LAKELAND SMALL AREA PLAN

LAKELAND, TENNESSEE

JANUARY 27, 2017

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Looney Ricks Kiss

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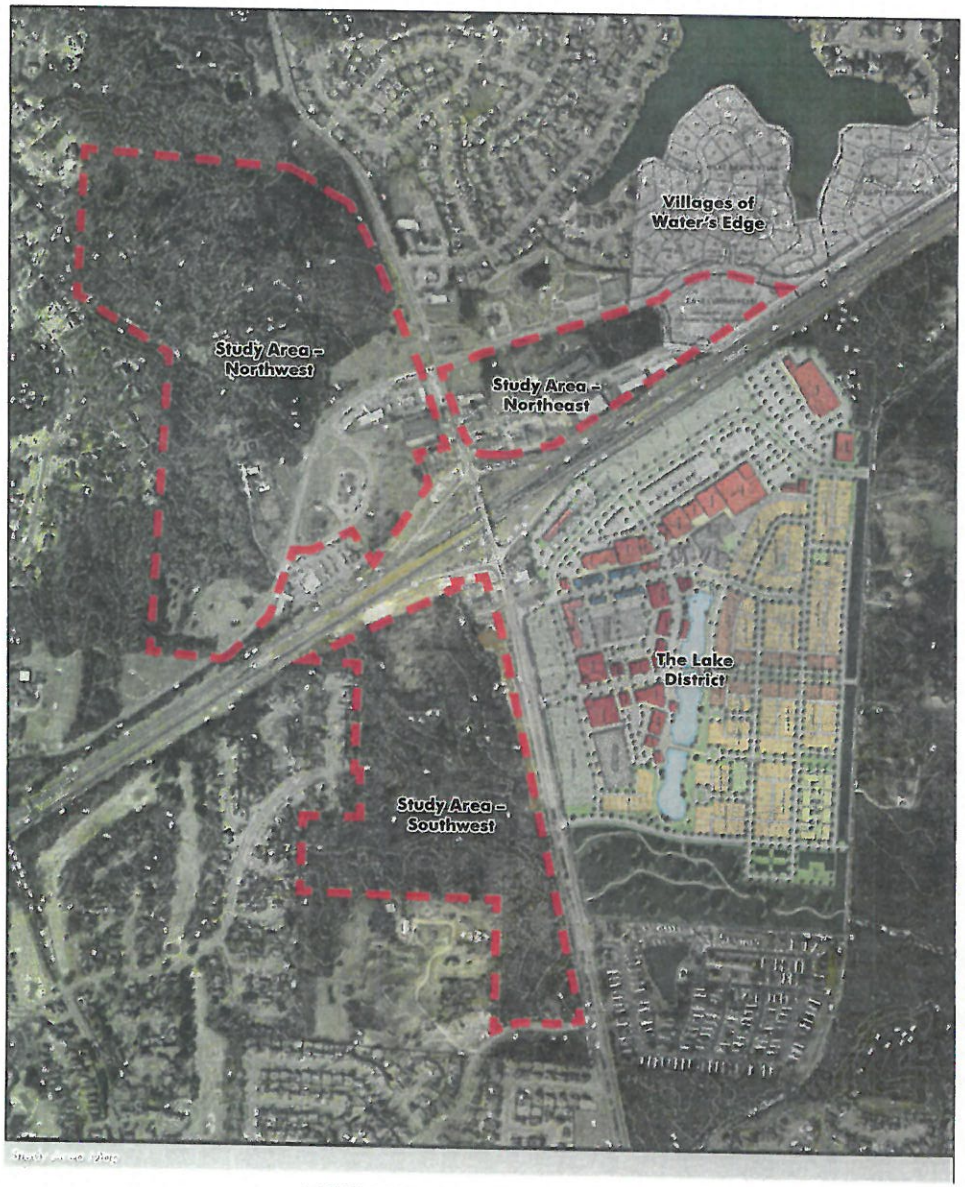


LAKELAND SMALL AREA PLAN STUDY AREA

Purpose

While the area surrounding the Interstate 40 and Canada Road Interchange was largely static for a decade, this same area is now at the forefront of change. Previous building trends resulted in uses, densities and building designs that have not created the quality of experience desired by area residents nor does it represent the goals and vision of the community. This study was undertaken to create a clear vision regarding goals, uses, densities and function for the area surrounding the Interstate 40 and Canada Road Interchange.

Overview

The City of Lakeland is a thriving community in the Mid-South region. Incorporated in 1977, the City is now home to nearly 13,000 residents (Est. 2015 Census) and growing, potentially reaching a population of 40,000 in the future. Lakeland's unique history helped shape the City into a beautiful, safe, well-maintained community that it is today. The City's appeal owes much to its range of home choices as well as resident participation in community activities, schools, churches, clubs, organizations and City advisory groups.

Careful planning is important for Lakeland's continued development, and the City reviews plans to ensure that the growth of the community maintains the neighborhood atmosphere that residents have come to treasure. Near the City's 275-acre Garner Lake, the interchange at Interstate 40 and Canada Road is currently undergoing reconstruction with an expected completion in mid-2017. In 2016 The Lake District development, located southeast of the interchange, was approved and construction is expected to begin in 2018. These transformative projects will have a major impact on visitors' perception of the City as they traverse this gateway into the community. With this Small Area Plan, the City hopes that the necessary groundwork will be laid for economic development leading to a work–live–play environment for future generations to enjoy.

Interstate 40 and Canada Road

The study area for the Lakeland Small Area Plan includes three quadrants around the Canada Road interchange at Interstate 40 in Lakeland, Tennessee. Comprised of approximately 215 acres, the area is currently zoned C-2 for commercial development. However, significant amounts of property is currently undeveloped. The City of Lakeland desired a plan showing the potential development of the area in order to align its development policies and capital improvement program projects with the community's vision for the area.

