

WOOLWICH TOWNSHIP TDR
EXECUTIVE SUMMARY



FEBRUARY 2007
AMENDED JULY 2008

GROUP **melvin** DESIGN

BACKGROUND

Until recently, Woolwich Township remained a rural, agricultural community with little pressure for change. This trend was reversed, beginning in the late 1990s, when a General Development Plan for a 4,500-unit development, known as Weatherby, received Joint Land Use Board approval. By the early 2000's, Woolwich Township became the fastest growing community in New Jersey and the second fastest in the entire northeastern United States. Scenic character, combined with proximity to major highways and urban areas, makes it a highly desirable place to live.

Unfortunately, suburbanization has brought with it rising taxes, mounting traffic, and loss of rural character. If recent trends continue into the future, Woolwich Township will be left with virtually no open space, degraded water resources and natural habitats, and the end to its agricultural heritage. Over 5,000 new homes – mostly single-family units – will consume thousands of acres of land. More than 4,000 new school children will trigger educational costs, driving taxes up even further. Commercial growth –which can help defray tax impacts – will be minimal because the Township's public water and sewer service areas cannot handle needed commercial development.



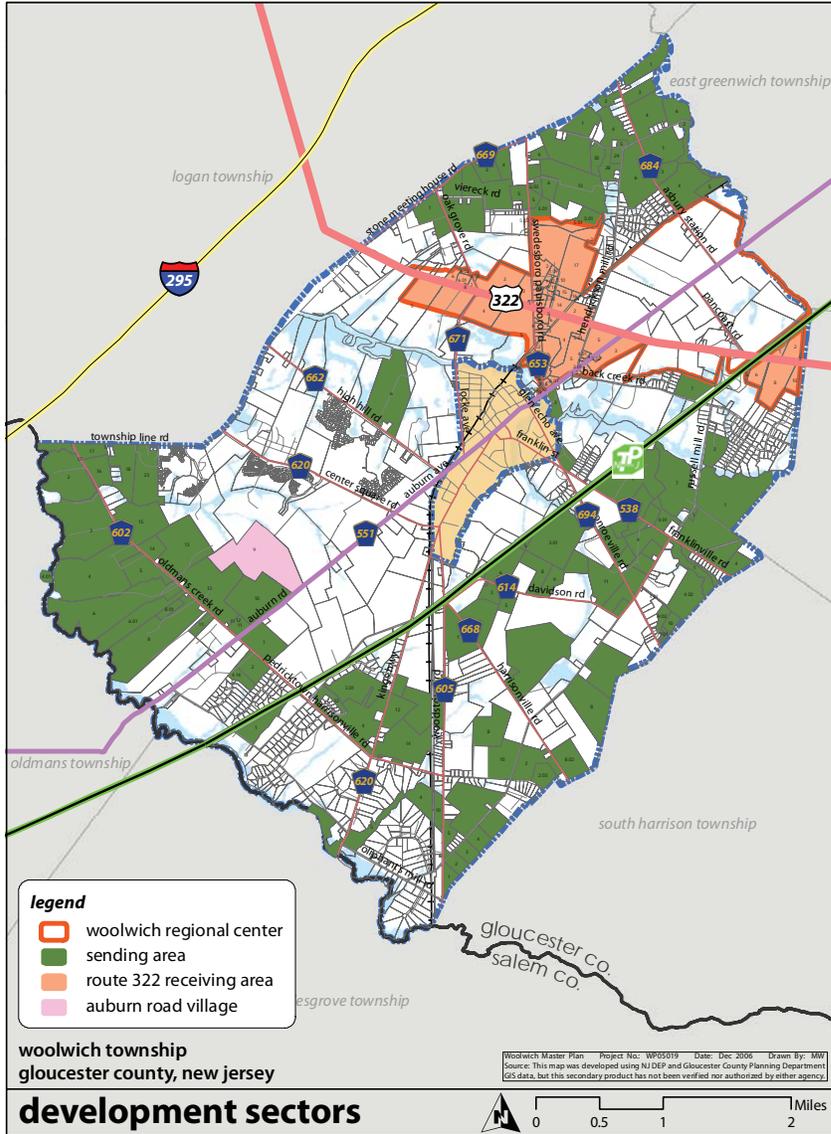
WOOLWICH TOWNSHIP TRANSFER OF DEVELOPMENT RIGHTS (TDR) PLAN

In early 2005, Woolwich Township embarked on an aggressive, comprehensive planning process to curb sprawl by channeling new development into discrete growth boundaries. Through this “smart growth” approach, the Township will, in effect, create desirable, compact, mixed use centers, while preserving thousands of acres of productive farmland and scenic open space outside of them. The means for accomplishing this is through the Transfer of Development Rights.

Transfer of Development Rights (TDR) allows property owners in designated preservation areas – called sending zones – to sell the development value of their land to interested buyers. The buyer of these development rights can then transfer the development potential to designated growth areas – called receiving zones.

Within the receiving zone, a developer can build not only what is allowed by right, based on the zoning in place in the receiving zone. He can also place the additional development potential, based on the development rights purchased, on his property. The Township works with the private sector and with county and state agencies to ensure that needed infrastructure – especially water, sewer and transportation systems – will be in place to accommodate planned growth in the receiving zone.

Sending zone property owners receive the development value of their property without having to subdivide it into housing developments. Instead, their land can continue to be farmed or maintained in open space. In this way, a critical mass of contiguous farmland will help ensure the continued viability of agriculture in Woolwich Township.

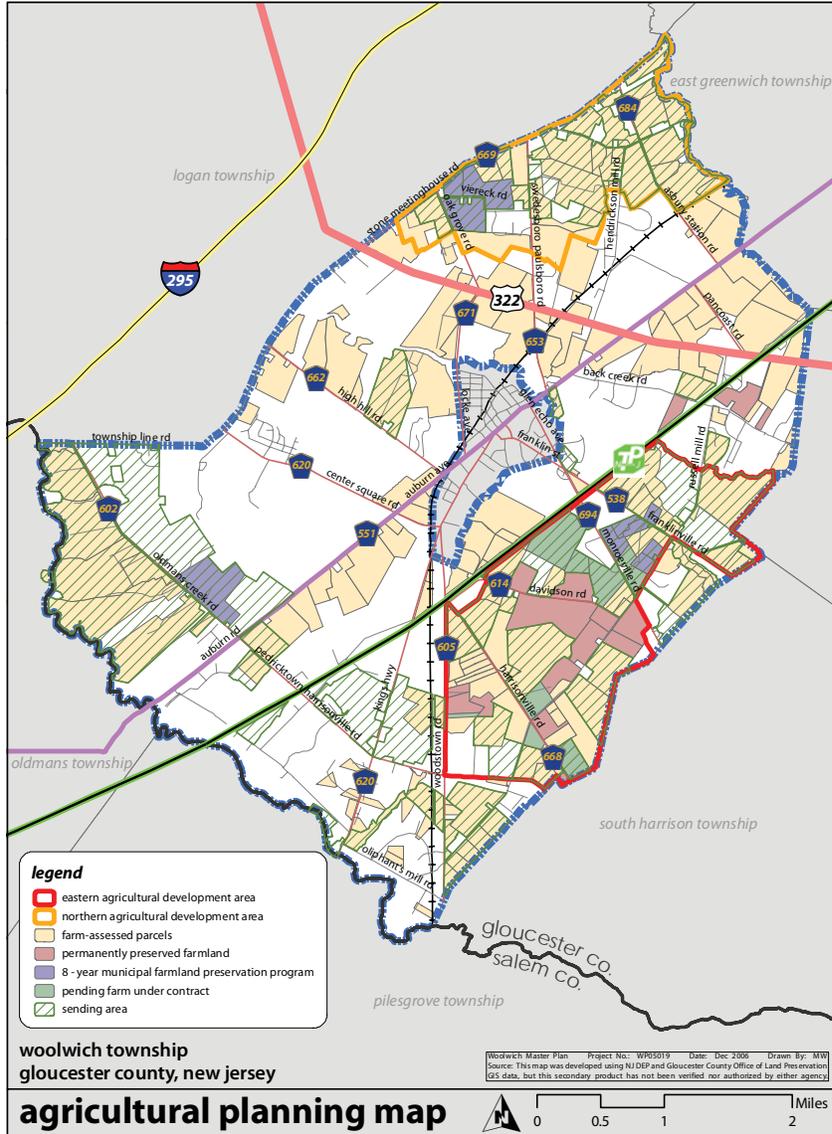


TDR SENDING ZONE

Over 4,000 acres of productive farmland and open space on 119 tax parcels are included in Woolwich Township's sending zone. These properties are located in the Township's residential zoning districts outside of the existing sewer service area. Other criteria that they meet include most or all of the following:

- undeveloped or largely undeveloped;
- generally greater than 10 acres in size;
- contribute to the creation of large contiguous blocks of farmland or open space;
- adjoin preserved land;
- not already encumbered with development restrictions or easements;
- not subject to pending closing through the farmland preservation program;
- in total, create the requisite number of credits needed in the receiving zone.

