Long-Term Redevelopment

6.0 LONG-TERM REDEVELOPMENT

Figure 6.2a: Image of a Form Based Code Regulated Community, Image Courtesy of http://www.bing.com/images

6.1 INTRODUCTION

Located within the Atlanta metro region, Lithonia has the potential to see new growth due to its proximity to this job center. Growth in Lithonia presents a tremendous opportunity for progress, new development, and economic vitality. Such growth can, however, have a negative impact on the City if it is not carefully facilitated. This chapter recommends strategies to put in place before new development occurs that will guide developers to build in a way that respects Lithonia's small town character, promotes existing amenities, encourages economic development, and creates sustainable, walkable and healthy places to live.

The central strategy recommended within this chapter to control the way new development impacts the City is the creation and adoption of a Form Based Code. As part of this code, character areas are identified, a recommended regulating plan is created, standards for development are provided, and street design standards are identified (refer to Section 6.2). Section 6.3 shows how these standards could be applied to recommended development sites, such as at the Big Ledge Quarry located just north of the city.

6.2 FORM BASED CODE

Form Based Codes are becoming increasingly popular in communities seeking practical ways to grow in a sustainable way that respects the character of an area. They set more focused physical guidelines in certain areas to create more aesthetically desirable and walkable places. Form based codes regulate the key aspects of the built form, such as the height of buildings, how close structures are to the street, and the design of building fronts- including stoops, porches, fences, or storefonts. They also govern the streets themselves so that the streets and buildings work together to create a desirable public realm—adding value to every property in the process. A Form Based Code generally includes a regulating plan, development standards, and street design standards.[6.1]

Figure 6.2b: The Lithonia Plaza Provides an Example of the Product of Current Zoning Codes in Lithonia

Current development standards for Lithonia encourage a built environment that is more suburban and not reflective of the community's small town feel, with large building set backs, low densities, and regulations that do not take into account the different character of areas throughout town. According to the community vision statement in the 2003 Livable Communities Initiative (LCI) study, Lithonia "will strive for diversification and balanced growth with a focus on development that preserves existing amenities and historic resources; encourages economic growth and business creation; promotes diversity in housing options; and creates sustainability in harmony with the environment that will enhance the quality of life socially, culturally, and economically for its residents."[6.2] The current development regulations in Lithonia are not adequately promoting this vision for Lithonia, where the City can grow in a sustainable and diverse manner that promotes economic development and preserves Lithonia's many amenities and historic resources.

To support this community vision and address challenges and opportunities as discussed throughout the *Blueprints* process, a proposed Form Based Code is recommended for the City of Lithonia. Refer to Appendix A: Form Based Code.

Form Based Codes were originally introduced by Duany Plater-Zyberk & Company to create more walkable communities. The Form Based Code was created as an alternative to conventional zoning, which regulates development through controlling land use. The Form Based Code, in contrast, regulates development through controlling urban form, such as building heights, building set-backs, and street types. Uses within buildings will change throughout their life-cycles, but the way a building addresses its surroundings will have a greater impact on the community. Refer to Figure 6.2a for an image of a neighborhood regulated by a Form Based Code.

In Lithonia, conventional zoning based on land use can

be observed in the current Plaza development, where the buildings are placed in a large asphalt parking lot and set back away from the street (Refer Figure 6.2b). Located on the same block are the historic buildings along Main Street, an example of a development built before conventional zoning resulting in a built environment like that promoted by a Form Based Code. These buildings are multi-story and multi-use and often include retail space on the first floor, with professional and/or potential residential space above (refer to Figure 6.2c). These structures were not built based on the use that would occupy them, instead they were built with the character of Main Street in mind and a knowledge that their use would change over time.

The Form Based Code, as described in the remainder of this chapter, aims to identify character areas throughout Lithonia, to create a regulating plan based on these character areas, and to recommend development standards and street design standards to guide future growth in a sustainable, healthy manner that respects the unique assets and character of Lithonia. Sections 6.2.1 through 6.2.4 describe the components that make up the Form Based Code. The Form Based Code document can be seen in Appendix A: Lithonia Form Based Code. Recommendations on how to implement the code can be observed in Chapter 7: Recommendations.

Figure 6.2c: Historic Buildings Along Main Street

6.2.1 CHARACTER AREAS

Lithonia character areas were identified during the *Blueprints* process to provide suggestions for where nodal development should occur as population growth and demand for mixed-use neighborhoods become a reality. According to the Georgia Department of Community Affairs a character area is: "... a planning sub-area within the community where more detailed, small-area planning and implementation of certain policies, investments, incentives, or regulations may be applied in order to preserve, improve, or otherwise influence its future development patterns in a manner consistent with the community vision."[6.3] The vision for each of these character areas led to the creation of the regulating plan and informed the development of the Form Based Code and its development standards.

The character areas were selected based on several factors. First, each area has a unique character and provides Lithonia with a different asset or amenity that could be leveraged. Second, each area has or has the potential for a common or consistent form of development and land use pattern, lifestyle, intensity of use, design elements, or other factors that collectively define the overall character of the area. Third, the selected character areas together create a corridor through Lithonia that will give visitors

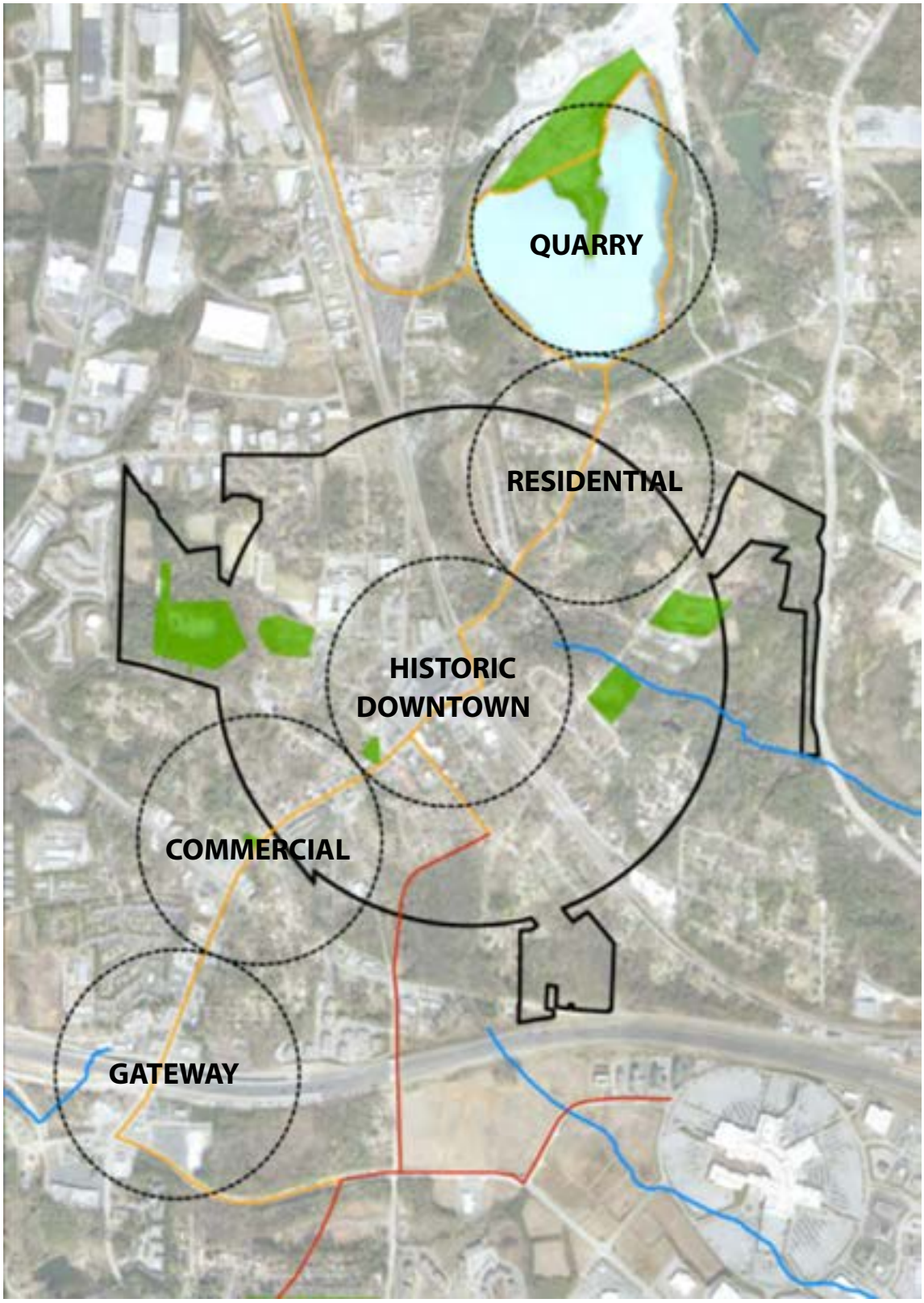


Figure 6.2d: *Blueprints* Character Areas

and residents a connected and understandable way to move through the City from Lithonia's entrance at I-20, along Main Street, to the Big Ledge Quarry, one of Lithonia's greatest underutilized assets.

Five character areas were identified during this planning process and are further described below: the Gateway Node, the Commercial Node, the Historic Downtown Node, the Residential Node, and the Quarry Node (Refer to Figure 6.2d).

GATEWAY NODE

The Gateway Character Node focuses on the buildings and roads experienced as you first enter the City of Lithonia from I-20. Currently the Gateway Node is a single-use, auto-oriented corridor with large building set-backs, parking between the building and the street, five to six vehicular lanes wide, and few pedestrian amenities. This area has very little that distinguishes it from any other interstate exit in Georgia.

This gateway area, however, is important to creating an identity for Lithonia and should be treated as such. It is the first place people see when arriving in the Lithonia area and, therefore, becomes their perception of what Lithonia is. Additionally, there have been discussions about extending a MARTA rail line to Lithonia along I-20, terminating within this newly identified Gateway Node. While there are no current plans to implement this rail line extension, the very interest in it does give more reason to make this node a more prominent and well designed place. Potential for Transit-Oriented Development (TOD) exists if the MARTA line becomes a reality. A TOD is a mixed-use development that encourages transit ridership by providing access to a transit station, allowing for higher density, and providing great pedestrian amenities and access. This interstate exit is also a secondary access point for Stonecrest Mall. More attention to this area could serve to benefit the City, a future TOD, and future growth at the mall.

To make this node into a mixed-use, walkable neighborhood with potential to become a TOD if the MARTA rail is built, supportive design regulations through the Form Based Code were identified. Street types are identified in the code that place high density, mixed use development along Evans Mill Road near I-20/the potential location of a MARTA transit stop. Lower density mix-use and residential uses are recommended for streets connecting to Evans Mill Road, which would provide more access for people to utilize the future rail line. Development regulations help to make this node a more walkable, transit friendly neighborhood, by detailing reduced building setbacks, designing more pedestrian friendly streetscapes, and encouraging high density mixed use development near the center of the node. More information on how the Form Based Code works in this node can be observed in Sections 6.2.2 through 6.2.4.

COMMERCIAL NODE

The Commercial Character Node is centered around the intersection of Evans Mill Road and Covington Highway. Currently this area provides some retail and restaurant options for Lithonia residents, but is designed in a way that prioritizes the automobile, with very little pedestrian amenities. Buildings are setback from the street with parking lots in between. The road width transitions from the five to six lanes at the Gateway Node to four lanes in this commercial area and sidewalks appear just north of Covington Highway along Evans Mill Road, providing some pedestrian connection from this area into downtown Lithonia.

This character area has potential to grow into a medium density commercial center providing shopping and office space to Lithonia and acting as a transition from the Gateway Node into the Historic Downtown Node. The Form Based Code provides recommendations for future development that supports this character by regulating high-density, mixed use at the intersection of Evans Mill Road and Covington Highway, with less dense mixed use and residential connecting to and supporting the center of this node. Development standards detail building set-backs, provision of parking behind buildings, and increasing the density at the node center. More information on how the Form Based Code works in this node can be observed in Sections 6.2.2 through 6.2.4.

HISTORIC DOWNTOWN NODE

The Historic Downtown Character Node focuses on Lithonia's Downtown Plaza. This area has historically been the heart of Lithonia. Redevelopment in the 1960s changed the character of this area from a town center with pedestrian oriented development to an auto-oriented strip mall style development surrounded by surface parking. This area has potential to once again become a center for the community. Design recommendations for revitalization of the Plaza area are further described in Chapter 5.