Canada Road and Beverly Rivers Drive

Stakeholder Meeting

Stakeholder Meeting

Public Meeting

PUBLIC AND STAKEHOLDER INPUT

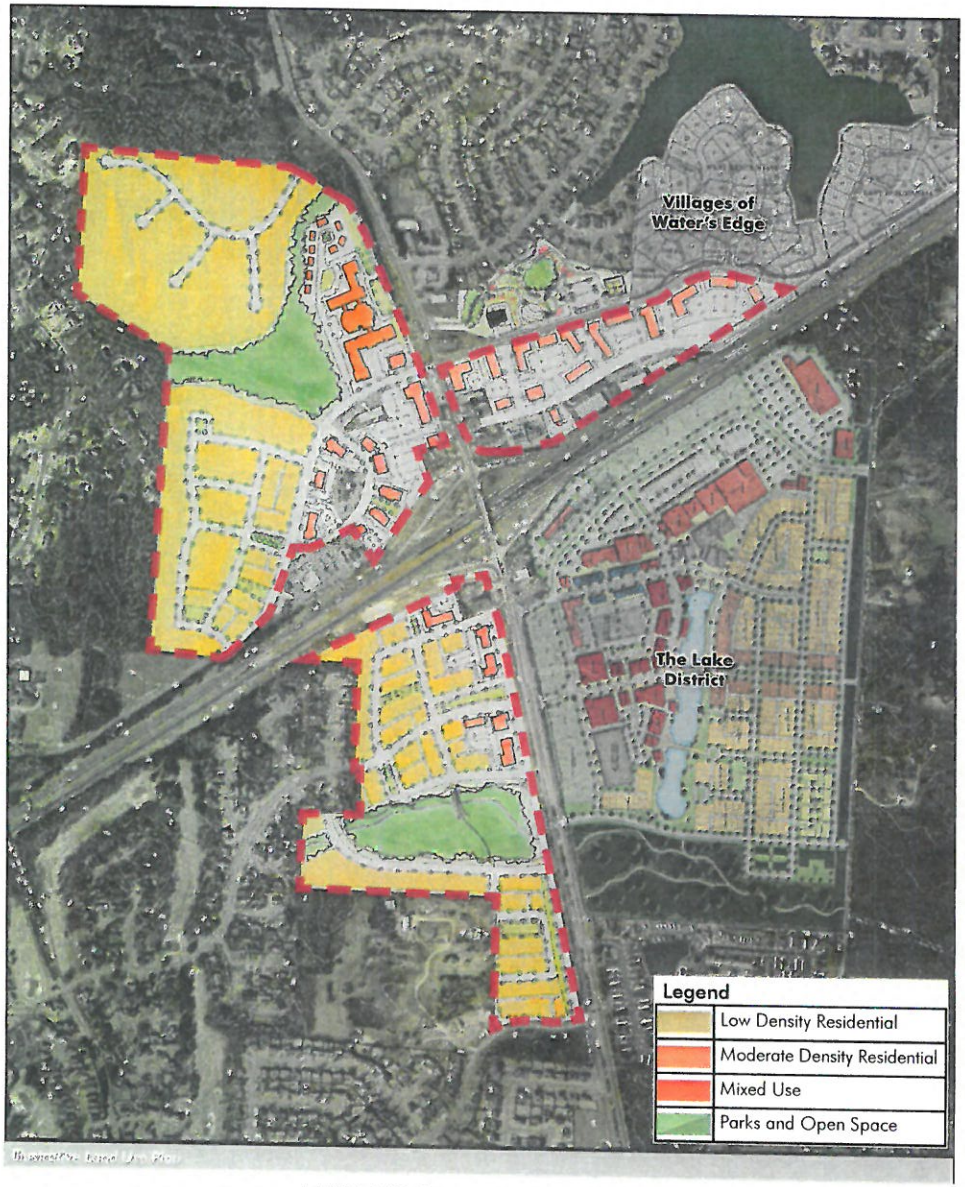
On Monday, November 28, 2016, the Lakeland Small Area Plan design team conducted six meetings to learn more about the community's desires for the Canada Road/Interstate-40 study area. Over the course of the day we spoke with 40 property owners, business owners, nearby residents, real estate developers, and representatives from agencies that serve the area.

9:00-10:00am	Business & Property Owners – 14 attendees
10:30-11:30am	Real Estate Professionals and Developers – 6 attendees
12:00-1:00pm	Service Providers – 6 attendees
1:30-2:30pm	Economic Development and Elected Officials – 7 attendees
3:00-4:00pm	Neighborhood Association Representatives – 2 attendees
5:30-6:30pm	Public Input Meeting – 5 attendees

Several common themes came up during the discussions that cut across the different groups. These points should form the basis of design for the study area, as meeting these objectives will most likely satisfy the desires of a broad range of stakeholders.

- Bring more people to this area, making it a destination for the region and not just a convenience stop along the highway
- Ensure the area projects the image of the community given that this is the primary gateway to Lakeland
- Attract more resident-serving businesses including retail, dining, entertainment, medical and other services so residents can fulfill most needs without leaving Lakeland (restaurants, local boutique retail, family medical, and office uses, with any residential serving as a transition between commercial uses and the existing neighborhoods)
- Employ higher design standards than are currently provided, and seek more quality tenants and businesses
- Promote vibrancy, activity and walkability with ground-level retail and possibly a town square
- Bring visual consistency to all quadrants around the interchange through consistent architectural character and signage, and eliminate non-conforming highway-oriented signs
- If housing is included, provide for a range of types serving seniors, 55+, condominium and single family residents; if for rent homes are included, ensure they are of high quality and lasting value
- Continue to add bicycle lanes and sidewalks that connect this area to adjacent neighborhoods, and fill the gaps in the bike/pedestrian network
- Provide street lighting for safety at night, however fixtures should be more low-scale and full cut-off fixtures (Dark Sky)
- Keep some of the rural character of the area by preserving trees or maintaining larger landscape buffers
- Make improvements to street, sewer, utility and drainage infrastructure to support increased demand by development

On Monday, December 19 and Tuesday, December 20, 2016, a two-day design workshop (ie., charrette) was held at The Refuge Church where the design team developed the development scenarios and graphics contained herein. Over two dozen attendees reviewed and commented on the proposals being generated and gave their feedback on the process and its expected outcomes. At both an intermediate "pin-up" design session and the final Public Presentation, the public's input helped guide and inform the plans contained herein. Comments and questions focused on residential development types, automobile/bicycle/pedestrian connections, potential for maintaining trees and natural areas for flora and fauna, and the potential for retail/commercial development to continue to transform the area into a destination for Lakeland residents and visitors.

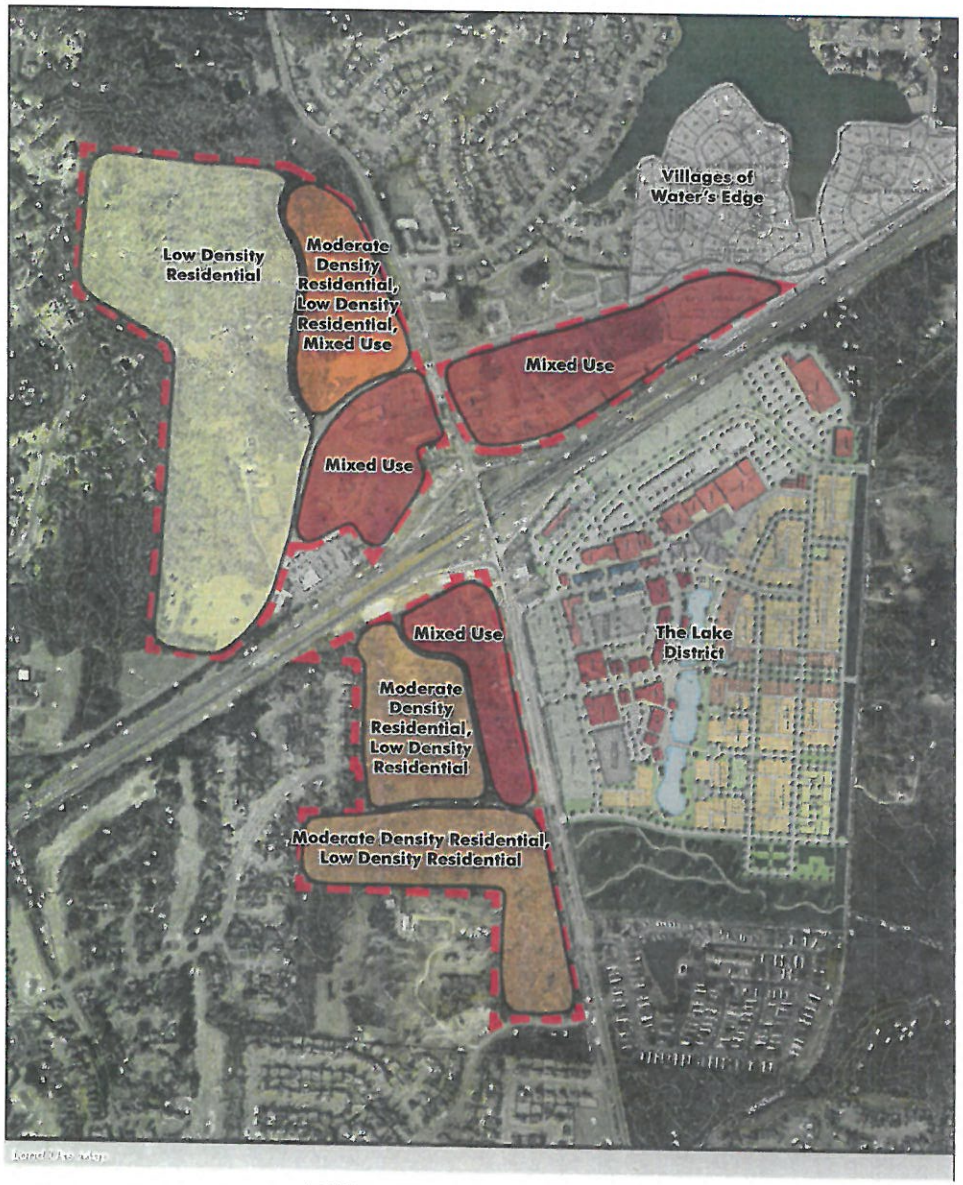


POTENTIAL DEVELOPMENT PLAN

The design charrette investigated two potential development scenarios: a low-intensity option that illustrated a conservative pattern of development including one-story buildings and generous setbacks; and a high-intensity option that included multistory commercial, residential and other development that anticipated significant development over the next 20+ years.

