

I-65 @ EXIT 305 (CR 222) ACCESS CONCEPT PLAN

Developed for:

The City of Good Hope &

The City of Cullman

Prepared by:



JUNE 13, 2017



I-65 @ EXIT 305 (CR 222) ACCESS CONCEPT PLAN

Developed for:

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1.0 INTRODUCTION

The purpose of this document is to provide a summary of findings and recommendations to be used as a guide by the City of Good Hope and the City of Cullman for the future development and construction anticipated to occur in the vicinity of the recently opened Exit 305 interchange on I-65 at County Road 222 (CR 222) in Good Hope, Alabama. Additionally, this document and the subsequent recommendations can be used in the future to manage the number and location of new access points related to proposed developments, anticipate the potential need for future widening and improvement of existing roadways, and planning for potential new roadways and transportation facilities. Ultimately, this document is intended to be used by the municipalities as a tool in the land planning and development process in order to provide property access to encourage growth and development while maintaining traffic operations and roadway efficiency for the motoring public.

The Alabama Department of Transportation (ALDOT) opened the Exit 305 interchange in early 2016. Serving as a primary route to Lewis Smith Lake, CR 222 also provides access to Industrial Park III and the adjacent Burrow property. The new interchange, immediately surrounded by large tracts of vacant property and single-family residential homes, is anticipated to spur growth and development in the near future. This expected growth has encouraged the City of Good Hope and the City of Cullman to proactively identify traffic and access concerns in the vicinity of the new interchange in an effort to address existing deficiencies and to prevent future traffic operational problems prior to their occurrence.

Sources of information used in this report include: the Alabama Department of Transportation (ALDOT); the City of Cullman; the City of Good Hope; the Transportation Research Board (TRB); the American Association of State Highway and Transportation Officials (AASHTO); the Institute of Transportation Engineers (ITE); the Federal Highway Administration (FHWA); St. John & Associates, Inc; Traffic Data LLC; and field reconnaissance efforts and other information collected by Skipper Consulting, Inc.

2.0 PROJECT HISTORY AND BACKGROUND

Although the thought of an interchange on I-65 at CR 222 had long been discussed and desired by area residents, the project need came into focus during the late 1990's and early 2000's. The Alabama Power Company began construction of Lewis Smith Lake in 1957 and finished construction and began filling the lake in 1961. Located approximately 6 miles southwest of the Exit 305 interchange, Smith Lake has long been a tourist attraction and traffic generator with CR 222 providing direct access to the east side of the massive reservoir. However, without an interchange, visitors utilizing I-65 had to find another route to CR 222. The local population and Smith Lake tourist traffic combined was never sufficient to justify an interchange.

An emphasis on economic development and industrial recruitment in the 1990's attracted a significant amount of interest in the Cullman area, including Industrial Park III. NAFCO, a steel manufacturer. TOPRE and Advanced Heat Treat Corporation have since located in Industrial Park III as well.

It was during the Topre recruitment process that the ALDOT committed to construct the CR 222 interchange in part due to the anticipated traffic and shipping demand related to Industrial Park III. The Chamber of Commerce, the cities of Cullman and Good Hope and the Cullman County Commission shared in covering the local match portion of the construction cost. However, funding issues for ALDOT delayed the project for several years. Construction officially began in the fall of 2014 and a ribbon-cutting ceremony was held on January 22, 2016 to officially open the Exit 305 interchange.

3.0 EXISTING CONDITIONS

3.1 Project Study Area

Based on discussions held at the outset of the project, the study area for this project was defined as the area along I-65 from Exit 304 (AL 69) to the south, to approximately 1,900' north of the new Exit 305 to the north (Hoenig Drive extended), to AL 69 to the east, to approximately 2,000' west of I-65 to the west (CR 469 extended). The project study area is shown in **Figure 1**.



