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After decades of remarkable growth, Sugar Hill has become one of the premier places to live in Gwinnett County. One key to Sugar Hill’s success is the high value the City places on quality of life.

This commitment to quality of life is exemplified in the City’s new initiative to develop the Sugar Loop Greenway, an 11.5-mile greenway around the city with approximately 16.5 miles of trail. A greenway is a linear open space that connects multiple destinations along a corridor that is predominantly natural in character. Within the proposed Sugar Loop Greenway will be a trail, defined here as a paved path intended for shared use by pedestrians, bicyclists, wheelchair users, joggers, and other non-motorized users.

A greenway project of this size and scale will be transformative for Sugar Hill. Specifically, the City and its residents can expect to experience economic, health, environmental, transportation, and community benefits from the greenway’s development.

**Economic Benefits**

Multiple studies have proven the economic benefits of trails and greenways. Trails have been shown to directly increase adjacent property values. One study in Boulder, Colorado found that all other variables being equal, the value of a property adjacent to a greenway is 32 percent higher than those 3,200 feet away.

This increase in value is reflected in a boost of real estate marketability. According to a survey conducted by the National Association of Realtors and the National Association of Homebuilders, home buyers rank trails as the second-most important community amenity out of 18 amenity types.

**Health Benefits**

Trails also provide significant health benefits by offering a safe, attractive place for walking, bicycling, and jogging. Studies show that if people have easy access to a trail, they are much more likely to meet the Centers for Disease Control (CDC) recommendation of 150 minutes of aerobic activity per week for adults and 60 minutes per day for children.

**Environmental Benefits**

Greenways provide a number of environmental benefits, ranging from a decrease in automobile trips to the preservation of natural areas, which protect ecosystem functions and provide wildlife corridors. The healthier the environment is, the fewer challenges a community will face in terms of stormwater management, air quality, and climate resiliency.

**Transportation Benefits**

When safe, pleasant and convenient facilities are available, bicycling and walking become viable modes of transportation. According to the Atlanta Regional Commission (ARC) Walk, Bike, Thrive! plan, approximately 10 percent of the region’s car trips are under 1 mile, a distance that most people can walk or bicycle. If even half of those trips were by bicycle or walking, there would be a significant reduction of congestion on roadway networks.

**Community Benefits**

Trails and greenways help to preserve community character by protecting natural resources and connecting important destinations. They also provide a place for people to interact with one another and strengthen the overall sense of community. From an urban design perspective, trails can also be opportunities to develop community identity through specialized infrastructure such as iconic bridges, and to enforce the city’s image and brand through signage.
At a regional level, the demand for trails and greenways far exceeds the current supply. This is particularly true in Gwinnett County, which has very few miles of trail in comparison to its population.

One reason for this scarcity is that opportunities to protect greenways and build off-road trails are increasingly rare. Approximately 80 percent of Gwinnett County has been developed, with very few corridors or large tracts of land remaining. Yet with every new neighborhood that is built, demand for trails, open space, and other amenities grows. As part of a survey conducted during the City of Sugar Hill’s 2008 Comprehensive Plan effort, 79.2 percent of respondents indicated that Sugar Hill needs more natural areas and green space. This was the highest percentage of nine different options, including restaurants, retail/shopping, and professional offices.

Fortunately, Sugar Hill still has a significant opportunity to develop a high-quality greenway and trail. The backbone of this opportunity is the presence of five parcels owned by the Georgia Department of Transportation (GDOT). These parcels total approximately 127 acres and stretch from the Chattahoochee River southeast to Peachtree Industrial Boulevard. Originally part of the proposed "Outer Perimeter" road, GDOT purchased these parcels with federal funds under the agreement that they would be used for transportation. Over time, support for the Outer Perimeter has waned and the identified corridor has been encroached upon by development. These parcels now present an opportunity to develop approximately 3 miles of off-road trail, most of which would be surrounded by undeveloped natural area.

Beyond the GDOT parcels, there are several natural features that not only add to Sugar Hill’s character, but could potentially contribute to the greenway. The most prominent of these features is the Chattahoochee River near the western edge of the City. The river is a beautiful natural and recreation feature, and it is highly valued as a source of drinking water for Georgia. Approximately 3 miles flow past Sugar Hill, and most of the adjacent property is owned and managed by the National Park Service (NPS).

Two of the Chattahoochee’s significant tributaries flow through Sugar Hill: Richland Creek in the north and Level Creek in the south. The Richland Creek corridor in particular is still very natural in its character, but both creeks are opportunities to connect trail users to nature and the area’s gold mining heritage.

In addition to waterways, the City of Sugar Hill has a number of significant facilities that could serve as destinations along a greenway. Downtown Sugar Hill continues to develop, and has a long-range concept in place for mixed-use development and additional community amenities. Large parks are also potential destinations, such as E. E. Robinson Park, Gary Pirkle Park, the Sugar Hill Golf Course, and the future Level Creek Park. The City also has plans to develop a new 71-acre park near the Chattahoochee River, and recently acquired a 9.2-acre park space along Level Creek Road.

