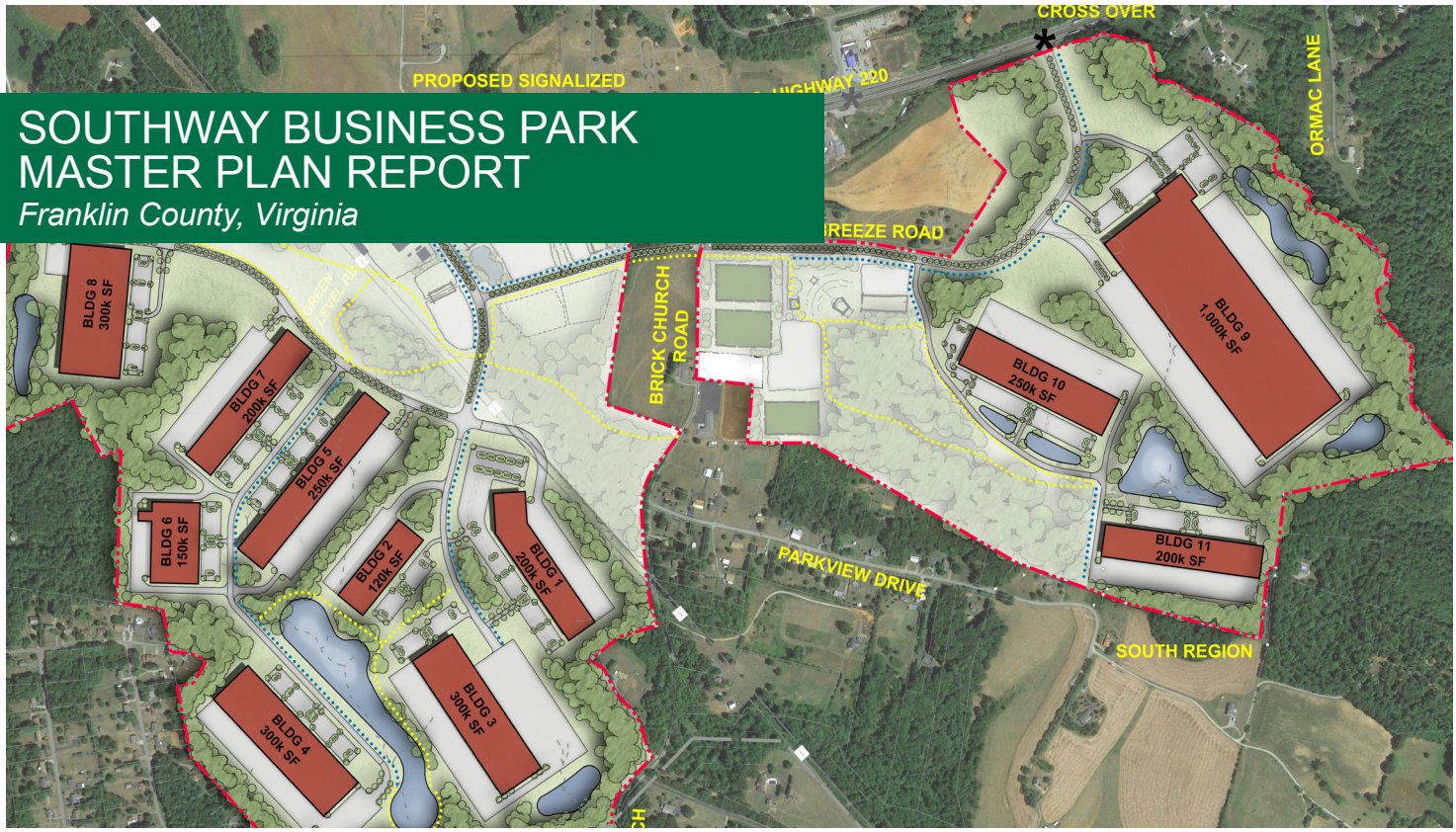
SOUTHWAY BUSINESS PARK
MASTER PLAN REPORT

Franklin County, Virginia



Franklin County
A Natural Setting for Opportunity

Date: August 2016

Draft Version #1
8/16/16

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Executive Summary

Franklin County has successfully invested in the site selection, real estate diligence, land acquisition and master planning of the currently named Southway Business Park (the Park). The County originally selected the Route 220 Corridor between Rocky Mount and Roanoke as a prime location to generate economic support for the growing region and provide jobs for the future. The County identified 8 potential sites along the corridor and asked Timmons Group to assist in conducting a high level assessment of each. The high level assessment considered a range of site selection criteria including land costs, ownership, permitting, and development costs per acre to generate jobs and private sector investment. The site selection process also considered how the private development community may view the public investment and consider creating additional taxable activity around the perimeter of the project. The site currently named the Southway Business Park was selected and acquired.

The Timmons Group team was hired to develop a conceptual master plan for the Southway Business Park. Our team met with Franklin County staff a number of times to re-evaluate the preliminary market study and target market suggestions, refine the potential building size and locations, to begin preliminary discussions about public and recreational uses that should be part of the park, and discuss public and private infrastructure needs for each of the land bays. During the very early stages of the project, Chmura Economics and Analytics was asked to conduct a preliminary Return on Investment Study to help validate the pending investment in land, grading, infrastructure, amenities, etc. Timmons Group provided Chmura with refined, preliminary construction estimates for the recommended public investment along with high level estimates of private investment anticipated with each of three preliminary land plan alternatives. The Chmura report summarized that the project could support over 3 million square feet of private building construction that generates an 8.3:1 Benefit/County Cost Ratio if developed as currently planned.

Timmons Group was also asked to consider how the County should differentiate and brand this park to assure economic development success. Timmons Group was supported on this assignment by Padilla CRT from Richmond, Virginia who was brought on board during the master planning process. Padilla interviewed stakeholders in the community and utilized their unique skill set in Economic Development to draft a high level brand position statement for the park. The brand position answers a key question: "Why would a business locate within the Southway Business Park?" The current brand position suggests a compelling answer, "Here in Franklin County, our people have a strong work ethic. They like to get things done, but they also love to hike, climb, boat and fish. That's part of what has made us the fastest growing county in Western Virginia. And Southway Business Park will be the center of everything in the region." As Timmons Group continued to check in with this brand position as we worked through refining alternatives for the land bays to assure both messages remain consistent.

A draft master plan was presented to staff on August 10, 2016. The draft master plan includes three land planning alternatives that consider a wide variety of future building sizes, locations, and dimensions. Each alternative preserves a goal of supporting over 3 million square feet of taxable buildings and at least one pad site capable of supporting 1 million square feet of space. We believe this feature differentiates the

park from others in this part of Virginia. The master plan alternatives also consider the necessary roads, public utilities, stormwater management, and private utilities necessary to cost effectively serve the future buildings. Staff was also very helpful in refining the public and recreational uses that should be part of the park, the caliber and quality of the road, landscaping, and greenway corridors, and helped align our plan with the pending changes to the Comprehensive Plan and the new zoning category that will govern development of this park. Timmons Group also worked with staff and members of VDOT to position the park for potential grant monies to build the first phase of the infrastructure. Following input from the staff a final presentation will be made to the County Board of Supervisors on August 16, 2011. This report presents the team's findings and preliminary recommendations.

The Timmons Group team learned quite a bit at each of the meetings with staff, the community, the region, and with State Economic Development leaders. We found an engaged, educated group of regional leaders very interested in successfully executing a plan for the Park instead of just having a master planning document to place on a shelf. We have also participated in marketing discussions with prospects that have already showed an interest in the Southway Business Park for new or expanded facilities for their business. We have also started the process of having this site certified through the program that recently emerged through the Virginia Economic Development Partnership. The recommendations that are included within this section reflect the team's collective professional opinions as shaped by these meetings and therefore oftentimes reach beyond the specific deliverables requested in the original assignment. The Southway Business Park is at the beginning of what looks to be a life changing development for Franklin County and the Roanoke Region. Through a collaborative effort of marketing, master planning, engineering and finance, our team has created a vision and plan for what the Park can one day become.

Recommendations

The Master Plan for the Southway Business Park is presented in Exhibit 1 and represents the culmination of the entire planning process. In addition to executing the deliverables outlined in the original assignment, our team has prioritized eight recommendations representing initiatives that we believe are critical to the success of the project. These recommendations are outlined below.

Following these recommendations, this report presents the final Master Plan, Engineering and Development Cost Estimates.

1. Have the Southway Business Park Certified by the Virginia Economic Development Partnership.

2. Rename the Park and Develop a Stand Alone Website

3. Develop an overall environmental Permitting Strategy for the proposed infrastructure and pad sites.

4. Secure funding for, design and build road to support Phase I.

5. Site Work to support Building #1 and the adjacent Pad

6. Draft Memorandum of Understanding (MOU) with Private Developer for Commercial Space along Route 220

7. Develop Preliminary Design Guidelines and Covenants for the Park once zoning and Comprehensive Plan updates are complete

8. Launch Communications Strategy

Section 1 – Project Purpose and Scope

The County of Franklin is situated in southwest Virginia, approximately twenty (20) miles south of Roanoke. The 2010 County population was 56,159 and was one of the fastest growing communities in this region of the Commonwealth at that time. The County presently has two County-owned business parks that are close to capacity. In December 2015, the Franklin County Board of Supervisors purchased approximately three hundred fifty (350) acres on U.S. 220 in the northern part of the County. Additionally, the County also s purchased approximately two hundred (200) acres of adjacent property in the same area in 2016.

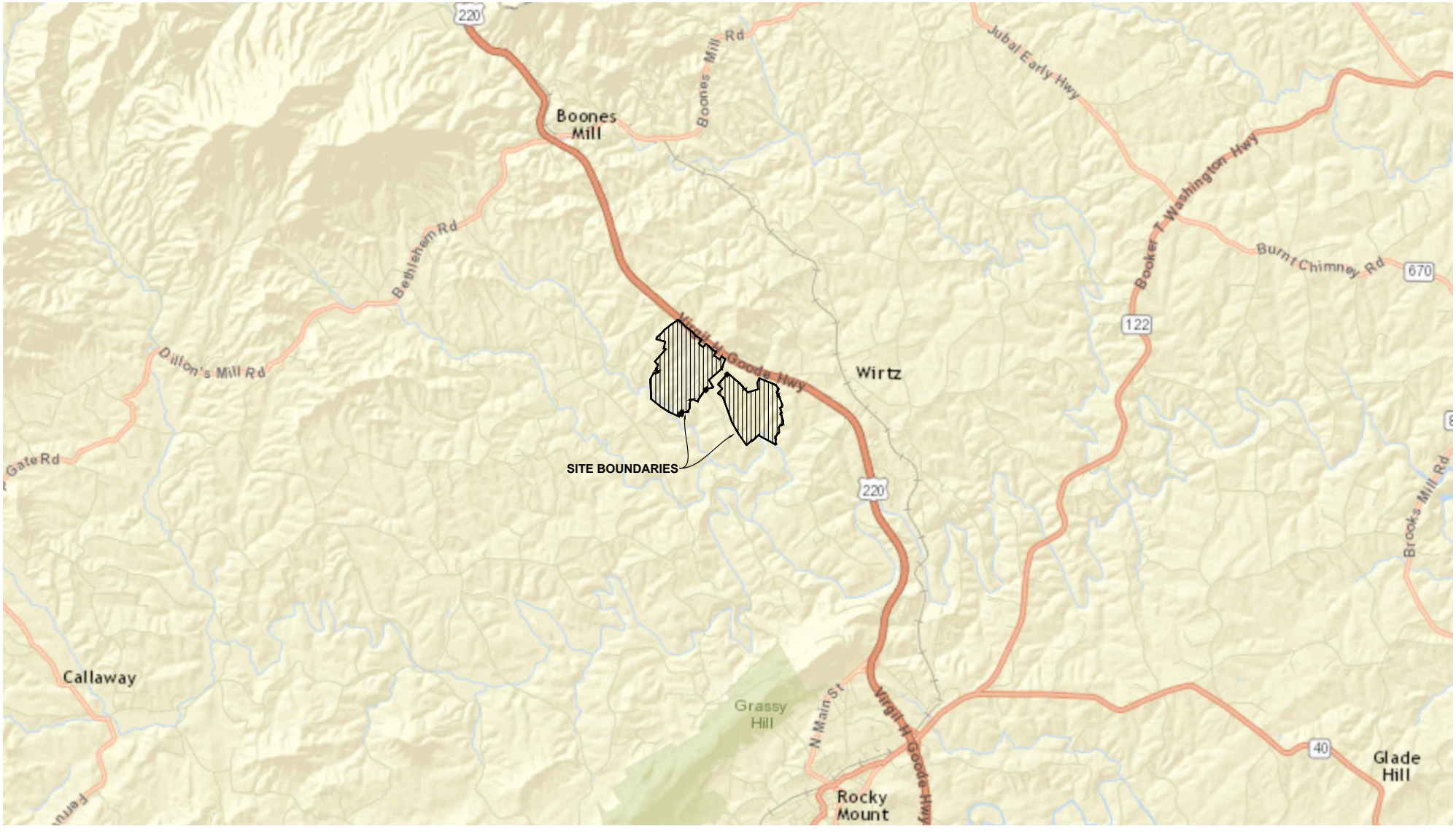
The vision for the new park is a campus-style development with community amenities that will be attractive to modern companies looking for an immersive location instead of a traditional industrial park. The Southway Business Park is expected to accommodate up to three million square feet of advanced light manufacturing, warehouse/distribution, and office/technology space. A signature of the project will be the creation of a 100-acre pad site that can accommodate a 1 million square foot tenant. To further differentiate the park from competitors, the overall design is expected to encompass recreation areas, event grounds, greenspace, walking/biking trails, water features, a tourist welcome center, and public safety buildings among other uses.

The objective of this project is to create a master plan for the Southway Business Park to guide the County's long term development of the identified property. This master plan will be the basis for multi-year planning on how best to develop the park, including project prioritization and cost budgeting.

The request for proposals for Master Planning services was advertised on February 8, 2016. Timmons Group was awarded the project and commenced work in March of 2016. The project goal is to develop a master plan for the park that encompasses all of the elements of the County's vision, and to develop a strategy that will best convey the desired brand to the world. The high level branding strategy has been developed in concert with the overall master plan. This brand strategy will ultimately enable the development of materials to support the envisioned brand, design of interior and exterior park signage, and the creation of marketing materials that best markets the park to potential business entrants.

The master plan will serve as a primary tool for the County's leadership as it moves forward with implementation and growth. This planning document will serve as a guide to direct physical growth, promote and excite partners, and be a budgetary planning tool for funding and financing.

The master planning process is a comprehensive process that will evolve over time. New technologies, land acquisitions, sales and unknown factors will inevitably emerge. As a result, the County's leadership will need to continually reinvest in the planning, giving new shape to its vision and responding to market changes.



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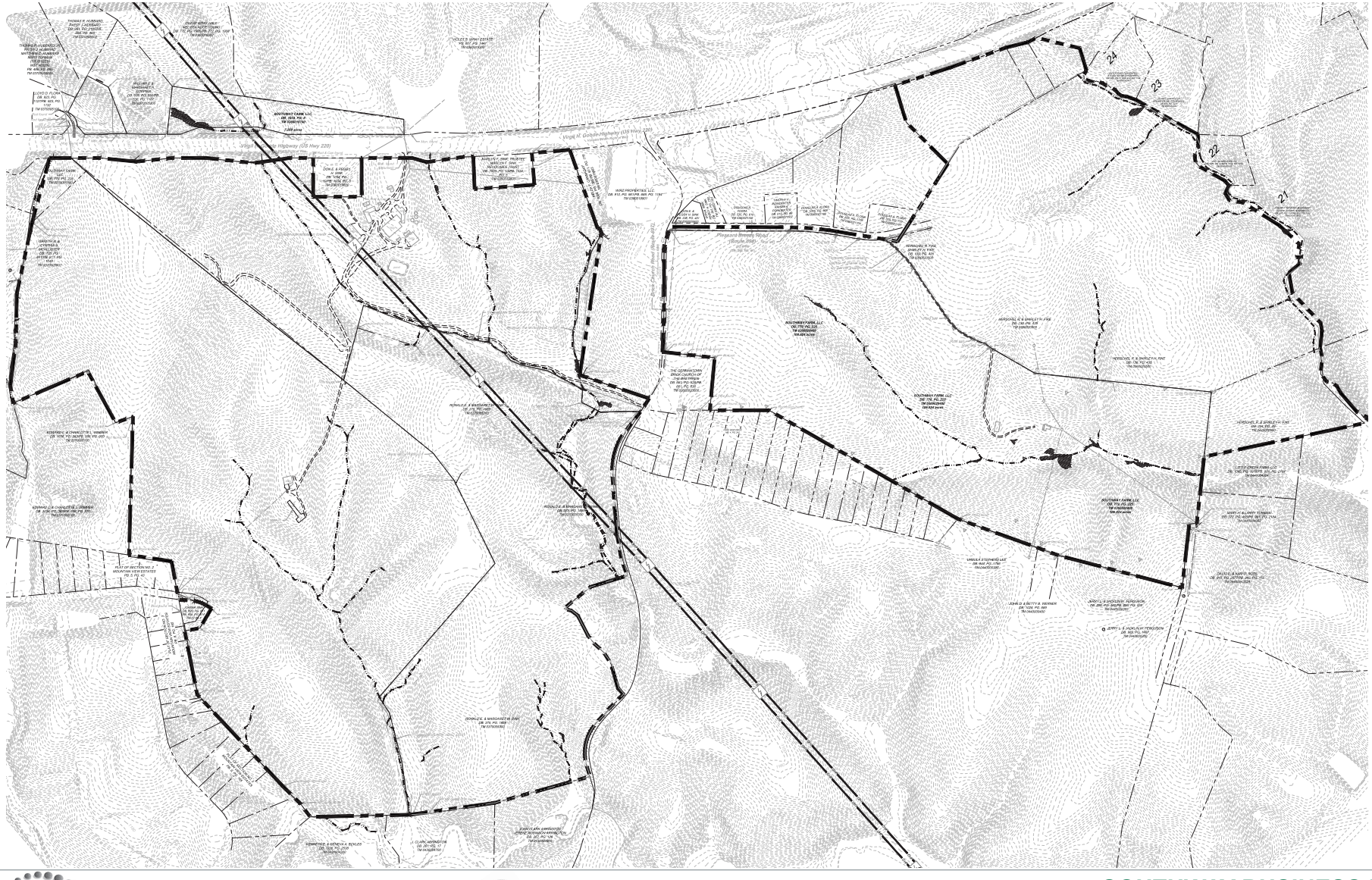
SOUTHWAY BUSINESS PARK

VICINITY MAP



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SOUTHWAY BUSINESS PARK

PROPERTY MAP

Southway Business Park site visit 4-28-16 001

Southway Business Park site visit 4-28-16 002

Southway Business Park site visit 4-28-16 003

Southway Business Park site visit 4-28-16 004

Southway Business Park site visit 4-28-16 005

Southway Business Park site visit 4-28-16 006

Southway Business Park site visit 4-28-16 007

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Southway Business Park site visit 4-28-16 059

Section 2 – Business Park Master Planning

Section 2.1 – Development Area

The Development Area is approximately 323 ac ± north of Brick Church Road and 223 ac +/- south of Brick Church Road. The topography is rolling, with drainage swales cutting across both regions of the development. The north region of the Development Area has an Appalachian Electric Power transmission line cutting across the site. The route of the proposed Mountain Valley Gas Pipeline runs along the southern/eastern border of the northern region. The majority of the property has been cleared and actively farmed prior to purchase by the County.

Section 2.2 – Development Goals

Several goals were articulated by County leadership for development of this property. The following is a summary of the major points:

1. Provide at least one building pad site able to accommodate a 1,000,000 s.f. facility.
2. Provide meaningful public spaces that would provide services for the citizens of Franklin County as well as being an amenity for the business park
3. Respect the rural heritage of the property and surrounding area.
4. Maintain the natural beauty of the area to the maximum extent practical.
5. Provide flexibility in the plan to accommodate the different sized facilities that may be needed by prospects considering coming to the park.
6. Retain the existing Southway Farms homestead and outbuildings for potential re-use.

Section 2.3 – Development Options

Three options for the development of the property were prepared, presenting various options and configurations for building placement on-site. The building templates that were utilitzed for the development of these options are consistent with the target markets identified for Southway Business Park. These options require different levels of infrastructure investment and provide differing amounts of potential gross floor area development. The results are tabulated below in Table 1.

Graphical representations of the concepts are included at the end of this section.

Phase 1 Development Options	Gross Floor Area (SF)
Option 1	3,240,000
Option 2	3,400,000
Option 3	3,600,000

Table 1: Gross Floor Area by Option

Option 1

The North Region of Option 1 is designed to provide up to eight facilities of ranging in size from 120,000 s.f. to 300,000 s.f. placed at varying elevations across the site. Due to the topography, the buildings are grouped into four sub-regions, which are areas that will most effectively be graded together (refer to Section 3 for more information on the grading regions). Access to this portion of the site is primarily from a planned intersection with Route 220 at the existing Southway Farms crossover. Once the entrance drive crosses the valley it connects with an internal park drive which rides along the crest of the existing ridge providing access to the various facility sites

The South Region is designed to accommodate the 1,000,000 s.f. facility, along with two smaller buildings. Access to this side of the park will be primarily from a planned intersection with Route 220 at a new crossover location that generally coincides with the existing farm road onto the Flora property.

The two sides of the business park are proposed to be connection via an internal road that traverses along the alignment of Pleasant Breeze Road, across property currently owned by Brick Church and then tying in to the northern access drive. This connector road will allow access between the two sides of the park without having to travel on route 220. It will also allow travelers on Brick Church road to gain access to one of the two new signalized intersections proposed with the development, which will be beneficial to the travelling public by avoiding the existing sub-standard intersection of Brick Church Road and Route 220.

The public spaces, which are addressed in more detail in Section 8, tie the two sides of the business park together and provide public amenities that will benefit the County citizens as well as workers in the Southway Business Park.

Option 2

Option 2 is very similar to Option 1, with the same basic infrastructure and amenities plan. The primary difference with Option 2 is that three of the smaller footprint buildings in the North Region are replaced with one 750,000 s.f. facility. Option 2 has a lower cost of earthmoving compared to Option 1, and would be a preferred alternative if the right sized user were available to come to the complex early.

Option 3

Option 3 is a much more aggressive approach to placing facilities on the site, and provides the 1,000,000 s.f. pad site in the North Region and an 850,000 s.f. pad in the South Region. This approach in the North Region will require a substantial amount of retaining wall to separate the circulation road from the facility.

On the South Region side, the placement of buildings, while providing a higher potential amount of square footage, would require significantly more grading and retaining walls than in other options.

This option does not provide for cross connectivity between the two sides of the park and the amount of area available for public space is reduced as well.

Section 2.3 – Phasing Options

The North Region and South Regions of the park can be developed independently, from both a road and utility infrastructure perspective.

The catalyst for the development of the South Region is likely going to come from a prospect that needs a 1,000,000 s.f. facility. Accommodating this prospect would require that all of the road and utility infrastructure work be completed at one time.

To prepare the North Region for marketing to prospects, the most logical first phase of development would be construction of the entrance drive into the site, and the bulk grading and regional stormwater management facilities for Region 1. Construction of the sanitary sewer pump station and force main connector would likewise be done during this first phase.

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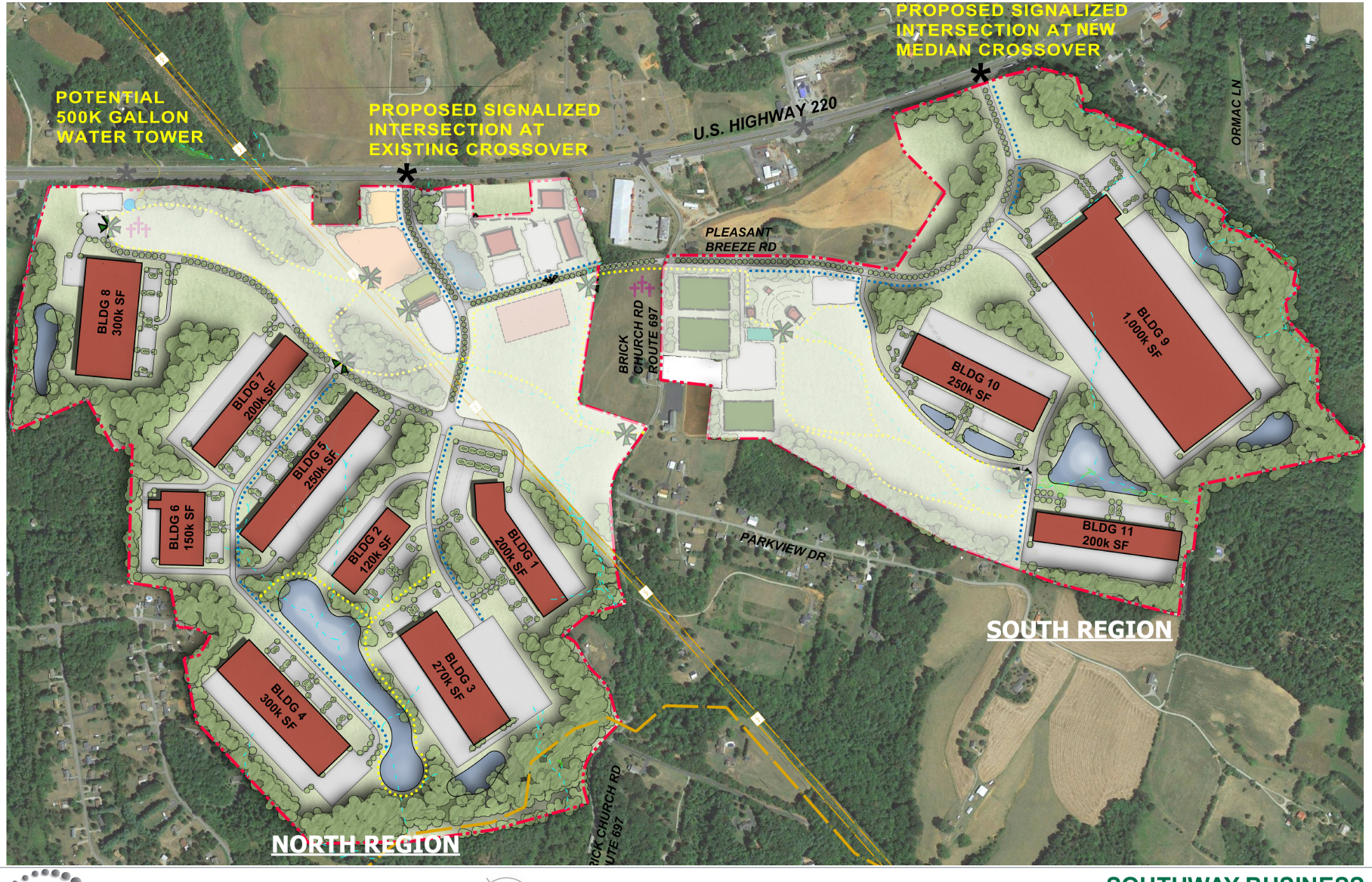
USAGE DIAGRAM



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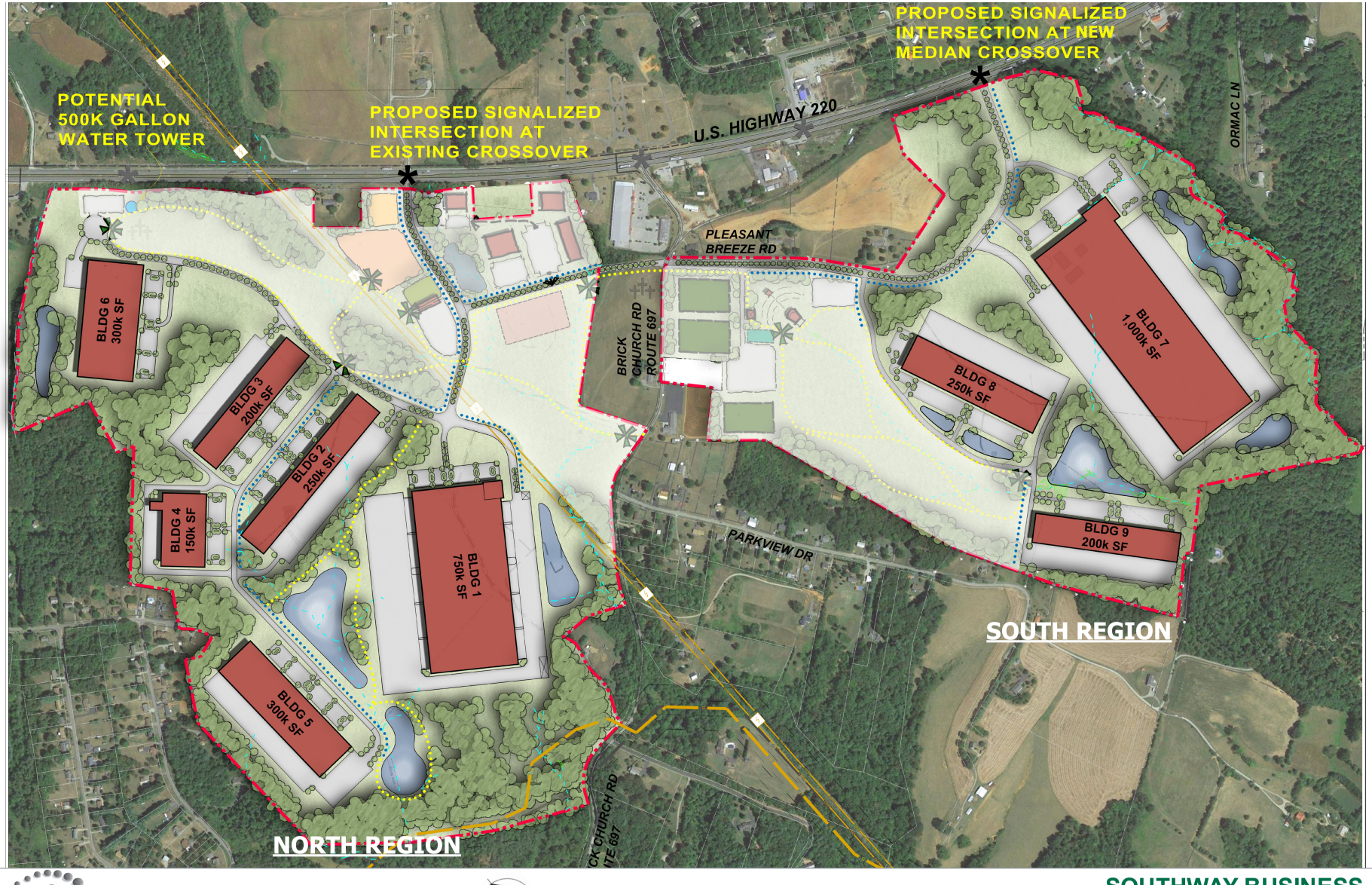
CONCEPT PLAN 1



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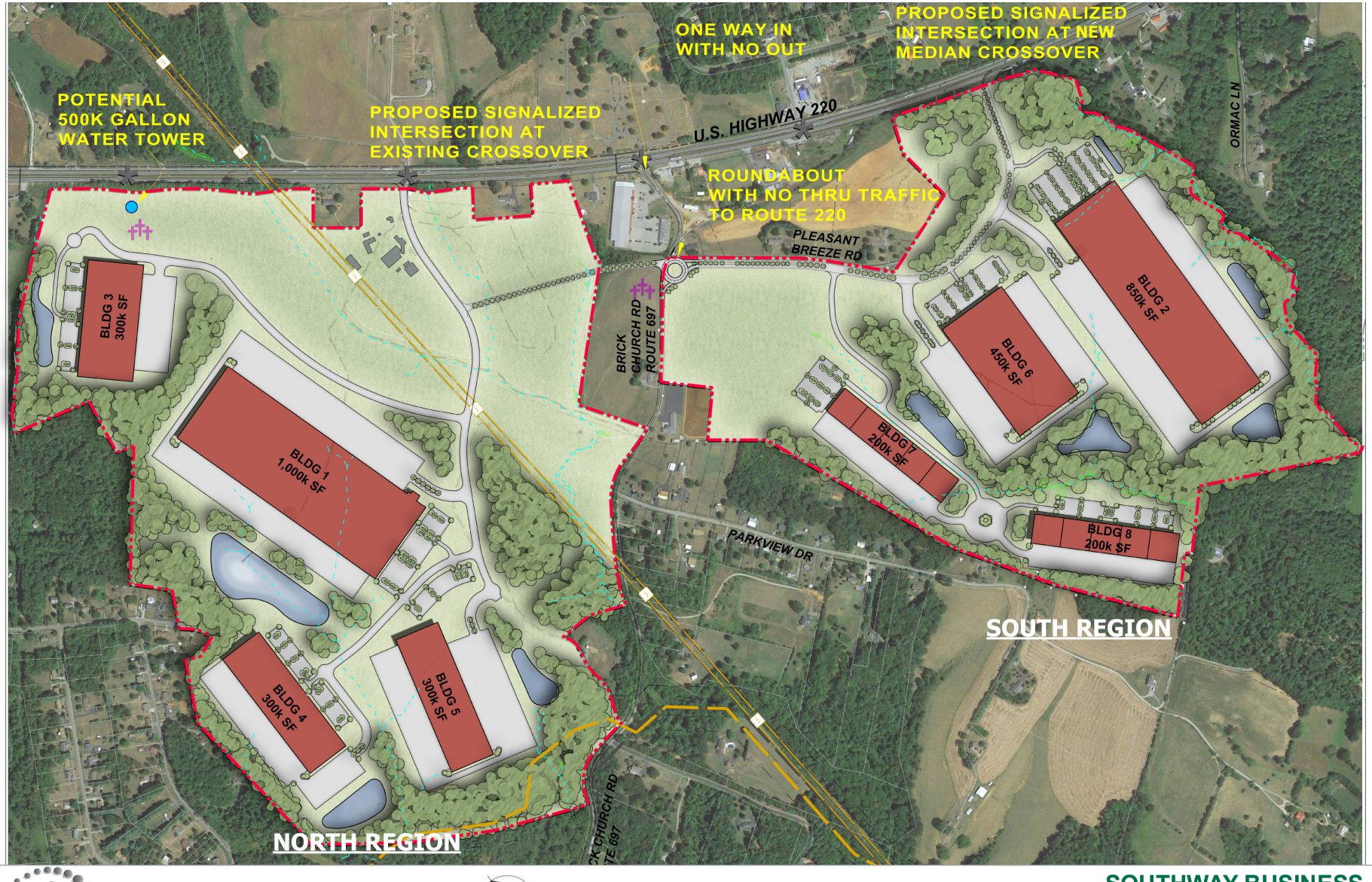
CONCEPT PLAN 2



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CONCEPT PLAN 3

Section 3 – Site Soils and Grading Analysis

The following discussion of site soils and grading has been prepared to provide baseline knowledge of existing soil conditions and anticipated grading issues. Since topography on the site varies in elevation by more than 300 feet and large cuts and fills will be necessary to establish building pads and sites, an understanding of existing conditions is important.

Section 3.1 – Existing Soils

Per the information contained in the geotechnical report, the site consists of a relatively thin (1-3") layer of topsoil over residual soils, primarily sands and clays. Weather rock was encountered in several of the borings as well, at depths generally greater than 11' depth. Groundwater was encountered generally at greater depths (25+ feet), but could vary seasonally. Refer to the Preliminary Geotechnical Engineering Report for more detailed information.