Figure 1 - Project Study Area

3.2 Study Area Roadways and Intersections

There are numerous roadways within the study area, of varying characteristics, classifications, size, and purpose, designed to function in different ways. Typically, almost all roadways fall into one of three classifications: arterial streets, collector streets, or local streets. The difference between the classifications depends on the trade-off between providing mobility to through traffic with higher speeds and traffic volumes and the level of land access that is permitted. Another important aspect of the study area roadways is the jurisdiction in which it's located and which of the different municipalities and agencies are responsible for maintenance and oversight.

• <u>I-65</u>

Within the study area, I-65 is classified as an Urban Interstate and is a four-lane, median divided controlled access roadway, with a posted speed limit of 70mph. However, I-65 was not included in the analysis to the extent that the Federal Highway Administration (FHWA) and ALDOT retain virtually all control over the facility.

• <u>AL 69</u>

Within the study area, Alabama Highway 69 (AL 69) is classified as an Urban Minor Arterial roadway according to the ALDOT. Serving as the eastern boundary of the study area, AL 69 consists of a five-lane roadway, including a center two-way-left-turn-lane (TWLTL), with concrete curb and gutter, and a posted speed limit of 45 mph. According to its Urban Minor Arterial functional classification, AL 69 serves to provide some reasonably spaced access to adjacent property but still primarily focus on vehicle progression and flow. AL 69 is owned and maintained by the ALDOT and located primarily within the Good Hope jurisdiction. New access points and modifications to existing access points on AL 69 are controlled by ALDOT through a permit application, review, and approval process and subject to ALDOT's design and construction standards.

As bound by the study limits, the AL 69 corridor extends from the Exit 304 interchange to just south of 23rd Street SW, approximately 9,600' (1.8 miles) in length. The roadside setting is primarily commercial and retail development with industrial and manufacturing development to the north, and single-family residential and vacant land interspersed in the middle. The topography is relatively flat to gently rolling.

There are three (3) existing traffic signals along the study segment of AL 69, specifically at CR 222, Cupp Road, and the I-65 SB Exit Ramps.

• <u>CR 222</u>

Within the study area, CR 222 is classified as a Collector roadway, consisting of a three-lane cross section, including a center two-way-left-turn-lane (TWLTL), with a 4'-5' paved shoulder, and a posted speed limit of 45 mph. As a collector facility, the primary function of CR 222 is to provide connectivity between local roads and arterials such as AL 69. CR 222 provides more access to

adjacent property and local roads and its design is less focused on vehicle progression, such that interrupted flow is expected by users. CR 222 is located within the City of Good Hope jurisdiction.

As bound by the study limits, the CR 222 corridor extends from its intersection with CR 469 east to AL 69, approximately 5,900' (1.1 miles) in length. The roadside setting is a mixture of primarily single-family residential dwellings on the south side of CR 222 with the north side comprised of industrial and manufacturing development (Industrial Park III) to the west, commercial development to the east, and large tracts of vacant land mixed in along both sides for the length of the corridor. The topography along the CR 222 corridor is relatively flat to gently rolling.

There is one (1) existing traffic signal along the study segment of CR 222, specifically at the intersection with AL 69.

• <u>CR 469</u>

Within the study area, CR 469 is a local road with a two-lane cross section with a posted speed limit of 35mph. The travel lanes are approximately 9'-10' in width and there is no usable shoulder for vehicular traffic. The roadside setting is primarily vacant property and single-family residential dwellings. The terrain is rolling.

• Super Saver Road/Stewart Road

Within the study area, Super Saver Road/Stewart Road is a local road with a two-lane cross section, a posted speed limit of 35mph, and signed for 'No Through Trucks'. The travel lanes are approximately 9'-10' in width and there is no usable shoulder for vehicular traffic. Super Saver Road is an attractive short cut route between AL 69 and CR 222. The roadside setting is primarily single-family residential dwellings and open farm land. The terrain is rolling to mountainous with several steep grades. Of particular importance, the Good Hope Fire and Rescue Station #1 is located on Super Saver Road at the intersection with Mize Road South.

