



SMYRNA  
*forquith city*  
GEORGIA

## SOUTH COBB DRIVE CORRIDOR IMPROVEMENT STUDY



**CROY**  
ENGINEERING

Engineers  
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# ACKNOWLEDGEMENTS

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## SECTION A - EXECUTIVE SUMMARY

The City of Smyrna in cooperation with the Georgia Department of Transportation, Cobb County and the Atlanta Regional Commission conducted a corridor improvement study for South Cobb Drive/State Route (SR) 280 from Concord Road to Windy Hill Road. South Cobb Drive plays an important role in providing connectivity within Smyrna, Cobb County and the northwest area of the Atlanta metropolitan region. Additionally, it is an important corridor for residential, office and retail/commercial activities for this western portion of the City.

The primary objective of the study was to determine transportation improvements that would promote the use along and across South Cobb Drive for all modes of travel. Through robust public engagement activities, the study aimed to implement proposed infrastructure improvements and focus on projects, proposals and recommendations that would stimulate economic growth and redevelopment along this important corridor serving the City.

The first round of public involvement entailed dissemination of information about the study and the types of multi-modal improvements that could be considered. The input received at the initial public meeting and through the surveys was used to develop alternatives that were presented to the citizens and to the stakeholders for comment during the second round of public engagement events. The compilation of feedback indicated a consistent set of desired improvements:

- Multi-use paths on both sides of South Cobb Drive
- Improved sidewalk connectivity from the adjoining residential areas
- Enhanced intersection improvements at Powder Springs Street
- Pull-offs for the Cobb LINC buses at proposed bus stops along the corridor
- Aesthetic improvements including landscaping, lighting and vest pocket parks

One interesting result of the public comment process is that the citizens were split almost evenly between maintaining the flush median/two-way center turn lane and constructing a raised, landscaped median. Preliminary cost estimates were prepared for these two alternatives. The cost projections for these improvements range from \$5.81 million (Design Concept 2) to \$7.98 million Design Concept 3). For comparative purposes, a cost estimate was also provided for Design Concept 4; \$11.8 million. Due to financing commitments for other transportation projects, the City of Smyrna will not be in a position to fund the preliminary engineering, environmental analysis, and construction of the South Cobb Drive improvement projects in the immediate future. This is a long term strategy and it is anticipated that the recommended projects will begin design and implementation in the next four to five years. As other funding sources and partners are identified, the City will determine which of the recommended projects can be feasibly implemented. Funding sources such as SPLOST and other transportation and infrastructure funding programs will be utilized to pay for the preferred project improvements.

## SECTION B - INTRODUCTION



### STUDY BACKGROUND

The South Cobb Drive Corridor Improvement Study is a foundation for implementing improvements that will enable South Cobb Drive to be a well-functioning roadway that accommodates the needs of the residents in the area, provides safety and efficiency for all users, [pedestrians, cyclists and vehicular] adds value to the surrounding neighborhoods, and enhances the economic vitality of the region. The study is a collaborative effort involving the City of Smyrna, the Georgia Department of Transportation [GDOT], Cobb County, and the Atlanta Regional Commission [ARC]. The consultant team was led by Croy Engineering, LLC with the assistance of James Rod Wilburn and Associates, Inc. [JRWA], Corporate Environmental Risk Management, LLC [CERM] and Strategic City Partners. The study area focuses on the 1.5-mile section of South Cobb Drive between Windy Hill Road and Concord Road.

South Cobb Drive/SR 280 is a major arterial roadway that connects Smyrna to the City of Marietta to the north and the City of Atlanta to the south. The roadway is an important regional corridor, providing direct street access and connectivity between I-75 and I-285. The South Cobb Drive corridor plays a significant role in providing accessibility within the City of Smyrna, providing a critical north-south connection between the city's major east-west roadways of Windy Hill Road, Concord Road and the East-West connector. In addition to functioning as a vital transportation corridor, it is also host to a variety of office, commercial and retail options for local citizens and commuters. This important section of roadway has the potential to be transformed from an obsolete commercial strip into a dynamic corridor with a viable and sustainable mixture of retail, residential and office uses.

The City of Smyrna has conducted several major studies and plans over the last two decades including the Smyrna Town Center LCI Study, the Smyrna Vision Plan and the Smyrna Comprehensive Plan. A major theme that is reiterated and emphasized in all of these studies is the enhancement of the quality of life for all Smyrna residents. This Corridor Improvement Study seeks to advance this goal by planning for and promoting sustainable development and redevelopment along the corridor. Circulation along South Cobb Drive has traditionally been auto-centric in nature. However, with a significant increase in population and public interest in multi-modal options, identifying mobility alternatives for the city has become more and more important and resulted in the City of Smyrna initiating the Corridor Improvement Study for South Cobb Drive.

The fundamental objective of the study is to develop concepts for improving safety and travel efficiency on South Cobb Drive between Concord Road and Windy Hill Road for all modes of transportation which include opportunities to promote walking and cycling along and adjacent to the corridor. Transportation improvements along the South Cobb Drive corridor anticipate having the catalytic effect stimulating redevelopment along the corridor. Aimed at revitalizing economic growth and creating a sense of place, the Study also intends to enhance the visual character and aesthetics of the roadway and explore innovative opportunities for landscape and streetscape improvements.

With Cobb LINC Route 20 operating on the corridor and Routes 25 and 15 operating on Concord Road and Windy Hill Road respectively, enhancing transit service and improving ridership was determined as a vital objective of the South Cobb Drive Corridor Improvement Study.





# PROJECT TIMELINE

The project timeline below represents the schedule of activities and collaborative efforts taken while conducting this Corridor Improvement Study.

Figure 1: Project Timeline

Task Description	Aug' 16	Sept' 16	Oct' 16	Nov' 16	Jan' 17	Feb' 17	Mar' 17	Apr' 17	May 17
<b>PROJECT KICK-OFF WORKSHOP</b>									
Prepare preliminary PIP outline									
Attend project kick-off workshop									
Adjust PIP outline									
Draft PIP outline plan & coordinate									
Finalize PIP plan & Upload to website									
<b>PUBLIC KICK-OFF SESSION</b>									
Plan & prepare for PIOH I									
PIOH I follow up									
Food Truck Tuesday & follow up									
Cumberland Transfer Outreach & follow up									
Fall Jonquil Festival & follow up									
<b>STAKEHOLDER INTERVIEWS</b>									
Form SC & PAG									
Interview key stakeholders									
Prepare stakeholder interview summary									
PAG meeting as needed									
<b>DRAFT RECOMMENDATIONS &amp; REPORT</b>									
Plan & prepare for PIOH 2									
Handouts for Smyrna City Retreat									
Conduct PIOH 2									
PIOH 2 summary									
<b>FINAL RECOMMENDATIONS &amp; REPORT</b>									
Presentation to the City Council									

## COMMUNITY ENGAGEMENT

Community engagement was a crucial component in formulating various concepts for corridor improvements along South Cobb Drive. The engagement process provided citizens the opportunity to identify challenges and opportunities along and adjacent to the corridor and assist in the formulation of the development concepts that address these challenges and opportunities.

A Public Involvement Plan (PIP) was prepared as a component of the South Cobb Drive Concept Development Study. The purpose of the PIP was to obtain input from the public in order to:

- Identify opportunities and challenges along the corridor
- Analyze the values and desires of the community and key stakeholders regarding the corridor
- Obtain public opinion and consensus regarding the concepts being considered

A preliminary Project Implementation Plan Outline and Schedule was prepared during the initial stages of project development and a Project Advisory Group (PAG) consisted of representatives from agencies that have operational and maintenance responsibilities that would be directly impacted by the project's action plan. PAG members included representation from the City of Smyrna, the GDOT, Cobb County, Cobb LINC, the ARC, and the Consulting Team.

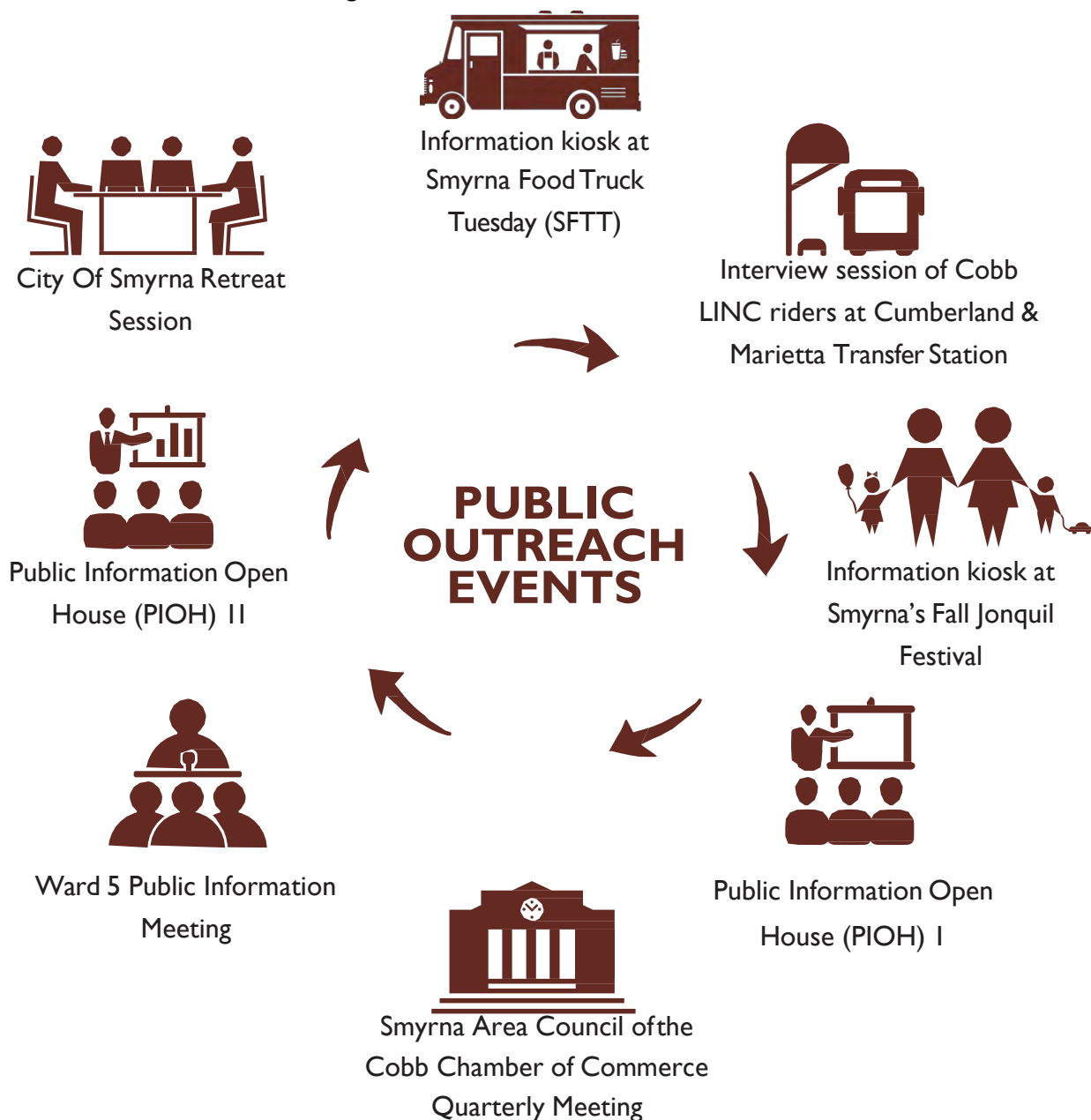
Public participation is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process. Public participation is a two-way communication and collaborative problem solving with the goal of achieving better and more acceptable decisions.”

- International Association for Public Participation. (2007)

A crucial component of the process included a project website [[www.southcobbdrive.com](http://www.southcobbdrive.com)] that actively engaged citizens and kept them updated during all stages of the planning process.

A series of public outreach events were conducted in order to obtain community insight. The focus of these events included understanding opportunities and challenges along the South Cobb Drive corridor and capturing the values, desires and opinions of the public.

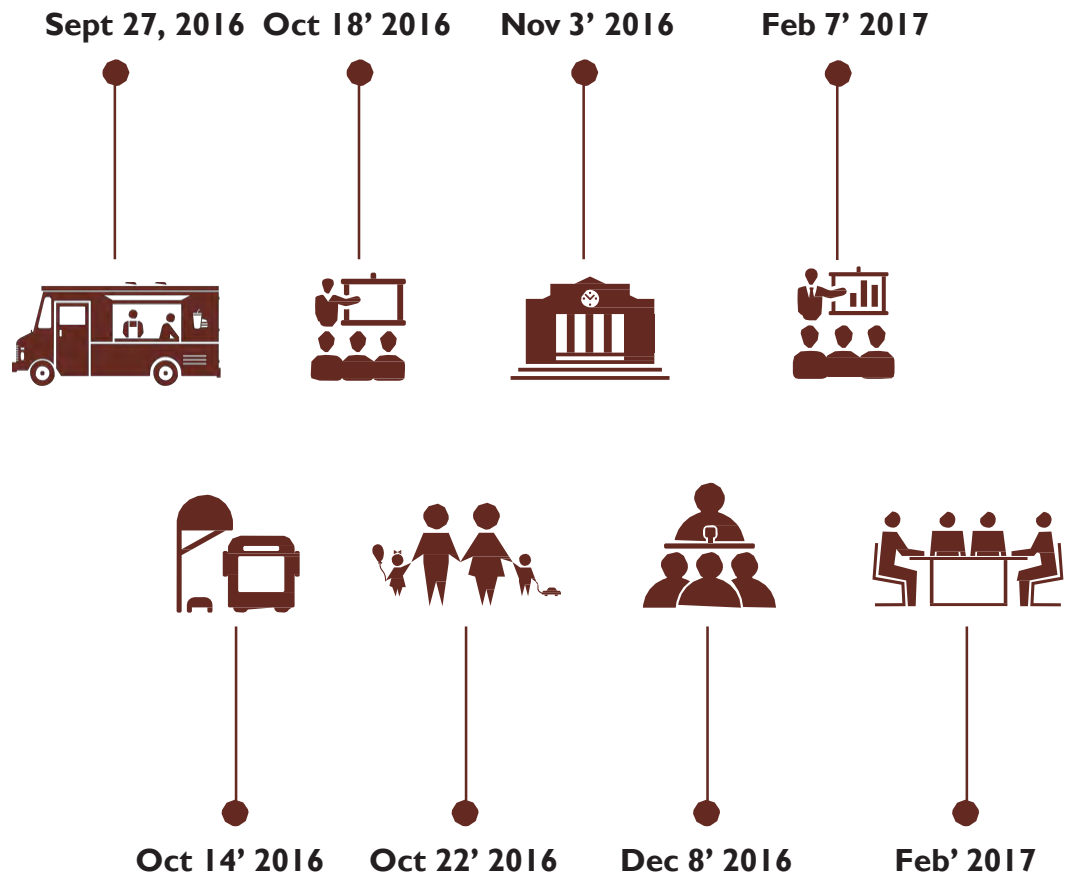
Figure 2: Public Outreach Events



Survey forms, questionnaires, and vision boards were available at each of the public outreach events. To more effectively engage ethnic communities translated questionnaires and translators were provided at the Public Information Open House sessions and for transit rider interviews at the Marietta and Cumberland Cobb LINC transfer stations.

Public Outreach efforts were consistent and were designed to encourage maximum participation. This can be determined from the outreach timeline below.

Figure 3: Public Outreach Events Schedule



## STAKEHOLDERS

Stakeholders who represented a cross section of vested community leaders were identified by the Project Advisory Group. The identified stakeholders were comprised of elected officials, representatives from the residential neighborhoods, business owners, religious leaders and community activists. Attempts were made early in the project development phase to interview all those identified to ascertain their viewpoints and aspirations regarding a broad range of issues. Issues discussed included, but were not limited to: transportation and multi-modal improvements, land use, community cohesiveness, and aesthetics.

Gateway Sidewalk Transit  
**Bikability**  
 Clean Zoning  
 Vital Vision  
**Safe**  
 Vibrant Quality Businesses  
**Participation**  
 Thriving Urban Design  
 Redevelopment Mixed Use

# PUBLIC OUTREACH EVENTS

## **[I] Smyrna Food Truck Tuesday [SFTT]**

Date - September 27, 2016

The kiosk included a display of the existing conditions along the project corridor, including the improvements at Glendale Place (under construction at the time) and the future pedestrian crossing just south of Plaza Drive programmed by the GDOT. An illustration of the future pedestrian crossing was also provided, as well as a display showing two existing and two proposed typical cross sections. Visitors to the kiosk at the SFTT were provided informational handouts for the project and a flyer announcing the date, time and location of the first PIOH.

## **[II] Interview session at Cumberland Transfer Station (CTS) & Marietta Transfer Station (MTS)**

Date - October 14, 2016

Time - 11:00am to 5:00pm

An interview session of Cobb LINC Route 20 bus riders was conducted at the CTS and MTS. Questions specific to transit and the South Cobb Drive corridor were asked of Route 20 riders who arrived at and departed from the stations.

## **[III] Public Information Open House (I)**

Date - October 18, 2016

Time - 5:00pm to 7:00pm

Venue - Wolfe Adult Recreation Center

The PIOH was advertised on the City of Smyrna website plus the electronic gateway signs. Additionally, six signs announcing the time, place and date of the PIOH were displayed along the project corridor (three northbound and three southbound), and post-cards were distributed to businesses and commercial property owners located within ¼ mile of the project corridor. Flyers advertising the PIOH were also distributed at key locations throughout the project corridor, the Library and City Hall, the Cumberland and Marietta Transfer Stations and on the Cobb LINC Route 20 bus. The PIOH included displays of the existing conditions along the corridor, including the improvements at Glendale Place [under construction at the time] and the future pedestrian crossing south of Plaza Drive programmed by the GDOT. Displays were also provided of the existing, as well as some proposed, typical roadway cross sections of South Cobb Drive.





#### **[IV] Fall Jonquil Festival**

Date - October 22, 2016

Venue - Smyrna Fall Jonquil Festival

The kiosk included a display of the existing conditions along the project corridor, including the improvements at Glendale Place [under construction at the time] and the future pedestrian crossing just south of Plaza Drive programmed by the GDOT. A display of the existing, as well as some proposed, typical road cross sections were also provided.



#### **[V] Smyrna Area Council of the Cobb Chamber of Commerce Quarterly Meeting**

Date - November 3, 2016

Venue - Brawner Hall

An information kiosk was set to specifically target the business community and provide them with an opportunity to ask questions and to provide input. The kiosk included a display of the existing conditions along the project corridor and vision boards demonstrating various density and character concepts. A display showing the existing, as well as some proposed, typical road cross sections were included. Handout packages were also distributed.

## **[VI] Ward 5 Public Information Meeting**

Date – December 8, 2016

Venue - Smyrna City Council Chambers

A presentation was made to more directly engage citizens of Ward 5, and provide them the opportunity for maximum input. Those in attendance were also encouraged to participate via the on line survey and attend the upcoming open house.

## **[VI] Public Information Open House (2)**

Date – February 7, 2017

Time - 5:00pm to 7:00pm

Venue - Wolfe Adult Recreation Center

The Consultant Team presented four design concepts and solicited feedback regarding specific improvements for the development of the project corridor.



## **[V] City of Smyrna Retreat Session**

Date - February, 2017

A handout package was prepared specifically for distribution at the annual retreat for City Council members. The package included a summary of the Public Outreach Sessions, information on some preliminary recommendations, and other planning and research tasks that had been completed for the project to date.

## SECTION C - VISION & GOALS

### MISSION STATEMENT

The South Cobb Drive Corridor Improvement Study recognizes the regional and local importance of the South Cobb Drive corridor. The primary goal of the study is to formulate, in cooperation with our state and local stakeholders, multi-modal mobility concepts, proposals, recommendations and infrastructure projects that address issues and concerns related to safety, connectivity and capacity. Additionally, the study will develop land-use concepts, proposals and recommendations to promote and encourage commercial, retail, office and residential development and redevelopment along the corridor; and will formulate a complementary infrastructure and comprehensive streetscape improvement plan that will improve the corridor aesthetics and enhance the quality of life of the adjoining neighborhoods.