Potential rock, as indicated by auger refusal, was encountered in two borings, one on the north tract and one on the south. However, one of the locations is at a depth lower than anticipated cuts (45' below existing grade) and the other is in an area that will be in fill based on preliminary grading studies. Note that rock may still be encountered on other areas on the site, based on site geology and presence of weathered bedrock.

Section 3.2 – Grading Concepts

General Excavation Recommendations

Grading of the site is anticipated to take place in phases as the property is developed. The grading concept exhibits at the end of this section indicate a rough estimate of the anticipated earthwork required for each phase. Note that grading concepts and quantities of cut/fill required will vary greatly depending on development of individual sites. Multiple, smaller sites may be able to be graded in ways to significantly reduce mass excavation vs. fewer large "mega-sites" requiring hundreds of thousands of square feet of floor space and associated loading/parking at one elevation. For purposes of this master plan, a conservative approach has been used to assume fewer, larger sites as shown in the site development concepts in Section 2.

The first phase of mass excavation will take place to prepare the southern portion of North Tract for development, shown on the "North Region 1 Grading Concept". Starting at the cul de sac, cuts of 40+ feet will be necessary to pad grade a suitable building site. Much of this material will be used to fill in the low area to the northwest. Total volume of excavation and earth moving (cut and fill) will likely be in

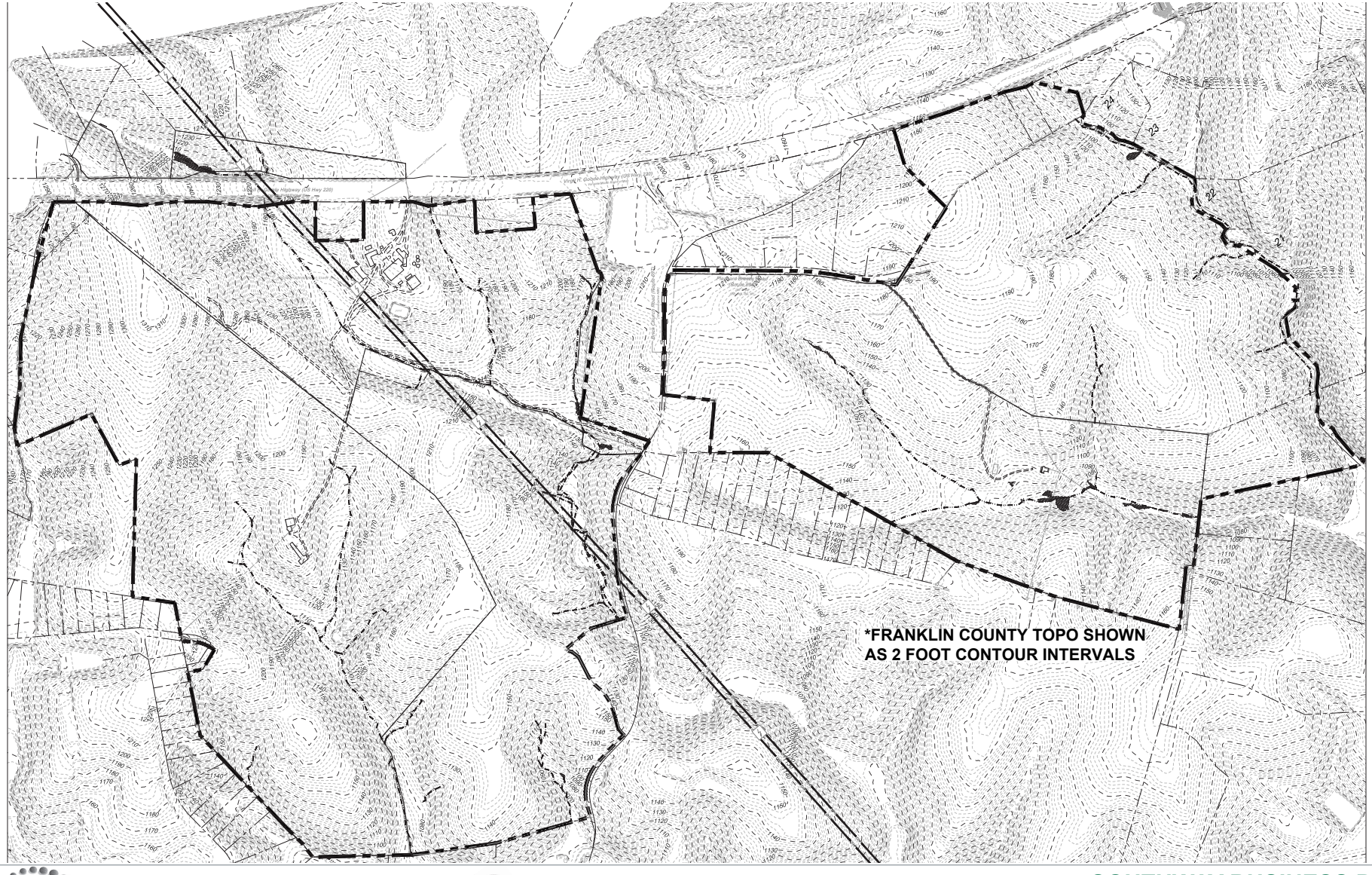
the range of 2.5-3 million cubic yards (CY) to achieve a balanced site. A stormwater management facility will also be graded into this area to capture and treat stormwater from this area. A more detailed discussion of stormwater management is included in Section 3.

The second phase of development on the north tract will consist of the approximately 60-acre area north and west of the cul de sac along the site access road, labeled "North Region 2 Grading Concept". This area will not require as deep cuts but will still require roughly 1.5-2 million cubic yards of earth moving to grade the site and create a net balance of cut vs. fill.

The third phase of development on the north tract will be for the 25-30 acre area labeled on the "North Region 3 Grading Concept". This parcel will require roughly 750-900,000 CY of earth moving. Finally, the fourth area on the north tract is the area labeled as "North Region 4", a 20-acre acre tract at the north end of the business park. This parcel is located at a higher elevation than the remaining parcels and will also require a separate stormwater detention basin due to the horizontal and vertical separation from the other parcels. Total volume of excavation required for this region is roughly 400,000 CY.

The first phase of development in the South Tract will be a large parcel southwest of the entrance road, possibly the million square foot "mega-parcel" building, the two adjacent building sites to the southwest, and associated stormwater management. Collectively, these are shown on the "South Region Grading Concept". This parcel will require approximately 3.5 million CY of total earth moving to create a net balanced site and to grade in a regional stormwater detention facility to serve much of the south tract. Grading this parcel may require cuts and fills of up to 40'.

Preliminary grading concepts have been developed with a goal of having each phase achieve a net balance of cut vs. fill required, so that substantial quantities of suitable material will not be required to be imported or exported from the site. Due to the relatively thin layer of topsoil present on the site, some quantity of topsoil import may still be required during development of landscape areas. As discussed above, development patterns of the individual sites could result in significant reductions in mass excavation requirements. The grading concepts utilized in this master plan assume larger building pads and loading/parking areas will need to be graded to a single elevation, resulting in greater requirements for cut and fill.



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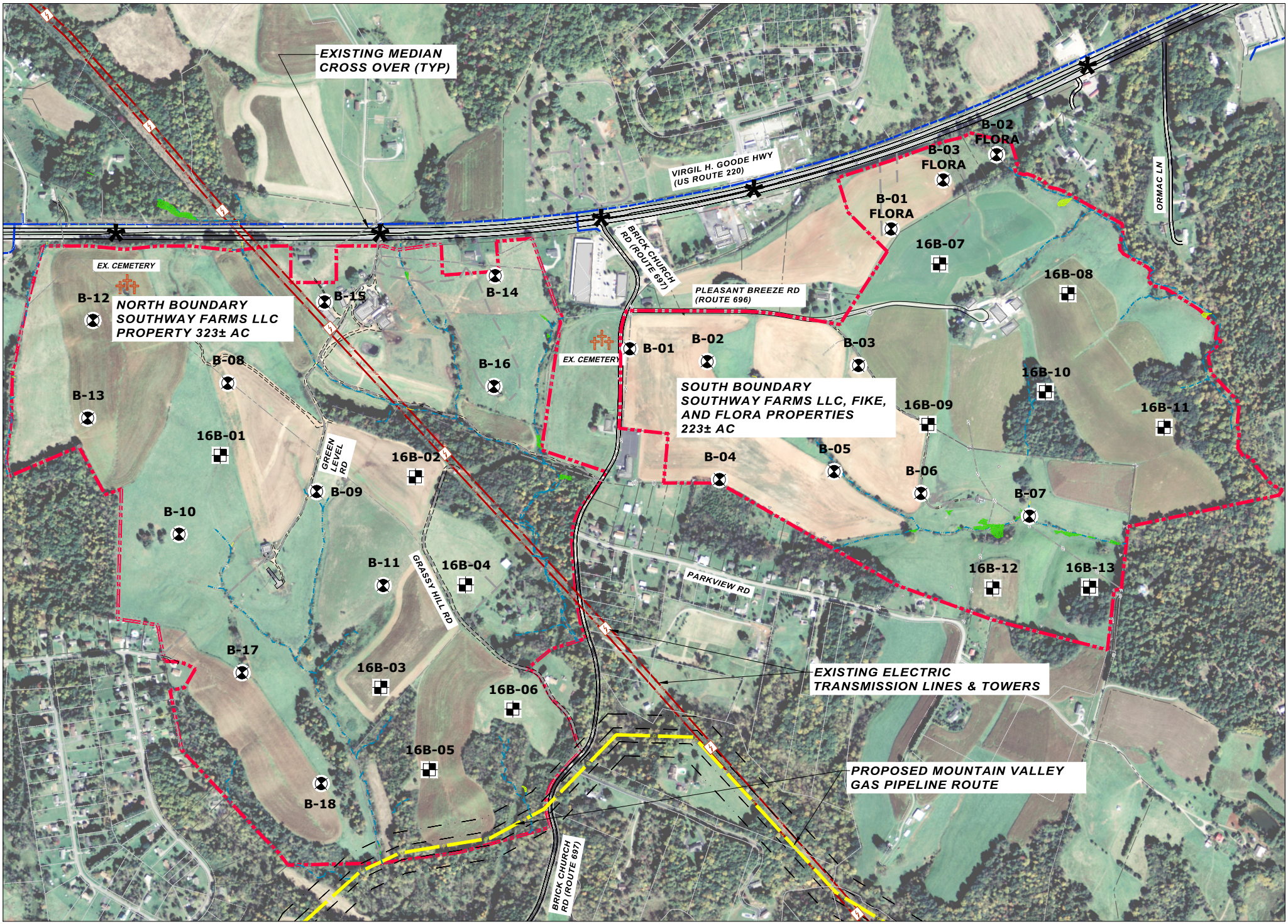
EXISTING TOPOGRAPHY



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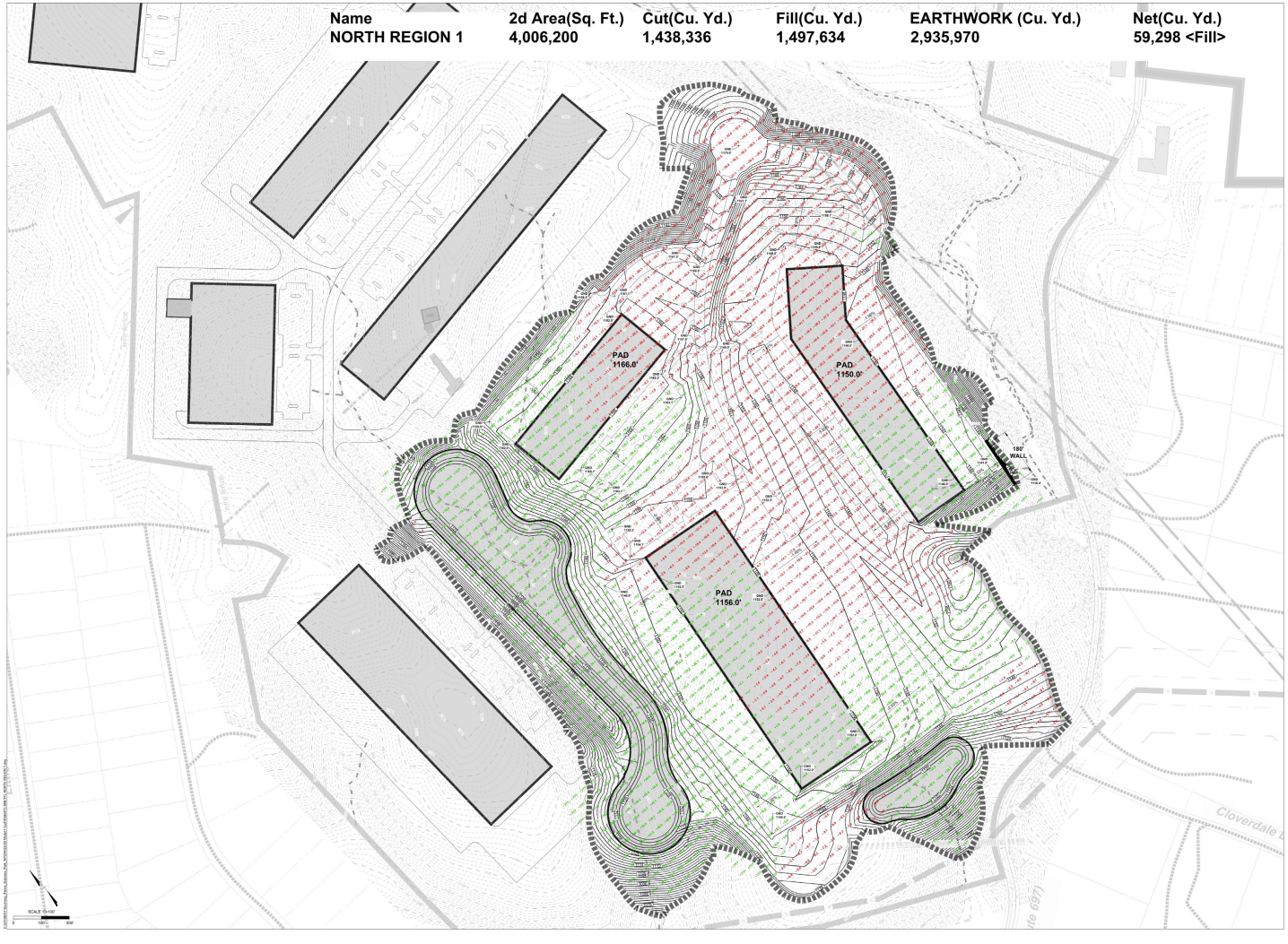
Name	2d Area(Sq. Ft.)	Cut(Cu. Yd.)	Fill(Cu. Yd.)	EARTHWORK (Cu. Yd.)	Net(Cu. Yd.)
NORTH REGION 1	4,006,200	1,438,336	1,497,634	2,935,970	59,298 <Fill>



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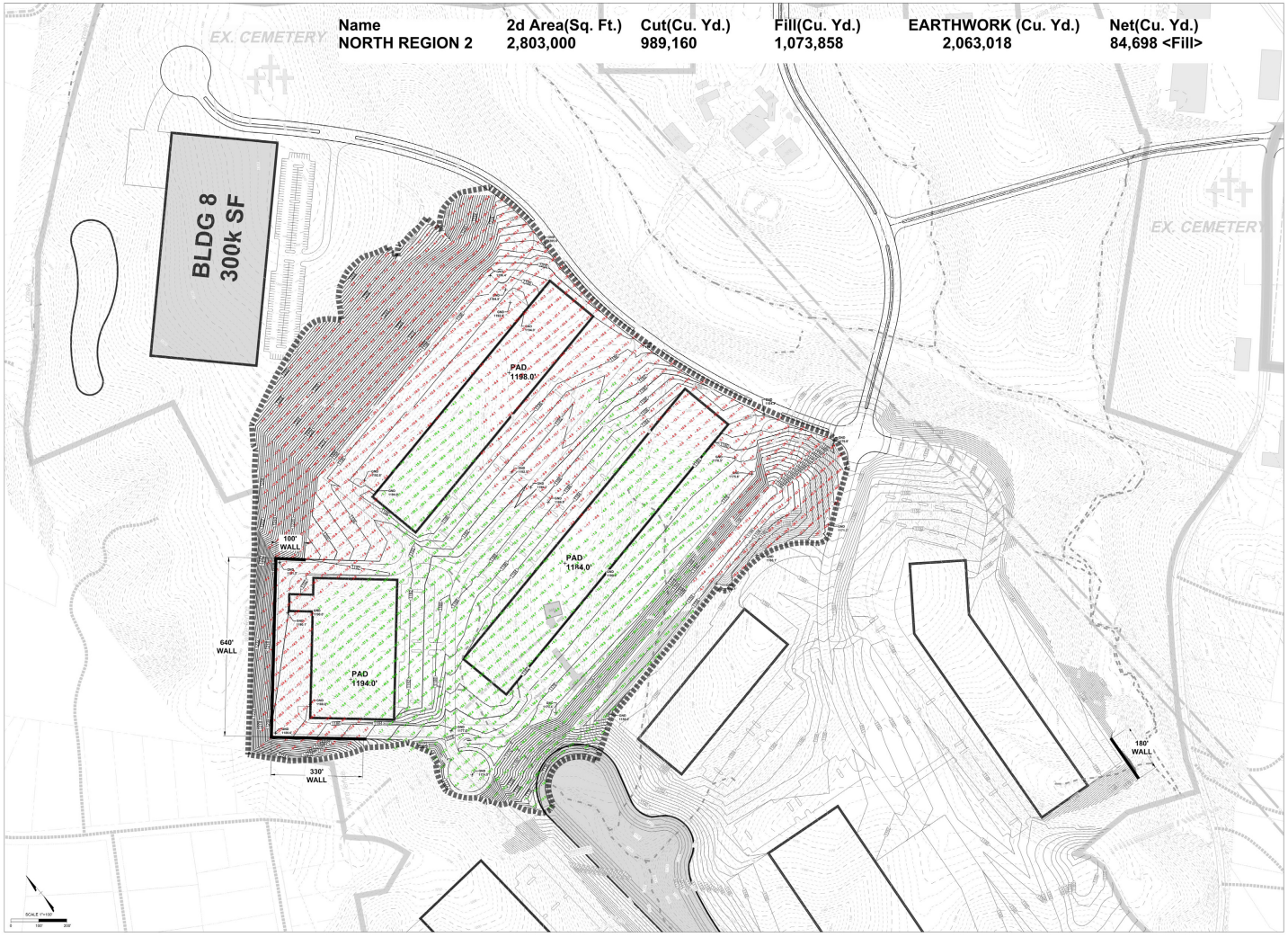
NORTH REGION 1 GRADING CONCEPT



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SOUTHWAY BUSINESS PARK

NORTH REGION 2 GRADING CONCEPT

Name	2d Area(Sq. Ft.)	Cut(Cu. Yd.)	Fill(Cu. Yd.)	EARTHWORK (Cu. Yd.)	Net(Cu. Yd.)
NORTH REGION 3	1,179,600	448,253	400,289	848,542	47,964 <Fill>

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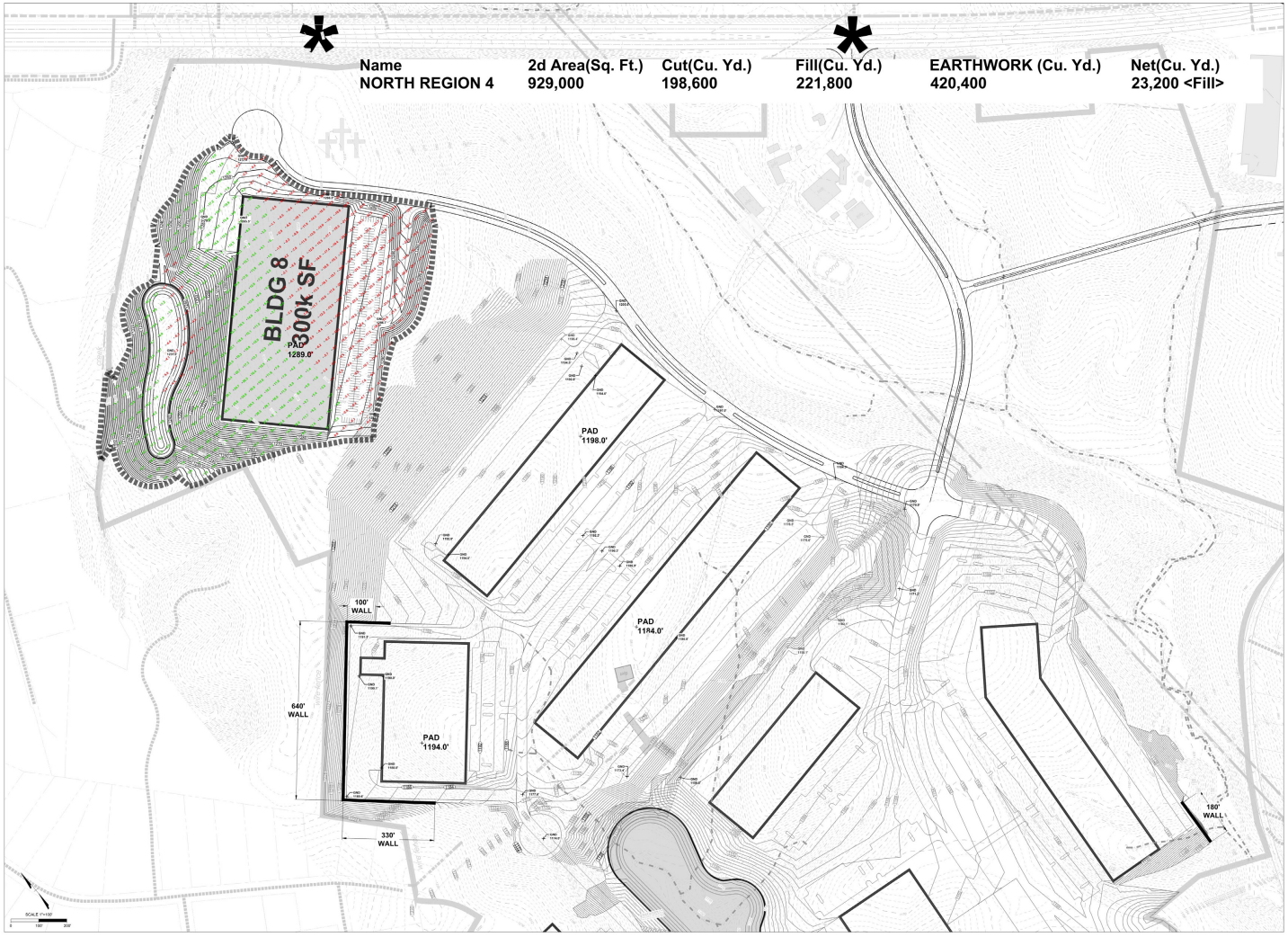
NORTH REGION 3 GRADING CONCEPT



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SCALE 1"=600'
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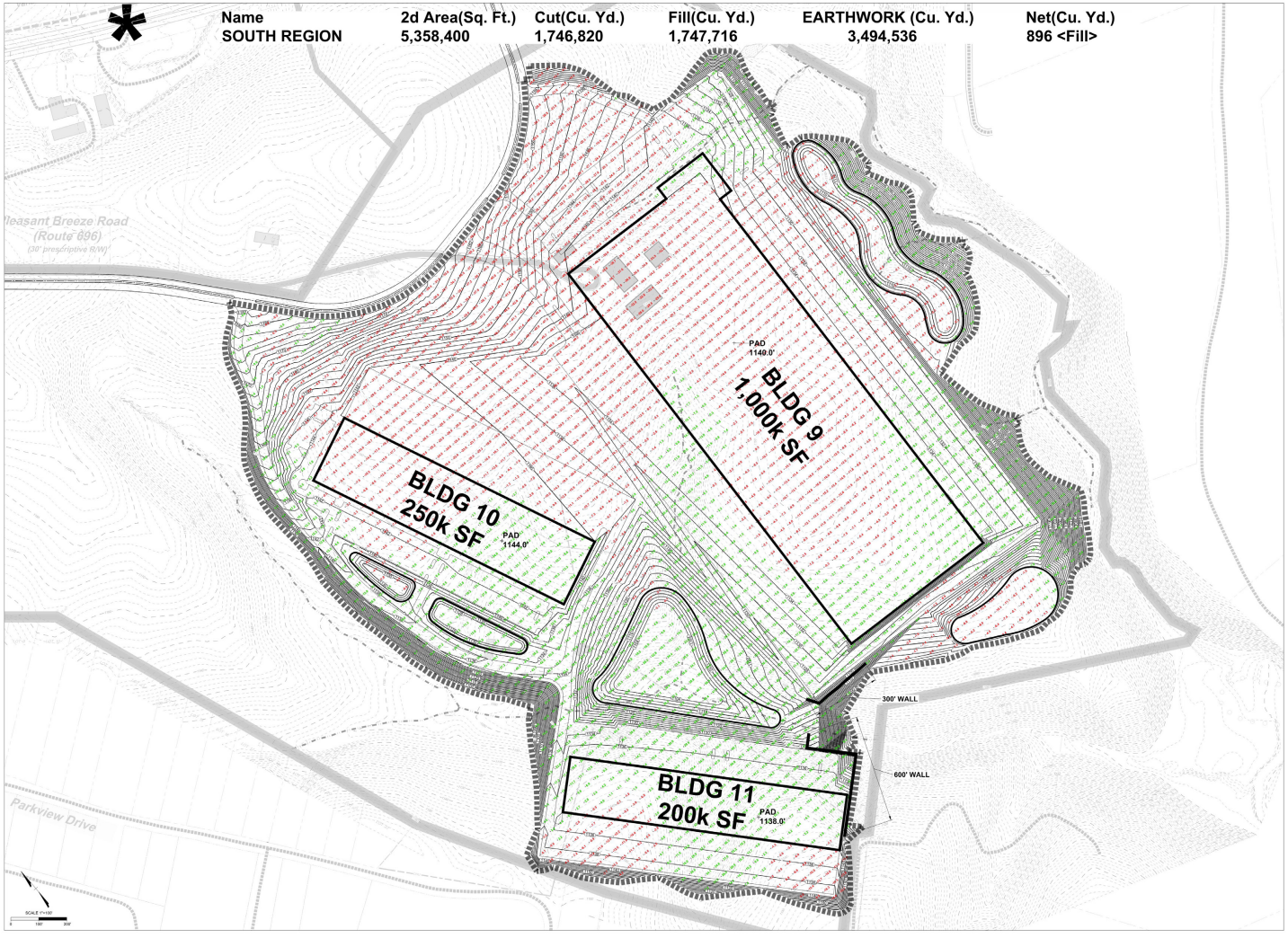
SOUTHWAY BUSINESS PARK

NORTH REGION 4 GRADING CONCEPT

Name	2d Area(Sq. Ft.)	Cut(Cu. Yd.)	Fill(Cu. Yd.)	EARTHWORK (Cu. Yd.)	Net(Cu. Yd.)
SOUTH REGION	5,358,400	1,746,820	1,747,716	3,494,536	896 <Fill>



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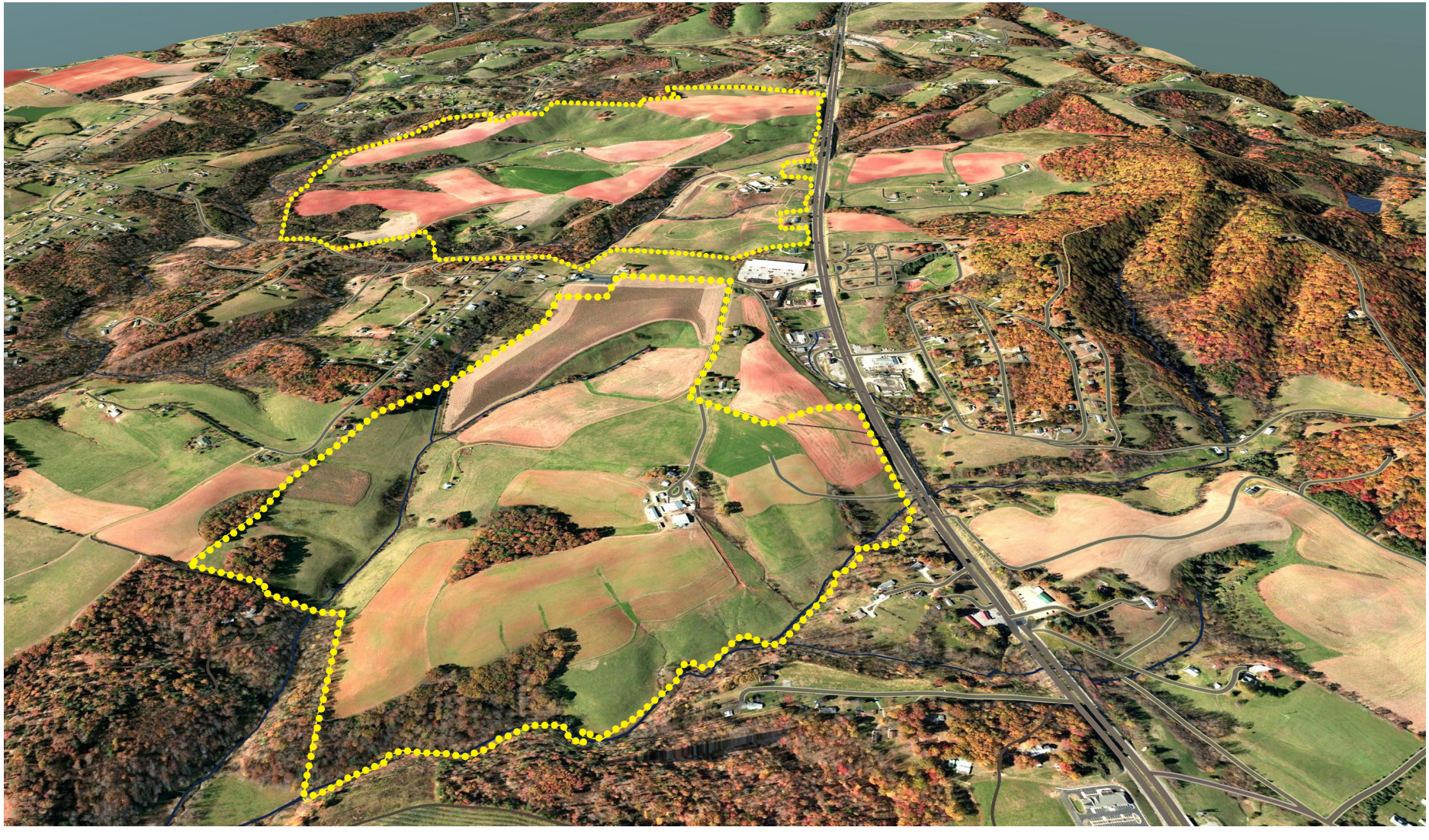
SOUTH REGION GRADING CONCEPT



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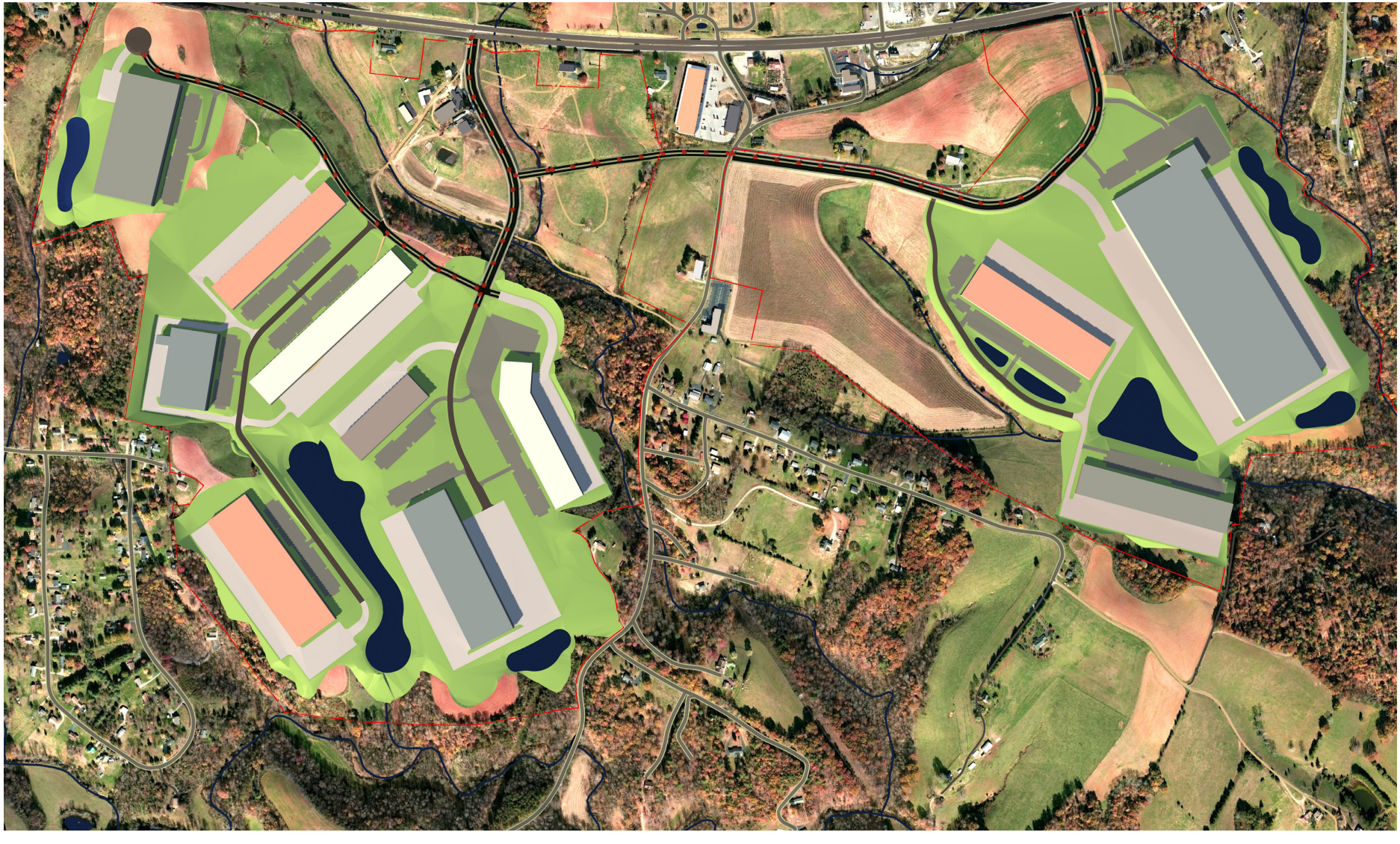
SOUTHWAY BUSINESS PARK

EXISTING TOPOGRAPHY 3D MODEL



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OVERALL 3D PLAN

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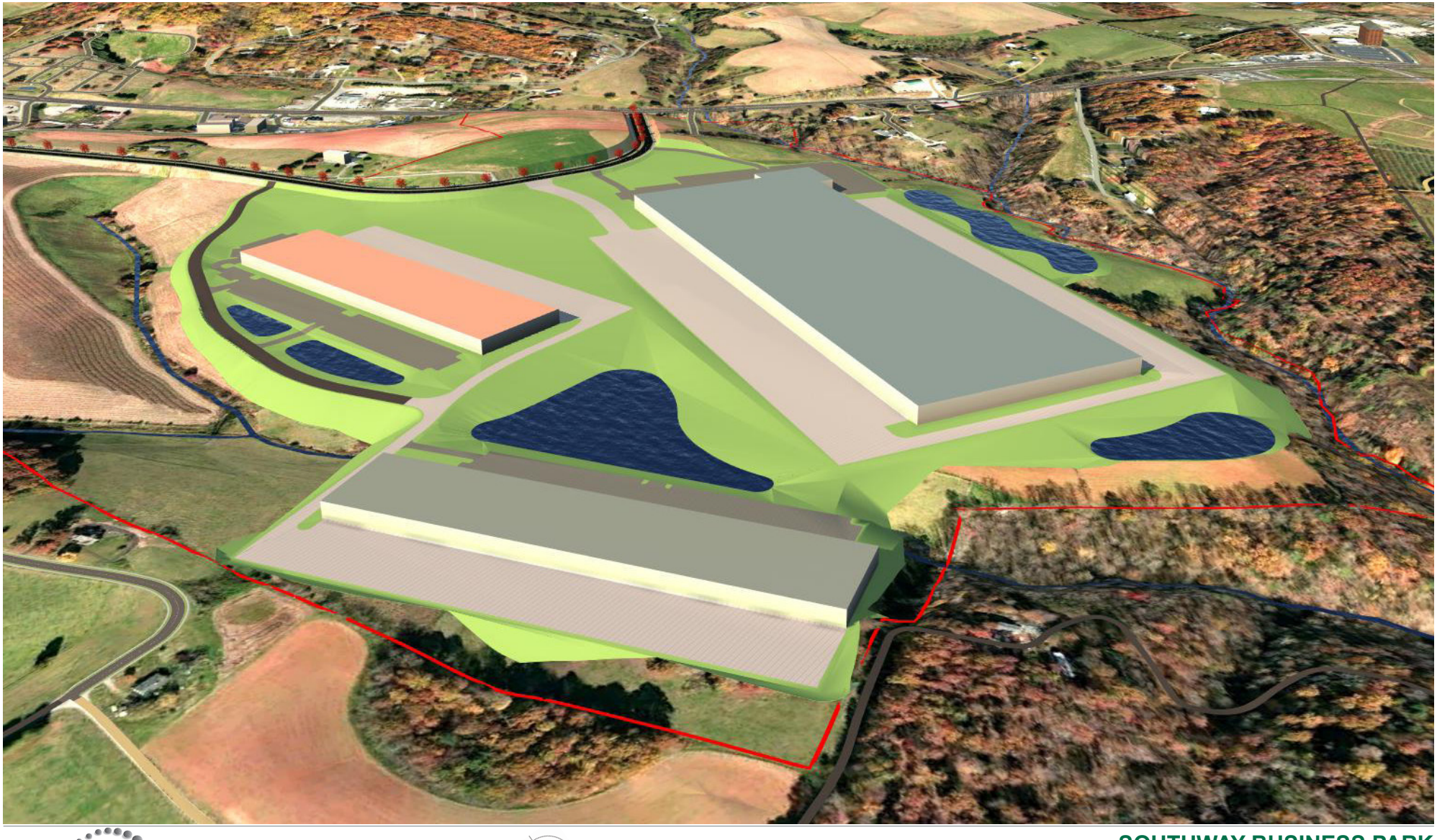
SOUTHWAY BUSINESS PARK

NORTH REGION 3D PERSPECTIVE



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SOUTH REGION 3D PERSPECTIVE

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SOUTHWAY BUSINESS PARK
ADDITIONAL SOUTH 3D PERSPECTIVE

Section 4 – Stormwater Management Concept Plan

The following stormwater management concept plan has been prepared to provide baseline knowledge of existing conditions, governing stormwater regulations, preliminary stormwater compliance requirements for the site layout options presented, a catalog of appropriate Best Management Practices (BMPs), and stormwater management strategies. The purpose of the following report is to allow the County and future prospects to effectively budget for design and construction of the ultimate build out of the Southway Business Park.