The Form Based Code for this node place priority for highest density development along Main Street, with secondary focus on Max Cleland Boulevard and Swift Street. Please refer to Chapter 5 for detailed information on design recommendations for the Downtown Plaza. The proposed code would support redevelopment in the Plaza at the scale and feel covered in Chapter 5.

RESIDENTIAL NODE

The Residential Character Node looks at recommendations for the residential blocks north of downtown Lithonia. This node is currently composed mostly of single-family homes. Rock Chapel Road is identified as the focus for this area in the regulating plan, as it connects the community westward to Main Street and eastward to Big Ledge Quarry. The recommended character for this area is one that preserves and enhances the existing character of the residential neighborhood.

The Residential Node can be further enhanced by increasing the density along Rock Chapel Road, allowing for more residents to generate and support increased commercial development throughout Lithonia. The Form Based Code's development standards encourage well-designed in-fill housing on large lots allowing for this single-family neighborhood to evolve into a medium-density neighborhood without compromising its overall character.

The Form Based Code specifically addresses regulations for blended densities on larger lots. These lots can be subdivided to allow for infill or accessory dwellings to be built, maximizing property values. The addition of units through attached housing, accessory units, or conversion to multi-family dwellings, in an existing neighborhood, creates opportunities for communities to slowly increase density without radically changing the landscape or character. An increase in Lithonia's population is a necessity if commercial uses are to appear and thrive in downtown. More information on how the Form Based Code works in this node can be observed in Sections 6.2.2 through 6.2.4.

THE QUARRY NODE

The Quarry Character Node focuses on redevelopment of the Big Ledge Quarry, located just north of the City of Lithonia. Currently, the northern portion of the quarry

is being utilized for granite operations. The remainder of the quarry, however, remains as a strikingly beautiful and underutilized amenity. This area has enormous potential to become a redeveloped area for residents and visitors, if developed in an appropriate way that highlights and provides safe access to the quarry, creates a walkable pedestrian-friendly environment, and is well connected to the rest of Lithonia. Recommendations for redevelopment of the Quarry are further described in Section 6.3.

The Form Based Code provides standards for developing the Quarry Node in a way that respects the natural beauty of the area and still fits into the context of Lithonia. Standards within the Form Based Code include building setbacks, subdivision and block size requirements, density, and streetscape requirements for the quarry development. More information on how the Form Based Code works in this node can be observed in Sections 6.2.2 through 6.2.4.

6.2.2 REGULATING PLAN

The regulating plan is an important component of the Form Based Code. The plan, which was created based on the character areas as described in Section 6.2.1, identifies locations where different development standards and street design regulations of the Form Based Code apply. Refer to Figure 6.2e for the regulating plan. The building form standards and street designs are based around street types as identified in the regulating plan. Each street type addresses the designated character of the area, the permitted uses, the maximum block dimensions, the building types standards, the building set backs, the maximum building heights, frontage type standards, parking requirements and locations, transects allowed, and street design standards. These requirements are further described within the Form Based Code, but the regulating plan identifies where they should occur within each character node.

The street types as shown in the regulating plan include:

- Jetty Street Type - shown in Red
- Slab Street Type - shown in Green
- Rubble Street Type - shown in Blue
- Ballast Street Type - shown in Yellow
- Gneiss Street Type - shown in Purple

The development standards and the street design standards associated with each street type are described in Sections 6.2.3 and 6.2.4. Below is a brief description of each street type as they relate to density levels and building uses. The street type names - Jetty, Slab, Rubble, Ballast and Gneiss - are types of granite historically found in Lithonia.

Jetty: Aimed at higher density, transit, pedestrian activities, retail, restaurants, entertainment, intense housing and services. The physical form and uses are regulated to reflect a more urban character

Slab: Aimed at a balance between commercial and service uses and medium-density housing options

Rubble: Aimed at house-scaled infill development and historic preservation

Ballast: Aimed at creating streets with housing, services and recreation

Gneiss: Aimed at creating a district with housing, services and recreation.

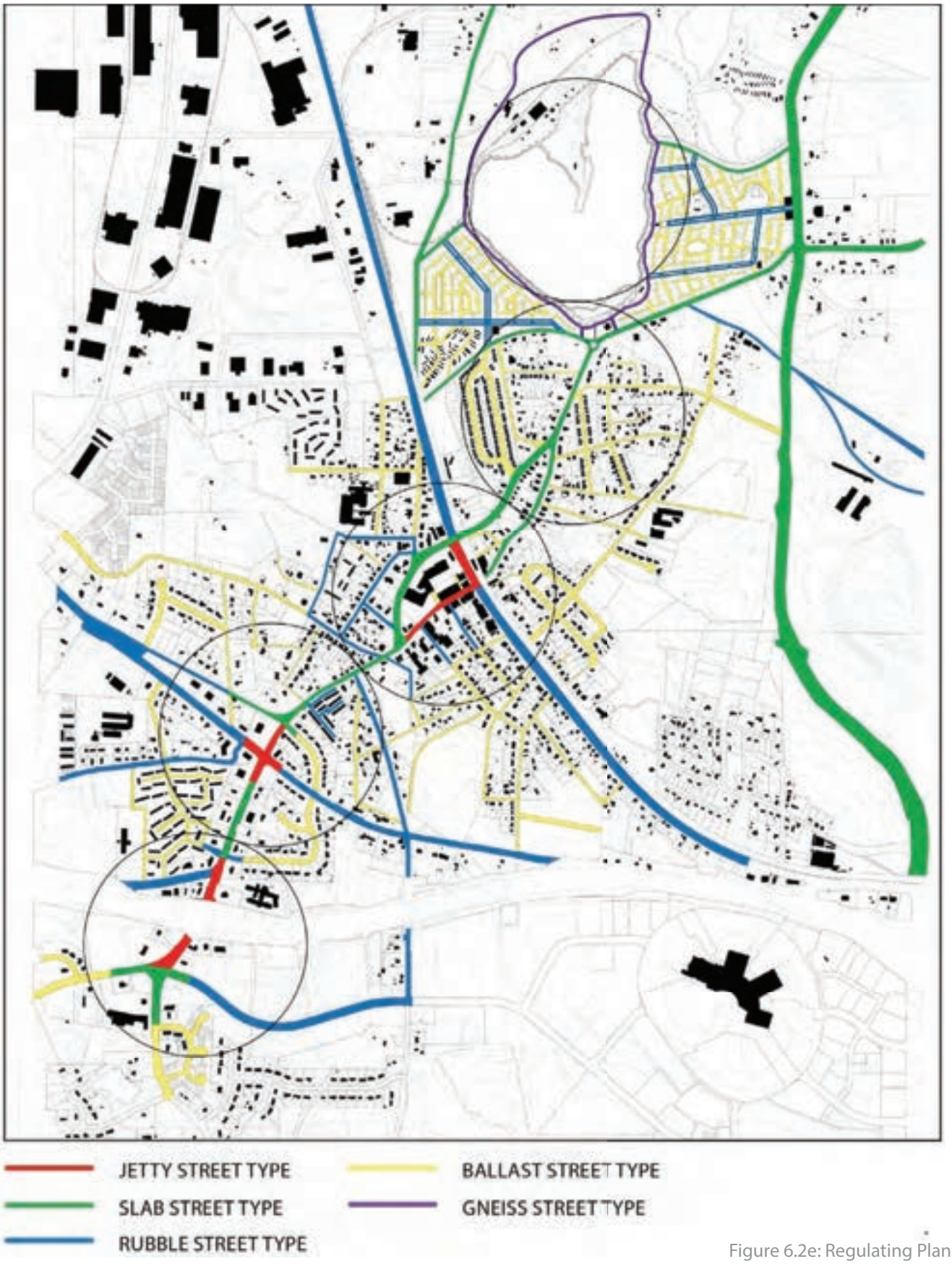


Figure 6.2e: Regulating Plan

Figure 6.2f: Transect Diagram, Image courtesy of: www.transect.org/images/transect2.jpg

6.2.3 DEVELOPMENT STANDARDS

The development standards associated with each street type regulate the character, development potential, permitted uses, the maximum block dimensions, the building type standards, the building set backs, the maximum building heights, frontage type standards, parking requirements and locations, transects allowed, and public space standards. These standards for each street type can be found in the Appendix A, Tables 2.1 to 2.5. Below are descriptions of the development standard categories.

TRANSECTS ALLOWED

To help determine and understand density, uses, and design standards within the proposed Form Based Code, transects were utilized as a guiding principle (refer to Figure 6.2f). A transect provides a way of organizing the city through cross-section. It looks at how one would design the city from the outer more rural edges to the inner more urban area, allowing for less dense environments to exist at the edges and higher density to be built in the inner, more urban, areas. Transects are categorized from T2 to T5, T2 being the least dense with deeper building setbacks and larger block sizes and T5 being the most dense with smaller setbacks and smaller, more walkable block sizes. T3 and T4 increase in density incrementally from T2 to provide a seamless progression from low to high density areas within a city.[6.4] Appendix A, Table 1 provides more information on the definition of transects utilized in this code. Transects were then assigned to each street type to help define the character of each street. The transect utilized is listed in the Transects Allowed category at the bottom of each street type table (refer to Appendix A, Tables 2.1 through 2.5).

CHARACTER

The recommended character of each street type is described through text and images on each street type table. For example at the top of Table 2.3: Rubble. The character is described as such "The Rubble guidelines depicted in this template apply to areas that are intended to be mixed-use neighborhoods. This area is intended to accommodate the widest variety of attached and detached building types and uses. Images are shown next to the label character to further describe the vision for this street type."

DEVELOPMENT POTENTIAL

The development potential category expresses what kinds of development are recommended to be built on each street type that will fit the desired character of the street. These development types include commercial,

residential, live-work, and recreation. The Rubble street type's development potential, for example, is residential and live-work.

PERMITTED USES

The permitted uses category describes the uses that are recommended as appropriate for the particular street type. Uses include retail, local retail, office, medical, lodging, residential, high-density residential, restaurant, civic, service, recreation. The Rubble street type, for example, asks for local retail, office, residential and service uses.

BLOCKS/SUBDIVISION OF LAND

Regulations for blocks/subdivision of land include maximum block length and maximum block depth. The suggested block dimensions were determined by the character of the street, the transect types, the level of density, and the dimensions of the suggested building type standards. The recommended maximum block dimensions range from 250' deep by 360' in length to 200' deep by 600' in length. The Rubble street type, for example, recommends a block size of 200' deep by 500' in length.

BUILDING TYPE STANDARDS

In order to create unique streets with diverse building types, building type standards are recommended for each street type. The building types are assigned based on both form and use. Some of the suggested building types include: Commercial Building, Mixed-Use Building, Live/Work Building, Apartment Building, Courtyard Building, Townhouse, Detached Single-Unit House, Accessory Dwelling, Row House.

Details for each building type are specified in the code

Figure 6.2g: Commercial Building Type Standard
Image courtesy of: https://formbasedcodes.org/

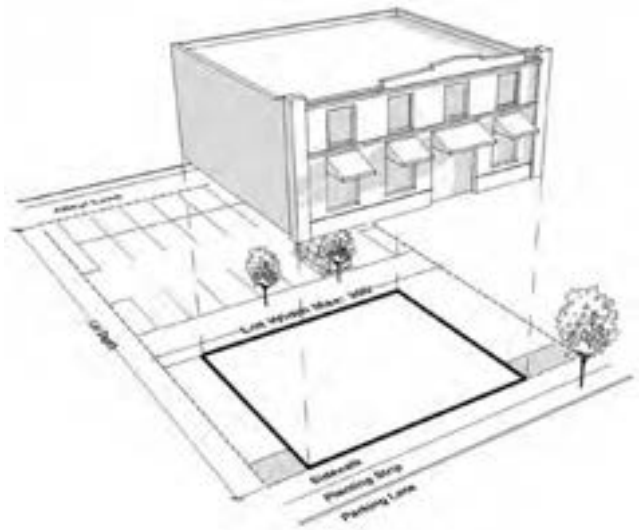


Figure 6.2h: Live/Work Building Type Standard
Image courtesy of: https://formbasedcodes.org/

and identify a recommended range for the lot width, the number of units per acre, the maximum number of stories, and the recommended open space percentage. Refer to Figures 6.2g and 6.2h for examples of a Commercial Building type standard and a Live/Work Building type standard.

