Scoping Study for the Realignment of Cobb Parkway at McCollum Parkway

Existing Conditions Report

Cobb County, Georgia

January 2024

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Introduction

The purpose of this existing conditions report is to serve as an initial step for the overall Scoping Study for the Realignment Study of Cobb Parkway at McCollum Parkway (Study). This existing conditions report inventories and evaluates the current transportation network, including roadways, sidewalks, bike lanes, safety, and existing traffic characteristics such as traffic volume, travel times, and congestion levels. Additionally, a preliminary utility and environmental review was conducted and incorporated into this existing conditions report. The findings of the existing condition's report will act as a baseline for subsequent stages of the study including the development of improvement strategies, alternatives analysis, and the evaluation of the effectiveness of proposed realignment alternatives.

Project Background

Due to existing issues with the current roadway network alignment in the study area (Figure 1), the Cobb County Department of Transportation (CCDOT) identified the need to better accommodate traffic patterns and movement between Kennesaw Due West Road, Cobb Parkway/US 41/SR 3 (Cobb Parkway) and McCollum Parkway. Currently, traffic coming from the I-75 area, traveling westbound along McCollum Pkwy must turn left or right onto Cobb Parkway to access the western portion of the study area because McCollum Parkway dead ends west of Cobb Parkway as Cobb International Boulevard. Traffic moving towards I-75 from western portions of the study area must turn on Cobb Parkway first before accessing McCollum Parkway in a z-type movement which increases travel time and safety concerns due to having to travel through more intersection conflict points.

Thus, the first step towards identifying the potential needs and solutions within the study area is the inventory and evaluation of the existing conditions. The report section outlines the goals and objectives of the existing conditions report, identifies the overall study area, and provides an overview of previous transportation studies or plans that have influenced policy and recommendations as they apply to the existing transportation system within the study area.

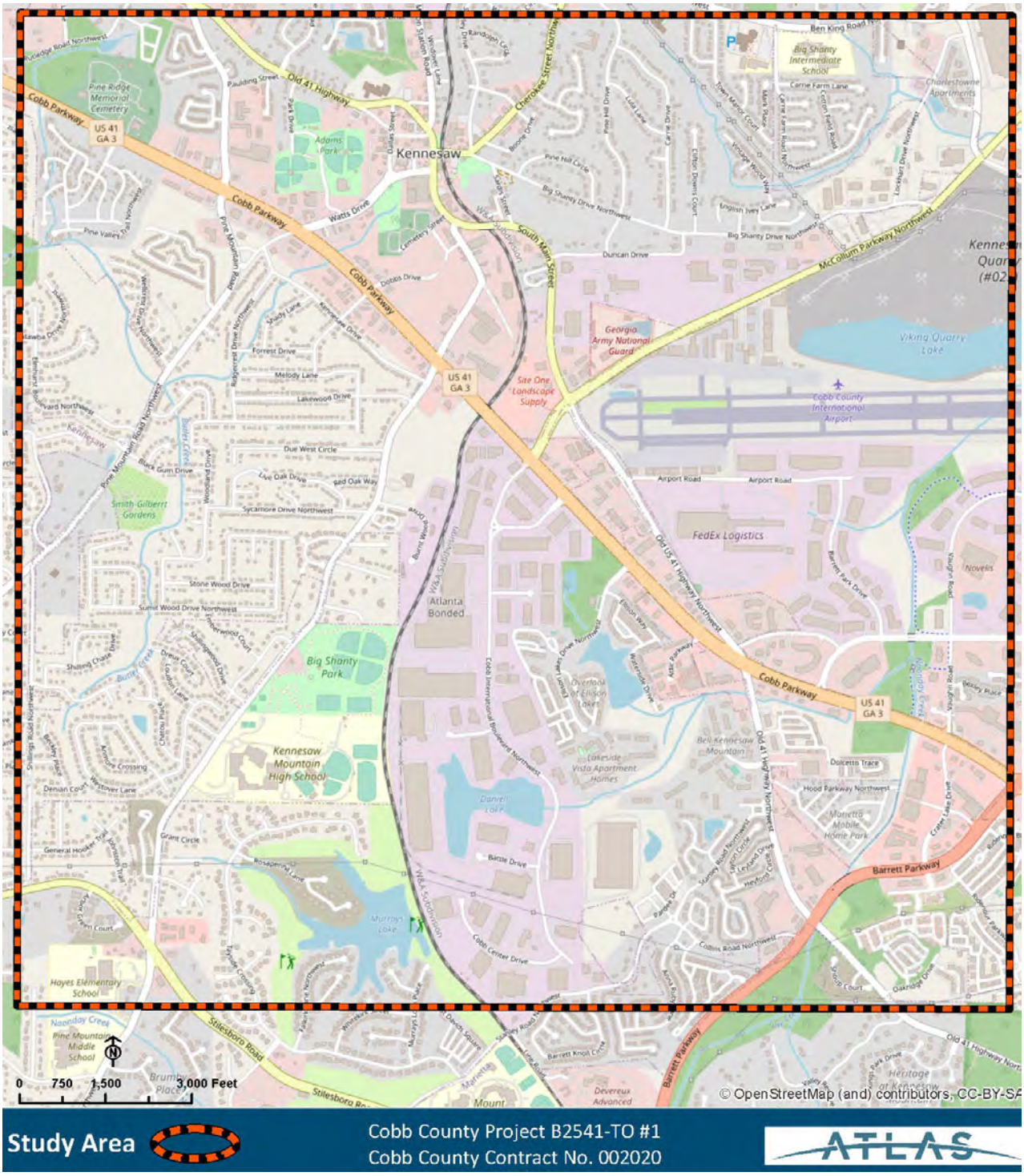
The main objectives of the existing conditions report are to:

- Conduct a review of relevant previous plans and studies, current land use, and transportation regulations or policies that impact the study area.
- Review developments and projects underway, permitted, or programmed in the study area.
- Collect and analyze existing traffic data including traffic counts, turning movement volumes, and truck volumes to assess existing traffic conditions.
- Document and review the existing active transportation facilities within the study area.
- Conduct preliminary environmental screening within the study area.
- Evaluate the traffic operations and safety.
- Identify and evaluate pre-existing utilities that could be impacted by any of the proposed alternatives and subsequent ROW information that may be impacted.

Study Area Boundary

The study area includes the primary intersection of Cobb Parkway at McCollum Parkway/Kennesaw Due West Road/Old 41 Highway, which is being considered for potential realignment as well as adjacent arterial, collector, and local roadway segments located within the jurisdiction of Cobb County and the City of Kennesaw. The study area also includes notable destinations such as the Cobb County International Airport, downtown Kennesaw, Big Shanty Park, and Kennesaw Mountain High School amongst multiple commercial and residential developments. Also within the study area is a FedEx facility and Vulcan Materials quarry, both of which generate heavy vehicle traffic. Just outside the study area along McCollum Parkway is Kennesaw State University and I-75 to the northeast. To the southeast along US 41, is Wellstar Kennestone Hospital which has a Level 2 Trauma center. Overall, the study area comprises approximately 10.8 square miles where the entirety of the study area is located in Cobb County, and a large majority of the study area is also located within the City of Kennesaw. Figure 1 below shows the study area.

FIGURE 1: PROJECT STUDY AREA



Review of Relevant Plans and Studies

Numerous planning studies within the study area have been conducted previously which could influence policy decisions regarding land use, development, as well as the existing transportation network. These studies could have a direct impact on the future of development and transportation by providing both a vision for future transportation, land use, and community improvements and actionable items that pave the way for that vision. The plans and studies that were reviewed as part of this study effort are summarized below.

City of Kennesaw 2022 Comprehensive Plan Update

The City of Kennesaw 2022 Comprehensive Plan is a tool to guide development, investment, and the allocation of services within a jurisdiction. A comprehensive plan like the City of Kennesaw's Comprehensive Plan is one planning instrument that can help guide policy decisions and it includes three distinctive features:

- It is a long-range plan, looking ahead years and even decades into the future.
- It is comprehensive and looks across many different facets of what a city comprises including land-use, infrastructure, public works, and funding.
- It is deliberative and inclusive seeking to understand the needs and desires of the city.

The City of Kennesaw last updated its comprehensive plan in 2017, thus the current document replaces that plan with updated policies, data, and a new community work program. This update affirms the City's big-picture vision, defines goals and lays out a task list for city leaders, staff, and citizens to address issues and to position the City of Kennesaw to be a leader within metro Atlanta.

Within the study area, several transportation policies were recommended to improve transportation connectivity and access. These policies include:

- Encourage the integration of public transportation hubs at nodal developments.
- Support improved pedestrian mobility and safety as surrounding neighborhood revitalization occurs.
- Encourage pedestrian access to nodal developments via sidewalks and trail systems to maximize the use of public transportation hubs.
- Encourage pedestrian access to downtown via sidewalks and trail systems.
- Provide an interconnected system of streets within new development that is also connected to existing development.
- Require truck parking along the sides or rear of the structures.
- Ensure vehicular circulation takes place on the respective industrial property; backing into or turning around on streets should not allowed. Appropriate site design should support proper circulation.

Below are the planned land use developments in the study area that are identified in the City of Kennesaw 2022 Comprehensive Plan Update.

Core Property Capital Project

Core Property Capital proposes to develop along Summer Street, Keene Street, Burrell Court, and Cobb Parkway a mixed-use concept, containing apartments, retail, restaurants, and townhomes in two phases. The first phase will include 288 multifamily units at four stories, 15,000 square feet of restaurant/retail, and a 3,000-square-foot redevelopment of Lighthouse Baptist Church. The second phase will have up to 110 multi-family units and 20,000 square feet of first-floor commercial or 40,000 square feet of commercial.

TPA Residential Project

Located at 2652 South Main Street, this mixed-use development project will consist of a minimum of 44 for-sale townhomes, 318 multi-family luxury apartment units, a multi-level parking deck, 5,000 to 10,000 square feet of commercial that wraps around the multi-level parking deck, an additional detached retail building with 10,000 to 25,000 square feet of commercial space, a southern extension of the City's existing Gateway Park along Main Street with interconnected trails and pedestrian connectivity.

Cobb Forward Comprehensive Transportation Plan (2022)

The County's Comprehensive Transportation Plan (CTP), takes Cobb County's future growth into account. The CTP provides Cobb County with a set of policies and multimodal network enhancements, positioning Cobb County for implementation through local, state, and federal funding sources. The CTP includes several transportation projects that have been identified and prioritized through in-depth technical evaluations and significant public involvement efforts.

Within the study area, numerous planned transportation projects were identified in the CTP long-range planning horizon (30 years) including the McCollum Parkway Realignment project which this study focuses on. Other planned transportation improvements include:

- McCollum Parkway Multi-Use Trail (from Town Point Drive to Old 41 Highway)
- Big Shanty Drive Improvements (from McCollum Parkway to Sardis Street)
- Sardis Street Extension (from Main Street to Cherokee Street)
- Sardis Street Overpass (from Moon Station Road to Sardis Street Extension)
- Cherokee Street Trail (from Main Street to McCollum Parkway)
- Kennesaw Trail (from Main Street to west of Vaughn Road)
- Main Street Bridge at Summer Street
- Kennesaw Truck Route Signage Phase I - Jiles Road (from north of Paulding Street to Old 41 Highway)
- Cobb Parkway (US 41/SR3) Widening (from Barret Parkway to Third Army Road Conn)
- Cobb Parkway (US 41/SR 3) Corridor Improvement (from Old 41 Highway to Blue Springs Road)
- Cobb Place Boulevard Improvements (from Old 41 Highway to Barrett Lakes Parkway)
- Cobb International Boulevard Trail (from Barrett Parkway to Old Highway 41)
- US 41 at Old 41 Highway Intersection Improvements

GDOT SR 3 / US 41 / Cobb Parkway Road Safety Audit (RSA) (December, 2020)

SR 3 is an urban principal arterial that runs from south to north, approximately paralleling Interstate 75 (I-75), which connects Georgia's northern and southern ends at the Tennessee state line and Florida's

southern border. The average daily traffic (ADT) on the study corridor is 40,400 cars per day (vpd). Many types of transportation use this corridor, including cars, trucks, school buses, bicycles, pedestrians, and pedestrians. Furthermore, the corridor experiences 3.5% of heavy vehicle traffic.

The RSA team identified safety enhancements that could benefit all users of the road after analyzing the observations made along the corridor. Re-striping the pavement and placing "Stay Right" and "One-way" signs in the median on the study corridor are examples of immediate actions. Installing guardrails, switching out 5-section left-turn signal heads for 4-section Flashing Yellow Arrow signal heads (FYAs), and considering a Reduced Conflict U-turn (RCUT) at one of the junctions are examples of solutions. Repairing and building sidewalks, adding turn lanes at crossings, and taking into account median U-turns (MUTs) at intersections along the study stretch are all long-term options.

Table 1 below lists the top suggestions for enhancing safety along the RSA study corridor. The RSA will help the Georgia Department of Transportation (GDOT), Cobb County, and the City of Kennesaw organize priorities for future safety improvements. SR 3 may be made a safer route for all users by putting the report's recommendations into practice and by leading with a “safety first” philosophy in any upcoming projects along the corridor. As written in the RSA, the GDOT Office of Traffic Operations (OTO) oversees the application of safety upgrades. As part of this scoping study, GDOT is included as a stakeholder, and the team will coordinate with OTC and GDOT District 7 (D7) to ensure that recommendations are consistent with the RSA.

TABLE 1: RSA STUDY RECOMMENDATIONS

Recommendations	Safety Benefit	Time Frame	Cost/Effort	Responsible Agency
Install “Keep Right” (R4-7c) and Object Marker (OM) signs on the median nose points for SR 3.	Moderate	Short Term	Low	GDOT D7 Maintenance
Install reflective backplates for signal heads where not already present.	Moderate	Short Term	Low	GDOT D7 / Cobb County / SigOPS
Stripe around median nose points and install RPMs.	Moderate	Short Term	Low	GDOT D7 Maintenance
Replace non-retroreflective, damaged signs and remove non-compliant signs.	Moderate	Short Term	Low	GDOT D7 Maintenance
Refurbish pavement markings along the corridor.	Moderate	Short Term	Low	GDOT D7 Maintenance
Replace 5-section signal heads with 4-section Flashing Yellow Arrow (FYA) signal heads where not already present.	Moderate	Intermediate	Moderate	SigOPS / D7 Traffic Ops / Cobb County
Consider a Restricted Crossing U-turn (RCUT) with downstream U-turns and Pedestrian Hybrid Beacons (PHBs) at the intersection of SR 3 and Dobbs Dr / Keene St.	High	Intermediate	Moderate	GDOT D7
Consider a Median U-turn (MUT) with downstream U-turns at the intersection of SR 3 and Kennesaw Due West.	High	Long Term	High	OTO Safety

Install sidewalk with Americans with Disabilities Act (ADA) ramps along both sides of SR 3.	Low	Long Term	High	Cobb County

McCollum Parkway Alternatives Analysis 2018

An Alternatives Analysis for McCollum Parkway was conducted in 2018 that shows the Z-movement traffic patterns between Kennesaw Due West Road, Cobb Parkway/US 41/SR3, and McCollum Parkway, both to and from I-75 would be improved by realigning the roads in the study area. The ability to improve three existing intersections, including those at McCollum Parkway/Old 41 Highway, McCollum Parkway/Cobb Parkway, and Cobb Parkway/Kennesaw Due West Road would be an added benefit of this realignment project. It was also noted that there may be potential for higher-end retail development and redevelopment along Cobb Parkway and additional trail connection from Downtown Kennesaw to the Noonday Creek Trail.

The following projects were considered during this planning effort.

- Abandon Old 41 Highway north of Airport Road,
- Realign south of Airport Road with Airport curb cut
- Extend Airport Road to Cobb International Drive and add a new signal at the existing T-intersection of Cobb Parkway and Cobb International Drive
- Restripe Cobb Parkway south of Cobb International Boulevard to include dual left turn lanes
- Abandon the existing turn lane on Cobb Parkway and replace it with a center-landscaped median
- Abandon McCollum Parkway from Cessna Lane to Cobb International Boulevard
- Realign McCollum Parkway along the abandoned railroad spur with an at-grade crossing at South Main Street and a bridge over the CSX railroad
- Add signal at realigned McCollum Parkway and Cirrus Way
- Realign South Main Street from realigned McCollum Parkway to Cobb International Boulevard west towards the CSX railroad and under the proposed grade-separated Cobb Parkway
- Realign Summers Street to connect the realigned McCollum Parkway and the intersection of Summers Street, Cobb Parkway, and Kennesaw Due West Road. Add a signalized intersection and turn lanes on Summers Street
- Restripe Kennesaw Due West Road and add two receiving lanes
- Add trail along the west side of realigned South Main Street from Duncan Drive south

Town Center CID Freight Cluster Study

The Town Center CID (TCCID) has started a plan in 2023 to better understand freight-related needs, issues, challenges, and growth opportunities in the area. The plan will work to identify strategies and projects that would improve freight access and mobility to support future growth within the TCCID area. The Plan is expected to be complete in spring 2024. Anticipated outcomes from the plan include:

- Increased understanding of freight movement
- Identification of infrastructure needs and opportunities
- Analysis of existing land-use and industrial design

- Projection of future growth and support strategies
- Collection of Stakeholder and public input
- Project identification, prioritization, and project cost estimates

Stakeholder Engagement

Stakeholder and Public Engagement Strategy

This Stakeholder and Public Engagement Strategy (SPE) was developed and served as the guideline for coordinating public and stakeholder activities, distributing project information, engaging the public and interested parties throughout the process, and collecting input. The strategy has utilized a variety of techniques and levels of involvement to gain a complete understanding of existing conditions, community goals and values, needs and opportunities, and desires for the future. This process utilized both traditional and non-traditional techniques to reach broad and diverse audiences with varying degrees of expertise, time availability, and investment in the outcomes of the plan. A summary of the SPE tools and techniques is provided below.

Project Management Team (PMT)

A Project Management Team (PMT) was established to provide oversight to the SPE update and consists of Cobb County staff, representatives from the City of Kennesaw, Georgia DOT staff, and members of the consultant team. The PMT met monthly to communicate study progress, provide input, and discuss issues.

Stakeholder Steering Committee (SSC)

A Stakeholder Steering Committee was created to provide input during the study process. The SSC met four times during the course of the study. Representatives received updates on the study progress, reviewed realignment alternatives, and provided feedback on specific needs, desires, and concerns of the community and or their organization concerning transportation improvements on the study corridor. Representatives from the following organizations participated in the SSC.

- ARC
- Builder's First Source
- Georgia National Guard
- Acworth Business Association
- Atlanta Bonded Warehouse Corporation
- Cobb County Commission Representative
- Cobb County International Airport
- Cobb County Parks, Recreation & Cultural Affairs Department
- Cobb County Police (Precinct 1)
- Cobb County Schools
- Cobb DOT
- CobbLinc
- FedEx Ground Warehouse
- Fire & Emergency Services
- Georgia DOT District 7
- Georgia DOT Traffic Operations
- Kennesaw Business Association
- Kennesaw Mayor's Representative
- Kennesaw Police Department

- Kennesaw Public Works Department
- KSU Parking & Transportation
- KSU Police Department (C.O.R.E.)
- Princeton Ridge Homeowners Association
- Town Center CID
- USPS
- Vulcan Materials Company
- Warehouse District Representative

Public Meetings

Engaging stakeholders and the community in a meaningful way is critical to the success of the scoping study. A public meeting was held on May 11, 2023, to present the need and purpose of the study, public engagement to date, and the existing conditions in the study area. The second public meeting is planned but has not been held yet.