Section 4.1 – Existing Site Conditions Relative to Stormwater Management

The Southway Business Park site was consolidated from multiple individual parcels totaling approximately 540± total acres. The land has been primarily used for agriculture. A geotechnical study was conducted for the site in 2016 to provide subsurface exploration and analysis for engineering capability of the soils, including potential for infiltration. Further discussion of soils is included in Section 3 – Site Grading.

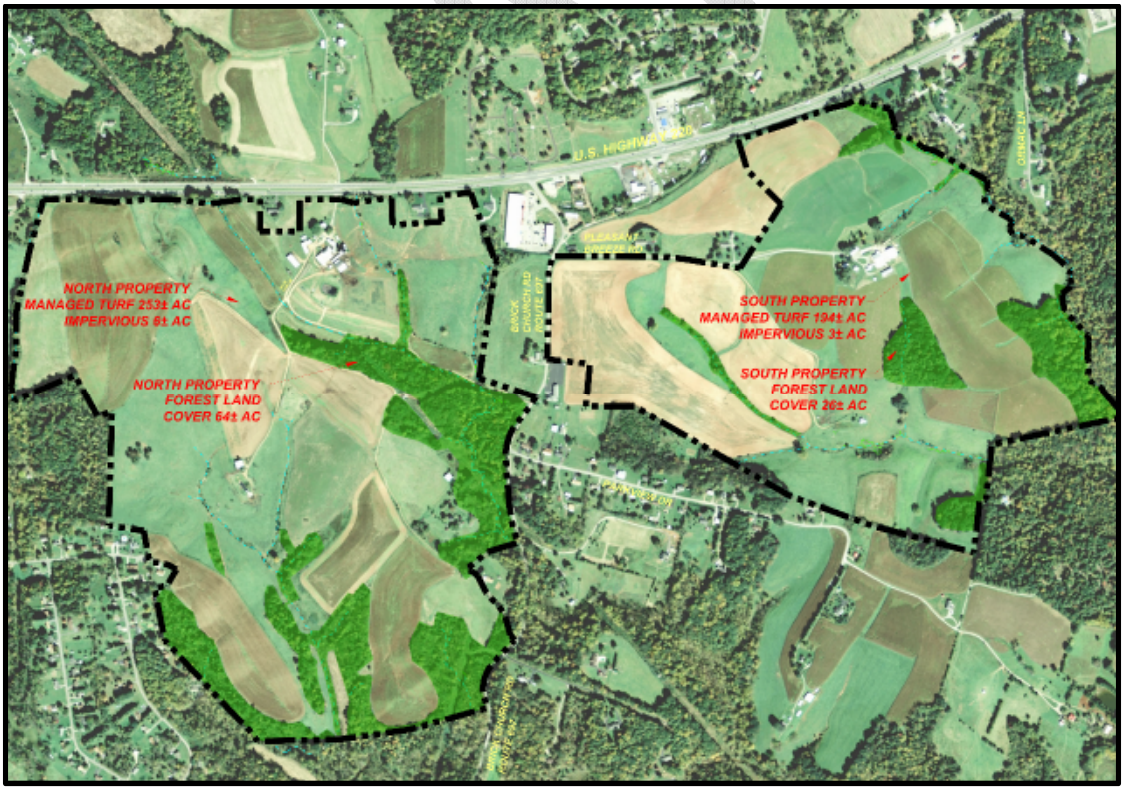


Figure 1: Existing Land Cover

Due to the relatively low elevation of groundwater encountered, some of the soils may be suitable for infiltration-type BMPs for water quality treatment. Further study including infiltration testing will be required during design of individual building sites to confirm suitability.

Section 4.2 – Governing Stormwater Management Regulations

On July 1, 2014 the revised Virginia Stormwater Management Program (VSMP) Regulations, became effective. The revised regulations carry significant changes in stormwater management requirements for development sites in the Commonwealth of Virginia and are representative of a paradigm shift in the concept of stormwater management. The intent of the technical criteria mandated by the revised regulations is to reduce the volume of stormwater runoff, and associated pollutants, from impervious and managed turf surfaces in order to mimic predevelopment hydrology. Site developers are to comply with the revised regulations using the runoff reduction method and energy balance equation. Further, developers are encouraged to use Environmental Site Design and Low Impact Development to achieve the compliance standards mandated by the revised regulations. Virginia uses total phosphorus as the keystone pollutant by which to measure compliance with water quality criteria, and the 1-, and 10-yr frequency storm events to measure water quantity compliance for energy balance and flood control respectively.

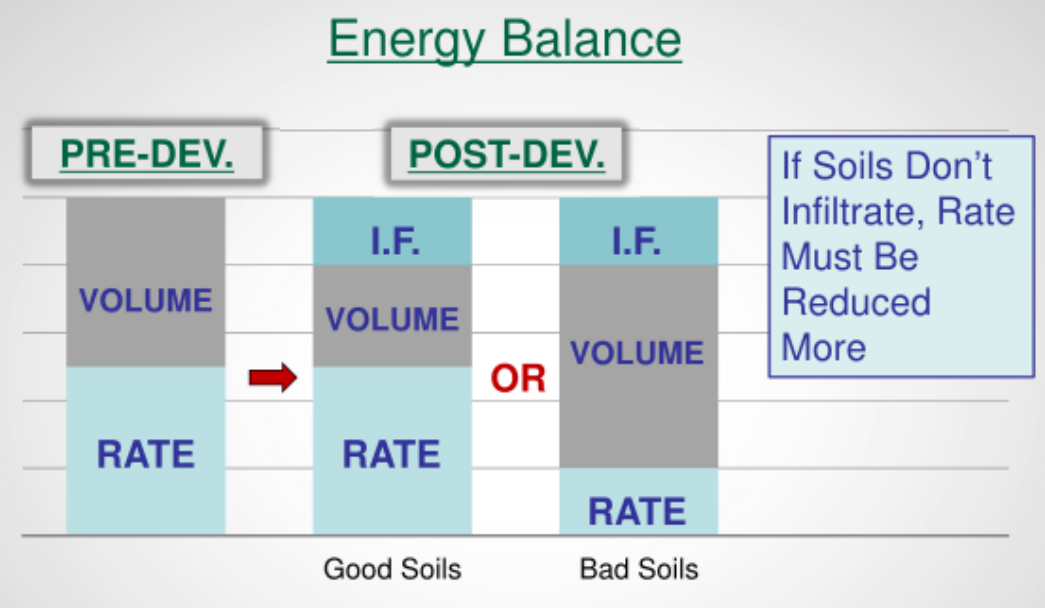
Water Quality Criteria

Water quality compliance for this Stormwater Management Concept Plan is demonstrated using the Virginia Runoff Reduction Method and associated compliance spreadsheet tool. The new development water quality standard of 0.41 lbs/ac/year of phosphorus was set as the target pollutant goal, as the existing site is predominately agricultural land and open space. Considering the entire site as new development provides a conservative estimate for use in master planning; however, once more detailed site planning begins, it may be possible to partition off existing impervious areas as “redevelopment” to reduce the pollutant removal requirement.

Water Quantity Criteria

Water quantity compliance is developed around preventing stream channel erosion and flooding. Concentrated stormwater flow from development sites must meet channel protection criteria

(otherwise noted as energy balance) established for constructed, restored, or natural conveyance systems, as applicable. The channels receiving runoff from the Southway Business Park will likely be classified as natural conveyance systems. Therefore, the channel protection criteria that will apply is as follows: the post-developed peak flow rate of runoff during the 1-yr 24-hour storm (Q_{post}) must be less than 80% of the pre-developed peak flow rate (Q_{pre}) multiplied by the pre-developed runoff volume (RV_{pre}) all divided by the post-developed runoff volume (RV_{post}). Flood protection criteria is separately defined for conveyance systems that do not experience localized flooding during the 10-yr 24-hour storm, and those that currently do experience localized flooding during the 10-yr 24-hour storm. Depending on the applicable situation, it shall be demonstrated that runoff during the specified design storm is either confined in the receiving channel or that the peak runoff flow rate in post-development conditions is less than that during pre-development conditions. According to the revised VSMP regulations, as long as compliance with the water quantity standards as prescribed above are met, then the requirements of Minimum Standard 19 of the Virginia Erosion and Sediment Control Regulations shall be satisfied.



Section 4.3 – Preliminary Stormwater Compliance Requirements

Proposed drainage patterns for the layout options were determined based on the proposed location of building pads as they correspond to existing drainage patterns. In some cases, the anticipated grading

associated with the new building pads will alter the drainage patterns and subsequently increase/decrease pollutant loads to a single outfall.

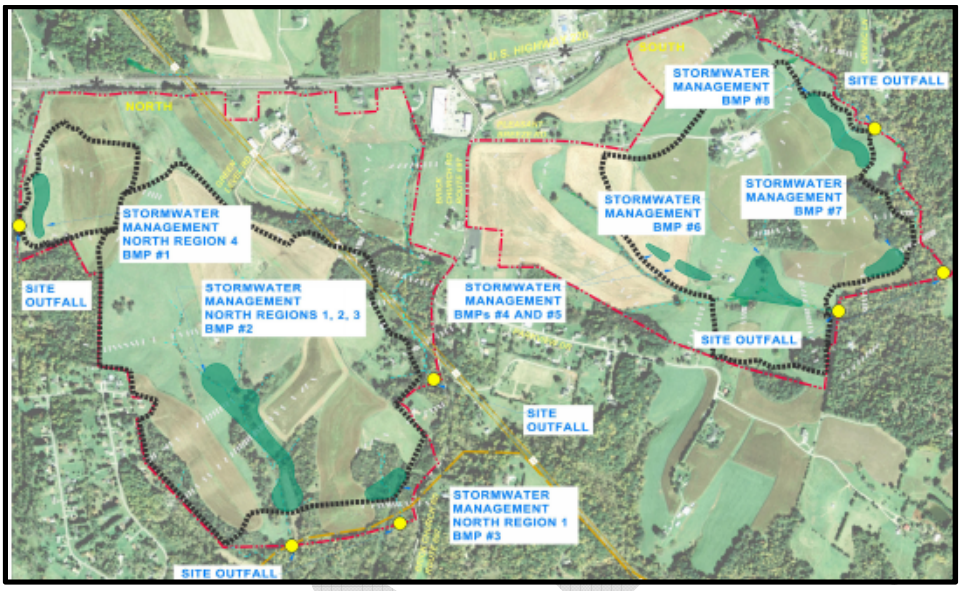


Figure 6: Regional BMP & Site Outfall Map

Since Southway Business Park is such a large development with a high variation in elevation, it may be more cost-effective to construct regional stormwater basins to capture and treat stormwater from multiple building sites rather than accounting for 100% of the quality and quantity on each site. The Master Plan Concept 1 reflects this approach. The strategy is to achieve a percentage of the removal and detention contributed by the multiple sites with regional BMPs. This will reduce the burden of managing the full stormwater quality and quantity requirements on each individual site. Underground stormwater management may also be employed (site specific) due to the potential size of tenant layout, steep topography, and useable space on individual parcel.

The phosphorous (TP) load reduction anticipated is 341.7 lb/yr total for the business park as outlined below divided into specific regions, public spaces and main corridor.

		North Region I	North Region II	North Region III
Land Cover	Impervious Cover, %	43.0%	49.0%	55.0%
	Managed Turf, %	57.0%	51.0%	45.0%
	Forest/Open Space, %	0.0%	0.0%	0.0%
	Total Acreage, ac	93.5	65.7	28.0
Site Runoff Coefficient, Rv		0.53	0.57	0.61
Post Development TP Load, lb/yr		112.03	85.30	39.11
TP Load Reduction Required, lb/yr		73.69	58.37	27.63
Treatment Volume (cu ft)		178,306	135,757	62,247

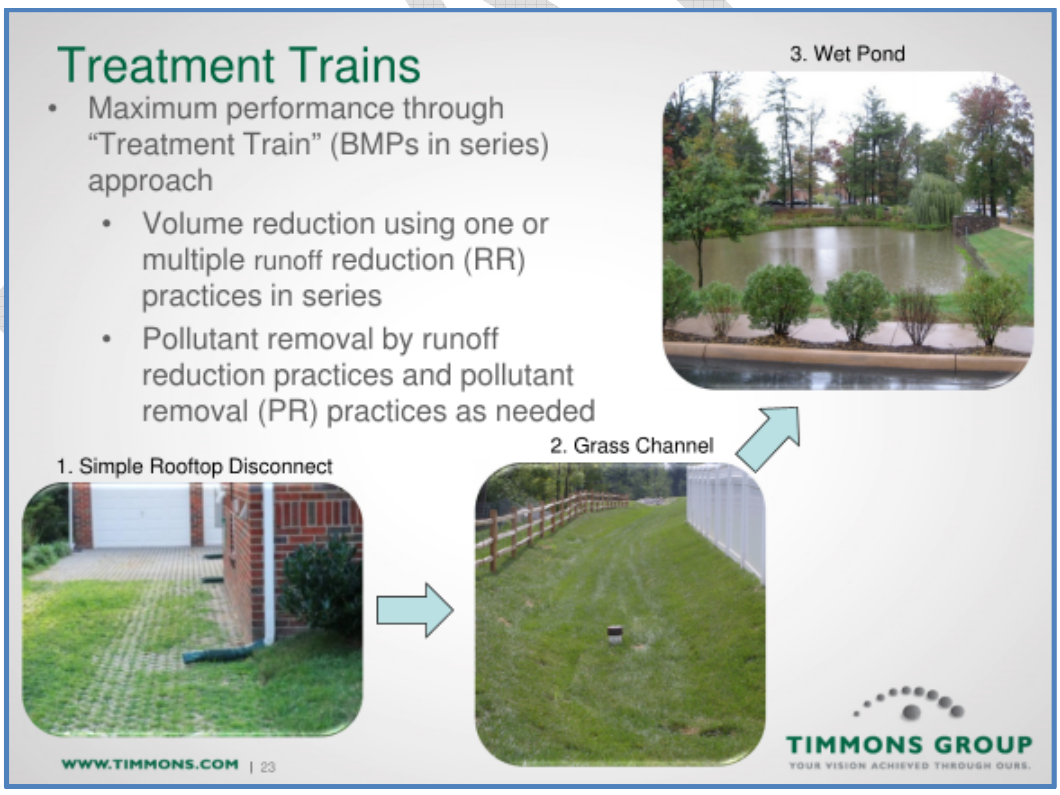
		North Region IV	South Region
Land Cover	Impervious Cover, %	46.0%	56.0%
	Managed Turf, %	54.0%	44.0%
	Forest/Open Space, %	0.0%	0.0%
	Total Acreage, ac	22.0	125.0
Site Runoff Coefficient, Rv		0.54	0.62
Post Development TP Load, lb/yr		27.27	177.73
TP Load Reduction Required, lb/yr		18.24	126.48
Treatment Volume (cu ft)		43,402	282,877

		North Public Space	South Public Space	Main Corridor
Land Cover	Impervious Cover, %	20.0%	15.0%	74.0%
	Managed Turf, %	24.0%	16.0%	16.0%
	Forest/Open Space, %	56.0%	69.0%	0.0%
	Total Acreage, ac	85.0	50.6	15.5
Site Runoff Coefficient, Rv		0.26	0.20	0.76
Post Development TP Load, lb/yr		49.56	22.93	26.74
TP Load Reduction Required, lb/yr		14.71	2.18	20.39
Treatment Volume (cu ft)		78,873	36,498	42,562

Section 4.4 – Catalog of Appropriate Best Management Practices (BMPs)

To accompany the revised regulations, a new set of design standards for Best Management Practices (BMPs) were developed. The design standards, developed for both proprietary and non-proprietary BMPs, have been vetted through the BMP Clearinghouse (www.vwrrc.vt.edu/swc) and approved by the Soil and Water Conservation Board prior to documentation of pollutant removal efficiencies. The finite list of BMPs that are authorized for use in the Commonwealth of Virginia were screened for applicability at the Southway Business Park, as summarized below in Table 4.

The intent of Virginia's Runoff Reduction Method is to obtain compliance with water quality and water quantity standards by incorporating multiple measures in close proximity to runoff generating land cover (managed turf and impervious surfaces) in order to reduce the volume of runoff. Treatment trains (or BMPs in series), are encouraged to maximize the effect of runoff reduction, and by default, pollutants are removed from the stormwater because the volume of runoff is reduced. At the end of the treatment series, if the pollutant removal goal is not met, the designer is encouraged to employ practices that remove pollutants, but do not reduce the runoff.



Examples of runoff reducing BMPs are those that employ infiltration, filtration, and water re-use. Examples of BMPs that treat pollutants, but do not reduce runoff are those that employ the concept of sedimentation and biological uptake. In general, runoff reducing practices are designed for very small contributing drainage areas (1-5 acres) and would be located throughout the individual sites while utilizing the regional BMPs for mostly detention and any balance of water quality need to achieve the requirement goal.

While still feasible to use large stormwater management facilities (*i.e.*, ponds and wetlands) to obtain compliance with the new water quality criteria, there are numerous disadvantages, such as: the footprint required is generally at the consequence of significant loss of real estate; ponds and wetlands must be located off-line of existing jurisdictional features to obtain environmental permits; and site grading and earthwork are costly factors to manipulate the land to drain accordingly. Likewise, significant challenges must be overcome to effectively design large industrial/commercial development sites using Environmental Site Design and Low Impact Development techniques as prescribed by the VSMP regulations. Site grading and earthwork can be minimized to more closely follow existing topography; thereby preserving existing drainage patterns, the number of stormwater management facilities, or BMPs. A large site such as the Southway Business Park can easily result in the need for dozens of individual practices low impact practices.

Each of the 15 non-proprietary BMPs were assessed for suitability and applicability at the Southway Business Park based on knowledge of existing conditions, knowledge of proposed layout options, and familiarity with the BMP design standards. BMPs that were less than ideally suited for the site were then excluded from further concept analysis. The purpose of the concept analysis is to demonstrate potential stormwater management strategies that may be incorporated on site from a mass grading/master planning level based on anticipated uses planned for the site; however, site designers are encouraged not exclude “low applicability” BMPs from analysis once design progresses. For example, green roofs are an attractive and high functioning BMP, but require interdependent site and building planning more suitable for the design phase and not appropriate for specifying at the preliminary concept level, as is the purpose of this report.

Best Management Practice	Design Standard Reference	Maximum Runoff Reduction (RR)	Maximum Pollutant Reduction (PR)	Brief Description (CDA=Contributing Drainage Area)	Site Applicability
Rooftop Disconnection	1	25	0	This BMP standard is intended for small scale disconnection of rooftops, such as residential applications; the maximum rooftop area treated is 1,000 SF per disconnection	Low
Sheet Flow to Vegetated Filter Strip/Conserved Open pace	2	50	0	Best suited for minimal slopes adjacent to impervious surfaces to treat sheet flow. 35-65ft width required	High
Grass Channel	3	10% (30% with CA)	15	Ideal for linear uses; CDA<5 acres, 4' min. bottom width	Medium
Soil Amendments	4	Dependent on other practices		Costly to import	Low
Vegetated Roof	5	45	0	Requires structural capacity, access, & significant maintenance	Medium
Rainwater Harvesting	6	Varies	0	Appropriate for large roof area treatment; however, year-round re-use/demand must be documented	Medium
Permeable Pavement	7	75	25	Load restrictions apply; extensive maintenance required to ensure proper function	High
Infiltration	8	90	25	CDA<2 acres; min infiltration rate = ½ in/hr; requires 2-3 forms of pretreatment	Medium
Bioretention	9	80	50	CDA<5 acres (50% impervious); pretreatment required; 6" ponding required	High
Dry Swale	10	60	40	CDA<5 acres; min. 2' between media and water table	High
Wet Swale	11	0	40	CDA<5 acres; wet swales are similar to linear wetlands, but not as effective	Low
Filtering Practice	12	0	65	Two feet minimum required between bottom of sand filter and water table	Medium
Constructed Wetland	13	0	75	Should only be considered if water quality or channel protection requirements have not been satisfied by runoff reduction measures	Low
Wet Pond	14	0	75		High
Extended Detention Pond	15	15	15		Medium

Table 2: Authorized Non-proprietary BMPs

Section 4.5 – Recommended Site Specific Low Impact BMPs

Sheet Flow to Vegetated Filter Strip/Conserved Open Space

There are two design variants specified in the sheet flow standard, included in Appendix F: vegetated filter strips and conserved open space. Both types of filter strips reduce the runoff volume by 50%. Conserved open space is only applicable on undisturbed soils and native vegetation and requires a minimum 35 – 50 foot width, typically located adjacent to wetlands, streams, or forest conservation areas, and is ideally suited for many areas on the site. Gravel diaphragms or permeable berms may be required to ensure sheetflow is directed to conserved open space.

Bioretention

Bioretention basins and/or cells are desirable BMPs due to their versatility in spatial configuration, exceptional runoff volume reduction (80%), and effective pollutant removal efficiency (50%) at a level 2 design. Similar to most other BMPs, the maximum contributing drainage area is limited (5 acres at 50% impervious, or 2.5 acres of 100% impervious area). Further, the design standard specifies limits on distance between BMP media and the water table. Allowances can be made for exceptions to the standard depth requirement. Bioretention cells require forebays in addition to the use of filter strips, gravel diaphragms, or other pretreatment measures. It is recommended that bioretention basins/cells be designed in available proposed managed turf space to minimize the need for larger BMPs such as constructed wetlands and wet ponds.

Example Bioretention

Dry Swale

Dry Swale is another recommended BMP due to its similarity to a bioretention. Dry swales are versatile in spatial configuration because of their linear arrangement. This filtering measure employs an engineered amended soil media with stone filtering along the bottom width as its section which provides up to 60% runoff reduction and 40% phosphorous efficiency removal rate. The treatment area is generally limited to 5 acre. Longitudinal slopes will range from 0.5% to 4% max. with check dams to reduce the flow rate and allow runoff to filter through the media bottom. Dry swales require pretreatment devices such as forebays, gravel strip diaphragms, and grass filter strips.

Example Dry Swale

Example Dry Swale

Grass Channels

Grass channels are ideal for linear configurations, and are preferred over traditional drainage systems such as curb & gutter and storm drain inlets & pipes because they provide both runoff volume reduction (10-30%) and pollutant removal through filtering (15%). The pollutant removal performance of grassed channels can be improved by the use of compost soil amendments; however, that will add significant cost for borrow of suitable soils, particularly for large scale uses, such as this site. Grass channels require a larger cross-sectional footprint than traditional grass ditches due to a minimum bottom width requirement of 4 feet, and 3H:1V side slopes. The maximum longitudinal slope is 4% before check dams are required; however, a 2% slope is considered ideal. The bottom of the grass channel should be a minimum of 2 feet above the water table. It is recommended that grass channels be used where feasible on the site.

Permeable Pavement

Permeable pavements are considered alternative paving surfaces that are able to allow runoff to be conveyed through the surface down to a filtering level thus providing the reduction and phosphorous removal. This measure can be implemented in a variety of hardscape surfaces including pavers, porous asphalt, and porous concrete. The asphalt and concrete have a specified mixture that includes a percentage of voids that allows water to pass through the surface. Permeable pavements can provide up to 75% runoff reduction and 25% removal efficiency. They are best utilized in hardscape pedestrian areas, and lighter vehicle traffic areas. They would not be recommended in areas that would serve heavy vehicles, therefore if employed they would be best suited in employee / visitor parking areas and pedestrian gathering / walkways.

Example Porous Asphalt

Example Porous Pavers

Rainwater Harvesting

Rainwater harvesting systems are design to capture and hold stormwater runoff, typically underground (though there are above ground options), where it can be pumped to an area on-site that would re-use the rainwater. Some notable re-use applications include grey water (for indoor building restrooms, laundry), cooling tower supply, fire suppression systems, irrigation, vehicle washes, etc. This measure can provide up to 90% runoff reduction but only if rainfall events of 1 inch or less is used through the demand with the overflow fully contained. It should also be noted that this approach does not provide phosphorous removal. Removal is credited when Rainwater Harvested treated runoff is conveyed downstream to another approved DEQ BMP Clearinghouse method.

Rainwater Harvesting systems can be advantageous in terms of runoff reduction, but they are typically costly. Their implementation would depend upon the type of facility and its use. For example a Data Center may benefit greatly by using this measure because if its cooling tower demand, but a lumber warehouse would not due to the lack of water fixtures it would require.

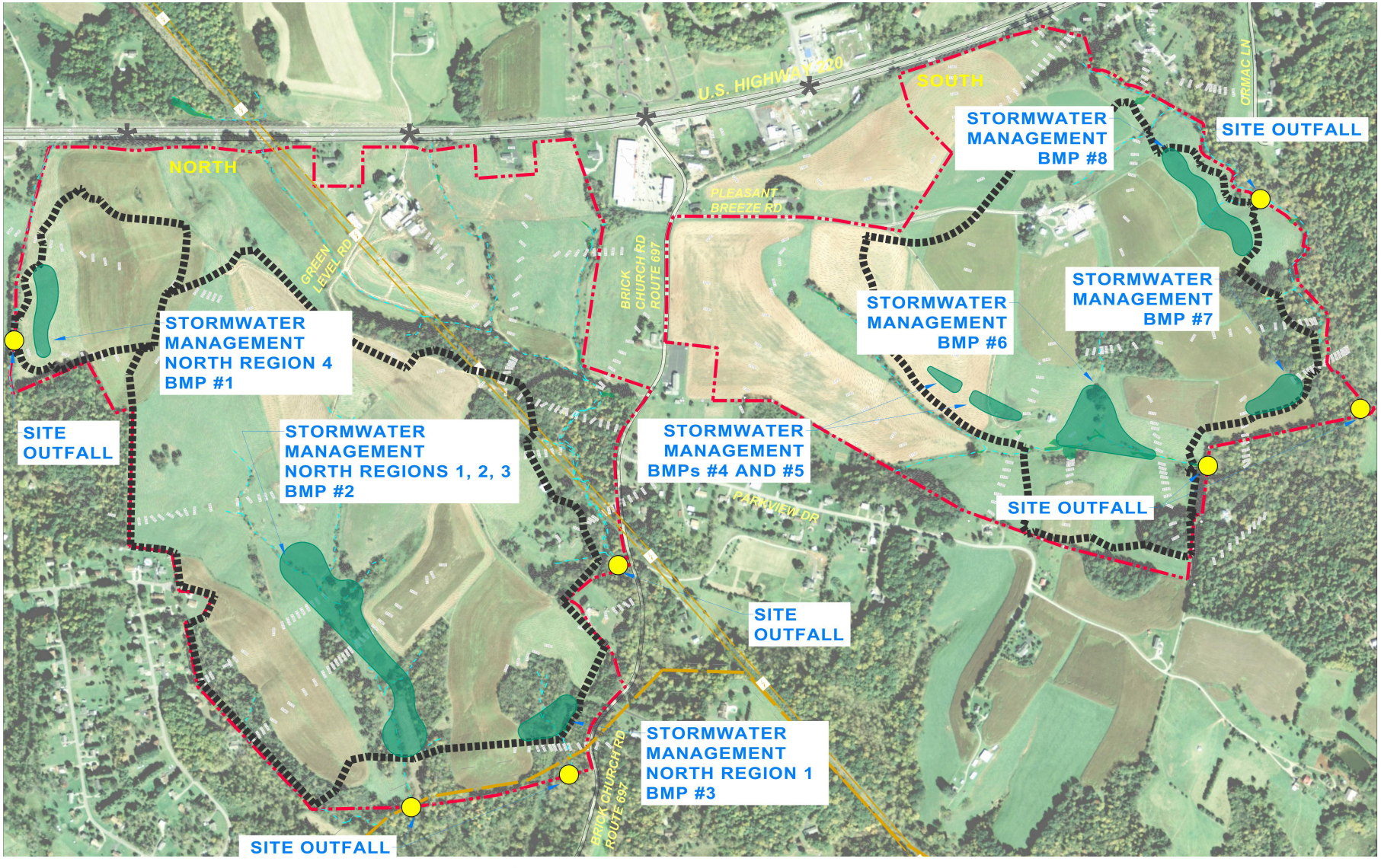
Vegetated Roof

Vegetated roofs (also known as green roofs) are an alternative rooftop surface that consists of green planting areas and growing media in lieu of the typical rooftop impervious materials. Green roofs can provide up to 60% runoff reduction credit, but does not remove nutrients. It should be noted that additional consideration needs to be given for the building structural support when choosing this measure as an alternative. Its implementation will largely depend on the tenant's desire to utilize the practice and their requirements with respect building aesthetics and structural costs.

Example Vegetated Roof

Proprietary BMPs

Proprietary BMPs can be an effective measure to reduce the pollutant loads where other methods will not work. Proprietary BMPs, such as StormFilters®, utilize a replaceable cartridge system to filter pollutants from runoff from impervious areas. Such systems are housed in an underground vault and require routine maintenance to clean/replace the filter cartridges and remove debris. These BMPs are ideally suited for urban areas where available surface area is sparse; however, due to the anticipated high water table on the site, these systems may provide a suitable alternative where other BMPs are constrained by depth requirements. Design of these systems must consider careful attention to buoyancy forces from ground water.



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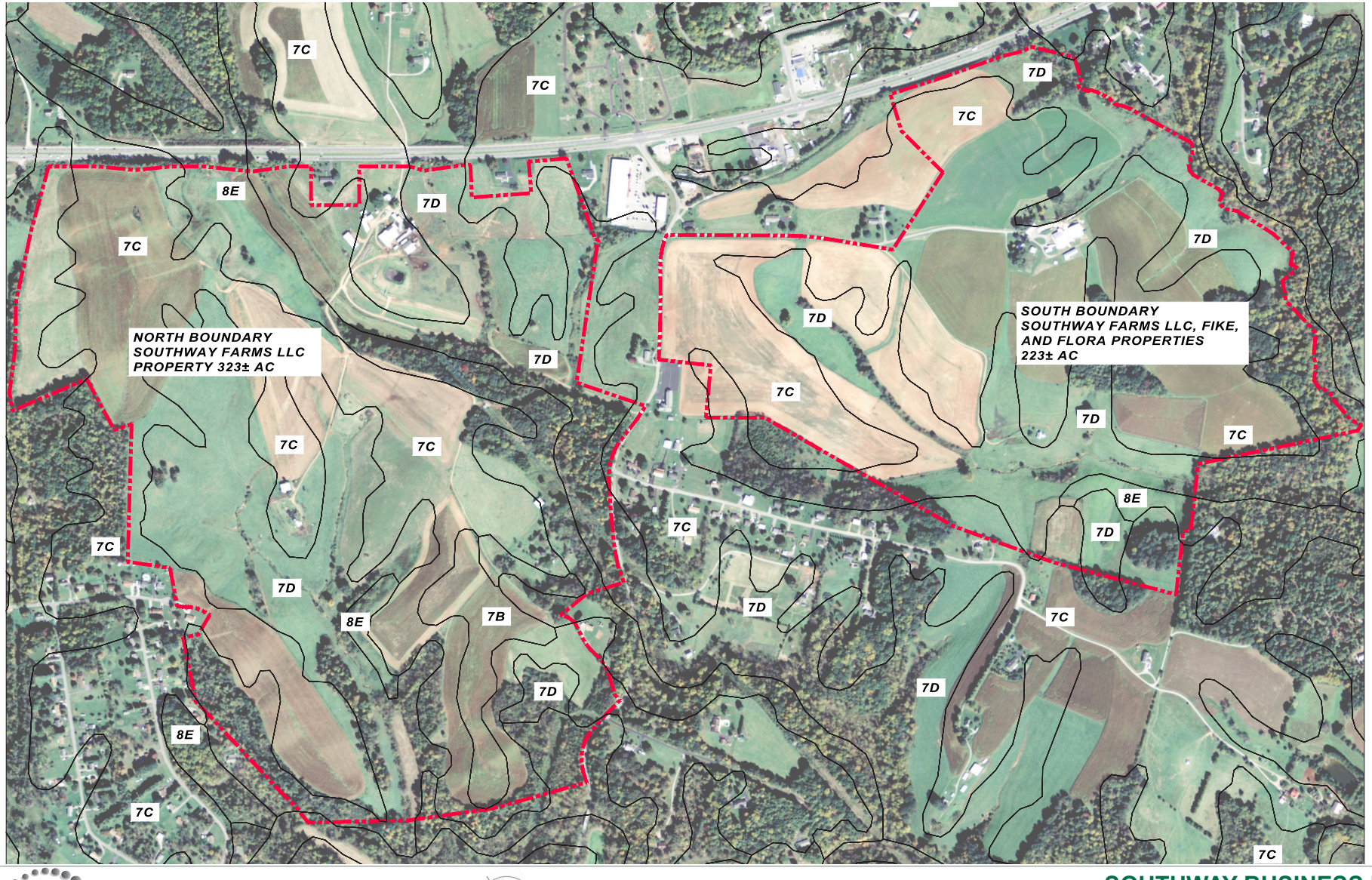
BMP AND SITE OUTFALL MAPPING



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SOILS MAPPING

Section 5 – Environmental Mitigation & Permitting

The site is located within Upper Roanoke River drainage basin (Hydrologic Unit Code 03010101; see Figure 10). The site generally drains to the south through wetland systems and unnamed tributaries to the Lower Blackwater River. The Blackwater River flows in an easterly direction and becomes part of Smith Mountain Lake approximately 24 river miles downstream from the site.