BUILDING PLACEMENT STANDARDS: SETBACKS

Building setbacks are provided to further support the

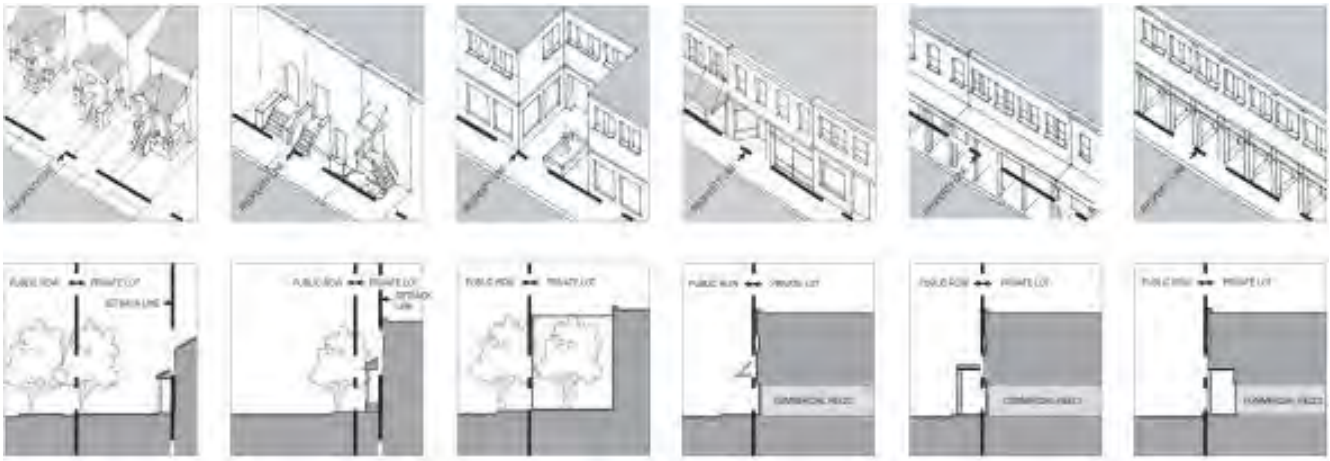


Figure 6.2j: Frontage Type Standards

recommended character and development potential for each street type. To promote a high density, commercial or mixed use street, like the Jetty street type, building setbacks are recommended to be small (5' maximum front setback, 10' maximum rear setback, and 0' side setback) to allow for greater access to buildings and to create a desirable pedestrian environment. Building setbacks are permitted to be larger in areas that recommend lower density residential uses, such as the Ballast street type (12'-24' maximum front setback, 12' minimum rear setback, and 12' minimum side setback).

BUILDING PROFILE STANDARDS

The building profile standards focuses on recommendations for building heights and types of encroachments into setbacks. This regulation further supports the character of the street as it provides a maximum building height and provides recommendations for the types of details that can be designed into a private building frontage or yard - such as the allowance of porches and fences, a terrace, a stoop, or a storefront. The different frontage types are further described in Appendix A: Table 5.0.

FRONTAGE TYPE STANDARDS

Frontage type standards provide further detail to the types of private frontage that are allowed for each street type. Refer to Figure 6.2j for examples of building frontage type standards. The Frontage Type Standards category provides a recommended percentage of width that each frontage type should occupy on the building, the recommended depth, and the recommended height. Further information on Frontage Type Standards can be seen in Appendix A: Table 5.0.

PARKING AND PLACEMENT STANDARDS

The parking standards were created to encourage Lithonia to become a more walkable mixed-use, commercial and neighborhood center. Unlike parking requirements in conventional zoning codes where minimum parking requirements are typically established, the parking requirements in the Form Based Code were created based on density levels, permitted uses and transects allowed. The parking standards specify the minimum and maximum number of spaces recommended for each use. For example, the Rubble street type requires a minimum of one parking space with a maximum of two spaces per bedroom in a residential building, and a minimum of 1.5 spaces with a maximum of three spaces per unit for a live/work space.

The placement of parking is recommended to be located behind buildings in commercial areas, such as in the

downtown Plaza. Parking decks are recommended in high density areas, as they allow for more parking in a smaller building footprint. On-street parking is recommended in all street types. The main benefits of on-street parking include higher efficiency and access to buildings, efficient use of the land (using the street for parking can save considerable amounts of land from being used as an off-street surface parking lot), and increased safety (drivers tend to travel at significantly slower speeds in the presence of cars parked on the street). Requirements for on-street parking are further described in Section 6.2.4 and Appendix Tables 3.1 to 3.5, where street design guidelines are detailed.

PUBLIC SPACE STANDARDS

Public Space Standards are also included in the Form Based Code. These standards provide recommendations on how the public realm, including squares, parks, greens, playgrounds, and plazas, should be designed and which street type these public space types should be built along. Details regarding the design and the recommended street type that these five types of public space should be associated with can be found in Appendix Table 4.

Open green spaces and civic spaces have great importance, creating a balanced community that serves a wide range of neighborhood, business, and local government activities. The inclusion of public space in Lithonia in the form of plazas, greens, parks, squares and playgrounds enhances community identity and value. Civic spaces are organizing elements within the structure of neighborhoods and town core that provide access to the outdoors and public gathering spaces for all residents and visitors of Lithonia.

Figure 6.2k: Jetty Street Design Standard

Figure 6.2m: Slab Street Design Standard

Figure 6.2n: Rubble Street Design Standard

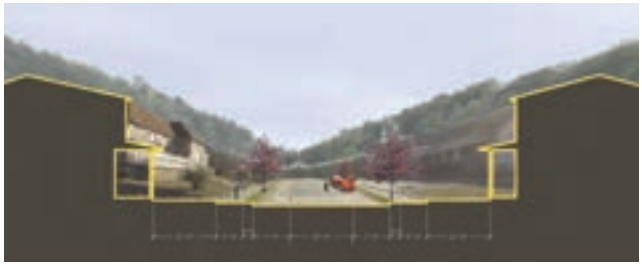


Figure 6.2p: Ballast Street Design Standard

Figure 6.2q: Gneiss Street Design Standard

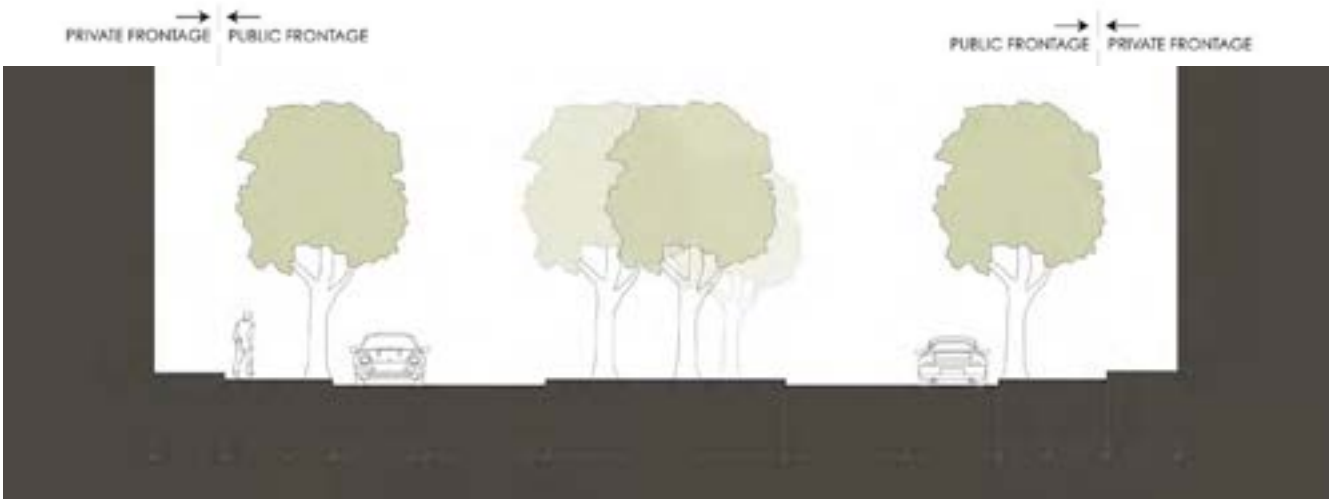


Figure 6.2r: Example of Right-of-Way Width

6.2.4 STREET DESIGN

Streets make up the majority of public space found within communities, therefore, their design is very important in creating a character and identity in Lithonia.

Street design standards, as described in Appendix A, Tables 3.1 to 3.5, focus on the design of the street right-of-way for each street type. Categories for the street design include: movement type, design speed, pedestrian crossing time, transect zone, maximum right-of-way width, pavement widths, number of traffic lanes, bicycle lanes, parking lanes, curb types, planter types, walkway types, and lighting.

All thoroughfares within the Form Based Code focus on the design of the street for both the automobile and the pedestrian. Below are descriptions of the design categories that make up the street design guidelines for each street type. Refer to Figures 6.2k to 6.2q for an images of street designs for each street type as found with n Appendix A: Table 3.5.

Movement Type: The kind of traffic flow the thoroughfare is designed to accommodate. The two movement types recommended within the guidelines are slow or free. Slow movement means that the driver will move slowly based on activity in the area and high numbers of pedestrians. The Free movement type allows for drivers to move unimpeded at higher speeds.

Design Speed: This standard provides the highest vehicle speed the thoroughfare is designed to accommodate. Recommended speeds within the street design tables range from 15mph to 35mph.

Pedestrian Crossing Time: The pedestrian crossing time describes the typical length of time required for a person to walk across the thoroughfare. The times listed can help designers, developers and engineers understand the impact that the street will have on a pedestrian and can help influence decisions relating to traffic lights, signaling, and signage being identified for a street.

Right-of-Way Width: The Right-of-Way (ROW) width provides the full measurement across a thoroughfare, including the roadway width, sidewalks, planters, and other pedestrian amenities. It essentially includes the public space between private property lines or private frontages. Refer to Figure 6.2r for an example of a ROW width.

Pavement Width: The Pavement Width identifies the width within the ROW of the pavement that would be used for vehicle lanes, bicycle lanes, street parking, etc. It includes the space between the curbs in the ROW.

Traffic Lanes: This standard provides the recommended number and width of vehicle travel lanes. In the Form Based Code, the lane widths vary between 10' and 12' and number of lanes vary between two and three.

Bicycle Lanes: This category regulates the number and width of lanes designated for bicycle travel, typically marked by sold white stripes on the pavement. Bicycle lanes are only recommended on two of the five street types, where there is higher density and, therefore, more traffic, making it more important to have a dedicated cycling lane versus sharrows where the bicycle and the car share the same lane.

Parking Lanes: The Parking Lanes category details the number, orientation, and width of on-street parking lanes. On-street parking is recommended on all five street types as it provides access to buildings, an efficient use of the land (using the street for parking can save considerable amounts of land from being used as an off-street surface parking lot), and increased safety (drivers tend to travel at significantly slower speeds in the presence of cars parked on the street). Refer to Figures 6.2s and 6.2t.

Curb Type: The Curb Type describes the kind of transition that should occur at the edge of the pavement. All five street types recommend a square curb type, which provides a vertical, square edge to the sidewalk/planter zone and creates a strong edge between the pedestrians and the vehicles.

Figure 6.2s: Example of On-Street Parking

Figure 6.2t: Example of On-Street Parking

Planter Type: This category identifies the type and width of landscaping accommodations at the edge of the pavement, between the sidewalk and the curb, providing a buffer between the pedestrian and the roadway. This category provides requirements for the width of the planter, whether or not it should be continuous, the size of street trees, and any specifications for a median within the street.

Walkway Type: The walkway type provides information on the kind and width of space allotted for pedestrians within the ROW. Materials for some of the walkways are identified within the Code, including permeable sidewalk for the Ballast street type and gravel sidewalk for the Gneiss street type.