Pop Up Events

Pop-up events are an excellent way to quickly connect with the community right where they are. They are a good method for connecting with stakeholders who may not regularly attend meetings, but whose perspective is sought, including environmental justice populations. According to the United States Environmental Protection Agency (EPA), environmental justice can be broadly defined as *"the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income levels."* Pop-up events may include materials such as project information, displays, posters, meeting flyers, and intercept surveys for the public to quickly provide input. These events occurred in tandem with already planned public events or County/City events or may be planned by the Consultant Team in popular gathering locations along the corridor. Ideal locations and events for pop-up engagements will be developed in coordination with the study team and the PMT. Up to three pop-up engagements may be held.

Digital Communication & Engagement

Study Website: The Study Team prepared content to be uploaded to a study website that will be hosted by the County. The site provides basic project information to the public and includes study materials, event notifications, and information about opportunities to review and or provide input on design alternatives being considered.

Online Engagement Tool: The Study Team created an online interactive map via Social Pinpoint to solicit geo-referenced input. A link to this site was placed on the County website. This fun and engaging tool gave people the flexibility to participate from the comfort of their own homes and at their convenience. The first opportunity to participate via Social Pinpoint sought input on existing conditions in the study area. Nine hundred sixty-three individuals visited the site, and 73 comments were collected.

Once the draft recommendations are complete, a second iteration of the Social Pinpoint site will be published to solicit input on study findings.

Social Media Outreach: To ensure maximum participation, the team will collaborate with County and City for promotion on their social media channels. Social media content and a schedule for publishing will be provided to the County and City.

Existing Conditions

Overview

Within the study area, the majority of roadways are designated under the GDOT roadway classification system as local public roadways. Examples of local roadways are roads within residential communities and local connector roads that connect larger arterial routes such as Cobb International Boulevard, Big Shanty Road, and Ben King Road. Local roadways are those that by definition, provide access to homes, businesses, and other properties. There are several roadways in the study area that are classified as either collectors or arterials which are designated by the services they provide. The picture below shows an example of existing conditions along McCollum Parkway nearby the intersection with Cobb Parkway.

FIGURE 2: MCCOLLUM PARKWAY EXISTING CONDITIONS

Collector roadways are those that link arterials and local roads and perform some of the duties of each. Examples of collector road segments within the study area are Kennesaw Due West Road and Pine Mountain Road. Arterial roadways are roadways that provide mobility so traffic can move from one place to another quickly and safely. Roadways in the study area that are designated as arterial roads are Cobb Parkway / US 41 (principal arterial), McCollum Parkway (minor arterial), South Main Street (minor arterial), and Old US 41 Highway (minor arterial). There are several active transportation links within the study area including dedicated bike shoulder lanes on Kennesaw Due West and the separated Noonday Creek Trails amongst other active transportation facilities. Additionally, there is a notable airport (Cobb County International Airport) and an existing CSX freight rail line that traverses under Cobb Parkway adjacent to Kennesaw Due West and Summers Street.

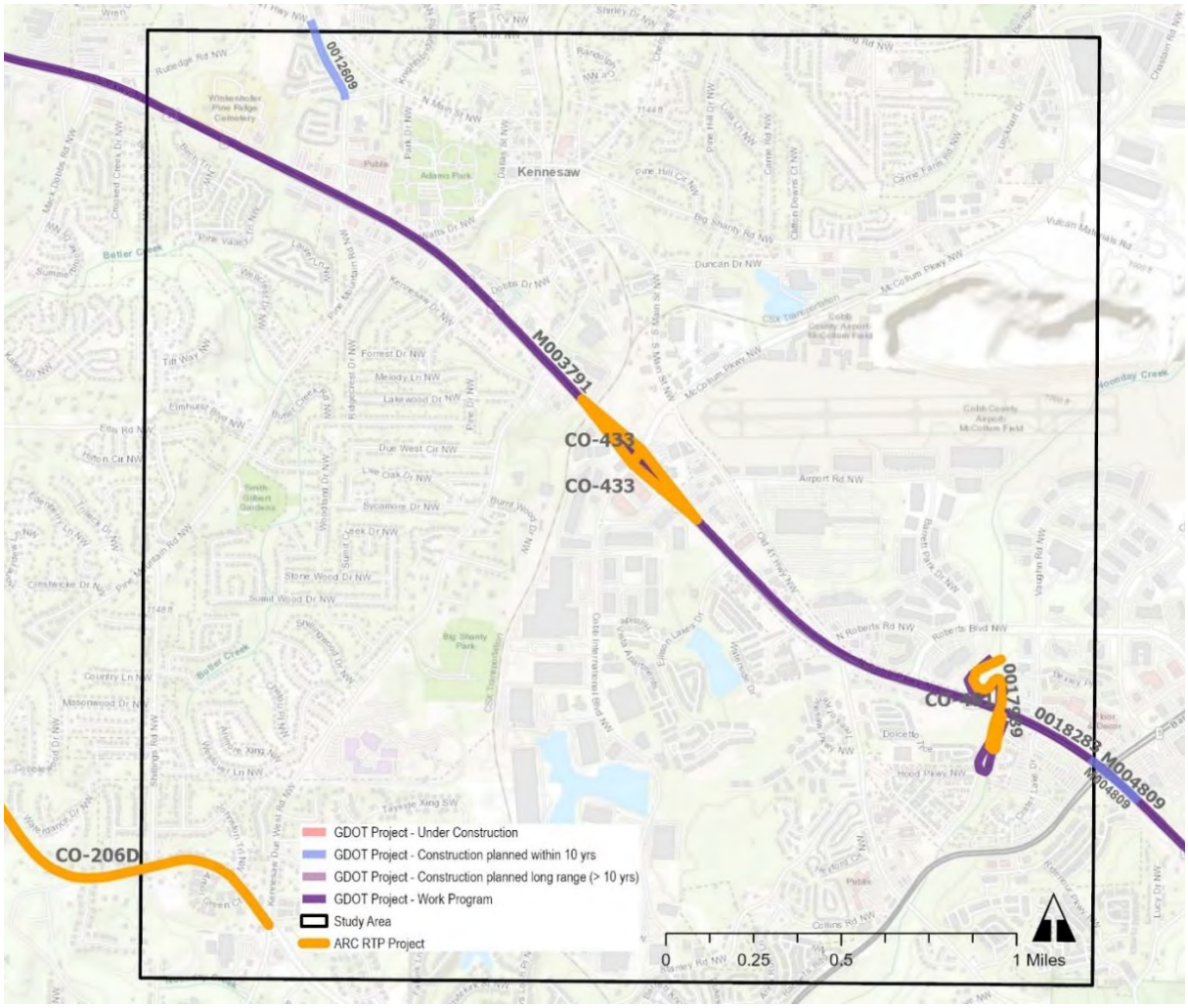
Study Area Transportation Projects

Several infrastructure improvement projects are planned or under construction within the vicinity of the Realignment Study area, including six GDOT projects and three projects listed in the ARC's 2020 Regional Transportation Plan (RTP). All of the six GDOT projects are listed as Construction Work Program under project status while two ARC projects are listed as long range and one ARC project is programmed. The transportation projects within the study area should help to better serve long-term transportation improvement strategies and solutions to region/corridor-wide mobility issues. The projects are listed in Table 2 below and shown in Figure 3.

TABLE 2: TRANSPORTATION PROJECTS WITHIN THE STUDY AREA

Agency	Project ID	Project Type	Project Description	Project Status
ARC/Cobb County	CO-206D	General Purpose Capacity	Stilesboro Rd widening	Long Range
ARC/City of Kennesaw	CO-433	Interchange Capacity	US 41 (Cobb Pkwy) Grade Separation at McCollum Pkwy	Long Range
ARC/Cobb County/ Town Center CID	CO-481	Bike-Ped Facility	Noonday Creek Trail Crossing	Programmed
GDOT	0012609	Reconstruction/Rehabilitation	This project involves upgrading and adding electronic truck route signage throughout the City of Kennesaw to improve safety and road operations for truck drivers and motorists.	Construction Work Program
GDOT	0017989	New Construction	Noonday Creek Trail at SR 3 & and at Noonday Creek Pedestrian Bridge	Construction work program
GDOT	0018283	Reconstruction/Rehabilitation	The proposed improvement would construct an additional left turn lane for both northbound and southbound approaches of SR3/Cobb Pkwy at the intersection of Barrett Pkwy.	Construction Work Program
GDOT	M004809	Reconstruction/Rehabilitation	SR3/US 41/Cobb Pkwy at CR 891/White Cir Add Offset Turn Lanes	Construction Work Program
GDOT	M003791	Maintenance	Cobb SR 3 at SR 5 Extend Left Turn Lane	Construction Work Program

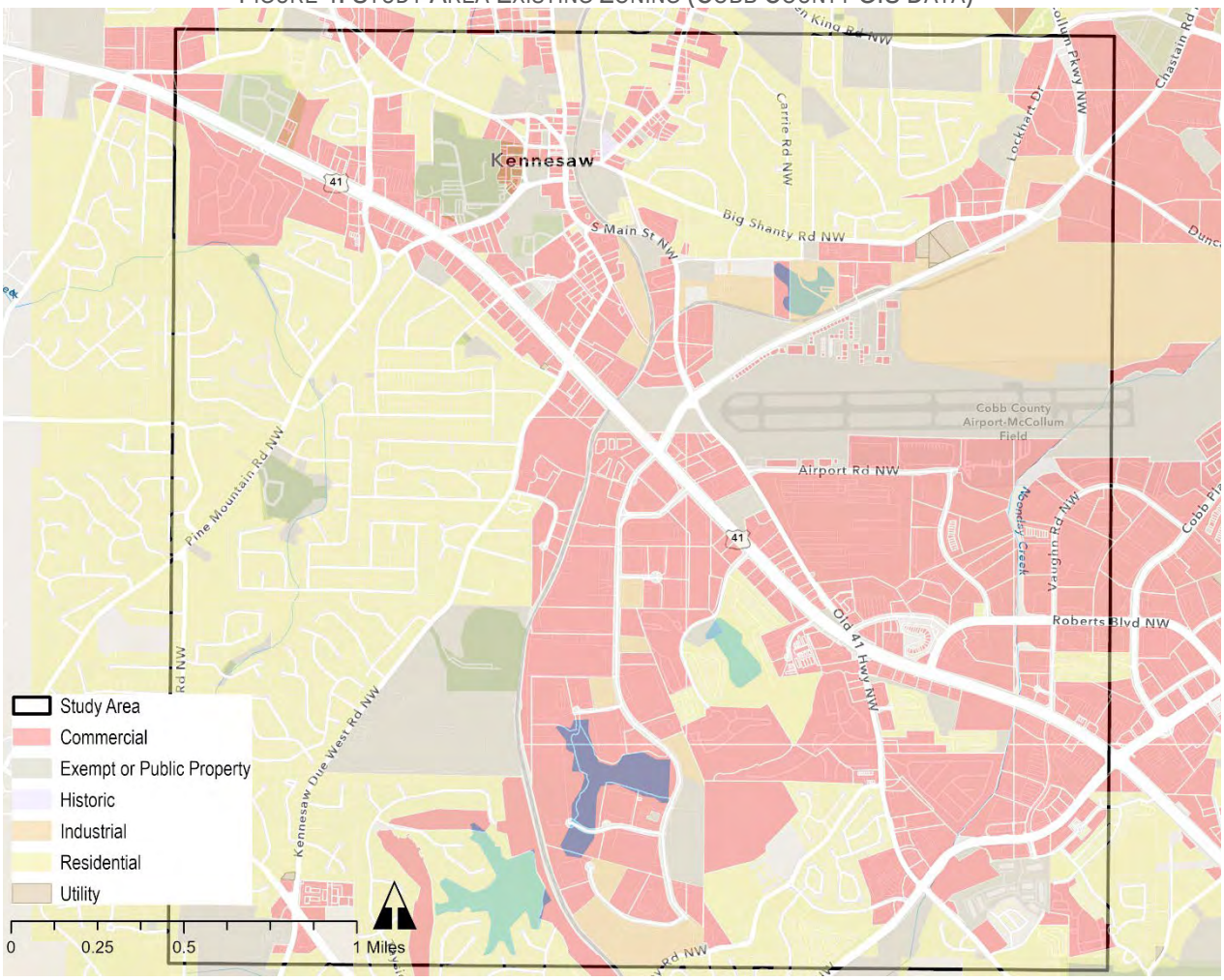
FIGURE 3: STUDY AREA GDOT AND ARC PROJECTS



Existing Land Use

The project study area encompasses primarily the City of Kennesaw within the Cobb County limits. Existing land use data shown in Figure 4, was sourced from the current Cobb County Parcel dataset. The land use shown in Figure 4, shows a concentration of commercial zoning along the eastern side of Cobb Parkway / US 41 including at the intersection with McCollum Parkway. Most of the medium and low-density residential land use areas are located within the southwestern portion of the study area, however, sporadic residential land use is located throughout the study area except for the area within and adjacent to the Cobb County International Airport boundary. The greatest mix of land uses occurs primarily in the northwest and southeast portions of the study area close to Cobb Parkway / US 41.

FIGURE 4: STUDY AREA EXISTING ZONING (COBB COUNTY GIS DATA)



Traffic Data Inventory

Existing traffic counts for the study were collected on Tuesday, November 29, 2022. This date was chosen following common traffic engineering practice since school is in session the week after Thanksgiving break and thus typical traffic patterns are observed during this non-holiday timeframe (Tuesday -Thursday). Turning Movement Counts (TMCs) were conducted at six different locations within the project study area during the AM, Midday, and PM peak hour periods. The six locations of the existing TMCs are as follows:

- US 41 at Kennesaw Due West
- S Main St at McCollum Pkwy
- US 41 at McCollum Pkwy
- Old US 41 at Airport Rd
- US 41 at Ellison Lakes Dr
- US 41 at Old US 41

48-hour bi-directional counts were conducted at the following nine locations:

- Summers St east of US 41
- Kennesaw Due West of US 41
- US 41 north of McCollum Pkwy
- McCollum Pkwy east of US 41
- US 41 south of Old US 41
- S Main St north of McCollum Pkwy
- Cobb Int Blvd west of US 41
- US 41 south of McCollum Pkwy
- Old US 41 south of Airport Rd

Four out of the nine 48-hour bi-directional counts collected within the study area also included vehicle classification counts, meaning both vehicle and truck-specific data were collected. Figures 5 through 8 show the locations of the traffic counts within the study area and the existing turning movement and ADT counts per direction at each collected location.