<u>Reid Road</u>

Within the study area, Reid Road is a local road with a two-lane cross section, a posted speed limit of 35mph, and is signed for 'No Through Trucks'. Reid Road is a winding, narrow road which connects to CR 222 and AL 69. The travel lanes are approximately 9'-10' in width and there is no usable shoulder for vehicular traffic. The roadside setting is primarily single-family residential dwellings and open farm land however; a cell tower is located on Reid Road. The terrain is rolling to mountainous with several steep grades. Reid Road also provides road frontage for the Burrow South property which is designated for tourism/recreational type uses.

The remainder of the roadways within the project study area are classified as local roads and are comprised of varying geometric conditions, speed limits, and are of varying importance to this access concept study. The major roadways in the study area and their respective roadway classification is shown in Figure 2.





LEGEND						
	STUDY AREA					
	URBAN INTERSTATE					
	URBAN MINOR ARTERIAL					
	COLLECTOR					
	LOCAL ROADS					

3.3 Existing Segment Traffic Volumes

Existing traffic volumes were collected from multiple sources and compiled for use in this report. Skipper Consulting Inc. collected 24-hour segment volumes for six (6) locations within the study area in May 2016. As a part of an unrelated project, Skipper Consulting Inc. collected 24-hour segment volumes for AL 69 (located northeast of the Exit 304 interchange) in 2015. These existing segment volumes are shown in **Figure 3**.







LEGEND						
	STUDY AREA					
	URBAN INTERSTATE					
	URBAN MINOR ARTERIAL					
	COLLECTOR					
	LOCAL ROADS					
\bigcirc	COUNT LOCATION (AADT)					

3.4 Existing Roadway Segment Capacity Analysis

Traffic capacities are expressed as levels of service ranging from "A" (best) to "F" (worst). In general, a level of service (LOS) "C" is considered desirable, while a level of service "D" is considered acceptable during peak hours of traffic flow. To determine the daily LOS on the study area roadways, the existing daily traffic volume of each location was divided by its daily carrying capacity established by ALDOT to calculate the volume to capacity (v/c) ratio. The existing daily traffic volumes and levels of service are summarized in Table 1.

STA #	ROADWAY	LOCATION	ROADWAY CLASSIFICATION	# OF LANES	2016 DAILY TRAFFIC VOLUME	ROADWAY CAPACITY*	v/c	LOS*
А	CR 437	SW OF EXIT 304	COLLECTOR	2	9,710	16,600	0.58	С
В	AL 69	NE OF EXIT 304	URBAN MINOR ARTERIAL	5	18,480	31,900	0.58	С
С	AL 69	NE OF 23 rd ST	URBAN MINOR ARTERIAL	5	18,140	31,900	0.57	С
D	CR 222	WEST OF CR 469	COLLECTOR	3	8,522	20,800	0.41	В
E	CR 222	WEST OF I-65	COLLECTOR	3	7,855	20,800	0.38	В
F	CR 222	EAST OF I-65	COLLECTOR	3	7,613	20,800	0.37	В
G	CR 469	NORTH OF CR 222	LOCAL ROAD	2	567	7,000	0.08	А
н	STEWART RD	SOUTH OF CR 222	LOCAL ROAD	2	485	7,000	0.07	А

Table 1 – Existing Segment Daily Traffic Volumes and Levels of Service (LOS)

* Roadway Capacities and LOS according to ALDOT APPROVED CAPACITIES table

As shown in Table 1, the existing roadways currently operate at acceptable levels of service.

3.5 Existing Land Uses and Zoning

The project study area is located predominantly within the City of Good Hope but also includes property within the City of Cullman and unincorporated Cullman County. The land use throughout the study area exhibits rural characteristics and the majority of the land within the study area is vacant.

