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Sussex County

DELAWARE
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COUNTY ADMINISTRATIVE OFFICES
2 THE CIRCLE | PO BOX 417
GEORGETOWN, DELAWARE

ORDINANCE NO. _____

AN ORDINANCE TO AMEND THE FUTURE LAND USE MAP OF THE COMPREHENSIVE PLAN IN RELATION TO TAX PARCEL NO. 532-12.00-1.00, 532-12.00-27.00, 532-18.00-42.00, 532-18.00-44.00 AND 532-19.00-1.00

WHEREAS, on May 7, 2021, the Sussex County Planning and Zoning Office received a request to consider an amendment to the Future Land Use Map identified as Figure 4.5-1 in the Comprehensive Plan in relation to Tax Parcel No. 532-12.00-1.00, 532-12.00-27.00, 532-18.00-42.00, 532-18.00-44.00 and 532-19.00-1.00 (the “Property”); and

WHEREAS, Tax Parcel No. 532-19.00-1.00 are designated as being within the Low Density Area as set forth in the Future Land Use Map identified as Figure 4.5-1 in the Plan; and

WHEREAS, Tax Parcel No. 532-18.00-42.00 and 532-18.00-44.00 are designated as being within the Existing Development Area; and

WHEREAS, Tax Parcel No. 532-12.00-1.00 and 532-12.00-27.00 designated as being partially within the Existing Development Area and also partially within the Low Density Area.

WHEREAS the request received is to amend the Area designation of the Property to the Developing Area; and

WHEREAS, Sussex County Council desires to adopt this Ordinance amending the Future Land Use Map of the Plan with minor amendments; and

WHEREAS, in accordance with the required process for public hearings on ordinances such as this one, both Sussex County Council and the Sussex County Planning & Zoning Commission will hold public hearings on this Ordinance, but limited in scope to this specific proposed amendment to the Future Land Use Map contained in the Plan.

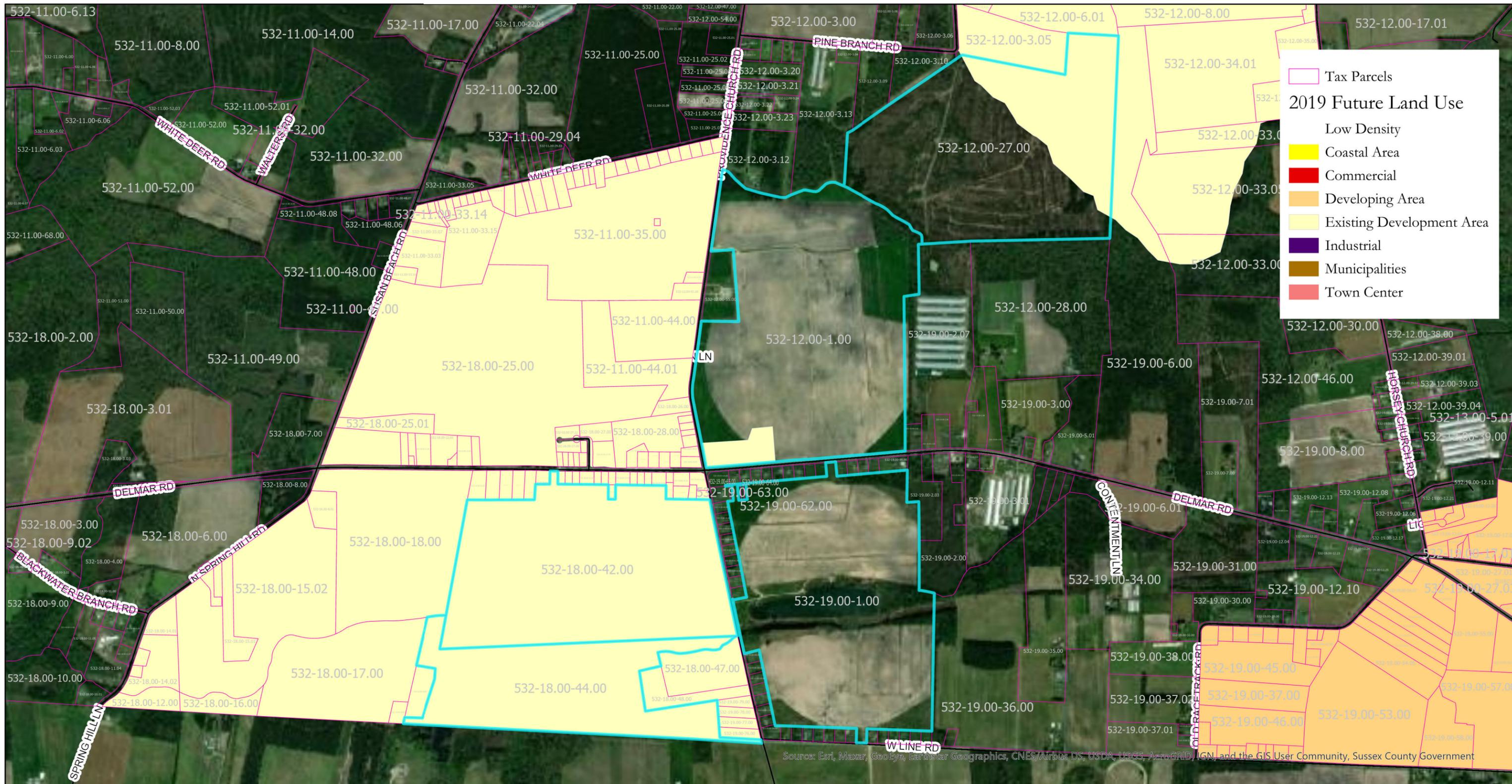
NOW, THEREFORE, THE COUNTY OF SUSSEX HEREBY ORDAINS:

Section 1. The Future Land Use Map identified as Figure 4.5-1 of the Sussex County Comprehensive Plan is hereby amended to change the Area designation part of Sussex County Parcel. No. 532-12.00-1.00, 532-12.00-27.00, 532-18.00-42.00, 532-18.00-44.00 and 532-19.00-1.00 from the Low Density Area and/or Existing Development Area to the Developing Area. The parcels so changed are identified in Exhibit A, attached hereto and incorporated herein.

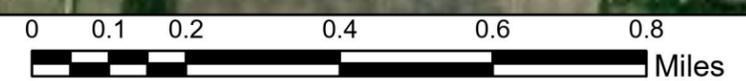
Section 2. This Ordinance shall also take effect following its adoption by majority vote of all members of the County Council of Sussex County, Delaware, and upon certification by the State of Delaware.



Sussex County



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sussex County Government





STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF STATE PLANNING COORDINATION

July 22, 2021

Jamie Whitehouse, AICP
Director, Department of Planning & Zoning
Sussex County
2 The Circle
P.O. Box 417
Georgetown, DE 19947

RE: PLUS review 2021-06-11; Sussex County Comprehensive Plan Amendment

Dear Mr. Whitehouse:

Thank you for meeting with State agency planners on June 23, 2021 to discuss the proposed Comprehensive Plan Amendment for Sussex County. This proposed amendment would change the Future Land Use Map for 4 parcels from the Low Density Area to the Developing Area and for 1 parcel from Existing Development Area to the Developing Area.

Please note that additional changes to the plan could result in additional comments from the State. Additionally, the comments below reflect only issues that are the responsibility of the agencies that were represented at the meeting.

Office of State Planning Coordination – Contact Dorothy Morris 739-3090

Parcel 532-12.00-1.00, 532-12.00-27.00, 532-18.00-44.00, and 532-19.00-1.00 are currently within the low density area of the County plan. Parcel 532-18.00-42.00 is currently with Existing Development area of the County Plan. The county has received a request that all parcels listed above be moved into a Developing Area.

According to the Sussex County certified comprehensive plan, Existing Development Areas consists primarily of existing residential development under the current General Residential and Medium Density Residential zoning districts, as well as some commercial uses. These areas are scattered throughout the County. These areas are surrounded by Low Density Areas, and this particular classification is simply being used to identify these existing scattered zoning areas that have no direct relation to their surrounding zoning and/or the Future Land Use Map.

The Developing Areas are identified as newer, emerging growth areas that demonstrate the characteristics of developmental pressures. Most of the proposed Developing Areas are adjacent to municipalities, within or adjacent to potential future annexation areas of a municipality, or adjacent to Town Centers.

The parcels in question do not meet the definition of a Developing area. They are not adjacent to the Town of Delmar, nor are they within or adjacent to the potential future annexation area of the town. The Town of Delmar recently updated their comprehensive plan, which has been certified and these areas were not included in their planned growth area. There has been no justification mentioned for why higher density development would be needed in this part of the county and the State sees no reason for the proposed change from existing development and Level 4 to developing. In addition, these parcels are all within a Level 4 area according to the 2020 Strategies for State Policies and Spending.

The Sussex County certification letter dated April 1, 2019 stated the Sussex County comprehensive plan was certified, provided no major changes are enacted. It is the opinion of the Office of State Planning that this change would constitute a major change to the currently certified comprehensive plan and this office, for the reasons stated in this letter, objects to the comprehensive plan amendment.

29 Delaware Code §9103(d) states:

Should the Office of State Planning Coordination make objection to any proposed comprehensive plan or amendments or revisions thereto, then the Office of State Planning Coordination shall immediately enter into negotiation with the county or municipality in an attempt to solicit agreement and resolution. Any agreements reached during these negotiations shall be incorporated into the public record and considered by the governing body prior to final action on the comprehensive plan. If the Office of State Planning Coordination and the county or municipality fail to reach agreement after a period of 45 days, the Office of State Planning Coordination shall report the extent of agreement and areas of continued disagreement to the Cabinet Committee on State Planning Issues for dispute resolution.

This letter serves as our intent to begin the 45 day negotiation period. We will contact the County in the coming days to set up a meeting to discuss our objections and determine the ability to reach an agreement.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- This amendment would facilitate a development known to DelDOT as Wild Pine Country Club. DelDOT provided comments on a Traffic Impact Study in October 2009. A copy of those comments is attached.
- In the context of the current County Comprehensive Plan, it is outside the growth area associated with the Town of Delmar.

- In the context of the Strategies for State Policies and Spending, it is in a Level 4 investment area where developers would be required to build all infrastructure in and around any development.

Department of Natural Resources and Environmental Control – Beth Krumrine 735-3480

- DNREC reviewers are not in support of this change as it is inconsistent with Delaware's Strategies for State Policies and Spending. More intensive development is also inconsistent with the environmental features that exist both on and surrounding these parcels.
- Blackwater Creek runs along/through parcels 532-12.00-1.00, 532-18.00-44.00, and 532-19.00-1.00.
- Parcel 532-12.00-1.00 lies adjacent to lands designated within the Delaware Ecological Network (DEN) and the entirety of parcel 532-12.00-27.00 lies within these important natural lands. This network is made up of interconnecting natural areas of significant ecological value. Forest disturbances in these areas will jeopardize habitat on the parcel and possibly beyond the parcels' boundaries.
- An analysis of historical data indicates that the forest area located on the southwest corner of parcel 532-18.00-42.00 likely maintained some degree of forest cover since 1937 and could be considered mature forest. Mature forests possess the potential for rare, threatened, or endangered species that rely on this type of habitat.
- Development of this site is anticipated to displace local wildlife. Wildlife displaced by encroaching development may become a nuisance for homeowners.

State Historic Preservation Office – Contact Carlton Hall 736-7400

Tax Parcel#: 532-12.00-1.00

- Prehistoric archaeological potential is low. Soils are 50/50 well-drained and poorly drained. Too far away from a historic water source to be favorable conditions.
- Historic archaeological potential is high across the southern border of the map. The early 20th century maps (Hebron and Salisbury) both show multiple buildings across there, confirmed in aerials. May also be a church in the far southwestern corner of the parcel – no indication of a graveyard associated with it, but it is easily possible. Beers doesn't show anything else on the property except the EM Lowe structures, which do not appear on 20th century maps.
- Our office would like to remind the developer of the Unmarked Human Burials and Human Skeletal Remains Act (Title 7, Ch. 54).

- If there is federal involvement, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. For further information on the Section 106 process please review the Advisory Council on Historic Preservation's website at: www.achp.gov

Tax Parcel#: 532-12.00-27.00

- Prehistoric archaeological potential is low. There are multiple historic water sources within favorable distance, but all the soil in the parcel is poorly drained, mucky loam. There are no comparable sites nearby.
- Historic archaeological potential is low. The AJ Horsey, Moore & Co. structure (Beers) may have been there at one point and might be visible in the 1937 aerials. However, it doesn't appear in topographic maps of the 20th century and the land changed throughout the years between agricultural practices.

Tax Parcel#: 532-18.00-42.00

- Prehistoric archaeological potential is high in the southern half of the parcel, moderate to low elsewhere. Higher potential on higher topography overlooking Blackwater Creek, but still moderate elsewhere in the southern half of the parcel. Recommend a Phase I archaeological survey prior to any ground disturbance occurring on parcel.
- Historic archaeological potential is low, except on the eastern border (mid-parcel). There appears to have been some sort of structure there in the 1901 topo and 1937, 1954, and 1961 aerial photographs. Integrity may have been destroyed by ag practices, but there is still a moderate chance of features and artifacts relating to the potential farmstead.
- If any project or development proceeds, the developer should be aware of the Unmarked Human Burials and Human Skeletal Remains Law (Del. C. Title 7, Ch. 54).
- If there is federal involvement, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. For further information on the Section 106 process please review the Advisory Council on Historic Preservation's website at: www.achp.gov

Tax Parcel#: 523-18.00-44.00

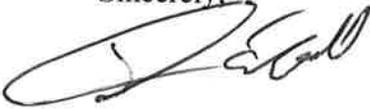
- Prehistoric archaeological potential is moderate near the Blackwater Creek area, though soils are variable of poorly drained and moderately well-drained. Topography varies and there aren't very many high spots of the water.
- Historic archaeological potential is low. No indication that there is anything on the parcel, and the western side has seen significant ground disturbance.

Tax Parcel#: 532-19.00-1.00

- Prehistoric potential is low throughout the parcel, except for higher areas of elevation, near Blackwater Creek, with well-drained soils that has not been disturbed. This is limited to the southwestern quarter of the parcel, which is moderate to high potential. The rest of the parcel is either too far away, has poorly drained soils, or has been disturbed. I would recommend a Phase I archaeological survey prior to ground disturbance.
- Historic archaeological potential is low. There appear to be two farmsteads near the western side of the parcel in the early aerials, but they are technically off parcel. Outbuildings or related structures appear to be on this parcel, but likely were destroyed with agricultural practices and ground disturbance from construction.
- If there is federal involvement, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. For further information on the Section 106 process please review the Advisory Council on Historic Preservation's website at: www.achp.gov

Thank you for the opportunity to review this Comprehensive Plan amendment. If you have any questions, please contact me at 302-739-3090.

Sincerely,



David L. Edgell, AICP
Director, Office of State Planning Coordination

Attachment



STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION

800 BAY ROAD
P.O. Box 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

October 19, 2009

Mr. Lawrence B. Lank
Director
Sussex County Planning & Zoning Commission
P.O. Box 417
Georgetown, DE 19947

Dear Mr. Lank:

The attached revised Traffic Impact Study (TIS) review letter for the **Wild Pine Country Club (f.k.a. Blackwater Creek)** development has been completed under the responsible charge of a registered professional engineer whose firm is authorized to work in the State of Delaware. They have found the TIS to conform to DelDOT's Rules and Regulations for Subdivision Streets and other accepted practices and procedures for such studies. DelDOT accepts this revised TIS review and concurs with the recommendations. We are providing it to you in fulfillment of our joint agreement regarding the review of TIS.

The revised review letter was the result of changes to the proposed land use, numerous meetings and coordination regarding entrance design and off-site improvements. Based on the changes to the project and the coordination, it was necessary for us to revise the TIS review letter, dated March 28, 2007. If you have any questions concerning this letter or the attached revised review letter, please contact me at (302) 760-2134.

Sincerely,

Todd Sammons
Project Engineer

TS:km
Enclosures
cc with enclosures:

Ms. Constance C. Holland, Office of State Planning Coordination
Mr. Derrick Kennedy, Orth-Rodgers & Associates Inc.
Mr. Andrew J. Parker, McCormick Taylor
Mr. Mir Wahed, Johnson, Mirmiran, and Thompson
DelDOT Distribution

DelDOT Distribution

Frederick H. Schranck, Deputy Attorney General
Chief of Community Relations, Public Relations
Natalie Barnhart, Director, Transportation Solutions (DOTS)
Ralph A. Reeb, Director, Division of Planning
Michael H. Simmons, Assistant Director, Project Development South, DOTS
Donald D. Weber, Chief Traffic Engineer, Traffic, DOTS
Mark Luszcz, Assistant Chief Traffic Engineer, Traffic, DOTS
Thomas E. Meyer, Traffic Studies Manager, Traffic, DOTS
Theodore G. Bishop, Assistant Director, Development Coordination
Joseph Wright, Assistant Director, Transportation Engineering
Marvin Roberts, Public Works Manager, South District
Jennifer Pinkerton, Deputy Principal Assistant, Pavement Management
William J. Dryden, Transportation Planner, Project Development South, DOTS
Lisa Collins, Service Development Planner, Delaware Transit Corporation
Marc Coté, Subdivision Engineer, Development Coordination
T. William Brockenbrough, Jr., County Coordinator, Development Coordination
Derek Sapp, Subdivision Manager, Development Coordination
Anthony Aglio, Bicycle Coordinator, Statewide & Regional Planning
Jennifer Baldwin, Pedestrian Coordinator, Statewide & Regional Planning
Troy Brestel, Project Engineer, Development Coordination

October 15, 2009

Mr. Todd J. Sammons
Project Engineer
DelDOT Division of Planning
P.O. Box 778
Dover, DE 19903

RE: Agreement No. 1404
Traffic Impact Study Services
Task No. 46A – Wild Pine Country Club (f.k.a. Blackwater Creek)

Dear Mr. Sammons,

McCormick Taylor has completed an updated review of the Traffic Impact Study (TIS) for the proposed Wild Pine Country Club (formerly known as Blackwater Creek) prepared by Orth-Rodgers & Associates, Inc. (ORA), dated July 26, 2006. This updated review was assigned as Task Number 46A. Due to changes in proposed land use and, more importantly, additional meetings and coordination regarding entrance design and off-site improvements, the previous TIS review letter became outdated and an update was required. In fact, for the same reasons, this is now the third version of a TIS review letter to be issued for this project. Previous TIS review letters for this project, which reflected earlier proposed land use plans, were dated December 6, 2005 and March 28, 2007. ORA prepared the report in a manner generally consistent with DelDOT's *Rules and Regulations for Subdivision Streets*.

The TIS evaluates the impacts of the revised land use for the Wild Pine Country Club development. The latest land use for the proposed development consists of a total of 709 single-family detached houses, 348 townhouses, 403 condominiums, and an 18-hole golf course. The development consists of three separate parcels, referred to as North Farm, South Farm, and West Farm, which comprise a total of approximately 800 acres of land. North Farm is proposed to have 336 single-family detached houses, 348 townhouses, and an 18-hole golf course. South Farm is proposed to have 373 single-family detached houses and West Farm is proposed to have 403 condominiums. While not shown here to avoid confusion, the previously proposed land use plans are summarized in the Project Description and Background and Trip Generation sections of this review letter. Construction is anticipated to be complete by 2020.

While the proposed land use for this development has now changed for the second time, it was determined that the latest proposed land use did not trigger the need to perform additional level of service (LOS) analyses. This is because the latest proposed land use would generate less traffic than the original proposed land use and more traffic than the second version of the proposed land use, but while LOS analyses was performed for both previously proposed land use scenarios, recommendations between those two previous review letters did not change for capacity-based reasons. As such, performing new LOS analyses for this updated review is not necessary because it is apparent the results would not effect the recommendations.

The proposed North Farm, South Farm, and West Farm parcels are located in the northeast, southeast, and southwest quadrants, respectively, of the Delaware Route 54 (Delmar Road / Sussex Road 76) and Providence Church Road (Sussex Road 504) intersection, west of the Town of Delmar in Sussex County, Delaware. Four access points are proposed:

- Providence Church Road and West Farm Access / South Farm Access #1
- Delaware Route 54 and South Farm Access #2 / North Farm Access #1
- West Line Road (Sussex Road 512) and South Farm Access #3
- Providence Church Road and North Farm Access #2

All three parcels fall under Sussex County zoning ordinances. The parcel for North Farm is currently zoned AR-RPC (Agricultural Residential – Residential Planned Community). The parcel for South Farm is currently zoned AR-1 (Agricultural Residential). The parcel for West Farm parcel is currently zoned GR-RPC (General Residential – Residential Planned Community). No rezoning is proposed although South Farm would be developed under the cluster development option.

DelDOT currently has one relevant project near the study area: the Corridor Capacity Preservation Program (CCPP). This is a statewide program intended to sustain the capacity of adopted highway corridors by various means such as limiting access points and using service roads for local vehicle trips. The general purpose of the program is to ensure that the existing principal arterial highways, such as US Route 13 (Sussex Highway), are able to efficiently carry regional traffic without impedance from the effects of local development.

Based on our review, we have the following comments and recommendations.

The following intersections exhibit LOS deficiencies without the implementation of physical roadway and/or traffic control improvements:

<i>Intersection</i>	<i>Situations for which deficiencies occur</i>
Delaware Route 54 and Providence Church Road	2020 PM with Wild Pine Country Club
Delaware Route 54 and Old Racetrack Road (Sussex Road 502)	2020 AM, PM, and Saturday with Wild Pine Country Club
Delaware Route 54 and US Route 13	2003/2004 Existing Saturday; 2020 AM, PM and Saturday without and with Wild Pine Country Club

Although analysis indicates that the intersection of Delaware Route 54 and US Route 13 would have LOS deficiencies with or without the proposed development in the future AM, PM and Saturday peak hours, we do not recommend any improvements be implemented by the developer at this intersection. The major improvements required to eliminate the LOS deficiencies at this intersection (i.e., grade separation or widening US Route 13 to include three through lanes per direction and adding double left-turn lanes on both approaches of Delaware Route 54) cannot be considered a reasonable developer-led improvement project. Such improvements would be very expensive and would include significant impacts to the surrounding properties, and are not

reasonable requests of this developer considering the level of impact of this proposed development on the intersection and the extent of other off-site improvements for which this developer will be responsible.

ORA has been working in conjunction with DelDOT to develop conceptual plans to illustrate certain improvements and phasing plans to show the order and anticipated time frame for completion of entrance and off-site improvements. The recommended improvements described below are detailed in one or more of the plans provided by ORA. Attached to this TIS review letter are: one Entrance Improvement Phasing Plan (**Figure 1**, dated September 22, 2009), one Off-Site Improvement Phasing Plan (**Figure 2**, dated September 22, 2009), and three Conceptual Plans (dated September 21, 2009). These are included beginning on Page 8.

