

**ZONING MAP AMENDMENT
BOONE COUNTY PLANNING COMMISSION**

R E C E I V E D
91049 & 91050
AUG 06 2024
BOONE COUNTY
PLANNING COMMISSION

Seven (7) copies of submitted drawings are required

An application consists of all fees paid in full, submitted drawings, and a completed application form

SECTION A: (To be completed by applicant)

1. Name of Project: Wendy's Restaurant with Drive-Thru
2. Location of Project: NW Corner of Parcel ID: 074.00-00-077.03 (Project Area: SW Side of Lakeside Dr & Mt Zion Rd Intersection)
3. Total Acreage of Project: 1.2 Acres +/-
4. Current Zoning of Property: MHP (Mobile Home Park)
5. Proposed Zoning of Property (classification being requested): C-4 (Commercial Four) / CD
6. Proposed Use(s) (specify each use):
Proposed is an eating and drinking establishment with drive-thru facilities.
7. Proposed Building Intensities (specify for each building):
Gross floor area is approximately 2,300 SF +/- with space for approximately 40 seats in the dining room.
8. Are you applying for any of the following (check all that apply):
 Conditional Use Permit Variance
9. Current Owner: Mt. Zion MHC LP
 Address: 467 Erlanger Road

<u>Erlanger</u>	<u>KY</u>	<u>41018</u>
City	State	Zip Code

 Phone Number: _____ Fax Number: _____
 Email: kkeeney@flagshipcommunities.com
10. Applicant: Sinkula Investments
 Address: 3005 Dixie Highway, Suite 150

<u>Edgewood</u>	<u>KY</u>	<u>41017</u>
City	State	Zip Code

 Phone Number: 859-414-2358 Fax Number: _____
 Email: laston@sinkula.com
11. Are there any existing buildings on the site: Yes No
 If yes, indicate how many: _____

12. 1187 362 2058
Deed Book Page Number Group Number

13. Have you had a pre-application meeting with the BCPC staff: Yes No

14. Have you submitted a Concept Development Plan: Yes No

15. Have you met or discussed your proposed development with any of the following organizations/agencies (check all that apply):

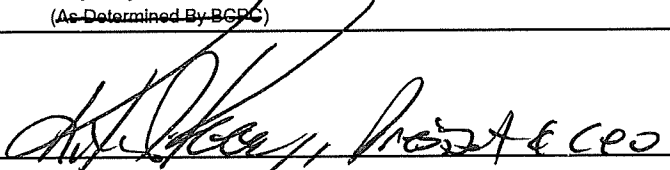
- | | |
|---|---|
| <input type="checkbox"/> Boone County Building Department | <input type="checkbox"/> Local Fire District |
| <input type="checkbox"/> Boone County Public Works Department | <input type="checkbox"/> Local School District |
| <input type="checkbox"/> Boone County Water District | <input type="checkbox"/> Northern Kentucky Health Department |
| <input type="checkbox"/> Cincinnati Bell | <input type="checkbox"/> Owen Cooperative Electric, Inc. |
| <input type="checkbox"/> Cincinnati/Northern Kentucky International Airport (Kentucky Airport Zoning Commission for height restrictions near the airport) | <input type="checkbox"/> Sanitation District No. 1 |
| <input type="checkbox"/> Duke Energy | <input type="checkbox"/> USDA NRCS/Boone County Conservation District |
| <input type="checkbox"/> Florence Public Services Department | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Kentucky Division of Water | |
| <input checked="" type="checkbox"/> Kentucky Transportation Cabinet | |

16. Concept Development Plan Jurisdiction/Location (check all that apply):
 Unincorporated Boone Florence Walton Union

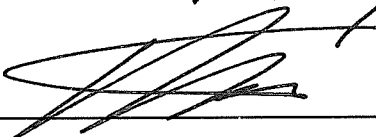
17. Waiver of 60 Day Time Requirement by Originator for Final Planning Commission Action:

In accordance with the provisions of KRS 100.211, the applicant(s) and property owner(s) or originator(s) hereby waive the 60 day time limit for the Boone County Planning Commission to take final action on my (our) Zoning Map Amendment/Concept Development Plan application. This time limit waiver is considered effective immediately upon receipt by the Boone County Planning Commission and expires on October 17, 2024 (As Determined By BCPC)

Property Owner's Signature:



Applicant's Signature:

 PRESIDENT

EXHIBIT

“A”

STAFF REPORT

#3

Request of **Sinkula Investments (applicant)** for **Mt. Zion MHC LP (owner)** for a Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4), including the following variances: (1) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along Lakeside Drive; and (2) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along the west property line, for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky. The request is for a Zoning Map Amendment to allow the development of an eating and drinking establishment with drive-through service.

September 4, 2024

REQUESTS

- A. The first request is a zoning map amendment for an approximate 1.2 acre area from MHP to C-4 in order to develop an approximate 2,300 square foot eating and drinking establishment (Wendy's) with drive-through service.
- B. The second request is for a Variance to reduce the street frontage buffer requirement from 10 feet in width to approximately 2 foot in width along Lakeside Drive.
- C. The third request is for a Variance to reduce a Buffer Yard A requirement from 10 feet in width to approximately 2 foot in width along the west property line.

PERTINENT SITE HISTORY

The site was developed as a mobile home park sometime in the early 1970's.

- 2024 A Zoning Map Amendment with a Concept Development Plan was approved for the adjacent property to the east. This approximate 1 acre site was approved to develop a 4,359 square foot eating and drinking establishment (McDonald's) with drive-through service. (R23-032-A)
- 2024 On March 7, 2024, the Boone County Planning Commission approved a Major Site Plan for McDonald's.
- 2024 On March 12, 2024, the Boone County Planning Commission approved a Conveyance Plat creating the 1.057 acre parcel for McDonalds.

SITE CHARACTERISTICS

- A. The approximate 1.2-acre area is located along the south side of Mt. Zion Road, the west side of Lakeside Drive.

- B. The area to be rezoned has approximately one hundred and forty (140) feet of frontage along Mt. Zion Road, and approximately three hundred and sixty (360) feet of frontage along Lakeside Drive.
- C. All of the mobile homes have been removed from this site.
- D. The proposed site will be accessed from the signalized intersection of Mt. Zion Road and Lakeside Drive.
- E. Topographically, the site slopes from Mt. Zion Road back south at an average grade of 2%.

ADJACENT LAND USES AND ZONES

North: Commercial businesses (C-4)

South: Mobile Home Park (MHP)

East: Future McDonald's (C-4) and Mobile Home Park (MHP)

West: Commercial businesses (C-4)

APPLICABLE REGULATIONS

- A. Section 308 of the Boone County Zoning Regulations states that before any map amendment is granted, the Planning Commission and legislative body shall use the following criteria:
 - 1. The map amendment is in agreement with the adopted comprehensive plan and any specific study designed to further detail the Boone County Comprehensive Plan for the location in question; or
 - 2. The existing zoning classification is inappropriate and that the proposed zoning classification is appropriate; or
 - 3. There have been major changes of an economic, physical, or social nature not anticipated in the adopted comprehensive plan that substantially alter the area's character.
- B. Section 302 of the Boone County Zoning Regulations states that at the time of filing an application for a zoning map amendment, an applicant may also request a dimensional variance for the same development.
- C. Section 250 of the Boone County Zoning Regulations defines a variance as a

departure from dimensional terms of the zoning regulation pertaining to the height, width, or location of structures, and the size of yards and open spaces where such departure meets the requirements of KRS 100.241 to 100.247.

- D. The Planning Commission should evaluate the variance as it relates to the Variance criteria as stated in Section 251 of the Boone County Zoning Regulations.

Before any variance is granted, the Board must find that the granting of the variance will not adversely affect the public health, safety or welfare, will not alter the essential character of the general vicinity, will not cause a hazard or a nuisance to the public, and will not allow an unreasonable circumvention of the requirements of the zoning regulations. In making these findings, the board shall consider whether:

1. The requested variance arises from special circumstances which do not generally apply to land in the general vicinity, or in the same zone;
2. The strict application of the provisions of the regulations would deprive the applicant of the reasonable use of the land or would create an unnecessary hardship on the applicant;
3. The circumstances are the result of actions of the applicant taken subsequent to the adoption of the zoning regulation from which relief is sought.

The Board shall deny any request for a variance arising from circumstances that are the result of willful violations of the zoning regulation by the applicant subsequent to the adoption of the zoning regulation from which relief is sought.

- E. Section 505.4 and Table 5-5 of the Boone County Zoning Regulations principally permits eating and drinking establishments in the C-4 zoning district.
- F. Section 1004.6 of the Boone County Zoning Regulations allows for Drive-in facilities as an accessory use in the C-4 zoning district.
- G. Section 3155 of the Boone County Zoning Regulations requires the following stacking standards:

Eating and Drinking Establishment: A minimum of four (4) stacking spaces, per drive-through lane, prior to the menu board/ordering station, plus one (1) stacking space at the menu board/ordering station, plus a minimum of four (4) stacking spaces between the menu board/ordering station and the pick-up window.

The zoning administrator may modify the requirements of this subsection, based upon the submittal of a traffic/parking study.

- H. Table 31.1 of the Boone County Zoning Regulations shows the following minimum building setbacks that are required in a C-4 district:
1. Front Yard – 30 feet
 2. Rear Yard – 50 feet when adjoining MHP
 3. Side Yard – 10 feet
- I. Table 32-2 and Section 3620 of the Boone County Zoning Regulations require the following landscape buffers to be provided:
- Buffer Yard A (10 feet) – Along Mt. Zion Road, Lakeside Drive, and the westerly property line.
- Buffer Yard B (20 feet) – Along the southern boundary of the proposal.
- J. Section 1004. A of the Boone County Zoning Regulations states that the purpose of the Commercial Four district is to provide locally oriented commercial services, either retail, recreational or office uses, in areas located near or adjacent to interstate highways and arterial roads. These areas are either currently or expected to experience rapid growth due to the population projections and recommended land uses in the Boone County Comprehensive Plan and in other land use studies. Such uses would serve to accommodate the service demands of an expanding local population that normally can't be met because of the limited type and scale of office, recreational or retail use in the immediate area. These types of uses are intended to serve the local population or community rather than regional interests. Districts will be located near or adjacent to interstate highways and along arterial roads whereby access and visibility are required to serve local residents. These districts shall be limited in size in order to provide maximum ingress and egress for the local population.

RELATIONSHIP TO COMPREHENSIVE PLAN

- A. The Our Boone County Plan 2040 Future Land Use Plan designates the site for Commercial uses, which is described as “retail, corporate and professional office, interchange commercial, indoor commercial recreation, restaurants, services, etc.”
- B. The Land Use Plan Element of Our Boone County Plan 2040, includes the following passages, which relate to the request:
1. Development at the Mt. Zion interchange should be planned in such a way as to not greatly impact the existing and planned Suburban Density Residential uses in the area. KY 536 (Mt. Zion Rd.) is planned for major widening, which will make this corridor a major arterial route from Boone County, through Kenton County, to Campbell County. Reconstruction of the Mt. Zion/I-75 interchange is expected to begin in 2019 and the reconstruction of Mt. Zion Road from I-75 to Old Union Road

is underway and should be completed by 2020. Commercial activity associated with the interchange should be concentrated on the east side of the interstate. Access for these commercial uses should be coordinated so that all development can easily access traffic signals. All commercial development should be planned with attention to possible traffic impacts because this interchange will serve an increasing volume of residential, commercial, and industrial traffic. The type of commercial activity northeast of the interchange should serve the residential areas on Mt. Zion Road and along Dixie Highway, Gateway Technical College, and the Northern Kentucky Industrial Park. Street and parking lot connections are critical in this area to help traffic flow on Mt. Zion Road. South of the interchange, between the interstate and U.S. 25, should develop in a variety of residential and commercial mixed uses. In time, the Greenlawn Estates Mobile Home Park should redevelop as Commercial due to its high visibility and access along Mt. Zion Road. Mobile home development should not extend south of Maher Road. Reconstruction and widening of U.S. 25 creates the potential for redevelopment in much of this corridor. Mixed use development with prevalent interconnections is recommended. (Florence Industrial Future Land Use Geographical Area, pg. 132).

2. "Developments in Boone County must recognize the potential impacts upon adjoining land uses and incorporate a transition of land uses, building setbacks, and/or landscaping to minimize these impacts. Potential impacts include visual, noise or vibrations, odors, dust, smoke, and light. Buffering to mitigate these impacts should be an integral part of the design of proposed projects; where appropriate, existing site features should be used in meeting this guideline. Developments should provide buffering along public roadways, to soften the visual impact. Appropriate wooded areas and stream valleys should remain as open space within developments and between developments. Developments proposed adjacent to planned or established open spaces should provide pedestrian access where appropriate. Natural green space benefits the community as well as encourages developers to create innovative development designs through clustering of buildings and impermeable area. Typically, buffering is required and provided between both like and unlike land uses. However, as the development of Boone County fills in previously rural areas, different lot sizes and designs of residential development sometimes impact each other. Where an appropriate gradation of lot size and setbacks cannot be designed into a proposed residential subdivision development of a significantly higher density than existing adjacent residential uses, deliberate vegetation buffering may need to be incorporated into the design to help protect low density residential areas. Buffer areas should use and supplement existing site features where possible" (Future Land Use Development Guidelines, Buffering, pp. 95-96).
3. "Developments in Boone County must include landscaping to accompany the proposed project. Retention of existing healthy vegetation is considered a component of landscaping and is encouraged. This landscaping should be

designed to improve the public view of a development, and should be incorporated into parking lots and other vehicle circulation areas, as well as within open spaces and around structures. Landscaping is intended to soften the visual impacts of the development from adjoining properties and roadways. The amount of heat absorbed by impervious cover from sun radiation is decreased by landscaping, which reduces energy costs. Landscaping helps purify the air of harmful pollutants, thus reducing health impacts. It also helps reduce the quantity and improve the quality of storm water runoff, including temperature. The use of bioretention islands (water filtering basins) and grass swales should be used where possible in place of raised islands as described in Northern Kentucky's Storm Water Best Management Practices Manual (2012). Native species are often heartier than nursery stock and should be used wherever possible to minimize pesticides and other high impact forms of maintenance. Developments along major roadways in Boone County must include landscaping between the development and the right-of-way in order to promote the aesthetic appearance from the roads and to facilitate the compatibility of differing land uses (Future Land Use Development Guidelines, Landscaping, pg. 96).

4. Developments in Boone County must recognize the potential impacts of associated traffic on adjoining properties and transportation systems. The need exists to protect the capacity of the existing roadway network and to plan improvements to accommodate new development and travel patterns. Access management provisions include the coordination of curb cuts, adequate corner clearance and sight distance for access points, adequate spacing between access points, shared access points and parking facilities, provisions for access connections to adjoining properties, and dedication of public right-of-way (Future Land Use Development Guidelines, Access Management, pg. 96).
 5. Developments in Boone County should give consideration to the overall design of the area. Site, landscape, and building design should be a primary concern at the early stages of the development, with an emphasis on the aesthetic impact of the proposed use. The minimal use of signs is encouraged; signage should be adequate to identify a specific development, but should not be used as a means to compete for motorist attention. The objective is to avoid the confusion and/or distraction of motorists, and to avoid the potential negative impacts of signs on the visual appearance of a development or corridor. Utility lines should be placed underground wherever possible, and junction boxes screened from public view (Future Land Use Development Guidelines, Design, Signs, and Cultural Resource Preservation, pg. 97).
- C. The following Our Boone County Plan 2040 Goals and Objectives apply to this application:

1. Land uses and zoning decisions shall strive to balance the rights of landowners with the rights of neighbors and the community (Overall Goal A, Objective 4).
 2. Provide appropriate services, housing, employment, and shopping opportunities in order to meet the needs of the population in all geographic areas of the County (Demographics Goal A, Objective 4).
 3. Boone County businesses are developed in appropriate locations and are compatible with surrounding land uses. (Economy Goal B).
 4. Compact, efficient development patterns shall be encouraged for industrial, commercial, and office uses with appropriately sized and well maintained buffer spaces between the business use and other land uses. (Economy Goal B, Objective 1).
 5. Mixing of commercial and non-commercial uses shall occur in areas where consideration has been given to assure compatibility with surrounding land uses and natural systems (Economy Goal B, Objective 2).
 6. Commercial uses shall be designed and located to coordinate with the surrounding land uses and shall have safe access and adequate parking. (Economy Goal B, Objective 3).
 7. Priority shall be given towards maintaining, protecting, and improving the capacity and safety of the existing road system across jurisdictions (Transportation Goal A, Objective 1).
 8. Roadway capacity shall be preserved by utilizing access management policies and guidelines (Transportation Goal B, Objective 4).
 9. Traffic impact analysis should be used as a tool to address impacts to the existing transportation system. (Transportation Goal C, Objective 3).
- D. Mt. Zion Road is a state-maintained arterial street providing for two-way traffic within five driving lanes and additional turn lanes. There are multi-use paths along both sides of the roadway. The posted speed limit is 45 MPH.
- E. Lakeside Drive is a privately maintained street providing two-way traffic within two driving lanes. There are sidewalks located along the private streets. The posted speed limit is 20 MPH.

CONCEPT PLAN

- A. The applicant is proposing the following:

1. Construction of an approximately 2,300 square-foot Wendy's restaurant with drive-through service and a 40-seat dining room.
2. A single point of access to and from the site from a proposed extension of Lakeside Drive.
3. Asphalt paving providing a total of 29 parking spaces.
4. A single drive-through lane providing adequate stacking at the ordering station and pick-up window.
5. A delivery/truck loading zone in the south portion of the site.
6. An optional driveway connection is shown on the plan which could allow access to Demia Way.
7. Relocation of the permanent concrete barrier to the end of Carpenter Drive.
8. A proposed stop sign and "Do Not Block Access" sign located at the entrance to the McDonald's site.
9. Pavement Striping with "Do Not Block Access" lettering at the entrance to the McDonald's site.

STAFF COMMENTS

- A. The submitted Concept Development Plan does not indicate utilities, landscaping, or lighting. A further evaluation would need to be done when a Major Site Plan application is submitted.
- B. A Traffic Impact Study was submitted with the request and it's part of the record as an exhibit. The following Findings and Recommendations are excerpts from the Study:

6. FINDINGS

Capacity Analysis (Level of Service Analysis)

The detailed capacity analysis (and LOS characteristics) of all 2023, 2025, and 2035 Build and No-Build scenarios for the AM and PM peak hour are reported in Section 5. Unsignalized intersections are not assigned an "intersection" level of service but are evaluated for each approach. The LOS analyses completed for the intersection are summarized below, and the results can be found in Appendix C.

Mt. Zion Road (KY-536) & Demia Way – Unsignalized

For the AM and PM peak hours, the northbound approach delay for Base to Build conditions ranges from 12.0 – 14.7 seconds. The largest approach delay increase occurs between 2025 and 2035 No-Build and Build scenarios, being 0.2 seconds. The maximum V/C ratio for the northbound approach is 0.10, which occurs during the PM peak hour.

The largest 95th percentile queue length for the northbound approach is 8 feet, which occurs during the 2035 AM scenario.

The capacity analyses and 95th percentile queue length results are included in Appendix C.

Mt. Zion Road (KY-536) & Lakeside Drive/Berberich Drive - Signalized

In the AM peak hour, the average intersection delays for Base to Build conditions range from 6.7 – 25.2 seconds. The largest intersection delay increase between No-Build and Build scenarios occurs during 2035, being 6.0 seconds. The maximum northbound approach delay occurs similarly, with a 1.5-second increase between 2025 and 2035 No-Build to Build scenarios. The maximum V/C ratio for the intersection is the northbound approach, being 0.74.

The 95th percentile queue length for the northbound approach at the Mt. Zion Road and Lakeside Drive/Berberich Drive intersection is 211 feet for the 2025 and 2035 Build AM scenarios, and 143 feet for the 2025 and 2035 Build PM scenarios.

The capacity analyses and 95th percentile queue length results are included in Appendix C.

Mt. Zion Road (KY-536) & Kroger Access – Unsignalized

For the AM and PM peak hours, the southbound approach delay for Base to Build conditions ranges from 12.0 – 14.7 seconds. The largest approach delay increase occurs between 2025 and 2035 No-Build and Build scenarios, being 0.2 seconds. The maximum V/C ratio for the southbound approach is 0.10, which occurs during the PM peak hour.

The largest 95th percentile queue length for the southbound approach is 15 feet, which occurs during the 2035 AM scenario.

The capacity analyses and 95th percentile queue length results are included in Appendix C.

7. RECOMMENDATIONS

General

The analyses completed for the intersection show acceptable delays for all approaches with V/C ratios less than 1.0 for all AM and PM Build scenarios.

Lakeside Drive & McDonald's access

A striping configuration that discourages vehicles from blocking turn movements to and from the McDonald's access point is proposed. The striping configuration shall comply with MUTCD standards and regulations, shall read "DO NOT BLOCK". The limits of the striping shall cover the northbound lane of Lakeside Drive where that area intersects with the McDonald's access point. Additionally, a "DO NOT BLOCK INTERSECTION" sign shall be installed south of the Lakeside Drive/McDonald's access point and shall face south towards northbound traffic. Per the turn lane warrant calculations, no turn lanes are warranted at this intersection.

Lakeside Drive & Carpenter Drive

Per the turn lane warrant calculations, since no turn lanes are warranted at the Lakeside Drive/McDonald's access, by default, no turn lanes are warranted at this intersection. The developer proposes to prohibit access to/from Lakeside Drive from/to Carpenter Drive by installing some type of barrier.

- C. An inter-departmental email was sent to the Boone County Building Department, Boone County Public Works, Boone County Water District, Florence Fire Department, KYTC, and SD1 requesting comments pertaining to the requests. These comments are attached to the Staff Report.

STAFF CONCERNS

1. The Concept Development Plan for the McDonald's site showed a barrier curb running perpendicular to Lakeside Drive. This curb would be located just past the proposed McDonald's entrance. One of the bases for the approval for McDonald's was that the only traffic on Lakeside Drive would be McDonald's customers. McDonald's was the only leased area and was not connected to adjoining properties. The proposed Wendy's development could create numerous access issues for both sites.
2. Staff would like the applicant's team to discuss the Traffic Impact Study to better understand the projected flow of vehicles coming in and out of the proposed Wendy's and McDonald's. Will this proposal create a backup of vehicles exiting from McDonald's? How many cars can make it through the intersection before the light changes?
3. Staff has concerns regarding the effectiveness of a painted "Do Not Block Access" area in front of the McDonald's entrance. Vehicles would stack up on Lakeside Drive towards Mt. Zion Road if blocked.

4. The proposal includes a variance request for a reduction in landscape buffers along Lakeside Drive and the west boundary of the site. The proposal would require the removal of an established tree line along the west boundary between the existing commercial development and this site. Has the applicant had discussions with the adjacent commercial property owners to see if landscaping could be provided within a shared landscape buffer?
5. The plan shows an optional driveway connection. Has the applicant had discussions with the adjacent owners that would allow for a connection over to Demia Way?
6. Staff would like the issue of future connectivity addressed. Has there been any discussion about the continuation of commercial development and future access when/if it continues along Mt. Zion Road?
7. With this application, it appears that the redevelopment of the mobile home park is being done in a piecemeal fashion. To provide better coordination, the property owner should develop a plan for the entire property, which could then be developed in phases.

CONCLUSION

- A. The request for the proposed zoning map amendment needs to be evaluated by the Boone County Planning Commission and Boone Fiscal Court in terms of Kentucky Revised Statute (KRS) 100.213, Article 3 of the Boone County Zoning Regulations, the appropriate planning documents noted herein, and the potential impacts on existing and planned uses in the area. The 2040 Future Land Use Map will not need to be amended if the request is approved.
- B. The request for the proposed Variance needs to be evaluated by the Boone County Planning Commission in terms of Kentucky Revised Statute (KRS) 100.243, Article 2 of the Boone County Zoning Regulations, the appropriate planning documents noted herein, and the potential impacts on existing and planned uses in the area.

Respectfully submitted,


Steven Lilly
Planner, Zoning Services

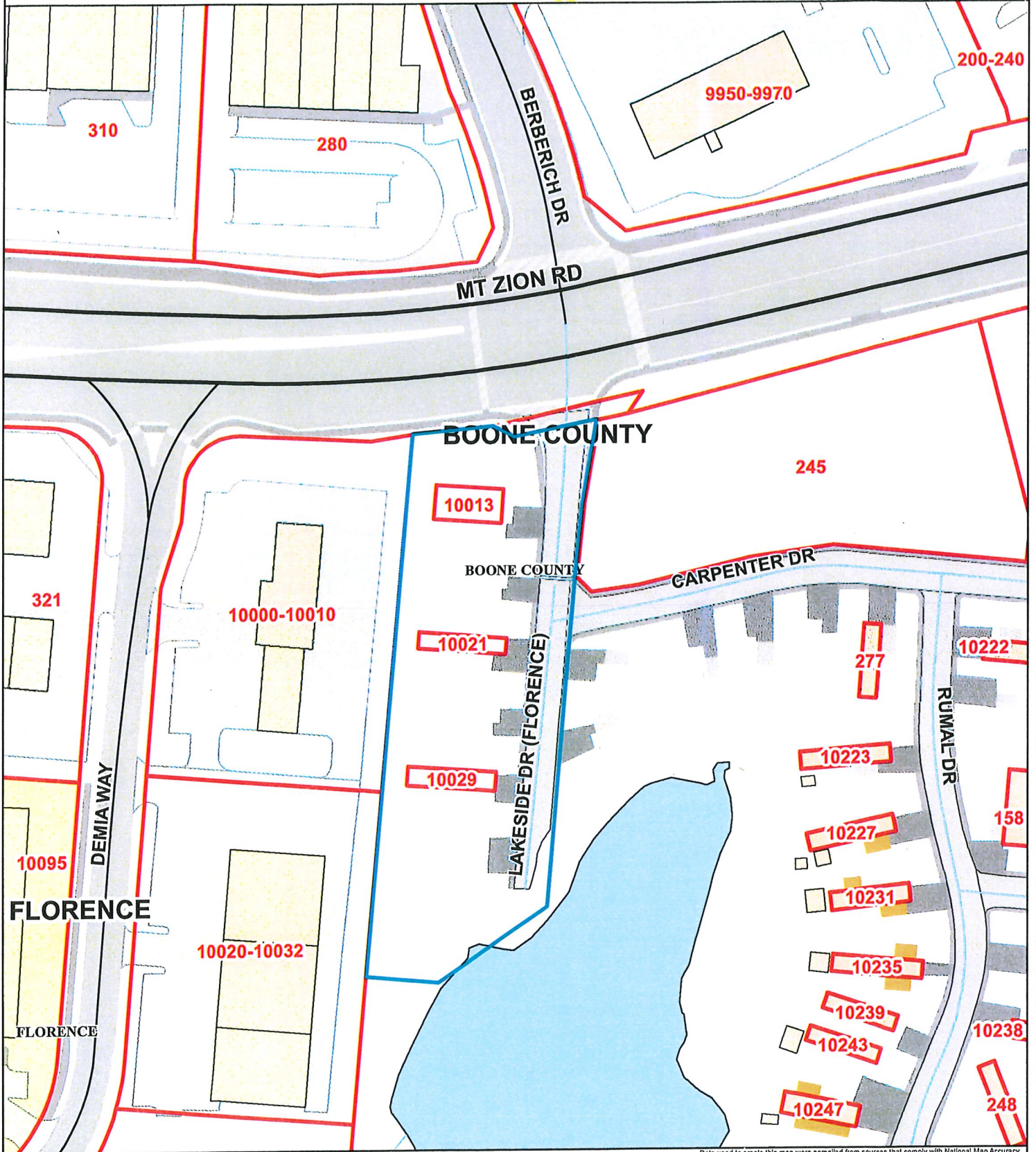
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Attachments:

- *Vicinity Map
- *Aerial Map
- *Topographical Map
- *Zoning Map
- *2040 Future Land Use Map
- * Application
- *Concept Development Plan
- * Inter-departmental emails

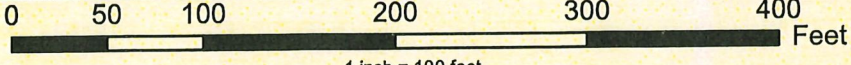
Vicinity Map

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1 inch = 100 feet



Boone



Boone County GIS
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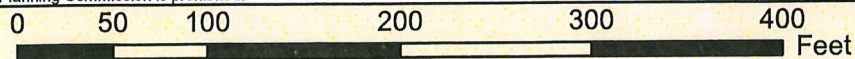
Aerial Map

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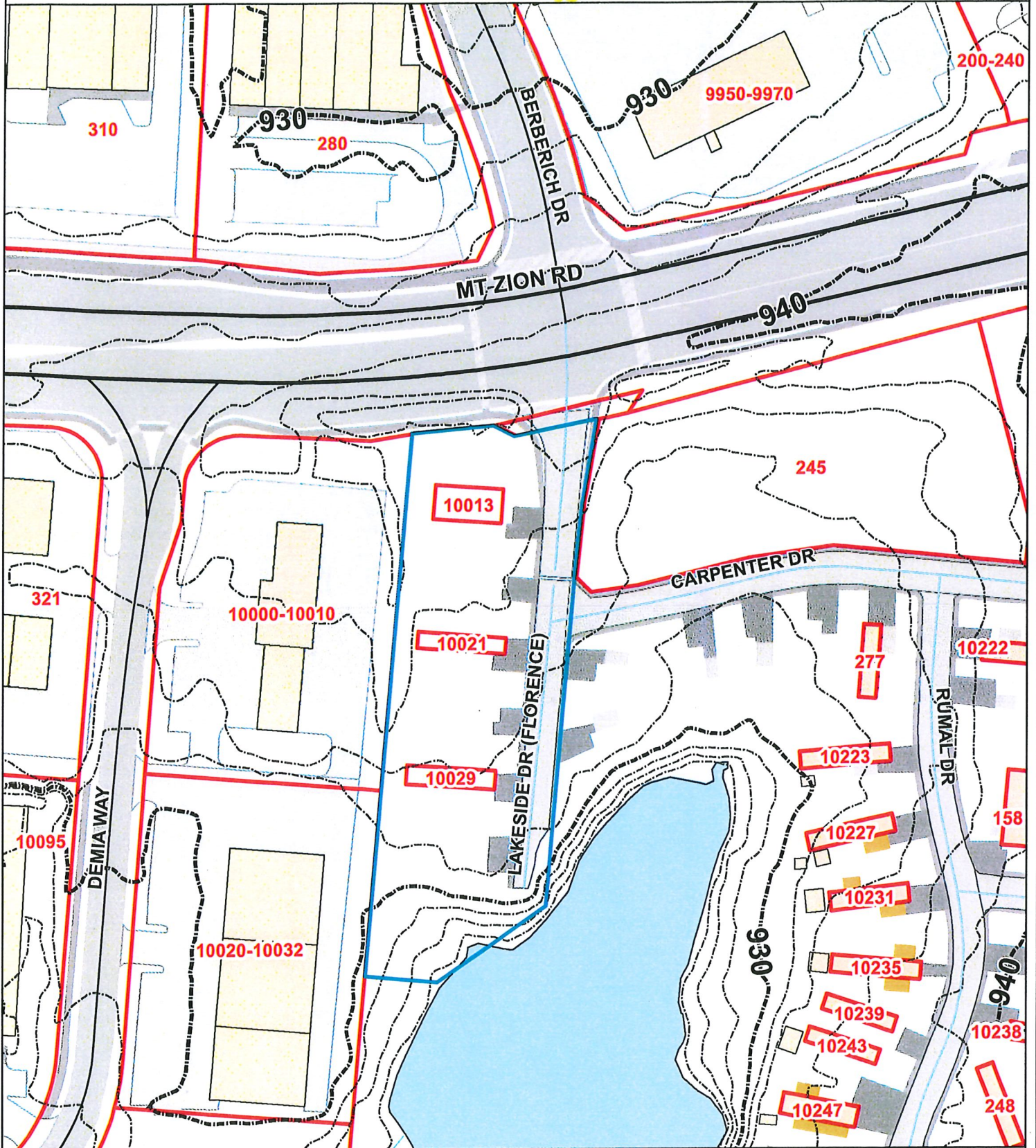