CR 222 supports several industrial facilities within and immediately outside the project study area. Industrial Park III is located just west of the CR 469 intersection and currently has three tenants, Topre America Corporation, NAFCO, and Advanced Heat Treat. In addition, the Burrow Property (north) is a 60 acre vacant property located on the north side of CR 222 between Industrial Park III and CR 469 and has an M-1P zoning designation according to the City of Cullman Zoning Map currently published on the city's website. The Burrow property (south) Alabama Brick Delivery, Inc. and James R. Smith Trucking Co., Inc. are located on the north side of CR 222 near its intersection with AL 69.

The land along AL 69 east of its interchange with I-65 is primarily populated by commercial and service type developments typical of an interstate interchange. Fast food restaurants, gas stations/convenience stores, truck stops, and a hotel occupy the properties in the immediate vicinity of the interchange (Exit 304). The remainder of the AL 69 road frontage property within the study area includes a mixture of retail, residential, agricultural, and industrial applications.

According to the most recent zoning maps available and obtained from the City of Cullman and the City of Good Hope, the project study area is comprised of B-2 (Business District), R-2 (Med-Density Residential), and Ag-1 (Agriculture) zones. The immediate vicinity outside the study area boundary includes R-1 (Low-Density Residential) and M-1P (Manufacturing District). The M-1P zones include Industrial Park I and Industrial Park II located on AL 69 near its intersection with Mize Road North. A composite map of the existing zoning is shown on Figure 4.



LEGEND

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- **R-2 (RESIDENTIAL DISTRICT)**
- M-1P (MANUFACTURING DISTRICT)



4.0 FUTURE CONDITIONS AND ACCESS CONCEPT STRATEGY

4.1 Future Segment Traffic Volumes

Future segment traffic volumes were developed for planning purposes and in order to anticipate potential roadway deficiencies and improvement needs. Future volume projections were completed for horizon years 2021 and 2036 by applying a background growth rate to the existing segment volumes. The background growth rate was developed based on historical traffic volumes for count stations near the study area as published by the ALDOT. Based on the historical traffic counts, substantial growth has occurred in recent years near the study area and is expected to continue with the opening of the new interchange. However, growth would be expected to level off or become less aggressive after a period of time. As such, a background growth rate of 2% annually was applied to develop the 2021 segment traffic volumes. Then beginning with the 2021 segment volumes, a 1% annual growth rate was applied to develop the 2036 segment traffic volumes. The future segment volumes are summarized below in Table 2 and Table 3.

4.2 Future Roadway Segment Capacity Analysis

Traffic capacities are expressed as levels of service ranging from "A" (best) to "F" (worst). In general, a level of service (LOS) "C" is considered desirable, while a level of service "D" is considered acceptable during peak hours of traffic flow. To determine the daily LOS on the study area roadways, the future daily traffic volume of each location was divided by its daily carrying capacity established by ALDOT to calculate the volume to capacity (v/c) ratio. The existing daily traffic volumes and levels of service are summarized in Table 2 and Table 3.

STA	ROADWAY	LOCATION	ROADWAY CLASSIFICATION	# OF LANES	ROADWAY CAPACITY	2021 DAILY TRAFFIC VOLUME	v/c	LOS
А	CR 437	SW OF EXIT 304	COLLECTOR	2	16,600	10,681	0.64	D
В	AL 69	NE OF EXIT 304	URBAN MINOR ARTERIAL	5	31,900	20,328	0.64	D
с	AL 69	NE OF 23 rd ST	URBAN MINOR ARTERIAL	5	31,900	19,954	0.63	D
D	CR 222	WEST OF CR 469	COLLECTOR	3	20,800	9,374	0.45	В
E	CR 222	WEST OF I-65	COLLECTOR	3	20,800	8,641	0.42	В
F	CR 222	EAST OF I-65	COLLECTOR	3	20,800	8,374	0.40	В
G	CR 469	NORTH OF CR 222	LOCAL ROAD	2	7,000	624	0.09	А
Н	STEWART RD	SOUTH OF CR 222	LOCAL ROAD	2	7,000	534	0.08	А