FIGURE 5: EXISTING TRAFFIC COUNT MAP

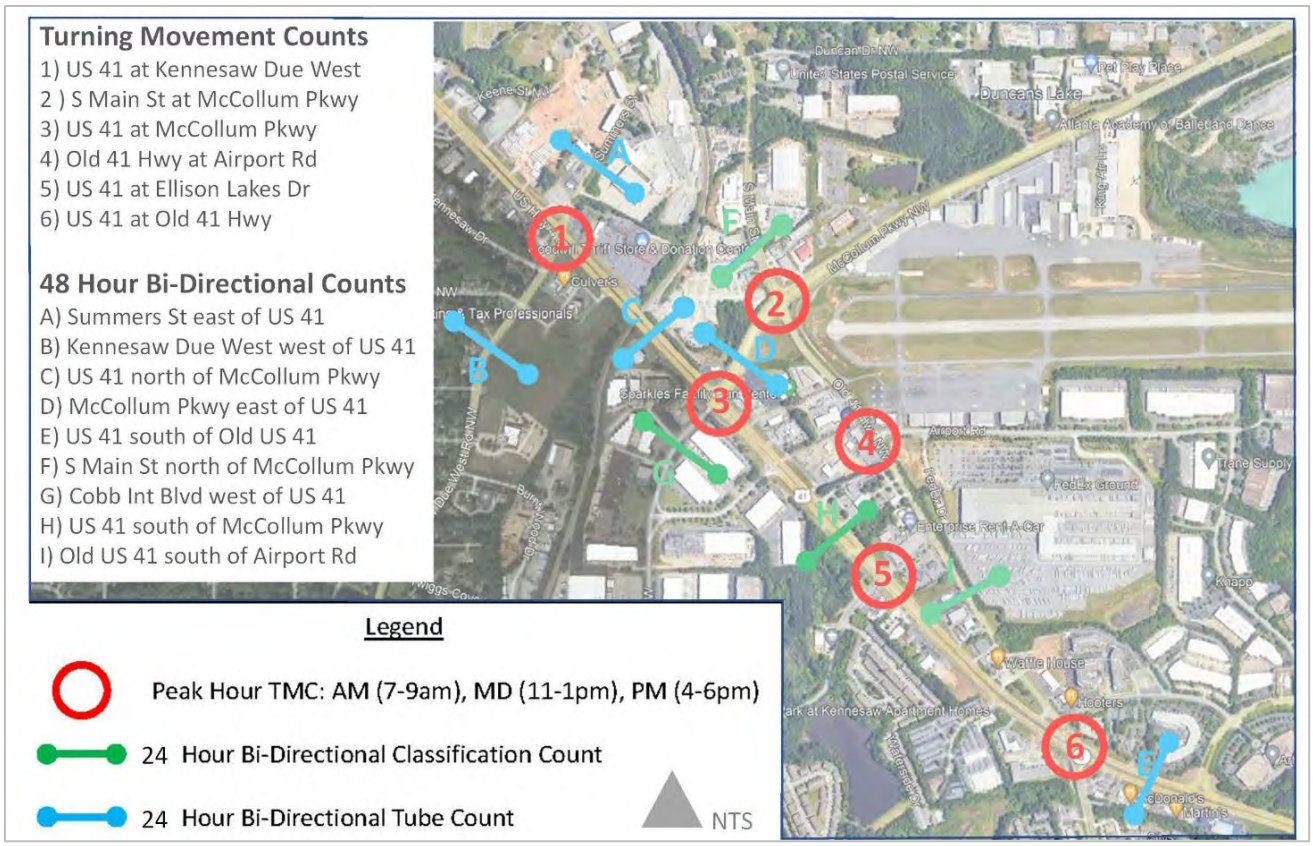
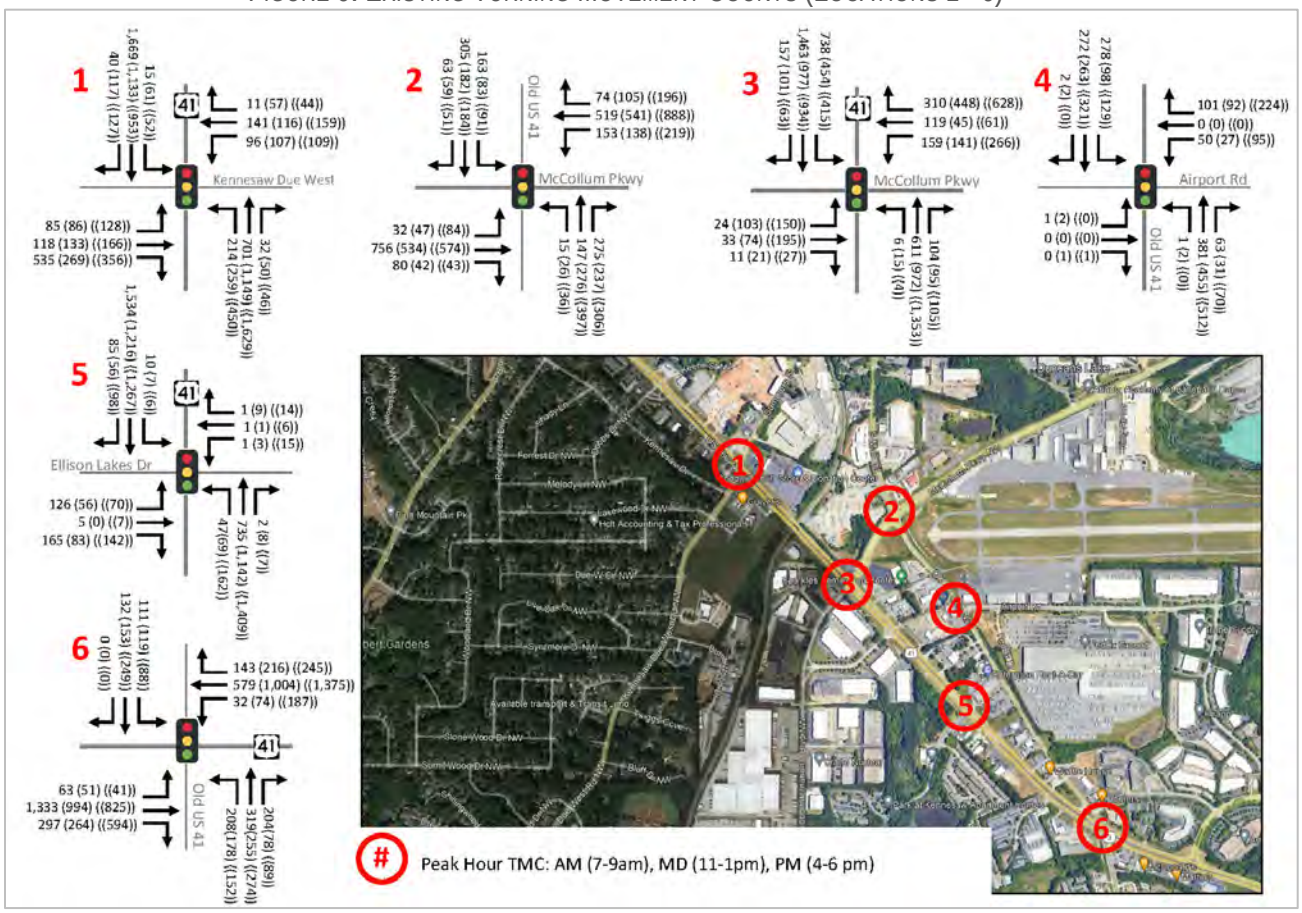
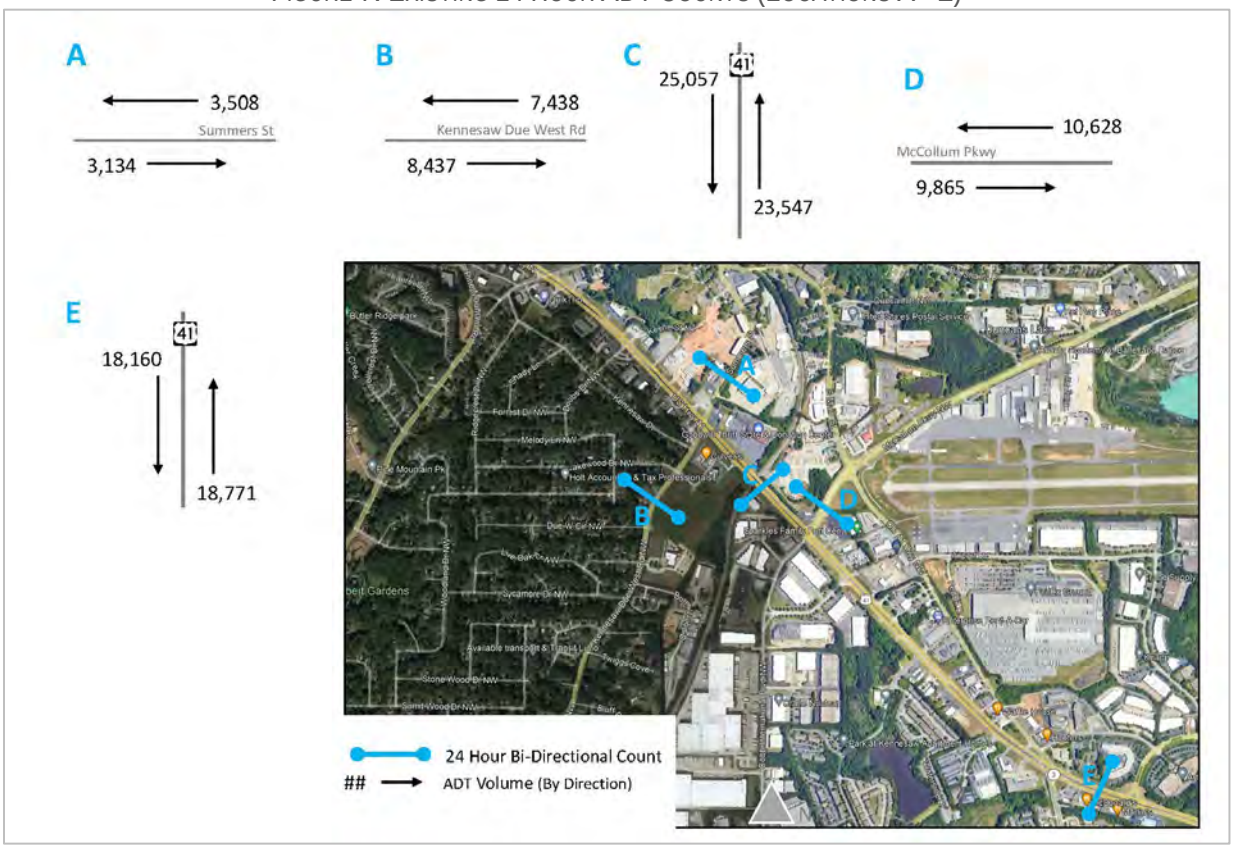


FIGURE 6: EXISTING TURNING MOVEMENT COUNTS (LOCATIONS 1 - 6)



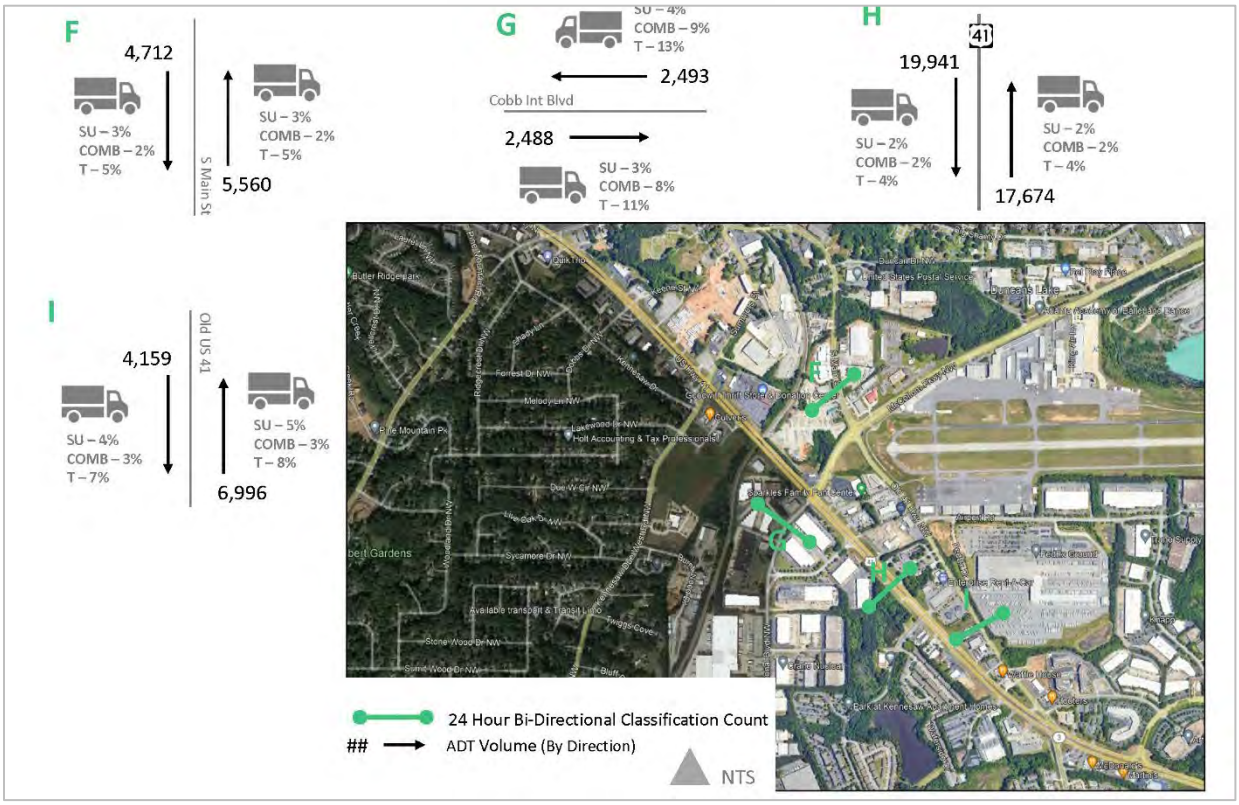
As shown in the figure above, there is a large number of vehicles that are making a westbound right turn from McCollum Parkway onto US 41 In conjunction with this movement, there is also a large number of vehicles making a northbound left from US 41 onto Kennesaw Due West Road. The reverse route also has a large number of vehicles: vehicles making a westbound right from Kennesaw Due West Road onto US 41 and vehicles making a southbound left turn from US 41 onto McCollum Parkway.

FIGURE 7: EXISTING 24 HOUR ADT COUNTS (LOCATIONS A - E)



As shown in the figure above, the heaviest movement in the study area exists on US 41 with an ADT of over 48,000 vpd. Since this is the case, signal timings are adjusted to accommodate this movement. In addition, congestion can build up on US 41 and can cause spillbacks on the intersecting streets, including McCollum Parkway and Kennesaw Due West Road.

FIGURE 8: EXISTING 24 HOUR ADT COUNTS (LOCATIONS F - I)

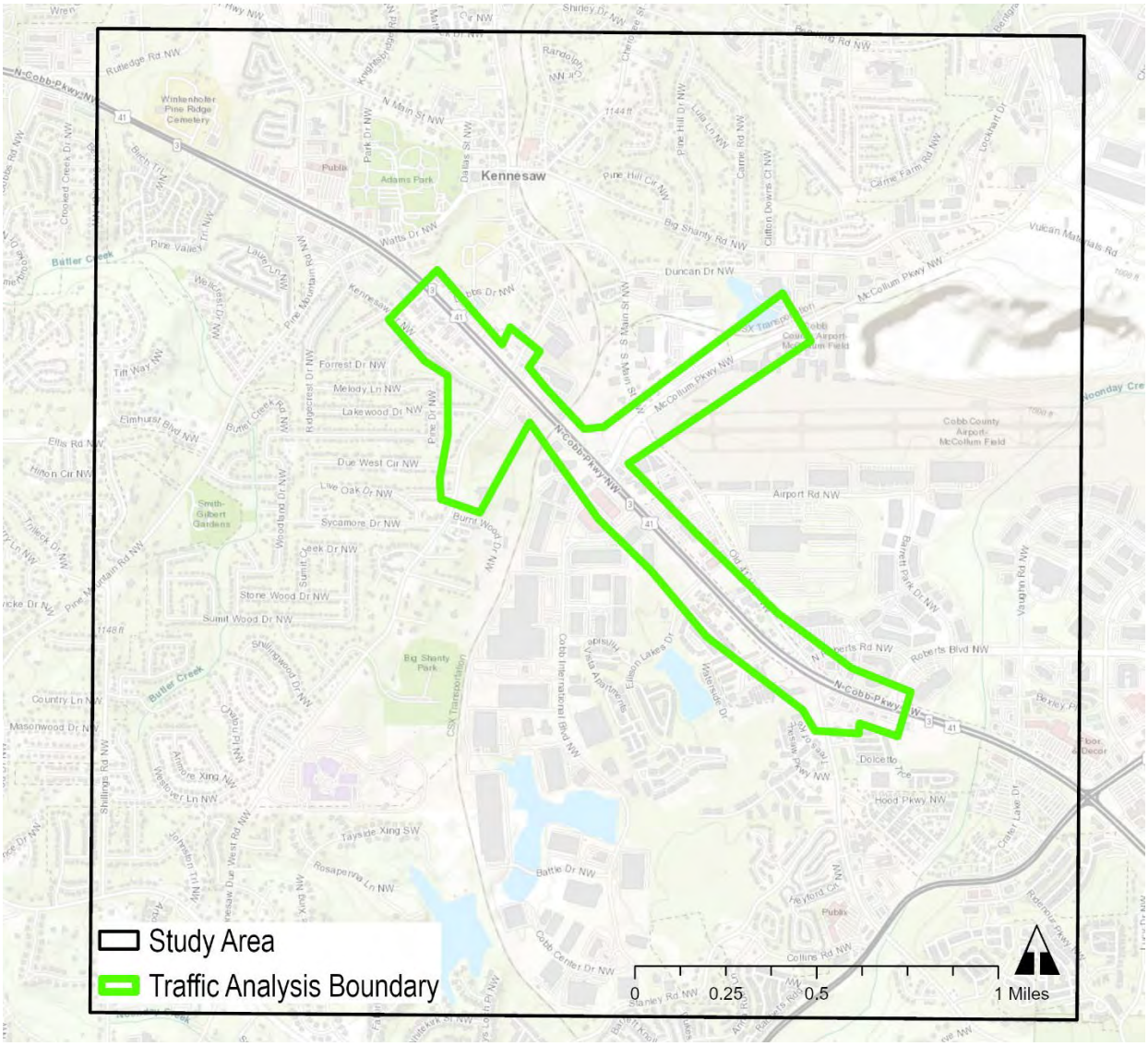


As shown in the figure above, Cobb International Boulevard has the largest percentage of trucks, although it does not have the highest volume of heavy vehicles. This figure demonstrates the freight traffic coming from the commercial developments near Cobb International Boulevard.

Existing Traffic Analysis

This section will evaluate the traffic operations and safety within the analysis study area. It is important to note that the traffic analysis study area is a more detailed refined area within the overall study area shown in Figure 1. The reasoning for this is so that an existing detailed microsimulation model can be constructed and calibrated at the focal point of the analysis area which is the realignment of the Cobb Parkway at McCollum Parkway/Kennesaw Due West Road and Old 41 Highway intersections. The established study years for this include the Open Year (2032), and Design Year (2052) and will be analyzed in subsequent reports. Figure 9 below shows the traffic analysis study area boundary used for the Regional Integrated Transportation Information System (RITIS) data inventory and VISSIM microsimulation baseline model calibration.

FIGURE 9: TRAFFIC ANALYSIS BOUNDARY



Synchro Analysis

Existing 2022 intersection operations within the study area were analyzed in Synchro using existing traffic volumes, lane configurations, and signal operations data. The most widely used measure of effectiveness is the intersection Level of Service (LOS), which is based on the amount of average delay experienced by drivers as they travel through an intersection or along a roadway segment. The LOS ranges from A to F. LOS A represents free-flow traffic conditions while LOS F represents extreme delays with stopped traffic conditions. Table 3 summarizes the existing (2022) intersection capacity analysis results.

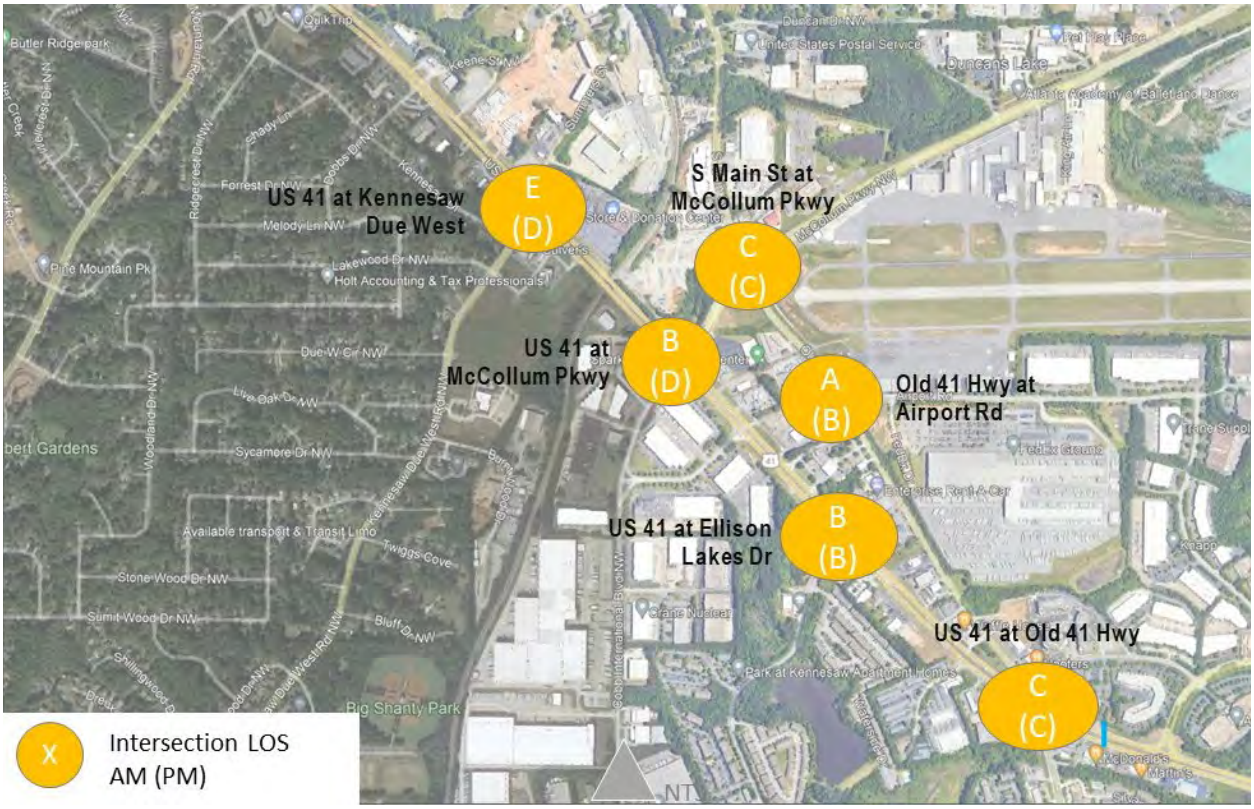
TABLE 3: EXISTING (2022) LEVEL OF SERVICE (LOS) RESULTS

Location	Control Type	LOS Results	
		AM	PM
1) US 41 at Kennesaw Due West	Signal	E	D
2) S Main St at McCollum Pkwy	Signal	C	C
3) US 41 at McCollum Pkwy	Signal	B	D
4) Old 41 Hwy at Airport Rd	Signal	A	B
5) US 41 at Ellison Lakes Dr	Signal	B	B
6) US 41 at Old 41 Hwy	Signal	C	C

Source: Atlas Technical Consultants

The results of the existing intersection LOS analysis show that overall surface street intersections are performing at acceptable levels of service, with some intersections (US 41 at Kennesaw Due West) experiencing significant delays in the AM peak hours. Several locations, such as US 41 at McCollum Pkwy, are experiencing higher delays during the PM peak hour than in the AM peak hour. Figure 10 below visualizes the LOS results under the existing condition scenario.