Boone County GIS - Putting Northern Kentucky on the Map

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Topographical Map

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0 50 100 200 300 400 Feet

1 inch = 100 feet

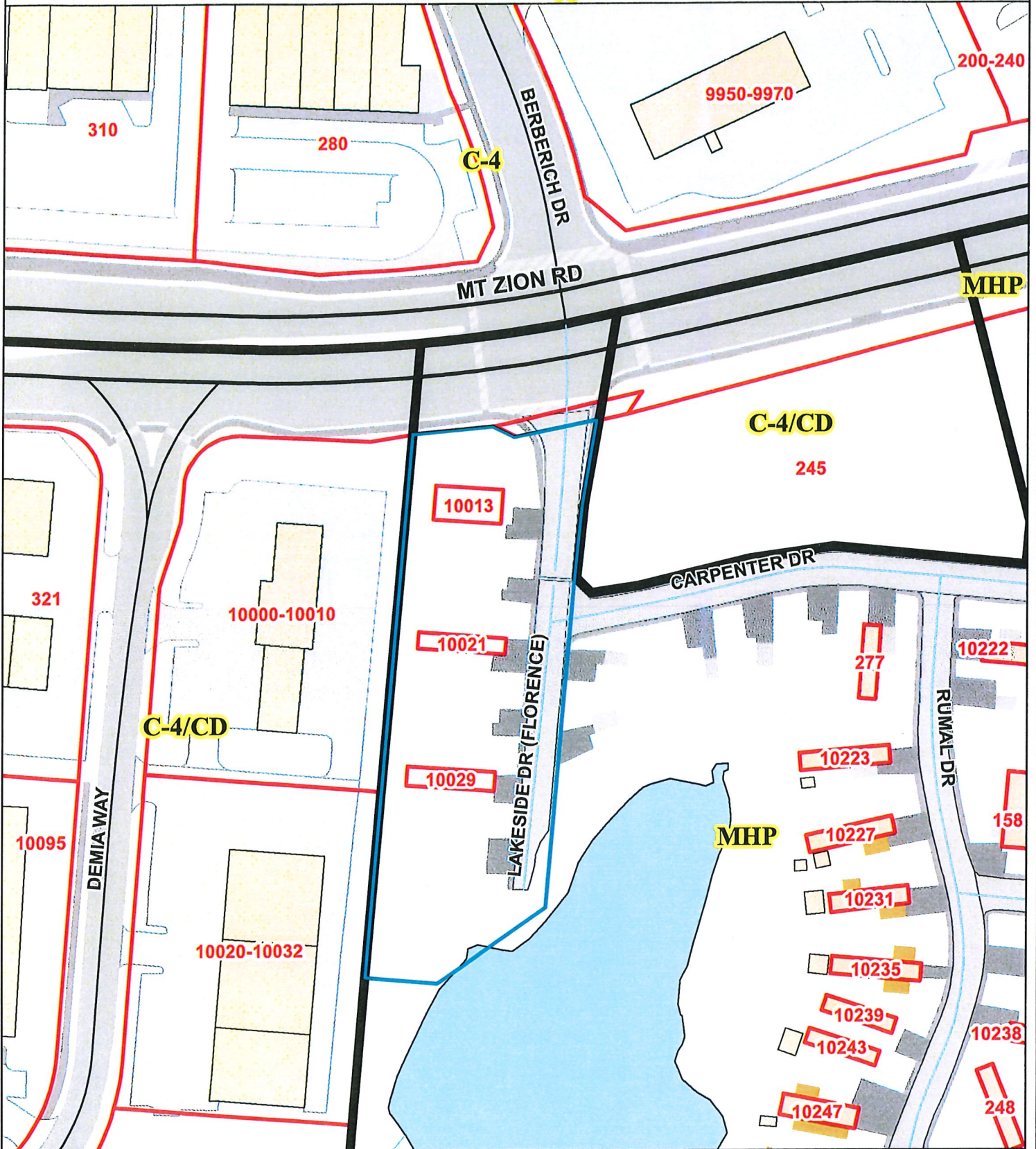


Boone County GIS - Putting Northern Kentucky on the Map

Note: Please Refer to 9/1/09 04311903
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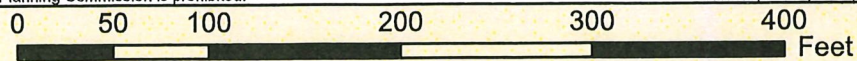
Zoning Map

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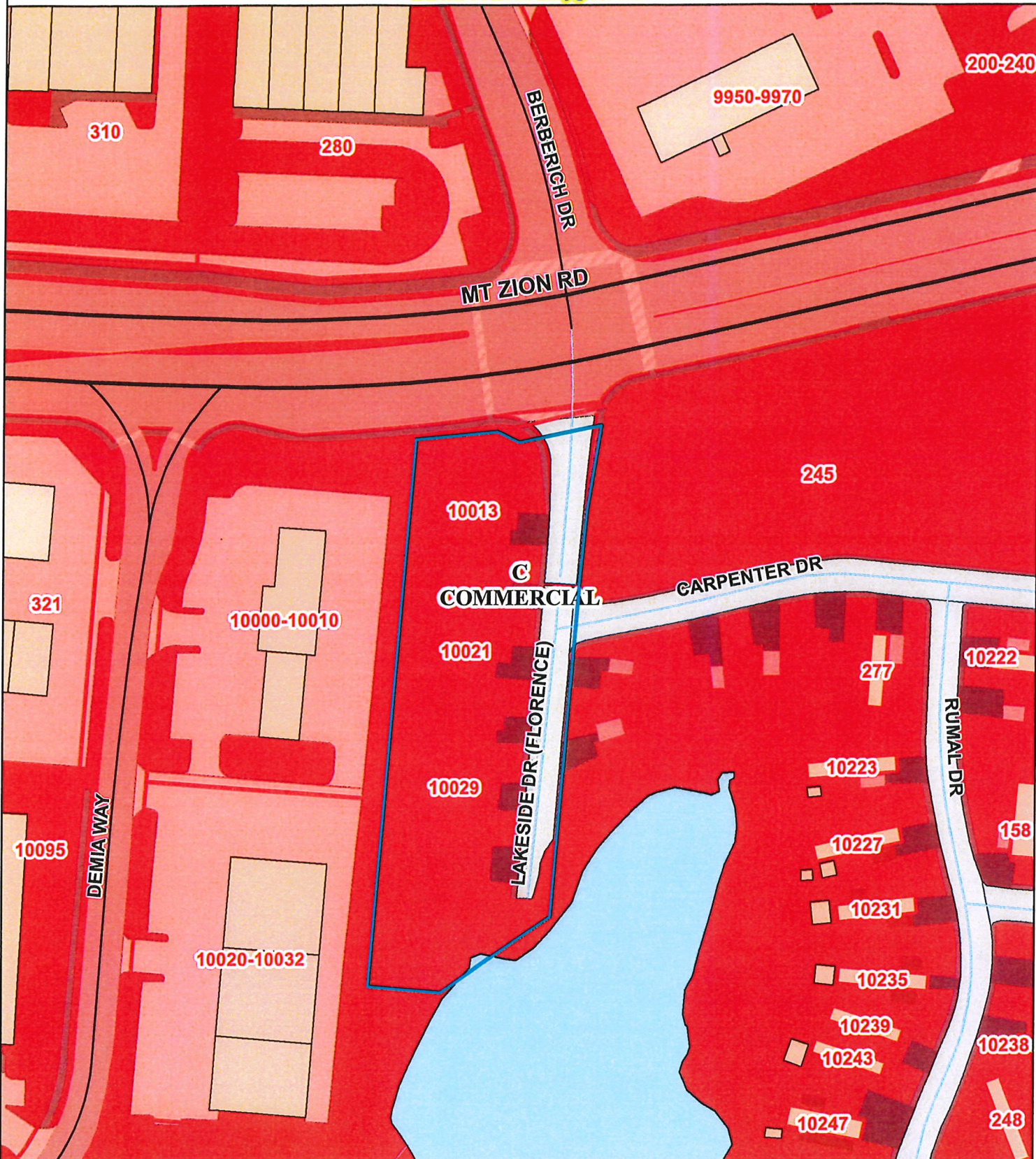
Boone



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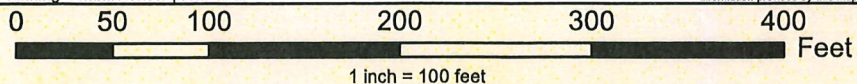
2040 Future Land Use Map

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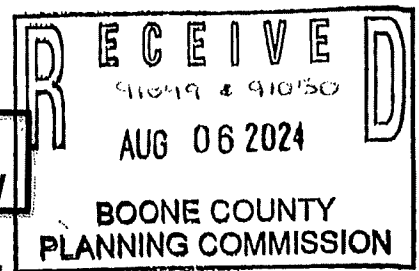
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Boone County GIS - Putting Northern Kentucky on the Map

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ArcMap Document: *.mxd

ZONING MAP AMENDMENT
BOONE COUNTY PLANNING COMMISSION



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SECTION A: (To be completed by applicant)

1. Name of Project: Wendy's Restaurant with Drive-Thru
2. Location of Project: NW Corner of Parcel ID: 074.00-00-077.03 (Project Area: SW Side of Lakeside Dr & Mt Zion Rd Intersection)
3. Total Acreage of Project: 1.2 Acres +/-
4. Current Zoning of Property: MHP (Mobile Home Park)
5. Proposed Zoning of Property (classification being requested): C-4 (Commercial Four) / CD
6. Proposed Use(s) (specify each use):
Proposed is an eating and drinking establishment with drive-thru facilities.
7. Proposed Building Intensities (specify for each building):
Gross floor area is approximately 2,300 SF +/- with space for approximately 40 seats in the dining room.
8. Are you applying for any of the following (check all that apply):
 Conditional Use Permit Variance
9. Current Owner: Mt. Zion MHC LP
Address: 467 Erlanger Road
Erlanger KY 41018
City State Zip Code
Phone Number: _____ Fax Number: _____
Email: kkeeney@flagshipcommunities.com
10. Applicant: Sinkula Investments
Address: 3005 Dixie Highway, Suite 150
Edgewood KY 41017
City State Zip Code
Phone Number: 859-414-2358 Fax Number: _____
Email: laston@sinkula.com
11. Are there any existing buildings on the site: Yes No
If yes, indicate how many: _____

12. 1187 362 2058
Deed Book Page Number Group Number

13. Have you had a pre-application meeting with the BCPC staff: Yes No

14. Have you submitted a Concept Development Plan: Yes No

15. Have you met or discussed your proposed development with any of the following organizations/agencies (check all that apply):

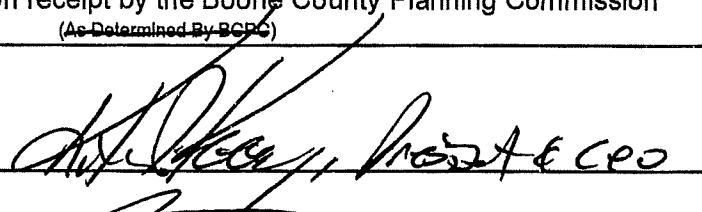
- | | |
|---|---|
| <input type="checkbox"/> Boone County Building Department | <input type="checkbox"/> Local Fire District |
| <input type="checkbox"/> Boone County Public Works Department | <input type="checkbox"/> Local School District |
| <input type="checkbox"/> Boone County Water District | <input type="checkbox"/> Northern Kentucky Health Department |
| <input type="checkbox"/> Cincinnati Bell | <input type="checkbox"/> Owen Cooperative Electric, Inc. |
| <input type="checkbox"/> Cincinnati/Northern Kentucky International Airport (Kentucky Airport Zoning Commission for height restrictions near the airport) | <input type="checkbox"/> Sanitation District No. 1 |
| <input type="checkbox"/> Duke Energy | <input type="checkbox"/> USDA NRCS/Boone County Conservation District |
| <input type="checkbox"/> Florence Public Services Department | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Kentucky Division of Water | |
| <input checked="" type="checkbox"/> Kentucky Transportation Cabinet | |

16. Concept Development Plan Jurisdiction/Location (check all that apply):
 Unincorporated Boone Florence Walton Union

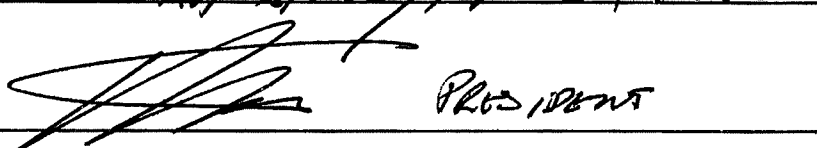
17. Waiver of 60 Day Time Requirement by Originator for Final Planning Commission Action:

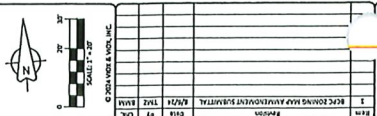
In accordance with the provisions of KRS 100.211, the applicant(s) and property owner(s) or originator(s) hereby waive the 60 day time limit for the Boone County Planning Commission to take final action on my (our) Zoning Map Amendment/Concept Development Plan application. This time limit waiver is considered effective immediately upon receipt by the Boone County Planning Commission and expires on October 17, 2024 (As Determined By BCPC)

Property Owner's Signature:



Applicant's Signature:

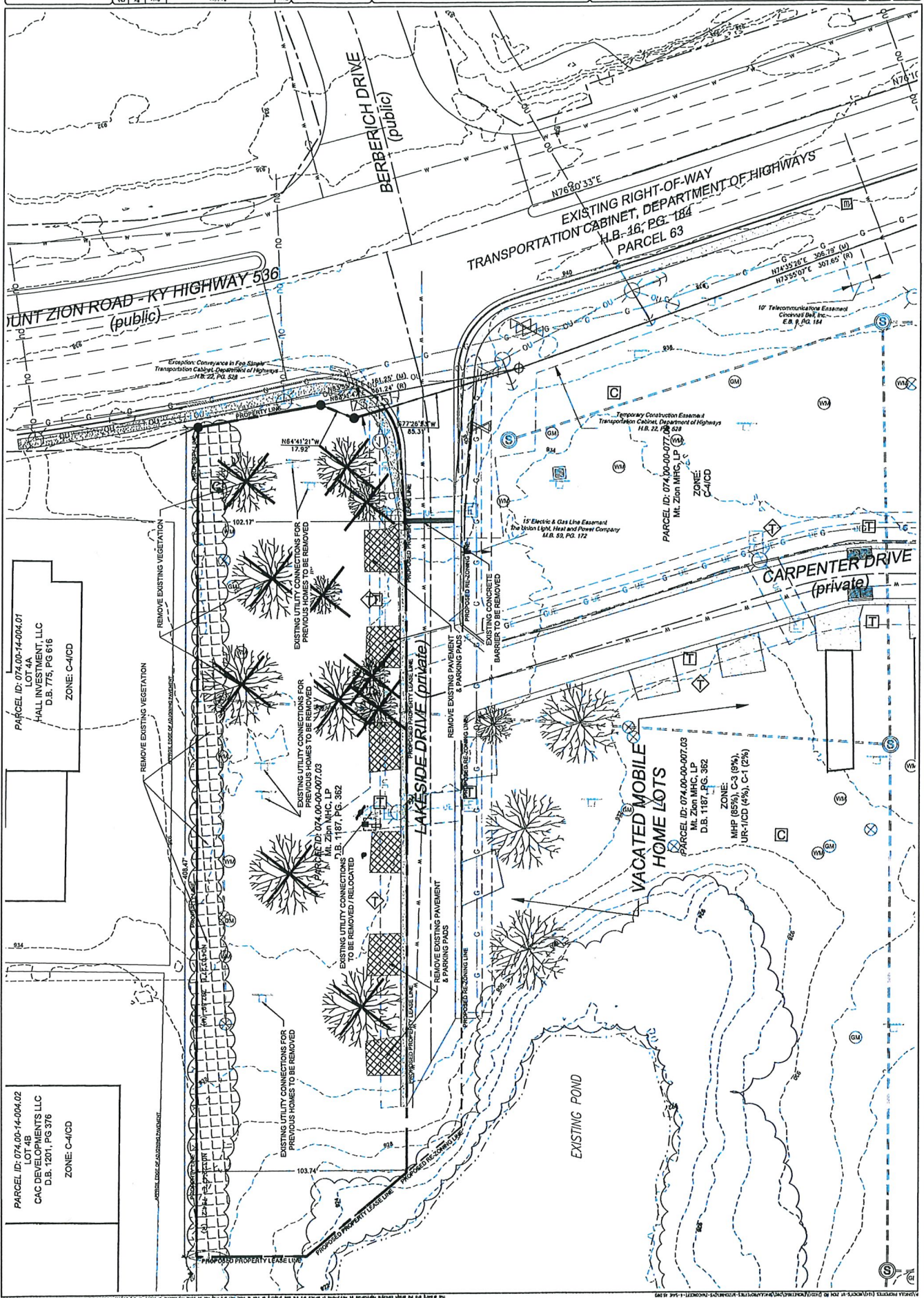
 PRESIDENT



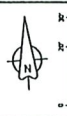
VLOX & VLOX
 Civil Engineers, Surveyors, and Landscape Architects
 402 E. Energy Plaza • P.O. Box 41510
 Lexington, KY 40501-0151
 Phone: (606) 253-2323 • Fax: (606) 253-1000
 www.vloxinc.com

WENDY'S RESTAURANT CONCEPT
 MT ZION ROAD & LAKESIDE DRIVE
 UNINCORPORATED BOONE COUNTY, KY
 EXISTING CONDITIONS

DATE	01.13
SCALE	AS SHOWN
PROJECT	WENDY'S RESTAURANT CONCEPT
LOCATION	MT ZION ROAD & LAKESIDE DRIVE
OWNER	WENDY'S RESTAURANT CONCEPT
DESIGNER	VLOX & VLOX



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NO.	DESCRIPTION	DATE	BY	CHK.
1	100% DESIGN AND DEVELOPMENT SUBMITTAL	11/17/21	JK	JK

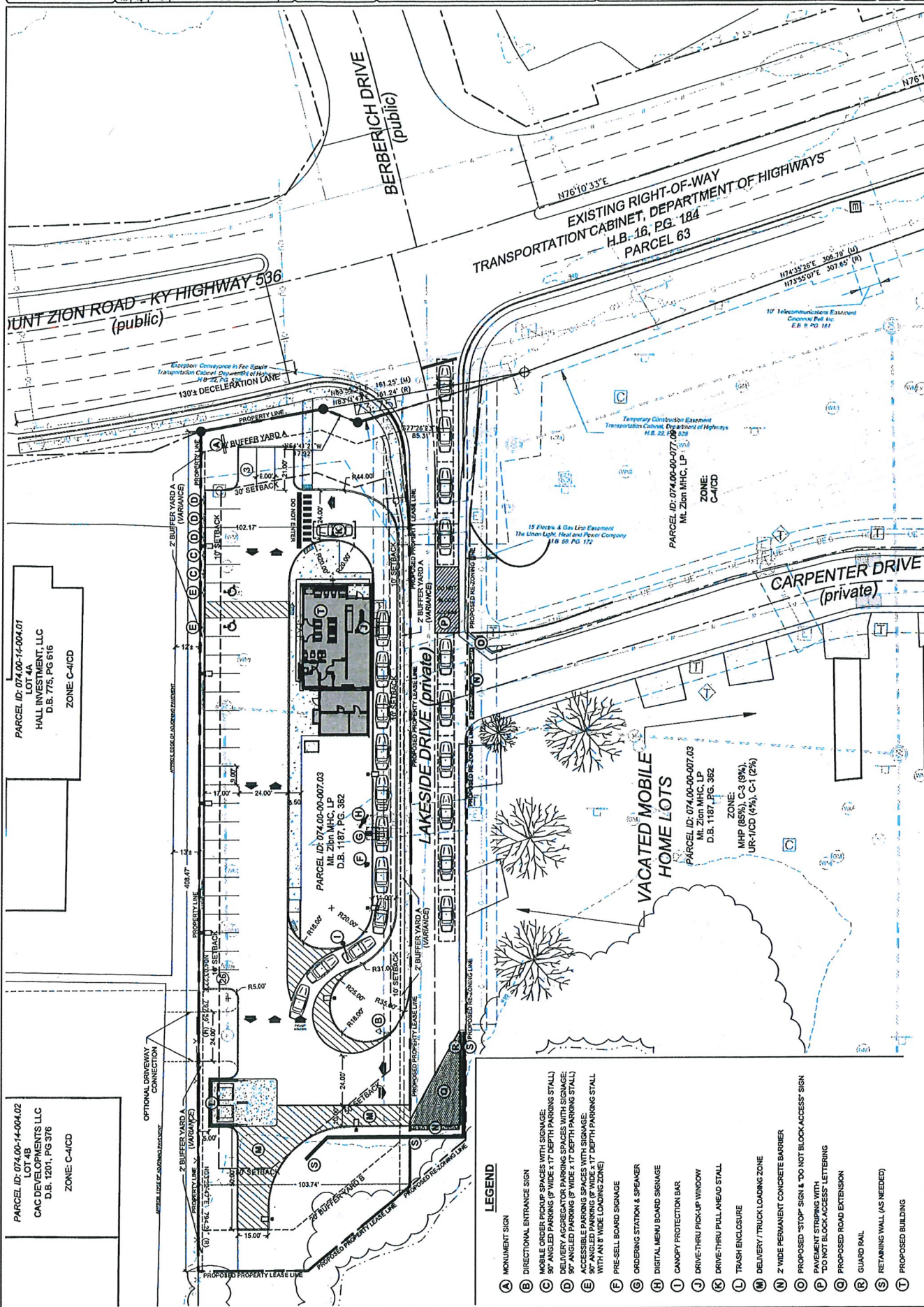
VLOX & VLOX
 Civil Engineers, Surveyors, and Landscape Architects
 448 Frange Road • Frange, Kentucky 40318
 Phone: (502) 727-2323 • Fax: (502) 727-1000
 www.vlox.com



WENDY'S RESTAURANT CONCEPT
 MT ZION ROAD & LAKESIDE DRIVE
 UNINCORPORATED BOONE COUNTY, KY
 LAYOUT PLAN

DATE	11/17/21
SCALE	AS SHOWN
PROJECT	WENDY'S RESTAURANT CONCEPT
CLIENT	CAC DEVELOPMENTS LLC
NO. OF SHEETS	1 OF 1

C2.0



PARCEL ID: 074.00-14-004.01
 LOT 4A
 HALL INVESTMENT, LLC
 D.B. 775, PG 616
 ZONE: C-4/CD

PARCEL ID: 074.00-14-004.02
 LOT 4B
 CAC DEVELOPMENTS LLC
 D.B. 1201, PG 376
 ZONE: C-4/CD

PARCEL ID: 074.00-00-007.03
 Mt. Zion MHC, LP
 D.B. 1187, PG. 362

PARCEL ID: 074.00-00-077.08
 Mt. Zion MHC, LP
 ZONE: C-4/CD

PARCEL ID: 074.00-00-007.03
 Mt. Zion MHC, LP
 D.B. 1187, PG. 362
 ZONE: MHP (85%), C-3 (9%), UR-1/CD (4%), C-1 (2%)

- LEGEND**
- (A) MONUMENT SIGN
 - (B) DIRECTIONAL ENTRANCE SIGN
 - (C) MOBILE ORDER PICKUP SPACES WITH SIGNAGE
 - (D) 90° ANGLED PARKING (8' WIDE X 17' DEPTH) PARKING STALL
 - (E) DELIVERY AGGREGATOR PARKING SPACES WITH SIGNAGE
 - (F) 90° ANGLED PARKING (8' WIDE X 17' DEPTH) PARKING STALL
 - (G) ACCESSIBLE PARKING SPACES WITH SIGNAGE
 - (H) DRIVE-THRU PICKUP WINDOW WITH AN 8' WIDE LOADING ZONE
 - (I) PRE-SELL BOARD SIGNAGE
 - (J) ORDERING STATION & SPENGER
 - (K) DIGITAL MENU BOARD SIGNAGE
 - (L) CANOPY PROTECTION BAR
 - (M) DRIVE-THRU PICKUP WINDOW
 - (N) DRIVE-THRU PULL AHEAD STALL
 - (O) TRASH ENCLOSURE
 - (P) DELIVERY / TRUCK LOADING ZONE
 - (Q) 2' WIDE PERMANENT CONCRETE BARRIER
 - (R) PROPOSED "STOP" SIGN & "DO NOT BLOCK ACCESS" SIGN
 - (S) PAVEMENT STRIPING WITH "DO NOT BLOCK ACCESS" LETTERING
 - (T) PROPOSED ROAD EXTENSION
 - (U) GUARD RAIL
 - (V) RETAINING WALL (AS NEEDED)
 - (W) PROPOSED BUILDING

THIS DRAWING AND THE DESIGN THEREON IS THE PROPERTY OF VLOX & VLOX. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF VLOX & VLOX.

Steve Lilly

From: Randy Childress <Randy.Childress@Florence-KY.gov>
Sent: Wednesday, August 7, 2024 4:26 PM
To: Steve Lilly; Paul Stephenson; Mark Martin; Robert Franxman; Tom Logan; Brefeld, Linzy M (KYTC-D06); Andy Aman; Mike Roush; jison@sd1.org
Subject: RE: Zoning Map Amendment - Wendy's Mt Zion Rd

EXTERNAL MESSAGE

No comments from Fire/EMS.

From: Steve Lilly <steve.lilly@boonecountyky.org>
Sent: Wednesday, August 7, 2024 9:29 AM
To: Paul Stephenson <Pstephenson@boonecountyky.org>; Mark Martin <mmartin@boonecountyky.org>; Robert Franxman <rfranxman@boonecountyky.org>; Tom Logan <tlogan@boonecountyky.org>; Randy Childress <Randy.Childress@Florence-KY.gov>; Brefeld, Linzy M (KYTC-D06) <Linzy.Brefeld@ky.gov>; Andy Aman <aaman@sd1.org>; Mike Roush <mroush@boonecountyky.org>; jison@sd1.org
Subject: RE: Zoning Map Amendment - Wendy's Mt Zion Rd

Good morning,

We have received an application for a Zoning Map Amendment including two variances for an approximate 1.2-acre area located near the intersection of Mt. Zion Road and Lakeside Drive. Below is a link that contains the submitted files for the request. Please review the files and provide comments back to me no later than Friday, **August 23, 2024**.

[202408-Wendy\u0027s-Mt Zion Rd](#)

If you have any questions, please let me know.

Steven Lilly, PLS
Planner, Zoning Services



BOONE COUNTY
PLANNING COMMISSION

2950 Washington Street, Room 317
Burlington, Kentucky 41005
(P) 859-334-2196 (F) 859-334-2264

Steve Lilly

From: Jared Ison <jison@sd1.org>
Sent: Thursday, August 8, 2024 9:04 AM
To: Steve Lilly; Paul Stephenson; Mark Martin; Robert Franxman; Tom Logan; Randy Childress; Brefeld, Linzy M (KYTC-D06); Andy Aman; Mike Roush
Subject: Re: Zoning Map Amendment - Wendy's Mt Zion Rd

EXTERNAL MESSAGE

Steve,

SD1 comments below:

Storm:

1. A Land Disturbance Permit will need to be applied for and obtained, from SD1, if disturbing 1-acre or greater of land.

Sanitary:

1. A reservation of sanitary sewer capacity needs to be applied for.
2. A Sanitary Sewer Construction Permit will need to be applied for and obtained, from SD1, if constructing public sanitary sewer.
3. New sanitary connection(s) with this project will need to obtain the appropriate sanitary sewer connection permits from SD1.

Plats:

1. All plats with an SD1 easement(s) will need to be reviewed and signed off on by SD1.

Thanks,

Jared Ison
Development Services Coordinator
SD1
1045 Eaton Drive
Ft. Wright, KY 41017
(859)-578-6883

Public Records Notice: I am not the Official Custodian of Public Records at SD1. All requests for public records must be sent to SD1's Official Custodian of Records at: 1045 Eaton Dr. Ft. Wright, KY 41017, Attention: Official Custodian of Records; facsimile at (859) 331-2436 or via email to records@sd1.org. Your request will not be forwarded.

From: Steve Lilly <steve.lilly@boonecountyky.org>
Sent: Wednesday, August 7, 2024 9:28 AM
To: Paul Stephenson <Pstephenson@boonecountyky.org>; Mark Martin <mmartin@boonecountyky.org>; Robert Franxman <rfranxman@boonecountyky.org>; Tom Logan <tlogan@boonecountyky.org>; Randy Childress <randy.childress@florence-ky.gov>; Brefeld, Linzy M (KYTC-D06) <Linzy.Brefeld@ky.gov>; Andy Aman

Steve Lilly

From: Brefeld, Linzy M (KYTC-D06) <Linzy.Brefeld@ky.gov>
Sent: Wednesday, August 21, 2024 11:54 AM
To: Steve Lilly
Subject: RE: Zoning Map Amendment - Wendy's Mt Zion Rd

EXTERNAL MESSAGE

Steve,

We are still reviewing the TIS for this development. My staff is hoping to be finished by Friday.

Thanks!

From: Steve Lilly <steve.lilly@boonecountyky.org>
Sent: Tuesday, August 20, 2024 4:10 PM
To: Paul Stephenson <Pstephenson@boonecountyky.org>; Mark Martin <mmartin@boonecountyky.org>; Robert Franxman <rfranxman@boonecountyky.org>; Tom Logan <tlogan@boonecountyky.org>; Brefeld, Linzy M (KYTC-D06) <Linzy.Brefeld@ky.gov>; Andy Aman <aaman@sd1.org>; Mike Roush <mroush@boonecountyky.org>
Subject: RE: Zoning Map Amendment - Wendy's Mt Zion Rd

Sending out a reminder for comments.

Steven Lilly, PLS Planner, Zoning Services



BOONE COUNTY PLANNING COMMISSION

2950 Washington Street, Room 317
Burlington, Kentucky 41005
(P) 859-334-2196 (F) 859-334-2264

From: Steve Lilly <steve.lilly@boonecountyky.org>
Sent: Wednesday, August 7, 2024 9:29 AM
To: Paul Stephenson <Pstephenson@boonecountyky.org>; Mark Martin <mmartin@boonecountyky.org>; Robert Franxman <rfranxman@boonecountyky.org>; Tom Logan <tlogan@boonecountyky.org>; Randy Childress <Randy.Childress@Florence-KY.gov>; Brefeld, Linzy M (KYTC-D06) <Linzy.Brefeld@ky.gov>; Andy Aman <aaman@sd1.org>; Mike Roush <mroush@boonecountyky.org>; jison@sd1.org
Subject: RE: Zoning Map Amendment - Wendy's Mt Zion Rd

Good morning,

We have received an application for a Zoning Map Amendment including two variances for an approximate 1.2-acre area located near the intersection of Mt. Zion Road and Lakeside Drive. Below is a link that contains the submitted files for the request. Please review the files and provide comments back to me no later than Friday, **August 23, 2024**.

[202408-Wendy\u0027s-Mt Zion Rd](#)

COMMISSION MEMBERS PRESENT:

Mr. Randy Bessler
Mrs. Kathy Clark
Mrs. Pamela Goetting
Mr. Steve Harper, Temporary Presiding Officer
Mr. David Hincks
Mrs. Janet Kegley
Mr. Rick Lunnemann
Mr. Eric Richardson
Mr. Charlie Rolfsen, Chairman
Mr. Bob Schwenke
Mrs. Jackie Steele, Secretary/Treasurer
Mr. Tom Szurlinski
Mr. Steve Turner
Mr. Kenny Vaught

COMMISSION MEMBERS NOT PRESENT:

Ms. Corrin Gulick, Vice Chairwoman

LEGAL COUNSEL PRESENT:

Mr. Dale Wilson

STAFF MEMBERS PRESENT:

Mr. Kevin P. Costello, AICP, Executive Director
Mr. Michael D. Schwartz, Director, Zoning Services
Mr. Steve Lilly, PLS, GISP, Planner

Chairman Rolfsen introduced the second item on the Agenda at 8:54 p.m.

ZONING MAP AMENDMENT, Steve Lilly, Staff

3. Request of **Sinkula Investments (applicant) for Mt. Zion MHC LP (owner)** for a Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4), including the following variances: (1) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along Lakeside Drive; and (2) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along the west property line, for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky. The request is for a Zoning Map Amendment to allow the development of an eating and drinking establishment with drive-through service.

Staff member, Steve Lilly, referred to his PowerPoint presentation (see Staff Report). The site is 1.2 acres in area. It is located on the south side of Mt. Zion Road and the west side of Lakeside Drive. The site has 140 feet of frontage along Mt. Zion Road and 360 feet along Lakeside Drive and there is a signalized intersection at Mt. Zion Road. There is a left turn lane on Mt. Zion Road. The site slopes down from Mt. Zion Road at a 2% grade. There is an existing pond at the end of Lakeside Drive. Mr. Lilly described the adjoining land uses and zoning. McDonald's is under construction next to the site. Pages 1-3 of the Staff Report include sections from the Zoning Regulations. The 2040 Future Land Use Map designates the site as Commercial (C). The text also notes that over time the Greenlawn Mobile Home Park site should redevelop into commercial uses due to its high visibility and access to Mt. Zion Road. Pages 3-6 of the Staff Report includes appropriate sections from the Comprehensive Plan. Mr. Lilly described the submitted Concept Development Plan. There are no mobile homes located on the subject site. All trees will be removed from the site. A 2,350 square foot Wendy's restaurant is being proposed. It will have a drive-thru and a 40 seat dining room. Lakeside Drive is being proposed to be extended. The proposed drive-thru has adequate stacking. The existing concrete barrier will be relocated to Carpenter Drive. A delivery zone is proposed on the site. There is a proposed connection to the property located to the west. A Traffic Impact Study was submitted. Pages 8-10 of the Staff Report includes the findings and recommendations from that study. Comments have been received from SD1 of which a land disturbance permit and a reservation of sanitary sewer capacity are required. The State is reviewing the Traffic Impact Study. Mr. Lilly showed photographs of the site. Staff has concerns about the flow of traffic from both restaurants on Lakeside Drive given the length of the private road and the barrier. Will the painted message of "Do No Block" really be effective? The proposal includes a reduction of the landscaping buffers along Lakeside Drive and the western property line. No landscaping plan has been submitted. Could there be shared landscaping? Staff would also like to know if the applicant discussed the shared access to the adjacent property owner or to Demia Way? What about future connectivity within the entire property as it is noted in the Comprehensive Plan. What about sharing an overall plan for future development to assure good traffic flow?