The sending zone encompasses nearly half of the Township's total farmland assessed properties, two-thirds of prime agricultural soils or agricultural soils of statewide importance, and one-third of all habitats of threatened and endangered species.



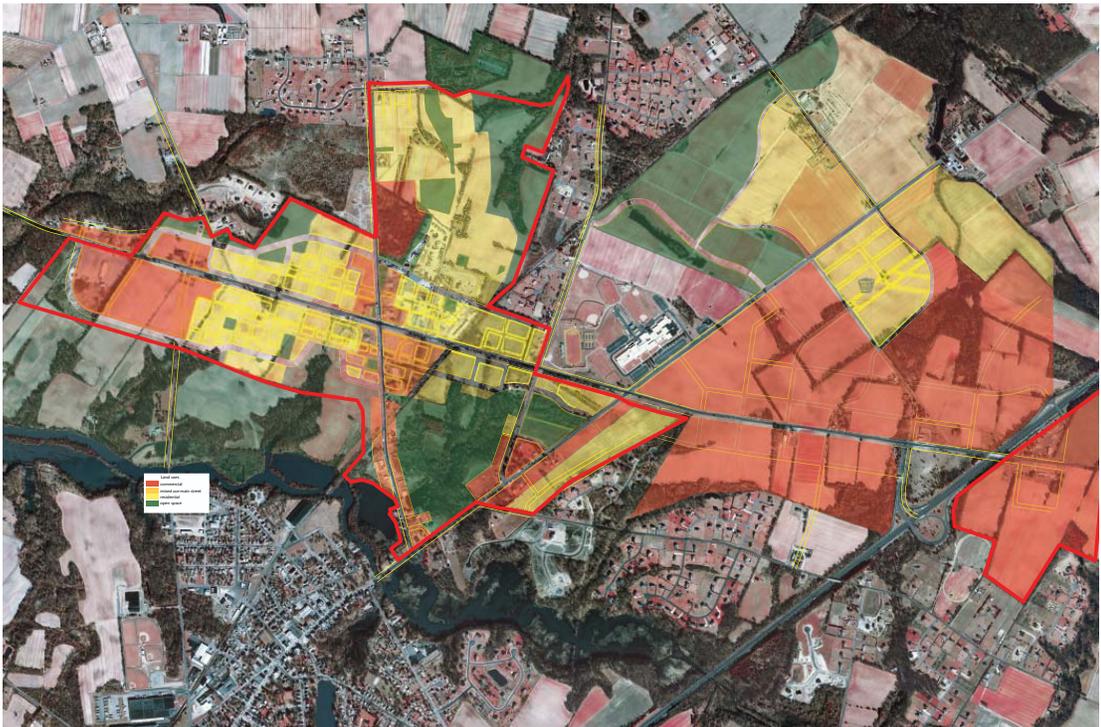
US 322 CORRIDOR RECEIVING ZONE

There are two proposed receiving zones in Woolwich Township. The larger of the two is called the US 322 Corridor Receiving Zone. It encompasses 762 acres. This receiving zone is divided into two non-contiguous sections. The larger of the two contains Woolwich New Town and an adjacent gateway commercial area. Woolwich New Town will be a mixed use center with walkable neighborhoods and services into which development rights are transferred. It will contain a mix of housing, locally-oriented commercial uses, civic buildings and open space. Together with the adjacent gateway commercial area, it occupies 665 acres. Of the 3,217 homes planned here, only 100 will be single-family units. The rest will be a mix of twins, townhouses, condominiums and units above small shops. The diversity in housing types will ensure a better fiscal outcome for the Township, with more single person households as well as households with no children.

A commercial main street will create a vibrant downtown for Woolwich New Town. Additional office, retail and flex space will locate on the far western edge of Woolwich New Town and in the second section of the receiving zone, east of the NJ Turnpike. In total, up to 3.6 million square feet of commercial space can be built in the receiving zone. This balance of housing and ratables will, once again, ensure a healthy fiscal outcome for the Township.

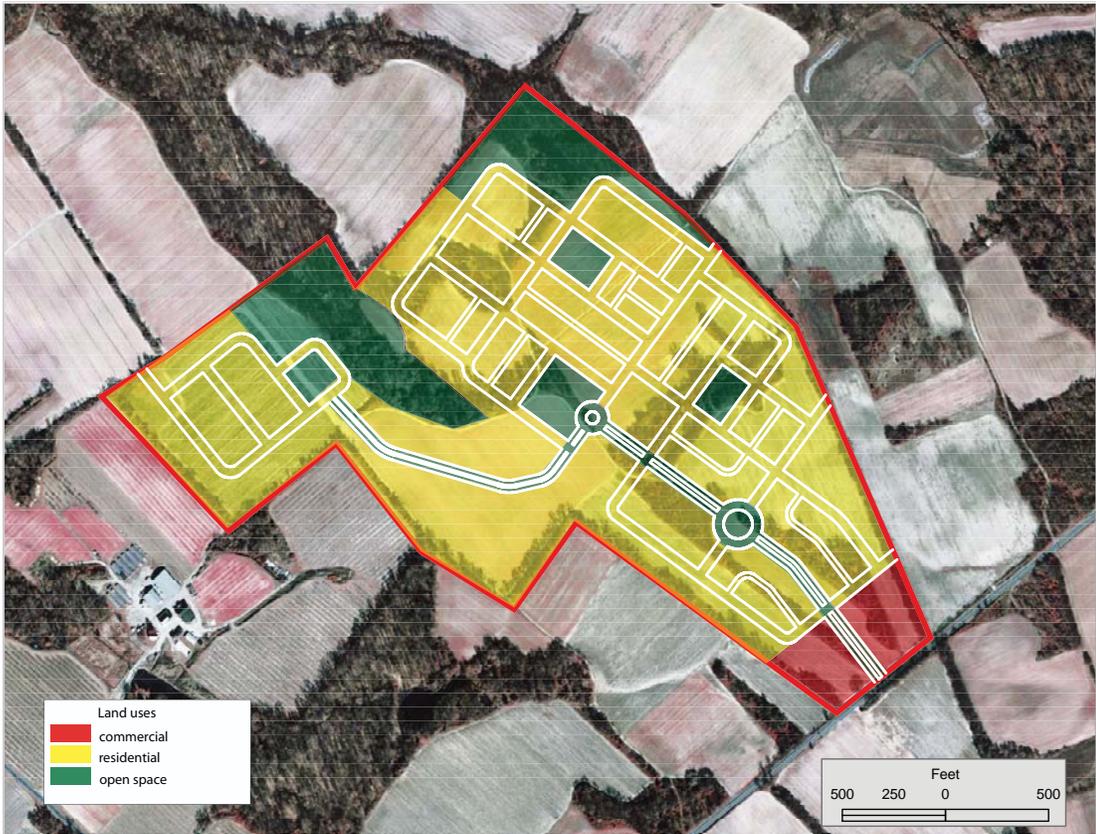
Woolwich New Town comprises just over one square mile of land. The compact design of this site reduces the need to drive, by bringing destinations in walking and bicycling distance from homes. As for vehicular traffic, the highly connected street network takes pressure off of US 322, allowing regional traffic to use the highway, while local traffic can utilize neighborhood streets. Streets are designed to accommodate bus rapid transit in the future.

The receiving zone is designed with environmental protection in mind. Bald eagle habitat associated with Raccoon Creek will be protected. Wetland encroachments will be minimized and all necessary environmental permits attainable. Low-impact stormwater management systems will maximize groundwater recharge and water quality protection, while reducing the potential for flooding. In addition to lands preserved outside of the growth boundaries, nearly 89 acres of parks and public spaces will be created within the receiving zone.



