SECTION 2

Background and Description of Infrastructure Master Plans

The Town of Holly Springs has developed a Vision Holly Springs Comprehensive Plan that includes long-range plans for providing services to its residents in a manner that will protect the environment (Design Based Planning, 2009). Those services include, among others, water, wastewater, transportation, and reclaimed water. Long-range infrastructure planning provides the general sizing and location of facilities such as treatment plants, distribution and collection lines, force mains, pump stations, transportation corridors, and major roadway improvements. The Town's most recent supplement to the Comprehensive Plan was issued in 2013. The Town developed a comprehensive transportation plan in June 2011, with an amendment issued in July 2013 (Kimley-Horn and Associates, 2013). Appendix G includes excerpts from the Town's infrastructure master plans.

2.1 Wastewater

2.1.1 Existing Wastewater System

The wastewater collection and treatment system for the Town consists of gravity lines, pumping stations, and force mains that convey flows to the Utley Creek Water Reclamation Facility (WRF). The Utley Creek WRF currently discharges approximately 1.4 million gallons per day (MGD) into Utley Creek in the Cape Fear River basin. The Utley Creek WRF has a current treatment capacity of 6.0 MGD with a permitted discharge capacity of 2.4 MGD. The plant is currently operating under a permit page that limits the discharge to 2.4 MGD until the discharge is relocated. This WRF is an activated sludge plant that is designed with an ability to operate so as to discharge reduced nitrogen and phosphorus effluent.

The system serves residential, commercial, institutional, and industrial customers. The Town's industrial community includes several major employers, such as Warp Technology, Corrugated Container, and Novartis Pharmaceuticals. The Town has a pretreatment ordinance in place.

Numerous drainage basins exist within the Town's Planning Area. Sewer lines generally flow by gravity, following natural drainage-ways until they reach a WRF or a point where they are pumped out of the drainage basin into another drainage basin. Main sewer interceptors can receive flows from numerous tributary drainage basins by gravity flow and other drainage basins by force mains.

The Town's collection system consists of 157 miles of gravity sewers and 22 miles of force mains, as well as 13 large scale pump stations and 10 individual house pump stations. Seven of the pump stations were installed with the original sewer collection system in the mid-1980s.

There are houses within the Town's jurisdiction that are served by individual septic systems. The Town does not typically require hook-up for existing septic systems. However, new development must connect to the Town's system if sewer is available in the area.

2.1.2 Future Wastewater System

The Town received a permit to expand the Utley Creek WRF capacity from 6 MGD to 8 MGD and is evaluating options to move the outfall, in accordance with the current permit requirements. The outfall location does not impact the service area for the wastewater infrastructure and thus has no impact on SCI. Figure 2-1 shows proposed wastewater infrastructure. Exact locations of the proposed infrastructure will be determined during the preliminary design and preparation of the environmental documents, which examine the direct impacts. However, general locations are known and are supported by future land use planning and population projections; thus, SCI can be identified at this time.

2.1.3 Reclaimed Water

The Town brought on line a new reclaimed water system in 2010. This was the first step to provide an environmentally responsible alternative to the use of potable water for irrigation (and other uses), as well as to reduce the volume of wastewater discharged into Utley Creek and Harris Lake. The Town is currently permitted to distribute 1.5 MGD of reclaimed water and has been delegated authority from NCDENR to issue permits for reclaimed water irrigation up to 5 acres for both residential and non-residential properties.

The Town currently has a 0.5 MGD elevated reclaimed water tank and 13 miles of reclaimed lines to supply reclaimed water for irrigation and other uses. Currently the following areas are serviced: public medians of Green Oaks Parkway, several businesses in the Holly Springs Business Park, the Twelve Oaks Golf Course Community and the Holly Springs Towne Center. The estimated reclaimed water usage for 2012 is 0.16 MGD, with peak daily use around 0.55 MGD. Reclaimed water is currently available west of G.B. Alford Highway, with plans for future lines to extend service eastward. In addition to the Town's reclaimed water distribution system, bulk reclaimed water is also available at the Utley Creek WRF to users for both construction and irrigation uses.

The Town initially identified demand projections in a Reuse Master Plan (The Wooten Company, 2001), but revised these projections following updated future land use planning efforts. In 2013, a review of the planned land uses within the Town's current reclaimed water service area identified the potential for annual average daily reclaimed water demands to grow to 0.9 MGD by 2030 and 1.2 MGD by 2060 (CH2M HILL, 2013).