Chairman Rolfsen asked if the applicant was present and wanted to proceed with their presentation?

Mr. Brock MacKay, Viox & Viox, Inc., introduced Mr. Laurence Aston, President, Sinkula Investments. He stated that they have been in business since 1995. They have 13 restaurants today. Mr. MacKay noted that he also has a representative from Flagship Communities REIT. It is proposed to be a leased lot. The site is at a good location. It is a better use. The proposed access is located as far away from Mt. Zion Road. It helps with deliveries. It is a smaller restaurant. He explained the need for the variance due to the size of the lot. They have met with the neighbor. Mr. MacKay showed a slide of building elevations. He reviewed the history of traffic in the area. There are about 150 mobile homes in the neighborhood. Lakeside was originally opened all the way but it was a cut through. That is why they put a barrier up. Flagship Communities have removed additional mobile homes in the event that McDonald's needs to move their access.

Chairman Rolfsen asked if anyone living on Carpenter Drive could use the traffic signal? Mr. MacKay replied no. They would have to use Dixie Highway. Mr. Rolfsen asked if they have a definitive answer of how many cars can use the traffic signal? What is the timing or the number of cars that can make it through the light? The State will not allow the intersection to be clogged.

Chairman Rolfsen asked if anyone in the audience would like to speak in favor or against the request or had any questions?

Mr. Rick Hall, owner of the oil change and car wash next to the subject site has been in touch with the owner (Cindy Cahill) of 10050 Demia Way. The perfect solution is to connect to his property that will get traffic to Demia Way and use another way out to Mt. Zion Road. The location of the Wendy's dumpster is 20 feet from the existing pond (bugs and rodents). The dumpster should be located closer to the building. In addition, there are 30 semis that go up and down Mt. Zion Road. How do semis turn around on Lakeside Drive? It will be gridlock. Wendy's is interested in the connection. He is for and against the project. Mr. MacKay responded that he likes the connection to the west and they could always look at using Carpenter Drive to turn around.

Mr. Costello asked if the owner of the mobile home park was present. What is the game plan for the future of the park? The development is piecemeal. Also, there are two high traffic uses near Mt. Zion Road with limited capacity as the owner is not letting traffic go east. We were told it would only be McDonald's and now a Wendy's is proposed. It reminds him of Dream Street. Mr. Andrew Pulliam, Flagship Communities, stated that there were people living off Mt. Zion and they moved them because it was too close to the new road. He has no intention for more commercial zoning. They are only interested in mobile homes and will never develop to the east because of the playground, soccer fields, etc.

Mr. Costello inquired about the condition of Lakeside Drive? Mr. Pulliam replied that he doesn't have an answer. Mr. MacKay stated that they may have to widen the back portion of the street to make it 24 feet wide like the front part. There will also be a need for a retaining wall or guardrail at the end of the road before the pond. There are only two lanes at the intersection. Chairman Rolfsen asked about a change in signal timing and adding a right turn lane.

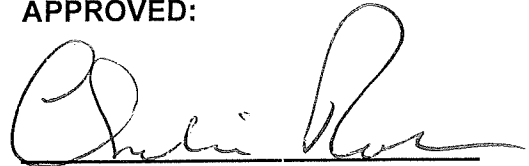
Mr. Hall noted that Lakeside Drive was not built to handle trucks, just cars. The pond is full of algae and his mother drowned in the pond in 2011.

Chairman Rolfsen asked if the Commissioners had any questions or comments?

Mr. Lunnemann asked if Lakeside Drive could be upgraded to a public road with turning lanes? At some point, real public roads need to be built. Mr. MacKay stated that mobile home parks typically have private streets but he will discuss the matter with the owner. The KYTC will decide about the turn lane. Mr. Lunnemann stated that if Carpenter Drive is cut off at McDonald's, it may make sense to cut off Carpenter Drive and put in a cul-de-sac with a public street. The current road system can't support two fast food restaurants.

Seeing no further questions or comments, Chairman Rolfsen announced that the Committee Meeting for this item will be on September 18, 2024 at 5:00 P.M. This item will be on the Agenda for the Business Meeting on October 2, 2024 at 7:00 p.m. in the Fiscal Courtroom. Chairman Rolfsen closed the Public Hearing at 9:44 p.m.

APPROVED:



Charlie Rolfsen
Chairman

Attest:



Kevin P. Costello, AICP
Executive Direct

**BOONE COUNTY PLANNING COMMISSION
BOONE COUNTY FISCAL COURTROOM
BURLINGTON, KENTUCKY
BUSINESS MEETING
DECEMBER 4, 2024
7:00 P.M.**

Chairman Rolfsen opened the Business Meeting at 7:00 p.m. and welcomed the audience to the Planning Commission's December 4, 2024 Business Meeting. Chairman Rolfsen then invited everyone to join him in reciting the Pledge of Allegiance.

COMMISSION MEMBERS PRESENT:

Mr. Randy Bessler
Mrs. Kathy Clark
Mrs. Pamela Goetting
Ms. Corrin Gulick, Vice Chairwoman
Mr. Steve Harper, Temporary Presiding Officer
Mr. David Hincks
Mrs. Janet Kegley
Mr. Rick Lunnemann
Mr. Eric Richardson
Mr. Charlie Rolfsen, Chairman
Mr. Bob Schwenke
Mrs. Jackie Steele, Secretary/Treasurer
Mr. Tom Szurlinski

COMMISSION MEMBERS NOT PRESENT:

Mr. Steve Turner
Mr. Kenny Vaught

LEGAL COUNSEL PRESENT:

Mr. Dale Wilson

STAFF MEMBERS PRESENT:

Mr. Kevin P. Costello, AICP, Executive Director
Mr. Michael Schwartz, Director, Zoning Services
Mr. Steve Lilly, GISP, Planner

APPROVAL OF THE MINUTES:

Chairman Rolfsen stated that the Commissioners received copies of the Minutes from the November 20, 2024 Business Meeting. He asked if there were any comments or corrections?

Mr. Hincks moved to approve the Minutes as presented. Mr. Szurlinski seconded the motion and it carried unanimously.

BILLS:

Mr. Kevin P. Costello, AICP, Executive Director, advised the Commissioners of the **Bills to be Paid**, which included a list of **Expenses** and **Salaries and Benefits** for a time period between November 7, 2024 and December 4, 2024.

EXPENSES:

Attorney Fees	4,800.00
Auto Expense	32.06
Consultant/Professional Svcs Fees	467.50
Filing Fees	900.00
Legal Ads/Recruitment	231.69
Miscellaneous Expense	541.24
Office & Board Meeting Supplies	896.80
Office / Equipment Maintenance	692.40
Office Equipment / Expense	327.48
Office/Liability Expense	527.32
Postage Expense	<u>1,009.75</u>

TOTAL: \$ 10,426.24

SALARIES AND BENEFITS:

FICA-BCPC Portion	\$ 7,008.04
Health/Dental/Life/LTD	17,750.95
Retirement – BCPC Portion	23,408.58
Salaries – Staff Expenses	96,279.04
Salaries – BCPC & BOA	<u>1,540.00</u>

TOTAL: \$ 145,986.61

GRAND TOTAL: \$ 156,412.85

Ms. Gulick moved that the bills (expenses and salaries and benefits) be approved and paid as presented and indicated approval of those items, which have been previously paid. Mrs. Goetting seconded the motion and it carried unanimously.

ACTION ON PLAN REVIEWS:

CHANGE OF CONCEPT DEVELOPMENT PLAN, Corrin Gulick, Chairwoman, Michael Schwartz, Staff

1. Request of **Bayer Becker, per Rob Keller (applicant) for Bunnell Hill Development Company Inc., per Roger Wells (owner)** for a Change of Concept Development Plan in an Industrial One/Planned Development (I-1/PD) district, for an approximate 11.8 acre area having a Parcel Identification Number (PIDN) of 037.00-00-018.00, and being located along the north and west sides of Conrad Lane, between North Bend Road and Strike The Gold Drive, approximately seven hundred fifty (750) feet east of Strike The Gold Drive, and directly across from Carry Back Drive, Boone County, Kentucky. The request is for a Change of Concept Development Plan to allow the development of sixty-eight (68) attached single-family residential dwellings within six (6) buildings.

Mr. Richardson moved to defer the request until the January 8, 2025 Business Meeting. Mr. Szurlinski seconded the motion and it carried unanimously. The next Committee Meeting for the request is scheduled for December 18, 2024 at 5:00 p.m.

ZONING MAP AMENDMENT - Steve Harper, Chairman, Steve Lilly, Staff

2. Request of **Sinkula Investments (applicant) for Mt. Zion MHC LP (owner)** for a Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4), including the following variances: (1) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along Lakeside Drive; and (2) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along the west property line, for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky. The request is for a Zoning Map Amendment to allow the development of an eating and drinking establishment with drive-through service.

Staff Member, Steve Lilly showed an updated plan based upon the results of the Public Hearing and two Committee Meetings. He showed the connection to the property on the west side of the site. He read the Committee Report, which recommended approval of the Zoning Map Amendment and Variances based upon Findings of Facts and Conditions. The Condition Letter has been signed by the applicant and property owner and submitted to the Planning Commission. The Committee voted 4-0 for approval.

Chairman Rolfsen asked if there was anyone in the audience who wanted to speak in favor or against the request? Seeing no further comment, **Mr. Harper moved, by Resolution to the Boone County Fiscal Court to recommend approval of the Zoning Map Amendment and Variances based on the Committee Report, Findings of Fact and Conditions. Ms. Gulick seconded the motion.** Chairman Rolfsen noticed that the Committee vote was 4-0 in favor of the request but Mr. Lunnemann forgot to check the box. Mr. Lunnemann confirmed he was in favor of the request. **Chairman Rolfsen asked for a vote on the original motion made by Mr. Harper and seconded by Ms. Gulick. The motion passed unanimously.**

ZONING MAP AMENDMENT, Corin Gulick, Chairwoman, Michael Schwartz, Staff

3. Request of **Trauth Homes, Inc. (applicant/owner)** for a Zoning Map Amendment from Rural Suburban (RS) to Industrial One (I-1) for an approximate 5.3 acre area located at the northeast corner of the intersection of North Bend Road with Conrad Lane, Boone County, Kentucky, including the properties with the following Parcel Identification Numbers (PIDN's): 048.00-01-001.00 and 048.00-01-001.01. The request is for a zone change to allow for the development of a 30,000 square foot flex space/multi-tenant building, a future development site, a Variance reducing the Buffer Yard D width along the east property line from eighty (80) feet with a forty (40) foot option to ten (10) feet (Buffer Yard A), and a Conditional Use Permit to allow Active Recreation.

Staff Member, Michael Schwartz, read the Committee Report, which recommended approval of the Zoning Map Amendment, Variance and Conditional Use Permit, based upon Findings of Facts and Conditions. The Committee voted 4-0 in favor of the request and the applicant has signed the Condition Letter.

Chairman Rolfsen asked if there was anyone in the audience who wanted to speak in favor or against the request? Mr. Brad Trauth, applicant, stated that he is happy to bring this recreational project to Boone County. He would like to break ground late Spring or early Summer, 2025.

Seeing no further comment, **Ms. Gulick moved, by Resolution to the Boone County Fiscal Court to recommend approval of the Zoning Map Amendment, Variance and Conditional Use Permit, based on the Committee Report and Findings of Fact and Conditions. Mrs. Kegley seconded the motion and it passed unanimously.**

ZONING MAP AMENDMENT, Rick Lunnemann, Chairman, Steve Lilly, Staff

4. Request of **Seva at Merchants Square II, LLC (applicant)** for **Kemba Credit Union, Inc. (owner)** for a Zoning Map Amendment from Commercial Two/Planned Development/Houston Donaldson Study Corridor (C-2/PD/HDO) to Office Two/Planned Development/Houston Donaldson Study Corridor (O-2/PD/HDO) for an approximate 5.3 acre area located at 5935 and 5945 Merchants Street, Florence, Kentucky. The request is for a zone change to allow the development of a four-story, 62,000 square foot hotel.

Staff Member, Steve Lilly noted that the applicant provided line of sight drawings and building materials that agreed to the lawsuit settlement. He read the Committee Report, which recommended approval of the Zoning Map Amendment based upon Findings of Facts and Conditions. The Committee voted 4-0 in favor of the request and the applicant and owner have signed the Condition Letter.

Chairman Rolfsen asked if there was anyone in the audience who wanted to speak in favor or against the request? Mr. Ravi Narsinghani, applicant, stated that he was in agreement with the Conditions and was available for questions if necessary.

Seeing no further comment, **Mr. Lunnemann moved, by Resolution to the City of Florence to recommend approval of the Zoning Map Amendment based on the Committee Report outlining Findings of Fact and Conditions. Mr. Szurlinski seconded the motion.** Dr. Clark asked what is the average the extended stay occupancy rate? Mr. Narsinghani replied upper 70s% to low 80s% occupancy rates. **Chairman Rolfsen asked for a vote on the original motion made by Mr. Lunnemann and seconded by Mr. Szurlinski. The motion passed unanimously.**

ZONING TEXT AMENDMENT, Rick Lunnemann, Chairman, Michael Schwartz, Staff

5. Request of the **Boone Fiscal Court** to consider Zoning Text Amendments to Section 505.5 (Use District Matrix) and Section 2703.7 (Graves Road – Commercial Development Standards), of the Boone County Zoning Regulations adding Residential Storage Warehouse (mini warehouse) as a conditional use within the Graves Road – Commercial (GR-C) district, subject to certain restrictions.

Staff Member, Michael Schwartz, read the Committee Report, which recommended approval of the Zoning Text Amendments based upon Findings of Fact with one change or Condition. It is noted in the Committee Report. The Committee voted unanimously in favor of the request.

Seeing no further comment, **Mr. Lunnemann moved, by Resolution to the Boone County Fiscal Court to recommend approval of the Zoning Text Amendments based on the Committee Report and Findings of Fact and with one Condition. Mrs. Steele seconded the motion and it passed unanimously.**

ZONING TEXT AMENDMENTS, Rick Lunnemann, Chairman, Michael Schwartz, Staff

6. Request of the **Boone County Planning Commission Technical/Design Review Committee** to consider a series of amendments to the **Boone County Zoning Regulations** pertaining to solar energy systems and battery storage facilities.

Staff Member, Michael Schwartz, read the Committee Report, which recommended approval of the Zoning Text Amendments based upon Findings of Fact. The Committee voted unanimously in favor of the request.

Seeing no further comment, **Mr. Lunnemann moved, by Resolution to the Boone County Fiscal Court, City of Florence, City of Union and City of Walton to recommend approval of the Zoning Text Amendments based on the Committee Report and the Findings of Fact. Mrs. Kegley seconded the motion and it passed unanimously.**

TECHNICAL/DESIGN REVIEW, Rick Lunnemann, Chairman, Michael Schwartz, Staff

7. Turfway Crossing Signage – 1336 Hansel Avenue

Mr. Michael Schwartz presented the request. The Technical/Design Review Committee met prior to the Business Meeting. The request is to modify an existing sign for Turfway Crossing. The previous sign was approved prior to the adoption of the Houston-Donaldson Study. The Committee recommended Option 3 because it has a larger sign for the name of the development. The second condition is to allow no more than 3 tenant panels. If more are needed,

the applicant would have to reapply. The third condition is to require the sign base to be at least 24 inches in height as viewed from the public street.

Mr. Lunnemann moved to approve the request subject to the conditions previously stated. Mrs. Goetting seconded the motion and it passed unanimously.

NEW BUSINESS

CHANGE OF CONCEPT DEVELOPMENT PLAN/CONDITIONAL USE PERMIT, Michael Schwartz, Staff

8. Request of **Alex Othman (applicant/owner)** for: (1) a Change of Concept Development Plan for an approximate 2.62 acre area of the site; (2) a Conditional use Permit for an approximate 7.52 acre area of the site; and (3) expansion of an existing commercial parking facility for an approximate 2.02 acre area of the site. The site is an approximate 9.54 acre area located at 527-535 Hunter Road and 571-591 Hunter Road, Boone County, Kentucky, which is currently zoned Commercial Services (C-3). The submitted request is to allow the conversion of an approximate 7.52 acre area of the site from commercial parking to a truck stop and to allow the expansion of the existing commercial parking facility on an approximate 2.02 acre area of the site.

CHANGE OF CONCEPT DEVELOPMENT PLAN, Steve Lilly, Staff

9. Request of **Dualite Sales and Service, Inc., per Greg Hoffer (applicant) for Mikes No 67, LLC (Mike's Carwash) (owner)** for a Change of Concept Development Plan in a Commercial Two/Planned Development (C-2/PD) district, for an approximate 0.97 acre area located at 8534 US 42, Florence, Kentucky. The request is for a Change of Concept Development Plan to allow for alternative signage than what is allowed by the underlying zoning district.

ZONING MAP AMENDMENT, Lauren Elliott, Staff

10. Request of **Susan Shuffett (applicant/owner)** for a Zoning Map Amendment from Industrial Three Surface Mining (I-3) to Agriculture (A-1) for an approximate 28.4 acre portion of the property, having a total area of approximately 32.2 acres, located at 5856 Burlington Pike, Boone County, Kentucky. The request is for a zone change to allow for the creation of one (1) additional building lot.

Dr. Clark moved to schedule the Public Hearings for Items #8, #9 and #10 on January 8, 2025 at 7:30 p.m. in the Fiscal Courtroom. Mr. Schwenke seconded the motion and it passed unanimously.

H. EXECUTIVE DIRECTOR'S REPORT:

Mr. Kevin P. Costello, AICP, noted that it is the time of the year to appoint a representative from the Planning Commission to serve on the OKI Board of Directors for 2025. Randy Bessler is currently the Planning Commission's representative and he would like to serve another term. **Mrs. Kegley moved to reappoint Randy Bessler to represent the Planning Commission and serve on the OKI Board of Directors for 2025. Ms. Gulick seconded the motion and it passed unanimously.**

I. COMMITTEE REPORTS:

- Airport (Randy Bessler)
No Report
- Administrative/Personnel (Tom Szurlinski)
No Report
- Enforcement (Tom Szurlinski)
No Report
- Long-Range Planning/Comprehensive Plan (Bob Schwenke)

The Comprehensive Plan Update Workshop is tomorrow from 5:30 – 7:30 p.m. at the Union Fire Station on U.S. 42

- Technical/Design Review (Rick Lunnemann)
No Report
- Executive (Charlie Rolfsen)
No Report

J. CHAIRMAN'S REPORT: (Charlie Rolfsen)

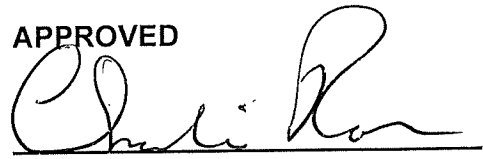
Chairman Rolfsen announced that the 2025 Election of Planning Commission Officers will be held on January 8, 2025. He appointed Bob Schwenke and Janet Kegley to serve as the Nominating Committee. He suggested that anyone who was interested in serving as an officer of the Board to notify a member of the Nominating Committee before January 8, 2025 so that your name can be added to the ballot.

K. OKI REPORT: (Randy Bessler)
No Report

L. ADJOURNMENT:

There being no further business to come before the Planning Commission, **Mr. Bessler moved to adjourn the meeting. Mr. Lunnemann seconded the motion and it passed unanimously. The meeting was adjourned at 7:36 p.m.**

APPROVED



Charlie Rolfsen
Chairman

Attest:



Kevin P. Costello, AICP
Executive Director

EXHIBIT

“B”

ZONE CHANGE/CONCEPT PLAN COMMITTEE REPORT

TO: Boone County Planning Commission

FROM: Steve Harper, Chair

DATE: December 4, 2024

RE: Request of **Sinkula Investments (applicant)** for **Mt. Zion MHC LP (owner)** for a Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4), including the following variances: (1) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along Lakeside Drive; and (2) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along the west property line, for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky. The request is for a Zoning Map Amendment to allow the development of an eating and drinking establishment with drive-through service.

APPROVAL:

1. We, the Committee Members were present at the Committee Meeting and voted on the above request or else were absent from voting. Further, based upon the vote, the Committee directs the Staff to draft the finding of fact and conditions, if deemed necessary, to complete the Committee Report.
2. We, the Committee, recommend approval of the Zoning Map Amendment and Variance requests based on the following findings of fact:

ZONING MAP FINDINGS OF FACT

1. The Committee concluded that the proposed C-4 district is consistent with the Our Boone County Plan 2040 Future Land Use Plan Map which identifies the site for Commercial uses which is described as "retail; corporate and professional office, interchange commercial, indoor commercial recreation, restaurants, services, etc."

The submitted Concept Development Plan shows the construction of a fast-food restaurant with drive-through service consistent with the Commercial uses recommended.

2. The Committee concluded that the proposed C-4 district is consistent with the Land Use Plan Element of Our Boone County Plan 2040, which includes the following passages, which relate to the request:

Development at the Mt. Zion interchange should be planned in such a way as to not greatly impact the existing and planned Suburban Density Residential uses in the area. KY 536 (Mt. Zion Rd.) is planned for major widening, which will make this corridor a major arterial route from Boone County, through Kenton County, to Campbell County. Reconstruction of the Mt. Zion/I-75 interchange is expected to begin in 2019 and the reconstruction of Mt. Zion Road from I-75 to Old Union Road is underway and should be completed by 2020. Commercial activity associated with the interchange should be concentrated on the east side of the interstate. Access for these commercial uses should be coordinated so that all

ZONE CHANGE/CONCEPT PLAN COMMITTEE REPORT

Wendy's/Mt Zion Road

December 4, 2024

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development can easily access traffic signals. All commercial development should be planned with attention to possible traffic impacts because this interchange will serve an increasing volume of residential, commercial, and industrial traffic. The type of commercial activity northeast of the interchange should serve the residential areas on Mt. Zion Road and along Dixie Highway, Gateway Technical College, and the Northern Kentucky Industrial Park. Street and parking lot connections are critical in this area to help traffic flow on Mt. Zion Road. South of the interchange, between the interstate and U.S. 25, should develop in a variety of residential and commercial mixed uses. In time, the Greenlawn Estates Mobile Home Park should redevelop as Commercial due to its high visibility and access along Mt. Zion Road. Mobile home development should not extend south of Maher Road. Reconstruction and widening of U.S. 25 creates the potential for redevelopment in much of this corridor. Mixed use development with prevalent interconnections is recommended. (Florence Industrial Future Land Use Geographical Area, pg. 132).

This proposal represents a continuation of the redevelopment of the Mobile Home Park to Commercial as recommended. The Committee concluded that this proposal represents the last available site which will serve as the entrance to the redevelopment. The Committee also concluded that any future redevelopment of the mobile home park will have to include the entirety of the property to properly evaluate vehicular street connections to mitigate any foreseeable traffic issues.

3. The Committee concluded that the proposed zoning map amendment, along with the submitted concept development plan, is consistent with the Future Land Use Development Guidelines of the Our Boone County Plan 2040.

The Future Land Use Development Guidelines state that developments in Boone County must recognize the potential impacts upon adjoining land uses and incorporate a transition of land uses, building setbacks, and/or landscaping to minimize these impacts. Potential impacts include visual, noise or vibrations, odors, dust, smoke, and light. Buffering to mitigate these impacts should be an integral part of the design of proposed projects; where appropriate, existing site features should be used in meeting this guideline. Developments should provide buffering along public roadways, to soften the visual impact. (Future Land Use Development Guidelines, Buffering, pp. 95-96)

This proposal includes agreements with the adjacent property owners. These agreements will allow for sufficient landscaping to be provided between the proposed site and the adjacent commercial properties.

4. The Committee concluded that the proposed C-4 district is consistent with several Our Boone County Plan 2040 Goals and Objectives.
 - a. Land uses and zoning decisions shall strive to balance the rights of landowners with the rights of neighbors and the community (Overall Goal A, Objective 4).

ZONE CHANGE/CONCEPT PLAN COMMITTEE REPORT

Wendy's/Mt Zion Road

December 4, 2024

Page 3

- b. Provide appropriate services, housing, employment, and shopping opportunities in order to meet the needs of the population in all geographic areas of the County (Demographics Goal A, Objective 4).
- c. Boone County businesses are developed in appropriate locations and are compatible with surrounding land uses. (Economy Goal B).
- d. Mixing of commercial and non-commercial uses shall occur in areas where consideration has been given to assure compatibility with surrounding land uses and natural systems (Economy Goal B, Objective 2).

CONDITIONS

The Committee concluded that the attached conditions are necessary to achieve consistency with the Our Boone County Plan 2040. The Committee concluded that the attached conditions are necessary to mitigate foreseeable community impacts that may be created by the development. The property owner has signed a letter demonstrating agreement with the conditions:

1. The approval shall be based on the revised Concept Development Plan that was reviewed at the November 20, 2024 Zone Change Committee meeting, unless modified by other conditions below.
2. That an ingress/egress easement be recorded which allows for the connection through CAC Developments LLC property to Demia Way.
3. That the connection be constructed and directional arrows be provided, identifying the additional access through the adjacent CAC Developments LLC property to Demia Way, This connection shall be completed prior to the start of business operations.

VARIANCE FINDINGS OF FACT

The request is in agreement with KRS 100.243 and Section 251 of the Boone County Zoning Regulations for the following reasons:

1. The proposed variances do not adversely affect the public health, safety, or welfare, will not alter the essential character of the general vicinity, will not cause a hazard or nuisance to the public, and will not allow an unreasonable circumvention of the requirements of the zoning regulations. In making this finding, the Committee concluded the strict application of the landscaping buffer yard requirements and the rear yard setback would deprive the applicant of the reasonable use of the land or create an unnecessary hardship.
2. The proposed variance is being requested as part of a proposed zoning map amendment with the submittal of a proposed Concept Development Plan. Since the requested variance is part of, and being reviewed in light of, the proposed zoning map amendment and concept development plan, it is the decision of this committee that the proposed variances should only be approved and be in effect if the proposed zoning map amendment is approved by the legislative body.

ZONE CHANGE/CONCEPT PLAN COMMITTEE VOTE

TO: Boone County Planning Commission
FROM: Steve Harper, Chairman
DATE: November 20, 2024

REMARKS:

We, the Committee Members were present at the Committee Meeting and voted on the above request or else were absent from voting. Further, based upon the vote, the Committee directs the Staff to draft the findings of fact and conditions if deemed necessary in order to complete the Committee Report.

ZONING MAP AMENDMENT - Steve Harper, Chairman, Steve Lilly, Staff

2. Request of **Sinkula Investments (applicant)** for **Mt. Zion MHC LP (owner)** for a Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4), including the following variances: (1) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along Lakeside Drive; and (2) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along the west property line, for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky. The request is for a Zoning Map Amendment to allow the development of an eating and drinking establishment with drive-through service.

Janet Kegley
Janet Kegley
For Project Absent
Against Project
Abstain Deferred

Corrin Gulick
Corrin Gulick
For Project Absent
Against Project
Abstain Deferred

Rick Lunnemann
Rick Lunnemann
For Project Absent
Against Project
Abstain Deferred

Kathy Clark (Alternate)
Kathy Clark (Alternate)
For Project Absent
Against Project
Abstain Deferred

Steve Harper
Steve Harper (Chairman)
For Project Absent
Against Project
Abstain Deferred

Steve Turner (Alternate)
Steve Turner (Alternate)
For Project Absent
Against Project
Abstain Deferred

David Hincks
David Hincks
For Project Absent
Against Project
Abstain Deferred

Jackie Steele (Alternate)
Jackie Steele (Alternate)
For Project Absent
Against Project
Abstain

TOTAL: _____ DEFERRED 4 FOR PROJECT _____ ABSENT
_____ AGAINST PROJECT _____ ABSTAIN

ZONE CHANGE/CONCEPT PLAN COMMITTEE VOTE

TO: Boone County Planning Commission

FROM: Steve Harper, Chairman

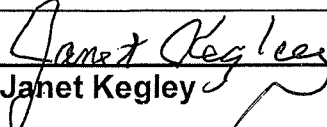
DATE: September 18, 2024

REMARKS:

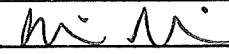
We, the Committee Members were present at the Committee Meeting and voted on the above request or else were absent from voting. Further, based upon the vote, the Committee directs the Staff to draft the findings of fact and conditions if deemed necessary in order to complete the Committee Report.

ZONING MAP AMENDMENT, Steve Harper, Chairman, Steve Lilly, Staff

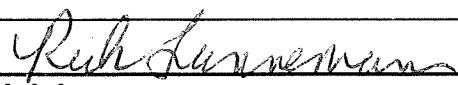
3. Request of **Sinkula Investments (applicant)** for **Mt. Zion MHC LP (owner)** for a Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4), including the following variances: (1) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along Lakeside Drive; and (2) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along the west property line, for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky. The request is for a Zoning Map Amendment to allow the development of an eating and drinking establishment with drive-through service.



Janet Kegley
For Project ____ Absent ____
Against Project ____
Abstain ____ Deferred

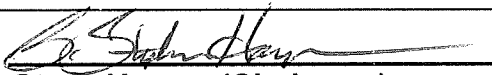


Corrin Gulick
For Project ____ Absent ____
Against Project ____
Abstain ____ Deferred



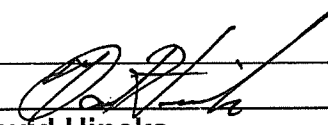
Rick Lunnemann
For Project ____ Absent ____
Against Project ____
Abstain ____ Deferred

Kathy Clark (Alternate)
For Project ____ Absent ____
Against Project ____
Abstain ____ Deferred



Steve Harper (Chairman)
For Project ____ Absent ____
Against Project ____
Abstain ____ Deferred

Steve Turner (Alternate)
For Project ____ Absent ____
Against Project ____
Abstain ____ Deferred ____



David Hincks
For Project ____ Absent ____
Against Project ____
Abstain ____ Deferred

Jackie Steele (Alternate)
For Project ____ Absent ____
Against Project ____
Abstain ____

TOTAL: 5 DEFERRED ____ FOR PROJECT ____ ABSENT
 ____ AGAINST PROJECT ____ ABSTAIN

COMMISSION MEMBERS PRESENT:

Mr. Randy Bessler
Mrs. Kathy Clark
Mrs. Pamela Goetting
Mr. Steve Harper, Temporary Presiding Officer
Mr. David Hincks
Mrs. Janet Kegley
Mr. Rick Lunnemann
Mr. Eric Richardson
Mr. Charlie Rolfsen, Chairman
Mr. Bob Schwenke
Mrs. Jackie Steele, Secretary/Treasurer
Mr. Tom Szurlinski
Mr. Steve Turner
Mr. Kenny Vaught

COMMISSION MEMBERS NOT PRESENT:

Ms. Corrin Gulick, Vice Chairwoman

LEGAL COUNSEL PRESENT:

Mr. Dale Wilson

STAFF MEMBERS PRESENT:

Mr. Kevin P. Costello, AICP, Executive Director
Mr. Michael D. Schwartz, Director, Zoning Services
Mr. Steve Lilly, PLS, GISP, Planner

Chairman Rolfsen introduced the second item on the Agenda at 8:54 p.m.

ZONING MAP AMENDMENT, Steve Lilly, Staff

3. Request of **Sinkula Investments (applicant)** for **Mt. Zion MHC LP (owner)** for a Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4), including the following variances: (1) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along Lakeside Drive; and (2) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along the west property line, for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky. The request is for a Zoning Map Amendment to allow the development of an eating and drinking establishment with drive-through service.