Should the County choose to approve the proposed development, the following items should be incorporated into the site design and reflected on the record plan. All applicable agreements (i.e. letter agreements for off-site improvements and traffic signal agreements) should be executed prior to entrance plan approval for the proposed development.

1. The developer should improve Providence Church Road between Delaware Route 54 and Maryland State Line / West Line Road in order to meet DelDOT's collector road standards, as shown by Improvement #1 of the Off-Site Improvement Phasing Plan (**Figure 2**). These standards include but are not limited to twelve-foot travel lanes and eight-foot shoulders. The developer should provide a bituminous concrete overlay to the existing travel lanes, at DelDOT's discretion. DelDOT should analyze the existing lanes' pavement section and recommend an overlay thickness to the developer's engineer if necessary.
2. The developer should improve Providence Church Road between Delaware Route 54 and White Deer Road (Sussex Road 508) in order to meet DelDOT's local road standards, as shown by Improvement #2 of the Off-Site Improvement Phasing Plan (**Figure 2**). These standards include but are not limited to eleven-foot travel lanes and five-foot shoulders. The developer should provide a bituminous concrete overlay to the existing travel lanes, at DelDOT's discretion. DelDOT should analyze the existing lanes' pavement section and recommend an overlay thickness to the developer's engineer if necessary.
3. The developer should improve West Line Road between Providence Church Road and the eastern property line in order to meet DelDOT's local road standards, as shown by Improvement #3 of the Off-Site Improvement Phasing Plan (**Figure 2**). These standards include but are not limited to eleven-foot travel lanes and five-foot shoulders. Although DelDOT is responsible for this roadway, this improvement should be coordinated with Maryland SHA because this road straddles the state line. The developer should provide a bituminous concrete overlay to the existing travel lanes, at DelDOT's discretion. DelDOT should analyze the existing lanes' pavement section and recommend an overlay thickness to the developer's engineer if necessary.

4. The developer should construct the West Farm Access / South Farm Access #1 site entrance on Providence Church Road. Due to the phasing of the project, in which the South Farm parcel is proposed to be developed earlier than the West Farm parcel, this site entrance intersection should be constructed in two phases, as shown in the Entrance Improvement Phasing Plan (**Figure 1**). The first phase (Phase 1 on **Figure 1**) would provide access to and from the South Farm parcel with the proposed configuration shown in the table below.

Approach	Current Configuration	Proposed Phase 1 Configuration
Westbound South Farm Site Entrance	Approach does not exist	One shared left/right-turn lane
Northbound Providence Church Road	One through lane	One shared through/right-turn lane
Southbound Providence Church Road	One through lane	One shared through/left-turn lane

The second phase (Phase 4 on **Figure 1**) would add access to and from the West Farm parcel. The proposed configuration of the completed four-leg intersection is shown in the table below.

Approach	Current Configuration	Proposed Phase 4 Configuration
Eastbound West Farm Site Entrance	Approach does not exist	One shared left/through/right-turn lane
Westbound South Farm Site Entrance	Approach does not exist	One shared left/through/right-turn lane
Northbound Providence Church Road	One through lane	One shared left/through/right-turn lane
Southbound Providence Church Road	One through lane	One shared through/left-turn lane and one right-turn lane

Based on DeIDOT's *Standards and Regulations for Subdivision Streets and State Highway Access*, the initial recommended minimum length for the southbound right-turn lane (excluding taper) is 100 feet. The developer should coordinate with DeIDOT's Subdivision Section to determine the final turn-lane length.

5. The developer should install a single-lane roundabout for the South Farm Access #2 / North Farm Access #1 site entrance on Delaware Route 54, as shown in Phase 2 of the Entrance Improvement Phasing Plan (**Figure 1**). A conceptual plan for this roundabout has been designed by ORA, as shown in the attached "Route 54 & Site Driveways" plan (Conceptual Plans, Sheet Number 2 of 3). The developer should coordinate with DeIDOT regarding final design details for this improvement. Should a roundabout be determined to be infeasible at this location, the developer should enter into a traffic signal agreement with DeIDOT for this intersection. The traffic signal agreement should include pedestrian signals, crosswalks, and interconnection at DeIDOT's discretion.

6. The developer should construct the North Farm Access #2 site entrance on Providence Church Road, as shown in Phase 3A of the Entrance Improvement Phasing Plan (**Figure 1**). The proposed configuration is shown in the table below.

Approach	Current Configuration	Proposed Configuration
Westbound North Farm Site Entrance	Approach does not exist	One shared left/right-turn lane
Northbound Providence Church Road	One through lane	One shared through/right-turn lane
Southbound Providence Church Road	One through lane	One shared through/left-turn lane

7. The developer should construct the South Farm Access #3 site entrance on West Line Road, as shown in Phase 5 of the Entrance Improvement Phasing Plan (**Figure 1**). The proposed configuration is shown in the table below.

Approach	Current Configuration	Proposed Configuration
Eastbound West Line Road	One through lane	One shared through/left-turn lane
Westbound West Line Road	One through lane	One through lane and one right-turn lane
Southbound South Farm Site Entrance	Approach does not exist	One shared left/right-turn lane

Based on DelDOT’s *Standards and Regulations for Subdivision Streets and State Highway Access*, the initial recommended minimum length for the westbound right-turn lane (excluding taper) is 100 feet. The developer should coordinate with DelDOT’s Subdivision Section to determine the final turn-lane length.

8. The developer should install a single-lane roundabout at the intersection of Delaware Route 54 and Providence Church Road, as shown by Improvement #4 of the Off-Site Improvement Phasing Plan (**Figure 2**). A conceptual plan for this roundabout has been designed by ORA, as shown in the attached “Route 54 & Providence Church Rd” plan (Conceptual Plans, Sheet Number 1 of 3). The developer should coordinate with DelDOT regarding final design details for this improvement. Should a roundabout be determined to be infeasible at this location, the developer should enter into a traffic signal agreement with DelDOT for this intersection. The traffic signal agreement should include pedestrian signals, crosswalks, and interconnection at DelDOT’s discretion.
9. The developer should improve the intersections of Delaware Route 54 and Old Racetrack Road and Delaware Route 54 and Horsey Church Road, as indicated by Improvement #5 of the Off-Site Improvement Phasing Plan (**Figure 2**), by realigning Old Racetrack Road (east of Horsey Church Road) such that it would intersect Delaware Route 54 as a T-intersection. Other associated improvements should include:

- removing a portion of original Old Racetrack Road and constructing a cul-de-sac just east of Horsey Church Road
- adding a right-turn lane on the westbound Delaware Route 54 approach to Horsey Church Road
- adding a left-turn lane on the eastbound Delaware Route 54 approach to original Old Racetrack Road

A conceptual plan for these improvements has been designed by ORA, as shown in the attached “Route 54 & Old Racetrack / Horsey Rd” plan (Conceptual Plans, Sheet Number 3 of 3). The developer should coordinate with DelDOT regarding final design details for these improvements.

10. The developer should enter into a traffic signal agreement with DelDOT for the intersection of Delaware Route 54 and realigned Old Racetrack Road, as indicated by Improvement #6 of the Off-Site Improvement Phasing Plan (**Figure 2**). This traffic signal is also noted in the attached conceptual plan for this intersection (Conceptual Plans, Sheet Number 3 of 3). The agreement should include pedestrian signals, crosswalks and interconnection at DelDOT’s discretion. The developer should coordinate with DelDOT on the implementation and equitable cost sharing of the traffic signal.
11. The following bicycle, pedestrian, and transit improvements should be included:
 - a. The shoulders on Delaware Route 54 should be maintained and marked as bike lanes from Providence Church Road to the eastern property line.
 - b. A right-turn yield to bikes sign (MUTCD R4-4) should be added at the start of each right-turn lane added to Providence Church Road and West Line Road.
 - c. Where right-turn lanes are added to Providence Church Road and West Line Road, a minimum of a five-foot bicycle lane should be dedicated and striped with appropriate markings for bicyclists through the turn lane in order to facilitate safe and unimpeded bicycle travel.
 - d. Appropriate bicycle symbols, directional arrows, striping (including stop bars), and signing should be included along bicycle facilities and right-turn lanes within the project limits.
 - e. Utility covers should be moved outside of the designated bicycle lane or be flush with the pavement.
 - f. 15-foot wide easements from the edge of the right-of-way should be dedicated to DelDOT within the site frontages along Delaware Route 54, Providence Church Road, and West Line Road. Within each easement, a minimum of a ten-foot wide multi-use path (with a minimum of a five-foot buffer from the roadway) that meets current AASHTO and ADA standards should be constructed. The multi-use paths should connect to any paths on adjacent parcels or to the shoulder at the beginning and ending limits of the site frontage.
 - g. ADA compliant curb ramps and crosswalks should be provided at all pedestrian crossings, including all site entrances. Type 3 curb ramps are discouraged.

- h. Internal sidewalks to promote walking as a viable transportation alternative should be constructed, on both sides of the road, within the development. These sidewalks should each be a minimum of five-feet wide (with a minimum of a five-foot buffer from the roadway) and should meet current AASHTO and ADA standards. These sidewalks should be constructed to extend to the site entrances, and should connect to the frontage multi-use paths. These internal sidewalks should also be provided in such a way as to allow for easy pedestrian movement between the different parcels that comprise Wild Pine Country Club, including marked crosswalks across Delaware Route 54 and Providence Church Road.
- i. The developer should coordinate with the Delaware Transit Corporation regarding the possibility of adding transit services and facilities at this location. Internal sidewalks should be connected to any new transit facilities and parking facilities for bicyclists should be included.

Improvements in this TIS may be considered “significant” under DeIDOT’s *Work Zone Safety and Mobility Procedures and Guidelines*. These guidelines are available on DeIDOT’s website at http://www.deldot.gov/information/pubs_forms/manuals/de_mutcd/index.shtml. For any additional information regarding the work zone impact and mitigation procedures during construction please contact Mr. Adam Weiser of DeIDOT’s Traffic Section. Mr. Weiser can be reached at (302) 659-4073 or by email at Adam.Weiser@state.de.us.

Please note that this review generally focuses on capacity and level of service issues; additional safety and operational issues will be further addressed through DeIDOT’s subdivision review process.

Additional details on our review of the TIS are attached. Please contact me at (302) 738-0203 or through e-mail at ajparker@mtmail.biz if you have any questions concerning this review.

Sincerely,
McCormick Taylor, Inc.



Andrew J. Parker, P.E., PTOE
Project Manager

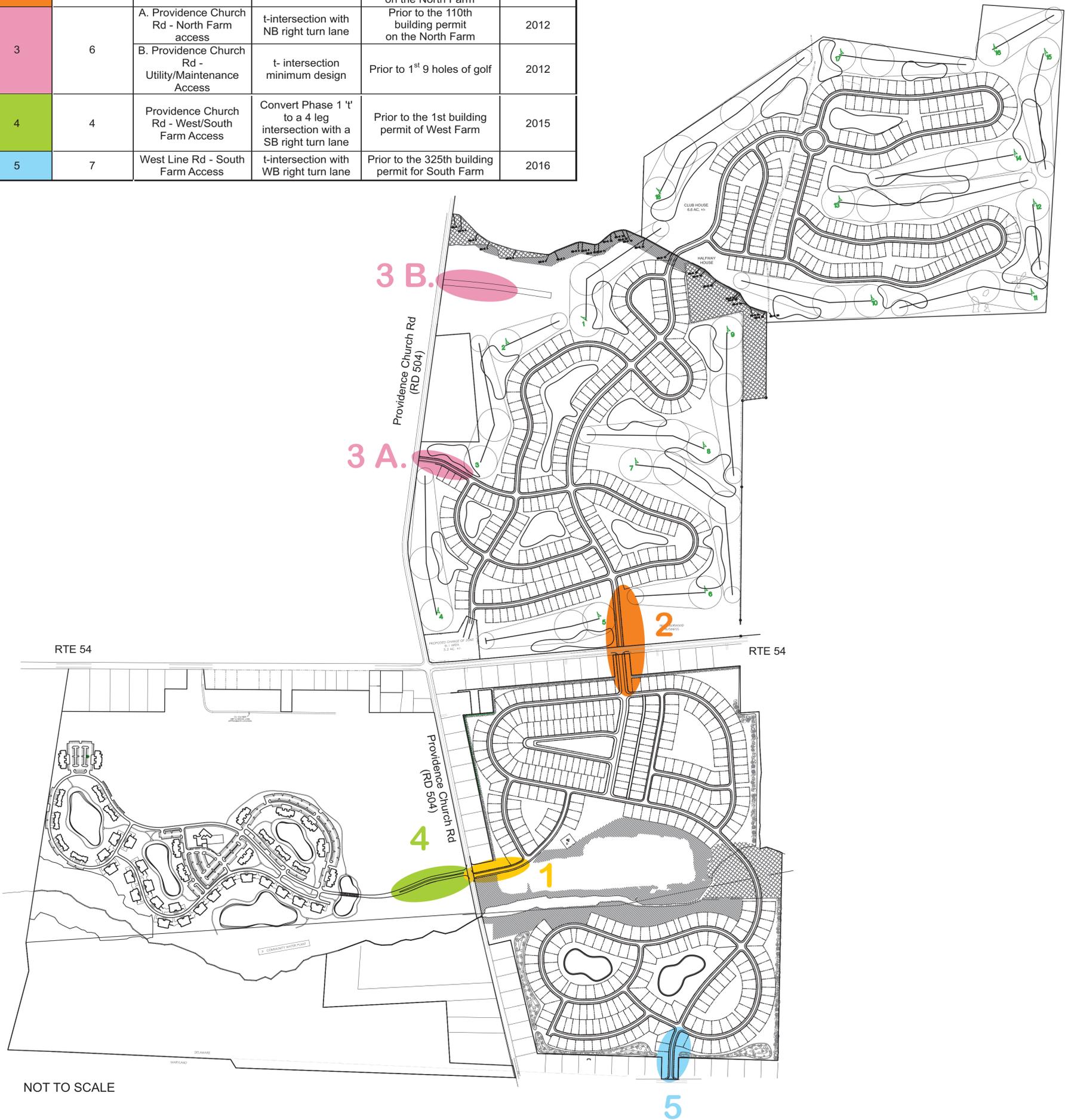
Enclosure

Entrance Improvement Phasing Plan BLACKWATER CREEK



Blackwater Creek Development
 Entrance Improvement Phasing Plan

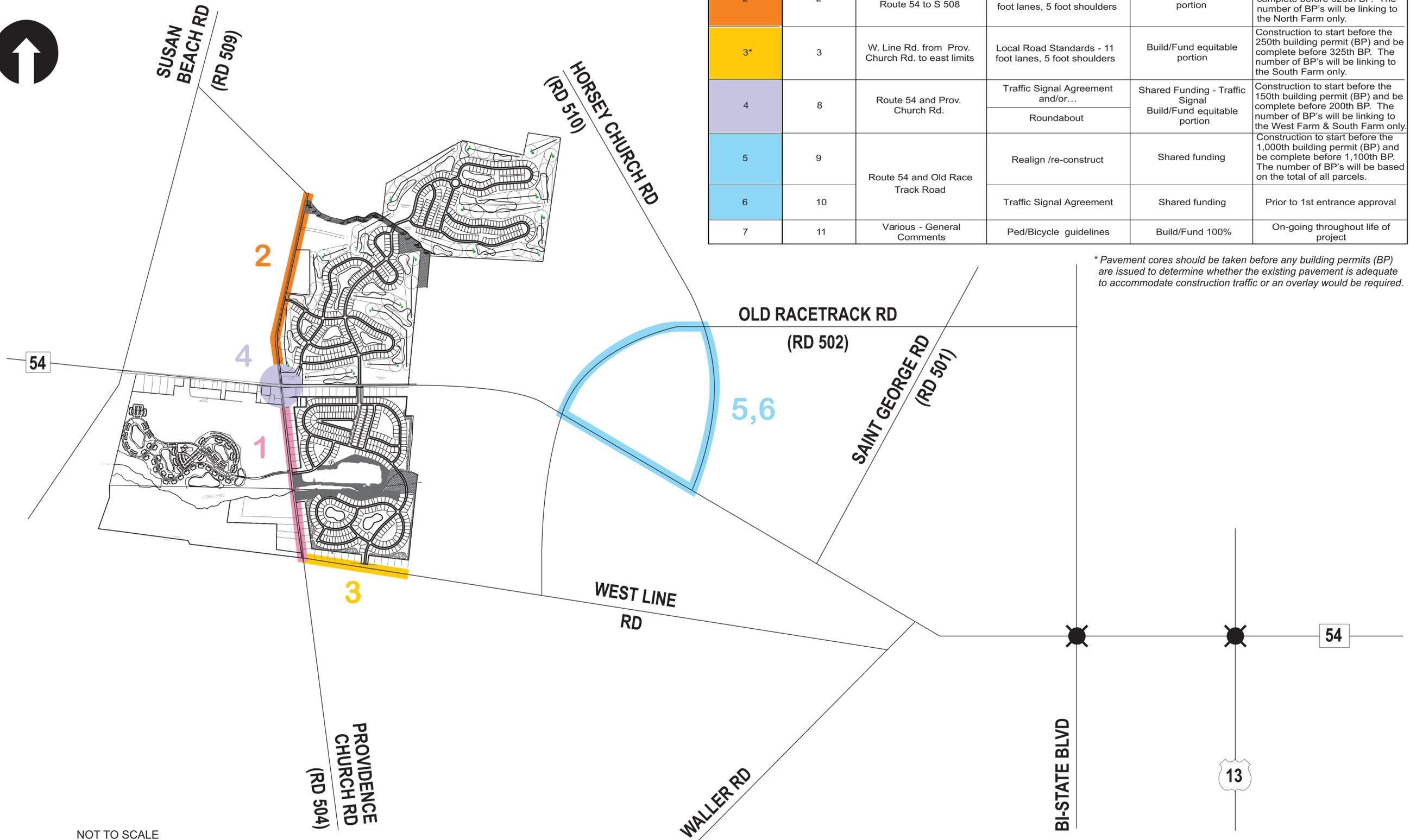
Phase	DelDOT's TIS Letter Improvement #	Site Access Location	Anticipated Design	Completion Date	Estimated Time Frame
1	4	Providence Church Rd - South Farm Access	t- intersection minimum design	Prior to the 1st building permit of South Farm	2010
2	5	Route 54 Access	4 leg Roundabout	Prior to the 54th building permit on the South Farm/ or the 1st building permit on the North Farm	2011
3	6	A. Providence Church Rd - North Farm access	t-intersection with NB right turn lane	Prior to the 110th building permit on the North Farm	2012
		B. Providence Church Rd - Utility/Maintenance Access	t- intersection minimum design	Prior to 1 st 9 holes of golf	2012
4	4	Providence Church Rd - West/South Farm Access	Convert Phase 1 't' to a 4 leg intersection with a SB right turn lane	Prior to the 1st building permit of West Farm	2015
5	7	West Line Rd - South Farm Access	t-intersection with WB right turn lane	Prior to the 325th building permit for South Farm	2016



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Off-Site Improvement Phasing Plan

BLACKWATER CREEK



Improvement #	DeIDOT's TIS Letter Improvement #	Location	Proposed upgrade	Developers Responsibility	Anticipated Time Frame
1*	1	Prov. Church Rd. from Route 54 to W. Line Rd.	Collector Road Standards - 12 foot lanes, 8 foot shoulders	Build/Fund equitable portion	Construction to start before the 200th building permit (BP) and be complete before 300th BP. The number of BP's will be linking to the West Farm & South Farm only.
2*	2	Prov. Church Rd. from Route 54 to S 508	Local Road Standards - 11 foot lanes, 5 foot shoulders	Build/Fund equitable portion	Construction to start before the 250th building permit (BP) and be complete before 325th BP. The number of BP's will be linking to the North Farm only.
3*	3	W. Line Rd. from Prov. Church Rd. to east limits	Local Road Standards - 11 foot lanes, 5 foot shoulders	Build/Fund equitable portion	Construction to start before the 250th building permit (BP) and be complete before 325th BP. The number of BP's will be linking to the South Farm only.
4	8	Route 54 and Prov. Church Rd.	Traffic Signal Agreement and/or... Roundabout	Shared Funding - Traffic Signal Build/Fund equitable portion	Construction to start before the 150th building permit (BP) and be complete before 200th BP. The number of BP's will be linking to the West Farm & South Farm only.
5	9	Route 54 and Old Race Track Road	Realign /re-construct	Shared funding	Construction to start before the 1,000th building permit (BP) and be complete before 1,100th BP. The number of BP's will be based on the total of all parcels.
6	10		Traffic Signal Agreement	Shared funding	Prior to 1st entrance approval
7	11	Various - General Comments	Ped/Bicycle guidelines	Build/Fund 100%	On-going throughout life of project

* Pavement cores should be taken before any building permits (BP) are issued to determine whether the existing pavement is adequate to accommodate construction traffic or an overlay would be required.