Figure 2-2 shows the Town's proposed reclaimed water infrastructure.

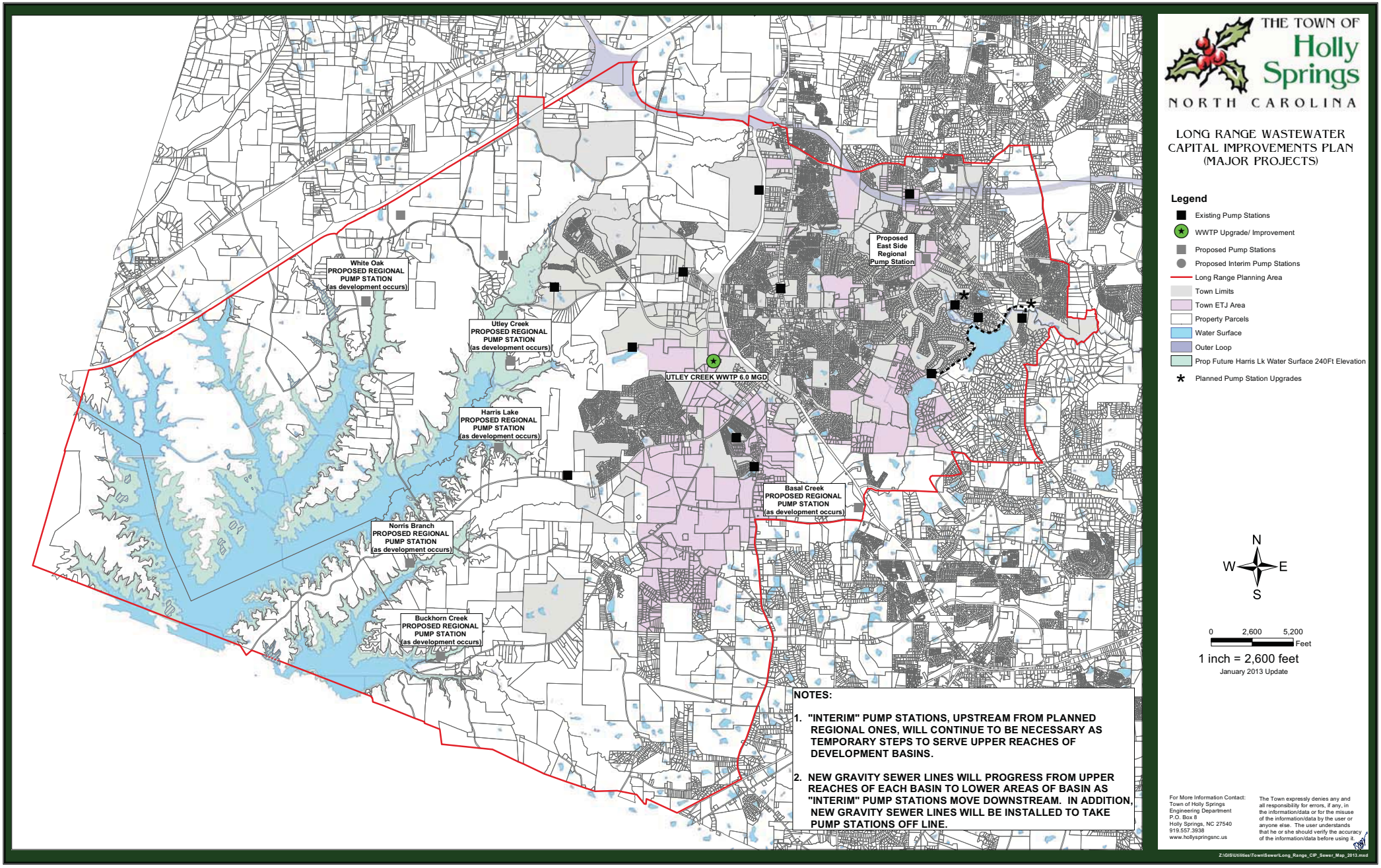

FIGURE 2-1
Proposed Wastewater Infrastrucutre
2015 Secondary and Cumulative Impacts
Master Management Plan - Town of Holly Springs

