

Efland-Buckhorn-Mebane Access Management Plan



2019

Orange County Planning Department

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Executive Summary

The Federal Highway Administration's (FHWA) official access management definition is the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding system in terms of safety, capacity, and speed. This plan promotes FHWA's access management practices by allowing local government to:

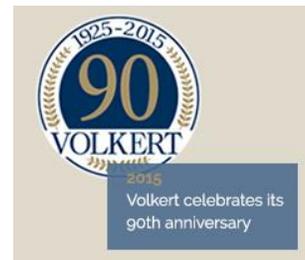
- Maintain the overall safety for all users of the transportation system;
- Minimize congestion and crash rates;
- Provide for efficient traffic flow and pedestrian and bicycle safety; and
- Provide appropriate access to adjacent business properties.

The original Efland-Buckhorn-Mebane Access Management Plan (E-B-M AMP) was adopted November 15, 2011 and it implemented Efland-Mebane Small Area Plan (2006) recommendations. It has also advanced several 2030 Comprehensive Plan goals and objectives.



The original plan identified access management strategies and areas where new connector roads would be needed to maintain and improve access within areas identified in the County's land use plan for economic development purposes. This plan was instrumental in gaining North Carolina Department of Transportation (NCDOT) acceptance and participation in roadwork improvements necessary to serve the Morinaga Candy Factory, which opened in 2016, with limited on-site surveying and analysis.

In 2017, a thorough existing conditions, environmental, and traffic analysis was completed through an engineering-based transportation study conducted by Volkert Inc., based in Raleigh, NC. Its Transportation Report for the Efland-Buckhorn-Mebane Study Area (See Appendix A), hereafter referred to as the 2017 Transportation Report, reinforces the original E-B-M AMP with a comprehensive investigation of the area's development potential, traffic impact and recommended improvements.



The E-B-M AMP is:

- A combination of the original adopted 2011 E-B-M AMP; 2017 Transportation Study; and County Planning, City of Mebane, and public comments.
- A long-range transportation vision for the area illustrating roadway alignment and corridor width necessary to serve future land uses and address traffic impact as development occurs.
- A plan that assists the County in promoting economic development through its development review process by encouraging developers to dedicate right-of-way necessary for future roads.

The E-B-M AMP is not:

- A proposal for, nor does it seek authorization for, funding right-of-way acquisition.
 - However, an AMP would be a necessary prerequisite to guide the investment to improve access, where necessary.

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- A collection of future road design and construction projects, nor does it include a schedule.
- A guarantee that future development will occur or that roads will be built. The original Efland-Buckhorn-Mebane Access Management Plan (E-B-M AMP) was adopted November 15, 2011.

This update uses the 2017 Transportation Report to renew and replace the original 2011 Efland-Buckhorn-Mebane Economic Development District Access Management Plan. This plan takes into account input from local residents and businesses in the area through a public workshop conducted throughout the planning process. It also incorporates other road and intersection improvements recommended by planning staff based on their expertise and familiarity with economic development activities coordinated by the County's Economic Development Department.

I. Introduction

Orange County seeks to develop an access management plan in order to maintain and improve the functionality of the transportation network as the Efland-Buckhorn-Mebane (E-B-M) Study Area develops. This E-B-M AMP provides the basis and justification for requiring the dedication of right-of-way in the planning area. Orange County's Unified Development Ordinance (UDO) requires that proposed site plans demonstrate compliance with adopted access management plans.

As properties are developed, transportation interconnectivity and access become increasingly important. Orange County and regional metropolitan and rural planning organizations are dedicated to safe and efficient use of the transportation network through sound access management practices. These practices in form of local plans and policies are applied to highways, major arterials, and other roadways, including but not limited to:

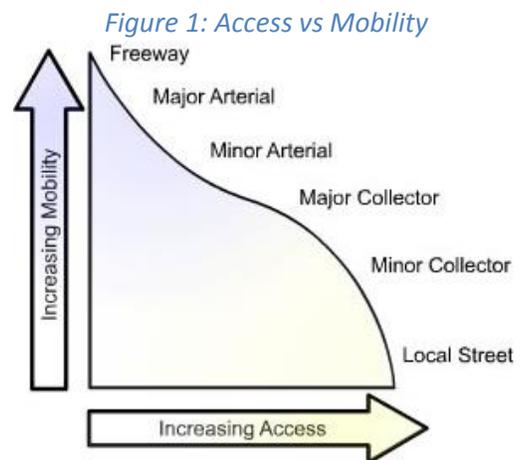
- **Access Spacing:** Increasing the distance between traffic signals improves traffic flow on major roadways, reduces congestion, and improves air quality for heavily traveled corridors.
- **Driveway Spacing:** Fewer driveways spaced further apart allow for more orderly traffic merging and presents fewer challenges to drivers.
- **Safe Turning Lanes:** Dedicated left- and right-turn, indirect left-turns and U-turns, and roundabouts keep through-traffic flowing. Roundabouts provide an opportunity to reduce conflict points within intersections for safe travel.
- **Median Treatments:** Two-way left-turn lanes and non-traversable, raised medians are examples of some of the most effective means to regulate access and reduce crashes.
- **Right-of-Way Management:** Right-of-way reservation for future widenings, good sight distance, access location, and other access-related issues.

Such policies designate appropriate control levels for various land uses. Local residential streets are allowed full access, while commercial corridors have limited access. A wide range of road types are included, each requiring standards that ensure free traffic flow while allowing access to major businesses and other land uses along a road ([FIGURE 1](#)).

Orange County uses Access management Plans to ensure land use decisions take into consideration their impacts on the transportation network. This practice is incorporated into the UDO as a means of implementing the County's 2030 Comprehensive Plan. The County currently has three Access Management Plans in place:

- Orange Grove Road (March 2003)
- Efland-Buckhorn-Mebane (November 2011)
- Eno Economic Development District (November 2013)

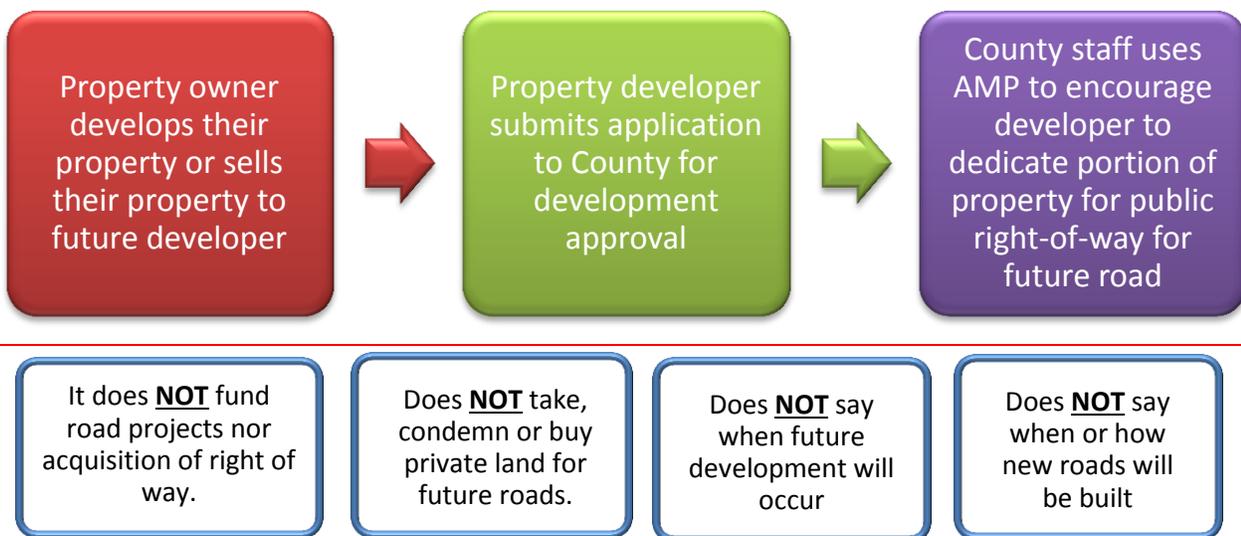
A review of current legal and regulatory practices lists some fundamental access management aspects and authority:



- Access management starts at the state level through enabling legislation;
- State-enabling legislation dictates power given to local jurisdictions; and
- Land use planning techniques can be used to promote access management.

Access Management Plans (AMPs) are proposed long-range transportation plans with elements such as possible new roads and connections to existing roads. These plans promote an orderly, cost effective, efficient and environmentally sensitive roadway program, which help guide development decisions and investment. Ultimately, Orange County seeks to develop an access management plan in order to maintain the functionality of and improve the transportation network as the area develops over time. These AMPs are primarily used when a property owner sells or subdivides their property, if they choose, for development.

Figure 2 : How the Plan Works



A “Developer” is defined as: a person who develops real estate.

A property owner who seeks to make physical changes to their property for their own personal use or improve the property’s sale potential is synonymous to “a person who develops real estate”. This person must submit a development application to the County for approval. It is through this development review process where this plan is exercised to request right-of-way.

This regulatory framework is detailed in the following section.

A. State and Local Regulations

Under State law - North Carolina General Statutes (N.C.G.S.) § 136-66.2 - Metropolitan Planning Organizations (MPOs) and municipalities shall develop Comprehensive Transportation Plans (CTPs) in cooperation with the NCDOT. Orange County’s is divided among three regional transportation agencies, each with a CTP. These agencies work with Orange County to meet state and federal regulations for all transportation projects, plans, and programs. They also ensure transportation planning is continuing, coordinated, and comprehensive (23 U.S.C. 134-135).

- Burlington-Graham Metropolitan Planning Organization (BG MPO)
- Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO)
- Triangle Area Rural Planning Organization (TARPO)

TARPO’s CTP was adopted in 2013 and provides transportation project recommendations for Orange County’s rural areas, while the MPO CTPs address the urbanized areas. DCHC MPO CTP was adopted in 2017 and a BG MPO CTP is currently underway.

It is important to note that the CTPs do not include every road on the highway system. As such, in accordance with state law, to complement the CTP roadway element, municipalities and MPOs may develop collector street plans. Additionally, locally approved transportation plans, such as the E-B-M AMP, may contain street or highway right-of-way alignment and dedication requirements, and collectively function as the collector street plan for the MPO or municipality as referenced in N.C.G.S. § 136-66.2.

The Orange County Unified Development Ordinance (UDO) section 2.5.3.(v) and reiterated in section 6.10.A.1.(b), includes the requirements for reserving and dedicating right of way or requiring road construction listed in Access Management Plans or on the CTP. Specific mention is also made to the dedication of right of way based on the concepts shown on the CTP and locally adopted transportation plans, in accordance with N.C.G.S. § 136 66.2 and § 136 66.10.

The CTP, collector street plan and locally adopted transportation plans pursuant to N.C.G.S. § 136-66.2 serve as the comprehensive legal framework referenced in N.C.G.S. § 136-66.10(a), addressing the reservation and dedication of right-of-way under local ordinances.

North Carolina requires development along state routes to be accordance with NCDOT’s Policy on Street and Driveway Access to North Carolina Highways. This document sets specific driveway and street access points criteria regulating their location, design, and operation. When any construction work is done on state routes or adjacent to existing roadways, connection and access points must meet this state regulation; including properties being modified or expanded. While the state’s policy focuses on the transportation network, local zoning ordinances and subdivision regulations address land use. Local access management plans play an important role in merging state policy and local authority in efforts to integrate land use and transportation, including Orange County planning processes.

B. Background and Planning Area

Several plans have been completed within the E-B-M area, beginning with the 1981 Comprehensive Plan, which was a Countywide plan addressing land uses for all of the County’s townships. [FIGURE 2](#) illustrates the AMP’s chronology. The E-B-M AMP encompasses 4.25

Orange County, NC Code of Technical Ordinances

Unified Development Ordinance (UDO)

*Adopted April 5, 2011
(As amended, see summary table)*



Prepared by:
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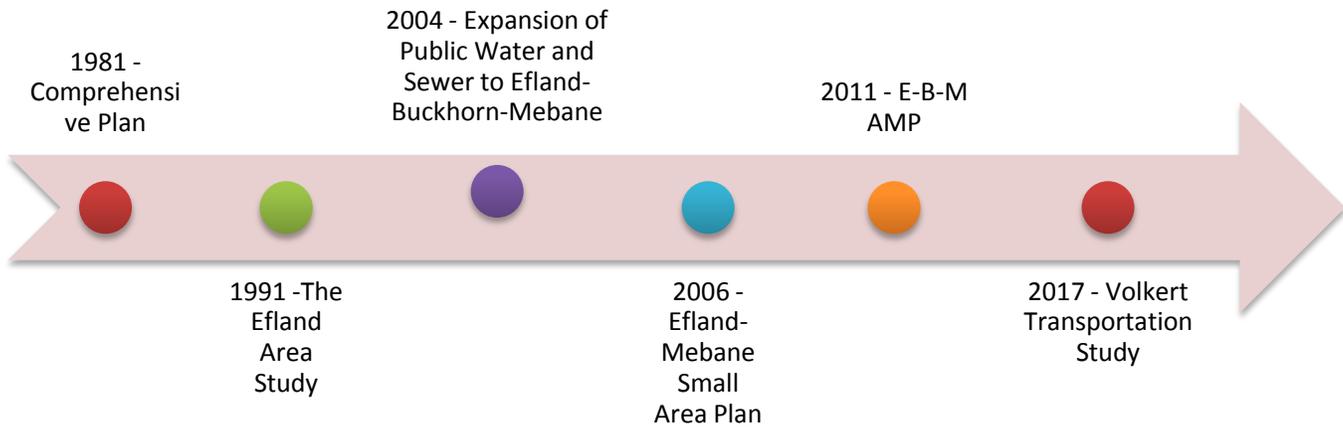
With formatting guidance from:
Clarion Associates, LLC

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square miles along I-85/I-40 between Efland and Mebane and is bounded by the following (FIGURE 3):

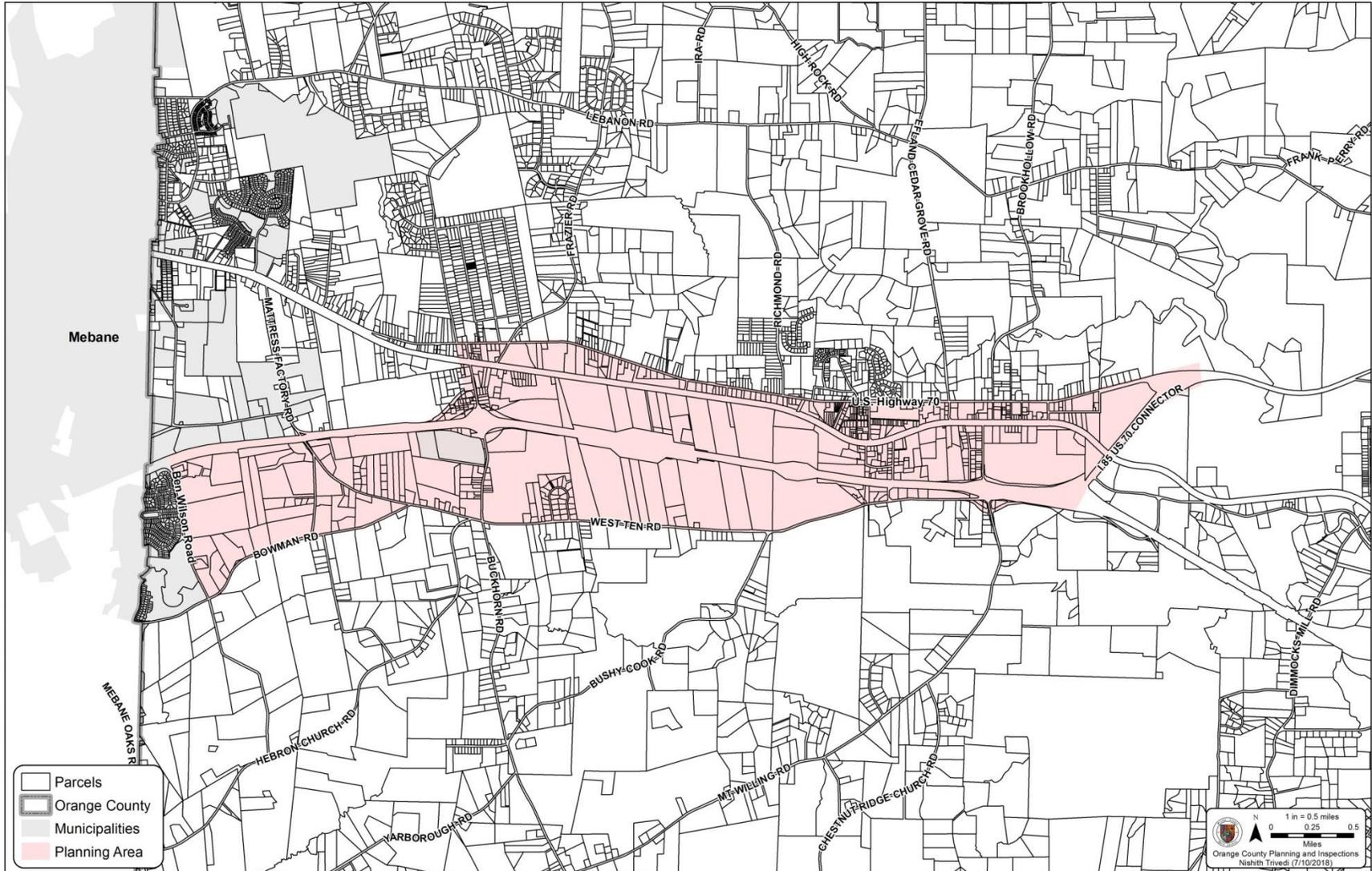
- North: US Highway 70
- South: West Ten Road/Bowman Road
- East: I-85/US-70 Connector
- West: Ben Wilson Road

Figure 3: Plan Chronology



Efland-Buckhorn-Mebane Access Management Plan

Figure 4: E-B-M AMP Planning Area Map



C. Goals and Objectives

This update advances goals and objectives of the Orange County's adopted 2030 Comprehensive Plan (adopted in 2008) to ensure land use decisions take into consideration their impact on the transportation network. Specific goals and objectives advanced include:

Economic Development (ED) Goal 2: Infrastructure that supports desired development.

- **Objective ED-2.1:** Encourage compact and higher density development in areas served by water and sewer.
- **Objective ED-2.2:** Encourage mixed use projects that support walkable communities.
- **Objective ED-2.3:** Promote public transportation, alternative modes of transportation, and encourage carpooling and park-and-ride participation.
- **Objective ED-2.5:** Identify lands suitable to accommodate the expansion and growth of commercial and industrial uses in the County.

Land Use (LU) Goal 1: Fiscally and environmentally responsible, sustainable growth, consistent with the provision of adequate services and facilities and a high quality of life.

- **Objective LU-1.1:** Coordinate the location of higher intensity / high density residential and non-residential development with existing or planned locations of public transportation, commercial and community services, and adequate supporting infrastructure (i.e., water and sewer, high-speed internet access, streets, and sidewalks), while avoiding areas with protected natural and cultural resources. This could be achieved by increasing allowable densities and creating new mixed-use zoning districts where adequate public services are available.
- **Objective LU-1.2:** Evaluate and report on whether existing and approved locations for future residential and non-residential developments are coordinated with the location of public transportation, commercial and community services, and adequate supporting infrastructure (i.e., water and sewer services, high-speed internet access, streets and sidewalks).

Transportation (T) Goal 3: Integrated land use planning and transportation planning that serves existing development, supports future development, and is consistent with the County's land use plans which include provisions for preserving the natural environment and community character.

- **Objective T-3.3:** Determine the policies to guide connectivity within and between residential developments based on their impact on neighborhood character.
- **Objective T-3.4:** Direct development to higher density mixed-use districts along transit corridors and make necessary multi-modal transportation improvements to service lands that are slated for future intense development, such as Economic Development Districts.
- **Objective T-3.5:** Use innovative techniques to increase mobility and reduce rush hour congestion.

Additionally this AMP advances the Efland Mebane Small Area Plan's following goals and objectives:

Goal: In the future, the planning area should be well served by reliable infrastructure to accommodate orderly, planned growth. The planning area will retain the core village area that will be the center of community life. An

efficient multi-modal transportation system will operate in the area and commercial and light industrial uses both in the planning area and nearby will provide job opportunities to area residents. There will be a mix of housing types and sizes that will be economically accessible to a broad spectrum of working people. Parks and greenspace will be connected by a system of greenways that will allow people to enjoy a high-quality outdoor environment while also serving as corridors for wildlife migration.

- **Objective:** Orderly and planned expansion of the sewer system and a sufficient public water supply system.
- **Objective:** Preservation of community character while allowing for planned, sustainable residential and non-residential growth.
- **Objective:** Provision of an efficient, multi-modal transportation system.
- **Objective:** A greater level of intergovernmental coordination between Orange County and the other governmental entities in the planning area.

Given that a portion of the E-B-M AMP planning area is within the City of Mebane's planning area, as designated in the city's 2017 Mebane by Design Comprehensive Land Development Plan and addressed in the water and sewer agreement between Orange County and Mebane, Mebane, in coordination with Orange County, may seek to extend additional water and sewer lines into the planning area. Based on these policies, it is expected that any future development within the E-B-M planning area that requests water and sewer service from the City of Mebane may at some point be annexed by the City of Mebane. The planning process takes the adjacent city into consideration.

The plan aids in achieving these goals and objectives by ensuring that the future road design considers all available options as development occurs. As roads are built over time - either in the course of private development or through the State's Strategic Improvement Program - design of existing and proposed roads will take into account all available NCDOT approved options including but not limited to:

- Wide paved shoulders
- bike lanes and sidewalks
- transit services
- shared use path and markings
- turn lanes and roundabouts
- intelligent transportation systems (ITS)

Orange County will also continue promoting its transit and transportation demand management practices as potential options throughout the planning area, as it does throughout the county. Actual design of specific roads is outside the scope of this plan.

This plan is limited in scope with the primary purpose of ensuring that future development addresses the traffic impact it will cause. This is not a Comprehensive Transportation Plan but locally adopted plans are included in CTPs by reference. NCDOT standard street cross sections are included in the plan and they establish the desired right-of-way sought during development review. The plan also considers possible alternative cross-sections consistent with the necessary right-of-way. As this plan is not a CTP, it does not address nor prioritize travel

mode. The actual design of individual roads will be conducted only when roads are implemented either through the site plan and development review process or NCDOT's design and public review phase. This plan serves as an overall vision for the area.