Multi-Modal Mobility Concepts, Proposals, Recommendations & Projects That Address Issues & Concerns Related To Safety, Connectivity And Circulation



Policies To Encourage Growth, Development & Redevelopment Of Commercial, Retail, Office And Residential Land Uses



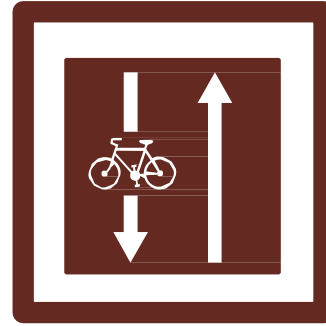
Aesthetic Enhancements That Includes A Comprehensive Streetscape Improvements Plan To Upgrade Visual Appearance and Aesthetics Of The Corridor

## VISION AND GOALS



### **SAFETY**

Promote vehicular & pedestrian safety along & across the corridor



### **ROADWAY CAPACITY**

Increase roadway capacity to accommodate diverse mobility

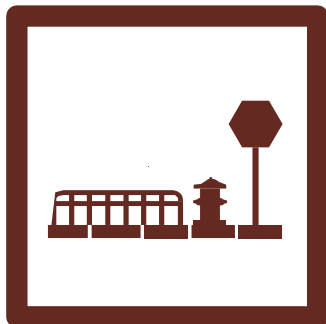


**CONNECTIVITY** Develop roadway & multi use trail connectivity to bridge major destinations



### **DEVELOPMENT**

Foster developments that support economic growth & vitality along the corridor



**AESTHETICS** Encourage landscape & streetscape opportunities to enhance corridor aesthetics



### **QUALITY OF LIFE**

Nurture community values to improve the quality of life in adjoining neighborhoods



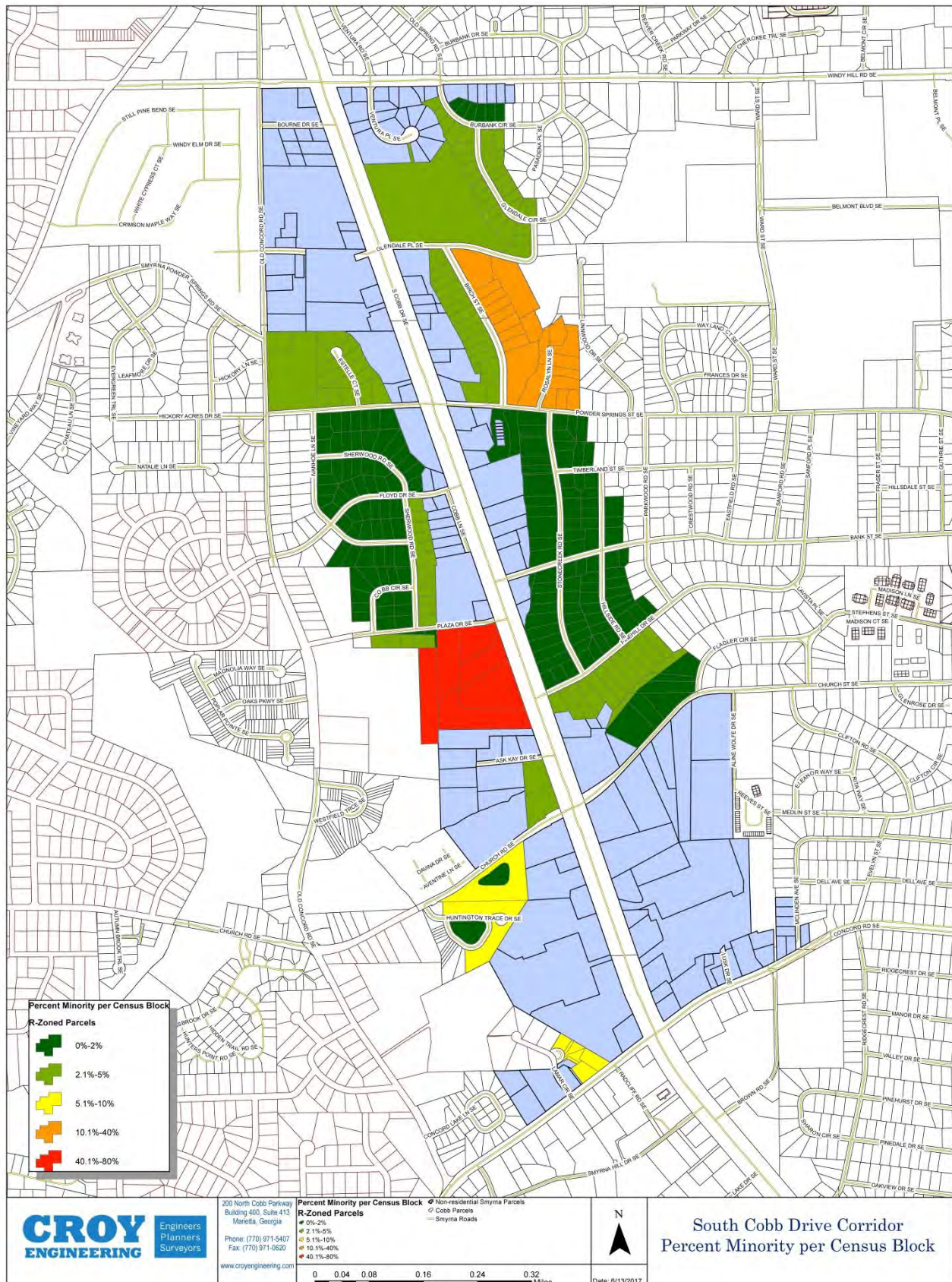
## SECTION D - EXISTING CONDITIONS

### DEMOGRAPHICS

Understanding the demographic character of the corridor is an important factor in identifying the key stakeholders impacted by development of the corridor. A first look at the City of Smyrna in terms of the variables to be included in the environmental justice and community profile along the 1.5 miles corridor was completed. For this analysis, the 2010 Census block data and 2015 American Community Survey data (2016 data will not be available until the end of 2017) was used to assess population diversity and density of housing units. For all of the population analyses, the parcels that are classified as commercial were excluded. The population for the block groups within a 0.25 mile radius around the South Cobb Drive corridor, which includes parts of unincorporated Cobb County, according to the ACS data, is approximately 11,120. The map below shows the percentage of minority residents per block group. For most of the corridor the residents of the block groups are less than 5% minority. Smyrna Grove is a new community that will ultimately consist of 194 single family homes that is located in the northwest corner of the study area. Because Smyrna Grove is under construction with just over half the homes sold to date, the final demographic characteristics will not be determined until the project is built out and fully occupied.



# Map I – Minority Distribution



## **INCOME DIVERSITY**

Low-income populations are defined as individuals or households with income at or below the U.S. Census poverty thresholds. Sections 673(2) of the Omnibus Budget Reconciliation Act (OBRA) of 1981 (42 U.S.C 9902(2)) requires the Department of Health and Human Services (DHHS) to update the poverty guidelines at least annually, adjusting them based on the Consumer Price Index for All Urban Consumers (CPI-U). The poverty guidelines are used as an eligibility criterion by the Community Services Block Grant program and several other federal programs. The poverty guidelines are calculated each year using the latest published Census Bureau poverty thresholds as the starting point. The Census tract data along the project corridor was evaluated to decide whether a potential Environmental Justice population was present. Based on census block group data, low income and minority population above the corresponding county average are present along the entire corridor.

Table 1: DHHS Poverty Guidelines 2015

HOUSEHOLD SIZE	MEDIAN HOUSEHOLD INCOME
1-Person Household	\$12,060
2-Person Household	\$16,240
3-Person Household	\$20,420
4-Person Household	\$24,600

## **LANGUAGE DIVERSITY**

Limited English Proficiency (LEP) individuals are those who do not speak English as their primary language and who have a limited ability to read, speak, write or understand English. This is utilized as an indicator of racial or ethnic minority persons. The make-up of the diverse population along the South Cobb Drive corridor is multicultural with citizens from India, Haiti, China, Korea and Vietnam but primarily Spanish speaking is the largest minority population.

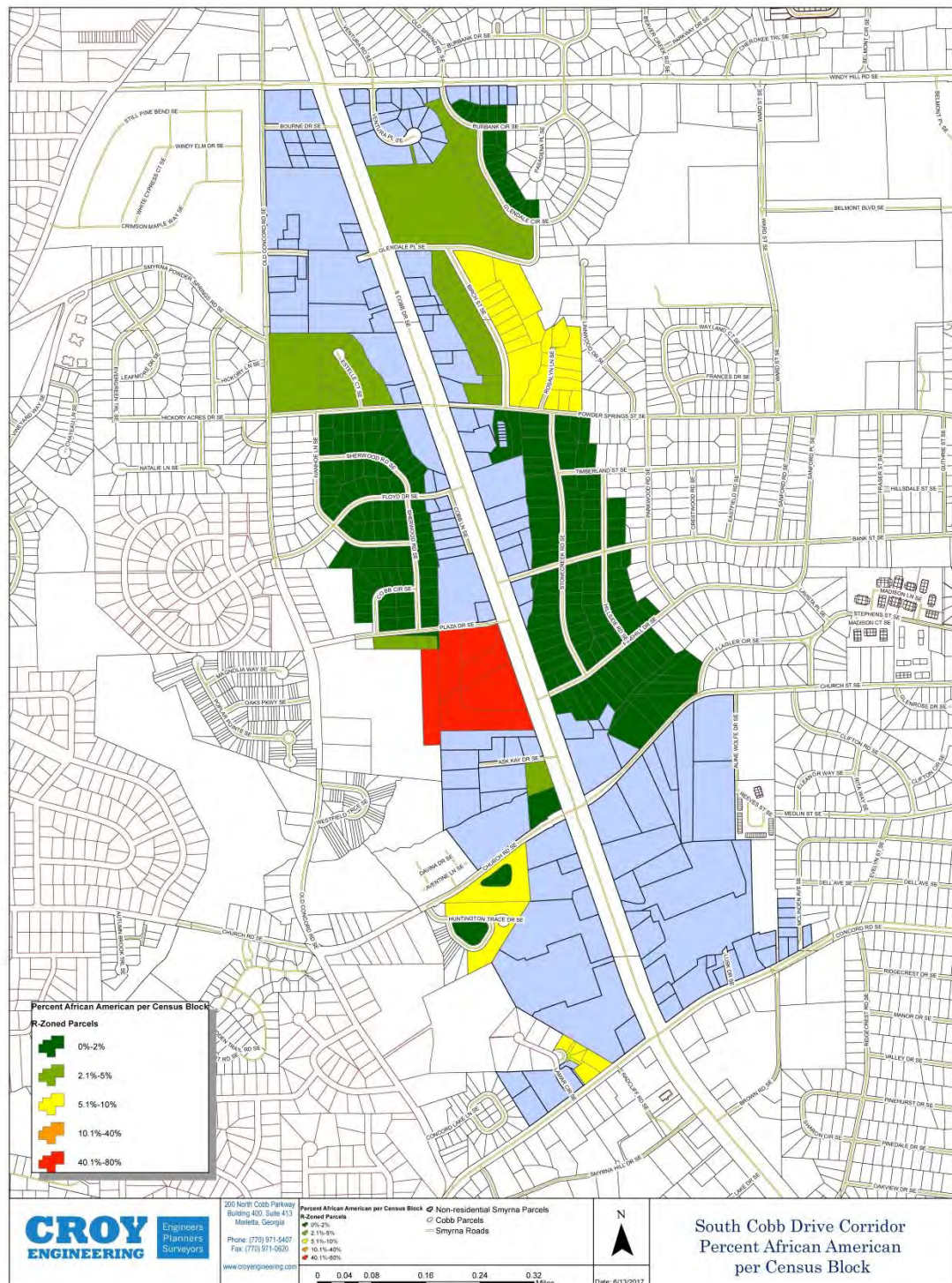
## **RENTAL POPULATION**

Results of a housing survey of properties determined that most residents within 1/4 mile of the study corridor are residing in owner occupied units with some rental units available. If implementation of the proposed improvements reduces the number of rental units or results in the consolidation of rental units into more dense concentrations this could have an adverse impact on low income populations in the corridor. Housing issues that impact low income residents of the community will be addressed in the City of Smyrna's update to their Comprehensive Plan which will be completed in late 2017.



The map below shows that population of most of the block groups are less than 5% African American.

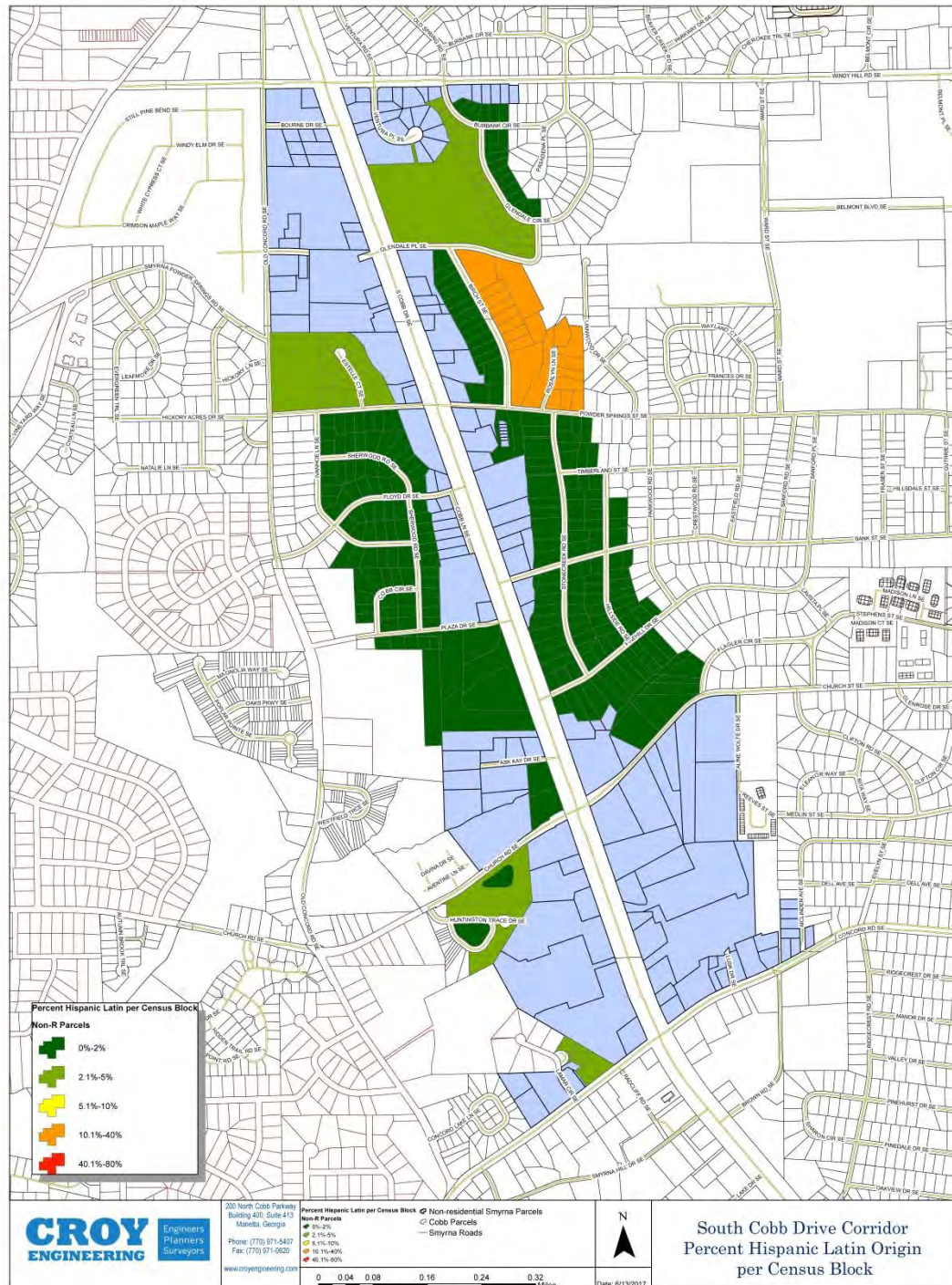
Map 2 – African American Population





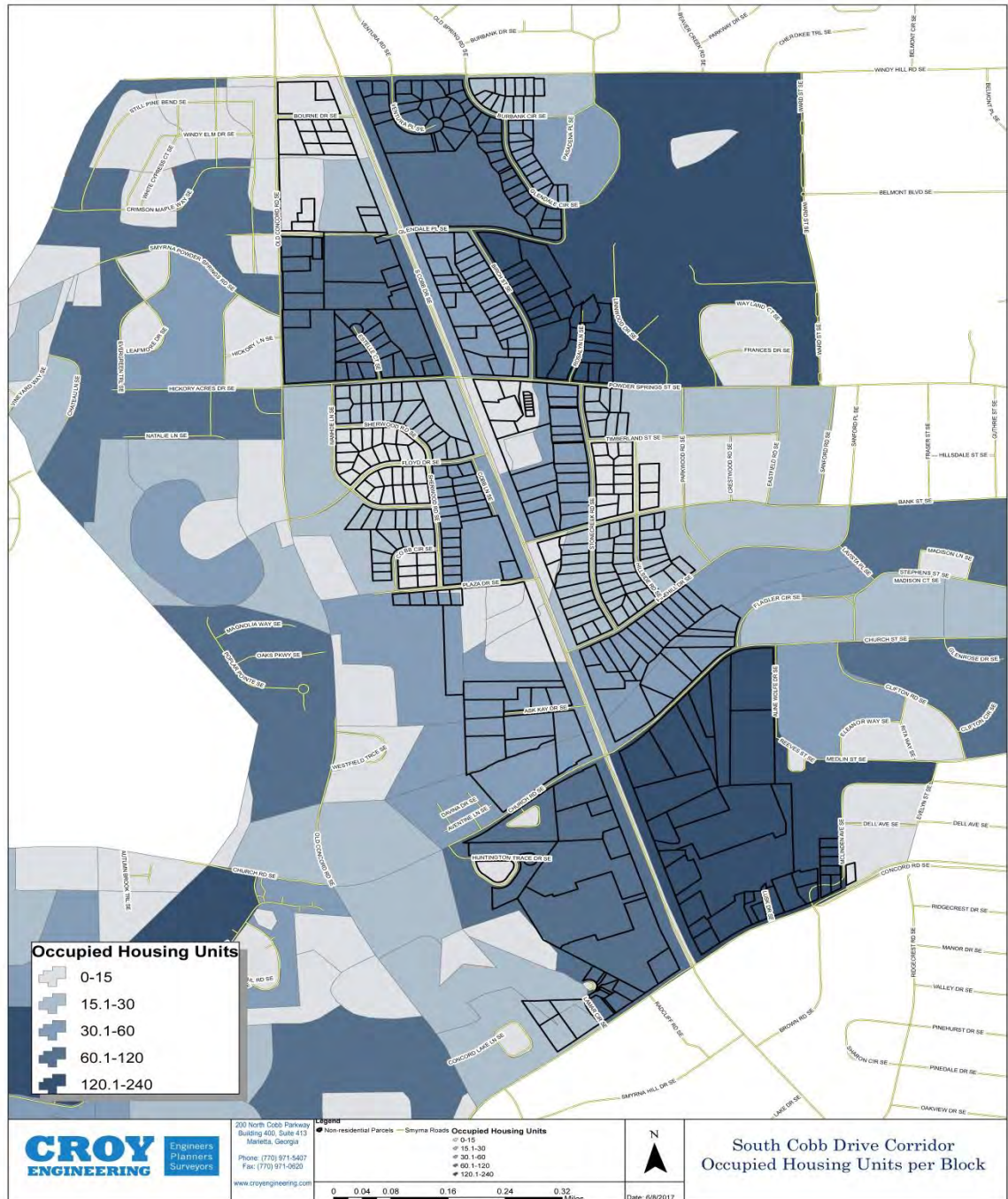
The map below shows that the percentage of Hispanic/ Latino residents per block group is more than 5% for only two of the block groups.

Map 3 – Hispanic/Latino Population



The map below represents the number of housing units per block group. As stated earlier Smyrna Grove, a new community consisting of 194 single family homes located in the northwest corner of the study corridor. The current distribution cannot be determined, as the property is under construction.

Map 4 – Housing Units Per Block





## SCHOOL POPULATION DISTRIBUTION

There are attendance zones for three public elementary schools that encompass the South Cobb Drive corridor. These schools are Norton Park Elementary School, Smyrna Elementary School and Belmont Hills Elementary School. As Belmont Hills Elementary School is within the ¼ mile study area more specific information about its student population was obtained.

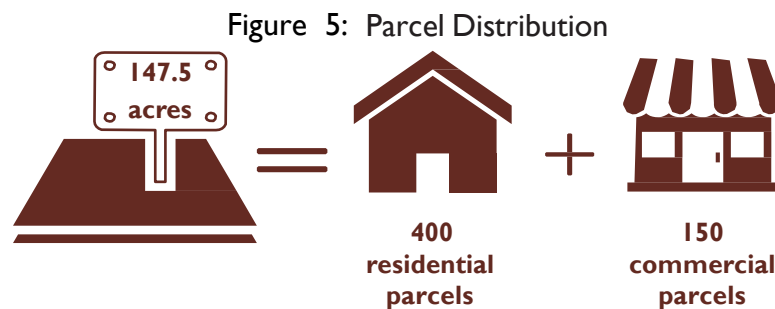
Belmont Hills Elementary School serves approximately 350 students. Students are identify mostly as Hispanic; White, non-Hispanic; and Multiracial. Of the Belmont Hills Elementary School students 66% are “limited in English proficiency”, 89% are classified as “economically disadvantaged” and 98% are paying reduced lunch prices. The student to teacher ratio at Belmont Hills Elementary School is 10:1.

Figure 4: Belmont Hills Elementary School Demographics & Statistics



## LAND USE

Within the ¼ mile of the South Cobb Drive corridor, from Windy Hill Road to Concord Road, encompasses a total of 147.5 acres. Approximately 550 parcels, both residential and non-residential, which include a small number of institutional and faith-based land use activities, comprise the study area.



### RESIDENTIAL USAGE

Within the ¼ mile study area of the corridor approximately 400 parcels or 72% of the are zoned residential. Currently, the majority of the residential parcels along South Cobb Drive fall between Church Street and Windy Hill Road. Between Concord Road and Church Street most of the parcels are commercial. Some residentially zoned parcels directly abut South Cobb Drive and they lie between Church Street and Powder Springs Street. Windshield survey results indicate positive redevelopment and reinvestment trends for the existing single family residential units within this portion of the study area. The extreme northwest corner of the study area is occupied by a transformative residential redevelopment project known as Smyrna Grove which, when completed, will consist of 194 single family detached homes.

The different types of residential uses seen along the corridor are:

- Multi Family - 2 developments: Lexington Park, 156 units; Glendale Apartments, 105 units
- Residential Town House - 3 developments
- Single Family - approximately 350 parcels

Assuming standard occupancy and density rates, approximately 1,200-1,500 residents live along the corridor. This is calculated by assuming 500 residential units with 2.5-3 people per unit. The number could, however, vary based on household size.