AUBURN ROAD RECEIVING ZONE

Auburn Road Village, the second receiving zone, is located next to Weatherby, a 4500-unit development south of US 322 and west of Swedesboro. This receiving zone sits on a 125-acre parcel of land. Here, the plan calls for 502 homes, including 130 single-family units, and the balance, a combination of twins and townhouses. A small commercial area will front Auburn Road, the principal access to the site. Should additional connections be made into Weatherby, children from both Weatherby and Auburn Road Village will be able to walk to area schools. Parents will be able to travel to the small commercial centers at Auburn Road Village and in Weatherby without burdening Auburn Road with more traffic. Over 30 acres of open space will provide passive and active recreation.



HOW DEVELOPMENT RIGHTS ARE TRANSFERRED

Woolwich Township will implement its TDR program not only through the adoption of Master Plan amendments but also through the enactment of a zoning ordinance, all in accordance with the State Transfer of Development Rights Act, N.J.S.A. 40:55d-137 et seq. The ordinance will establish a certain total number of TDR credits in the sending zone, allocated on a parcel-by-parcel basis. These credits equate to the development potential of each property. It will also create a receiving zone development intensity that can only be achieved through the Transfer of Development Rights.

Credit calculations are intended to reflect the actual development potential of sending zone properties. Calculations are made using a formula based on the suitability of different soils for septic systems and current zoning. In addition, the formula deducts a certain percentage of the gross tract area on a given parcel to account for needed infrastructure (e.g. stormwater management, driveways, etc.)

The formula was modeled after one created for Chesterfield Township, Burlington County several years ago. Woolwich Township “tested” the formula against a dozen approved subdivisions and found it to be an accurate indicator of development potential. Nonetheless, there may be instances where a landowner wishes to challenge the resulting allocation. The ordinance will allow sending zone landowners to do so through an appeal process, in which the landowner can demonstrate higher development potential. To do this, s/he must follow specific procedures contained in the ordinance.

Neither sending nor receiving zone property owners are required to participate in TDR. By-right zoning will exist in both areas. However, there are built-in incentives to participate. Sending zone property owners are assigned credits based on zoning in place prior to the adoption of TDR. Once TDR is enacted, the zoning will change in the sending zone, with the intent of limiting growth. Those interested in building in the receiving zone receive density bonuses by purchasing development rights from the sending zone. Therefore, they can build more than they would otherwise be able to do without the Transferred Development Rights.



Farm
Preservation
Through
Center
Development



CONSISTENCY WITH STATE PLAN

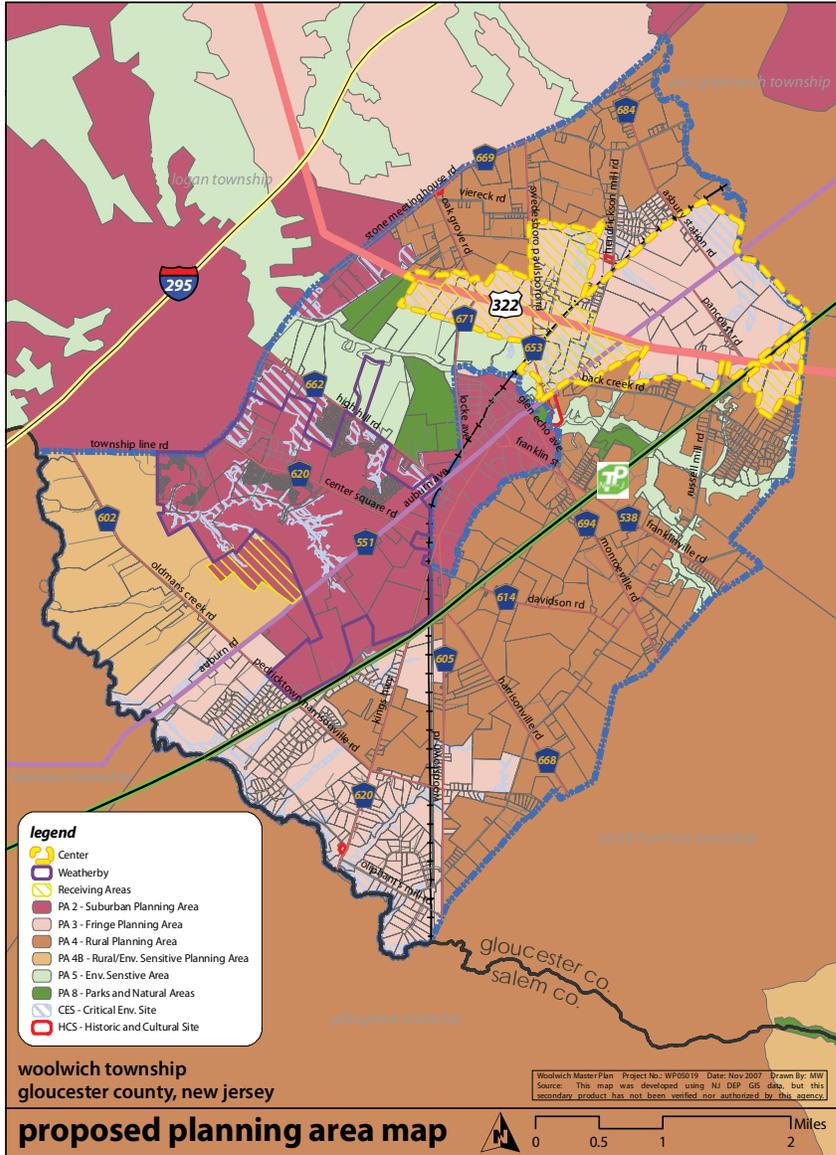
In New Jersey, the adoption of a TDR ordinance is predicated on receiving Initial Plan Endorsement from the State Planning Commission. Initial Plan Endorsement is an official recognition that local master plan documents are consistent with the New Jersey State Development and Redevelopment Plan. Initial Plan Endorsement brings other benefits to municipalities, besides the ability to implement the transfer of development rights. It increases the opportunity to obtain financial and technical resources from the State that will help implement the municipal Master Plan.

Woolwich Township's petition for Initial Plan Endorsement includes a series of proposed changes to the State Plan Policy Map. These changes are intended to reflect the Township's new direction in channeling growth into areas where infrastructure exists or is planned, and concurrently preserving rural environs.

As proposed, the State Plan Policy Map shows that future growth in Woolwich Township will be limited by and large to continued development of Weatherby, the two proposed receiving zones and Woolwich Regional Center. These growth areas are designated either as Planning Area 2 – Suburban Planning Area, or as a Regional Center.

Woolwich Regional Center is a 2.7 square mile area along US 322 that includes not only the US 322 Corridor Receiving Zone, but also Woolwich Adult, LLC property, Kingsway Regional Middle and High School campus, and several small commercially zoned properties on the far western boundary of the Regional Center, north of US 322 and west of the US 322 Corridor Receiving Zone. Woolwich Adult, LLC, plans to construct 1,029 active adult homes, and 2.7 million square feet of commercial space including retail uses, offices and hotel space. Woolwich Regional Center, including the US 322 Corridor Receiving Zone and Woolwich Adult, will accommodate 44% of projected residential growth and 86% of projected commercial growth throughout the Township.

Once built, Woolwich Regional Center will have the characteristics of a regional center envisioned in the State Plan. It will contain compact development patterns and a circulation system enabling people to choose alternative modes of transportation, including walking, bicycling and transit. In addition to the existing middle and high school campus, it will house a mix of residential, commercial and civic uses. Commercial uses will include both locally and regionally-oriented uses, serving future residents of Woolwich Regional Center as well as residents in other parts of Woolwich and surrounding communities.



THE OUTCOME

Woolwich Township's smart growth approach will result in the creation of tightly-knit, mixed use, vibrant places. Outside of these growth areas and Weatherby, over 5,000 acres of land will be preserved, most of it the result of Transferring Development Rights. Traffic impacts will be far less than it would be if recent trends prevail, because new growth will be compact, enabling local trips to be taken on foot or bicycle. Since housing types will be so varied, households will be equally diverse. As such, there will be fewer "traditional" families and school children.