D. Planned Projects

I-85 bisects the planning area and is scheduled for pavement rehabilitation through NCDOT's adopted FY 2018-2027 State Transportation Improvement Program (STIP).

- TIP I-5954 & TIP I-5958 - I-40/I-85 pavement rehabilitation totaling \$18,365,000 and covering 7.4 miles.

Prior to the state issuing the STIP every other year, NCDOT accepts a limited number of projects from Metropolitan Planning Organizations for inclusion through its Strategic Prioritization of Transportation (SPOT) process. Orange County submitted the following three projects in the planning area to BG MPO for consideration in the FY 2020-2029 STIP:

- SPOT ID – H140373 - Mattress Factory Road - extended to US-70 - \$306,000
- SPOT ID – H090193 - I-40 – Mattress Factory Road Interchange - convert grade separation into interchange - \$4,960,000
- SPOT ID – H090557 – Buckhorn Road – SR-1114 – widen to multi-lane with bike/ped accommodations - \$14,674,000

While these projects will not be included in the FY 2020-2029 STIP, they are Orange County priorities for the E-B-M planning area. The City of Mebane has incorporated these three projects as part of its adopted 2040 Comprehensive Transportation Plan. While these projects are now part of Mebane's locally adopted plan, they also remain a priority for Orange County. The Buckhorn Road widening (SPOT ID H183915) is currently going through an express feasibility study conducted by NCDOT. The preliminary scope of the study includes:

- Rebuilding the I-85 interchange to improve access and egress
- Construction of a railroad grade separation on a realigned Buckhorn Road connecting to Frazier Road
- Realignment of Industrial Drive to Buckhorn Road with roundabout

Orange County is currently identifying other transportation priorities in the planning area for the future SPOT process so they may be considered in the next STIP.

II. Access Management Plan

The E-B-M AMP is updated using a strategic planning process. The detailed analysis included in the 2017 Transportation Study, located in [APPENDIX B](#), documents the quantitative nature of the planning area, identifying key access management issues addressed by the original 2011 access management plan. This E-B-M AMP update is to follow a planning process similar to the original 2011 AMP. A community meeting was conducted to gather public input on the plan, including the issues, concerns, and recommendations of the attendees. Access Management strategies have been evaluated, recommended, and included in this document in order to execute a successful plan. A summary of the planning process is shown below in [FIGURE 5](#) and detailed in this chapter.

Figure 5: Planning Process



A. Community Meeting

On August 28, 2018, Orange County Planning Department hosted a Community Meeting at Gravelly Hill Middle School, located within the planning area. Extensive outreach was conducted to get the public involved in the planning process, this included:

- Individual letters mailed to each property owner in - and within 500' of - the planning area notifying them of the Community Meeting and encouraging their participation.
- Posted on County website urging public involvement and keeping them updated on the plan's status.
- Provided a schedule requesting public participate when the plan goes before Planning Board, Orange County Unified Transportation Board and Board of County Commission for approval.

The Community Meeting was held in the gym at Gravelly Hill Middle School from 4:30 pm – 6:30 pm. Maps of the E-B-M planning area were displayed around the gym with comment cards and brief surveys soliciting their input while crafting the plan. Detail comments from the community meeting are included in Appendix C. They support the need for an update of the E-B-M AMP and are supportive of the implementation strategies necessary to address their transportation concerns in the planning area.

B. 2017 Transportation Study

The 2017 Transportation Study ([APPENDIX B](#)) analyzed existing conditions for the planning area. The area is mostly rural in character with a few commercial properties scattered throughout. Sites such as Morinaga America Foods, Inc., Forma-Fab Metals, Cleora Sterling, and Gravelly-Hill Middle School are located within the planning area. I-85/I-40 bisects the area and is paralleled by US-70 and West Ten Road. Efland Fire Department Station 2, GE Industrial Solutions, and Efland Cheeks Elementary School as well as other uses are found along the area's border. Since the 2011 AMP's adoption and the subsequent 2017 Transportation Study, the planning area has been further analyzed, including updating traffic count and crash data and additional road and intersection improvements have been identified for the area.

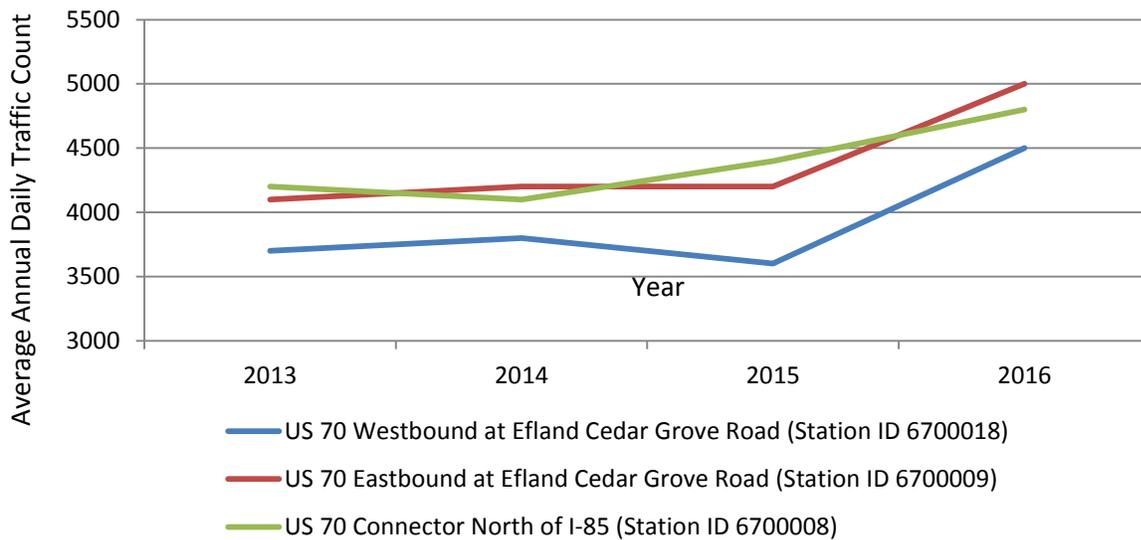
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In 2016, nineteen NCDOT traffic counting stations were located throughout the planning area (FIGURE 6). These stations count vehicular traffic traversing various corridors. Some stations collect traffic counts annually while others are collected every other year.

Key highlights of traffic count analysis:

- Station 6701742 – Buckhorn Road north of I-58 – currently accounts for twice as many vehicles (12,000) than 2006 (6,500).
- Stations 6701742 and 6701751 – I -85 within the planning area – currently has an estimated 30% more traffic volume (113,000) than in 2006 (88,000).
- Stations 6700018 and 6700009 – US-70 east of Efland Cedar Grove Road – continue experiencing increased traffic over the past few years (FIGURE 7).

Figure 6: US-70 Traffic Trends



- Traffic count stations along West Ten Road and Bowman Road indicate traffic has more than doubled (TABLE 1).

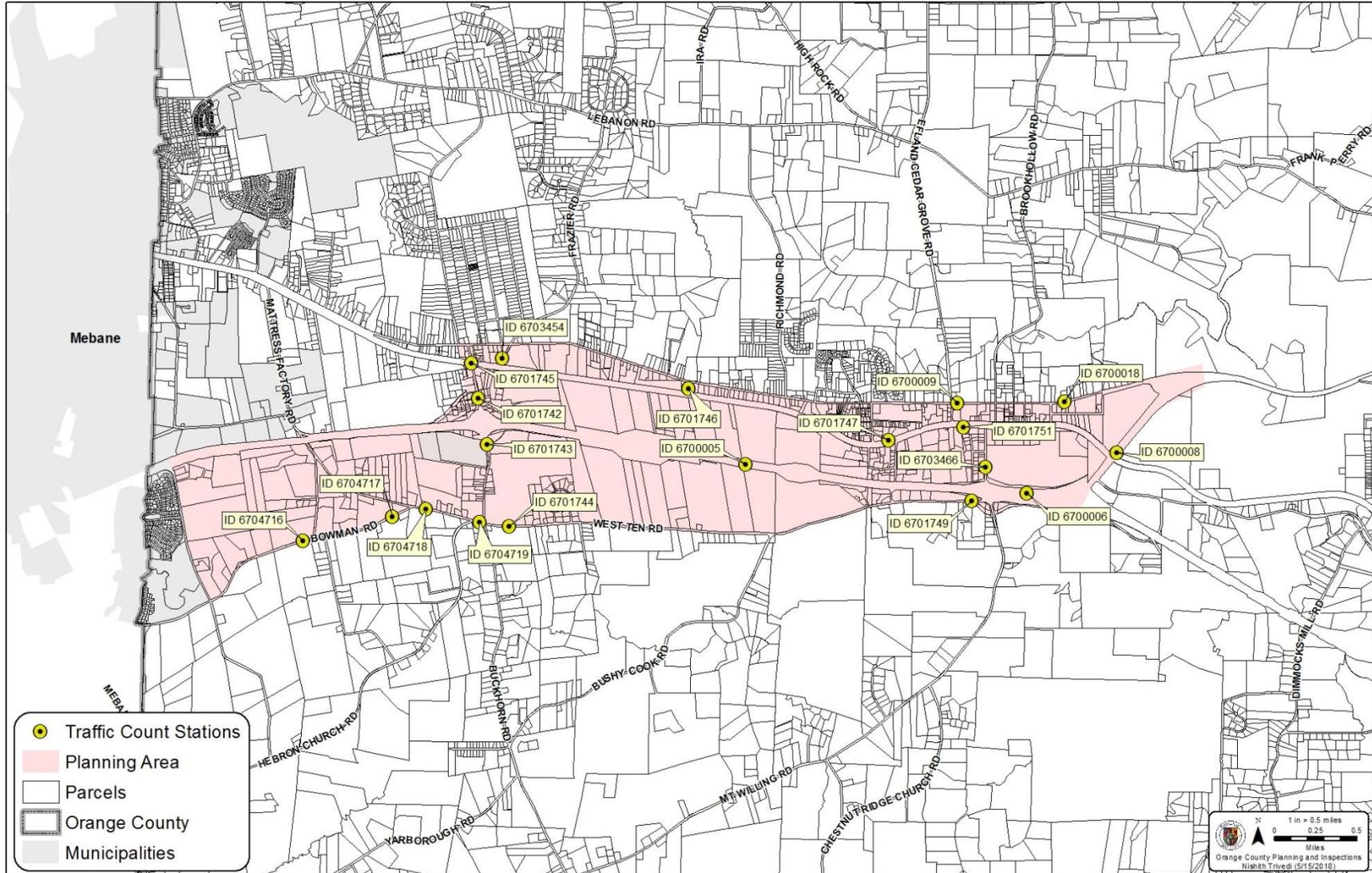
ROUTE	Station ID	2003	2005	2007	2009	2011	2013
West Ten Road	6701749	830	870	1000	900	1000	1500
West Ten Road	6704718	980	910	1100	1000	1200	1400
West Ten Road	6704719	1200	1300	1400	1300	1600	1800
Bowman Road	6704717	440	460	610	630	770	840
Bowman Road	6704716	460	860	1200	1200	1500	1200

Table 1: Traffic Trends

Increased traffic in the area has also resulted in greater number of accidents in the planning area. Access Management policies must address this increased traffic to ensure safe travel for all users.

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Figure 7: Traffic Count Stations Map



This plan update includes a brief safety analysis, an analysis not included in the 2017 Transportation Study. A total of 1,385 estimated crashes have been reported in the planning area over the past ten year. Accidents in the urban area - as determined by the U.S. Census - account for only 2.74% (38) of all crashes (FIGURE 8). The urban area is mainly along US-70. Crashes along rural streets in the E-B-M area have constantly been increasing over the past ten years as reported to NCDOT (FIGURE 9). Five accidents in rural area have resulted in fatalities.

This trend may continue as more accidents continue to occur along rural roads like Buckhorn Road, Bowman Road and West Ten Road. While US-70 portion of the planning area may be considered urban, the northern half is still rural. Access management policies will seek to reduce this growing trend, especially in the rural areas.

Figure 8: Crash by Severity

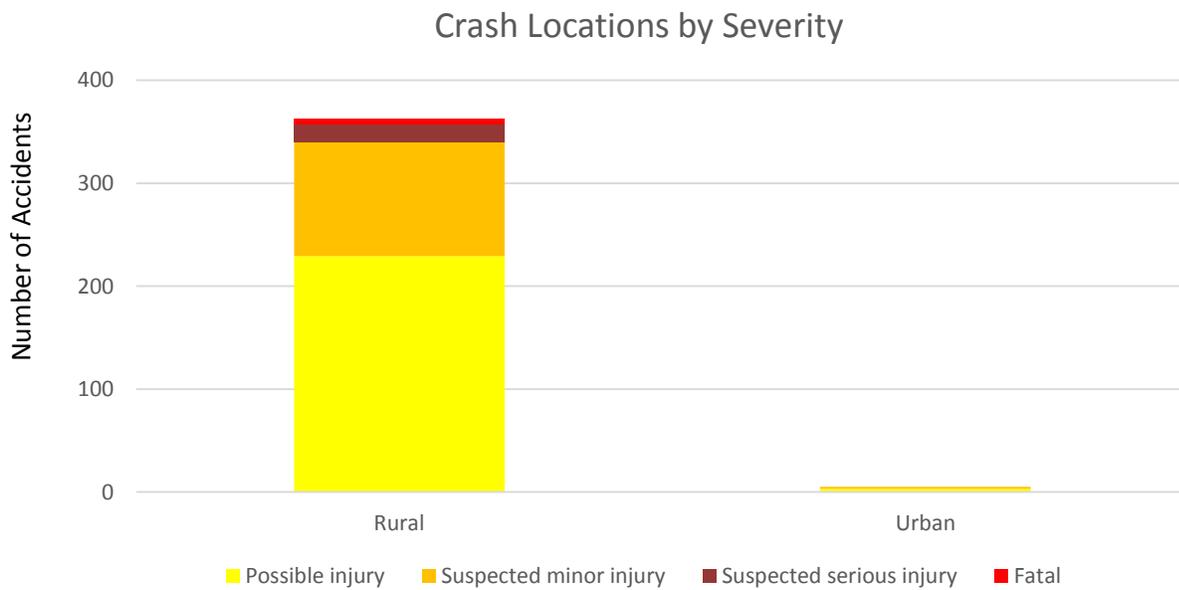
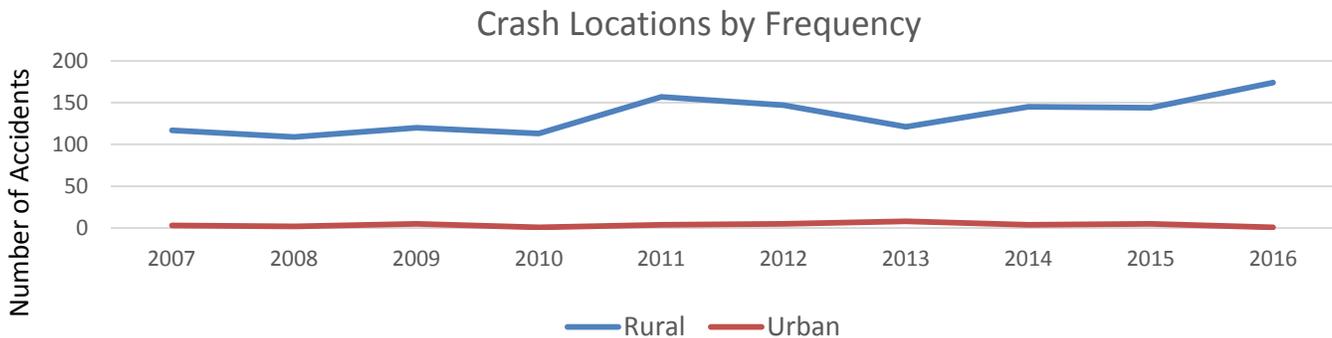
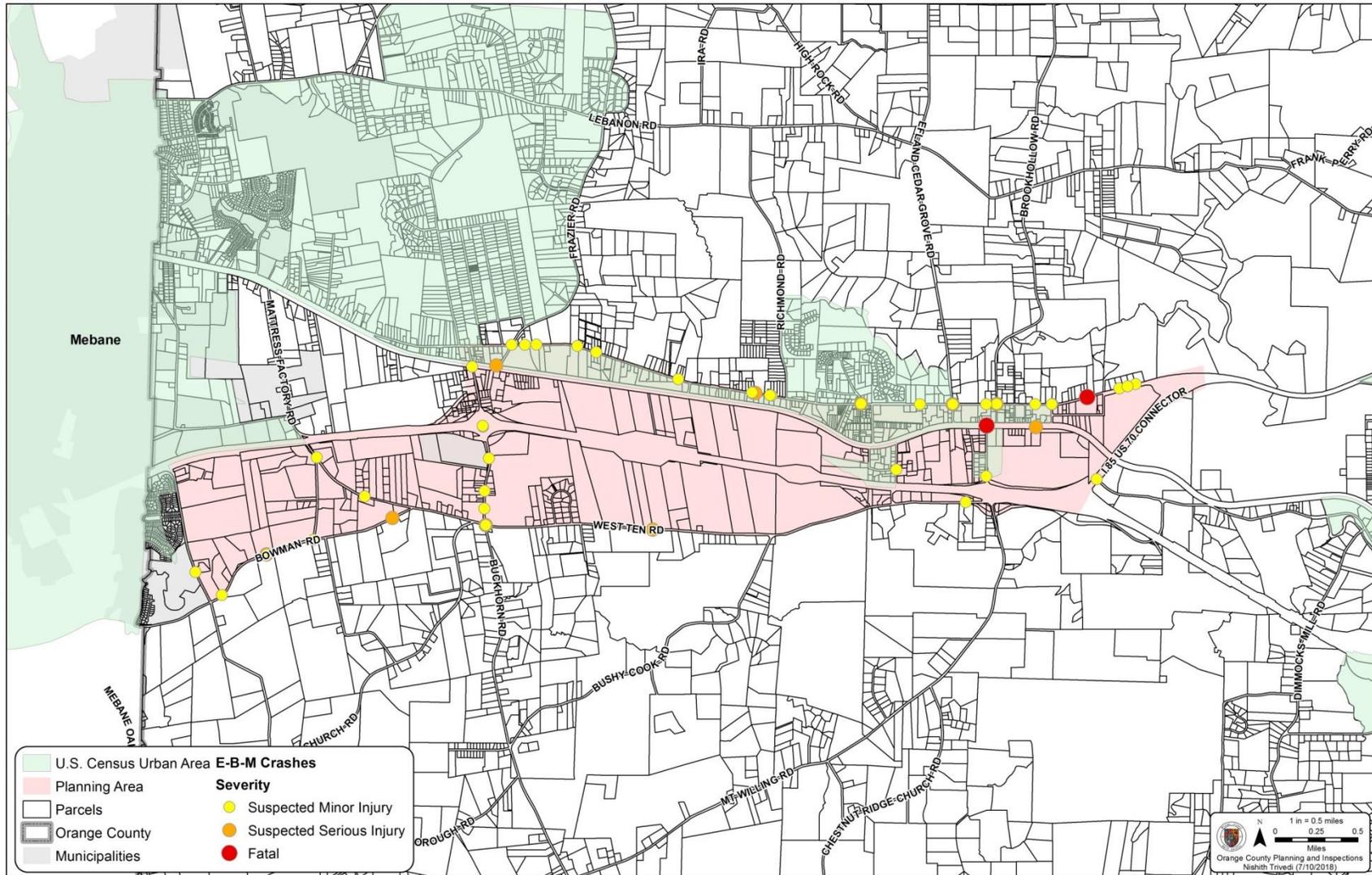


Figure 9: Crash Frequency Trend



Efland-Buckhorn-Mebane Access Management Plan

Figure 10: Crash Severity Map



1. Land Use Matrix and Future Network

As part of the 2017 Transportation Study, the planning area was divided into eighteen potential development sites called “pods”. These sites were analyzed and their maximum buildable area was determined [APPENDIX B](#). Institute of Transportation Engineers (ITE) trip generations were also evaluated to ascertain development impact on the transportation network. The Pod analysis, street cross sections and intersection improvements were developed to help identify and mitigate the traffic impact through this process and made as part of updated AMP.

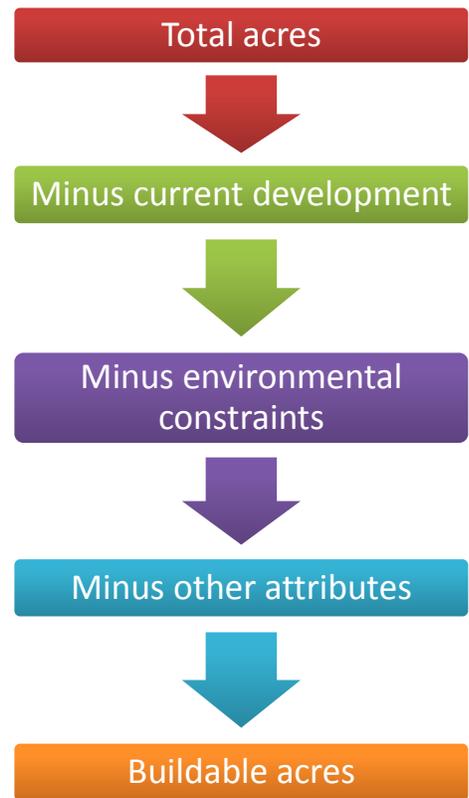
2. Pod Delineation and Analysis

The analysis completed as part of the Study estimates a total 638.2 buildable acres (27.73% of 2301.5 gross acres), due to environmental constraints and other factors. Pods range in size from 22 to 362 acres. A summary of each pod’s buildable acres is shown below ([TABLE 2 & FIGURE 11](#)). Refer to the 2017 Transportation Study in [APPENDIX B](#) for additional information and assumptions used in the analysis.

