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## SECTION IX. INFRASTRUCTURE AND TELECOMMUNICATION

### WATER SUPPLY

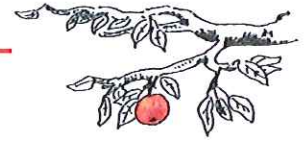
There is no public water available in the Town of LaFayette outside of three water districts in the Jamesville Reservoir area, the Coye Road, East LaFayette, and Smokey Hollow Water Districts (see Map \_\_\_). In 2011 the Onondaga County Water Authority (OCWA), who provides water for these districts, had 234 active accounts in all three districts combined. There were 1,462 households in the rest of LaFayette, leaving 84% of the Town's households reliant on individual wells or privately operated water systems. In addition, almost all of the Town's businesses, industries, apartment buildings, and its two schools are located outside of the public water districts.

The availability of groundwater varies across the Town, as can be seen on Map \_\_\_\_. Much of the Town has poor access to groundwater, while the Butternut and Tully Valleys have Moderate to good access. However, the Tully Valley is home to salt deposits 1,200 feet below the surface. Brine from this bedrock aquifer can sometimes contaminate the aquifers closer to the surface. This situation, along with former brine wells, and a brine line running north-south through the valley, leave water from some wells salty and non-potable in this area. Due to these issues, Honeywell International Inc, responsible for the former Allied Chemical brine wells, provides spring-fed water for many households in the hamlet of Cardiff. The brine fields of the Tully Valley are discussed further in a later section.

In Onondaga County, each lot in a new realty subdivision (5 or more lots, each less than 5 acres), without public water and sewer, must be a minimum of 40,000 square feet. However, 40,000 square feet is a best case scenario which can only occur if there are very good soils. More often lots are larger. A smaller lot size with both a septic system and a well must have soils that are permeable enough for septic effluent to percolate away from the drain field, but fine grained enough to filter out pathogenic bacteria and viruses before they reach water feeding a well.

In some parts of Town, especially the hamlet of LaFayette, due to the poor soils and concentration of development, there are concerns about well contamination. The area also faces issues of possible salt contamination from Interstate 81, the DOT's salt storage property between routes 81 and 11, or the nearby underground salt deposits. In recent years the Onondaga County Health Department has had reports in this area of contamination from sodium chloride (salt), coliform, iron, and magnesium. Property owners using their own well have no requirement to test their water regularly (public water and other private sources must do this). This means homeowners may go for years with contaminated water and not know it.





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## PUBLIC WATER

**Coye Road, Northeast LaFayette, and Smokey Hollow Water Districts** -The Town of LaFayette has three water districts, the Coye Road Water District formed in 1978 and Northeast LaFayette and Smokey Hollow Water Districts formed in 2007. Each of these systems are operated and maintained by the Onondaga County Water Authority (OCWA), water usage is billed by OCWA, and the Town covers capital costs through taxes paid by those in the district. These water districts are contiguous, serving \_\_\_ households in the northern part of the Town within the boundaries outlined on Map\_\_.

**Potential Central LaFayette Water District** – While it is unlikely the existing public water districts will be expand too much in the near future, the Town has considered providing public water in the hamlet area, and has commissioned studies looking into this in 1992, 1995 and 2009. Most recently, Thoma Development Consultants completed a Public Water Survey in 2007 to gauge interest, and Dunn & Sgromo Engineers, PLLC then completed an engineer’s report for the Central LaFayette Water District.

Thoma Development Consultants surveyed the Hamlet area around the intersection of Routes 11 and 20, the area east of the Hamlet along Route 20, including the Applewood subdivision, and Route 11 between the hamlet and the northern Town line. The survey had a 46.9% response rate, and while 58.1% of respondents were satisfied with their well water, 65.8% were interested in receiving public water. While 72% in the hamlet area, and 74.5% north of the hamlet were interested in public water, only 54.5% east of the hamlet were interested. However, of those who were interested, 57% were not willing to pay more than \$400 a year for it. Throughout the surveyed area, many respondents described issues with their well water, including very hard water, which was harming their pipes and fixtures; iron and sulfur in the water; losing the ability to pump water during power outages; and running out of water during particularly dry weather.