The present opportunity to develop the Sugar Loop Greenway will not exist indefinitely. Both the City of Sugar Hill and Gwinnett County are expected to see continued growth, which will only increase pressure on remaining undeveloped land. To maintain Sugar Hill’s quality of life, the City must act quickly to preserve the Sugar Loop Greenway corridor.
Although the concept of a single greenway loop around Sugar Hill is a new initiative, many aspects of the potential greenway are rooted in previous planning and design initiatives.

**City of Sugar Hill Comprehensive Plan**
The City of Sugar Hill Comprehensive Plan emphasized the City’s commitment to quality neighborhoods, economic growth, and investing in recreational and cultural assets. Specifically, the Comprehensive Plan made the following greenspace recommendations:

- Maintain property in as natural a state as possible
- Seek opportunities to add passive recreational trails through large greenspace areas
- Link greenspace areas into a useful network of greenways, set aside for pedestrian and bicycle connections between schools, churches, recreation areas, City centers, residential neighborhoods and commercial areas
- Promote greenspace areas as passive-use tourism and recreation destinations
- Utilize greenspace areas as much as possible for the infiltration and natural cycling of stormwater runoff
- Improve recreational access to the Chattahoochee River
- Consider connecting E. E. Robinson Park to streams and protected riparian buffers near Peachtree Industrial Boulevard

**Downtown Core Illustrative Plan**
The Downtown Core Illustrative Plan is a redevelopment concept for the area immediately around Sugar Hill’s City Hall. It shows a future mixed-use community called Epicenter, a series of smaller mixed use projects, 60-90 units of multi-family residential, and a boutique hotel. A multi-use trail oriented east-west is shown between Hillcrest Drive and a proposed extension of Level Creek Road.

**Downtown Framework Plan**
Expanding beyond the Sugar Hill Downtown core, the Downtown Framework Plan is a generalized future land use concept for the broader downtown area. Its vision for the future is higher density, mixed uses connected by an east-west bike/trail connection.

**Gwinnett County 2030 Unified Plan**
The Gwinnett County 2030 Unified Plan combined the Comprehensive Plan, Consolidated Plan, and Comprehensive Transportation Plan. One major focus was additional investment in parks, environmentally sensitive areas, greenways, and the Chattahoochee River Corridor. The plan identified a need for small, locally-accessible park space and a continuous system of greenways. In the vicinity of Sugar Hill, the “Preferred Place Map” identified greenways along Level Creek, Richland Creek, and the Chattahoochee River.

**Gwinnett County Open Space and Greenways Master Plan Update**
The Gwinnett County Open Space and Greenways Master Plan Update updated a 2002 plan that proposed a 1,700-mile greenway network across the county. The update pared down this initial network based on feasibility metrics, such as distance from existing buildings and active railroads. The final greenway master plan proposed greenway corridors near Sugar Hill similar to those identified in the Unified Plan.

**Gwinnett County 2013 Parks and Recreation Capital Improvement Plan (CIP) Update**
In preparation for the 2013 special-purpose local-option sales tax (SPLOST), Gwinnett County updated its Parks and Recreation CIP. The update identified a number of significant investments in the vicinity of Sugar Hill, including a new Tier 1 Park acquisition and a desire to connect this new park to Settles Bridge, Level Creek, and George Pierce Parks.

**Level Creek Park Master Plan**
Currently under construction, Gwinnett County is using SPLOST funds to build the new 67-acre Level Creek Park. The proposed design has a multi-purpose field complex, central concession/restroom building, walking track, six lighted tennis courts, an interactive fountain, picnic pavilions, and paved and unpaved trails. Over half the park will be preserved as natural area with unpaved trails.

**Retreat at Orr’s Ferry Park Plan**
The City has designed a new 71-acre passive park east of the Chattahoochee River. Current plans call for the development of a special events facility, trails, and clusters of cottage and yurts.

**City of Buford Comprehensive Plan Update**
The City of Buford Comprehensive Plan Update provided a broad vision for the future. During the planning process, residents reported a need for additional park space, with a particular interest in having more greenways and walking paths. The future land use plan shows parts of Richland Creek as park/conservation land use.
City of Suwanee Pedestrian and Bicycle Plan
In 2011 the City of Suwanee created a plan for greenway trails, multi-use trails, pedestrian tunnels, and sidewalks. The plan does not propose any greenway or multi-purpose trails near the City’s boundary with the City of Sugar Hill, but does show an internal network of greenway trails in Sims Lake Park. In future phases of the Sugar Loop Greenway, connecting to both Sims Lake Park and George Pierce Park in Suwanee would add significant regional connectivity by linking to the Ivy Creek Greenway and the Suwanee Greenway.

Atlanta Regional Commission (ARC) Walk, Bike, Thrive! Plan
The ARC released a draft of its Walk, Bike, Thrive! plan in December 2015. It establishes a regional policy framework based on three topics: world-class infrastructure, healthy livable communities, and competitive economies. Although primarily a broad policy document, the plan identified hundreds of focus areas in the region for walking and biking investments; two of these areas are in or near the City of Sugar Hill.