Lighting: Whether or not continuous lighting is recommended on a street type is included in the Street Design Standards. Only the Jetty and Slab street types

Figure 6.3a: Big Ledge Quarry

require continuous street/pedestrian lighting. While it is not required for the other street types, lighting the walkways and the street does provide more safety and visibility for the automobiles and pedestrians and should be considered for all streets. Lower lighting/lower light bulb wattages, than what would be found on a commercial street, may be a better option for residential streets to avoid flooding light into homes. [6.5]

6.3 BIG LEDGE QUARRY REDEVELOPMENT

Although not located within the City limits, the Big Ledge Quarry was examined during the *Blueprints* process because of its impacts on Lithonia's history and its ability to shape Lithonia's future. This section focuses on the Quarry Character Node. Redevelopment of the Big Ledge Quarry is promoted in this report because it represents a unique local asset that is currently underutilized and has potential to draw people and development into and around Lithonia. The Quarry is also important as it played a vital role in the history and growth of Lithonia, historically being an economic engine for the city. Applying the Form Based Code to the Quarry Node would regulate how the redevelopment of this area could occur in a sustainable manner that supports Lithonia's continued growth. This section provides recommendations for redevelopment of the Quarry Node, utilizing the Form Based Code. Refer to Figure 6.3a for an existing condition image of the Big Ledge Quarry.

The Quarry Node is located just north of Lithonia's city limits, near the intersection of Rock Chapel Road and Railroad Street (refer to Figure 6.2d). The large quarry that sits at this site is known as the Big Ledge Quarry. When quarry operations were booming during the late 1800s and early 1900s, Big Ledge provided an economic base for Lithonia (refer to Figure 6.3b). Today, Hanson Aggregates operates on a portion of the north side of the quarry. Community stakeholders stated their understanding that Hanson Aggregates is utilizing the quarry to crush gravel

for use as an aggregate and not utilizing the quarry to obtain granite. The remainder of the site surrounding the quarry on the east, south and west edges is covered in tree and bush growth and not currently in use.

Since Big Ledge Quarry is located outside of Lithonia's boundary, in order for the city to obtain any direct tax benefits from new development, this land would need to be annexed and incorporated into the City of Lithonia. Refer to Figure 6.3c for an example of new City boundaries if the land is annexed. However, if the land is developed and remains as part of unincorporated DeKalb County, Lithonia could still see benefits from this new development. An increased population residing at the Quarry would have easy access to Lithonia's downtown and many amenities. These new residents would spend time and money at Lithonia's current and future businesses, such as those in the Lithonia Plaza, the Stewart Amphitheater, and new development at the Gateway and Commercial Nodes. The presence of more people in these nodes and throughout Lithonia would also bring increased safety and security to the community, as more people would be on the streets to monitor and prevent the occurrence of criminal activities.

It will be important, though, for this development to be designed in a manner that connects to Lithonia's existing street network and fits into Lithonia's small town character. Applying the Form Based Code to this redevelopment can help ensure that these goals are met.

6.3.1 BROWNFIELD REDEVELOPMENT

The Big Ledge Quarry site may be considered a brownfield by the Environmental Protection Agency (EPA) because of its previous use as an industrial site for quarrying of granite. According to the EPA, a brownfield site is a "real property,

Figure 6.3b : Lithonia's Quarry Industry

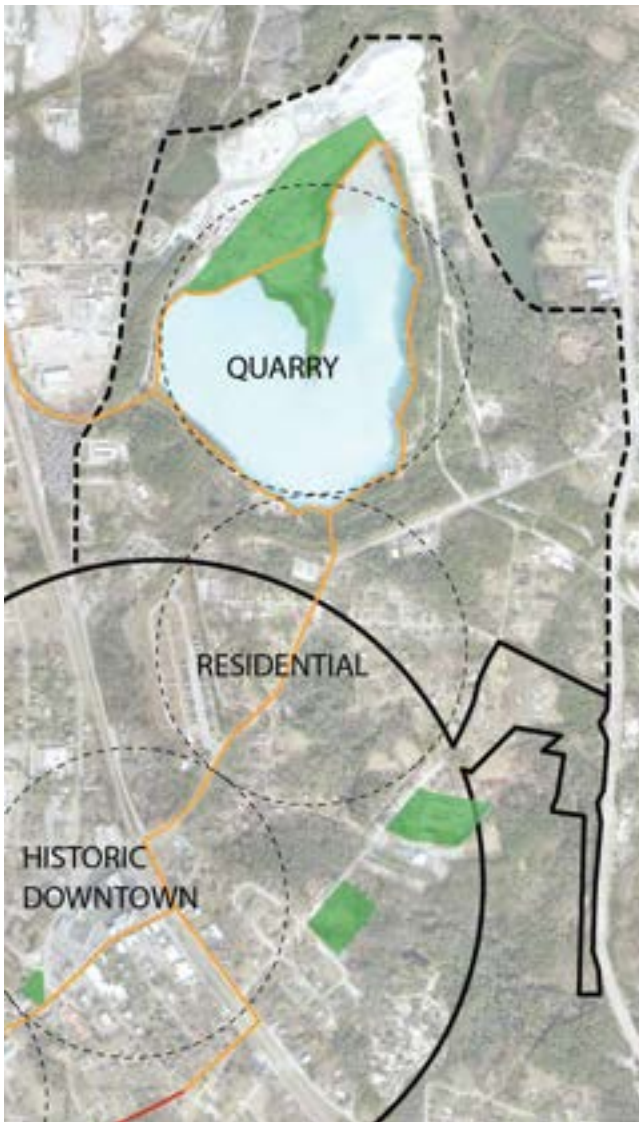


Figure 6.3c: Big Ledge Quarry Site and Potential Annexation

the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant". While there may be no hazardous substances present at this site, it will be necessary to complete environmental testing of the site prior to redevelopment and, if hazardous substances are present, for remediation to take place.

The benefits for greater Lithonia of redevelopment at this site can be significant. The increased population of residents living in the Quarry Node could bring economic development and increased safety to Lithonia. Additionally, because the Quarry is such a beautiful and historic area, it has great potential to draw recreation and heritage tourism visitors into the community to enjoy the views and utilize Lithonia's many other amenities, providing another source of economic income for the community.

The successful redevelopment of brownfields has been completed all over the country. Refer to Chapter 7: Recommendations for examples. It is important to note that this redevelopment vision assumes willingness of the property owner. Community leaders interested in this concept must work with the current or future property owner of the site to see redevelopment occur.

6.3.2 TRAILS AND GREENWAYS

An important consideration in redeveloping the Big Ledge Quarry site is making it accessible to recreational users living in and visiting Lithonia, such as local nature enthusiasts and cyclists visiting the area via the PATH Foundation trail. By creating a trail that provides access to the Big Ledge Quarry and connects to surrounding trail systems, more visitors will be drawn to Lithonia to enjoy this beautiful amenity and will have the opportunity to enjoy Lithonia's growing downtown, ultimately, contributing to the local economy.

Not only would economic growth happen with an influx of visitors, but creation of greenways and trails have, in many cases, increased property values, allowing the City to receive higher property taxes from Quarry residents, if the City annexes this land. Even if the land is not annexed, any resultant positive property values in this area are likely to benefit Lithonia by offering a stabilizing influence on the larger area's property values. An example of greenspace impacts on nearby properties includes the Shepherd's Vineyard housing development in Apex, N.C. which added $5,000 to the price of 40 homes adjacent to their regional greenway – and those homes were still the first to sell.[6.6]

Another incentive for including trail plans in the Big Ledge Quarry redevelopment are the environmental benefits. Green infrastructures have the ability to conserve open space, soften the patterns of urban growth, mitigate water and air pollution, and protect natural species.

A trail or greenway system could also provide revenue opportunities in Lithonia due to tourism and recreation-related businesses. Opportunities for economic activity include construction and maintenance of the trails, recreational equipment rentals (such as bicycles, kayaks, and canoes), recreational services (such as shuttle buses and guided tours), historic preservation, restaurants and lodging. These opportunities are exemplified in the Outer Banks of North Carolina. Bicycling in the Outer Banks is estimated to have an annual economic impact of $60 million and 1,407 jobs supported from the 40,800 visitors for whom bicycling was an important reason for choosing to vacation in the area. The annual return on bicycle

