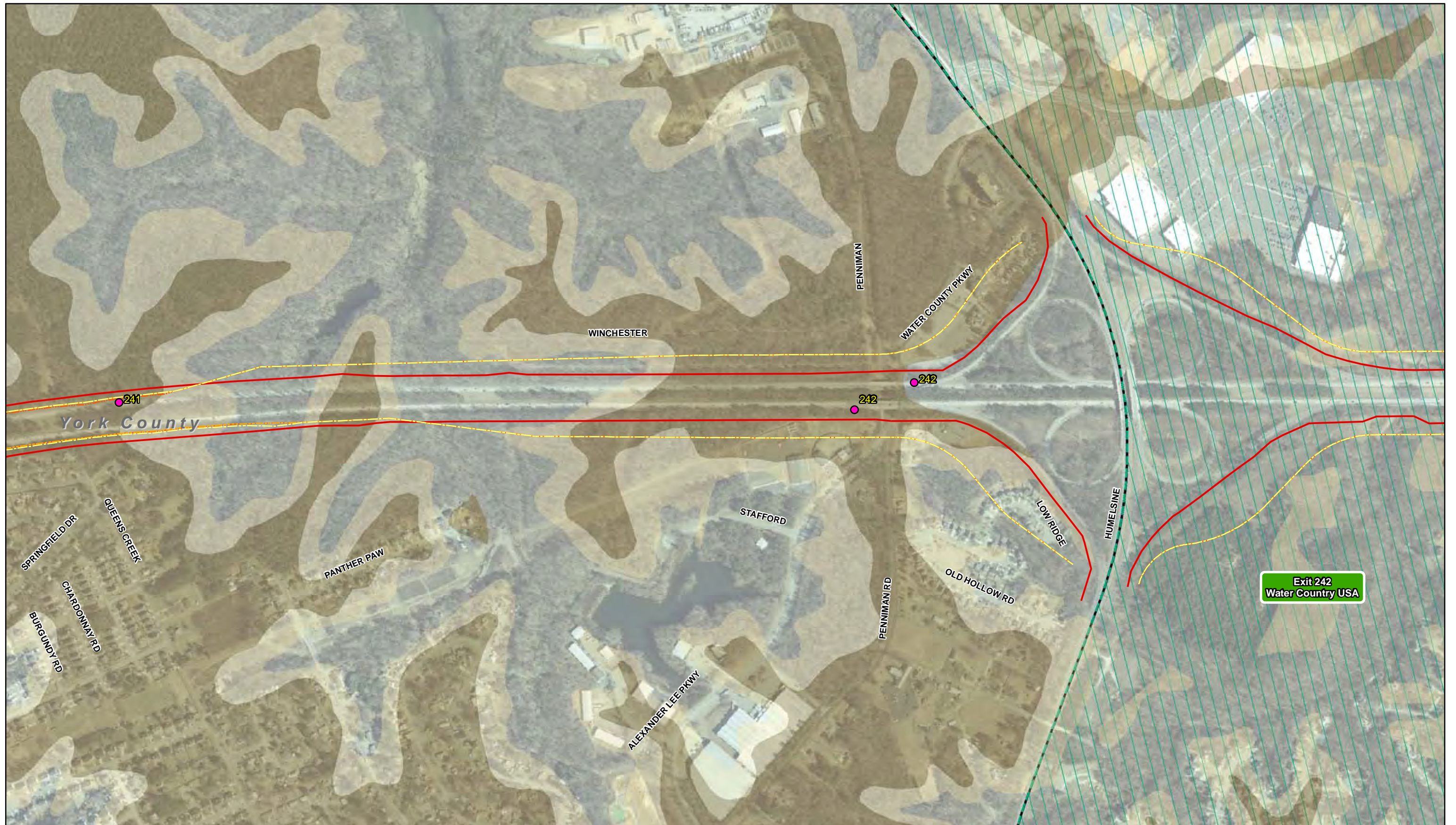


Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
Map 29 of 43
Notes:
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Feet

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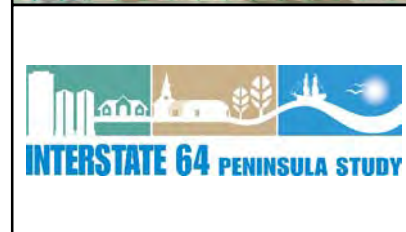
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Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
 Map 30 of 43

Notes:
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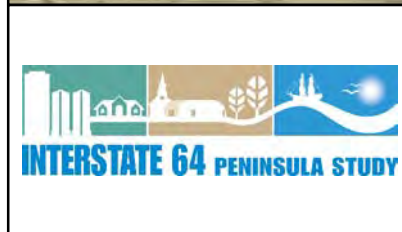


Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
Map 31 of 43
Notes:
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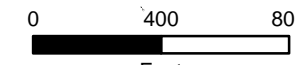
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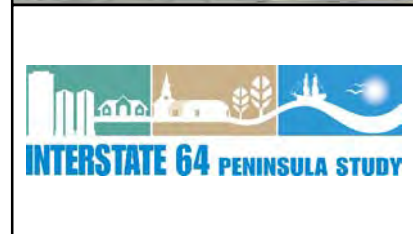
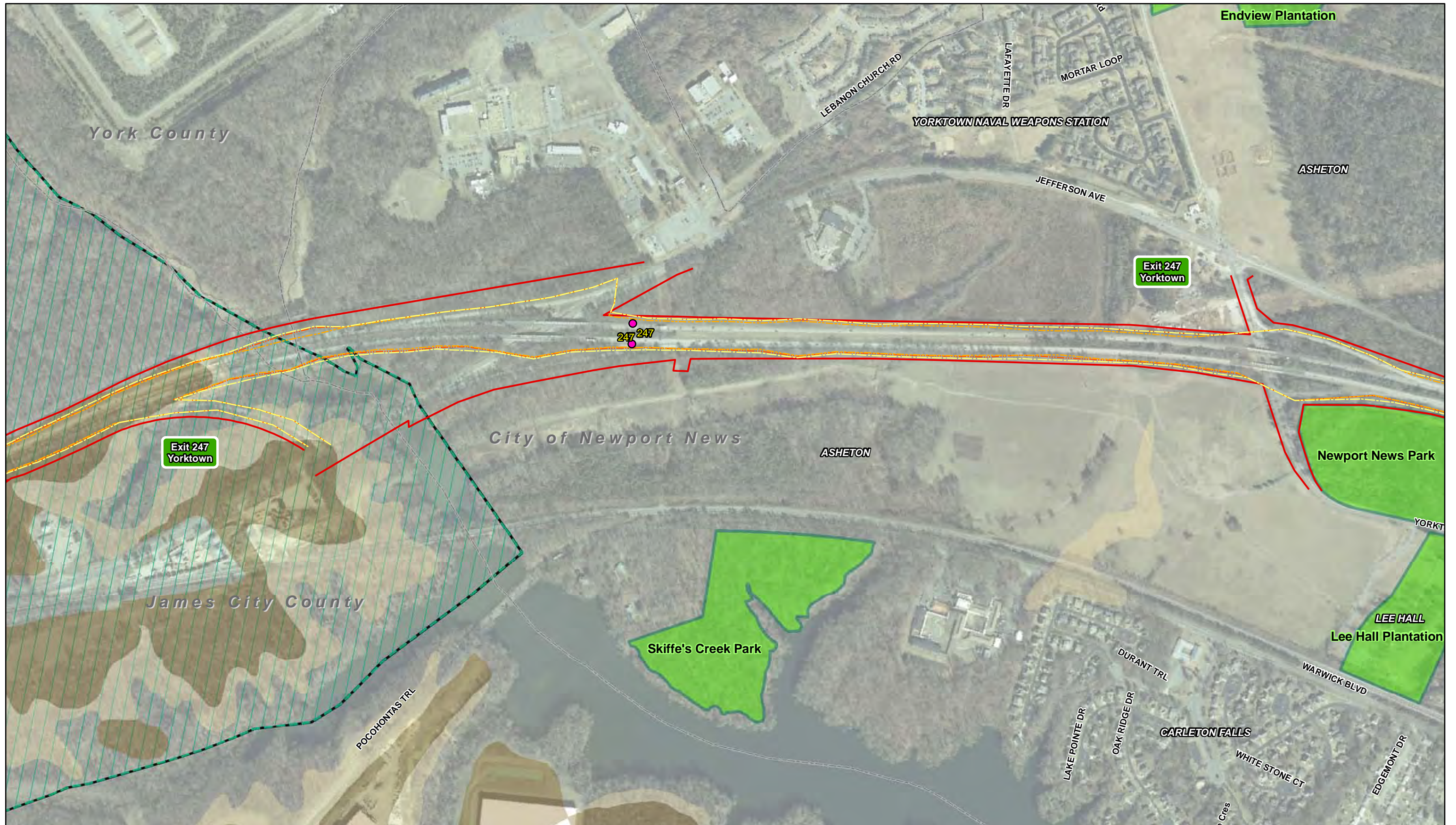
Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
Map 32 of 43
Notes:
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Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
 Map 33 of 43
 Notes:
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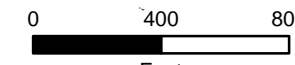