Key elements of the plan include:

- Retail/commercial activity concentrated along Canada Road nearest the Interstate 40 interchange, and along the south side of Beverle Rivera Drive.
- Connections (for motorists, bicyclists and pedestrians) across Canada Road and other arterial and collector roads to enable easy and safe crossover from one part of the study area to the other.
- Different scales and types of residential development (from attached townhouse to single-family homes) to aid in a comfortable transition from the commercial core to the low-density residential neighborhoods surrounding the study area.
- Preservation of natural areas where appropriate for topographical, stormwater or habitat considerations.
- Interconnected networks of tree-lined streets that provide access to people within the new developments as well as neighboring areas, giving everyone multiple means of access to the area.
- Appropriately scaled blocks, buildings and streets that foster a safe, attractive and pedestrian-friendly environment.
- Street-facing buildings with parking located on-street, between or to the rear of buildings to give the area a Main Street-type of feeling.
- Sensitivity to the incremental nature of development that will likely follow existing property patterns, with the exception of an alternative plan for the northeast quadrant which showed a large "town square" type of development.
- Extension of multiuse trails and improvements to local parks to promote more recreational activity, which in turn will lead to a healthier community.
- Streetscape enhancements such as lighting, curb and gutter drainage, landscaping, sidewalks and paths for a more beautiful community.



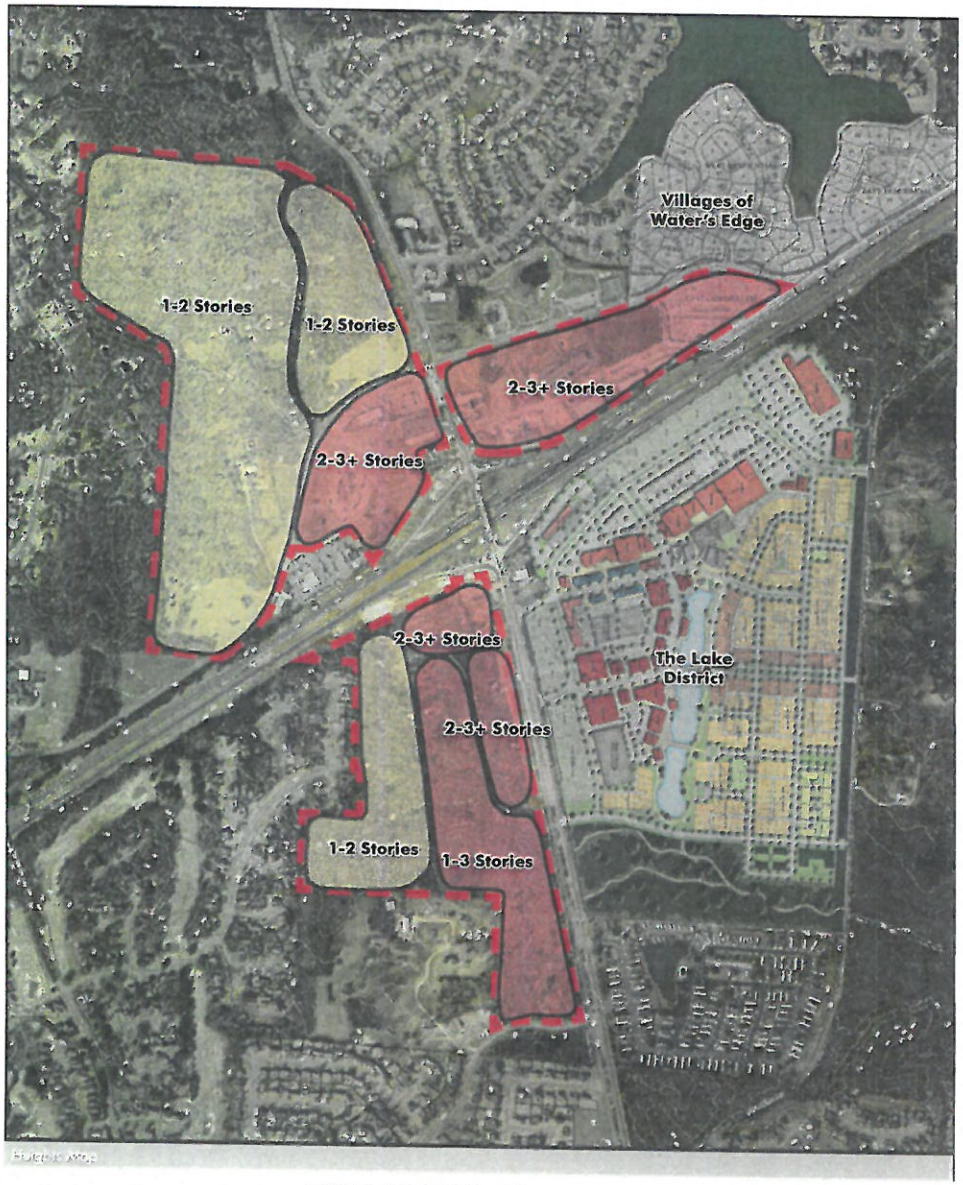
Land Use Map

LAND USE PLAN

The current zoning designation for the property within the study area is C-2, Regional Commercial, with nearly all of the area being designated Neighborhood Type V, as described in the City of Lakeland's *Land Development Regulations*. The C-2 Regional Commercial District is "a large Scale commercial district designed to serve the greater community and adjacent communities. Of the three (3) commercial districts, it allows the widest range of Uses. The Mixed Use, Cottage Commercial, Commercial, and Civic Building Types may be developed in this district" (LDR, III. Sec. 1.C). This allows for most all commercial, retail, service, office, and civic/institutional uses, and allows for residential or office uses above a ground-floor commercial use. The Neighborhood Type V designation allows for multifamily residential use when integrated into a commercial development, or allows a single family residential use as a small part of a much larger subdivision, however each is limited to 20% or 10% of the total development, respectively.

If retail and commercial uses were to be developed according to the current zoning, more than 2 million square feet of development could be realized. To provide a sense of scale and perspective, an equivalent amount of development can be found at the Wolfchase Galleria area just a few miles away. However, it is unlikely that another major retail commercial development node of that magnitude would locate so close to Wolfchase in the near or long term. In addition, the City of Lakeland commissioned a recent update to a commercial market study which showed that demand will be largely served by The Lake District proposed development. With this in mind, the team concluded that the entire C-2 designated area should accommodate mixed uses in the future. This in turn led to the notion that low- and moderate-density residential be allowed in the study area to a greater degree than the Neighborhood Type V designation currently allows.