Chattahoochee River National Recreation Area General Management Plan/Environmental Impact Statement
Completed in 2009, NPS evaluated six alternative scenarios for the management of the Chattahoochee River National Recreation Area (CRNRA), with a focus on balancing visitor access and stewardship of natural resources. The preferred alternative favored expanding use to local residents and pursuing cooperative efforts with agencies to enhance the recreation area’s connectivity with the community. The Sugar Loop Greenway could potentially connect to the CRNRA through its three northernmost units: Bowman’s Island, Orrs Ferry, and Settles Bridge. In the NPS plan, Bowman’s Island was designated as a “natural zone” with few facilities other than primitive trails and kiosks; Orrs Ferry would be a “natural area recreation zone” that allows unpaved trails; and Settles Bridge would primarily be a “natural area recreation zone” with a “developed zone” in the middle for more intensive recreation uses, including paved trails.

These previous planning and design initiatives, illustrated comprehensively in Figure 1, form the framework for the initial identification of the Sugar Loop Greenway corridor.
The first step in developing the Sugar Loop Greenway concept was to identify potential locations that could support the trail. Five layers of data were used as screens to identify the best potential location for the greenway.

**1/4-MILE BUFFER**

Based off of previous planning efforts and the location of GDOT parcels, the City identified a general corridor for further evaluation. Using Geographic Information Systems (GIS) analysis tools, all parcels within a ¼ mile of this initial corridor were identified as potential parts of the Sugar Loop Greenway. In total, 7,760 parcels were initially considered.

**LAND USE**

Current land use is one of the most important characteristics in determining potential locations for the greenway. Land uses that are most conducive to developing a greenway are vacant/under-developed land; public use such as parks and schools; conservation lands; Home-Owners Association (HOAs) land used as open space; and land owned by churches. Uses such as single-family residential and other heavily developed lots are considered unfavorable for greenway development and were excluded from the analysis at this screen.

**OWNERSHIP**

Equally important to land use is land ownership. In general, land that is already publicly owned is strongly preferred for greenway development. The highest potential parcels are already owned by the City of Sugar Hill, followed by those owned by other agencies such as Gwinnett County, GDOT, the City of Buford, and the federal government. Medium potential for greenway development can be found on undeveloped or under-developed parcels owned by HOAs, private development companies, churches, and in conservation subdivisions. The preferred Sugar Loop Greenway location would take advantage of parcels already owned by the City and other public agencies first, but could explore using the medium potential parcels if no other options exist.
Because of their linear nature, utility easements often present opportunities for trail and greenway development. Within and near Sugar Hill, there are over 100 miles of sewer easements and approximately 5 miles of Atlanta Gas Light (AGL) utility easements. Some of these easements have the potential to support the Sugar Loop Greenway and are an opportunity to build upon land that already has restrictions in place.

Northwest Gwinnett County is characterized by rolling topography. This presents both challenges and opportunities for greenway development. In general, most trail users prefer flat or gentle slopes. Within the preliminary corridor, areas with slopes of higher than 15 percent were identified. These would be considered largely impassable for cyclists.

Another natural characteristic to consider is the presence of streams. Although water can be an excellent feature for a trail, streambeds are sensitive environments. The State of Georgia requires a 25-foot development-free buffer around streambeds to protect these systems, and local authorities require an additional 25 feet. Variances would be required from Gwinnett County and/or the State for building within these areas.

When these five layers were considered together, the following conceptual corridor emerged as having the most potential to support the Sugar Loop Greenway. The land within this refined corridor is predominantly public-owned; undeveloped or used for complementary purposes such as recreation or community uses; and has fewer steep slopes and more area outside of stream buffers for trail construction. In some cases, the trail will likely take advantage of existing roadway Right-of-Way (ROW) or sewer easements to make needed connections.
The conceptual greenway corridor identified through the inventory and analysis capitalizes on a number of opportunities:

**GDOT Parcels**
GDOT is not actively pursuing construction of the Outer Perimeter roadway. In the interim, the parcels earmarked for the Outer Perimeter present an opportunity to build the southwest leg of Sugar Loop Greenway. Because it is a trail project, the Sugar Loop Greenway would meet the original requirements for the land to be used as transportation. If the Outer Perimeter does move forward in the future, the land could revert back to GDOT and the trail could be rebuilt along the new roadway corridor.

**Connecting to Nature**
The preliminary Sugar Loop Greenway would improve residents’ access to the Chattahoochee River, Level Creek, and Richland Creek. By having direct experiences with these water resources, greenway users will have a greater stake in their protection and have more opportunities to connect with nature in their daily lives.

**Connecting Parks**
The City of Sugar Hill has five parks and recreation facilities: Gary Pirkle Park, E. E. Robinson Park, the Sugar Hill Golf Course, Sugar Hill Town Green, and the Sugar Hill Lawn and Amphitheatre. The Sugar Loop Greenway is an opportunity to connect these five facilities along a continuous trail, and to provide park facilities in areas that are currently under-served by parks.

**Connecting Schools**
Sugar Hill Elementary School and Sycamore Elementary School are both located within the conceptual Sugar Loop Greenway corridor. Not only would these schools benefit from greater connectivity to the community, the Sugar Loop Greenway is an opportunity to provide children with a safe route for walking or bicycling to school.