## COMMERCIAL

Commercial zoning is located primarily on the frontage of South Cobb Drive along the entire corridor within the study area with 153 parcels having this zoning classification. The zoning designations for the area are:

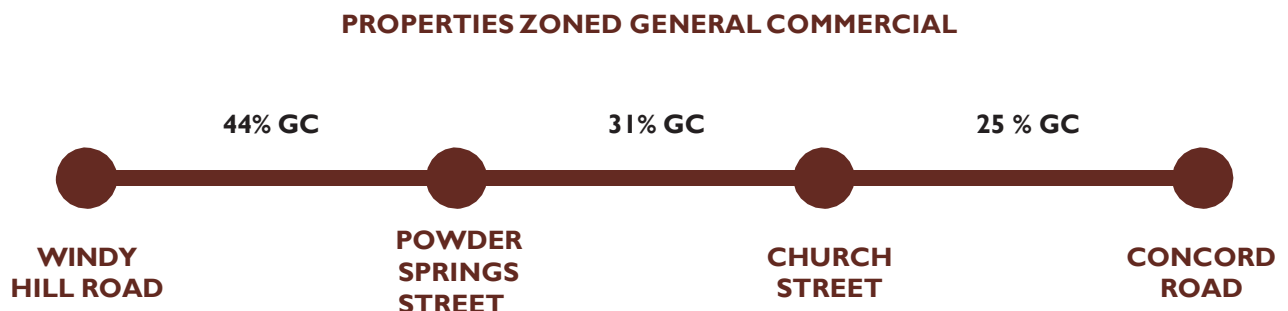
Table 2: Parcel Distribution by Zoning Type

TYPE	NUMBER
Future Commercial (FC)	6
General Commercial (GC)	131
Limited Commercial (LC)	8
Light Industrial (LI)	1
Office Distribution (OD)	2
Office Institution (OI)	5

Of the commercially zoned parcels, 85% are General Commercial. There is distribution of General Commercial (GC) throughout the study area primarily between Windy Hill Road and Powder Springs Street. Fifty-seven (57) or 44% of the parcels are zoned General Commercial. Architectural style and facades are inconsistent with disjointed signage styles. Parking and outside storage associated with these commercial uses also lend to an unattractive non-uniform appearance.

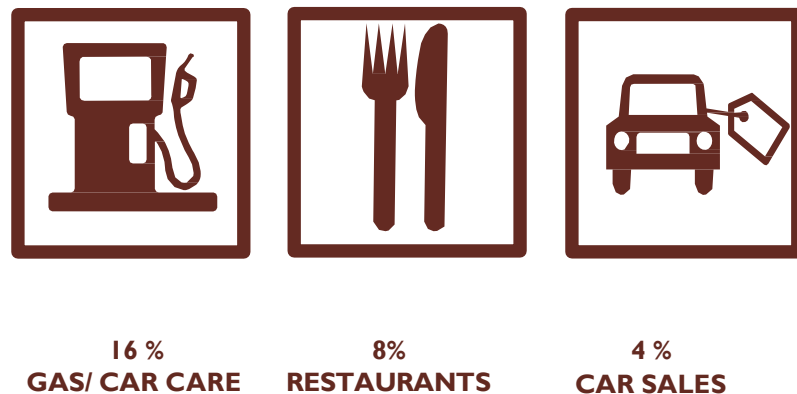
From Powder Springs Street to Church Street, 31% of the commercial properties are zoned GC. In that area between Church Street and Concord Road 25% are zoned GC. General Commercial is a zoning category that allows a broad range of uses focusing primarily on commercial uses oriented to automobile traffic. Historically, uses within GC districts have required a location that is accessible to large numbers of people and serve a substantial portion of the community. The study area falls within the boundaries of the South Cobb Drive Urban Design Guidelines adopted by the City in 1998. As redevelopment occurs, many of the design issues and inconsistencies noted above would be addressed by the terms of the Design Guidelines.

Figure 6: Percentage Distribution of Commercial Properties along the Corridor



A majority of the businesses along the study corridor are related to Gas/Car Care (16%), Restaurants (8%) and Car Sales (4%). There is a mix of other various retail services not otherwise specified. Some gaps in the business services offered are notable. Included in this lack of services category are grocery/food stores (only Kroger at Concord Road and one food mart) and higher quality restaurant establishments.

Figure 7: Percentage Distribution of Businesses along the Corridor



Approximately 12% of the parcels are currently Future Commercial, vacant lots or parking lots. Seven parcels are homes zoned GC, FC, or LC. Belmont Hills Elementary School serves approximately 350 students. Students identify mostly as Hispanic; White, non-Hispanic; and multiracial. At Belmont Hills Elementary School, 66% of the students are “limited in English proficiency.” As previously stated, 89% of the students here are classified as “economically disadvantaged” and 98% are paying reduced lunch prices. The student to teacher ratio at Belmont Hills Elementary School is 10:1.

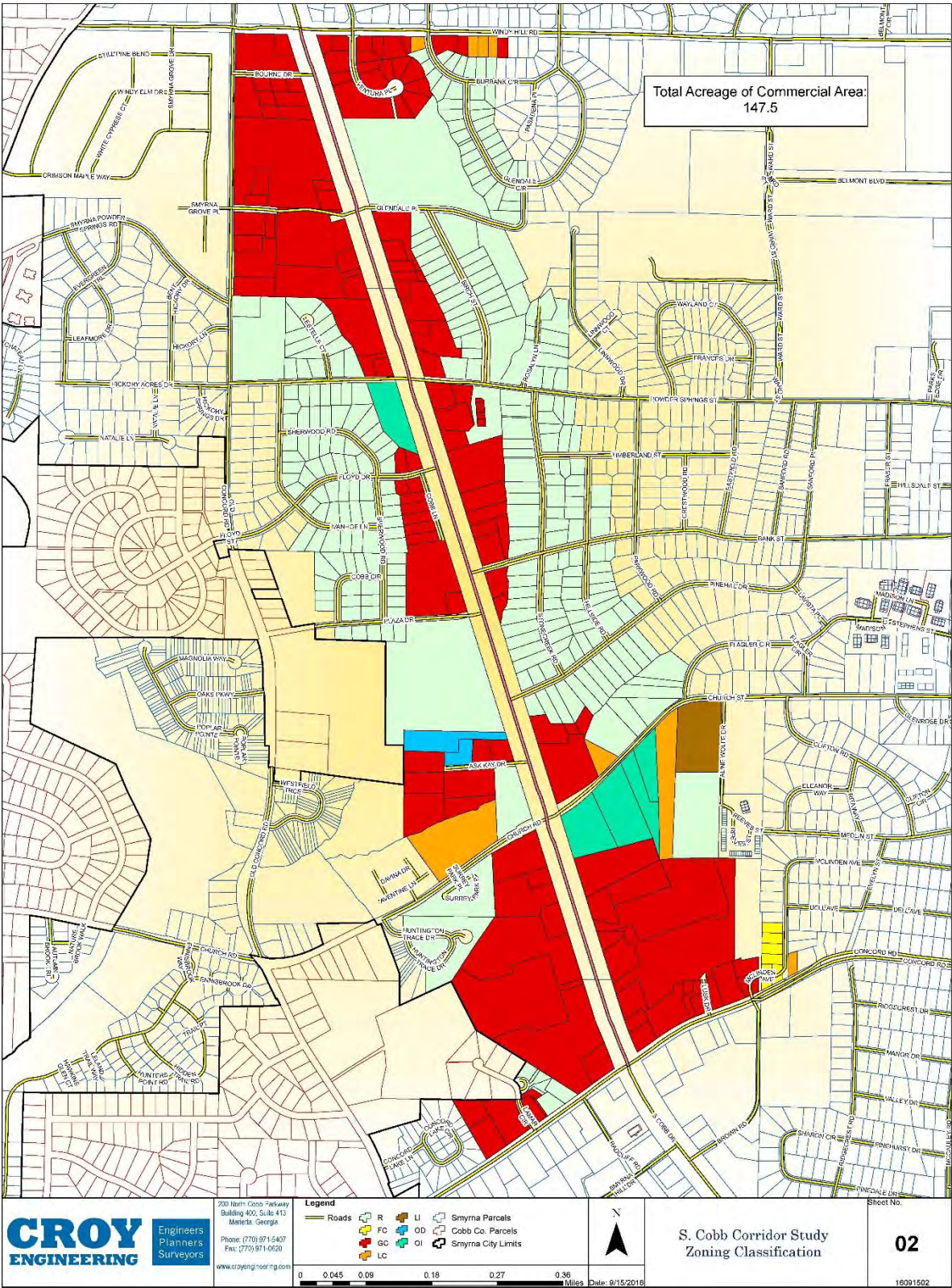
The study recommends all proposed redevelopment areas should be reflected in the Future Land Use Plan as Mixed Use. The South Cobb Design Corridor standards should be amended to encourage quality commercial redevelopment, protection of the adjacent neighborhoods, more inter-parcel connectivity and sustainable mixed use development.

There are portions of the study area, on both the eastern and western sides of South Cobb Drive, which are constrained by environmental conditions. The Future Land Use Development Map for the City of Smyrna [<http://www.smyrnacity.com/home/>] indicates redevelopment within the Corridor with a concentration of Community Activity Center and Mixed Use development along the corridor.

The map on the following page shows the existing land use distribution along the South Cobb Drive corridor.



# Map 5 – Land Use





## LAND USE GOALS & POLICIES

There appear to be several opportunities within the study area to address/implement key Comprehensive Plan Goals and Policies related to Housing, Economic Development, Natural and Cultural Resources and Land Use:

- **Policy 1.1** Ensure adequate buffering and screening in order to protect residential neighborhoods from negative impacts of adjacent development.
- **Policy 2.3** Encourage the redevelopment of older apartment complexes into townhomes and condominiums in order to increase home ownership rates.
- **Policy 2.4** Create an inventory of vacant properties, properties owned by the City or other government agencies, and tax delinquent properties suitable for infill development.
- **Policy 3.5** Provide opportunities for mixed use, live/work housing.
- **Policy 4.3** Pursue growing industries such as education, health care and transportation to locate within the City.
- **Policy 4.6** Develop a mechanism to market the City and its assets. Network and coordinate with agencies which compile data and carry out promotional and marketing efforts, to assist in stimulation business location and development that serves the region.
- **Policy 5.1** Promote adaptive reuse and mixed-use redevelopment of declining and strip commercial centers.
- **Policy 5.2** Continue to utilize innovative economic development tools to revitalize declining commercial areas.
- **Policy 5.3** Compile and maintain a database of key parcels with development and redevelopment potential.
- **Policy 8.2** Target environmentally sensitive areas such as floodplains and wetlands for greenspace acquisition.
- **Policy 8.6** Provide opportunities for compact development supportive of open space preservation.
- **Policy 9.4** Incorporate the connection, maintenance, and enhancement of greenspace in all new development.
- **Policy 16.2** Encourage an appropriate transition of type and scale between established neighborhoods and activity centers.
- **Policy 18.1** Prioritize redevelopment and revitalization of existing underutilized commercial and industrial areas over development of new land for commercial purposes.
- **Policy 18.3** Where appropriate, the City should assist in site assemblage for redevelopment initiatives, without the use of eminent domain.

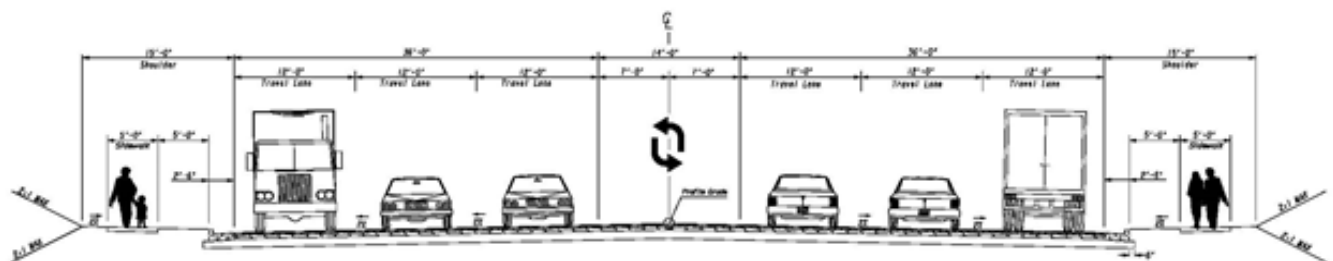
# TRANSPORTATION FACILITIES

The Georgia Department of Transportation identifies South Cobb Drive/SR 280 as a minor arterial. It is also classified as a key multi-modal corridor by Cobb County's 2030 Comprehensive Transportation Plan.

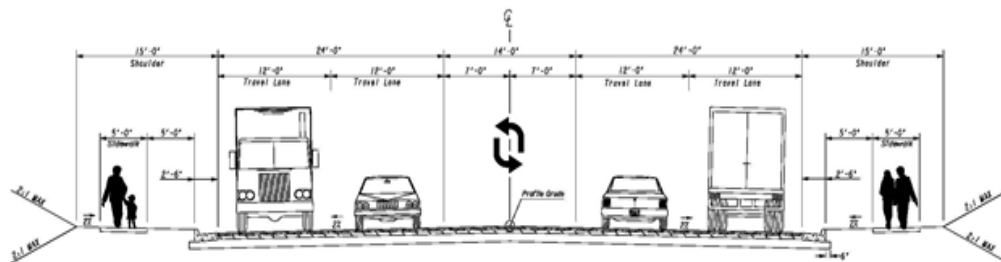
## ROADWAY FACILITIES

The speed limit along South Cobb Drive is 45 miles per hour. From Windy Hill Road to just South of Powder Springs Street, South Cobb Drive has 6 travel lanes with a centered two-way left-turn lane. From Powder Springs Street to Concord Road, South Cobb Drive has 4 travel lanes with a centered two-way left-turn lane. Sidewalks are on both sides of the roadway along the entire length of the study corridor. The figures below show the typical cross sections along this corridor.

Figure 8: Corridor Cross Section



South Cobb Drive Typical Cross Section North of Powder Springs Street



South Cobb Drive Typical Cross Section South of Powder Springs Street

## TRANSIT FACILITIES

Data obtained from Cobb LINC, Cobb County's transit system, was used to identify existing transit routes, stop locations, route hours and headways for service that operates along and within proximity to this segment of South Cobb Drive.

### Transit Routes

- Route 20 runs north-south along South Cobb Drive between the Marietta Transfer Center and the Cumberland Transfer Center.
- Route 15 crosses the corridor's northern limits, traveling east-west along Windy Hill Road between the Marietta Transfer Center and Wildwood Parkway.
- Route 25 crosses the corridors southern limits, traveling east-west along Concord Road/ Spring Road between Cumberland Transfer Center and MARTA H.E. Holmes Station. Route 25 began operating on September 6, 2016. Although it contains pieces of previously suspended routes, it is not simply a "reintroduced" or slightly modified previous route.

Figure 9: Cobb Linc Routes along the Corridor

### Major Destinations

- Windy Hill Rd: Walgreens (NW)
- Glendale Place: South Cobb Plaza/Family Dollar (W); Belmont Hills Elem. School (E)
- Church St: Faith Christian Center (E)
- Concord Rd: Kroger (NW); Goodwill and Food Depot (NE)



In summary, Cobb LINC transit service within the study area begins as early as 5:00 am and continues as late as midnight on weekdays and from 7:00 am through 9:00 pm on Saturdays. There is no Sunday service. Typical one-hour headways increase to every 30 minutes during the morning and evening peak commuting periods.

## **ROUTE SCHEDULES**

Route schedules within the corridor study area were reviewed with regard to route to route transfer opportunities. The scheduled arrival times of the respective routes in the vicinity of Windy Hill Road (Routes 20 and 15) and Concord Road (Routes 20 and 25) frequently occur within minutes of each other. However, the time required to walk between respective stops is not reliable enough, and more typically insufficient to enable convenient transfer between routes. Most transferring passengers would be likely to miss the bus, requiring wait times up to 30 minutes (peak periods) or one hour (off-peak headways) to catch the next bus.

## **RIDERSHIP**

The most recent ridership numbers provided by Cobb LINC are for the months of March 2017 and April 2017. The total April monthly ridership for Route 20 exceeded 16,000, while Route 15 exceeded 13,000 and Route 25 exceeded 12,000. Approximately 90 percent of total ridership occurs on weekdays. In April, all three routes' Saturday ridership exceeded 1,500, ranging from a high of 2,000 on Route 25 to a low of nearly 1,530 on Route 15. Saturday ridership in March was lower, with a high on Route 20 of over 1,500 and a low on Route 15 of 1,100.

These numbers show a slight decrease in ridership compared to the average monthly ridership in the Fiscal Year 2015 (FY15, which ran from October 2014-September 2015) and Fiscal Year 2016 (FY16). On Route 20, weekday ridership exceeded 21,000 in FY15 and dropped to 18,500 in FY16, while Saturday ridership decreased from a FY15 total of nearly 2,400 to just over 2,000 in FY16. However, the newly initiated Route 25 is showing increasingly strong ridership numbers nearly on par with Route 15.

Detailed information on service hours (from initial departure station) and headways by route and direction for the Route 20, Route 15 and Route 25 are provided on Table 3, Table 4 and Table 5 plus Figure 10, Figure 11 and Figure 12 respectively on the following pages.

Table 3: Route 20 Hours and Headways

ROUTE 20					
Route Hours and Headways (From Initial Departure Stop)					
WEEKDAYS			SATURDAY		
	Outbound	Inbound		Outbound	Inbound
Hourly	5:00 a.m.-6:00 a.m.		Hourly	7:00 a.m.-9:00 p.m.	7:00 a.m.-10:00 p.m.
Every 30 min	6:00 a.m.-9:00 a.m.	6:00 a.m.-10:00 a.m.			
Hourly	9:00 a.m.-3:00 p.m.	10:00 a.m.-3:00 p.m.			
Every 30 min	3:00 p.m.-8:00 p.m.	3:00 p.m.-9:00 p.m.			
Hourly	9:00 p.m.-11:00 p.m.	9:00 p.m.-12:00 a.m.			

Figure 10: Cobb Linc Route 20 along the Corridor

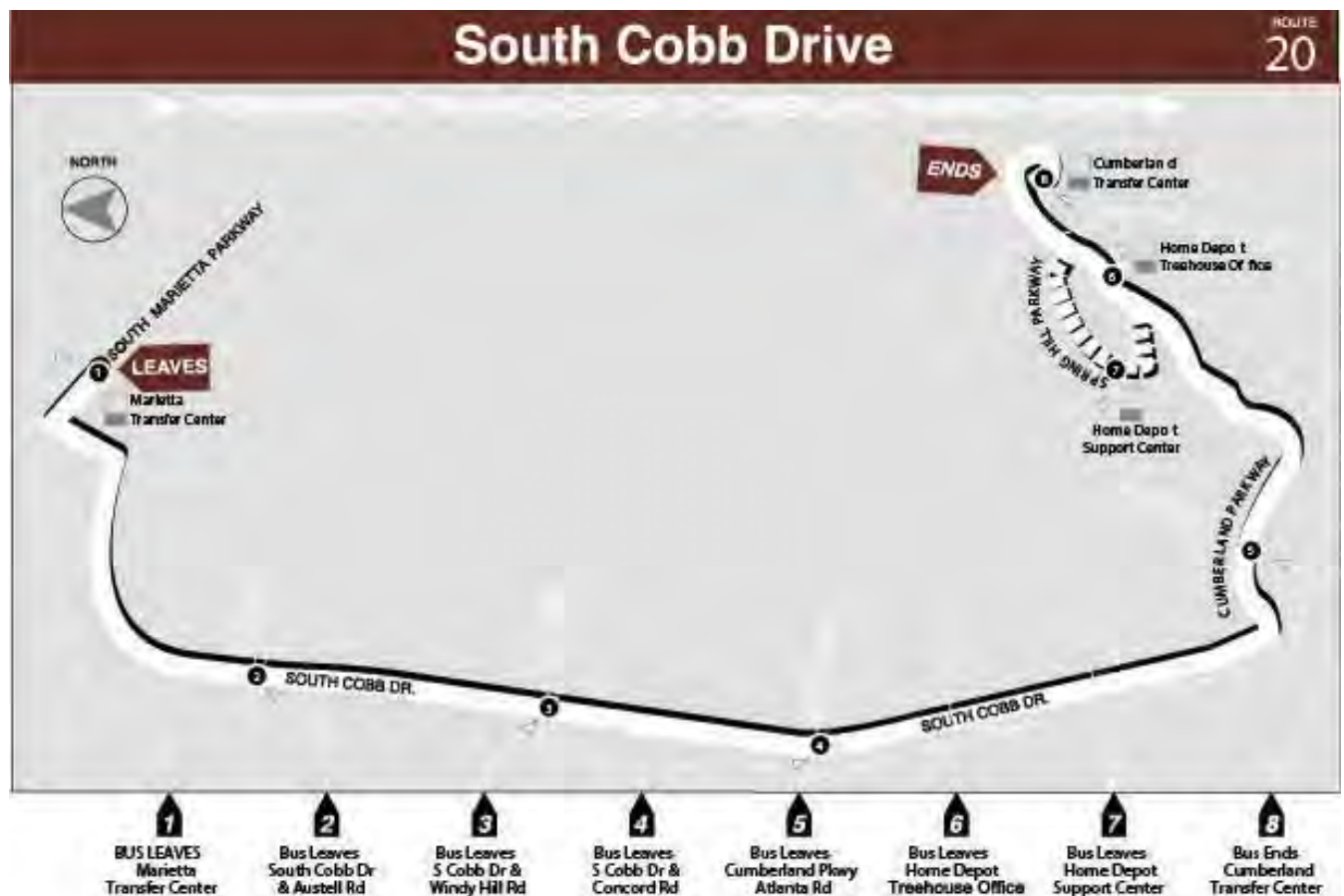




Table 4: Route 15 Hours and Headways

ROUTE 15 (within proximity of South Cobb Drive)					
Route Hours and Headways (From Initial Departure Stop)					
WEEKDAYS			SATURDAY		
	Outbound	Inbound		Outbound	Inbound
Hourly	5:30 a.m.-6:30 a.m.	6:15 a.m.-7:15 a.m.	Hourly	7:30 a.m.-7:30 p.m.	8:10 a.m.-8:10 p.m.
Every 30 min	6:30 a.m.-9:30 a.m.	7:15 a.m.-10:15 a.m.			
Hourly	9:30 a.m.-3:30 p.m.	10:15 a.m.-4:15 p.m.			
Every 30 min	3:30 p.m.-7:30 p.m.	4:15 p.m.-8:15 p.m.			
Hourly	7:30 p.m.-8:30 p.m.	8:15 p.m.-9:15 p.m.			