VISION STATEMENT

In the year 2025, residents of Woolwich Township benefit from the synergy of town and country living.

A newly created Woolwich Regional Center provides a vibrant gathering place in which to live, socialize, shop, work and recreate. It offers housing that meets the full life span needs of existing and future residents, including young professionals, couples, families, singles and seniors. Diversity in housing options and prices attract an equally diverse resident population. A combination of housing diversity and balanced commercial development help mitigate rising public service and infrastructure costs, especially educational costs.

Woolwich Regional Center consists of the US 322 Corridor Receiving Zone, Woolwich Adult residential and commercial communities, and the existing middle and high school campus. The US 322 Corridor Receiving Zone consists of two noncontiguous sections. The larger of the two – Woolwich New Town – is a tightly knit collection of homes, businesses, civic institutions and public spaces. Streets are interconnected and lined with sidewalks and attractive landscaping. Walking and bicycling are safe and desirable alternatives to driving for simple errands and neighborhood trips. A connected system of public greenways, parks and plazas are enjoyed by all. They also serve as natural stormwater systems that recharge ground water, maintain water quality and manage the volume of stormwater flows that enter nearby streams.

Woolwich Adult hosts active adult housing and commercial development. Regional shopping and entertainment draw not only residents of Woolwich, but also visitors from surrounding communities. Connections between housing for active adults, regional shopping and Woolwich New Town make travel within the Regional Center easier and more direct. Walking and bicycling are viable options for local trips not only because of the interconnected system of streets and paths, but also because destinations are in close proximity to each other and to housing. The densities, particularly in Woolwich New Town, make mass transit viable.

Woolwich Regional Center is the principle location of future commercial development in Woolwich Township. Therefore, in addition to the aforementioned local and regional businesses, it accommodates single use and multi-family buildings with large format retail, along with office, flex space and institutional uses at the western edge of Woolwich New Town. The purpose is to provide for uses weighted toward serving the local economy, albeit more automobile oriented uses. The second non-contiguous section of the US 322 Corridor Receiving Zone, located east of the NJ Turnpike, offers more regionally-oriented commercial uses.

Resource conservation is a centerpiece of the Regional Center. This is achieved through water conservation, building design and orientation, and use of sustainable building materials. Furthermore, buildings are designed so that they can be adapted to new uses in the future.

Outside of Woolwich Regional Center, there are some scattered residential subdivisions, the planned community of Weatherby, and limited commercial uses. There is also a second planned community adjacent to Weatherby – Auburn Road Village – which provides mixed housing options in a compact village setting, along with local retail uses and services. This is Woolwich Township's second receiving zone.

Despite the changes that new development brings about, the Township has over 5,000 acres of preserved land, or roughly 38% of its land base. Streams are protected by creative filtering and infiltration systems that filter pollutants and help recharge groundwater. Habitat of threatened and endangered species, including bald eagles, are protected and managed appropriately. Much of the land outside of the Regional Center continues to be farmed because a critical mass of farmland is preserved and maintained to support agriculture.

Although the additional commercial and residential growth impacts adjacent municipalities, the negative effects are far less than they would be under existing zoning. Compact development patterns reduce traffic impacts and visual impacts of spread-out growth. An interconnected

street system permits local traffic to bypass US 322, ensuring that its ability to handle regional traffic flow is not compromised. At the same time, land preservation in the sending zone provides visual and environmental benefits to adjoining municipalities and reinforces any farmland preservation efforts they may be pursuing.

In the year 2025, Woolwich Township is proud of its accomplishments. It is especially proud of its status as one of New Jersey's premier sustainable communities. A sustainable land use planning approach – the town and country framework – enables Woolwich Township to maintain environmental, economic, fiscal and social health for present and future generations.



REGULATING PLAN - LAND USE

The Land Use Plan subdivides Woolwich Regional Center into four sectors, each informed by the types and location of uses, building heights, densities and other fundamental features that define the public space around the buildings.

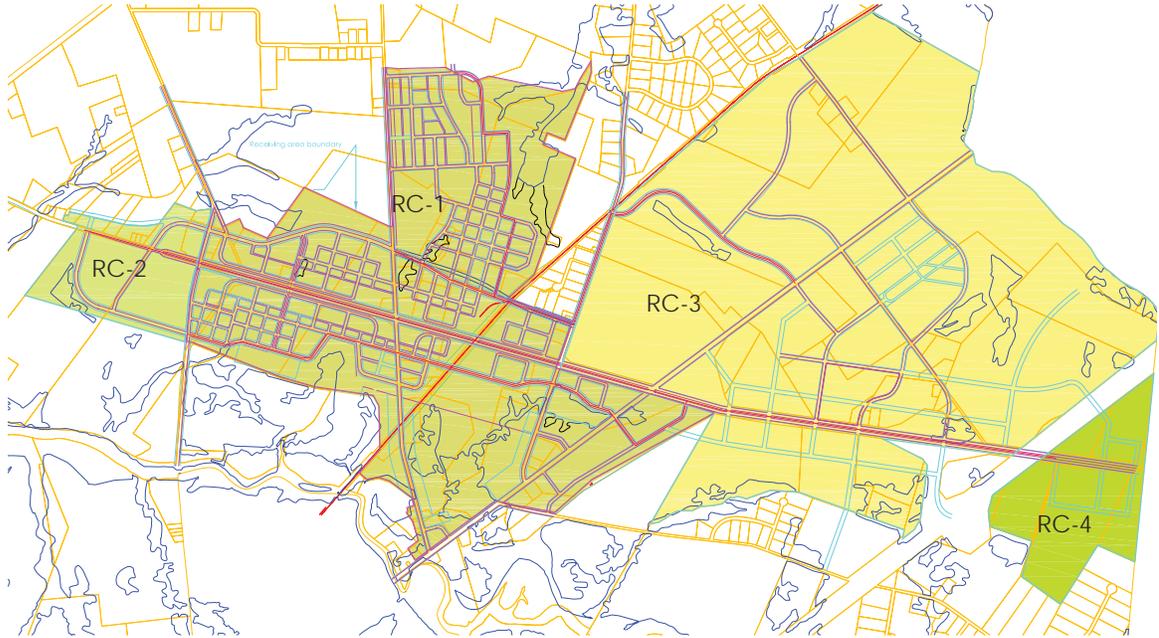
The RC-1 sector provides for mixed-use, walkable neighborhoods with a mixture of institutional uses, housing types and a spectrum of small scale neighborhood retail/services.

The RC-2 sector provides locations for larger format retail, office, flex space and institutional uses that are often auto dependent. These uses are weighted toward serving the local economy such as general offices, car washes, auto service and repair establishments, and supermarkets. Examples of institutional uses include houses of worship, fire stations and police sub-stations.

The RC-3 sector accommodates large format retail and office and hotel uses that traditionally serve a regional market. While there are integrated connections to the RC-1 sector, for the most part, uses in the RC-3 sector are auto dependent and serve a market much larger than the Regional Center itself. Uses include regional boutique shopping in a walkable setting, large format big box retail, corporate office and senior housing in a neotraditional configuration.

The RC-4 sector affords locations for regional offices, hotel and flex space and retail service uses that serve primarily on-site populations. Regional uses are a logical extension of the office/hotel uses permitted in the RC-3 sector.

The land use plan governing Auburn Road Village is generally consistent with the guidelines for the RC-1 sector of the Regional Center and with the Woolwich Township Zoning Regulations and Design Standards for the Regional Center and TDR receiving zones.



REGULATING PLAN - CIRCULATION

The Woolwich Township Circulation Plan sets forth a local transportation structure required to support expected growth Township-wide, in Woolwich Regional Center - including the US 322 Corridor Receiving Zone – and in the Auburn Road Receiving Zone. Within the context of the Regional Center and receiving zones, it analyzes the potential traffic impacts associated with that growth and makes recommendations about how growth can occur in a way that gives greater priority to use of public transportation and “human powered transportation” – namely walking and biking. This in turn reduces total trip making and vehicle miles traveled.

Growth will occur with or without the transfer of development rights. However, fragmented, spread out development of low density housing across the Township’s rural landscape will necessitate greater use of cars for travel purposes, since other travel modes are not practical at low densities. This will require longer average trip distances, increasing the total amount of vehicle miles traveled. Although traffic impacts from the Regional Center and receiving zones may be concentrated, they should be less than what would result under previous zoning.