The accompanying Land Use diagram illustrates a concentrated area of retail/commercial/mixed-use development surrounding the Interstate 40 and Canada Road interchange and along Canada Road across from similar uses in The Lake District. Radiating out from this commercial core, however, is moderate- to low-density residential area to serve as a transitional use between the commercial core and the low-density residential subdivisions that currently exist. By reducing the core commercial area to a more realistic size, the chances of commercial development being complementary, not competitive, with The Lake District is improved. Likewise, an orderly transition and buffer between existing residents and new commercial uses is created to help mitigate any buffering issues while still providing easy access to the new commercial core.



BUILDING HEIGHTS PLAN

The height of new buildings, which in turn leads to density, is controlled by the *Land Development Regulations* by means of prescribed Building Types. Allowable building types in the C-2 Regional Commercial District is:

- Mixed Use Building – 1 to 3 stories
- Commercial Building – 1 to 2 stories
- Cottage Commercial Building – 1 to 2½ Stories
- Corridor Building – 1 to 3 stories (5 with Conditional Use Permit)
- Civic Building – 1 to 3 stories

These building types and expected heights are consistent with the core commercial developed area shown along Canada Road, where the plan anticipates most buildings to be between 1 and 3 stories tall.

In the transitional residential areas, if residential becomes a permitted use, the plan anticipates that most residential products be 1 to 2 stories tall. This is in keeping with, or slightly below, the typical height standards permitted in the *Land Development Regulations* for the following residential building types that are recommended to be allowed:

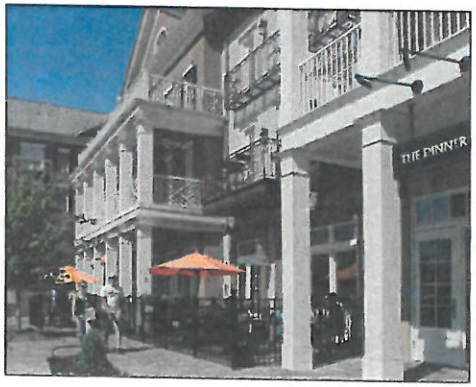
- Urban Estate – 2 to 3 stories
- Urban Manor – 1½ to 2½ stories
- Attached House – 2 to 3 stories

Low-Density Residential Character

The outer edges of the study area is where a transition between retail/commercial or moderate-density residential to low-density residential is needed in order to seamlessly blend new development with the existing subdivisions. Urban Estate and Urban Manor building types, illustrated here, would be appropriate for these transitional areas.

Retail Character

New retail development, when not in a mixed-use configuration, would most likely be one-story and traditional in character. These photographs illustrate how contemporary construction with traditional details and composition would help create a distinctive Town or Village Center character. Also, retail is expected to be located close to the public street with on-street parking, broad sidewalks, lighting and landscaping be present for the shoppers convenience, comfort and safety.



Mixed Use/Commercial Character

Multi-story commercial buildings are expected wherever office or mixed-use buildings are proposed. When in a mixed-use configuration, ground-floor retail serves the public while upper floors are occupied by residential or office uses. Whether purely commercial or mixed-use, these buildings require careful attention to massing, detail, materials, signage, composition, siting and landscaping in order to fit well into the fabric of the area.

Moderate-Density Residential Character

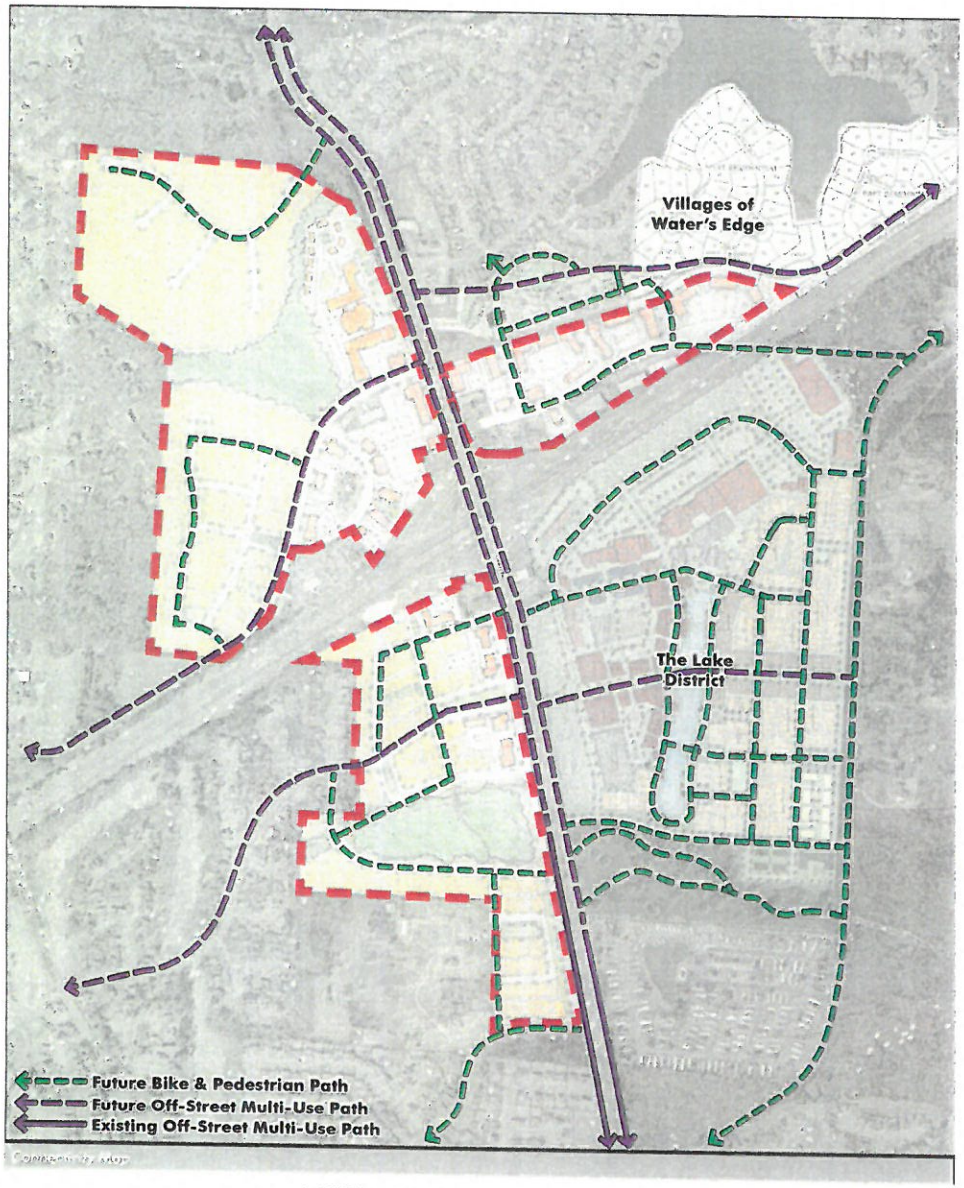
Closer to the core commercial areas, it would be appropriate to allow moderate-density residential buildings, such as attached single-family townhouses, rowhouses, or condominiums, which begin to take on the massing of the larger commercial buildings while retaining their residential character. Senior housing, for example, would be appropriate. Likewise, the successful configuration of moderate-density residential requires emphasis on street-facing buildings and public gathering spaces or small parks to provide relief from the otherwise denser development.

Public Space Character

While The Lake District project includes several public amenities, a larger gathering space for public events such as in a Town Square or Great Lawn is missing from Lakeland. Shown here are several types of public open spaces that could begin to serve as the "heart" of Lakeland.