FIGURE 10: EXISTING (2022) LEVEL OF SERVICE (LOS) RESULTS



The Synchro traffic simulation performed for the intersection analysis also estimates the queue lengths of the various movements at each intersection in total linear feet. The estimated queue lengths under the existing condition are listed in the tables below for the six locations where traffic counts and existing LOS analysis were conducted. The six locations include:

- US 41 at Kennesaw Due West
- S Main St at McCollum Pkwy
- US 41 at McCollum Pkwy
- Old US 41 at Airport Rd
- US 41 at Ellison Lakes Dr
- US 41 at Old US 41

TABLE 4: KENNESAW DUE WEST AT US 41 EXISTING QUE LENGTHS (LINEAR FEET)

Direction of Travel	Left AM [Noon] (PM)	Through AM [Noon] (PM)	Right AM [Noon] (PM)
Eastbound	90 [94] (167)	132 [175] (187)	527 [49] (60)
Westbound	99 [113] (116)	168 [206] ((264)	
Northbound	139 [227] (270)	257 [377] (691)	
Southbound	16 [54] (51)	796 [406] (406)	

TABLE 5: MCCOLLUM PKWY AT US 41 EXISTING QUE LENGTHS (LINEAR FEET)

Direction of Travel	Left AM [Noon] (PM)	Through AM [Noon] (PM)	Right AM [Noon] (PM)
Eastbound	44 [150] (249)	30 [49] (113)	
Westbound	134 [113] (240)	108 [74] (126)	28 [128] (276)
Northbound	10 [24] (9)	267 [288] (629)	24 [0] (0)
Southbound	202 [170] (229)	534 [332] (303)	30 [8] (0)

TABLE 6: MCCOLLUM PKWY AT OLD 41 HWY EXISTING QUE LENGTHS (LINEAR FEET)

Direction of Travel	Left AM [Noon] (PM)	Through AM [Noon] (PM)	Right AM [Noon] (PM)
Eastbound	32 [48] (86)	387 [276] (327)	12 [0] (0)
Westbound	119 [93] (167)	228 [267] (533)	6 [3] (61)
Northbound	29 [41] (55)	224 [304] (507)	58 [63] (68)
Southbound	125 [63] (86)	228 [110] (128)	

TABLE 7: OLD 41 HWY AT AIRPORT RD EXISTING QUE LENGTHS (LINEAR FEET)

Direction of Travel	Left AM [Noon] (PM)	Through AM [Noon] (PM)	Right AM [Noon] (PM)
Westbound	56 [32] (92)	0 [0] (10)	
Northbound	NA	184 (221) [251]	
Southbound	58 [19] (32)	56 [48] (77)	

TABLE 8: ELLISON LAKES DR AT US 41 EXISTING QUE LENGTHS (LINEAR FEET)

Direction of Travel	Left AM [Noon] (PM)	Through AM [Noon] (PM)	Right AM [Noon] (PM)
Eastbound	144 [77] (87)	13 [0] (17)	106 [18] (55)
Westbound		6 [20] (42)	
Northbound	19 [42] (120)	119 [456] (201)	0 [0] 0
Southbound	7 [11] (9)	561 [339] (382)	m35 [6] (22)

TABLE 9: OLD 41 HWY AT US 41 EXISTING QUE LENGTHS (LINEAR FEET)

Direction of Travel	Left AM [Noon] (PM)	Through AM [Noon] (PM)	Right AM [Noon] (PM)
Eastbound (US 41)	41 [56] (27)	634 [415] (282)	64 [142] (393)
Westbound (US41)	34 [46] (140)	201 [396] (610)	14 [45] (48)
Northbound (Old 41)	182 [157] (152)	398 [229] (340)	67 [0] (0)
Southbound (Old 41)	141 [128] (80)	149 [183] (309)	

VISSIM Analysis

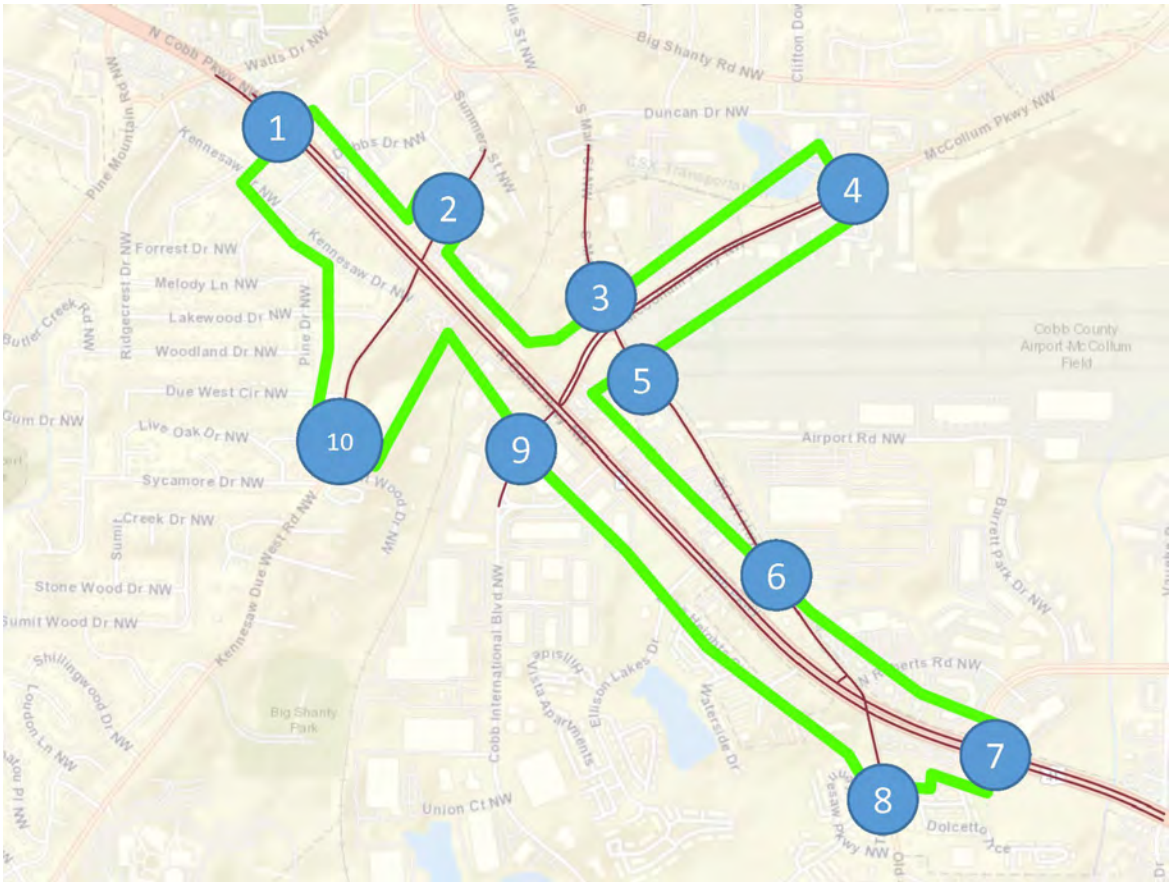
VISSIM (version 8) was utilized to perform a supplemental operational analysis of the study area roadway network. VISSIM is a microsimulation-based software that models individual vehicle movements on a second or sub-second basis to assess the traffic performance of highway and street systems. Major tasks for the use of VISSIM for operational analysis will include data collection/preparation, base model development, error checking, calibration of the existing condition peak period models, and no build and alternative analysis. Base model development includes coding various network elements (roadway geometry and intersection control) from various data sources. Error checking includes reviewing the model inputs, preliminary model outputs, animation, and error files. Calibration of the existing model includes adjustments to model parameters and subsequent comparison of field data to Measures of Effectiveness (MOEs) until an acceptable match is achieved. The calibrated model is then utilized in combination with design year volumes and conditions to develop no-build-and-build models for comparison of appropriate MOEs.

RITIS Data Collection

The Regional Integrated Transportation Information System, or RITIS, is an automated system for data sharing, distributing, and archiving transportation-related data. The RITIS platform includes a variety of performance indicators, dashboards, and visual analytics tools that can be used to assess transportation conditions, gauge system effectiveness, and share relevant information between organizations and the general public. The RITIS platform uses HERE data and INRIX traffic data for most roadways within the state of Georgia. Since the RITIS platform is still in beta mode, not every roadway or segment is coded. For this realignment scoping study, Origin/Destination data using the traffic analysis boundary shown in Figure 9 as well as travel time and speed data was captured within the traffic analysis study area.

This data assists in calibrating the VISSIM model by using real-time GPS data to improve the accuracy and simulations of the VISSIM model under existing conditions. Figure 11 below shows the RITIS origin/destination gates that were used for trip assignment and route choice analysis.

FIGURE 11: ORIGIN/DESTINATION GATES



Measures of Effectiveness (MOEs)

MOEs that are developed from the RITIS data platform include origin-destination data to evaluate trip distribution, analysis of top route choices, and travel time and speed data within the traffic analysis study area. Tables 10 to 12 show the AM, Midday, and PM origin-destination route choices by percentage of overall trips. Figures 12-14 show the top route choices (more than 20% of total origin trips) originating from gates 1, 3, 4, 7, 8, and 10.

The table data shows that the top three destinations per origin location are highlighted in red font. For example in Table 10 below, the first gate (US 41 / Cobb Pkwy SB) shows that 50% of trips that originate on Cobb Pkwy traveling southbound continue on US 41 / Cobb Pkwy SB and exit the traffic analysis boundary zone on US 41 / Cobb Pkwy south of the US 41 / Cobb Pkwy at Old 41 Hwy intersection. The figures below show the table data to show the top route choices for the following origin gates:

- 1 - US 41 / Cobb Pkwy SB
- 3 - S Main St
- 4 - McCollum Pkwy
- 7 - US 41 / Cobb Pkwy NB
- 8 - Old 41 Hwy NB
- 10 - Kennesaw Due West

TABLE 10: ORIGIN DESTINATION TRIP DISTRIBUTION (AM)

	Trip Distribution-AM												
	Destinations*												
Origins	Gate ID	Internal	US 41 / Cobb Pkwy SB	Summers St	S Main St	McCollum Pkwy	Old 41 Hwy NB	Old 41 Hwy SB	US 41 / Cobb Pkwy NB	Old 41 Hwy NB	Cobb International Blvd	Kennesaw Due West	All other roads
	Internal	19%	14%	2%	2%	11%	1%	1%	29%	7%	2%	6%	7%
	US 41 / Cobb Pkwy SB	5%	1%	1%	0%	23%	2%	0%	50%	6%	4%	4%	4%
	Summers St	13%	7%	3%	0%	3%	0%	0%	27%	17%	23%	7%	0%
	S Main St	4%	1%	0%	2%	19%	14%	0%	12%	42%	2%	0%	4%
	McCollum Pkwy	11%	22%	0%	8%	3%	13%	0%	4%	10%	12%	11%	4%
	Old 41 Hwy NB	7%	0%	0%	4%	75%	0%	0%	7%	0%	0%	7%	0%
	Old 41 Hwy SB	50%	0%	0%	0%	0%	0%	0%	0%	0%	17%	0%	33%
	US 41 / Cobb Pkwy NB	7%	45%	1%	4%	5%	0%	6%	12%	0%	6%	2%	11%
	Old 41 Hwy NB	11%	13%	0%	1%	30%	0%	0%	18%	5%	1%	2%	21%
	Cobb International Blvd	5%	24%	3%	11%	30%	5%	0%	14%	0%	3%	5%	0%
	Kennesaw Due West	4%	9%	29%	0%	35%	1%	0%	9%	0%	6%	1%	4%

**Percentages in red font show the top three destinations per each origin gate.*

FIGURE 12: AM ORIGIN DESTINATION TOP ROUTE CHOICES IN PERCENT

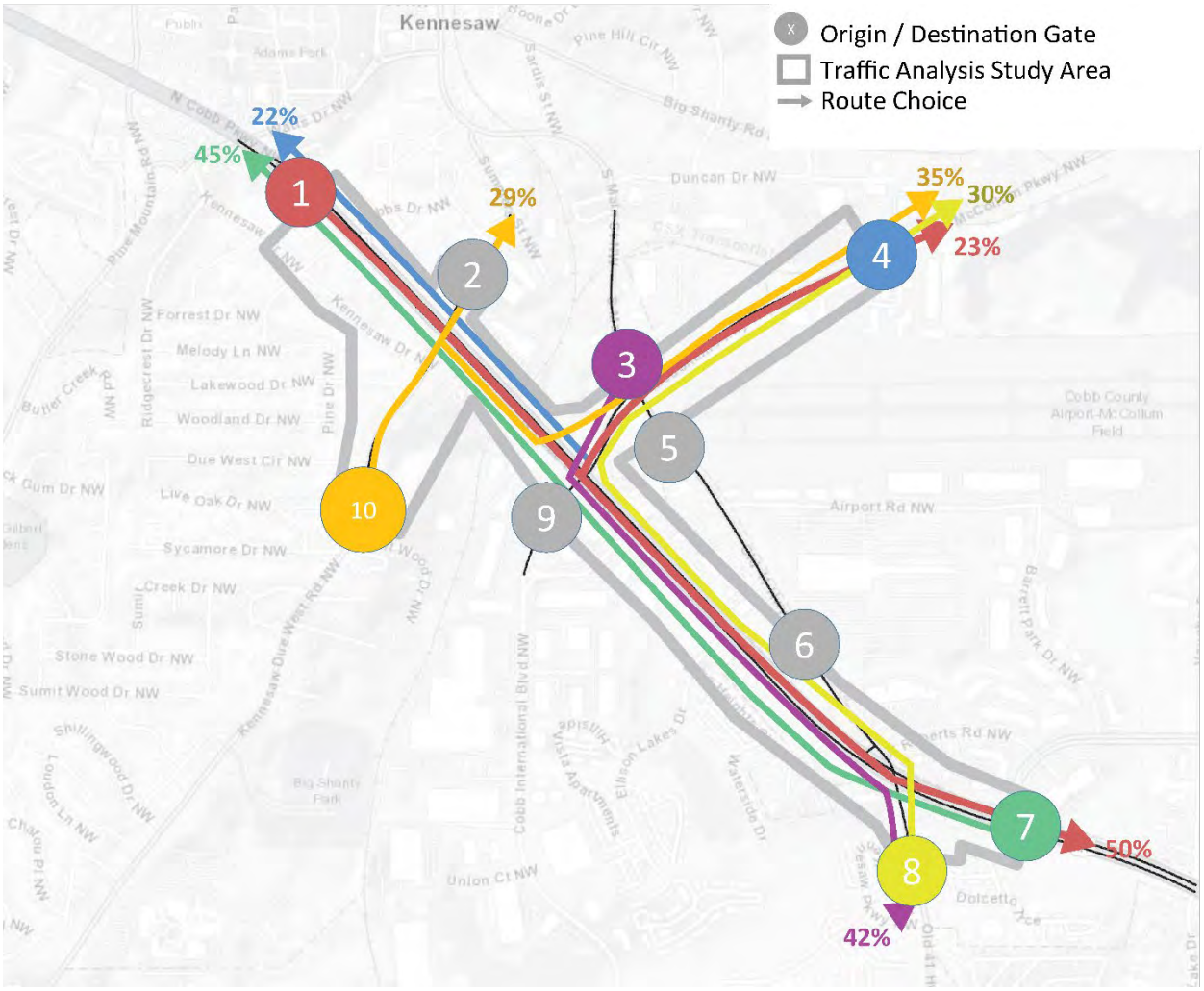


TABLE 11: ORIGIN DESTINATION TRIP DISTRIBUTION (MIDDAY)

	Trip Distribution-Midday												
	Destinations												
Origins	Road Name	Internal	US 41 / Cobb Pkwy SB	Summers St	S Main St	McCollum Pkwy	Old 41 Hwy NB	Old 41 Hwy SB	US 41 / Cobb Pkwy NB	Old 41 Hwy NB	Cobb International Blvd	Kennesaw Due West	All other roads
	Internal	19%	14%	2%	6%	15%	1%	0%	16%	7%	1%	13%	6%
	US 41 / Cobb Pkwy SB	5%	1%	1%	0%	22%	1%	0%	50%	7%	3%	5%	4%
	Summers St	22%	5%	2%	2%	2%	0%	0%	28%	16%	5%	5%	14%
	S Main St	3%	2%	1%	4%	16%	0%	0%	21%	50%	3%	0%	1%
	McCollum Pkwy	10%	31%	0%	11%	4%	6%	0%	6%	10%	6%	13%	2%
	Old 41 Hwy NB	6%	5%	0%	56%	29%	1%	0%	3%	0%	0%	0%	0%
	Old 41 Hwy SB	100%	0%										0%
	US 41 / Cobb Pkwy NB	5%	56%	2%	8%	5%	0%	0%	9%	1%	2%	3%	9%
	Old 41 Hwy NB	9%	23%	2%	2%	27%	0%	0%	12%	4%	0%	1%	19%
	Cobb International Blvd	4%	32%	1%	8%	22%	0%	0%	17%	0%	8%	6%	1%
	Kennesaw Due West	5%	12%	32%	0%	26%	2%	0%	10%	1%	3%	3%	6%

**Percentages in red font show the top three destinations per each origin gate.*

FIGURE 13: MIDDAY ORIGIN DESTINATION TOP ROUTE CHOICES IN PERCENT

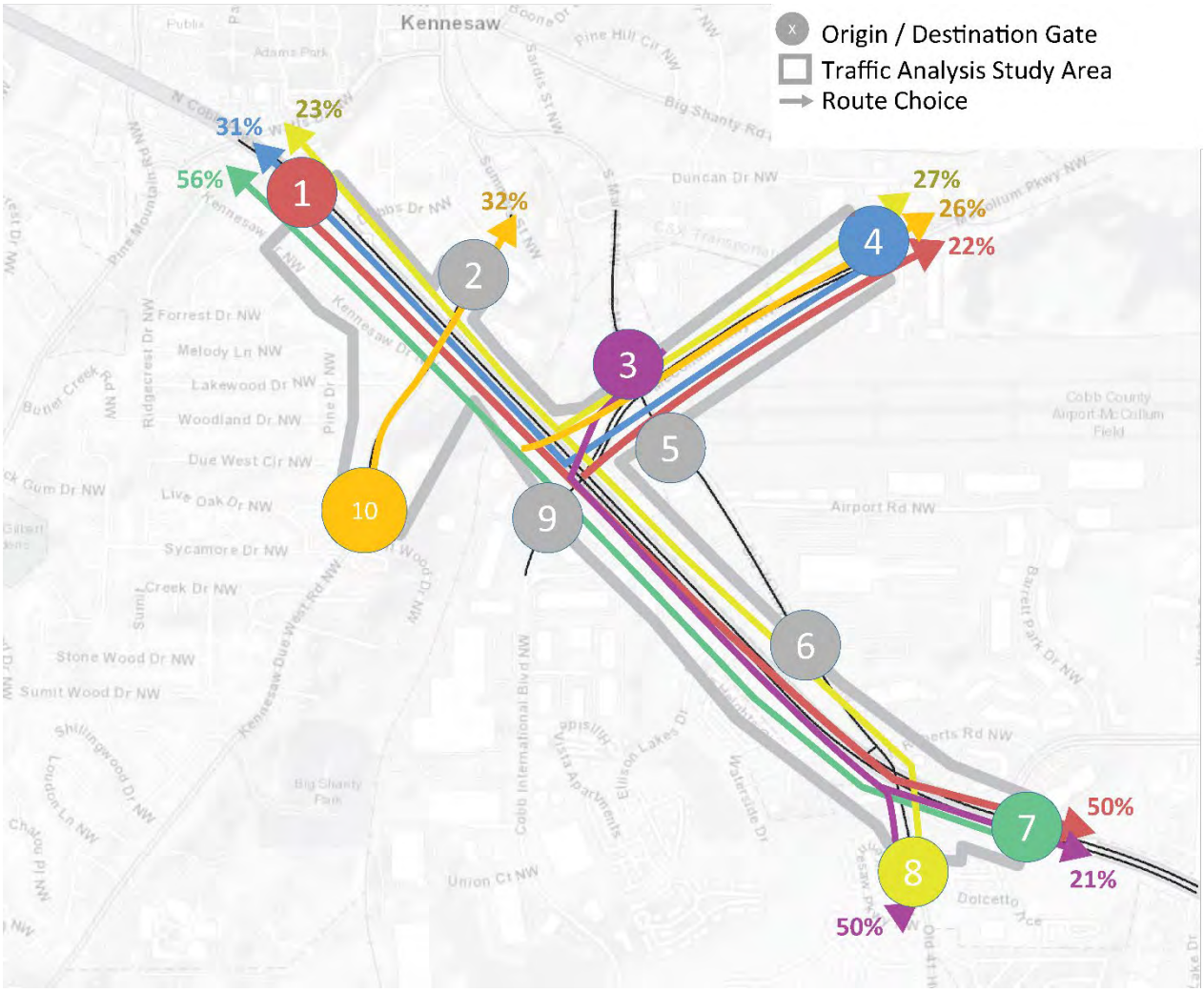


TABLE 12: ORIGIN DESTINATION TRIP DISTRIBUTION (PM)