After completing the Public Water Survey, the Town of LaFayette commissioned an engineering study for the project. The 2009 Engineer’s Report proposes a Central LaFayette Water District for the Town’s hamlet area. The area consists of 471 properties, including the area described above, plus Sentinel Heights Road to the northern boundary of LaFayette and the neighborhood between Sentinel Heights Road and Route 11. This overall area is the most densely populated area of the Town of LaFayette. The district has two schools with over 900 students between them, 190 apartment units, 322 single-family residents, and 45 businesses. At the time of the Report, 26 privately operating water systems in the area served the schools, apartments, and offices.

The proposed Central LaFayette Water District would connect to the existing Onondaga County Water Authority system on Sentinel Heights Road. To do this, the system would include new water mains totaling around 65,000 linear feet, fire hydrants every 600 to 800 feet, a duplex pumping station, and a 500,000 gallon storage tank. The Engineer’s Report estimated the total cost for the project at \$5.9 million.





In 2009 the Town initiated the legal process to form a water district in the hamlet area with a resolution passed July 15, 2009 estimating the total cost of the project at \$5.7 million, an estimated minimum hook up fee of approximately \$500, and an estimated annual cost of \$500 for the typical property. The Town's resolution stated that the Town planned to finance the project through a combination of long-term, low-interest financing and available grants. A public hearing was held on August 3, and a Public Referendum was held on November 3, 2009. The referendum was voted down with 72 votes in favor and 249 opposed, or only 22% in favor. It seems that many who owned property in the district had concerns about the cost of the proposed system, and many were afraid it would cost more than estimated.

In 2011 a student with Syracuse University's Maxwell School worked with the Town to complete a survey of businesses in LaFayette to help understand what barriers they face to having successful businesses. The survey was mailed to 80 businesses, and 22 responded (a 27.5% response rate). Of those 59% were located within the hamlet. 33% of all respondents said municipal water would help their business, while 57% said it would not and 10% did not know. At the end of the survey, respondents were asked what they would like to see to help their business grow and succeed. Several responses suggested public water would help.

The 2009 Engineer's Report outlined some other options for creating a water district and their advantages and disadvantages. One option could be to install a municipal well field and municipally owned distribution system for a somewhat smaller area than the proposed Central LaFayette Water District. This would have similar start up costs as connecting the system to the Onondaga County Water Authority's system, however, the operation and maintenance costs would be much higher, making it difficult for the community to afford.

Another option could be to create a smaller service area than originally proposed. However, the Engineer's Report believes this would leave too few participants sharing in the cost, most likely making it too expensive for those who remained in the district. Similarly, expanding the service area to more sparsely populated areas would also probably make it too expensive, as this would increase the overall costs by too much, compared to the number of added participants.

Moving into the future, the Town of LaFayette should pursue a public water district for the hamlet of LaFayette for a variety of reasons. The 2009 Engineer's Report discusses some issues with the current situation, including well contamination risks due to the dense concentration of septic systems, and higher fire insurance rates. According to Dunn and Sgromo Engineers, in the concentrated hamlet area there are over 60 wells and septic systems within a .1 square mile area, including a school, auto repair shop, and a gas station. As was previously mentioned, the Onondaga County Health Department is also concerned about well contamination due to the dense concentration and poor soils in the area. In addition, a lack of public water makes it more difficult to attract certain businesses and industry. The Town should seek outside funding to assist in the development of a public water system and alleviate costs for residents of the village as much as possible. In addition, the Town should provide clear information to





residents of the district about the costs and boundaries of the water district to help reduce false speculation.

## **BRINE FIELDS OF THE TULLY VALLEY**

North flowing brine from underground the Tully Valley area was the source for “salty springs” found along Onondaga Lake’s shoreline centuries ago. From the late 1700s to the early 1900s these springs were used to produce salt. When the concentration of brine began to diminish, the Solvay Process Company drilled several deep test holes south of Syracuse and eventually found halite (common salt) deposits in the Tully Valley. In the Tully Valley area, composite salt of around 150 feet thick lies at around 1,300 feet below land surface.