Pod	Gross Acres	Buildable Acres	Constraints/ Attributes	Percentage Buildable
1	343.41	86.79	256.62	25.27%
2	75.35	19.06	56.29	25.29%
3	257.53	81.01	176.52	31.46%
4	362.35	135.16	227.19	37.30%
5	138.95	0.00	138.95	0.00%
6	109.73	19.65	90.08	17.91%
7	22.01	7.47	14.54	33.94%
8	243.19	70.07	173.12	28.81%
9	55.96	18.15	37.81	32.43%
10	192.12	48.60	143.52	25.30%
11	62.20	7.14	55.06	11.48%
12	35.32	4.91	30.41	13.92%
13	49.26	15.23	34.03	30.91%
14	63.26	8.52	54.74	13.47%
15	49.91	11.07	38.84	22.19%
16	23.59	1.76	21.83	7.44%
17	144.61	79.31	65.30	54.84%
18	72.77	24.28	48.49	33.36%
Total	2301.52	638.17	1663.35	27.73%

Table 2: POD Buildable Acreage

Figure 11: POD Delineation Process



These pods were also used to estimate how much additional traffic future development could generate. Each year, ITE publishes trip generations for individual land uses. Based on current analysis, if all pods were developed over time and based on the designated land uses and current zoning, the planning area could experience an additional 172,829 vehicular trips per day on the roads. Below is a summary of daily, morning, and evening peak hour trip generations for the planning area (TABLE 2 & FIGURE 12).

Pod	Daily
1	7,440
2	2,781
3	21,917
4	40,416
5	0
6	1,998
7	36,955
8	5,088
9	17,736
10	4,336
11	4,516
12	392
13	925
14	4,896
15	1,010
16	772
17	16,228
18	5,422

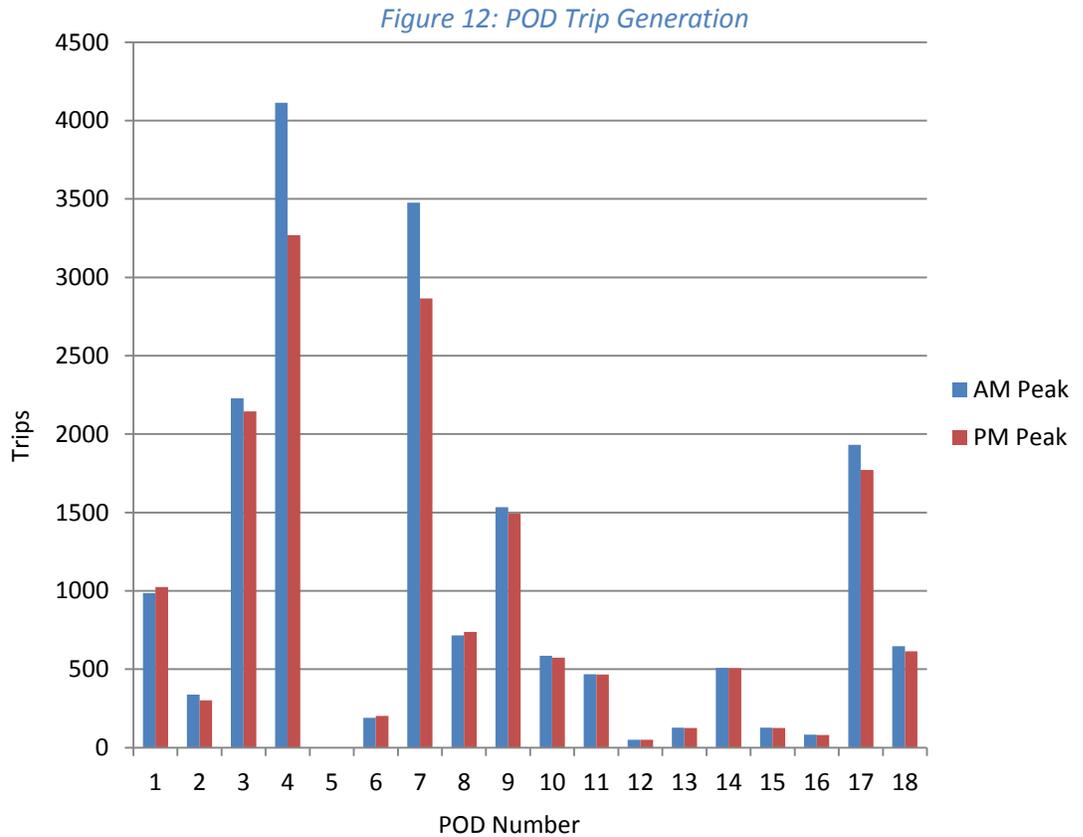


Table 3: POD Daily Trips

3. Intersection Analysis

Various intersections in the planning area were analyzed for potential improvements. This investigation is based on the Annual Average Daily Traffic (AADT) being projected from 2014-2025 using historic trends. NCDOT monitors the AADT data and the 2017 Transportation Study estimates a 3% annual increase over the past 15 years. This data is collected from traffic count stations located throughout the planning area and helps in determining each road’s Level of Service (LOS). ITE defines the various LOS as described below:

- LOS A: Free flow with individual users unaffected by others in the traffic stream.
- LOS B: Stable flow with freedom to select speed with some influence by others.
- LOS C: Restricted flow remaining stable with significant interaction with others.
- LOS D: High-density flow with speed and maneuverability restricted but steady traffic stream.
- LOS E: Unstable flow with poor comfort and convenience level.
- LOS F: Forced flow characterized by stop-and-go waves and increased accident exposure.

Refer to the 2017 Transportation Study for detail information on the planning area's LOS. It provides the engineering bases for requiring developers mitigate the traffic impact they will have on existing transportation network in accordance with the County's adopted 2030 Comprehensive Plan goals and objectives.

C. Recommendations - Future Roadway and Intersection Improvements

Based on the information presented in the 2017 Transportation Study and taking into account public comments, functional classification, design speed, traffic volumes, character and composition of traffic and type of right-of-way, the roadway network and intersection improvements are recommended on the following pages.

In order to meet the goals and objectives identified on page 15, this AMP update recommends the following actions:

- Require right-of-way dedication - based on the "Street Cross-Section Requirements" below - for all development throughout the Planning Area and acquire necessary easements for infrastructure improvements.
- Work with NCDOT to pursue funding to advance the following improvements:
 - Install a traffic light at high frequency crash intersections to ensure safety for all users and assist traffic flow.
 - Install a crosswalk with a flashing light at key intersections in the planning area.
- Consider a provision that any development having ingress/egress in the Planning Area either construct its fair share of recommended improvements or provide payment in lieu of such improvements.
- Work with developers, the Orange County Economic Development Department, and Orange County Planning and Inspection Department to implement access management recommendations.
- Identify and promote transportation projects in the planning area to respective planning organizations and NCDOT.
- Pursue NCDOT SPOT Safety projects for key intersections throughout the planning area.
- Support NCDOT's County Complete Street Policy, which was being updated at the time this Plan was prepared, to address multi-modal travel and protect pedestrian and bicycle circulation around residential subdivisions and commercial areas.
- Take transit services into consideration as the E-B-M AMP is implemented. Currently, Orange County Public Transportation operates one route in the planning area called the Orange-Alamance route. Consideration will also be given to transit as additional routes are added.

1. Street Cross-Section Requirements

Many existing roads will no longer have the capacity to handle the projected 172,829 additional vehicular trips. New roads will have to be constructed while existing ones may require widening. Road design plays an important role in access management. Several road cross sections have been designed to help address increased traffic. This AMP update also takes into consideration bicycle and pedestrian requirements along the proposed cross sections as demonstrated below ([FIGURES 13-20](#)).

The following information is for Figures 13 and 14 below:

- All new streets east of Buckhorn Road including:
 - Southern Drive
 - Forrest Road
- Recommended: 2 lanes undivided with:
 - 5' wide paved shoulder or
 - Curb and gutter, bike lane and sidewalk

Figure 13: NCDOT Standard Street Cross Section 2A

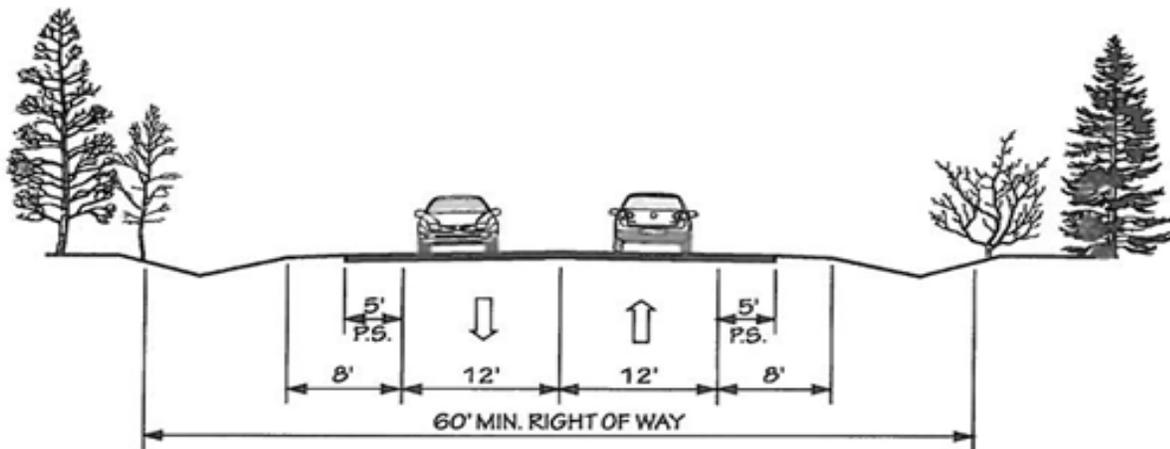
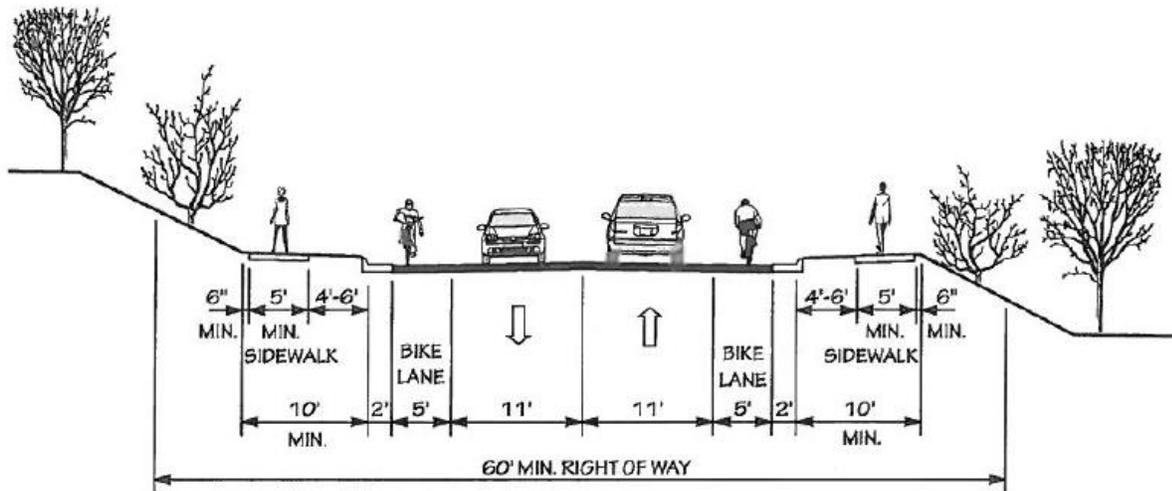


Figure 14: NCDOT Standard Street Cross Section 2E



The following information is for Figures 15 and 16 below:

- All new streets west of Buckhorn Road, including:
 - Bowman Road
 - Rock Quarry Road
 - Ben Wilson Road
- Recommended: 2 lanes:
 - Undivided, 4' wide paved shoulder and sidewalk or
 - Divided, raised median, curb & gutter, bike lanes and sidewalk

Figure 15: NCDOT Standard Street Cross Section 2D

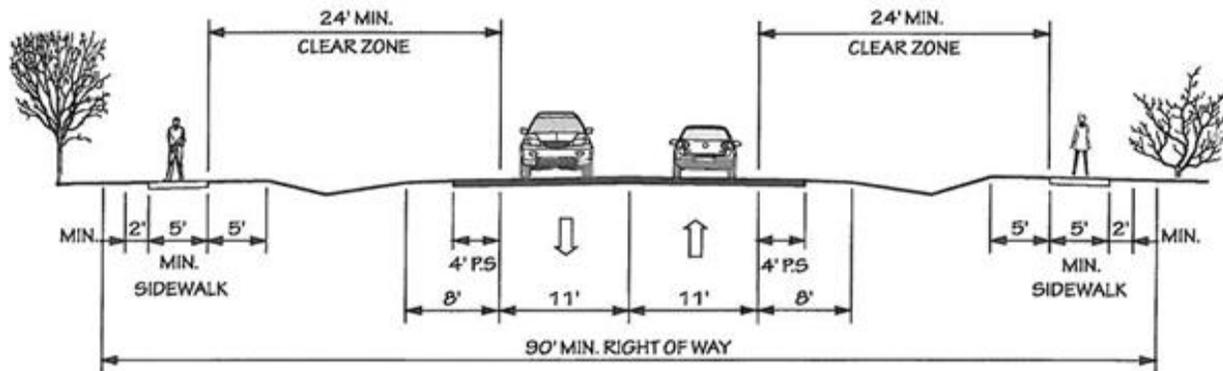
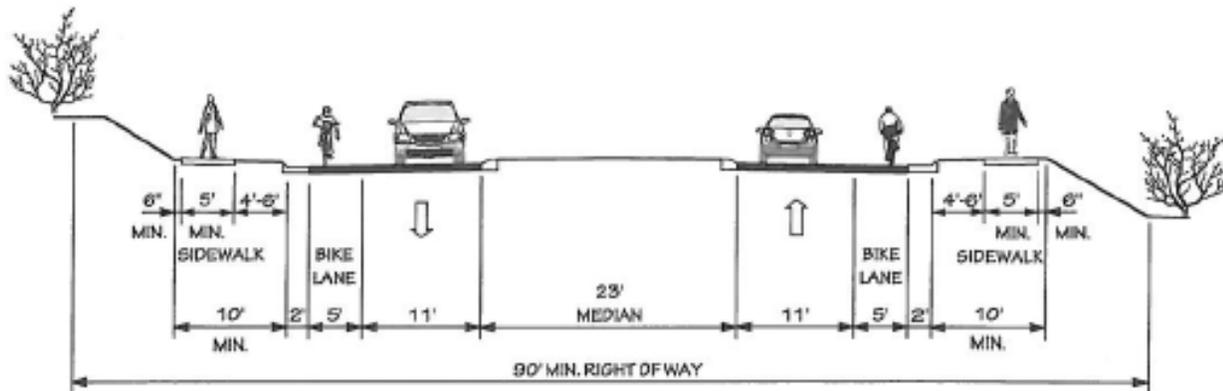


Figure 16: NCDOT Standards Street Cross Section 2J



The following information is for Figures 17 and 18 below:

- Existing streets:
 - Ben Wilson Road
 - West Ten Road (east of Ben Wilson Road)
- Recommended: 2 lanes with 2 way left turn lane:
 - 5' wide paved shoulder or
 - Curb & gutter, bike lane and sidewalks
- To be achieved through the State Transportation Improvement Program (STIP)

Figure 17: NCDOT Standard Street Cross Section 3A

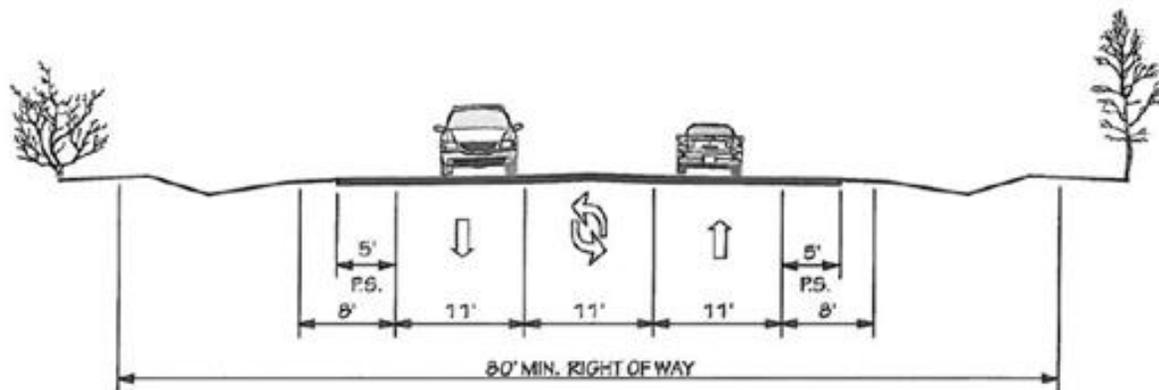
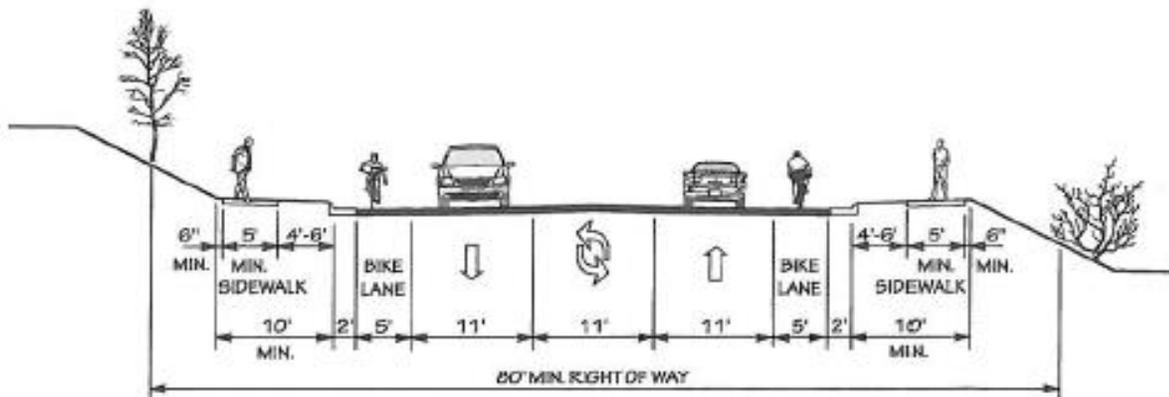


Figure 18: NCDOT Standards Street Cross Section 3C



Efland-Buckhorn-Mebane Access Management Plan

The following information is for Figures 19 and 20 below:

- Existing streets:
 - Buckhorn Road
 - Mt. Willing Road
 - West Ten Road (west of Ben Wilson Road)
- Recommended: 4 lanes divided and raised median with:
 - Curb & gutter, wide outside lanes and sidewalk or
 - Curb & gutter, bike lane and sidewalks
- To be achieved through the State Transportation Improvement Program (STIP)

Figure 19: NCDOT Standards Street Cross Section 4F

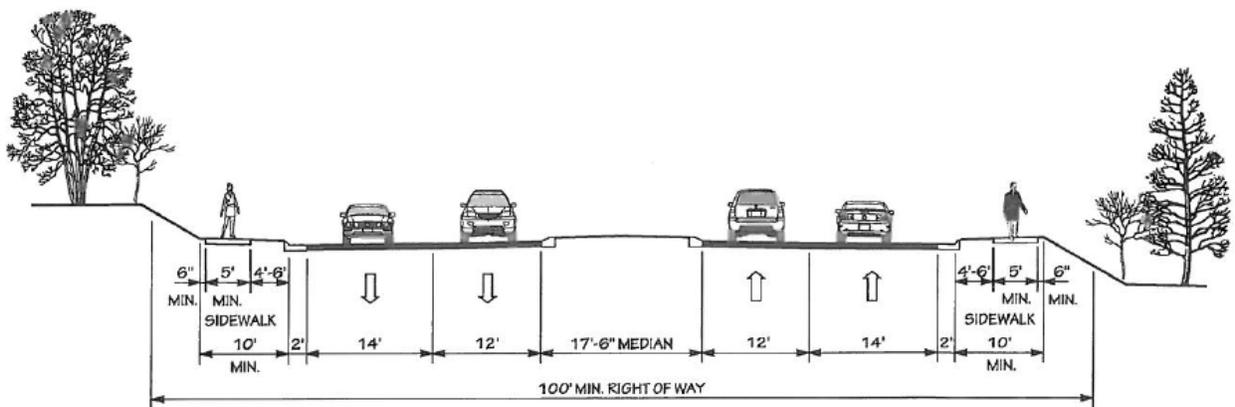
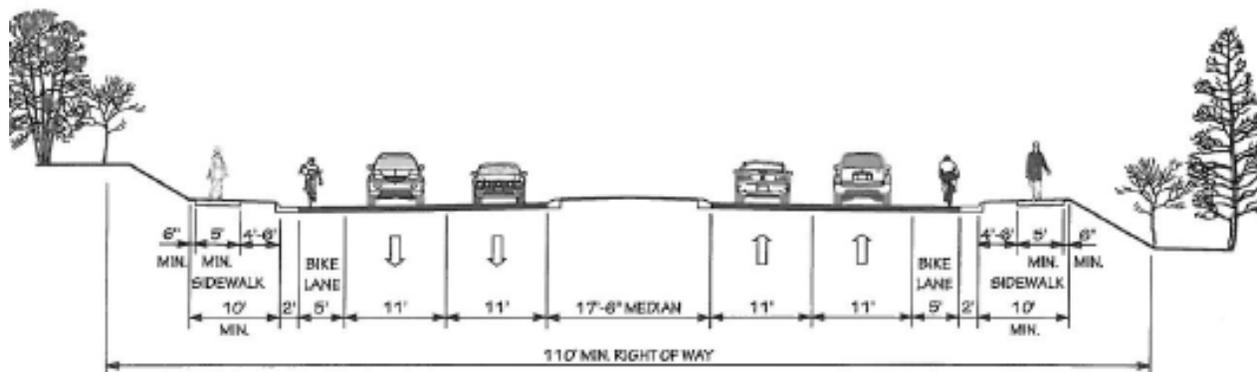


Figure 20: NCDOT Standard Street Cross Section 4G



Implementation of the future roadway network and recommended cross sections is intended to occur over time and largely through the development approval process. Developers are required to dedicate right-of-way consistent with the recommended cross sections and construct roads in accordance with NCDOT Roadway Design Manual requirements. While the cross sections are designed for local and collector roads, their capacity is taken into account as intersections are also analyzed and recommendations are provided in an effort to address traffic impact.