	Trip Distribution-PM												
	Destinations												
Origins	Road Name	Internal	US 41 / Cobb Pkwy SB	Summers St	S Main St	McCollum Pkwy	Old 41 Hwy NB	Old 41 Hwy SB	US 41 / Cobb Pkwy NB	Old 41 Hwy NB	Cobb International Blvd	Kennesaw Due West	All other roads
	Internal	19%	26%	2%	6%	13%	1%	1%	14%	4%	1%	8%	5%
	US 41 / Cobb Pkwy SB	8%	9%	0%	0%	19%	1%	0%	42%	8%	1%	8%	4%
	Summers St	22%	13%	1%	1%	0%	0%	0%	19%	21%	0%	1%	19%
	S Main St	11%	0%	2%	5%	41%	0%	0%	33%	3%	2%	1%	0%
	McCollum Pkwy	6%	34%	0%	10%	2%	4%	0%	4%	17%	2%	18%	2%
	Old 41 Hwy NB	3%	11%	0%	54%	27%	0%	0%	0%	0%	0%	4%	0%
	Old 41 Hwy SB	50%	0%	0%	25%	0%	0%	0%	0%	25%	0%	0%	0%
	US 41 / Cobb Pkwy NB	6%	61%	1%	13%	4%	0%	0%	1%	3%	1%	3%	7%
	Old 41 Hwy NB	5%	22%	0%	33%	21%	0%	0%	13%	3%	0%	1%	3%
	Cobb International Blvd	4%	32%	1%	8%	31%	0%	0%	10%	3%	1%	11%	0%
	Kennesaw Due West	6%	14%	32%	0%	23%	0%	0%	9%	2%	2%	2%	10%

**Percentages in red font show the top three destinations per origin gate.*

FIGURE 14: PM ORIGIN DESTINATION TOP ROUTE CHOICES IN PERCENT

Safety Analysis

Crash Summary

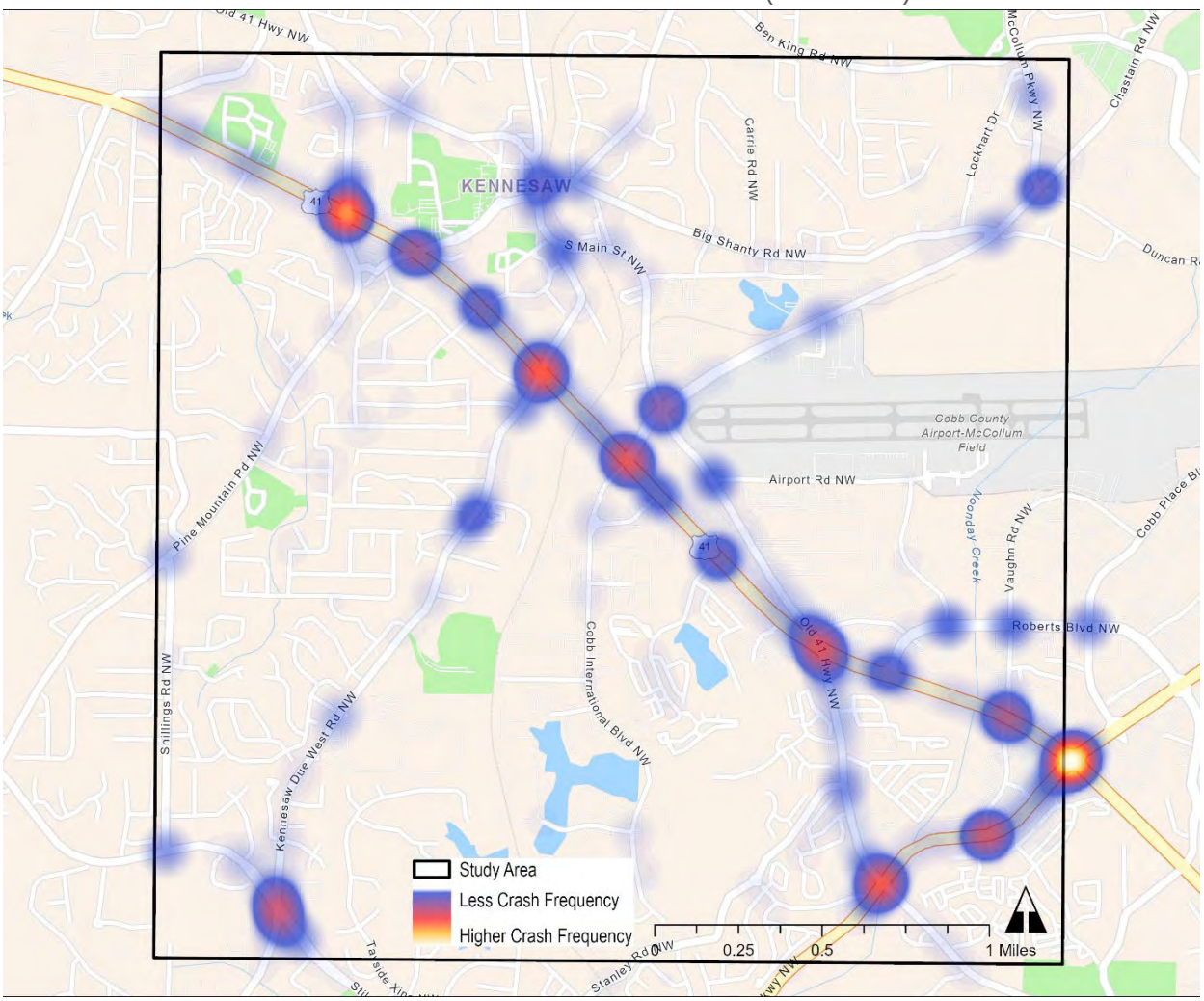
Historical crash data was sourced from Cobb County for the years 2018 – 2022, while the crash heat map was created using data from the GDOT *Numetric* crash analysis tool for the 2017-2021 time period and then subsequently consolidated to the limits of the study area boundary for further detailed analysis. The Numetric crash tool does not yet contain 2022 crash data. Between 2018 and 2022, the most common incident types were rear-end crashes (65.0% of total crashes) and sideswipe collisions (18.2% of total crashes). Other notable types of crashes occurring in the study area were collisions involving a fixed object (1.8%), angle crashes (8.6%), and other crashes (3.2%). The crash summary from 2018-2022 is categorized by accident type in Table 13 below.

TABLE 13: HISTORICAL CRASH SUMMARY FOR THE STUDY AREA (2018-2022)

Year	Angle	Head-on	Fixed Object	Rear-end	Sideswipe	LTWT	Other	Total
2018	10	0	6	158	44	7	9	234
2019	16	0	1	140	34	5	5	201
2020	20	0	4	116	31	2	3	176
2021	25	0	4	132	39	11	8	219
2022	13	0	3	92	31	7	6	152
Totals	84	0	18	638	179	32	31	982
Percent	8.6%	0.0%	1.8%	65.0%	18.2%	3.3%	3.2%	100%

To better visualize the distribution and frequency of crashes within the study area, each crash location was clustered into a density heat map, which is depicted in Figure 15. The heat map below shows areas with higher concentrations of crashes occurred primarily along Barrett Parkway, Cobb Parkway/US 41, McCollum Parkway, and Kennesaw Due West Road with less frequent crash hot spots occurring elsewhere within the study area.

FIGURE 15: STUDY AREA CRASH HEAT MAP (2017 - 2021)



Crash Severity

One measure to understand the historical crash patterns for the study was the use of the KABCO severity index which is a functional measure of the injury severity for any person involved in the crash. "K" stands for Fatal Injury, "A" stands for Suspected Serious Injury, "B" stands for Suspected Minor Injury, "C" represents Possible Injury, and O-No Apparent Injury. Table 14 below shows the KABCO crash severity summary for the Cobb County provided crash data between 2018 and 2022 within the study area. The data shows that the most commonly occurring crash severity types were "O" (No Apparent Injury) and "C" (Possible Injury).

TABLE 14: GDOT KABCO CRASH SEVERITY (2018-2022)

Year	Severity					Total Crashes
	K	A	B	C	O	
2018	0	0	5	45	184	234
2019	0	0	9	32	160	201
2020	0	2	7	22	145	176
2021	0	1	5	34	179	219
2022	0	2	7	24	119	152
Total	0	5	33	157	787	982

During the analyzed period from 2018 to 2022, the crash data showed that there were more than 980 crashes, where 195 crashes contained reported injuries. An annual breakdown of the crash severity is provided in Table 15 below.

TABLE 15: HISTORICAL CRASH SEVERITY (2017 - 2021)

Year	Severity		Total Crashes
	Injury	Fatal	
2018	50	0	234
2019	41	0	201
2020	31	0	176
2021	40	0	219
2022	33	0	152
Total	195	0	982

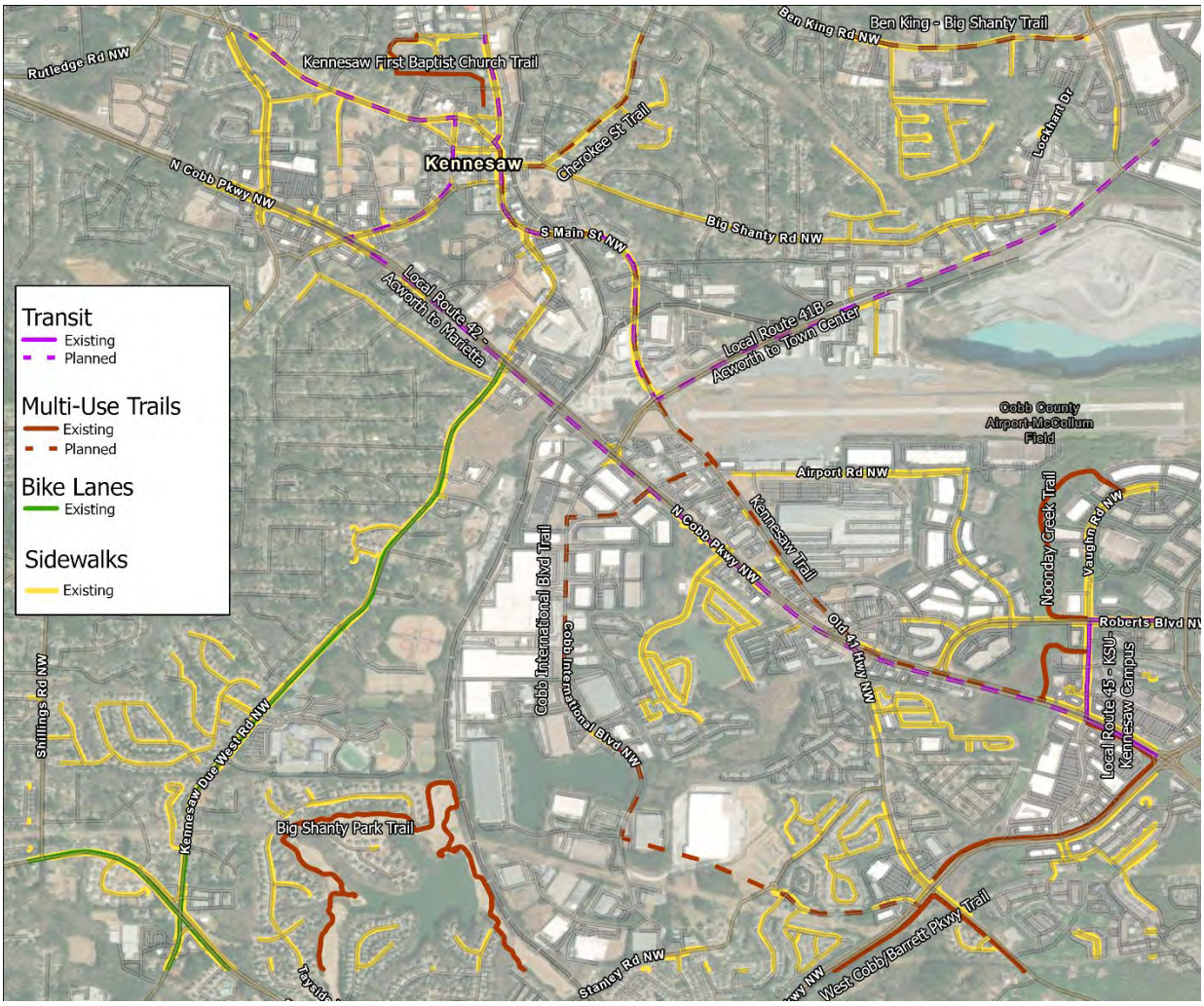
Active Transportation and Aviation Review

This analysis examines the existing conditions as they relate to active transportation (pedestrian and bicyclist facilities) and the nearby Cobb County International Airport-McCollum Field.

Active Transportation

A field visit was conducted on Friday, February 3, 2023, to verify active transportation infrastructure, observe pedestrian and bicyclist activity, and identify potential conflict points in the study area. Figure 16 includes existing and future pedestrian, bicyclist, and transit infrastructure.

FIGURE 16: PEDESTRIAN AND BICYCLIST INFRASTRUCTURE



Transit

Existing transit is near the eastern limits of the study area. CobbLinc Line 45, KSU-Kennesaw Campus, stops along Cobb Pkwy, Vaughn Rd, and Roberts Blvd. Two future CobbLinc lines are expected to travel along Cobb Pkwy, Watts Dr, Dallas St, and N Main St, as well as McCollum Pkwy, S Main St, and Moon Station Rd. As seen in Figure 17, a bus stop shelter is located near the Noonday Creek Trail.

FIGURE 17: TRANSIT STOP NEAR NOONDAY CREEK TRAIL

Multi-Use Trails

Multi-use trails exist along:

- Noonday Creek Trail, which runs from the southern study limit to the eastern study limit along:
    - Old 41 Hwy (east-west)
    - Barrett Pkwy (north-south)
    - Cobb Pkwy (east-west)
    - Parallel to Noonday Creek (north-south)
    - Vaughn Pkwy (north-south)
- West Cobb/Barrett Parkway Trail, which runs from the southern study limit to:
    - Barrett Pkwy (north-south)
- Additional recreational trails are:
    - Big Shanty Park Trail, surrounding Murrays Lake, south of Cobb Pkwy
    - Kennesaw First Baptist Church Trail, north of Downtown Kennesaw

Future multi-use trails are planned along:

- Collins Rd, Cobb International Blvd, and Cobb International Dr
- Cobb Pkwy, Old 41 Hwy, and Cherokee St

As seen in Figure 18, a Town Center bike share station is located off of the Noonday Creek Trail, allowing trail users to rent a bike with a mobile application.

FIGURE 18: TOWN CENTER BIKE SHARE

Bike Lanes

Bike lanes exist along:

- Kennesaw Due West Rd, south of Cobb Pkwy, as seen in Figure 19
- Stilesboro Rd (note: there are no bike symbols or signage along this roadway, but the lane markings function as delineated bike lanes)

FIGURE 19: BIKE LANE ALONG KENNESAW DUE WEST RD, BETWEEN BURNT WOOD DR AND COBB PKWY

Sidewalks

Sidewalks exist along:

- Old US 41 Hwy/Main St, west of McCollum Pkwy
- Kennesaw Due West Rd, south of Cobb Pkwy
- Jiles Rd, Big Shanty Rd, Cherokee St, Roberts Blvd, and Vaughn Rd, north of Cobb Pkwy
- Several subdivisions south of Cobb Pkwy
- Signalized intersection corners along Cobb Pkwy

Pedestrian footpaths can be seen along Cobb Pkwy in Figure 20, where the grass had been walked through adjacent to the highway. Additionally, pedestrians were observed walking along the corridor where no sidewalk was present as the field visit team drove along Cobb Pkwy.

FIGURE 20: PEDESTRIAN FOOTPATH ALONG COBB PKWY THROUGH GRASS, BETWEEN HICKORY KNOLL TRAIL

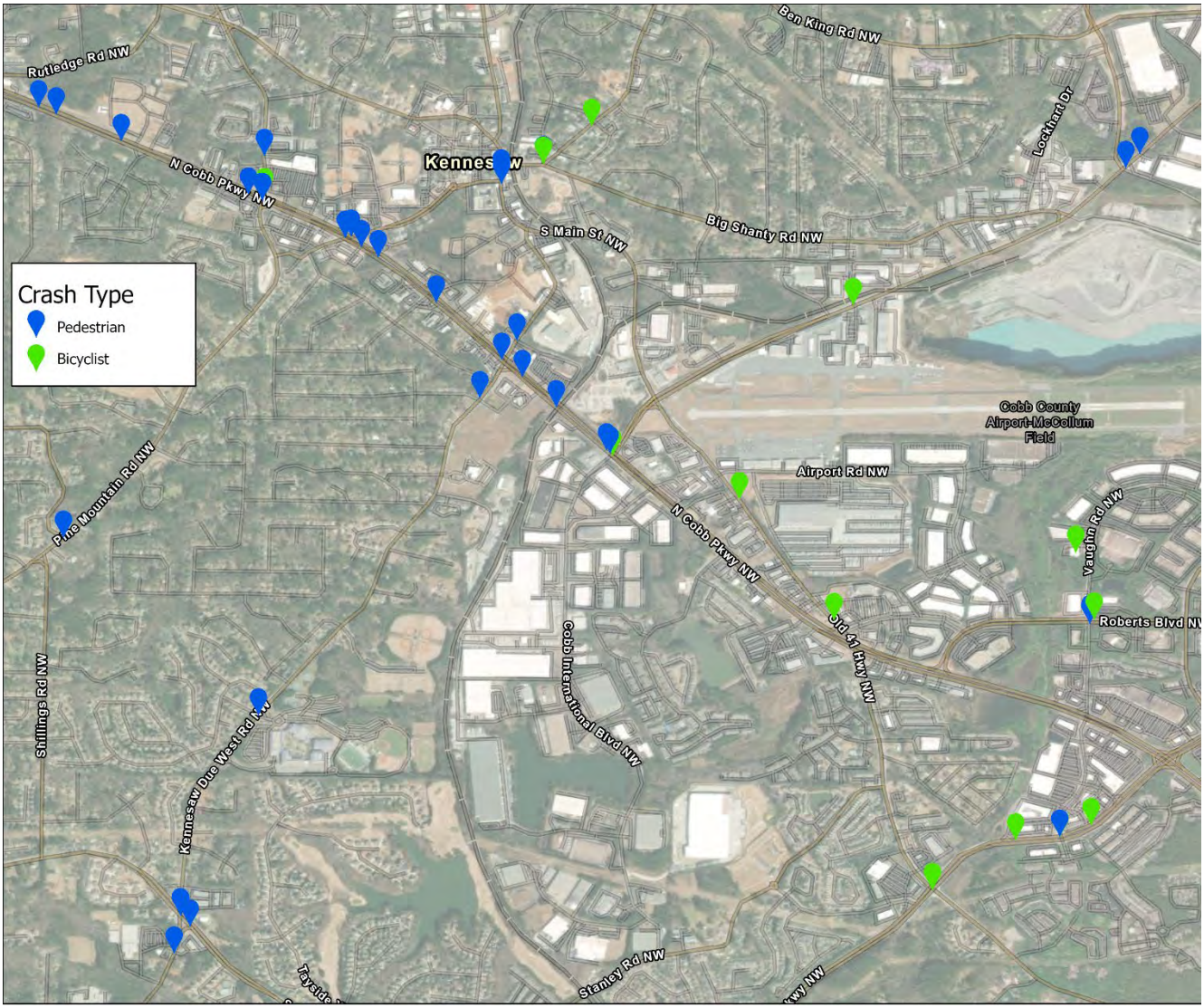
Crash Analysis

Crashes from 2013-2021 were analyzed for pedestrian and bicyclist collisions in the study area, which are shown in Figure 21. 35 crashes involved a pedestrian and 14 involved a bicyclist. Of these 49 crashes, four pedestrian crashes were fatal, and no bicyclist fatalities occurred. The fatal crashes are summarized below:

- Kennesaw Due West Rd & Stilesboro Rd: A Pedestrian crossing Stilesboro Rd southbound within the crosswalk was struck by an eastbound vehicle. The pedestrian crossed while the pedestrian signal indicated to not walk and the eastbound movement was green. The crash occurred in dark and wet roadway conditions.
- Cobb Pkwy, south of Dobbs Dr/Keene St: A Pedestrian crossing Cobb Pkwy from east to west was struck by a northbound vehicle outside of a marked crosswalk. The crash occurred in dark lighted and dry roadway conditions.
- Cobb Pkwy, south of Crooked Creek Rd: Pedestrian was struck after entering Cobb Pkwy from the west by a southbound vehicle. The pedestrian was crossing outside of a marked crosswalk. The crash occurred in dark lighted and dry roadway conditions.
- Cobb Pkwy, south of Pine Mountain Rd: A Pedestrian crossing Cobb Pkwy westbound was struck by a southbound vehicle. The pedestrian was crossing outside of a marked crosswalk. The crash occurred in dark lighted and dry roadway conditions.