According to the United State Geological Survey’s (USGS) publication “Salt Production in Syracuse, New York (“The Salt City”) and the Hydrogeology of the Onondaga Creek Valley” (2000), over 120 wells were drilled into four halite beds in the southern end of the Tully Valley from 1890-1986. Over this 96-year period over 96 million tons of salt were withdrawn (over eight times the amount produced from the Onondaga Lake springs).

While it appears the brine wells were all located in the Town of Tully, a brine line runs north-south through the Town of LaFayette, and served LCP Chemical Inc. in Solvay at one time. The pipeline was formerly owned by Allied Chemical and now belongs to Honeywell International.

According to the USGS, in the Tully Valley, the local ground-water flow system has been altered from almost 100 years of halite removal, and subsequent bedrock subsidence (sinking) and fracturing. There are now connections between the bedrock aquifers and valley-fill aquifers, which were not there before. This allows salty water to enter the aquifers above, which puts water quality in the Onondaga Creek valley aquifer system at risk.

As was mentioned in a previous section, the hamlet of Cardiff has had issues with salt contamination in its well water in the past, from the situation described above, and from leaks in the brine line and wells. Because of this, today, Honeywell International Inc. provides spring-fed water for many households in the hamlet of Cardiff. While the situation is not ideal, at this time there is no need for public water in Cardiff. However, due to the inability of some residents to use well water, the Town should stay apprised of the situation to be sure residents always have access to clean water.

## **WASTEWATER**

There is no public sewer system in the Town of LaFayette, including in the Jamesville Reservoir area. No portion of the Town is in Onondaga County’s Sanitary District Boundary, the County’s desired borders for future extensions of the sewer system. While it is possible to change these borders if municipalities or developers





request it, it is unlikely that sewers will be extended from another part of the county in the near future. While providing a public sewer system for the Hamlet of LaFayette has been explored in the past, typically in a Town of LaFayette's size it is too expensive to have both sewer and public water, and water is normally less expensive to develop.

## **FIRE PROTECTION**

The Town of LaFayette contracts with two fire departments to provide fire protection for their residents, the LaFayette Fire Department and the Jamesville Volunteer Fire Department. Both departments are private corporations, nonprofit entities with no independent authority to assume debt or collect taxes. The Town provides revenue for these departments by adding a fire tax to all property tax bills. Both departments are all volunteer departments. The LaFayette Fire Department provides first response service for the majority of the Town, including for eight miles of Interstate 81, but not around the Jamesville Reservoir where the Jamesville Volunteer Fire Department does. However, both departments provide mutual aid service to other areas as needed.

The LaFayette Fire Department operates out of two stations, one on Route 11 near the LaFayette hamlet, and another on Rowland Road, near the hamlet of Cardiff. The department answers an average of 500 calls for service a year. In the first six months of 2011 the Fire Department responded to 91 fire emergencies with an average response time of 9 minutes and 33 seconds, for a staffed engine to arrive at the scene. The National Fire Protection Association (NFPA) sets standards for response times for volunteer fire departments. The standard is 10 minutes for suburban areas and 14 minutes for rural areas. The LaFayette Fire Department is well within the standard for a rural area, and is even within the suburban standard. Even with these good response times, without public water and its associated fire hydrants, residents face higher fire insurance rates. However, this does not seem to be a concern in the community. In addition, the lack of public water requires the Fire Department to purchase more expensive equipment that can hold more water. They have been able to do so though, and currently have two 2,000 gallon tankers, two engines which hold 1,000 gallons each, and can call in mutual aid from nearby municipalities when more water is needed.

## **FUEL SOURCES**

LaFayette residents use a variety of sources to heat their homes. The 2005-2009 American Community Survey (U.S. Census Bureau) estimates that 43.9% of households use fuel oil or kerosene, 22.3% use utility gas, 19.4% use bottled, tank or LP gas, 7.6% use electricity and the remaining 6.8% use coal, wood or some other fuel.