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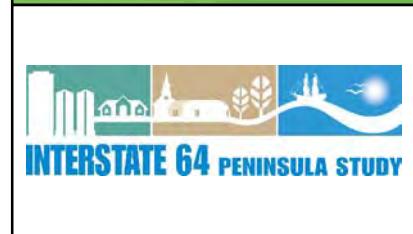
Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestal Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestal Districts, & Farmlands
Map 34 of 43
Notes:
 Water features courtesy of National Hydrographic Dataset.
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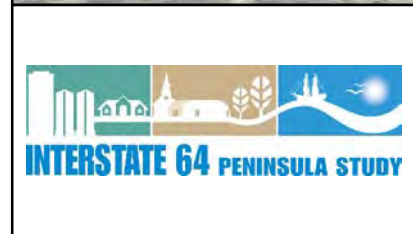
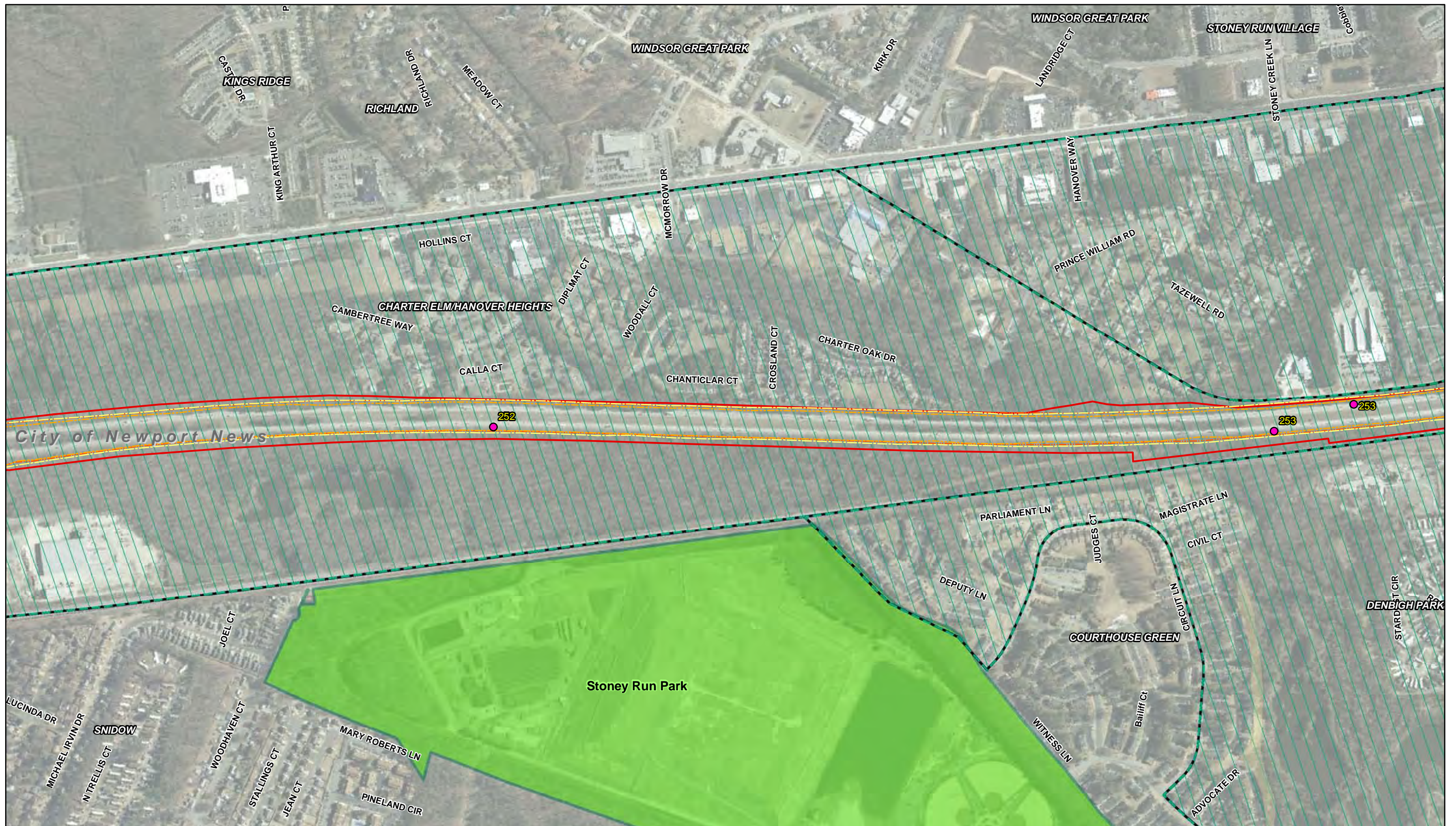
Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestry Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestry Districts, & Farmlands
 Map 35 of 43