Figure 11: Cobb Linc Route 15 along the Corridor

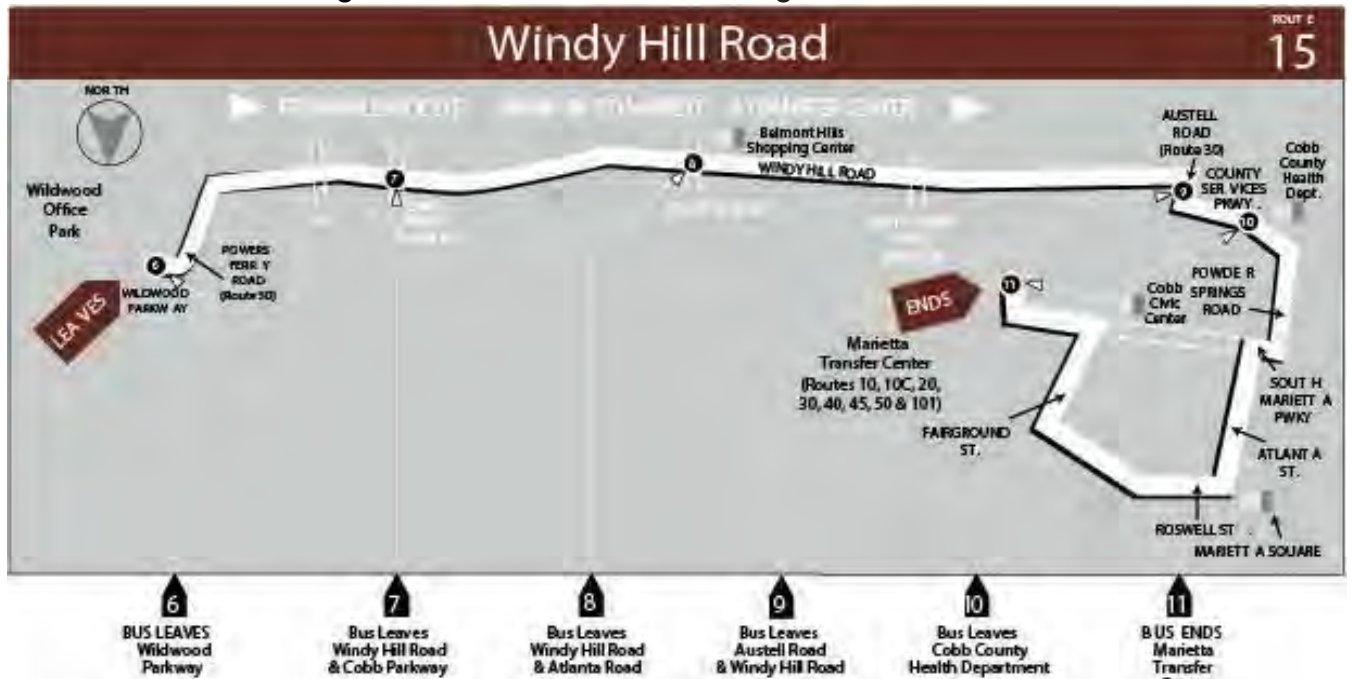
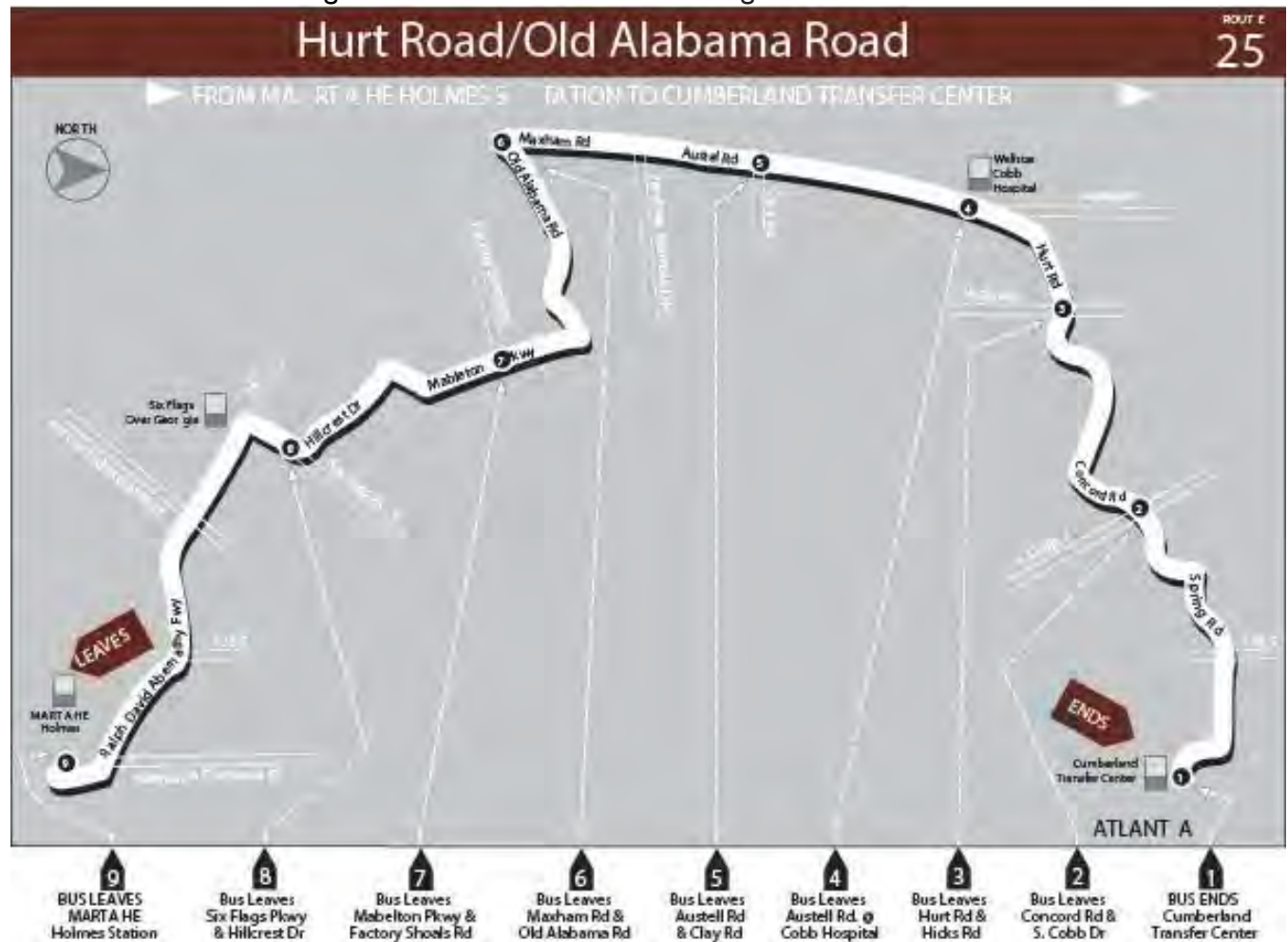


Table 5: Route 25 Hours and Headways

ROUTE 25 (at South Cobb Drive)					
Route Hours and Headways (From Initial Departure Stop)					
WEEKDAYS			SATURDAY		
	Outbound	Inbound		Outbound	Inbound
Hourly	6:35 a.m.-12:35 a.m.	5:15 a.m.-11:15 p.m.	Hourly	8:35 a.m.-12:35 a.m.	7:15 a.m.-10:15 p.m.

Figure 12: Cobb Linc Route 25 along the Corridor



## **BICYCLE/PEDESTRIAN FACILITIES**

Field surveys of the South Cobb Drive Corridor and the surrounding study area were conducted early in the study process to identify existing conditions. Key items included corridor characteristics, existing bicycle and pedestrian infrastructure, transit services and amenities, and observable indicators of latent demand.

Relevant studies and plans, primarily developed by the City of Smyrna, Cobb County, the Atlanta Regional Commission (ARC) and the Georgia Department of Transportation (GDOT), were also reviewed to identify planned and programmed projects and improvements within the study area.

These documents include –

- Smyrna Town Center LCI Study (5-year update 2013)
- Cobb County Bicycle and Pedestrian Improvement Plan (January 2010)
- Cobb County Comprehensive Transportation Plan Update 2040—Active Transportation Technical Memorandum (Summer 2015)
- Atlanta Regional Bicycle and Pedestrian Plan, Walk. Bike. Thrive! (2016)
- Cobb County 2016 SPLOST project list (county-wide and City of Smyrna specific).

## **PEDESTRIAN INFRASTRUCTURE**

Standard five-foot sidewalks are in place along both sides of South Cobb Drive between Concord Road and Windy Hill Road. The signalized intersections within the corridor limits (at Windy Hill Road, Glendale Place, Powder Springs Street, Church Street, the Kroger/Goodwill entrance, and Concord Road) include crosswalks and pedestrian signals. Crosswalk striping is also present at most side street crossings; however, the numerous driveway cuts along the entire corridor present potential pedestrian vehicle conflicts and safety concerns. Streetlights exist at varying locations and intervals along the corridor, however, the lack of consistent and adequate lighting along numerous segments of the roadway corridor decreases the general perception of safety for pedestrians.

A 2014 GDOT-sponsored Road Safety Audit (RSA) along South Cobb Drive (SR 280) from I-285 to Fairground/Lockheed Street recommended –

- Curb ramps to be ADA compliant
- Add some sidewalk connectivity
- Evaluate the locations of transit bus stops
- Install a raised median along significant portions of South Cobb Drive to provide a refuge for pedestrians and reduce vehicular collisions

Figure 13: Road Safety Audit Recommendations



Site-specific recommendations south of the Plaza Drive intersection included providing a pedestrian mid-block hybrid beacon signal (High intensity Activated crossWalk signal) due to the number of pedestrians who cross the roadway. A median along this location to reduce head-on vehicular collisions and potential pedestrian injuries is also recommended. GDOT is moving forward with the recommended HAWK pedestrian signal. Design is complete, with installation expected before the end of Summer 2017.

Existing Smyrna Initiatives include -

- Smyrna Bike Share Program
- Multi-use Trail along Concord Road
- Currently proposed bicycle/pedestrian initiatives are not focused on the study corridor, but to the south

## **BICYCLE AND MULTI-USE PATH INFRASTRUCTURE**

The City of Smyrna has been proactive in constructing multi-use paths throughout the city over the past decade. The Kennesaw Mountain to Chattahoochee River Trail (Mountain to River Trail) along Atlanta Road, the Silver Comet Trail along the East-West Connector, and connecting trails along Concord Road and in the Cumberland area are some of the best-known and most widely used. Multi-use paths are consistently being installed within and adjacent to the corridor study area.

Currently, path facility locations within the study area include -

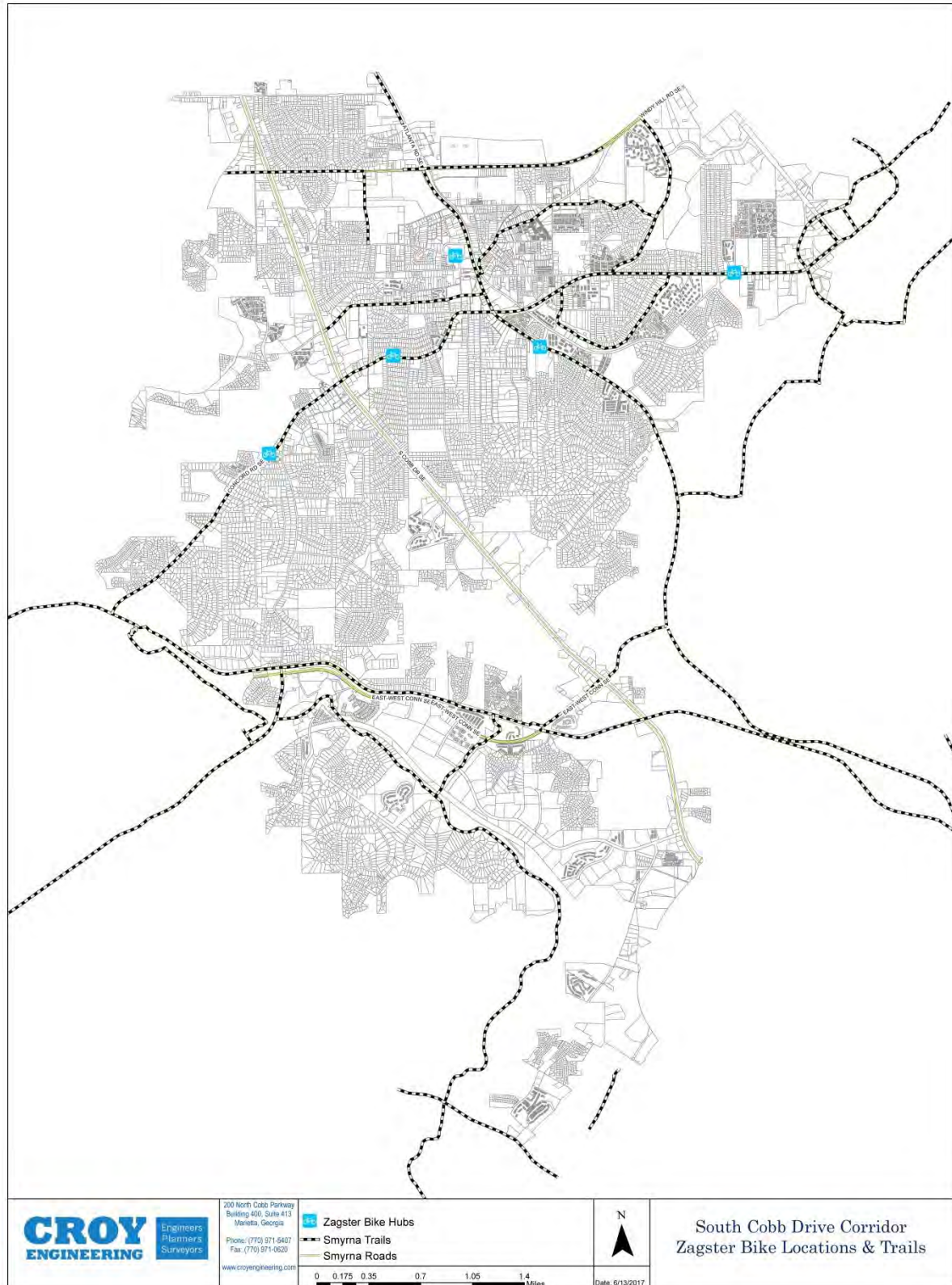
- Along the western side of South Cobb Drive from Church Street south to Concord Road
- In the vicinity of Campbell High School along Ward Street, Belmont Boulevard and Belmont Place
- Along Concord Road from Atlanta Road to South Cobb Drive

On-road bicycle facilities such as bicycle lanes, sharrows and “Share the Road” signage and marking programs do not currently exist within the corridor study area.

Enhancing and complementing the city’s expanding multi-use path/trail network is the implementation of the Smyrna Bike Share Program in coordination with Zagster bikes. Figure 14 shows the location of the Zagster rental locations in relation to the multi-use trail system near and in Smyrna. Anyone 18 years of age and older with a valid credit card may join the program. Trips under four hours are free, then \$5 per hour up to a maximum of \$40 per ride. The closest sharing station to the study corridor is located just east of South Cobb Drive at the Concord Road Linear Park. Other sharing stations are currently located at the Smyrna Public Library on the Village Green, at Taylor-Brawner Park on Atlanta Road south of Concord Road, at the Spring Road Linear Park near Jonquil Park, and on Concord Road at Hurt Road near the Silver Comet Trailhead. As the Smyrna Bike Share Program expands additional sharing stations will be established at strategic locations throughout the city.



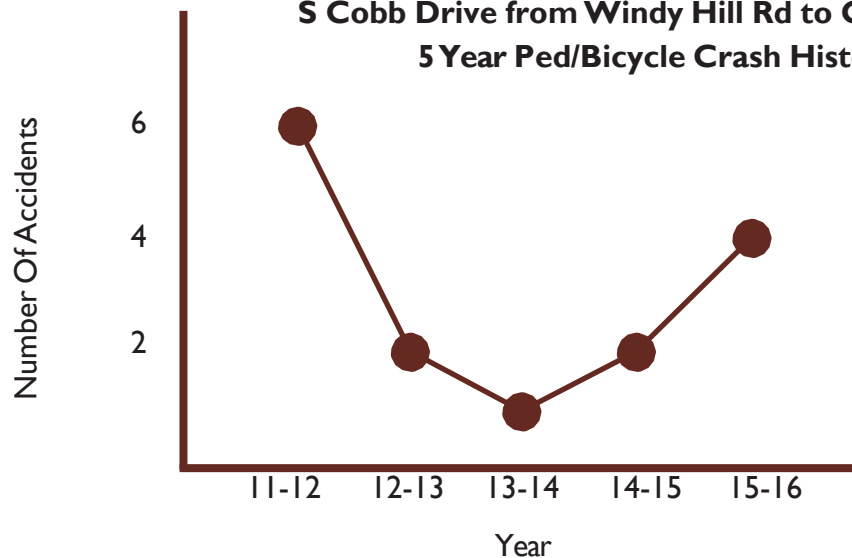
Figure 14: Multi-use Paths and Zagster Locations



## BICYCLE & PEDESTRIAN SAFETY

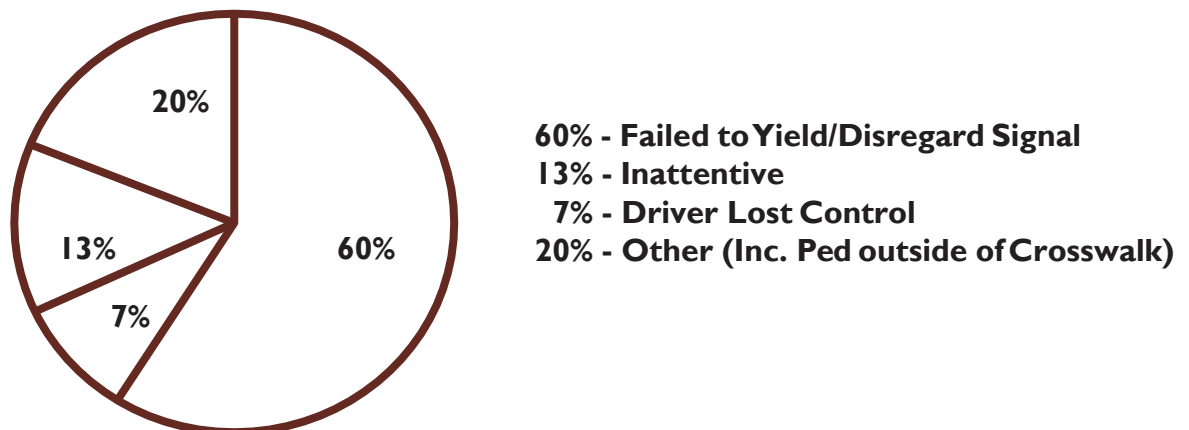
A review of accident history along the corridor between October 2011 and October 2016 indicated that 15 accidents involving pedestrians and bicyclists were reported. One fatality occurred in 2015.

Figure 15: Pedestrian/ Bicycle Crash History  
**S Cobb Drive from Windy Hill Rd to Concord Rd**  
**5 Year Ped/Bicycle Crash History**



Contributing factors to bicycle and pedestrian accidents included failure to yield/disregarded signal (60 percent), inattention (13 percent), driver lost control (7 percent), and other (which includes pedestrian outside of crosswalk) (20 percent).

Figure 16: Contributing Factors for Pedestrian/ Bicycle Crashes

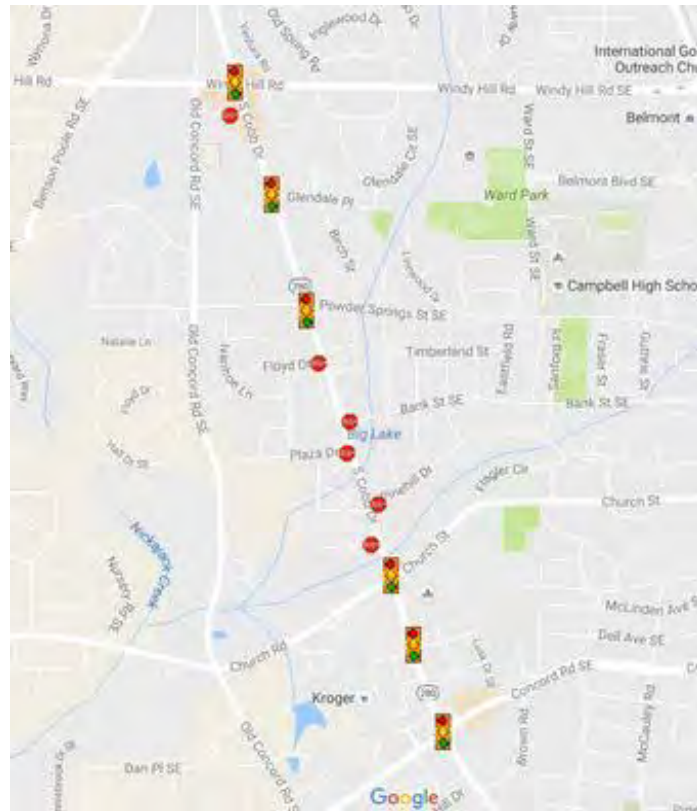


Mid-block crossing and jaywalking is a critical safety concern from the perspective of both the pedestrians and the motorists. This is particularly prevalent in the area around Plaza Drive, which is currently an unsignalized intersection adjacent to the Lexington Park apartment complex and transit stops. However, throughout the length of the corridor, un-signalized locations that provide convenient access to key destinations and Cobb LINC transit stops will continue to pose a safety concern. Since the completion of the initial pedestrian crash records analysis, ongoing queries have been conducted to monitor crashes. Since November 2016, three additional crashes involving pedestrians have occurred along this corridor.