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NOT TO SCALE

DESIGN CRITERIA

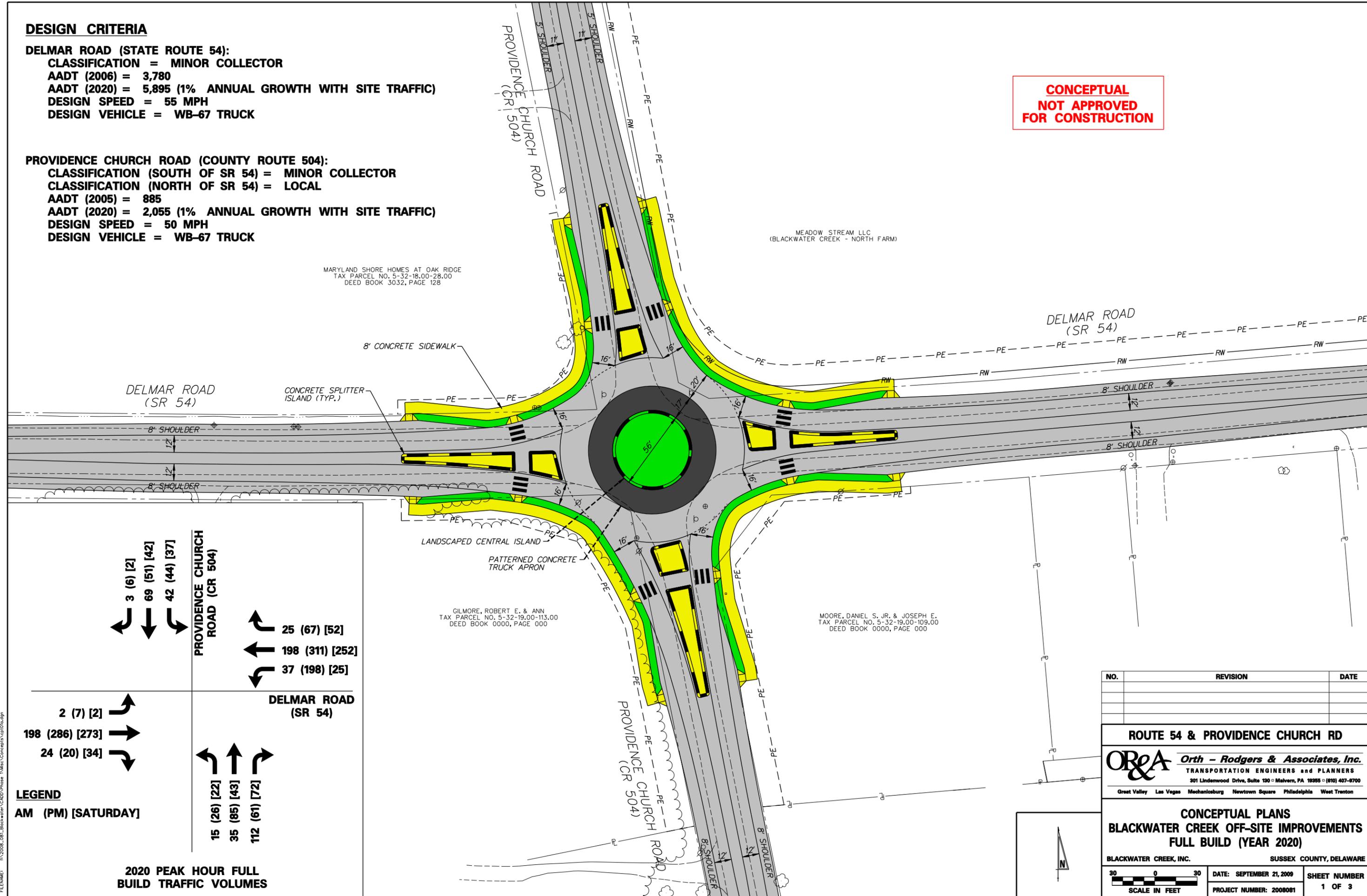
DELMAR ROAD (STATE ROUTE 54):

CLASSIFICATION = MINOR COLLECTOR
 AADT (2006) = 3,780
 AADT (2020) = 5,895 (1% ANNUAL GROWTH WITH SITE TRAFFIC)
 DESIGN SPEED = 55 MPH
 DESIGN VEHICLE = WB-67 TRUCK

PROVIDENCE CHURCH ROAD (COUNTY ROUTE 504):

CLASSIFICATION (SOUTH OF SR 54) = MINOR COLLECTOR
 CLASSIFICATION (NORTH OF SR 54) = LOCAL
 AADT (2005) = 885
 AADT (2020) = 2,055 (1% ANNUAL GROWTH WITH SITE TRAFFIC)
 DESIGN SPEED = 50 MPH
 DESIGN VEHICLE = WB-67 TRUCK

**CONCEPTUAL
 NOT APPROVED
 FOR CONSTRUCTION**



PROVIDENCE CHURCH ROAD (CR 504)		DELMAR ROAD (SR 54)	
3 (6) [2]	25 (67) [52]	2 (7) [2]	198 (286) [273]
69 (51) [42]	198 (311) [252]	24 (20) [34]	15 (26) [22]
42 (44) [37]	37 (198) [25]		35 (85) [43]
			112 (61) [72]

LEGEND
 AM (PM) [SATURDAY]

**2020 PEAK HOUR FULL
 BUILD TRAFFIC VOLUMES**

NO.	REVISION	DATE

ROUTE 54 & PROVIDENCE CHURCH RD

OR&A Orth - Rodgers & Associates, Inc.
 TRANSPORTATION ENGINEERS and PLANNERS
 301 Lindenwood Drive, Suite 130 • Malvern, PA 19355 • (610) 407-8700
 Great Valley Las Vegas Mechanicsburg Newtown Square Philadelphia West Trenton

**CONCEPTUAL PLANS
 BLACKWATER CREEK OFF-SITE IMPROVEMENTS
 FULL BUILD (YEAR 2020)**

BLACKWATER CREEK, INC. SUSSEX COUNTY, DELAWARE

30 0 30
 SCALE IN FEET

DATE: SEPTEMBER 21, 2009 SHEET NUMBER
 PROJECT NUMBER: 2008081 1 OF 3

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DESIGN CRITERIA

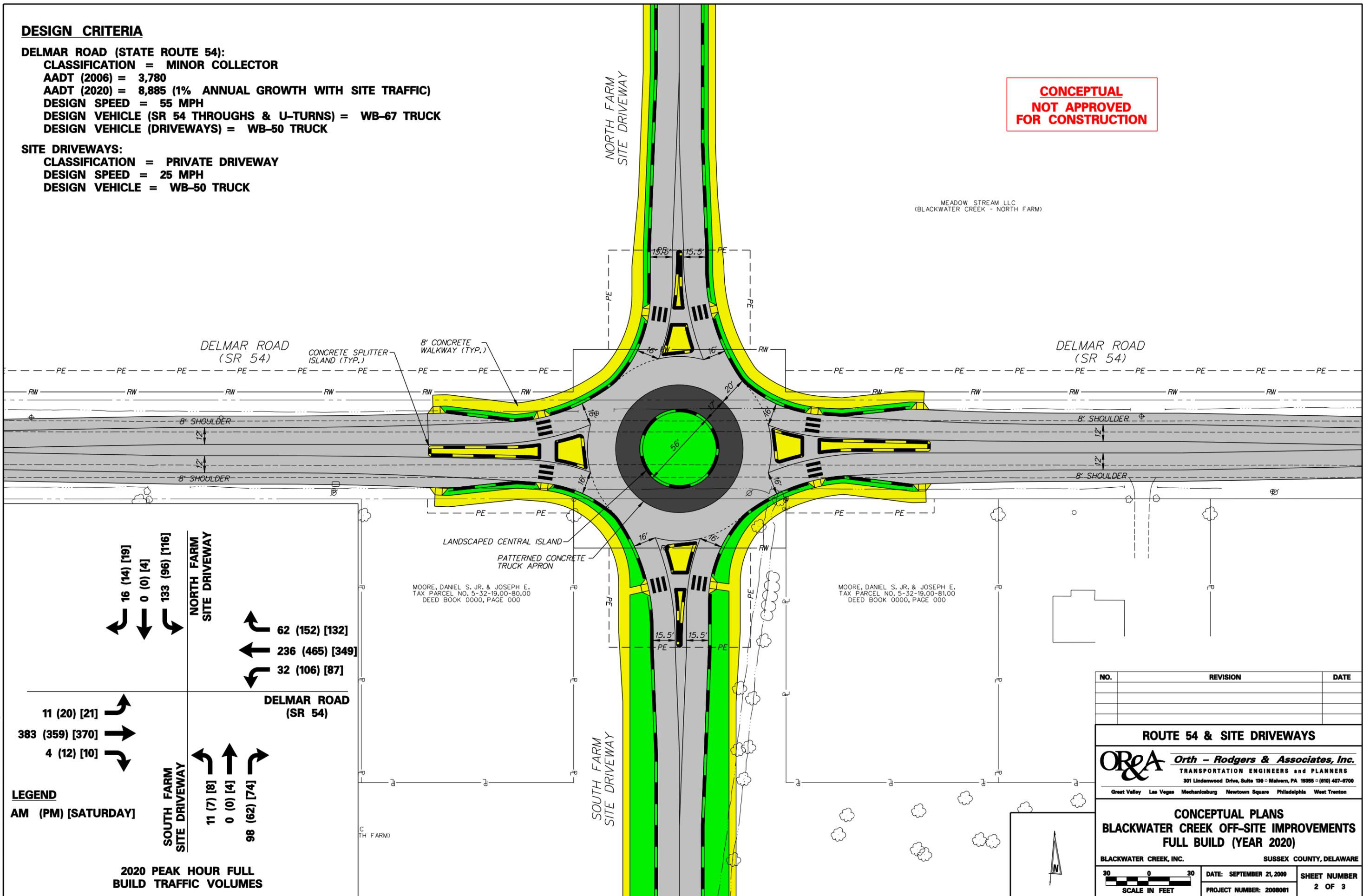
DELMAR ROAD (STATE ROUTE 54):

CLASSIFICATION = MINOR COLLECTOR
 AADT (2006) = 3,780
 AADT (2020) = 8,885 (1% ANNUAL GROWTH WITH SITE TRAFFIC)
 DESIGN SPEED = 55 MPH
 DESIGN VEHICLE (SR 54 THROUGHES & U-TURNS) = WB-67 TRUCK
 DESIGN VEHICLE (DRIVEWAYS) = WB-50 TRUCK

SITE DRIVEWAYS:

CLASSIFICATION = PRIVATE DRIVEWAY
 DESIGN SPEED = 25 MPH
 DESIGN VEHICLE = WB-50 TRUCK

**CONCEPTUAL
 NOT APPROVED
 FOR CONSTRUCTION**



NO.	REVISION	DATE

ROUTE 54 & SITE DRIVEWAYS

OR&A Orth - Rodgers & Associates, Inc.
 TRANSPORTATION ENGINEERS and PLANNERS
 301 Lindenwood Drive, Suite 120 • Malvern, PA 19355 • (610) 407-8700
 Great Valley Las Vegas Mechanicsburg Newtown Square Philadelphia West Trenton

**CONCEPTUAL PLANS
 BLACKWATER CREEK OFF-SITE IMPROVEMENTS
 FULL BUILD (YEAR 2020)**

BLACKWATER CREEK, INC. SUSSEX COUNTY, DELAWARE

DATE: SEPTEMBER 21, 2009 SHEET NUMBER: 2 OF 3

PROJECT NUMBER: 2008081

SCALE IN FEET

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NOTES:

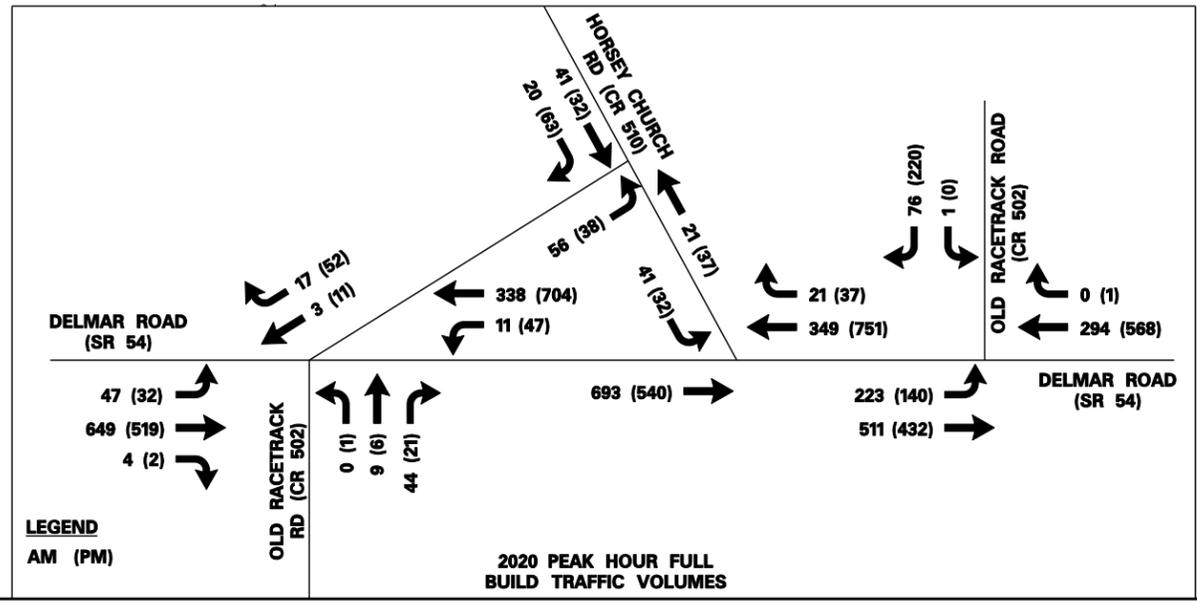
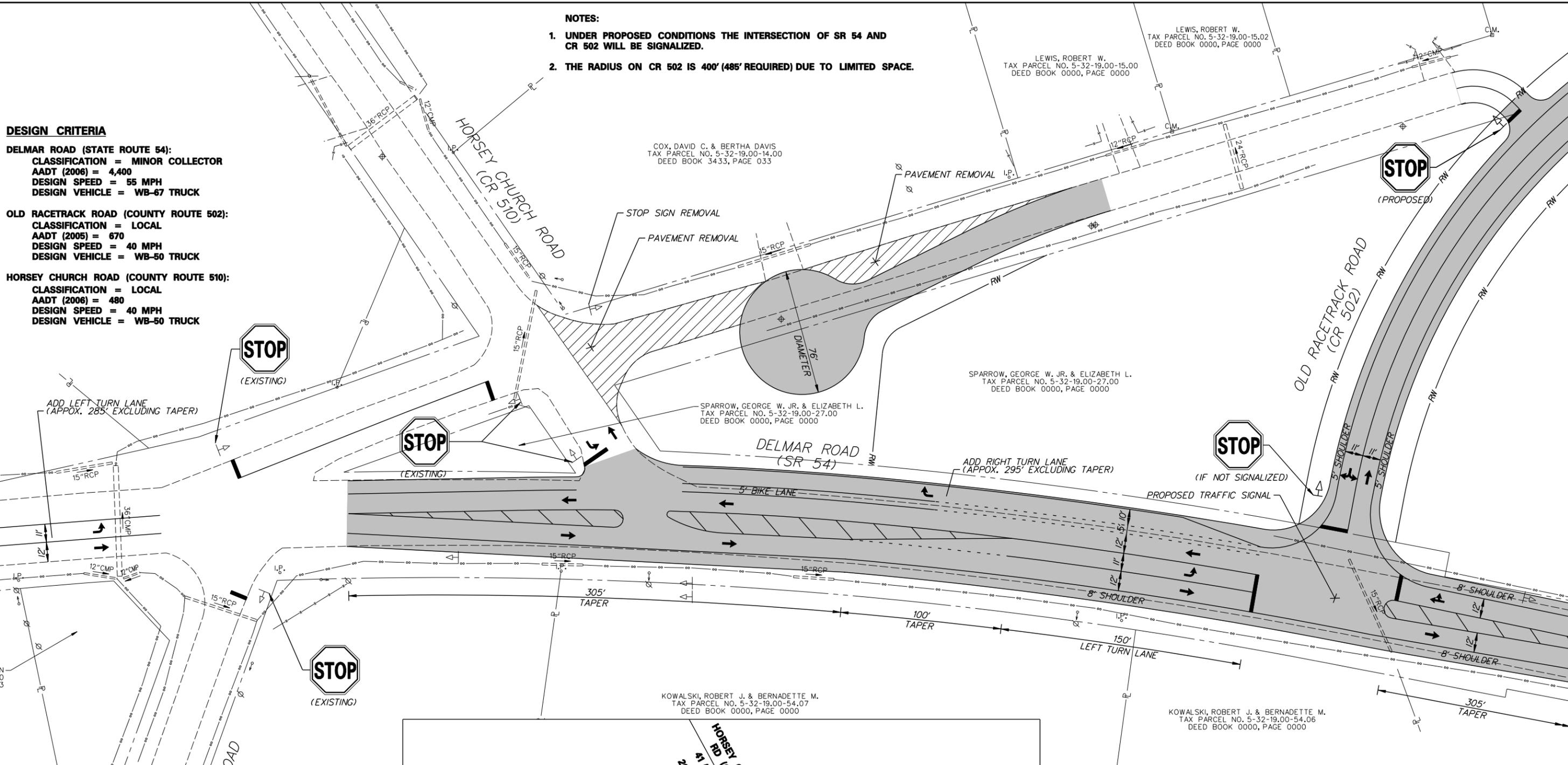
1. UNDER PROPOSED CONDITIONS THE INTERSECTION OF SR 54 AND CR 502 WILL BE SIGNALIZED.
2. THE RADIUS ON CR 502 IS 400' (485' REQUIRED) DUE TO LIMITED SPACE.

DESIGN CRITERIA

DELMAR ROAD (STATE ROUTE 54):
 CLASSIFICATION = MINOR COLLECTOR
 AADT (2006) = 4,400
 DESIGN SPEED = 55 MPH
 DESIGN VEHICLE = WB-67 TRUCK

OLD RACETRACK ROAD (COUNTY ROUTE 502):
 CLASSIFICATION = LOCAL
 AADT (2005) = 670
 DESIGN SPEED = 40 MPH
 DESIGN VEHICLE = WB-50 TRUCK

HORSEY CHURCH ROAD (COUNTY ROUTE 510):
 CLASSIFICATION = LOCAL
 AADT (2006) = 480
 DESIGN SPEED = 40 MPH
 DESIGN VEHICLE = WB-50 TRUCK



**CONCEPTUAL
NOT APPROVED
FOR CONSTRUCTION**

NO.	REVISION	DATE

ROUTE 54 & OLD RACETRACK /HORSEY RD

OR&A Orth - Rodgers & Associates, Inc.
 TRANSPORTATION ENGINEERS and PLANNERS
 301 Lindenwood Drive, Suite 120 • Malvern, PA 19355 • (610) 407-8700
 Great Valley Las Vegas Mechanicsburg Newtown Square Philadelphia West Trenton

**CONCEPTUAL PLANS
BLACKWATER CREEK OFF-SITE IMPROVEMENTS
FULL BUILD (YEAR 2020)**

BLACKWATER CREEK, INC. SUSSEX COUNTY, DELAWARE

DATE: SEPTEMBER 21, 2009 SHEET NUMBER 3 OF 3
 PROJECT NUMBER: 2008081

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General Information

Report date: July 26, 2006

Prepared by: Orth-Rodgers & Associates, Inc.

Prepared for: Meadow Stream LLC

Tax Parcels: 5-32-18.00-42.00 (West Farm)

5-32-19.00-1.00 (South Farm)

5-32-12.00-1.00 and 5-32-12.00-27.00 (North Farm)

Generally consistent with DelDOT's Rules and Regulations for Subdivision Streets: Yes

Project Description and Background

Description: This is now the third version of a TIS review letter to be issued for this project. The two previous TIS review letters for this project reflected earlier proposed land use plans. In all cases, the proposed development would consist of three separate parcels, referred to as North Farm, South Farm, and West Farm.

As of July 2005, the proposed land use included 1,011 single-family detached houses, 138 townhouses, 610 condominiums, an 18-hole golf course, and 22,500 square feet of retail space. As of July 2006, the proposed land included 608 single-family detached houses, 168 townhouses, 403 condominiums, and an 18-hole golf course. Based on the latest proposed land use (as of September 2009), the proposed development would consist of 709 single-family detached houses, 348 townhouses, 403 condominiums, and an 18-hole golf course. The three versions of the proposed land use are described in more detail below in **Table 1**.

Table 1
HISTORY OF PROPOSED LAND USE FOR WILD PINE COUNTRY CLUB

Proposed Land Use	As of July 2005	As of July 2006	As of September 2009
North Farm			
Single-family detached houses	210	208	336
Townhouses	138	168	348
Golf course	18 holes	18 holes	18 holes
Retail space	22,500 square feet	0	0
South Farm			
Single-family detached houses	396	400	373
West Farm			
Single-family detached houses	405	0	0
Townhouses	610	403	403

Location: The proposed North Farm, South Farm, and West Farm parcels are located in the northeast, southeast, and southwest quadrants, respectively, of the Delaware Route 54 (Delmar Road / Sussex Road 76) and Providence Church Road (Sussex Road 504) intersection, west of the Town of Delmar in Sussex County, Delaware. A site location map is included on Page 15.

Amount of land to be developed: approximately 800 acres of land (425 acres in North Farm, 198 acres in South Farm, and 177 acres in West Farm)

Land use approval(s) needed: Subdivision approval. All three parcels fall under Sussex County zoning ordinances. The parcel for North Farm is currently zoned AR-RPC (Agricultural Residential – Residential Planned Community). The parcel for South Farm is currently zoned AR-1 (Agricultural Residential). The parcel for West Farm parcel is currently zoned GR-RPC (General Residential – Residential Planned Community). No rezoning is proposed although South Farm would be developed under the cluster development option.

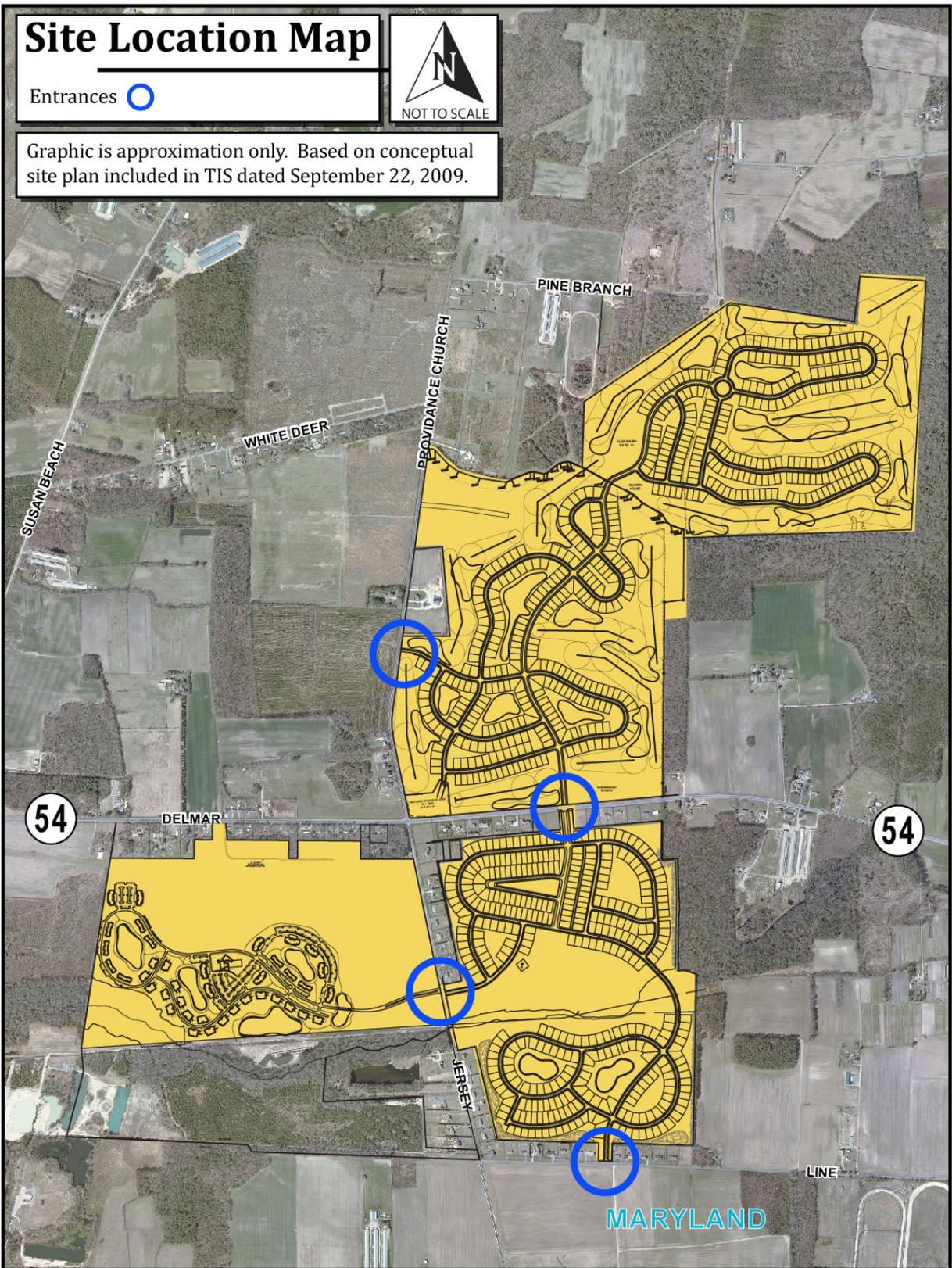
Proposed completion date: 2020

Proposed access locations: Four access points are proposed:

- Providence Church Road and West Farm Access / South Farm Access #1
- Delaware Route 54 and South Farm Access #2 / North Farm Access #1
- West Line Road (Sussex Road 512) and South Farm Access #3
- Providence Church Road and North Farm Access #2

Daily Traffic Volumes:

- 2008 Average Annual Daily Traffic on Delaware Route 54: 3,562 vpd
- 2008 Average Annual Daily Traffic on West Line Road: 875 vpd
- 2008 Average Annual Daily Traffic on Providence Church Road: 832 vpd



Livable Delaware

(Source: Delaware Strategies for State Policies and Spending, July 2004)

Location with respect to the Strategies for State Policies and Spending Map of Delaware:

The proposed Wild Pine Country Club development is located within Investment Level 4.