Notes:
 Water features courtesy of National Hydrographic Dataset.
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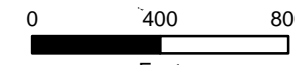



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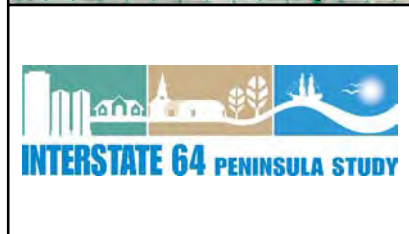
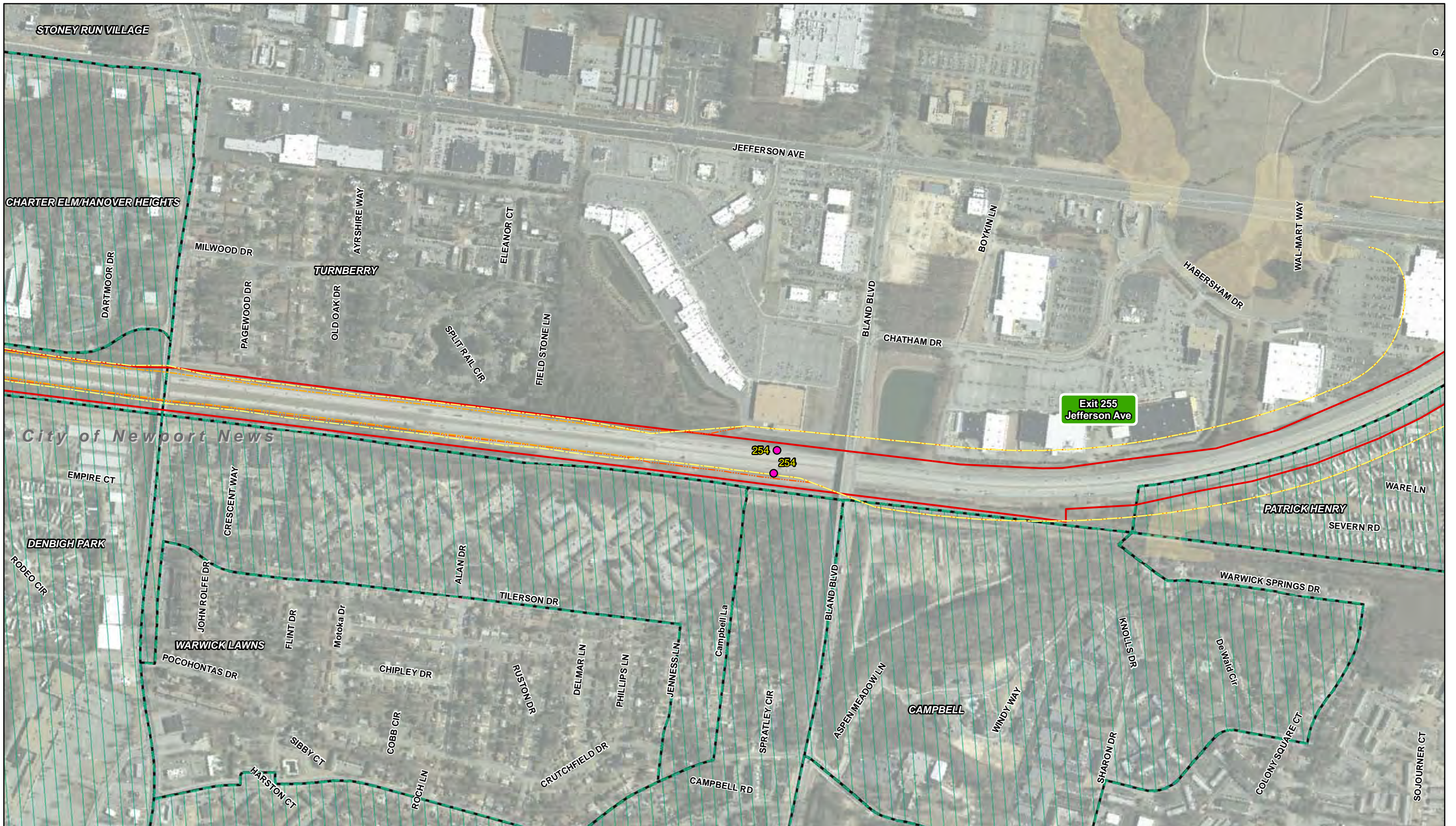
Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
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Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
 Map 36 of 43
 Notes:
 Water features courtesy of National Hydrographic Dataset.
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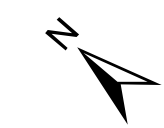