**Current Construction**
A number of current construction projects present opportunities for integration within the Sugar Loop Greenway. Gwinnett County is currently constructing Level Creek Park, and its internal trail system could serve as part of the future Sugar Loop Greenway. Additionally, Gwinnett County DOT’s design for the Whitehead Road bridge reconstruction is an opportunity to provide enough space underneath the bridge for an underpass that would eventually accommodate the Sugar Loop Greenway trail.

**Regional Connectivity**
The Sugar Loop Greenway is an opportunity to increase the amount of trail facilities in Gwinnett County and provide better connectivity. Three significant trail projects are within a bikable distance of the proposed Sugar Loop: the Ivy Creek Greenway, the Suwanee Greenway, and Big Creek Greenway in neighboring Forsyth County, which will eventually connect to the Silver Comet Trail. The Sugar Loop Greenway is an opportunity to connect to these existing trails, and provide a critical trail link for the region.

**Partnerships**
Successful greenways are often built on partnerships with other agencies and organizations. The Sugar Loop Greenway is an opportunity for the City to strengthen relationships with the following:

**GDOT**
The five GDOT parcels form the backbone of the Sugar Loop Greenway concept. For the greenway to move forward, the City must partner with GDOT or work with the agency to acquire the land directly.

**GWINNETT COUNTY**
Because parts of the Sugar Loop Greenway will likely be outside City of Sugar Hill boundaries, it will be necessary to coordinate with Gwinnett County. The inclusion of County facilities within the corridor, such as Level Creek Park, will also require close coordination and present an opportunity for joint funding.

**NATIONAL PARK SERVICE**
NPS owns and manages many acres of park land within the conceptual greenway, including 1.5 miles of Chattahoochee River frontage. Current NPS policy for the property designates most of it as natural land and would not allow for paved trails. The City of Sugar Hill could approach NPS about a potential partnership to allow a limited amount of paved trail within their land to connect the Sugar Loop Greenway directly to the river. At a minimum, unpaved connections to the CRNRA hiking trail network should be coordinated with NPS.

**CHURCHES**
Multiple churches are within the conceptual Sugar Loop Greenway. These are opportunities for the City to partner with church organizations to provide land for the trail or negotiate easements. In addition to a potential economic benefit, churches would benefit from improved connections to their surrounding neighborhoods, greater visibility to potential congregation members, and direct access to a significant urban amenity.

**HOAs**
Several HOAs have undeveloped land within the conceptual greenway. In many cases, this land is limited in its development potential but would be ideal for a trail. Residents’ access to the Sugar Loop Greenway would increase their property values and improve recreation opportunities and access.
Along with the opportunities present in the conceptual Sugar Loop Greenway, there are a number of challenges that the City will need to overcome:

**Steep Slopes**
Some slopes within the conceptual greenway are greater than 15 percent. However, the maximum slope for meeting Americans with Disabilities Act (ADA) standards is 5 percent and inclines steeper than 5 percent would require railings and other modifications for compliance. An 8 percent slope is the maximum considered for transportation, but a 10 percent slope can be tolerated for short stretches. When using a parcel with steep slopes is the only option, the Sugar Loop Greenway trail will need to employ multiple switchbacks to make it usable. While possible, this adds to the expense of trail construction, and increases the difficulty of the trail for less advanced users.

**Protected Creeks and Streams**
Within the Sugar Loop Greenway there are a number of creeks and streams. In addition to the 25-foot stream buffer required by the State of Georgia, the conceptual greenway’s drainage patterns, wetlands, water quality, and streambank erosion must be considered.

**Roadway Crossings**
There are a number of locations within the conceptual greenway where the trail will need to cross roadways. The most challenging crossing will be State Route 20 (SR 20), which is five lanes wide at some points in the corridor and is currently being expanded in others. From a trail user perspective, crossing a major street should occur either above grade using a bridge, or below grade using a tunnel. Both of these solutions are quite costly, but are significantly safer than crossing busy roads “at grade.”

**Boundaries**
Approximately half of the conceptual Sugar Loop Greenway is located outside City boundaries in unincorporated Gwinnett County. This necessitates working with Gwinnett County closely to ensure that the Sugar Loop Greenway aligns with the County’s plans and building ordinances.

**Gated Communities**
Many of the neighborhoods abutting the proposed Sugar Loop Greenway are gated communities, thereby limiting public access in these areas. Gated communities wishing to provide direct connections to the Sugar Loop Greenway will need to balance access to the amenity with community expectations for security.

**Legal Issues**
Lawsuits are a fact of life in the United States, and avoiding liability is an important consideration. However, liability risks from trails are minimal compared to other public facilities such as swimming pools and roadways. Private landowners who own land adjacent to the trail may worry about liability if users wander off the trail and injure themselves, but the Georgia Recreational Use Statute provides them with legal protection from suit. In the case of injury on the trail, the City of Sugar Hill and Gwinnett County would be covered by their respective insurance policies.