Community design has a huge impact on vehicular and non-vehicular users. Street grids that provide redundancy in travel routing options and more direct travel linkages can reduce total travel demand by making trip distances shorter. Center-oriented land development, in which uses are mixed and densities are kept high, can further reduce congestion by allowing more travel to occur by alternative travel modes.

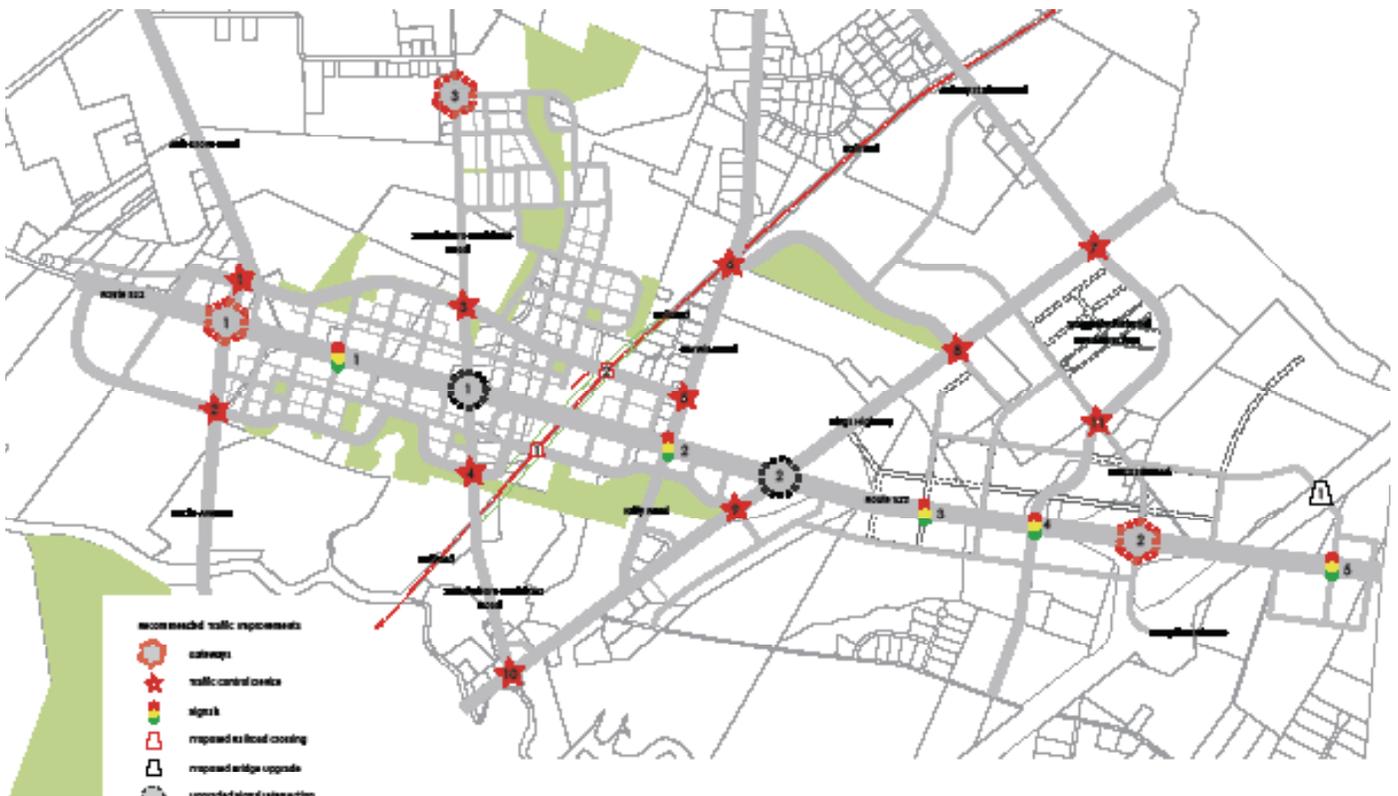
Non-work trips constitute the large majority of trips people make on a daily basis. Many of these trips occur close to home or work and can be readily made by alternative travel modes or by driving on local streets. Trips of less than .5 miles – a ten minute walk – can be easily made by walking. If a community is designed to encourage such walking trips, many residents will choose to walk more frequently, reducing reliance on cars for short trips. Woolwich New Town is designed to encourage walking by locating most homes within a half mile of the intersection of its main street (Swedesboro-Paulsboro Road) with US 322.

The proposed Boulevard design for US 322 is intended to serve multiple functions. It will accommodate regional automobile traffic. It will accommodate regional and local truck traffic as well. For instance, trucks from Pureland Industrial Complex in neighboring Logan Township will traverse the highway. So too will trucks associated with warehouses on the western edge of Woolwich Township, commercial facilities in Woolwich Regional Center or farms in the sending zone. At the same time, parkways associated with US 322 and adjacent service roads will help to create a gentler and safer pedestrian experience within Woolwich Regional Center.

The intent of the Plan as it relates to the Regional Center and receiving zones is to build streets that are integral components of community design. Streets must be designed to complement neighborhoods and commercial centers and must be pedestrian in scale. Streets are encouraged to be designed with on-street parking. All streets shall be landscaped. In an effort to protect this investment, Woolwich Township views streets as the most important public space, serving not just motor vehicles, but pedestrians as well.

The following design principles form the basis for this Plan:

- Streets shall interconnect within a development and with adjoining development. Street stubs should be provided with development adjacent to open land to provide for future connections per the Street Regulating Plan.
- Streets shall be designed as public space and scaled to the pedestrian.
- Streets shall be bordered by sidewalks or multi-purpose paths on both sides.
- Streets shall be designed with street trees planted in a manner appropriate to their function.
- Wherever possible, street locations should account for difficult topographical conditions, paralleling excessive contours to avoid excessive cuts and fills and the destruction of significant trees and vegetation outside of street rights-of-way on adjacent lands.
- All streets shall permit public access whether by easement or by public dedication. Closed or gated streets are prohibited.
- All streets permit on-street parking, unless otherwise noted in the street Regulating Plan.
- All on-street parking provided shall be parallel. Curb or angle parking is permitted upon approval of the Joint Land Use Board and Township Committee.
- The use of traffic calming devices, such as raised intersections, landscaping bulb-outs, refuge islands, and neighborhood circles are encouraged as alternatives to conventional traffic control measures.
- Boulevard and Main Street design concepts will be used to assure that arterial roads passing through the Regional Center can achieve the above design principles while serving the higher traffic volumes that these roads must attract. In order to respect the context of the Regional Center, roundabouts and gateways will be provided to augment other forms of traffic control along arterial roadways.



REGULATING PLAN - PUBLIC SPACES

Woolwich Township Public Spaces Plan provides the foundation for building successful, sustainable linkages and public spaces in Woolwich Township. The framework for the Plan begins by defining a Township-wide linear structure that knits neighborhoods, landmarks, towns, retail centers, parks and public spaces together so that these nodes become accessible on foot or bicycle. Linkages consist of existing and planned roadways, organized into a hierarchy based on the surrounding environment through which they pass. All linkage types have pedestrian paths, bicycle lanes, and/or multi-purpose paths.

The Plan proposes a series of 20 parks on approximately 89 acres of open space and parks in Woolwich New Town and in a few locations immediately adjacent to Woolwich New Town. They include parks and greenways. They also include street rights of way, featuring plenty of landscape amenities along with sidewalks or multi-purpose paths.

The densities in Woolwich New Town result in very little private yard space. Consequently, availability and accessibility of public open space becomes very important to residents. Therefore, every neighborhood in Woolwich New Town has one or more parks within a 1,000 foot walking distance of most homes.

Proposed public spaces offer diverse uses, activities and landscape treatments. The design of these spaces embraces the benefits of encouraging social interaction, facilitating stormwater management, protecting wildlife habitat, promoting healthy living, and providing passive and active recreational opportunities for residents.

The Plan presents a conceptual design for each park and public space, along with recommendations and cost estimates for hardscaping and landscaping.



REGULATING PLAN - STORMWATER MANAGEMENT

Proposed stormwater strategies for Woolwich New Town reflect Woolwich Township's vision of a sustainable future and draw upon state of the art solutions, including low impact development techniques and incentives for implementing them.