Streetscape Character

As existing streets are improved and new streets added to the area, the character of the streetscape elements (lighting, landscaping, benches, trash receptacles, bicycle racks, etc.) will have a profound impact on the image of the area by visitors. Quality and distinctive elements, such as traditional black-painted light poles or tree-lined streets, will establish part of Lakeland's identity as perceived by others. These examples show types of elements that the City of Lakeland should consider standardizing for all development within the study area in order to promote a cohesive look and feel to the district.

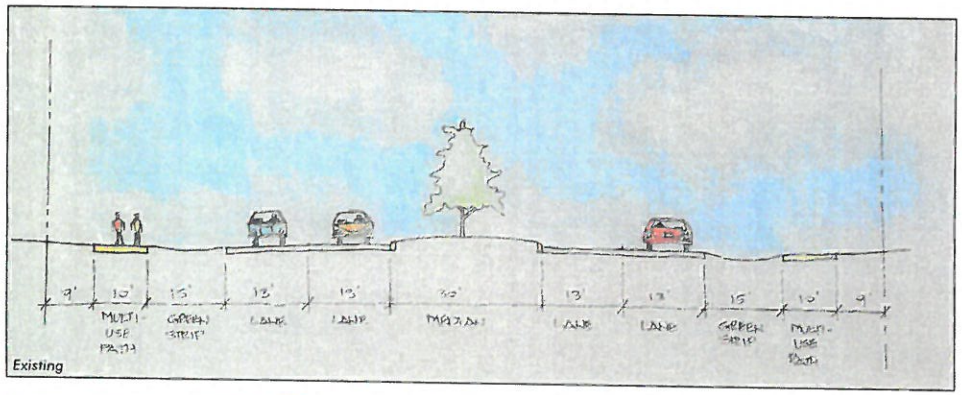


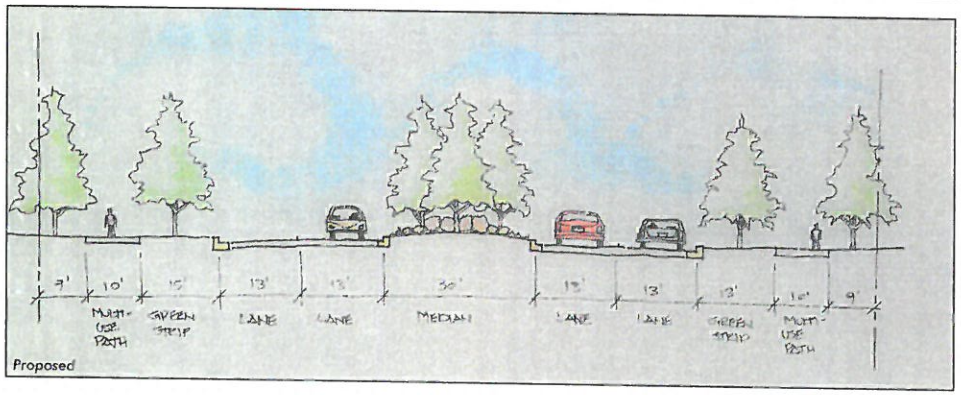
AUTOMOBILE, BICYCLE AND PEDESTRIAN NETWORK

The area is currently served by several streets ranging from the multi-lane Canada Road which provides regional access to local collector streets such as Beverle Rivera and Davies Plantation that provides access to the existing development in the interchange quadrants. There are opportunities to rebalance these streets to better facilitate the community vision and to create a sense of place within the district; a rebalancing also allows for people to choose how they travel in the district by making provisions for travel modes such as walking and biking that are not currently supported. A guiding principle for existing street retrofits was to maintain curblines where present to eliminate the need for major infrastructure modifications. The recommendation for each existing street is summarized below.

Connectivity Diagram

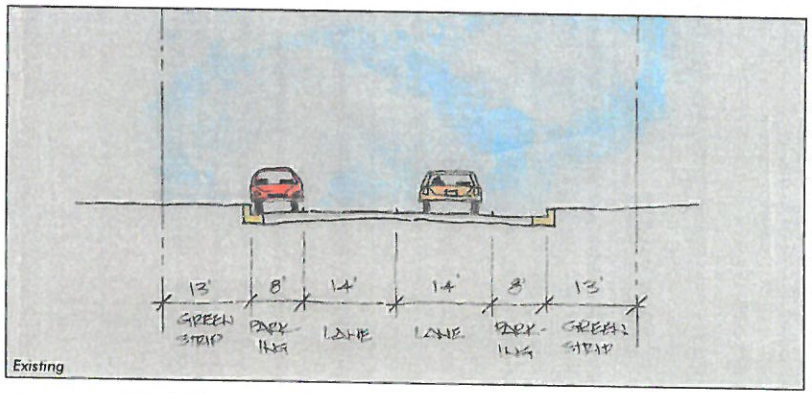
The City of Lakeland's planned bicycle facilities are mapped on the attached diagram. The diagram also shows how the addition of facilities in conjunction with the street retrofits and new streets provide pedestrian and bicycle connectivity between neighborhoods, parks, and businesses within the District. It is anticipated that street retrofits along with new connections may be subject to timing constraints to align with new development and may be subject to additional cost and feasibility analysis. By providing these connections, residents of Lakeland and this District will have true choices about how they move about their community.

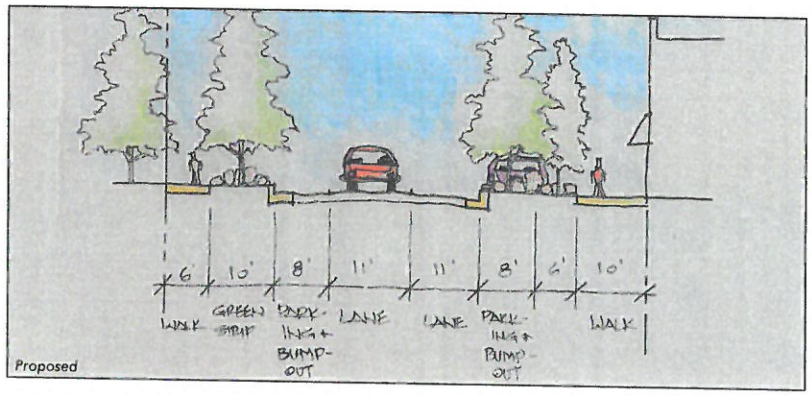




Canada Road

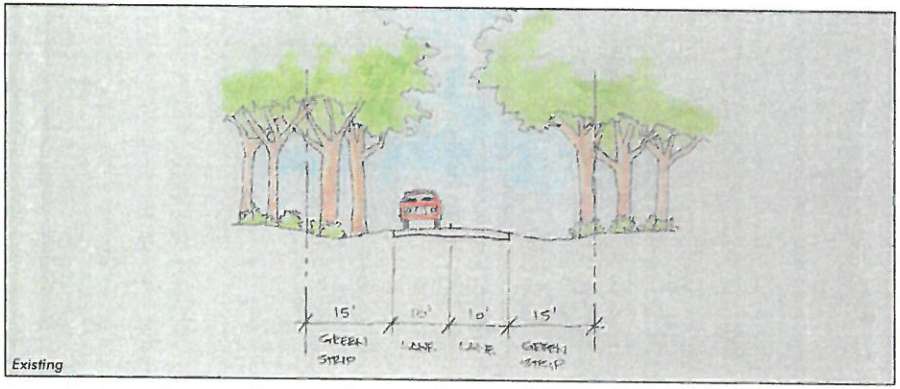
Canada Road is a major regional north-south arterial connecting I-40 to Lakeland. It is planned to be expanded to four/six lanes with a median in the area of the I-40 interchange; the configuration will be similar to the segment south of the interchange area. Off-street shared use paths are included within the right of way but separate from the travel lanes. Through the area of this plan, it is recommended that the proposed lane configuration be maintained, but that the level of streetscape be enhanced per the proposed cross section to reflect a more defined sense of place and formal streetscape.