2. Intersection Improvement Requirements and TIA

Evaluating LOS determines the necessary recommendations at various intersections in the planning area. For reference, many municipal governments adopt policies like TIAs that require that new development not decrease LOS below level C or D. Determining the LOS for a given roadway involves complex calculations taking into account factors such as roadway grades and lane width. The 2017 Transportation Study identified the following intersections as those requiring specific improvements by developers and any transportation projects associated with them (TABLE 4).

The 2017 Transportation Study serves as an overall Traffic Impact Analysis (TIA) for the E-B-M area, as each pod’s development potential was modeled in accordance with Section 6:17 - Traffic Impact Analysis – of the County’s UDO. The purpose of a TIA is to “insure that proposed developments do not adversely affect the highway network and to identify any traffic problems associated with access from the site to the existing transportation network.” TIAs also document the required traffic mitigations that must be incorporated into the proposed development. A TIA is required for all special use permits, subdivisions, conditional zoning applications and site plans. This is for all applications with an estimated trip generation exceeding 800 daily trips as the pods have previously demonstrated.

Intersection	Recommendation
Ben Wilson Road at New Road A	South bound right turn lane North bound right turn lane West bound right and left turn lane
West Ten Road at New Road A	Right and left turn lanes in all directions
West Ten Road at Buckhorn Road	Right and left turn lanes in all directions
Mt. Willing Road at New Road H	Right and left turn lanes in all directions
US-70/I-85 Connector	West bound left turn lane East bound right turn lane Northbound right and left turn lane

Table 4: Intersection Recommendations

Future intersection improvements may also involve roundabouts and advances in intelligent transportation systems (ITS). Advances in ITS may also be implemented at various intersections to help improve safety and mobility. Some of these advancements include but are not limited to:

- Curve Speed, Work Zone, and Do Not Pass Warnings

- [Stop Sign Gap Assistance](#)
- [Traffic Signal Priority, Operation and Benchmarking](#)
- [Automated Traffic Signal Performance Measures](#)
- [Emergency Transportation System Operations](#)
- [Traffic Incident and Road Weather Management](#)

[Roundabouts are possible at any intersection in place of signalized intersections. The use of roundabouts requires meeting NCDOT traffic warrant. They must also meet with NCDOT’s Traffic Engineering Policies, Practices, and Legal Authority \(TEPPL\). While the 2017 Transportation Study did not include roundabouts as possible intersection improvements, this update incorporates them as possibilities.](#)

The AMP for the planning area consists of planned streets intersections as illustrated in [FIGURE 16](#). Details of these intersection improvements are located on pp. 26-42 of [APPENDIX B](#).

D. AMP Update and Implementation

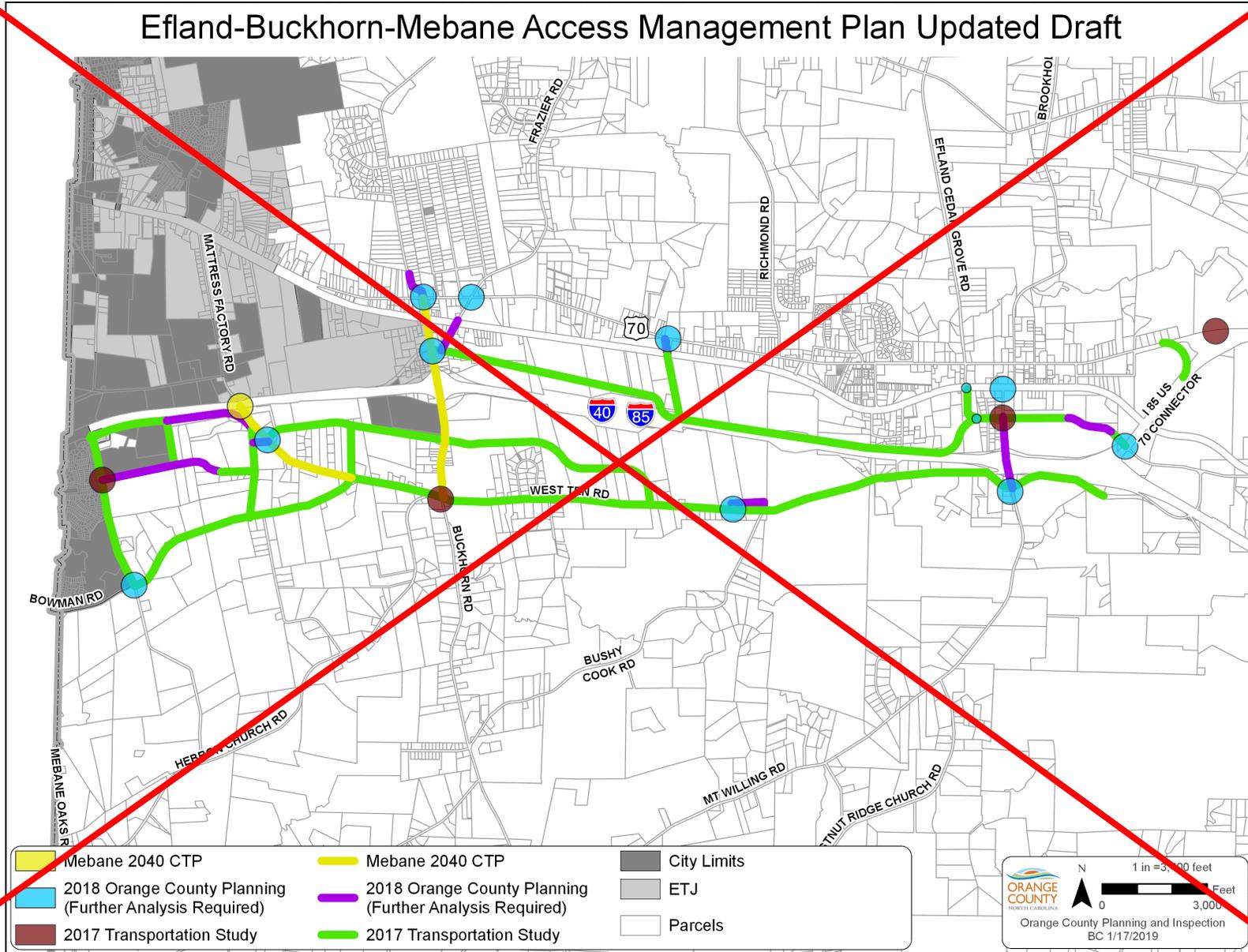
Developers proposing projects within this area will be required to provide the appropriate street cross sections and intersection improvements as specified in this plan. The E-B-M AMP update includes the original 2011 AMP by carrying forward its list of access management concepts, treatments, and considerations as listed in [TABLE 5](#).

Concepts	Treatments
Driveway-Related Crashes, Spacing, Density and Consolidation	Access Management and Pedestrian Safety
Intersection Spacing and Traffic Signal Spacing	Driveway Grade and Width
Functional Areas of Intersections and Conflict Points	Clearing Driveways Away From Corners and Driveway Turn Radius
Speed Differential Between Turning Vehicles And Through Traffic	Shared/Joint Driveways and/or Cross Access
Benefits and Economic Impacts of Access Management	Dedicated Left And Right Turning Lanes
	Continuous Two-Way Left-Turn Lanes
Considerations	Three-Lane Roadways With Two-Way Left-Turn Lanes
Internal Circulation In Land Developments and Sight Distance	Raised Medians at Intersections and Continuous Raised Median
Incorporating Aesthetics Into Access Management	Comparison Of Raised Median And Two-Way Left-Turn Lanes
Clear Zones, Utility Placement And Lighting	Frontage and Backage Roads

Table 5: AMP Practices

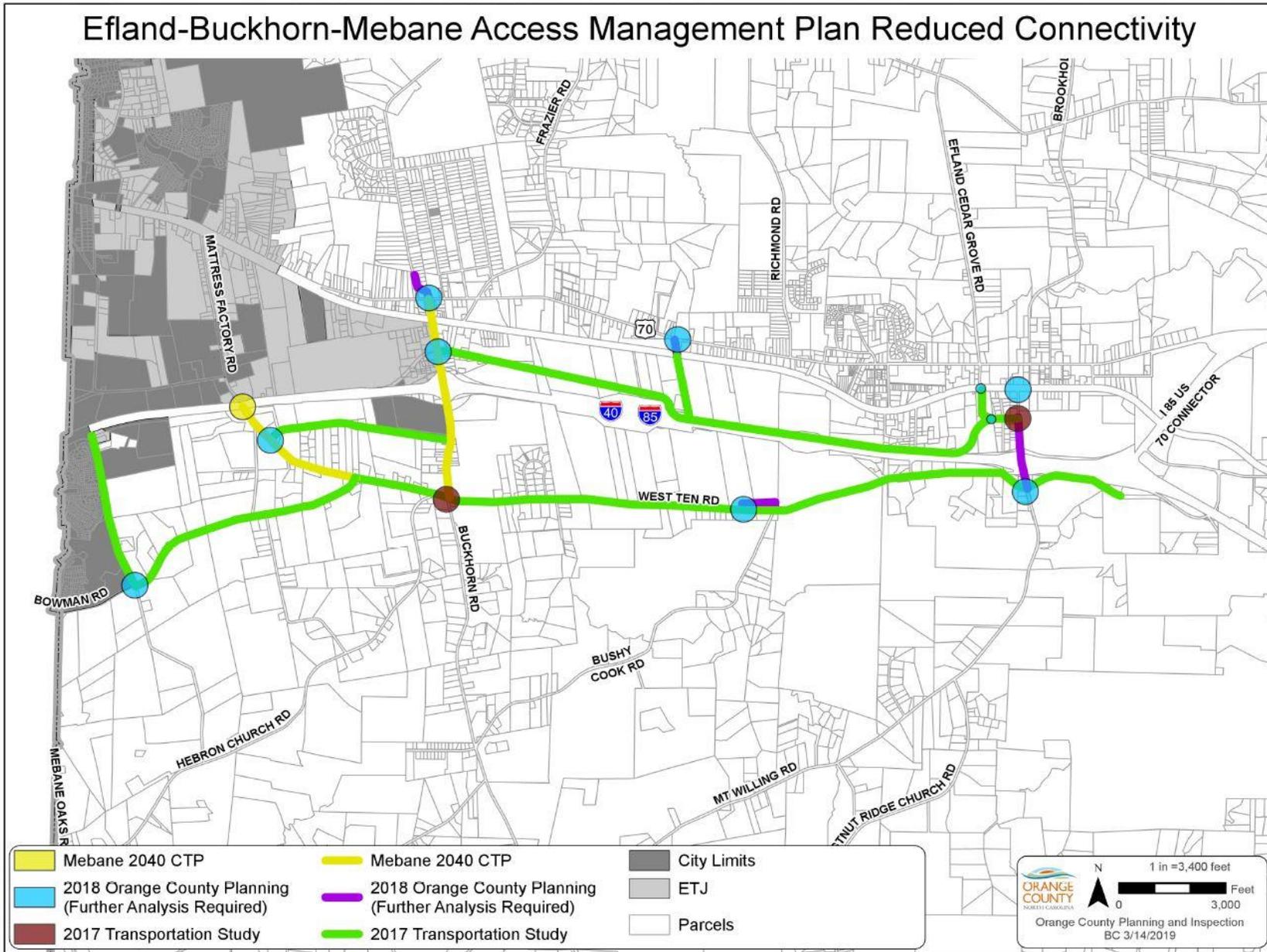
A detail explanation of each concept, treatment and consideration is provided in [APPENDIX A](#) at the end of this Plan. The E-B-M AMP below ([FIGURE 16](#)) illustrated the road network and intersection improvements planned in the area. This plan is based on detail transportation analysis as documented in the 2017 Transportation Study ([APPENDIX B](#)) and public comments gathered throughout the planning process.

Efland-Buckhorn-Mebane Access Management Plan Updated Draft



Efland-Buckhorn-Mebane Access Management Plan

Figure 21: E-B-M AMP



III. Implementation

The following is a list of plans, policies, and regulations currently in place aimed at addressing relevant issues:

- Orange County 2030 Comprehensive Plan
- Orange County Unified Development Ordinance
- E-B-M Small Area Plan and Access Management Plan

Consistent with adopted plans and access management practices, following is a list of criteria considered during the development review process:

1. Restrict access where possible from the functional area of intersections.
2. Control turning movements at entrances where recommended by a TIA, right-in/right-out entrance design prevents left ingress and egress turning movements.
3. Limit or share access through a proposed development in order to prevent vehicles from backing up on to the major roads and to enhance onsite circulation.
4. Space intersections and driveway access points to plan for reduced traffic conflict points as traffic congestion increases:
 - a. Align major intersections and minor entrances with positive offset(s) to increase safety for all users.
 - b. Provide a limited number of strategically located median crossovers in the planning area.
 - c. Add exclusive turn lanes where required by NCDOT.
 - d. Provide adequate separation between traffic signals to expand road's traffic capacity and simplify signal synchronization.
5. Where feasible along arterials and collectors, share joint entrance(s) with adjoining property owner(s) through the recordation of joint access easements with maintenance provisions by adjoining property owner(s).
6. Where feasible along arterials, provide vehicular and pedestrian and bicycle connections between adjoining properties through the recordation of access easement(s) with maintenance provisions, and construct connection(s) to the boundary with adjoining undeveloped parcel(s).
7. Provide frontage roads with non-residential development/redevelopment to increase safety for all users on arterials and collector roads, and promote non-residential development for economic benefit.
8. Provide an interconnected street network in the planning area as generally indicated on the map ([FIGURE 16](#))
9. Provide an interior access network from identified primary access points along arterial and collector roads.
10. Accommodate transit, bicyclists and pedestrians on roadways in the planning area.
11. Limit perennial stream crossings, and impacts to wetlands and steep topographical areas.
12. Required future road cross-sections shall be subject to NCDOT and Orange County review and are incorporated in the Burlington Graham, Triangle Area Rural Planning Organization and Durham-Chapel Hill-Carrboro Metropolitan Planning Organization Comprehensive Transportation Plans (CTP) by reference.

A. Roles and Responsibilities

NCDOT has full authority over state roads but not over local land use decisions. Orange County regulates land use decisions but does not own or maintain local roads. Therefore, coordination is essential in balancing the two authorities when it comes to access management policies and procedures. Each agency has authority over a different part of the process and the partnership benefits the public, developer, and property owner whose financial investment is at stake.

Role/Responsibility of the NCDOT

NCDOT is responsible for regulating the location, design, construction, and maintenance of street and driveway connections on the State Highway system. The NCDOT recognizes landowners have certain reasonable rights of access consistent with their needs. However, access connections are a major contributor to traffic congestion and poor roadway facility operations that can result in decreased highway capacity, and increased safety hazards. Early NCDOT review of development proposals helps ensure conformance with access management requirements and provides NCDOT an opportunity to suggest changes prior to local project approval, which may occur well in advance of a request for a driveway permit. The NCDOT Access Management Group (of the Congestion Management Section of the Traffic Engineering and Safety Systems Branch) examines the potential safety and capacity impacts that new or expanding traffic generation may have on the state roadway system and provides recommendations based on the analysis. This process typically requires the completion of a Traffic Impact Analysis by the Developer/ Property Owner/Applicant. Other recommendations may range from denying access, to requiring the developer to construct additional travel or turn lanes, access restrictions, internal traffic pattern operations or installing new traffic signals to minimize the traffic impact.

Role/Responsibility of Orange County

Several sections of the Orange County UDO assist with implementation of the E-B-M AMP. The UDO requires site plans to comply with County adopted access management, transportation and/or connectivity plans and to denote the location of future roadways(s) and access easements, whether public or private, and to ensure and encourage future connectivity. The UDO also provides additional requirements for Economic Development Districts as well as the Major Transportation Corridor Overlay District (MTC). An important implementation tool for access management is the UDO requirement of a traffic impact analysis for all special use permits, major subdivisions, conditional zoning applications, site plans that exceed 800 trips per day, and for 80 or more dwelling units of residential development. Additionally, a traffic impact analysis may be required when a road capacity or safety issue exists. The purpose of the traffic impact analysis is to insure that proposed developments do not adversely affect the road network and to identify any traffic problems associated with access from the site to the existing transportation network. The objective of the traffic impact analysis is to identify solutions to potential problems and to present improvements to be incorporated into the proposed development.

As individual developments occur in the planning area, permits can be issued that conform to the access management plan, or permits outlining conditions (whether through conditional zoning, special use permits, or site plan reviews) can be issued so that the development will ultimately be in conformance. NCDOT representatives provide technical assistance and support. Orange County can assist the NCDOT by attaching conditions to development approvals to require actions from the developer that support access management. This may include conditions that require unified access and circulations systems, alternative access roads, or joint and cross access. All development in the planning area must be in accordance with NCDOT *Policy on Street and Driveway Access to North Carolina Highways*.

Continued intergovernmental coordination with the City of Mebane will be important to realizing desired development and access management within the planning area since the City will be the service provider of public water and sanitary sewer.

Role/Responsibility of the Developer /Property Owner/Applicant

A development applicant, such as the property owner and/or developer, is required to coordinate with Orange County and the NCDOT to identify possible conflicts with local, state, or federal regulations and plans, including adopted access management plans. A traffic impact analysis may be required to be prepared by the applicant's engineer, to determine any traffic concerns associated with access from the site to the existing transportation network, and to identify solutions to potential problems for incorporation into the proposed development. Additionally, prior to beginning any site disturbance work, the applicant is responsible for obtaining all applicable permits required for construction within the highway right-of-way resulting from development, including but not limited to, a Street and Driveway Access Permit issued by the NCDOT District Engineer, and all applicable environmental permits (i.e., erosion control, water quality, and wetlands). All applicants are required to coordinate with all agencies involved, including other local governments, to identify conflicting or overlapping access issues.

B. Resources

The plan may require future updates as development occurs and other access management issues are identified. While North Carolina counties do not own or maintain local roads, they do have certain authority over land use decisions, and through innovative use of local regulations, Orange County can adopt local policies and ordinances aimed at addressing specific issues such as access management. A variety of tools are made available including and not limited to:

- Land Development Regulations
- Special Service Districts
- Intergovernmental Agreements
- Complete Streets Policy
- Exactions