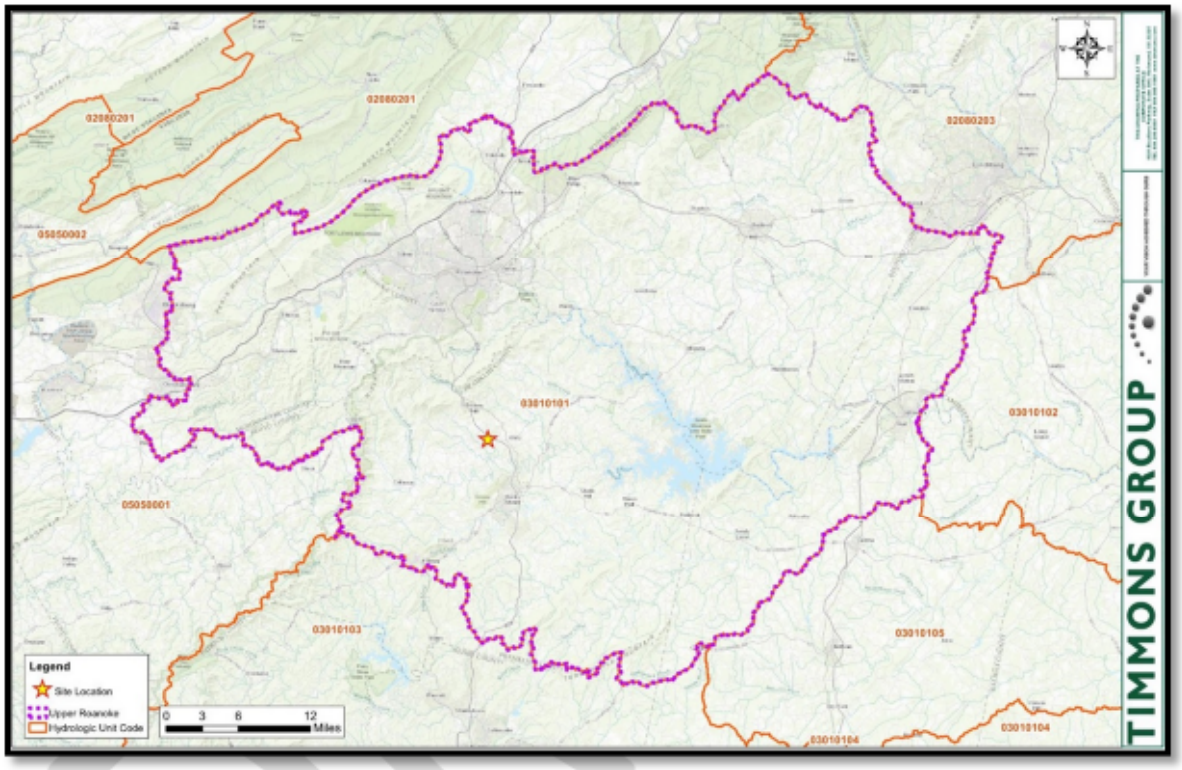


Figure 20: Drainage Basin Map

Section 5.1 – Existing Wetlands and Streams Assessment

In August of 2015 and March of 2016, Timmons Group performed a wetlands and waters of the U.S. delineation (wetland delineation) on the entire site. The site was delineated based upon the methodology outlined in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual; the Regional Supplement to the Corps Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0); and subsequently issued U.S. Army Corps of Engineers (USACE) regulatory guidance regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high water mark within drainage features. The wetland delineation has been

confirmed by the USACE in letters dated November 25, 2015 and May 24, 2016. The results of the wetland delineation are provided in Table 7 and depicted on Figure 11.

Development Phase	Total Acreage (AC)	Wetlands (AC)	Streams (LF)
Phase 1	550 ±	1.07	26,337

Table 3: Estimated Wetlands and Streams for Subject Areas

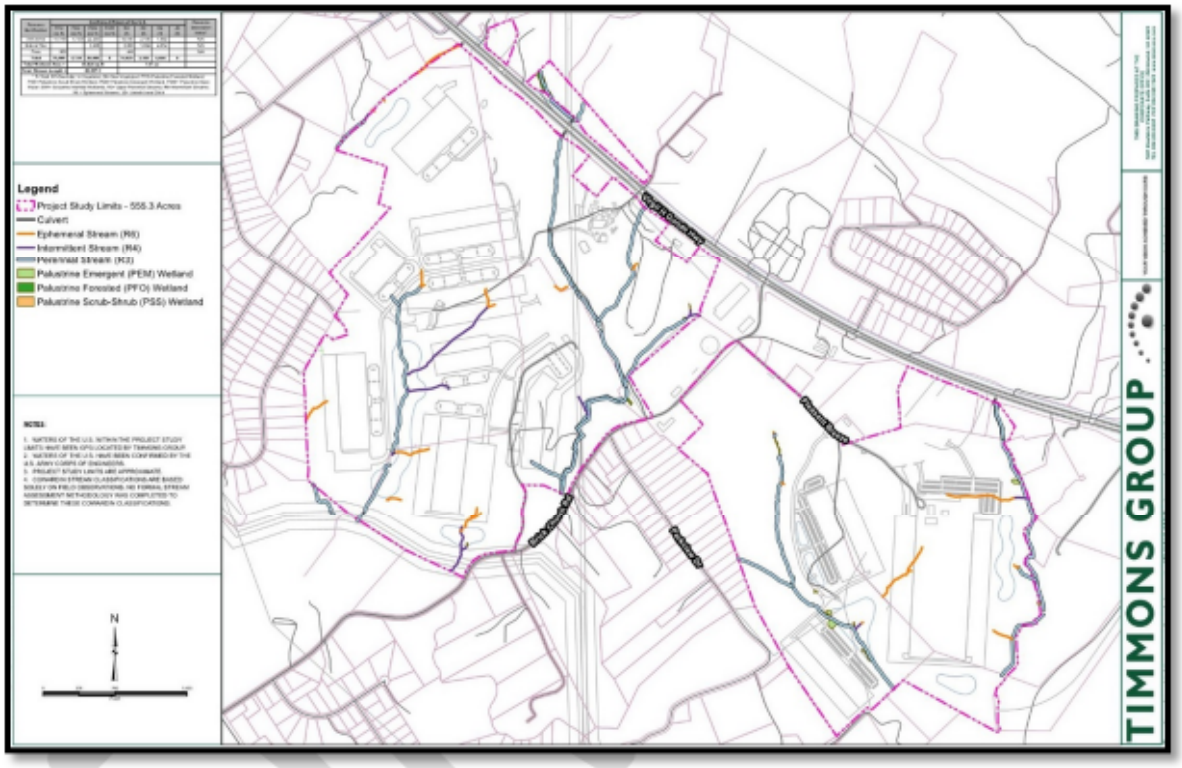


Figure 3: Confirmed Wetlands and Waters of the U.S.

Section 5.2 – Wetland and Stream Impacts

The most current conceptual site development plan was evaluated for stream and wetland impacts, along with the anticipated amount of compensatory mitigation. In Virginia, compensatory wetland mitigation is assessed based on application of a standard ratio applied to the acreage of the impacted wetland type. For example, Forested wetlands are mitigated at 2:1, Scrub Shrub wetlands at 1.5:1, and Emergent wetlands at 1:1. Stream compensatory mitigation is determined by assessing each impact stream reach with the Unified Stream Methodology (USM), a protocol developed by the USACE and Virginia Department of Environmental Quality (DEQ). For the purposes of this report, wetlands were assumed to be mitigated at a ratio of 2:1 (2 credits per 1 acre). Streams were assumed to be mitigated

at a ratio of 1:1 (1 compensation credit per 1 linear foot). The results of the preliminary impact analysis and compensatory mitigation requirements is provided below in Table 8 and depicted on Figure 12.

Development Phase	Wetland Impacts (AC)	Stream Impacts (LF)	Wetland Mitigation Required (credit)	Stream Mitigation Required (cc)
Phase 1-Concept	0.51	12,337	1.02	12,337

Table 4: Estimated Wetland and Stream Impacts and Mitigation Requirements

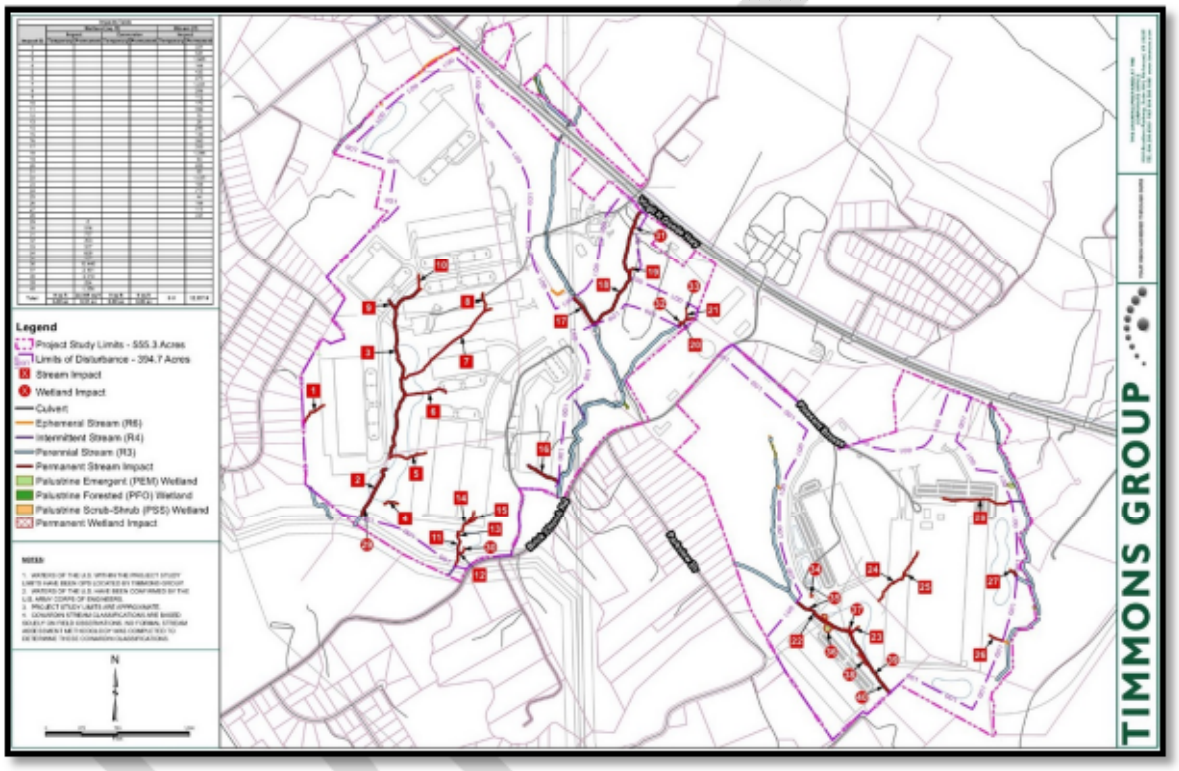


Figure 12: Preliminary Wetland and Waters of the U.S. Impacts Map

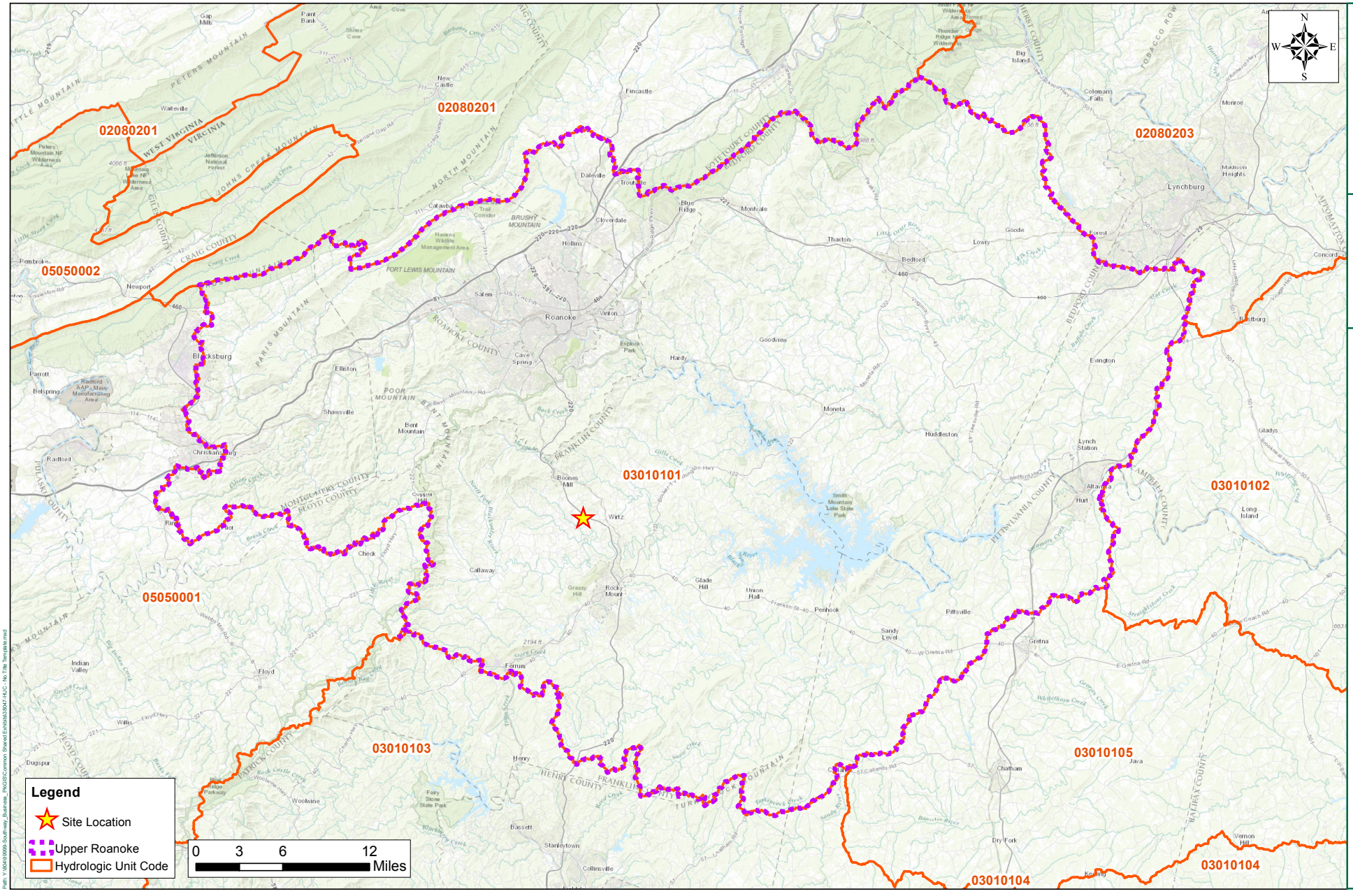
Section 5.3 – Federal and State Clean Water Act Permitting

Based on the proposed impacts discussed in Section 5.2, this project would be reviewed and processed by the USACE and DEQ under the corresponding regulations for Individual Permit (IP) authorizations. The IP process and level of detail required for review can vary greatly depending on the complexity of the project, the amount of proposed impacts, as well as public comment/input. Additionally, the USACE and to a lesser degree DEQ, are hesitant to authorize permits for "speculative" projects, or projects that do not have an end user for immediate occupancy following permit authorization.

Based on the proposed impacts as derived from the Concept Plan, this project will most likely require a significant level of effort and time to obtain agency approvals. Having a pre-application meeting or meetings well in advance of submittal of a permit application, can help reduce the timing of permit authorizations. Additionally, completing any necessary environmental reviews or surveys for cultural resources and threatened and endangered species prior to applying for the permit can reduce the timing involved with review agency coordination. This will also allow for planning and implementation of conservation measures as needed to avoid effects to these resources and expedite federal review clearances.

Section 5.4 – Wetland and Stream Mitigation Options

There are several courses of action for the mitigation of unavoidable impacts to wetlands and Waters of the U.S. The options available are provided in the order in which the regulatory agencies generally consider the most ecologically preferable. Generally, construction of a Permittee Responsible Mitigation (PRM) Bank, construction of a commercial mitigation bank, purchase credits from an existing stream and/or wetland mitigation bank or payment into the in-lieu fee fund.



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Resource Identification	Confirmed Waters of the U.S.								Resource Description Notes*
	PFO (sq ft)	PSS (sq ft)	PEM (sq ft)	POW (sq ft)	R3 (lf)	R4 (lf)	R6 (lf)	JD (lf)	
354 Acres	14,749	4,139	22,293		13,190	2,106	1,692		N/A
Sink & Fike			4,695		4,995	1,002	2,912		N/A
Flora	950				440				N/A
Total	**15,699**	**4,139**	**26,988**	**0**	**18,625**	**3,108**	**4,604**	**0**	
Total Wetland Area =	**46,826 sq ft**				**1.07 ac**				
Total Stream Length =	**26,337 lf**								

* T=Tidal; NT=Non-tidal; V=Vegetated; NV=Non-Vegetated; PFO=Palustrine Forested Wetland; PSS=Palustrine Scrub-Shrub Wetland; PEM=Palustrine Emergent Wetland; POW= Palustrine Open Water; EW= Estuarine Intertidal Wetlands; R3= Upper Perennial Streams; R4=Intermittent Streams; R6 = Ephemeral Streams; JD= Jurisdictional Ditch

Legend

- Project Study Limits - 555.3 Acres
- Culvert
- Ephemeral Stream (R6)
- Intermittent Stream (R4)
- Perennial Stream (R3)
- Palustrine Emergent (PEM) Wetland
- Palustrine Forested (PFO) Wetland
- Palustrine Scrub-Shrub (PSS) Wetland

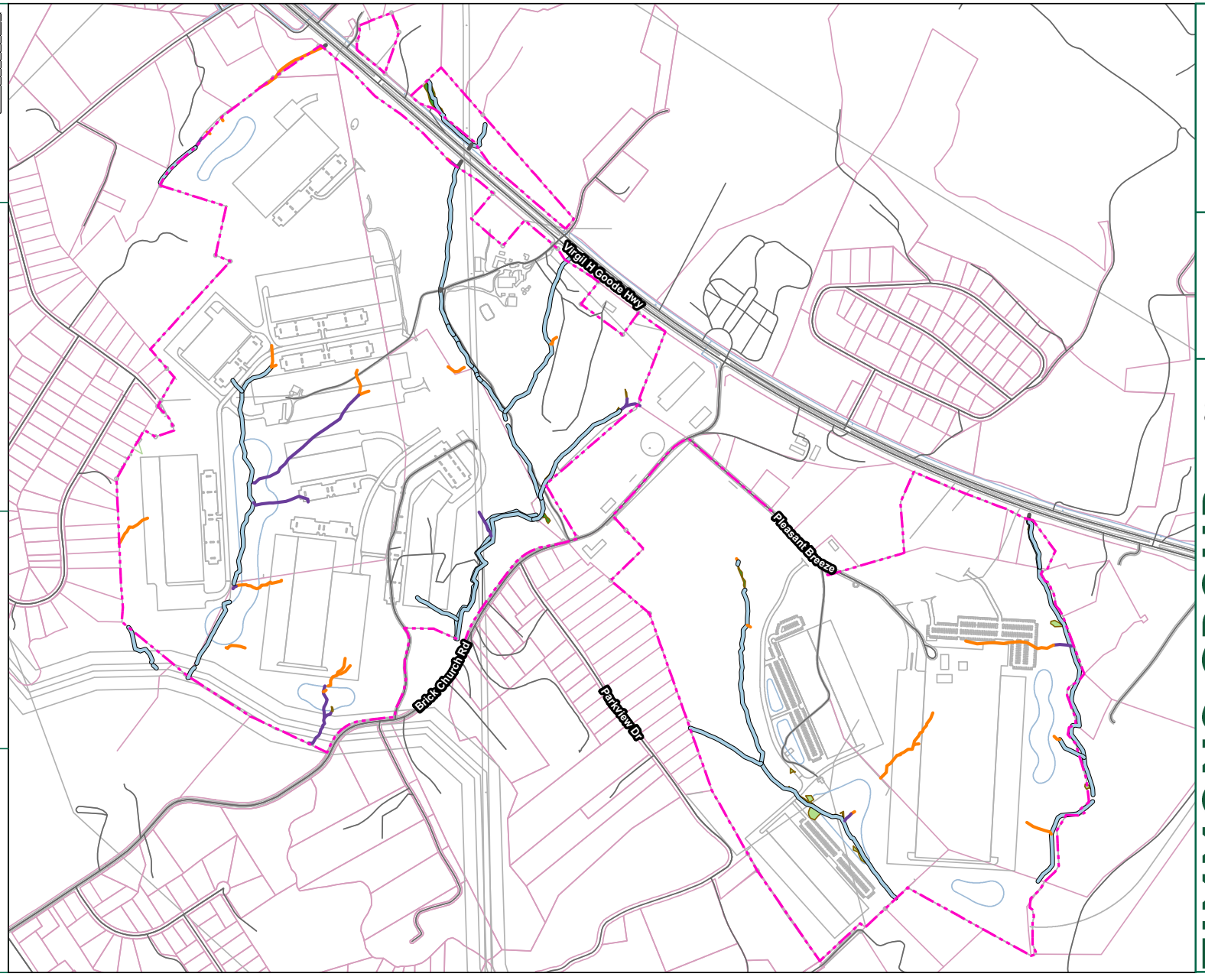
NOTES:

1. WATERS OF THE U.S. WITHIN THE PROJECT STUDY LIMITS HAVE BEEN GPS LOCATED BY TIMMONS GROUP.
2. WATERS OF THE U.S. HAVE BEEN CONFIRMED BY THE U.S. ARMY CORPS OF ENGINEERS.
3. PROJECT STUDY LIMITS ARE APPROXIMATE.
4. COWARDIN STREAM CLASSIFICATIONS ARE BASED SOLELY ON FIELD OBSERVATIONS. NO FORMAL STREAM ASSESSMENT METHODOLOGY WAS COMPLETED TO DETERMINE THESE COWARDIN CLASSIFICATIONS.

N

0 375 750 1,500

Feet



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Path: Y:\90499999-Southvalley_Business_PKG\GIS\Common Shared Exhibits\39947-WTDM.mxd

Impacts Table						
	Wetland (sq. ft)				Stream (lf)	
	Impact		Conversion		Impact	
Impact ID	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
1						321
2						581
3						1,968
4						164
5						435
6						470
7						1,221
8						206
9						112
10						170
11						399
12						70
13						28
14						286
15						139
16						360
17						359
18						1,396
19						83
20						205
21						65
22						1,425
23						108
24						712
25						44
26						158
27						111
28						741
29		6				
30		516				
31		777				
32		263				
33		517				
34		629				
35		157				
36		12,440				
37		2,101				
38		3,319				
39		224				
40		1,356				
Total	0 sq ft 0.00 ac	22,305 sq ft 0.51 ac	0 sq ft 0.00 ac	0 sq ft 0.00 ac	0 lf	12,337 lf

Legend

- Project Study Limits - 555.3 Acres
- Limits of Disturbance - 394.7 Acres
- Stream Impact
- Wetland Impact
- Culvert
- Ephemeral Stream (R6)
- Intermittent Stream (R4)
- Perennial Stream (R3)
- Permanent Stream Impact
- Palustrine Emergent (PEM) Wetland
- Palustrine Forested (PFO) Wetland
- Palustrine Scrub-Shrub (PSS) Wetland
- Permanent Wetland Impact

NOTES:

1. WATERS OF THE U.S. WITHIN THE PROJECT STUDY LIMITS HAVE BEEN GPS LOCATED BY TIMMONS GROUP.
2. WATERS OF THE U.S. HAVE BEEN CONFIRMED BY THE U.S. ARMY CORPS OF ENGINEERS.
3. PROJECT STUDY LIMITS ARE APPROXIMATE.
4. COWARDIN STREAM CLASSIFICATIONS ARE BASED SOLELY ON FIELD OBSERVATIONS. NO FORMAL STREAM ASSESSMENT METHODOLOGY WAS COMPLETED TO DETERMINE THESE COWARDIN CLASSIFICATIONS.

N

0 375 750 1,500
Feet

Virgil H Goode Hwy
Brick Church Rd
Parkview Dr
Pleasant Breeze

THIS DRAWING PREPARED AT THE CORPORATE OFFICE
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Section 6 – Utility Infrastructure Plan

Assessment of a potential large-scale development site, such as the Southway Business Park, requires evaluation of existing and potential wastewater and potable water infrastructure, as well as natural gas availability to the site. The following content provides information about existing water and wastewater infrastructure as well as proposed water and wastewater infrastructure expansion and improvements that would be required for the Business park development.

Overall, the information contained in the content below is for discussion and planning purposes only.

Section 6.1 – Existing Water Infrastructure

The site selected for the business park is largely undeveloped. As such, the site would require potable water distribution system infrastructure prior to tenant occupation. Despite the current lack of onsite potable water, existing municipal water infrastructure is available within close proximity to the Business park. The site is within the Western Virginia Water Authority (WVWA) service area.

An existing 12" waterline runs along the east side of Rt. 220. This service would need to be tapped and 12" lines extended into the business park for connection. Although pressure in the existing line is adequate for development, duration may not be sufficient to serve fire flow needs for multiple buildings. A more detailed discussion of potential water infrastructure is in Section 6.5 below.

Section 6.2 – Existing Wastewater Infrastructure

Currently, the site under evaluation as a potential Business park is largely undeveloped and contains virtually no sanitary collection system infrastructure. The surrounding area is primarily served by private septic systems. The site does fall within the Western Virginia Water Authority (WVWA) service area.

The WVWA Plateau Plaza Wastewater Treatment Plant is located approximately one-mile south of the business park site. Approximately 6,000 linear feet of force main will need to be constructed along Rt. 220 to tie into this Plateau Plaza system. Additional force main could be constructed to tie into the Town of Rocky Mount system, which has a higher capacity. Discussion of potential wastewater infrastructure is in section 6.6 below.

Section 6.3 – Existing Natural Gas Infrastructure

Per information contained on their website, the portion of the Rt. 220 corridor along which the business park is located is identified as being within the Roanoke Gas service area. Roanoke Gas currently provides service to the area of Roanoke county just north of the Franklin County border.

In addition, the proposed path of the Mountain Valley Pipeline will run along the southwest edge of the north tract. This 42" pipeline would transport natural gas from a transmission system in Wetzel County, WV to markets in the mid- and south-Atlantic regions of the U.S. A tap is being considered for location within the business park site. This tap would potentially bring natural gas service not only to the business park site but to larger portions of Franklin County. The project is currently undergoing Federal regulatory review. Construction for this project could begin in 2017.

Section 6.4 – Existing Electrical Infrastructure

The site is served by American Electric Power. The northern tract of the business park is bisected by a high-voltage transmission line that runs north-south across the parcel. Field survey is currently underway to verify tower locations and sag of the lines. Potential road crossings have been calculated to show that adequate vertical clearance is maintained below the lines.

3-phase power will need to be extended to the site to serve the development needs for the site. 10-15,000 kW service could potentially be needed depending on the nature of the businesses located on the site (i.e. data center vs. distribution center). A substation may be required depending on future load growth.

Section 6.5 –Water Infrastructure Improvements

Two main water infrastructure components are required for any proposed development lacking onsite potable water: a water source and a water distribution system. Before evaluating existing utilities and determining the extent of water infrastructure expansion required to serve a new development an estimate of the overall future water demand must be developed.

Currently, the future water demand associated with the Business park in unknown. Therefore, a conservative estimate must be developed based on conventional water service demands for similar development scenarios. In this case, an average demand of about 250,000 gallons per day (GPD) can be assumed for the first phases of development, with demand eventually climbing to as high as 500,000 GPD depending on use.

A new elevated water storage tank will be required to meet future water demands for the property. This may be located at the northeast corner of the north tract, at the high point of the property approximately elevation 1300'. County-owned and privately owned parcels across Rt. 220 are also being considered for a more regional tank location due to its higher elevation and ability to serve a larger number of parcels. Size of the storage tank could range from 500,000 gallons or higher depending on ultimate service area of the tank.

On-site water distribution system: A new on-site main will be constructed to convey water from the existing water line south to the proposed Business park. It is anticipated that a 12" tee will be located on the existing water line at each of the two new entrances, and 12" waterlines extended into the site. Eventually these 12" lines will be extended along the site access road to create a looped system. Additional water lines will be teed from this trunk line to serve individual building sites within the Business park.

Beyond the new main and the elevated storage tank described above, ancillary water infrastructure components like fire hydrants, gate valves, and air release valves will also be required to ensure adequate water system operation.

Section 6.6 –Wastewater Infrastructure Improvements

As mentioned previously, no sanitary collection system infrastructure exists within the proposed Business park property. Therefore, construction of a new collection system will be required in order to accommodate the industrial/commercial flows associated with future Business park tenants.

Conceptually, two distinct collection system sub-networks would comprise the overall Business park collection system. The primary component of each onsite collection system sub-network will be a pump station, located near the lowest elevation on the tract to maximize collection area. Gravity sewer system will be constructed on-site to drain to the pump station, and force mains would be constructed from the pump station to the force main that will be located in Rt. 220.

In addition to the construction of a pump station and on-site gravity and force mains, approximately 6,000 linear feet of force main will need to be constructed along Rt. 220 from the Plateau Plaza WWTP to the site.

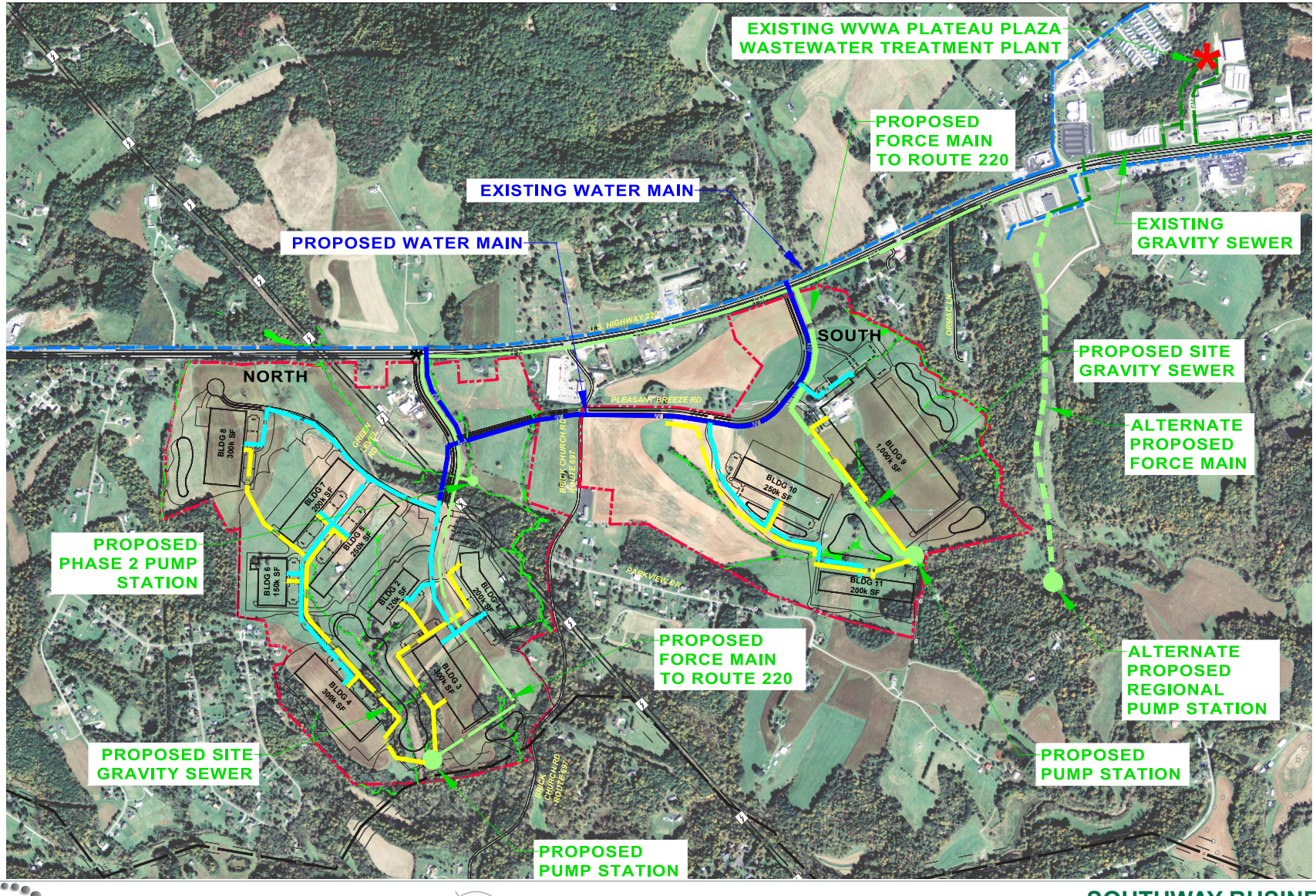
Construction of the wastewater infrastructure is anticipated to be phased. The first phase, currently under design with WVWA, is extension of force main along Rt. 220 across the site frontage. The first

phase of business park construction is to build a pump station to serve each tract. This can be further broken down into construction of only the north tract pump station, if desired until tenants are identified for the south tract. The phase 1 pump station will be designed to pump approximately 50,000-75,000 GPD. It will be located near the low point on the property, the swale at the northwest corner adjacent to the possible future Mountain Valley Pipeline tap location. Refer to Figure 12 for a graphical layout. Approximately 6500-7000 LF of force main will be constructed from the pump station to tie into the off-site force main in Rt. 220. As new buildings are constructed, each individual site will utilize a gravity system to convey wastewater to the pump station.

Likewise, on the southern tract, the first phase will consist of construction of a pump station and approximately 4500 LF of force main to convey wastewater to the off-site force main in Rt. 220. An alternate location for the pump station is to locate it at a lower off-site elevation to serve additional off-site parcels. This alternate location is shown on Figure 12, although final size and location would be determined based on coordination between the county and WVWA to determine how much additional acreage is desired to be served by the pump station.