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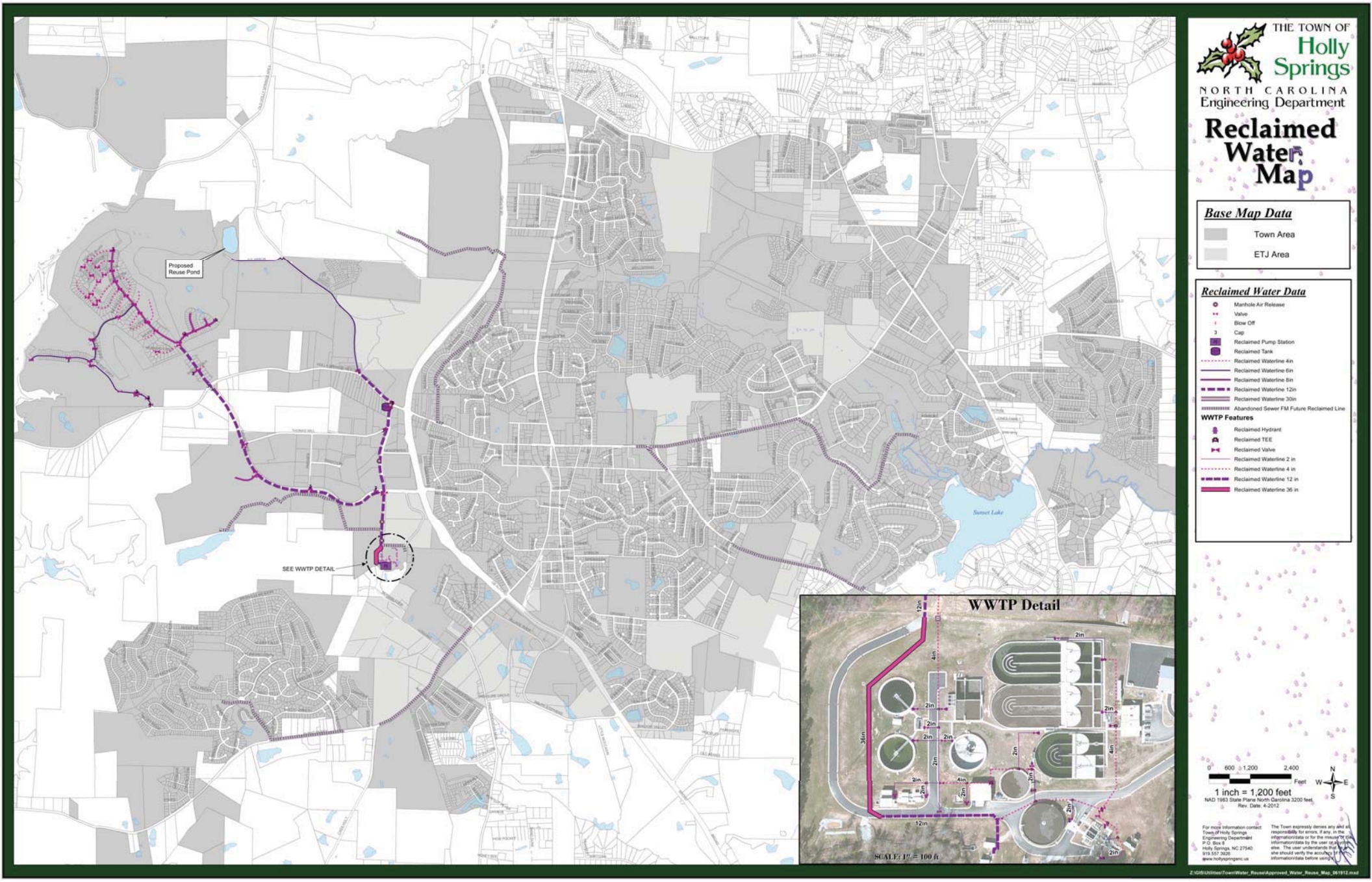

FIGURE 2-2
Proposed Reclaimed water Infrastrucutre
2015 Secondary and Cumulative Impacts
Master Management Plan - Town of Holly Springs

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2.2 Water

2.2.1 Existing Water System

The Town's water supply originates from the Cape Fear River in Harnett County. The Town owns an allocation of 10 MGD in the Harnett County Water Treatment Plant (WTP). The Town also owns transmission capacity of 10 MGD with minor pump upgrades. The Town embarked upon this water supply project with several partners in 1998. The Town then participated in an expansion of the Harnett County WTP in Lillington in 2012, increasing the plant's capacity from 27 MGD to 42 MGD. The Town's water supply is conveyed via a shared 36-inch transmission line to a booster pump station just north of the Wake County/Harnett County line; the water is then pumped to the Town via a 30-inch water transmission main owned by the Town.