Beverle Rivera Drive

Beverle Rivera Drive is currently 45 feet curb to curb in the northeast quadrant of the interchange. Configured as a two-lane street, it serves commercial and institutional uses as well as provides access to the park. Beverle Rivera is planned to be extended to the east and connect to the neighborhoods currently accessed by Huff-N-Puff Road. The recommended concept for Beverle Rivera is to reallocate the pavement to define two travel lanes and two on-street parallel parking lanes; planted bumpouts are recommended to be integrated to break up the line of parking spaces and narrow the roadway at intervals. Finally, a shared use path is proposed on the north side of the street to provide access to the neighborhoods and park, and to the bike facilities on Canada Road and west.



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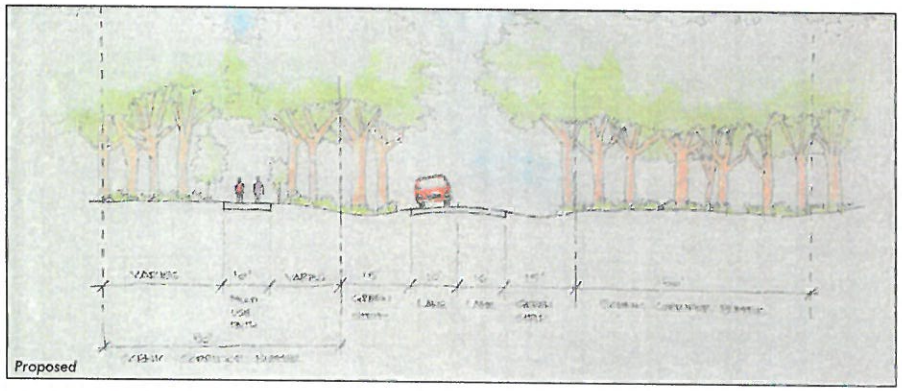
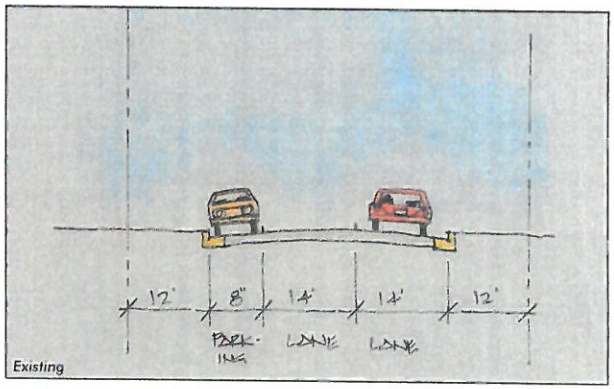


Proposed

Monroe Road

Monroe Road serves north-south traffic along the far eastern edge of the study area. A Scenic Corridor, Monroe Road is characterized by a 20-foot wide pavement section with natural landscape and trees almost to the edge of the traveled way. Given the scenic nature of Monroe Road, it is recommended that no changes to the pavement section be made; however, construction of a 10-foot shared use path along the east side with a variable buffer between it and the travelway is recommended to provide an active transportation link in this area. Another potential initiative in this area would be a proposed street extension of Huff-N-Puff Road back across I-40 on the old right of way to provide a multi-modal connection between the Lake District and areas north of I-40.



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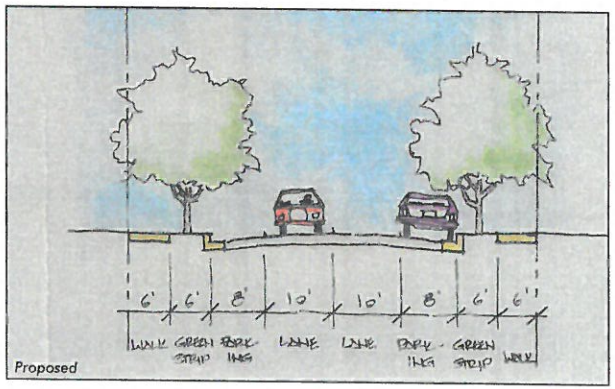
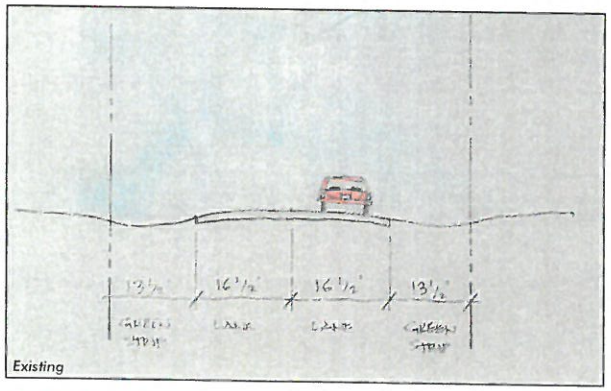
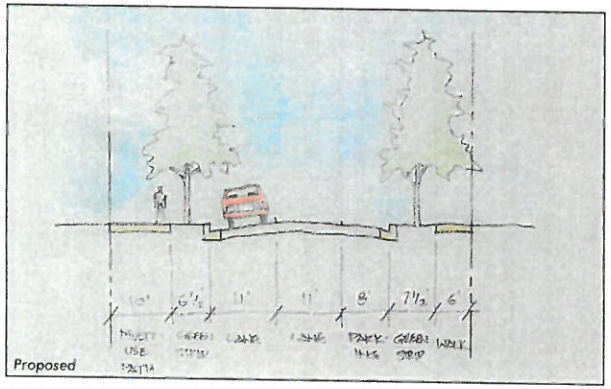


Proposed

Huff-N-Puff Road

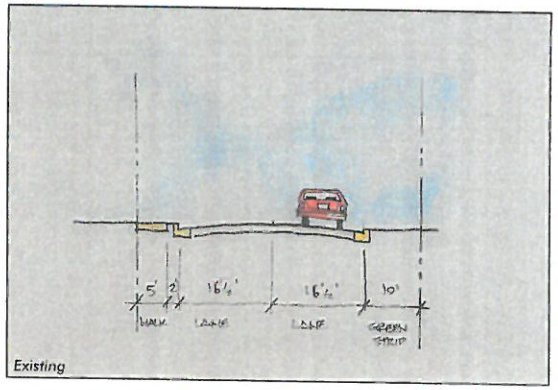
Huff-N-Puff Road is a two lane street with 36 feet of pavement between curb faces. While there is room for on-street parallel parking, it is not currently marked as such. Sidewalks do not currently exist on Huff-N-Puff Road. It is recommended that the pavement be reallocated to provide two travel lanes with dedicated on-street parking lanes; similar to Beverle Rivera, planted bumpouts will break up the parking lanes and provide visual narrowing to offer traffic calming ad streetscape opportunities. In addition, sidewalks should be constructed with planted separators between them and the travelway.