Section 6.7 – Water and Wastewater Infrastructure Plan Summary

As described above, while infrastructure upgrades and extensions would be required to serve the future tenants of the Business park, much of the construction can be phased to limit capital expenditure until new tenants are established. Refer to Figure 12 below for the Potential Water and Wastewater Utilities Layout. Additional information is provided in Appendix J.



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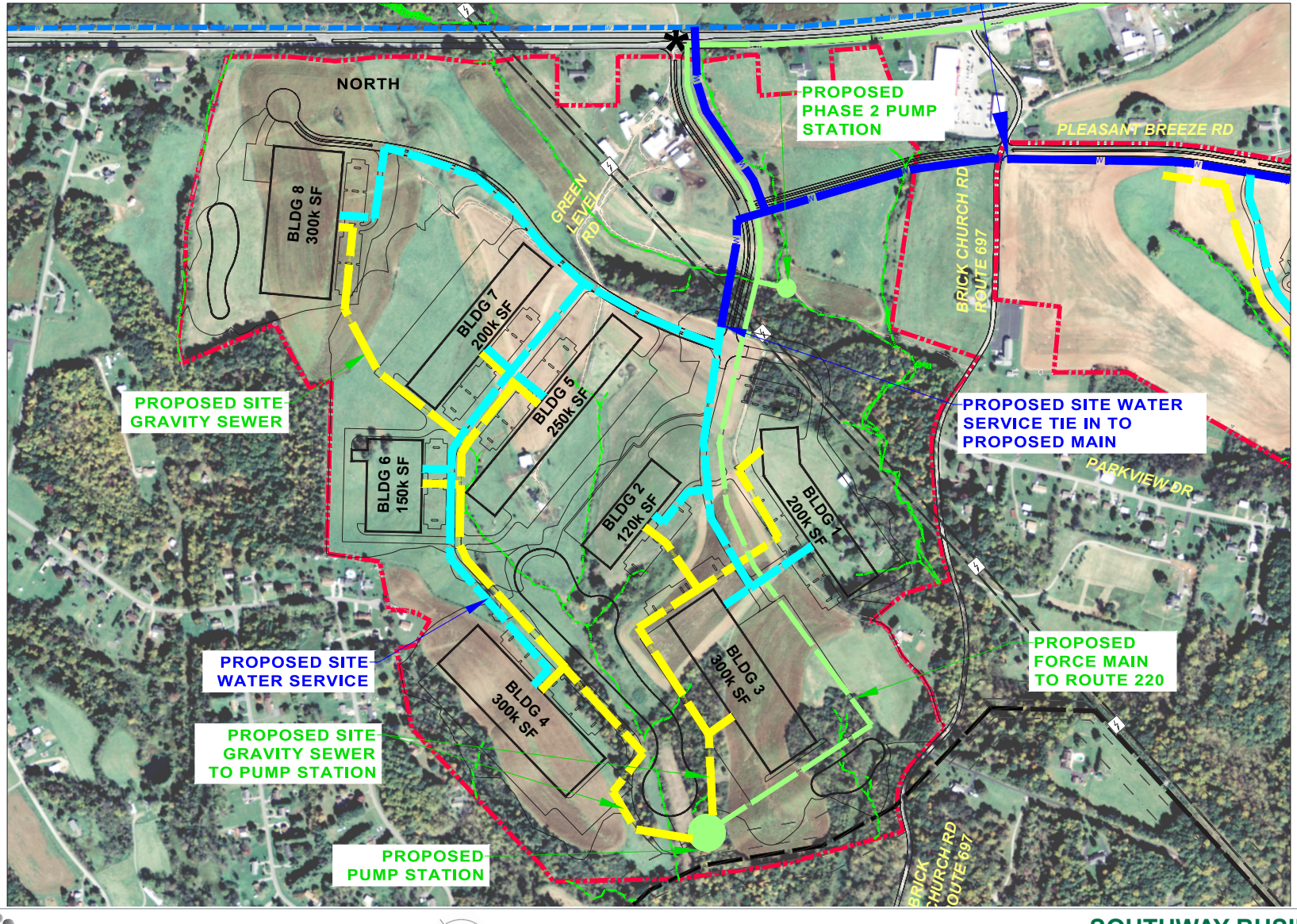
0 600' 1200'

SOUTHWAY BUSINESS PARK

OVERALL UTILITIES PLAN



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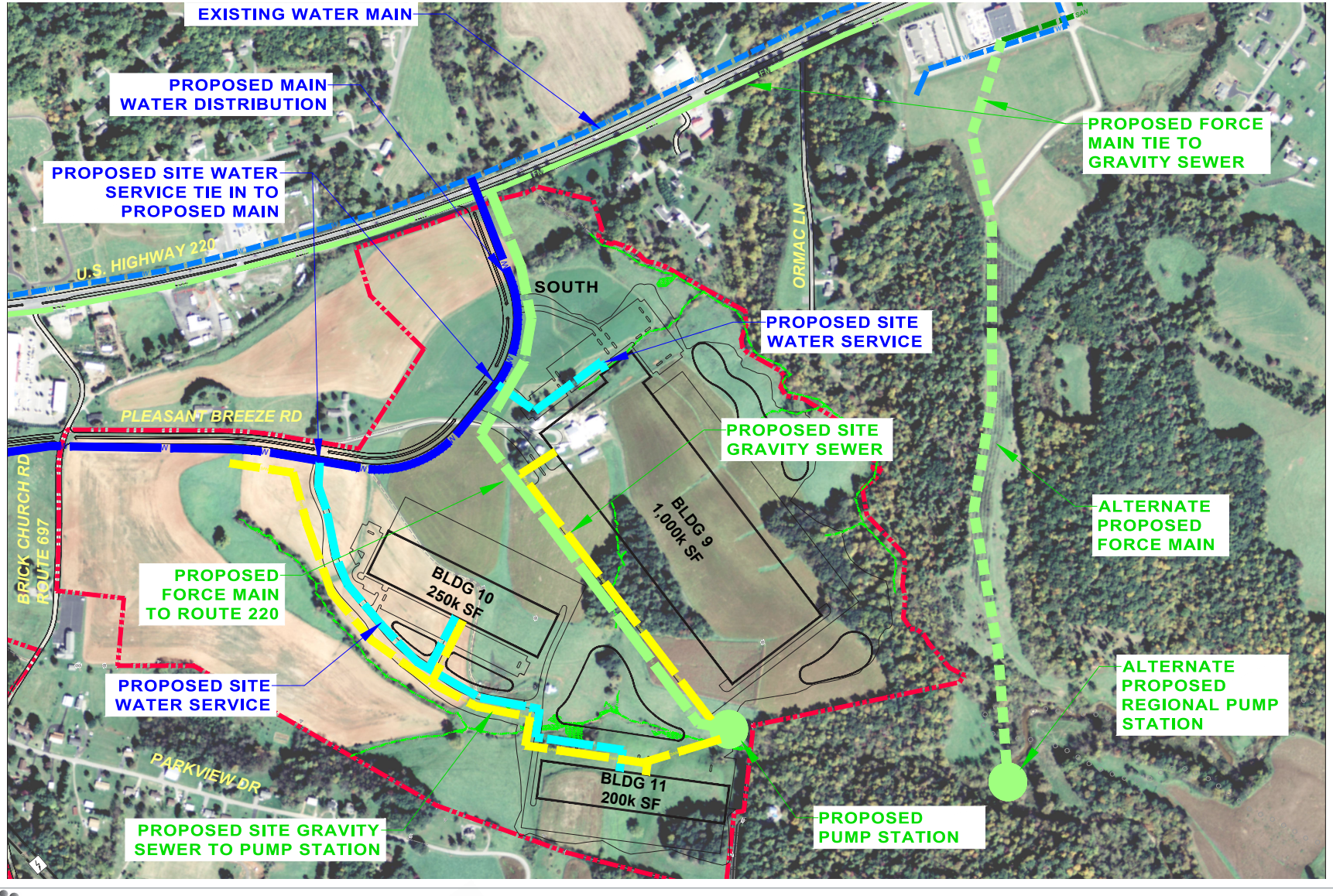
SOUTHWAY BUSINESS PARK

NORTH UTILITIES PLAN



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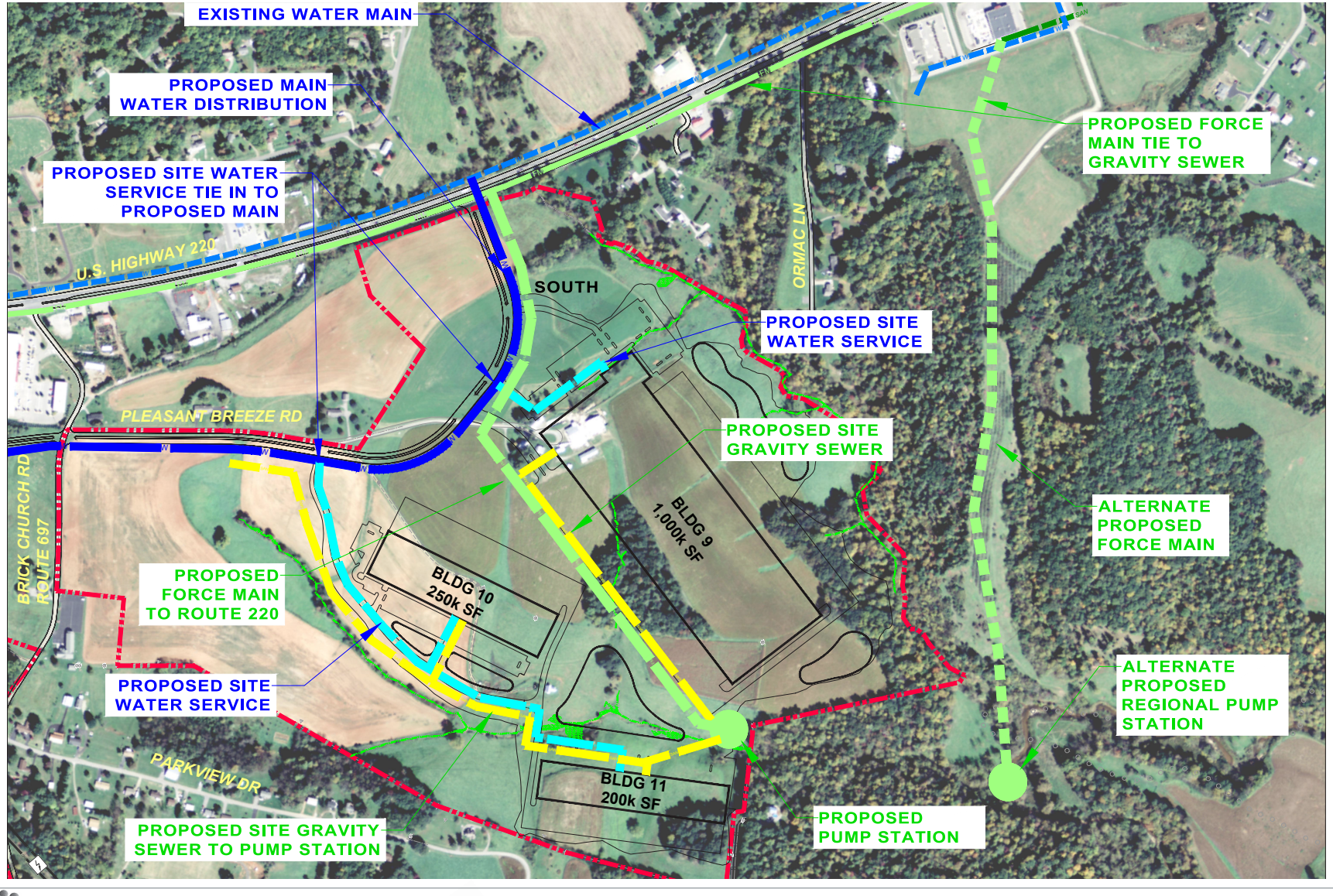
0 300' 600'

SOUTHWAY BUSINESS PARK

SOUTH UTILITIES PLAN



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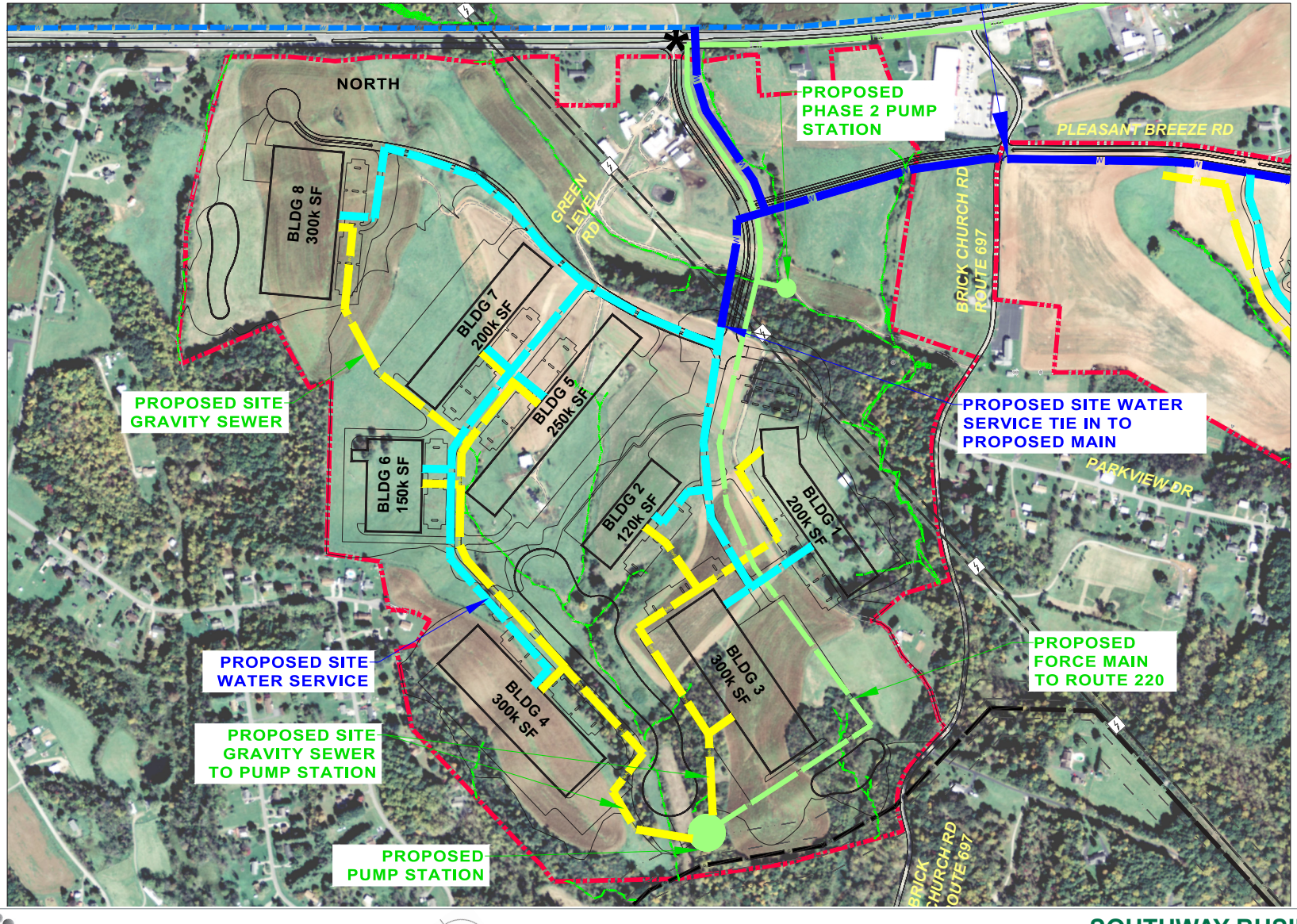
SOUTHWAY BUSINESS PARK

SOUTH UTILITIES PLAN



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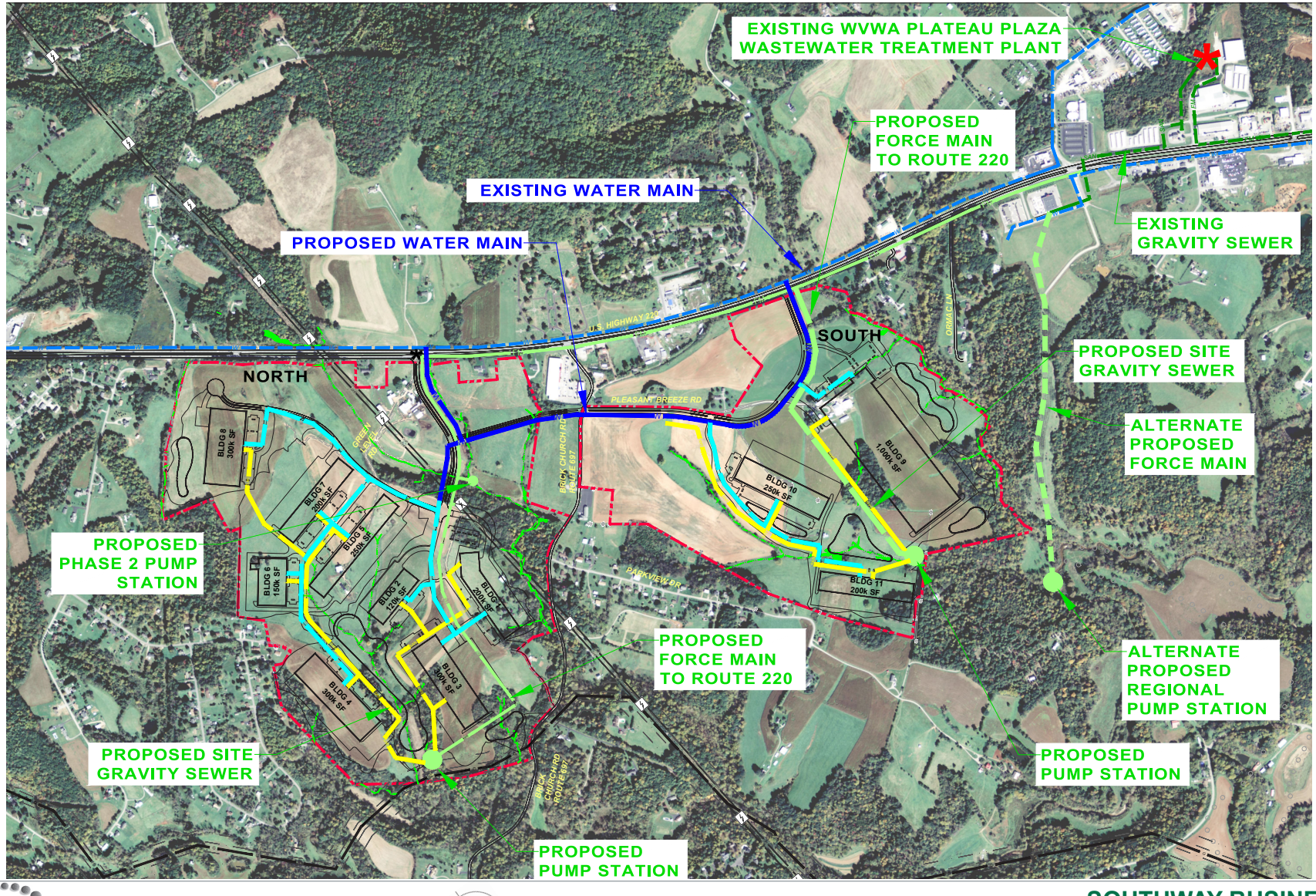
0 300' 600'

SOUTHWAY BUSINESS PARK

NORTH UTILITIES PLAN



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0 600' 1200'

SOUTHWAY BUSINESS PARK

OVERALL UTILITIES PLAN

Section 7 – Transportation Improvements

A detailed Traffic Impact Assessment for the Southway Business Park was prepared and submitted for the VDOT Chapter 527 process. Excerpts from this study are included in this section.

Section 7.1 – Existing Roadway Network

US Route 220 (Virgil H. Goode Highway) is a 4-lane, divided, north-south, rural principal arterial thoroughfare with a posted speed limit of 55 mph that carries approximately 24,000 vehicles per day. US Route 220, which will serve as the main access road to the site, traverses Franklin County from the City of Roanoke (north) to Martinsville (south), passing through Boones Mill and Rocky Mount.

Route 697 (Wirtz Road) is a 2-lane, undivided facility with a posted speed limit of 40 MPH. Wirtz Road is classified as a rural major collector and connects US Route 220 to points east in Franklin County. Wirtz Road has an ADT of approximately 3,600 vehicles and a heavy vehicle percentage of 5%.

Route 697 (Brick Church Road) is a 2-lane, undivided facility with a posted speed limit of 40 MPH. Brick Church Road is classified as rural minor collector that connects US Route 220 to points west in Franklin County. Brick Church Road has an ADT of approximately 1,300 vehicles with limited heavy vehicle traffic.

Route 1210 (Link Street) is a local road that provides access to a residential subdivision and small commercial component with frontage on US Route 220. Route 1210 has no outlet other than US Route 220.

Currently, there are no sidewalks, trails, or bicycle facilities along the US Route 220 corridor in the vicinity of the site. With the development of the site, the Applicant is proposing to construct a 10-foot multi-use path along the Southern and Northern Access roads. It is possible that some internal trips may be made via walking/biking to the to the commercial portions of the business park. However, without sidewalks or trails along the US Route 220 corridor, it is unlikely that a significant portion of trips from outside the site would be made via walking or bicycle.

Franklin County does not provide any transit options and there are no private transit operations along the US Route 220 corridor or within the vicinity of the site. No transit improvements or travel options are planned in the area.

There are no programmed road improvements within the study area beyond those scheduled to be constructed in conjunction with the development of Virginia Marketplace Commercial Center.

Section 7.2 – Anticipated Land Uses

The proposed Southway Business Park consists of 3.27 million square feet of industrial park, 65,000 square feet of retail/commercial use, a recreation complex with 3 fields, and a county park at ultimate buildout. The Southway Business Park trip generation, without internal capture, walking, and transit reductions, is summarized in Table 7-1. This is based on the Development Concept Option 1.

Table 7-1: Trip Generation Summary

Land Use	ITE Code	AMOUNT	UNITS	WEEKDAY						
				ADT	AM PEAK HOUR			PM PEAK HOUR		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Industrial Park	130	3,270,000	SF (GFA)	16,996	1,218	267	1,485	542	2,039	2,581
Shopping Center	820	65,000	SF (GLA)	2,776	39	24	62	116	125	241
Soccer Complex	488	3	Fields	214	2	1	3	36	18	53
County Park	412	45	Acres	103	1	0	1	2	2	4
	TOTAL	**3,335,048**	**-**	**20,088**	**1,259**	**293**	**1,552**	**696**	**2,184**	**2,879**

As indicated in Table 7-1, on a typical weekday, the Southway Business Park development is anticipated to generate approximately 20,088 trips per day.

Section 7.3 – Site Access Alternatives

All access to the Southway Business Park is proposed to come directly from Route 220. Interconnection of the business park to Brick Church Road was not considered as a viable alternative, due to the limitations of the existing intersection of Brick Church Road and Route 220.

The recommended approach to access for the North Region of the business park is to utilize the existing crossover in Route 220 in front of the Southway Farm, improve the turn lanes and signalize the intersection.

The recommended approach to access for the South Region of the business park is to create a new crossover in Route 220 in front of the Fike Farm, add the necessary turn lanes and signalize the intersection.

Movement between the two regions of the park may be provided by a connector road, which could intersect with Brick Church Road. This point of interconnection will also enable flexibility for motorists travelling northbound on Brick Church Road to utilize an alternative access points to connect to Route 220 at future signalized intersections.

In addition to the traditional signalized intersections that are currently proposed, we evaluated several other alternative means to connect the business park entrances with Route 220. These alternatives included:

1. A Diamond Interchange
2. A Single Point Urban Interchange (SPUI)
3. A Directional Flyover Interchange
4. Synchronized Streets Approach.

Because of the need to acquire additional right-of-way, the need to demolish the existing farm buildings to construct the approach embankments and the significant costs associated with constructing the bridge(s), the grade separated interchange options were not pursued further. Copies of the sketches showing each of these three alternatives are attached.

The Synchronized Streets approach was evaluated as a possibility, but was ultimately discarded as well since the existing median island is not wide enough to allow u-turn movements for tractor trailers exiting the site. In order to have entrances that satisfy the Synchronized Streets criteria, the southbound lanes of Route 220 would need to be shifted towards the business park by a minimum of 50' in order to provide the required median widths. This was deemed a cost prohibitive option.

Section 7.4 – VDOT Minimum Spacing Standards

Existing US Route 220 (Virgil H. Goode Highway) is functionally classified as a Rural Principal Arterial in the vicinity of the site and has a posted speed limit of 55 mph.

Table 11 summarizes VDOT's minimum spacing standards for commercial entrances, intersections, and crossovers from the access management guidelines. As indicated in Table 11, for Collectors with a posted speed limit of 50 mph or higher signalized intersections require a minimum spacing of 1,320 feet, unsignalized intersections and full access entrances opposite each other require a minimum spacing of 750 feet, and full access entrances (on the same side of the roadway) require a minimum spacing of 495 feet.

We have also reviewed sight distance for the proposed northern intersection. Route 220 is currently posted at 55 mph. For a 60 mph design speed, 820' of sight distance is required looking to the right (which is the direction of concern for this entrance). Based on the available as-built road profile that we received from VDOT, the sight distance to the right from this entrance is approximately 825' which satisfies current guidelines.

Minimum Spacing Standards for Commercial Entrances, Intersections, and Median Crossovers

Highway Functional Classification	Legal Speed Limit (mph)①	Minimum Centerline to Centerline Spacing (Distance) in Feet			
		Spacing from Signalized Intersections to Other Signalized Intersections ②	Spacing from Unsignalized Intersections & Full Median* Crossovers to Signalized or Unsignalized Intersections& Full Median Crossovers ③	Spacing from Full Access Entrances & Directional Median to Other Full Access Entrances and Any Intersection or Median Crossover ④	Spacing from Partial Access One or Two Way Entrances to Any Type of Entrance, Intersection or Median Crossover ⑤
Principal Arterial	≤ 30 mph 35 to 45 mph ≥ 50 mph	1,050 1,320 2,640	880 1,050 1,320	440 565 750	250 305 495
Minor Arterial	≤ 30 mph 35 to 45 mph ≥ 50 mph	880 1,050 1,320	660 660 1,050	355 470 555	200 250 425
Collector	≤ 30 mph 35 to 45 mph ≥ 50 mph	660 660 1,050	440 440 660	225 335 445	200 250 360
Local Street⑥	Commercial entrance spacing: See Figure 4-11.				

TABLE 2-2 MINIMUM SPACING STANDARDS FOR COMMERCIAL ENTRANCES, INTERSECTIONS AND MEDIAN CROSSOVERS ⑦

Notes:

A. **Intersection –** The intersection spacing applies when two full access entrances are directly across from each other on an undivided highway.
B. **Entrances –** The entrance spacing applies to entrances on the same side of the highway.
C. **Entrance offset –** See Figure 4-6 for Offsetting entrances on opposite sides of a roadway.
D. **Right turn lanes –** When a right turn lane will be installed at an entrance, the length of the turn lane needs to be considered when locating the entrance.
E. **Roundabouts –**
   - Are separated from signalized intersections and unsignalized intersections/median crossovers by the Unsignalized Intersection spacing standard and from full access and partial access entrances by the Partial Access Entrance spacing standard.
   - Are separated from other roundabouts by the Partial Access Entrance spacing standard.
   - Are measured from the outer edge of the nearest inscribed diameter.

* Rev. 7/14

Existing and proposed crossover locations are shown on the attached map.

Section 7.5 – VDOT Road Design Standards

The VDOT road design standards are found in Appendix A of VDOT's *Road Design Manual*. The geometric design standards are determined based on the functional classification of the roadway and the design year ADT volumes. The on-site roadways are assumed to be functionally classified as rural collector roads for the purpose of determining the applicable design standards:

Section 7.6 – Recommended Transportation Network Improvements

In order to accommodate the increased traffic volumes associated with the proposed Southway Business Park development, the following operational and capacity improvements are recommended:

1. Construct a 2-lane Northern Access Road that intersects US Route 220 at the existing crossover near Ellwood Wray Drive, travels through the site, and connects with Brick Church Road at the existing intersection of Pleasant Breeze Road (proposed Eastern Access Road). The following improvements were assumed at that US Route 220/Northern Access Road intersection.

    a. An eastbound right turn lane on US Route 220 (200' x 200');
    b. A westbound left turn lane on US Route 220 (200' x 200'); and
    c. A northbound approach of Northern Access Road consisting of a left turn lane, a left-through lane, and a right turn lane

2. Construct a 2-lane Southern Access Road that intersects US Route 220 at a new crossover located approximately 1,320 feet east of the existing US Route 220/Link Street intersection. The Eastern Access Road extends from the proposed intersection with US Route 220 to Brick Church Road and replaces the existing Pleasant Breeze Road to connect across from the proposed Northern Access Road. The following improvements were assumed at that US Route 220/Southern Access Road intersection.

    a. An eastbound right turn lane on US Route 220 (200' x 200');
    b. A westbound left turn lane on US Route 220 (200' x 200');
    c. A northbound approach of Southern Access Road to have a left turn lane and dual right turn lanes

3. Upgrade the existing intersection of Brick Church Road to accommodate the proposed eastbound leg of the Northern Access Road and the reconstruction of the westbound Pleasant Breeze Road into the Southern Access Road. All four (4) legs will utilize single-lane approaches.

4. Install two (2) traffic signals; one (1) at the proposed intersection of US Route 220 and the Western Access Road and one (1) at the proposed intersection of US Route 220 and the Eastern Access Road.

5. Re-time/re-phase the existing traffic signal at the US Route 220/Wirtz Road intersection.

For the future 2036 and 2042 Build analyses, the improvements identified above were assumed to be in place at the buildout of the Southway Business Park development in 2036.

Section 7.7 – Trip Reduction Strategies

The County may consider developing a Travel Demand Management (TDM) program to reduce the impacts of the site traffic on the surrounding network. TDM programs can be targeted to an entire area, such as a city or county, or a small local area, such as an employment park or a single site.

TDM strategies attempt to reduce congestion and air pollution by influencing changes in travel behavior. The goal is to reduce commuting trips in a particular area during a particular time of the day. Rather than building new roads, widening existing roads, installing traffic signals, or improving signal timings, TDM increases the passenger capacity of the transportation system by reducing the number of vehicles on the roadway during peak travel times. This is accomplished through a variety of strategies aimed at influencing mode choice, frequency of trips, trip length, and routes traveled.

TDM alternatives related to mode choice can include the following:

- Ridesharing such as carpools and vanpools;
- Public and private transit (including buses and private shuttles); and
- Non-motorized travel such as bicycling or walking.

TDM alternatives can also focus on the frequency of trips and the times during which those trips occur. Some alternatives to consider include:

- Compressed work weeks, in which employees work a full 40-hour work week in fewer than the typical 5 days (e.g., four 10-hour days); and
- Flexible work schedules, which allow employees to shift their work start and end times (and thus travel times) to less congested times of the day

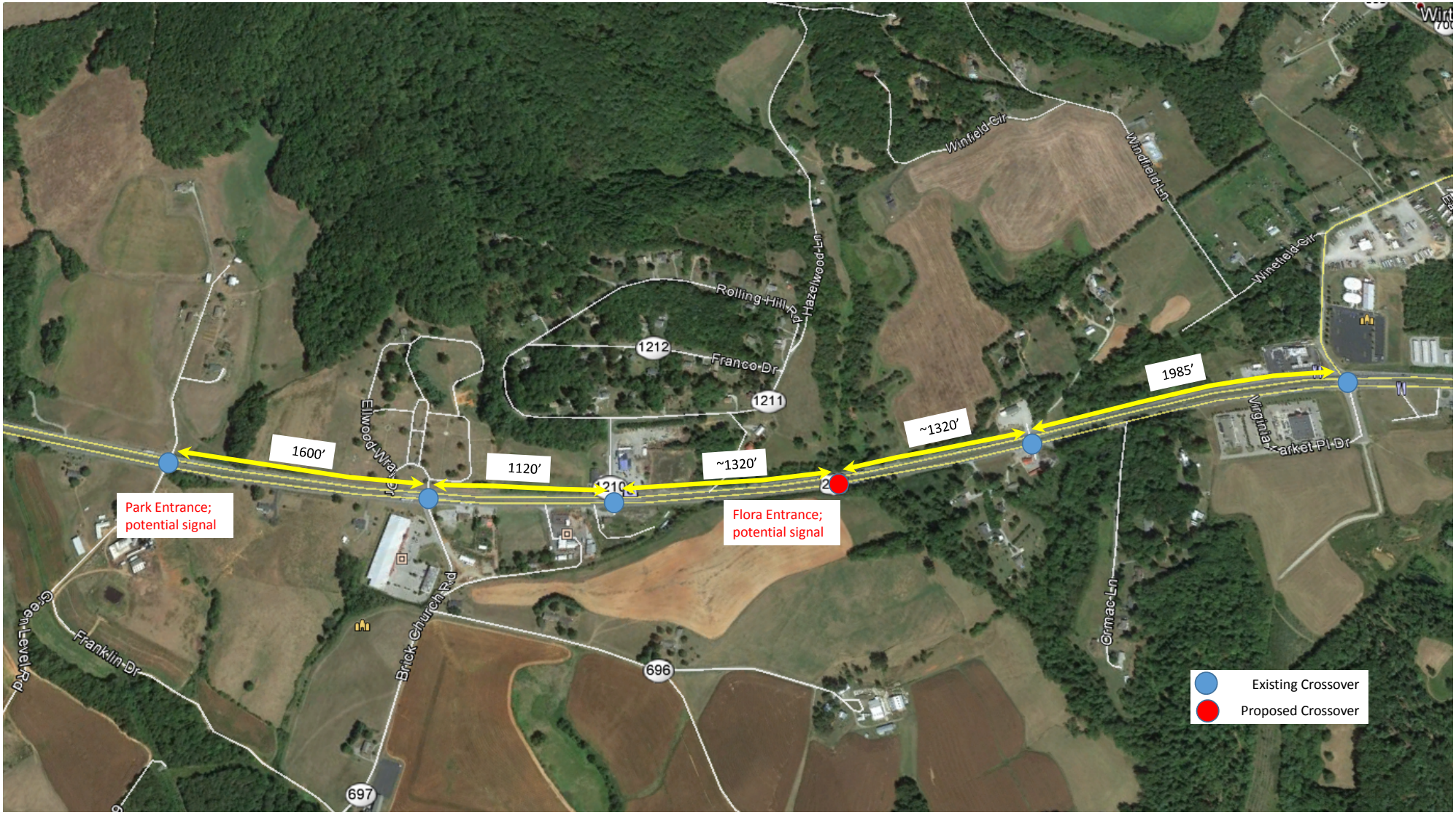
Lastly, TDM strategies can also include improving existing alternative modes of transportation and/or making them more attractive through incentive-based programs. The following are examples of TDM strategies:

- Improvements to existing transportation services, such as vanpool programs, or expanded bus routes, or increased bus frequency;

- Financial/time incentives, for example, preferential parking for ridesharers or subsidies for transit riders;
- Parking management programs including parking supply, price, and demand;
- Employer support measures, such as employee transportation coordinators, on-site transit pass sales, on guaranteed ride home programs; and
- Marketing and promotion, such as transportation fares and periodic prize drawings for ridesharers.

Most TDM programs include a combination of multiple strategies that are appropriate for the area and population in which they are to be implemented. Several of the strategies that could be considered for this project/area include carpools, vanpools, and staggered work hours.

The key to maximizing the effectiveness of a TDM program is to determine what strategies the employees at a particular site would be able to use and build the program around incentives that most strongly encourage the use of those modes.