Investment Level 4

Areas located within Investment Level 4 are predominantly agricultural; contain agribusiness activities, farm complexes and small settlements that are often found at historic crossroads. These areas contain undeveloped natural areas, including forestland and recreational parks, however may have scattered single-family detached residential houses located within them.

Transportation facilities and services will be preserved by the state while they continue to manage the transportation system in a manner that will support the preservation of the natural environment. The state will limit its investments in water and wastewater systems to existing public health, safety and environmental risks and discourage accommodating further development. In addition, the state will limit continued development of areas within Investment Level 4 to those that enhance agriculture and protect water supplies, preserve critical habitat and maintain existing education and public safety services. Although residential development is not desirable in Investment Level 4, conservation design techniques (protecting large portions of existing open space and farmland while clustering development on a smaller portion of the parcel and using environmentally friendly design innovations) can be utilized in some cases to help ensure that developments are compatible with the rural character and natural resources present in the area. However, it is the state's general intent to discourage additional development in Investment Level 4 areas that are unrelated to the areas' needs by limiting infrastructure investment.

Proposed Development's Compatibility with Livable Delaware: The proposed Wild Pine Country Club development falls within Investment Level 4 and is to be developed with residential sites and a golf course. While clustered developments in Investment Level 4 areas can be utilized in some cases, and the proposed Residential Planned Community concept plan generally aligns with this technique, areas classified as Investment Level 4 are not desirable to be built upon unless preserving the natural and/or agricultural environment already in place. In addition, West Farm and North Farm are proposed to have higher-density type housing types (i.e., townhouses), which may be considered inconsistent with the rural and agricultural nature of this area. As such, this development appears to be generally inconsistent with the policies stated in the 2004 update of the Livable Delaware "Strategies for State Policies and Spending", but additional discussion may be required due to the RPC zoning and cluster development option.

Comprehensive Plan

Sussex County Comprehensive Plan:

(Source: *Sussex County Comprehensive Plan Update, June 2008*)

The Sussex County Comprehensive Plan Future Land Use Map indicates that the proposed development is partially in a Low Density Area, which is categorized as a Rural Area, and partially in a Developing Area, which is categorized as a Growth Area. Within the Developing Area, a portion of the proposed development is in a Mixed Residential Area.

In Rural Areas, farming should co-exist with appropriate residential uses and permanently preserved property. The following major guidelines should apply to future growth in Low Density Areas:

Permitted Uses – The primary uses envisioned in Low Density Areas are agricultural activities and single-family detached homes. Business development should be largely confined to businesses addressing the needs of these two uses. Industrial uses that support or depend on agriculture should be permitted. The focus of retail and office uses in Low Density Areas should be providing convenience goods and services to nearby residents. Commercial uses may require conditional use approval from County Council. The types of commercial uses in these residential areas should be limited in their location, size and hours of operation. More intense commercial uses, such as auto repair and gasoline sales, should be avoided in these areas.

Densities – Base densities in Low Density Areas should be unchanged from the current zoning provisions. The minimum lot size should be $\frac{3}{4}$ acre for lots served by on-lot septic systems and $\frac{1}{2}$ acre for lots with central sewers. The cluster option permitted in Low Density Areas should continue to permit overall site densities of up to 2 units per acre, provided significant open space is set aside and the tract connects to public sewers.

Infrastructure – Development where lots are no smaller than $\frac{3}{4}$ acre can be accommodated in this planning area without central sewers. Other development should require central sewer service.

In contrast to Rural Areas, designated Growth Areas are designed to accommodate concentrated levels of development. Specifically regarding Developing Areas, these are newer, emerging growth areas. They are often located near main arterial roads that connect major destinations within the County. Most of the proposed developing Areas are adjacent to municipalities and most are within potential future annexation areas of a municipality. In some cases, the developing areas are not yet served by sewer and water systems but have the potential to secure these services either from public or private providers that provide service to nearby locations. The following major guidelines should apply to future growth in the Developing Areas:

Permitted Uses – A range of housing types are appropriate in most Developing Areas, including single family homes, townhouses and multi-family units. In selected areas, commercial uses should be allowed. A variety of office uses would be appropriate in many areas. Portions of the Developing Areas with good road access and few nearby homes should allow for business and

industrial parks. Careful mixtures of homes with light commercial and institutional uses can be appropriate to provide for convenient services and to allow people to work close to home.

Densities – The County envisions base density in these areas to be 2 units per acre, with the option to go to 4 units per acre if the developer uses optional density bonuses. Those optional bonuses may involve payment of fees that fund permanent land preservation elsewhere in the County, or other options. In addition, consideration should be given to possible density bonuses if a developer funds a major road improvement that otherwise would not be required. That type of bonus may require conditional use approval by County Council and may not be allowed in the Environmentally Sensitive Developing Area. Smaller lots and flexibility in dimensional standards should be allowed if the developer uses a cluster option that results in permanent preservation of a substantial percentage of the tract.

Infrastructure – Central water and sewer facilities are strongly encouraged. If central utilities are not possible, permitted densities should be limited to 2 units per acre. The Developing Areas are largely based upon areas where public sewage service is already available or where the County plans upon providing public sewage service within five years.

Furthermore, pertaining to Mixed Residential Areas, these mainly consist of existing residential development and lands where residential developments are proposed under the current general Residential and Medium Density Residential zoning districts. The following major guidelines should apply to future growth in Mixed Residential Areas:

Permitted Uses – The full range of housing types are appropriate in these residential areas, including single-family homes, townhouses and multi-family units. Non-residential development is not encouraged.

Densities – The current densities in these areas range from a maximum of 4 homes per acre for single-family detached housing to a maximum of 12 dwelling units per acre for multi-family housing.

Infrastructure – Central water and sewer facilities are strongly encouraged. If central utilities are not possible, densities should be limited to 2 units per acre.

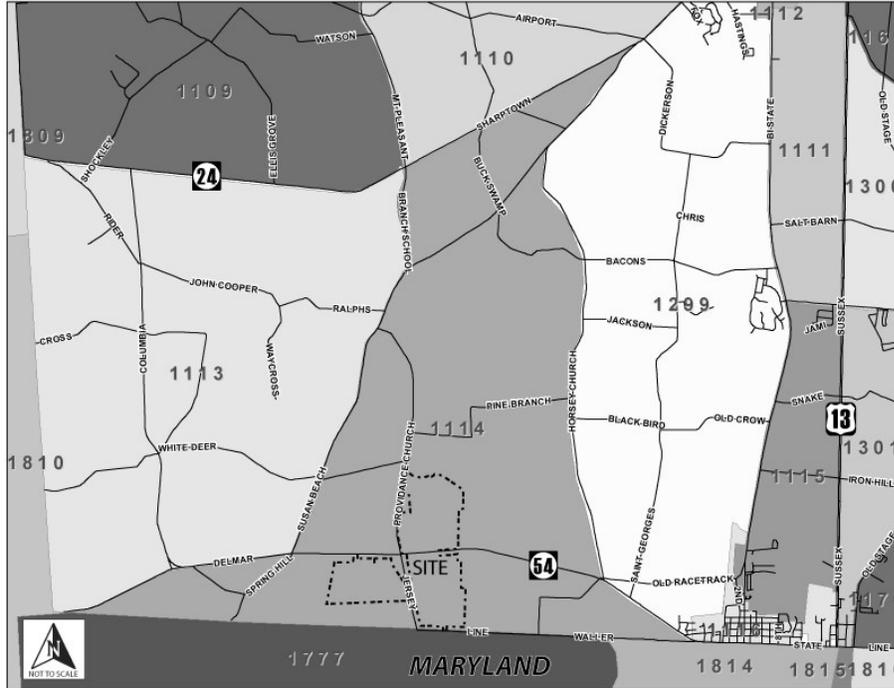
Proposed Development’s Compatibility with Comprehensive Plan:

The proposed residential and golf course land uses of the proposed Wild Pine Country Club development appear to generally comply with the *Permitted Uses* of the Rural Area and Growth Area designations of these parcels. In addition, the overall density of the site is approximately 1.8 units per acre, which is within the acceptable density range considering the housing types. Although that is the case, and while this project is now smaller than originally proposed (with 1,460 dwelling units currently proposed, down from 1,759 dwelling units originally), this development is still relatively large and has the potential to create a significant strain on the existing infrastructure. As such, this development raises questions regarding consistency with the Sussex County Comprehensive Plan, and thus may require additional discussion.

Transportation Analysis Zones (TAZ)

Transportation Analysis Zones (TAZ) where development would be located: 1114

TAZ Boundaries:



Current employment estimate for TAZ: 3 in 2005

Future employment estimate for TAZ: 4 in 2030

Current population estimate for TAZ: 933 in 2005

Future population estimate for TAZ: 1,705 in 2030

Current household estimate for TAZ: 365 in 2005

Future household estimate for TAZ: 674 in 2030

Relevant committed developments in the TAZ: none

Would the addition of committed developments to current estimates exceed future projections: No

Would the addition of committed developments and the proposed development to current estimates exceed future projections: Yes

Relevant Projects in the DelDOT Capital Transportation Program (FY 2008 – FY 2013)

DelDOT currently has one relevant project near the study area: the Corridor Capacity Preservation Program (CCPP). This is a statewide program intended to sustain the capacity of adopted highway corridors by various means such as limiting access points and using service roads for local vehicle trips. The general purpose of the program is to ensure that the existing principal arterial highways, such as US Route 13 (Sussex Highway), are able to efficiently carry regional traffic without impedance from the effects of local development.

Trip Generation

Trip generation for the proposed development was computed using comparable land uses and equations contained in Trip Generation, Seventh Edition, published by the Institute of Transportation Engineers (ITE). The following land uses were utilized to estimate the amount of new traffic generated for this development. All three versions of the proposed land use plan are shown here.

Latest Proposed Land Use (as of September 2009)

- North Farm
 - 336 single-family detached houses (ITE land use code 210)
 - 348 townhouses (ITE land use code 230)
 - 18-hole golf course (ITE land use code 430)
- South Farm
 - 373 single-family detached houses (ITE land use code 210)
- West Farm
 - 403 condominiums (ITE land use code 230)

Table 2a
NORTH FARM PEAK HOUR TRIP GENERATION (2009 PROPOSED LAND USE)

Land Use	AM Peak Hour			PM Peak Hour			Saturday Mid-Day		
	In	Out	Total	In	Out	Total	In	Out	Total
336 single-family detached houses	61	184	245	201	118	319	167	143	310
348 townhouses	24	116	140	112	55	167	78	66	144
Internal Capture	-	-	-	-	-	-	5	5	10
Net External Residential Trips	85	300	385	313	173	486	240	204	444
18-hole golf course	32	8	40	22	27	49	41	42	83
Internal Capture	-	-	-	-	-	-	9	9	18
Net External Golf Course Trips	32	8	40	22	27	49	32	33	65
TOTAL TRIPS (North Farm)	117	308	425	335	200	535	272	237	509

Table 2b
SOUTH FARM PEAK HOUR TRIP GENERATION (2009 PROPOSED LAND USE)

Land Use	AM Peak Hour			PM Peak Hour			Saturday Mid-Day		
	In	Out	Total	In	Out	Total	In	Out	Total
373 single-family detached houses	68	203	271	221	130	351	185	158	343
Internal Capture	-	-	-	-	-	-	3	3	6
Net External Residential Trips	68	203	271	221	130	351	182	155	337
TOTAL TRIPS (South Farm)	68	203	271	221	130	351	182	155	337

Table 2c
WEST FARM PEAK HOUR TRIP GENERATION (2009 PROPOSED LAND USE)

Land Use	AM Peak Hour			PM Peak Hour			Saturday Mid-Day		
	In	Out	Total	In	Out	Total	In	Out	Total
403 condominiums	27	130	157	127	62	189	86	74	160
Internal Capture	-	-	-	-	-	-	2	2	4
Net External Residential Trips	27	130	157	127	62	189	84	72	156
TOTAL TRIPS (West Farm)	27	130	157	127	62	189	84	72	156
TOTAL TRIPS – ENTIRE SITE	212	641	853	683	392	1075	538	464	1002

Table 2d
WILD PINE COUNTRY CLUB DAILY TRIP GENERATION (2009 PROPOSED LAND USE)

Land Use	Weekday ADT			Saturday ADT		
	In	Out	Total	In	Out	Total
709 single-family detached houses	3151	3151	6302	3403	3403	6806
751 townhouses/condominiums	1858	1858	3716	1573	1573	3146
18-hole golf course	322	322	644	366	366	732
TOTAL TRIPS	5331	5331	10662	5342	5342	10684

Original Proposed Land Use (as of July 2005)

- North Farm
 - 210 single-family detached houses (ITE land use code 210)
 - 138 townhouses (ITE land use code 230)
 - 18-hole golf course (ITE land use code 430)
 - 22,500 square feet of retail (ITE land use code 820)
- South Farm
 - 396 single family homes (ITE land use code 210)
- West Farm
 - 405 single family homes (ITE land use code 210)
 - 610 condominiums (ITE land use code 230)

Table 3a
NORTH FARM PEAK HOUR TRIP GENERATION (2005 PROPOSED LAND USE)

Land Use	AM Peak Hour			PM Peak Hour			Saturday Mid-Day		
	In	Out	Total	In	Out	Total	In	Out	Total
210 single-family detached houses	39	117	156	132	77	209	107	91	198
138 townhouses	11	56	67	52	26	78	45	38	83
Internal Capture	-	-	-	7	4	11	7	7	14
Net External Residential Trips	50	173	223	177	99	276	145	122	267
18-hole golf course	32	8	40	22	27	49	41	42	83
Internal Capture	-	-	-	-	-	-	9	9	18
Net External Golf Course Trips	32	8	40	22	27	49	32	33	65
22,500 square feet of retail space	39	25	64	112	122	234	171	157	328
Internal Capture	-	-	-	12	13	25	10	9	19
Pass-by Trips	-	-	-	60	66	126	61	56	117
Net External Retail Trips	39	25	64	40	43	83	100	92	192
TOTAL TRIPS (North Farm)	121	206	327	239	169	408	277	247	524

Table 3b
SOUTH FARM PEAK HOUR TRIP GENERATION (2005 PROPOSED LAND USE)

Land Use	AM Peak Hour			PM Peak Hour			Saturday Mid-Day		
	In	Out	Total	In	Out	Total	In	Out	Total
396 single-family detached houses	72	215	287	233	137	370	196	167	363
Internal Capture	-	-	-	8	6	14	10	8	18
Net External Residential Trips	72	215	287	225	131	356	186	159	345
TOTAL TRIPS (South Farm)	72	215	287	225	131	356	186	159	345

Table 3c
WEST FARM PEAK HOUR TRIP GENERATION (2005 PROPOSED LAND USE)

Land Use	AM Peak Hour			PM Peak Hour			Saturday Mid-Day		
	In	Out	Total	In	Out	Total	In	Out	Total
405 single-family detached houses	73	220	293	238	139	377	200	171	371
610 condominiums	37	182	219	178	87	265	119	101	220
Internal Capture	-	-	-	17	9	26	16	14	30
Net External Residential Trips	110	402	512	399	217	616	303	258	561
TOTAL TRIPS (West Farm)	110	402	512	399	217	616	303	258	561
TOTAL TRIPS – ENTIRE SITE	303	823	1126	863	517	1380	766	664	1430

First Revision of Proposed Land Use (as of July 2006)

- North Farm
 - 208 single-family detached houses (ITE land use code 210)
 - 168 townhouses (ITE land use code 230)
 - 18-hole golf course (ITE land use code 430)
- South Farm
 - 400 single-family detached houses (ITE land use code 210)
- West Farm
 - 403 condominiums (ITE land use code 230)

Table 4a
NORTH FARM PEAK HOUR TRIP GENERATION (2006 PROPOSED LAND USE)

Land Use	AM Peak Hour			PM Peak Hour			Saturday Mid-Day		
	In	Out	Total	In	Out	Total	In	Out	Total
208 single-family detached houses	39	116	155	130	77	207	106	90	196
168 townhouses	13	65	78	62	30	92	49	42	91
Internal Capture	-	-	-	-	-	-	3	3	6
Net External Residential Trips	52	181	233	192	107	299	152	129	281
18-hole golf course	32	8	40	22	27	49	41	42	83
Internal Capture	-	-	-	-	-	-	9	9	18
Net External Golf Course Trips	32	8	40	22	27	49	32	33	65
TOTAL TRIPS (North Farm)	84	189	273	214	134	348	184	162	346

Table 4b
SOUTH FARM PEAK HOUR TRIP GENERATION (2006 PROPOSED LAND USE)

Land Use	AM Peak Hour			PM Peak Hour			Saturday Mid-Day		
	In	Out	Total	In	Out	Total	In	Out	Total
400 single-family detached houses	72	217	289	235	138	373	198	169	367
Internal Capture	-	-	-	-	-	-	4	4	8
Net External Residential Trips	72	217	289	235	138	373	194	165	359
TOTAL TRIPS (South Farm)	72	217	289	235	138	373	194	165	359

Table 4c
WEST FARM PEAK HOUR TRIP GENERATION (2006 PROPOSED LAND USE)

Land Use	AM Peak Hour			PM Peak Hour			Saturday Mid-Day		
	In	Out	Total	In	Out	Total	In	Out	Total
403 condominiums	27	130	157	127	62	189	86	74	160
Internal Capture	-	-	-	-	-	-	2	2	4
Net External Residential Trips	27	130	157	127	62	189	84	72	156
TOTAL TRIPS (West Farm)	27	130	157	127	62	189	84	72	156
TOTAL TRIPS – ENTIRE SITE	183	536	719	576	334	910	462	399	861

Overview of TIS

Intersections examined:

- 1) Providence Church Road & West Farm Access / South Farm Access #1
- 2) Delaware Route 54 & South Farm Access #2 / North Farm Access #1
- 3) West Line Road (Sussex Road 512) & South Farm Access #3
- 4) Providence Church Road & North Farm Access #2
- 5) Delaware Route 54 & Susan Beach Road / North Spring Hill Road (Sussex Road 509)
- 6) Delaware Route 54 & Providence Church Road
- 7) Delaware Route 54 & Old Racetrack Road (Sussex Road 502)
- 8) Delaware Route 54 & Horsey Church Road (Sussex Road 510)
- 9) Delaware Route 54 & Saint George Road (Sussex Road 501)
- 10) Delaware Route 54 & Waller Road (Sussex Road 512)
- 11) Delaware Route 54 & Bi-State Boulevard (US Route 13 Alternate / Maryland Route 675)
- 12) Delaware Route 54 & US Route 13
- 13) Providence Church Road & Susan Beach Road
- 14) West Line Road & Providence Church Road / North Jersey Road
- 15) West Line Road & Old Racetrack Road

Conditions examined:

- 1) Case 1: 2003/2004 Existing (analyzed in original Blackwater Creek TIS, Review Task Number 49)
- 2) Case 2: 2020 Without Proposed Development (analyzed in original Blackwater Creek TIS, Review Task Number 49)
- 3) Case 2B (Delaware Route 54 & US Route 13 intersection only): 2020 Alternative Volumes Without Proposed Development (analyzed in revised Blackwater Creek TIS, Review Task Number 123)
- 4) Case 3: 2020 With Proposed Development (analyzed in revised Blackwater Creek TIS, Review Task Number 123)

- 5) Case 4 (Delaware Route 54 & US Route 13 intersection only): 2020 Alternative Volumes With Proposed Development (analyzed in revised Blackwater Creek TIS, Review Task Number 123)

Peak hours evaluated: Weekday morning and evening peak hours. Intersections on the Delaware Route 54 corridor were also analyzed for the summer Saturday mid-day peak hour.