Staff member, Steve Lilly, referred to his PowerPoint presentation (see Staff Report). The site is 1.2 acres in area. It is located on the south side of Mt. Zion Road and the west side of Lakeside Drive. The site has 140 feet of frontage along Mt. Zion Road and 360 feet along Lakeside Drive and there is a signalized intersection at Mt. Zion Road. There is a left turn lane on Mt. Zion Road. The site slopes down from Mt. Zion Road at a 2% grade. There is an existing pond at the end of Lakeside Drive. Mr. Lilly described the adjoining land uses and zoning. McDonald's is under construction next to the site. Pages 1-3 of the Staff Report include sections from the Zoning Regulations. The 2040 Future Land Use Map designates the site as Commercial (C). The text also notes that over time the Greenlawn Mobile Home Park site should redevelop into commercial uses due to its high visibility and access to Mt. Zion Road. Pages 3-6 of the Staff Report includes appropriate sections from the Comprehensive Plan. Mr. Lilly described the submitted Concept Development Plan. There are no mobile homes located on the subject site. All trees will be removed from the site. A 2,350 square foot Wendy's restaurant is being proposed. It will have a drive-thru and a 40 seat dining room. Lakeside Drive is being proposed to be extended. The proposed drive-thru has adequate stacking. The existing concrete barrier will be relocated to Carpenter Drive. A delivery zone is proposed on the site. There is a proposed connection to the property located to the west. A Traffic Impact Study was submitted. Pages 8-10 of the Staff Report includes the findings and recommendations from that study. Comments have been received from SD1 of which a land disturbance permit and a reservation of sanitary sewer capacity are required. The State is reviewing the Traffic Impact Study. Mr. Lilly showed photographs of the site. Staff has concerns about the flow of traffic from both restaurants on Lakeside Drive given the length of the private road and the barrier. Will the painted message of "Do No Block" really be effective? The proposal includes a reduction of the landscaping buffers along Lakeside Drive and the western property line. No landscaping plan has been submitted. Could there be shared landscaping? Staff would also like to know if the applicant discussed the shared access to the adjacent property owner or to Demia Way? What about future connectivity within the entire property as it is noted in the Comprehensive Plan. What about sharing an overall plan for future development to assure good traffic flow?

Chairman Rolfsen asked if the applicant was present and wanted to proceed with their presentation?

Mr. Brock MacKay, Viox & Viox, Inc., introduced Mr. Laurence Aston, President, Sinkula Investments. He stated that they have been in business since 1995. They have 13 restaurants today. Mr. MacKay noted that he also has a representative from Flagship Communities REIT. It is proposed to be a leased lot. The site is at a good location. It is a better use. The proposed access is located as far away from Mt. Zion Road. It helps with deliveries. It is a smaller restaurant. He explained the need for the variance due to the size of the lot. They have met with the neighbor. Mr. MacKay showed a slide of building elevations. He reviewed the history of traffic in the area. There are about 150 mobile homes in the neighborhood. Lakeside was originally opened all the way but it was a cut through. That is why they put a barrier up. Flagship Communities have removed additional mobile homes in the event that McDonald's needs to move their access.

Chairman Rolfsen asked if anyone living on Carpenter Drive could use the traffic signal? Mr. MacKay replied no. They would have to use Dixie Highway. Mr. Rolfsen asked if they have a definitive answer of how many cars can use the traffic signal? What is the timing or the number of cars that can make it through the light? The State will not allow the intersection to be clogged.

Chairman Rolfsen asked if anyone in the audience would like to speak in favor or against the request or had any questions?

Mr. Rick Hall, owner of the oil change and car wash next to the subject site has been in touch with the owner (Cindy Cahill) of 10050 Demia Way. The perfect solution is to connect to his property that will get traffic to Demia Way and use another way out to Mt. Zion Road. The location of the Wendy's dumpster is 20 feet from the existing pond (bugs and rodents). The dumpster should be located closer to the building. In addition, there are 30 semis that go up and down Mt. Zion Road. How do semis turn around on Lakeside Drive? It will be gridlock. Wendy's is interested in the connection. He is for and against the project. Mr. MacKay responded that he likes the connection to the west and they could always look at using Carpenter Drive to turn around.

Mr. Costello asked if the owner of the mobile home park was present. What is the game plan for the future of the park? The development is piecemeal. Also, there are two high traffic uses near Mt. Zion Road with limited capacity as the owner is not letting traffic go east. We were told it would only be McDonald's and now a Wendy's is proposed. It reminds him of Dream Street. Mr. Andrew Pulliam, Flagship Communities, stated that there were people living off Mt. Zion and they moved them because it was too close to the new road. He has no intention for more commercial zoning. They are only interested in mobile homes and will never develop to the east because of the playground, soccer fields, etc.

Mr. Costello inquired about the condition of Lakeside Drive? Mr. Pulliam replied that he doesn't have an answer. Mr. MacKay stated that they may have to widen the back portion of the street to make it 24 feet wide like the front part. There will also be a need for a retaining wall or guardrail at the end of the road before the pond. There are only two lanes at the intersection. Chairman Rolfsen asked about a change in signal timing and adding a right turn lane.

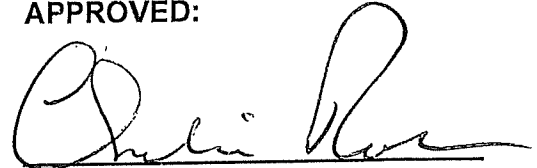
Mr. Hall noted that Lakeside Drive was not built to handle trucks, just cars. The pond is full of algae and his mother drowned in the pond in 2011.

Chairman Rolfsen asked if the Commissioners had any questions or comments?

Mr. Lunnemann asked if Lakeside Drive could be upgraded to a public road with turning lanes? At some point, real public roads need to be built. Mr. MacKay stated that mobile home parks typically have private streets but he will discuss the matter with the owner. The KYTC will decide about the turn lane. Mr. Lunnemann stated that if Carpenter Drive is cut off at McDonald's, it may make sense to cut off Carpenter Drive and put in a cul-de-sac with a public street. The current road system can't support two fast food restaurants.

Seeing no further questions or comments, Chairman Rolfsen announced that the Committee Meeting for this item will be on September 18, 2024 at 5:00 P.M. This item will be on the Agenda for the Business Meeting on October 2, 2024 at 7:00 p.m. in the Fiscal Courtroom. Chairman Rolfsen closed the Public Hearing at 9:44 p.m.

APPROVED:



Charlie Rolfsen
Chairman

Attest:



Kevin P. Costello, AICP
Executive Direct

SUPPORTING INFORMATION

10021 LAKESIDE DRIVE COMMERCIAL DEVELOPMENT TRAFFIC IMPACT STUDY

Mt. Zion Road (KY-536) & Lakeside Drive/Berberich Drive
Unincorporated Boone County, Kentucky



Prepared for:

Sinkula Investments Ltd. Co.
3005 Dixie Highway, Suite 150
Edgewood, Kentucky 41017



Prepared By: Jon Girdler, PE
Date: August 6, 2024

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APPENDICES

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 - B. ITE Trip Generation Rates, Plots and Equations & Turning Movement Exhibits
 - C. Synchro Analyses
 - D. Turn Lane Warrants
 - E. Historic Traffic Data
-

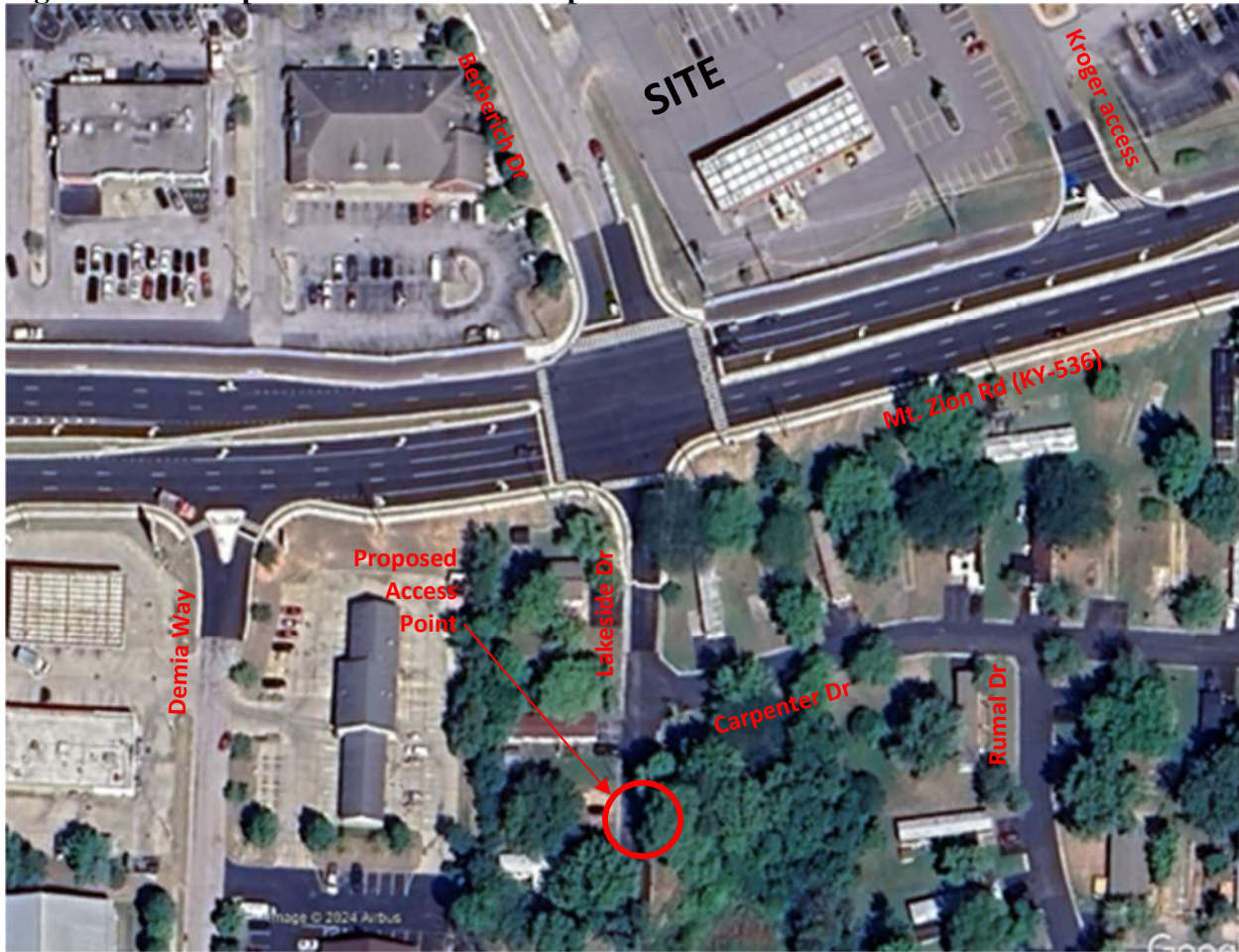
1. EXECUTIVE SUMMARY

The following provides an overview of the report and its recommendations related to the proposed commercial development in unincorporated Boone County, Kentucky. The anticipated Full-Build year is 2025, with post Full-Build to be in 2035. The development will consist of a fast-food restaurant with 1 drive-through lane (Wendy's). The access point is proposed near the southern terminus of Lakeside Drive, which is approximately 345 feet away from the intersection of the Mt. Zion Road/Lakeside Drive intersection.

The following conclusions are outlined below to mitigate any effects that the development will have on the surrounding roadways:

1. A striping configuration that discourages vehicles from blocking turn movements to and from the McDonald's access point is proposed. The striping configuration shall comply with MUTCD standards and regulations, shall read "DO NOT BLOCK". The limits of the striping shall cover the northbound lane of Lakeside Drive where that area intersects with the McDonald's access point. Additionally, a "DO NOT BLOCK INTERSECTION" sign shall be installed south of the Lakeside Drive/McDonald's access point and shall face south towards northbound traffic. Per the turn lane warrant calculations, no turn lanes are warranted at this intersection.
2. The developer proposes to prohibit turning movements between Lakeside Drive and Carpenter Drive by installing a barrier.

Figure 1 – Development Site Location Map



2. SCOPE OF WORK

Preliminary discussions regarding the TIS scope were held with KYTC District 6 and Boone County Public Works. It was determined the scope would include 3 existing intersections:

- Mt. Zion Road (KY-536) & Demia Way (right-in/right-out, 1-way stop-controlled)
- Mt. Zion Road & Lakeside Drive/Berberich Drive (signalized)
- Mt. Zion Road & Kroger access (right-in/right-out, 1-way stop-controlled)

The study area is shown in Figure 1.

The following tasks were performed as part of this study:

1. **Meeting/discussions with Project Team, KYTC, and/or public agencies** – Discussions and/or meetings were held with the various jurisdictional agencies and interested parties for the purpose of the establishment of details of scope of work and technical traffic engineering analysis methodology.
2. **Existing traffic conditions** – A site reconnaissance was conducted for the purpose of identifying aspects of ingress/egress and important roadway characteristics on the subject roadways. Included in the reconnaissance was traffic lane geometry and utilization, pavement widths, roadway characteristics, posted speed limits, traffic controls, signage, applicable

Manual of Uniform Traffic Control Devices standards, and any potential safety issues related to intersection sight distance.

This study utilized the turning movement counts performed for the nearby McDonald's that is currently under construction. The weekday morning and evening peak hour time periods were counted in August 2023.

3. **New traffic volumes and distribution of trips** – The same development schedule is assumed for this development compared to the nearby McDonalds (Full-Build assumed to be 2025). However, a couple different trip estimates are assumed to determine a worst-case scenario. The trips were calculated by using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*. New trip turning movements for vehicles were assigned to the adjacent street system using demographic information and the existing traffic flow distributions. Like the McDonald's traffic study completed by Bayer Becker, two years of projected growth was added to the existing turning movement counts to serve as the opening day/Full-Build traffic volumes. Post Full-Build year is assumed to be 2035. Twelve years of projected growth were added to the existing turning movement counts to serve as the post Full-Build traffic volumes.
4. **Turn Lane Warrant Analysis** - The need for exclusive right- and left-turn lanes was investigated along Lakeside Drive (as depicted on Figure 1).
5. **Projected Year Traffic**- The analysis was completed for Base conditions (2023), year 2025 No-Build and Full-Build scenarios, and 10 years of projected traffic for the 2035 post No-Build and Full-Build scenarios. The No-Build traffic volumes were estimated by applying a regional growth factor to the 2023 traffic volumes and include the McDonald's trips. For consistency with other traffic studies completed for the area, the regional growth factor per the Ohio Kentucky Indiana Regional Council of Governments is assumed to be 1.31% (applied exponentially, 1.03 for 2025 and 1.17 for 2035) for both the AM and PM peak hours.

Level of Service Analysis – The intersections in the study area were analyzed for morning and evening peak hour traffic volumes for the Full-Build and No-Build scenarios.

6. **Traffic Impact Study Report** – This report was prepared as requested by KYTC, and describes the methodology used for the traffic analysis. The report includes appropriate traffic engineering analysis, conclusions, and recommendations to fully mitigate any potential adverse traffic impacts. This report fully conforms to the regulations and standards adopted by KYTC.

The final report will be submitted to KYTC and Boone County for review and approval.

3. EXISTING AREA CONDITIONS

KY-536 is of paramount importance for the Boone County roadway network. It is a vital east-west corridor that provides access to many communities in Boone, Kenton, and Campbell County. In the vicinity of the proposed development, it provides access to I-71/75 (to the west), US-25 (to the east), and various arterial, collector, and local roads to the north and south. It is a five-lane roadway separated by a raised median (with exclusive westbound and eastbound turn lanes) and is classified as a minor urban arterial. The roadway's posted speed limit is 45 MPH within the study area. Lakeside Drive, the northbound approach of the Mt. Zion/Lakeside Drive intersection, is a private roadway owned and maintained by the developer. It possesses one inbound lane and one outbound lane. There is sufficient sight distance at the proposed development access. The intersections to the east and west of Lakeside Drive made with KY-536 are restricted access points (right-in/right-outs), designated as the Kroger access and Demia Way, respectively. Both restricted access points are one-way stop-controlled configurations.

As previously mentioned, this study utilized the turning movement counts performed for the nearby McDonald's that is currently under construction. The weekday morning and evening peak hour time periods were counted in August 2023. The study focused on the peak hour time periods of 7:30 AM – 8:30 AM and 4:30 PM – 5:30 PM.

4. PROPOSED SITE DEVELOPMENT

The new development will include a 2,200 SF Wendy’s restaurant with 1 drive-through lane. The concept plan is included in Appendix A, which shows the Full-Build condition. Per KYTC policy, the new AM and PM trips were initially estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*. The condition that was analyzed represents a worst-case scenario, which amounts to the same number of trips that was assumed for McDonald’s across the street. The distribution of these trips is more clearly shown in exhibits contained in Appendix B.

Table 1. Estimated New Site Trips (2025 – Full-Build)

ITE Land Use Code	Land Use Description	Var. (X)	Var. Units	AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
934	Fast-Food Restaurant with Drive-Through Window	N/A	N/A	96	93	189	73	67	140
				51%	49%		51%	49%	
Pass-By Trip Reduction (50% AM & 55% PM)				-48	-47	-95	-40	-37	-77
Primary Trips				48	46	94	33	30	63

Exhibits showing the various Full-Build and No-Build scenarios are listed below, and are included in Appendix B:

- Exhibit A shows the percentage distribution of the new Build trips.
- Exhibit B shows the volume distribution of the new Build trips.
- Exhibit C shows the pass-by trips.
- Exhibit D shows the primary trips.
- Exhibit E shows the combination of pass-by and primary trips.
- Exhibit 1 shows the 2023 Base traffic volumes.
- Exhibit 2 shows the 2025 No-Build traffic volumes (includes McDonald’s volumes).
- Exhibit 3 shows the 2025 Build traffic volumes (includes Wendy’s volumes).
- Exhibit 4 shows the 2035 No-Build traffic volumes (includes McDonald’s volumes).
- Exhibit 5 shows the 2035 Build traffic volumes (per the McDonald’s trip generation totals).

5. TRAFFIC ANALYSIS

Capacity Analysis

A capacity analysis was performed for the study area intersections as previously indicated. All analysis scenarios were completed using Synchro software. The capacity of an intersection is quantified by the Level of Service (LOS) which is based upon the amount of delay a vehicle experiences at a particular intersection. The criterion for signalized and unsignalized intersections is listed below as defined in the Highway Capacity Manual (HCM, 6th Edition), Volume 3.

Table 2. Unsignalized Intersection LOS Criteria

LOS	Average Control Delay (seconds/vehicle)
<i>A</i>	≤ 10
<i>B</i>	$>10 - 15$
<i>C</i>	$>15 - 25$
<i>D</i>	$>25 - 35$
<i>E</i>	$>35 - 50$
<i>F</i>	>50

Table 3. Signalized Intersection LOS Criteria

LOS	Average Control Delay (seconds/vehicle)	General Description
<i>A</i>	≤ 10	<i>Free Flow</i>
<i>B</i>	$> 10 - 20$	<i>Stable Flow (slight delays)</i>
<i>C</i>	$> 20 - 35$	<i>Stable Flow (acceptable delays)</i>
<i>D</i>	$> 35 - 55$	<i>Approaching unstable flow (occasionally wait through more than one cycle)</i>
<i>E</i>	$> 55 - 80$	<i>Unstable Flow (intolerable delays)</i>
<i>F</i>	> 80	<i>Forced Flow (congested and queues fail to clear)</i>

The following is a list of code definitions that are used in the capacity analysis results:

- EB/WB/NB/SB – Eastbound/Westbound/Northbound/Southbound
- L – Left Turn Movement
- T – Through Movement
- R – Right Turn Movement

The summary of Synchro analyses completed for all No-Build and Build AM and PM scenarios for each intersection is included below. The Synchro output is included in Appendix C.

Mt. Zion Road & Demia Way – Unsignalized

The capacity analyses completed for the Mt. Zion Road & Demia Way intersection are shown in Tables 4 and 5.

The results of the intersection approach delays for the AM Base, No-Build, and Build scenarios are shown below. The northbound approach possesses LOS B for all scenarios. All other approaches possess LOS A for every AM scenario. The maximum V/C ratio for the intersection is the northbound approach, being 0.04.

Table 4. Mt. Zion Road & Demia Way – AM LOS/Delay (seconds/vehicle)

Lane Group	EB (KY-536)				WB (KY-536)				NB (Demia Way)				SB (N/A)			
			R	App.				App.			R	App.				
2023 - Base				A								B				
				0.0								12.0				
2025 – No-Build				A								B				
				0.0								12.3				
2035 – No-Build				A								B				
				0.0								12.8				
2025 – Build				A								B				
				0.0								12.4				
2035 – Build				A								B				
				0.0								13.0				

The results of the intersection approach delays for the PM Base, No-Build, and Build scenarios are shown below. The northbound approach possesses LOS B for all scenarios. All other approaches possess LOS A for every PM scenario. The maximum V/C ratio for the intersection is the northbound approach, being 0.10.

Table 5. Mt. Zion Road (KY-536) & Demia Way – PM LOS/Delay (seconds/vehicle)

Lane Group	EB (KY-536)				WB (KY-536)				NB (Demia Way)				SB (N/A)			
			R	App.							R	App.				
2023 - Base				A								B				
				0.0								13.3				
2025 – No-Build				A								B				
				0.0								13.6				
2035 – No-Build				A								B				
				0.0								14.5				
2025 – Build				A								B				
				0.0								13.7				
2035 – Build				A								B				
				0.0								14.7				

Mt. Zion Road & Lakeside Drive/Berberich Drive – Signalized

The capacity analyses completed for the Mt. Zion Road & Lakeside Drive/Berberich Drive intersection are shown in Tables 6 and 7.

The results of the average intersection delays for the AM Base, No-Build, and Build scenarios are shown below. The average intersection delays possess LOS A for the Base scenario and LOS B for all No Build and Build scenarios. The northbound approach possesses LOS A for the Base scenario and LOS E for all No Build and Build scenarios. The same increase in the average intersection delay occurs during the 2025 and 2035 No-Build to Build conditions (6.0 sec). The maximum northbound approach delay occurs similarly, with a 1.5-second increase between 2025 and 2035 No-Build to Build scenarios. The maximum V/C ratio for the intersection is the northbound approach, being 0.74.

Table 6. Mt. Zion Road & Lakeside Drive/Berberich Drive - AM LOS/Delay (seconds/vehicle)

Lane Group	EB (KY-536)				WB (KY-536)				NB (Lakeside Dr)		SB (Berberich Dr)			Int.
	L	T	R	App.	L	2T/R		App.	L/T/R	App.	L/T	R	App.	
2023 - Base	A	A	A	A	A	A		A	D	D	D	D	D	A
	3.7	2.5	2.1	2.5	0.0	7.1		7.1	53.5	53.5	53.1	54.1	53.6	6.7
2025 – No-Build	A	A	A	A	A	A		A	E	E	D	D	D	B
	5.2	7.9	7.1	7.8	4.6	8.2		7.9	58.0	58.0	52.2	52.1	52.1	12.4
2035 – No-Build	A	A	A	A	A	A		A	E	E	D	D	D	B
	5.3	8.1	7.1	8.0	4.7	8.7		8.4	58.0	58.0	52.2	52.2	52.2	12.3
2025 – Build	A	B	B	B	A	B		B	E	E	D	D	D	B
	8.6	12.4	11.6	12.1	8.0	12.3		11.7	59.5	59.5	48.2	47.7	47.9	18.4
2035 – Build	A	B	B	B	A	B		B	E	E	D	D	D	B
	8.8	12.7	11.6	12.5	8.1	13.0		12.4	59.5	59.5	48.2	48.0	48.1	18.3

The results of the intersection approach delays for the AM Base, No-Build, and Build scenarios are shown below. The average intersection delays possess LOS B for the Base and 2025 No Build scenarios, and LOS C for the 2025 Build and 2035 No-Build and Build scenarios. The largest intersection delay increase occurs during the 2035 No-Build to Build scenario (5.5 seconds). The northbound approach possesses LOS D for the Base scenario and LOS E for all No Build and Build scenarios. The largest approach delay increase occurs during the 2035 No-Build to Build conditions (5.1 sec). The maximum V/C ratio for the intersection is the northbound approach, being 0.71.

Table 7. Mt. Zion Road & Lakeside Drive/Berberich Drive - PM LOS/Delay (seconds/vehicle)

Lane Group	EB (KY-536)				WB (KY-536)				NB (Lakeside Dr)		SB (Berberich Dr)			Int.
	L	T	R	App.	L	2T/R		App.	L/T/R	App.	L/T	R	App.	
2023 - Base	A	A	A	A	A	B		B	D	D	E	E	E	B
	6.9	7.2	5.9	7.1	8.8	12.7		12.7	50.3	50.3	58.9	54.7	57.0	15.3
2025 – No-Build	A	B	B	B	A	B		B	E	E	E	D	D	B
	9.0	12.2	10.3	11.8	8.3	15.1		14.7	61.6	61.6	57.0	51.9	54.6	19.4
2035 – No-Build	A	B	B	B	A	B		B	E	E	E	D	D	B
	9.6	12.6	10.4	12.2	8.5	16.0		15.7	61.6	61.6	57.0	53.1	55.0	19.7
2025 – Build	B	B	B	B	B	B		B	E	E	D	D	D	C
	11.7	16.2	14.3	15.6	10.8	18.7		17.9	65.5	65.5	53.2	48.6	51.1	23.5
2035 – Build	B	B	B	B	B	C		C	E	E	D	D	D	C
	13.6	18.0	15.4	17.5	12.1	21.4		20.6	66.7	66.7	53.4	48.6	51.0	25.2

Mt. Zion Road & Kroger Access – Unsignalized

The capacity analyses completed for the Mt. Zion Road & Demia Way intersection are shown in Tables 8 and 9.

The results of the intersection approach delays for the AM Base, No-Build, and Build scenarios are shown below. The southbound approach possesses LOS B for all scenarios. All other approaches possess LOS A for every AM scenario. The maximum V/C ratio for the intersection is the northbound approach, being 0.03.

Table 8. Mt. Zion Road & Kroger Access - AM LOS/Delay (seconds/vehicle)

Lane Group	EB (KY-536)				WB (KY-536)				NB (N/A)				SB (Kroger access)			
			R	App.				App.							R	App.
2023 - Base				A												B
				0.0												11.8
2025 – No-Build				A												B
				0.0												12.0
2035 – No-Build				A												B
				0.0												12.6
2025 – Build				A												B
				0.0												12.2
2035 – Build				A												B
				0.0												12.8

The results of the intersection approach delays for the PM Base, No-Build, and Build scenarios are shown below. The southbound approach possesses LOS B for all scenarios. All other approaches possess LOS A for every PM scenario. The maximum V/C ratio for the intersection is the northbound approach, being 0.18.

Table 9. Mt. Zion Road & Kroger Access - PM LOS/Delay (seconds/vehicle)

Lane Group	EB (KY-536)				WB (KY-536)				NB (N/A)				SB (Kroger access)			
			R	App.				App.							R	App.
2023 - Base				A												B
				0.0												13.7
2025 – No-Build				A												B
				0.0												14.0
2035 – No-Build				A												C
				0.0												15.2
2025 – Build				A												B
				0.0												14.2
2035 – Build				A												C
				0.0												15.3

Turn Lane Warrants

Turn lane warrant analyses were completed for the Lakeside Drive and McDonald's access intersection. Per the calculation methodology presented in the KYTC Highway Design Manual, the turn lane warrants were evaluated for the need of a southbound left-turn lane. The results show that a left-turn lane is not warranted for the intersection.

The turn lane warrant calculations are included in Appendix D.

Table 10. Turn Lane Warrant Results – Lakeside Drive & McDonald's access

Design Scenario	SB Left Turn Lane	Turn Lane Length
2035 AM Build	Not Warranted	N/A
2035 PM Build	Not Warranted	N/A

95th Percentile Queue Lengths

The following shows the tabulated queue lengths for signalized intersections as reported by the Synchro results. The queue length is defined as the distance from the stop bar that back-up occurs because of delay at an intersection. Another metric used to summarize these results is the Queue Storage Ratio (QSR). The QSR is derived from the reported queue length divided by the available storage capacity.

Table 11 shows AM and PM queue lengths for the Mt. Zion Road & Lakeside Drive/Berberich Drive intersection. All AM and PM QSR values are less than 1. Since it is proposed to prohibit turn movements between Lakeside Drive and Carpenter Drive with a barrier, install striping that reads “DO NOT BLOCK” at the intersection of Lakeside Drive and the McDonald’s access, and install a sign that reads “DO NOT BLOCK INTERSECTION” (R10-7, 24”x30”), the queue length of the northbound approach (211 feet) would reach approximately 40 feet beyond Carpenter Drive.

Table 11. AM & PM 95th Percentile Queue Lengths (ft) - Mt. Zion Rd & Lakeside Dr/Berberich Dr

<i>AM Movement/Lane Group</i>	<i>Length (feet)</i>	<i>2023 Base</i>	<i>2025 No Build</i>	<i>2025 Build</i>	<i>2035 No Build</i>	<i>2035 Build</i>
Eastbound Left	260	9	11	17	11	17
Eastbound Through (2)	540	45	95	122	110	141
Eastbound Right	140	0	11	27	11	33
Westbound Left	340	0	17	48	17	48
Westbound Through-Right (2)	1,580	142	155	198	182	232
Northbound Left/Through/Right	345	7	91	211	91	211
Southbound Left-Through	285	54	54	52	54	52
Southbound Right	140	7	7	5	7	17
<i>PM Movement/Lane Group</i>	<i>Length (feet)</i>	<i>2023 Base</i>	<i>2025 No Build</i>	<i>2025 Build</i>	<i>2035 No Build</i>	<i>2035 Build</i>
Eastbound Left	260	36	38	41	41	46
Eastbound Through (2)	540	141	144	147	167	180
Eastbound Right	140	0	5	25	5	26
Westbound Left	340	2	21	39	21	42
Westbound Through-Right (2)	1,580	232	238	243	281	301
Northbound Left/Through/Right	345	0	57	143	57	143
Southbound Left-Through	285	168	168	174	168	193
Southbound Right	140	53	52	51	57	56

6. FINDINGS

Capacity Analysis (Level of Service Analysis)

The detailed capacity analysis (and LOS characteristics) of all 2023, 2025, and 2035 Build and No-Build scenarios for the AM and PM peak hour are reported in Section 5. Unsignalized intersections are not assigned an “intersection” level of service but are evaluated for each approach. The LOS analyses completed for the intersection are summarized below, and the results can be found in Appendix C.

Mt. Zion Road (KY-536) & Demia Way – Unsignalized

For the AM and PM peak hours, the northbound approach delay for Base to Build conditions ranges from 12.0 – 14.7 seconds. The largest approach delay increase occurs between 2025 and 2035 No-Build and Build scenarios, being 0.2 seconds. The maximum V/C ratio for the northbound approach is 0.10, which occurs during the PM peak hour.

The largest 95th percentile queue length for the northbound approach is 8 feet, which occurs during the 2035 AM scenario.

The capacity analyses and 95th percentile queue length results are included in Appendix C.

Mt. Zion Road (KY-536) & Lakeside Drive/Berberich Drive - Signalized

In the AM peak hour, the average intersection delays for Base to Build conditions range from 6.7 – 25.2 seconds. The largest intersection delay increase between No-Build and Build scenarios occurs during 2035, being 6.0 seconds. The maximum northbound approach delay occurs similarly, with a 1.5-second increase between 2025 and 2035 No-Build to Build scenarios. The maximum V/C ratio for the intersection is the northbound approach, being 0.74.

The 95th percentile queue length for the northbound approach at the Mt. Zion Road and Lakeside Drive/Berberich Drive intersection is 211 feet for the 2025 and 2035 Build AM scenarios, and 143 feet for the 2025 and 2035 Build PM scenarios.

The capacity analyses and 95th percentile queue length results are included in Appendix C.

Mt. Zion Road (KY-536) & Kroger Access – Unsignalized

For the AM and PM peak hours, the southbound approach delay for Base to Build conditions ranges from 12.0 – 14.7 seconds. The largest approach delay increase occurs between 2025 and 2035 No-Build and Build scenarios, being 0.2 seconds. The maximum V/C ratio for the southbound approach is 0.10, which occurs during the PM peak hour.

The largest 95th percentile queue length for the southbound approach is 15 feet, which occurs during the 2035 AM scenario.

The capacity analyses and 95th percentile queue length results are included in Appendix C.

7. RECOMMENDATIONS

General

The analyses completed for the intersection show acceptable delays for all approaches with V/C ratios less than 1.0 for all AM and PM Build scenarios.

Lakeside Drive & McDonald's access

- A striping configuration that discourages vehicles from blocking turn movements to and from the McDonald's access point is proposed. The striping configuration shall comply with MUTCD standards and regulations, shall read "DO NOT BLOCK". The limits of the striping shall cover the northbound lane of Lakeside Drive where that area intersects with the McDonald's access point. Additionally, a "DO NOT BLOCK INTERSECTION" sign shall be installed south of the Lakeside Drive/McDonald's access point and shall face south towards northbound traffic. Per the turn lane warrant calculations, no turn lanes are warranted at this intersection.

Lakeside Drive & Carpenter Drive

- Per the turn lane warrant calculations, since no turn lanes are warranted at the Lakeside Drive/McDonald's access, by default, no turn lanes are warranted at this intersection. The developer proposes to prohibit access to/from Lakeside Drive from/to Carpenter Drive by installing some type of barrier.