The Town currently has an emergency water supply agreement with the City of Raleigh for 1.2 MGD; however, the 16-inch transmission line along Holly Springs Road, which connects the Town with the City's water system, is capable of supplying up to 2.5 MGD. The Town also holds a Jordan Lake allocation for future water demand of 2.0 MGD.

The water distribution system includes two pump stations: one on the Holly Springs Road transmission main to Raleigh, NC and one on the Harnett County transmission main, just north of the Wake County/Harnett County line. The Town maintains approximately 166 miles of distribution lines with diameters ranging from 2 to 30 inches. Potable water storage for the Town is provided in three elevated storage tanks: the Lee Street Tank (0.5 million gallons [MG]) near the center of Town, the Holly Springs Elementary School Tank (1.0 MG) just north of the center of Town, and Avent Ferry Road Tank (1.0 MG) southwest of downtown.

Some houses within the Town's jurisdiction are served by individual wells. The Town does not typically require hook-up for existing well users, although these houses may request service from the Town. New development must connect to the Town's system if water is available in the area.

2.2.2 Future Water System

The Town can currently supply 1.0 MGD of water to its customers (with minor pump upgrades.) Plans are in place to accommodate a population of 61,900 in 2030 (Table 3-1), and the Town will need to expand its water supply to meet future demands. To meet this additional need, future capital improvements will be required, and the Town has four potential options to meet this future need:

- Purchase additional capacity from Harnett County.
- Access its Jordan Lake allocation.
- Purchase water from the City of Raleigh.
- Reduce potable water demand by increased use of reclaimed water for nonpotable uses.

The specific methodology and details of accessing water via the second and third options above will be studied at a later date, and any direct impacts of various water supply options will be addressed in future environmental documents.

The general locations of future major water lines are known and complement future land use planning and population projections. General locations of future water lines, some of which are anticipated within the next 10 years, are shown on Figure 2-3. Exact locations of the proposed infrastructure will be determined during the preliminary design and preparation of the environmental documents, which examine the direct impacts. However, because general locations are known and are supported by future land use planning and population projections, SCI can be identified at this time.

2.3 Transportation

The Town's Comprehensive Transportation Plan identifies areas of need for additional infrastructure. The Plan is multimodal and discusses non-vehicular transportation system options, including pedestrian, greenway, bicycle, and transit modes (Kimley-Horn and Associates, 2013).

The Town's Comprehensive Transportation Plan addresses several elements including roadways, transit service, and bicycle and pedestrian facilities. Figure 2-4 illustrates the location of the planned roadway infrastructure in the Town. Exact locations of proposed transportation infrastructure will be determined during development of environmental documents that examine direct impacts. However, general locations of major transportation corridors are known and are supported by future land use planning and population projections; thus SCI can be identified at this time.

Several transportation projects are in the planning stages. The Town's CIP, in Appendix C, includes the following projects:

- North Main Athletic Complex Road: connection from Bypass to Main Street will provide connectivity and better distribution to accommodate capacity.
- Avent Ferry Road: over the next 2-4 years many improvements will be made to address the safety and congestion issues.
- Avent Ferry Road and the 55 Bypass Intersection: the Town and NCDOT are looking to make improvements at this intersection in the next 1-2 years.
- Main St Extension: interconnection to distribute traffic more efficiently and alleviate congestion at Avent Ferry Road and 55 Bypass Intersection.
- Middle Creek Bridge: connection for improved safety, interconnectivity, and quality of life.

In addition to the planned roads shown on Figure 2-4, the Town also has plans to support alternative transportation. Appendix G includes figures showing the Town's planned sidewalks and greenways that will promote walking and biking. In addition, all new development must incorporate alternative transportation modes into its design.

Other major regional transportation efforts affecting the Town include the completed NC540 plan, which currently ends at NC 55, but will eventually be extended to the U.S. 64/U.S. 264 Bypass in Knightdale. Portions of both the existing and future segments extend through the Town (NCDOT, 2013).