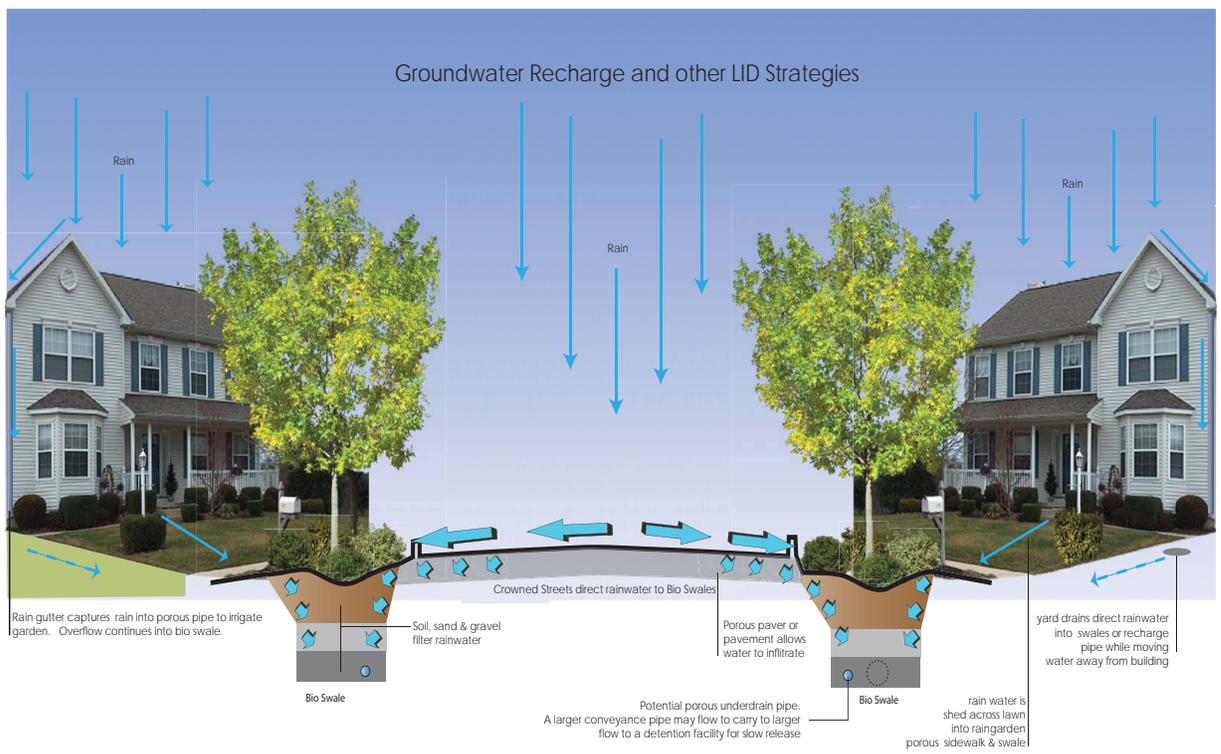
Stormwater runoff significantly impacts the quality of our waterways, depositing sediment and pollutants. These residuals have harmful affects on drinking water supplies, recreation, fisheries and wildlife. Historically, conventional stormwater management has approached stormwater runoff as a problem to be solved rather than a valuable resource to be embraced. Conventional strategies as past experience has shown, are flawed by the very fact that they do the opposite of what nature does to manage stormwater.

A "natural" approach to stormwater management mimics a site's predevelopment hydrology by using design technologies that infiltrate, filter, store, evaporate and detain runoff close to its source. This innovative alternative approach modeled after nature is referred to as "Low Impact Development" or "Natural Drainage".

The stormwater management plan strives to integrate a natural, low-impact approach to maintain the natural features, hydrologic conditions and characteristics of the relative portions of each subwatershed, including the protection of open space and critical creek habitat. Incorporating this approach within this new community offers an unprecedented opportunity to reduce runoff, dramatically improving water quality, flows and habitat.

To facilitate this approach, the stormwater plan consists of three basic levels of stormwater runoff management, namely SITE, BLOCK and REGIONAL levels. Opportunities exist within each level of management to incorporate low impact development design techniques that must work in concert with each other to achieve the goals of the overall stormwater plan. A master plan for the regional components is provided. Developer participation is required at all three levels including implementation of regional facilities on an as needed basis through cost share agreements.

Groundwater Recharge and other LID Strategies



REGULATING PLAN - ZONING REGULATIONS & DESIGN STANDARDS

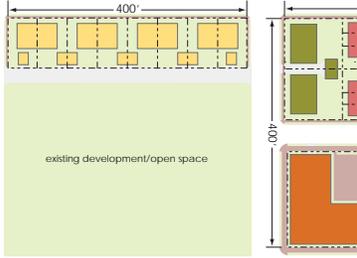
The Zoning Regulations and Design Standards Ordinance is the legal mechanism that sets forth the land use criteria, which shall be used by the Township in reviewing and approving land development applications for Woolwich Regional Center and Auburn Road Village. The Ordinance divides the Regional Center into 3 subsections and treats the Village center as a single subsection or zone. Permitted, accessory and conditional uses are noted for each subsection. The Ordinance also shows the permitted locations of residential, non-residential and mixed land uses within each subsection.

Specific bulk and area, architecture and design, parking, edge and buffers, and environment standards are noted for permitted land uses. In addition, general and miscellaneous design standards are provided that address signage and all other aspects of land development from site design and layout to parking and circulation to landscaping.

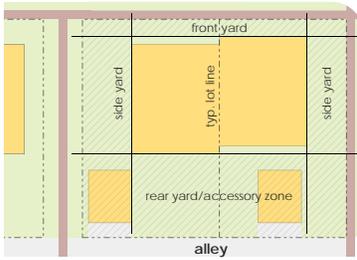
town scale



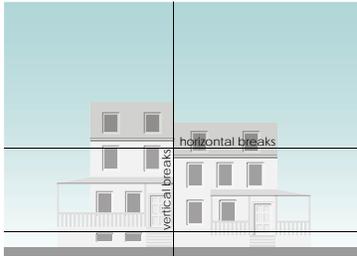
block scale



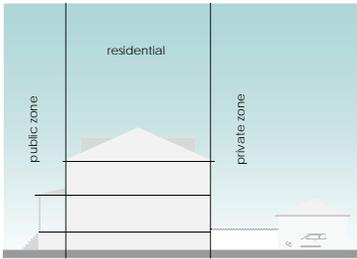
site scale



public realm



private realm



ECONOMIC & INFRASTRUCTURE PLAN - REAL ESTATE MARKET ANALYSIS

Adoption of a TDR ordinance is predicated on the completion of a real estate market analysis. The real estate market analysis assesses the viability of the development rights and density calculations proposed in the development transfer plan element.

A draft real estate market analysis has been prepared for Woolwich Township. The analysis relied on recent sales transactions, existing zoning, environmental constraints, projected growth, receiving zone land use plans, and proposed credit calculations to evaluate the feasibility of the proposed TDR program.

The analysis concludes that there is a demand for 1,357 credits. This exceeds the 1,336 credits that have been created in the sending zone.

The demand for credits from the sending zone is based on a specific development program for each of the receiving zones and availability of bonus credits to stimulate the transfer of development rights. There appears to be sufficient residential, retail and office/commercial demand to absorb the 3,217 residential units proposed for the US 322 Corridor Receiving Zone and 502 units proposed for the Auburn Road Receiving Zone.