**Public Support**
Building broad public support for the Sugar Loop Greenway will be essential—without the support of residents, businesses, and other stakeholders, the greenway cannot exist. It is particularly important to get buy-in from the property owners along and near the trail. Typically, property owners can be concerned about a trail being built on or near their property; fears include an increase in crime, liability for injuries, and a decrease in property value. Prior to meeting with landowners, the City of Sugar Hill should be ready to explain the anticipated benefits of higher property values, and have a plan to address security and liability concerns.

**Security**
One of the primary concerns residents may have is safety on the trail. The City does not have its own police department, and would need to work with Gwinnett County to ensure that adequate surveillance is provided.
Shown in Figure 2, the Sugar Loop Greenway concept encompasses approximately 11.5 miles of paved trail around Sugar Hill, connecting major destinations throughout the community. Starting in Downtown the corridor travels south-southwest roughly parallel to Peachtree Industrial Boulevard. At the future Level Creek Park, the trail turns northwest to follow the alignment of the GDOT parcels, where it will cross Level Creek Road, Whitehead Road, and Suwanee Dam Road before turning northeast at the City’s future passive park south of SR 20 near the Chattahoochee River. The corridor would then cross SR 20 and continue to travel northeast along the edge of the Sugar Hill Golf Course. At Gary Pirkle Park, the corridor turns east through the park and eventually reaches Richland Creek Road. Shortly before Peachtree Industrial Boulevard, the trail turns southwest back to Downtown, where it crosses SR 20 again. Side trails off of the main Sugar Loop Greenway trail are also possible in the future if there is community support.

Destinations
Most major community facilities and destinations within Sugar Hill are located along the conceptual greenway, including all of the City’s parks and recreation facilities. Downtown Sugar Hill, the Sugar Hill Community Center, Gwinnett County’s Level Creek Park, the CRNRA, Sugar Hill Elementary School and Sycamore Elementary School are also located along the greenway.

Pocket Parks + Trailheads
The Sugar Loop Greenway will also unlock opportunities to expand the City’s park system with five proposed pocket parks. A pocket park is a small park space that is about three acres in size or less. Typical facilities at the pocket parks would include a playground, picnic tables, multi-purpose green space, parking and trail access. The pocket parks will not only offer trail access, but will provide close-to-home recreation facilities in areas that are currently underserved by public parks, and capitalize on existing unique landscape features. Concepts for three pocket parks are shown in Figures 3, 4 and 5.

In addition to the five new pocket parks, there will be eight formal trailheads where users can park and meet other users. Trailheads are proposed at the Sugar Hill Town Green, E.E. Robinson Park, the future Level Creek Park, in the future Retreat at Orr’s Ferry Park, the Sugar Hill Golf Course, Gary Pirkle Park, Sycamore Elementary School, and at the Sugar Hill Street Department Facility on Hillcrest Road. Trailheads at existing public facilities will typically have wayfinding signage, benches/picnic tables, a drinking fountain, and shared parking; trailheads that are at new sites will have approximately five to nine parking spaces, wayfinding signage, benches/picnic tables, and a small pavilion for protection during poor weather.

Guiding Principles
- Use existing public land and ROW as much as possible
- Maximize user experience and access to nature
- Connect neighborhoods, parks, schools, and other community facilities
- Use existing trails and facilities where feasible
- Provide pocket parks as close-to-home recreation opportunities
- Connect Sugar Hill to the growing regional trail network

Bridges
Two bridges are anticipated as part of the Sugar Loop Greenway, both of which will cross SR 20, one near the Chattahoochee River and the other near Downtown Sugar Hill. Not only will these bridges safely carry trail users across a busy state highway, but their locations are opportunities to develop gateways at both ends of Sugar Hill. The western bridge over SR 20 will span beyond the roadway corridor to overcome significant changes in topography.

Future Connections
In the long term there are opportunities for trail spurs to connect Sugar Hill directly with the Suwanee Greenway, Big Creek Greenway, Lake Lanier, the hiking trails of CRNRA, Settles Bridge Park, Sims Lake Park, George Pierce Park, the Western Gwinnett Bikeway, and neighborhoods east of Peachtree Industrial Boulevard. Spurs will likely be a combination of on-road and off-road facilities.
FIGURE 2. SUGAR LOOP GREENWAY CONCEPT
8 DESIGN CONSIDERATIONS

Although detailed design of the Sugar Loop Greenway would be part of the next phase, there are many design considerations that will guide the trail’s ultimate alignment and user experience.

**Trail Types + Users**

The dimensions and experience of a trail will vary depending on the context. In more developed areas, the trail may be narrower and serve double duty as a sidewalk; in natural areas, the trail may become wider and meandering to preserve natural features. The American Association of State Highway and Transportation Officials’ (AASHTO) recommends a minimum of 10 feet for trails, but 12 to 14 feet where heavy traffic is expected.

The Sugar Loop Greenway trail will need to accommodate a variety of users, which will also affect the trail width, surface, vertical clearance, and amenities. The primary user types expected on the Sugar Loop Greenway trail are pedestrians and bicyclists. Pedestrians have relatively few design requirements, though their preferences depend on their activity. Walkers and joggers typically prefer softer surfaces such as rubber or crushed stone to lessen physical impact on joints, but other pedestrians such as those pushing strollers typically prefer concrete or asphalt. The minimum vertical clearance for pedestrians is 8 feet.