## EXISTING TRAFFIC CONDITIONS AND PROJECTED GROWTH TRAFFIC CONTROL

There are 6 signalized intersections and 6 un-signalized intersections along the corridor. The signalized intersections along this segment of South Cobb Drive are at Windy Hill Road, Glendale Place, Powder Springs Street, and Concord Road. The un-signalized intersections along this segment of South Cobb Drive are at Bourne Drive, Floyd Drive, Bank Street, Plaza Drive, Pinehill Drive, and Ask Kay Drive.

Figure 17: Signalized Intersections along the Corridor



## ANNUAL AVERAGE DAILY TRAFFIC

The Annual Average Daily Traffic, AADT, is the total volume of traffic for a year. The table below shows the AADT volumes for the year 2015 for three count stations on South Cobb Drive, which were obtained from Georgia Department of Transportation's GEOCounts™ data.

Table 6: Annual Average Daily Traffic Volumes 2015

STATION I.D.	LOCATION OF COUNTER	2015
672614	North of Windy Hill	25,400
672612	Between Windy Hill and Concord Road	33,600
672609	South of Concord Road	21,900

## TRAFFIC OPERATIONS

To quantify the existing traffic conditions along South Cobb Drive, traffic counts collected along the corridor were used to model traffic operations using Synchro 9 and HCS 2010. The two tables below show the existing traffic operations. The first displays the Levels of Service (LOS) and delay per intersection. The second table displays the LOS of South Cobb Drive based on roadway capacity.

Table 7: Intersection LOS

INTERSECTION LOS				
INTERSECTING ROUTE	A.M.		P.M.	
	LOS	DELAY	LOS	DELAY
Windy Hill Road	E	67.2 s	E	66.7 s
Glendale Place	A	4.6 s	A	2.2 s
Powder Springs Street	C	33.1 s	C	26.8 s
Bank Street (Un-signalized)*	D	27.8 s	D	30.0 s
Plaza Drive (Un-signalized)*	D	27.1 s	D	25.1 s
Pinehill Drive (Un-signalized)*	C	17.2 s	C	23.4 s
Church Street/Church Road	D	39.2 s	D	37.3 s
The Crossings/Concord Village	B	15.2 s	C	26.3 s
Concord Road	E	76.4 s	E	78.8 s

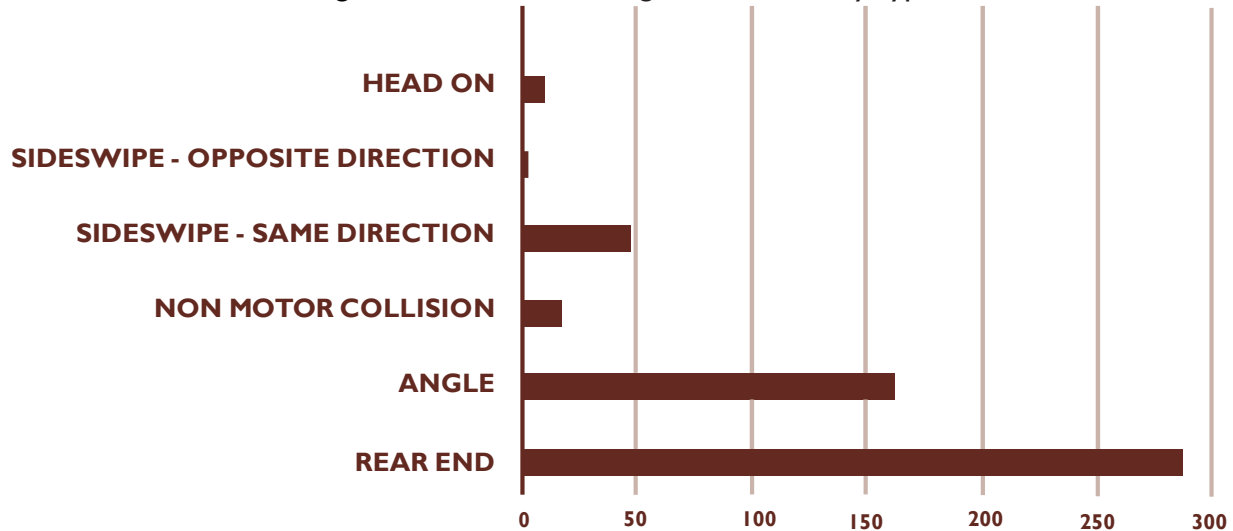
Table 8: Roadway Capacity LOS

ROADWAY CAPACITY LOS		
ROADWAY	AADT	LOS
North of Powder Springs Street	29602	A
South of Powder Springs Street	34514	B

## SAFETY

Crash record information was obtained from the Georgia Electronic Accident Reporting System (GEARS) for the South Cobb Drive corridor. The data was obtained for the time period between May 2013 and May 2016. A total of 517 accidents were recorded in the time period with most number being attributed to Rear Ends, which accounted for 287 of the reported accidents (56%). The figure below shows the accidents along South Cobb Drive by type.

Figure 18: Accidents along the Corridor by Type



The highest occurrence crash locations were directly related to the intersections with the highest traffic volumes.

Table 9: Highest Crash Locations

ROAD	CRASHES	PERCENT
Windy Hill Road	167	32%
Concord Road	167	32%
Church Street	63	12%

The figure on the right displays a heat map showing the clustering of traffic accidents at the intersections along South Cobb Drive. The table on the following page identifies the potential causes and countermeasures for rear end and angle crashes as stated by the Traffic Engineering Handbook, latest edition published by the Institute of Transportation Engineers (ITE).

Figure 19: Traffic Accidents Heat Map

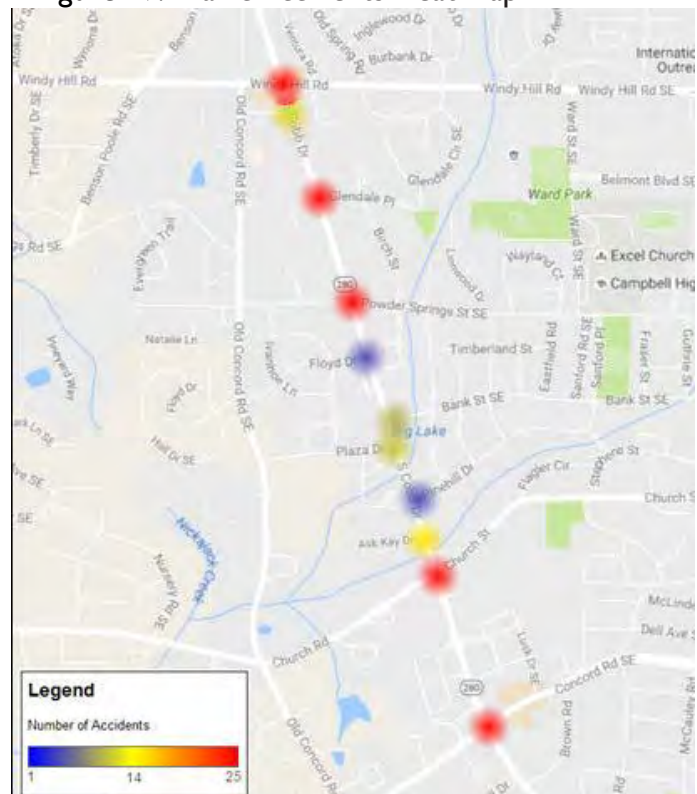




Table 10: Potential Causes and Countermeasures of Crash

POTENTIAL CAUSES	POTENTIAL COUNTERMEASURES
<b>REAR END CRASHES - HIGHEST NUMBER OF CRASHES</b>	
<ul style="list-style-type: none"> <li>• Large turn volumes</li> <li>• Inadequate roadway lighting</li> <li>• Poor visibility of signal timing</li> <li>• Inadequate signal timing</li> </ul>	<ul style="list-style-type: none"> <li>• Providing left turn phases and turn lanes</li> <li>• Prohibiting turns</li> <li>• Improving lighting</li> <li>• Installing warning and overhead signs</li> <li>• Adjusting phase change interval</li> <li>• Providing red clearance interval or progression</li> </ul>
<b>ANGLE CRASHES - SECOND HIGHEST NUMBER OF CRASHES</b>	
<ul style="list-style-type: none"> <li>• Restricted sight distance</li> <li>• Excessive speed</li> <li>• Inadequate roadway lighting</li> <li>• Inadequate signal timing</li> <li>• Large traffic volumes</li> </ul>	<ul style="list-style-type: none"> <li>• Providing warning signs</li> <li>• Removing sight obstructions</li> <li>• Reducing speed limits with enforcement</li> <li>• Retiming signal</li> <li>• Providing red clearance interval</li> <li>• Adding lane(s)</li> </ul>

Since the completion of the initial crash records analysis, ongoing queries have been conducted to monitor crashes. Since May 2016, 288 additional crashes have occurred along this corridor, of which 27% resulted in one of more injuries.

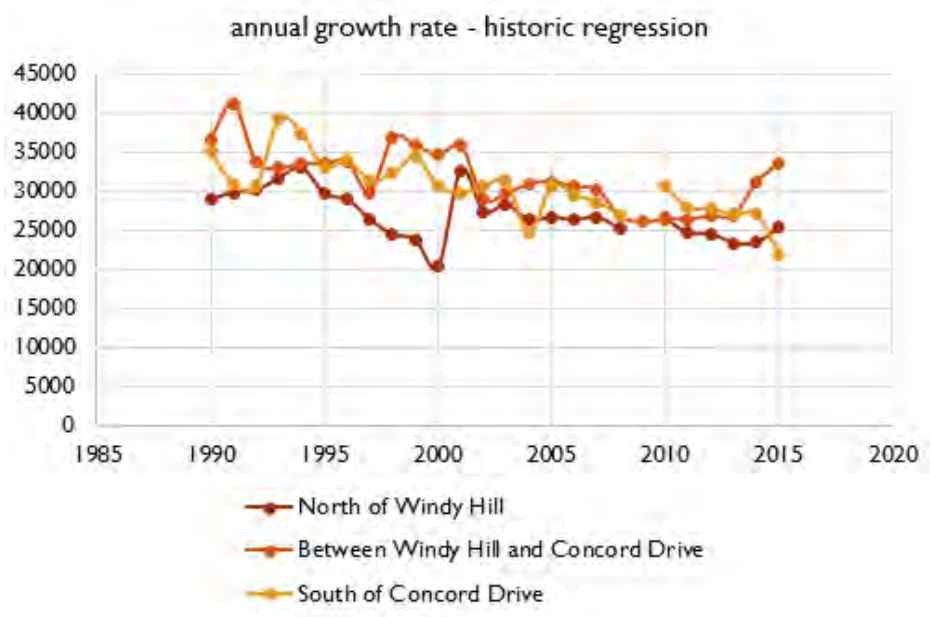
## ANNUAL GROWTH RATE

The future traffic growth rates were determined using two methodologies – Historical Data Regression and ARC Traffic Demand Model Analysis. The three counters for the historic data analysis were located north of Windy Hill Road, between Windy Hill Road and Concord Road, and south of Concord Road. The 5 roadways studied for the travel demand model analysis included Pat Mell Road, Windy Hill Road, Old Concord Road, Concord Road and Church Road.

## HISTORICAL DATA REGRESSION

A linear regression analysis was performed using the historical traffic count data to determine an approximate growth factor for the previously mentioned roads. Historical Traffic count data for years varying between 1990 and 2015 was collected from GEOCounts™ online mapping. For each roadway, segments with corresponding traffic counters were plotted against each year. Depending on the counter and the year, some volumes were not given or estimated. As recommended by GDOT's Design Policy Manual, traffic counts that were deemed irregular were omitted to "eliminate erroneous counts and reflect general trend." The average annual growth rate for the 10-year period from 2005-2015 is -0.58%.

Figure 20: Annual Growth Rate: Historic Regression



## REGIONAL TRAVEL DEMAND MODEL

Since roadway improvements and socio-economic factors, such as population and employment change, have been incorporated into the regional travel demand model, it is considered that the annual growth rates (AGR) calculated reflect future travel demand change. The Regional Travel Demand model forecast data for the years 2015, 2020, 2030 and 2040 were used in the analysis. The average AGR using the 2015 and 2040 travel demand model projects is 1.38% shown in the table below.

Table 11: Regional Travel Demand Model Forecast

ROADWAY	LINK LOCATION	2015	2040	AGR
Pat Mell Road	East Of South Cobb Drive	4,339	6,907	2.37%
Windy Hill Road	West Of Old Concord Road	51,511	59,031	0.58%
Old Concord Road	South Of Church Road	2,350	3,917	2.67%
Concord Road	Between S. Cobb Drive & Old Concord Road	33,221	39,617	0.77%
Church Road	West Of Old Concord Road	7,397	8,302	0.49%
<b>AVERAGE</b>				<b>1.38%</b>

## KEY FINDINGS

The table below summarizes key findings of the existing conditions along the South Cobb Drive corridor.

Table 12: Key Findings of Existing Conditions

CATEGORY	FINDINGS
Land Use and Zoning	Primarily General Commercial/Residential
Socio-Economics/ Demographics	Population: Minority: less than 10% Below Poverty Line: less than 8%
Transportation Facilities	Roadway Facilities: <ul style="list-style-type: none"> <li>Windy Hill Rd to Powder Springs St (6 Lanes w/ Two-way Left-turn lane)</li> <li>Powder Springs St to Concord Road (4 Lanes w/ Two-way Left-turn lane)</li> </ul>
	Transit Facilities: <ul style="list-style-type: none"> <li>Route 20 along S Cobb Drive Corridor</li> <li>Route 15 along Windy Hill Road</li> <li>Route 25 Along Concord Road</li> </ul>
	Bicycle Facilities: Progressive planning underway
Traffic Conditions and Projected Growth	6 signalized intersections 6 un-signalized intersections
	Annual Growth Rate: <ul style="list-style-type: none"> <li>Historical AGR - 0.58%</li> <li>TDM AGR - 1.38%</li> </ul>
	3 year Crash Data: <ul style="list-style-type: none"> <li>517 total crashes</li> <li>55% Rear Ends</li> <li>32% at Windy Hill Road, 32% at Concord Rd, and 12% at Church St</li> </ul>

## SECTION E - CONCEPT DESIGN ALTERNATIVES

After compiling the first round of public feedback generated from the public outreach sessions and online submissions, the corridor study team developed four design concepts for the corridor's transportation network, a streetscaping concept, and identified potential opportunities for redevelopment along the corridor.

A set of universal design concepts that would be consistent through the four concept design alternatives were identified.

Figure 21: Universal Design Concepts

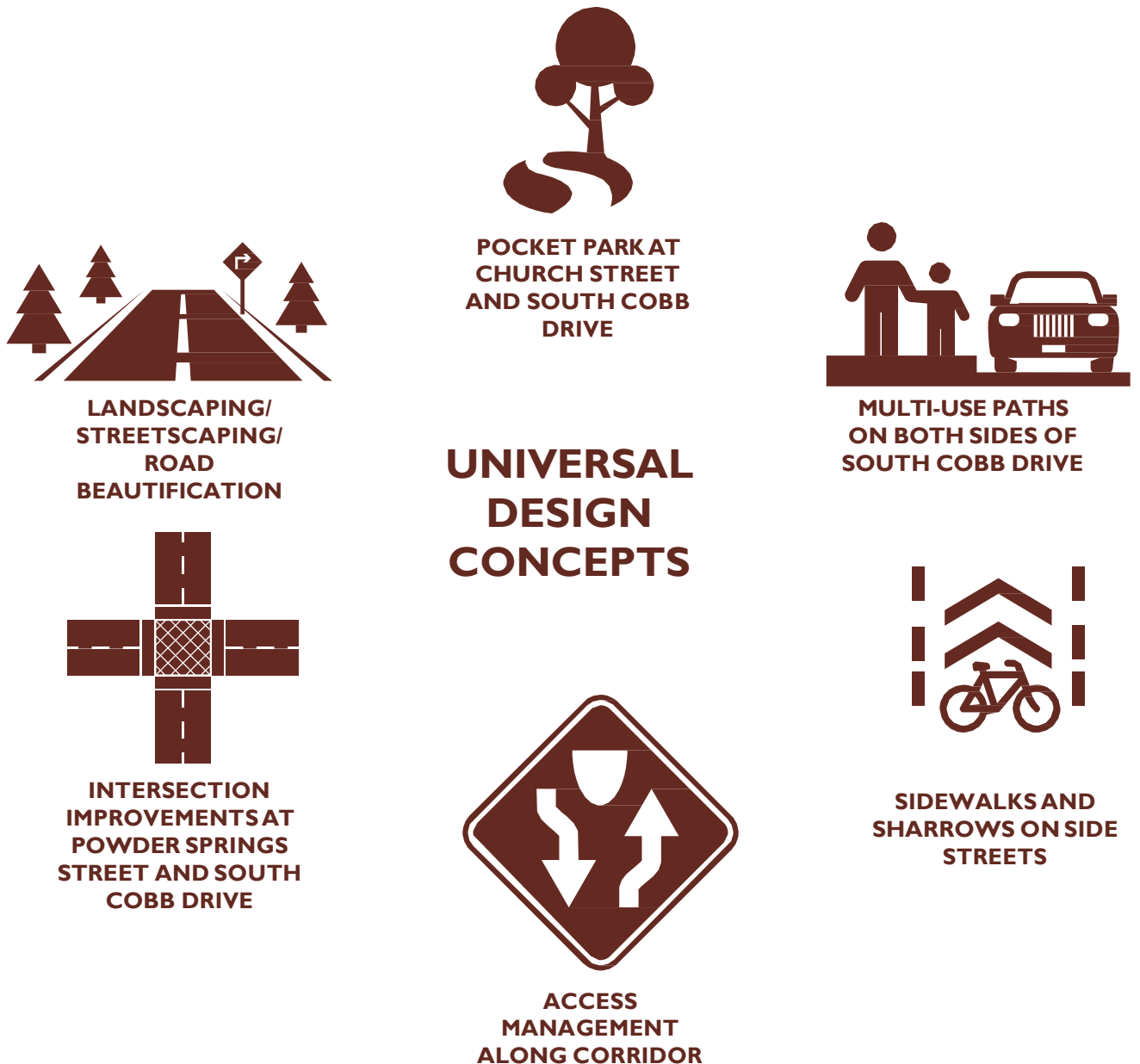
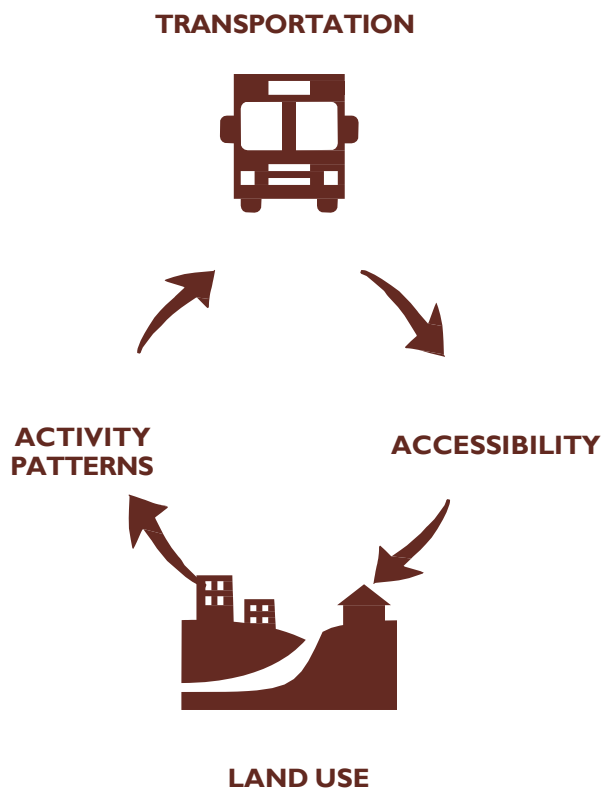




Figure 22: Relationship between Transportation and Land Use

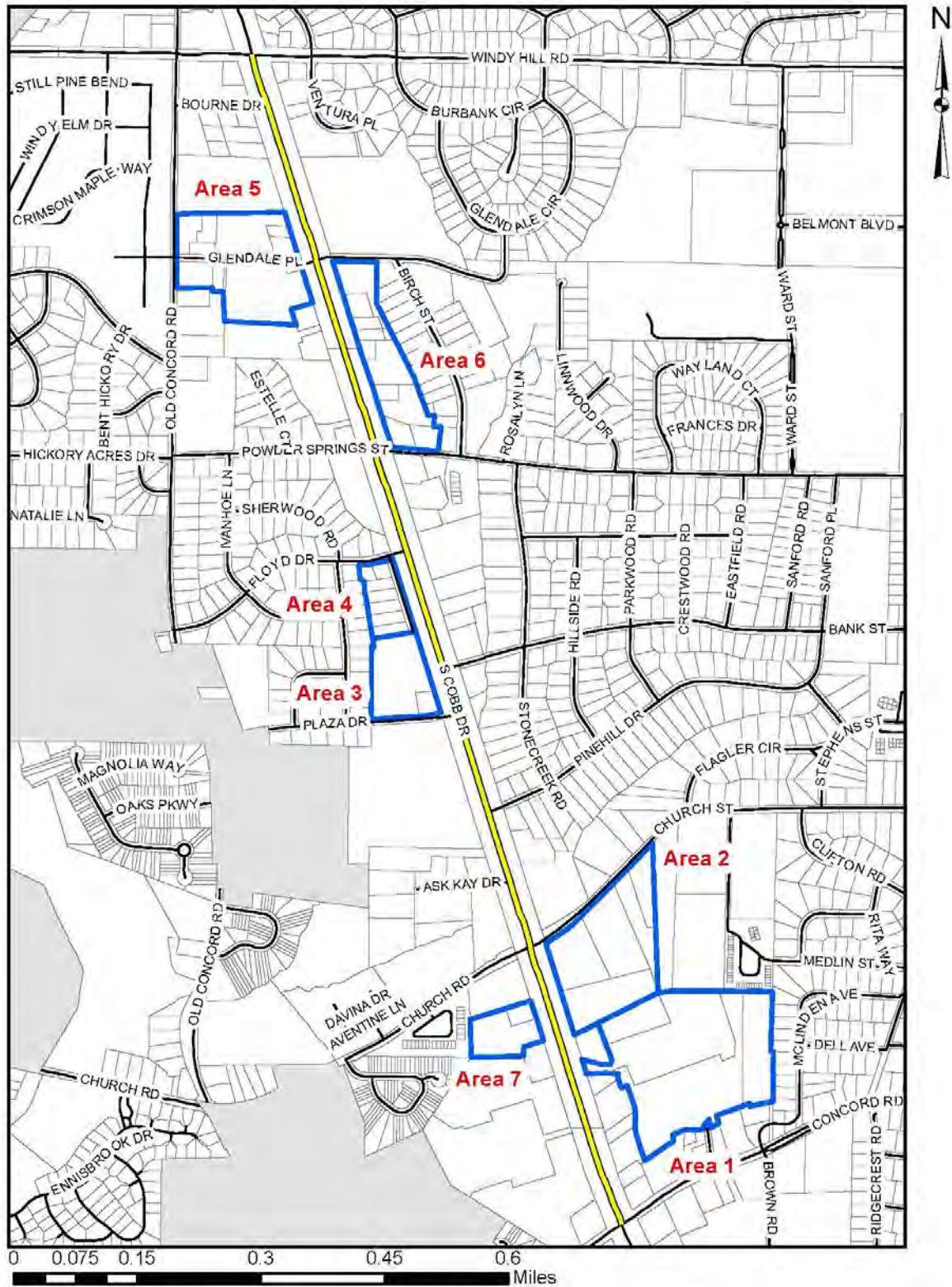


The important relationship between transportation and land use is fundamental. Land use can be stimulated and shaped by providing infrastructure to improve accessibility, safety and mobility. Accessibility is defined by the number of travel options, opportunities or destinations within a particular travel radius. Land development generates travel and activity patterns dictate the need for new facilities which in turn increases accessibility and helps attract development. The universal recommendations included in all of the alternatives are anticipated to have a positive impact on development/redevelopment opportunities along the corridor. Each of the four alternatives also contain unique transportation improvements. These distinct improvements for each alternative were assessed based on their positive or negative effects on the redevelopment areas, impact on adjacent properties within the study boundaries and actions required by the private and public sector.