Table 2 – 2021 Future Segment Daily Traffic Volumes and Levels of Service (LOS)

* Roadway Capacities and LOS according to ALDOT APPROVED CAPACITIES table

STA	ROADWAY	LOCATION	ROADWAY CLASSIFICATION	# OF LANES	ROADWAY CAPACITY*	2036 DAILY TRAFFIC VOLUME	v/c	LOS*
А	CR 437	SW OF EXIT 304	COLLECTOR	2	16,600	12,283	0.74	D
В	AL 69	NE OF EXIT 304	URBAN MINOR ARTERIAL	5	31,900	23,377	0.73	D
С	AL 69	NE OF 23 rd ST	URBAN MINOR ARTERIAL	5	31,900	22,947	0.72	D
D	CR 222	WEST OF CR 469	COLLECTOR	3	20,800	10,780	0.52	С
E	CR 222	WEST OF I-65	COLLECTOR	3	20,800	9,937	0.48	В
F	CR 222	EAST OF I-65	COLLECTOR	3	20,800	9,630	0.46	В
G	CR 469	NORTH OF CR 222	LOCAL ROAD	2	7,000	717	0.10	А
н	STEWART RD	SOUTH OF CR 222	LOCAL ROAD	2	7,000	614	0.09	А

Table 3 – 2036 Future Segment Daily Traffic Volumes and Levels of Service (LOS)

* Roadway Capacities and LOS according to ALDOT APPROVED CAPACITIES table

As shown in Table 2 and Table 3, the study area roadways are anticipated to operate at acceptable levels of service for the future segment volumes anticipated in 2021 and 2036.

4.3 Anticipated Development Patterns

The construction of the interchange at Interstate 65 and County Road 222 should act as a catalyst for development throughout the study area. One of the most important steps in implementing new development is to adjust zoning and land use throughout the study area. The zoning and land use adjustments will encourage development and at the same time control the growth that occurs. As part of this study, there are 8 tracts of land that are being proposed for rezoning. The zoning adjustments that are being proposed create large tracts of land with common zoning that will encourage significant development. A composite map of the anticipated future zoning is shown on **Figure 5**.





REZONING SUMMARY						
ING ZONE	ANTICIPATED FUTURE ZONE					
DENSITY RES)	B-2 (BUSINESS DISTRICT)					
D DENSITY RES)	B-2 (BUSINESS DISTRICT)					
D DENSITY RES)	B-2 (BUSINESS DISTRICT)					
RICULTURE)	B-2 (BUSINESS DISTRICT)					
RICULTURE)	B-2 (BUSINESS DISTRICT)					
RICULTURE)	R-2 (MED DENSITY RES)					
RICULTURE)	R-2 (MED DENSITY RES)					
D DENSITY RES)	B-2 (BUSINESS DISTRICT)					

* NOTE: ALL PARCELS LISTED ARE LOCATED WITHIN THE CITY OF GOOD HOPE

4.4 Planned Roadway Improvements

It is our understanding that CR 469 is planned to be widened to a three lane cross section, including a center two-way-left-turn-lane (TWLTL), from CR 222 north to the bridge, approximately 2,000 feet in length.