All four fatal pedestrian collisions occurred during dark-not-lighted conditions. Three of the four crashes occurred along Cobb Pkwy where pedestrians were outside of crosswalks, and two of which were in areas with no sidewalks.

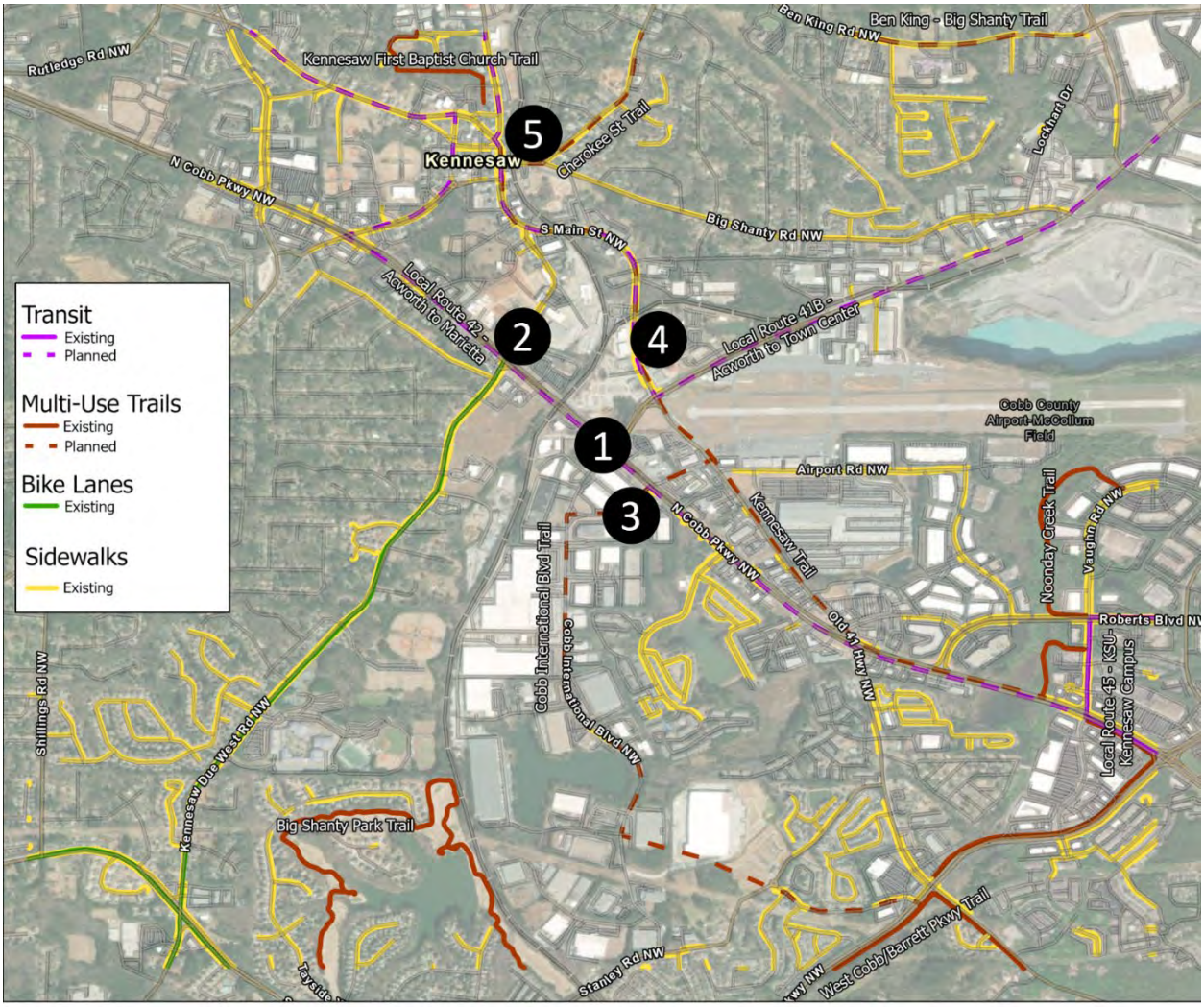
FIGURE 21: PEDESTRIAN AND BICYCLIST CRASHES FROM 2013-2018



Conflict Points

Conflict points for pedestrians and bicyclists were identified, based on areas where active transportation modes intersect with vehicles. The five conflict points are shown below in Figure 22 and are discussed in this section.

FIGURE 22: CONFLICT POINTS IDENTIFIED WITHIN THE STUDY AREA



1. Cobb Pkwy

Cobb Pkwy currently does not have sidewalks or bike lanes along the corridor. Pedestrians must walk along the side of the roadway or find alternate routes to reach their destinations. This was observed near residential areas along Cobb Pkwy, such as the mobile home complex west of Pine Mountain Rd. Along the bridges crossing over the railroad, pedestrians are forced to walk within a few feet of the travel lanes. Future transit lines along Cobb Pkwy will increase the amount of pedestrian traffic along the corridor.

The bridges crossing over the railroad limit Cobb Pkwy's cross-section to 2 ft shoulders next to the roadway. According to the ARC Complete Streets Workbook, every large commercial driveway should have marked crosswalks. Many driveways currently do not have crosswalks, which decreases pedestrian visibility when walking along Cobb Pkwy.

According to the ARC Workbook, crossing opportunities should be provided every 400-600 feet along suburban arterials. Currently, there are crossing opportunities approximately every 3,300 feet along Cobb Pkwy. Fatal pedestrian collisions are seen in the crash history, due to crossing the roadway outside of marked crosswalks.

There are no bike lanes along Cobb Pkwy. Bicyclists are allowed to ride within the travel lanes along Cobb Pkwy with general-purpose traffic.

2. *Cobb Pkwy & Kennesaw Due West Rd*

The dedicated bike lanes along Kennesaw Due West Rd provide access to Cobb Pkwy, south of the roadway; however, there is no facility for these bicyclists once they reach the roadway. As seen in Figure 19 the markings for these bike lanes are faded.

3. *Cobb Pkwy & Cobb International Dr*

In existing conditions, the intersection of Cobb Pkwy & International Dr is unsignalized. A future trail crossing is planned at this intersection.

4. *Old 41 Hwy*

Between Cobb Pkwy and McCollum Pkwy, there are no sidewalks. There are nearby transit stops along Roberts Rd and Vaughn Rd. It is important to note that a future trail is planned along this roadway, which would provide pedestrian and bicyclist connectivity once built.

5. *Cherokee St Railroad Crossing*

Steep grades of approximately 7% and 4% (eastbound and westbound, respectively) lead up to the railroad crossing at Cherokee St, which makes traversal difficult for elderly and disabled pedestrians. Sidewalks are on either side of the crossing; however, there is a lack of delineation for pedestrians over the crossing.

Aviation Review

The purpose of this analysis is to assess existing airport conditions as they relate to the Runway Protection Zone (RPZ) at Cobb County International Airport-McCollum Field (RYY or the Airport).

The establishment of many airfield design standards is driven by a runway's critical aircraft. The FAA defines a critical aircraft as, "the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport [500 operations annually]." The most recent airport layout plan (ALP) update approved by the FAA in 2018, used a C-II critical aircraft for Runway 9-27, the sole runway of the Airport. Additionally, visibility minimums were identified as 4000 Runway Visual Range (RVR) for approaches on Runway 27, and 5000 RVR for approaches on Runway 9.

To ensure the runway design standards had not changed, this baseline analysis of the existing conditions on Runway 9-27, reviewed the total operations by aircraft type for calendar year 2022, and the visibility minimums published for each runway end. The results showed while the critical aircraft had increased from C-II to D-III, the approach types and visibility minimums on both runway ends remained constant to their ALP update values, causing the approach and departure RPZ dimensions to remain constant as well. For this study, the RPZ will be focused on the Runway 9 end, which includes Runway 9 approaches and Runway 27 departures.

Runway Protection Zone

A runway protection zone is defined by the FAA as "an area at ground level before the threshold or beyond the runway end to enhance the safety and protection of people and property on the ground."[1] Before the RPZ guidance in FAA AC 150/5300-13B, *Airport Design*, the FAA had identified two different zones within an RPZ polygon. The Central Portion of the RPZ, was an extension of the Object Free Area (OFA), and the outer edges were known as the Controlled Activity Area. When AC 150/5300-13B was published in 2022, these zones were removed and instead each RPZ area is reviewed in its entirety, with the extensions of the RSA and ROFA being viewed as the most critical areas beyond a runway's end.

Based on the D-III-5000 Runway Design Code for Runway 9, the approach RPZ areas must have an inner width segment of 500 feet, an outer width segment of 1,010 feet, and a length aligned with the runway centerline between them at 1,700 feet. The inner width segment of the approach RPZ must be located 200 feet prior to the threshold of that runway. Similarly, the inner width segment of the departure RPZ of Runway 27 must be located 200 feet beyond the end of the usable runway pavement for a departure, or the takeoff run available (TORA). The threshold for approaches on Runway 9, is displaced by 1,062 feet from the end of the runway. Because the TORA for departures on Runway 27 is 6,311 feet, the departure RPZ begins 200 feet beyond the end of the physical pavement.

It is preferred that an RPZ be fully within an airport's property to ensure that land uses will be compatible. In September 2022, the FAA issued AC 150/5190-4B *Airport Land Use Compatibility Planning*. The

[1] FAA AC 150/5300-13B, *Airport Design*. (2022) Retrieved online at: https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5300-13B-Airport-Design.pdf

document guides the FAA and Airport Sponsors when changes in land use occur near the Airport, including the following seven major land use categories listed below:

- Residential Uses
- Commercial Activities
- Industrial and Mining Activities
- Institutional Activities
- Infrastructure/Utilities/Energy Production Activities
- Agriculture and Open Space Activities
- Parks and Recreation Activities

Source: *AC 150/5190-4B Airport Land Use Compatibility Planning*, September 16, 2022. Page 2-21. (Table 2-3)

RPZ Analysis

An analysis was completed using the overlapped Runway 9 approach RPZ and Runway 27 departure RPZ, concerning the Airport's property map. This identifies the RPZ areas that are off-airport property and at risk for land use incompatibility. Some incompatible uses were identified including, but not limited to buildings, public roads/highways, and vehicular parking facilities.

Table 16 and Figure 23 show the results of the analysis, with the total acreage of the overlapped RPZ areas[2], the area owned by the Airport (or on-airport property), the area not owned nor controlled by the airport (off-airport property), and the total acreage of the RPZ areas that could be considered incompatible based on existing uses. The review also identified approximate lengths of roadways or railways and a count of buildings/parking lots that are fully or partially within the RPZ areas.

TABLE 16: RPZ ANALYSIS

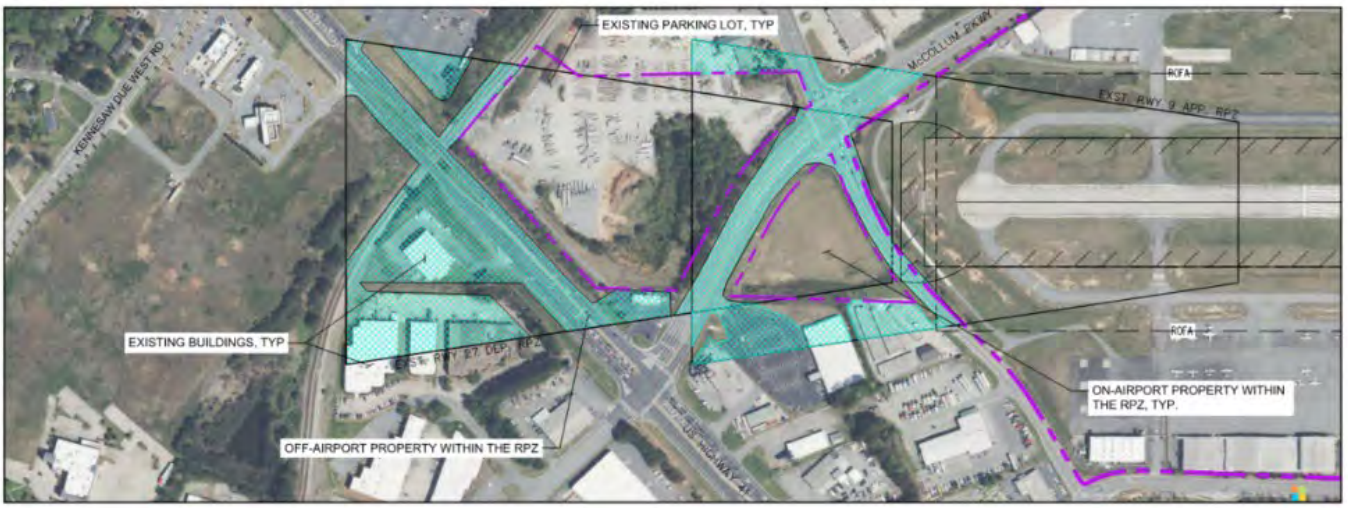
RPZ Area Analysis	
RPZ Area - Total Overlapped (Acres)	50.4
RPZ Area - On-Airport Property (Acres)	29.9
RPZ Area - Off-Airport Property (Acres)	20.5
RPZ Area - Incompatible Uses (Acres)	14.9
Incompatible Uses Analysis	

[2] The departure RPZ is offset further west than the approach RPZ.

Public Roads/Highways - (Miles)	0.7
Rail Facilities	0.2
Vehicular Parking Lots - Count	5
Buildings - Count	8

Source: VHB Analysis, 2023; RYY ALP Update, 2018

FIGURE 23: COMBINED RPZ ANALYSIS



Source: VHB Analysis, 2023; RYY ALP Update, 2018

RPZ Review of Off-Airport Property and Incompatible Uses

The results of the RPZ analysis showed that the combined area of the two RPZ areas is equal to 50.4 acres, and the Airport owns and controls 29.9 acres (59.3 percent), resulting in the remaining 20.5 acres being off-airport property. The RPZ areas that are off-airport properties have multiple facilities that could be considered incompatible land use per FAA definitions equaling 20.9 acres in total.

The 0.7-mile segment of combined roadways in the RPZ areas includes:

- Cobb Parkway – Four-lane parkway with median and multiple turn lanes at intersections.
- McCollum Parkway – Four-lane parkway with multiple turn lanes at intersections.
- Old US 41 Highway – Two-to-three lane highway with multiple turn lanes at intersections.

The 0.2-mile segment of the railway is a part of the CSX line and is an active railroad.

Eight of the ten buildings are partially within the RPZ areas, and two are fully within them. A brief review of the building's uses includes:

- Three office buildings
- One county polling building
- One family fun center building
- Two commercial service buildings
- Three multi-unit storage buildings

The vehicular parking lots are used for office buildings, the family fun center, and commercial service buildings. In addition to vehicular parking, there is a space owned by the Airport.

FAA Guidance on Mitigating Incompatible Uses in RPZs

The FAA's AC 150/5190-4B Guidance also states that the FAA Regional Office and Airport District Office (ADO) must work with the Airport Sponsor to "seek to establish the necessary zoning controls to enable it to address existing incompatible land uses when the opportunity arises"[3] and "take all appropriate steps available to establish and exercise zoning controls necessary to prevent any new incompatible land uses".[4]

In addition, when airport owners or sponsors, planning agencies, or other organizations accept funds from FAA-administered airport financial assistance programs, they must agree to certain obligations (or assurances). These obligations require the recipients to maintain and operate their facilities safely and efficiently and in accordance with specified conditions. The assurances may be attached to the application or the grant for federal assistance and become part of the final grant offer or in restrictive covenants to property deeds. In terms of grant obligations related to RPZ control, this is covered under Grant Assurance[5] 21, where the airport sponsor is federally obligated to:

"take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft."[6]

Additionally, the FAA Central Region Airports Division developed an AIP Sponsor Guide for Airport Sponsors, which includes Section 550- Runway Protection Zones.[7] It states that the airport "must own the landing area, ...have sufficient interest in the Runway Protection Zones to protect the Runway Protection

[3] FAA AC 150/5190-4B, Airport Land Use Compatibility Planning, Page 2-14. September 16, 2022.

[4] FAA AC 150/5190-4B, Airport Land Use Compatibility Planning, Page 2-15. September 16, 2022.

[5] *Grant Assurances* are obligations in which if an Airport Sponsor receives funds from FAA-administered airport financial assistance programs, the Airport Sponsor must "maintain and operate their facilities safely and efficiently and in accordance with specified conditions." Applicability of grant assurances depends on the type of funding received by FAA. Airport Sponsors must comply with the conditions specified in the grant assurance. (Federal Aviation Administration – Grant Assurances-Obligations-Airports. Accessed June 5, 2021. https://www.faa.gov/airports/aip/grant_assurances/

[6] FAA Airports, Assurances Airport Sponsors, 21, Page 9. February 2020.

[7] FAA Central Region Airports Division, AIP Sponsor Handbook, 550-Runway Protection Zones, Page 500-14. September 1, 2020.

Zones from both obstructions and incompatible land use" and "...must strive to attain compatible zoning around the airport to prevent incompatible land uses that:

- Could cause sufficient conflict that endanger the airport
- Cause it to be closed or
- Require substantial remedial investment to purchase conflicting developed property."[8]

The sponsor may attain the land within the RPZ via three methods:

- Purchase the approach areas in fee allowing the airport full control of the land
- Purchase an easement (or combination of easement and zoning)
- Rely upon sufficient zoning[9]

Compatible land use is defined within FAA Order 5190.6B, Change 2 *FAA Airport Compliance Manual*, as land that "neither adversely affects flight operations from the airport nor is itself adversely affected by such flight operations".[10] To the extent any "compatible land uses" are located within an RPZ, they could be considered incompatible. The FAA Order states, in part, as follows:

... "Incompatible land uses can include wastewater ponds, municipal flood control channels and drainage basins, sanitary landfills, solid waste transfer stations, electrical power substations, water storage tanks, golf courses, and other bird attractants. other incompatible uses would be towers or buildings that penetrate part 77 surfaces or are located within a Runway Protection Zone (RPZ), Runway Object Free Area (ROFA), Object Free Zone (OFZ), clearway, or stopway."[11]

RPZ Analysis Summary

For a particular runway, the larger or more stringent RPZ governs the property interests associated. However, in this case, both the Runway 9 approach RPZ and Runway 27 departure RPZ are offset, and collectively contain multiple incompatible land uses within them. Airport ownership, control, and implementation of compatible land use principles is the optimum method for ensuring public safety regarding RPZs. It is a primary goal to clear RPZ areas of incompatible objects such as buildings, roads, parking lots, and railways where possible.