APPENDICES

- A. Site Concept Plan
- B. ITE Trip Generation Rates, Plots, and Equations
& Turning Movement Exhibits
- C. Synchro Analyses
- D. Turn Lane Warrants
- E. Historic Traffic Data

APPENDIX A

Site Concept Plan

PARCEL ID: 074.00-14-004.02
 LOT 4B
 CAC DEVELOPMENTS LLC
 D.B. 1201, PG 376
 ZONE: C-4/CD

PARCEL ID: 074.00-14-004.01
 LOT 4A
 HALL INVESTMENT, LLC
 D.B. 775, PG 616
 ZONE: C-4/CD

PARCEL ID: 074.00-00-007.03
 Mt. Zion MHC, LP
 D.B. 1187, PG. 362

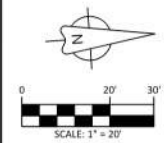
PARCEL ID: 074.00-00-007.03
 Mt. Zion MHC, LP
 D.B. 1187, PG. 362

ZONE:
 MHP (85%), C-3 (9%),
 UR-1/CD (4%), C-1 (2%)

PARCEL ID: 074.00-00-077.09
 Mt. Zion MHC, LP
 ZONE:
 C-4/CD

LEGEND

- (A) MONUMENT SIGN
- (B) DIRECTIONAL ENTRANCE SIGN
- (C) MOBILE ORDER PICKUP SPACES WITH SIGNAGE;
90° ANGLED PARKING (9' WIDE x 17' DEPTH PARKING STALL)
- (D) DELIVERY AGGREGATOR PARKING SPACES WITH SIGNAGE;
90° ANGLED PARKING (9' WIDE x 17' DEPTH PARKING STALL)
- (E) ACCESSIBLE PARKING SPACES WITH SIGNAGE;
90° ANGLED PARKING (9' WIDE x 17' DEPTH PARKING STALL
WITH AN 8' WIDE LOADING ZONE)
- (F) PRE-SELL BOARD SIGNAGE
- (G) ORDERING STATION & SPEAKER
- (H) DIGITAL MENU BOARD SIGNAGE
- (I) CANOPY PROTECTION BAR
- (J) DRIVE-THRU PICK-UP WINDOW
- (K) DRIVE-THRU PULL AHEAD STALL
- (L) TRASH ENCLOSURE
- (M) DELIVERY / TRUCK LOADING ZONE
- (N) 2' WIDE PERMANENT CONCRETE BARRIER
- (O) PROPOSED "STOP" SIGN & "DO NOT BLOCK ACCESS" SIGN
- (P) PAVEMENT STRIPING WITH
"DO NOT BLOCK ACCESS" LETTERING
- (Q) PROPOSED ROAD EXTENSION
- (R) GUARD RAIL
- (S) RETAINING WALL (AS NEEDED)
- (T) PROPOSED BUILDING



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Item	Revision	Date	By	CHK
1	BCFC ZONING MAP AMENDMENT SUBMITTAL	8/8/24	TMZ	BMM

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WENDY'S RESTAURANT CONCEPT
 MT ZION ROAD & LAKESIDE DRIVE
 UNINCORPORATED BOONE COUNTY, KENTUCKY

Project No:	119424001	Checked:	BMM
Date:	08/06/2024	Ref:	TMZ
Sheet:	C2.0		

LAYOUT PLAN

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APPENDIX B

ITE Trip Generation Rates, Plots, and Equations

&

Turning Movement Exhibits



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MT. ZION ROAD/LAKESIDE DRIVE WENDY'S RESTAURANT TRAFFIC IMPACT STUDY BOONE COUNTY, KENTUCKY

Project No:
119424001

Checked:
MLB

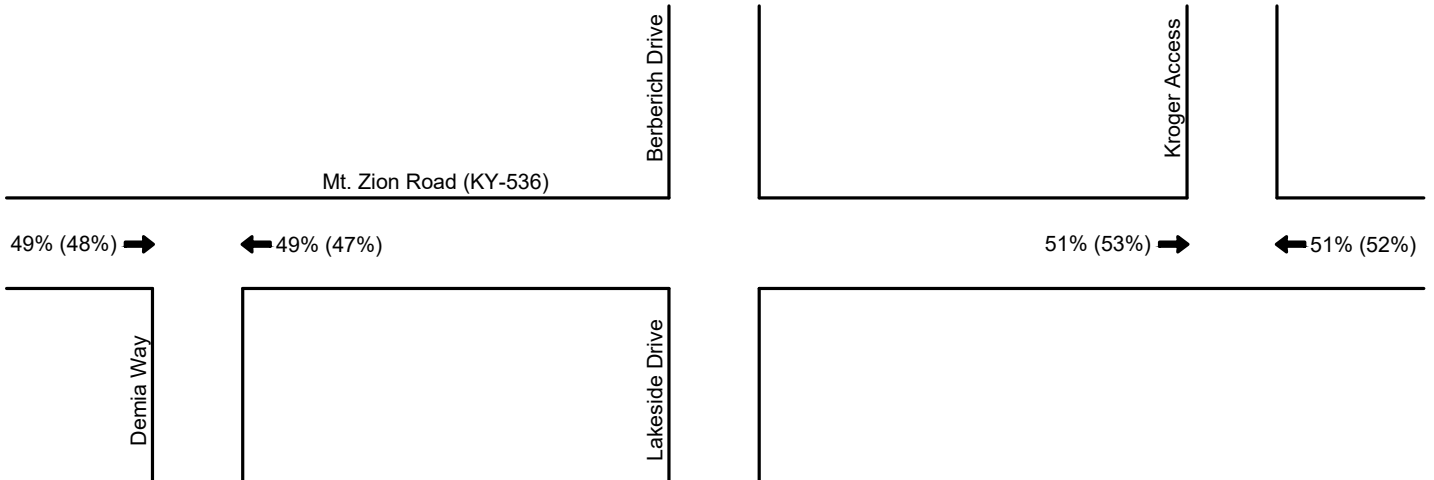
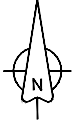
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7/24/24

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EXHIBIT A

TRIP DISTRIBUTION PERCENTAGES AM(PM)





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TRIP DISTRIBUTION VOLUMES AM(PM)

Project No:
119424001

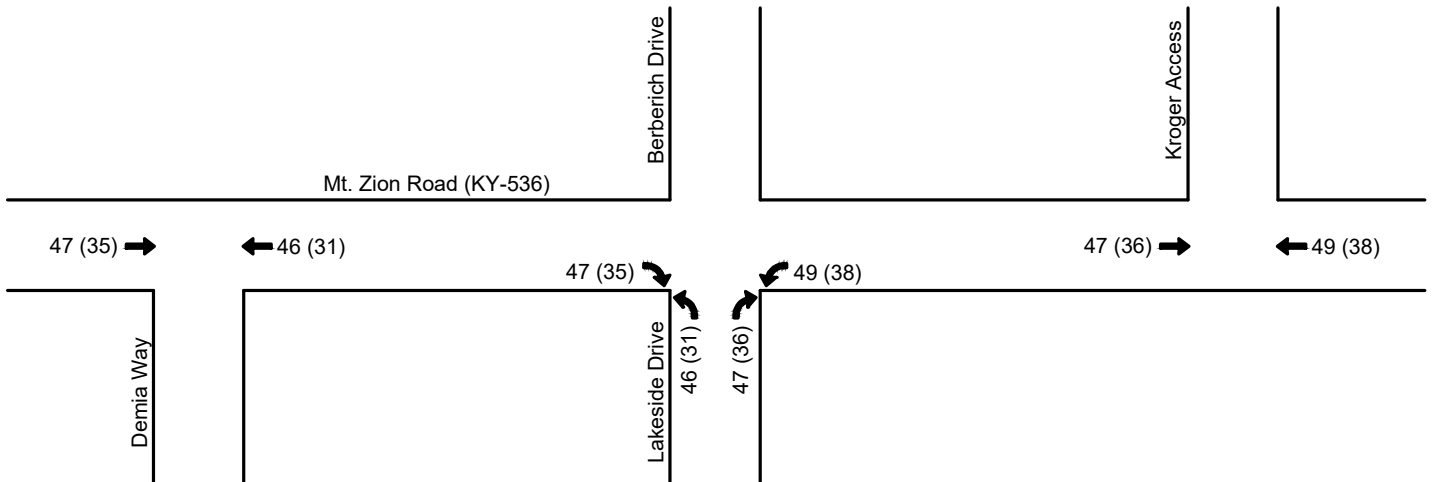
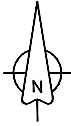
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7/24/24

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EXHIBIT B



Proposed 2,200 SF Fast-Food
Restaurant with Drive-Through



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**MT. ZION ROAD/LAKESIDE DRIVE
 WENDY'S RESTAURANT
 TRAFFIC IMPACT STUDY**
 BOONE COUNTY, KENTUCKY
 PASS-BY VOLUMES AM(PM)

Project No:
119424001

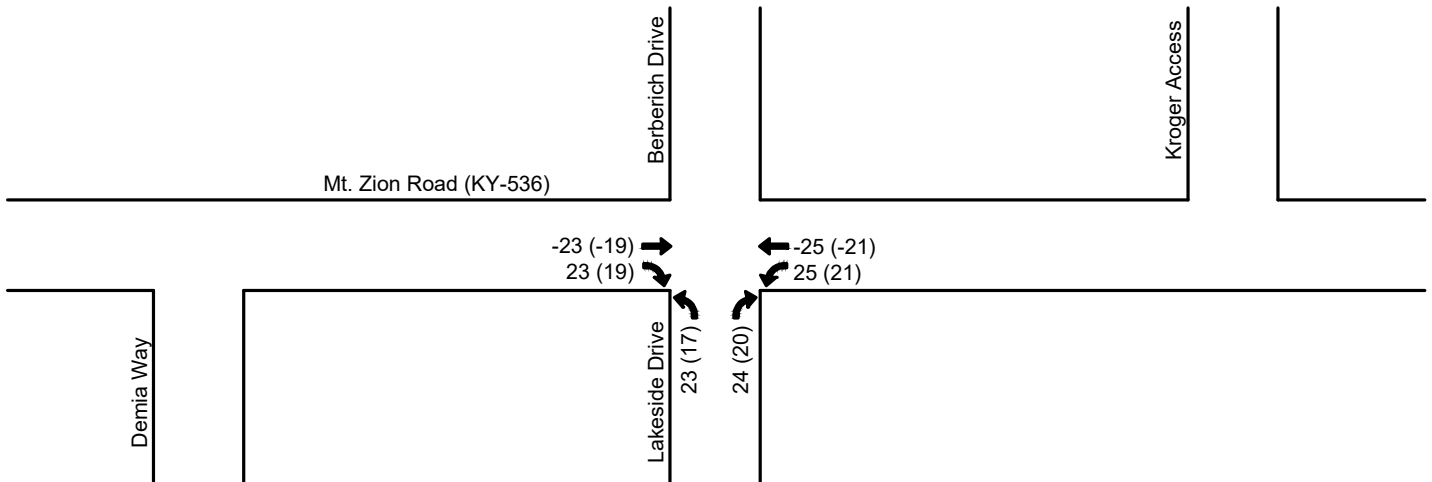
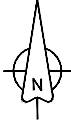
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EXHIBIT C



Proposed 2,200 SF Fast-Food
 Restaurant with Drive-Through

Proposed Fast-Food Restaurant with Drive-Through

Per ITE Land Use 934, the estimated number of trips generated by a 2,200 SF fast-food restaurant with a drive-through is 98 AM trips (50 enter, 48 exit) and 73 PM trips (38 enter, 35 exit) with pass-by trip reduction rates of 50% and 55%, respectively. Entering and exiting distributions are 51%/49% for AM peak hour and 52%/48% for PM peak hour. As a conservative estimate, it was assumed that this development would generate as much traffic as the McDonald's across from Lakeside Drive.



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MT. ZION ROAD/LAKESIDE DRIVE WENDY'S RESTAURANT TRAFFIC IMPACT STUDY

BOONE COUNTY, KENTUCKY

PRIMARY VOLUMES AM(PM)

Project No:
119424001

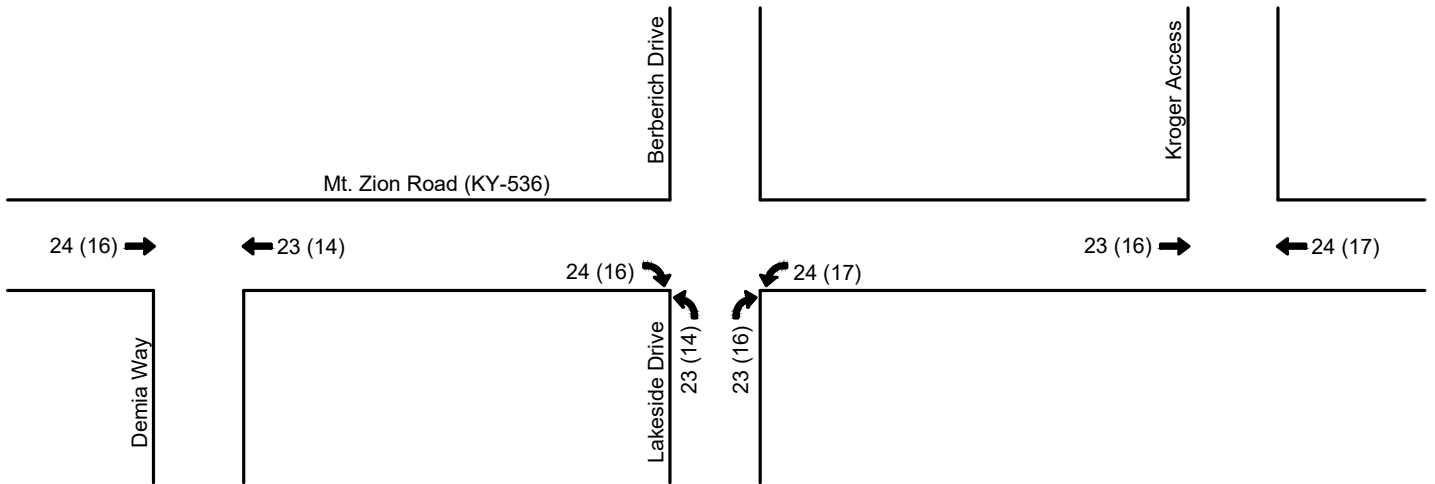
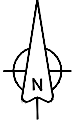
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EXHIBIT D



Proposed 2,200 SF Fast-Food
Restaurant with Drive-Through



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MT. ZION ROAD/LAKESIDE DRIVE WENDY'S RESTAURANT TRAFFIC IMPACT STUDY BOONE COUNTY, KENTUCKY

Project No:
119424001

Checked:
MLB

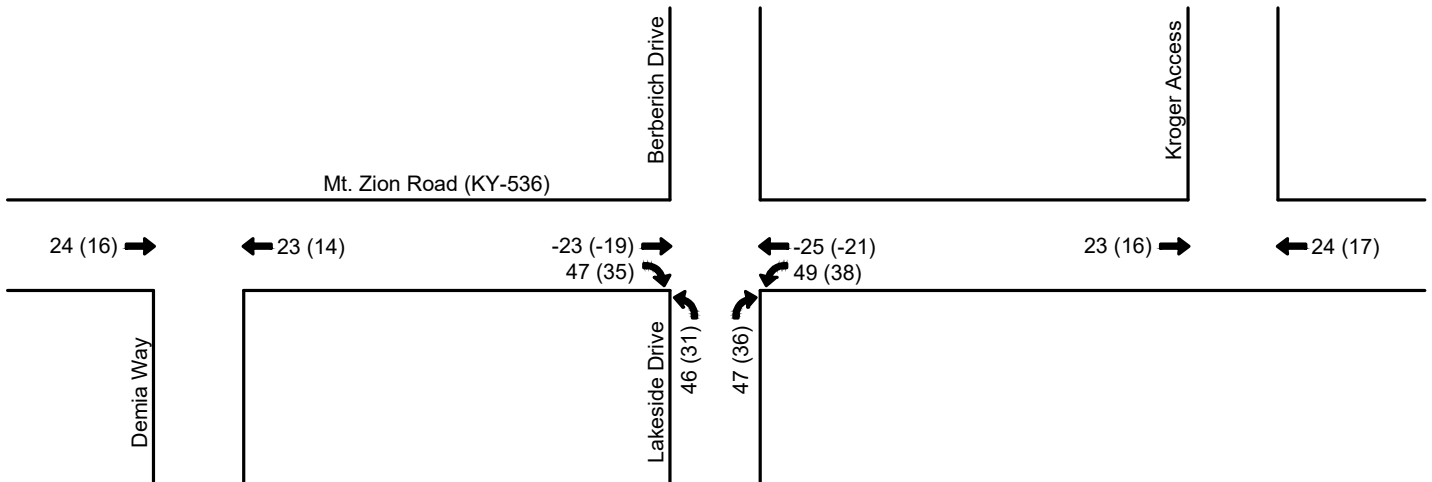
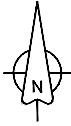
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EXHIBIT E

FINAL DEVELOPMENT VOLUMES AM(PM)



Proposed 2,200 SF Fast-Food
Restaurant with Drive-Through



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**MT. ZION ROAD/LAKESIDE DRIVE
FAST-FOOD DEVELOPMENT
TRAFFIC IMPACT STUDY**
BOONE COUNTY, KENTUCKY

Project No:
119424001

Checked:
MLB

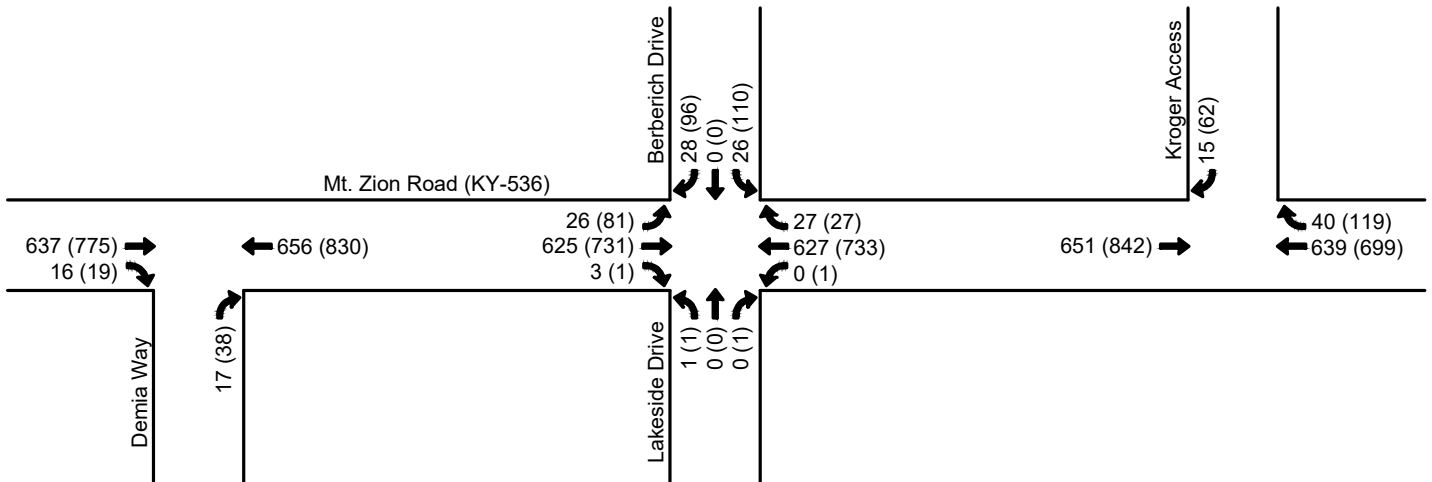
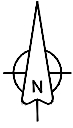
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EXHIBIT 1

2023 BASE VOLUMES AM(PM)





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MT. ZION ROAD/LAKESIDE DRIVE FAST-FOOD DEVELOPMENT TRAFFIC IMPACT STUDY

BOONE COUNTY, KENTUCKY

2025 NO BUILD VOLUMES AM(PM)

Project No:
119424001

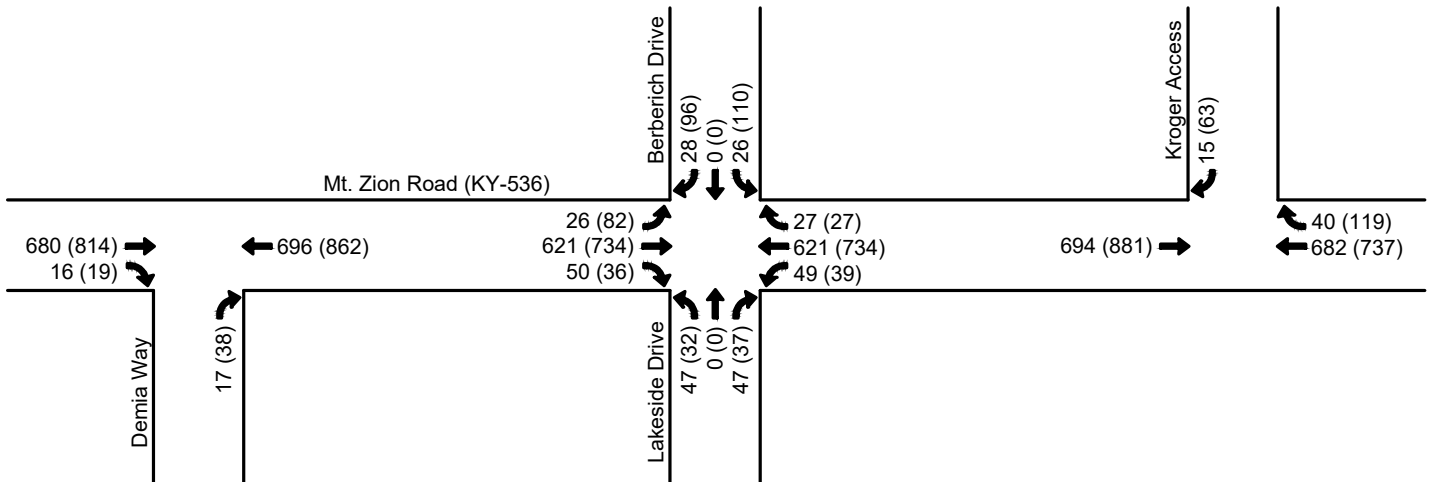
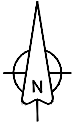
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EXHIBIT 2





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**MT. ZION ROAD/LAKESIDE DRIVE
 WENDY'S RESTAURANT
 TRAFFIC IMPACT STUDY**

BOONE COUNTY, KENTUCKY

2025 BUILD VOLUMES AM(PM)

Project No:
119424001

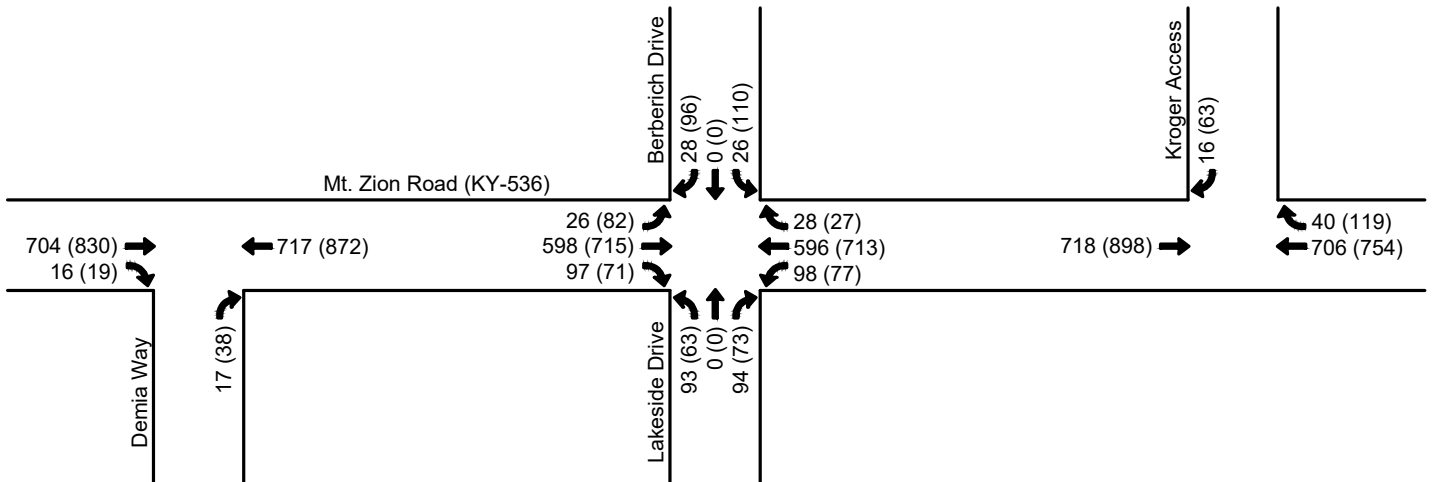
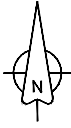
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7/24/24

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EXHIBIT 3



Proposed 2,200 SF Fast-Food Restaurant with Drive-Through

Proposed Fast-Food Restaurant with Drive-Through

Per ITE Land Use 934, the estimated number of trips generated by a 2,200 SF fast-food restaurant with a drive-through is 98 AM trips (50 enter, 48 exit) and 73 PM trips (38 enter, 35 exit) with pass-by trip reduction rates of 50% and 55%, respectively. Entering and exiting distributions are 51%/49% for AM peak hour and 52%/48% for PM peak hour. As a conservative estimate, it was assumed that this development would generate as much traffic as the McDonald's across from Lakeside Drive.



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MT. ZION ROAD/LAKESIDE DRIVE FAST-FOOD DEVELOPMENT TRAFFIC IMPACT STUDY

BOONE COUNTY, KENTUCKY

2035 NO BUILD VOLUMES AM(PM)

Project No:
119424001

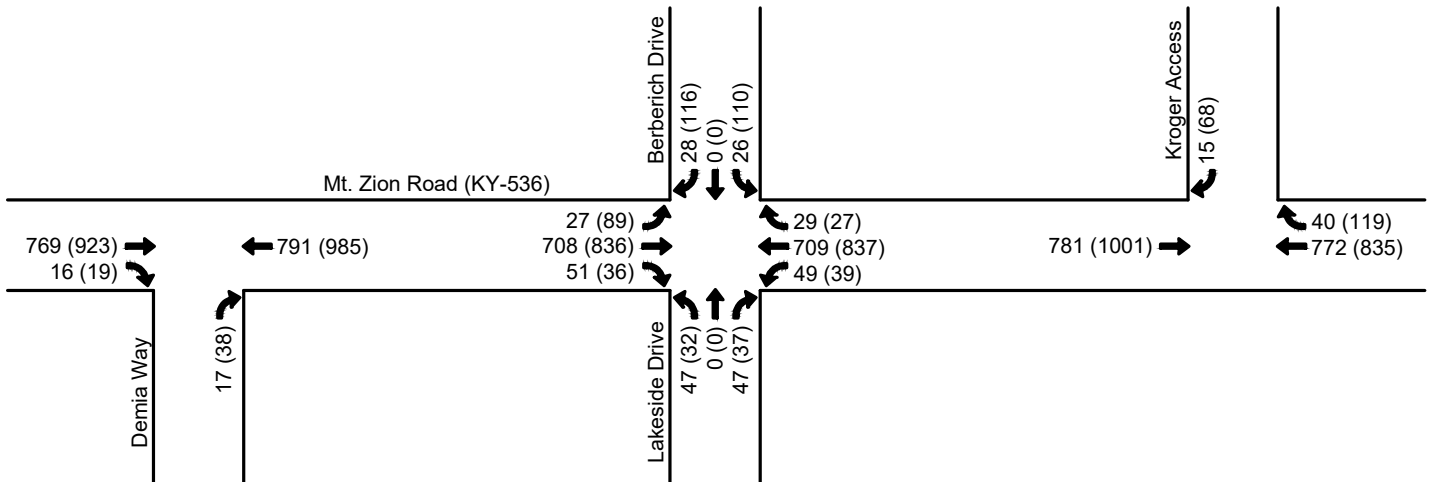
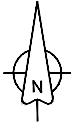
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EXHIBIT 4





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**MT. ZION ROAD/LAKESIDE DRIVE
 WENDY'S RESTAURANT
 TRAFFIC IMPACT STUDY**

BOONE COUNTY, KENTUCKY

2035 BUILD VOLUMES AM(PM)

Project No:
119424001

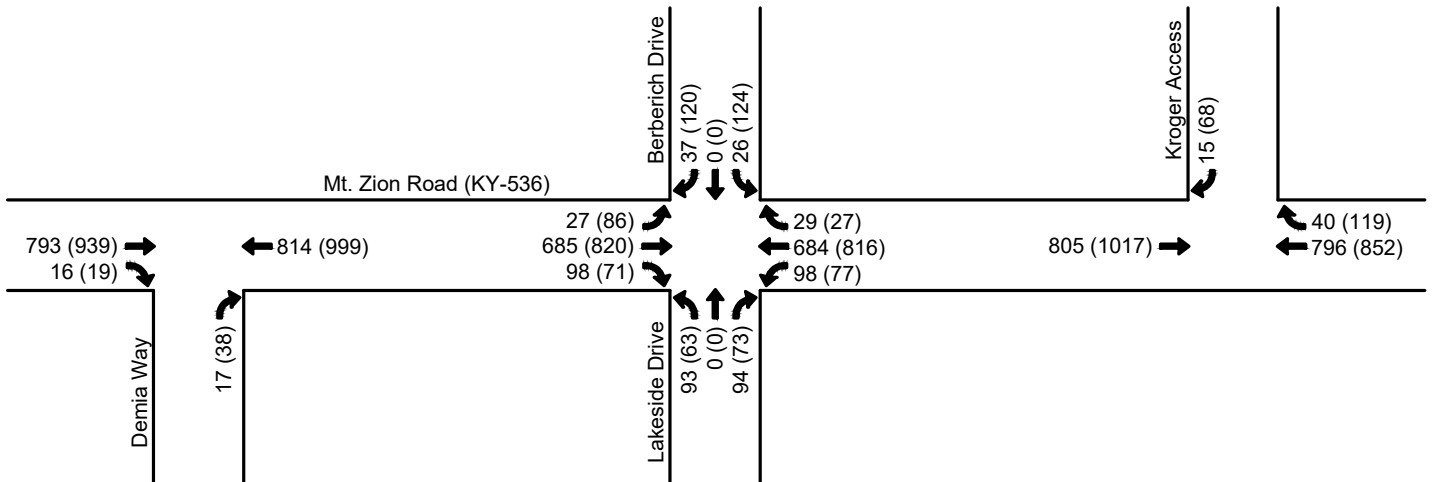
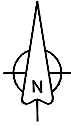
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7/24/24

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EXHIBIT 5



Proposed 2,200 SF Fast-Food Restaurant with Drive-Through

Proposed Fast-Food Restaurant with Drive-Through

Per ITE Land Use 934, the estimated number of trips generated by a 2,200 SF fast-food restaurant with a drive-through is 98 AM trips (50 enter, 48 exit) and 73 PM trips (38 enter, 35 exit) with pass-by trip reduction rates of 50% and 55%, respectively. Entering and exiting distributions are 51%/49% for AM peak hour and 52%/48% for PM peak hour. As a conservative estimate, it was assumed that this development would generate as much traffic as the McDonald's across from Lakeside Drive.