4.5 Access Management Defined

According to the FHWA, access management is the proactive management of vehicular access points to land parcels adjacent to all manner of roadways. Good access management promotes safe and efficient use of the transportation network and benefits include improved movement of traffic, reduced crash frequency, and fewer vehicle conflict points. Access management encompasses a set of techniques that state and local governments can use to control access to highways, major arterials, and other roadways. These techniques include:

- <u>Access spacing</u> increasing the distance between traffic signals improves the flow of traffic and reduces congestion
- <u>Driveway spacing</u> fewer driveways spaced further apart allows for more orderly merging of traffic and presents fewer challenges to drivers
- <u>Safe Turning Lanes</u> dedicated left and right turn, indirect left turns and U-turns, and roundabouts keep through traffic flowing
- <u>Median Treatments</u> two-way-left-turn-lanes (TWLTL) and non-traversable, raised medians are examples of some of the most effective means to regulate access and reduce crashes
- <u>Right-of-Way Management</u> as it pertains to R/W reservation for future widenings, good sight distance, access location, and other access-related issues.

Access management provides an important means of maintaining mobility. It calls for effective ingress and egress to a facility, efficient spacing and design to preserve the functional integrity, and overall operational viability of street and road systems.

4.6 Access Concept Strategy

Related to the Exit 305 project study area, access management principles considered for the access concept development strategy address the following areas:

- Driveway spacing should be a minimum of 660' along CR 222 and a minimum of 300' 400' on those roadways classified as local roads. Driveway spacing on AL 69 is controlled by the ALDOT.
- Traffic signal spacing should be a minimum of 1,320' (centerline to centerline) on non-state roadways. Traffic signals should be considered only at locations that meet the required MUTCD signal warrant criteria.
- Properties proposed for development within the study area should be encouraged to provide an internal circulation system of roadways.
- Interconnectivity between adjacent developments shall be required and internal development streets shall be stubbed at adjacent property lines where possible.

- Outparcels developed as part of a larger development should be provided access from within the development only and not from the public roadways.
- Driveway locations should be encouraged to align with existing, proposed, or potential driveways for properties across the street where possible, or offset from each other in accordance with current design standards.

5.0 EXIT 305 VICINTY ACCESS CONCEPT

Based on the totality of the information and access management considerations presented herein, **Figure 6** presents a graphical representation of the recommended Exit 305 Vicinity Access Concept. In addition to the specific connections and driveway locations shown, the following improvements are recommended:

- 1. Improve Mann Dr to include 12' travel lanes
- 2. Improve Mize Rd N to include 12' travel lanes
- 3. Improve Reid Rd N to include 12' travel lanes
- 4. Improve Mize Rd S to include 12' travel lanes
- 5. Improve Super Saver Rd/Stewart Rd to include 12' travel lanes
- 6. Realign Super Saver Rd and Cupp Rd to create a single, signalized intersection with AL 69
- Construct a back frontage road west of Stewart Rd connecting to Mize Rd S and Stewart Rd near CR 222. The back frontage road would serve the anticipated commercial strip development on the west and north sides
- 8. Consider CR 222 at CR 469 for future traffic signalization
- 9. Consider CR 222 at Stewart Rd for future traffic signalization
- 10. Extend Training Center Dr north to connect to Mize Rd N
- 11. Install lighting at the interchange





ACCESS PLAN RECOMMENDATIONS

2 IMPROVE MIZE RD N TO 12' LANES 3 IMPROVE REID RD N TO 12' LANES 4 IMPROVE MIZE RD S TO 12' LANES 5 IMPROVE SUPER SAVER RD/STEWART RD TO 12' LANES REALIGN SUPER SAVER RD AND CUPP RD TO CREATE A SINGLE INTERSECTION WITH AL 69 CONSTRUCT A BACK FRONTAGE ROAD 8 CONSIDER CR 222 AT CR 469 FOR FUTURE SIGNALIZATION 9 CONSIDER CR 222 AT STEWART RD FOR FUTURE SIGNALIZATION 10 EXTEND TRAINING CENTER DR TO MIZE RD N

LEGEND						
FULL DIRECTIONAL ACCESS						
RIGHT-IN/RIGHT-OUT ACCESS						
IMPROVED EXISTING ROADWAY						
PROPOSED NEW ROADWAY						
PROPOSED CUL-DE-SAC						
PROPOSED FUTURE SIGNALIZED INTERSECTION						