In September 2012, Wake County released an updated draft of the Wake County Transit Plan, which is pending action from the Wake County Board of Commissioners. The Plan was developed in cooperation with several partners, including the Capital Area Metropolitan Planning Organization (CAMPO), Triangle Transit, the Regional Transportation Alliance (RTA),

and the City of Raleigh's Capital Area Transit. The Plan provides a dual approach to meet expanding transportation demands as the County continues to grow: (1) a core transit plan that broadens local and commuter bus service and includes rush-hour commuter rail service from Garner to Durham; and (2) an enhanced transit plan that includes a regional light rail service (Wake County, 2012). No light rail service lines or stations are planned within the Holly Springs study area. More information on the Wake County Transit Plan is found in Appendix B.

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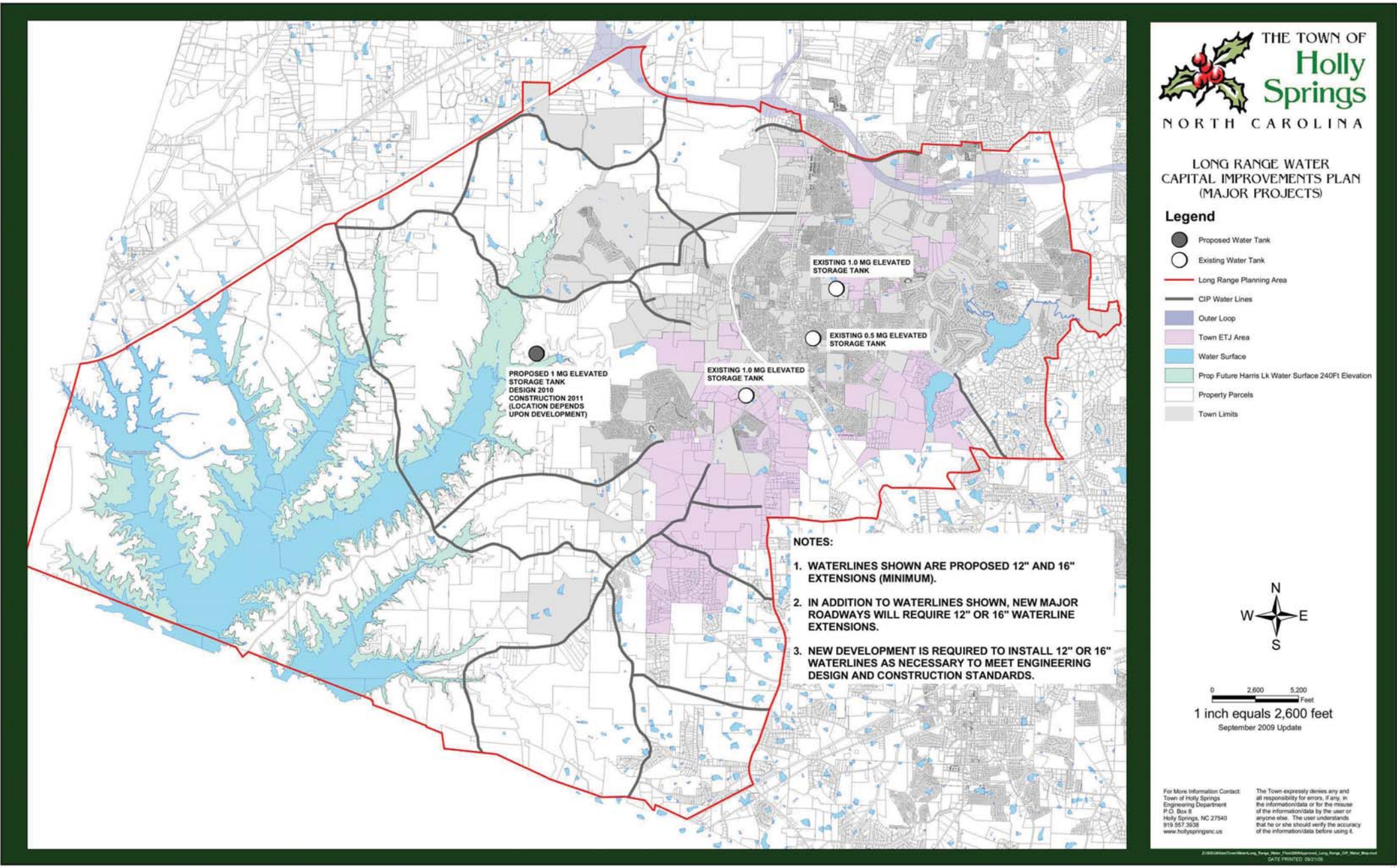