Map 6 on the following page identifies seven potential areas for redevelopment. Many of the areas are comprised of several individual parcels that present an opportunity for assemblage, shared access and connectivity. The areas also have sufficient acreage, parcel configuration and topographic conditions amenable to redevelopment. Redevelopment of these areas would be consistent with objectives set forth in the City's current Future Use Development Map, as well as the South Cobb Drive Urban Design Guidelines. Redeveloping these areas will also assist the City of Smyrna in attracting and encouraging certain business services and opportunities that are lacking within the corridor. This array of business types includes, but is not limited to, related retail outlets, up-scale family dining, various specialty retail uses and small scale office spaces. It also has the potential to reduce the percentage of other business services currently located along the corridor that are dependent upon automobile travel/traffic.

Results of stakeholder interviews, as well as, comments received during the PIOH events indicate a strong community preference to make the corridor more pedestrian friendly and improve the mix and physical attractiveness of businesses along the corridor. These comments are consistent with key Comprehensive Plan Goals and Policies related to Housing, Economic Development, Natural and Cultural Resources and Land Use.

## Map 6 – Potential Redevelopment Areas



# DESIGN CONCEPT I

In addition to the universal improvements, Design Concept I for South Cobb Drive's transportation network proposes the following:

- Adding a traffic signal at Bank Street and South Cobb Drive

Figure 23: Design Concept I Components

## UNIVERSAL CONCEPTS



## ADDITIONAL CONCEPT

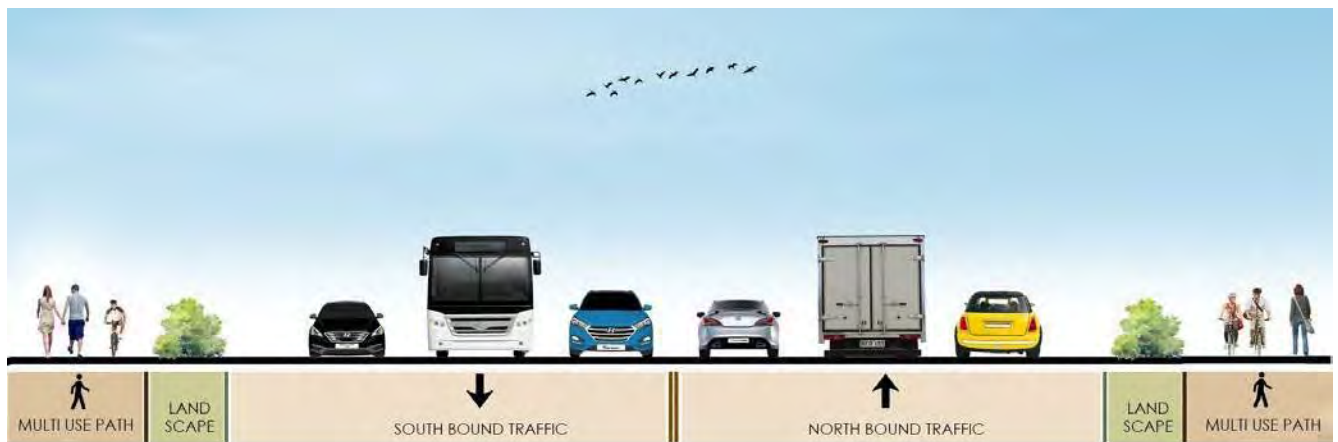


Figure 24: Roadway Conceptual Section

### Transportation Benefits of Design Concept I:

The traffic light at Bank Street would replace the pedestrian HAWK signal that is programmed by the Georgia Department of Transportation to be installed south of Plaza Drive later this year.

- Having a steady sequence of lights enables platoons of vehicles to proceed through a series of green lights without excessive delay.
- A longer distance between traffic lights break up platoons and reduces the efficiency of moving vehicles along a corridor. If approved, a full warrant analysis would be conducted for a signal at Bank Street to be considered by the Georgia Department of Transportation.

**Land Use Impact of Design Concept I:**

The recommendation for improving the intersection at South Cobb Drive and Powder Springs Street would have a positive effect on Redevelopment Area 6. The improvements to the intersection of South Cobb Drive and Glendale Place (on the northern edge of Area 6) also enhance the redevelopment potential of the area. Improved intersections and access points at both the north and south ends of Area 6 could prove to be a valuable design enhancement that would encourage redevelopment. Area 6's proximity to the elementary school and the increased residential construction activity occurring to the west (i.e. Smyrna Grove) may also increase the potential for pedestrian oriented redevelopment.

This alternative included an improvement recommendation for the installation of a traffic signal at Bank Street. Proximity to a new signalized intersection would encourage redevelopment oriented towards pedestrian activity. The significant residential revitalization activities occurring on the east side of the corridor, north and south of Bank Street, as well as, the existing multifamily apartment community located south of Areas 3 and 4 at 2950 South Cobb Drive, suggest a more pedestrian oriented environment be created along this portion of the South Cobb Drive Corridor.

**Impact of Design Concept I on Cyclists, Pedestrians & Transit:**

In addition to the roadway operational advantages, the new signal proposed at Bank Street in Design Concept I would provide opportunities for pedestrians and cyclists to safely cross South Cobb Drive. Under this concept, the new traffic signal would replace the need for the HAWK pedestrian signal, which is pedestrian actuated and only comes on when pressed.



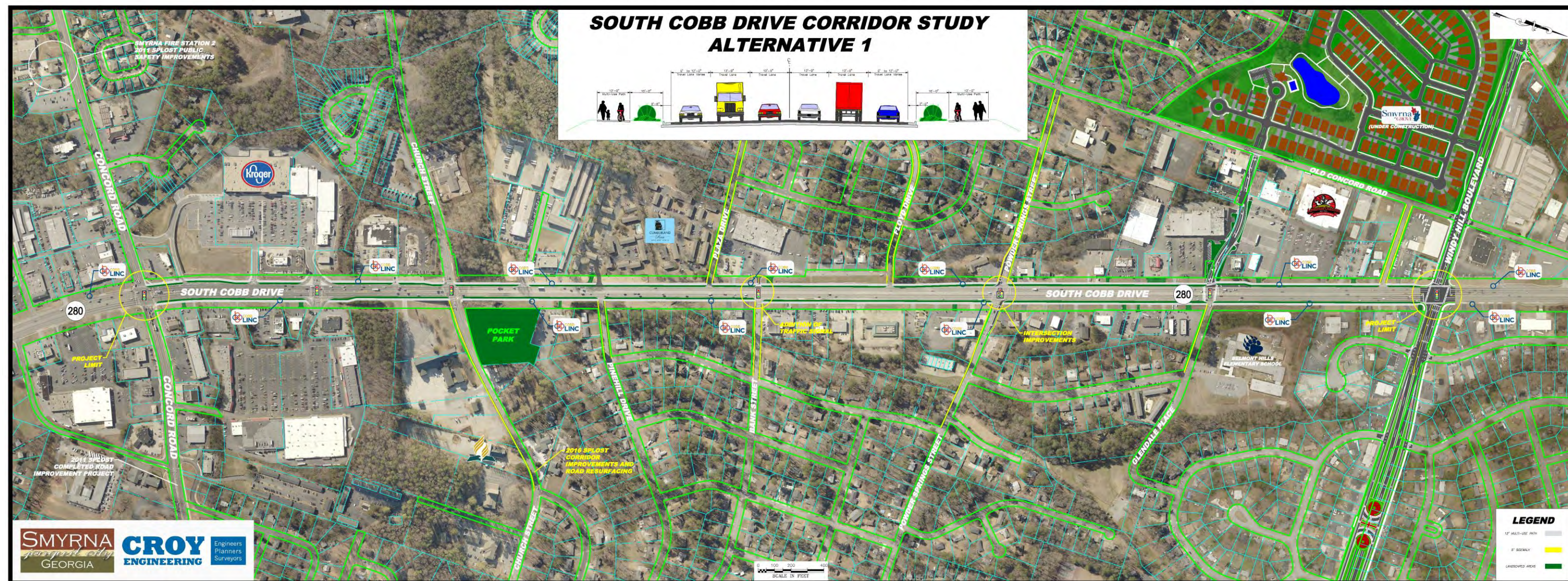


Figure 25: Design Concept 1



## DESIGN CONCEPT 2

In addition to the listed universal improvements, Design Concept 2 for South Cobb Drive's transportation network proposes the following:

- Adding bus pull-offs at transit stops and relocating bus stops to the far side of signalized intersections; see Figure 27 for bus pull-off example.
- Adding bike lanes on both sides of South Cobb Drive; see Figure 28 for bike lane example.

Figure 26: Design Concept 2 Components

### UNIVERSAL CONCEPTS



### ADDITIONAL CONCEPTS

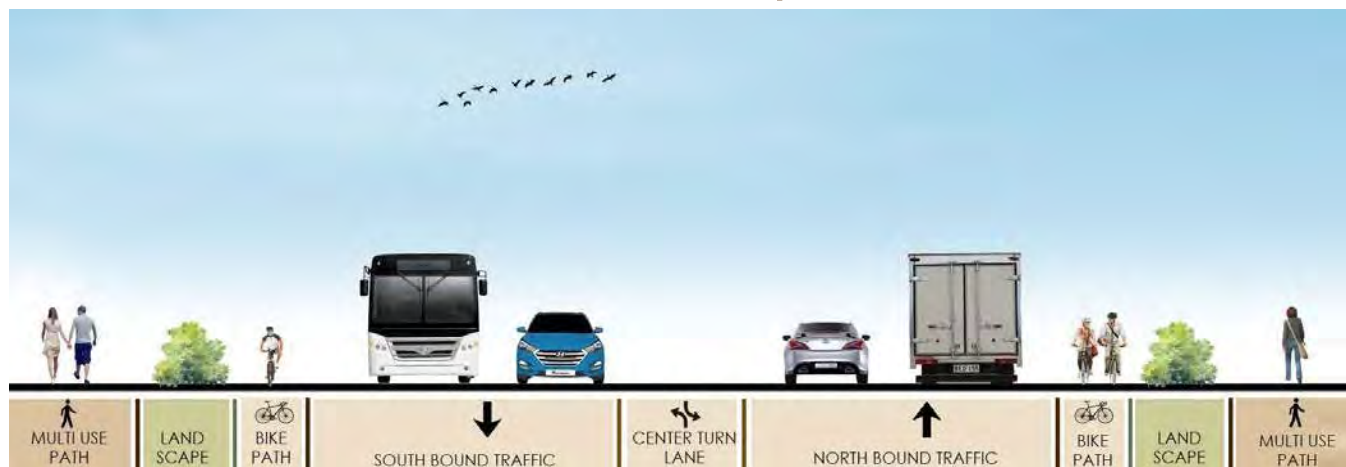


Figure 27: Roadway Conceptual Section

### Transportation Benefits of Design Concept 2:

- Adding bus pull-offs at transit stops removes stopped buses from the through movements, which reduces delay for drivers. Additionally, gaps are created for buses to re-enter traffic when bus stops are located on the far side of signalized intersections.
- Providing bike lanes along the corridor encourages cycling as a means of transportation and promotes a more orderly flow of traffic. Bike lanes remove slower-moving bikes from vehicle lanes, which reduces delay for drivers and increases safety for cyclists.



Figure 28: Bus Pull-off Example



Figure 29: Bike Lane Example

### **Land Use Impact of Design Concept 2:**

The recommendation for incorporating bus pull-offs and bike lanes along the corridor could have a detrimental impact on Redevelopment Area 6, given its lack of parcel depth along the South Cobb Drive corridor. On the other hand, establishment of bus pull-offs and bike lanes could have a positive effect on Redevelopment Areas 1-5 and 7, by allowing for innovative site design options that could potentially hide or buffer onsite parking and ancillary outside storage. Any bus pull offs fronting these parcels need to be properly designed and located within the ROW to avoid compromising the development potential.

### **Impact of Design Concept 2 on Cyclists, Pedestrians & Transit:**

Bus pull-off lanes provide a small area (similar to an acceleration/deceleration lane) where transit buses can exit the flow of normal vehicular traffic for passenger boarding. The primary benefits are:

- Traffic flow is not impeded every time the bus stops for passengers
- A safer environment is created for pedestrians, cyclists, bus passengers and motorists

By locating the pull-offs near signalized intersections, transit riders are encouraged to utilize designated pedestrian crosswalks at the intersections without having to walk long distances to reach them. This discourages the temptation to jaywalk mid-block.

The second element of Design Concept 2 is the inclusion of on-road bicycle lanes in both directions along South Cobb Drive. The intention was bike lanes would be in addition to the multi-use paths along both sides of the roadway and not a replacement for them. Although multi-use paths are suitable for cyclists, as well as, pedestrians, skaters and others, experienced cyclists may want to avoid conflicts with slower moving pedestrians and less experienced cyclists by utilizing the roadway. From the public comments received, there was almost no support for the on-road bike lanes. Concurrently there were numerous comments in opposition. Consequently, as the design concepts were advanced, the bicycle lanes were deleted from Design Concept 2.



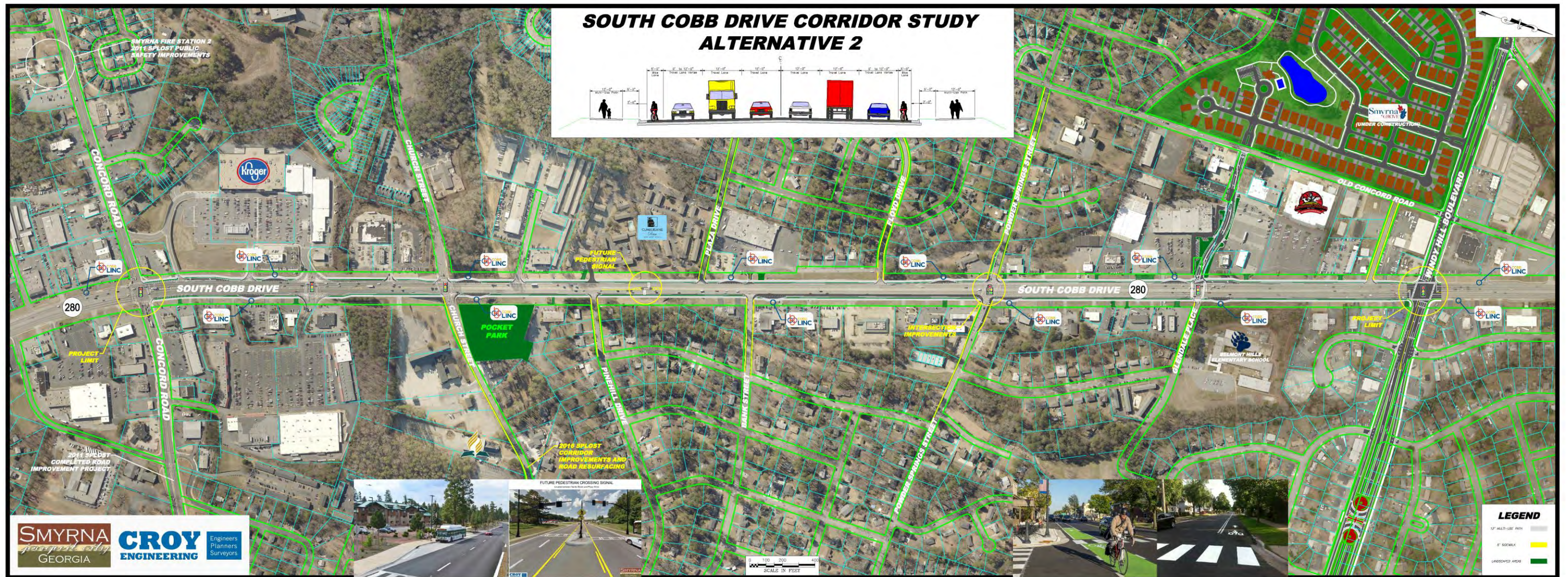


Figure 30: Design Concept 2



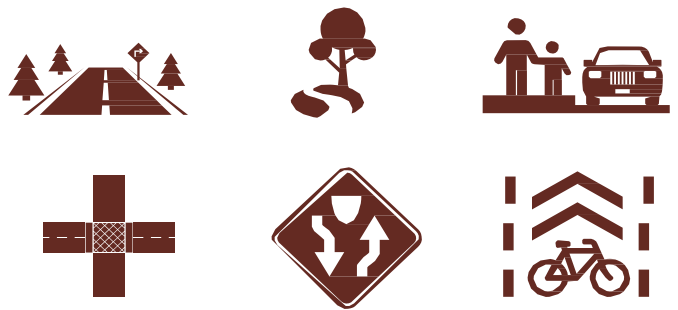
## DESIGN CONCEPT 3

Design Concept 3 for South Cobb Drive's mobility and transportation network proposes the following additions to the universal concepts:

- Adding bus pull-offs at transit stops and relocating bus stops to the far side of signalized intersections
- Installing a raised landscaped median along certain portions of the corridor
- Incorporating bus queue jumping lanes at the intersection of Windy Hill Road and South Cobb Drive; see Figure 32 for example of bus queue-jumper lane.
- A ThrU-Turn intersection at Windy Hill Road and South Cobb Drive; see Figure 33 for example of ThrU-Turn.

Figure 31: Design Concept 3 Components

### UNIVERSAL CONCEPTS



### ADDITIONAL CONCEPTS



Figure 32: Roadway Conceptual Section

### Transportation Benefits of Design Concept 3:

- Adding bus pull-offs at transit stops removes buses from the normal vehicular through movements, which reduces delay for drivers. Another benefit is that gaps are created for buses to re-enter traffic when bus stops are located on the far side of signalized intersections.

- Raised medians provide pedestrian refuge areas/ islands and allow for crossing one direction of traffic at a time. This significantly reduces the complexity and increases the safety of crossing a wide, high speed arterial like South Cobb Drive. Studies from the Federal Highway Administration (FHWA) show that raised medians reduce motor vehicle crashes, reduce delays for motorists, and increase the capacity of roadways. FHWA studies show that raised medians:
  1. Reduce motor vehicle crashes by 15 percent.
  2. Decrease delays (>30 percent) for motorists.
  3. Increase the capacity (>30 percent) of roadways
- Adding a bus queue jumping lane at Windy Hill Road and South Cobb Drive gives buses a “head start” over queued vehicles by allocating additional time for buses to move through the intersection. Bus queue jump lanes (See Figure 32 below) reduce delays at intersections and improve the efficiency of transit.
- A ThrU-Turn intersection (See Figure 33) operates by directing left turns through the intersection (prohibiting the left turn) and guides motorists to a location to make a U-turn and return to the original intersection to continue the travel by making a right turn. Some advantages of ThrU-turn intersections include reducing congestion, aiding in better progression along major routes, increasing capacity at the intersection, and fewer and more separate conflict points for vehicles.