The survey estimates 0% of households use solar energy, and while the survey does not ask about wind or geothermal energy, some of the 1.3% who use "other fuel" sources could be using these. While a small amount of residents use renewable energy sources to heat and power their homes now, residents expressed an interest in becoming a leader in sustainability and energy independence during planning





workshops. In addition, in 2009, the Town updated their Zoning Ordinance to include a section to regulate the development of private windmills designed for home, farm and small commercial use, and to address related health, safety, and community welfare issues.

## TELECOMMUNICATION

The majority of LaFayette has access to both DSL and cable broadband internet, as can be seen on Map \_\_\_\_. However, there are a few sections of town that are limited to one or the other, and there are three areas that do not have access to either. These areas with no broadband access include the very south-eastern corner of Town, the very north-western corner of Town, an area of about 3 square miles just southwest of where Routes 81 and 20 meet and stretches of Eager Road and Commane Road where numerous houses are located. Of the 22 businesses who responded to a 2011 survey completed by a Syracuse University Student (as mentioned in the Public Water Section) 11% were “very dissatisfied” with their broadband access, while 89% were “satisfied” or “very satisfied”. Fiber broadband is available to portions of the municipalities just north of LaFayette, including the Town of Dewitt and the City of Syracuse. It is possible, as technology advances and changes, that this could be extended south into LaFayette. In addition to broadband, the major cellular providers offer service for the entire Town of LaFayette.

The majority of the Town also has access to cable television, or, if not, at least has the option to get satellite television. However, there are parts of Town that cannot get either option due to the topography. There are several households, including along Eager Road, that have no access to cable, and because of steep terrain south of them cannot get a satellite signal. Verizon Fios, a fiber optic network, is expected to begin offering service in the Town of LaFayette in the near future. The Town should take advantage of this opportunity to try to provide television and broadband access to all residents of the Town.

## ROADS

**Town Roads** -The Town of LaFayette Highway Department is responsible for maintaining all Town roads, including making repairs and plowing, and has a contract with Onondaga County to plow certain County roads as well. The Town Department is also responsible for maintaining roadside ditches and drainage basins. The Department has a five-year maintenance plan, which is updated when they assess the roads each spring. The Department is responsible for approximately 28 miles of roads, not including the County roads they plow.

The condition of most Town roads are up to current standards. However, as in many upstate New York communities with harsh winters, the Town has to work hard to extend the lifespan of the roads. The new Highway Superintendent is taking steps to help roads last longer. The Department gets information from Cornell Cooperative Extension, through printed material and workshops, on the latest materials, methods,





and research related to road infrastructure. The Highway Superintendent has changed some of the Department's methods and materials used for road repairs, based on what has proven to add the longest time to a road's lifespan.

While Town law requires industry to clean any spill that might occur on Town roads, there is no Road Preservation Ordinance in place, for industry to replace Town roads damaged after heavy use. Gas drilling in the Marcellus Shale, using High-Volume Hydraulic Fracturing, is possible in southern Onondaga County, including LaFayette, assuming the New York State Department of Conservation will permit it. Currently there are a few dozen oil and gas leases in the Town, mostly in the southwestern corner of Town, along with several dozen more in the neighboring towns of Onondaga, Otisco, and Tully. While it can be assumed State and County roads will see most of the possible increase in traffic, it is possible that Town roads, culverts, and bridges will also require more maintenance as a result of these changes.

To help protect their roads, the Town can do some or all of the following. LaFayette can conduct a thorough road inventory and assessment to provide a baseline for tracking changes in road wear over time. The Highway Superintendent should identify infrastructure in poor, vulnerable conditions, and if deemed necessary a Weight Restrictions Local Law can be passed to prevent vehicles over a certain weight from driving on these roads without a permit to do so. In addition, the Town can develop a Road Use Agreement which industry can voluntarily agree to. These detail rights and responsibilities of each party, which saves time and reduces the likelihood of litigation. They can establish a truck haul route, a means of recovering costs of road repair, how to value the costs of road damages, insurance requirements, and hours of the day trucks are permitted, among other things. The Town can also pass a Road Preservation Local Law, which would apply uniformly to all vehicles exceeding 8 tons, and would establish a permit system to operate vehicles on town highway systems. This would provide similar regulations as a voluntary Road Use Agreement, and they can be used in combination with each other. And finally, the Town can enact a Driveway Ordinance to protect waterways, control erosion, and provide safe access to and from adjacent roads. It would be useful for the Town of LaFayette to work with its neighbors if they enact any of the above measures, especially Towns to the west and south.