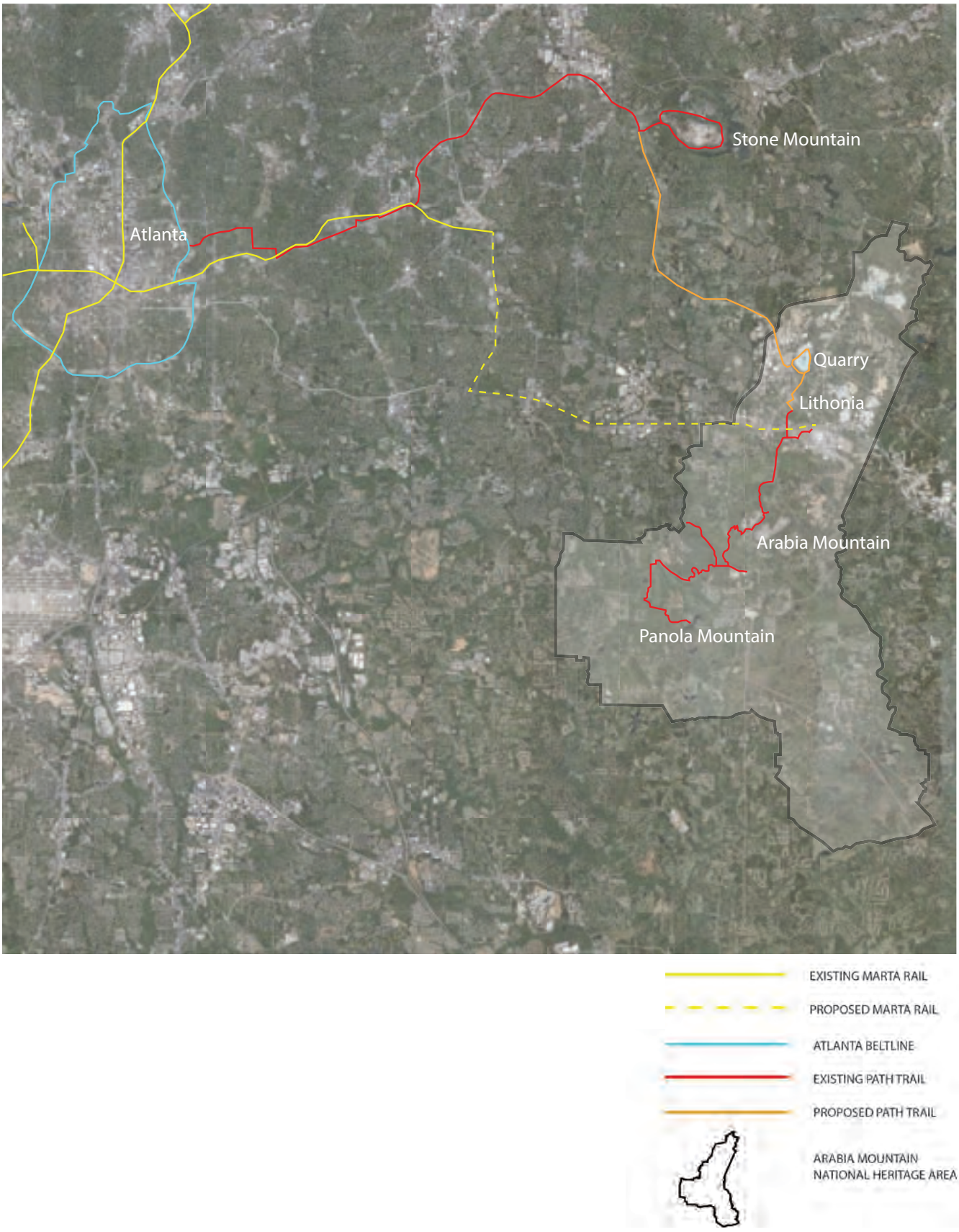


Figure 6.3d: Big Ledge Quarry Proposed PATH Extension

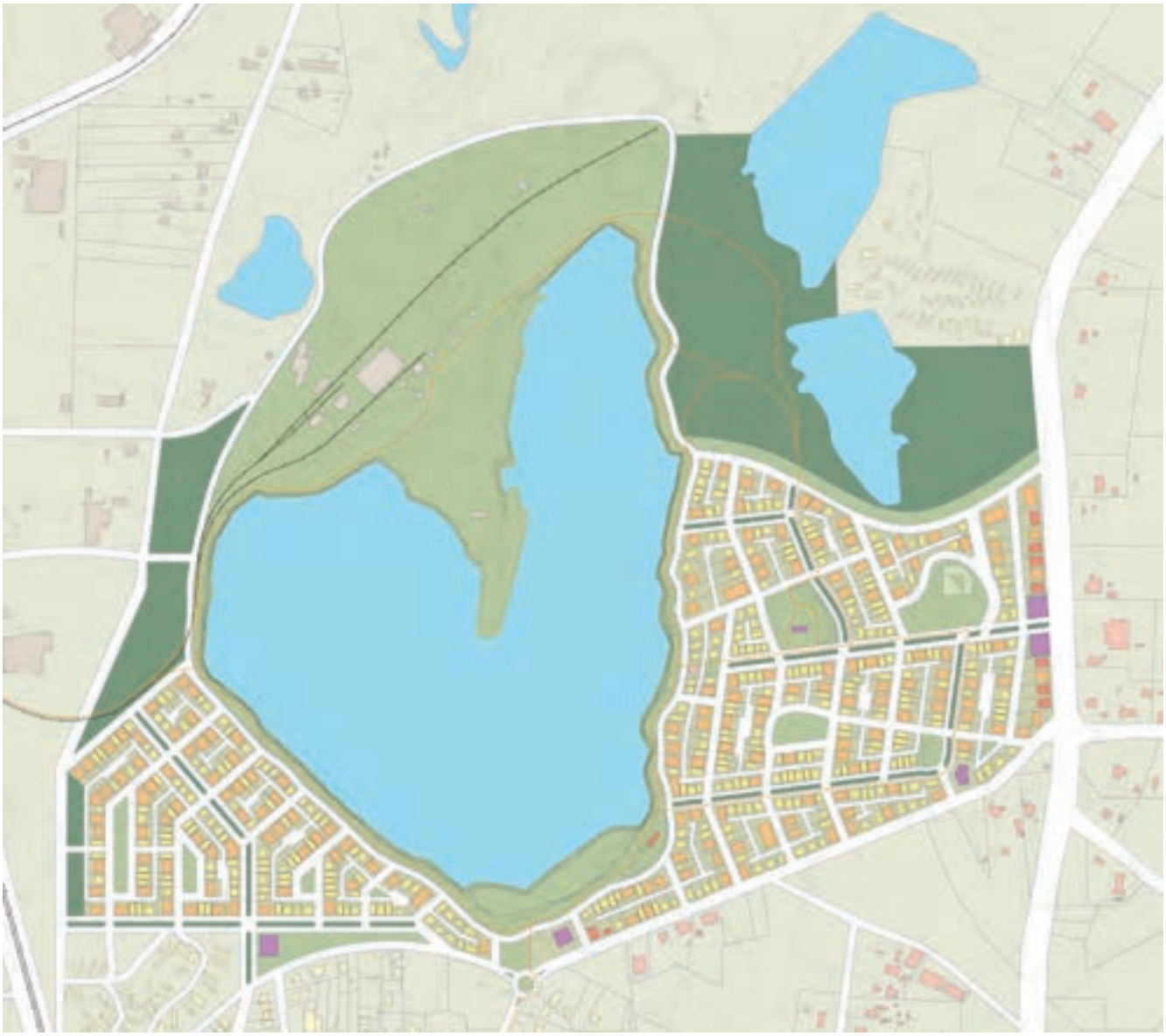


Figure 6.3e: Big Ledge Quarry Site Plan

facility development in the Outer Banks is approximately nine times higher than the initial investment.[6.7]

The recommended path trail to connect the Big Ledge Quarry is pictured in Figure 6.3d. The existing path system is highlighted in red with the proposed path system shown in orange. The map shows the proposed trail in relation to the larger context, connecting it from the Arabia Mountain Trail to the Stone Mountain Trail, which will eventually connect to Atlanta's BeltLine trail. This proposed path could complete a 46 mile bike loop connecting Atlanta through Lithonia to the Arabia Mountain National Heritage Area.

6.3.3 FORM BASED CODE

The plan for the Quarry's redevelopment, as seen in Figure 6.3e, is supported by the Form Based Code as described in Section 6.2. The regulating plan of this code provides the first step in determining the design of the quarry development. In the regulating plan a street network is identified and street types are assigned (refer to Figure 6.3f).

Figure 6.3f: Big Ledge Quarry Street Types

The proposed street network was created based on several factors. First, it was important to connect the development to the existing street infrastructure in Lithonia. The intersection of Rock Chapel Road and Railroad Street is a recommended connection point and could provide a gateway to the community as it would connect the new development to Main Street, then on to I-20 via Evans Mill Road. The edges of this new development, which include Rock Chapel Road, Railroad Street, Rogers Lake Road and Turner Hill Road were identified as streets that could be mixed use and medium density, fitting the Slab street type. The majority of the redevelopment's interior streets were identified as low density, residential areas, aligning with the Ballast street type. Several interior development streets were identified as Rubble streets to allow for a mix of uses within the community. The road directly adjacent to the quarry was identified as a Gneiss street, which encourages a greater mix of uses including residential, office, services, lodging, high density residential, restaurant and recreation. This street type allows for the area directly surrounding the quarry to be accessible to visitors and residents and provides amenities to all who visit the Quarry, such as lodging, restaurants, and recreation. The proposed bicycle/pedestrian trail, as described in Section 6.3.2, is recommended to be built between this new roadway and the quarry with a minimum of a 10' buffer between the path and the quarry and a minimum of a 12' buffer between the path and the new roadway. Refer to Appendix A for details of the Form Based Code for the redevelopment and street design standards as recommended for the Quarry Node.

To preserve the history of the site and to create a significant amount of open space, the north half of the land surrounding the quarry, including where Hanson Aggregates is currently in operation, is not proposed for redevelopment and instead could be turned into a public park in the future when active mining ceases. This new park could include passive and active recreation as well as pieces of industrial equipment formerly utilized on the site to educate visitors of the historical uses of this area.

6.3.4 PHASED IMPLEMENTATION

To implement the quarry redevelopment, it is recommended that a phased approach be utilized. Designing and developing the site in phases allows for proper planning, management, maintenance, adequate provision of infrastructure, and a revenue flow to support subsequent phases of development. Eight phases, 0 to 7 are proposed for the completion of the Quarry redevelopment. Refer to Figure 6.3h for a map of all eight phases

Phase 0: This introductory phase, Tours, is focused on creating awareness of and excitement for the redevelopment of the Quarry site by leading tours to and

Figure 6.3g: Example of residential development

around the quarry. Each tour could include an explanation of the history of the site and of the future development plans. Many *Blueprints* stakeholders explained that they had never been to the quarry. These tours would show residents, visitors and potential investors the value of the quarry as an amenity for locals and visitors. Refer to Figures 6.3j and 6.3k.

Phase 1: This first phase of redevelopment activity, Paths, focuses on building a bicycle/pedestrian path system that connects the Arabia Mountain PATH Trail through Lithonia to the quarry and around the site to provide clear views into this natural amenity. Eventually, this path system should connect all the way to the Stone Mountain Trail. Partnerships with the PATH Foundation and the Arabia Mountain Heritage Area Alliance will be vital to implementing this phase. Refer to Figures 6.3m and 6.3n.

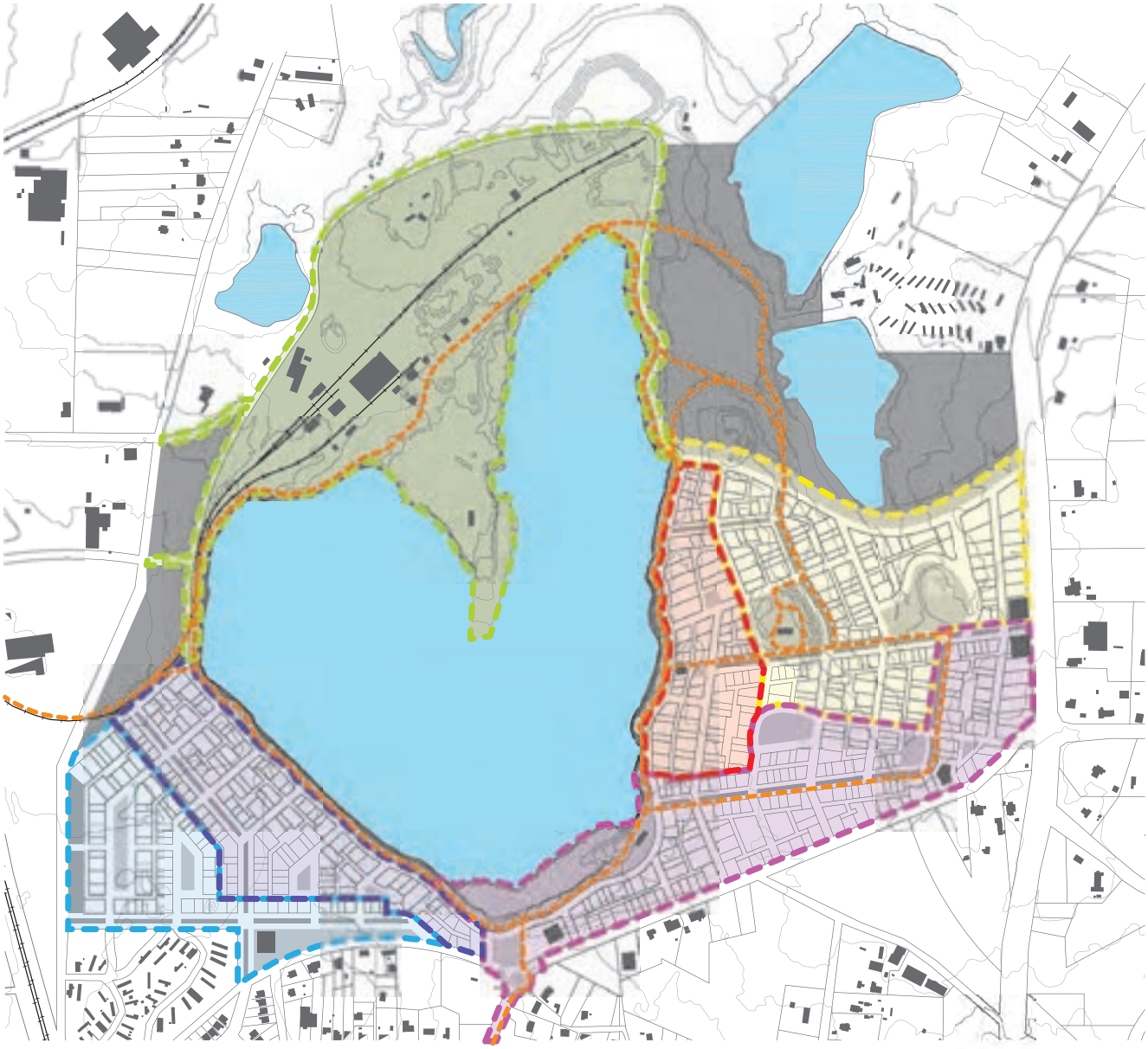
Phase 2: The second redevelopment phase, Gateway, creates an entrance to the community and begins residential development (refer to Figure 6.3g for an example elevation view of residential development). The neighborhood concept in this report includes 153 housing units and a community center to be located at the entrance near the intersection of Rock Chapel Road and Railroad Street. This phase also recommends the inclusion of a living machine (refer to Section 6.3.5), a community garden, and a park. A living machine is an ecological wastewater treatment system that treats wastewater for re-use. Refer to Figures 6.3p and 6.3q.

Phase 3: The third development phase, Westledge Neighborhood, continues the build out of the neighborhood to the west of the quarry. This development adds another 83 lots to the development, a family park, a rain garden (refer to Section 6.3.5), and a living machine (refer to Section 6.3.5). Refer to Figures 6.3r and 6.3s.

Phase 4: The fourth development phase, Westledge Quarry Front, finishes the development of the west side of the quarry by building out the land adjacent to the quarry on this side. Eighty-one additional lots are constructed in this phase. Visitor lodging can be implemented during this phase as the quarry could become a destination place. Refer to Figures 6.3t and 6.3u.

Phase 5: The fifth phase, Eastledge Neighborhood, introduces development on the east side of the quarry. Seventy-four lots are built in this portion of the development, along with a recommended community garden, a living machine (refer to Section 6.3.5), and a rain garden (refer to Section 6.3.5). Refer to Figures 6.3v and 6.3w.