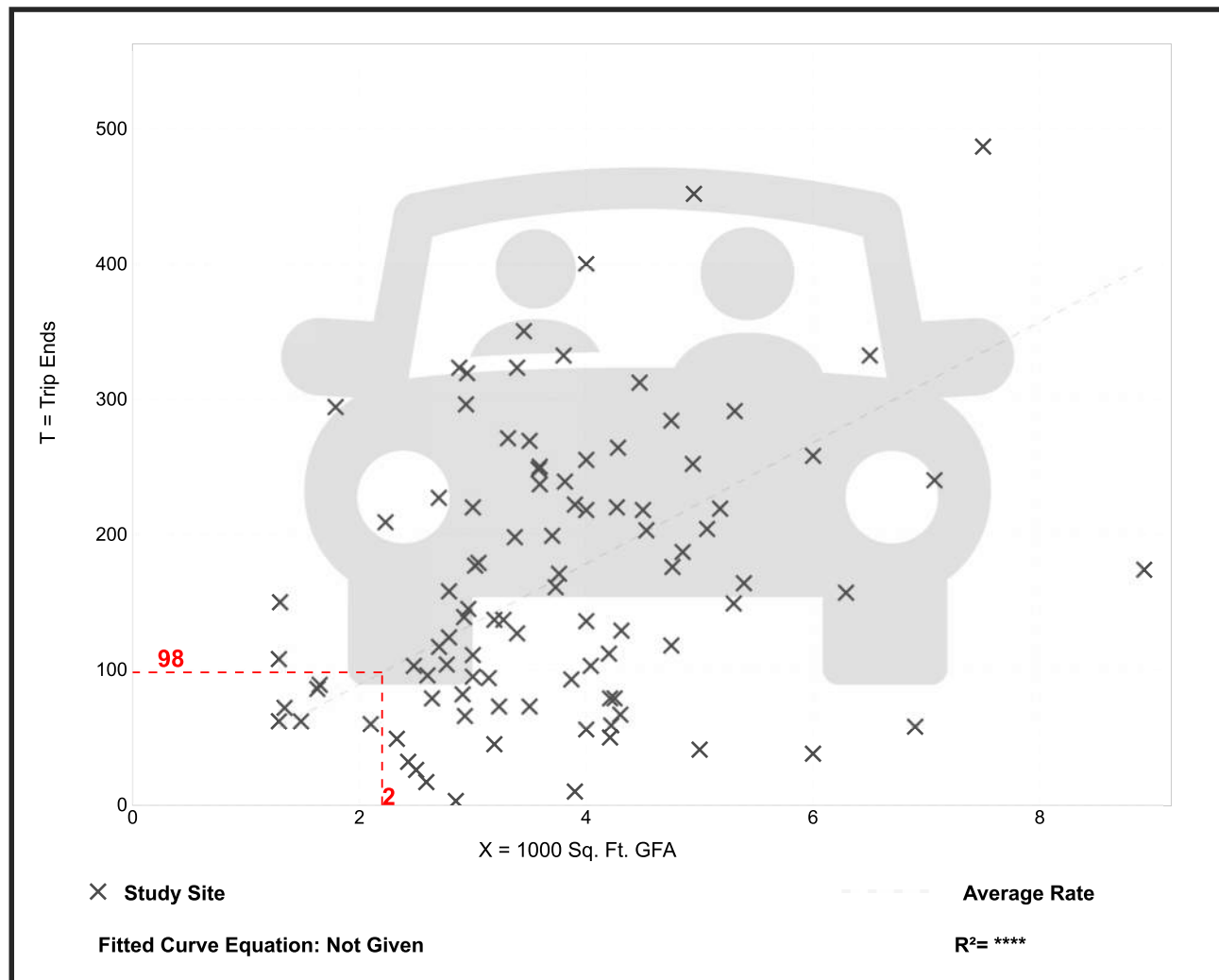
Fast-Food Restaurant with Drive-Through Window (934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 96
 Avg. 1000 Sq. Ft. GFA: 4
 Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
44.61	1.05 - 164.25	27.14

Data Plot and Equation



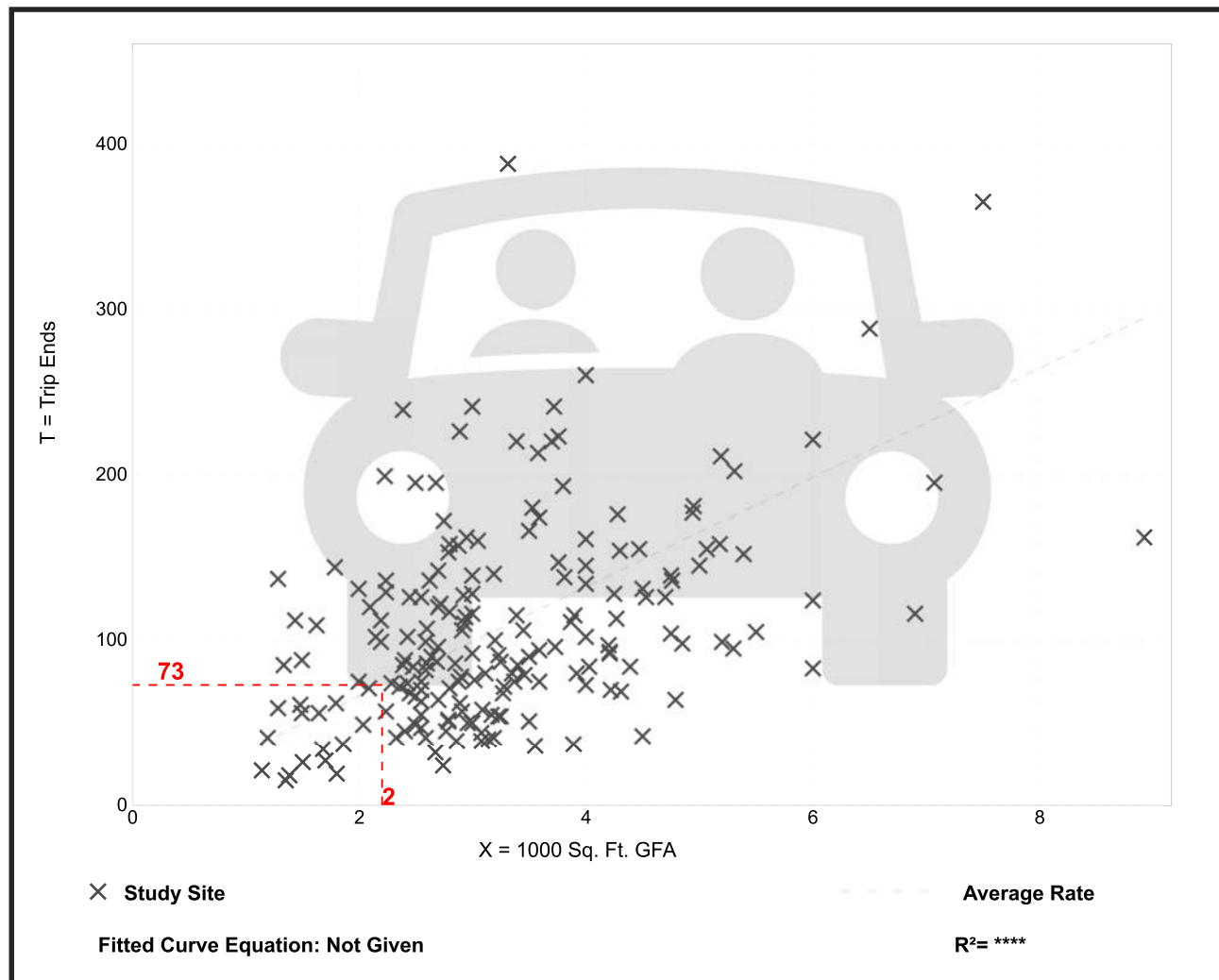
Fast-Food Restaurant with Drive-Through Window (934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 190
 Avg. 1000 Sq. Ft. GFA: 3
 Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
33.03	8.77 - 117.22	17.59

Data Plot and Equation



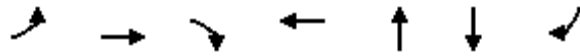
APPENDIX C

Synchro Analyses

Queues

101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/29/2024



Lane Group	EBL	EBT	EBR	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	28	679	3	711	1	28	30
v/c Ratio	0.05	0.17	0.00	0.28	0.01	0.24	0.16
Control Delay	2.6	2.4	0.0	6.4	53.0	59.0	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.6	2.4	0.0	6.4	53.0	59.0	4.2
Queue Length 50th (ft)	4	35	0	111	1	22	0
Queue Length 95th (ft)	9	45	0	142	7	54	7
Internal Link Dist (ft)		224		305	66	353	
Turn Bay Length (ft)	260		130				
Base Capacity (vph)	704	4100	1376	2569	647	643	742
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.17	0.00	0.28	0.00	0.04	0.04

Intersection Summary

HCM 6th Signalized Intersection Summary
 101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/29/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑			↕			↖	↗
Traffic Volume (veh/h)	26	625	3	0	627	27	1	0	0	26	0	28
Future Volume (veh/h)	26	625	3	0	627	27	1	0	0	26	0	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1796	1900	1900	1796	1530	1900	1900	1900	1856	1900	1826
Adj Flow Rate, veh/h	28	679	3	0	682	29	1	0	0	28	0	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	7	0	0	7	25	0	0	0	3	0	5
Cap, veh/h	608	3994	1311	607	2359	100	140	0	0	169	0	111
Arrive On Green	0.05	0.81	0.81	0.00	0.71	0.71	0.07	0.00	0.00	0.07	0.00	0.07
Sat Flow, veh/h	1753	4904	1610	1810	3335	142	1116	0	0	1519	0	1547
Grp Volume(v), veh/h	28	679	3	0	349	362	1	0	0	28	0	30
Grp Sat Flow(s),veh/h/ln	1753	1635	1610	1810	1706	1771	1116	0	0	1519	0	1547
Q Serve(g_s), s	0.4	3.6	0.0	0.0	9.0	9.0	0.1	0.0	0.0	0.0	0.0	2.2
Cycle Q Clear(g_c), s	0.4	3.6	0.0	0.0	9.0	9.0	1.8	0.0	0.0	1.8	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.08	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	608	3994	1311	607	1207	1252	140	0	0	169	0	111
V/C Ratio(X)	0.05	0.17	0.00	0.00	0.29	0.29	0.01	0.00	0.00	0.17	0.00	0.27
Avail Cap(c_a), veh/h	811	3994	1311	941	1207	1252	682	0	0	726	0	709
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.6	2.4	2.1	0.0	6.5	6.5	53.5	0.0	0.0	52.6	0.0	52.8
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.5	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.7	0.0	0.0	2.9	3.0	0.0	0.0	0.0	0.8	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.7	2.5	2.1	0.0	7.1	7.1	53.5	0.0	0.0	53.1	0.0	54.1
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h		710			711			1				58
Approach Delay, s/veh		2.5			7.1			53.5				53.6
Approach LOS		A			A			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.0	0.0	104.2		16.0	12.9	91.3				
Change Period (Y+Rc), s		* 7.4	* 6.8	6.3		* 7.4	* 6.8	* 6.3				
Max Green Setting (Gmax), s		* 55	* 22	82.1		* 55	* 20	* 85				
Max Q Clear Time (g_c+I1), s		3.8	0.0	5.6		4.2	2.4	11.0				
Green Ext Time (p_c), s		0.0	0.0	4.9		0.2	0.0	4.4				

Intersection Summary

HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↔
Traffic Vol, veh/h	0	0	1	0	0	3
Future Vol, veh/h	0	0	1	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	0	0	1	0	0	3

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	4	1	0	-	1
Stage 1	1	-	-	-	-
Stage 2	3	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	1023	1090	-	0	1635
Stage 1	1028	-	-	0	-
Stage 2	1025	-	-	0	-
Platoon blocked, %			-		-
Mov Cap-1 Maneuver	1023	1090	-	-	1635
Mov Cap-2 Maneuver	1023	-	-	-	-
Stage 1	1028	-	-	-	-
Stage 2	1025	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1635
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	0	0
HCM Lane LOS	-	A	A
HCM 95th %tile Q(veh)	-	-	0

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	637	16	0	656	0	17
Future Vol, veh/h	637	16	0	656	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	13	0	7	0	9
Mvmt Flow	692	17	0	713	0	18

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	-	-	355
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.28
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.99
Pot Cap-1 Maneuver	-	-	0	-	532
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	532
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	532	-	-	-
HCM Lane V/C Ratio	0.035	-	-	-
HCM Control Delay (s)	12	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	651	639	40	0	15
Future Vol, veh/h	0	651	639	40	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	7	6	10	0	33
Mvmt Flow	0	708	695	43	0	16

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 369
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	- 7.56
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	- 3.63
Pot Cap-1 Maneuver	0	-	-	-	0 547
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	- 547
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	547
HCM Lane V/C Ratio	-	-	-	0.03
HCM Control Delay (s)	-	-	-	11.8
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Queues

101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	28	675	54	53	704	102	28	30
v/c Ratio	0.05	0.20	0.05	0.08	0.29	0.55	0.26	0.16
Control Delay	3.2	7.6	1.3	3.3	7.2	36.4	59.5	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.2	7.6	1.3	3.3	7.2	36.4	59.5	3.7
Queue Length 50th (ft)	4	68	0	7	109	32	22	0
Queue Length 95th (ft)	11	95	11	17	155	91	54	7
Internal Link Dist (ft)		224			305	66	353	
Turn Bay Length (ft)	260		130	330				
Base Capacity (vph)	715	3364	1141	763	2428	682	545	715
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.20	0.05	0.07	0.29	0.15	0.05	0.04

Intersection Summary

HCM 6th Signalized Intersection Summary
 101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/26/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑			↕			↖	↗
Traffic Volume (veh/h)	26	621	50	49	621	27	47	0	47	26	0	28
Future Volume (veh/h)	26	621	50	49	621	27	47	0	47	26	0	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1796	1900	1900	1796	1530	1900	1900	1900	1856	1900	1826
Adj Flow Rate, veh/h	28	675	54	53	675	29	51	0	51	28	0	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	7	0	0	7	25	0	0	0	3	0	5
Cap, veh/h	591	3285	1079	636	2293	98	99	11	66	173	0	149
Arrive On Green	0.05	0.67	0.67	0.07	0.69	0.69	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1753	4904	1610	1810	3334	143	572	110	683	1192	0	1547
Grp Volume(v), veh/h	28	675	54	53	345	359	102	0	0	28	0	30
Grp Sat Flow(s),veh/h/ln	1753	1635	1610	1810	1706	1770	1365	0	0	1192	0	1547
Q Serve(g_s), s	0.6	6.5	1.4	1.0	9.8	9.8	6.5	0.0	0.0	0.0	0.0	2.2
Cycle Q Clear(g_c), s	0.6	6.5	1.4	1.0	9.8	9.8	9.3	0.0	0.0	2.8	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.08	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	591	3285	1079	636	1174	1218	175	0	0	173	0	149
V/C Ratio(X)	0.05	0.21	0.05	0.08	0.29	0.29	0.58	0.00	0.00	0.16	0.00	0.20
Avail Cap(c_a), veh/h	787	3285	1079	840	1174	1218	699	0	0	654	0	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.2	7.8	7.0	4.6	7.6	7.6	54.9	0.0	0.0	51.7	0.0	51.5
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.1	0.6	0.6	3.0	0.0	0.0	0.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.1	0.5	0.3	3.3	3.4	3.3	0.0	0.0	0.8	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.2	7.9	7.1	4.6	8.2	8.2	58.0	0.0	0.0	52.2	0.0	52.1
LnGrp LOS	A	A	A	A	A	A	E	A	A	D	A	D
Approach Vol, veh/h		757			757			102				58
Approach Delay, s/veh		7.8			7.9			58.0				52.1
Approach LOS		A			A			E				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.3	15.2	89.1		19.3	13.0	91.3				
Change Period (Y+Rc), s		* 7.4	* 6.8	6.3		* 7.4	* 6.8	* 6.3				
Max Green Setting (Gmax), s		* 55	* 22	82.1		* 55	* 20	* 85				
Max Q Clear Time (g_c+I1), s		11.3	3.0	8.5		4.8	2.6	11.8				
Green Ext Time (p_c), s		0.7	0.1	5.1		0.3	0.0	4.4				

Intersection Summary

HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	7.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↔
Traffic Vol, veh/h	0	93	1	0	96	3
Future Vol, veh/h	0	93	1	0	96	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	0	101	1	0	104	3

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	212	1	0	-	1
Stage 1	1	-	-	-	-
Stage 2	211	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	781	1090	-	0	1635
Stage 1	1028	-	-	0	-
Stage 2	829	-	-	0	-
Platoon blocked, %			-		-
Mov Cap-1 Maneuver	731	1090	-	-	1635
Mov Cap-2 Maneuver	731	-	-	-	-
Stage 1	1028	-	-	-	-
Stage 2	776	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	7.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	- 1090	1635	-
HCM Lane V/C Ratio	- 0.093	0.064	-
HCM Control Delay (s)	- 8.6	7.4	0
HCM Lane LOS	- A	A	A
HCM 95th %tile Q(veh)	- 0.3	0.2	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	680	16	0	696	0	17
Future Vol, veh/h	680	16	0	696	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	13	0	7	0	9
Mvmt Flow	739	17	0	757	0	18

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	378
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.28
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.99
Pot Cap-1 Maneuver	-	-	0	-	0	514
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	514
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	514	-	-	-
HCM Lane V/C Ratio	0.036	-	-	-
HCM Control Delay (s)	12.3	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	694	682	40	0	15
Future Vol, veh/h	0	694	682	40	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	7	6	10	0	33
Mvmt Flow	0	754	741	43	0	16

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 392
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	- 7.56
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	- 3.63
Pot Cap-1 Maneuver	0	-	-	-	0 527
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	- 527
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	527
HCM Lane V/C Ratio	-	-	-	0.031
HCM Control Delay (s)	-	-	-	12
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Queues

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	28	650	105	107	678	203	28	30
v/c Ratio	0.05	0.21	0.10	0.18	0.30	0.79	0.20	0.11
Control Delay	5.6	11.3	2.6	6.0	10.2	59.4	53.0	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	11.3	2.6	6.0	10.2	59.4	53.0	2.0
Queue Length 50th (ft)	5	82	1	21	131	121	22	0
Queue Length 95th (ft)	17	122	27	48	198	211	52	5
Internal Link Dist (ft)		224			305	66	353	
Turn Bay Length (ft)	260		130	330				
Base Capacity (vph)	688	3050	1053	714	2294	645	419	675
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.21	0.10	0.15	0.30	0.31	0.07	0.04

Intersection Summary

HCM 6th Signalized Intersection Summary
 101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑			↕			↖	↗
Traffic Volume (veh/h)	26	598	97	98	596	28	93	0	94	26	0	28
Future Volume (veh/h)	26	598	97	98	596	28	93	0	94	26	0	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1796	1900	1900	1796	1530	1900	1900	1900	1856	1900	1826
Adj Flow Rate, veh/h	28	650	105	107	648	30	101	0	102	28	0	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	7	0	0	7	25	0	0	0	3	0	5
Cap, veh/h	541	2966	974	576	2090	97	149	7	118	228	0	266
Arrive On Green	0.05	0.60	0.60	0.07	0.63	0.63	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1753	4904	1610	1810	3321	154	639	44	689	1017	0	1547
Grp Volume(v), veh/h	28	650	105	107	333	345	203	0	0	28	0	30
Grp Sat Flow(s),veh/h/ln	1753	1635	1610	1810	1706	1769	1371	0	0	1017	0	1547
Q Serve(g_s), s	0.8	8.2	3.7	2.8	12.2	12.2	16.6	0.0	0.0	0.0	0.0	2.2
Cycle Q Clear(g_c), s	0.8	8.2	3.7	2.8	12.2	12.2	19.9	0.0	0.0	3.4	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.09	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	541	2966	974	576	1074	1113	275	0	0	228	0	266
V/C Ratio(X)	0.05	0.22	0.11	0.19	0.31	0.31	0.74	0.00	0.00	0.12	0.00	0.11
Avail Cap(c_a), veh/h	716	2966	974	743	1074	1113	626	0	0	535	0	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.6	12.2	11.3	7.8	11.6	11.6	55.6	0.0	0.0	48.0	0.0	47.5
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.2	0.8	0.7	3.9	0.0	0.0	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.9	1.3	1.0	4.5	4.7	7.1	0.0	0.0	0.8	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	12.4	11.6	8.0	12.3	12.3	59.5	0.0	0.0	48.2	0.0	47.7
LnGrp LOS	A	B	B	A	B	B	E	A	A	D	A	D
Approach Vol, veh/h		783			785			203				58
Approach Delay, s/veh		12.1			11.7			59.5				47.9
Approach LOS		B			B			E				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.7	16.6	88.4		30.7	13.3	91.7				
Change Period (Y+Rc), s		* 7.4	* 6.8	6.3		* 7.4	* 6.8	* 6.3				
Max Green Setting (Gmax), s		* 55	* 22	82.1		* 55	* 20	* 85				
Max Q Clear Time (g_c+I1), s		21.9	4.8	10.2		5.4	2.8	14.2				
Green Ext Time (p_c), s		1.4	0.2	5.0		0.3	0.0	4.2				

Intersection Summary

HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↙		↑			↖↗
Traffic Vol, veh/h	0	93	94	0	96	99
Future Vol, veh/h	0	93	94	0	96	99
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	0	101	102	0	104	108

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	418	102	0	-	102	0
Stage 1	102	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	595	959	-	0	1503	-
Stage 1	927	-	-	0	-	-
Stage 2	744	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	551	959	-	-	1503	-
Mov Cap-2 Maneuver	551	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	689	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	- 959	1503	-
HCM Lane V/C Ratio	- 0.105	0.069	-
HCM Control Delay (s)	- 9.2	7.6	0
HCM Lane LOS	- A	A	A
HCM 95th %tile Q(veh)	- 0.4	0.2	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	704	16	0	717	0	17
Future Vol, veh/h	704	16	0	717	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	13	0	7	0	9
Mvmt Flow	765	17	0	779	0	18

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	391
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.28
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.99
Pot Cap-1 Maneuver	-	-	0	-	0	504
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	504
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	504	-	-	-
HCM Lane V/C Ratio	0.037	-	-	-
HCM Control Delay (s)	12.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	718	706	40	0	16
Future Vol, veh/h	0	718	706	40	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	7	6	10	0	33
Mvmt Flow	0	780	767	43	0	17

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	405
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.56
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.63
Pot Cap-1 Maneuver	0	-	-	-	516
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	516
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	516
HCM Lane V/C Ratio	-	-	-	0.034
HCM Control Delay (s)	-	-	-	12.2
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Queues

101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/26/2024

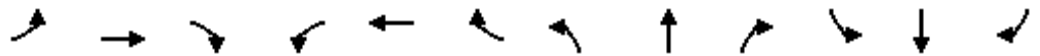


Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	29	770	55	53	803	102	28	30
v/c Ratio	0.05	0.23	0.05	0.09	0.33	0.55	0.26	0.16
Control Delay	3.2	7.8	1.4	3.3	7.5	36.4	59.5	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.2	7.8	1.4	3.3	7.5	36.4	59.5	3.7
Queue Length 50th (ft)	4	80	0	7	130	32	22	0
Queue Length 95th (ft)	11	110	11	17	182	91	54	7
Internal Link Dist (ft)		224			305	66	353	
Turn Bay Length (ft)	260		130	330				
Base Capacity (vph)	667	3364	1141	718	2428	682	545	715
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.23	0.05	0.07	0.33	0.15	0.05	0.04

Intersection Summary

HCM 6th Signalized Intersection Summary
 101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑			↕			↖	↗
Traffic Volume (veh/h)	27	708	51	49	709	29	47	0	47	26	0	28
Future Volume (veh/h)	27	708	51	49	709	29	47	0	47	26	0	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1796	1900	1900	1796	1530	1900	1900	1900	1856	1900	1826
Adj Flow Rate, veh/h	29	770	55	53	771	32	51	0	51	28	0	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	7	0	0	7	25	0	0	0	3	0	5
Cap, veh/h	543	3287	1079	591	2294	95	99	11	66	173	0	149
Arrive On Green	0.05	0.67	0.67	0.07	0.69	0.69	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1753	4904	1610	1810	3339	139	572	110	682	1192	0	1547
Grp Volume(v), veh/h	29	770	55	53	394	409	102	0	0	28	0	30
Grp Sat Flow(s),veh/h/ln	1753	1635	1610	1810	1706	1771	1365	0	0	1192	0	1547
Q Serve(g_s), s	0.6	7.6	1.4	1.0	11.6	11.6	6.5	0.0	0.0	0.0	0.0	2.2
Cycle Q Clear(g_c), s	0.6	7.6	1.4	1.0	11.6	11.6	9.3	0.0	0.0	2.8	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.08	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	543	3287	1079	591	1172	1217	175	0	0	173	0	149
V/C Ratio(X)	0.05	0.23	0.05	0.09	0.34	0.34	0.58	0.00	0.00	0.16	0.00	0.20
Avail Cap(c_a), veh/h	737	3287	1079	795	1172	1217	698	0	0	653	0	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.3	8.0	7.0	4.6	7.9	7.9	55.0	0.0	0.0	51.8	0.0	51.5
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.1	0.8	0.7	3.0	0.0	0.0	0.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.4	0.5	0.3	3.9	4.1	3.3	0.0	0.0	0.8	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.3	8.1	7.1	4.7	8.7	8.6	58.0	0.0	0.0	52.2	0.0	52.2
LnGrp LOS	A	A	A	A	A	A	E	A	A	D	A	D
Approach Vol, veh/h		854			856			102				58
Approach Delay, s/veh		8.0			8.4			58.0				52.2
Approach LOS		A			A			E				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.3	15.2	89.2		19.3	13.1	91.3				
Change Period (Y+Rc), s		* 7.4	* 6.8	6.3		* 7.4	* 6.8	* 6.3				
Max Green Setting (Gmax), s		* 55	* 22	82.1		* 55	* 20	* 85				
Max Q Clear Time (g_c+I1), s		11.3	3.0	9.6		4.8	2.6	13.6				
Green Ext Time (p_c), s		0.7	0.1	5.9		0.3	0.0	5.2				
Intersection Summary												
HCM 6th Ctrl Delay				12.3								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection						
Int Delay, s/veh	7.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑			↙
Traffic Vol, veh/h	0	93	1	0	96	0
Future Vol, veh/h	0	93	1	0	96	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	0	101	1	0	104	0

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	209	1	0	-	1
Stage 1	1	-	-	-	-
Stage 2	208	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	784	1090	-	0	1635
Stage 1	1028	-	-	0	-
Stage 2	832	-	-	0	-
Platoon blocked, %			-		-
Mov Cap-1 Maneuver	734	1090	-	-	1635
Mov Cap-2 Maneuver	734	-	-	-	-
Stage 1	1028	-	-	-	-
Stage 2	779	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	7.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	- 1090	1635	-
HCM Lane V/C Ratio	- 0.093	0.064	-
HCM Control Delay (s)	- 8.6	7.4	0
HCM Lane LOS	- A	A	A
HCM 95th %tile Q(veh)	- 0.3	0.2	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	769	16	0	791	0	17
Future Vol, veh/h	769	16	0	791	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	13	0	7	0	9
Mvmt Flow	836	17	0	860	0	18

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	-	-	427
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.28
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.99
Pot Cap-1 Maneuver	-	-	0	-	478
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	478
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	478	-	-	-
HCM Lane V/C Ratio	0.039	-	-	-
HCM Control Delay (s)	12.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	781	772	40	0	15
Future Vol, veh/h	0	781	772	40	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	7	6	10	0	33
Mvmt Flow	0	849	839	43	0	16

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	441
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.56
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.63
Pot Cap-1 Maneuver	0	-	-	-	487
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	487
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	487
HCM Lane V/C Ratio	-	-	-	0.033
HCM Control Delay (s)	-	-	-	12.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Queues

101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	29	745	107	107	775	203	28	40
v/c Ratio	0.06	0.24	0.10	0.20	0.34	0.79	0.20	0.15
Control Delay	5.6	11.5	3.4	6.1	10.7	59.4	53.0	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	11.5	3.4	6.1	10.7	59.4	53.0	5.9
Queue Length 50th (ft)	6	96	5	21	155	121	22	0
Queue Length 95th (ft)	17	141	33	48	232	211	52	17
Internal Link Dist (ft)		224			305	66	353	
Turn Bay Length (ft)	260		130	330				
Base Capacity (vph)	640	3050	1049	671	2298	645	419	675
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.24	0.10	0.16	0.34	0.31	0.07	0.06

Intersection Summary

HCM 6th Signalized Intersection Summary
 101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑	↗	↖	↑↑			↕			↖	↗
Traffic Volume (veh/h)	27	685	98	98	684	29	93	0	94	26	0	37
Future Volume (veh/h)	27	685	98	98	684	29	93	0	94	26	0	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1796	1900	1900	1796	1530	1900	1900	1900	1856	1900	1826
Adj Flow Rate, veh/h	29	745	107	107	743	32	101	0	102	28	0	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	7	0	0	7	25	0	0	0	3	0	5
Cap, veh/h	496	2965	973	535	2093	90	149	8	118	228	0	266
Arrive On Green	0.05	0.60	0.60	0.07	0.63	0.63	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1753	4904	1610	1810	3333	144	636	44	686	1017	0	1547
Grp Volume(v), veh/h	29	745	107	107	380	395	203	0	0	28	0	40
Grp Sat Flow(s),veh/h/ln	1753	1635	1610	1810	1706	1770	1366	0	0	1017	0	1547
Q Serve(g_s), s	0.8	9.6	3.8	2.8	14.5	14.5	16.6	0.0	0.0	0.0	0.0	3.0
Cycle Q Clear(g_c), s	0.8	9.6	3.8	2.8	14.5	14.5	20.0	0.0	0.0	3.4	0.0	3.0
Prop In Lane	1.00		1.00	1.00		0.08	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	496	2965	973	535	1071	1112	275	0	0	228	0	266
V/C Ratio(X)	0.06	0.25	0.11	0.20	0.35	0.36	0.74	0.00	0.00	0.12	0.00	0.15
Avail Cap(c_a), veh/h	668	2965	973	701	1071	1112	623	0	0	535	0	628
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.8	12.5	11.4	7.9	12.1	12.1	55.6	0.0	0.0	47.9	0.0	47.8
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.2	0.9	0.9	3.9	0.0	0.0	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.4	1.4	1.0	5.4	5.6	7.1	0.0	0.0	0.8	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.8	12.7	11.6	8.1	13.0	13.0	59.5	0.0	0.0	48.2	0.0	48.0
LnGrp LOS	A	B	B	A	B	B	E	A	A	D	A	D
Approach Vol, veh/h		881			882			203				68
Approach Delay, s/veh		12.5			12.4			59.5				48.1
Approach LOS		B			B			E				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.8	16.6	88.4		30.8	13.5	91.6				
Change Period (Y+Rc), s		* 7.4	* 6.8	6.3		* 7.4	* 6.8	* 6.3				
Max Green Setting (Gmax), s		* 55	* 22	82.1		* 55	* 20	* 85				
Max Q Clear Time (g_c+I1), s		22.0	4.8	11.6		5.4	2.8	16.5				
Green Ext Time (p_c), s		1.4	0.2	5.9		0.3	0.0	5.0				

Intersection Summary

HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↑			↙
Traffic Vol, veh/h	0	93	94	0	96	96
Future Vol, veh/h	0	93	94	0	96	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	101	102	0	104	104

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	414	102	0	-	102	0
Stage 1	102	-	-	-	-	-
Stage 2	312	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	599	959	-	0	1503	-
Stage 1	927	-	-	0	-	-
Stage 2	747	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	555	959	-	-	1503	-
Mov Cap-2 Maneuver	555	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	692	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	- 959	1503	-
HCM Lane V/C Ratio	- 0.105	0.069	-
HCM Control Delay (s)	- 9.2	7.6	0
HCM Lane LOS	- A	A	A
HCM 95th %tile Q(veh)	- 0.4	0.2	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	793	16	0	814	0	17
Future Vol, veh/h	793	16	0	814	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	13	0	7	0	9
Mvmt Flow	862	17	0	885	0	18

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	-	-	440
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.28
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.99
Pot Cap-1 Maneuver	-	-	0	-	468
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	468
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	468	-	-	-
HCM Lane V/C Ratio	0.039	-	-	-
HCM Control Delay (s)	13	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	805	796	40	0	15
Future Vol, veh/h	0	805	796	40	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	7	6	10	0	33
Mvmt Flow	0	875	865	43	0	16

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	454
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.56
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.63
Pot Cap-1 Maneuver	0	-	-	-	476
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	476
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	476
HCM Lane V/C Ratio	-	-	-	0.034
HCM Control Delay (s)	-	-	-	12.8
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Queues

101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/29/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	88	795	1	1	826	2	120	104
v/c Ratio	0.18	0.22	0.00	0.00	0.38	0.01	0.69	0.36
Control Delay	5.4	6.4	0.0	5.0	12.0	0.0	75.4	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	6.4	0.0	5.0	12.0	0.0	75.4	12.7
Queue Length 50th (ft)	16	59	0	0	162	0	99	0
Queue Length 95th (ft)	36	141	0	2	232	0	168	53
Internal Link Dist (ft)		224			305	66	353	
Turn Bay Length (ft)	260		130	330				
Base Capacity (vph)	581	3604	1218	688	2162	688	568	698
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.22	0.00	0.00	0.38	0.00	0.21	0.15