In addition to road maintenance, the Town Highway Department is responsible for signage. The Federal Highway Administration has new requirements for signs in all municipalities. By 2012, the Town of LaFayette must replace all road signs that do not meet retroreflectivity requirements, which make sure all signs are highly visible and easy to read at night. Nationally about half of all traffic fatalities occur at night, even though only one-quarter of travel happens at night. This will make roads safer for the community, especially as the population ages. The LaFayette Highway Department has a plan in place to replace all needed signs by 2012, and has created a comprehensive plan for replacement of these signs in future years.

**Interstate and US Highways** - Routes 20, 11 and 81 run through the Town of LaFayette. Routes 20 and 11 intersect at the heart of the Hamlet of LaFayette. Exit and entrance ramps to I-81 north and southbound lie less than 1000 feet away from this intersection on Route 11, and less than 2000 feet away on Route 20. Because of this,





and because almost 2,000 cars travel daily from this junction to Syracuse or elsewhere north of LaFayette, the roads in this area see significantly more traffic than the rest of the Town. The intersection of Route 20 and 11 has fallen into disrepair in recent years as the NYS Department of Transportation (DOT) develops plans to reconstruct it. At this time reconstruction is scheduled to begin and be completed in 2013.

The most recent draft plans from the DOT, dated January 2011, include plans for Route 20 from the I-81 entrance ramp, east to around 600 feet beyond Dodge Road; and for Route 11 around 600 feet north of the I-81 entrance ramp, south to the John Deer building, about 1,500 feet south of the hamlet intersection. These draft plans include adding a center turning lane on Route 20, in front of the school and some houses; adding a left-turn only lane on Route 20 on the west side of the light; adding a center median on the opposite, or east, side; and moving the I-81 northbound entrance and exit ramps so that they intersect with Route 11 at a safer angle. These plans also include removing the old hotel at the southeast corner of the hamlet intersection, and giving the property to the Town of LaFayette. See the Section V. Hamlet Development for more information about the DOT reconstruction.

## GOALS AND IMPLEMENTATION MEASURES

**GOAL 34:** Ensure all residents and businesses in the Town of LaFayette have access to clean, affordable, and sufficient drinking water.

### IMPLEMENTATION MEASURES:

- A) Implement a program that encourages everyone to regularly check the quality of their well water, especially in the Hamlet of LaFayette. Additionally, encourage residents to determine baseline well water quality before gas drilling using hydraulic fracturing begins in the area, and provide information about how and where to do so.
- B) Create a Water District for the LaFayette Hamlet.
- C) Keep apprised of the water situation in the hamlet of Cardiff and support residents' efforts to acquire clean and safe water as needed.

**GOAL 35:** Continue to provide well-maintained roads throughout the Town of LaFayette.

### IMPLEMENTATION MEASURES:

- A) Conduct a thorough Inventory and Assessment of Town roads, and develop and adopt a Road Preservation Ordinance, Road Use Agreements, and/or a Driveway Ordinance to help protect roads that may be heavily used by trucks associated with high-volume hydraulic fracturing.





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- B) Work with the NYS DOT to complete the reconstruction of the Hamlet of LaFayette's main intersection in a timely fashion (in 2013 or as soon as possible thereafter), and in a manner appropriate for the scale and character of the Hamlet.

**GOAL 36:** Ensure that all residents and businesses have access to broadband internet and a television provider.

**IMPLEMENTATION MEASURES:**

- A) Work with providers to fill in any gaps in coverage within the Town
- B) Work with providers to extend fiber optic coverage (television and internet service) into and throughout the Town, in particular the LaFayette Hamlet, and areas not currently covered by cable, DSL, or satellite.