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Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
Map 37 of 43
Notes:
 Water features courtesy of National Hydrographic Dataset.
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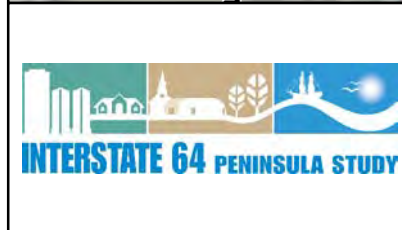
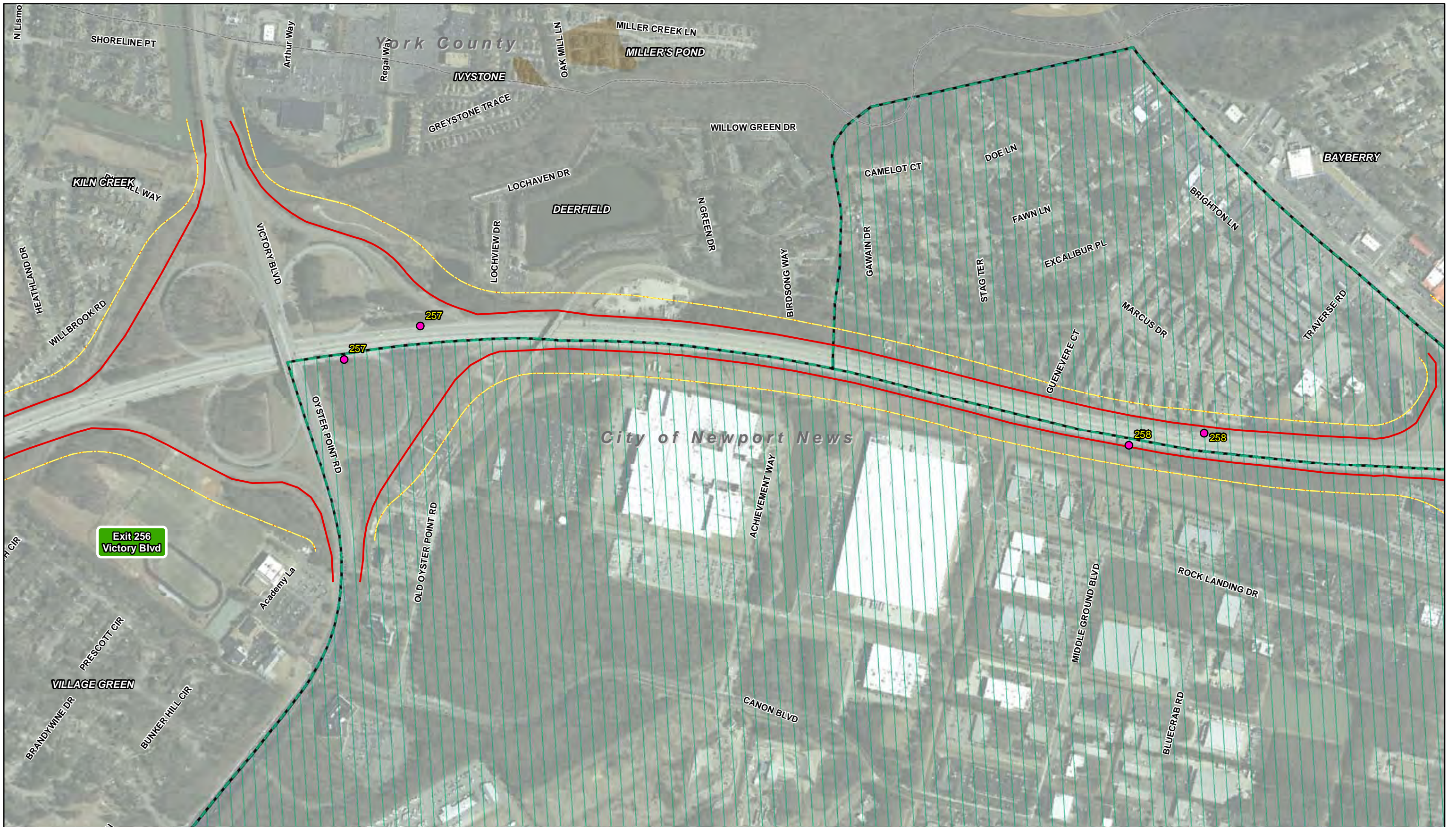
Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestry Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestry Districts, & Farmlands
Map 38 of 43
Notes:
 Water features courtesy of National Hydrographic Dataset.
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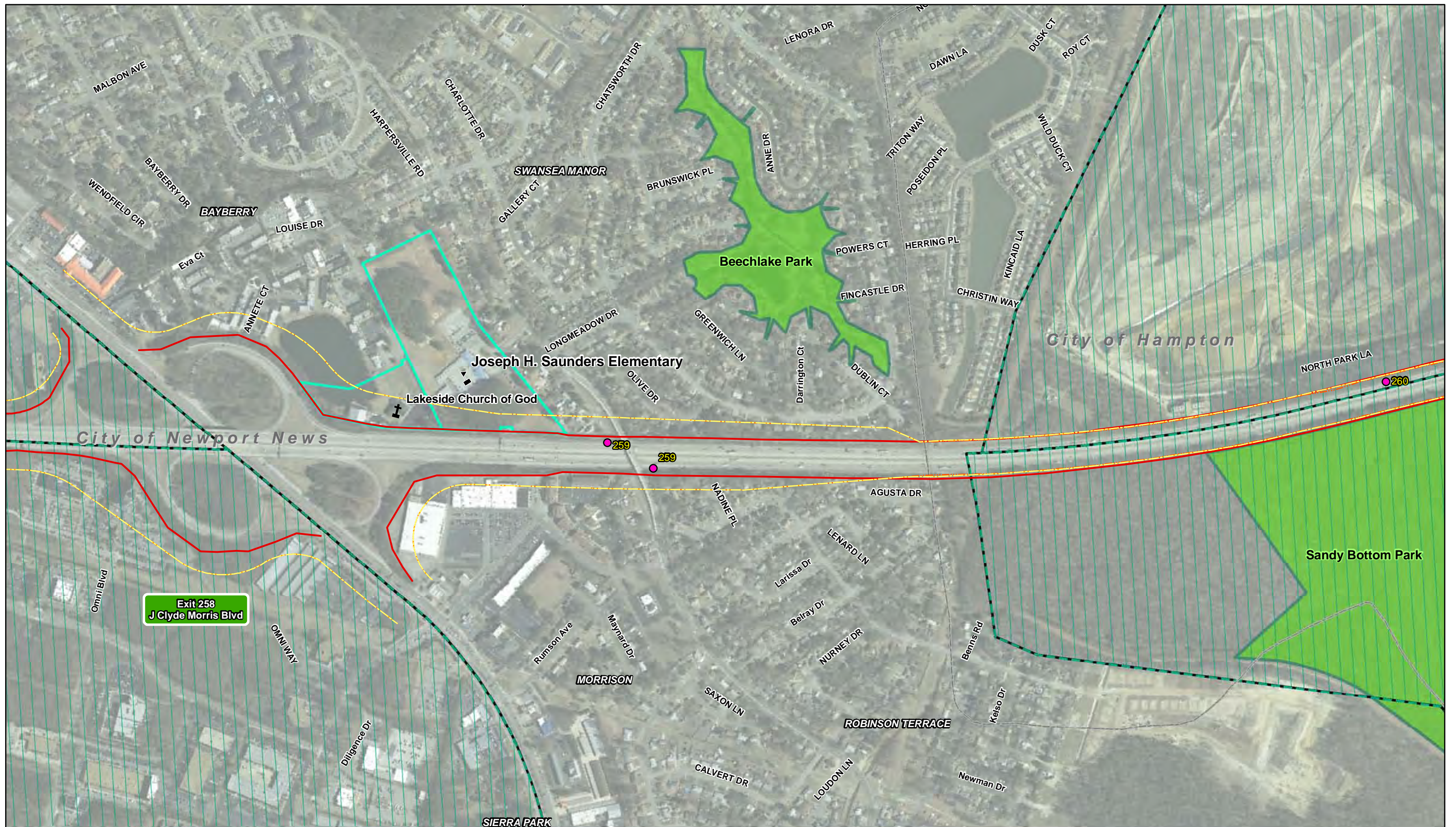
Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
 Map 39 of 43