Intersection Summary

HCM 6th Signalized Intersection Summary
 101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/29/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↑↑↑	↖	↖	↑↑			↕			↕	↗
Traffic Volume (veh/h)	81	731	1	1	733	27	1	0	1	110	0	96
Future Volume (veh/h)	81	731	1	1	733	27	1	0	1	110	0	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1796	1900	1900	1796	1530	1900	1900	1900	1811	1900	1811
Adj Flow Rate, veh/h	88	795	1	1	797	29	1	0	1	120	0	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	7	0	0	7	25	0	0	0	6	0	6
Cap, veh/h	520	3451	1133	498	2131	78	57	13	30	204	0	216
Arrive On Green	0.07	0.70	0.70	0.00	0.63	0.63	0.14	0.00	0.14	0.14	0.00	0.14
Sat Flow, veh/h	1753	4904	1610	1810	3359	122	119	92	211	1070	0	1535
Grp Volume(v), veh/h	88	795	1	1	405	421	2	0	0	120	0	104
Grp Sat Flow(s),veh/h/ln	1753	1635	1610	1810	1706	1774	422	0	0	1070	0	1535
Q Serve(g_s), s	2.0	7.7	0.0	0.0	15.2	15.2	0.0	0.0	0.0	0.0	0.0	8.4
Cycle Q Clear(g_c), s	2.0	7.7	0.0	0.0	15.2	15.2	15.8	0.0	0.0	15.7	0.0	8.4
Prop In Lane	1.00		1.00	1.00		0.07	0.50		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	520	3451	1133	498	1083	1126	100	0	0	204	0	216
V/C Ratio(X)	0.17	0.23	0.00	0.00	0.37	0.37	0.02	0.00	0.00	0.59	0.00	0.48
Avail Cap(c_a), veh/h	656	3451	1133	795	1083	1126	491	0	0	594	0	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.8	7.0	5.9	8.8	11.7	11.7	50.2	0.0	0.0	56.2	0.0	53.1
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	1.0	1.0	0.1	0.0	0.0	2.7	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.4	0.0	0.0	5.6	5.8	0.1	0.0	0.0	4.2	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	7.2	5.9	8.8	12.7	12.7	50.3	0.0	0.0	58.9	0.0	54.7
LnGrp LOS	A	A	A	A	B	B	D	A	A	E	A	D
Approach Vol, veh/h		884			827			2			224	
Approach Delay, s/veh		7.1			12.7			50.3			57.0	
Approach LOS		A			B			D			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.2	7.2	100.6		26.2	16.4	91.3				
Change Period (Y+Rc), s		* 7.4	* 6.8	6.3		* 7.4	* 6.8	* 6.3				
Max Green Setting (Gmax), s		* 55	* 22	82.1		* 55	* 20	* 85				
Max Q Clear Time (g_c+I1), s		17.8	2.0	9.7		17.7	4.0	17.2				
Green Ext Time (p_c), s		0.0	0.0	6.0		1.1	0.2	5.4				

Intersection Summary

HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↔
Traffic Vol, veh/h	0	0	2	0	0	2
Future Vol, veh/h	0	0	2	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	0	0	2	0	0	2

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	4	2	0	-	2
Stage 1	2	-	-	-	-
Stage 2	2	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	1023	1088	-	0	1634
Stage 1	1026	-	-	0	-
Stage 2	1026	-	-	0	-
Platoon blocked, %			-		-
Mov Cap-1 Maneuver	1023	1088	-	-	1634
Mov Cap-2 Maneuver	1023	-	-	-	-
Stage 1	1026	-	-	-	-
Stage 2	1026	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1634
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	0	0
HCM Lane LOS	-	A	A
HCM 95th %tile Q(veh)	-	-	0

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	775	19	0	830	0	38
Future Vol, veh/h	775	19	0	830	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	11	0	7	0	9
Mvmt Flow	842	21	0	902	0	41

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	432
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.28
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.99
Pot Cap-1 Maneuver	-	-	0	-	0	474
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	474
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	474	-	-	-
HCM Lane V/C Ratio	0.087	-	-	-
HCM Control Delay (s)	13.3	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	842	699	119	0	62
Future Vol, veh/h	0	842	699	119	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	7	6	10	0	33
Mvmt Flow	0	915	760	129	0	67

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	445
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.56
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.63
Pot Cap-1 Maneuver	0	-	-	-	483
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	483
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	483
HCM Lane V/C Ratio	-	-	-	0.14
HCM Control Delay (s)	-	-	-	13.7
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.5

Queues

101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	89	798	39	42	827	75	120	104
v/c Ratio	0.19	0.25	0.04	0.08	0.39	0.33	0.68	0.36
Control Delay	5.8	10.3	0.7	5.2	12.3	20.2	74.1	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	10.3	0.7	5.2	12.3	20.2	74.1	12.4
Queue Length 50th (ft)	17	102	0	8	164	11	100	0
Queue Length 95th (ft)	38	144	5	21	238	57	168	52
Internal Link Dist (ft)		224			305	66	353	
Turn Bay Length (ft)	260		130	330				
Base Capacity (vph)	590	3217	1094	681	2151	587	556	695
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.25	0.04	0.06	0.38	0.13	0.22	0.15

Intersection Summary

HCM 6th Signalized Intersection Summary
 101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/26/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑			↕			↖	↗
Traffic Volume (veh/h)	82	734	36	39	734	27	32	0	37	110	0	96
Future Volume (veh/h)	82	734	36	39	734	27	32	0	37	110	0	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1796	1900	1900	1796	1530	1900	1900	1900	1811	1900	1811
Adj Flow Rate, veh/h	89	798	39	42	798	29	35	0	40	120	0	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	7	0	0	7	25	0	0	0	6	0	6
Cap, veh/h	491	3045	1000	521	2046	74	71	13	53	218	0	268
Arrive On Green	0.07	0.62	0.62	0.06	0.61	0.61	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1753	4904	1610	1810	3359	122	189	76	303	954	0	1535
Grp Volume(v), veh/h	89	798	39	42	405	422	75	0	0	120	0	104
Grp Sat Flow(s),veh/h/ln	1753	1635	1610	1810	1706	1774	567	0	0	954	0	1535
Q Serve(g_s), s	2.4	10.3	1.3	1.1	17.0	17.0	4.3	0.0	0.0	0.0	0.0	8.4
Cycle Q Clear(g_c), s	2.4	10.3	1.3	1.1	17.0	17.0	21.9	0.0	0.0	17.6	0.0	8.4
Prop In Lane	1.00		1.00	1.00		0.07	0.47		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	491	3045	1000	521	1040	1081	137	0	0	218	0	268
V/C Ratio(X)	0.18	0.26	0.04	0.08	0.39	0.39	0.55	0.00	0.00	0.55	0.00	0.39
Avail Cap(c_a), veh/h	621	3045	1000	706	1040	1081	458	0	0	524	0	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.8	12.0	10.3	8.2	14.0	14.0	58.2	0.0	0.0	54.8	0.0	51.0
Incr Delay (d2), s/veh	0.2	0.2	0.1	0.1	1.1	1.1	3.4	0.0	0.0	2.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	3.6	0.5	0.4	6.5	6.7	2.8	0.0	0.0	4.2	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	12.2	10.3	8.3	15.1	15.0	61.6	0.0	0.0	57.0	0.0	51.9
LnGrp LOS	A	B	B	A	B	B	E	A	A	E	A	D
Approach Vol, veh/h		926			869			75			224	
Approach Delay, s/veh		11.8			14.7			61.6			54.6	
Approach LOS		B			B			E			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.7	14.8	92.9		31.7	16.5	91.3				
Change Period (Y+Rc), s		* 7.4	* 6.8	6.3		* 7.4	* 6.8	* 6.3				
Max Green Setting (Gmax), s		* 55	* 22	82.1		* 55	* 20	* 85				
Max Q Clear Time (g_c+I1), s		23.9	3.1	12.3		19.6	4.4	19.0				
Green Ext Time (p_c), s		0.4	0.1	6.1		1.1	0.2	5.4				

Intersection Summary

HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	7.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↔
Traffic Vol, veh/h	0	67	2	0	73	2
Future Vol, veh/h	0	67	2	0	73	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	0	73	2	0	79	2

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	162	2	0	-	2
Stage 1	2	-	-	-	-
Stage 2	160	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	834	1088	-	0	1634
Stage 1	1026	-	-	0	-
Stage 2	874	-	-	0	-
Platoon blocked, %			-		-
Mov Cap-1 Maneuver	794	1088	-	-	1634
Mov Cap-2 Maneuver	794	-	-	-	-
Stage 1	1026	-	-	-	-
Stage 2	832	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	7.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	- 1088	1634	-
HCM Lane V/C Ratio	- 0.067	0.049	-
HCM Control Delay (s)	- 8.5	7.3	0
HCM Lane LOS	- A	A	A
HCM 95th %tile Q(veh)	- 0.2	0.2	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	814	19	0	862	0	38
Future Vol, veh/h	814	19	0	862	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	11	0	7	0	9
Mvmt Flow	885	21	0	937	0	41

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	453
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.28
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.99
Pot Cap-1 Maneuver	-	-	0	-	0	459
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	459
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	459	-	-	-
HCM Lane V/C Ratio	0.09	-	-	-
HCM Control Delay (s)	13.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	881	737	119	0	63
Future Vol, veh/h	0	881	737	119	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	7	6	10	0	33
Mvmt Flow	0	958	801	129	0	68

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	465
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.56
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.63
Pot Cap-1 Maneuver	0	-	-	-	468
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	468
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	468
HCM Lane V/C Ratio	-	-	-	0.146
HCM Control Delay (s)	-	-	-	14
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.5

Queues

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Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	89	777	77	84	804	147	120	104
v/c Ratio	0.18	0.25	0.07	0.16	0.38	0.60	0.78	0.34
Control Delay	6.2	11.7	3.4	6.0	12.9	41.4	87.9	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	11.7	3.4	6.0	12.9	41.4	87.9	11.8
Queue Length 50th (ft)	18	102	3	17	165	70	102	0
Queue Length 95th (ft)	41	147	25	39	243	143	174	51
Internal Link Dist (ft)		224			305	66	353	
Turn Bay Length (ft)	260		130	330				
Base Capacity (vph)	599	3050	1041	670	2125	587	441	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.25	0.07	0.13	0.38	0.25	0.27	0.15

Intersection Summary

HCM 6th Signalized Intersection Summary

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	715	71	77	713	27	63	0	73	110	0	96
Future Volume (veh/h)	82	715	71	77	713	27	63	0	73	110	0	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1796	1900	1900	1796	1530	1900	1900	1900	1811	1900	1811
Adj Flow Rate, veh/h	89	777	77	84	775	29	68	0	79	120	0	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	7	0	0	7	25	0	0	0	6	0	6
Cap, veh/h	461	2816	925	491	1925	72	103	13	93	254	0	341
Arrive On Green	0.07	0.57	0.57	0.07	0.57	0.57	0.22	0.00	0.22	0.22	0.00	0.22
Sat Flow, veh/h	1753	4904	1610	1810	3355	126	303	57	417	924	0	1535
Grp Volume(v), veh/h	89	777	77	84	394	410	147	0	0	120	0	104
Grp Sat Flow(s),veh/h/ln	1753	1635	1610	1810	1706	1774	777	0	0	924	0	1535
Q Serve(g_s), s	2.9	11.9	3.2	2.6	19.0	19.0	11.9	0.0	0.0	0.0	0.0	8.4
Cycle Q Clear(g_c), s	2.9	11.9	3.2	2.6	19.0	19.0	30.0	0.0	0.0	18.1	0.0	8.4
Prop In Lane	1.00		1.00	1.00		0.07	0.46		0.54	1.00		1.00
Lane Grp Cap(c), veh/h	461	2816	925	491	979	1018	208	0	0	254	0	341
V/C Ratio(X)	0.19	0.28	0.08	0.17	0.40	0.40	0.71	0.00	0.00	0.47	0.00	0.31
Avail Cap(c_a), veh/h	582	2816	925	645	979	1018	426	0	0	455	0	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.5	15.9	14.1	10.6	17.5	17.5	61.1	0.0	0.0	51.9	0.0	48.1
Incr Delay (d2), s/veh	0.2	0.2	0.2	0.2	1.2	1.2	4.4	0.0	0.0	1.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.4	1.2	1.0	7.5	7.8	5.7	0.0	0.0	4.2	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.7	16.2	14.3	10.8	18.7	18.7	65.5	0.0	0.0	53.2	0.0	48.6
LnGrp LOS	B	B	B	B	B	B	E	A	A	D	A	D
Approach Vol, veh/h		943			888			147			224	
Approach Delay, s/veh		15.6			17.9			65.5			51.1	
Approach LOS		B			B			E			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.3	16.5	91.4		40.3	16.5	91.3				
Change Period (Y+Rc), s		* 7.4	* 6.8	6.3		* 7.4	* 6.8	* 6.3				
Max Green Setting (Gmax), s		* 55	* 22	82.1		* 55	* 20	* 85				
Max Q Clear Time (g_c+I1), s		32.0	4.6	13.9		20.1	4.9	21.0				
Green Ext Time (p_c), s		0.9	0.2	6.1		1.1	0.2	5.2				

Intersection Summary

HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑			↙↕
Traffic Vol, veh/h	0	67	69	0	73	75
Future Vol, veh/h	0	67	69	0	73	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	0	73	75	0	79	82

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	315	75	0	-	75
Stage 1	75	-	-	-	-
Stage 2	240	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	682	992	-	0	1537
Stage 1	953	-	-	0	-
Stage 2	805	-	-	0	-
Platoon blocked, %			-		-
Mov Cap-1 Maneuver	645	992	-	-	1537
Mov Cap-2 Maneuver	645	-	-	-	-
Stage 1	953	-	-	-	-
Stage 2	762	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	-	992	1537
HCM Lane V/C Ratio	-	0.073	0.052
HCM Control Delay (s)	-	8.9	7.5
HCM Lane LOS	-	A	A
HCM 95th %tile Q(veh)	-	0.2	0.2

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	830	19	0	872	0	38
Future Vol, veh/h	830	19	0	872	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	11	0	7	0	9
Mvmt Flow	902	21	0	948	0	41

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	462
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.28
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.99
Pot Cap-1 Maneuver	-	-	0	-	0	453
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	453
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	453	-	-	-
HCM Lane V/C Ratio	0.091	-	-	-
HCM Control Delay (s)	13.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	898	754	119	0	63
Future Vol, veh/h	0	898	754	119	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	7	6	10	0	33
Mvmt Flow	0	976	820	129	0	68

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	475
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.56
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.63
Pot Cap-1 Maneuver	0	-	-	-	460
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	460
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	460
HCM Lane V/C Ratio	-	-	-	0.149
HCM Control Delay (s)	-	-	-	14.2
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.5

Queues

101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/30/2024

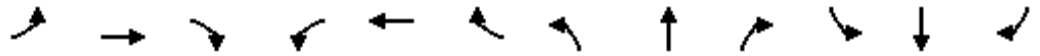


Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	97	909	39	42	939	75	120	126
v/c Ratio	0.23	0.28	0.04	0.09	0.44	0.33	0.68	0.41
Control Delay	6.1	10.6	0.7	5.3	13.0	20.2	74.1	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	10.6	0.7	5.3	13.0	20.2	74.1	12.1
Queue Length 50th (ft)	18	119	0	8	196	11	100	0
Queue Length 95th (ft)	41	167	5	21	281	57	168	57
Internal Link Dist (ft)		224			305	66	353	
Turn Bay Length (ft)	260		130	330				
Base Capacity (vph)	545	3217	1094	635	2153	587	556	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.28	0.04	0.07	0.44	0.13	0.22	0.18

Intersection Summary

HCM 6th Signalized Intersection Summary
 101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/30/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑			↕			↖	↗
Traffic Volume (veh/h)	89	836	36	39	837	27	32	0	37	110	0	116
Future Volume (veh/h)	89	836	36	39	837	27	32	0	37	110	0	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1796	1900	1900	1796	1530	1900	1900	1900	1811	1900	1811
Adj Flow Rate, veh/h	97	909	39	42	910	29	35	0	40	120	0	126
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	7	0	0	7	25	0	0	0	6	0	6
Cap, veh/h	447	3045	1000	477	2054	65	71	13	53	218	0	268
Arrive On Green	0.07	0.62	0.62	0.06	0.61	0.61	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1753	4904	1610	1810	3376	108	188	76	301	954	0	1535
Grp Volume(v), veh/h	97	909	39	42	460	479	75	0	0	120	0	126
Grp Sat Flow(s),veh/h/ln	1753	1635	1610	1810	1706	1777	565	0	0	954	0	1535
Q Serve(g_s), s	2.6	12.1	1.3	1.1	20.2	20.2	4.4	0.0	0.0	0.0	0.0	10.3
Cycle Q Clear(g_c), s	2.6	12.1	1.3	1.1	20.2	20.2	22.0	0.0	0.0	17.6	0.0	10.3
Prop In Lane	1.00		1.00	1.00		0.06	0.47		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	447	3045	1000	477	1038	1081	137	0	0	218	0	268
V/C Ratio(X)	0.22	0.30	0.04	0.09	0.44	0.44	0.55	0.00	0.00	0.55	0.00	0.47
Avail Cap(c_a), veh/h	575	3045	1000	662	1038	1081	453	0	0	523	0	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.4	12.3	10.3	8.4	14.7	14.7	58.2	0.0	0.0	54.8	0.0	51.8
Incr Delay (d2), s/veh	0.2	0.3	0.1	0.1	1.4	1.3	3.4	0.0	0.0	2.2	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.2	0.5	0.4	7.7	8.0	2.8	0.0	0.0	4.2	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.6	12.6	10.4	8.5	16.0	16.0	61.6	0.0	0.0	57.0	0.0	53.1
LnGrp LOS	A	B	B	A	B	B	E	A	A	E	A	D
Approach Vol, veh/h		1045			981			75				246
Approach Delay, s/veh		12.2			15.7			61.6				55.0
Approach LOS		B			B			E				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.8	14.8	93.0		31.8	16.6	91.3				
Change Period (Y+Rc), s		* 7.4	* 6.8	6.3		* 7.4	* 6.8	* 6.3				
Max Green Setting (Gmax), s		* 55	* 22	82.1		* 55	* 20	* 85				
Max Q Clear Time (g_c+I1), s		24.0	3.1	14.1		19.6	4.6	22.2				
Green Ext Time (p_c), s		0.4	0.1	7.2		1.2	0.2	6.5				

Intersection Summary												
HCM 6th Ctrl Delay											19.7	
HCM 6th LOS											B	

Notes
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	7.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↔
Traffic Vol, veh/h	0	67	2	0	73	2
Future Vol, veh/h	0	67	2	0	73	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	0	0
Mvmt Flow	0	73	2	0	79	2

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	162	2	0	-	2	0
Stage 1	2	-	-	-	-	-
Stage 2	160	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	834	1088	-	0	1634	-
Stage 1	1026	-	-	0	-	-
Stage 2	874	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	794	1088	-	-	1634	-
Mov Cap-2 Maneuver	794	-	-	-	-	-
Stage 1	1026	-	-	-	-	-
Stage 2	832	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	7.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	- 1088	1634	-
HCM Lane V/C Ratio	- 0.067	0.049	-
HCM Control Delay (s)	- 8.5	7.3	0
HCM Lane LOS	- A	A	A
HCM 95th %tile Q(veh)	- 0.2	0.2	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	923	19	0	985	0	38
Future Vol, veh/h	923	19	0	985	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	11	0	7	0	9
Mvmt Flow	1003	21	0	1071	0	41

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	-	-	512
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.28
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.99
Pot Cap-1 Maneuver	-	-	0	-	420
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	420
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	420	-	-	-
HCM Lane V/C Ratio	0.098	-	-	-
HCM Control Delay (s)	14.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	1001	835	119	0	68
Future Vol, veh/h	0	1001	835	119	0	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	7	6	10	0	33
Mvmt Flow	0	1088	908	129	0	74

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 519
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	- 7.56
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	- 3.63
Pot Cap-1 Maneuver	0	-	-	-	0 428
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	- 428
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	428
HCM Lane V/C Ratio	-	-	-	0.173
HCM Control Delay (s)	-	-	-	15.2
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.6

Queues

101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/26/2024

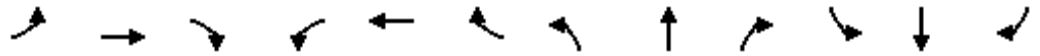


Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	93	891	77	84	916	147	135	130
v/c Ratio	0.22	0.30	0.07	0.18	0.44	0.60	0.80	0.38
Control Delay	7.2	12.9	3.6	6.8	14.5	40.6	87.8	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	12.9	3.6	6.8	14.5	40.6	87.8	10.8
Queue Length 50th (ft)	20	126	3	18	206	71	116	0
Queue Length 95th (ft)	46	180	26	42	301	143	193	56
Internal Link Dist (ft)		224			305	66	353	
Turn Bay Length (ft)	260		130	330				
Base Capacity (vph)	540	3006	1027	612	2096	547	439	695
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.30	0.07	0.14	0.44	0.27	0.31	0.19

Intersection Summary

HCM 6th Signalized Intersection Summary
 101: LAKESIDE DR/BERBERICH DR & MT. ZION RD

07/26/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	820	71	77	816	27	63	0	73	124	0	120
Future Volume (veh/h)	86	820	71	77	816	27	63	0	73	124	0	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1796	1900	1900	1796	1530	1900	1900	1900	1811	1900	1811
Adj Flow Rate, veh/h	93	891	77	84	887	29	68	0	79	135	0	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	7	0	0	7	25	0	0	0	6	0	6
Cap, veh/h	404	2757	905	438	1894	62	102	12	92	266	0	366
Arrive On Green	0.06	0.56	0.56	0.06	0.56	0.56	0.24	0.00	0.24	0.24	0.00	0.24
Sat Flow, veh/h	1753	4904	1610	1810	3373	110	281	52	386	918	0	1535
Grp Volume(v), veh/h	93	891	77	84	449	467	147	0	0	135	0	130
Grp Sat Flow(s),veh/h/ln	1753	1635	1610	1810	1706	1776	718	0	0	918	0	1535
Q Serve(g_s), s	3.2	14.7	3.3	2.8	23.7	23.7	12.4	0.0	0.0	0.0	0.0	10.7
Cycle Q Clear(g_c), s	3.2	14.7	3.3	2.8	23.7	23.7	33.2	0.0	0.0	20.8	0.0	10.7
Prop In Lane	1.00		1.00	1.00		0.06	0.46		0.54	1.00		1.00
Lane Grp Cap(c), veh/h	404	2757	905	438	958	998	206	0	0	266	0	366
V/C Ratio(X)	0.23	0.32	0.09	0.19	0.47	0.47	0.71	0.00	0.00	0.51	0.00	0.36
Avail Cap(c_a), veh/h	522	2757	905	588	958	998	387	0	0	435	0	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	17.7	15.2	11.9	19.7	19.7	62.1	0.0	0.0	51.9	0.0	48.0
Incr Delay (d2), s/veh	0.3	0.3	0.2	0.2	1.6	1.6	4.6	0.0	0.0	1.5	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.5	1.2	1.1	9.5	9.9	5.9	0.0	0.0	4.8	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	18.0	15.4	12.1	21.4	21.3	66.7	0.0	0.0	53.4	0.0	48.6
LnGrp LOS	B	B	B	B	C	C	E	A	A	D	A	D
Approach Vol, veh/h		1061			1000			147			265	
Approach Delay, s/veh		17.5			20.6			66.7			51.0	
Approach LOS		B			C			E			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		43.4	16.5	91.4		43.4	16.6	91.3				
Change Period (Y+Rc), s		* 7.4	* 6.8	6.3		* 7.4	* 6.8	* 6.3				
Max Green Setting (Gmax), s		* 55	* 22	82.1		* 55	* 20	* 85				
Max Q Clear Time (g_c+I1), s		35.2	4.8	16.7		22.8	5.2	25.7				
Green Ext Time (p_c), s		0.8	0.2	7.2		1.3	0.2	6.2				
Intersection Summary												
HCM 6th Ctrl Delay			25.2									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑			↙↕
Traffic Vol, veh/h	0	67	69	0	73	75
Future Vol, veh/h	0	67	69	0	73	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	73	75	0	79	82

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	315	75	0	-	75
Stage 1	75	-	-	-	-
Stage 2	240	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	682	992	-	0	1537
Stage 1	953	-	-	0	-
Stage 2	805	-	-	0	-
Platoon blocked, %			-		-
Mov Cap-1 Maneuver	645	992	-	-	1537
Mov Cap-2 Maneuver	645	-	-	-	-
Stage 1	953	-	-	-	-
Stage 2	762	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBL	SBT
Capacity (veh/h)	-	992	1537
HCM Lane V/C Ratio	-	0.073	0.052
HCM Control Delay (s)	-	8.9	7.5
HCM Lane LOS	-	A	A
HCM 95th %tile Q(veh)	-	0.2	0.2

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↑
Traffic Vol, veh/h	939	19	0	999	0	38
Future Vol, veh/h	939	19	0	999	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	11	0	7	0	9
Mvmt Flow	1021	21	0	1086	0	41

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	521
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.28
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.99
Pot Cap-1 Maneuver	-	-	0	-	0	414
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	414
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	414	-	-	-
HCM Lane V/C Ratio	0.1	-	-	-
HCM Control Delay (s)	14.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑			↑
Traffic Vol, veh/h	0	1017	852	119	0	68
Future Vol, veh/h	0	1017	852	119	0	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	7	6	10	0	33
Mvmt Flow	0	1105	926	129	0	74

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	528
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.56
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.63
Pot Cap-1 Maneuver	0	-	-	-	422
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	422
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	422
HCM Lane V/C Ratio	-	-	-	0.175
HCM Control Delay (s)	-	-	-	15.3
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.6

APPENDIX D

Turn Lane Warrants

Left Turn Lane Warrants

Input Fields

Left Turn Volume (vph)	96	Speed Limit (mph)	25
Advancing Volume (vph)	192	No. of through lanes	1
Opposing Volume (vph)	94	Percent Heavy Vehicles (decimal percent)	0.01

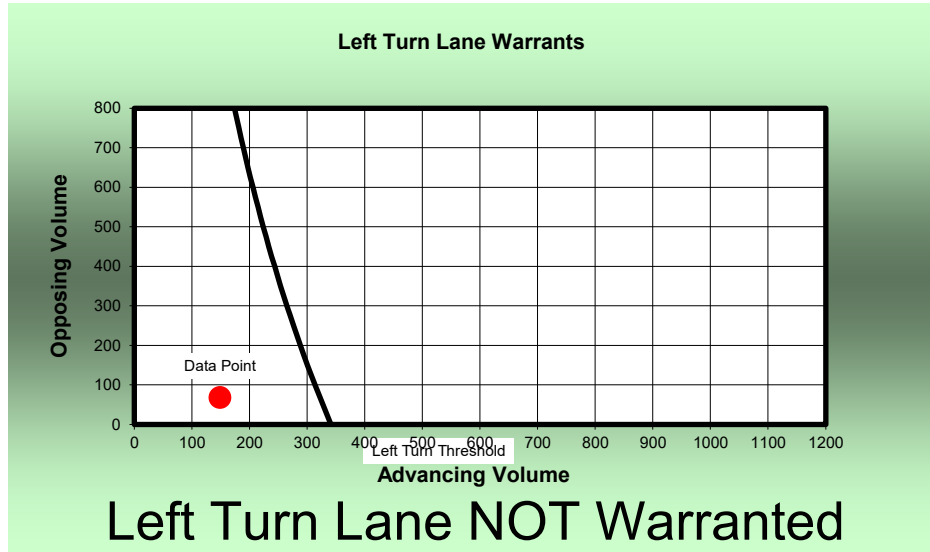


Note: This spreadsheet is intended to supplement the guidance provided in the Auxiliary Turn Lane policy outlined in the KYTC Highway Design Manual. This policy should be fully reviewed and understood prior to using this application.

Left Turn Lane Warrants

Input Fields

Left Turn Volume (vph)	73	Speed Limit (mph)	25
Advancing Volume (vph)	148	No. of through lanes	1
Opposing Volume (vph)	69	Percent Heavy Vehicles (decimal percent)	0.01



Note: This spreadsheet is intended to supplement the guidance provided in the Auxiliary Turn Lane policy outlined in the KYTC Highway Design Manual. This policy should be fully reviewed and understood prior to using this application.

APPENDIX E

Historic Traffic Data



TIS Simplified Traffic Forecast

Count Year	2023
Opening Year	2025
Design Year	2035
Years Back	15

Number of Counts 13

Growth Rate -1.25%

KYTC Traffic Count Station #1

STA ID 008L17

Year	AADT
2024	
2023	11380
2022	
2021	
2020	12021
2019	
2018	
2017	15490
2016	
2015	
Year	AADT
2014	13813
2013	
2012	
2011	15200
2010	
2009	
2008	15400
2007	
2006	
2005	14500
Year	AADT
2004	
2003	
2002	
2001	15300
2000	
1999	
1998	
1997	14000
1996	
1995	

KYTC Traffic Count Station #2

STA ID 008L16

Year	AADT
2024	
2023	
2022	
2021	
2020	
2019	
2018	
2017	
2016	22266
2015	
Year	AADT
2014	
2013	20791
2012	
2011	
2010	23200
2009	
2008	
2007	24900
2006	
2005	
Year	AADT
2004	19900
2003	
2002	
2001	18800
2000	
1999	
1998	
1997	14400
1996	
1995	

KYTC Traffic Count Station #3

STA ID 008M19

Year	AADT
2024	
2023	
2022	
2021	9085
2020	
2019	
2018	8524
2017	
2016	
2015	10023
Year	AADT
2014	
2013	
2012	9800
2011	
2010	
2009	8910
2008	
2007	
2006	9320
2005	
Year	AADT
2004	
2003	
2002	
2001	6680
2000	
1999	
1998	
1997	
1996	
1995	3460

Historical Traffic Volume Summary

Station Details:

Sta ID:	008L16
Sta Type:	Full Coverage
Map:	MapIt
District:	6
County:	Boone
Route:	008-KY-0536 -000
Route Desc:	MT ZION RD

Begin MP:	13.4060
Begin Desc:	I 71 & I 75 UNDERPASS
End Mp:	14.2050
End Desc:	US 25 (DIXIE HIGHWAY)
Impact Year:	
Year Added:	

Newest Count:

AADT:	22266
Year:	2016
% Single:	5.4710
% Combo:	1.3820
K Factor:	6.80
D Factor:	56

Definitions:

Sta. ID - Three digit county number + station number

MP - milepoint

Impact Year – year of significant change to traffic pattern within station segment

AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway

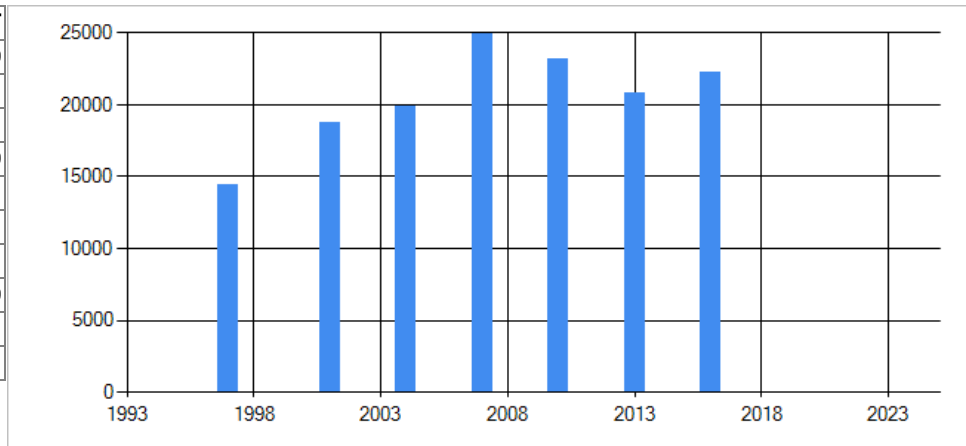
% Single – single unit truck volume as a percentage of the AADT

% Combo – combination truck volume as a percentage of the AADT

K Factor – peak hour volume as a percentage of the AADT

D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2024		2014		2004	19900
2023		2013	20791	2003	
2022		2012		2002	
2021		2011		2001	18800
2020		2010	23200	2000	
2019		2009		1999	
2018		2008		1998	
2017		2007	24900	1997	14400
2016	22266	2006		1996	
2015		2005		1995	



Historical Traffic Volume Summary

Station Details:

Sta ID:	008L17
Sta Type:	Full Coverage
Map:	MapIt
District:	6
County:	Boone
Route:	008-US-0025 -000
Route Desc:	DIXIE HWY

Begin MP:	7.6430
Begin Desc:	KY 536 (MT ZION ROAD)
End Mp:	8.4480
End Desc:	RICHARDSON ROAD/KY 842
Impact Year:	
Year Added:	

Newest Count:

AADT:	11380
Year:	2023
% Single:	7.5490
% Combo:	4.4420
K Factor:	8.70
D Factor:	56

Definitions:

Sta. ID - Three digit county number + station number

MP - milepoint

Impact Year – year of significant change to traffic pattern within station segment

AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway

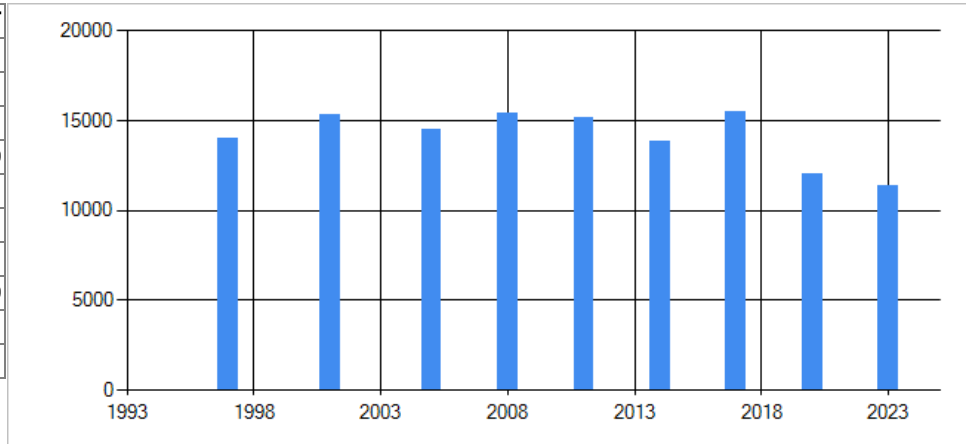
% Single – single unit truck volume as a percentage of the AADT

% Combo – combination truck volume as a percentage of the AADT

K Factor – peak hour volume as a percentage of the AADT

D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2024		2014	13813	2004	
2023	11380	2013		2003	
2022		2012		2002	
2021		2011	15200	2001	15300
2020	12021	2010		2000	
2019		2009		1999	
2018		2008	15400	1998	
2017	15490	2007		1997	14000
2016		2006		1996	
2015		2005	14500	1995	



Historical Traffic Volume Summary

Station Details:

Sta ID:	008M19
Sta Type:	Classification
Map:	MapIt
District:	6
County:	Boone
Route:	008-KY-3503 -000
Route Desc:	SAM NEACE DR+EMPIRE CONN+EMPIRE DR

Begin MP:	0
Begin Desc:	KY 536 (MT ZION ROAD)
End Mp:	1.6740
End Desc:	KY 1829 IN KY INDUSTRIAL PARK
Impact Year:	
Year Added:	1994

Newest Count:	
AADT:	9085
Year:	2021
% Single:	5.1970
% Combo:	2.7180
K Factor:	9.50
D Factor:	59

Definitions:

Sta. ID - Three digit county number + station number

MP - milepoint

Impact Year – year of significant change to traffic pattern within station segment

AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway

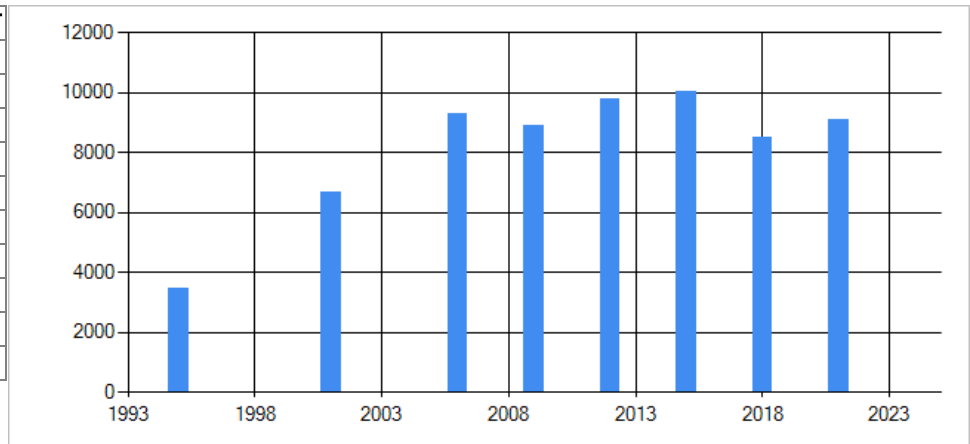
% Single – single unit truck volume as a percentage of the AADT

% Combo – combination truck volume as a percentage of the AADT

K Factor – peak hour volume as a percentage of the AADT

D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2024		2014		2004	
2023		2013		2003	
2022		2012	9800	2002	
2021	9085	2011		2001	6680
2020		2010		2000	
2019		2009	8910	1999	
2018	8524	2008		1998	
2017		2007		1997	
2016		2006	9320	1996	
2015	10023	2005		1995	3460





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Fax: 859.727.8452

www.vioxinc.com

August 6, 2024

DESCRIPTION OF 1.205 ACRES

Located in Boone County, Kentucky, lying on the south side of Mt. Zion Road, Kentucky Highway 536, approximately 185 feet east of Demia Way and being part of the same property conveyed to Mt. Zion MHC, LP, by deed recorded in Deed Book 1187, page 362, in the office of the Boone County clerk and is more particularly described as follows:

BEGINNING at a point in the south right-of-way line of Mt. Zion Road at the common corner of Mt. Zion MHC, LP and Lot 4 A of the Daniels Business Park (Plat Slide 562 A);

THENCE with said right-of-way line for the following three (3) courses:

1. N 83°54'37" E a distance of 61.15 feet, to a point;
2. S 64°41'21" E a distance of 17.92 feet, to a point;
3. N 77°37'37" E a distance of 63.10 feet, to a point;

THENCE leaving said right-of-way line and through the lands of Mt. Zion MHC, LP, for the following five (5) courses:

1. S 08°45'23" W a distance of 65.10 feet, to a point;
2. S 05°05'01" W a distance of 55.39 feet, to a point;
3. S 04°03'31" W a distance of 246.96 feet, to a point;
4. S 54°37'05" W a distance of 99.75 feet, to a point;
5. N 85°57'13" W a distance of 54.00 feet, to a point in the common line of Lot 4A and 4B of the Daniels Business Park;

THENCE with the common line of Mt. Zion MHC, LP, and Daniels Business Park N 04°02'57" E a distance of 408.47 feet, to the point of beginning containing 1.205 Acres, more or less.