Committed developments considered (as provided by DelDOT):

- 1) Delmar Commons (a 49,700 square foot shopping center, a 5,740 square foot super-Wawa with gas pumps, 10,000 square feet of restaurants, and a 15,000 square foot office building)
- 2) Sleepy Hollow Estates (252 residential dwelling units)
- 3) Heron Ponds (313 residential dwelling units) (located on the south side of Delaware Route 54 in Wicomico County, MD)

Intersection Descriptions

1) Providence Church Road & West Farm Access / South Farm Access #1

Type of Control: proposed two-way stop-controlled intersection

Eastbound approach: (West Farm Access) one shared left/through/right-turn lane, stop-controlled

Westbound approach: (South Farm Access) one shared left/through/right-turn lane, stop-controlled

Northbound approach: (Providence Church Road) one shared left/through/right-turn lane

Southbound approach: (Providence Church Road) one shared through/left-turn lane and one right-turn lane

2) Delaware Route 54 & South Farm Access #2 / North Farm Access #1

Type of Control: proposed single-lane roundabout

Eastbound approach: (Delaware Route 54) one shared left/through/right-turn lane

Westbound approach: (Delaware Route 54) one shared left/through/right-turn lane

Northbound approach: (South Farm Access) one shared left/through/right-turn lane

Southbound approach: (North Farm Access) one shared left/through/right-turn lane

3) West Line Road & South Farm Access #3

Type of Control: proposed two-way stop-controlled (T-Intersection)

Eastbound approach: (West Line Road) one shared through/left-turn lane

Westbound approach: (West Line Road) one through lane and one right-turn lane

Southbound approach: (South Farm Access) one shared left/right-turn lane, stop-controlled

4) Providence Church Road & North Farm Access #2

Type of Control: proposed two-way stop-controlled (T-intersection)

Westbound approach: (North Farm Access) one shared left/right-turn lane, stop-controlled

Northbound approach: (Providence Church Road) one shared through/right-turn lane

Southbound approach: (Providence Church Road) one shared through/left-turn lane

5) Delaware Route 54 & Susan Beach Road / North Spring Hill Road:

Type of Control: two-way stop-controlled intersection

Eastbound approach: (Delaware Route 54) one shared left/through/right-turn lane

Westbound approach: (Delaware Route 54) one shared left/through/right-turn lane

Northbound approach: (North Spring Hill Road) one shared left/through/right-turn lane, stop-controlled

Southbound approach: (Susan Beach Road) one shared left/through/right-turn lane, stop-controlled

6) Delaware Route 54 & Providence Church Road:

Type of Control: two-way stop-controlled intersection

Eastbound approach: (Delaware Route 54) one shared left/through/right-turn lane

Westbound approach: (Delaware Route 54) one shared left/through/right-turn lane

Northbound approach: (Providence Church Road) one shared left/through/right-turn lane, stop-controlled

Southbound approach: (Providence Church Road) one shared left/through/right-turn lane, stop-controlled

7) Delaware Route 54 & Old Racetrack Road:

Type of Control: two-way stop-controlled intersection

Eastbound approach: (Delaware Route 54) one shared left/through/right-turn lane

Westbound approach: (Delaware Route 54) one shared left/through/right-turn lane

Northbound approach: (Old Racetrack Road) one shared left/through/right-turn lane, stop-controlled

Southbound approach: (Old Racetrack Road) one shared left/through/right-turn lane, stop-controlled

8) Delaware Route 54 & Horsey Church Road:

Type of Control: two-way stop-controlled (T-intersection)

Eastbound approach: (Delaware Route 54) one shared through/left-turn lane

Westbound approach: (Delaware Route 54) one shared through/right-turn lane

Southbound approach: (Horsey Church Road) one shared left/right-turn lane, stop-controlled

9) Delaware Route 54 & Saint George Road:

Type of Control: two-way stop-controlled (T-intersection)

Eastbound approach: (Delaware Route 54) one shared through/left-turn lane

Westbound approach: (Delaware Route 54) one shared through/right-turn lane

Southbound approach: (Saint George Road) one shared left/right-turn lane, stop-controlled

10) Delaware Route 54 & Waller Road:

Type of Control: two-way stop-controlled (T-intersection)

Eastbound approach: (Delaware Route 54) one shared through/left-turn lane

Westbound approach: (Delaware Route 54) one shared through/right-turn lane

Southbound approach: (Waller Road) one shared left/right-turn lane, stop-controlled

11) Delaware Route 54 & Bi-State Boulevard:

Type of Control: signalized four-leg intersection

Eastbound approach: (Delaware Route 54) one shared left/through/right-turn lane

Westbound approach: (Delaware Route 54) one shared left/through/right-turn lane

Northbound approach: (Bi-State Boulevard) one left-turn lane and one shared through/right-turn lane

Southbound approach: (Bi-State Boulevard) one left-turn lane and one shared through/right-turn lane

12) Delaware Route 54 & US Route 13:

Type of Control: signalized four-leg intersection (configuration below is as of 2006)

Eastbound approach: (Delaware Route 54) one left-turn lane, one through lane, and one channelized right-turn lane

Westbound approach: (Delaware Route 54) one left-turn lane, one through lane, and one channelized right-turn lane

Northbound approach: (US Route 13) one left-turn lane, two through lanes, and one channelized right-turn lane

Southbound approach: (US Route 13) one left-turn lane, two through lanes, and one channelized right-turn lane

Note: Improvements have been made to this intersection since the TIS was completed in 2006. As of 2009, the eastbound approach consists of one exclusive left-turn lane, one shared through/left-turn lane, and one right-turn lane.

13) Providence Church Road & Susan Beach Road

Type of Control: two-way stop-controlled (T-intersection)

Westbound approach: (Providence Church Road) one shared left/right-turn lane, stop-controlled

Northbound approach: (Susan Beach Road) one shared through/right-turn lane

Southbound approach: (Susan Beach Road) one shared through/left-turn lane

14) West Line Road & Providence Church Road / North Jersey Road

Type of Control: two-way stop-controlled (T-intersection)

Westbound approach: (West Line Road) one shared left/right-turn lane, stop-controlled

Northbound approach: (North Jersey Road) one shared through/right-turn lane

Southbound approach: (Providence Church Road) one shared through/left-turn lane

15) West Line Road & Old Racetrack Road

Type of Control: two-way stop-controlled (T-intersection)

Eastbound approach: (West Line Road) one shared through/left-turn lane

Westbound approach: (West Line Road) one shared through/right-turn lane

Southbound approach: (Old Racetrack Road) one shared left/right-turn lane, stop-controlled

Transit, Pedestrian, and Bicycle Facilities

Existing transit service: The closest transit service to the proposed development is the Seaford-Delmar shuttle along US Route 13. This free shuttle, funded by the Job Access Reverse Commute Federal Grant Program, connects with Wicomico County Transit Route 22 (which continues south from Delmar to Salisbury). There are 11 daily round trips on weekdays and 13 round trips on Saturdays.

Planned transit service: No changes to the existing transit service are currently planned. The Seaford-Delmar shuttle is funded by a federal grant, and continuation of that service is dependent upon continued grant funding and/or outside subsidies.

Existing bicycle and pedestrian facilities: The *Kent and Sussex Counties Bicycle Map* indicates one bicycle trail, the Southern Delaware Heritage Trail, runs through the study area. The trail runs along Horsey Church Road and continues along Delaware Route 54 between Horsey Church Road through the intersection of Delaware Route 54 and Old Stage Road (Sussex Road 68). Delaware Route 54 is designated as having average cycling conditions with moderate traffic volumes (2,000-10,000 ADT) between Susan Beach Road and Horsey Church Road and above average cycling conditions with moderate traffic volumes from Horsey Church Road to US Route 13. Providence Church Road, West Line Road/Waller Road, Horsey Church Road, Old Racetrack Road, and Saint George Road are rated as having above average cycling conditions with low traffic volumes (less than 2,000 ADT). Bi-State Boulevard is rated as having above average cycling conditions with moderate traffic volumes. US Route 13 is designated as having above average cycling conditions with high traffic volumes (greater than 10,000 ADT). There are currently no sidewalks within the vicinity of the proposed development.

Planned bicycle and pedestrian facilities: ORA included a copy of a letter from Anthony Aglio of DelDOT dated 2/23/05. In addition, DelDOT included several comments related to bicycle and pedestrian facilities in the PLUS review letter dated 5/26/05 and in a letter from Stephen Bayer dated 9/20/06. Based on those three correspondences, the following recommendations are made:

- a) A minimum ten-foot paved multi-modal path with a minimum of 5-foot setback that meets current AASHTO and ADA standards should be constructed along all site frontages.
- b) A minimum of five-foot bicycle lane (in addition to any required auxiliary lanes) should be striped along the site frontage on Delaware Route 54 in order to facilitate safe and unimpeded bicycle travel. A right-turn yield to bikes sign MUTCD R4-4 should be added at the start of the turn lane.
- c) A minimum five-foot shoulder should be added along the development frontages on Providence Church Road and West Line Road. Also share the road signs MUTCD W11-1 with W16-1 should be added at the limits of the property frontage.
- d) Internal sidewalks to promote walking as a viable transportation alternative should be constructed, including sidewalks connecting this development to adjacent developments. These internal sidewalks should also be provided in such a way as to allow for easy pedestrian movement between the different parcels that comprise Wild Pine Country Club, including marked crosswalks across Delaware Route 54 and Providence Church Road.

Previous Comments

There were no previous comments regarding the revised TIS.

General HCS Analysis Comments

(see table footnotes on the following pages for specific comments)

- 1) The TIS was inconsistent in its use of Peak Hour Factors (PHF's) for the existing and no-build conditions. McCormick Taylor used PHF's per lane group for existing conditions. For future conditions the existing PHF was assumed on all roads except for Delaware Route 54 where a PHF of 0.88 was assumed. At the intersection of Delaware Route 54 & US Route 13, which is projected to operate over capacity in 2020 conditions, a PHF of 0.92 was assumed for all approaches.
- 2) There are calculation discrepancies for PHFs and heavy vehicle percentages between the TIS and McCormick Taylor's calculations. McCormick Taylor calculated existing truck percents per lane group. For future conditions, it was assumed that truck percents would remain the same as existing on all roads except for Delaware Route 54 & US Route 13 where a 2% minimum truck percentage was used.
- 3) The TIS used HCS+ for its analysis. McCormick Taylor used HCS 2000 to be consistent with the original Blackwater Creek TIS review.
- 4) The HCS analyses included in the TIS did not always reflect the lane widths observed in the field by McCormick Taylor. McCormick Taylor's HCS analyses incorporated the field-measured lane widths.
- 5) The TIS and McCormick Taylor used different cycle lengths and/or signal timing parameters when analyzing the signalized intersections in some cases.

Table 5
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ¹ Two-Way Stop Control	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Providence Church Road & West Farm Access / South Farm Access #1				
2020 with Wild Pine Country Club (Case 3)				
Eastbound West Farm Access	B (10.8)	B (11.5)	B (10.8)	B (11.5)
Westbound South Farm Access #1	A (9.3)	A (10.0)	A (9.3)	A (10.0)
Northbound Providence Church Road - Left	A (7.5)	A (7.6)	A (7.5)	A (7.6)
Southbound Providence Church Road - Left	A (7.3)	A (7.5)	A (7.3)	A (7.5)

¹ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 6
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ² Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & South Farm Access #2/ North Farm Access #1						
2020 with Wild Pine Country Club (Case 3)						
Eastbound Delaware Route 54 - Left	A (8.0)	A (9.1)	A (8.6)	A (8.0)	A (9.1)	A (8.6)
Westbound Delaware Route 54 - Left	A (8.3)	A (8.5)	A (8.5)	A (8.3)	A (8.5)	A (8.5)
Northbound South Farm Access #2	B (13.5)	B (14.8)	C (15.5)	B (13.5)	B (14.8)	C (15.5)
Southbound North Farm Access #1	F (58.1)	F (216.2)	F (172.9)	F (58.1)	F (216.2)	F (172.9)

Signalized Intersection ²	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & South Farm Access #2/ North Farm Access #1						
2020 with Wild Pine Country Club (Case 3)	B (0.44)	B (0.69)	B (0.60)	B (0.48)	B (0.75)	B (0.67)

Roundabout ³	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & South Farm Access #2/ North Farm Access #1						
2020 with Wild Pine Country Club (Case 3)						
Eastbound Delaware Route 54	NA	NA	NA	A (9.3)	A (9.8)	A (9.8)
Westbound Delaware Route 54	NA	NA	NA	A (8.3)	A (8.7)	A (8.7)
Northbound South Farm Access #2	NA	NA	NA	B (11.3)	B (10.6)	B (10.9)
Southbound North Farm Access #1	NA	NA	NA	B (13.1)	B (15.4)	B (14.0)
Overall Intersection	NA	NA	NA	A (9.8)	A (9.7)	A (9.8)

² For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

³ McCormick Taylor analyzed the roundabout using aaSIDRA. The numbers in parentheses following levels of service are average delay per vehicle, measured in seconds, calculated with the aaSIDRA model. The analysis assumed an environment factor of 1.2.

Table 7
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ⁴ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
West Line Road & South Farm Access #3				
2020 with Wild Pine Country Club (Case 3)				
Eastbound West Line Road - Left	A (7.3)	A (7.5)	A (7.3)	A (7.5)
Southbound South Farm Access #3	A (9.2)	A (9.4)	A (9.2)	A (9.4)

⁴ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 8
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ⁵ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Providence Church Road & North Farm Access #2				
2020 with Wild Pine Country Club (Case 3)				
Westbound North Farm Access #2	A (9.3)	A (10.0)	A (9.3)	A (10.0)
Southbound Providence Church Road - Left	A (7.4)	A (7.6)	A (7.4)	A (7.6)

⁵ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 9
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ⁶ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
2003/2004 Existing (Case 1)						
Eastbound Delaware Route 54 - Left	A (7.5)	A (7.6)	A (7.5)	A (7.5)	A (7.6)	A (7.5)
Westbound Delaware Route 54 - Left	A (7.5)	A (7.6)	A (7.5)	A (7.5)	A (7.5)	A (7.5)
Northbound North Spring Hill Road	B (10.1)	B (11.6)	B (11.0)	B (10.1)	B (11.6)	B (11.0)
Southbound Susan Beach Road	B (11.1)	B (11.4)	B (11.2)	B (11.1)	B (11.4)	B (11.2)
2020 without Wild Pine Country Club (Case 2)						
Eastbound Delaware Route 54 - Left	A (7.7)	A (7.8)	A (7.8)	A (7.7)	A (7.9)	A (7.8)
Westbound Delaware Route 54 - Left	A (7.7)	A (7.9)	A (7.9)	A (7.7)	A (7.9)	A (7.9)
Northbound North Spring Hill Road	B (11.2)	B (14.7)	B (13.8)	B (11.4)	C (15.3)	B (13.8)
Southbound Susan Beach Road	B (13.2)	B (14.8)	B (14.6)	B (13.5)	B (14.9)	B (14.6)
2020 with Wild Pine Country Club (Case 3)						
Eastbound Delaware Route 54 - Left	A (7.8)	A (7.9)	A (7.8)	A (7.8)	A (7.9)	A (7.8)
Westbound Delaware Route 54 - Left	A (7.7)	A (7.9)	A (7.9)	A (7.7)	A (7.9)	A (7.9)
Northbound North Spring Hill Road	B (11.5)	C (15.6)	B (14.1)	B (11.5)	C (15.6)	B (14.1)
Southbound Susan Beach Road	B (13.8)	C (15.3)	B (15.0)	B (13.8)	C (15.3)	B (14.9)

⁶ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 10
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ⁷ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & Providence Church Road						
2003/2004 Existing (Case 1)						
Eastbound Delaware Route 54 – Left	A (7.4)	A (7.8)	A (7.6)	A (7.4)	A (7.8)	A (7.6)
Westbound Delaware Route 54 – Left	A (7.6)	A (7.6)	A (7.6)	A (7.6)	A (7.6)	A (7.6)
Northbound Providence Church Road	B (10.3)	B (14.1)	B (11.3)	B (10.3)	B (14.1)	B (11.3)
Southbound Providence Church Road	B (11.4)	B (13.2)	B (11.6)	B (11.4)	B (13.1)	B (11.6)
2020 without Wild Pine Country Club (Case 2)						
Eastbound Delaware Route 54 – Left	A (7.7)	A (8.1)	A (7.9)	A (7.7)	A (8.1)	A (7.9)
Westbound Delaware Route 54 – Left	A (7.8)	A (8.0)	A (8.0)	A (7.8)	A (8.0)	A (8.0)
Northbound Providence Church Road	B (11.8)	C (20.7)	B (14.5)	B (12.1)	C (23.3)	B (14.8)
Southbound Providence Church Road	B (14.0)	C (18.8)	B (15.2)	B (14.5)	C (20.1)	B (15.4)
2020 with Wild Pine Country Club (Case 3)						
Eastbound Delaware Route 54 – Left	A (7.7)	A (8.2)	A (7.9)	A (7.7)	A (8.2)	A (8.0)
Westbound Delaware Route 54 – Left	A (7.9)	A (8.3)	A (8.2)	A (7.9)	A (8.3)	A (8.2)
Northbound Providence Church Road	C (15.7)	F (106.7)	C (22.9)	C (15.7)	F (106.7)	C (22.9)
Southbound Providence Church Road	C (23.9)	F (172.6)	D (33.8)	C (23.9)	F (172.6)	D (33.8)

Signalized Intersection ⁷	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & Providence Church Road						
2020 with Wild Pine Country Club (Case 3)	B (0.40)	C (0.61)	B (0.45)	B (0.41)	C (0.59)	B (0.46)

⁷ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 10 (continued)
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Roundabout ⁸	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & Providence Church Road						
2020 with Wild Pine Country Club (Case 3)						
Eastbound Delaware Route 54	NA	NA	NA	A (9.1)	A (9.6)	A (9.0)
Westbound Delaware Route 54	NA	NA	NA	A (8.9)	B (10.1)	A (9.2)
Northbound Providence Church Road	NA	NA	NA	A (9.2)	A (9.3)	A (9.3)
Southbound Providence Church Road	NA	NA	NA	A (9.0)	B (11.0)	B (10.2)
Overall Intersection	NA	NA	NA	A (9.1)	A (9.9)	A (9.3)

⁸ McCormick Taylor analyzed the roundabout using aaSIDRA. The numbers in parentheses following levels of service are average delay per vehicle, measured in seconds, calculated with the aaSIDRA model. The analysis assumed an environment factor of 1.2.

Table 11
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ⁹ Two-Way Stop Control	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & Old Racetrack Road						
2003/2004 Existing (Case 1)						
Eastbound Delaware Route 54 - Left	A (7.5)	A (7.6)	A (7.6)	A (7.5)	A (7.6)	A (7.6)
Westbound Delaware Route 54 - Left	A (7.7)	A (7.5)	A (7.6)	A (7.7)	A (7.5)	A (7.6)
Northbound Old Racetrack Road	A (9.8)	B (10.5)	B (10.5)	A (9.8)	B (10.6)	B (10.5)
Southbound Old Racetrack Road	A (9.5)	B (10.0)	B (10.6)	A (9.6)	B (10.1)	B (10.6)
2020 without Wild Pine Country Club (Case 2)						
Eastbound Delaware Route 54 - Left	A (7.8)	A (8.0)	A (7.9)	A (7.8)	A (8.0)	A (7.9)
Westbound Delaware Route 54 - Left	A (7.9)	A (7.8)	A (7.9)	A (7.9)	A (7.8)	A (7.9)
Northbound Old Racetrack Road	B (11.0)	B (12.9)	B (12.6)	B (11.1)	B (12.9)	B (12.7)
Southbound Old Racetrack Road	B (10.6)	B (11.4)	B (13.2)	B (10.7)	B (11.8)	B (13.5)
2020 with Wild Pine Country Club (Case 3)						
Eastbound Delaware Route 54 - Left	A (8.5)	A (8.9)	A (8.8)	A (8.5)	A (8.9)	A (8.8)
Westbound Delaware Route 54 - Left	A (8.5)	A (8.2)	A (8.3)	A (8.5)	A (8.2)	A (8.3)
Northbound Old Racetrack Road	E (40.3)	E (38.0)	E (45.7)	E (40.3)	E (40.3)	E (46.2)
Southbound Old Racetrack Road ¹⁰	C (20.0)	F (52.4)	F (96.8)	C (20.7)	F (120.2)	F (99.2)

⁹ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

¹⁰ For the PM peak hour analysis, the TIS used an incorrect PHF of 0.82 on the southbound approach. McCormick Taylor used the PHF of 0.62 based on the count data.

Table 11 (continued)
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Roundabout ¹¹	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & Old Racetrack Road / Horsey Church Road ¹²						
2020 with Wild Pine Country Club (Case 3)						
Eastbound Delaware Route 54	0.53-0.64	0.43-0.51	0.50-0.60	0.55-0.66	0.42-0.50	0.50-0.61
Westbound Delaware Route 54	0.27-0.33	0.47-0.56	0.41-0.50	0.31-0.37	0.47-0.56	0.42-0.51
Northbound Old Racetrack Road	0.09-0.11	0.05-0.06	0.08-0.10	0.09-0.11	0.04-0.05	0.06-0.08
Southbound Old Racetrack Road	0.17-0.20	0.53-0.65	0.35-0.43	0.15-0.19	0.38-0.49	0.26-0.32

Roundabout ¹³	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & Old Racetrack Road / Horsey Church Road						
2020 with Wild Pine Country Club (Case 3)						
Eastbound Delaware Route 54	NA	NA	NA	A (9.8)	A (9.6)	A (9.5)
Westbound Delaware Route 54	NA	NA	NA	B (10.2)	A (9.2)	A (9.5)
Northbound Old Racetrack Road	NA	NA	NA	B (10.3)	A (8.2)	A (9.4)
Southbound Old Racetrack Road	NA	NA	NA	B (11.2)	B (13.1)	B (10.4)
Overall Intersection	NA	NA	NA	B (10.1)	B (10.2)	A (9.7)

¹¹ The TIS analyzed the roundabout using HCS. The results displayed represent the upper-bound and lower-bound volume-to-capacity (v/c) ratios for that approach. The FHWA *Roundabouts: An Information Guide* defines the lower-bound v/c ratio as the operations that may be expected until roundabouts become more common and the upper-bound v/c ratio as the capacities that are expected at most roundabouts. For roundabouts, the 2000 Highway Capacity Manual does not calculate a letter grade level of service.

¹² The TIS recommends the installation of a roundabout at the intersection of Delaware Route 54 & Old Racetrack Road. Horsey Church Road would be eliminated between Old Racetrack Road and Delaware Route 54 due to its close proximity to the roundabout at Old Racetrack Road. Traffic that formerly used this section of road would use the proposed roundabout and would be redistributed accordingly.

¹³ McCormick Taylor also analyzed the roundabout using aaSIDRA. The numbers in parentheses following levels of service are average delay per vehicle, measured in seconds, calculated with the aaSIDRA model. The analysis assumed an environment factor of 1.2.

Table 12
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ¹⁴ Two-Way Stop Control (T-intersection)	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & Horse Church Road						
2003/2004 Existing (Case 1)						
Eastbound Delaware Route 54 - Left	A (7.5)	A (7.7)	A (7.6)	A (7.5)	A (7.7)	A (7.6)
Southbound Horse Church Road	B (10.3)	B (10.7)	B (10.1)	B (10.4)	B (10.9)	B (10.1)
2020 without Wild Pine Country Club (Case 2)						
Eastbound Delaware Route 54 - Left	A (7.8)	A (8.0)	A (8.0)	A (7.8)	A (8.0)	A (8.0)
Southbound Horse Church Road	B (12.4)	B (13.3)	B (11.9)	B (12.6)	B (14.0)	B (12.1)
2020 with Wild Pine Country Club (Case 3) ¹⁵						
Eastbound Delaware Route 54 - Left	A (8.0)	A (8.6)	A (8.5)	A (7.9)	A (8.6)	A (8.5)
Southbound Horse Church Road	C (16.4)	C (19.6)	C (15.7)	B (14.8)	C (20.6)	C (15.7)

¹⁴ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

¹⁵ The TIS recommends the installation of a roundabout at the intersection of Delaware Route 54 & Old Racetrack Road. Horse Church Road would be eliminated between Old Racetrack Road and Delaware Route 54 due to its close proximity to the roundabout at Old Racetrack Road. Traffic that formerly used this section of road would use the proposed roundabout and would be redistributed accordingly.