IV. Appendix

A. 2011 E-B-M EDD AMP

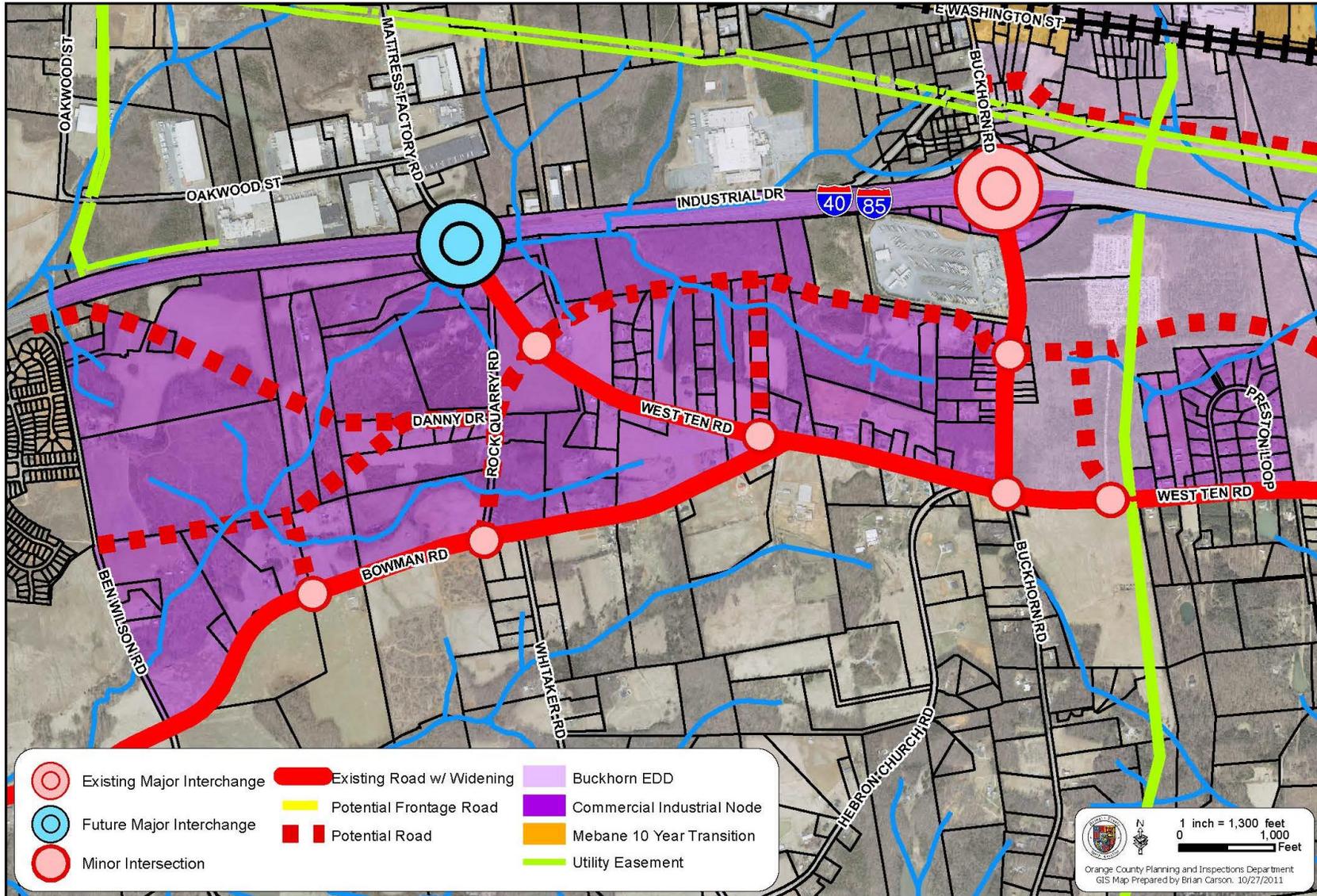
B. 2017 E-B-M Transportation Study

C. Community Meeting

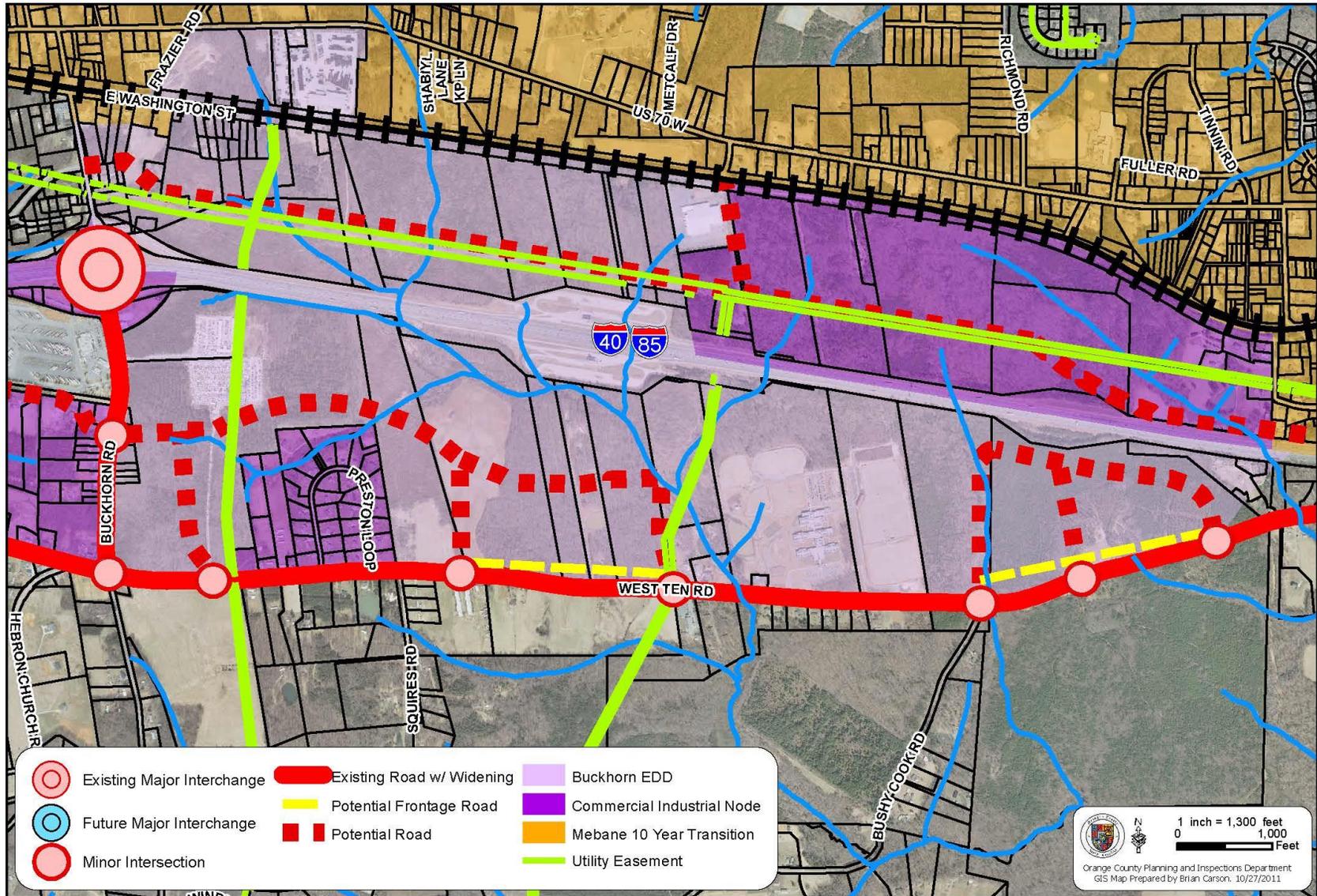
APPENDIX A

2011 Efland-Buckhorn-Mebane Access Management Plan

Efland-Buckhorn-Mebane Access Management Plan - Map A

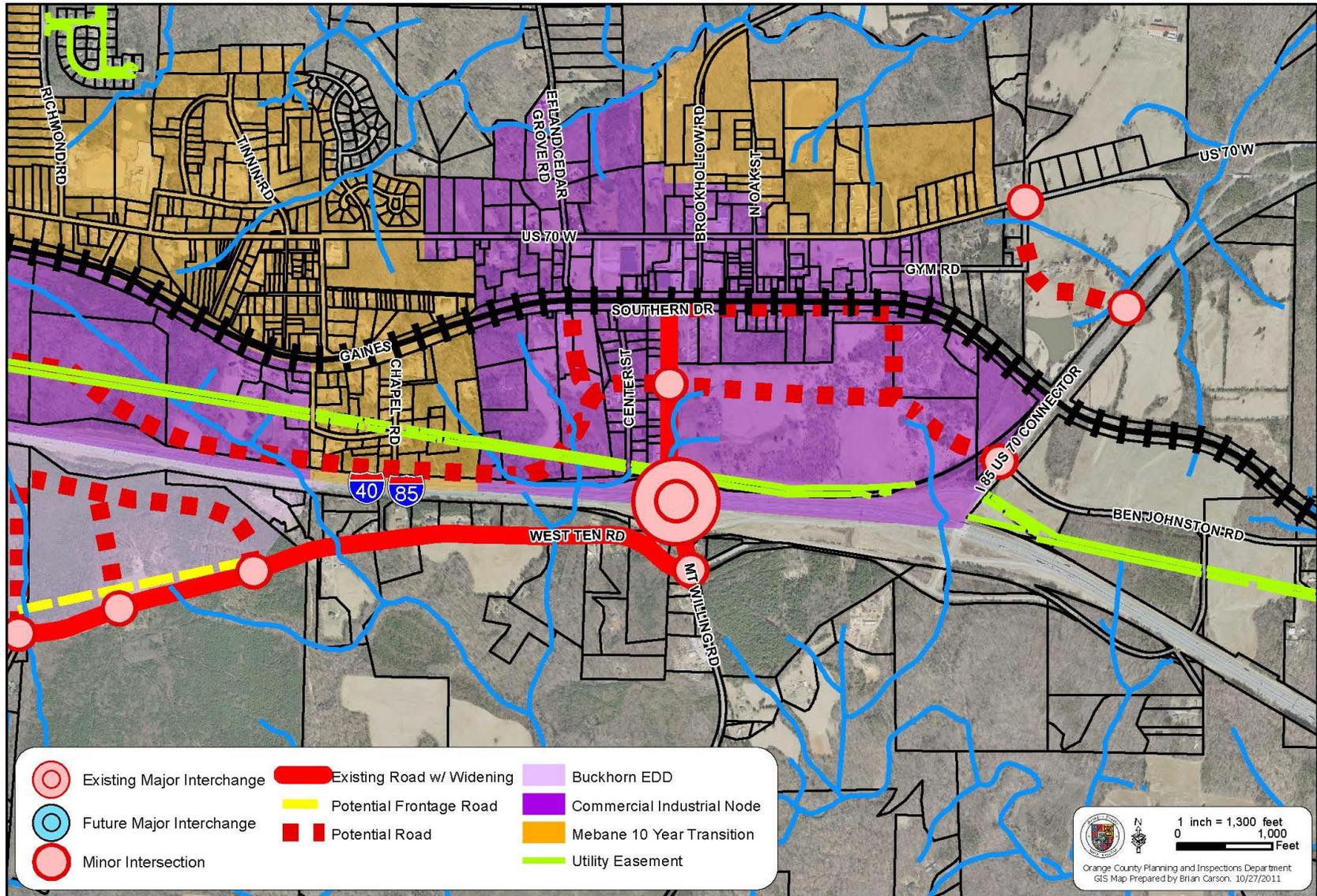


Efland-Buckhorn-Mebane Access Management Plan - Map B



Note: The locations of potential roads and intersections are conceptual and reflect the County's intent to improve access and connectivity. Specific locations will be determined on a case by case basis as development occurs and site specifics are analyzed.

Efland-Buckhorn-Mebane Access Management Plan - Map C



Note: The locations of potential roads and intersections are conceptual and reflect the County's intent to improve access and connectivity. Specific locations will be determined on a case by case basis as development occurs and site specifics are analyzed.

ACCESS MANAGEMENT PROGRAM

(To Be Applied Within Corridors And Development Zones)

ACCESS MANAGEMENT CONCEPTS

1. Driveway-Related Crashes

Much of access management involves managing traffic movements into and out of commercial driveways. The reason for this is that driveway traffic generates a large number of crashes on major roads and streets-arterials and collectors.

2. Driveway Spacing

Maintaining an adequate spacing between commercial driveways is one of the most critical aspects of access management.

3. Driveway Density And Driveway Consolidation

Driveway density (the number of driveways per block or per mile) and driveway consolidation are very important considerations in access management. These roadway characteristics are basic issues in any access management plan or program.

4. Intersection Spacing And Traffic Signal Spacing

Although most discussions about access management focus on the management of private driveways, proper spacing of roadway intersections is an equally important access management issue.

Why is intersection spacing important?

The importance of intersection spacing is similar to that of driveway spacing. As the number of intersections per mile increase, the opportunity for crashes increases. The existence of too many intersections per mile also increases delay and congestion. On the other hand, not providing an adequately dense street network forces motorists and pedestrians to travel farther to their destinations.

5. Functional Areas Of Intersections

It is important to protect the functional area of an intersection from driveway access. Driveways located within this area may result in higher crash rates and increased congestion.

What is the functional area of an intersection?

The functional area of an intersection is that area beyond the physical intersection of two roadways that comprises decision and maneuvering distance, plus any required vehicle storage length. The functional area includes the length of road upstream from an oncoming intersection needed by motorists to perceive the

intersection and begin maneuvers to negotiate it. The upstream area consists of distance for travel during a perception-reaction time, travel for maneuvering and deceleration, and queue storage. The functional area also includes the length of road downstream from the intersection needed to reduce conflicts between through traffic and vehicles entering and exiting a property.

6. Conflict Points

Conflict points are commonly used to explain the accident potential of a roadway. Access management strategies are typically designed to reduce the number and density of conflict points.

What is a conflict point?

A conflict point is the point at which a highway user crossing, merging with, or diverging from a road or driveway conflicts with another highway user using the same road or driveway. It is any point where the paths of two through or turning vehicles diverge, merge, or cross.

7. Speed Differential Between Turning Vehicles And Through Traffic

Speed differential is a simple yet important concept that forms the basis for many access management measures.

What is speed differential?

Speed differential is the difference between the speed of vehicles that are continuing along the main roadway versus those that are entering and exiting the driveway. For instance, if through traffic generally moves at 35 miles per hour and cars have to slow to 10 miles per hour to enter a driveway, the speed differential at and near that driveway is 25 miles per hour.

Why is speed differential important?

A speed differential above 20 miles per hour begins to present safety concerns. When the speed differential approaches 30 to 35 miles per hour, the likelihood of a collision between fast moving through vehicles and turning vehicles increases very quickly.

8. Benefits Of Access Management

An effective, local access management program can play an important role in preserving highway capacity, reducing crashes, and avoiding or minimizing costly remedial roadway improvements. The traveling public would then benefit from faster and safer travel. The great majority of businesses would benefit from increased economic vitality along a well-managed corridor. Taxpayers would benefit from more efficient use of existing facilities. And public agencies would benefit from the relatively low cost of access management; they could then use their resources for other needs.

9. Economic Impacts Of Access Management

Business owners often are concerned that changes in access to their premises will have temporary or permanent impacts on their sales. They are concerned that changes in direct access to their property—such as consolidating driveways or installing raised medians will lead to declines in patronage and sales. Perceived impacts of access management on adjacent commercial businesses and landowners are often major impediments to projects moving forward. In the case of access management, perceptions are often worse than reality.

Access management before development offers clarity and relieves the post-development difficulty in retrofitting.

10. Access Management And Pedestrian Safety

Access management is usually promoted as a way to improve driving conditions for motorists. Clearly, access management techniques can lead to roads and streets that are dramatically safer and much easier and more pleasant to drive. However, research also indicates that several key access management techniques are just as valuable to pedestrians. These include:

- reducing the number of driveways, particularly commercial driveways, within a given distance (per block or mile)
- providing for greater distance separation between driveway
- providing a safe refuge for pedestrian crossings with raised medians

COMMON ACCESS MANAGEMENT TREATMENTS

11. Driveway Grade

Along older urban arterial streets, it is common to find rather steep driveways with grades (or slopes) of 5-10 percent or more. Driveways with steep grades were often constructed to allow the driveway and connecting parking lots to drain more efficiently and to save earth-moving costs. On the other hand, more recently constructed arterials typically feature very gentle driveway grades. Driveway grade is an important – yet often overlooked – safety consideration.

The maximum practical grade for driveways varies between 8-14 percent for low-volume driveways and five percent for high-volume driveways (a 30-foot long driveway with a 14 percent grade would rise or fall about four feet along its length).

Furthermore, the maximum practical change in grade is about 12 percent. Above this value, many vehicles will scrape their bumpers or other low-hanging parts on the driveway, potentially causing damage to the vehicle and driveway or roadway surface. While this may be the maximum practical grade, it is much safer to use a smaller grade. A minimal grade (say, two percent) is still needed for drainage.

12. Driveway Width

Along older urban arterial streets, it is common to find many narrow driveways. Older commercial driveway and parking lot designs tended to use ten to fifteen foot wide driveways. This type of design will safely accommodate only one vehicle at a time, either an entering or an exiting vehicle. Another common problem is driveways in urban and rural areas that are too wide. In some cases, the driveway may have no discernible boundaries or curbs. Both situations create operational and safety concerns. A properly designed driveway helps turning traffic move off the roadway more quickly and reduces the likelihood of crashes.

13. Clearing Driveways Away From Corners

Clearing driveways away from corners is the simplest, yet perhaps the most critical access management treatment.

What is corner clearance?

Corner clearance is the minimum distance required between an intersection and an adjacent driveway along an arterial road or collector street.

14. Shared/Joint Driveways And/Or Cross Access

Driveway spacing and driveway density are important considerations in managing access. When driveways are spaced too closely together or the number of driveways per block or mile becomes too large, a significant increase in traffic accident rates occurs. Traffic also tends to become congested more quickly in such situations.

What is driveway sharing?

A shared driveway is when two or more adjacent properties use the same driveway for ingress and/or egress. Shared driveways are very common in newer commercial areas, for instance at strip malls, regional shopping centers, and office parks. Sharing driveways is simply good design practice since conflict points caused by motorists entering and leaving the businesses are reduced. This will, in turn, tend to reduce traffic accidents associated with turning traffic and improve the traffic flow on the main road.

What are joint and cross access?

Joint and cross access are formal, legal methods of ensuring that adjacent properties can share driveways. In the case of joint access, two adjacent property owners share a driveway along their common property line. In the case of cross access, one property owner has the legal right to access and use a driveway that is on the adjacent property owner's land.

Joint and cross access can be built into private real estate titles through easements. They can also be encouraged or required in local planning or design standards or in municipal and county ordinances.

15. Continuous Two-Way Left-Turn Lanes

Continuous two-way-left-turn lanes (TWLTL) are a common access management treatment when combined with driveway consolidation and corner clearance. TWLTLs simultaneously provide a separate lane for left turning vehicles and property access. Typically, they are used as the center lane of a five-lane roadway. A less common design involves three lanes, a TWLTL in the center for left turns and one lane in each direction for through traffic.

Recent theory suggests avoiding this design unless road right-of-way conditions are restrictive.

- 16. Three-Lane Roadways With Two-Way Left-Turn Lanes** Continuous two-way left-turn lanes (TWLTL) are a common access management treatment. Typically, they are used in the center of a four-lane roadway. However, a less-common design involving three lanes – a TWLTL in the center for left turns and one lane in each direction for through traffic – is being used more and more frequently. At first, the idea of a three-lane road may seem strange. But under the right circumstances they can work very well, operating better and more safely than a four-lane undivided road.

17. Raised Medians At Intersections

Raised medians with left-turn lanes at intersections offer a cost-effective means for reducing accidents and improving operations at higher volume intersections. The left-turn lanes separate slower turning vehicles from through traffic and provide a protected space for these vehicles to decelerate and turn. The raised median prohibits left turns into and out of driveways that may be located too close to the functional area of the intersection.

18. Continuous Raised Median

Continuous raised medians with well-designed median openings are among the most important features for managing access to create a safe and efficient highway system.

19. Comparison Of Raised Median And Two-Way Left-Turn Lanes

Because raised medians are the most restrictive access management treatment, building a raised median along an arterial is often very controversial among business and property owners. Two-way left-turn lanes (TWLTL) are much less so. Business persons and property owners feel that installation of raised medians will have a large, negative impact on their customers, sales, and property values. Therefore, TWLTLs are often suggested as a compromise solution. However, TWLTLs also represent a safety compromise when compared to raised medians. They should be used with care.

20. Frontage And Backage Roads

Frontage and backage roads run parallel the mainline route and provide alternative access to property. Property access is provided along the frontage or backage road, which accesses the arterial via a cross road (with a traffic signal if necessary). This reduces the number and density of conflict points associated with strip development. These roads are generally applicable to commercial development.

A backage road provides access to the rear side of commercial properties located between the backage road and the arterial. It also provides access to properties located on the opposite side of the backage road from the arterial, thus increasing land values and reducing infrastructure costs to individual properties.

A frontage road provides access to the front side of commercial properties located along the arterial. Care must be taken to ensure adequate separation between the arterial and the intersection of the frontage and cross roads.

Why are frontage and backage roads important?

Frontage and backage roads reduce conflict points between through traffic and turning traffic associated with strip development and direct property access to the arterial. Conflict points are associated with reduced levels of roadway safety and operations. Studies have shown that when driveway access to arterial roadways is granted to too many property owners without considering future traffic volumes and road classifications, the additional driveways increase the rate of accidents and decrease the efficiency of the roadway.

21. Dedicated Left And Right Turning Lanes

One of the major concerns of transportation engineers and planners in cities and suburban areas is keeping through traffic moving at a smooth and even pace. When traffic can't move at an even pace, delays and congestion are the result. This frustrates motorists and creates opportunities for "fender-bender" crashes. One of the simplest ways to accomplish smooth and even traffic is to remove the turning traffic from the through traffic flow at road intersections and near busy driveways. Often, dedicated turning lanes are provided to serve that purpose. Many times turning lanes are used in conjunction with raised medians and medians at intersections to provide additional safety by protecting turning traffic.

22. Driveway Turn Radius

Turn radius refers to the extent that the edge of a commercial driveway is "rounded" to permit easier entry and exit by turning vehicles. Driveway entrances with longer turn radii help slower, turning traffic move off the arterial more quickly. They also help traffic leaving a driveway turn and enter the stream of traffic more efficiently. Guidelines for turn radii are generally applied to non-residential developments and subdivisions.

23. Internal Circulation In Land Developments

Internal site design is probably the most neglected discussion point in access management. It would be natural to think that access management concerns stop at the roadway right-of-way line, but in fact they carry through into the property that is provided with access.

Why is internal site design important?

The movement of traffic into and out of properties can be dramatically affected by the internal design for on-site circulation. The internal design of circulation on a property may help or hinder traffic turning off or onto an arterial street. This in turn affects the speed differential between turning and through traffic.

What is the best way to design for internal circulation?

The internal circulation of a land development functions well when it is designed with respect to highway access point(s) rather than the building(s). Design should start from the outside in and finish with the parking and building. Very often, the opposite approach is taken. The circulation design of driveways and parking lots are done last. Here is the optimal internal circulation design approach:

1. Provide safe and reasonable access to and from the street to motorists and pedestrians.
2. Provide a reasonable transition between the access and the internal circulation, especially by making sure the driveways are wide and long enough.
3. Design the parking area and individual parking spaces.
4. Design the building footprint within the constraints of the internal circulation and the parking.

OTHER CORRIDOR DESIGN CONSIDERATIONS

24. Sight Distance

Guidelines for adequate sight distance are one of the most important and basic approaches a community can take in managing access to its roadways. Sight distance guidelines can help communities ensure that its arterials are safe for motorists and pedestrians. Sight distance guidelines can also help communities promote adequate spacing of residential and commercial driveways.

What is sight distance?

Sight distance is the length of highway visible to a driver. A safe sight distance is the distance needed by a driver on an arterial, or a driver exiting a driveway or street, to verify that the road is clear and avoid conflicts with other vehicles. Sight lines must be kept free of objects which might interfere with the ability of drivers to see other vehicles. Features such as hills, curves in the road, vegetation, other landscaping, signs, and buildings can reduce sight distance.

25. Incorporating Aesthetics Into Access Management

Access management projects often involve widening existing roadways to add either an additional two-way-left-turn lane (TWLTL) or a raised median. Such projects can lead to a wide expanse of concrete and asphalt. An aesthetically pleasing treatment, however, does not need to run counter to sound access management practices. In fact, aesthetics can and should be incorporated into access management project plans.

Why are aesthetics important?

Access management projects are much more likely to be accepted by the public and by business owners of adjacent properties if they look good as well as improve safety and traffic flow.

26. Clear Zones, Utility Placement And Lighting

Adequate clear zones with proper placement of utilities and sufficient lighting are essential components of well designed roadways. Proper design will help ensure sufficient sight distance and improve roadway operating safety.

What is a clear zone?

The American Association of State Highway and Transportation Officials (AASHTO) *Green Book* states that “a clear zone is used to designate the unobstructed, relatively flat area provided beyond the edge of the traveled way for the recovery of errant vehicles.” Utilities, structures, signs, trees, and other objects should not be located within the clear zone.

Figure 1a.