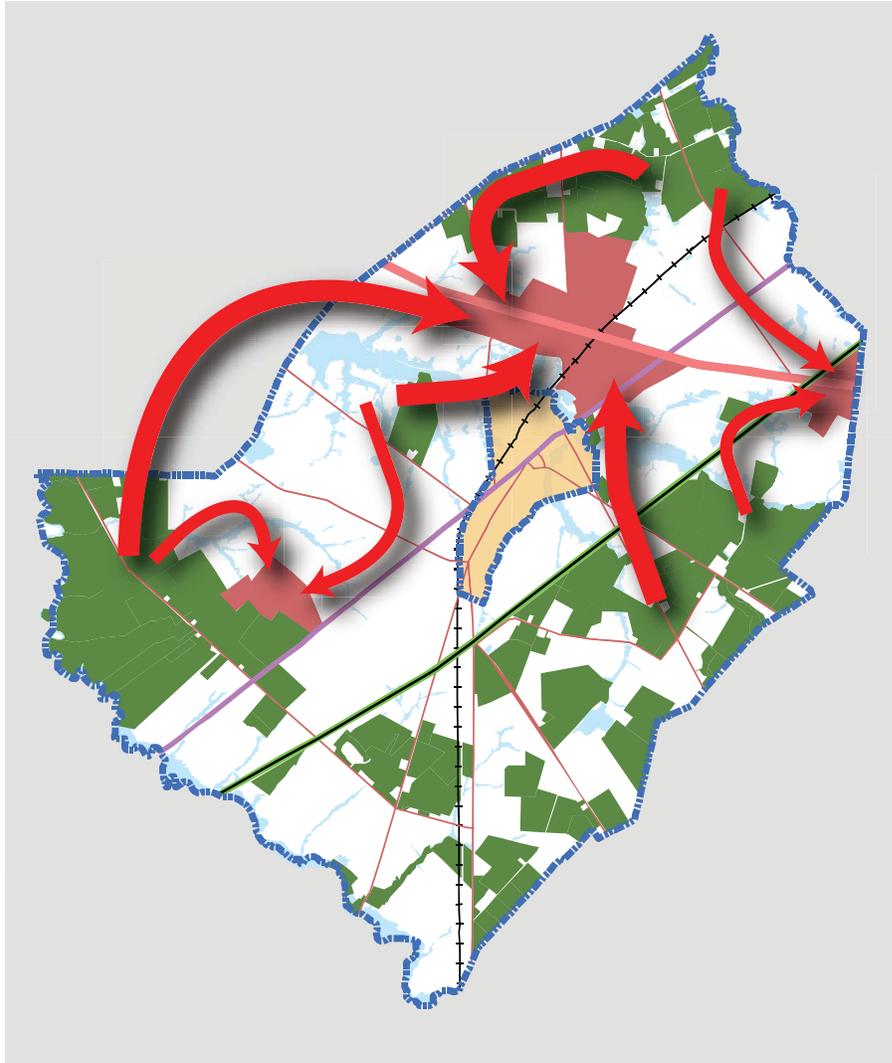
Retail market conditions and superior regional access available in the US 322 corridor should provide sufficient market to add 1.1 million to 2.1 million square feet of retail space in the US 322 Corridor Receiving Zone. The market for the remaining 500,000 to 1.5 million square feet of office/flex space will be no weaker than under pre-TDR conditions.

Residential development in the Auburn Road Receiving Zone should support a modest 60,000 to 70,000 square feet of convenience retail space programmed in that location.

This level of residential and retail demand, coupled with the proposed bonus development credits (credits sent from the sending zone to allow additional development in the receiving zone beyond what is permitted by right) will provide sufficient market to support needed sales of the 1,336 credits in the sending zone. This demand will assure that all sending area credits can find buyers from the receiving zones during the forecast period (through the year 2029).

Available funds (what a developer is willing to pay for a building lot) exceed the anticipated credit cost in the sending zone by 11% to 17% for almost all housing types. This creates the financial incentive to developers to pursue the purchase of credits.

The real estate market analysis concludes that the proposed TDR program is based on sufficient market demand and provides sufficient economic incentive to credit buyers to support the needed sales of 1,336 credits in the sending zone during the forecast period.



ECONOMIC & INFRASTRUCTURE PLAN - UTILITY SERVICES - SEWER

Woolwich Township is partially served by the Logan Township Municipal Utilities Authority (LTMUA). The sewer service area is limited to the Weatherby development and several adjacent properties, including the Auburn Road Receiving Zone. However, Woolwich Regional Center lies outside of the existing sewer service area.

Aqua New Jersey holds the wastewater disposal franchise in Woolwich Township. Working with the Township, it will arrange for, own and operate the facilities needed to address future demand. Given the volume and density of development in Woolwich Regional Center and the two receiving zones, individual on-site septic systems will be unable to serve these areas. Therefore, a centralized treatment system will be necessary.

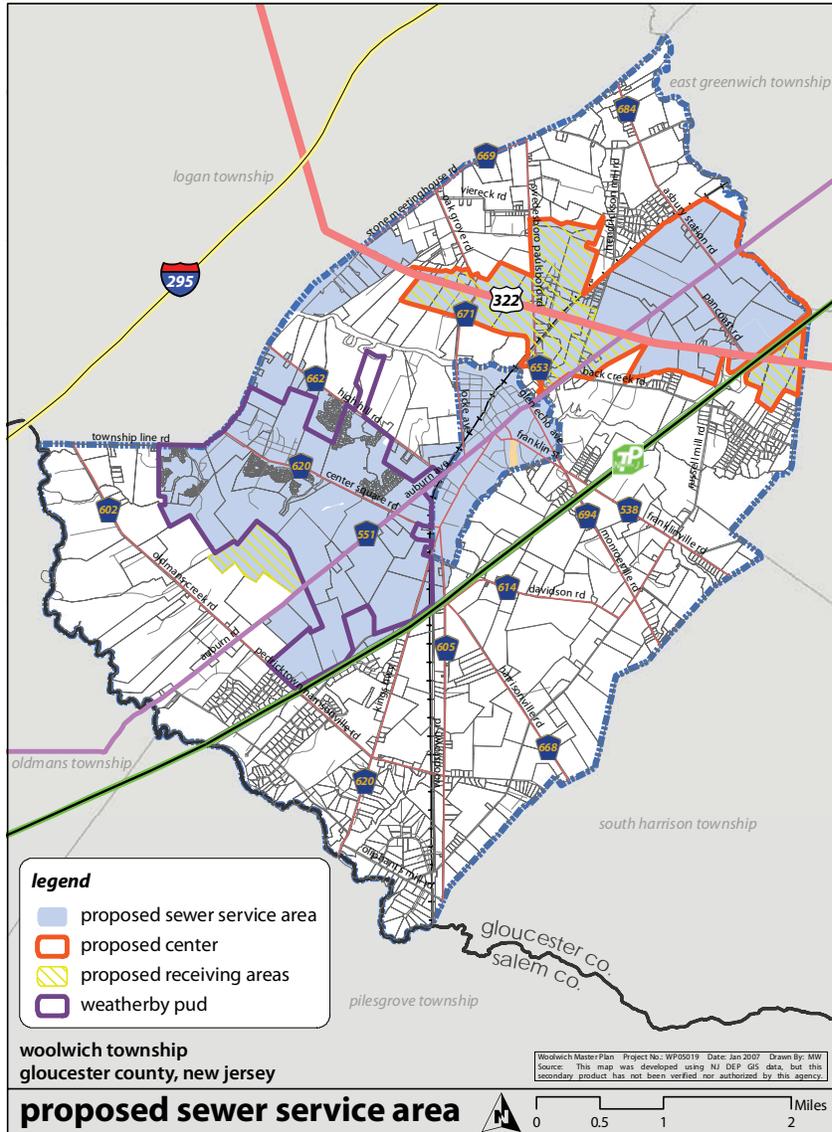
At this time, Aqua projects a total of 1.9 million gallons per day of wastewater flows for the entire US 322 corridor. This includes 1.8 mgd in the Regional Center, of which close to 1.3 mgd is assigned to the receiving zone. A small area west of the Regional Center, abutting the Logan Township border, comprises a very limited share of the total sewerage needs along the corridor.

It is anticipated that conventional gravity sewers and pressurized force mains will be used to convey sewerage from development sites to the treatment and disposal locations. The Township hopes to secure sewerage capacity through a two-phased approach. Phase One would involve obtaining partial capacity from the Logan Township Municipal Utilities Authority (LTMUA) through a future expansion of the LTMUA plant. The expectation is that this could potentially expedite the delivery of sewer service to the Regional Center and Receiving Zones. Phase Two would involve construction of a treatment plant in Woolwich Township to provide the balance of capacity needed in the Regional Center. The New Jersey Department of Environmental Protection (NJDEP) has indicated that groundwater discharge is the preferred method of wastewater disposal. Aqua has done some preliminary site investigations to identify potential disposal areas. It is estimated that up to 125 acres will be needed for effluent disposal. Again, a new treatment plant will have to be constructed.