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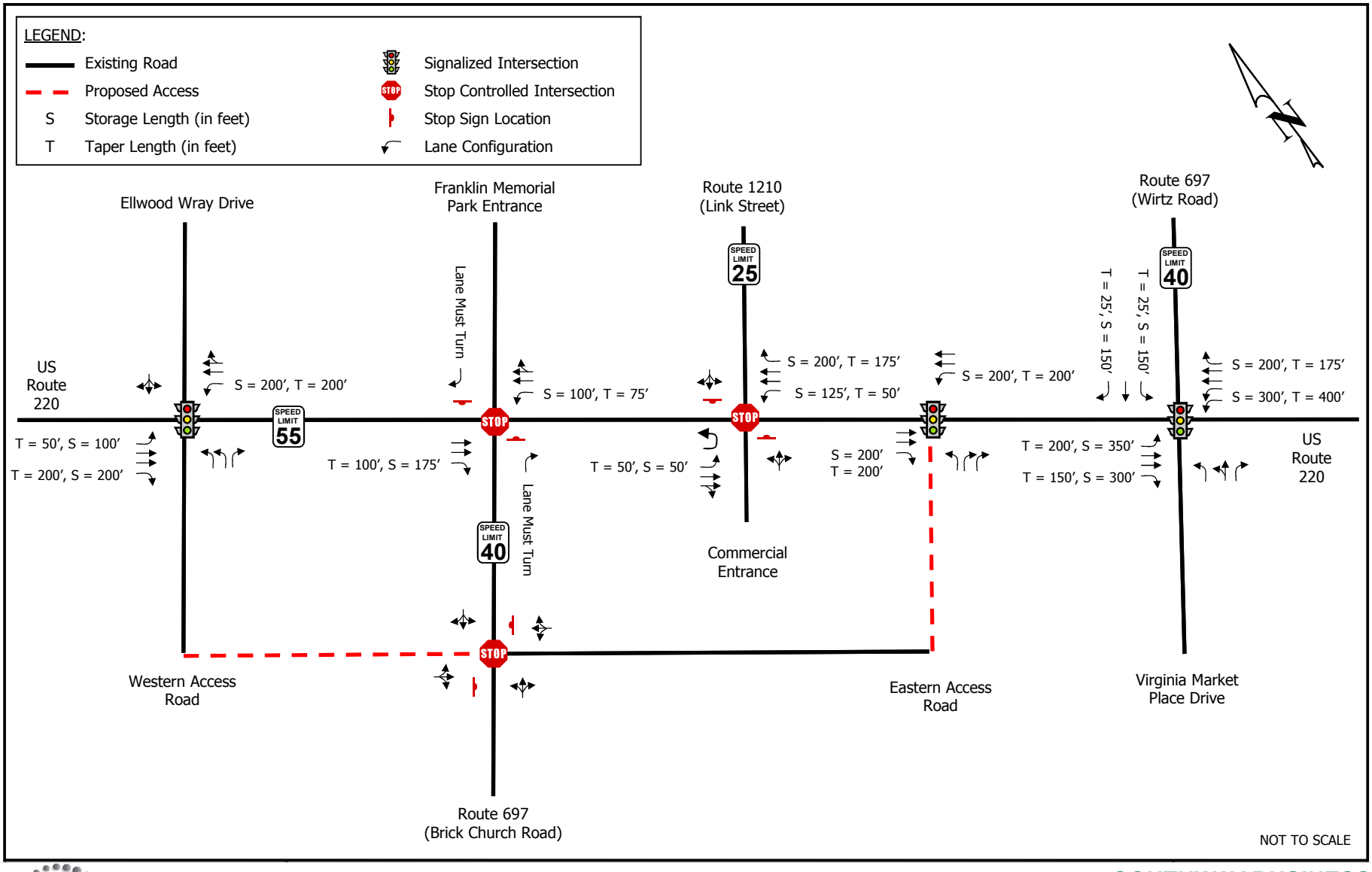
SOUTHWAY BUSINESS PARK

INTERSECTION SPACING MAP



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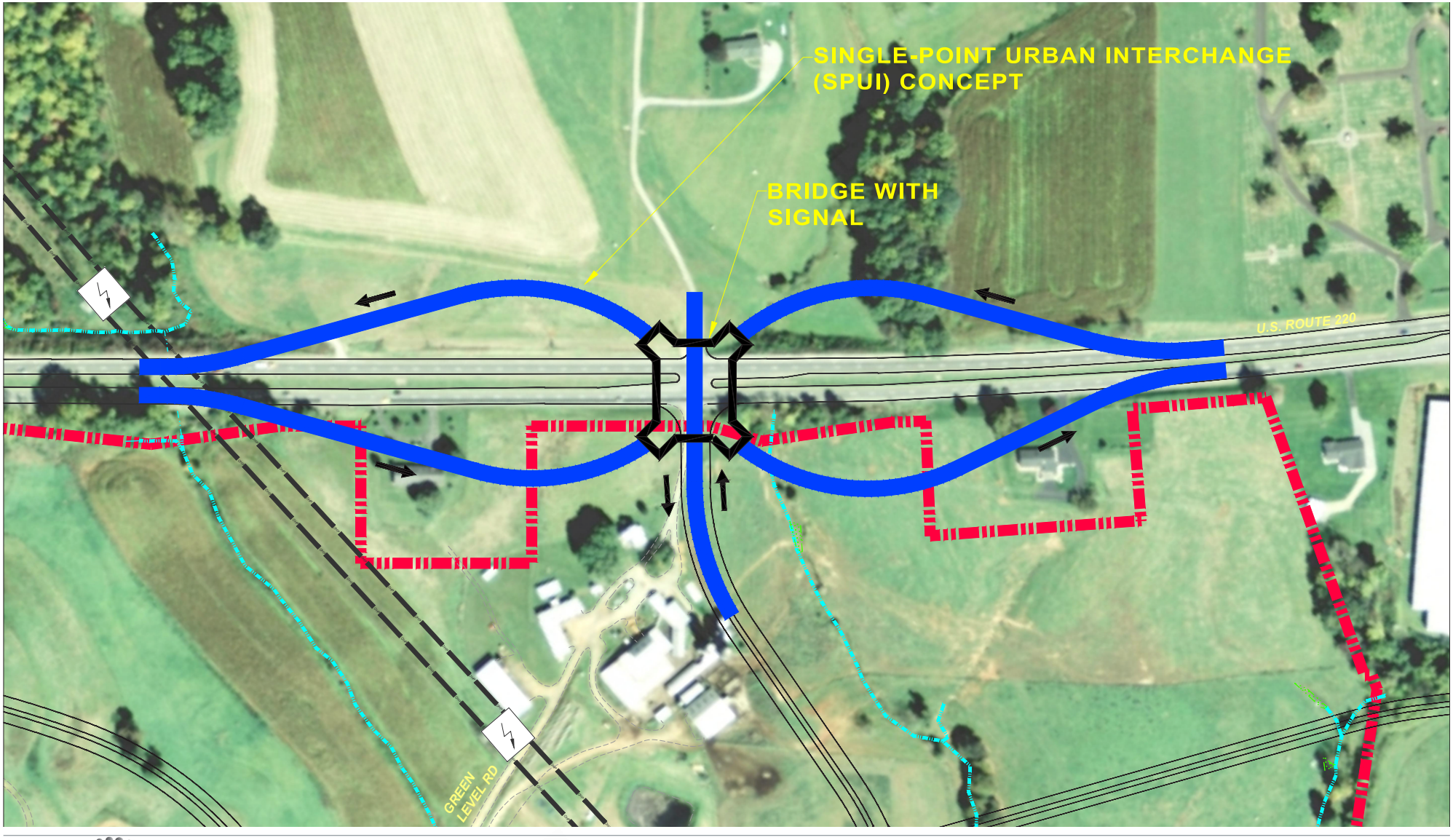
SOUTHWAY BUSINESS PARK

PROPOSED INTERSECTION IMPROVEMENTS



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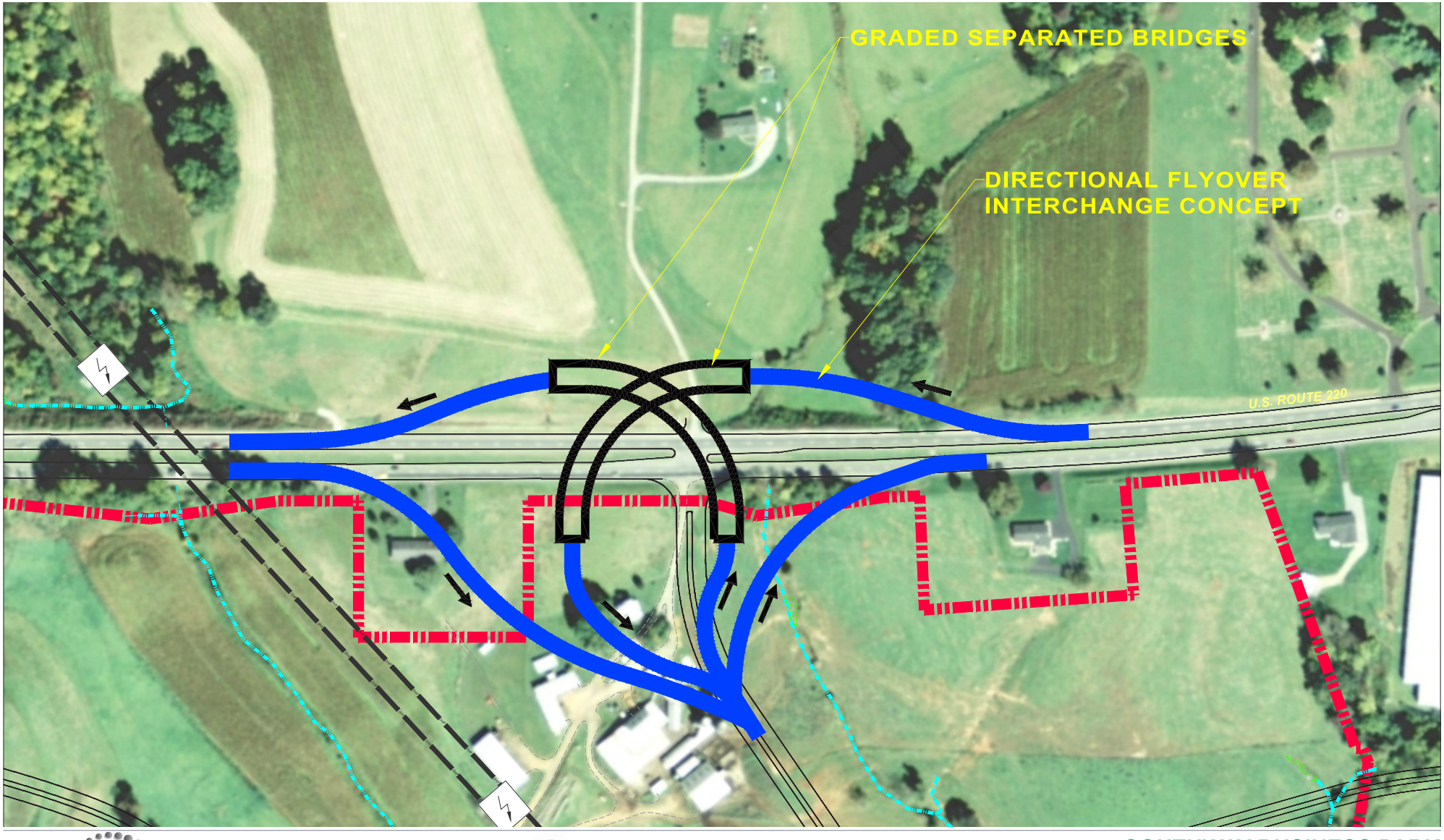
0 120' 240'

SOUTHWAY BUSINESS PARK
SINGLE POINT URBAN
INTERCHANGE CONCEPT



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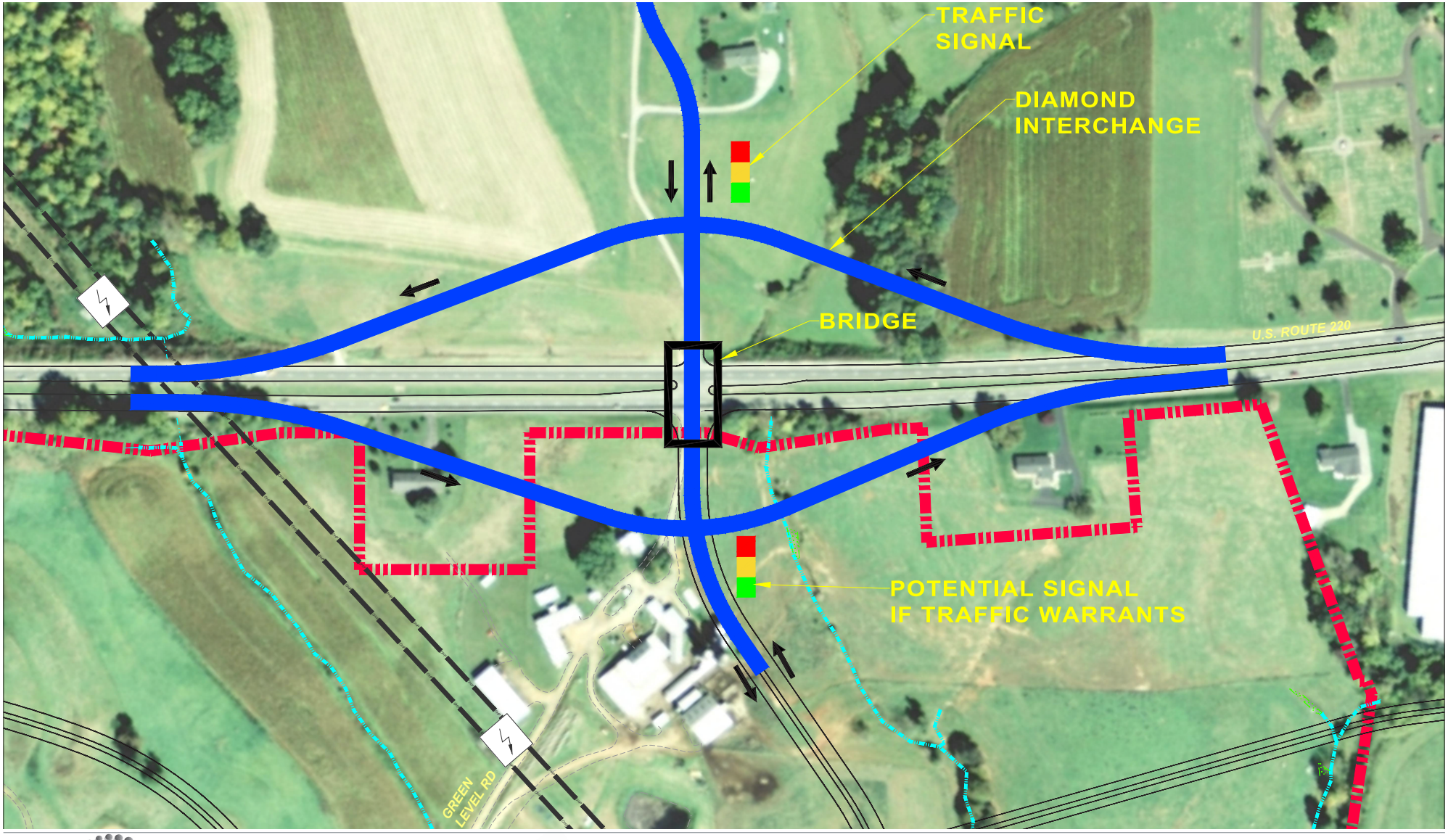
0 120' 240'

SOUTHWAY BUSINESS PARK
DIRECTIONAL FLYOVER INTERCHANGE
CONCEPT



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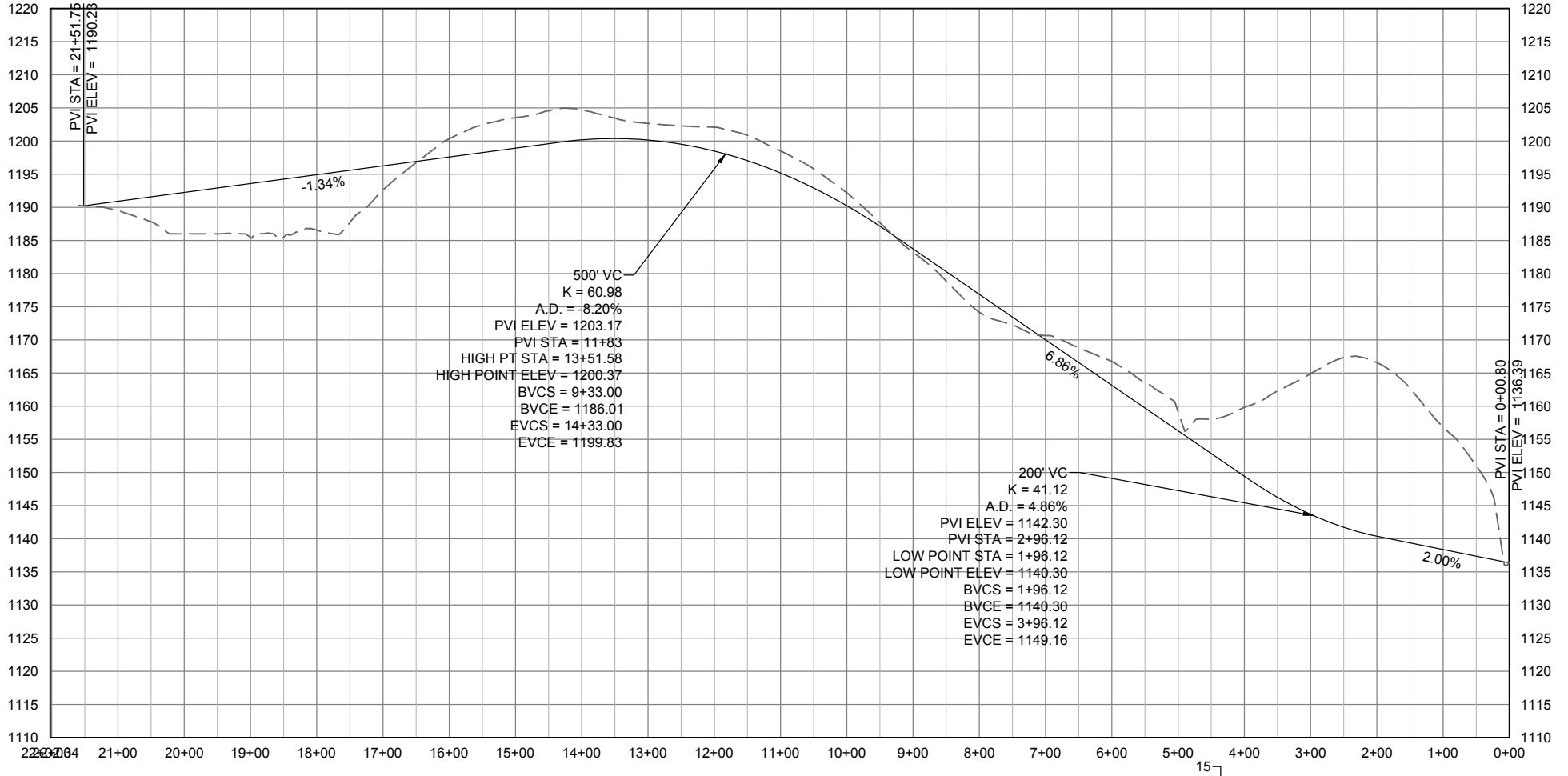
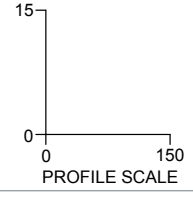
0 120' 240'

SOUTHWAY BUSINESS PARK

DIAMOND INTERCHANGE CONCEPT



ENTRANCE ROAD OPTION B2- PROFILE



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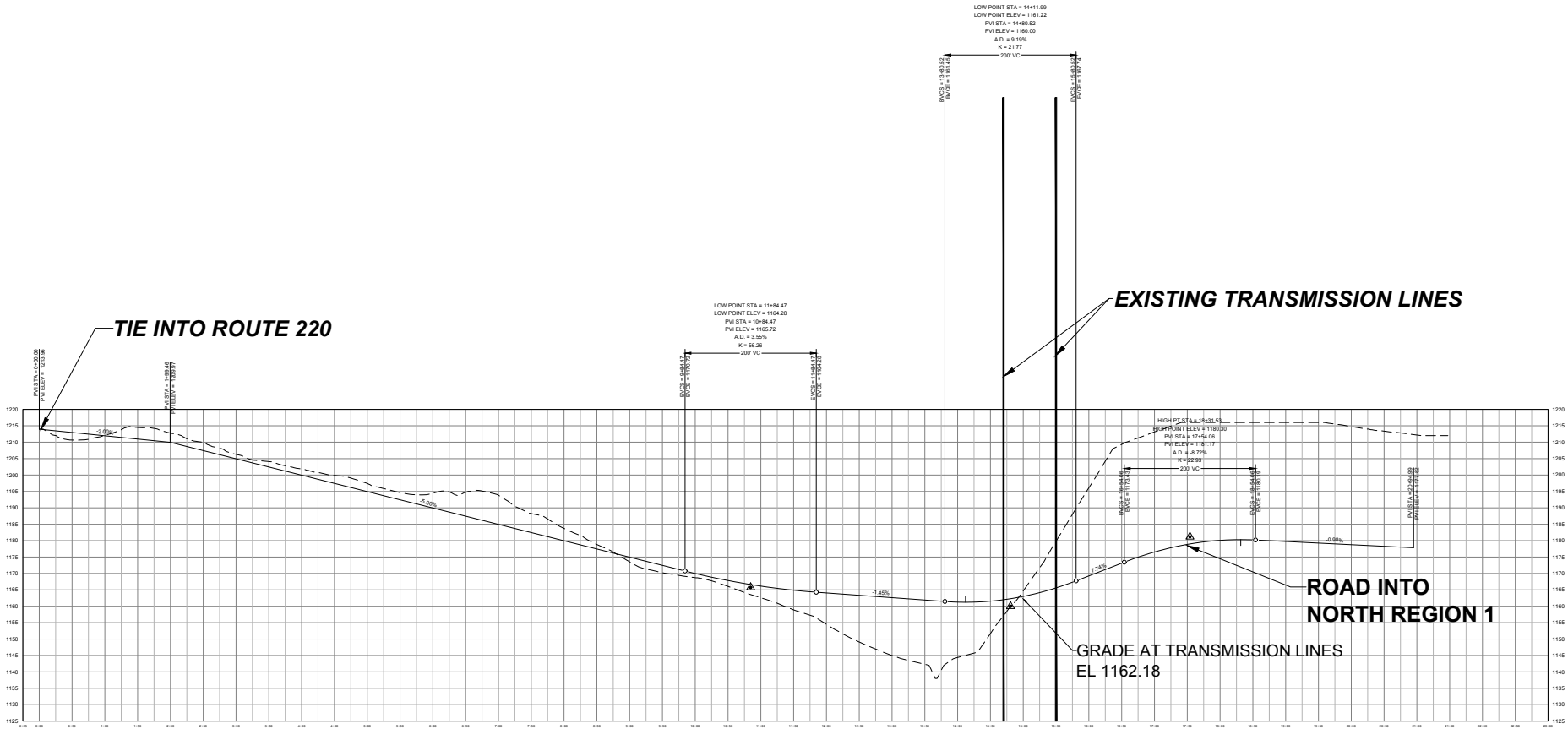
SOUTHWAY BUSINESS PARK
SOUTH ENTRANCE ROAD PROFILE



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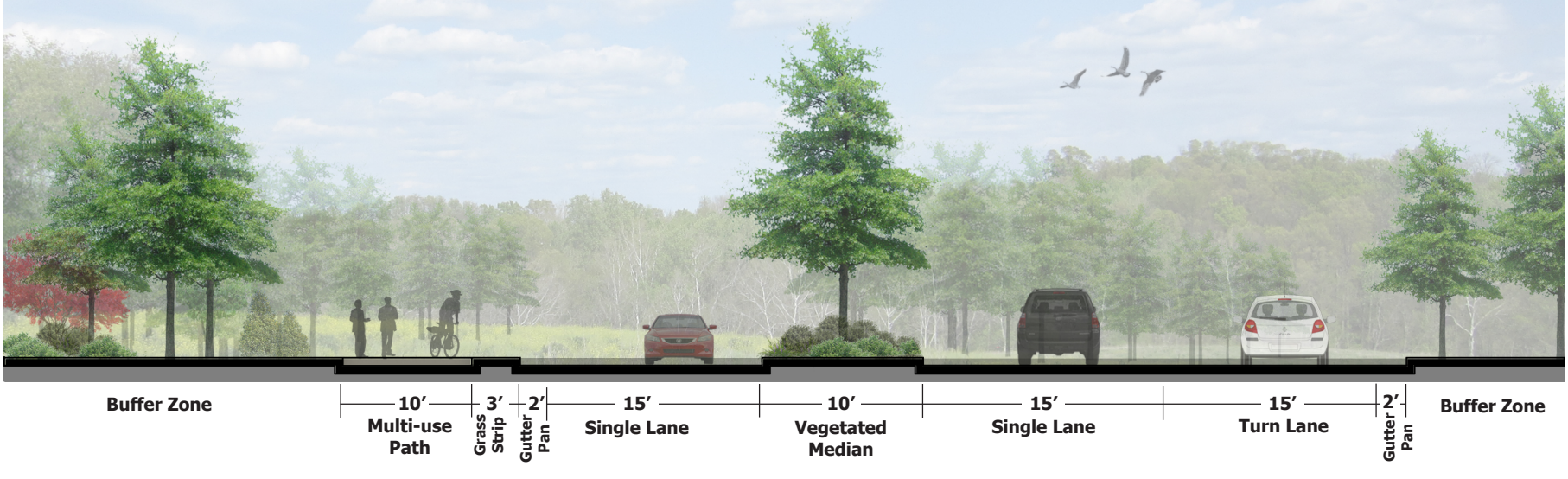
SOUTHWAY BUSINESS PARK

NORTH ENTRANCE ROAD PROFILE



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SOUTHWAY BUSINESS PARK

TYPICAL ROAD SECTIONS

Section 8 – Public Space Planning

The Master Plan for Southway Business Park has always considered the public space to be a critical component of the plan, both as a differentiator for the business park and as a benefit for the citizens of Franklin County.

Section 8.1 – Commercial Parcel(s)

The property on the east side of the entrance road and north of the east/west connector road is an ideal location for small commercial development to service park visitors and businesses. It is visible from Route 220 and will be easily accessible through the business park roads. It is in an ideal location for commercial businesses that provide services for the employees of the park in addition to the general drive-by public. Parking, stormwater management and a small sanitary sewer pump station will be required to serve this commercial property, and there appears to be adequate space on the parcel to accommodate all of these needs independently from the rest of the Southway Business Park infrastructure.

Section 8.2 – Market Space

Two of the goals for public spaces with this project were to provide a space for an agricultural market and a way to potentially re-use some of the existing Southway Farms buildings. The plan envisioned for the Market Space area is to construct a parking area to support events, construct a pavilion style facility that could serve as a farmers market, auction house or other event functions and re-purpose some of the existing farm outbuildings for other uses, potentially even for historic preservation purposes.

It is envisioned that the main house would be re-purposed as a visitors center and/or management building for the Southway Business Park.

Section 8.3 – Athletic Facilities

Franklin County expressed a desire to have three athletic fields associated with this development. They are located on the South side of the project, adjacent to the Brick Church. A 350+/- car parking lot is placed adjacent to these fields, which is more than adequate capacity to support game day

crowds. The placement of the lot also provides convenient access for players, coaches and spectators.

Section 8.4 – Amphitheatre / Performance Space

An amphitheater is located adjacent to the same 350+/- car parking lot that supports the athletic fields. The amphitheater is sited in a manner that allows us to take advantage of the existing grades in the area, basically allowing seating to be installed terracing down the hill. A covered platform or stage will be provided at the lower end of the bowl, allowing good sightlines for the spectators.

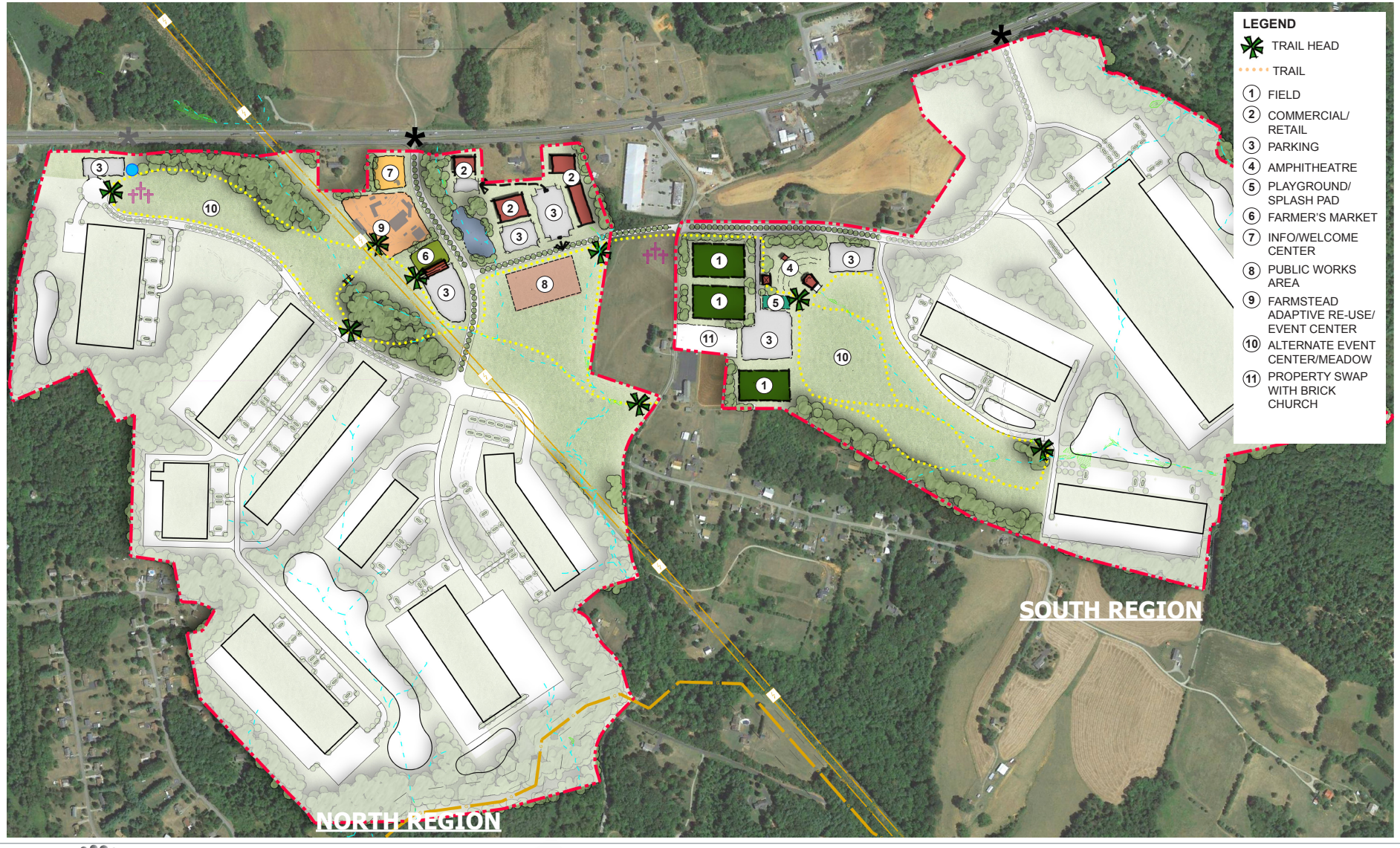
Section 8.5 – Passive Recreation and Trails

Trails wind all through the public spaces, connecting the North and South regions along the connector road as well. Several trail heads are placed throughout the park, providing parking options to access the trails at several locations.

Some areas of the public space that are currently in cultivation are proposed to be re-forested.

Section 8.6 – Public Service Facilities

Space for a public safety facility (modeled on a fire station design), a public works area and a small park and ride lot is shown in the area south of the Commercial Area. The location was chosen, in part, for its ability to provide a separated area for governmental functions, its ability to share access to the same sanitary sewer lift station as the commercial development and for the convenient access to the public roads that facilities of this type need.