80' PROPOSED STREET CROSS SECTION
SHOULDER SECTION

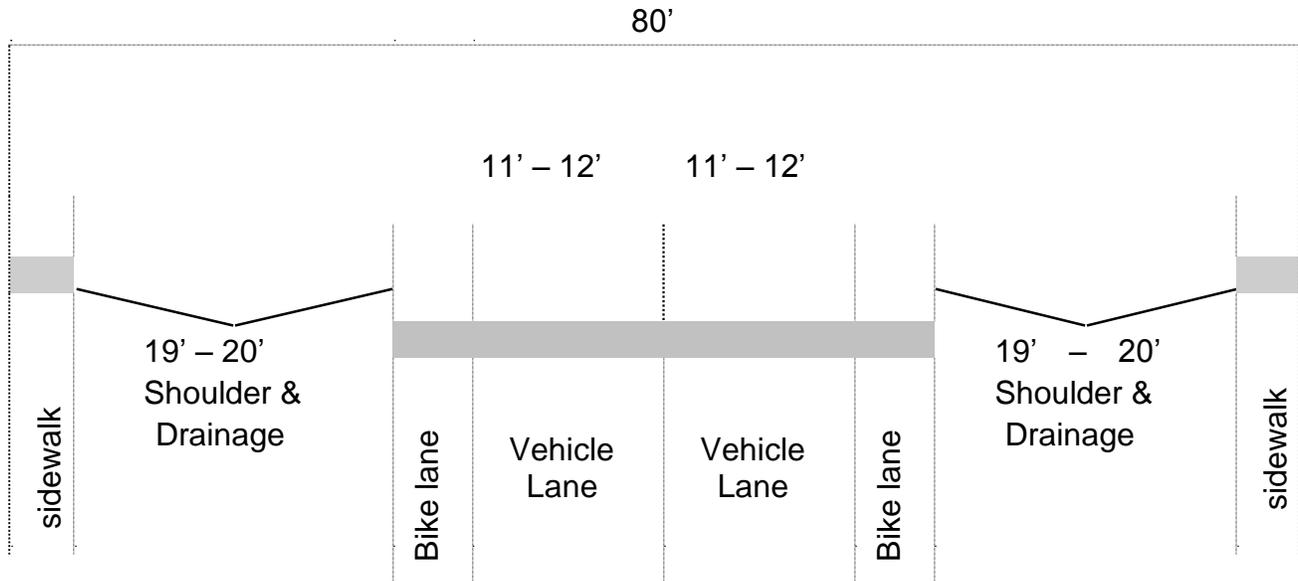
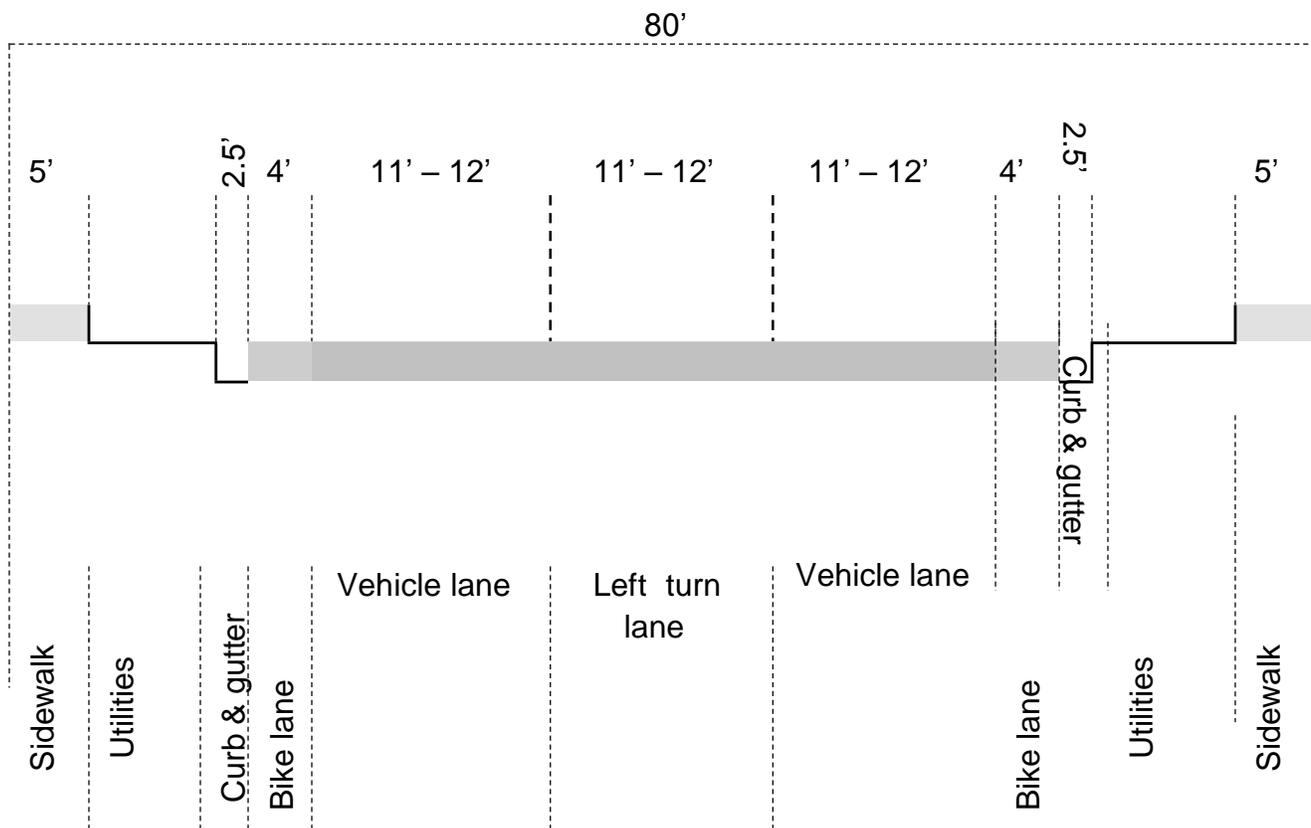


Figure 1b.

80' PROPOSED STREET CROSS SECTION
CURB & GUTTER SECTION



APPENDIX B

2017 Transportation Study

APPENDIX C

Community Meeting

Tuesday, August 28, 2018 Orange County Planning Department hosted a community meeting at Gravelly Hill Middle School Auditorium. An estimated 100 property owners, residents, and businesses attended the meeting where they received information on the planning process and current analysis of the area. People signed in, picked up a copy of the agenda, map, and survey, explored the boards, saw a brief presentation and spoke with staff.



Here are some key highlights from the meeting:

- People spoke one-on-one with staff regarding specific properties and neighborhoods.
- Some submitted comments in person and through email and filled out a survey.
- NCDOT's Division Engineer Chuck Edwards attended the meeting to answer any questions.
- Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) Aaron Cain attended.
- Cy Stober, Mebane's Development Director, also added to address any questions for Mebane.
- People wanted to know more about future sewer and water infrastructure planned for the area.

The following is a collection of all the material, comments, surveys, questions and answers provided during the community meeting and public review.



Community Meeting

Efland-Buckhorn-Mebane Access Management Plan
August 28, 2018, 4:30 – 6:30 pm
Gravelly Hill Middle School Auditorium
4801 W Ten Rd, Efland, NC 27243

What is an Access Management Plan?

Access Management Plans are proposed long-range master plans of possible new roads and connections to existing roads. These plans promote an orderly, cost effective, efficient and environmentally sensitive roadway program, which help guide development decisions and investment. Ultimately, Orange County seeks to develop an access management plan in order to maintain the functionality of the transportation network as the Efland-Buckhorn-Mebane Study Area develops over time.

Purpose:

- Gain information on the current 2011 plan and 2017 Transportation Study
- Provide comments, get answer to your questions, and see next steps

Format:

The meeting is primarily open house with the following agenda:

- 4:30 – 5:45 pm – open discussion with staff
- 5:45 – 6:15 pm – presentation with question and answer
- 6:15 – 6:30 pm – complete surveys and provide comments

How can I participate tonight?

Review the material, ask questions, and provide comments directly to staff, complete survey and leave with staff.

Next Steps

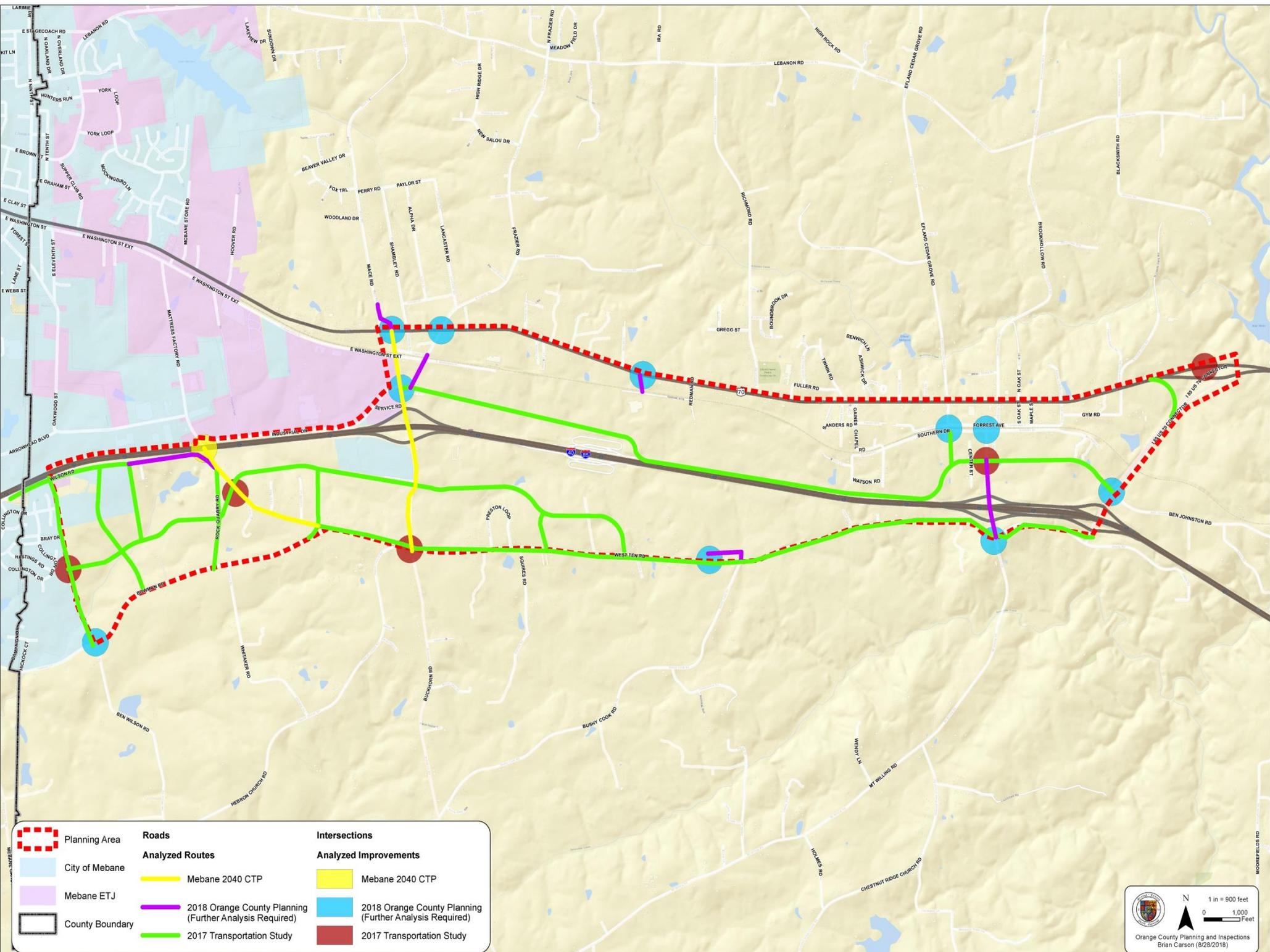
Orange County Planning Board – September 5, 2018
Orange Unified Transportation Board – September 19, 2018

A formal public hearing on a proposed Access Management Plan will be held by the Board of County Commissioners later this year, currently targeted for November. You will receive another written notice about the public hearing closer to the hearing date.

Staff Contact:

Nishith Trivedi, Orange County Planning Department
131 W. Margaret Lane, Suite 201
P.O. Box 8181
Hillsborough, NC 27278
E-mail: ntrivedi@orangecountync.gov Phone: (919) 245-2582

Website: http://www.orangecountync.gov/departments/planning_and_inspections/efland-buckhorn-mebane_access_management_plan/index.php



	Planning Area	Roads	Intersections
	City of Mebane	Analyzed Routes	Analyzed Improvements
	Mebane ETJ		
	County Boundary		

1 in = 900 feet
0 1,000 Feet

Orange County Planning and Inspections
Brian Carson (8/28/2018)

Source: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Swire, Esri (Thailand), NAVTEQ, © OpenStreetMap contributors, and the GIS User Community



What mode of travel do you use most often?

 Car Bike Transit Walk

How long is your commute?

 5 – 15 min 16 – 30 min 31 – 60 min > 1 hour

What roads do you use most often?

Do you support the analyzed street network?

 YesNo

If not, what street network do you suggest?

Do you support the analyzed street cross section?

 YesNo

If not, what street cross section do you suggest?

Any additional comments:



Efland-Buckhorn-Mebane
Access Management Plan

Community Meeting Sign-in

	Name	I live along...	Email	I heard about this meeting from...
Example	John & Jane Doe	US-70	John@att.net	Website, Email, Newsletter, Word of Mouth
1	Mary McMillian	315 Buckhorn Rd-Owner	jdm240@aol.com	letter
2	Bonnie Walton	sister	"	letter
3	Margaret McE	Bulls	margaretstephens43@gmail.com	
4	Julie Laws	Center St.	julielaws56@hotmail.com	letter
5	Charlie Marti	Hwy 70	mart4415@bellsouth.net	letter
6	Gary Allison		gallison@aol.com	Letter
7	Johnny Cates	WEST Twp Rd	CATESmill@gmail.com	letter
8	Joyce Clayton	2614 Mt. Wiling	rejoyce74@netd.net	letter
9	Fredde Wynn	7340 Old Country Lane Preston	fredde_wynn@hps.honda.com	letter
10	Bruce Simon	HOOP		letter
11	Billic Moore	Watson Rd.	Alsreen565.bmasmail	letter
12	Luvencia Moore	Watson Rd	-	letter
13	NADIA FEARRINGTON	Buckhorn Rd JTX	naolafearrington@me.com	letter
14	Gregory Jones	wife		letter
15	Nadegan Jones			letter



**Efland-Buckhorn-Mebane
Access Management Plan**

Community Meeting Sign-in

	Name	I live along...	Email	I heard about this meeting from...
Example	John & Jane Doe	US-70	John@att.net	Website, Email, Newsletter, Word of Mouth
1	Nancy B. Ashby	104 Paper Tree	Nashby1941@yahoo.com	
2	Robert Purcell	5526 US 70	21404805@aol.com	Newsletter
3	Kelly Gallagher	300 Center St	Kelly.Gallagher@gmail.com	-mail
4	Ed Sharpe	3907 West Ten	ed.sharpe@duke.edu	Newsletter - Mail
5	MARIE McADOO	4110 SANDERS RD, EFLAND, N.C.	marie.madoo311@gmail.com	
6	Bonnie Hauser	4301 SUGAR	bahauser@aol	face book
7	^{daughter of Jane Wilkins} Cindy Rayno	3110 Fieldstone, Meban	Cindy rayno@gmail.com	Newsletter
8	Bobby Cobb	Hwy 70 WEST	BOBBYCOBB83@gmail.com	NEWSLETTER
9	Arnee Tattersall	West 10	abtaller@gmail.com	email
10	LISA Andrews	Mt Willing	lisal66@hotmail.com	searching orange website
11	Lacy Andrews	Wallington Ct (Rock Quarry)		
12	Danny Wilson	Danny Dr. (Rock Quarry)	anitawilson6905@gmail.com	letter
13	Anita Wilson	Danny Dr	anitawilson6905@gmail.com	letter
14	Valene Curry	Mt. Willing	vcurry@orangecountync.gov	letter
15	Doug Brown	WEST TEN	douglarpms@earthlink.net	letter



Efland-Buckhorn-Mebane
Access Management Plan

Community Meeting Sign-in

	Name	I live along...	Email	I heard about this meeting from...
Example	John & Jane Doe	US-70	John@att.net	Website, Email, Newsletter, Word of Mouth
1	Brenda Allen	mattress Factory Rd		Letter
2	Maryann West	Buckhorn	mmba@mebke.net	Letter
3	LeVonne Kuttler	Buckhorn	LeVonnem@aol.com	word of mouth
4	Walter Bright			
5	Carolyn Pate	719 Buckhorn		
6	Wendy Williams	US 70	wwilliams@dom.edu	Letter
7	Benny Carr	Kenneth Trub	bcarr@nc.rr.com	
8	Dennis Graves	Buckhorn	dennisgraves-1@netzero.com	Letter
9	Donald Efland			Letter
10	Nancy Sandlin	85/40	ntsandlin@gmail.com	Letter
11	Rw. Justin Buss	Bayland Road Efland		Letter
12	Beau Abbott	US 70	beabbot317@tuc.com	word of mouth
13				
14				
15				



**Efland-Buckhorn-Mebane
Access Management Plan**

Community Meeting Sign-in

	Name	I live along...	Email	I heard about this meeting from...
Example	John & Jane Doe	US-70	John@att.net	Website, Email, Newsletter, Word of Mouth
1	JOE FERRINGTON	Buckhorn Rd		mail
2	Lisa Hall	Gym Rd	lnhall64@gmail.com alyson.gulassa@yahoo.com	mail
3	Alyson Gulassa	Collington Dr		mail
4	David Windham	Southern Dr.		county
5	Charles L. Windham	southern dr.	plumb@b2@outlook.com	county
6	Janet Harris	Preston Loop	janet.harris@volvo.com	mail
7	Kathy Coombs	1302 Ben Wilson Rd.	kathykeombs@hotmail.com	Mail
8	Ben Lloyd	21570	@12, 22, 2022 FANM 21930	
9	Steven & Karin Duggins	West Ten	Karind73@gmail.com	mail
10	Dora McAdoo		doral@gmail.com	mail
11	Aaron Giv		AARON.GIV@DURHAM.GOV	STAFF
12	John Douglas Sweeper			
13	Euler R Swenson			
14	John Bannon	Bushy Creek	JohnBannon13@gmail.com	email/mail
15	LARRY FORREST	WASHINGTON ST	LFORREST@SAYATHOOD	MAIL

L FORREST



**Efland-Buckhorn-Mebane
Access Management Plan**

Community Meeting Sign-in

	Name	I live along...	Email	I heard about this meeting from...
Example	John & Jane Doe	US-70	John@att.net	Website, Email, Newsletter, Word of Mouth
1	LEO ALLISON	Watson Rd	← lele2@mettel.net	
2	MARY ALLISON	Watson Rd	← lele2@mettel.net	
3	Jason Cates	West Ten Rd		letter Mail
4	GLORIA MARTIN	WEST TEN RD	G.MARTIN@METTEL.NET	MAIL
5	DENNIS MARTIN	WEST TEN RD	" "	MAIL
6	Jennifer Smith	US 70	metamorphosis.faces@gmail.com	mail
7	Amy Efland	US 70	meffland@centurylink.net	Mail
8	Marsha Efland	Brookhollow	mhuntefland@gmail.com	Mail
9	Rose Pinnix	Buckhorn	rdpinnix@gmail.com	mail
10	John Wagon	Mecklenburg		Mail
11	Jose Bocanegra	Buckhorn	jbocan674@gmail.com	mail
12	Dwayne Joseph Preston	Preston Loop	DWAYNE.GORDON@ORANGE.K12.NC.US	mail
13	Amy Hagan	Preston Loop	magiclelo@yahoo.com	neighbor
14	Carolyn Wilson	Ben Wilson Rd	cardynlizwilson@yahoo.com	mail
15				



**Efland-Buckhorn-Mebane
Access Management Plan**

Community Meeting Sign-in

	Name	I live along...	Email	I heard about this meeting from...
Example	Walter + Barb Booth	Wille Rd	bbooth@ec.nc.gov	Website, Email, Newsletter, Walter's Mouth
1	Dean Hunsicker	Lysander Lane	Hot mail: Andelickin@aon	11
2	Patricia Roberts	Richmond Rd	Patricia Roberts 77 gmail	Bonnie Hauser
3	Sam Garbo	BENWICK LAKE		HOA - Ashwick
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 - 15 min
- 16 - 30 min
- 31 - 60 min
- > 1 hour

What roads do you use most often?

70 / EFLAND CEDAR GROVE RD / MT. WILLING

Do you support the analyzed street network?

- Yes
- No

MOSTLY

If not, what street network do you suggest?

Do you support the analyzed street cross section?

- Yes
- No

TO MANY QUESTIONS

If not, what street cross section do you suggest?

EFLAND VILLAGE / CEDAR GROVE RD. / MT WILLING / 70

Any additional comments:

- 70/85 CONNECTOR - STUDY AND UPDATE
- EFLAND CEDAR GROVE INTERSECTION 70 - STUDY AND UPDATE
- EFLAND VILLAGE / MT. WILLING / 70 / EFLAND CEDAR GROVE RD.
↳ THE ENTIRE AREA NEEDS TO BE COORDINATED
IN AN EFFORT TO MAKE IT VIABLE AND USEFUL
- WHAT ABOUT PURSUING IKEA FOR THE 30 AC LOT
NOW THAT CARY WILL NOT HAVE IT. IKEA SEEMED INTERESTED
IN THIS REGION.



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 – 15 min
- 16 – 30 min
- 31 – 60 min
- > 1 hour

What roads do you use most often?

MS 70 - I40/85

Do you support the analyzed street network?

- Yes
- No

If not, what street network do you suggest?

still confused

Do you support the analyzed street cross section?

- Yes
- No

If not, what street cross section do you suggest?

still confused

Any additional comments:

No 4 way stop intersections*

Roundabouts!



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 – 15 min
- 16 – 30 min
- 31 – 60 min
- > 1 hour

What roads do you use most often?

Brookhollow, US-70, Efland-Cedar Grove, I-40/85, Mt. Willing

Do you support the analyzed street network?

- Yes
- No

If not, what street network do you suggest?

to many unknowns

Do you support the analyzed street cross section?

- Yes
- No

If not, what street cross section do you suggest?

to many unknowns

Any additional comments:



What mode of travel do you use most often?

- Car Bike
 Transit Walk

How long is your commute?

- 5 – 15 min 16 – 30 min
 31 – 60 min > 1 hour

What roads do you use most often?

US 70

Do you support the analyzed street network?

- Yes No

If not, what street network do you suggest?

Do you support the analyzed street cross section?

- Yes No

If not, what street cross section do you suggest?