Notes:
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Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
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Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
Map 40 of 43
Notes:
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Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestal Districts	Limits of Alternative 1B/2B
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Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestal Districts, & Farmlands
Map 41 of 43
Notes:
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Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestral Districts	Limits of Alternative 1B/2B
Churches	Minority Census Blocks	Prime Farmland NCRS SSURGO Soils	Limits of Alternative 3
Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

Census Areas, Community Facilities, Agricultural/Forestral Districts, & Farmlands
 Map 42 of 43

Notes:
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Community Facility Boundary	Existing Right of Way	Parks	Limits of Alternative 1A/2A
Community Centers	Locality Jurisdiction	Agricultural/Forestal Districts	Limits of Alternative 1B/2B
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Schools	Low Income Census Blocks	Farmland of Statewide Importance NCRS SSURGO Soils	
Cemeteries			
Public Housing			

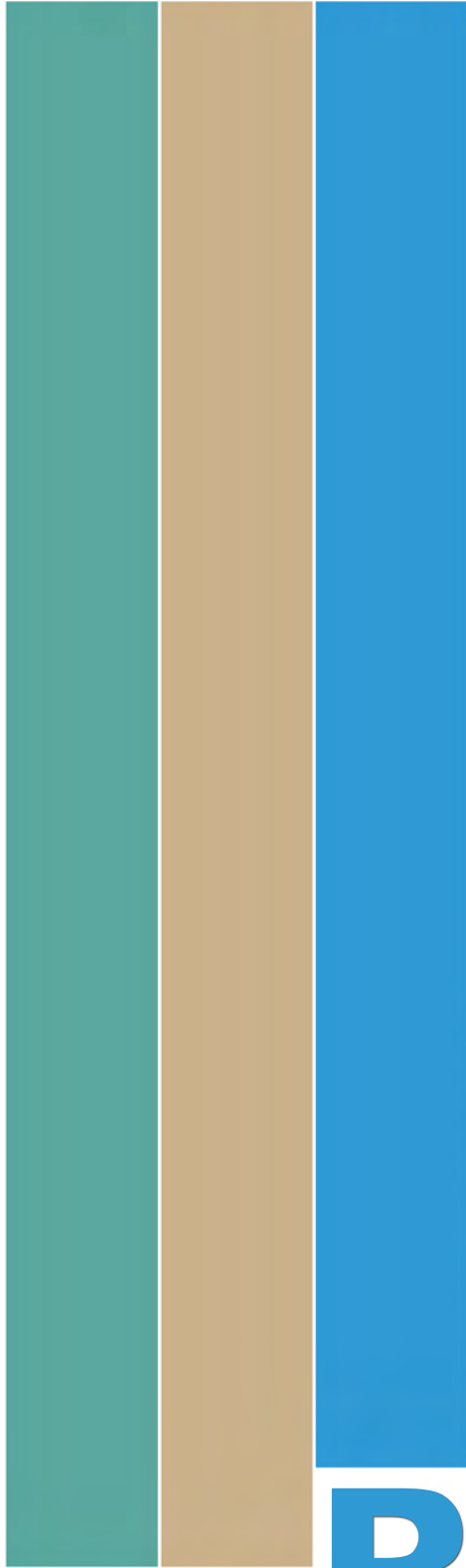
Census Areas, Community Facilities, Agricultural/Forestal Districts, & Farmlands
 Map 43 of 43
Notes:
 Water features courtesy of National Hydrographic Dataset.
 Roads layer courtesy of VGIN.
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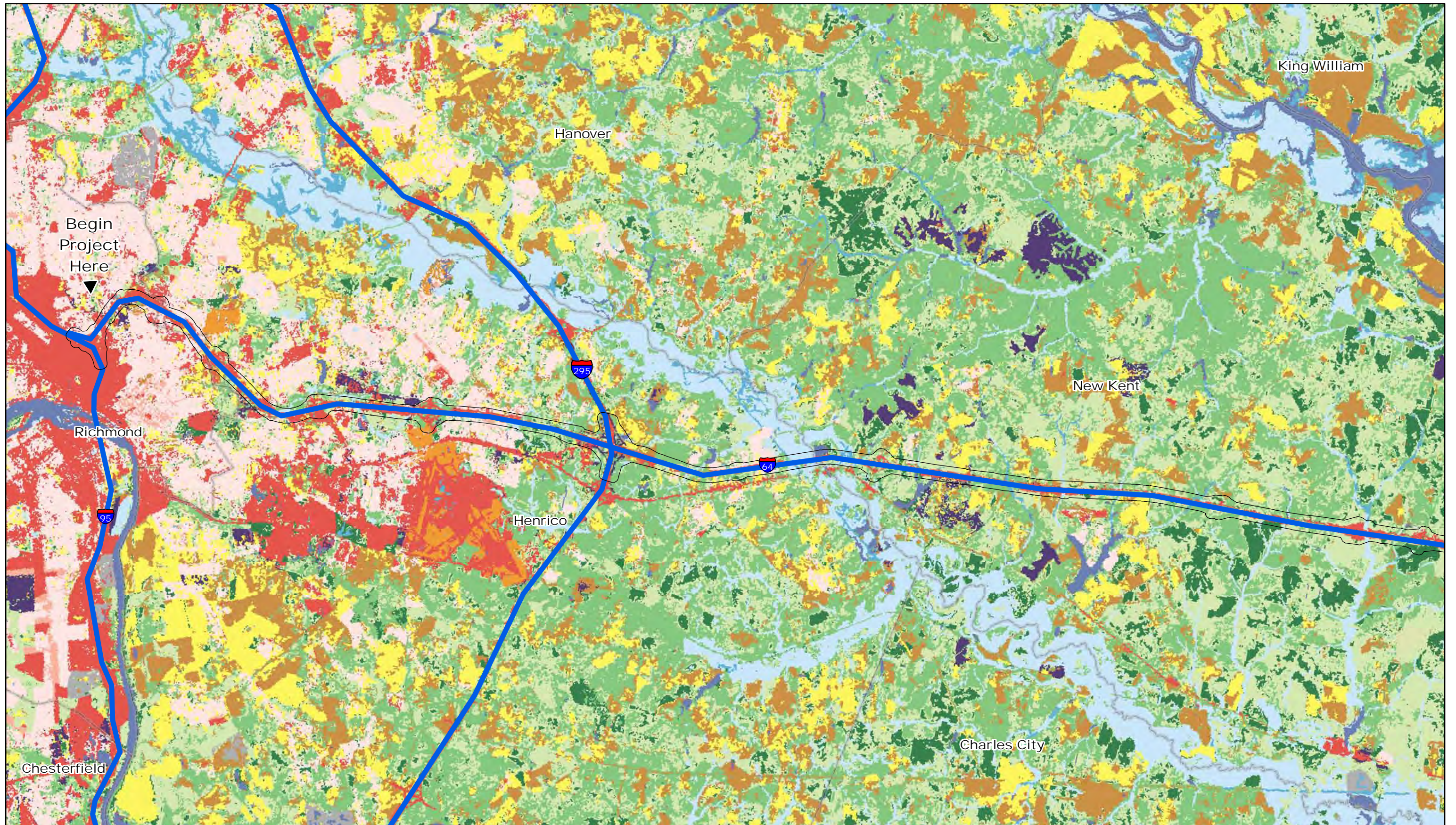
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INTERSTATE 64 PENINSULA STUDY