Bicyclists span a range of users, ranging from children riding bicycles recreationally to advanced users commuting and riding at high speeds. Typically bicyclists prefer hard surfaces such as concrete or asphalt, and require a vertical clearance of at least 8 feet. Additionally, trail design will need to ensure an adequate sight distance of at least 150 feet and minimize slopes over 5 percent.

Most of the Sugar Loop Greenway will be a concrete, multi-use path at least 10 feet in width that is separate from roadways. In some areas, it may be necessary to incorporate the trail into existing transportation facilities. On-street facilities are typically bicycle lanes or widened sidewalks. In sensitive natural areas such as wetlands or stream corridors, a boardwalk may be the most appropriate type of trail facility. Other potential surface types to consider include compacted crushed stone, resin-based materials, soil cement, and recycled materials such as rubber tires.

**Accessibility**

In addition to AASHTO guidelines, the Sugar Loop Greenway trail will need to meet standards set by the ADA that determine acceptable widths, slopes, cross-slopes, surfaces, and vertical clearances. These guidelines were recently updated to specifically address accessibility to multi-use trails.

**Working with Nature**

One of the goals of the Sugar Loop Greenway is to provide residents with better access to the city’s natural features. The City must find the correct balance of protecting resources while providing public access to enjoy them.

Generally, trail construction should be as streamlined as possible to minimize environmental impacts. In some areas, it may be advisable to place barriers to discourage trail users from wandering off the trail and disturbing wildlife. Landscaping around the trail should avoid using mowed turf outside trail shoulders and non-native, invasive species.

Particular attention will need to be paid to creek corridors and wetlands during the design process. These are highly productive natural systems, and damage to them can negatively impact water quality, drainage, and vulnerable habitats. The Sugar Loop Greenway will need to be designed to prevent erosion and flooding, and avoid use of pesticides and fertilizers where possible.

**Safety + Security**

**SURVEILLANCE + EMERGENCIES**

Although studies have found crime rates to be low on trails, security is often a major concern for both trail users and adjacent property owners. To ensure the security of the Sugar Loop Greenway, regular police involvement will be required. One of the best ways to patrol a trail is to get county policemen and women on bicycles to provide regular surveillance that will help deter potential crime. To augment the police presence, some municipalities also organize citizen patrols to help keep “eyes” on the trail, much like a neighborhood watch group.

In addition to police and volunteer patrols, there should be regular emergency callboxes placed along the trail, and an emergency location system that enables users to relay their location to 911 dispatchers. The trail will also need to be designed to enable emergency vehicle access.

**TRAIL CROSSINGS**

Crossings should be designed so that they are appropriate to the roadway’s traffic volume, have ample visibility, and provide clear signage and pavement markings. Because Sugar Hill is an urbanized area, the Sugar Loop Greenway trail will cross multiple roadways. Three types of roadway crossings are expected: bridges, underpasses, and at-grade.

When crossing a very large, busy roadway, the safest crossing type is an elevated bridge. Although expensive, these are the safest crossing types, can add to the user’s trail experience, and enhance the City’s sense of place. Where the Sugar Loop Greenway crosses SR 20, bridges are the preferred type of crossing facility.

At some locations on the trail, it may be appropriate to cross roadways using an underpass, such as the new bridge constructed on Whitehead Road. A minimum of 8 feet of clearance is required, and consideration must be given to appropriate lighting and drainage in the case of flooding.

At-grade trail crossings can be acceptable, cost-effective options when the trail must cross a roadway with low traffic volumes and good visibility. These crossings should be clearly marked with a wide crosswalk, flashing lights, and clear signage. To maximize driver visibility of trail users, midblock crossings are usually the safest, but they typically involve higher vehicle speeds. At-grade crossings at or near intersections may be necessary, but must be carefully designed to ensure visibility of trail users by turning vehicles.

**Working with Nature**

Greenway will need to be designed to prevent erosion and flooding, water quality, drainage, and vulnerable habitats. The Sugar Loop Greenway will need to be designed to prevent erosion and flooding, and avoid use of pesticides and fertilizers where possible.

**Safety + Security**

**SURVEILLANCE + EMERGENCIES**

Although studies have found crime rates to be low on trails, security is often a major concern for both trail users and adjacent property owners. To ensure the security of the Sugar Loop Greenway, regular police involvement will be required. One of the best ways to patrol a trail is to get county policemen and women on bicycles to provide regular surveillance that will help deter potential crime. To augment the police presence, some municipalities also organize citizen patrols to help keep “eyes” on the trail, much like a neighborhood watch group.

In addition to police and volunteer patrols, there should be regular emergency callboxes placed along the trail, and an emergency location system that enables users to relay their location to 911 dispatchers. The trail will also need to be designed to enable emergency vehicle access.
At-grade roadway crossings can be potentially hazardous because of speeding drivers and a lack of driver education. To improve safety, actions can be taken such as installing electronic signs that display a vehicle’s speed, or having cameras that detect speeding driver’s license plates for mailing a ticket. Some municipalities do periodic crosswalk stings, where an officer in plainclothes attempts to use the trail crossing while an officer in uniform tickets drivers who fail to stop.