Phase 6: The sixth phase, Eastledge Quarry Front, completes the build-out of residential and mixed-use lots



around the quarry. One hundred eleven lots are added to the development, as well as, a dog park and a pavilion. Refer to Figures 6.3x and 6.3y.

Phase 7: The final phase, Recreation, converts the industrial property on the north side of the quarry to a park and recreation space. Former equipment from the past quarry operations will remain to pay respect to the history of the area and to educate visitors about the quarrying industry. Refer to Figures 6.3z and 6.3aa.

Figure 6.3h: Big Ledge Quarry Site Phases

PATHS

Figure 6.3j: Phase 0 - Tour Route

Figure 6.3k: Phase 0 - Rendering of Quarry Tour

Figure 6.3n: Phase 1 - Rendering of Trail

Figure 6.3m: Phase 1 - Trail Network

Figure 6.3p: Phase 2 - Gateway Plan

Figure 6.3q: Phase 2 - Rendering of Gateway

Figure 6.3s: Phase 3 - Rendering of Westledge

Figure 6.3r: Phase 3 - Westledge Plan

Figure 6.3t: Phase 4 - Westledge Front Plan

Figure 6.3u: Phase 4 - Rendering of Westledge Front

Figure 6.3w: Phase 5 - Rendering of Eastledge

Figure 6.3v: Phase 5 - Eastledge Plan

Figure 6.3x: Phase 4 - Eastledge Front Plan

Figure 6.3y: Phase 4 - Rendering of Eastledge Front

Figure 6.3aa: Phase 7 - Rendering of Recreation

RECREATION

1 - UPPER QUARRY PARK

Figure 6.3z: Phase 7 - Recreation Plan

6.3.5 SUSTAINABLE DESIGN RECOMMENDATIONS

Several design recommendations are included below that would contribute to creating a more sustainable and healthier community within the proposed quarry redevelopment. The development as described in 6.3.1 through 6.3.4 already acknowledges some sustainable strategies, such as creating less dependency on the automobile by building mixed use neighborhoods, smaller more walkable blocks, and bicycle and pedestrian paths that connect to downtown Lithonia. Additionally, this development, being located so close to Lithonia, allows for easier access to infrastructure and existing utility lines.

Five categories for sustainable strategies are outlined below. The categories include energy, waster, stormwater, mobility and greenspace.

ENERGY

Two strategies are recommended to reduce the amount and cost of energy in the Quarry development: EarthCraft Home construction and solar power.

All homes are recommended to be built to the standards of the EarthCraft Home Program. These program standards include energy efficiency, low maintenance, air quality, water conservation, and resource-efficient building materials and systems.

It may be possible to place solar panels throughout the site to generate electricity to power residences, public buildings, street lighting and other electrical needs throughout the community. Figure 6.3cc shows map for the quarry area that identifies possible locations for solar panels. Lots in yellow are most advantageous as they face

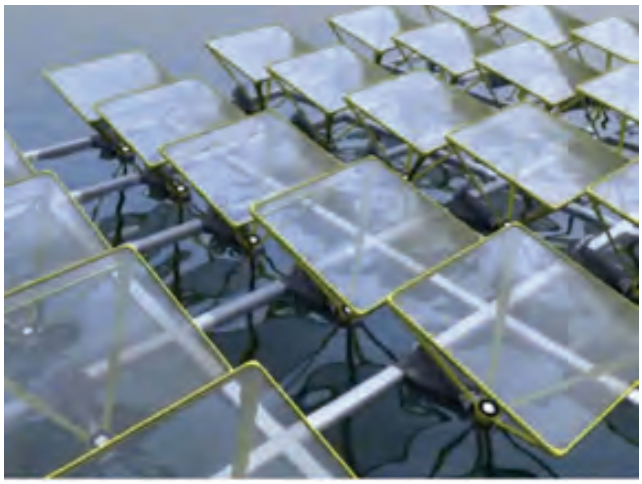


Figure 6.3bb: Image of a Solar Array

less than 15-degrees in east-west orientation, providing optimal sun capture. The quarry itself could provide an optimal solar panel area as it is a large open space and panels could be placed in any direction to capture sunlight. Refer to Figure 6.3bb for an image of a solar panel array.

While Georgia does not currently offer this program or any similar alternative energy programs, some states offer a program called Net Metering that allows homeowners to connect their photovoltaic system into the electricity grid and the owner receives credits on his/her utility bill for the amount of electricity the system generates. Alternative energy is currently being discussed in the 2012 legislative session, which may result in similar programs as Net Metering for the state of Georgia in the future.

WASTEWATER

With any new development, the treatment of wastewater must to be considered. This section provides a strategy for a more sustainable treatment of wastewater by utilizing a green biotreatment system, call the living machine.

A living machine is an ecological wastewater treatment system that treats wastewater for re-use – allowing

Figure 6.3cc: Energy Plan

Figure 6.3dd: Perspective of Quarry Biotreatment System

communities to locally manage their wastewater, create high quality reuse water, avoid sewer hook-up fees and dramatically reduce water and energy consumption and their associated costs. According to the EPA, living machines cost less to maintain and run than conventional sewage treatment plants.

A living machine is a constructed wastewater treatment facility that mimics the functions of a wetland system. It involves a series of tanks with live plants, trees, grasses and algae, koi and goldfish, tiny freshwater shrimp, snails, and a diversity of microorganisms and bacteria. Each tank is a different mini-ecosystem designed to eat or break down waste. The living machine allows for onsite, local wastewater recycling, producing water that can be utilized for irrigation, toilet flushing, industrial processes, washing equipment or animal areas, filling landscape water features (i.e. fish ponds) and other uses. It is not recommended that this water be reused for drinking or bathing. Refer to Figure 6.3ee for a map of the recommended locations of the living machine wastewater treatment centers and the flow of wastewater for collection at each treatment center. Refer to Figures 6.3dd and 6.3ff for an example of a living machine and the building it would be housed in.

STORMWATER

More sustainable stormwater strategies were also considered for the site. Site planning was a first step in stormwater management, as well as the recommendation of rain gardens throughout the site.

Proper site planning is a critical first step towards reducing the impacts of development on water resources. Soil disturbance is reduced when a development is designed to fit in to the existing terrain. For example, the roads proposed in the quarry redevelopment plan were placed parallel to natural contours to make the installation of natural drainage ways easier. Also, by limiting land disturbance to only those areas near the quarry necessary