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0 400' 800'

SOUTHWAY BUSINESS PARK

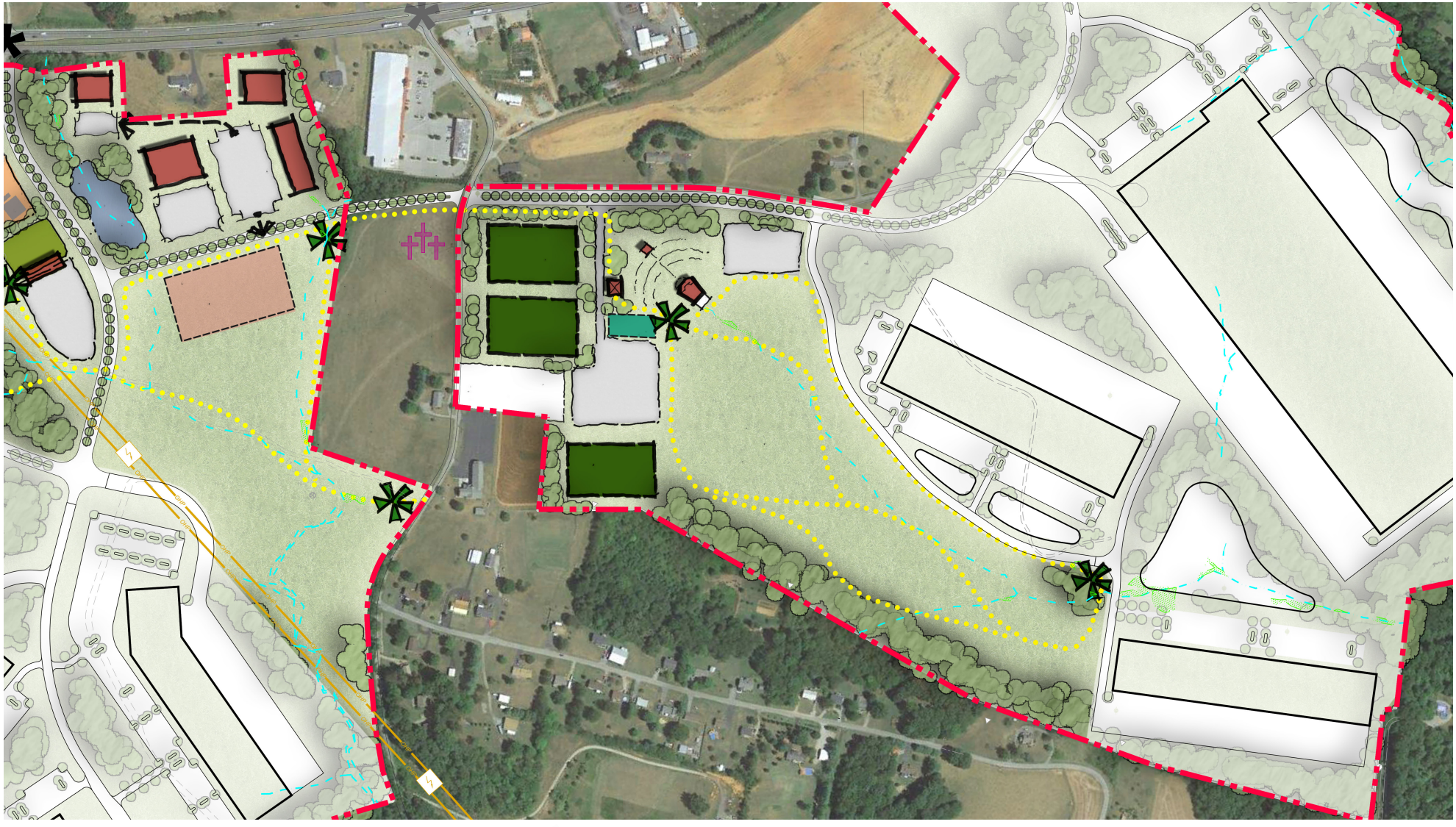
OVERALL PUBLIC SPACE PLAN

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

0 200' 400'

SOUTHWAY BUSINESS PARK

NORTH PUBLIC SPACE PLAN



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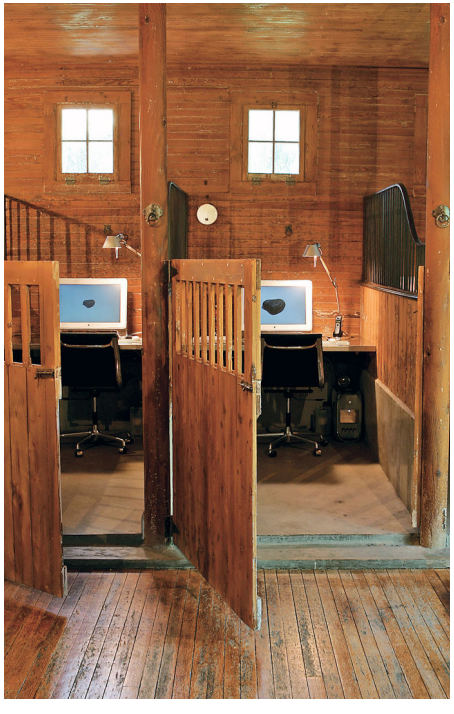
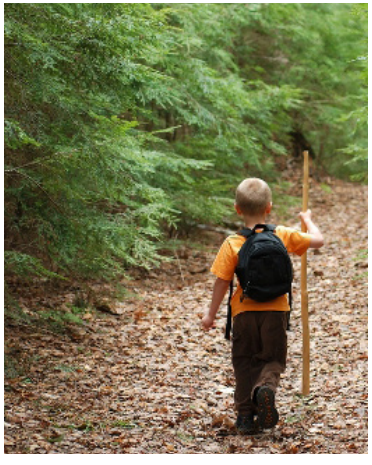
0 200' 400'

SOUTHWAY BUSINESS PARK

SOUTH PUBLIC SPACE PLAN





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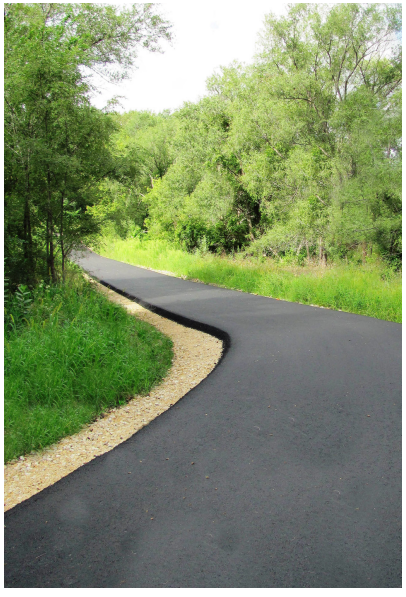
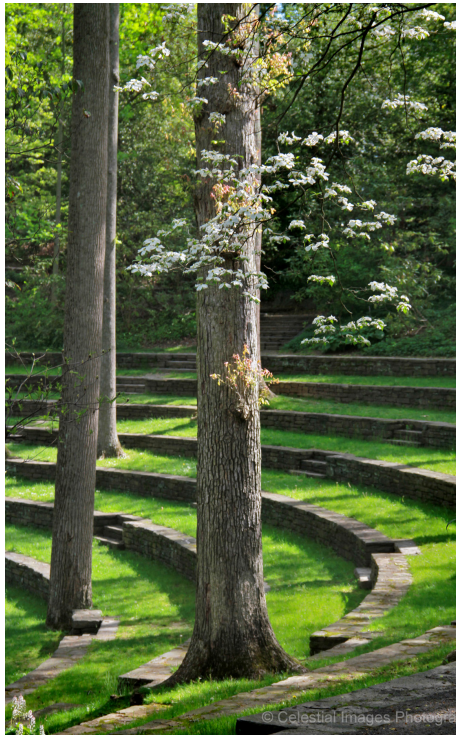
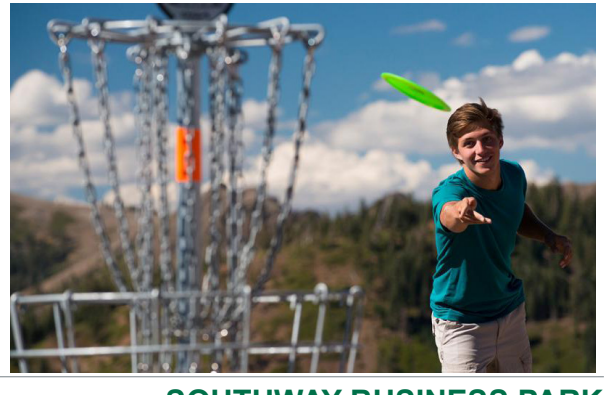
SOUTHWAY BUSINESS PARK

NORTH INSPIRATION IMAGES







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SOUTHWAY BUSINESS PARK
SOUTH INSPIRATION IMAGES

Section 9 – New Zoning Category / Design Guidelines

We understand that the Comprehensive Plan is being updated to accommodate the creation of the Southway Business Park and that a new zoning district is being planned to provide guidelines for development within the park.

We recommend that a complementary set of design guidelines be prepared that highlight requirements of the ordinance, give graphical representations of the desired look of the park and lay out any procedural guidelines (i.e. design review boards) that may be required for development in the business park.

Section 10 – Development Costs

We have reviewed the projected development costs based on the implementation of the Option 1 plan. This cost projection is based on many assumptions, including size and shape of buildings, amount of parking and service areas, relative elevations of buildings and utility usage. We have attempted to be conservative in our assumptions, but we recommend that these cost projections be updated as prospects come in with specific needs and the plan is adjusted accordingly.

Section 10.1 – Projected Infrastructure Costs

We anticipate the following construction costs and project costs for the development of the Southway Business Park, Concept 1.

- North Region: **$21,500,000**
- South Region: **$13,000,000**
- Route 220 Improvements: **$2,600,000**
- Public Space Improvements: **$9,200,000** (does not include cost of Public Safety Bldg.)

In addition to the above costs, there will be costs associated with the mitigation of the on-site streams impacted by construction. For budgeting purposes, we recommend carrying allowances of $3,000,000 for the North Region and $1,400,000 for the South Region to cover the costs of mitigation. Please note that these numbers could vary significantly based on the County's ultimate approach to mitigation.

Section 10.2 – Projected Costs for Road Infrastructure Phasing

The anticipated construction costs and other project costs for the projected four phases of roadway work (per the included map) is as follows:

- South Region Road Segment 1 (including Rte 220 entrance improvements): **$3,500,000**
- South Region Road Segment 2: **$1,500,000**
- South Region Road Segment 3: **$1,200,000**
- North Region Road Segment (including Rte 220 entrance improvements): **$3,000,000**

Please note that these roadway numbers are <u>included</u> in the overall project costs given in Section 10.1

Section 10.3 – Projected Cost Ratios

The following general cost ratios apply to the two phases of development for Concept Plan 1, based on the projected costs for development:

- North Region – $110,000/acre or $13/s.f of potential business space
- South Region – $115,000/ac or $10/s.f of potential business space or

If the full amount of allowance for mitigation is added to the projected development costs, the ratios revise to the following:

- North Region – $117,000/acre or $13.70 /s.f of potential business space
- South Region – $126,000/ac or $10.83 /s.f of potential business space or

TIMMONS GROUP

Southway Business Park - Opinion of Probable Construction Costs for Site Development
Location: Franklin County, VA
Date: 08/03/2016

NORTH REGION - OPINION OF PROBABLE CONSTRUCTION COSTS					
ITEM NUMBER	ITEM	QUANTITIES	UNIT	UNIT COST	TOTAL COST
1	Mobilization, Clearing, E&S Control	209	AC	$4,000.00	$836,000.00
2	Earthwork (Cut - Fill) - Region I	1,438,336	CY	$3.00	$4,315,008.00
3	Earthwork (Cut - Fill) - Region II	989,160	CY	$3.00	$2,967,480.00
4	Earthwork (Cut - Fill) - Region III	448,253	CY	$3.00	$1,344,759.00
5	Earthwork (Cut - Fill) - Region IV	198,600	CY	$3.00	$595,800.00
6	Rock Allowance	10,000	CY	$50.00	$500,000.00
7	Retaining Walls	14,000	SF	$25.00	$350,000.00
8	Storm Sewer System	2,000	LF	$130.00	$260,000.00
9	Regional (BMP) Stormwater Basins	1	LS	$200,000.00	$200,000.00
10	Roadway	10,500	LF	$385.00	$4,042,500.00
11	Multi- Use Trail (10' wide asphalt)	10,500	LF	$44.00	$462,000.00
12	Water System	8,600	LF	$40.00	$344,000.00
13	On-site Gravity Sanitary System	9,100	LF	$70.00	$637,000.00
14	Sanitary Pump Station	1	EA	$250,000.00	$250,000.00
15	Sanitary Sewer Force Main	12,400	LF	$60.00	$744,000.00
16	Roadway Landscaping	1	LS	$75,000.00	$75,000.00
17	Buffer Plantings	1	LS	$100,000.00	$100,000.00
18	Topsoil & Seeding	110	AC	$3,000.00	$330,000.00
Subtotal Site Construction Cost					$17,517,547.00
Add Project Costs (25%)					$4,379,386.75
Wetland Impact Mitigation Cost for WOUS Impacts (Budget Only!!)		7642.0	L.F.	$400.00	$3,056,800.00
Total Project Cost					**$24,953,733.75**

SOUTH REGION - OPINION OF PROBABLE CONSTRUCTION COSTS					
ITEM NUMBER	ITEM	QUANTITIES	UNIT	UNIT COST	TOTAL COST
1	Mobilization, Clearing, E&S Control	125.0	AC	$4,000.00	$500,000.00
2	Earthwork (Cut - Fill)	1,746,820	CY	$3.00	$5,240,460.00
3	Rock Allowance	10,000	CY	$50.00	$500,000.00
4	Retaining Walls	12,000	SF	$25.00	$300,000.00
5	Storm Sewer System	1,500	LF	$130.00	$195,000.00
6	Regional (BMP) Stormwater Basins	1.0	LS	$200,000.00	$200,000.00
7	Roadway	5,300	LF	$385.00	$2,040,500.00
8	Multi- Use Trail (10' wide asphalt)	5,300	LF	$44.00	$233,200.00
9	Water System	3,700	LF	$40.00	$148,000.00
10	On-site Gravity Sanitary System	4,000	LF	$70.00	$280,000.00
11	Sanitary Pump Station	1	EA	$250,000.00	$250,000.00
12	Sanitary Sewer Force Main	4,800	LF	$45.00	$216,000.00
13	Roadway Landscaping	1	LS	$75,000.00	$75,000.00
14	Buffer Plantings	1	LS	$100,000.00	$100,000.00
15	Topsoil & Seeding	55	AC	$3,000.00	$165,000.00
Subtotal Site Construction Cost					$10,443,160.00
Add Project Costs (25%)					$2,610,790.00
Wetland Impact Mitigation Cost for WOUS Impacts (Budget Only!!)		3299.0	L.F.	$400.00	$1,319,600.00
Wetland Impact Mitigation Cost for Wetland Impacts (Budget Only!!)		0.51	AC.	$120,000.00	$61,200.00
Total Project Cost					**$14,434,750.00**

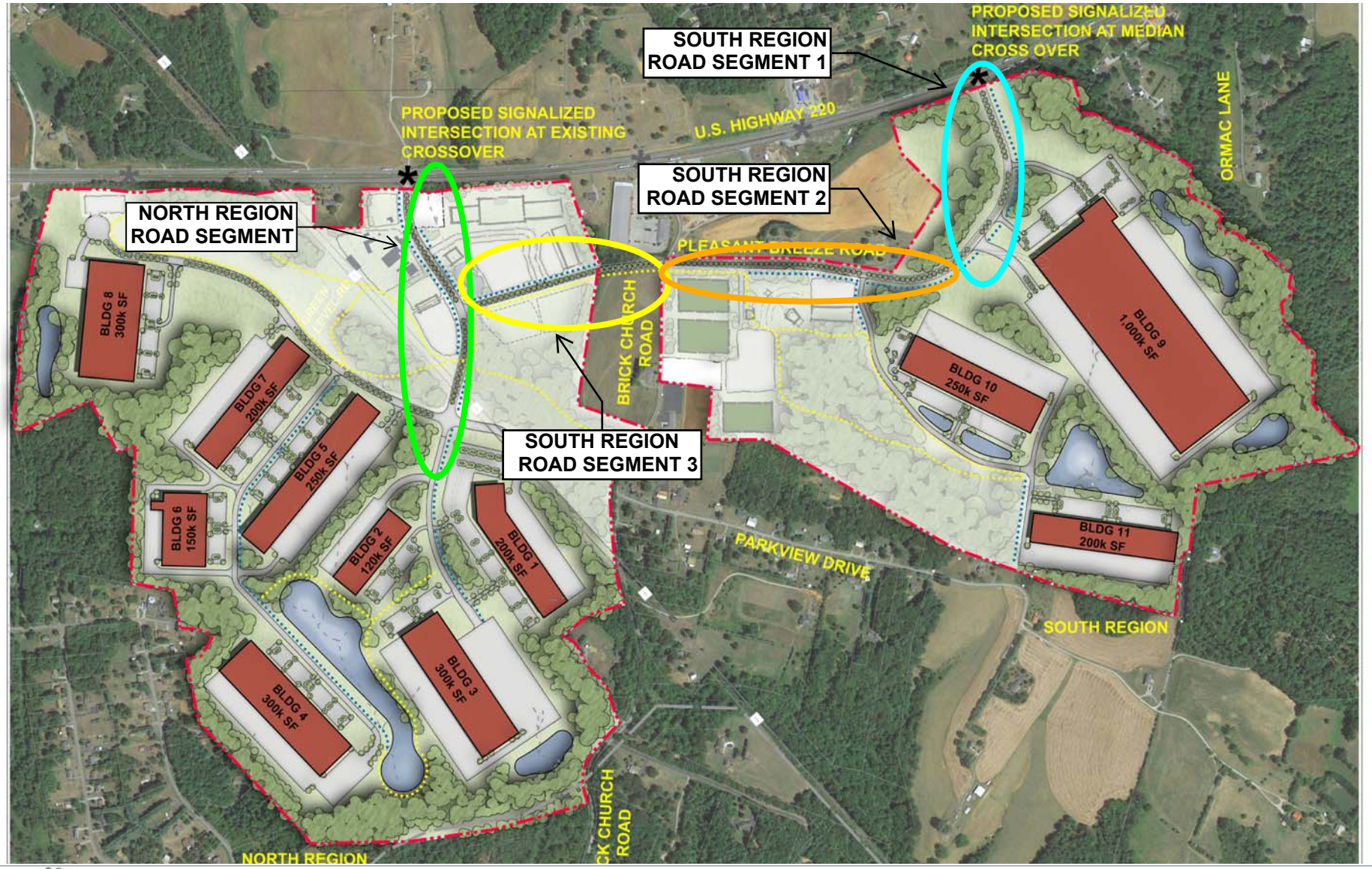
ROUTE 220 ENTRANCE IMPROVEMENTS - OPINION OF PROBABLE CONSTRUCTION COSTS					
ITEM NUMBER	ITEM	QUANTITIES	UNIT	UNIT COST	TOTAL COST
	South Region Entrance				
	Construct New Crossover	1	EA	$50,000.00	$50,000.00
	Construct New Turnlanes	2	EA	$200,000.00	$400,000.00
	Traffic Signal	1	EA	$300,000.00	$300,000.00
	Existing Utility Relocation for Entrance Construction (Allowance)	1	LS	$250,000.00	$250,000.00
	Monument Sign	1	EA	$200,000.00	$200,000.00
	North Region Entrance				
	Construct New Crossover	0	EA	$50,000.00	$0.00
	Extend Existing Turnlanes	2	EA	$75,000.00	$150,000.00
	Traffic Signal	1	EA	$300,000.00	$300,000.00
	Existing Utility Relocation for Entrance Construction (Allowance)	1	LS	$250,000.00	$250,000.00
	Monument Sign	1	EA	$200,000.00	$200,000.00
Subtotal Site Construction Cost					$2,100,000.00
Add Project Costs (25%)					$525,000.00
Total Project Cost					**$2,625,000.00**

PUBLIC SPACE - OPINION OF PROBABLE CONSTRUCTION COSTS					
ITEM NUMBER	ITEM	QUANTITIES	UNIT	UNIT COST	TOTAL COST
1	Mobilization, Clearing, E&S Control	45.0	AC	$4,000.00	$180,000.00
2	Earthwork (Cut - Fill)	50,000	CY	$5.00	$250,000.00
3	Rock Allowance	500	CY	$75.00	$37,500.00
4	Retaining Walls	5,000	SF	$25.00	$125,000.00
5	Storm Sewer System		LS	$15,000.00	$0.00
6	Best Management Practices (BMP's) and Stormwater Basins		LS		
7	Concrete	9,500	SY	$30.00	$285,000.00
8	Asphalt	66,500	SY	$28.00	$1,862,000.00
9	Multi- Use Trail (10' wide asphalt)	12,830	LF	$44.00	$564,520.00
10	Water System	1,200	LF	$40.00	$48,000.00
11	On-site Gravity Sanitary System	3,000	LF	$70.00	$210,000.00

12	Sanitary Pump Station	1	EA	$150,000.00	$150,000.00
13	Sanitary Sewer Force Main	300	LF	$45.00	$13,500.00
14	Roadway Landscaping	1	LS	$50,000.00	$50,000.00
15	Re-forestation Plantings	1	LS	$75,000.00	$75,000.00
16	Topsoil & Seeding	28	AC	$3,000.00	$84,000.00
17	Multi-purpose Fields	3	LS	$150,000.00	$450,000.00
18	Athletic Field Lighting	3	LS	$200,000.00	$600,000.00
19	Amphitheater Stage/Pad	1	LS	$100,000.00	$100,000.00
20	Pavillion with Bathrooms	1	LS	$150,000.00	$150,000.00
21	Maintenance Building	5,000	SF	$100.00	$500,000.00
22	Shelter	2	EA	$75,000.00	$150,000.00
23	Farmer's Market Pavillion	8,000	SF	$175.00	$1,400,000.00
24	Parking Lot Lighting/Poles	12	EA	$10,000.00	$120,000.00
Subtotal Site Construction Cost					$7,404,520.00
Add Project Costs (25%)					$1,851,130.00
Total Project Cost					**$9,255,650.00**

Sub- Total Project Construction Cost (All Regions + Roads)	$37,465,227.00

Projected Total Project Cost (Including All Regions & Roads + Project Costs + Mitigation Cost Budget)	**$51,269,133.75**



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SCALE 1"=700'
0 700' 1400'

SOUTHWAY BUSINESS PARK
ROAD SEGMENT PRICING GRAPHIC

TIMMONS GROUP

Southway Business Park - Opinion of Probable Construction Costs for Site Road Sections
Location: Franklin County, VA
Date: 08/15/2016

SOUTH REGION ROAD SEGMENT 1 - OPINION OF PROBABLE CONSTRUCTION COSTS					
ITEM NUMBER	ITEM	QUANTITIES	UNIT	UNIT COST	TOTAL COST
1	Mobilization, Clearing, E&S Control	4	AC	$4,000.00	$16,000.00
2	Earthwork (Cut - Fill)	206,000	CY	$3.00	$618,000.00
3	Rock Allowance	1,500	CY	$50.00	$75,000.00
4	Storm Sewer System	500	LF	$160.00	$80,000.00
5	Roadway	1,300	LF	$385.00	$500,500.00
6	Multi- Use Trail (10' wide asphalt)	1,300	LF	$44.00	$57,200.00
7	Water System	1,300	LF	$35.00	$45,500.00
8	Sewer Force Main	1,300	LF	$60.00	$78,000.00
9	Stormwater Management Allowance	1	LS	$50,000.00	$50,000.00
10	Roadway Landscaping	1	LS	$50,000.00	$50,000.00
	Entrance Improvements on Rte 220				
11	Construct New Crossover	1	EA	$50,000.00	$50,000.00
12	Construct New Turnlanes	2	EA	$200,000.00	$400,000.00
13	Traffic Signal	1	EA	$300,000.00	$300,000.00
14	Existing Utility Relocation for Entrance Construction (Allowance)	1	LS	$250,000.00	$250,000.00
15	Monument Sign	1	EA	$200,000.00	$200,000.00
Subtotal Site Construction Cost					$2,770,200.00
Add Project Costs (25%)					$692,550.00
Total Project Cost					**$3,462,750.00**

SOUTH REGION ROAD SEGMENT 2 - OPINION OF PROBABLE CONSTRUCTION COSTS					
ITEM NUMBER	ITEM	QUANTITIES	UNIT	UNIT COST	TOTAL COST
1	Mobilization, Clearing, E&S Control	7	AC	$4,000.00	$28,000.00
2	Earthwork (Cut - Fill)	22,000	CY	$3.00	$66,000.00

3	Rock Allowance	500	CY	$50.00	$25,000.00
4	Storm Sewer System	500	LF	$160.00	$80,000.00
5	Roadway	2,100	LF	$385.00	$808,500.00
6	Multi- Use Trail (10' wide asphalt)	2,100	LF	$44.00	$92,400.00
7	Water System	2,100	LF	$35.00	$73,500.00
8	Sewer Force Main	0	LF	$60.00	$0.00
	Stormwater Management Allowance	1	LS	$50,000.00	$50,000.00
9	Roadway Landscaping	1	LS	$50,000.00	$50,000.00
Subtotal Site Construction Cost					$1,245,400.00
Add Project Costs (25%)					$311,350.00
Total Project Cost					**$1,556,750.00**

SOUTH REGION ROAD SEGMENT 3 - OPINION OF PROBABLE CONSTRUCTION COSTS					
ITEM					
NUMBER	**ITEM**	**QUANTITIES**	**UNIT**	**UNIT COST**	**TOTAL COST**
1	Mobilization, Clearing, E&S Control	5	AC	$4,000.00	$20,000.00
2	Earthwork (Cut - Fill)	40,000	CY	$3.00	$120,000.00
3	Rock Allowance	1,000	CY	$50.00	$50,000.00
4	Storm Sewer System	500	LF	$160.00	$80,000.00
5	Roadway	1,400	LF	$385.00	$539,000.00
6	Multi- Use Trail (10' wide asphalt)	1,400	LF	$44.00	$61,600.00
7	Water System	1,400	LF	$35.00	$49,000.00
8	Sewer Force Main	0	LF	$60.00	$0.00
	Stormwater Management Allowance	1	LS	$50,000.00	$50,000.00
9	Roadway Landscaping	1	LS	$50,000.00	$50,000.00
Subtotal Site Construction Cost					$999,600.00
Add Project Costs (25%)					$249,900.00
Total Project Cost					**$1,249,500.00**

NORTH REGION ROAD SEGMENT - OPINION OF PROBABLE CONSTRUCTION COSTS					
ITEM NUMBER	**ITEM**	**QUANTITIES**	**UNIT**	**UNIT COST**	**TOTAL COST**
1	Mobilization, Clearing, E&S Control	6	AC	$4,000.00	$24,000.00
2	Earthwork (Cut - Fill)	85,000	CY	$3.00	$255,000.00
3	Rock Allowance	1,000	CY	$50.00	$50,000.00
4	Storm Sewer System	300	LF	$160.00	$48,000.00
5	Roadway	1,800	LF	$385.00	$693,000.00
6	Multi- Use Trail (10' wide asphalt)	1,800	LF	$44.00	$79,200.00
7	Water System	1,800	LF	$35.00	$63,000.00
8	Sewer Force Main	1,800	LF	$60.00	$108,000.00
9	Stormwater Management Allowance	1	LS	$50,000.00	$50,000.00
10	Roadway Landscaping	1	LS	$50,000.00	$50,000.00
	North Region Entrance				
11	Construct New Crossover	0	EA	$50,000.00	$0.00
12	Extend Existing Turnlanes	2	EA	$75,000.00	$150,000.00
13	Traffic Signal	1	EA	$300,000.00	$300,000.00
14	Existing Utility Relocation for Entrance Construction (Allowance)	1	LS	$250,000.00	$250,000.00
15	Monument Sign	1	EA	$200,000.00	$200,000.00
Subtotal Site Construction Cost					$2,320,200.00
Add Project Costs (25%)					$580,050.00
Total Project Cost					**$2,900,250.00**

Total Project Cost (Including All Road Segments)	**$9,169,250.00**

Section 11 – Return on Investment (ROI) Study

Chmura Economics & Analytics prepared a Return on Investment study for the Southway Business Park. This report was presented to the Franklin County Board of Supervisors at their April 19, 2016 meeting.

CHMURA
Economics & Analytics

Return on Investment Analysis for a Proposed Business Park in Franklin County, Virginia

Prepared for Timmons Group. Inc.

April 25, 2016

1309 E Cary Street, Richmond, VA 23219
1025 Huron Road East, Cleveland, OH 44115
chmuraecon.com

Table of Contents

1. Executive Summary

Franklin County is in the process of master planning a major business park, which will require significant county investment over the next 10 to 20 years. This study makes some conservative assumptions regarding the project's potential and analyzes the return on investment (ROI) Franklin County may expect for the current and future investments in the business park.

The proposed business park will attract over three hundred million dollars of private investment to Franklin County.

- This study assumes the total county cost for the development of the proposed business park is $42.2 million in 2016 dollars. These funds will be used to acquire land, develop infrastructure such as roads, sewer and water systems, and construct public facilities such as parks, recreation fields, and public safety facilities. These assumptions will be validated as part of the master planning process currently underway.

- Aside from the county investment, the proposed business park is also expected to attract private investment, estimated at $320.4 million in 2016 dollars, for building construction and equipment acquisition. This study assumes that the park will be planned to allow for approximately 3.27 million square feet of industrial and commercial space. These assumptions will be validated by the master plan.

The construction and the ongoing operation of the proposed business park will generate significant economic impact in Franklin County. The economic impact can be measured in three ways—impact from county investment without any business investment, impact from potential business capital investment, and impact from the anticipated ongoing operations of businesses located in the park.

- During the 20-year development phase, the county's investment in infrastructure alone is expected to generate a total of $37.4 million (in 2016 dollars) in economic impact (direct, indirect, and induced) in Franklin County. This figure excludes the land costs, and adds indirect and induced impacts from the county expenditure of $28.9 million within the county. On an annual average basis, the economic impact of the county's infrastructure investment alone is estimated to reach $1.9 million (direct, indirect, and induced) that can support 14 jobs in the county from 2016 to 2035. These jobs represent only the impact from infrastructure development, assuming no businesses locating in the park.

- Private capital investment, for the construction of buildings and purchase/installation of new equipment, is expected to generate a total of $271.8 million (in 2016 dollars) in economic impact (direct, indirect and induced) in Franklin County from 2016 to 2035. This figure may be conservative because it excludes business investment that might be spent at out-of-county businesses, and adds indirect and induced impacts from direct business investment in the county ($216.5 million in 2016 dollars). On an annual average basis, the economic impact of the private capital investment is estimated to be $13.6 million (direct, indirect, and induce) that can support 125 county jobs each year, such as construction and retail workers.

- For the purpose of this study, we assumed the proposed business park is expected to have light manufacturing facilities, facilities to serve logistics companies, and data centers. These assumptions will be validated by the current master plan process. When fully developed and occupied, the park is expected to be home to approximately 1,562 employees. It is estimated that all businesses located at the park will have combined annual revenues of $277.7 million in 2016 dollars.

- Adding indirect and induced impact from business operation, the total annual economic impact (direct, indirect and induced) from the ongoing operations of all businesses located at the proposed park will reach $351.4 million (2016 dollars) that can support 2,221 jobs in Franklin County from 2036 onward, when the park is fully occupied.

The total county taxes are estimated to be $2.0 million (2016 dollars) per year after the proposed business park is fully occupied.

- The largest county revenue source will be real estate tax from land and buildings in the park, estimated at $1.4 million (2016 dollars) in 2036, after the park is fully occupied.

- The annual revenues from the machinery and tools tax and business personal property tax are estimated to be $85,339 and $508,285 (2016 dollars), respectively, after the park is fully occupied in 2036. This figure was calculated by assuming total original cost of $25.1 million for manufacturing equipment, $27.5 million for equipment in logistic services companies, and $30.0 million for equipment in data centers. This estimate also recognizes that Franklin County assesses machinery and tools and business personal property tax on a declining schedule. For example, assessment for business personal property is 50% of original cost in year one and 20% of original cost in year 7 and beyond.

- During the intermediary years, the annual county tax revenues are estimated to be $264,213 (2016 dollars) in 2021, $557,598 (2016 dollars) in 2026, and $839,970 (2016 dollars) in 2031.

The ROI analysis for the county investment indicates that each dollar spent by Franklin County can support $8.30 of annual economic impact in the county when the park is fully occupied.

- The ROI analysis of the proposed business park focuses on the county costs only (land purchase, sewer, water, roads, etc.), and the benefit is measured as the broad economic impact of the business park in Franklin County.

- The total county cost is $42.2 million in 2016 dollars, while the total annual benefit is estimated to be $351.4 million after the park is fully occupied, resulting in an annual benefit and cost ratio of 8.3.

- During the intermediary years, the annual benefit and cost ratio is estimated to be 3.6 in 2021, 4.7 in 2026, and 6.4 in 2031.

Table 1.1 summarizes the investment, economic impact, and ROI of the proposed business park in Franklin County, Virginia. These figures do not account for any grants Franklin County may secure for roads, nor

the fact that a portion of the funds for sanitary sewer and water may be paid by the Western Virginia Water Authority.

Table 1.1: Cost and Benefit Analysis (2016 Dollars)

	Cumulative County Cost ($Million)	Cumulative Private Cost ($Million)	Cumulative County Tax Revenue ($Million)	Annual Economic Impact ($Million)	**Benefit/ County Cost Ratio**
After Year 5 (2021)	$27.6	$46.4	$0.8	$100.5	**3.6**
After Year 10 (2026)	$37.3	$99.0	$3.0	$176.6	**4.7**
After Year 15 (2031)	$42.1	$151.6	$6.6	$268.8	**6.4**
After Year 20 (2036)	$42.2	$320.4	$14.3	$351.4	**8.3**

Source: Chmura

2. Background

Timmons Group is currently working on developing a master plan for Franklin County's newest business park to be located along the U.S. Route 220 between the towns of Boones Mill and Rocky Mount. In 2012, Chmura Economics & Analytics (Chmura) performed a market analysis to assist with the initial site selection and evaluation that was conducted for this park, and identified potential target industries the park could attract based on the projected growth in Franklin County and surrounding areas, including regions of Roanoke and Martinsville.[1]

Since 2012, Franklin County has made steady progress in securing the funds to option, control, and purchase part of the acreage necessary for developing the business park. The county has completed diligence work on a number of properties and now controls land parcels totaling 550 acres. The County is currently in the process of master planning the project, including conducting public input sessions and stakeholder meetings. The focus of the master plan is to help guide the necessary infrastructure construction, including gas, roads, water, and sewer lines necessary to attract tax paying economic development to the county. This study assumes the infrastructure investment is expected to be undertaken by Franklin County, although other potential funding sources for the roads, sewer, and water have been identified.

Before committing the necessary resources, the county needs to understand the return on investment (ROI) of the proposed business park. Chmura is contracted to perform the ROI analysis.

The rest of the report is organized as follows:

- Section 3 explains the Chmura methodology of economic impact and ROI analysis.
- Section 4 presents the broad economic impact of the proposed business park in Franklin County.
- Section 5 summarizes the potential county tax revenues from the proposed business park.
- Section 6 evaluates the return on investment of the proposed business park.

[1] Source: Franklin County Business Park Market Analysis, prepared by Chmura Economics & Analytics for Timmons Group, October 30, 2012.

3. Methodology

3.1. ROI Methodology

For the ROI analysis of the proposed business park in Franklin County, the investment needs to be clearly defined. It is the amount of investment by the county to develop the business park, including infrastructure and utility construction, as well as planned public facilities such for recreation and/or public safety facilities. In the ROI analysis, only the county expenditures are counted as the cost. Although the goal of economic development is to attract private business, their investments (costs) are excluded from the ROI analysis.

The benefits (return) of the proposed business park can be measured in different ways. A narrow definition of benefits only includes the county tax revenues that can be generated from the business park development. However, that narrow definition ignores other county businesses and residents that are poised to benefit from the proposed business park. For example, county residents can be employed by businesses in the park, improving their income or reducing out-commuting. In addition, other county businesses can become suppliers and vendors to businesses in the park, increasing their revenues and profits.

Thus, Chmura chooses to use a broader definition of the benefit of the proposed business park in the ROI analysis, which is defined as the total economic impact of the business park in Franklin County. Since the development of the business park is expected to take 20 years, Chmura will also estimate ROI for intermediary years of 5-years, 10-years, and 15-years after the project starts, in addition to the ROI analysis for a fully occupied business park.

The ROI measure will be expressed as a benefit and cost ratio, so it can be easily compared with other investment instruments and projects.

3.2. Economic Impact Methodology

Since the benefit of the proposed business park is defined as the broader economic impact of the proposed business park in Franklin County, this section briefly summarizes Chmura's approach to the economic impact analysis.

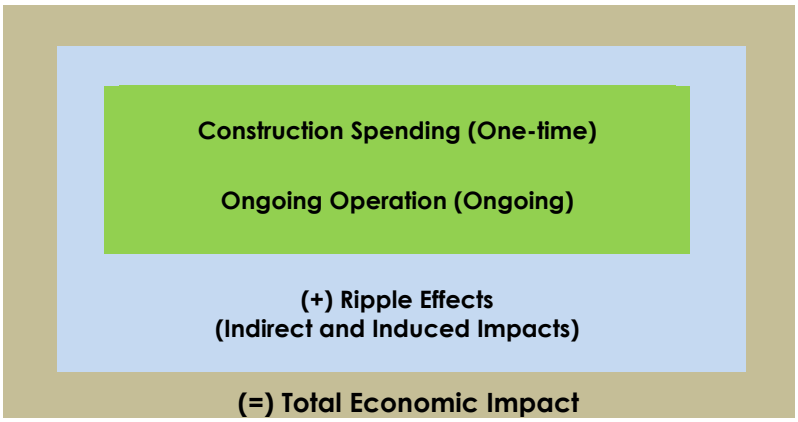
The economic impact resulting from the proposed business park will occur in two phases:

- One-time economic impact from development and construction of the business park: the impact includes activities such as infrastructure development, construction of new facilities, and equipment acquisition and installation. Both county and private investments will be used in the development of the business park.

- Ongoing operation of the business park: economic impact comes primarily from revenues or sales generated by businesses located in the park.