LIGHTING
Lighting is critical to ensure users’ safety both in terms of keeping the trail surface visible and deterring crime. Effective lighting must be well-placed, and at a minimum must be present in tunnels, overpasses, trailheads, bridges, and crossings. Unlike roadway lighting, trail lighting should be flat and illuminate only the trail. Fixtures should be relatively short, and in some cases bollards can be used to minimize the disturbance of light on nature and surrounding neighborhoods. At its best, trail lighting provides an increased sense of safety and adds to the overall aesthetic of the trail.

Amenities
Throughout the length of the trail there should be amenities such as benches, shaded rest areas, trash receptacles, information kiosks, and facilities for dog-walkers such as bag dispensers and dog-friendly drinking fountains. Additionally, the trail is an opportunity for public art, and environmental and heritage interpretation.

Signage, Wayfinding, and Branding
Signage will be an important element of the Sugar Loop Greenway. It can help brand the greenway and trail, improve user experience, and add to the character of Sugar Hill. The greenway should have a comprehensive wayfinding system that is consistent in its materials, colors, dimensions and symbology, and located predictably throughout the corridor. These wayfinding tools can be broadened beyond signs, and employ techniques such as using pavement markings to help give identity to the trail and/or note distances and times. Signage should also address the different types of user and clearly communicate trail etiquette and rules.

To best position the Sugar Loop Greenway for success, a cohesive, consistent brand should be developed. The branding should clearly echo the look already established by the City of Sugar Hill’s logo and other branding initiatives, but be specific to the Sugar Loop Greenway.

Building for Low Maintenance
In designing the Sugar Loop Greenway, both routine maintenance and remedial maintenance must be considered. Routine maintenance considerations include day-to-day tasks such as trash removal and litter pickup, and scheduled maintenance like tree trimming. Remedial maintenance corrects significant problems that occur over time, such as repairing damaged trail surfaces, replacing signs and repainting. When designing the trail, accessibility for maintenance and durability of components is essential.

One of the most important maintenance considerations is the type of surface used for the Sugar Loop Greenway trail. The more durable the material, typically the more expensive it is to build or purchase. However, a smart upfront investment can save money in the long term by reducing equipment replacement costs and labor spent addressing issues. From a materials maintenance perspective, concrete is the preferred surface material. When well-maintained, concrete can last up to 25 years and is resistant to flooding. Asphalt lasts a shorter period, typically from 7 to 15 years, but is generally preferred by some trail users because its softer surface has fewer negative impacts on the body. It also blends into the natural environment aesthetically.
This Sugar Loop Greenway Concept document is the first step of many in making the greenway a reality. Following is a high-level overview of the next steps for the City of Sugar Hill.

**Public Outreach**
To be a success, the greenway will need broad community support. The next step is for the City to share the vision with residents, business-owners, and other stakeholders through public meetings and individual meetings with property-owners who may be affected by the trail. During this period, input from the public will help inform the final location of the trail.

To cultivate a positive reception of the project, the City of Sugar Hill should consider the following:

- Organizing a “Friends of the Sugar Loop Greenway” group
- Creating a website that contains details on the Sugar Loop Greenway, including dates of public meetings, estimated construction schedules, and other events
- Inviting leaders of built trail projects to share their stories at public events
- Building awareness through the press by getting supporters to write letters to the editor, or inviting reporters to cover the story of the greenway’s development
- Developing a social media campaign to follow the greenway’s progress from plan to reality

Some residents and business-owners may have concerns about the trail, such as crime and safety. The City will need to discuss these fears directly and openly, and be prepared to concretely show how these concerns will be addressed.

**Building Partnerships**
Partnerships will be an essential component to the Sugar Loop Greenway’s long-term success and sustainability. These relationships should be established early in the process.

For partnerships with agencies where the trail will travel on their property, formal agreements must be put in place early that clearly state management and maintenance responsibilities. The City of Sugar Hill will likely need to develop multiple Memoranda of Understanding (MOUs) with Gwinnett County, GDOT, utility companies, the BFI landfill, schools, and potentially NPS.

Partnerships with non-profit groups and other community groups should also be explored. Potential partners include the Trust for Public Land, the PATH Foundation, Chattahoochee Riverkeeper, the Gwinnett County Historical Society, and other citizen groups.

**Greenway Planning + Design**

**PHASED MASTER PLANS + DESIGN DOCUMENTS**
Because of the length of the greenway and complexity of the project, future planning and design should be conducted in phases. For each phase, the City should meet individually with affected agencies and property owners to discuss the greenway project. Once the parcels included in the greenway are finalized through agreements or acquisition, detailed trail design can begin. Suggested phasing is illustrated in Figure 6.

A more detailed site analysis will need to be performed for each greenway segment. This analysis would study the vegetation, animal life, soil, geology, water resources, and cultural resources in the corridor, and determine areas of sensitivity that should be avoided. Depending on funding sources, it may also be necessary to perform an Environmental Assessment.