Conventional gravity sewers and pressurized force mains will likely be used in the Auburn Road Receiving Zone. Aqua projects .151 mgd of wastewater from this site. It is anticipated that the Auburn Road Receiving Zone will be able to send its effluent to the LTMUA treatment plant, but the treatment plant will need to be expanded to accommodate the additional flows.

Woolwich Township's settlement agreement with Woolwich Adult directs the Township to cooperate with the developer's attempts to secure sewer service for the 750 acres owned by Woolwich Adult, providing the developer adheres to stipulations outlined in the settlement agreement. Woolwich Adult must pay its pro rata share of the construction of a sewerage treatment plant based on needed capacity for its proposed development.

Under the settlement agreement, areas along the US 322 corridor adjacent to the 750 acres owned by Woolwich Adult would be able to obtain sewer capacity. Woolwich Township is responsible for preparing a wastewater management plan to accommodate an expansion of the existing sewer service areas in the Township. A wastewater management plan is required by state regulations whenever new domestic treatment works are proposed which have a design capacity of at least 2,000 gallons per day or require certain discharge permits and are not identified in the existing State Water Quality Management Plan. Thus, to implement TDR, Woolwich Township will have to ensure that a wastewater management plan is prepared and conveyed to NJDEP for state approval. Continued coordination with Aqua New Jersey, Woolwich Adult and NJDEP will be essential.



ECONOMIC & INFRASTRUCTURE PLAN - UTILITY SERVICES - WATER

Presently, public water supply in Woolwich Township is limited to Weatherby and immediately adjacent areas along Center Square Road. However, the Township has the opportunity to bring public water to Woolwich Regional Center and the two receiving zones.

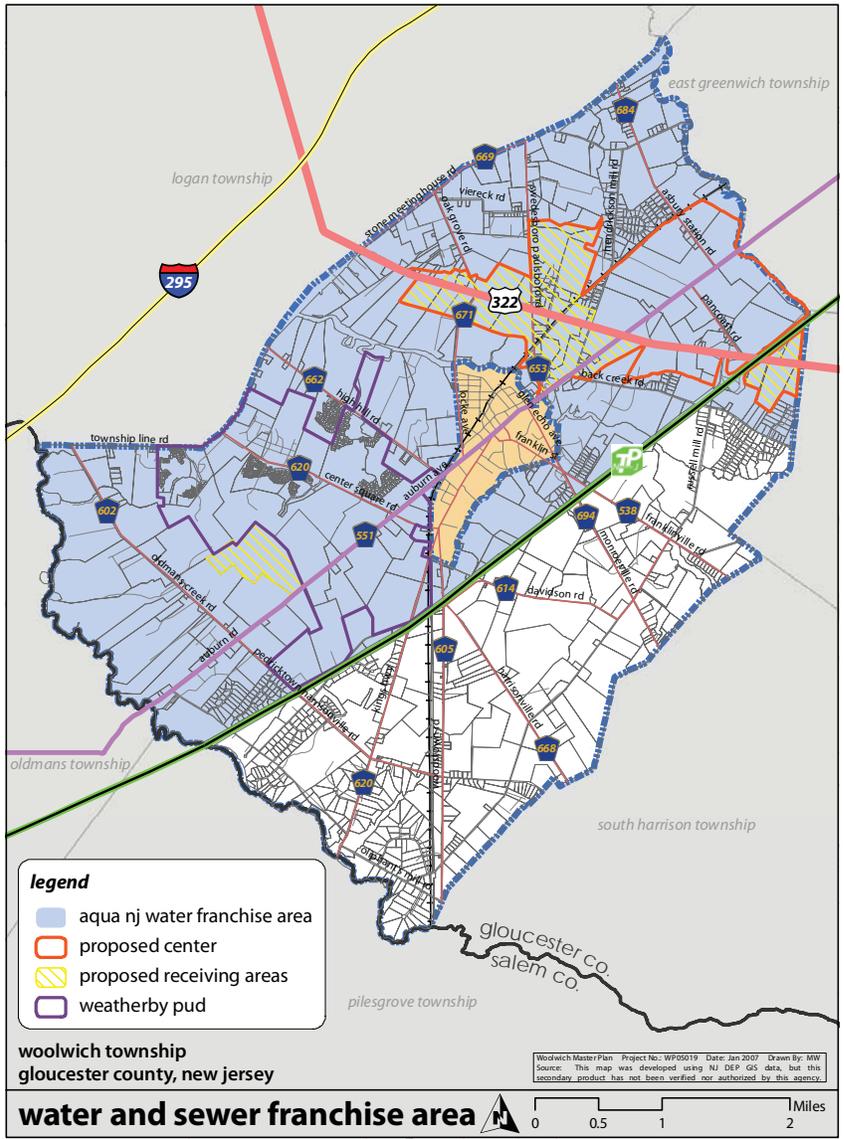
Aqua New Jersey holds the water supply franchise in Woolwich Township. It is responsible for arranging for, owning and operating facilities in accordance with existing and/or future service agreements with the Township and developers. Its current source of water is groundwater, as permitted by NJDEP's Bureau of Water Allocation.

Existing water supply infrastructure consists of four wells, one treatment plant, 1.65 million gallons of storage, a booster station and water distribution mains. Although Aqua's current water allocation is sufficient for the near-terms, it must be supplemented by water purchased from New Jersey American Water Company to meet future growth in Weatherby. A new transmission main could readily serve development along US 322. A water main extension from Aqua's existing plant is needed to provide water to the Auburn Road Receiving Zone.

The settlement agreement between Woolwich Township and Woolwich Adult calls for the designation of public water service for the developer's property on US 322 in the Regional Center and for other properties identified in the settlement agreement. The US 322 Corridor Receiving Zone falls within the proposed water service area. Woolwich Township must cooperate with the developer in facilitating expansion of the water supply service area, providing the developer adheres to protocol outlined in the settlement agreement.

Aqua projects 1.8 million gallons per day in water demand along the US 322 corridor based on programmed development. Of this amount, the Regional Center will require 1.7 mgd. The receiving zone demand will comprise the bulk of this demand at 1.2 mgd. The Auburn Road Receiving Zone will generate .143 mgd in water demand.

Based on recent groundwater modeling and indications from NJDEP, Aqua has concluded that the best source of water for the Regional Center and Auburn Road Receiving Zone will be surface water from New Jersey American Water Company, supplemented by groundwater sources.



ECONOMIC & INFRASTRUCTURE PLAN - CAPITAL IMPROVEMENT

Among the documents that a municipality must adopt prior to enacting a Transfer of Development Rights ordinance is a Capital Improvement Program (CIP) for the receiving zones. The CIP includes the location and cost of all necessary infrastructure and a method of cost sharing if any portion of the cost is going to be assessed against developers.

A CIP has been developed for Woolwich Township to address anticipated costs and mechanisms for cost sharing that address infrastructure needs in the US 322 Corridor Receiving Zone, Auburn Road Village and surrounding areas. Water, sewer, transportation and stormwater management improvements are itemized in the CIP, and the options in terms of cost sharing and management thereof are presented.

The bottom line cost to implement TDR is costly. However, the impacts of allowing sprawling development patterns to continue would be far greater, considering impacts to the quality of life in Woolwich Township.

Since implementation of the Transfer of Development Rights will be extended over a long period of time and involve multiple developers, it is imperative that a fair and reasonable method be established to pay for the projected needed infrastructure. Once the method is determined, it must be codified, with updated cost estimates and appropriate means of sharing the costs of the improvements.

Table of Cost Estimates

CATEGORY	TOTAL COST
A) US 322 Corridor Receiving Zone and Surrounding Context:	
Transportation	
Type 1 Improvements	\$30.4 million
Type 2 Improvements	\$91.6 million
Drainage:	\$10.3 million
Sewer:	\$56.8 million (includes Woolwich Regional Center and future warehouses on far western end of the US 322 corridor)
Water:	\$3.6 million (includes Woolwich Regional Center, Auburn Road Village and future warehouses on far western end of the US 322 corridor)
B) Auburn Road Village:	
All improvements are on-site and therefore will be the developer's responsibility.	

Note: Type 1 Improvements will be constructed and 100% paid for by developers on a site by site basis. Type 2 Improvements affect roadway infrastructure that has a regional benefit. Type 2 Improvements will be financed and implemented through a cost sharing approach among multiple parties.