Table 13
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ¹⁶ Two-Way Stop Control (T-intersection)	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & Saint George Road						
2003/2004 Existing (Case 1)						
Eastbound Delaware Route 54 - Left	A (7.5)	A (7.7)	A (7.6)	A (7.5)	A (7.8)	A (7.6)
Southbound Saint George Road	B (10.2)	B (11.4)	B (10.9)	B (10.2)	B (11.5)	B (10.9)
2020 without Wild Pine Country Club (Case 2)						
Eastbound Delaware Route 54 - Left	A (7.8)	A (8.1)	A (8.0)	A (7.8)	A (8.1)	A (8.0)
Southbound Saint George Road	B (11.9)	B (14.4)	B (13.9)	B (12.1)	C (15.1)	B (13.9)
2020 with Wild Pine Country Club (Case 3)						
Eastbound Delaware Route 54 - Left	A (7.9)	A (8.8)	A (8.5)	A (7.9)	A (8.8)	A (8.5)
Southbound Saint George Road	C (15.3)	C (21.8)	C (19.7)	C (15.3)	C (22.3)	C (19.7)

¹⁶ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 14
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ¹⁷ Two-Way Stop Control (T-intersection)	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & Waller Road						
2003/2004 Existing (Case 1)						
Westbound Delaware Route 54 - Left	A (8.0)	A (8.0)	A (7.8)	A (8.0)	A (8.0)	A (7.8)
Northbound Waller Road	B (11.0)	B (10.3)	B (10.0)	B (11.0)	B (10.3)	B (10.0)
2020 without Wild Pine Country Club (Case 2)						
Westbound Delaware Route 54 - Left	A (8.3)	A (8.4)	A (8.2)	A (8.3)	A (8.4)	A (8.2)
Northbound Waller Road	B (12.0)	B (11.9)	B (11.3)	B (12.0)	B (11.9)	B (11.6)
2020 with Wild Pine Country Club (Case 3)						
Westbound Delaware Route 54 - Left	A (9.0)	A (9.1)	A (8.9)	A (9.0)	A (9.1)	A (8.9)
Northbound Waller Road	C (16.8)	B (14.8)	B (14.7)	C (16.8)	B (14.8)	B (14.7)

¹⁷ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 15
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Signalized Intersection ¹⁸	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & Bi-State Boulevard						
2003/2004 Existing (Case 1)	B (0.61)	B (0.62)	B (0.51)	B (0.61)	B (0.53)	B (0.48)
2020 without Wild Pine Country Club (Case 2)	B (0.69)	B (0.73)	B (0.65)	C (0.69)	C (0.70)	C (0.62)
2020 with Wild Pine Country Club (Case 3)	C (0.87)	C (0.92)	B (0.76)	C (0.87)	C (0.83)	C (0.78)

¹⁸ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 16
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Signalized Intersection ¹⁹	LOS per TIS			LOS per McCormick Taylor		
	Weekday AM	Weekday PM	Saturday Mid	Weekday AM	Weekday PM	Saturday Mid
Delaware Route 54 & US Route 13						
2003/2004 Existing (Case 1)	D (0.71)	D (0.77)	D (0.87)	D (0.66)	D (0.72)	E (0.85)
2020 without Wild Pine Country Club (Case 2)	D (0.87)	F (1.02)	F (1.22)	D (0.92)	E (0.96)	F (1.20)
2020 without Wild Pine Country Club (Case 2B) ²⁰	NA	NA	NA	F (1.11)	F (1.23)	F (1.22)
2020 with Wild Pine Country Club (Case 3)	D (0.92)	F (1.10)	F (1.30)	E (0.92)	F (1.05)	F (1.31)
2020 with Wild Pine Country Club (Case 4) ²⁰	NA	NA	NA	F (1.14)	F (1.26)	F (1.33)
2020 with Wild Pine Country Club (Case 4) With Improvement Option 1 ^{20,21}	NA	NA	NA	F (1.08)	F (1.18)	F (1.14)
2020 with Wild Pine Country Club (Case 4) With Improvement Option 2 ^{20,22}	NA	NA	NA	D (0.84)	D (0.94)	D (0.93)

¹⁹ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

²⁰ Case 2B and Case 4 incorporate alternative traffic volumes that reflect an average of separate traffic counts performed for multiple traffic impact studies as well as a consistent set of common committed developments including Delmar Commons, Yorkshire Estates, Heron Pond, and Stillwater. Both the Case 2B and Case 4 volumes include traffic assigned to this intersection as generated by the Roam Chesapeake Reserve development scheduled to be complete in 2010. The Case 4 volumes also include traffic assigned to this intersection as generated by the proposed Wild Pine Country Club development. It should be noted that for the Saturday peak, Case 2B and Case 4 westbound right-turn and southbound through volumes are slightly lower than Case 1 volumes due to variations in traffic counts for this development compared to the average of multiple traffic counts. This is also true for the Saturday peak Case 2B eastbound left-turn volume. DeIDOT was made aware of this and have approved the Case 2B and Case 4 volumes.

²¹ Improvement Option 1 includes reconfiguring the eastbound and westbound approaches to each include one exclusive left-turn lane, one through lane and one shared through/right-turn. It also includes a second exclusive left-turn lane on the northbound US Route 13 approach. Additionally, these improvements include roadway widening on both the east and west sides of the intersection to accommodate the second through lanes (and the double left-turn lane from the northbound approach).

²² Improvement Option 2 includes the addition of a third through lane to both northbound and southbound US Route 13 as well as a second exclusive left-turn lane to the northbound approach. It also includes reconfiguring the eastbound and westbound approaches to each include two exclusive left-turn lanes, one through lane and one shared through/right-turn lane.

Table 17
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ²³ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
Providence Church Road & Susan Beach Road				
2003/2004 Existing (Case 1)				
Westbound Providence Church Road	A (8.5) ²⁴	A (8.8)	A (8.8)	A (8.8)
Southbound Susan Beach Road - Left	A (7.4)	A (7.4)	A (7.5)	A (7.4)
2020 without Wild Pine Country Club (Case 2)				
Westbound Providence Church Road	A (8.7)	A (8.7)	A (8.9)	A (8.9)
Southbound Susan Beach Road - Left	A (7.5)	A (7.4)	A (7.6)	A (7.4)
2020 with Wild Pine Country Club (Case 3)				
Westbound Providence Church Road	A (9.3)	A (9.1)	A (9.3)	A (9.1)
Southbound Susan Beach Road - Left	A (7.6)	A (7.5)	A (7.6)	A (7.5)

²³ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

²⁴ The TIS used an incorrect volume for the northbound through movement for the existing conditions AM peak hour analysis.

Table 18
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

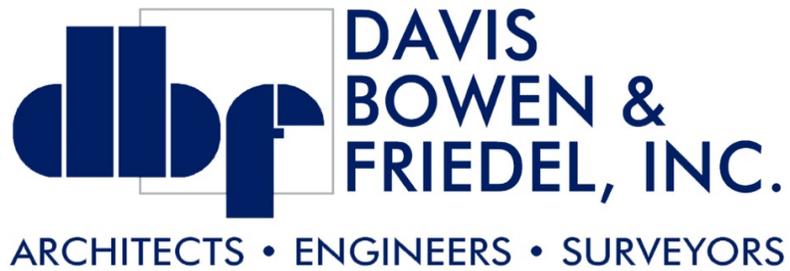
Unsignalized Intersection ²⁵ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
West Line Road & Providence Church Road / North Jersey Road				
2003/2004 Existing (Case 1)				
Westbound West Line Road	A (9.3)	A (9.2)	A (9.3)	A (9.2)
Southbound Providence Church Road - Left	A (7.3)	A (7.4)	A (7.3)	A (7.4)
2020 without Wild Pine Country Club (Case 2)				
Westbound West Line Road	A (9.1)	A (9.2)	A (9.4)	A (9.3)
Southbound Providence Church Road - Left	A (7.2)	A (7.4)	A (7.3)	A (7.4)
2020 with Wild Pine Country Club (Case 3)				
Westbound West Line Road	B (10.5)	B (10.0)	B (10.5)	B (10.0)
Southbound Providence Church Road - Left	A (7.4)	A (7.6)	A (7.4)	A (7.6)

²⁵ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.

Table 19
PEAK HOUR LEVELS OF SERVICE (LOS)
based on Traffic Impact Study for Wild Pine Country Club
Report dated July 26, 2006
Prepared by Orth-Rodgers and Associates, Inc.

Unsignalized Intersection ²⁶ Two-Way Stop Control (T-intersection)	LOS per TIS		LOS per McCormick Taylor	
	Weekday AM	Weekday PM	Weekday AM	Weekday PM
West Line Road & Old Racetrack Road				
2003/2004 Existing (Case 1)				
Eastbound West Line Road - Left	A (7.4)	A (7.2)	A (7.4)	A (7.2)
Southbound Old Racetrack Road	A (8.5)	A (8.5)	A (8.5)	A (8.5)
2020 without Wild Pine Country Club (Case 2)				
Eastbound West Line Road - Left	A (7.4)	A (7.2)	A (7.4)	A (7.2)
Southbound Old Racetrack Road	A (8.5)	A (8.5)	A (8.6)	A (8.5)
2020 with Wild Pine Country Club (Case 3)				
Eastbound West Line Road - Left	A (7.5)	A (7.4)	A (7.5)	A (7.4)
Southbound Old Racetrack Road	A (8.7)	A (9.1)	A (8.7)	A (9.1)

²⁶ For unsignalized analyses, the numbers in parentheses following levels of service are average delay per vehicle, measured in seconds. For signalized analyses, those numbers are X-critical, a composite volume-to-capacity ratio.



Sussex County Comprehensive Plan Amendment

November 18, 2021 Planning & Zoning Meeting

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- d. 2045 Future Land Use Map
- e. Delmar Future Land Use Map
- f. Delmar and County Zoning Map
- g. Environmental Conditions Map
- h. Sewer Service Territories
- i. Water Service Territories
- j. Roadway Functional Classification Map
- k. Local Employment Center
- l. Regional Employment Center
- m. Higher Education Facilities
- n. Regional Healthcare Facilities

A

Presentation Outline

A. Land Use & Zoning

1. The properties were located within the Developing Area according to the 2008 Future Land Use Map.
2. The properties are located within the Existing Development Area or Low Density Area according to the 2045 Future Land Use Map.
3. The properties are zoned General Residential, Agricultural Residential or Commercial.
4. The Owner of the property is Double H. Properties 2, LLC or Blackwater Showfield, LLC
5. The properties are located in the Level 4 Area of the 2020 State Strategies Map.

B. Land Utilization

1. The total acreage of the properties is 895.35 acres of land.
2. The properties have frontage along state-maintained roadways.

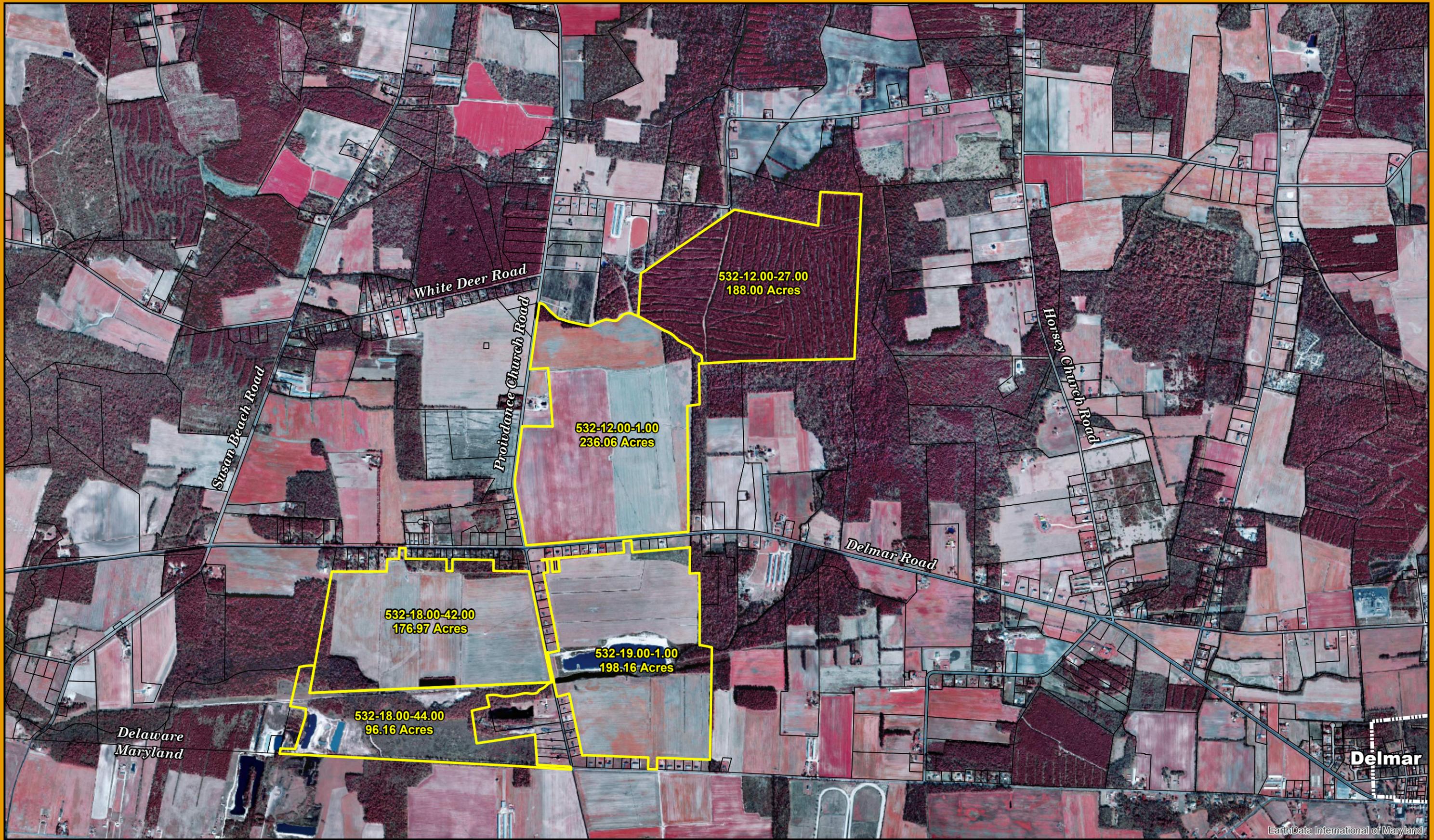
C. Traffic

1. Road classifications within the request area are Local Roads and Minor Collector Roads.

D. Civil Engineering

1. The properties are located within the Tidewater Utilities, Inc. CPCN for water.
2. The properties are located within the Tidewater Environmental Services, Inc. CPCN for sewer and applicant is aware of the pending sale to Artesian Wastewater, Inc.

Exhibit 1



EarthData International of Maryland



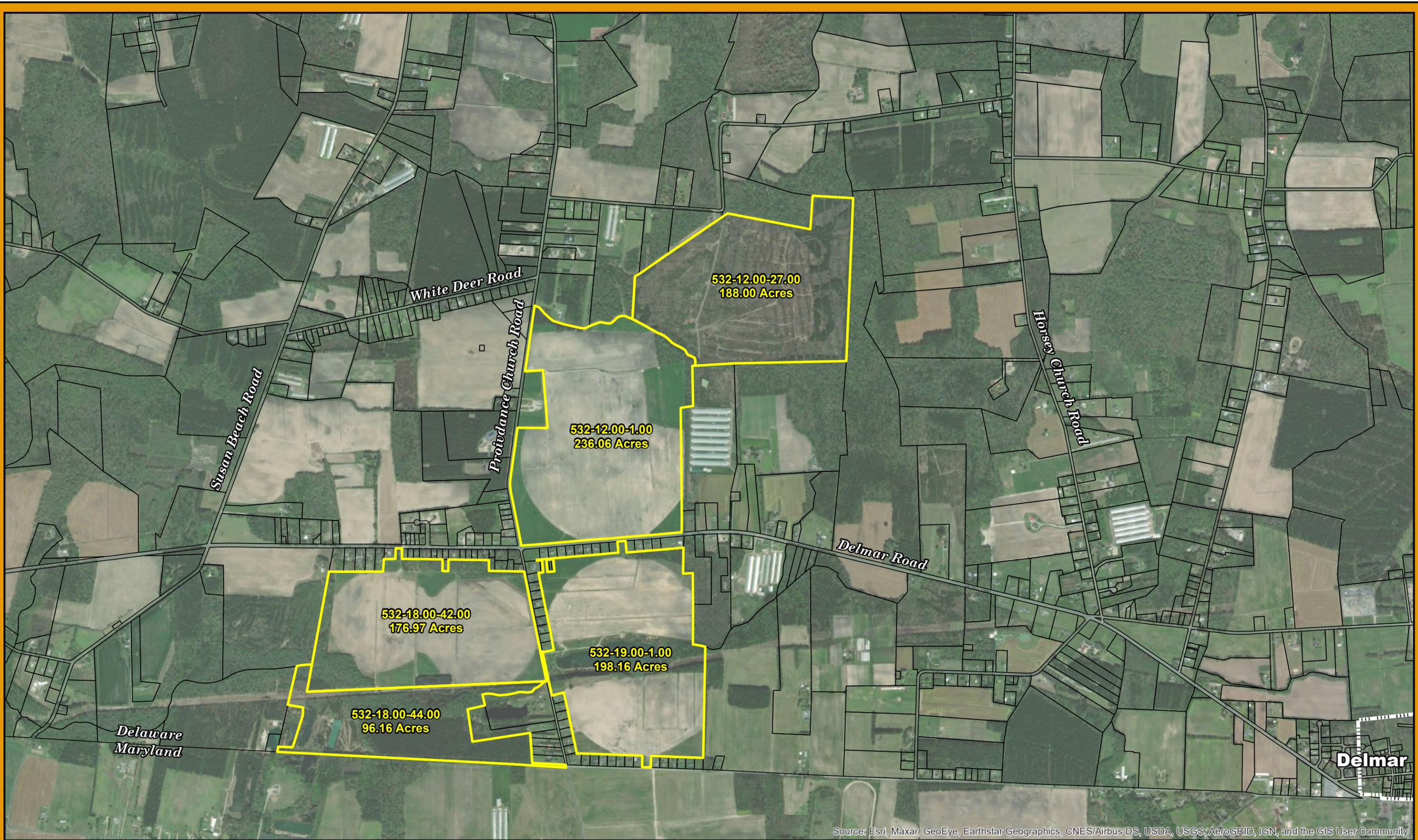
November 2021

Spring 2002
Aerial Photo

2002 Aerial Photo
Double H Properties, LLC.
Near Delmar, Sussex County, Delaware

0 1,500 3,000
Feet





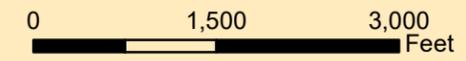
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



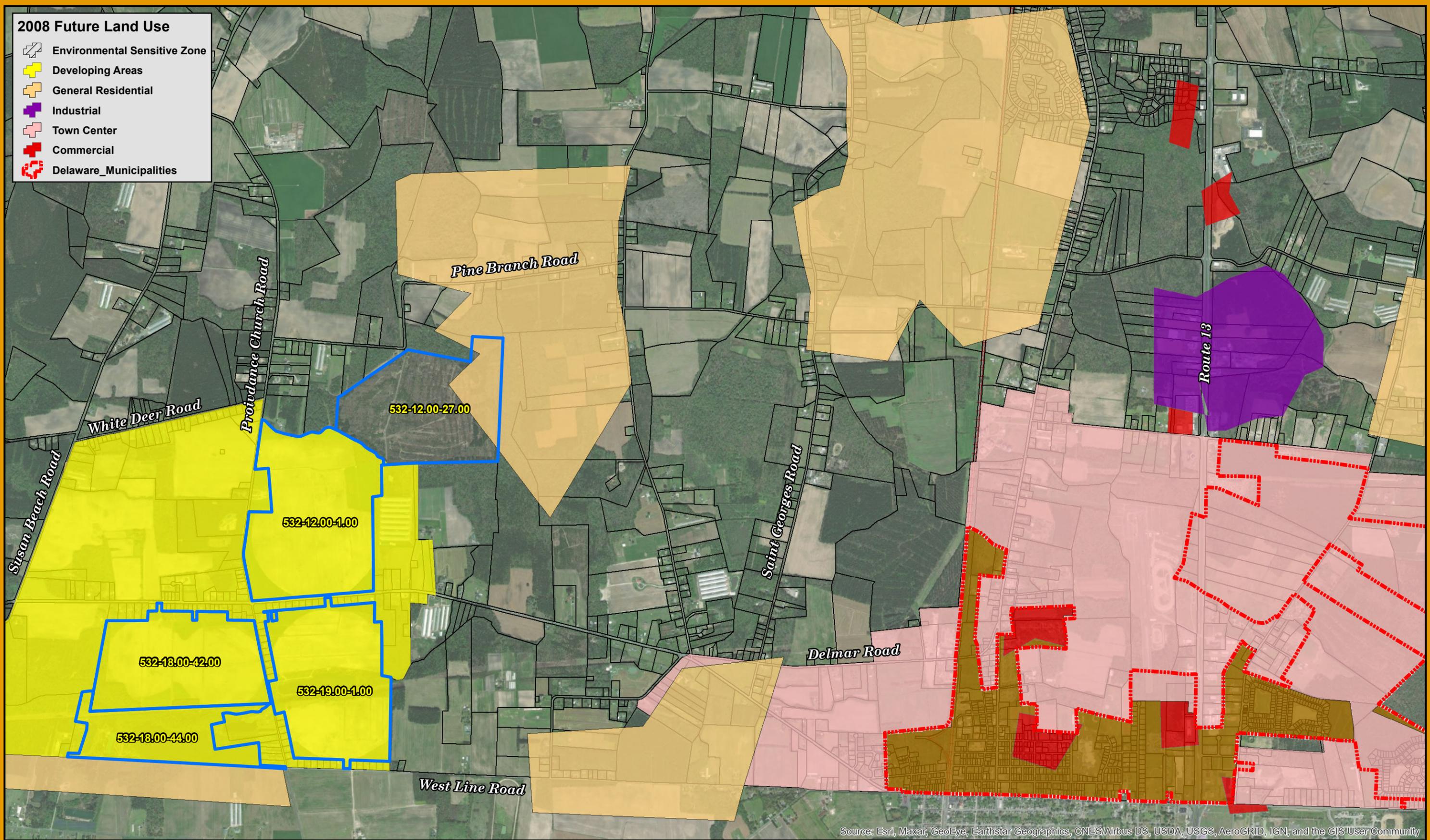
November 2021

**Summer 2020
Aerial Photo**

Current Aerial Photo
Double H Properties, LLC.
 Near Delmar, Sussex County, Delaware