[8] Ibid.

[9] Ibid.

[10] FAA Order 5190.6B, Change 2. FAA Airport Compliance Manual, Chapter 20. Compatible Land Use and Airspace Protection, *20.2 Zoning and Land* Use Planning, e. Definition of Compatible Land Use, Page 20-5. December 2022 https://www.faa.gov/airports/resources/publications/orders/compliance_5190_6/media/5190_6b_chap20.pdf

[11] FAA Order 5190.6B, Change 2. Chapter 21, 21.6, Land Use Inspection Guidance, f. Problem Areas, (6) Incompatible Land Uses, Page 21-10. December 2022. https://www.faa.gov/documentLibrary/media/Order/Order_5190_6B_Compliance_Chg2.pdf

Environmental Evaluation

This environmental screening report includes preliminary evaluations of the environmental resources within the study area. The project team conducted an initial analysis of historic, archaeological, and ecological resources. Further investigations would be required during the alternatives analysis process.

Historic Resources

The project was screened for historic resources that could be potentially eligible for listing in the National Register of Historic Places (NRHP). Data pertaining to the study area was analyzed using Georgia's Natural, Archaeological, and Historic Resources GIS (GNARHGIS), Cobb County's tax assessor records, the NRHP database, Google Street View, USGS topographic maps, and historic aerial photographs.

Background research indicated a total of 606 historic resources 50 years old or older are located within the study area (see Figure 24). Four of the resources are NRHP-listed Historic Districts that contain contributing resources. All four of the historic districts in the following table are located north of Cobb Parkway:

TABLE 17: STUDY AREA HISTORIC RESOURCES

Historic District	Contributing Resources
Big Shanty Village Historic District	13
Cherokee Street Historic District	13
North Main Street Historic District	14
Summers Street Historic District	3

Of the remaining 602 historic resources, two resources are listed in the NRHP and two resources have been recommended eligible for listing in the NRHP. A total of 598 historic resources have been unassessed for NRHP eligibility. The table below presents the resources listed or recommended eligible for inclusion in the NRHP:

TABLE 18: NRHP RECOMMENDED RESOURCES

Resource Name	NRHP Eligibility
Hiram Butler House	NRHP Listed
The General	NRHP Listed
Western & Atlantic Railroad (CSX)	Recommended Eligible
Dixie Highway (US Highway 41)	Recommended Eligible

Archaeological Resources

Background research was conducted to identify previously recorded archaeological sites within the study area. This included a review of the NRHP database, Georgia Archaeological Site File, GNAHRGIS, USGS topographic maps, Georgia Cemetery Locator, and historic aerial imagery.

The study area contains 44 previously recorded archaeological sites and five cemeteries. Six of the archaeological sites have been recommended eligible for inclusion in the NRHP, 25 have been recommended ineligible for inclusion in the NRHP, 12 have unknown eligibility, and one is listed in the NRHP. Two of the previously recorded sites within the study area are Civil War battlefields. Additionally, the study area is located within a Civil War battlefield study area (see Figure 25). Therefore, there is a high probability of identifying additional Civil War battlefields or military sites. A Phase I archaeological survey would be needed to determine the presence of additional archaeological sites.

Protected Species

Background research, using U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) and GNARHGIS online mapping portals which contain information on protected species, was conducted to identify all federal and state-protected species that could occur in the study area.

The study area is located within the range of 10 federal and state-protected species. Of the 10 species, the study area may provide a suitable habitat for 5 species (see Figure 26). The species are listed in the following table.

TABLE 19: STUDY AREA PROTECTED SPECIES

Common Name	Scientific Name	Federal Status	State Status
Monarch Butterfly	*Danaus plexippus*	Candidate	-
Little Amphianthus	*Amphianthus pusillus*	Threatened	-
Michaux's Sumac	*Rhus michauxii*	Endangered	Endangered
Common Name	Scientific Name	Federal Status	State Status
White Fringeless Orchid	*Platanthera integrilabia*	Threatened	-
Tricolored bat	*Perimyotis subflavus*	Proposed Endangered	-
Cherokee Darter	*Etheostoma scotti*	Threatened	Threatened
Lined Chub	*Hybopsis lineapunctata*	-	Rare
Pool Sprite, Snorkelwort	*Amphianthus pusillus*	Threatened	Threatened
Sun-loving Draba	*Draba aprica*	-	Endangered
Georgia Aster	*Symphyotrichum georgianum*	-	Threatened

Waters of the US

The National Wetlands Inventory (NWI) maps and Georgia EPD Trout Waters Map were reviewed to identify the presence of jurisdictional waters of the US within the study area.

These resources indicate the presence of 17 streams, 27 open waters, 5 wetlands, and the Noonday Creek Tributary Mitigation Site within the study area (see Figure 27).

FIGURE 24: HISTORIC RESOURCES

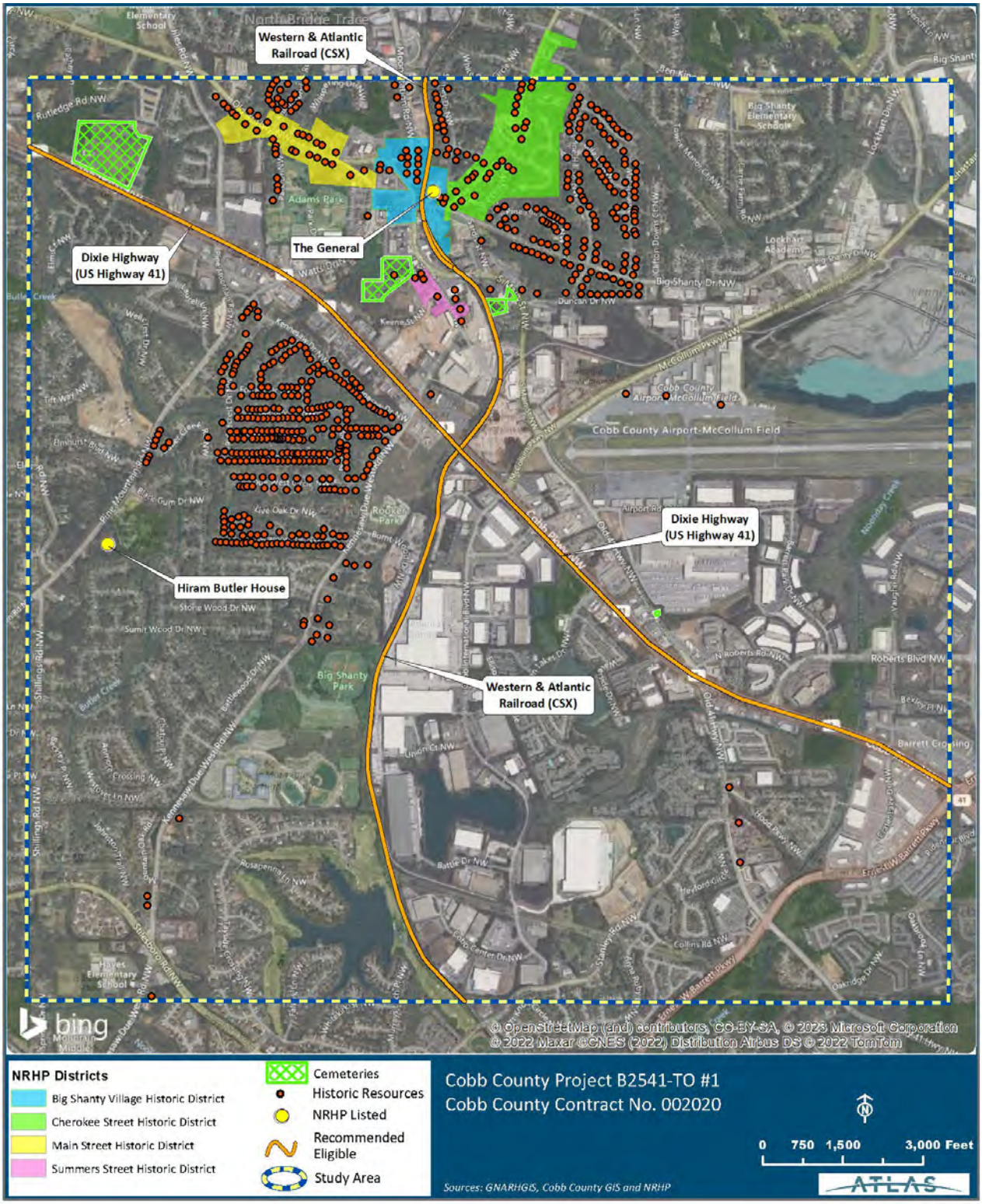


FIGURE 25: ARCHAEOLOGICAL RESOURCES

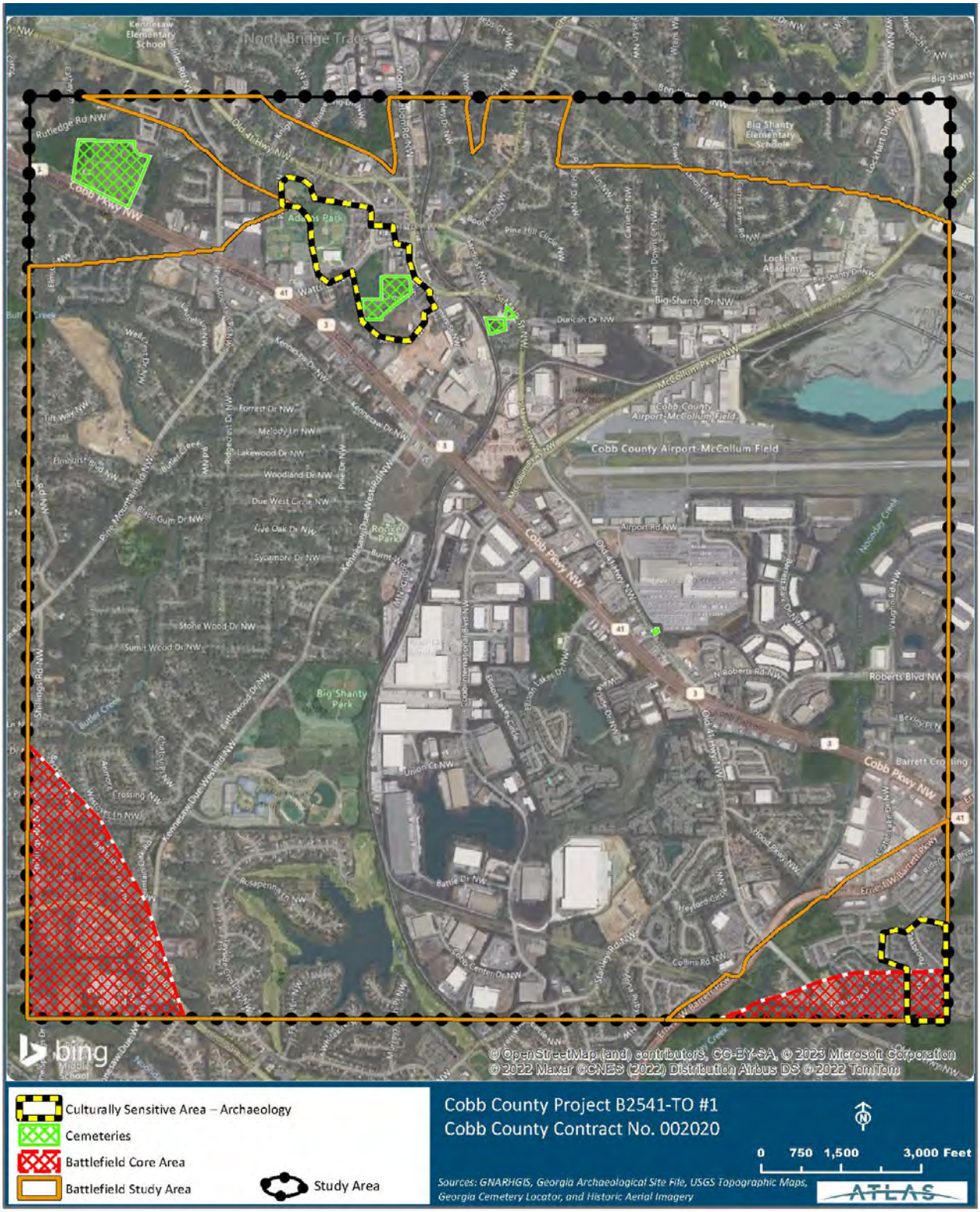


FIGURE 26: POTENTIALLY SUITABLE HABITAT FOR PROTECTED SPECIES

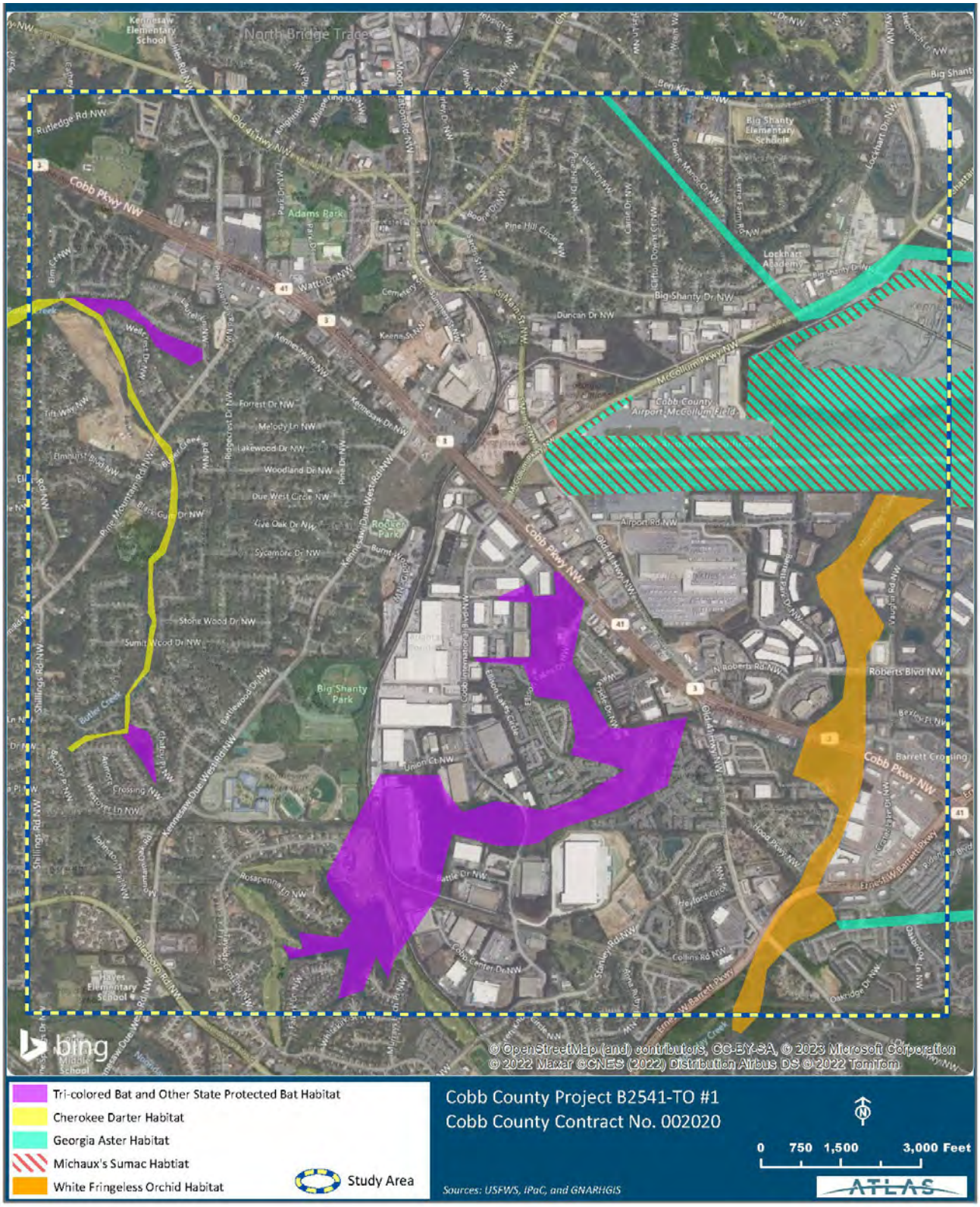
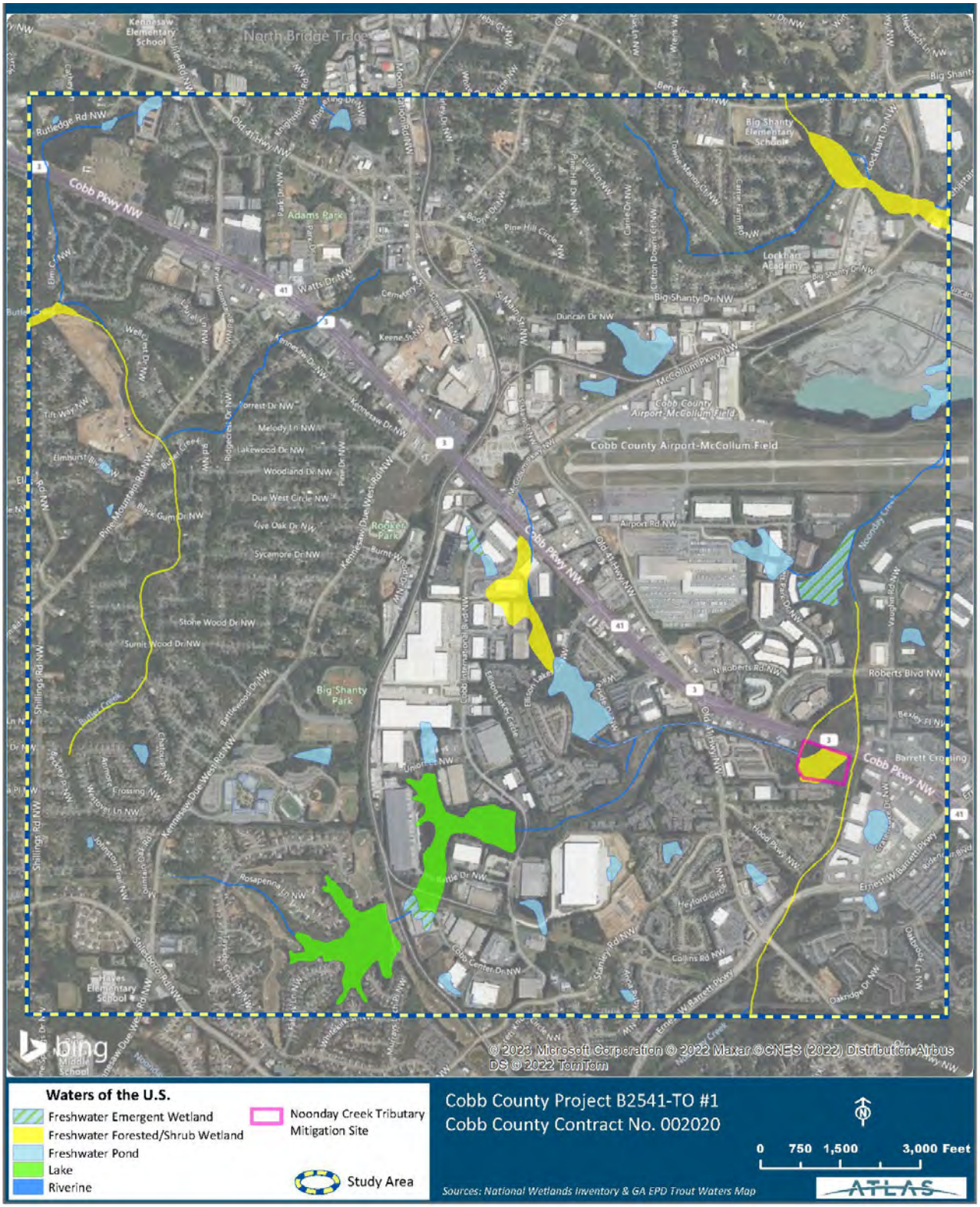


FIGURE 27: WATERS OF THE U.S.