Any additional comments:



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 - 15 min
- 16 - 30 min
- 31 - 60 min
- > 1 hour

What roads do you use most often?

Do you support the analyzed street network?

- Yes
- No

If not, what street network do you suggest?

focus on the TD connector not residential Mt Willing/Turner

Do you support the analyzed street cross section?

- Yes
- No

If not, what street cross section do you suggest?

Any additional comments:

I do not want to see more traffic flow along Mt Willing rd. or Turner. It is too residential. Traffic needs to be diverted from this area via the TD connector + the necessary additions that would be more logical in that area.

I am a homeowner on Mt Willing



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 – 15 min
- 16 – 30 min
- 31 – 60 min
- > 1 hour

What roads do you use most often?

West Ten / Buckhorn

Do you support the analyzed street network?

- Yes
- No

If not, what street network do you suggest?

Do you support the analyzed street cross section?

- Yes
- No

If no, what street cross section do you suggest?

Any additional comments:



What mode of travel do you use most often?

- Car Bike
 Transit Walk

How long is your commute?

- 5 – 15 min 16 – 30 min
 31 – 60 min > 1 hour

What roads do you use most often?

Do you support the analyzed street network?

- Yes No

If not, what street network do you suggest?

Do you support the analyzed street cross section?

- Yes No

If not, what street cross section do you suggest?

Any additional comments:



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 - 15 min
- 16 - 30 min
- 31 - 60 min
- > 1 hour

What roads do you use most often?

West Ten, Mt Willing, Efland Cedar Grove, Hwy 70, Interstate 40

Do you support the analyzed street network?

- Yes
- No
- Not Sure

If not, what street network do you suggest?

like to see proposed zoning

Do you support the analyzed street cross section?

- Yes
- No

If not, what street cross section do you suggest?

Any additional comments:

I would like to see what zoning to industry + residential



What mode of travel do you use most often?

- Car Bike
 Transit Walk

How long is your commute?

- 5 - 15 min 16 - 30 min
 31 - 60 min > 1 hour

What roads do you use most often?

Hwy 70, I-40/85

Do you support the analyzed street network?

- Yes No MAYBE

If not, what street network do you suggest?

UNSURE

Do you support the analyzed street cross section?

- Yes No UNSURE

If not, what street cross section do you suggest?

UNSURE

Any additional comments:

NOT ENOUGH INFORMATION
YET TO ASK INTELLIGENT
QUESTIONS



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 – 15 min
- 16 – 30 min
- 31 – 60 min
- > 1 hour

What roads do you use most often?

mattress FACTORY, West Ten, Rock Quarry, Bowman Rd.

Do you support the analyzed street network?

- Yes
- No

If not, what street network do you suggest?

Do you support the analyzed street cross section?

- Yes
- No

If not, what street cross section do you suggest?

Any additional comments:

I own Property At Intersection mattress FACTORY
Industrial Drive - ALSO own the property from candy factory
the drive to Rock Quarry

Judith Whyma
336-516-4019



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 - 15 min
- 16 - 30 min
- 31 - 50 min
- > 1 hour

What roads do you use most often?

Interstate and 70

Do you support the analyzed street network?

- Yes
- No

If not, what street network do you suggest?

Do you support the analyzed street cross section?

- Yes
- No

If not, what street cross section do you suggest?

Any additional comments:

*Please develop this part of
 Orange County, nothing changes. Orange
 County is very slow or no development
 at all.*

(Buckhorn Road)



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 – 15 min
- 16 – 30 min
- 31 – 60 min
- > 1 hour

What roads do you use most often?

Berland Road, Orange Blvd, Mt Willing & Buckhorn

Do you support the analyzed street network?

- Yes
- No

If not, what street network do you suggest?

Do you support the analyzed street cross section?

- Yes
- No

If not, what street cross section do you suggest?

Any additional comments:



What mode of travel do you use most often?

- Car Bike
 Transit Walk

How long is your commute?

- 5 – 15 min 16 – 30 min
 31 – 60 min > 1 hour

What roads do you use most often?

West 10, buckham led

Do you support the analyzed street network?

- Yes No

If not, what street network do you suggest?

Do you support the analyzed street cross section?

- Yes No

If not, what street cross section do you suggest?

Any additional comments:



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 – 15 min
- 16 – 30 min
- 31 – 60 min
- > 1 hour

What roads do you use most often?

West Ten; Buckhorn

Do you support the analyzed street network?

- Yes
- No

If not, what street network do you suggest?

Do you support the analyzed street cross section?

- Yes
- No

If not, what street cross section do you suggest?

Any additional comments:



What mode of travel do you use most often?

- Car
- Bike
- Transit
- Walk

How long is your commute?

- 5 - 15 min
- 16 - 30 min
- 31 - 60 min
- > 1 hour

What roads do you use most often?

Center St, Turner St, Mt. Willing

Do you support the analyzed street network?

- Yes
- No

If not, what street network do you suggest?

I support full turning movements at the 70/85 Connector. I live on Center Street in Efland and do not support extending Turner St.

Do you support the analyzed street cross section?

- Yes
- No

If not, what street cross section do you suggest?

Any additional comments:

I agree with a meeting attendee today who said neighborhoods should be preserved. Being able to turn right from 70 onto the connector would preserve my Center St. neighborhood.

From: Wendy Williams <wwilliams@elon.edu>
Sent: Tuesday, August 28, 2018 10:26 PM
To: Nishith Trivedi
Subject: EBM access Management Plan

I wanted to give feedback after attending the community meeting tonight. I live at 6131 US 70 just east of the intersection of Buckhorn Road and US 70. I'm in strong favor of a potential bridge over the railroad tracks that would connect with Frazier Road. I can see where that would provide business access.

For me personally, the intersection at Buckhorn and 70 is really dangerous. It needs a stoplight because two northbound lanes at the north end of Buckhorn have been unofficially created. One turns right and one turns left onto 70 which leaves neither lane with good visibility. Tractor trailers have a hard time turning at that intersection and they are frequent because of avoiding the weigh station.

Even though I think the current intersection needs a stoplight, I can definitely see traffic backing up at the at the stoplights on 70 creating a headache for people accessing Shambley road and my driveway.

I think rather than spending money to widen Buckhorn all the way to US 70, hopefully the Frazier bridge can get fast-tracked for funding. The bridge project would reduce accidents at the intersection of Buckhorn Road and 70 as well as the accidents at the intersection of Frazier Road and 70. And, another huge bonus for residents is that maybe the train horns wouldn't need to blow with a bridge in place. Emergency vehicles, that frequently need to get from US 70 to the interstate could greatly benefit from the Frazier Bridge as well.

I also think the Mace Road extension is a great idea. Although I could see where that could negatively affect the way of life of the community living on Mace Road.

There are quite a fair amount of people who walk along the road in front of our house. They have always walked by to get to the nearby convenience store, but now they are walking to the Dollar General as well. One lady even rides her motorized wheelchair along the shoulder of 70 to get to the store. Maybe sidewalks could be incorporated at some point.

I also think that the time is near for adding stoplights at the on and off ramps of Buckhorn Road and I-85/I-40.

Thanks for asking for community input!

Wendy Williams

From: Nishith Trivedi
Sent: Wednesday, August 29, 2018 11:16 AM
To: 'Wendy Williams'
Subject: RE: EBM access Management Plan

Thank you very much for these comments. We have included them in the material we are putting in preparing the draft plan. Please let us know if you have any more concerns. Look forward to hearing from you.

Thank you.

Sincerely,
Nishith Trivedi

From: Carl W <cspan@epbfi.com>
Sent: Saturday, August 25, 2018 4:22 PM
To: Nishith Trivedi
Subject: Tuesday's meeting

re: Buckhorn / Efland Development Plan Meeting

Hi Nishith,

Thanks for calling the other day. Will there be a recording or transcript made of the meeting Tuesday, so that if I cannot make the trip, I can still learn about other questions that were asked, and the answers given?

I have a question - I did not notice in the 62 page PDF where it discusses compensation to landowners for the acreage lost to the proposed road, right of way, etc. What can you tell me about how you expect that to play out?

Thank you.

Sincerely,

Carl Westman, landowner
Chattanooga, TN

From: Nishith Trivedi
Sent: Monday, August 27, 2018 7:41 AM
To: 'Carl W'
Subject: RE: Tuesday's meeting

Mr. Westman,

It was great speaking with you. Thank you very much for your comments. No, there will not be a transcript or recording. I will post the presentation on our website after the meeting along with the draft plan after it is complete. All comments from the meeting, phone, email etc. will be included in the draft along with all Q and A.

That is a great question and we will be addressing that at the meeting. Right now please rest assured there is no taking of land, there are no plans for Orange County nor the state to take land for the possibility of future roads so there is no compensation. The plan is simply for the preparation of future development to ensure the transportation network is addressed. Developers may be required to dedicate part of their development for the public right of way so that they and others can access their property.

We will address this more at the meeting tomorrow and include this discussion in the draft plan. Thank you for the question and please let me know should you have any others.

Sincerely,
Nishith Trivedi

Douglas Efland
Donald Efland
PO Box 246
Efland, NC 27243

September 27, 2018

Mr. Nishith Trivedi
Transportation Planner
Orange County Planning and Inspections Department
Hillsborough, NC 27278

We receive a notification letter from the Orange County Planning Department and wish to address the issue of the long-range planning for the EBM-AMP area. We also attended the public information session at Gravelly Hill Middle School concerning this subject. As it was presented, we would request that the western most proposed blue dot for a new intersection over the railroad tracks in the Efland area located at the curve where Forrest Ave. transitions to Efland Cedar Grove Road, and also including a portion of Southern Drive, be eliminated from the EBM-AMP. The logic behind our request is because there is no realistic conceivable way to make an overpass or underpass for crossing the railroad tracks at this location for the following reasons:

For an overpass, there is not enough distance from Hwy 70 to this location to accommodate the steep grade that would be required. The railroad track at this location is already 15 to 25 feet above the roadbed level on the Efland Cedar Grove Road side. NCDOT requirements for minimum vertical clearance of a road over a Railroad is 23 ½ feet. This would require a combined vertical earthen buildup and bridge above the current Efland Cedar Grove Road roadbed of approximately 40 to 50 feet (for comparison minimum Interstate vertical clearance is 16 to 17 feet). Even if it was realistic to think there was enough distance from Hwy 70 to accommodate the grade requirement for this new overpass the impact on adjacent landowners would be extreme. Efland Presbyterian Church would most likely lose their parking area that includes handicap parking. The homeowners on the western side of the Efland Cedar Grove Road section of the new required slope would lose all access to their homes and would most likely face eminent domain. Forrest Avenue and Southern Drive would become dead end roads.

The topography does not lend itself to an underpass either. Severe excavation would have to take place on both sides of the railroad and would include the associated problems mentioned with the overpass issue.

The idea of a new intersection with a level crossing is also unrealistic. It offers no advantage to the current roadway. It would only create parallel roads to the current roads and introduce an additional intersection to the current traffic flow. It also would require a vertical buildup of Efland Cedar Grove Road and result in making dead end roads of Forrest Avenue and Southern Drive and eliminate western homeowners' access to their houses.

It is easy to place a blue dot in this location and hold it out as an area for future study, but it has implications for any landowner surrounding it. This area is one of the few locations in the "Efland Area Commercial Industrial Node" that has both water and sewer. To designate it an area of "Future Analysis Required" would have negative implications for any potential buyer because no one in the Planning department would be able to define what the county would require for regulatory compliance or right-of-way designation. As such, it would eliminate anyone's interest in the area for purchase or development.

We currently do not know of any long-range plans by either the NCDOT or Southern Railroad for any new intersection in the Efland area, and at the public information forum it was expressed that the County was not aware of any plans either. We also have heard in the past about Southern Railroads unwillingness to share information or co-ordinate with the county. We first heard this idea of an over-under-pass mentioned in 1978, which was 40 years ago. It seems to reappear every few years as wishful thinking. For anyone who stands adjacent to the curve on Forrest Avenue and looks at the height required of a railroad overpass, and the distance to Hwy 70, it becomes apparent that the idea is not realistic and does not require "Future Analysis". For these reasons we think Orange County's resources would be much better allocated to serve the area by removing the western blue dot on EBM-AMP in Efland and developing a plan with NCDOT to connect Hwy70 to the interstate in both directions at the Hwy 70 Connector. This would also eliminate any required co-ordination with Southern Railroad for a new intersection.

Lastly: I (Doug Efland) personally sat through an extended series of monthly meetings with the Planning Department during the development of separate zoning overlays for the north side of the railroad tracks vs the south side of the railroad tracks in Efland. The stated purpose of the two separate zoning overlays were to preserve the village character on the north side while the county was constructing infrastructure on the south side to accommodate development along the interstate corridor. During this process we worked together as a citizen group with the Planning Department, and wrestled with different height restrictions for buildings and signs on the north side vs the south side among other things. To even contemplate for "Future Analysis" the creation of a colossal geographic feature taller than any structures that would be allowable, and then placed in the heart of the Village of Efland negates any planning the County has previously put in place. This would permanently change the character of Efland.

To reiterate, we think there should be increased thought about a two-way connection on the west side of the Hwy 70 connector and the removal of any verbiage or designation for consideration of any railroad over-under-pass from the Village of Efland's portion of the updated EBM-AMP. We appreciate your time spent with us and your consideration of our concerns.

Sincerely,

Douglas Efland

Donald Efland

To: Craig Benedict; Tom Altieri; Abigaile Pittman
Subject: RE: Questions about "DRAFT - Efland-Buckhorn-Mebane Access Management Plan"

From: Kim Livingston
Sent: Tuesday, October 09, 2018 10:09 AM
To: Barry Jacobs (External); David Stancil
Cc: Craig Benedict
Subject: RE: Questions about "DRAFT - Efland-Buckhorn-Mebane Access Management Plan"

Commissioner Jacobs,

I have reviewed the draft Efland-Buckhorn-Mebane Access Management Plan and the noted endangered species in the report. The only reference to endangered species are in the "Environmental Features Map, Figure 3." The environmental consultants identified some tributaries to Haw Creek as having endangered species; however, the NC Natural Heritage Program does not have records of endangered species in these tributaries or in the entire study area.

I will need to consult with Planning to determine if endangered species were found in the Haw Creek tributaries. If so, I can work with Planning and the NC Natural Heritage Program to list these species within their database and determine the best protection strategies.

Thank you for bringing this to my attention. I will inquire and be back in touch.

Kim Livingston, Land Conservation Manager
Orange County
Department of Environment, Agriculture, Parks and Recreation

306A Revere Rd (PO Box 8181) Hillsborough NC 27278
(919) 245-2514 | www.orangecountync.gov/DEAPR

To: Craig Benedict; Tom Altieri; Abigaile Pittman
Subject: RE: Questions about "DRAFT - Efland-Buckhorn-Mebane Access Management Plan"

-----Forwarded Message-----

From: Catherine Matthews

Sent: Oct 5, 2018 1:27 PM

To: ocbocc@orangecountync.gov

Subject: Questions about "DRAFT - Efland-Buckhorn-Mebane Access Management Plan"

Hello Commissioners,

I have just read the "DRAFT - Efland-Buckhorn-Mebane Access Management Plan" and I have questions about the endangered species that were noted in the report.

First, what are the endangered species as I did not see them noted in text or on the environmental features map.

Second, I could not find any statements about plans to protect these species.

Third, I know that we have a number of species of concern in the area covered by this report. What steps are planned to attend to for example the decreasing numbers of our state reptile, the eastern box turtle, or one of our state amphibians, the marbled salamander, which are both found here.

It seems like this would be an ideal time for the commission to consider installing safe road crossings for these species and others.

Thank you,

Dr. Catherine E. Matthews
Professor Emerita, K-12 Science Education & Environmental Education
Department of Teacher Education & Higher Education, UNCG

October 3, 2018 Planning Board Meeting

**ORANGE COUNTY PLANNING DEPARTMENT
131 W. MARGARET LANE, SUITE 201
HILLSBOROUGH, NORTH CAROLINA 27278**



**AGENDA
ORANGE COUNTY PLANNING BOARD**

NOTE CHANGE FROM USUAL LOCATION!!

**WHITTED BUILDING
300 WEST TRYON STREET, 2ND FLOOR
HILLSBOROUGH, NORTH CAROLINA 27278**

Wednesday, October 3, 2018

Regular Meeting – 7:00 pm

<u>No.</u>	<u>Page(s)</u>	<u>Agenda Item</u>
7.	13 - 152	EFLAND-BUCKHORN-MEBANE ACCESS MANAGEMENT PLAN - To make a recommendation to the BOCC on updates to the Efland-Buckhorn-Mebane Access Management Plan. Presenter: Nish Trivedi, Transportation Planner
8.		ADJOURNMENT

1

MEETING SIGN-IN SHEET	
Meeting: Orange County Planning Board	Meeting Date: October 3, 2018
Facilitator: Orange County Planning Staff	Place/Room: Whitted Building, Room 230

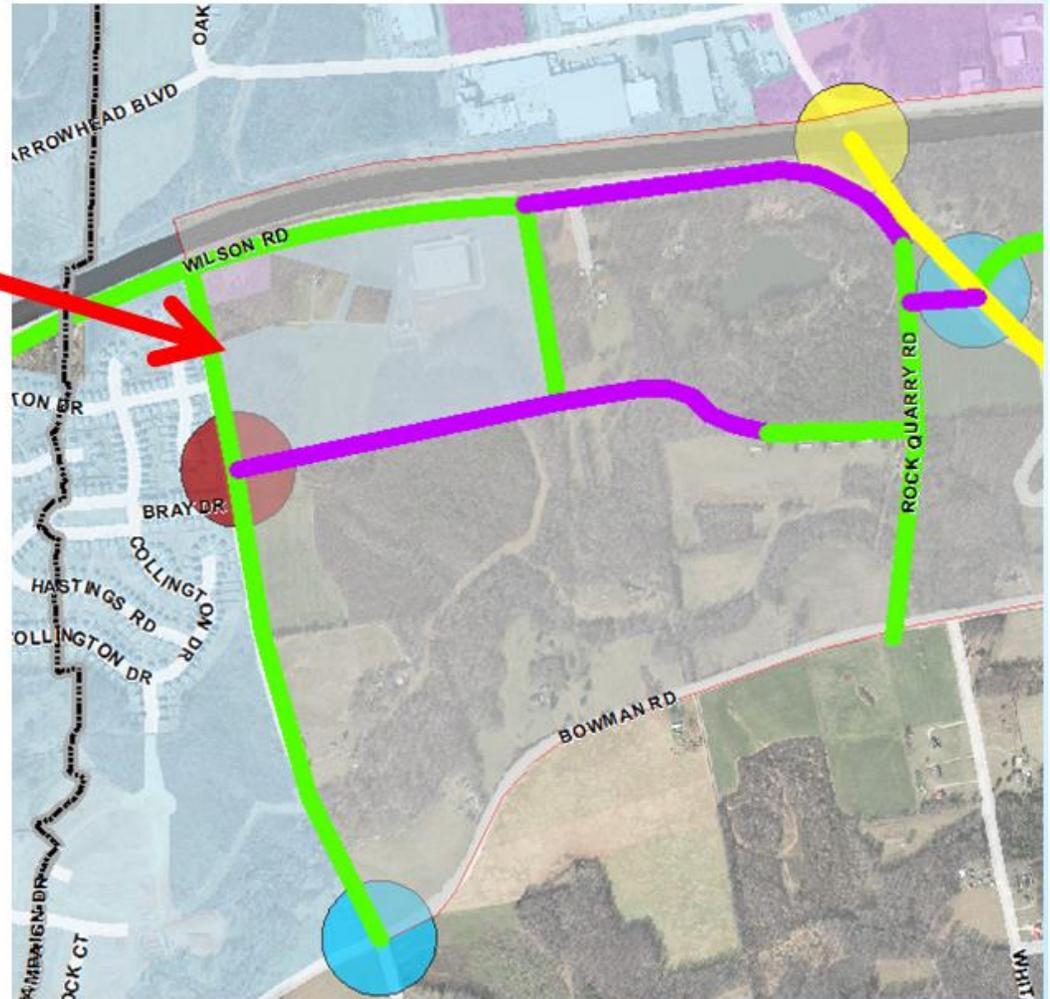
Name	Contact Info	Address
Wynell Smery	(336) 516-4677	1774 Mebane, Cab Rd
Brenda Allen	(919) 563-5208	407 E. W. Pherson Dr. Mebane
Richard & Brenda Bright	336-263-5121	405 W. Jackson St. Mebane
Carolyn Hicks	919 563 3478	1003 Buckhorn Rd ^{Mebane NC}
Walter Joe Bright	919 336 459-6302	601 Ponderosa Ln. Meban N.C.
JoAnn Hoyer	984-364-0921	1000 Bessy Cook Rd Efland
Amanda High	919-605-1439	5612 Preston Loop, Mebane
Steven Romarge	919-740-6323	321 Mt. Willing Rd. Efland
Tawon Whitfield	336-599-4439	6962 Burlington Rd ^{Hurdle Mills NC} 27541
Margie	336-516-2001	6334 Rabbit Run, Meban
Sony Jones	336-269-6550	6334 RABBIT RUN LN Meban
Kristen Marbais	919-414-0489	118 Efland Cedar Grove Rd. Efland
Jay Castle	919-815-4556	3507 W. Lion Efland Rd, Efland
Robert Riley, Jr.	919-906-9468	4111 MARVIN LANE 'EFLAND
Carolyn Wilson	919-619-8422	P.O. Box 1280 Hillsborough, NC 27278
Cindy Payne	919-637-3476	P.O. Box 422 Mebane, NC 27302
Athene & Watson	919-928-4486	517 Watson Rd, Efland NC 27243
Robert E. Jones	(919) 563-5779	6008 E. Washington St. Mebane
Melvin Bell	919) 504-0585	Mebane NC 27302

MEETING SIGN-IN SHEET			
Meeting:	Orange County Planning Board	Meeting Date:	October 3, 2018
Facilitator:	Orange County Planning Staff	Place/Room:	Whitted Building, Room 230