- 2008 Future Land Use**
-  Environmental Sensitive Zone
 -  Developing Areas
 -  General Residential
 -  Industrial
 -  Town Center
 -  Commercial
 -  Delaware_Municipalities



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



November 2021

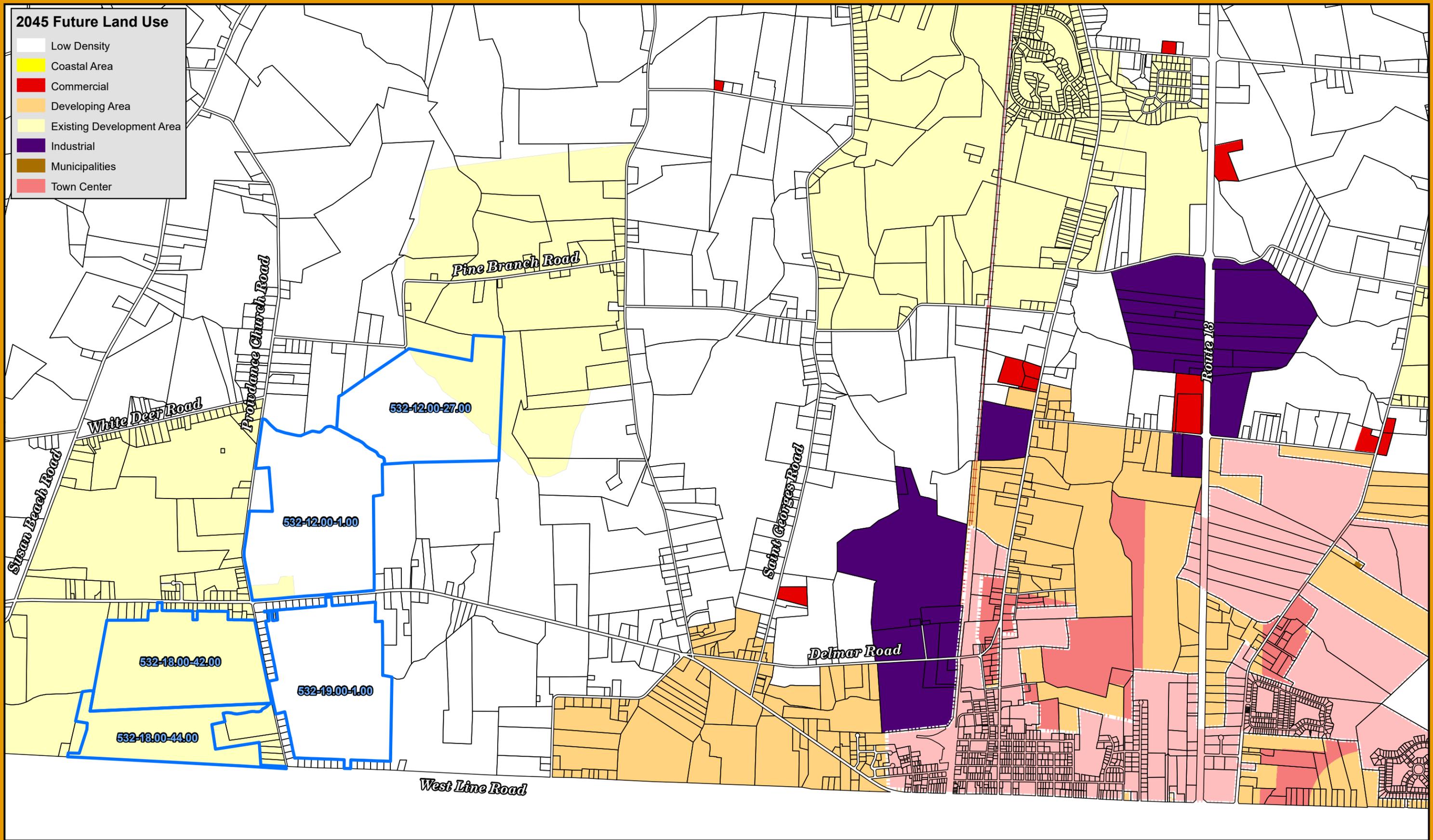
Summer 2020
Aerial Photo

County 2008 Future Land Use
Double H Properties, LLC.
 Near Delmar, Sussex County, Delaware

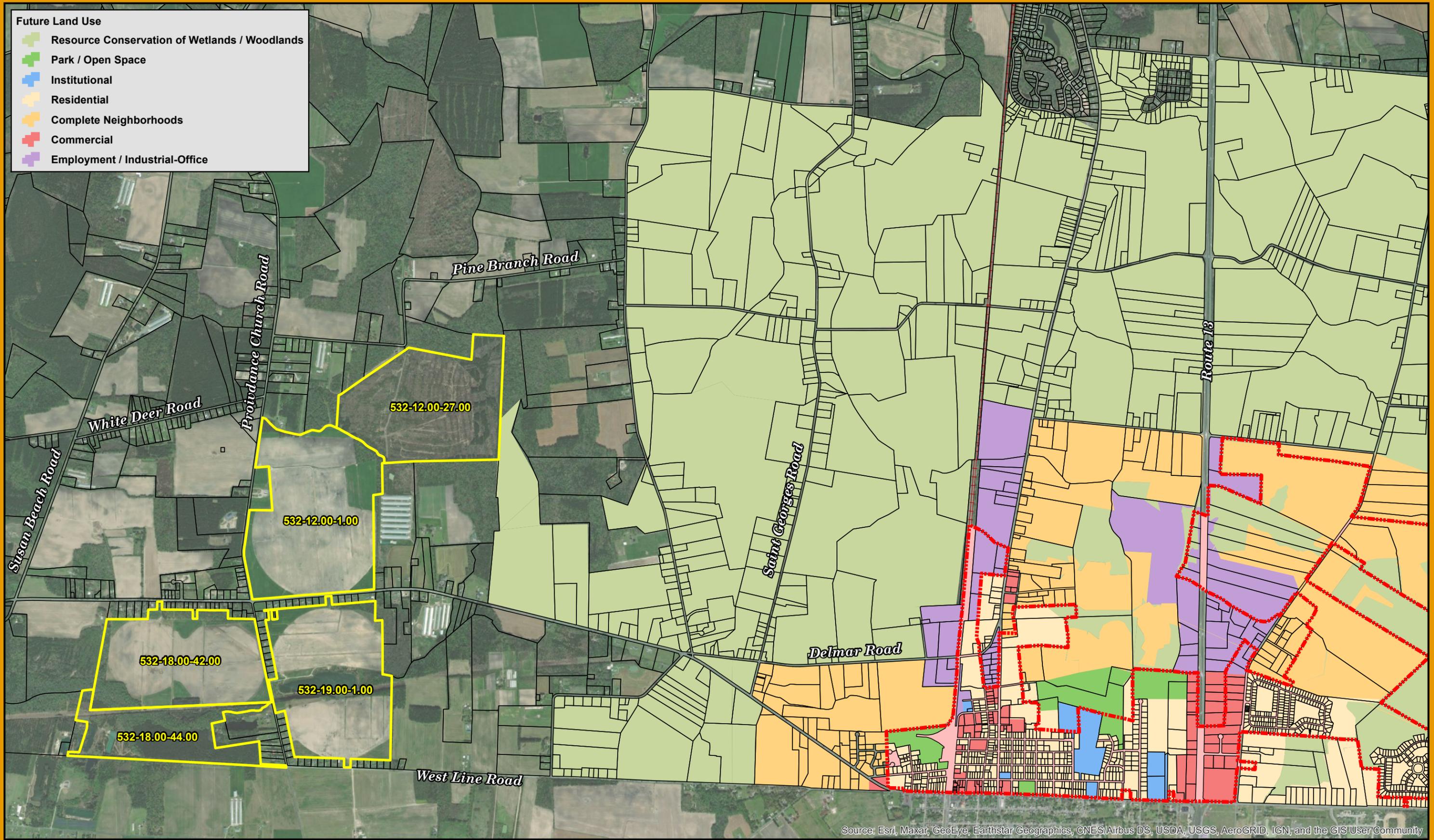


2045 Future Land Use

- Low Density
- Coastal Area
- Commercial
- Developing Area
- Existing Development Area
- Industrial
- Municipalities
- Town Center



- Future Land Use**
- Resource Conservation of Wetlands / Woodlands
 - Park / Open Space
 - Institutional
 - Residential
 - Complete Neighborhoods
 - Commercial
 - Employment / Industrial-Office

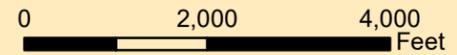


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



**Summer 2020
Aerial Photo**

Delmar Future Land Use
Double H Properties, LLC.
 Near Delmar, Sussex County, Delaware

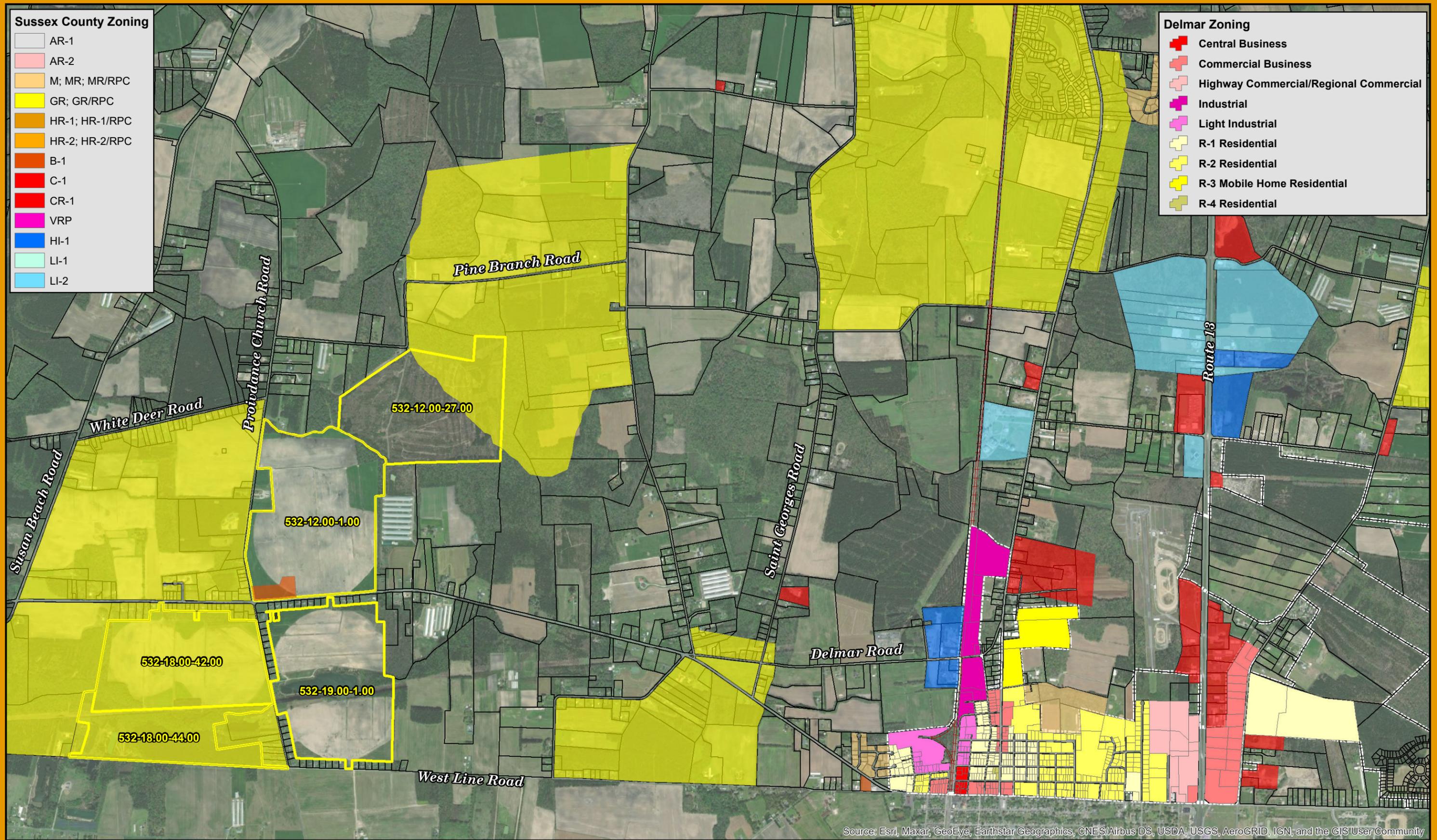


Sussex County Zoning

- AR-1
- AR-2
- M; MR; MR/RPC
- GR; GR/RPC
- HR-1; HR-1/RPC
- HR-2; HR-2/RPC
- B-1
- C-1
- CR-1
- VRP
- HI-1
- LI-1
- LI-2

Delmar Zoning

- Central Business
- Commercial Business
- Highway Commercial/Regional Commercial
- Industrial
- Light Industrial
- R-1 Residential
- R-2 Residential
- R-3 Mobile Home Residential
- R-4 Residential



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

November 2021

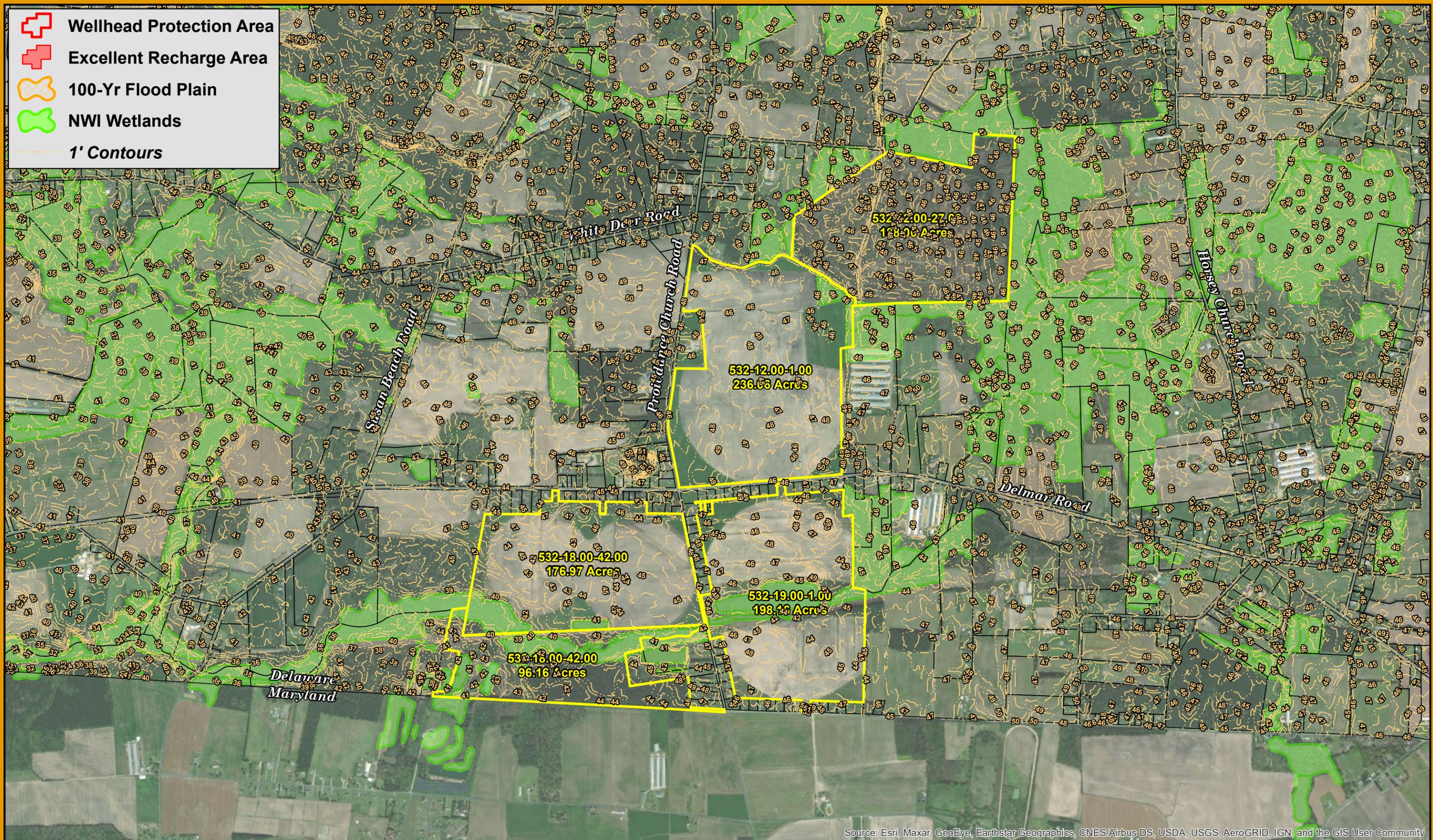
Summer 2020
Aerial Photo

Delmar & County Zoning Map
Double H Properties, LLC.
 Near Delmar, Sussex County, Delaware



DAVIS BOWEN & FRIEDEL, INC.
 ARCHITECTS - ENGINEERS - SURVEYORS

-  Wellhead Protection Area
-  Excellent Recharge Area
-  100-Yr Flood Plain
-  NWI Wetlands
-  1' Contours



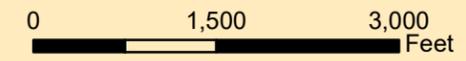
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



November 2021
 Summer 2020
 Aerial Photo

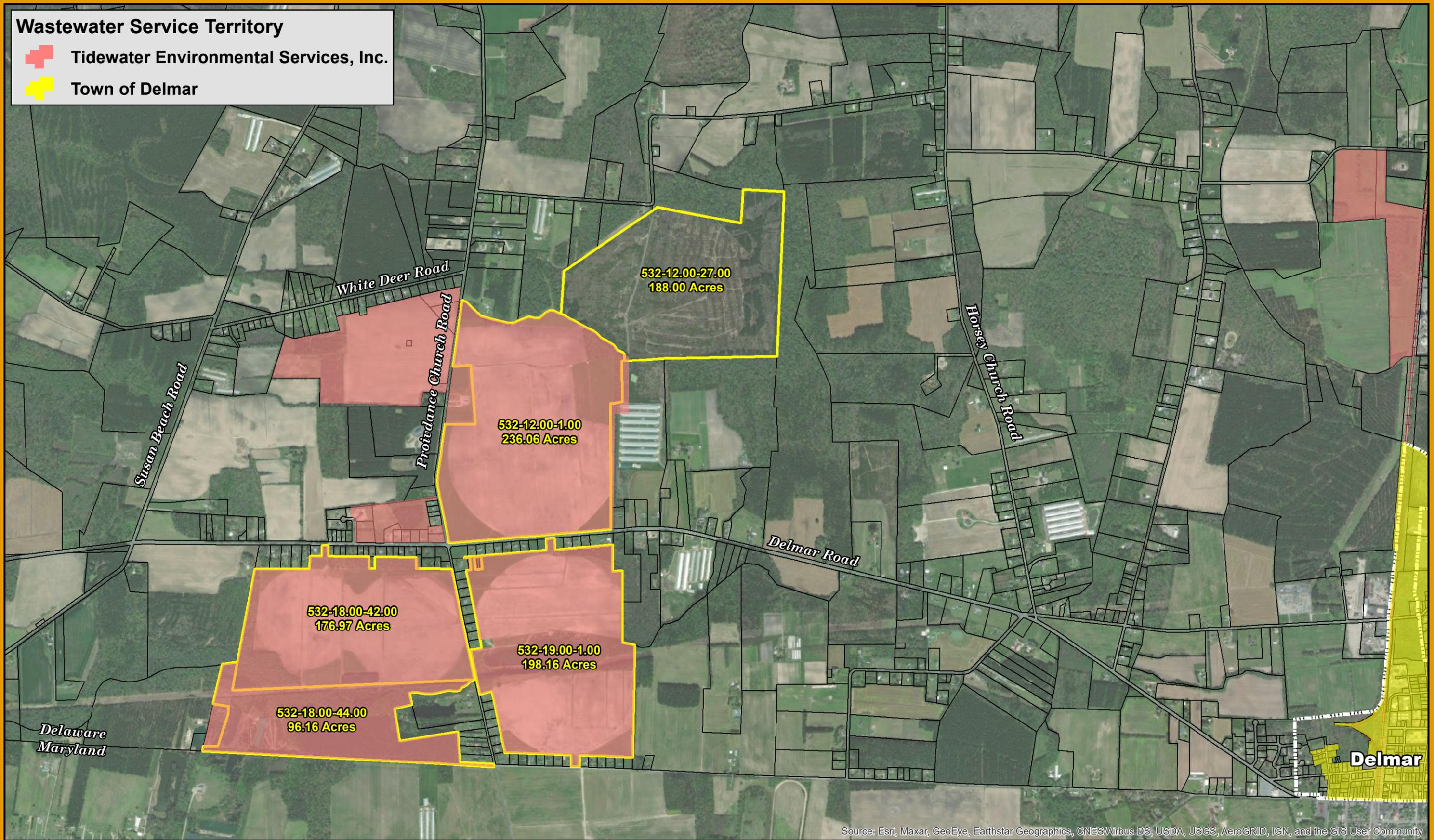
Environmental Conditions Map

Double H Properties, LLC.
 Near Delmar, Sussex County, Delaware



Wastewater Service Territory

-  Tidewater Environmental Services, Inc.
-  Town of Delmar



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



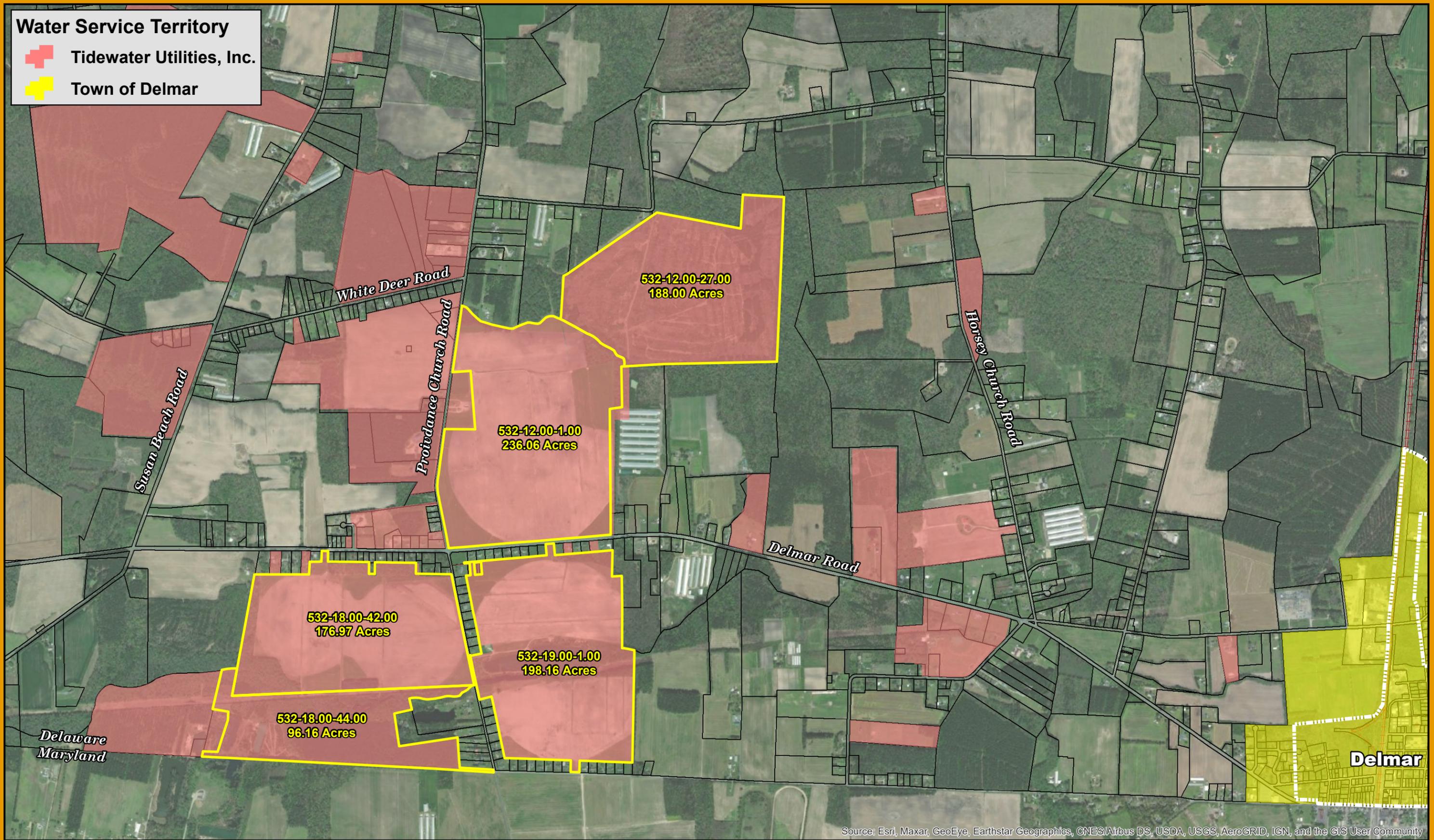
November 2021
**Summer 2020
Aerial Photo**