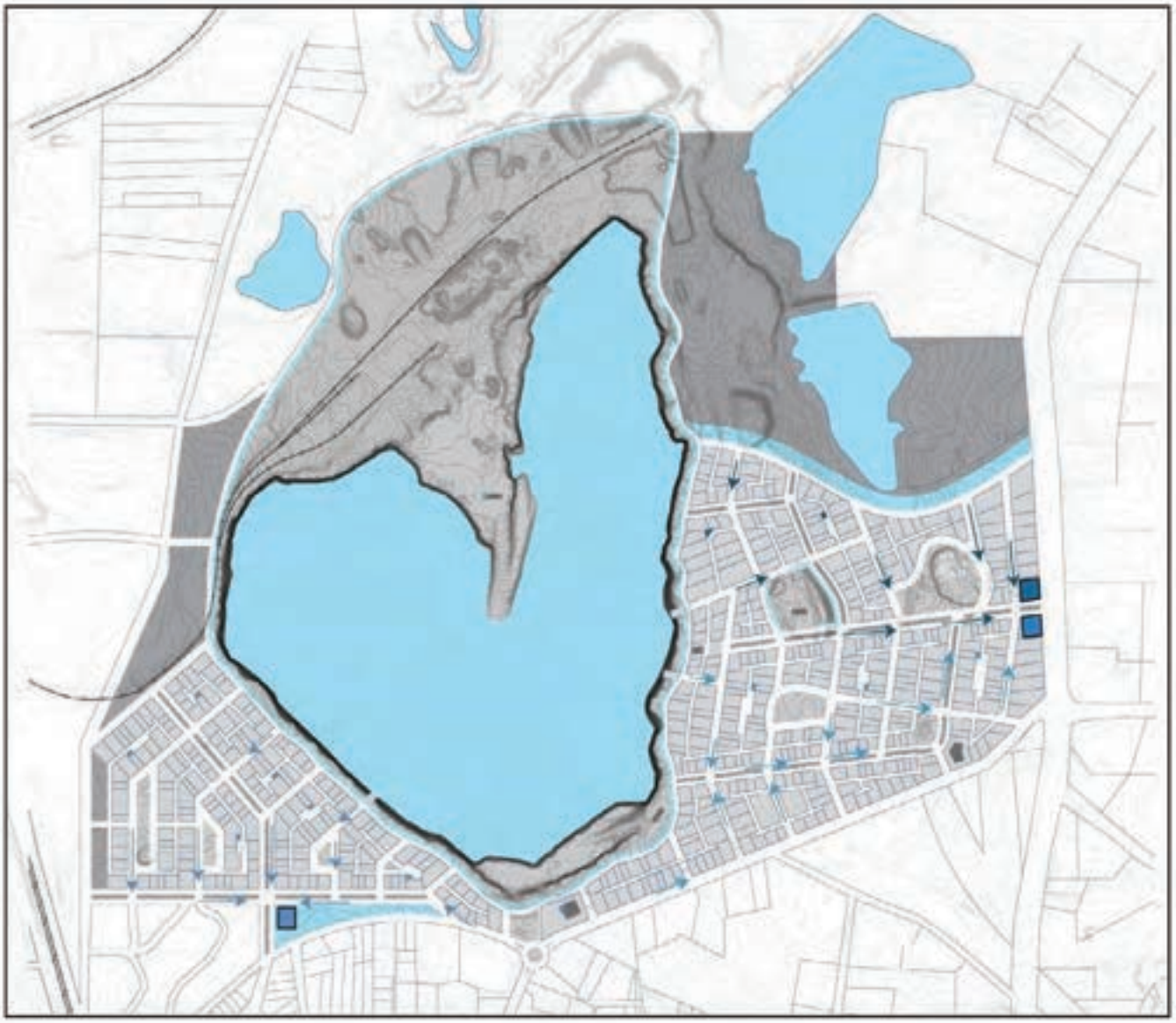


Figure 6.3ff: Image of Green Biotreatment System

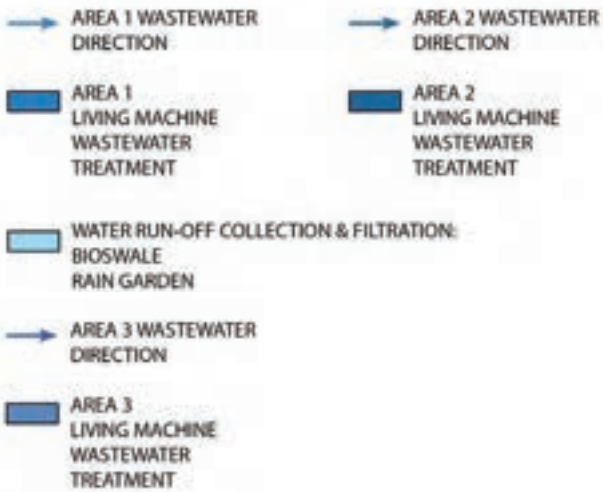


Figure 6.3ee: Wastewater Management System

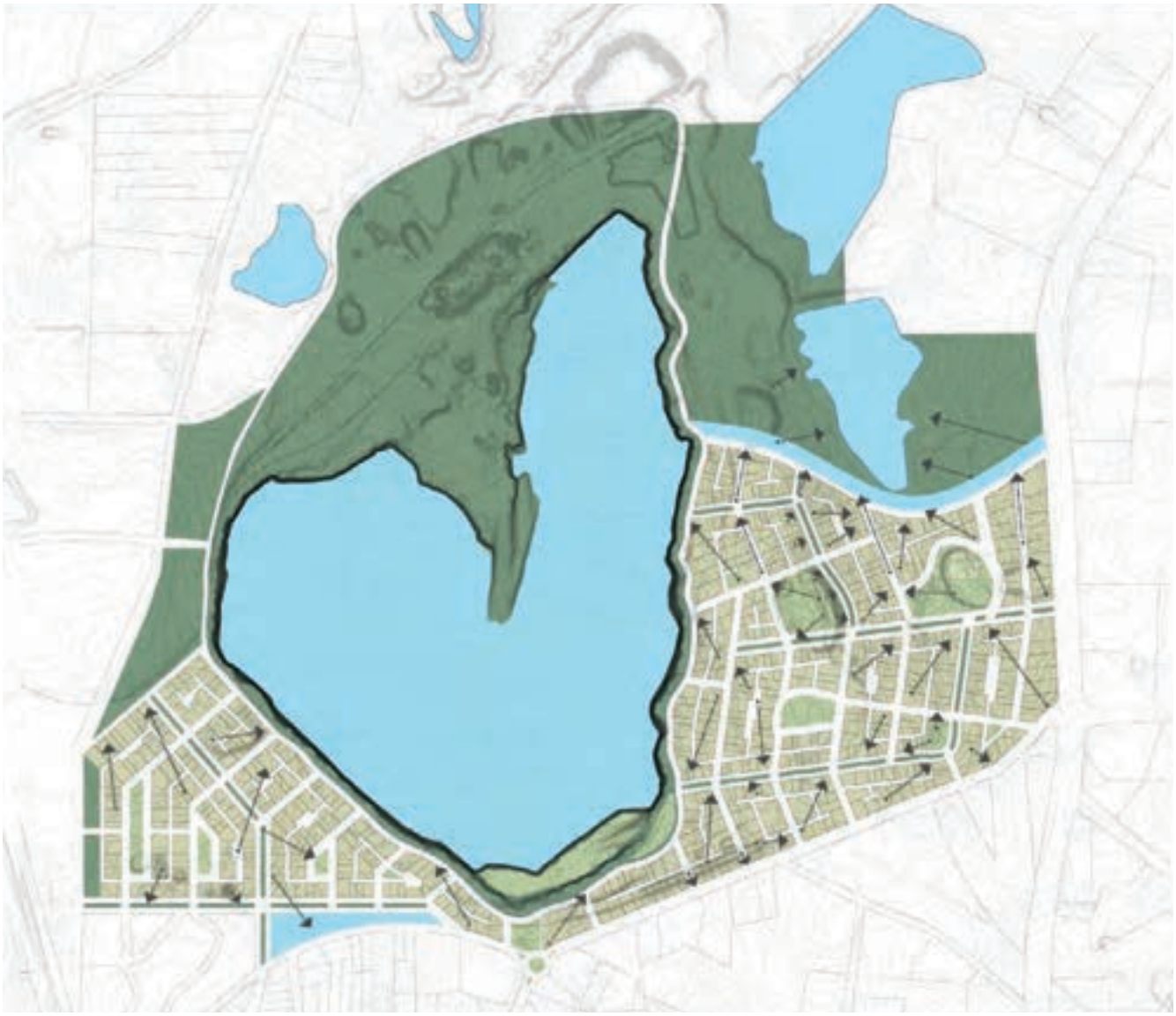


Figure 6.3gg: Stormwater Management Plan

Figure 6.3hh: Image of a Rain Garden

for construction and avoiding existing wetlands, the existing natural systems are better preserved. Future development of the quarry area should also take into account the amount of impervious surfaces and use materials that allow for ground drainage as appropriate.

The second strategy to control stormwater runoff is the use of vegetated systems, such as rain gardens, bioswales, and local lot drainage to keep stormwater runoff on the site. Rain gardens are shallow depressions in the landscape that typically include plants and ground cover. In addition to providing increased groundwater recharge, they are expected to provide pollutant treatment. Refer to Figure 6.3hh for an example of a rain garden. A bioswale, similar to a rain garden, is a linear depression in the landscape that includes plants and groundcover which work to slow, cool and filter the stormwater runoff before it meets with the waterways that collect most runoff. Refer to Figure 6.3gg for a stormwater management map that identifies recommended drainage locations, including rain gardens and bioswales.

MOBILITY AND PARKING

To lessen the dependency on the automobile and provide increased mobility options for all, alternatives to the car are proposed in the Quarry development.

Small, walkable block sizes and the inclusion of sidewalks on all streets, as proposed in the Form Based Code, allow for easy access through out the community by the pedestrian or the cyclist. The pedestrian/bicycle path, as described in Section 6.3.2, also provides additional access throughout the quarry neighborhood, as well as to other areas throughout Lithonia, such as the Downtown Plaza and to the Arabia Mountain Trail, which connects to the Mall at Stonecrest and the Arabia Mountain National Heritage Area. A bus route extending up Rock Chapel Road to provide service to this new community is also recommended in the quarry plan (refer to Figure 6.3jj).

Parking was also considered in the design recommendations as parking lots can have an adverse affect on the environment. Paved parking lots commonly result in areas that collect and concentrate stormwater runoff, which can negatively impact water quality. Paved parking lots can also generate heat, rising the air temperatures in the area. Careful attention to parking lot design could go a long way toward protecting the local environment and water resources. Pervious surface alternatives to asphalt or concrete can be utilized for an entire parking area. The recommended utilization of Zip cars can also encourage car sharing and reduce the need for an abundance of parking spaces. Street parking is recommended on all streets through out the development to further reduce the need for surface parking lots in the new development. Bicycle parking has also been considered in the Quarry plan to further encourage alternative transportation. Refer to Figure 6.3jj.

PARKS

To preserve the open space value of the Quarry and provide additional park space to Lithonia, parks and green space were an important consideration in the redevelopment plans. Figure 6.3kk identifies recommended locations for parks and open space. Greenspace is included with each phase of development, including parks, community gardens, playgrounds, rain gardens, and dog parks. Forest covered land is recommended to be preserved in areas that would be more difficult to develop due to natural characteristics such as wetlands or topography. The property north of the quarry is recommended

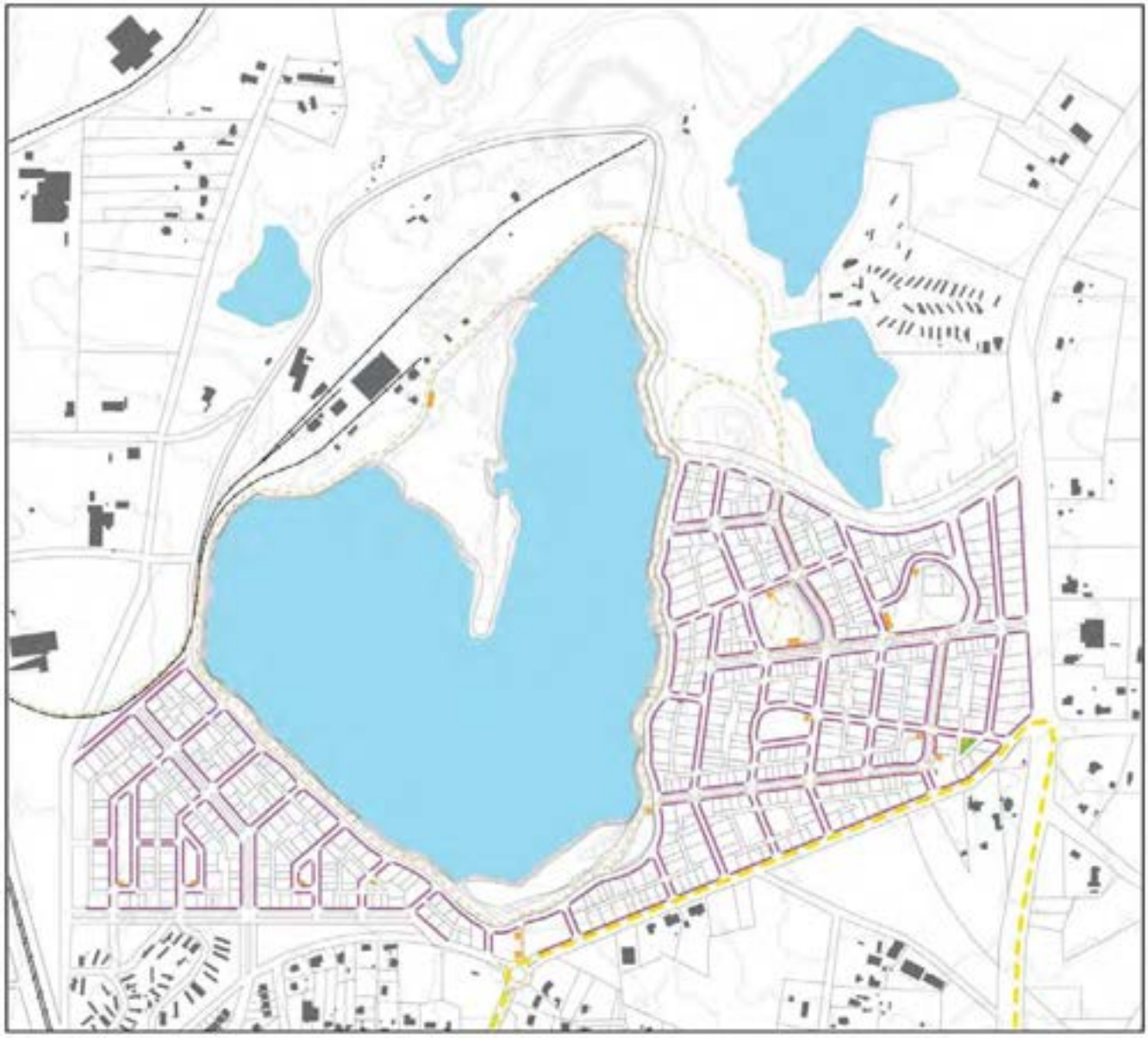


Figure 6.3jj: Mobility Plan

1 FOREST PRESERVE
2 FOREST PRESERVE
3 LONG MEADOW
4 COMMUNITY GARDEN
5 PLAYGROUND
6 DOG PARK
7 RAIN GARDEN
8 GATEWAY PLAZA
9 LOWER QUARRY PARK
10 UPPER QUARRY PARK
11 NATURE PRESERVE
12 RAIN GARDEN
13 INN SQUARE
14 OVERLOOK PARK
15 FAMILY PARK
16 COMMUNITY GARDEN
17 DOG PARK
18 RAIN GARDEN

TOTAL:
60% GREEN SPACE
40% DEVELOPED LOTS

Figure 6.3kk: Civic and Open Spaces

to become a park space, the Lower Quarry Park, that provides passive and active recreation opportunities. Equipment previously utilized for the quarry industry is recommended to remain and become features of the park that express the history of the site. Overall, this plan creates a well balanced development with 60% of the land to be greenspace and 40% of the land to be developed.

LAND USE

To identify the potential for the quarry site build-out as a mixed-use community, a land use map was created to show a potential plan for the lot by lot uses. Refer to Figure 6.3mm for a building type and land use map.

This map identifies commercial uses, multi-family residences, single-family residences, greenspace, lots, water, streets, and civic buildings. Single-family residential and multi-family residential are provided throughout the development allowing for a mix of incomes to reside in this new development. This plan allows for 1,013 apartment units and 357 single family housing units, resulting in 1370 dwelling units per 81 acres or 17 dwelling units per acre.

While architectural standards do not need to be included in the Form Based Code, suggested standards for the quarry development are included in Appendix A: Table 6. These suggested standards provide base, wall, and roof types as well as drainage, windows, and landscaping types that could be utilized in the redevelopment of the quarry.

SOIL SURVEY AND TECTONIC MAP

Local soil types research was conducted to help determine the conditions of the land in the quarry redevelopment area. This information is a first step to understanding site geology and to recommend solutions for building tectonics and foundation conditions. Refer to Figure 6.3nn for a map of soil conditions. Soil conditions include an explanation of the soil type, the slope, and the depth at which hard rock would be encountered.

In response to these soil conditions the Tectonic Map provides the locations of three foundation types that could be utilized. Foundations include slab on grade, shallow and pole. Each construction type provides a resolution to building on certain soil types. Refer to Figure 6.3pp.