General Land Use Mapping

APPENDIX B



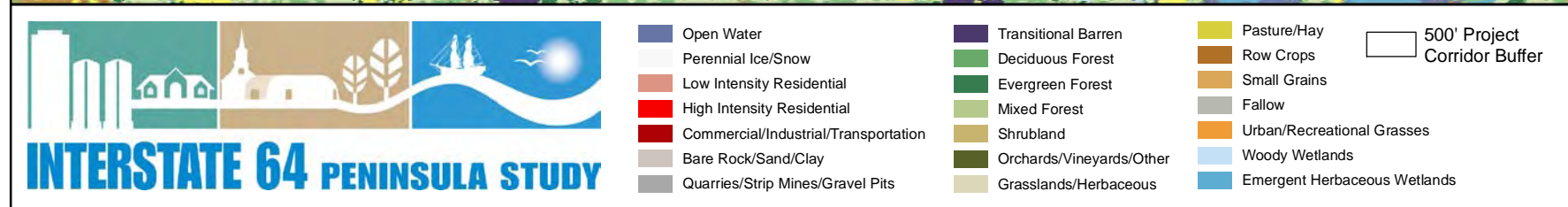
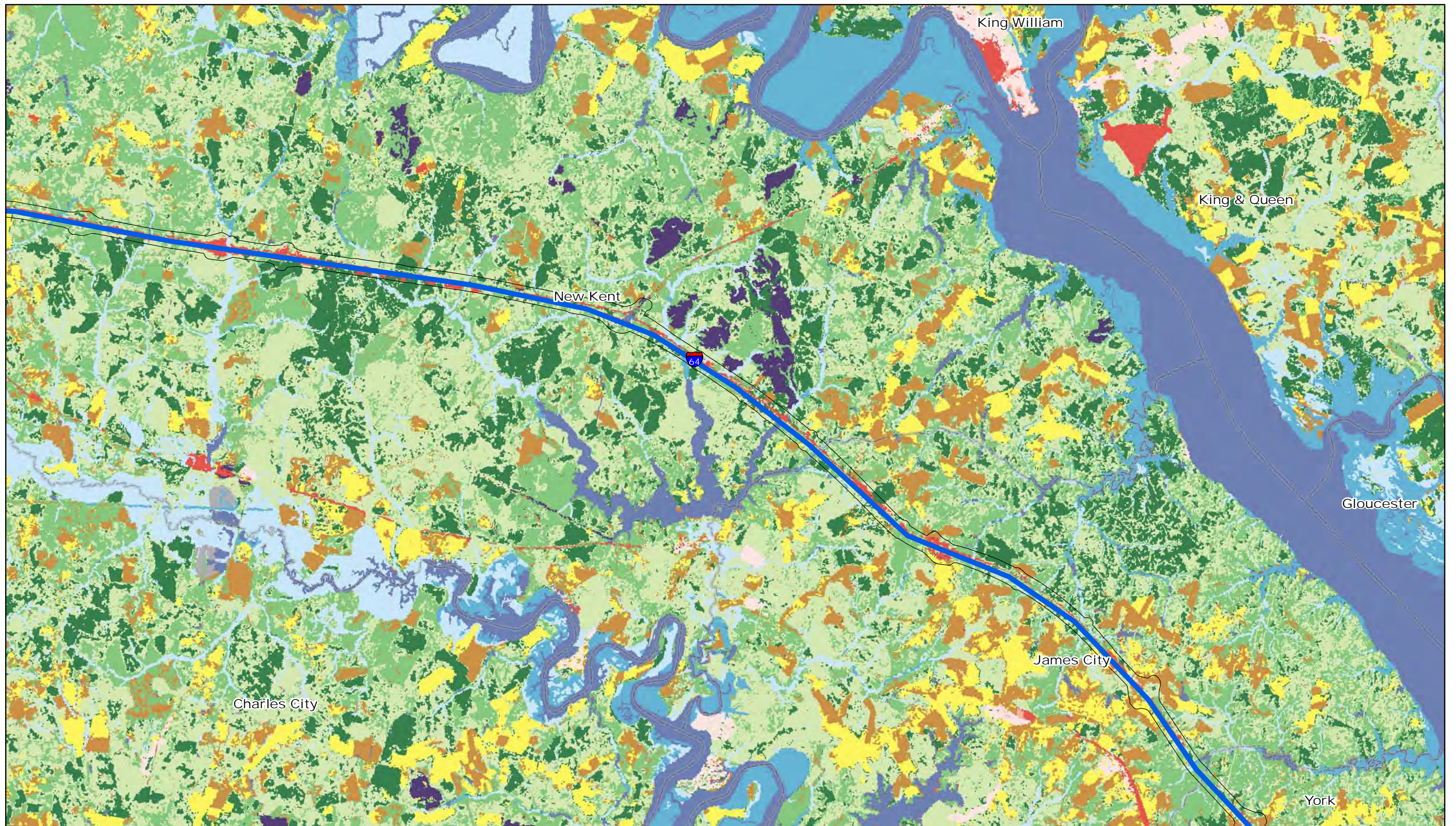
Open Water	Transitional Barren	Pasture/Hay	500' Project Corridor Buffer
Perennial Ice/Snow	Deciduous Forest	Row Crops	
Low Intensity Residential	Evergreen Forest	Small Grains	
High Intensity Residential	Mixed Forest	Fallow	
Commercial/Industrial/Transportation	Shrubland	Urban/Recreational Grasses	
Bare Rock/Sand/Clay	Orchards/Vineyards/Other	Woody Wetlands	
Quarries/Strip Mines/Gravel Pits	Grasslands/Herbaceous	Emergent Herbaceous Wetlands	