Sewer Service Territories (CPCN Areas)
Double H Properties, LLC.
Near Delmar, Sussex County, Delaware



Water Service Territory

-  Tidewater Utilities, Inc.
-  Town of Delmar



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



November 2021

Summer 2020
Aerial Photo

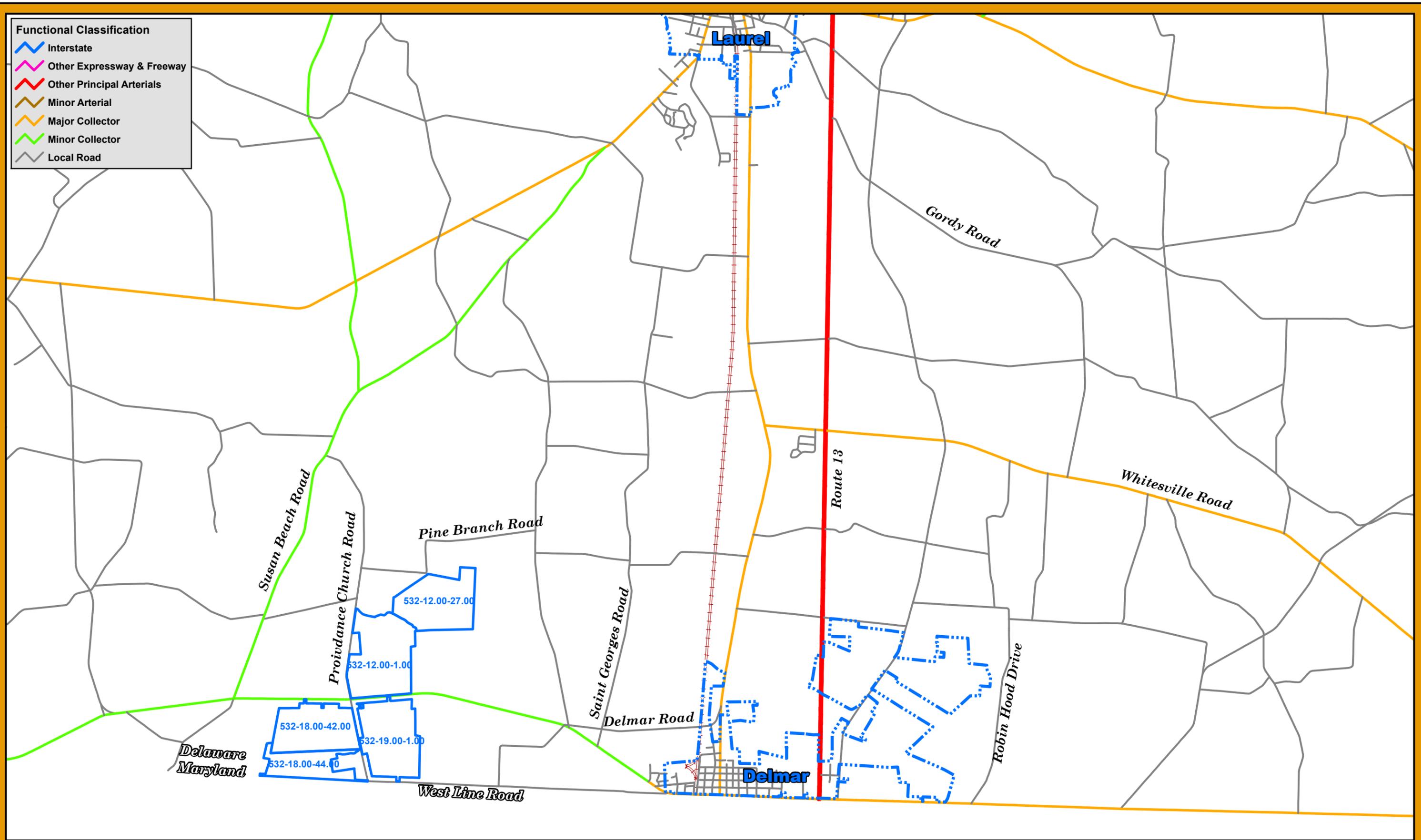
Water Service Territories (CPCN Areas)

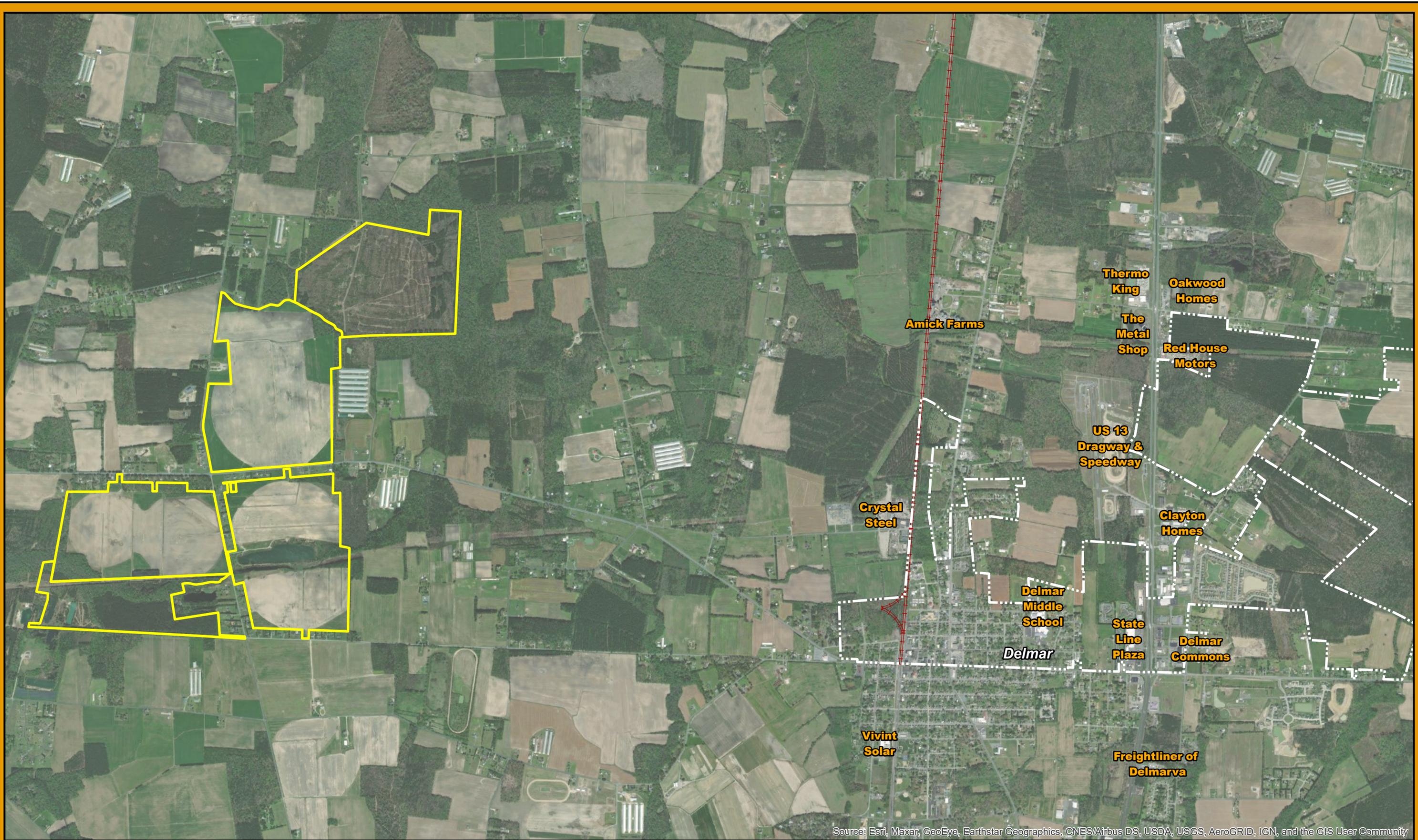
Double H Properties, LLC.
Near Delmar, Sussex County, Delaware



Functional Classification

-  Interstate
-  Other Expressway & Freeway
-  Other Principal Arterials
-  Minor Arterial
-  Major Collector
-  Minor Collector
-  Local Road





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

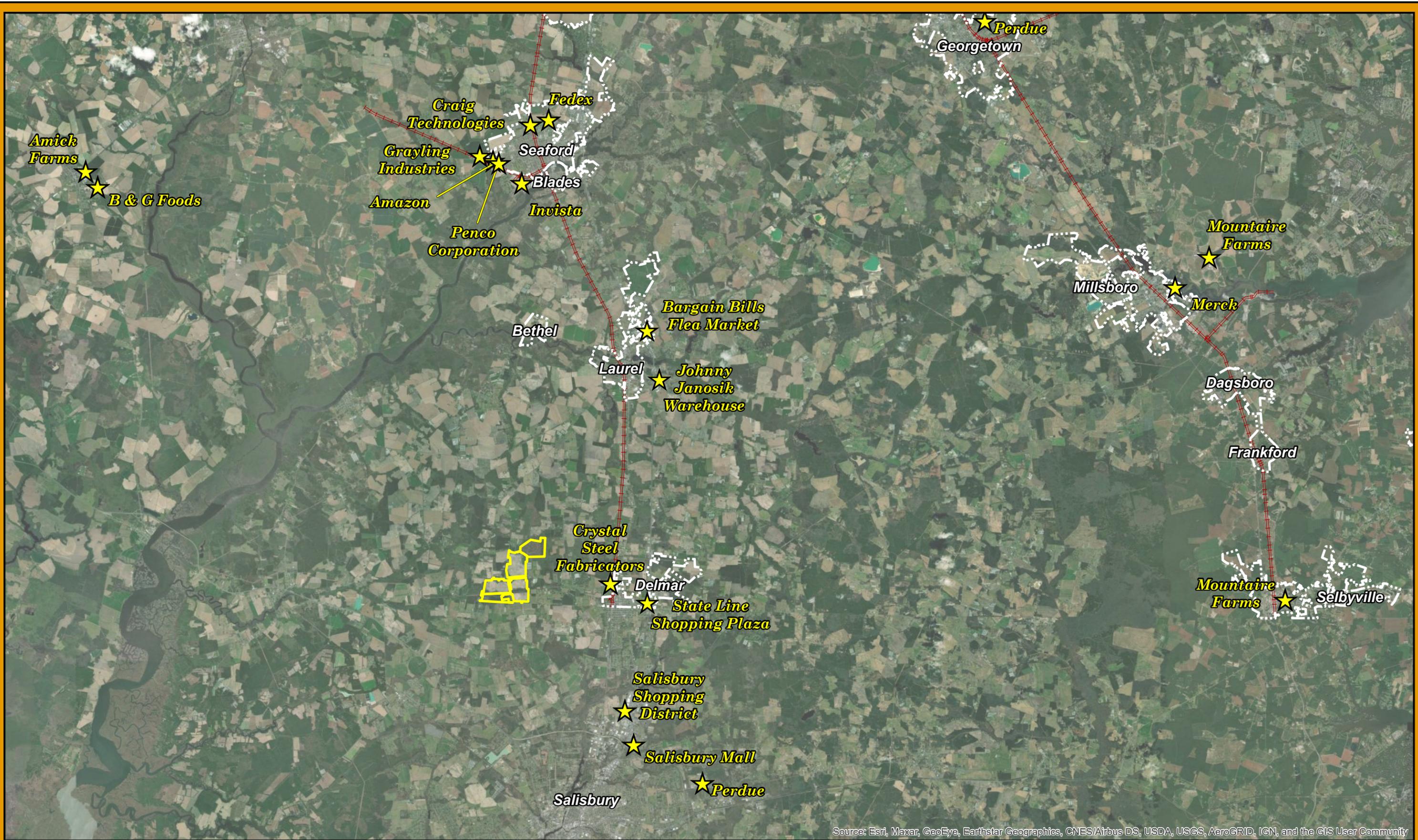


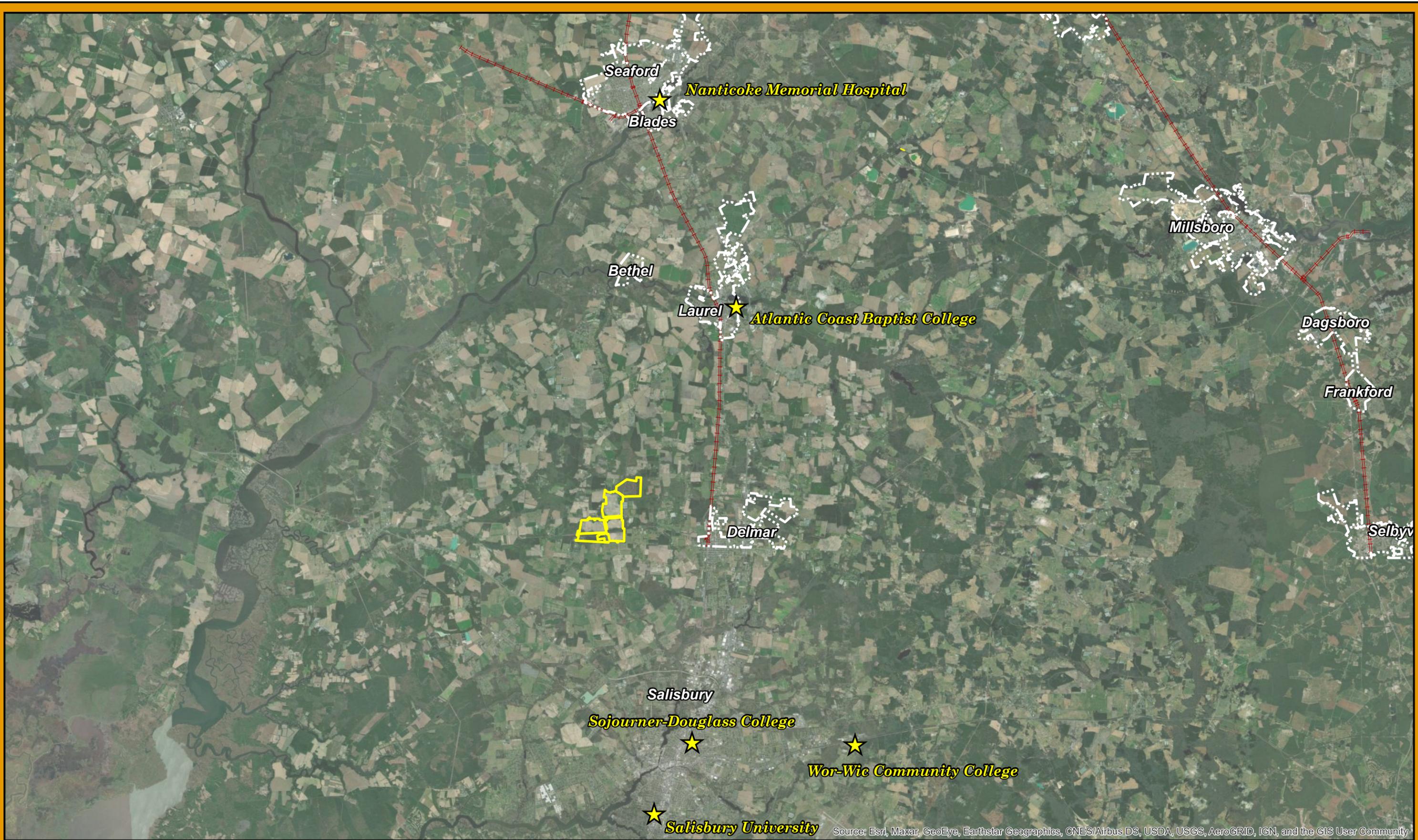
November 2021

**Summer 2020
Aerial Photo**

Local Employment Centers
Double H Properties, LLC.
Near Delmar, Sussex County, Delaware







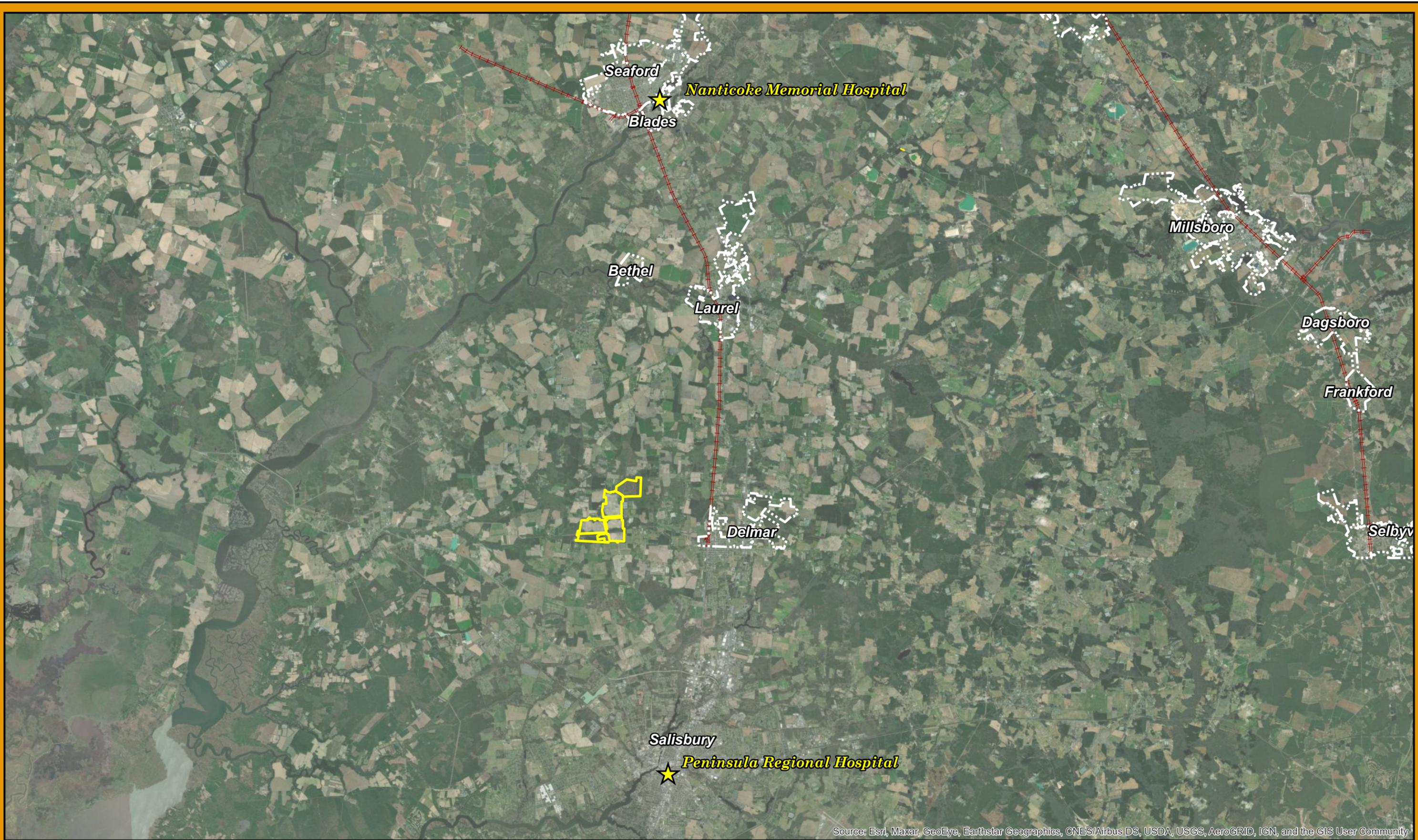
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

November 2021

Summer 2020
Aerial Photo

Higher Education Facilities
Double H Properties, LLC.
 Near Delmar, Sussex County, Delaware





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

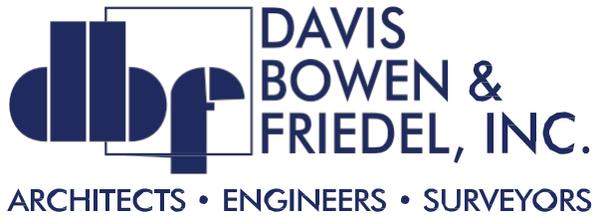


Summer 2020
Aerial Photo

Regional Healthcare Facilities

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