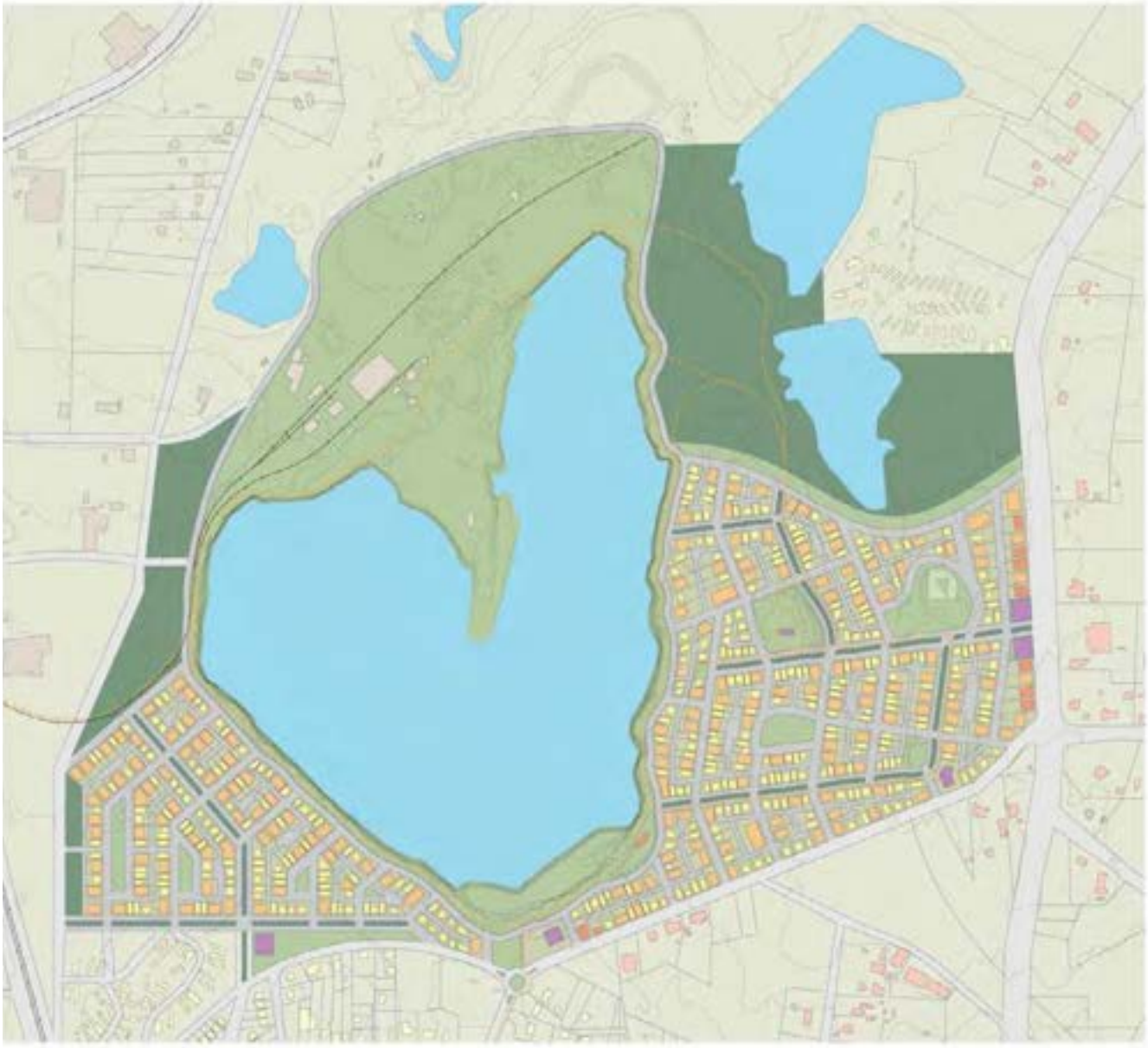
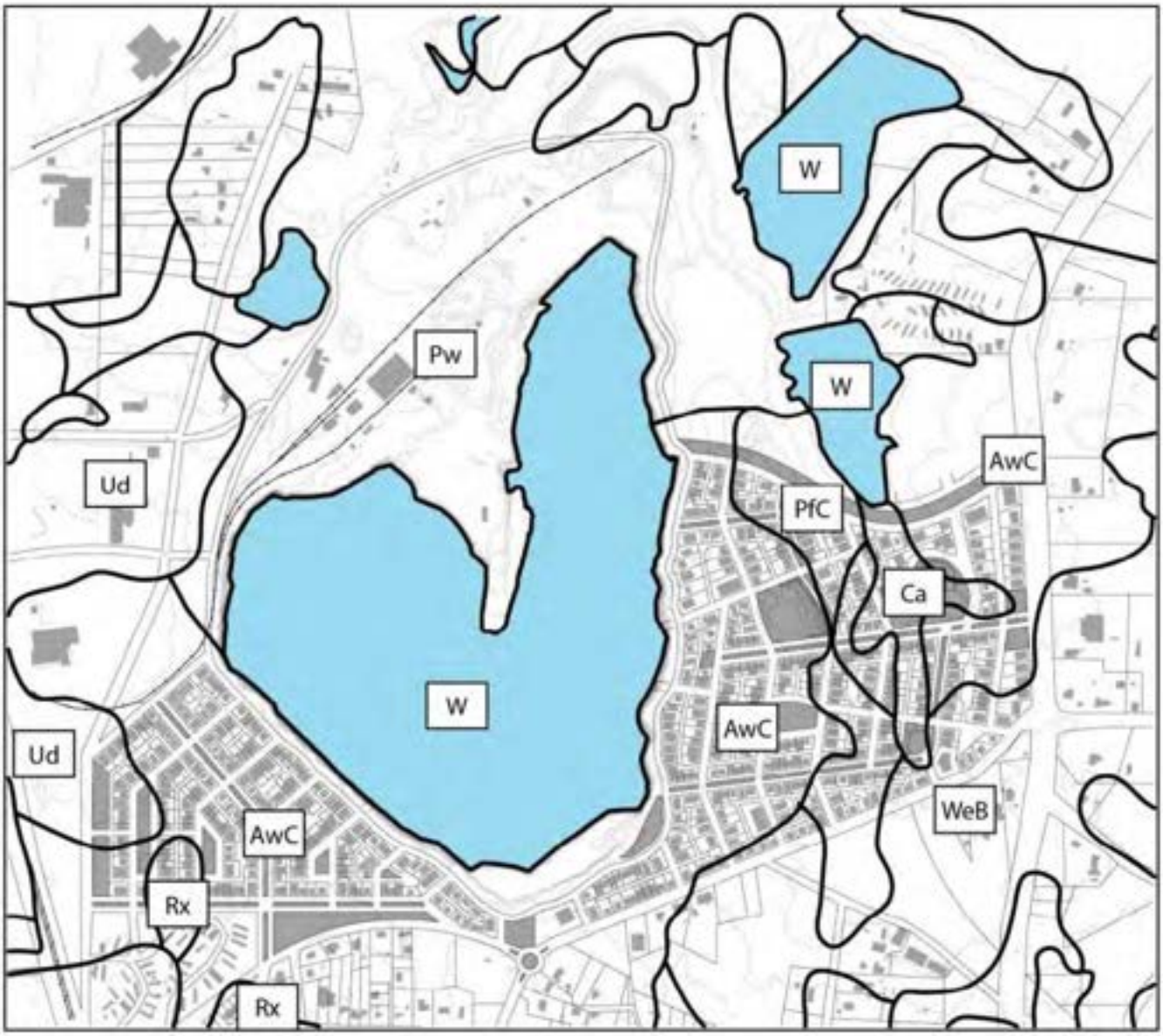


Figure 6.3mm: Land Uses and Building Types



AwC - Ashlar-Wedowee complex, 2-10% slopes
well drained top soil with hard rock at 31"- 64"

Ca - Cartecay silt loam, 0-2% slopes
well drained deep top soil

PfC -Pacolet sandy loam, 2-10% slopes
well drained top soil with hard rock at 66"

Pw - Pits, quarries
75 feet depth

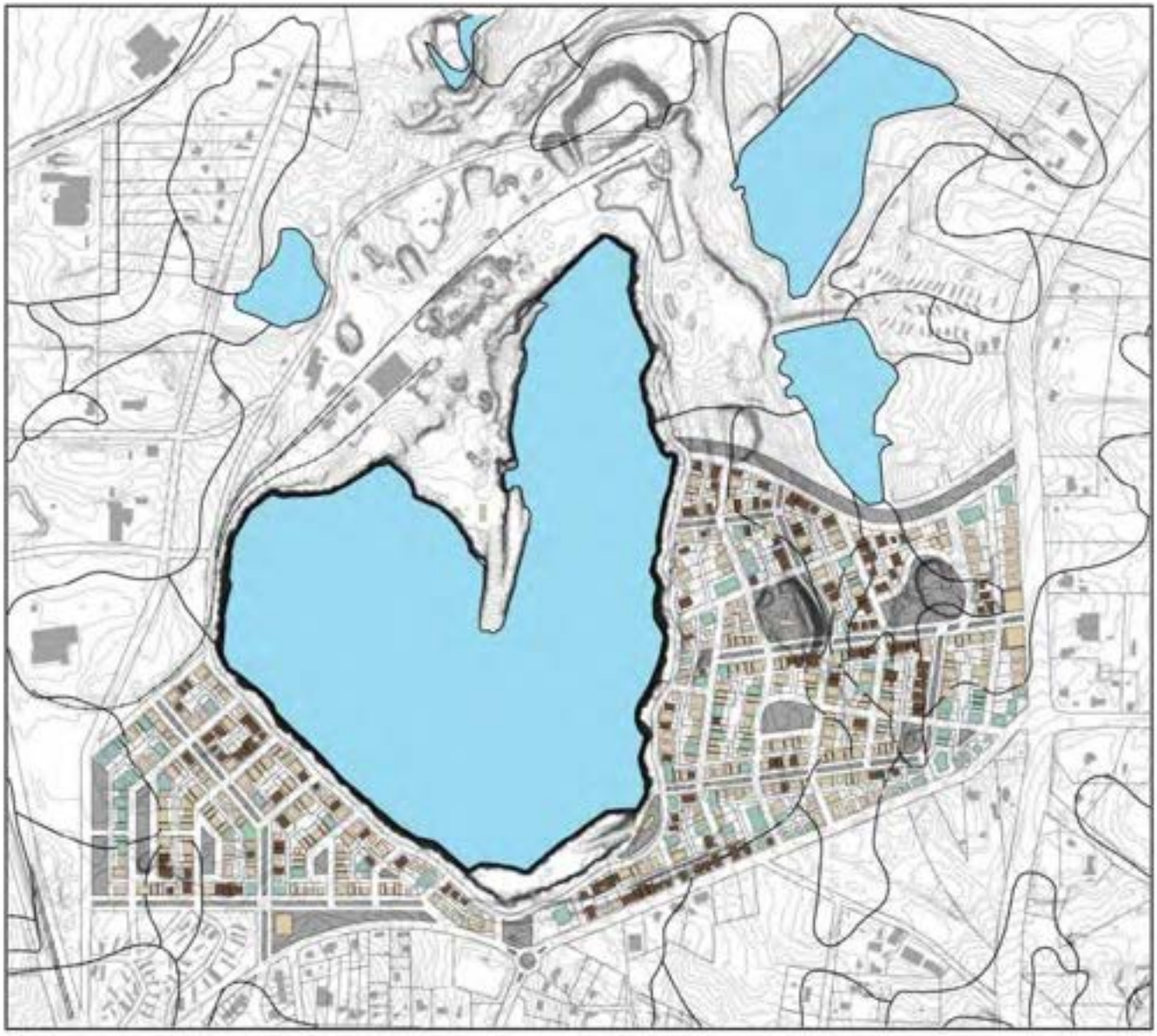
Rx - Rock outcrop
bare granite and gneiss bedrock

Ud - Urban land
soil has been cut, filled, shaped, and smoothed

WeB - Wedowee sandy loam, 2-6% slopes
well drained top soil with hard rock at 75"

W - Water

Figure 6.3nn: Soil Conditions



FOUNDATION CONDITION:

SLAB ON GRADE

-Ashlar-Wedowee complex soils with 2-5% slope

-Pacolet sandy loam soils with 2-4% slope

-Rock outcrop soils with 0-5% slope

SHALLOW

-Ashlar-Wedowee complex soils with 5-7% slope

-Urban land soils

-Wedowee sandy loam soils

POLE

-Ashlar-Wedowee complex soils with 8-10% slope

- Cartecay silt loam soils

--Pacolet sandy loam soils with 6-10% slope

-Rock outcrop soils with 6-10% slope

Figure 6.3pp: Foundation Types