Utilities Summary

Infrastructure or equipment that performs a service or function along a road or highway is often referred to as a roadway utility. Infrastructure can include items like lighting, traffic lights, signs, storm drains, and telecommunications equipment. The provision of communication and other vital services is made possible by the utilities found on roads, which are crucial in guaranteeing safe and effective transportation. To maintain them functioning and safe for usage, roadway utilities require regular maintenance and upkeep. Also, to minimize traffic interruption and guarantee that roadway utilities are constructed and maintained in a way that is cost-effective and efficient, meticulous planning and cooperation among various stakeholders are essential.

For the existing utilities inventory and analysis, AGL gas mains were plotted based on the information derived from their internal GIS system. These records only show gas mains, service lines to individual homes and businesses are not shown on their records. Zayo utilizes Google Earth, via a KMZ overlay, to depict the approximate location of their underground and overhead fiber lines. Overhead power/CATV/telecom lines were plotted based on a field walk that was conducted as well as assistance from Google Earth. While we were able to capture many utilities within the project scope, there are still utilities that are not accounted for based on the time it would take to coordinate with certain utilities. These utilities, such as AT&T, typically take 45-60 days to get full sets of underground utility records.

Ongoing coordination with utility companies and Cobb County is paramount during each phase of the scoping study. As alternatives are developed, it is recommended to try and best minimize the utility impacts within the required Right-of-Way (ROW). Figures 28 – 33 show the existing utilities inventoried within the study area that may be impacted by the proposed alternatives.

FIGURE 28: ATLANTA GAS LIGHT - HIGH PROFILE GAS MAINS

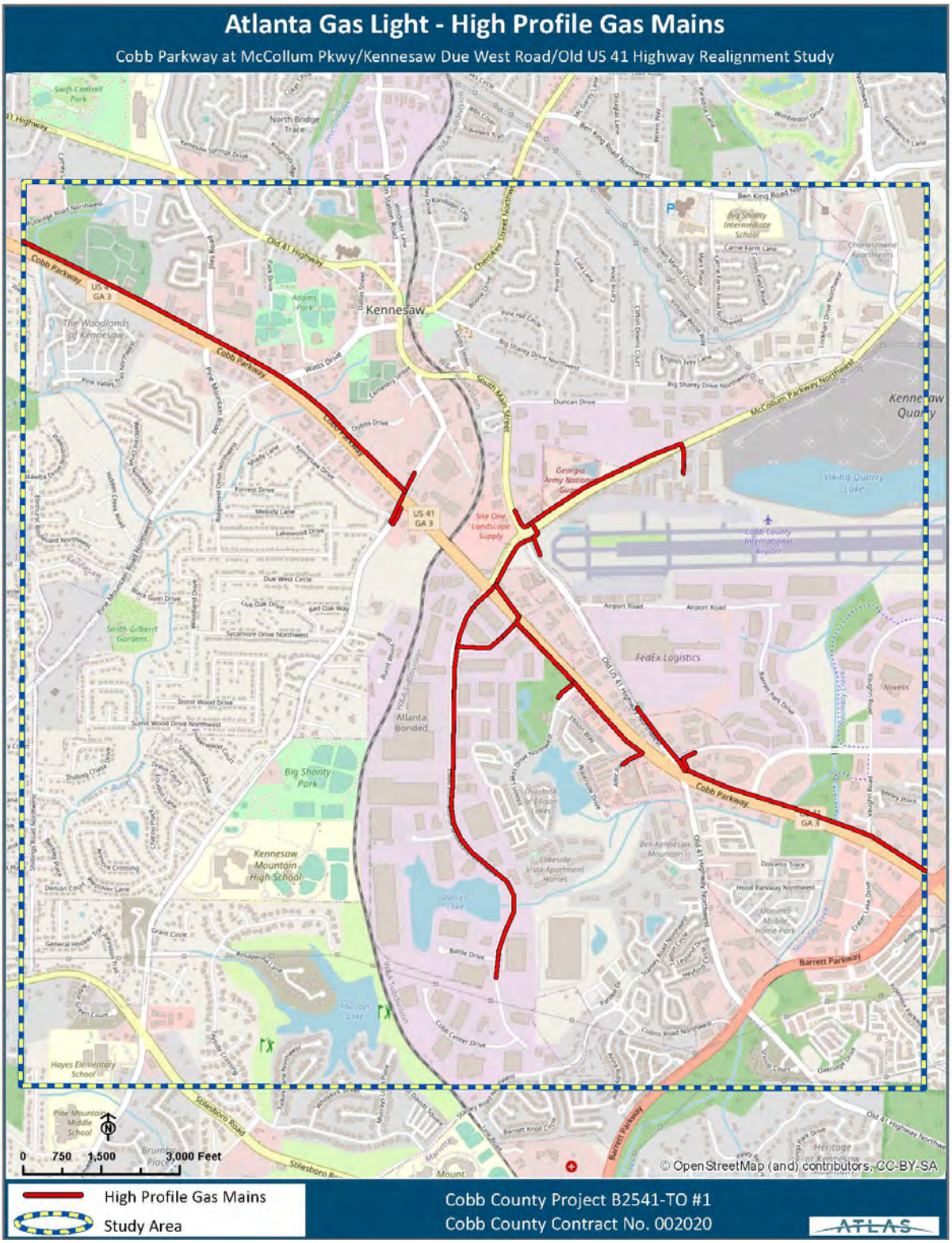


FIGURE 29: POWER AND TELECOMMUNICATION LINES

FIGURE 30: OVERHEAD POWER AND TELECOMMUNICATION LINES

FIGURE 31: SANITARY SEWER SYSTEM

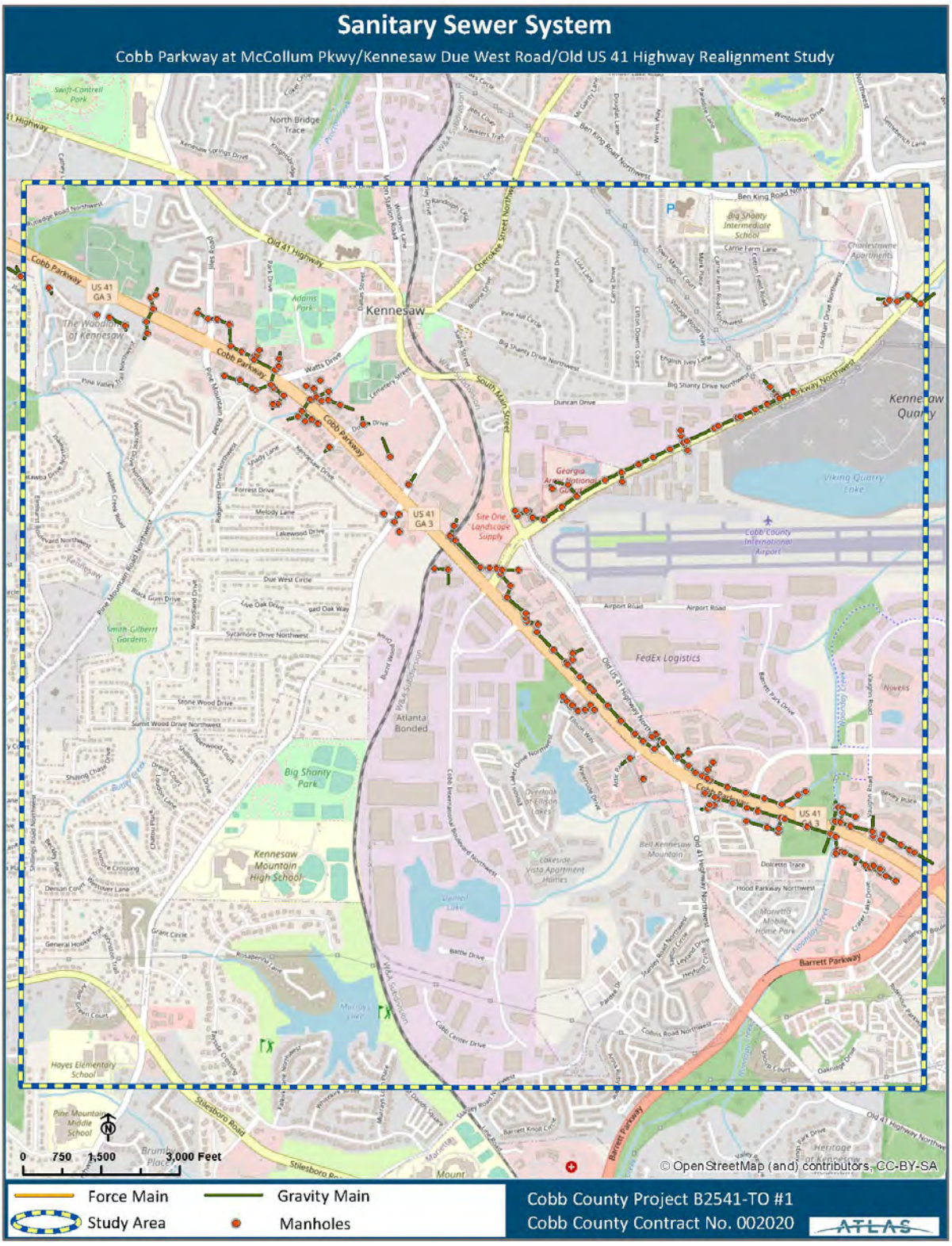


FIGURE 32: STORMWATER SYSTEM

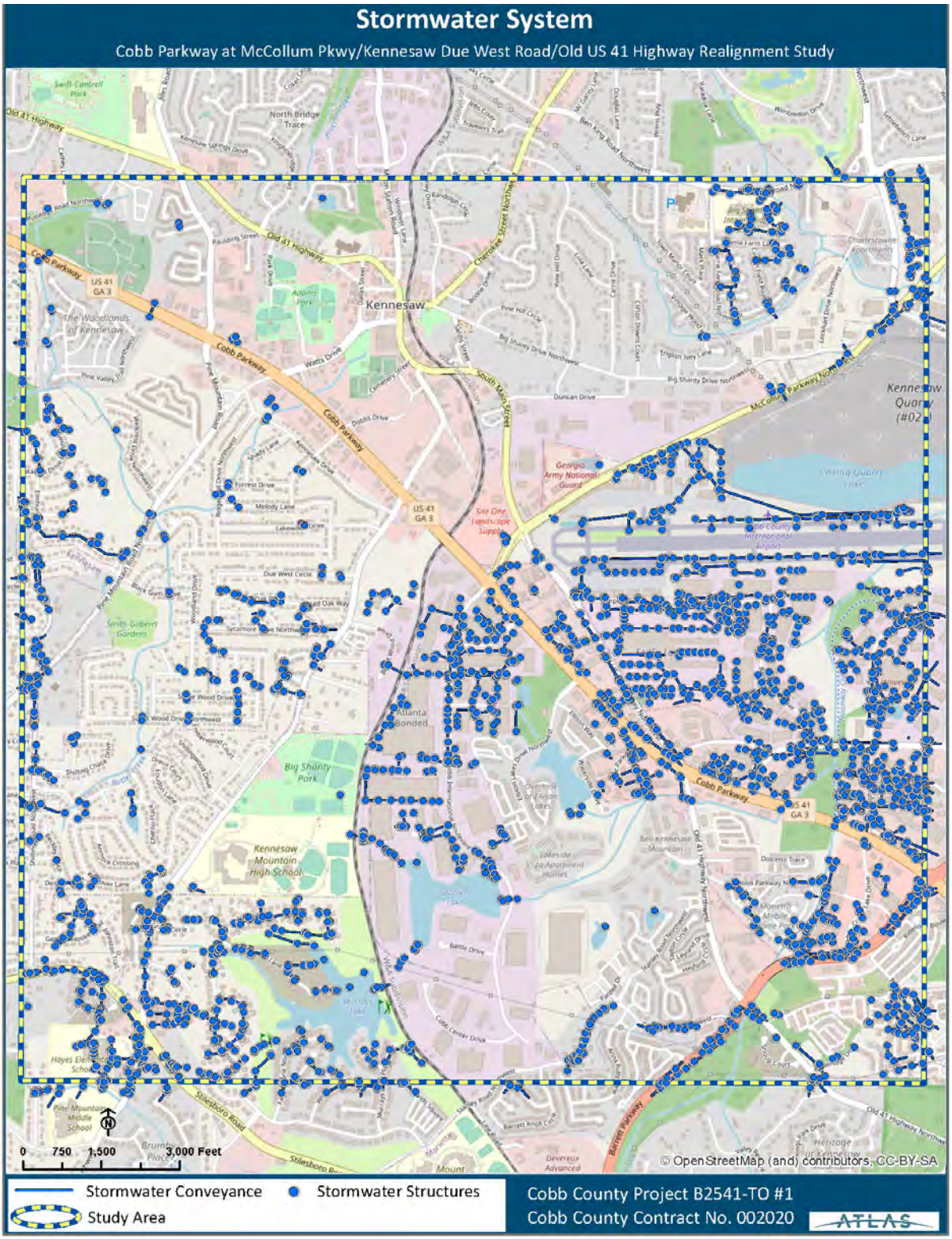
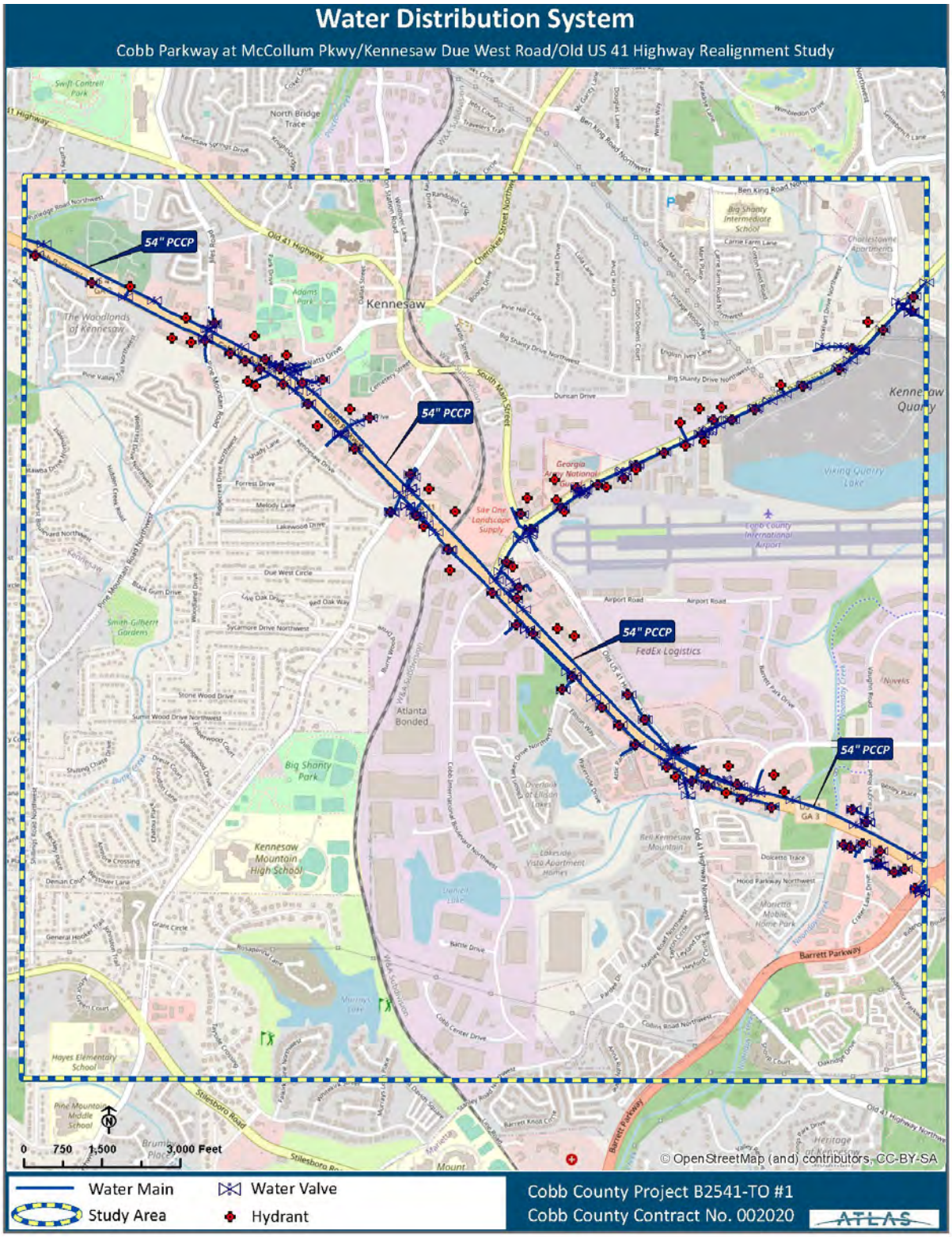


FIGURE 33: WATER DISTRIBUTION SYSTEM



Conclusion

This existing conditions report for the Scoping Study for the Realignment of Cobb Parkway at McCollum Parkway in Cobb County, Georgia, has provided a comprehensive analysis of the existing transportation, land use, and traffic-related data to achieve the identified objectives for the report. The study area encompasses various road classifications, including local roads, collector roads, and arterial roads, which serve different functions in providing access and mobility for the residents and commuters within the study area. Notably, the study area is characterized by significant traffic movements, particularly at intersections such as McCollum Parkway and US 41, and Kennesaw Due West Road and US 41 (referred to as a "Z" movement).

The study has highlighted the importance of accommodating the Federal Aviation Administration (FAA) approved safety zone at Cobb International Airport, ensuring compliance and maintaining the safety of air traffic operations. This consideration has been integrated into the evaluation of conceptual alternatives for the realignment.

Stakeholder involvement has been actively promoted throughout the study, recognizing the significance of community input in shaping the realignment plans. By engaging stakeholders, including residents, businesses, and other interested parties, the study has fostered transparency, collaboration, and the inclusion of diverse perspectives.

The analysis of existing intersection operations using Level of Service (LOS) measures has provided additional insight into the current traffic flow conditions. While most surface street intersections within the study area are performing at acceptable levels of service, certain locations, such as the US 41 at Kennesaw Due West intersection, experience significant delays during the AM peak hours. The LOS analysis has guided the identification of areas where improvements are needed to enhance traffic flow and reduce congestion.

The study has also utilized the Regional Integrated Transportation Information System (RITIS) data to evaluate trip distribution, top route choices, travel time, and speed data within the traffic analysis study area. These data have informed the understanding of origin-destination patterns and influenced the identification of key routes for various origin gates within the study area.

Draft alternatives considered as part of this study will be further developed and evaluated as part of an ongoing planning effort. Moving forward, the findings and recommendations from this scoping study will serve as a valuable foundation for subsequent reports and stages of the realignment project. In addition, the established study years, including the Open Year (2032) and Design Year (2052), will be further analyzed to account for future traffic demands and projected growth.