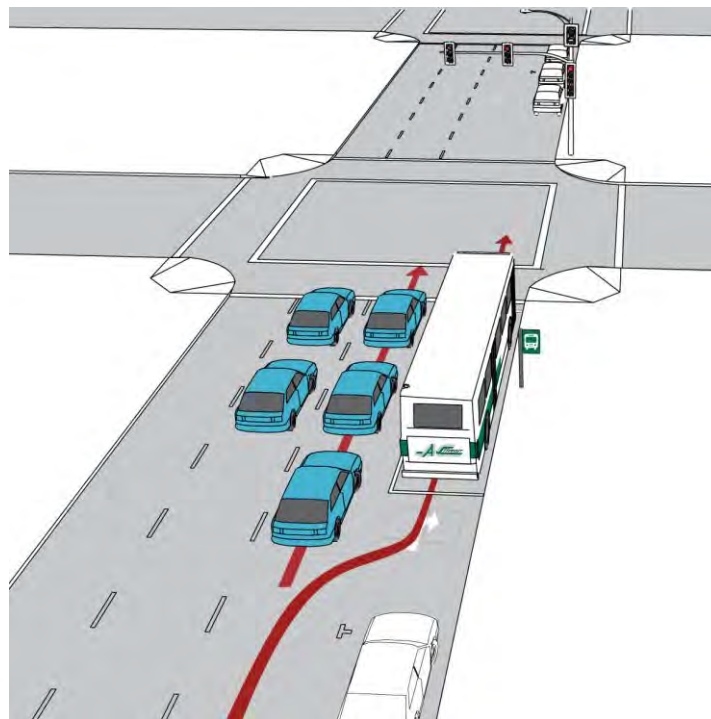


Figure 33: Bus Queue-Jumping Lane Example



Figure 34: ThrU-Turn Example

### **Land Use Impact of Design Concept 3:**

The recommendation for Bus Pull-Offs, installation of a Raised Median, north and south bound Bus Queue Jumping at Windy Hill Road and ThrU-turn at Windy Hill Road may have a negative impact on the redevelopment potential of Area 6. As stated previously, this redevelopment area has a relatively shallow parcel depth. Any bus pull offs fronting these parcels need to be properly designed and located within the ROW to avoid compromising the development potential. Areas 1-5 would probably not be negatively affected by a raised median, given their proximity and or access to signalized intersections. Area 7 may be negatively affected by a raised median, due to its distance from a signalized intersection. ThrU- turn lanes could have a positive effect on Area 5, given its proximity to the intersection of South Cobb Drive and Windy Hill Road.

### **Impact of Design Concept 3 on Cyclists & Pedestrians:**

With the multi-use path on both sides of South Cobb Drive which is universal for all design concepts, the benefit to cyclists continues to be infrastructure that is supportive of this travel mode. The primary benefit of Design Concept 3 for pedestrians is the construction of the median. The median provides a refuge for pedestrians who are not able to cross all lanes of South Cobb Drive at one time.



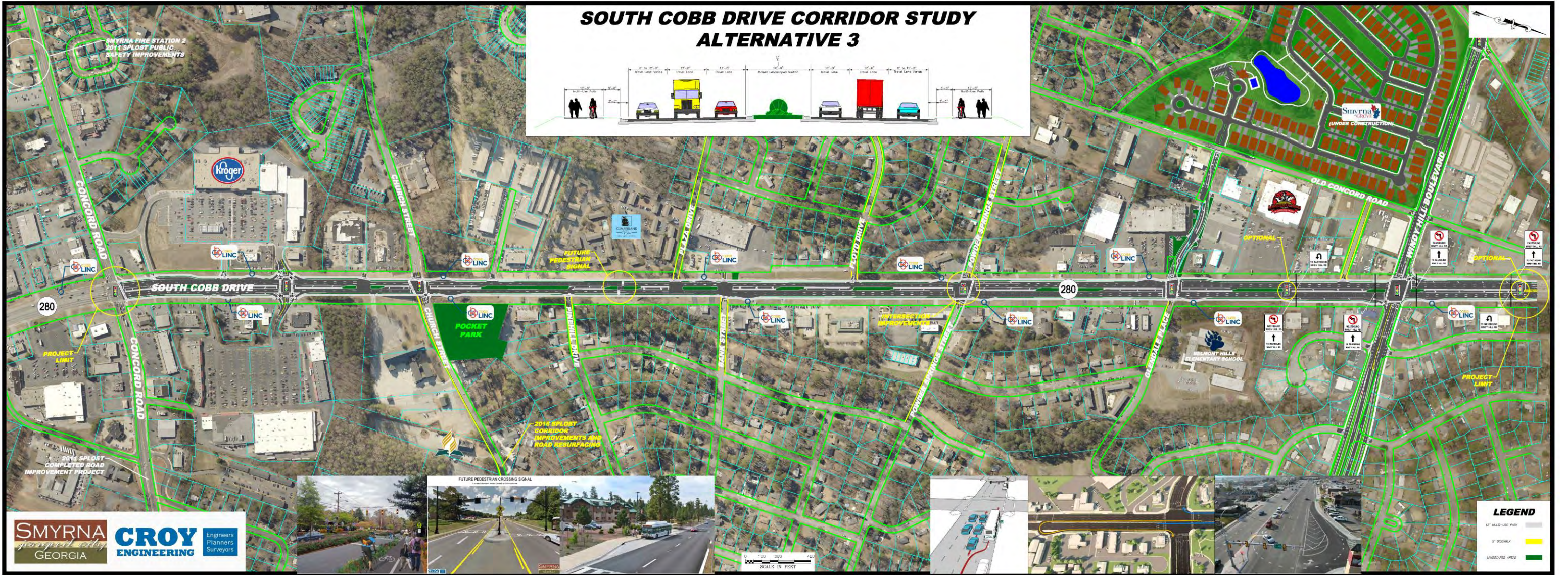


Figure 35: Design Concept 3



## DESIGN CONCEPT 4

In addition to the universal improvements listed, Design Concept 4 for South Cobb Drive's transportation network proposes the following:

- A raised landscaped median along corridor
- A Multi-Way Boulevard along corridor; see Figure 37 for example.
- Adding a traffic signal at Bank Street and South Cobb Drive

Figure 36: Design Concept 4 Components  
**UNIVERSAL CONCEPTS**



**ADDITIONAL CONCEPTS**

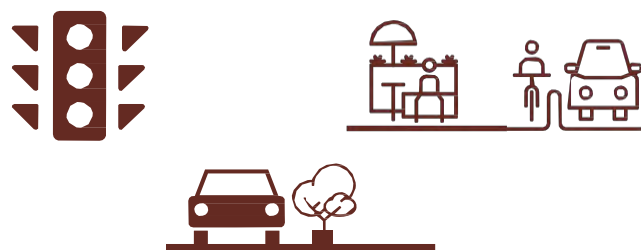


Figure 37: Roadway Conceptual Section

### Transportation Benefits of Design Concept 4:

Raised medians provide pedestrian refuge and allows them to cross one direction of traffic at a time, which significantly reduces the complexity of crossing a wide, high speed arterial such as South Cobb Drive. Studies from the Federal Highway Administration (FHWA) show that raised medians have been found to reduce motor vehicle crashes, reduce delay for motorists, and increase capacity of roadways.

FHWA studies show that raised medians:

1. Have been found to reduce motor vehicle crashes by 15 percent.
2. Decrease delays (>30 percent) for motorists.
3. Have resulted in increase in capacity (>30 percent) of roadways

Similar to Design Concept 3, Design Concept 4 also incorporates benefits of a raised median.

By incorporating a multi-way boulevard design, South Cobb Drive would be transformed into a multi-modal roadway with safe and efficient options for all users (vehicles, transit, cyclists, and pedestrians). The multi-way boulevard concept separates high volume and high speed vehicular travel lanes from local traffic allowing easier and safe access to developments along the corridor.

Barrier separation of the modes of travel creates a traffic calming buffer that fosters a pedestrian and bicycle friendly environment, which could help stimulate redevelopment of abutting parcels. Moreover, South Cobb Drive has sufficient right-of-way to construct the multi-way boulevard without the need for additional property acquisition.



Figure 38: Multi-Way Boulevard Examples

**Land Use Impact of Design Concept 4:**

The recommendation for installation of a raised median and a frontage road may have a positive impact on areas 1 and 2, given their size and proximity to strategically located signalized intersections. A frontage road could help stimulate the type of mixed use, live/work housing identified in the Smyrna Vision Plan and Comprehensive Plan. It would also allow for innovative site design options that could screen or buffer onsite parking and ancillary unattractive outside storage. Both Areas 1 and 2 have sufficient acreage and parcel configurations that would allow for more creative redevelopment adjacent to the frontage road, transitioning to less intense uses east of and immediately adjacent to the roadway corridor.

**Impact of Design Concept 4 on Cyclists, Pedestrians & Transit:**

The multi-way boulevard has the potential to transform South Cobb Drive into a unique, multi-modal roadway that addresses the needs of all users. By separating through traffic from local traffic, high traffic volumes are efficiently moved along the main arterial roadway. At the same time, the local lanes serve low volume, low speed traffic, cyclists and pedestrians. Buffers separate the local lanes, bicycle lanes, on-street parking, and multi-use paths from the main arterial roadway, creating a more pedestrian, and bicycle friendly environment. Raised and landscaped medians divide the main arterial lanes to improve the safety and efficiency of through travel while creating a roadway that is more aesthetically pleasing and much safer for pedestrians and cyclists. Appropriate traffic signal phasing at main intersections would be designed to allow local road vehicles to transition into the through lanes and vice versa.



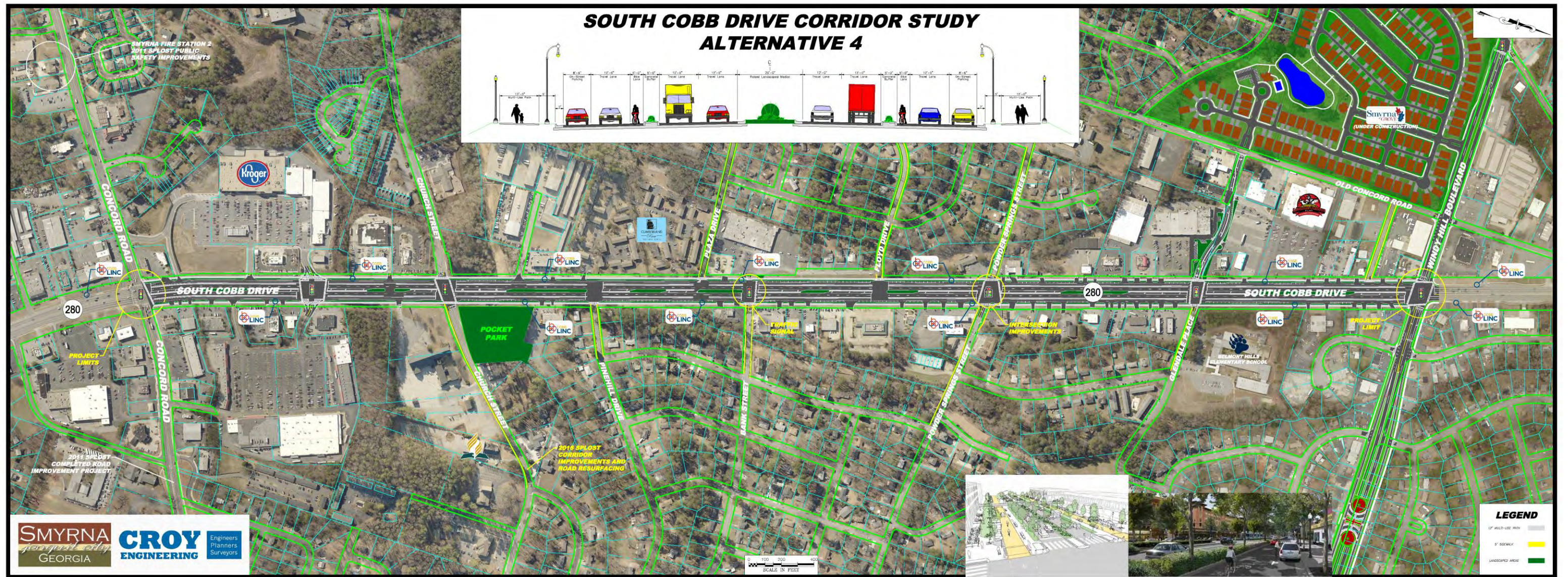


Figure 39: Design Concept 4



## LANDSCAPING & STREETSCAPING CONCEPTS

Conceptual ideas for landscaping, streetscaping and pocket parks, (see Figure 40 for example of pocket park) along South Cobb Drive were developed based on public feedback and potential transportation improvements detailed in the aforementioned transportation network concepts. Aerials of landscaping concepts for the corridor are shown with a raised median and without a raised median.

Figures are also provided to show what the potential landscaping/ streetscaping concepts would look like along the corridor.

Figure 40: Landscaping Concepts

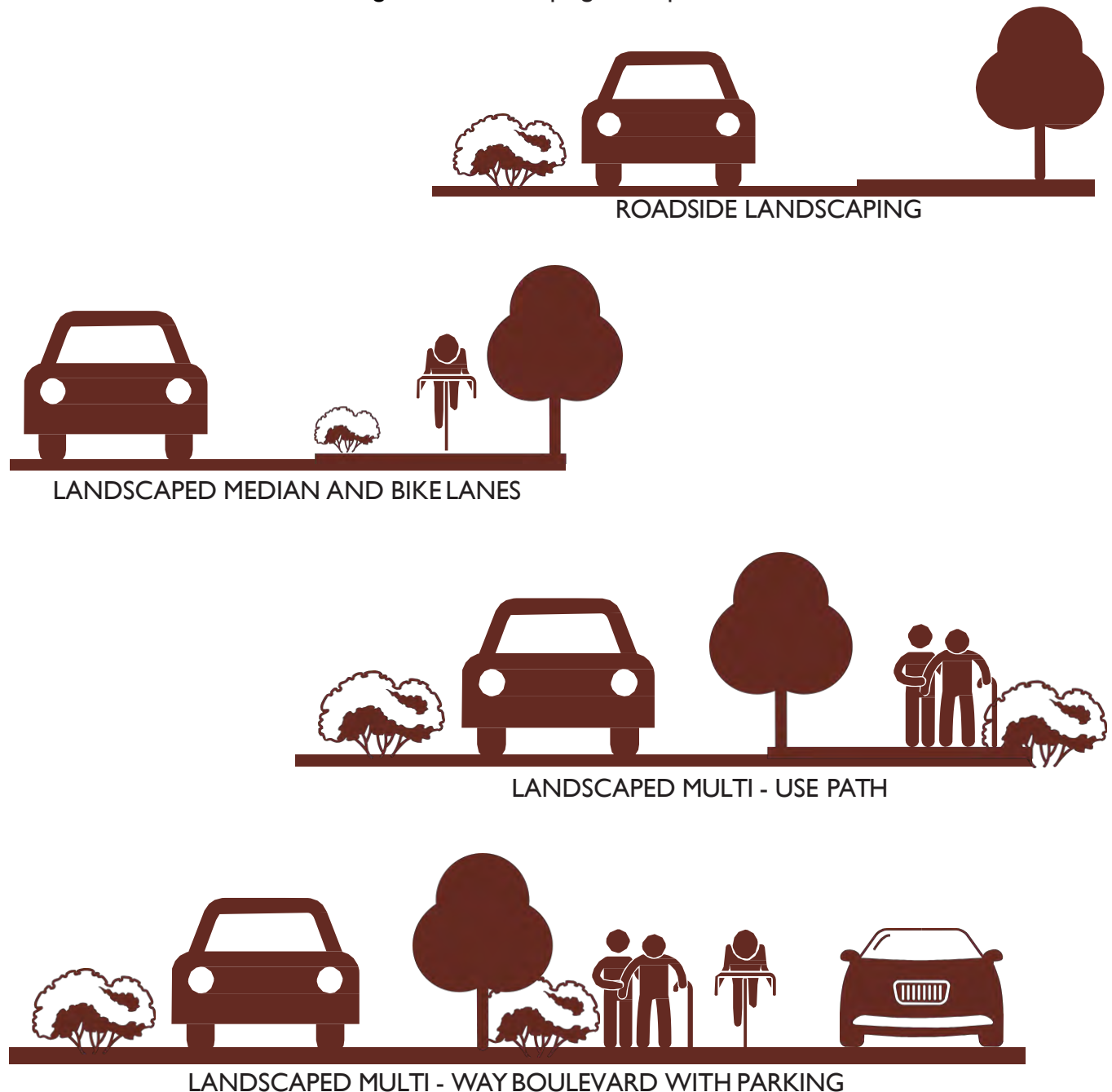




Figure 41: Pocket Park Example



Figure 42: Roadside Landscaping



Figure 43: Multi-use Path





Figure 44: Landscaping Design Concept



## PREFERRED ALTERNATIVE

During the second public information open house, input was received from the over 75 citizen participants and stakeholders. To generate even more input, the public comment period was extended two weeks and comments and feedback continued to be submitted via the project website. This extended public comment period allowed further input and clarification on each of the four presented concepts. Of the 407 comments submitted across all media during the public engagement process, only four comments indicated a preference for the No-Build or “do nothing” option.

Cost estimates for the four alternatives were not presented as part of the comparison between the options. This was done purposely. The study did not want cost to influence the transportation and economic development views and preferences of the citizens. The intent was that by eliminating “build the cheapest one” mentality, the study produced more objective transportation improvement perspectives.

After analyzing the comments received, there was a virtually equal preference for Design Concept 2, (without on-street bicycle lanes) and Design Concept 3. The primary difference is Design Concept 2 maintains the current flush median (two way center turn lane) and Design Concept 3 constructs a raised and landscaped median. Based on the preferred concepts, planning level cost estimates were calculated for Design Concepts 2 and 3. These cost estimates include projections for preliminary engineering, reimbursable utilities, and construction of the proposed improvements. Due to the extremely wide right-of-way of South Cobb Drive/ SR 280, additional right-of-way costs are not anticipated.

Based on the quantities for major construction items and current (2017) unit prices, it was determined that the approximate cost of Design Concept 2 would be \$5,813,200 and Design Concept 3 would be \$7,975,100. For comparative purposes, a cost estimate was also provided for Design Concept 4; \$11,801,200. The cost estimate sheets are in the appendix.

## SECTION F - SUMMARY

South Cobb Drive, State Route (SR) 280, is not only a vital regional transportation corridor, but the segment between Concord Road and Windy Hill Road is an important residential, office, retail and commercial corridor serving the City of Smyrna. In a collaborative effort, the City, along with its' consulting team and in conjunction with its' local and regional transportation partners, performed a concept alternatives study to determine what improvements should be constructed to improve the safety, efficiency and connectivity for all modes of travel along and across this important corridor. The proposed improvements should not only enhance transportation accessibility, safety and circulation for all users, but at the same time create an environment that supports dynamic and sustainable economic development and redevelopment throughout the corridor area.

A successful and robust public engagement process was undertaken to obtain input from the citizens, property owners, and business owners along and adjoining the South Cobb Drive corridor. Additionally, elected officials and other community stakeholders were interviewed, a project website was created, and public information open houses were held.

Public input indicated support for a set of universal improvements along the corridor:

- A multi-use path along both sides of South Cobb Drive
- Sidewalk connectivity from the adjoining neighborhoods
- Intersection improvements at Powder Springs Street
- Pull-offs for the Cobb LINC buses
- Aesthetic enhancements including, but not limited to:
  - Landscaping improvements
  - Pedestrian and roadway lighting
  - Improved wayfinding and directional signage

While there was significant support for installing a raised, landscaped median there was equal sentiment expressed for maintaining the current flush median with a two way center turn lane. Cost estimates were performed for both alternatives that estimated the amount of funding necessary for preliminary engineering, environmental analyses, and construction. (See the line item cost estimates outlined in the figure on the adjoining page) Additionally, a cost estimate was prepared for Design Concept 4. As Smyrna considers the various funding sources that may be available in the future, these concepts and related cost estimates can serve as basis for determining the scope and feasibility of improvements that could be installed along the South Cobb Drive Corridor. These concepts can also act as a template for improvements for other portions of South Cobb Drive, extending north and south of the study corridor.