FIGURE 2-3
Proposed Water Infrastrucutre
2015 Secondary and Cumulative Impacts
Master Management Plan - Town of Holly Springs

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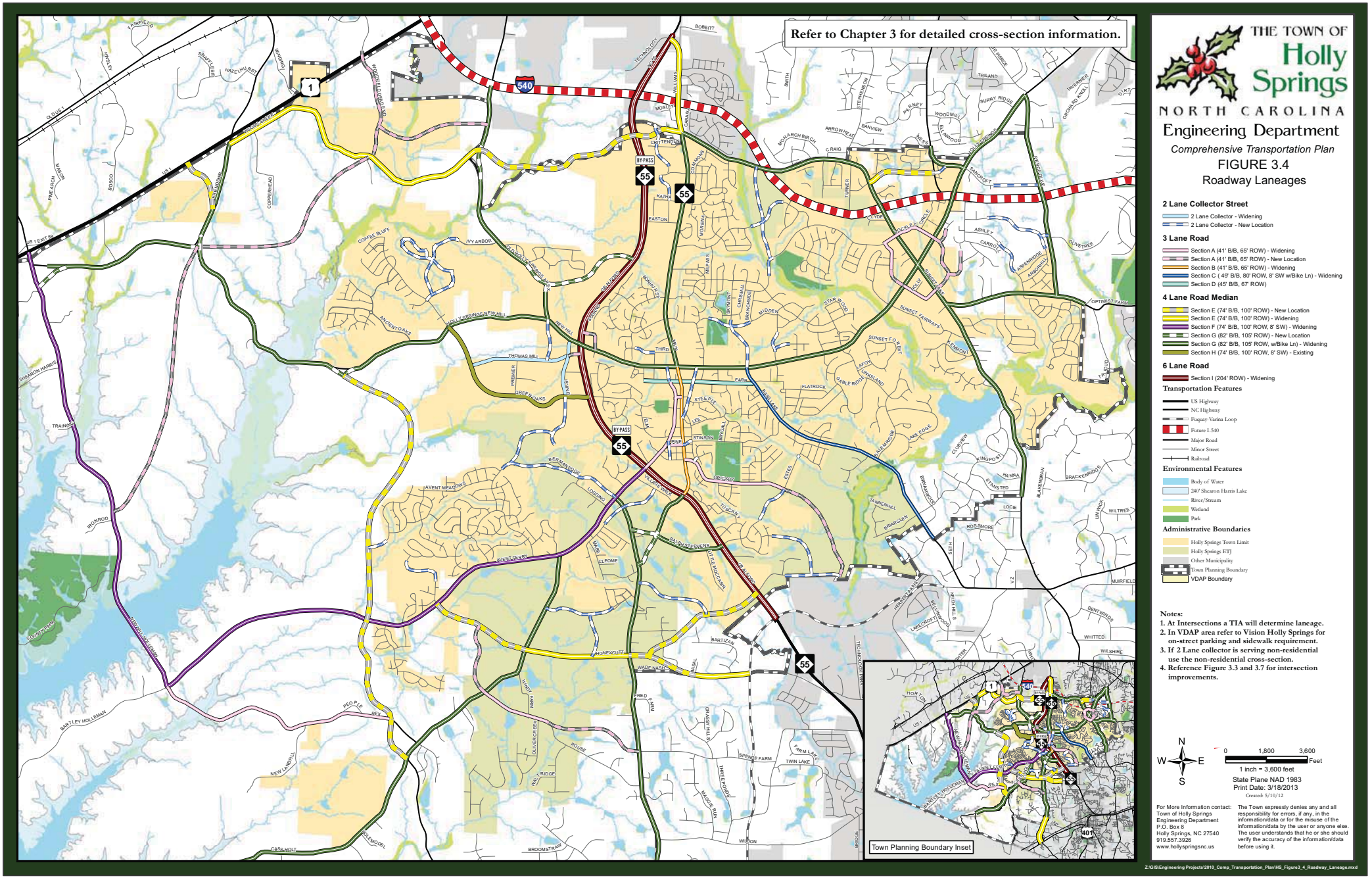

FIGURE 2-4
Proposed Transportation Infrastrucutre
2015 Secondary and Cumulative Impacts
Master Management Plan - Town of Holly Springs

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