**MANAGEMENT PLAN**
Prior to the Sugar Loop Greenway’s construction, the City should develop a preliminary greenway management plan. The purpose of a management plan is to provide detailed policy guidelines for the operation, maintenance and management of the greenway and its facilities. Specific areas to address include public safety, emergency services, maintenance, vegetation management, and natural resource protection.

**9 RECOMMENDATIONS + NEXT STEPS**

**CODE AND REGULATION UPDATES**
- Zoning: At a minimum, a “Greenspace” designation will need to be added to the zoning code. For more influence on the greenway and how it connects to the community, a Sugar Loop Greenway Overlay is recommended. This overlay would contain design standards for communities who wish to directly connect to the greenway, and would include provisions for how gated communities would balance access and security.

**Land Acquisition**
Although much of the land within the conceptual Sugar Loop Greenway is already under public ownership, additional acquisition will be necessary. The least complicated type of acquisition—and most expensive—is to purchase land outright from a public agency, organization, or private individual. This provides the most control over the parcel, but may be difficult to fund throughout an 11.5-mile corridor. If additional time is needed to raise funds, the City may consider an “Option to Buy” approach, which is a legal document giving the City the right to buy a parcel at a specified price within a certain period, but the City puts down a fee upfront (typically 10 percent of the land’s value).

As an alternative to fee simple acquisition, the City may pursue easements for the greenway. An easement is the right to another agency’s or person’s land for a specific purpose. Because the land is not purchased outright, it is a more affordable alternative. Other alternatives include land leases, donations, purchase and lease back agreements, and bargain sales. The use of eminent domain is not a recommended approach for most acquisitions, and should be avoided when possible.

**FIGURE 6. RECOMMENDED DESIGN PHASES**
Funding Sources
Paying for greenway acquisition, construction, and operations is a major undertaking and typically requires funding from a variety of sources.

FEDERAL/STATE FUNDING
Most large trail projects receive at least some federal and state funding. Depending on the program, municipalities typically must provide between a 1 and 20 percent match in funds.

The largest source of federal funding for bicycle and pedestrian facilities is a program called Transportation Alternatives. Funding from this program is distributed by state DOTs, and municipalities (or the project’s sponsor) must provide a 20 percent match. The Recreational Trails Program (RTP) is a distinct program within Transportation Alternatives, and is a competitive grant program managed by the state’s trail administrator. Eligible projects for funding include easement acquisitions, building new trails, development of trailside/trailhead facilities, maintenance and restoration of existing trails, and trail educational programs.

Other federal funding and technical assistance possibilities for the Sugar Loop Greenway include:

• Federal Lands and Tribal Transportation Program (FLTTP). This program provides funding for projects that improve access to federal lands, and could be a potential source for Sugar Loop Greenway trail segments near or in the CRNRA. For infrastructure not owned by the federal government, funding is provided through a component called the Federal Lands Access Program (FLAP).

• River, Trails and Conservation Assistance Program (RTCA). The RTCA is part of NPS, providing technical assistance to local communities and organizations. The program is not a funding source, but does provide staff support for developing trails.

• Land and Water Conservation Fund (LWCF). Administered by states in cooperation with NPS, the LWCF provides a 50/50 matching grant for outdoor recreation areas. The focus is on urban green spaces, particularly trails and projects that provide access to water resources.

• Urban and Community Forestry (UCF). The UCF program supports local projects relating to forestry, and provides technical and financial assistance to local governments.

LOCAL FUNDING
Receiving federal funding is typically a very competitive process, as requests far exceed the availability of funds. As such, local and private funding sources will also need to be explored:

• Special-Purpose Local Option Sales Tax (SPLOST) Funds. The SPLOST is an optional 1 percent sales tax that goes toward funding public Capital Improvement Projects. Levied at the county level, Gwinnett County voters have approved a series of SPLOST initiatives since the 1980s. The present three-year SPLOST program was renewed on November 5, 2013 and is anticipated to be on the 2016 ballot for renewal.

• Bond Issues. Local revenue can be generated through a local bond issue that must be passed by voter referendum.

• City of Sugar Hill General Fund. The City of Sugar Hill’s General Fund is the primary funding source for much of the City’s operations, and occasionally for capital projects. Sometimes General Fund money can be borrowed to fund a project until money from the SPLOST or other mechanisms is collected.

• Impact Fees. Regulated through the City’s subdivision regulations, impact fees require new developments to either set aside funding or provide land for community amenities. An impact fee could be leveraged on new developments within a certain distance of the proposed Sugar Loop Greenway.

• Trust Funds/Endowments. A trust fund or endowment can be set up to help fund acquisition, construction, and maintenance of the Sugar Loop Greenway. Typically these are managed by a local organization or commission, and funding is donated by both governments and private gifts.

• Foundation and Company Grants. Some private foundations provide trail grants and technical assistance; the best-known foundation for funding trails in the Atlanta region is the PATH Foundation, which has built over 20 miles of trails and greenways to date.

• Donations/Campaigns. Fundraising campaigns can be effective ways to help raise money for trail projects. Donors to campaigns can “buy” trail amenities such as benches, or even receive a “deed” to a specific piece of the trail that they contributed to.