Name	Contact Info	Address
Barry Parker	330 1260-5267	PO Box 818, Mebane NC 27302
Cheryl Parker	"	"
Nancy B. Schlegel	919 304-5518	104 Pepper Tree Dr. Mebane NC
Debra Elmore	919 573-1607	1015 Buckhorn Rd Mebane, NC
Julie Laws	919-632-6461	206 Center St., Efland, NC
Peggie Murray	919 219 4273	3004 Gym Rd Efland
Jan Forest Brooks	919 906 6157	1725 E Scarlett Mtnd Hills
Cy Stober	919 304.9211	CITY OF MEBANE PLANNING 102 S. FIFTH ST., MEBANE
DOUG EFLAND	919-819-5366	PO BOX 98 EFLAND NC
Beverly Stokes	202 658 8619	429 Gaines Chapel Rd Efland 27243
Nikki Mayer	919 672-5996	5615 Preston Loop, Mebane NC 27302
Laura Mayer	919-423-8597	5615 Preston Loop, Mebane 27302
NATALIE GIVANS	919-337-0108	118 Tadworth Ct, Mebane 27302
Marcella Sweeney	919-337-0108	118 Tadworth Ct Mebane 27302
Gabriel Santander	919 308 84-16	915 Buckhorn rd, Mebane
Phil Holland	919-210-4305	7515 Bowman Rd Mebane
Audie J Carter	336-263-0888	5601 Preston Loop Rd Mebane
P		

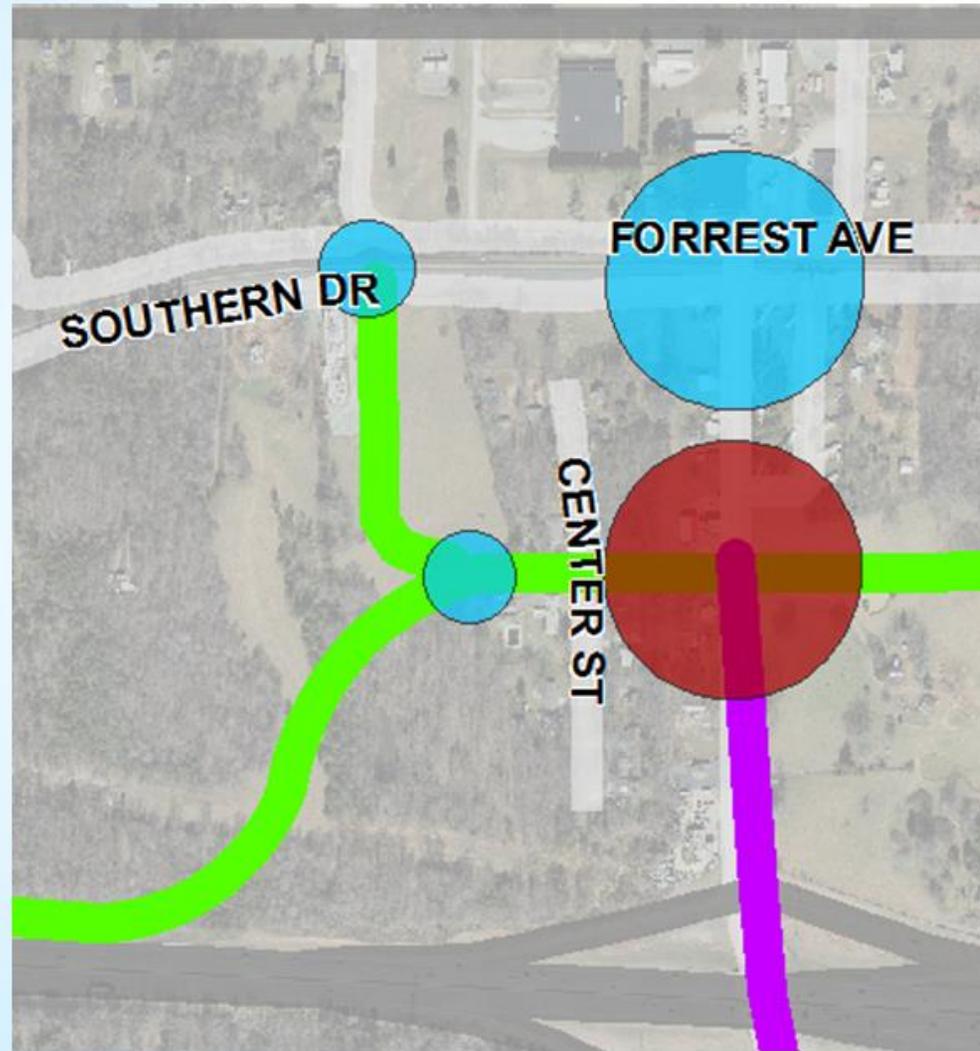
MEETING SIGN-IN SHEET**Meeting:** Orange County Planning Board**Meeting Date:** October 3, 2018**Facilitator:** Orange County Planning Staff**Place/Room:** Whitted Building, Room 230

Name	Contact Info	Address
Fatima Hernandez	(919) 923-9797	512 Hurricane Alley Chapel Hill NC, 27514
Octavio Hernandez	(919) 697-3351	
Dora Wilkerson	877 336-578-3977	
LeVonne Swenson Miller	336-202-1257	719 Buckhorn Rd Mebane, NC 27302
Patsy Walker	919-563-5841	325 Buckhorn Rd
Paul Fredrick	919-914-0563	6510 Hwy 70
Ben Lloyd	919 880-5680	2701 2701 US Hwy 70 W FFA
Crazy Lloyd	919 923-3488	303 US Hwy 70 W FFA
Dillon Holland	919-830-3865	7515 Bowman Rd Mebane NC
Corey Walton	919-452-0892	5659 Preston Loop Mebane, NC 27302



Alternative East-West access

- Protects environmental resources and reduces stream crossings
- T-Intersections and S curve moved
- Road to cemetery removed
- Reduces and improves future intersections along West Ten Road
- North access connects to existing Rock Quarry Road



Efland-Cedar Grove Road at Railroad

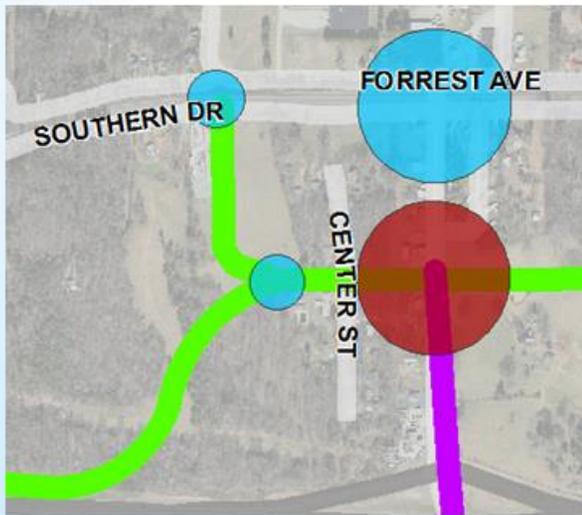
- No overpass or underpass planned, proposed, designed, etc.
- Straightens Efland-Cedar Grove Road
- No specific recommendations are made for railroad intersection(s)
- Roundabout could be considered for 3 way intersection west of Center St.



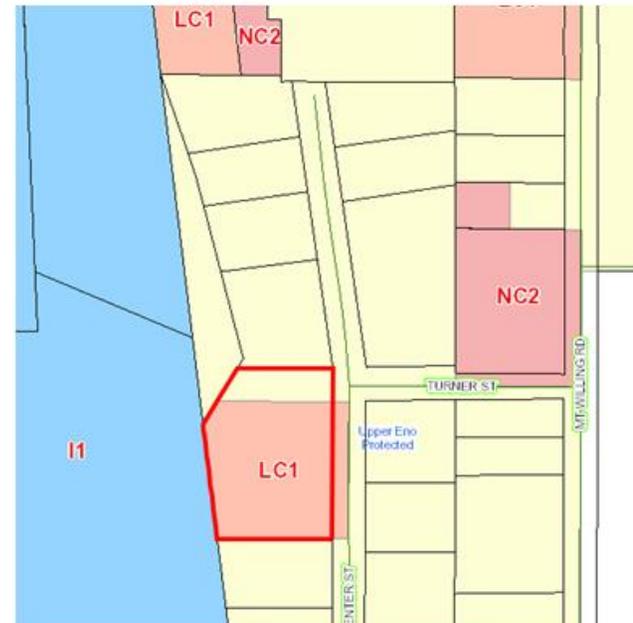
2011 E-B-M
AMP

Turner Street Extension – No Change

- Carried forward from 2011 plan
- Provide access to land locked parcels
- Zoned LC-1 – must connect to Arterial or Collector per UDO
 - Center St. is Local
- Right of way will be requested when properties are developed.



2018 Draft
E-B-M AMP



October 17, 2018 OUTBoard Meeting**AGENDA**

**Orange Unified Transportation Board
October 17, 2018
6:30 p.m.**

You can bring your laptops/tablets if you would like to use them.

**Conference Room 004 (Lower Floor) Orange County West Campus
131 West Margaret Lane, Hillsborough**

- 17 4.b. Efland-Buckhorn-Mebane Access Management Plan Update (Nish Trivedi) – To make a recommendation on the Efland-Buckhorn-Mebane Access Management Plan (E-B-M AMP).

OUTBoard Action: Recommend that the BOCC approve the E-B-M AMP.

Orange County OUTBoard Meeting 10/17/18

NAME	Address
Betty Rogers for Dellie Doby	3101 Buckhorn Rd, Efland, NC 27243
Brian & Bonnie Myers	5213 US 70, Mebane, NC 27302
Jenifer R. Terrell	3008 E. Washington Ext. Mebane NC 27302
ANTHONY O. CORBETT	104 FRAZIER RD MEBANE, NC 27302
Mai Nguyen & Huong Nguyen	"(919)601-3245"
Octavio Hernandez Lasso	512 Hurricane Aly Chapel Hill NC 27514
Dana Richardson	116 Bonaparte Dr. Hbores NC
Jolanda Williams	4005 W. Ten Rd Efland, NC 27243
April M. Whitted	125 W. Union St. Hillsborough NC 27302
By Stober	CITY OF MEBANE, 106 E. WASHINGTON ST., MEBANE, NC 27302
Katie Marbeis	118 Efland Cedar Grove Rd, Efland, NC
Richard & Brenda Bright	405 W. Jackson St Mebane N.C 27302
Robert Jones	6008 E. Washington St. Mebane, N.C. 27302
Knox Efland	PO Box 291 (2411 Halls Mill Rd.) Efland, NC 27243

Questions and Answers

The following questions and answers are paraphrased as the meeting was not recorded.

Question: Will any of the current roads be removed?

Answer: No

Question: So all existing roads will stay?

Answer: Yes

Question: What are you planning around the Preston Loop area?

Answer: Nothing in the subdivision. There will be a 100' buffer between the residential area and the surrounding large parcels should future development occur. We also want to make sure a road network through that development will be sufficient to address the increased traffic brought on by that new development.

Question: Can you tell us about the sewer and water infrastructure north of I-85 and Buckhorn Road mainly for several residents there that are not tied to any lines even though we are supposed to?

Answer: There is an agreement in place for that area's connection to Mebane's water and sewer.

Question: What about US-70? What are the findings along that road and are there any recommendations for it?

Answer: While there are no findings in the 2017 Transportation Study, we has staff will be studying this corridor more in determining what is best needed to ensure safe access along this route. It has been identified by NCDOT and DCHC MPO as a Strategic Freight Corridor. There are several intersections identified by staff that may require improvements to address the increasing traffic especially around Efland-Cedar Grove Road, I-85 connector, and Buckhorn Road. The map will be updated as more information is collected and appropriate access management solution is determined.

Question: What is actually going to develop in this area?

Answer: The 2017 Transportation Study, economic development nature of the area and an ever expanding water and sewer services have primed this area for all manner of residential and non-residential growth. The 2017 Transportation Study documents future residential, commercial, industrial, retail, restaurants, business parks and warehouses all along 18 different sections of the area. Future land use designations allow for commercial-industrial transition, economic development transition, agriculture-residential, and 10-year transition.

Question: When will all these roads occur?

Answer: As development occurs. There is no horizon or set year when this transportation network will be realized. Even since the 2011 E-B-M AMP, only one road, the one to Morinaga, has actually been constructed.

Question: Why do you have a road cutting through the residents along Center Street?

Answer: This is part of the planned Turner Street which calls for a 50' right of way and extends it Ben Johnston Road. It is the current right of way still in existence passed on from the original owner. We are studying how to address the growing traffic in the area; especially should the large property east of the neighborhood be fully developed.

Question: When will Mebane expand into this area with all its growth?

Answer: The western portion of the planning area, to Buckhorn road, is seen as how far the city will grow. However, the city cannot annex the area on its own. Developers and property owners must petition to annex into the city due to changes in state law.

Efland-Buckhorn-Mebane Access Management Plan

Frequently Asked Questions, Public Comments and Responses

#	Description	Source	Response
1	The City requests the removal of both north-south (N-S) roads between Ben Wilson and Rock Quarry Roads, as the Volkert study shows environmental and cultural site conflicts with them both	City of Mebane	Planning Director Recommended approving this request. Planning Board and OUTBoard approved Planning Director's Recommendation.
2	The City requests the relocation of the east-west (E-W) road between Ben Wilson and Rock Quarry Roads so that it connects Bray Drive and Danny Drive in order to decrease stream crossings		
3	The City prefers that the new intersection on West Ten Road between the intersections of Rock Quarry and Bowman Roads be avoided – is it possible to use Old Country Lane as a E-W connection and improve the existing three-way intersection with Rock Quarry and West Ten Roads? The City will await any further comment on this intersection until traffic projection concerns can be resolved – they may show the need for this proposed intersection		
4	The City would like to consider another route between West Ten Road and Buckhorn Road that reduces stream crossings and affects (again, the City awaits data discrepancy resolution or demonstration of limited access). The City believes that an alternate route could provide a similar transportation value with less concerns		
5	the City of Mebane shares Orange County's goal of developing the Efland-Buckhorn-Mebane study area for economic development, at least within the geographic realm of the City's future growth area.		Acknowledged and appreciated

#	Description	Source	Response
6	<p>The projected traffic volume shown in the Volkert study differs with the projections of the Transportation Demand Model (TDM) maintained and operated by the Piedmont Authority for Regional Transportation and the Triangle Regional Model (TRM) operated by Triangle J Council Of Governments. The City of Mebane wants to ensure that new roads in its future growth area are warranted due to concerns about projected levels of service and/or limited access. The information that has been provided to date does not provide justification of either. Once the City and County agree upon traffic volume projections, declining LOS for (some) roads may be demonstrated, warranting road improvements and/or the need for new routes.</p>	<p>City of Mebane</p>	<p>Current and future traffic volume (Average Annual Daily Traffic) is determined by multiple sources. The Travel Demand Models (TDM) in Orange County are administered by different agencies, using different socioeconomic inputs, are conducted independent of one another, and produces results ending at different horizon years. These models also differ from NCDOT's own statewide TDM. Here is a summary of the various TDMs that illustrate future traffic in Orange County and the E-B-M AMP area.</p> <ul style="list-style-type: none"> * Piedmont Triad Regional Model (PTRMv4.2 – 2013 Base Year / 2040 Design Year). The PTRMv4.2 is the travel demand model officially adopted by BGMPO and other agencies for long-range transportation planning. * Triangle Regional Model (TRMv6 – 2013 Base Year / 2045 Design Year). As of February 2018, TRMv6 is the official travel demand model used by DCHC MPO and CAMPO and other agencies. * NC Statewide Travel Model (NCSTM – 2015 Base Year / 2040 Design Year). The NC Statewide Travel Model covers the entire state of NC, although at a highly aggregated scale. <p>Orange County continues working with local jurisdictions in coordinating updates to both TDM and TRM. While there are lots of discrepancies between the different models, they all say the same thing: Traffic will continue to increase. The only difference is in the severity of the increase. The plan is designed to address the constant increasing nature of the traffic in the area.</p>
7	<p>What is the railroad doing at Efland-Cedar Grove Road, will there be an overpass?</p>	<p>Public Conversation</p>	<p>Inquired with NCDOT about any plan, projects, studies, etc. NCDOT requests Orange County conduct a Feasibility Study through the MPO and determine the best solutions necessary to address increasing vehicle and freight traffic along the railroad corridor in Efland.</p>
8	<p>We are trying to sell our property, the circle at Efland-Cedar Grove Road and the railroad may scare of potential buyers.</p>		

Efland-Buckhorn-Mebane Access Management Plan

#	Description	Source	Response	
9	The intersection at Turner extension and Efland-Cedar Grove Road would better be suited with a roundabout rather than a T-intersection. If Efland-Cedar Grove Road were to connect to Turner Street, it should curve into it allowing traffic to flow, similar to the other street curving into it.	Public Conversation	Inquired with NCDOT about any plan, projects, studies, etc. NCDOT requests Orange County conduct a Feasibility Study through the MPO and determine the best solutions necessary to address increasing vehicle and freight traffic along the railroad corridor in Efland.	
10	Will you take my property for these roads, will you compensate me for roads going through my property, will the County condemn my property for these roads?	August 28, 2018 Community Meeting Gravelly Hill Middle School	No. This is an unfunded Plan. Right-of-way dedication is to be obtained through the development review process. The plan does not seek funding to buy property for these roads nor does it seek any authorization take any property for them. The County is not in the road making business. This plan is a prerequisite necessary for legal standing so that the County may request property owners who seek to make changes to their property and submit a development application to dedicate some land for the public if necessary should a road be planned for their area.	
11	Will County build these roads? When will these roads be built?			
12	Will any of the current roads be removed?			No
13	So all existing roads will stay?			Yes
14	What are you planning around the Preston Loop area?			
15	Can you tell us about the sewer and water infrastructure north of I-85 and Buckhorn Road mainly for several residents there that are not tied to any lines even though they should be?	There is an agreement in place for that area's connection to Mebane's water and sewer.		

#	Description	Source	Response
16	What about US-70? What are the findings along that road and are there any recommendations for it?		While there are no findings in the 2017 Transportation Study, staff will be studying this corridor more in determining what is best needed to ensure safe access along this route. It has been identified by NCDOT and DCHC MPO as a Strategic Freight Corridor. There are several intersections identified by staff that may require improvements to address the increasing traffic especially around Efland-Cedar Grove Road, I-85 connector, and Buckhorn Road. The map will be updated as more information is collected and if a more appropriate access management solution is determined.
17	What is actually going to develop in this area?	August 28, 2018 Community Meeting Gravelly Hill Middle School	The 2017 Transportation Study, economic development nature of the area and expanding water and sewer services have primed this area for higher density residential and non-residential growth. The 2017 Transportation Study documents future residential, commercial, industrial, retail, restaurants, business parks and warehouses all along 18 different sections of the area. Future land use designations allow for commercial-industrial transition, economic development transition, agriculture-residential, and 10-year transition.
18	When will all these roads occur?		As development occurs. There is no horizon or set year when this transportation network will be realized. Since the 2011 E-B-M AMP, only one road, the one to Morinaga, has actually been constructed.
19	Why do you have a road cutting through the residents along Center Street?		This is part of the planned Turner Street which calls for a 50' right of way and extends it Ben Johnston Road. It is the current right of way still in existence passed on from the original owner. We are studying how to address the growing traffic in the area; especially if the large property to the east is fully developed.

#	Description	Source	Response
20	When will Mebane expand into this area with all its growth?		The western portion of the planning area, to Buckhorn road, is seen as how far the city will grow. However, the city cannot annex the area on its own. Developers and property owners must petition to annex into the city due to changes in state law.
21	What is the traffic in this area going to be like in the future and how was it determined?		The 2017 Transportation Study used the POD analysis to determine how much traffic would be generated (Table 1 p. 13). These values "were added to the future 2025 AADTs of the existing roadway network based on the proposed access points." (p.22). The results are presented in Figure 10 p. 24 of the 2017 Transportation Study.
22	70/85 Connector - Study and update		The 2017 Transportation Study provides some recommendations at this intersection.
23	Not enough information to ask intelligent question		The draft plan and 2017 Transportation Study goes into greater detail.
24	Efland Cedar Grove Intersection 70 - Study and update		
25	Efland Village/Mt. Willing/70/Efland Cedar Grove Road The entire area needs to be coordinated in an effort to make it viable		NCDOT was contacted, requesting their stand on any improvements along Efland Cedar Grove, Mt. Willing, and Railroad
26	What about pursuing IKEA for the 80 Acre lot now that Cary will not have it. IKEA seemed interested in this region.	Survey	IKEA is no longer interested in this region. They pulled out of Cary as of May 2018 (The News Observer), after they got their approval.
27	No four way stop intersections, Roundabouts!		Acknowledged and appreciated
28	I own property at intersection Mattress Factory Road and Industrial Drive. Also own property from candy factory the drive to Rock Quarry		Acknowledged and appreciated
29	I would like to see what zoning to industrial and residential		Orange County's Zoning Map is available to the public and published online at https://gis.orangecountync.gov:8443/orangeNCGIS/zoning.htm
30	Please develop this part of Orange County (Buckhorn Road), nothing changes. Orange County is very slow or no development at all.		We are conducting this planning exercise in an effort to address future development anticipated in the area.

Efland-Buckhorn-Mebane Access Management Plan

#	Description	Source	Response
31	I do not want to see more traffic flow along Mt. Willing road or Turner. It is too residential. Traffic needs to be deviated from this area via the 70 connector and the necessary additions that would be more local in that area. I am a homeowner on Mt. Willing.	Survey	Traffic will continue to increase throughout the planning area as development continues to occur, especially along those roads providing direct access to the I-40/I-85 interchange as Mt. Willing does. Mt. Willing road is minor collector road (NCDOT) and is used by commuters and trucks traveling north and south from Efland-Cedar Grove Road. It provides more immediate access than US-70 connector. Plan recommends more study be done at railroad crossings in Efland to address the constant increasing traffic.
32	I support full turning movements at the 70/85 connector. I live on Center Street in Efland and do not support extending Turner Street		Orange County's original adopted 2011 Efland-Buckhorn-Mebane Access Management Plan included the Turner Street extension which was based existing right-of-way, zoning, future land use map, need to provide access to land locked parcels, etc... all serving as bases to carry forward the originally adopted extension into the new updated plan.
33	I agree with a meeting attendee today who said neighborhoods should be preserved. Being able to turn right from 70 onto the connector should preserve my Center Street neighborhood.		