# APPENDIX

# Project Cost Estimation Spreadsheet

## Project Identification

Description	South Cobb Drive Corridor Study				
From Limit	Alternative 2	Proj. Type			
To Limit	Concord Road	District			
Notes	Windy Hill Road	Estimator	SM/DBD		
Project Length	1.47 miles	Original Estimate Date	3/7/2017		
		Revision Date	5/22/2017		

<u>Cost Summary</u>		per mile	Yr. of Exp.	Inflated Cost	Total Program Cost
Preliminary Engineering	\$657,142	\$ 447,036	2012	\$ 657,142	\$657,142
Reimbursable Utility	\$101,099	\$ 68,775	2012	\$ 101,099	\$101,099
Right-of-Way	\$0	\$ -	2012	\$ -	\$0
Construction	\$5,054,940	\$ 3,438,735	2012	\$ 5,054,940	\$5,054,940
<b>Total</b>	<b>\$5,813,181</b>	<b>\$ 3,954,545</b>	<b>Total</b>	<b>\$ 5,813,181</b>	<b>\$5,813,181</b>

## Construction Costs

<u>Average Per Lane-Mile Components</u>	Unit Cost	Miles	Add Lanes	Lane-Miles	Cost
Surface Str. New Cst. base & pave	\$440,000	0.22	1.00	0.22	\$96,800
Surface Str. Widening base & pave	\$440,000	0.00	0.00	0	\$0
Surface Street Overlay	\$52,000	1.47	6.00	8.82	\$458,640
Surface Street Structural Overlay (includes 35 lbs/sy of leveling, 10% patching & overlay) per mile	\$90,000	0.00	0	0	\$0
Cross Streets widening	\$440,000	0.00	0	0	\$0
Factor					
Cross Street Overlay	\$21,000	0.00	1.00		\$0
Traffic Control per Calendar Year	\$150,000	1.00	1.00		\$150,000
Typical Driveway (each)	\$4,000	0.00	1.00		\$0
Typical E & S Control (mile)	\$160,000	1.47	1.00		\$235,200
Typ Earthwork includes Clear & Grub (LS)	\$500,000	0.33	1.95		\$321,420
Typ Drainage - Urban Section (mile)	\$375,000	0.00	1.00		\$0
Curb & Gutter both sides (mile)	\$140,000	0.33	0.50		\$23,100
Lighting, pedestrian scale, both sides (mile)	\$750,000	1.47	1.00		\$1,102,500
Signing & Marking (mile)	\$100,000	1.47	1.00		\$147,000
Roadside landscaping, both sides (mile)	\$150,000	1.47	1.00		\$220,500
20ft. Raised median (mile)	\$200,000	0.00	1.00		\$0
Median landscaping (mile)	\$75,000	0.00	1.00		\$0
Multi-Use Path 12 ft. both sides (mile)	\$492,000	1.47	1.00		\$723,240
<b>Subtotal</b>					<b>\$3,478,400</b>

<u>Additional Per Mile Components</u>	Unit Cost	Length	Factor	Each	Cost
Add'l Major Earthwork (mile)	\$250,000	0.00	1.00		\$0
Add'l Major Drainage (mile)	\$100,000	1.47	1.00		\$147,000
Add'l Major Grade changes (mile)	\$250,000	0.00	1.00		\$0
Major alignment corrections (mile)	\$600,000	0.00	1.00		\$0
Maint of Traffic difficulty (mile)	\$100,000	0.00	1.00		\$0
Precast barrier Method 2 (ft)	\$50	0.00	1.00		\$0
Add'l guardrail (mile)	\$50,000	0.00	1.00		\$0
Paved Shoulders, 4 ft, 2 sides(mile)	\$165,000	0.00	1.00		\$0
Wetland Mitigation Credits (each)	\$100,000		1.00	0	\$0
Wetland Permits (per location)	\$50,000		1.00	0	\$0
Bikeway, 4 feet, both side (mile)	\$180,000	0.00	1.00		\$0
Typical Commercial Driveway (each)	\$10,000		1.00	67	\$670,000
Cl. B Conc. Pvmnt widening (mile)	\$18,000	0.00	1.00		\$0
Stream Buffer Permits (per stream)	\$50,000	0.00	1.00	2	\$100,000
Special E&S control	\$0		1.00	0	\$0
<b>Subtotal</b>					<b>\$917,000</b>



<b>Individual Components</b>	<b>Unit Cost</b>	<b>Length (ft)</b>	<b>Width (ft)</b>	<b>Ht (ft)</b>	<b>Each</b>	<b>Cost</b>
Retaining Walls - Gravity 0 - 5' (SF)	\$95	0			0	\$0
Retaining Walls-Gravity 5'-10' (SF)	\$190	0			0	\$0
Retaining Walls-MSE(SF)	\$120	0			0	\$0
Bridges - widen (SF) - PSC	\$120	0	0			\$0
Bridges - widen (SF) - Steel	\$190	0	0			\$0
Bridges - replace (SF) - PSC	\$150	0	0			\$0
Bridges - replace (SF) - Steel	\$200	0	0			\$0
Bridges - detour (SF)	\$55	0	0			\$0
Bridge Removal (SF)	\$20	0	0			\$0
Cofferdams (ea)	\$15,000				0	\$0
Box Culverts Single Barrel (SF of opening)	\$20	0	0			\$0
Box Culverts Multi Barrel (SF of opening)	\$15	0	0			\$0
48 inch cross drains (LF)	\$80	0				\$0
Replace 48 inch cross drains (LF)	\$120	0				\$0
Sediment/ detention ponds (ea)	\$20,000				0	\$0
Pavement patching (assumed 10% of an 11ft lane full depth paving only for one mile)						
SY	\$30,000				0	\$0
CSX Agreements (3 month bridge project)	\$100,000				0	\$0
Traffic Signalization / Upgrade (ea)	\$200,000				1	\$200,000
<b>Subtotal</b>						<b>\$200,000</b>
<b>Total Construction Cost</b>						<b>\$4,595,400</b>

87%

**Right-of-Way Costs**

<b>Area Type</b>	<b>Unit Cost (acre)</b>	<b>Miles</b>	<b>Width (ft)</b>	<b>Acres</b>	<b>Factor</b>	<b>Cost</b>
Urban Residential	\$750,000	0	0		0.00	\$0
	\$750,000	0	0		0.00	\$0
Urban Commercial	\$1,000,000	0	0		0.00	\$0
	\$1,000,000	0	0		0.00	\$0
Suburban/Rural Residential	\$500,000	0	0		0.00	\$0
	\$500,000	0	0		0.00	\$0
Suburban/Rural Commercial	\$750,000	0	0		0.00	\$0
	\$750,000	0	0		0.00	\$0
<b>Sub Total</b>						<b>\$0</b>
County Location Factor					0	\$0
Displacements		Number	factor			
Residential	\$300,000	0	1.00			\$0
Business	\$2,000,000	0	1.00			\$0
(fill out on Database Page) Damages	\$0	0	1.00			\$0
ROW multiplier						1.65
<b>Total Right-of-Way Cost</b>						<b>\$0</b>

0%

**Reimbursable Utility Costs**

<b>Utility Owner</b>	<b>Unit Cost</b>	<b>Factor</b>	
Major Petroleum Pipe Line	\$ 150,000	0	\$ -
Major Water Main	\$ 50,000	0	\$ -
Major Power Pole	\$ 250,000	0	\$ -
Minor Power Pole	\$ 100,000	0	\$ -
Additional Utility TBD	\$ -	0	\$ -
			\$ 91,908
<b>Total Reimbursable Utility Cost</b>			<b>\$91,908</b>

1.74%

**Preliminary Engineering Costs**

PE %	13%	<b>Total Preliminary Engineering Cost</b>	<b>\$597,402</b>
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11.30%

**Contingency Costs**

Contingency %	10%	<b>Total Contingency Cost</b>	<b>\$528,471</b>
		<b>Total (PE+Util.+ROW+CST)</b>	<b>\$5,284,710</b>
		<b>Grand Total</b>	<b>\$5,813,181</b>

# Project Cost Estimation Spreadsheet

## Project Identification

Description	South Cobb Drive Corridor Study				
From Limit	Alternative 3	Proj. Type			
To Limit	Concord Road	District			
Notes	Windy Hill Road	Estimator	SM/DBD		
Project Length	1.47 miles	Original Estimate Date	3/7/2017		
		Revision Date	5/22/2017		

<u>Cost Summary</u>		per mile	Yr. of Exp.	Inflated Cost	Total Program Cost
Preliminary Engineering	\$901,535	\$ 613,289	2012	\$ 901,535	\$901,535
Reimbursable Utility	\$138,698	\$ 94,352	2012	\$ 138,698	\$138,698
Right-of-Way	\$0	\$ -	2012	\$ -	\$0
Construction	\$6,934,884	\$ 4,717,608	2012	\$ 6,934,884	\$6,934,884
<b>Total</b>	<b>\$7,975,117</b>	<b>\$ 5,425,249</b>	<b>Total</b>	<b>\$ 7,975,117</b>	<b>\$7,975,117</b>

## Construction Costs

<u>Average Per Lane-Mile Components</u>	Unit Cost	Miles	Add Lanes	Lane-Miles	Cost
Surface Str. New Cst. base & pave	\$440,000	1.47	1.00	1.47	\$646,800
Surface Str. Widening base & pave	\$440,000	0.00	0.00	0	\$0
Surface Street Overlay	\$52,000	1.47	5.00	7.35	\$382,200
Surface Street Structural Overlay (includes 35 lbs/sy of leveling, 10% patching & overlay) per mile	\$90,000	0.00	0	0	\$0
Cross Streets widening	\$440,000	0.10	2	0.2	\$88,000
Factor					
Cross Street Overlay	\$21,000	0.00	1.00		\$0
Traffic Control per Calendar Year	\$150,000	1.00	1.00		\$150,000
Typical Driveway (each)	\$4,000	0.00	1.00		\$0
Typical E & S Control (mile)	\$160,000	1.47	1.00		\$235,200
Typ Earthwork includes Clear & Grub (LS)	\$500,000	0.33	3.10		\$511,500
Typ Drainage - Urban Section (mile)	\$375,000	1.47	1.00		\$551,250
Curb & Gutter both sides (mile)	\$140,000	1.80	1.00		\$252,000
Lighting, pedestrian scale, both sides (mile)	\$750,000	1.47	1.00		\$1,102,500
Signing & Marking (mile)	\$100,000	1.47	1.00		\$147,000
Roadside landscaping, both sides (mile)	\$150,000	1.47	1.00		\$220,500
20ft. Raised median (mile)	\$200,000	1.43	1.00		\$286,000
Median landscaping (mile)	\$75,000	0.51	1.00		\$38,250
Multi-Use Path 12 ft. both sides (mile)	\$492,000	1.47	1.00		\$723,240
<b>Subtotal</b>					<b>\$5,334,440</b>

<u>Additional Per Mile Components</u>	Unit Cost	Length	Factor	Each	Cost
Add'l Major Earthwork (mile)	\$250,000	0.00	1.00		\$0
Add'l Major Drainage (mile)	\$100,000	0.00	1.00		\$0
Add'l Major Grade changes (mile)	\$250,000	0.00	1.00		\$0
Major alignment corrections (mile)	\$600,000	0.00	1.00		\$0
Maint of Traffic difficulty (mile)	\$100,000	0.00	1.00		\$0
Precast barrier Method 2 (ft)	\$50	0.00	1.00		\$0
Add'l guardrail (mile)	\$50,000	0.00	1.00		\$0
Paved Shoulders, 4 ft, 2 sides(mile)	\$165,000	0.00	1.00		\$0
Wetland Mitigation Credits (each)	\$100,000		1.00	0	\$0
Wetland Permits (per location)	\$50,000		1.00	0	\$0
Bikeway, 4 feet, both side (mile)	\$180,000	0.00	1.00		\$0
Typical Commercial Driveway (each)	\$10,000		1.00	67	\$670,000
Cl. B Conc. Pvmnt widening (mile)	\$18,000	0.00	1.00		\$0
Stream Buffer Permits (per stream)	\$50,000	0.00	1.00	2	\$100,000
Special E&S control	\$0		1.00	0	\$0
<b>Subtotal</b>					<b>\$770,000</b>

<b>Individual Components</b>	<b>Unit Cost</b>	<b>Length (ft)</b>	<b>Width (ft)</b>	<b>Ht (ft)</b>	<b>Each</b>	<b>Cost</b>
Retaining Walls - Gravity 0 - 5' (SF)	\$95	0			0	\$0
Retaining Walls-Gravity 5'-10' (SF)	\$190	0			0	\$0
Retaining Walls-MSE(SF)	\$120	0			0	\$0
Bridges - widen (SF) - PSC	\$120	0	0			\$0
Bridges - widen (SF) - Steel	\$190	0	0			\$0
Bridges - replace (SF) - PSC	\$150	0	0			\$0
Bridges - replace (SF) - Steel	\$200	0	0			\$0
Bridges - detour (SF)	\$55	0	0			\$0
Bridge Removal (SF)	\$20	0	0			\$0
Cofferdams (ea)	\$15,000				0	\$0
Box Culverts Single Barrel (SF of opening)	\$20	0	0			\$0
Box Culverts Multi Barrel (SF of opening)	\$15	0	0			\$0
48 inch cross drains (LF)	\$80	0				\$0
Replace 48 inch cross drains (LF)	\$120	0				\$0
Sediment/ detention ponds (ea)	\$20,000				0	\$0
Pavement patching (assumed 10% of an 11ft lane full depth paving only for one mile)						
SY	\$30,000				0	\$0
CSX Agreements (3 month bridge project)	\$100,000				0	\$0
Traffic Signalization / Upgrade (ea)	\$200,000				1	\$200,000
<b>Subtotal</b>						<b>\$200,000</b>
<b>Total Construction Cost</b>						<b>\$6,304,440</b>

87%

#### Right-of-Way Costs

<b>Area Type</b>	<b>Unit Cost (acre)</b>	<b>Miles</b>	<b>Width (ft)</b>	<b>Acres</b>	<b>Factor</b>	<b>Cost</b>
Urban Residential	\$750,000	0	0		0.00	\$0
	\$750,000	0	0		0.00	\$0
Urban Commercial	\$1,000,000	0	0		0.00	\$0
	\$1,000,000	0	0		0.00	\$0
Suburban/Rural Residential	\$500,000	0	0		0.00	\$0
	\$500,000	0	0		0.00	\$0
Suburban/Rural Commercial	\$750,000	0	0		0.00	\$0
	\$750,000	0	0		0.00	\$0
<b>Sub Total</b>						<b>\$0</b>
County Location Factor					1	\$0
Displacements		Number	factor			
Residential	\$300,000	0	1.00			\$0
Business	\$2,000,000	0	1.00			\$0
(fill out on Database Page) Damages	\$0	0	1.00			\$0
ROW multiplier						1.65
<b>Total Right-of-Way Cost</b>						<b>\$0</b>

0%

#### Reimbursable Utility Costs

<b>Utility Owner</b>	<b>Unit Cost</b>	<b>Factor</b>	
Major Petroleum Pipe Line	\$ 150,000	0	\$ -
Major Water Main	\$ 50,000	0	\$ -
Major Power Pole	\$ 250,000	0	\$ -
Minor Power Pole	\$ 100,000	0	\$ -
Additional Utility TBD	\$ -	0	\$ -
			\$ 126,089
<b>Total Reimbursable Utility Cost</b>			<b>\$126,089</b>

1.74%

#### Preliminary Engineering Costs

PE %	13%	<b>Total Preliminary Engineering Cost</b>	<b>\$819,577</b>
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11.30%

#### Contingency Costs

Contingency %	10%	<b>Total Contingency Cost</b>	<b>\$725,011</b>
		<b>Total (PE+Util.+ROW+CST)</b>	<b>\$7,250,106</b>
		<b>Grand Total</b>	<b>\$7,975,117</b>



## Project Cost Estimation Spreadsheet

### Project Identification

Description	South Cobb Drive Corridor Study			
From Limit	Alternative 4	Proj. Type		
To Limit	Concord Road	District		
Notes	Windy Hill Road	Estimator	SM/DBD	
Project Length	1.47 miles	Original Estimate Date	3/7/2017	
		Revision Date	5/22/2017	

<u>Cost Summary</u>		per mile	Yr. of Exp.	Inflated Cost	Total Program Cost
Preliminary Engineering	\$1,334,053	\$ 907,519	2012	\$ 1,334,053	\$1,334,053
Reimbursable Utility	\$205,239	\$ 139,618	2012	\$ 205,239	\$205,239
Right-of-Way	\$0	\$ -	2012	\$ -	\$0
Construction	\$10,261,944	\$ 6,980,914	2012	\$ 10,261,944	\$10,261,944
<b>Total</b>	<b>\$11,801,236</b>	<b>\$ 8,028,051</b>	<b>Total</b>	<b>\$ 11,801,236</b>	<b>\$11,801,236</b>

### Construction Costs

<u>Average Per Lane-Mile Components</u>	Unit Cost	Miles	Add Lanes	Lane-Miles	Cost
Surface Str. New Cst. base & pave	\$440,000	1.47	5.00	7.35	\$3,234,000
Surface Str. Widening base & pave	\$440,000	0.00	0.00	0	\$0
Surface Street Overlay	\$52,000	1.47	5.00	7.35	\$382,200
Surface Street Structural Overlay (includes 35 lbs/sy of leveling, 10% patching & overlay) per mile	\$90,000	0.00	0	0	\$0
Cross Streets widening	\$440,000	0.10	2	0.2	\$88,000
		Factor			
Cross Street Overlay	\$21,000	0.00	1.00		\$0
Traffic Control per Calendar Year	\$150,000	1.00	1.00		\$150,000
Typical Driveway (each)	\$4,000	0.00	1.00		\$0
Typical E & S Control (mile)	\$160,000	1.47	1.00		\$235,200
Typ Earthwork includes Clear & Grub (LS)	\$500,000	0.33	3.10		\$511,500
Typ Drainage - Urban Section (mile)	\$375,000	1.47	1.00		\$551,250
Curb & Gutter both sides (mile)	\$140,000	1.47	3.00		\$617,400
Lighting, pedestrian scale, both sides (mile)	\$750,000	1.47	1.00		\$1,102,500
Signing & Marking (mile)	\$100,000	1.47	1.00		\$147,000
Roadside Landscaping, both sides (mile)	\$150,000	1.47	1.00		\$220,500
20ft. Raised median (mile)	\$200,000	1.43	1.00		\$286,000
Median landscaping (mile)	\$75,000	1.47	1.00		\$110,250
Multi-Use Path 12 ft. both sides (mile)	\$492,000	1.47	1.00		\$723,240
				<b>Subtotal</b>	<b>\$8,359,040</b>

<u>Additional Per Mile Components</u>	Unit Cost	Length	Factor	Each	Cost
Add'l Major Earthwork (mile)	\$250,000	0.00	1.00		\$0
Add'l Major Drainage (mile)	\$100,000	0.00	1.00		\$0
Add'l Major Grade changes (mile)	\$250,000	0.00	1.00		\$0
Major alignment corrections (mile)	\$600,000	0.00	1.00		\$0
Maint of Traffic difficulty (mile)	\$100,000	0.00	1.00		\$0
Precast barrier Method 2 (ft)	\$50	0.00	1.00		\$0
Add'l guardrail (mile)	\$50,000	0.00	1.00		\$0
Paved Shoulders, 4 ft, 2 sides(mile)	\$165,000	0.00	1.00		\$0
Wetland Mitigation Credits (each)	\$100,000		1.00	0	\$0
Wetland Permits (per location)	\$50,000		1.00	0	\$0
Bikeway, 4 feet, both side (mile)	\$180,000	0.00	1.00		\$0
Typical Commercial Driveway (each)	\$10,000		1.00	67	\$670,000
Cl. B Conc. Pvmt widening (mile)	\$18,000	0.00	1.00		\$0
Stream Buffer Permits (per stream)	\$50,000	0.00	1.00	2	\$100,000
Special E&S control	\$0		1.00	0	\$0
				<b>Subtotal</b>	<b>\$770,000</b>

Individual Components	Unit Cost	Length (ft)	Width (ft)	Ht (ft)	Each	Cost
Retaining Walls - Gravity 0 - 5' (SF)	\$95	0			0	\$0
Retaining Walls-Gravity 5'-10' (SF)	\$190	0			0	\$0
Retaining Walls-MSE(SF)	\$120	0			0	\$0
Bridges - widen (SF) - PSC	\$120	0	0			\$0
Bridges - widen (SF) - Steel	\$190	0	0			\$0
Bridges - replace (SF) - PSC	\$150	0	0			\$0
Bridges - replace (SF) - Steel	\$200	0	0			\$0
Bridges - detour (SF)	\$55	0	0			\$0
Bridge Removal (SF)	\$20	0	0			\$0
Cofferdams (ea)	\$15,000				0	\$0
Box Culverts Single Barrel (SF of opening)	\$20	0	0			\$0
Box Culverts Multi Barrel (SF of opening)	\$15	0	0			\$0
48 inch cross drains (LF)	\$80	0				\$0
Replace 48 inch cross drains (LF)	\$120	0				\$0
Sediment/ detention ponds (ea)	\$20,000				0	\$0
Pavement patching (assumed 10% of an 11ft lane full depth paving only for one mile)						
SY	\$30,000				0	\$0
CSX Agreements (3 month bridge project)	\$100,000				0	\$0
Traffic Signalization / Upgrade (ea)	\$200,000				1	\$200,000
					<b>Subtotal</b>	<b>\$200,000</b>
					<b>Total Construction Cost</b>	<b>\$9,329,040</b>
						87%

#### Right-of-Way Costs

Area Type	Unit Cost (acre)	Miles	Width (ft)	Acres	Factor	Cost
Urban Residential	\$750,000	0	0		0.00	\$0
	\$750,000	0	0		0.00	\$0
Urban Commercial	\$1,000,000	0	0		0.00	\$0
	\$1,000,000	0	0		0.00	\$0
Suburban/Rural Residential	\$500,000	0	0		0.00	\$0
	\$500,000	0	0		0.00	\$0
Suburban/Rural Commercial	\$750,000	0	0		0.00	\$0
	\$750,000	0	0		0.00	\$0
				<b>Sub Total</b>		<b>\$0</b>
County Location Factor					1	\$0
Displacements		Number	factor			
Residential	\$300,000	0	1.00			\$0
Business	\$2,000,000	0	1.00			\$0
(fill out on Database Page) Damages	\$0	0	1.00			\$0
				ROW multiplier		1.65
				<b>Total Right-of-Way Cost</b>		<b>\$0</b>
						0%

#### Reimbursable Utility Costs

Utility Owner	Unit Cost	Factor	
Major Petroleum Pipe Line	\$ 150,000	0	\$ -
Major Water Main	\$ 50,000	0	\$ -
Major Power Pole	\$ 250,000	0	\$ -
Minor Power Pole	\$ 100,000	0	\$ -
Additional Utility TBD	\$ -	0	\$ -
			\$ 186,581
			<b>Total Reimbursable Utility Cost</b>
			<b>\$186,581</b>
			1.74%

#### Preliminary Engineering Costs

PE %	13%	<b>Total Preliminary Engineering Cost</b>	<b>\$1,212,775</b>
			11.30%

#### Contingency Costs

Contingency %	10%	<b>Total Contingency Cost</b>	<b>\$1,072,840</b>
		<b>Total (PE+Util.+ROW+CST)</b>	<b>\$10,728,396</b>
		<b>Grand Total</b>	<b>\$11,801,236</b>