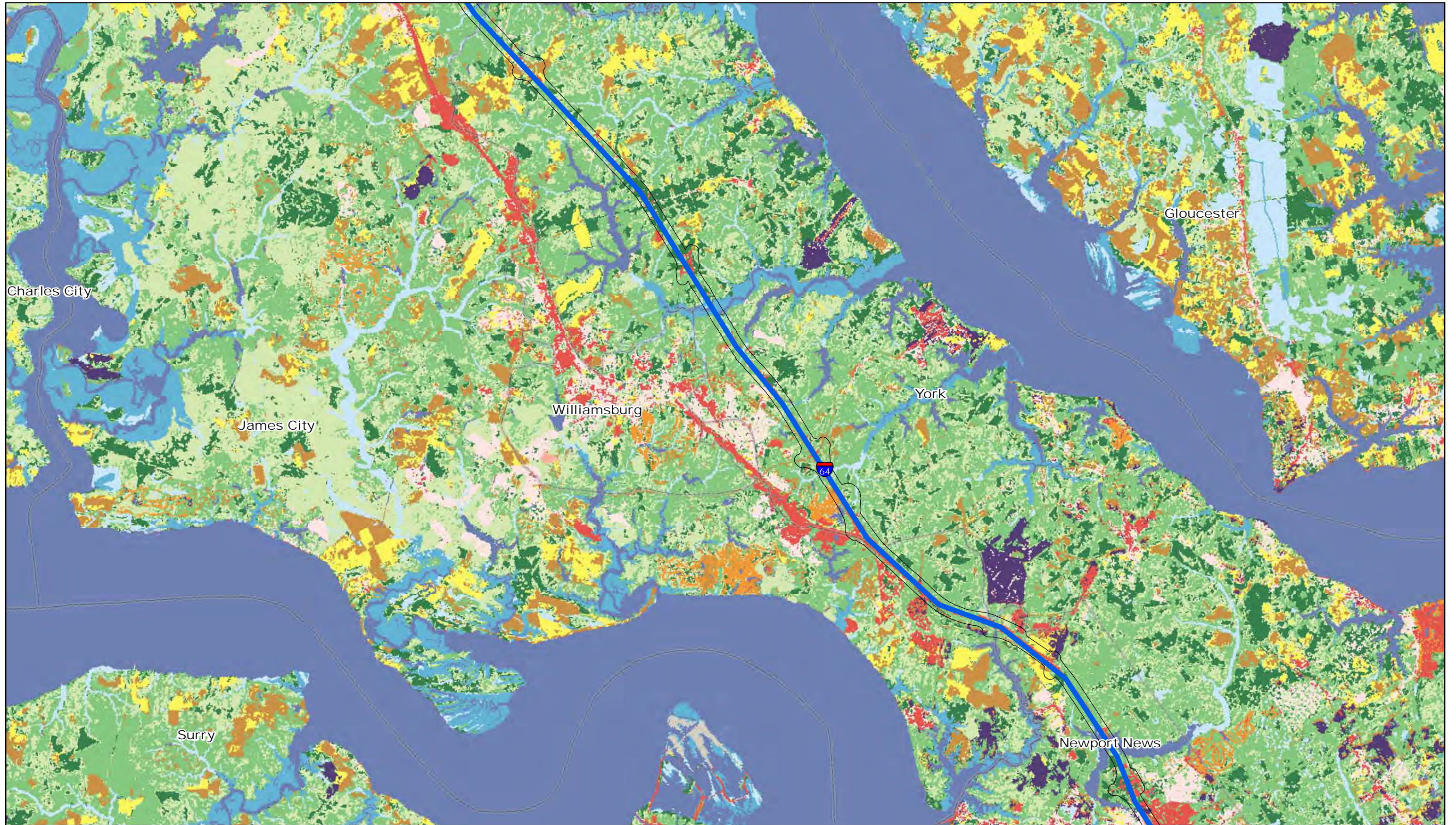
General Land Use

Map 1 of 4

Source:
2006 USGS National Land Cover Dataset



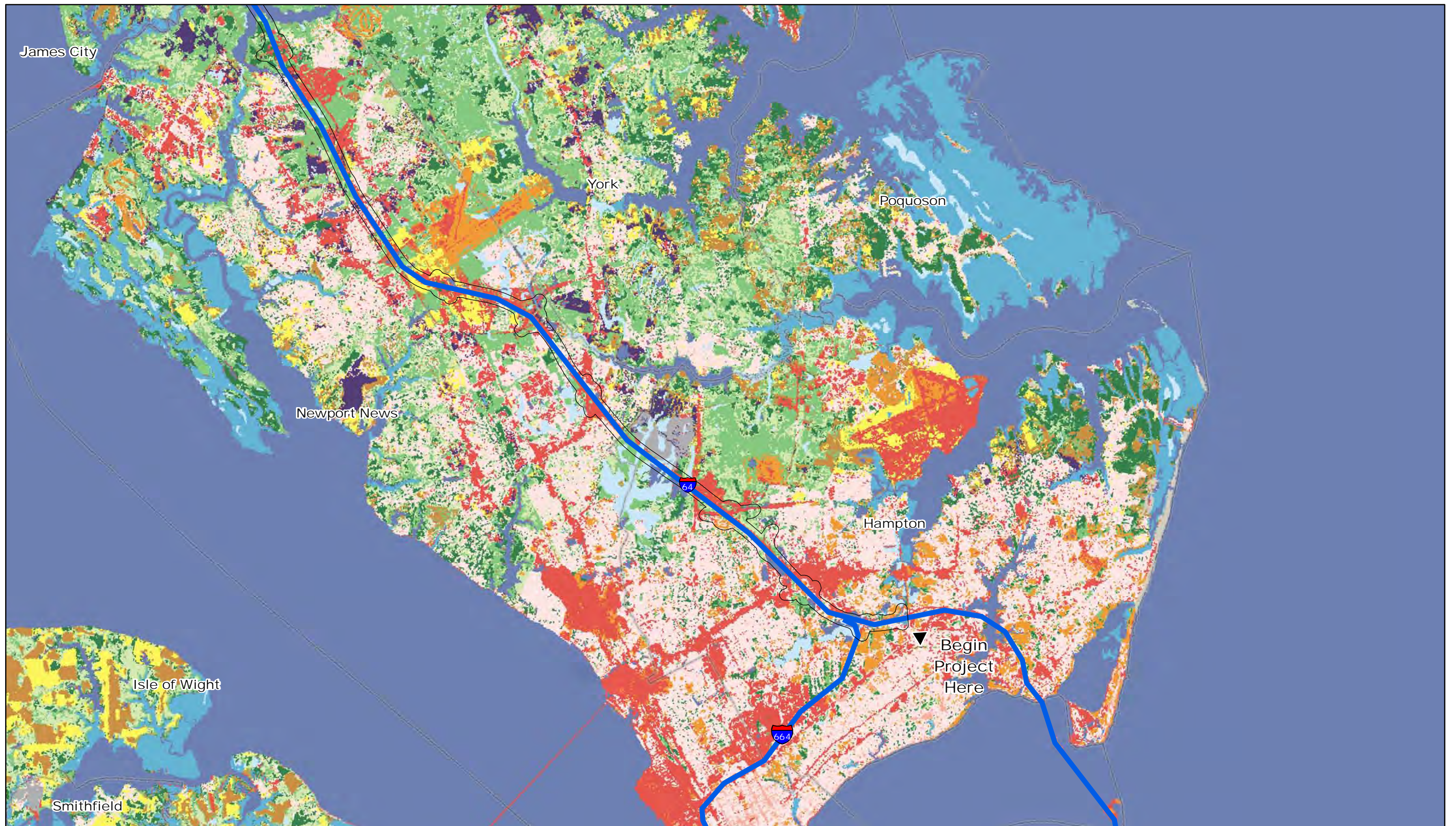




Open Water	Transitional Barren	Pasture/Hay	500' Project Corridor Buffer
Perennial Ice/Snow	Deciduous Forest	Row Crops	
Low Intensity Residential	Evergreen Forest	Small Grains	
High Intensity Residential	Mixed Forest	Fallow	
Commercial/Industrial/Transportation	Shrubland	Urban/Recreational Grasses	
Bare Rock/Sand/Clay	Orchards/Vineyards/Other	Woody Wetlands	
Quarries/Strip Mines/Gravel Pits	Grasslands/Herbaceous	Emergent Herbaceous Wetlands	

General Land Use
Map 3 of 4
 Source:
 2006 USGS National Land Cover Dataset





Open Water	Transitional Barren	Pasture/Hay	500' Project Corridor Buffer
Perennial Ice/Snow	Deciduous Forest	Row Crops	
Low Intensity Residential	Evergreen Forest	Small Grains	
High Intensity Residential	Mixed Forest	Fallow	
Commercial/Industrial/Transportation	Shrubland	Urban/Recreational Grasses	
Bare Rock/Sand/Clay	Orchards/Vineyards/Other	Woody Wetlands	
Quarries/Strip Mines/Gravel Pits	Grasslands/Herbaceous	Emergent Herbaceous Wetlands	

General Land Use
Map 4 of 4
 Source:
 2006 USGS National Land Cover Dataset