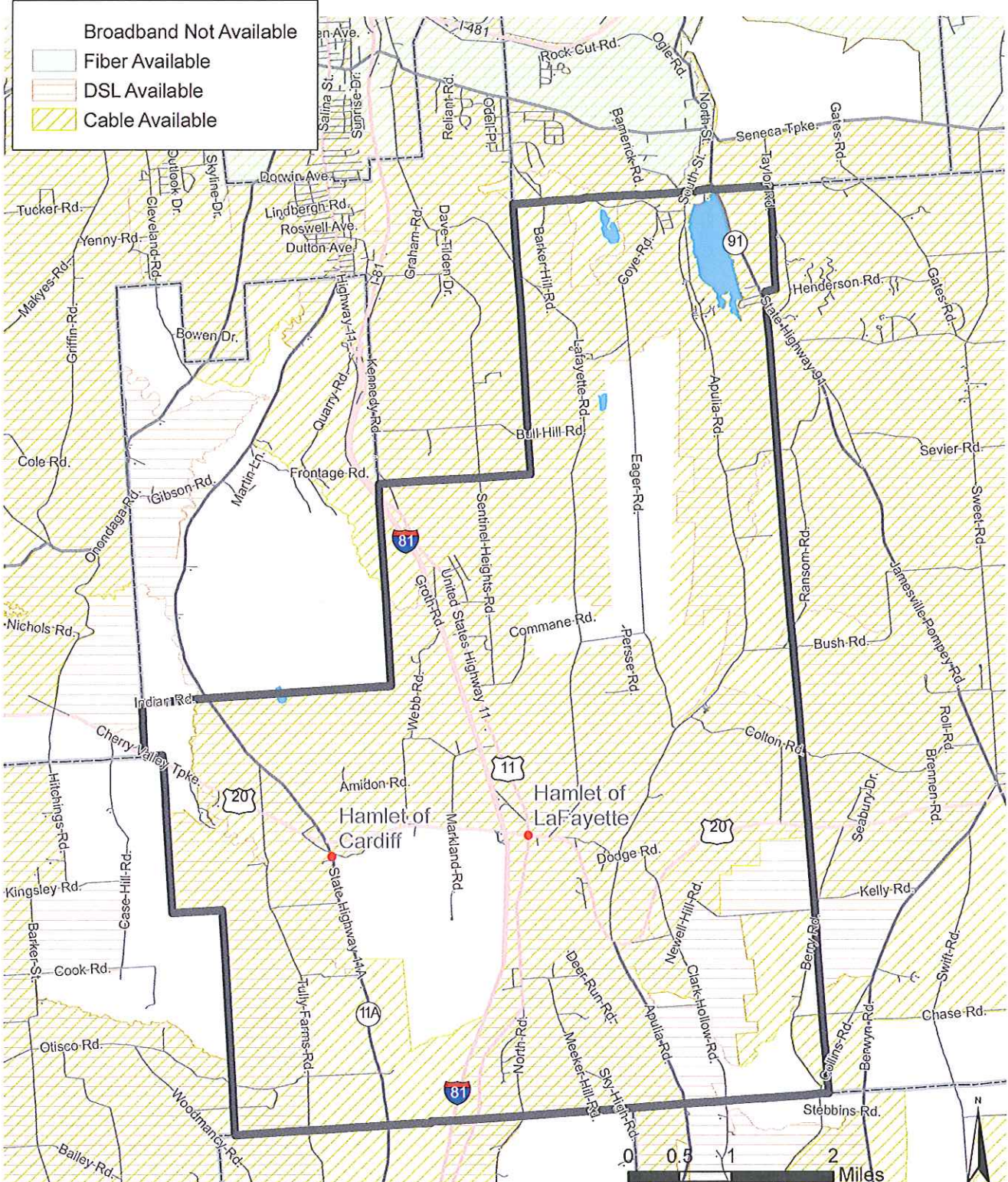
**GOAL 37:** Continue to provide quality fire protection services for the Town of LaFayette.

**IMPLEMENTATION MEASURES:**

- A) Support the LaFayette Fire Department in their efforts to acquire needed apparatus, other fire equipment, and training.