While the two components above constitute the direct economic impact of the proposed business park in Franklin County, the total economic impact also includes ripple effects from the direct impact. Ripple effects, categorized as indirect and induced impacts,[2] measure the secondary benefits that can be generated by both the construction and ongoing operations of the park. Using the operation of a manufacturing business as an example, the indirect impact is increased sales and employment that occur for any local businesses that sell supplies and services, such as raw materials, utilities, and equipment rentals, to the manufacturing business. The induced impact is the increased sales and employment that occur in local communities when the manufacturing firm's employees spend their wages. Beneficiaries of the induced impact are primarily consumer-related businesses such as retail stores, restaurants, and hospitals. Figure 3.1 summarizes the framework that Chmura used to estimate the direct and ripple effects of the proposed business park.

Figure 3.1: Economic Impact Analysis Framework



Background data for the direct impact, such as the size of the proposed park and estimated capital expenditures, were provided by Timmons Group. Indirect and induced impacts were estimated with IMPLAN Pro® software after the direct impact was identified.[3] Total operational and capital expenditures were input into the various IMPLAN model sectors to estimate the indirect and induced impacts for each sector. These impacts were aggregated to yield the estimates of the overall economic impact of the proposed business park in Franklin County.

In addition to the economic impact, this study also estimates the fiscal impact of the proposed business park to Franklin County government. The tax revenue for the county will come from ongoing operation of the park.[4] Franklin County will collect real estate, machinery and tools, and business personal property

[2] Please see Appendix 1 for terms and definitions.
[3] *IMPLAN Professional* (IMPLAN Pro®) is an economic impact assessment modeling system developed by the Minnesota IMPLAN Group that is often used by economists to build economic models that estimate the impacts of economic changes in local economies.
[4] Franklin County does not have a Business, Professional, and Occupational License (BPOL) tax.

taxes on the structure and equipment of businesses located at the park. Current tax rates for the county are used to estimate tax revenue, though tax rates may change in the future.

4. Economic Impact of the Proposed Business Park

4.1. One-time Economic Impact of Capital Investment

There are two types of capital expenditures for the proposed business park. The first is the investment by Franklin County for land acquisition, site development, roads, and utility construction. The second type of capital expenditure is the building construction and equipment acquisition and installation, which is typically done by private businesses attracted to the park. Chmura analyzes the impact of those two types of investment separately.

4.1.1. One-time Economic Impact of County Capital Investment

The total county investment to develop the proposed business park is estimated to be $42.2 million in 2016 dollars (Table 4.1). The county investment will be used to develop infrastructure such as roads ($11.6 million), the sewer system ($8.1 million), and the water system ($3.6 million). In addition, the county is currently proposing to build a public safety facility and/or recreational park on the site. These assumptions will be validated in the current master planning process. Another major county cost is $10.7 million for land acquisition.[5] For the purpose of this analysis, the total development phase of the park is assumed to last 20 years from 2016 to 2035; this study assumes that approximately 50% of the county investment ($20.3 million) will occur in the first two years of the development phase. It is understood that the county has identified potential sources of funding for much of this infrastructure which is not reflected in the table below.

Table 4.1: Estimated County Development Costs ($Million, 2016 Dollars)

	Year 1-2	Year 3-5	Year 6-10	Year 11-15	Year 16-20	**Total**
Water	$0.5	$1.5	$1.1	$0.6	$0.0	**$3.6**
Sewer	$5.9	$0.7	$1.1	$0.3	$0.0	**$8.1**
Roads	$2.0	$2.5	$4.7	$2.4	$0.0	**$11.6**
Landscaping/Maintenance	$0.0	$0.3	$0.1	$0.4	$0.1	**$0.9**
Public Safety/Recreations	$0.0	$0.8	$0.5	$0.0	$0.0	**$1.2**
Grading	$0.3	$0.3	$0.8	$0.5	$0.0	**$1.9**
Professional Services	$0.9	$0.8	$1.0	$0.5	$0.0	**$3.2**
Wetland Permitting and Mitigation	$0.0	$0.5	$0.5	$0.0	$0.0	**$1.0**
Land Acquisition	$10.7	$0.0	$0.0	$0.0	$0.0	**$10.7**
Total	**$20.3**	**$7.3**	**$9.7**	**$4.8**	**$0.1**	**$42.2**

Note: Numbers may not sum due to rounding

Source: Timmons Group

[5] According to impact study best practices, it is assumed that the money to acquire land does not have local economic impact.

The economic impact of the construction activities associated with the county's investment is summarized in Table 4.2. This economic impact is a direct result of the proposed infrastructure development and assumes no businesses have located in the park. In addition to the total impact for the entire development phase, the economic impacts are also presented for five-year intervals. For example, by Year 5 (2020), a total of $15.6 million (in 2016 dollars) will have been directly spent in Franklin County to develop the business park.[6] This spending will support 116 cumulative jobs in 5 years, mostly in the construction trades. The indirect impact is estimated to result in $2.9 million in additional sales and 27 cumulative jobs in Franklin County, in industries supporting construction, such as truck transportation, utilities, and site services. The induced impact is projected to total $1.7 million and 14 cumulative jobs in Franklin County in the first five years of construction. The induced jobs, which are generated when construction workers spend their income in the county, will be concentrated in consumer service-related industries such as restaurants, healthcare, and retail.

Overall, during the 20-year development phase, the county's investment is expected to generate a total economic impact (direct, indirect, and induced) of $37.4 million (in 2016 dollars) in Franklin County. That spending will support 286 cumulative jobs. On an annual average basis, the economic impact of the county capital investment is estimated to be $1.9 million that can support 14 jobs in the county on average each year from 2016 to 2035.

Table 4.2: Estimated Economic Impact of County Cost (2016 Dollars)

		Direct	Indirect	Induced	Total
5-Year Cumulative (2016-2020)	Spending ($Million)	$15.6	$2.9	$1.7	$20.1
	Employment	116	27	14	158
10-Year Cumulative (2015-2025)	Spending ($Million)	$24.4	$4.5	$2.6	$31.6
	Employment	179	42	22	243
15-Year Cumulative (2016-2030)	Spending ($Million)	$28.8	$5.4	$3.1	$37.2
	Employment	209	50	26	285
20-Year Cumulative (2016-2035)	**Spending ($Million)**	**$28.9**	**$5.4**	**$3.1**	**$37.4**
	Employment	**210**	**50**	**26**	**286**
Annual Average (2016-2035)	**Spending ($Million)**	**$1.4**	**$0.3**	**$0.2**	**$1.9**
	Employment	**10**	**2**	**1**	**14**

Note: Numbers may not sum due to rounding

Source: IMPLAN Pro 2014, Timmons, and Chmura

4.1.2. One-time Economic Impact of Private Investment

The proposed business park in Franklin County is also expected to bring in private investment, as businesses choose to locate in the park and invest in buildings and equipment. This analysis assumes the plan for the park includes 11 buildings with a total of 3.27 million square feet (SF) of commercial and industrial space (Table 4.3). The total private investment is estimated to be $320.4 million in 2016 dollars to

[6] This amount does not include land acquisition costs.

be used for buildings, equipment and professional services. The buildings of the park will be used for light industry/flex space, logistics services, and data centers. It is assumed that the construction of the project will last 20 years, from 2016 to 2035.[7]

Table 4.3: Plan and Private Cost Estimates for Franklin County Business Park (2016 Dollars)

		Industry	Size (Square Feet)	Total Cost ($Million)
Phase 1	Building 1	Flex/Light Manufacturing	200,000	$20.6
	Building 2	Flex/Light Manufacturing	120,000	$12.4
	Building 3	Logistics	300,000	$20.6
	Building 4	Logistics	300,000	$20.6
	Building 5	Flex/Light Manufacturing	250,000	$25.8
	Building 6	Flex/Light Manufacturing	150,000	$12.4
	Building 7	Flex/Light Manufacturing	200,000	$20.6
	Building 8	Data Center	300,000	$66.0
Phase 2	Building 9	Distribution/Logistics	1,000,000	$75.0
	Building 10	Distribution/Logistics	250,000	$25.8
	Building 11	Flex/Light Manufacturing	200,000	$20.6
Total			**3,270,000**	**$320.4**

Source: Timmons

The economic impact of the construction activities from private investment is summarized in Table 4.4. As with the impacts of county costs, the economic impacts of private investment were estimated for 5-year intervals. For example, by Year 5 (2020), a total of $34.7 million (in 2016 dollars) will have been directly spent in Franklin County to support building construction and equipment purchases. This spending will directly support 324 cumulative jobs in 5 years, mostly in the construction trades.[8] The indirect impact is estimated to be $4.3 million in spending and 39 cumulative jobs, while the induced impact is projected to total $4.6 million and 39 cumulative jobs in Franklin County in the first five years of construction.

[7] Timmons provided information on when each building will be constructed.

[8] Direct impacts are expected mostly in the construction trades because the expenditures for equipment will be paid to businesses outside the county.

Table 4.4: Estimated Economic Impact of Private Investment in Franklin County (2016 Dollars)

		Direct	Indirect	Induced	Total
5-Year Cumulative (2016-2020)	Spending ($Million)	$34.7	$4.3	$4.6	$43.5
	Employment	324	39	39	403
10-Year Cumulative (2016-2025)	Spending ($Million)	$74.0	$9.1	$9.8	$92.9
	Employment	692	84	83	859
15-Year Cumulative (2016-2030)	Spending ($Million)	$113.3	$14.0	$15.0	$142.2
	Employment	1,060	128	127	1,316
20-Year Cumulative (2016-2035)	**Spending ($Million)**	**$216.5**	**$27.0**	**$28.3**	**$271.8**
	Employment	**2,008**	**242**	**241**	**2,490**
Annual Average	**Spending ($Million)**	**$10.8**	**$1.4**	**$1.4**	**$13.6**
	Employment	**100**	**12**	**12**	**125**

Note: Numbers may not sum due to rounding

Source: IMPLAN Pro 2014, Timmons, and Chmura

Overall, during the 20-year development phase, private investment is expected to generate an economic impact (direct, indirect, and induced) of $271.8 million (in 2016 dollars) in Franklin County.[9] That spending will support 2,490 cumulative jobs in 20 years. On an annual average basis, the economic impact of the private investment is estimated to be $13.6 million that can support 125 jobs in the county per year from 2016 to 2035.

4.2. Economic Impact of Business Park Operations

In 2012, Chmura Economics & Analytics (Chmura) performed a market analysis for a potential business park in Franklin County, and identified target industries the park could attract. This study helped the County in the initial site selection and evaluation study that led to purchasing the above referenced properties.

Chmura re-evaluated the economic trends of the past three years. In addition, Chmura interviewed the county economic development staff on the current development priorities of the county. As a result of the above information, Chmura includes the following industries in this ROI analysis: logistics services, data centers, and light manufacturing. These proposed uses, and the anticipated building and equipment values provide a conservative estimate of potential private investment. Specifically, Chmura uses the average of the following industries to simulate the economic impact of light manufacturing: medical

[9] Please note that the direct impact of $216.5 million is smaller than $320.4 million because not all of the products and services needed can be purchased from Franklin County businesses. For example, much of the spending on equipment will benefit out-of-county businesses. Chmura uses the IMPLAN Pro model to estimate the percentage of spending within the county.

equipment manufacturing; bakery/ food manufacturing; printing; apparel manufacturing; and semi-conductor manufacturing.[10]

For direct operational revenue and employment of the proposed business park, Chmura uses the following estimating approach. Based on the size of industrial or commercial space, Chmura first estimates the number of employees that typically occupy those spaces. For example, the latest data from the Department of Energy[11] indicate that for industrial businesses, each worker will occupy 1,789 square feet of space. For warehouse and logistics industries, each worker will typically occupy 2,048 SF. Using those assumptions, it is estimated that the proposed business park can have 1,562 workers when it is fully occupied. Using the IMPLAN Pro model's estimate of the average revenue per worker for the different industries, Chmura is able to estimate that the total revenue of all businesses located in the park can reach $277.7 million in 2016 dollars, when the park is fully occupied.

Table 4.5 presents the economic impact from the ongoing operations of businesses located at the proposed business park in Franklin County. When all buildings in the park are in operation in 2036, all businesses combined are estimated to have a direct output (total revenues or sales) of $277.7 million (in 2016 dollars). Those businesses will directly employ 1,562 workers. The annual indirect impacts of $53.0 million and 483 jobs represent increased spending and employment for businesses in the county which support the businesses in the park. The induced impacts of $20.6 million and 175 jobs are the result of increased spending by local consumers who are working in the proposed business park. The total annual economic impact (direct, indirect and induced) of the business park can reach $351.4 million (2016 dollars) that can support 2,221 jobs in Franklin County from 2036 onward.

Table 4.5: Estimated Economic Impact Business Park Operation (2016 Dollars)

		Direct	Indirect	Induced	Total
After Year 5 (2021)	Spending ($Million)	$72.4	$11.4	$4.4	$88.3
	Employment	252	100	38	389
After Year 10 (2026)	Spending ($Million)	$133.9	$22.8	$8.9	$165.6
	Employment	577	202	75	854
After Year 15 (2031)	Spending ($Million)	$195.5	$34.1	$13.3	$242.8
	Employment	902	304	113	1,319
After Year 20 (2036)	**Spending ($Million)**	**$277.7**	**$53.0**	**$20.6**	**$351.4**
	Employment	**1,562**	**483**	**175**	**2,221**

Note: Numbers may not sum due to rounding

Source: IMPLAN Pro 2014, Timmons, and Chmura

During the intermediary years, when only part of the proposed business park is in operation, the annual economic impact is smaller. For example, after the fifth year of construction, the total economic impact of business park operation is estimated to be $88.3 million (including direct, indirect, and induced, in 2016

[10] The listed industries are the light manufacturing industries that currently have a presence in the county.
[11] Source: Commercial Building Energy Consumption Survey, Department of Energy http://www.eia.gov/consumption/commercial/.

dollars) in 2021, supporting 389 county jobs. The operational impact is projected to increase to $165.6 million and 854 county jobs in 2026, and $242.8 million and 1,319 jobs in 2031.

5. County Fiscal Impact

The construction and operation of the proposed business park will also bring in tax revenue to the government of Franklin County. In order to make a conservative estimate, only tax revenue from the direct impact was estimated in this section.[12]

During the construction phase, Virginia localities that have a Business, Professional, and Occupational License (BPOL) tax can collect BPOL tax revenue from various types of construction spending. However, Franklin County does not have a BPOL tax. As a result, Franklin County will not collect any tax from the construction activities.

After the businesses in the proposed business park are in operation, Franklin County can collect real estate tax from the land and the buildings located in the park. Currently, the county real estate tax rate is 0.55% of the assessed value.[13] It is assumed that the assessed property value (in 2016 dollars) is the value of the land plus the construction cost of buildings. As a result, after the park is fully occupied, the annual real estate tax for Franklin County is estimated to be $1.4 million (in 2016 dollars) in 2036.

Table 4.6: Annual County Tax from Operation (2016 Dollars)

	Real Estate Tax	Machinery & Tool Tax	Personal Property Tax	Total
After Year 5 (2021)	$216,963	$47,250	$0	$264,213
After Year 10 (2026)	$464,842	$57,356	$35,400	$557,598
After Year 15 (2031)	$712,722	$73,264	$53,985	$839,970
After Year 20 (2036)	**$1,367,080**	**$85,339**	**$508,285**	**$1,960,704**

Note: Numbers may not sum due to rounding

Source: Chmura

Equipment in manufacturing businesses is subject to the county's machinery and tools tax. The tax rate is 0.70% of the assessed value of equipment. The assessment ratio (the percentage of assessed value in original cost) is 100% for Year 1, 90% for Year 2, 80% for Year 3, 70% for Year 4, 60% for Year 5, 50% for Year 6, and 40% for Year 7 and onward.[14] The total original cost of manufacturing equipment is assumed to be $25.1 million, which will be installed in the business park at different times. Using the assumptions of the original cost, the county's assessment schedule and the assumed construction schedule, it is estimated that the county's machinery and tools tax will reach $85,339 (in 2016 dollars) in 2036.

Equipment in data centers and logistics businesses is subject to the business personal property tax. The statuary tax rate is 2.36% of the assessed value. The assessment ratio is 50% for Year 1, 45% for Year 2, 40% for Year 3, 35% for Year 4, 30% for Year 5, 25% for Year 6, and 20% for Year 7 and onward.[15] The total original cost of equipment in logistic businesses is assumed to be $27.5 million while the total original cost

[12] This approach is recommended by Burchell and Listokin in *The Fiscal Impact Handbook*.

[13] Source: Franklin County website, available at: http://www.franklincountyva.gov/cor-tax-rates.

[14] Source: Franklin County.

[15] Ibid.

of equipment in data centers is assumed to be $30.0 million. Using the assumptions of the original cost, the county's assessment schedule and the assumed construction schedule, it is estimated that the business personal property tax will reach $508,285 (in 2016 dollars) in 2036.

In summary, the total annual county tax is estimated to be $2.0 million (2016 dollars) in 2036 after the business park is fully occupied. During the intermediary years, the annual county tax is estimated to be $264,213 in 2021, $557,598 in 2026, and $839,970 in 2031.

6. Return on Investment of the Proposed Business Park

The return on investment (ROI) is defined as the ratio of the economic benefit to the county investment, as presented in Table 6.1.

Table 6.1: Cost and Benefit Analysis (2016 Dollars)

	Cumulative County Cost ($Million)	Cumulative Private Cost ($Million)	Cumulative County Tax Revenue ($Million)	Annual Economic Impact ($Million)	**Benefit/ County Cost Ratio**
After Year 5 (2021)	$27.6	$46.4	$0.8	$100.5	**3.6**
After Year 10 (2026)	$37.3	$99.0	$3.0	$176.6	**4.7**
After Year 15 (2031)	$42.1	$151.6	$6.6	$268.8	**6.4**
After Year 20 (2036)	$42.2	$320.4	$14.3	$351.4	**8.3**

Source: Chmura

In this analysis, Chmura uses a broader definition of the benefit of the business park, which is defined as the total economic impact of the business park in Franklin County. Using this definition, the total county cost is $42.2 million in 2016 dollars, while the total annual benefit of the business park is estimated to be $351.4 million after the park is fully occupied. As a result, each dollar spent by Franklin County can generate $8.30 of annual economic benefit in the county.

During the intermediary years, the benefit and cost ratios are smaller, as the county cost is front loaded with close to half of the costs spent in the first two years. The annual benefit and cost ratio is estimated to be 3.6 in 2021, 4.7 in 2026, and 6.4 in 2031.

Appendix 1: Impact Study Glossary

IMPLAN Professional is an economic impact assessment modeling system. It allows the user to build economic models to estimate the impact of economic changes in states, counties, or communities. It was created in the 1970s by the Forestry Service and is widely used by economists to estimate the impact of specific events on the overall economy.

Input-Output Analysis—an examination of business-business and business-consumer economic relationships capturing all monetary transactions in a given period, allowing one to calculate the effects of a change in an economic activity on the entire economy (impact analysis).

Direct Impact—economic activity generated by a project or operation. For construction, this represents activity of the contractor; for operations, this represents activity by tenants of the property.

Overhead—construction inputs not provided by the contractor.

Indirect Impact—secondary economic activity that is generated by a project or operation. An example might be a new office building generating demand for parking garages.

Induced (Household) Impact—economic activity generated by household income resulting from direct and indirect impact.

Multiplier—the cumulative impact of a unit change in economic activity on the entire economy.

Section 12 – Branding Study

Padilla CRT prepared a Brand Platform Presentation for the Southway Business Park. This presentation was provided to Franklin County on July1, 2016.

SOUTHWAY BUSINESS PARK

BRAND PLATFORM

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Introduction

Our Goal

Develop a clear identity for the Southway Business Park that differentiates the site, communicates its advantages and leads business recruitment activities.

Success at Southway, after all, means more employment opportunities for the local workforce, a stronger tax base for local needs, a more vibrant local community and a more attractive destination.

Discovery

What We've Learned

Franklin County wants to recruit a mix of businesses, not a just particular industry to Southway. Target sectors include advanced manufacturing, logistics and distribution, data centers, software and tech, outdoor recreation, retiree and health services.

"The Great Outdoors" in the region offers Southway recreation opportunities that are unparalleled at other Virginia sites: hiking, biking, fishing, boating, camping, hunting, etc. It's all here.

Southway planners seek to establish a site advantageous to businesses, but also to the local community. Trails, festival grounds, amphitheaters and other community resources are envisioned as key drivers of the park's success – an important differentiator.

Challenges: inadequate mobile phone service, lack of new housing development, lack of "soft infrastructure," and lack of available workforce may challenge recruitment efforts.

Business Assets

Southway has What Business Needs

- More than 500 acres of developable land
- The only site in Virginia with two 100-acre pad sites ready to go
- Access to Route 220 and Interstate and rail networks beyond
- Two-thirds U.S. population within a day's truck drive
- Access to water, sewer, gas, electricity and fast Internet
- Part of largest metropolitan region in Western Virginia
- Solid higher education and workforce training infrastructure in place
- Low costs of doing business and low cost of living
- County-led initiative with leadership's commitment to success

Lifestyle Alignment

Southway has What People Want

Data shows that employees want more work/lifestyle balance and working in a pleasant natural environment is a key consideration. This is even more true with younger “Millennials” who will represent 50% of the global workforce by 2020.

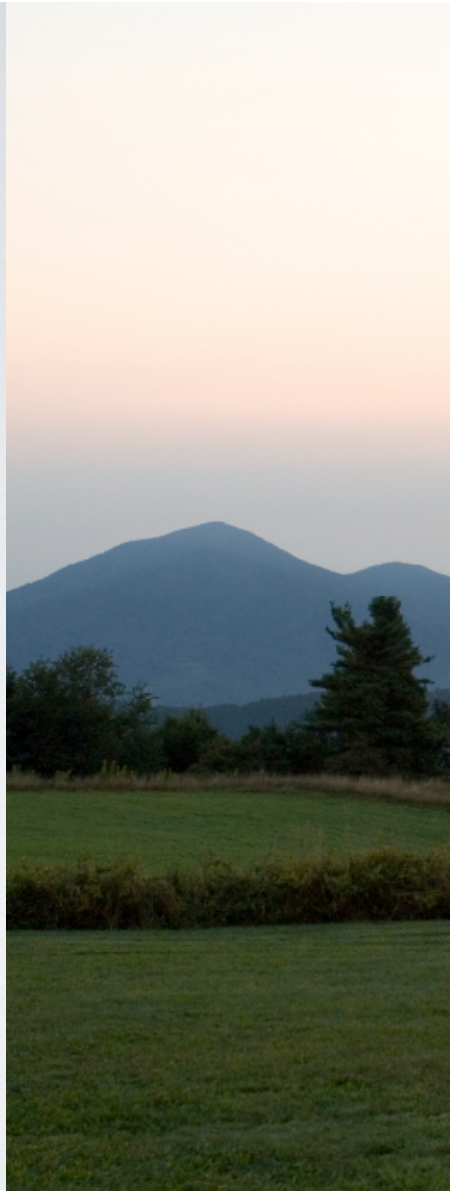
We learned things like:

- “By 2020, millennials will form 50% of the global workforce…Work/life balance has always been a priority for millennials…with 95% of respondents saying the work/life balance is important to them…What motivates me is a good working environment and friendly colleagues. If your workplace becomes your second home, you would want to give it your best.” – Opinium Research survey of Millennials at Work

Lifestyle Alignment: Continued

Interest in the outdoors is on the rise.

- The 2009 study, “A Tale of Ten Cities: Attracting and Retaining Talent," suggests “Amenities and the overall notion of the quality of life, play an increasing role in urban development and growth. Since…both employers and workers have choices about where to locate. It makes sense for them to locate in pleasant places…People tend to prefer locations with mild, coastal climates. It also includes the natural setting of the region, its topography, flora and fauna. Natural environmental amenities also include access to natural features in the wider region, such as mountains, seashores, countryside and forests.”
- From a 2013 study by The Outdoor Foundation: “Nearly half – 49.2 percent – of all Americans participated in outdoor recreation last year. The number of participants is the highest recorded. Nearly 143 million people enjoyed outdoor recreation, up nearly one million since 2011…The number of total outdoor outings increased, reaching an all-time high. Americans took 12.4 billion outdoor excursions in 2012, up from 11.5 billion excursions in 2011.”
- “Businesses are spending hundreds of millions of dollars each year on outdoor experiential training.” –Leadership and Management, 2011



Key Components of Brand Value

Who

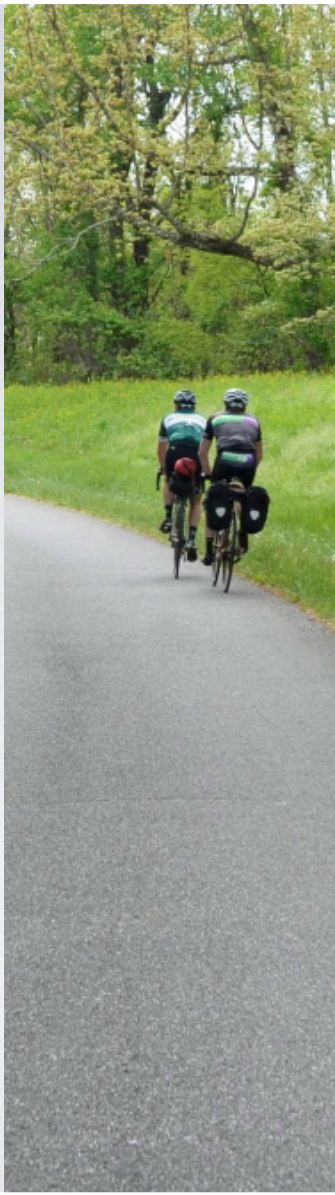
Southway Business Park is the ideal business location for corporate leaders and entrepreneurs who are attracted to a community with a great work ethic, strong values and an active lifestyle.

What

Located in one of the most beautiful locations on the east coast, Southway Business Park's more than 500 acres are easily accessible to both the interstate highway and the information super-highway. Southway combines sites that are ideal for any kind of business, with lifestyle amenities that can't be matched anywhere in the region.

Why

Here in Franklin County, our people have a strong work ethic. They like to get things done, but they also love to hike, climb, boat and fish. That's part of what has made us the fastest growing county in Western Virginia. And Southway Business Park will be the center of everything in the region.



A Powerful Combination

Most business parks are more business than park. They're often ugly, industrial eyesores located in places where you wouldn't go if you didn't have to. But Southway is a business park that lives up to the name with a nature preserve, trails and a historic community center, all in a beautiful location.

BUSINESS + **PARK**

Brand Position and Promise

Brand Position

The first business park
that's all business and all park.

Brand Promise

Located in one of the most beautiful locations on the east coast, Southway Business Park is over 500 acres that are easily accessible to both the interstate highway and the information super-highway. Southway combines sites that are ideal for any kind of business, with lifestyle amenities that can't be matched anywhere in the region.

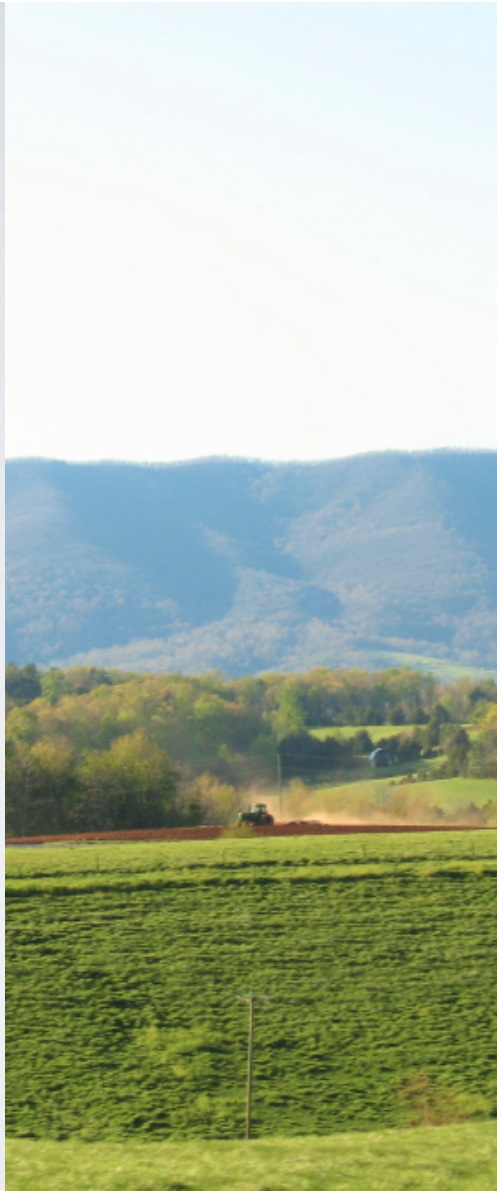
Brand Story

Southway: Business + Park

Southway Business Park was created to bring a powerful new business hub to the heart of Franklin County in the Roanoke Region of Virginia. The property will feature over 500 acres of prime real estate easily accessible to both the interstate highway system and the information superhighway. Southway will be equipped with everything needed to help fast-moving businesses succeed, including access to a labor force with wholesome values and a strong work ethic.

If that was all Southway was offering, it would be plenty, but there's much more. Southway is the first business park that deserves to be called a "park". Southway features it's own nature preserve with trails and recreation areas, as well as a historic community center all nestled into a beautiful location near the Blue Ridge parkway and Smith Mountain Lake.

In today's world, people want to work hard to get ahead, but when the day is done, they also want to enjoy an active lifestyle in a beautiful place with people they love. That's what makes Southway so special. It's the first business park that's all business and all park.



Brand Terminology

Category

Southway is ideal for a broad range of businesses, from traditional office environments, to distribution and retail. As a result, we recommend Southway be described as a “Business Park” and not an “Industrial Park.”

Name

For purposes of these recommendations, “Southway” is used as the name of the business park. It makes sense, however, to explore a new name that more accurately captures the value of the natural beauty and lifestyle amenities offered at the park. The goal is to increase the distinctiveness of the offering and send a message that this is a very special place.

Region

In describing Southway’s location, use primarily “in the heart of the Roanoke Region” to make a clear link to the Roanoke area. Also reference Franklin County where appropriate.

Brand Terminology Example

This is one example of a more descriptive name, “Blue Ridge” combined with the term “Business Park” and the geographic term “Roanoke Region.

Blue Ridge Business Park

IN THE HEART OF THE ROANOKE REGION

Brand Name Alternatives

- Blue Ridge Business Park
- Mountain Ridge Business Park
- Virginia Trailhead Business Park
- Trailblazer Business Park
- Basecamp Business Park
- Peak Heights Business Park
- Teels Creek Business Park
- Cahas Mountain Business Park
- Virginia Foothills Business Park
- Virginia Rising Business Park
- Prosperity Fields Business Park

Brand Experience

Southway: Business + Park

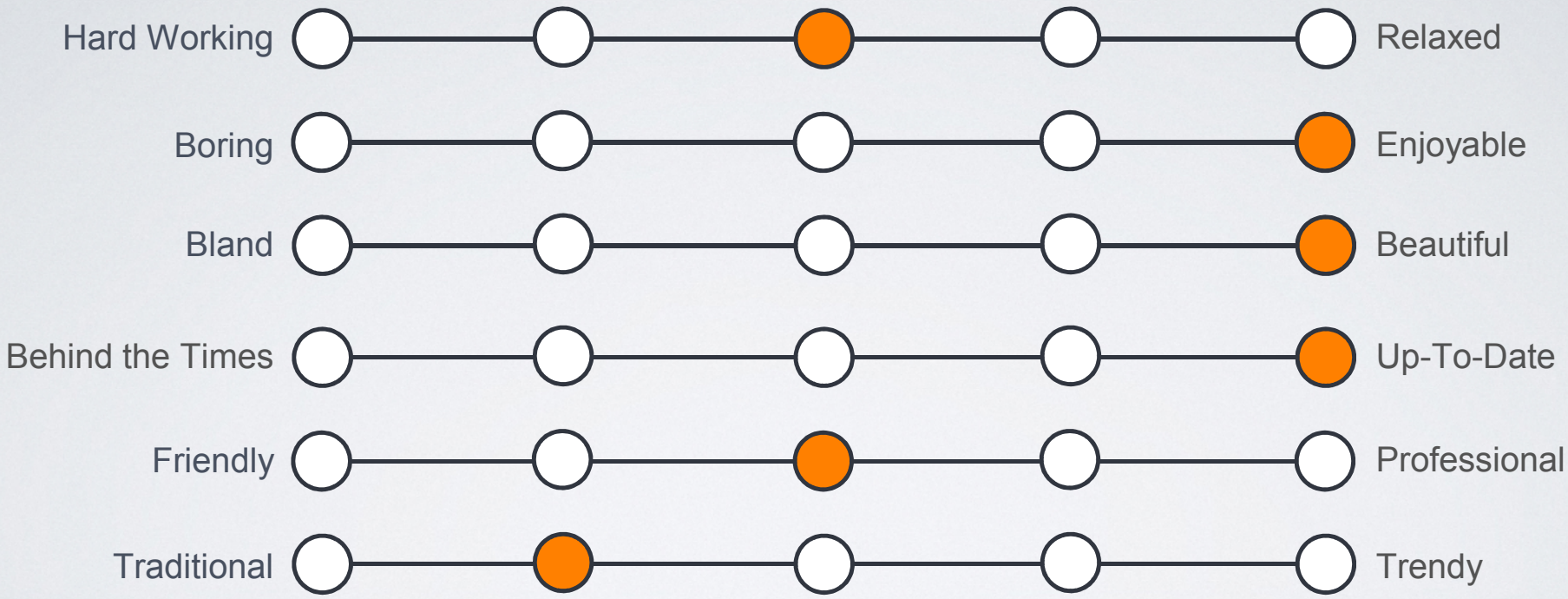
Let the park show through

To showcase the unique advantages of the Southway lifestyle, maintain a simple nature trail with ATVs ready to take prospects for a tour.

Community Center

The house should be converted into a community center with rocking chairs on the front porch and room for guests inside. Sales images should feature the Business + Park theme with plenty of images of both hard-working employees and technology, as well as images of Smith Mountain Lake, the Blue Ridge Mountains and other lifestyle features.

Brand Tone


Hard Working
Relaxed
Boring
Enjoyable
Bland
Beautiful
Behind the Times
Up-To-Date
Friendly
Professional
Traditional
Trendy

Marketing Recommendations

To reinforce the importance of marketing and promotion of Southway, and to ensure broad support of marketing initiatives, the following activities should be included as part of the site's overall master plan.

New Name

Evaluate naming possibilities, such as Blue Ridge Business Park, and select a new one. A more descriptive name than Southway will immediately support the brand position by evoking lifestyle differentiators.

Website

Design and develop a website dedicated to informing prospects about the business and lifestyle advantages of locating at Southway. A digital, mobile-friendly home that anchors and powers marketing efforts; it is an essential component of successful communications.

Trailer

Anchor the website with a cinematic, professionally-produced video that showcases the lifestyle and business benefits of Southway. The 60-second video will help prospects envision their businesses in Franklin County, convey its vibrancy and also provide a digital "calling card" that county leaders and marketers can share easily and widely.

Marketing Recommendations

Trade Advertising

In site-selection publications and in the outlets serving targeted industries, orchestrate a print and online ad campaign that promotes Southway; support advertising with corresponding direct mail and email campaigns.

Search Optimization and Advertising

Develop website content so that it is optimized for search engines like Google, ensuring that relevant searches position Southway at the top of the results list; deploy search advertising, too, to increase Southway's visibility when relevant searches occur.

Leave Behind

Develop printed material that can be left with prospects and contacts after meetings and shared at conferences. Design and content should be consistent with website and advertising.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