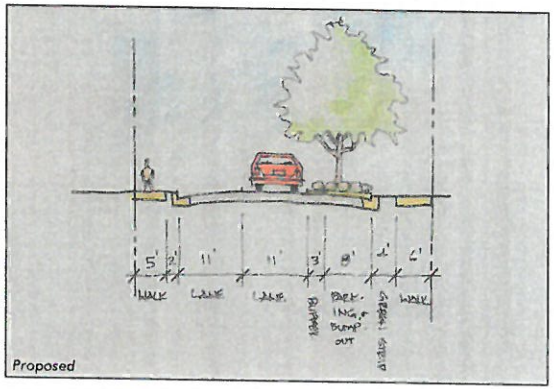




East Davies Plantation Road

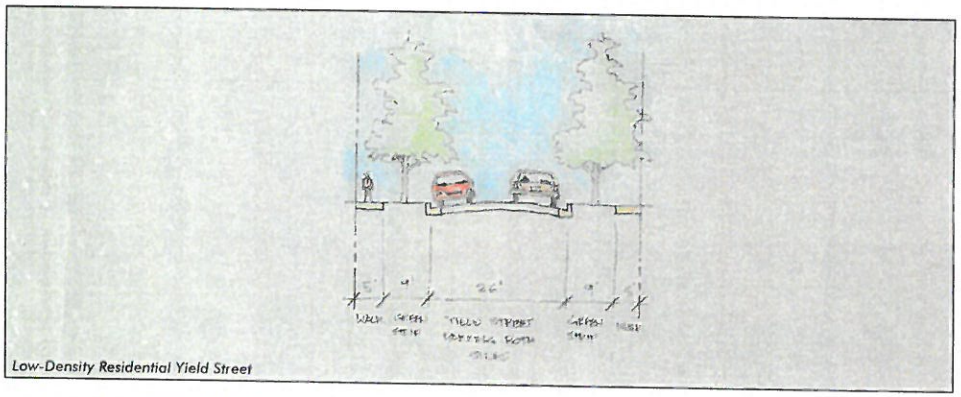
East Davies Plantation Road provides access to the northwest quadrant of the interchange area, and is characterized by 33 feet of pavement with curb and gutter on the south side only through the study area. A segment of sidewalk exists on the south side between Canada Road and Village Center Drive; no other sidewalk is present on the street. It is recommended that the street be narrowed to a pavement width of 30'; two 11-foot travel lanes and an 8-foot parallel parking lane on the south side, accomplished by narrowing from the north side where there is no curb and gutter. A 10-foot shared use path should be constructed on the north side to match the proposed pathway along Beverle Rivera, and a sidewalk should be constructed along the entire south side of the street to match the existing sidewalk segment near Canada Road. A planted strip should separate the sidewalks and paths from the traveled way. Streetscape should also be incorporated into the retrofitted street.



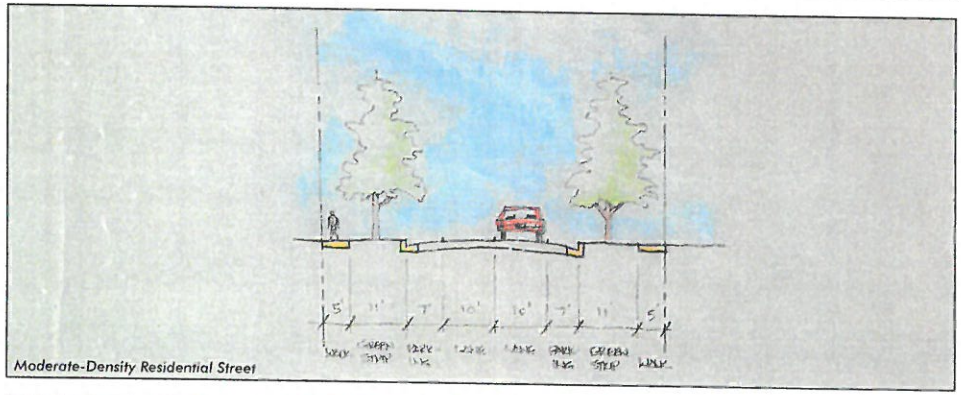


Village Circle Drive

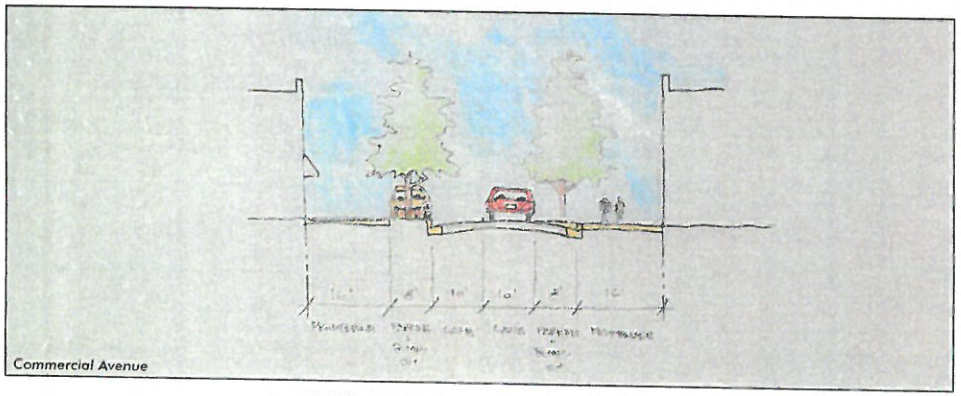
Village Center Drive serves several commercial buildings off of Davies Plantation Road in the northwest quadrant of the interchange. At 33 feet curb to curb, the width is the same as on East Davies Plantation but with curb and gutter on both sides. The presence of the curb and gutter requires the use of a 3-foot buffer between the travel lanes and the proposed parking lane to avoid reconstruction of the street and to facilitate the "right-sizing" of the facility. Sidewalks with planting strips are proposed on both sides of the street as well.



Low-Density Residential Yield Street



Moderate-Density Residential Street



Commercial Avenue

New Streets

As part of the redevelopment and infill vision for the area, new streets will have to be constructed. These streets should adhere to the principles of Complete Streets, in that they should provide real choices for modes of travel and accommodate cars, bikes, and pedestrians safely, and they should respect both the built and natural surrounding contexts. Three new street types are proposed to augment the existing streets, and they are consistent with the street configurations contained in the Land Development Regulations for the City of Lakeland.

Residential Single Family Yield – Serving single family residential neighborhoods, this street will be 26 feet wide and will accommodate two-way vehicular traffic with informal on-street parallel parking allowed on both sides. The presence of on street parking creates a "yield" condition when two cars meet, and one will have to yield to the other if a parked car is present. These streets will also have a significant planting strip capable of containing canopy trees and will have sidewalks on both sides. Bikes can be accommodated in a shared configuration as the street will be low speed in nature.

Residential Attached Housing – This street type serves attached housing such as townhomes, and will have formal on-street parallel parking lanes with two lanes of free-flow traffic. The travel lanes will be a maximum of 10 feet wide with 7-foot wide parking lanes, in context with the low-speed nature of the street and low-turnover nature of the residential parking. Streetscape will be accommodated in bumpouts within the parking lanes and a significant planting strip separating the street from the sidewalk.

Commercial Avenue – This street type is similar in width to the Residential Attached Housing Street but recognizes the higher turnover of the parking supply by widening the parking lane to 8 feet. It also creates a 16-foot hardscape pedestrian promenade to support the storefronts, and the width also accommodates activities such as outdoor cafes and sidewalk sales. The streetscape is formal in nature, with street trees in treewells, pedestrian scale lighting, and furnishings such as benches and trash receptacles.

CANADA ROAD – SOUTH

Canada Road – Existing

Canada Road – Future

Illustration depicts the concepts recommended in this report that will redefine the area as a desirable destination in part by creating streetscapes scaled to calm traffic and convey a sense of place and community more conducive to pedestrians and cyclists.

EAST BEVERLE RIVERA ROAD

Beverle Rivera Drive – Existing

Beverle Rivera Drive – Future

Illustrations into parts the concepts recommended in this report that will redefine the area as a desirable destination in part by creating streetscapes scaled to calm traffic and convey a sense of place and community more conducive to pedestrians and cyclists.