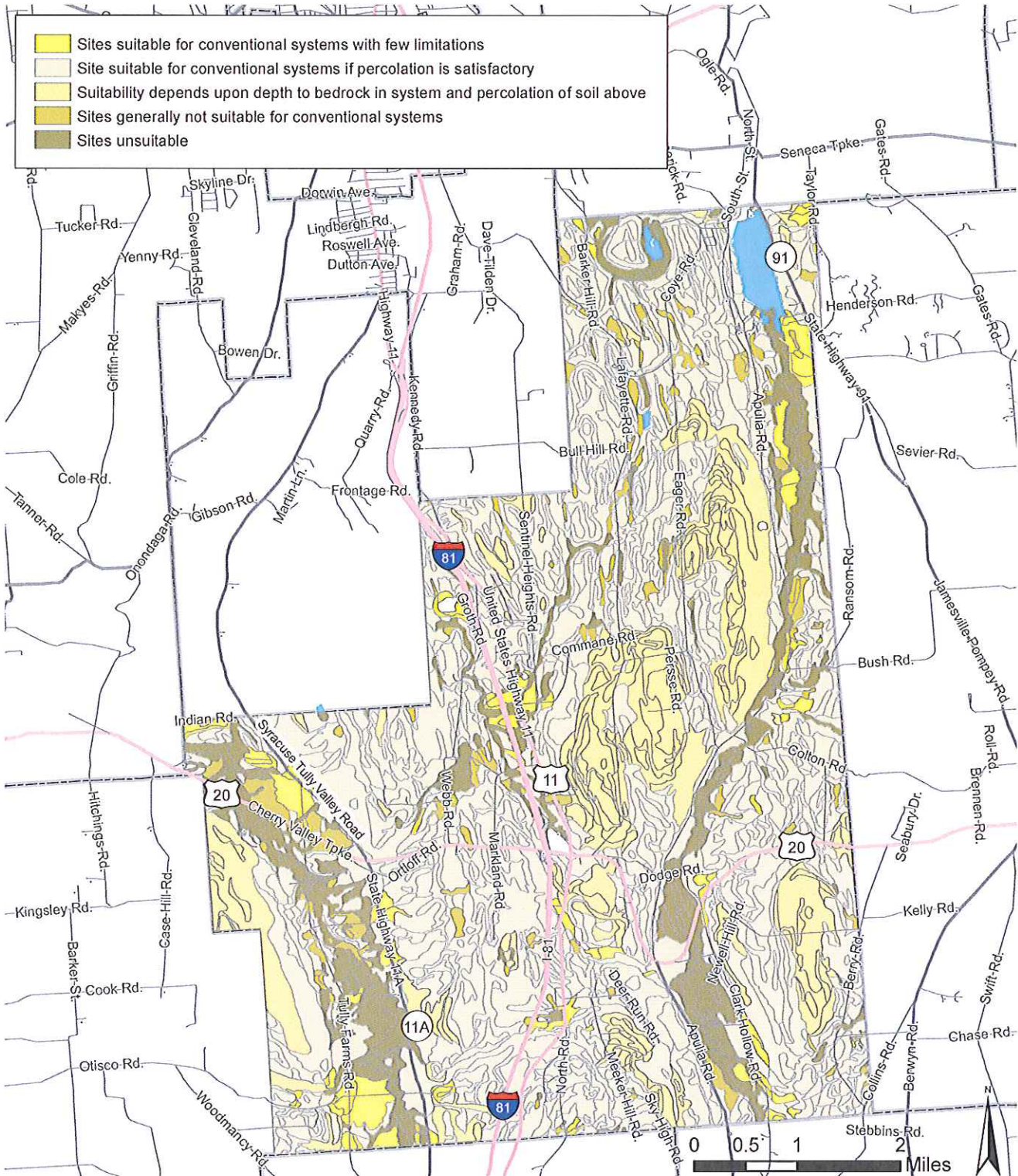
*\*See Section V. Hamlet Development for other measures related to the NYS DOT's reconstruction of the Hamlet of LaFayette's main intersection.*





Data provided by NYS Office of Cyber Security and edited based on Town feedback. Data is approximate and should be used for general planning purposes only.





Data provided by Onondaga County Department of Health.  
 Data is not specific to the parcel level. This map should be used for general planning purposes only.

**Map \_\_ : Suitability of Soils for Septic Systems**  
 Town of LaFayette Comprehensive Plan