RECOMMENDATIONS

As a result of the Small Area Plan process, the design team has identified several recommendations that the City of Lakeland may seek to implement as the area develops:

Marketing and Economic Development

- Make the area a destination for Lakeland residents, rather than a convenience stop along the highway.

Capital Improvement Projects or Developer-built Improvements

- Connect both sides of Canada Road with pedestrian-friendly crosswalks.
- Connect and extend the existing bicycle and pedestrian trail network, bridging gaps in the local/regional trail network and connecting further into adjoining neighborhoods, enabling people to access the area without requiring a car.
- Provide for a public open space, similar to a town square, providing a place for the community to gather for festivals or special occasions.
- Extend existing stub streets from adjoining neighborhoods and development through the study area to create a well-connected network of streets and paths.
- Install pedestrian-scaled lighting for safety and provide street furniture (benches, trash receptacles, bicycle racks, etc.) where appropriate with a unified design aesthetic.
- Consider the City of Lakeland taking a proactive development role in transforming the northeast quadrant of the study area, assisting in land assembly and infrastructure development where property has been developed in a haphazard way.
- Consider extending Huff-N-Puff Road east, bridging across Interstate 40, to Monroe Road such as it did before the highway was built.
- Install curb-and-gutter, on-street parking, landscaping and sidewalks or multiuse trails according to the proposed street sections.
- Make improvements to Windward Slopes Park to make it a more active part of the community recreation assets.
- Upgrade the existing sewer lift station and accompanying force main on Davies Plantation Road to coincide with and support future development west of Canada Road and north of Interstate 40. The size of these facilities would correspond with the scale of future development.
- The gravity sewer system serving the area East of Canada Road and north of Interstate 40 may be sufficient, but a detailed model of this sewer basin would be beneficial to determine if the capacity of the existing gravity system, lift station, and force main is sufficient to handle the future estimated sewer flow.
- Future improvements will need to be made to the lift station on Monroe Road in order to handle additional flow generated by future development west of Canada Road and south of Interstate 40. It is also recommended that the receiving gravity lines be studied prior to development.
- Hydrant flow tests should be performed in order to determine if investments are necessary to coincide with future development. Proposed development will need to identify location-specific fire flow demands for all commercial developments and checked against available flow and pressure.
- Assuming existing customers in the study area are being served adequately, it is unlikely that the future addition of similarly sized businesses and residences would result in inadequate daily flow and pressure, considering that there is a 24" water main running through the middle of the study area on Canada Road.

Policy and Regulatory Updates

- Extend the retail commercial center in The Lake District to the west side of Canada Road.
- Explore allowing golf carts or similar small personal electric vehicles (PEV's) on public trails or in bicycle lanes.
- Focus higher-intensity and taller retail and commercial development to the area immediately around the Interchange.
- Transition to lower-intensity retail/commercial uses and lower-scale residential between the higher-intensity core and the surrounding neighborhoods.
- Permit more residential uses be built in the C-2 zone, according to the plan, including single family detached and attached dwellings, similar to adjoining neighborhoods.
- Consider preserving some woodland property for community park space where topography or drainage prevents development; wherever possible preserve wildlife corridors to support existing wildlife and bird populations.
- Encourage new developments to build streets in conformance with the plans recommendations, encouraging safety by slowing traffic and providing on-street parking and sidewalks.
- Encourage shared parking between compatible uses and interconnections between parking areas to permit reductions in required parking.
- Institute and enforce high-quality design standards for signage, architectural fenestration, parking buffers and landscaping.
- Where appropriate, require buildings be located adjacent to the public street with parking located to the side or rear of the building, to encourage pedestrian connectivity and activity on the street.
- Require developments to provide an interconnected network of tree-lined streets.

APPENDIX

FISHER ARNOLD

ENGINEERING · INTEGRATION

January 26, 2017

RE: Lakeland Small Area Plan; Sewer Report

With the proposition of future developments in Lakeland, TN near the intersection of Canada Road and US Interstate-40, the capacity of the existing sanitary sewer collection system and the addition of sanitary sewer flows that will result from the new commercial and residential developments were examined. Future peak sewer flows were estimated on a per-person, per-acre basis according to the City of Memphis Sewer Manual. Development locations are as follows: west of Canada Road near Davies Plantation Road, between Huff 'N Puff Road and Beverie Rivera Road, and southwest of I-40 and Canada Road.

Based on the City of Lakeland sewer maps, there are no significant gravity interceptor sewer lines in this area to route the sewer flows. The sewage in this area is primarily piped by gravity to several individual lift stations and is eventually collected and pumped north to two 12" force mains on Canada Road.

The first proposed development, located west of Canada Road near Davies Plantation Road, has been subdivided by the developer into three specific areas. Area A is a 74.6 acre tract will include Townhouse and Single Family units, Area B is an 18.2 acre tract that will include moderate and low density residential dwellings and mixed use development, and Area C is a 16.5 acre tract that will include mixed use development. It is estimated that these developments will produce a total peak sewer flow of 740 gpm. It is anticipated that the sewer flows will be piped by gravity to a location near the existing lift station on Davies Plantation Road. This existing lift station only serves a few small businesses and will not be able to handle a flow near 740 gpm. The estimated future peak flows will require a new, much larger lift station, and its own force main.

The second proposed development, located between Huff 'N Puff Road and Beverie Rivera Road, is a 25.2 acre tract slated for mixed-use development. It is estimated that this development will discharge a peak sewer flow of 71 gpm. This flow can likely be collected by the existing gravity system which is comprised of 8" sewer lines. A 500 gpm lift station on Sailboat Lane collects the area's sewer flows and discharges to the north on Canada Road. The lift station serves a large residential development and commercial buildings including low volume hotels, a church, a small restaurant, a gas station, and an ATV parts store. The gravity system in this area may be sufficient, but a detailed model of this sewer basin would be beneficial to determine if the capacity of the existing gravity system, lift station, and force main is sufficient to handle the future estimated sewer flow. Any developer proposing a plan in this mixed-use area would need to submit a sewer report with their request to tie into existing gravity lines.

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The third proposed development, located southwest of the intersection of I-40 and Canada Road, has also been subdivided into two specific areas. Area E is a 12.4 mixed-use development tract, and Area F is a 45.5 area moderate and low density residential tract. It is estimated that these developments will produce a total peak sewer flow of 294 gpm. This flow will need to be collected by the existing gravity system on the east side of Canada Road, which is then received by a 730 gpm pump station on Monroe Road. This station already receives flow from two large moderate to high density residential developments as well as the outlet mall which is all estimated to produce over 600 gpm in sewer flow (using the City of Memphis Sewer Manual). Future improvements will need to be made to this station to handle any additional flow. It is also recommended that the receiving gravity lines be studied prior to development.

FISHER ARNOLD

ENGINEERING INTEGRATION

January 26, 2017

RE: Lakeland Small Area Plan; Water Report

The existing water system in this area is owned by MLGW. Current hydrant flow tests were not available for this report and are not typically performed by the City of Lakeland. The only hydrant tests available in this area were performed in 1999 and this was not deemed sufficient due to the increase in development in this area since that time. MLGW did mention that new tests could be performed in this area, but obtaining the test reports within a timely fashion for the purposes of this study was not likely.

There are currently many businesses and residences adjacent to the study area tied to the existing MLGW system. Assuming these customers are being served adequately, it is unlikely that the future addition of similarly sized businesses and residences would result in inadequate daily flow and pressure, considering that there is a 24" water main running through the middle of the study area on Canada Road.

The one aspect of future development that may be of concern is the adequacy of fire flow and pressure. Fire flow demands for all commercial developments will need to be calculated by the developers and checked against available flow and pressure. It is imperative that detailed, location-specific water design be performed for each site.

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