BOONE COUNTY PLANNING COMMISSION

www.boonecountky.org/pc
www.boonecountygis.com

Boone County Administration Building
2950 Washington Street, Room 317
P.O. Box 958
Burlington, KY 41005

Phone (859) 334-2196; Fax (859) 334-2264
plancom@boonecountky.org

November 22, 2024

Laurence Aston
Sinkula Investments
3005 Dixie Highway, Suite 150
Edgewood, Ky 41017

RE: Request of Sinkula Investments (applicant) for Mt. Zion MHC LP (owner) for a Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4), including the following variances: (1) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along Lakeside Drive; and (2) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along the west property line, for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky. The request is for a Zoning Map Amendment to allow the development of an eating and drinking establishment with drive-through service.

Dear Mr. Aston:

The following represents the recommended conditions of approval for the above referenced application as discussed by the Planning Commission at their November 20, 2024, meeting. As you verbally agreed to these conditions at that meeting, please so indicate by signing in the space provided at the end of this letter and return the original letter to the Planning Commission's office no later than December 2, 2024.

CONDITIONS

1. The approval shall be based on the revised Concept Development Plan that was reviewed at the November 20, 2024, Zone Change Committee meeting, unless modified by other conditions below.
2. That an ingress/egress easement be recorded which allows for the connection through CAC Developments LLC property to Demia Way.
3. That the connection be constructed, and directional arrows be provided, identifying the additional access through the adjacent CAC Developments LLC property to Demia Way, this connection shall be completed prior to the start of business operations.

Wendy's – Mt. Zion Road
November 22, 2024
Page 2

Sincerely,

Steven C. Lilly, PLS
Planner, Zoning Services

SCL

AGREEMENT

We, the property owners/developer of the approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky, agree to the conditions listed herein for the above referenced Zoning Map Amendment.

Kurtis P. Keeney

Managing Member/ President CEO

12/3/2024

Mt. Zion MHC LP (Owner)

Date

Sinkula Investments (Applicant/Developer)

Date

Sincerely,

Steven C. Lilly, PLS
Planner, Zoning Services

SCL

AGREEMENT

We, the property owners/developer of the approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky, agree to the conditions listed herein for the above referenced Zoning Map Amendment.

Mt. Zion MHC LP (Owner)

Date



Sinkula Investments (Applicant/Developer)

11-22-2024
Date

ORDINANCE 2025-03

AN ORDINANCE OF THE BOONE COUNTY FISCAL COURT, KENTUCKY APPROVING A REQUEST, WITH CONDITIONS, OF SINKULA INVESTMENTS (APPLICANT) FOR MT. ZION MHC LP (OWNER) FROM MOBILE HOME PARK (MHP) TO COMMERCIAL FOUR (C-4) FOR AN APPROXIMATE 1.2 ACRE AREA LOCATED AT THE SOUTHWEST CORNER OF THE INTERSECTION OF MT ZION ROAD AND LAKESIDE DRIVE, INCLUDING THE PROPERTIES AT 10013, 10017, 10021, 10025, 10029, AND 10033 LAKESIDE DRIVE, BOONE COUNTY, KENTUCKY.

WHEREAS, the Boone County Planning Commission received a request for Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4) and including the following variances: (1) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along Lakeside Drive; and (2) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along the west property line, for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky, which is more particularly described below; and

WHEREAS, the Boone County Planning Commission as the planning unit for the unincorporated areas of Boone County, Kentucky, was requested to and has conducted a Public Hearing serving as a due process trial-type hearing and made Findings of Fact and Conditions, recommending approval for the Zoning Map Amendment and Variances.

NOW, THEREFORE, BE IT ORDAINED BY THE FISCAL COURT OF COUNTY OF BOONE, COMMONWEALTH OF KENTUCKY:

Section One

That the request for a Zoning Map Amendment for the real estate which is more particularly described below shall be and is hereby approved, with Conditions, this Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4) and the corresponding variances: (1) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along Lakeside Drive; and (2) reducing the Buffer Yard A width from ten (10) feet to two (2) feet along the west property line, finally approved by the Planning Commission subject to approval of the zoning map amendment by the Boone County Fiscal Court. This approved zone change is for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky. The real estate which is the subject of this request for a Zoning Map Amendment in a Mobile Home Park (MHP) zone is more particularly described in DEED BOOK: 1187, PAGE NO: 362 (as supplied by the applicant) as recorded in the Boone County Clerk's office.

Section Two

That as a basis for approval, with Conditions, for a Zoning Map Amendment from Mobile Home Park (MHP) to Commercial Four (C-4) and corresponding variances finally approved by the Planning Commission subject to approval by the Boone County Fiscal Court for an approximate 1.2 acre area located at the southwest corner of the intersection of Mt Zion Road and Lakeside Drive, including the properties at 10013, 10017, 10021, 10025, 10029, and 10033 Lakeside Drive, Boone County, Kentucky, Boone County, Kentucky are the Findings of Fact and Conditions of the Boone County Planning Commission as set forth in its minutes and official records for this request

and are hereby incorporated by reference as if fully set out in this Ordinance and marked as "Exhibit 1."


Section Three

This Ordinance shall be in effect and in full force from and after its passage, publication and adoption, according to law.

First Reading the 7th day of January 2025.

Second Reading the 21st day of January 2025.

Adopted this 21st day of January 2025. Yes + No 0

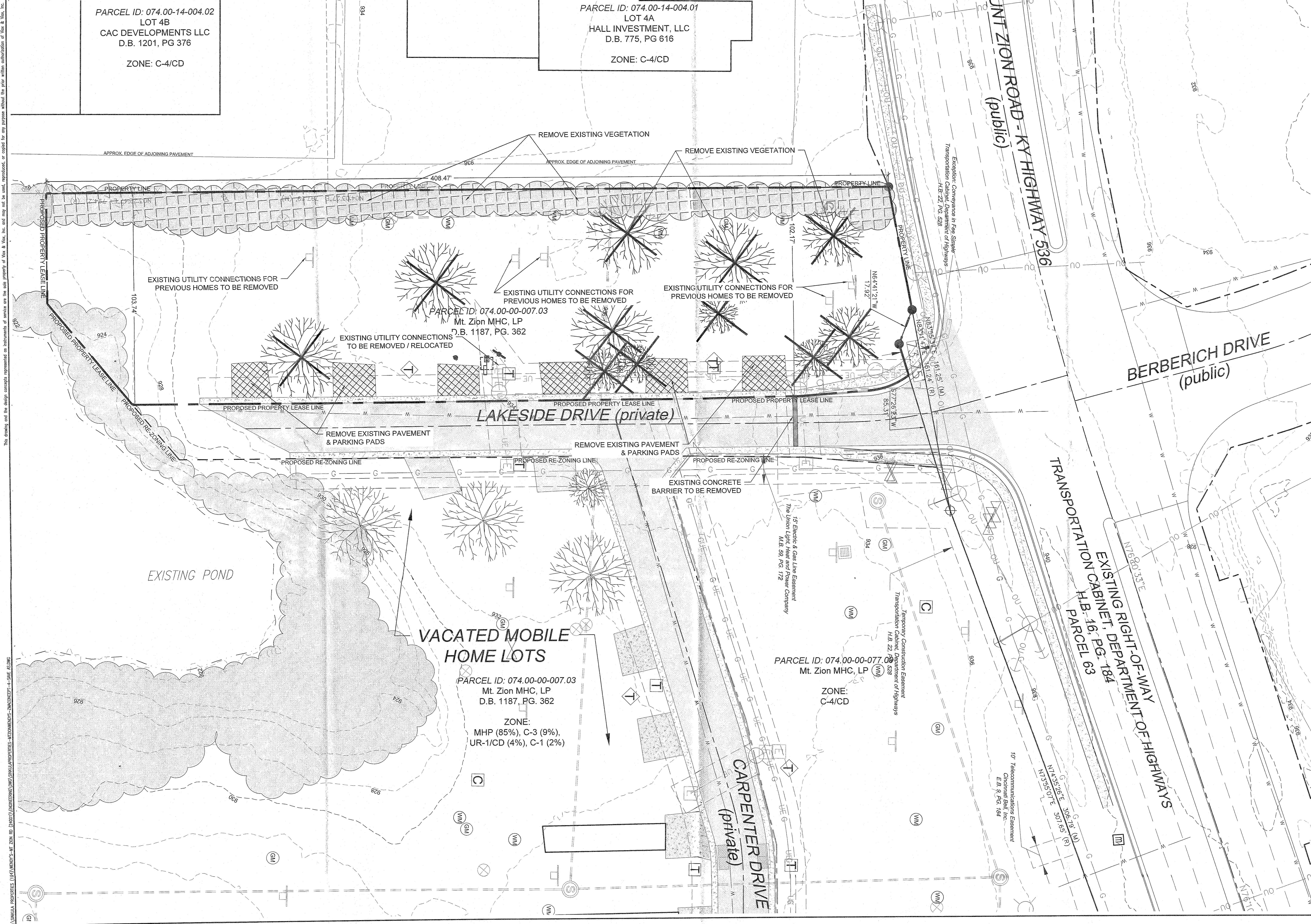


Gary W. Moore, Judge/Executive
Boone County Fiscal Court

ATTEST:



Shona Schulkers,
Fiscal Court Clerk



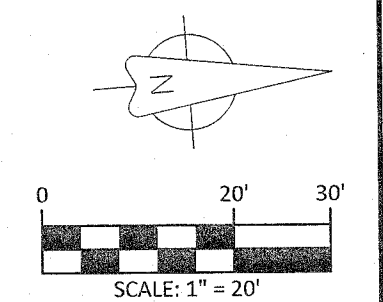
PARCEL ID: 074.00-14-004.02
 LOT 4B
 CAC DEVELOPMENTS LLC
 D.B. 1201, PG 376
 ZONE: C-4/CD

PARCEL ID: 074.00-14-004.01
 LOT 4A
 HALL INVESTMENT, LLC
 D.B. 775, PG 616
 ZONE: C-4/CD

PARCEL ID: 074.00-00-007.03
 Mt. Zion MHC, LP
 D.B. 1187, PG. 362

PARCEL ID: 074.00-00-007.03
 Mt. Zion MHC, LP
 D.B. 1187, PG. 362
 ZONE:
 MHP (85%), C-3 (9%),
 UR-1/CD (4%), C-1 (2%)

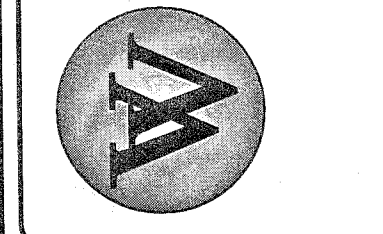
PARCEL ID: 074.00-00-077.03
 Mt. Zion MHC, LP
 ZONE:
 C-4/CD



Item	Revision	Date	By	CHK
1	BPC ZONING MAP AMENDMENT SUBMITTAL	8/6/24	TMZ	BMM

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 WWW.VIOXINC.COM

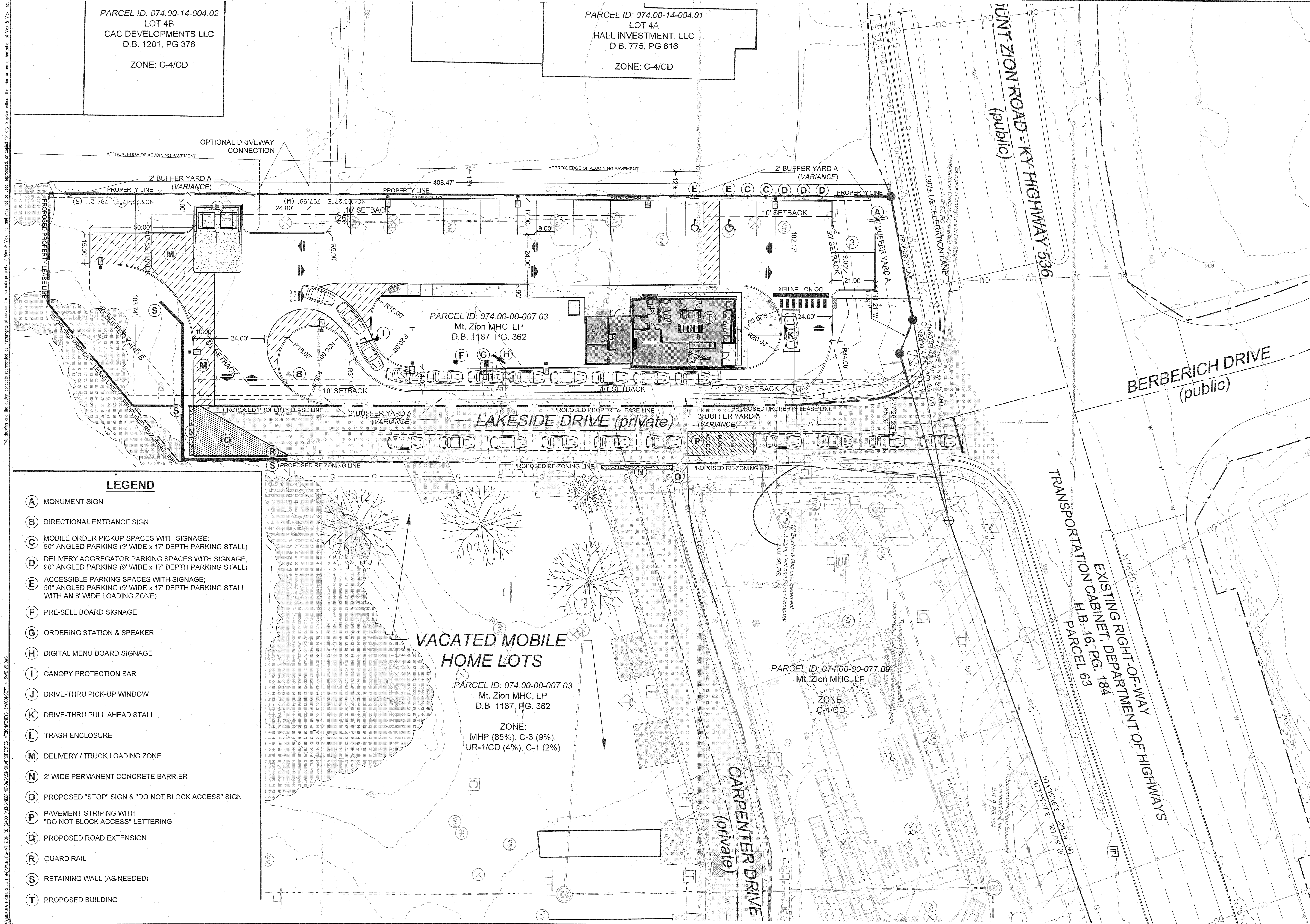


WENDY'S RESTAURANT CONCEPT
MT ZION ROAD & LAKESIDE DRIVE
 UNINCORPORATED BOONE COUNTY, KENTUCKY

Project No: 119424001	Checked: BMM
Date: 08/05/2024	Ref: TMZ
Sheet:	

C1.0

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PARCEL ID: 074.00-14-004.02
 LOT 4B
 CAC DEVELOPMENTS LLC
 D.B. 1201, PG 376
 ZONE: C-4/CD

PARCEL ID: 074.00-14-004.01
 LOT 4A
 HALL INVESTMENT, LLC
 D.B. 775, PG 616
 ZONE: C-4/CD

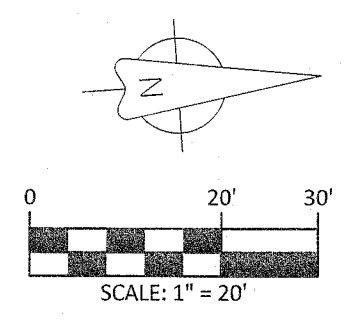
PARCEL ID: 074.00-00-007.03
 Mt. Zion MHC, LP
 D.B. 1187, PG. 362

PARCEL ID: 074.00-00-007.03
 Mt. Zion MHC, LP
 D.B. 1187, PG. 362
 ZONE:
 MHP (85%), C-3 (9%),
 UR-1/CD (4%), C-1 (2%)

PARCEL ID: 074.00-00-077.03
 Mt. Zion MHC, LP
 ZONE:
 C-4/CD

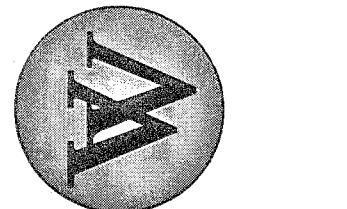
LEGEND

- (A) MONUMENT SIGN
- (B) DIRECTIONAL ENTRANCE SIGN
- (C) MOBILE ORDER PICKUP SPACES WITH SIGNAGE:
90° ANGLED PARKING (9' WIDE x 17' DEPTH PARKING STALL)
- (D) DELIVERY AGGREGATOR PARKING SPACES WITH SIGNAGE:
90° ANGLED PARKING (9' WIDE x 17' DEPTH PARKING STALL)
- (E) ACCESSIBLE PARKING SPACES WITH SIGNAGE:
90° ANGLED PARKING (9' WIDE x 17' DEPTH PARKING STALL
WITH AN 8' WIDE LOADING ZONE)
- (F) PRE-SELL BOARD SIGNAGE
- (G) ORDERING STATION & SPEAKER
- (H) DIGITAL MENU BOARD SIGNAGE
- (I) CANOPY PROTECTION BAR
- (J) DRIVE-THRU PICK-UP WINDOW
- (K) DRIVE-THRU PULL AHEAD STALL
- (L) TRASH ENCLOSURE
- (M) DELIVERY / TRUCK LOADING ZONE
- (N) 2' WIDE PERMANENT CONCRETE BARRIER
- (O) PROPOSED "STOP" SIGN & "DO NOT BLOCK ACCESS" SIGN
- (P) PAVEMENT STRIPING WITH
"DO NOT BLOCK ACCESS" LETTERING
- (Q) PROPOSED ROAD EXTENSION
- (R) GUARD RAIL
- (S) RETAINING WALL (AS NEEDED)
- (T) PROPOSED BUILDING



Rev	Date	By	Check	Reason
1	8/6/24	TAZ	BRM	BCPC ZONING MAP AMENDMENT SUBMITTAL

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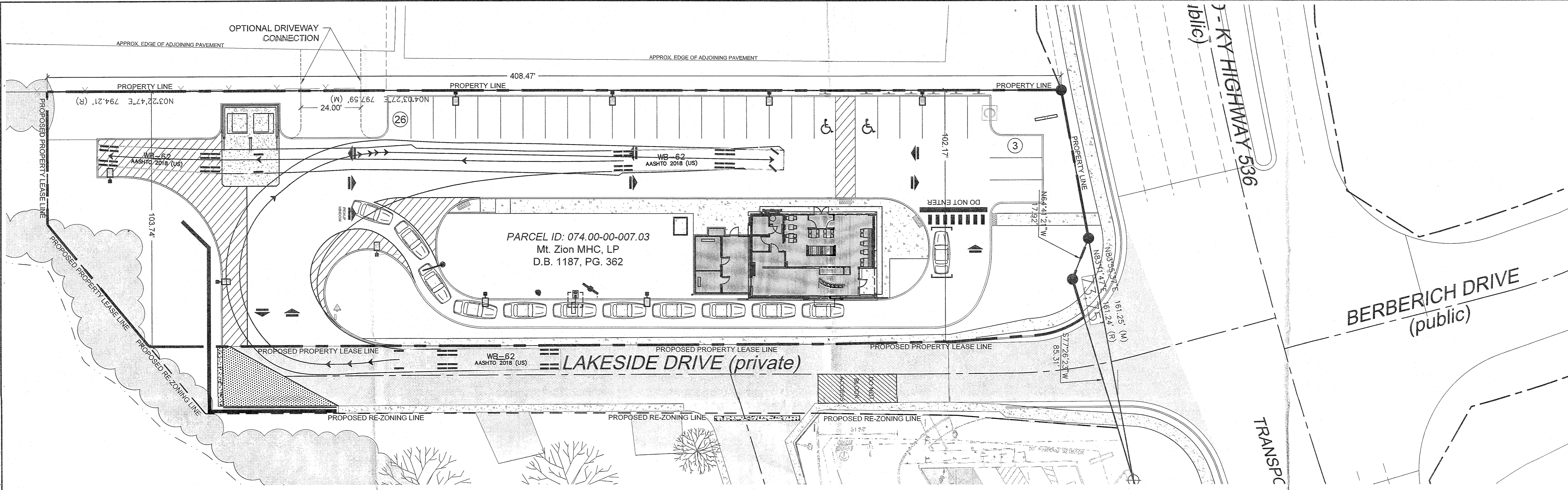
WENDY'S RESTAURANT CONCEPT
MT ZION ROAD & LAKESIDE DRIVE
 UNINCORPORATED BOONE COUNTY, KENTUCKY
 LAYOUT PLAN

Project No: 119424001	Checked: BRM
Date: 08/06/2024	Ref: Taz
Sheet: C2.0	

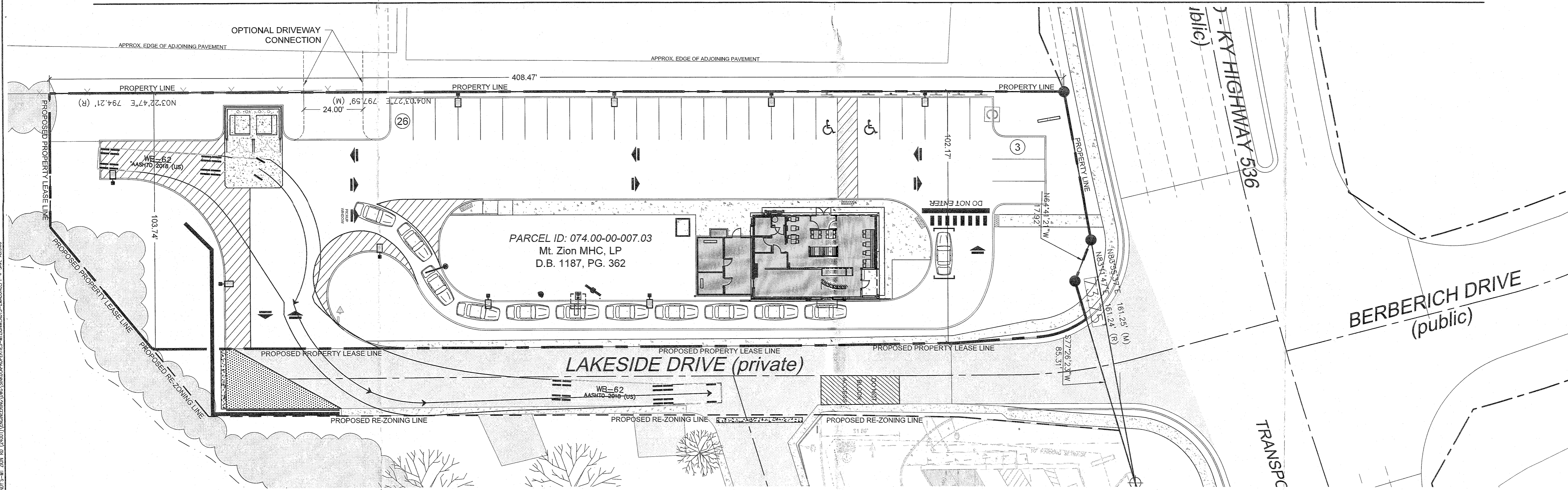
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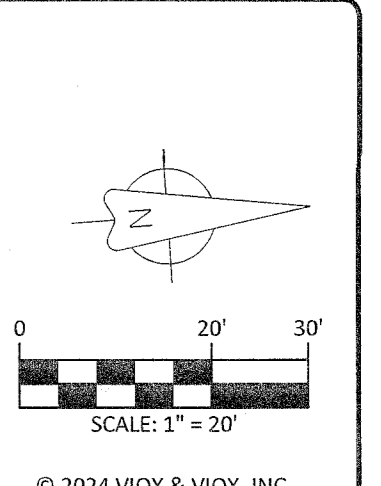
P:\SINKELA PROPERTIES (194)\WENDY'S-MT ZION RD (24001)\ENGINEERING\DWG\SINKELA PROPERTIES-MT ZION CONCEPT-4-SAVE AS DWG



A
C2.1
DELIVERY - INTO SITE
SCALE: 1" = 20'



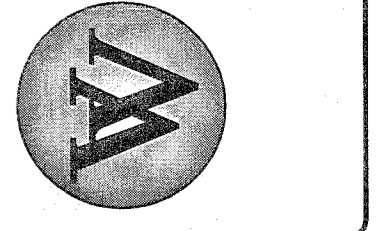
B
C2.1
DELIVERY - OUT OF SITE
SCALE: 1" = 20'



Item	Revision	Date	By	Chk.
1	B/C ZONING MAP AMENDMENT SUBMITTAL	8/6/24	TMZ	BMM

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WENDY'S RESTAURANT CONCEPT
MT ZION ROAD & LAKESIDE DRIVE
UNINCORPORATED BOONE COUNTY, KENTUCKY
AUTO-TURN DELIVERIES

Project No: 119424001	Checked: BMM
Date: 08/06/2024	Ref: TMZ

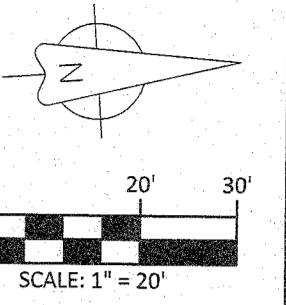
Sheet:
C2.1

PARCEL ID: 074.00-14-004.02
 LOT 4B
 CAC DEVELOPMENTS LLC
 D.B. 1201, PG 376
 ZONE: C-4/CD

PARCEL ID: 074.00-14-004.01
 LOT 4A
 HALL INVESTMENT, LLC
 D.B. 775, PG 616
 ZONE: C-4/CD

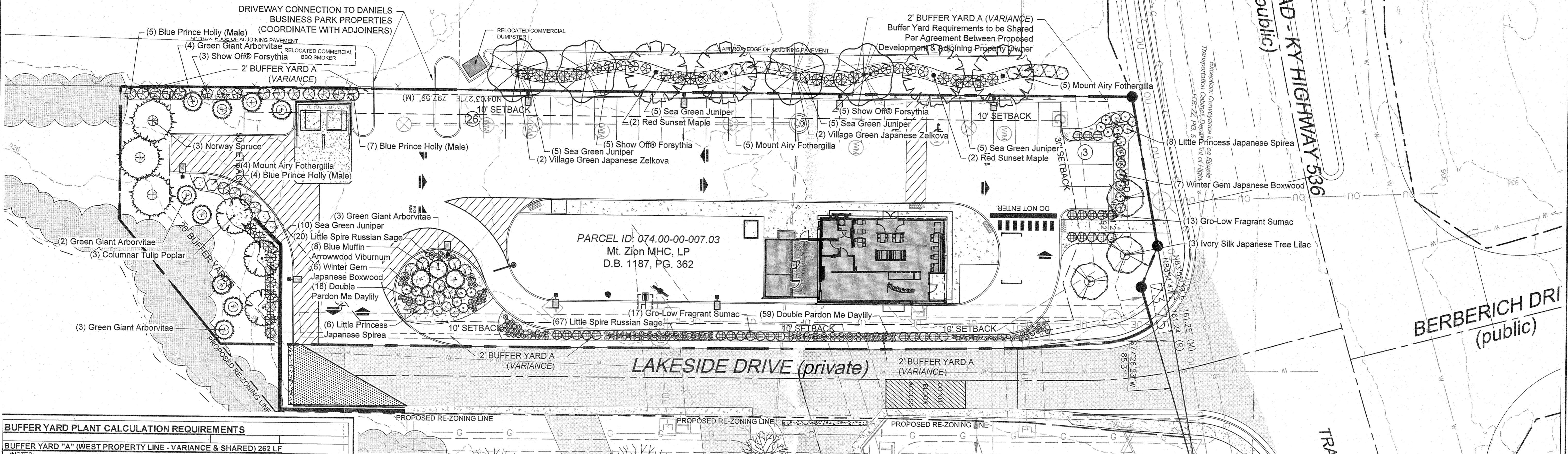
PARCEL ID: 074.00-00-007.03
 Mt. Zion MHC, LP
 D.B. 1187, PG. 362

Plan Shared at the
 11-20-24 Zone Change
 Committee Mtg.



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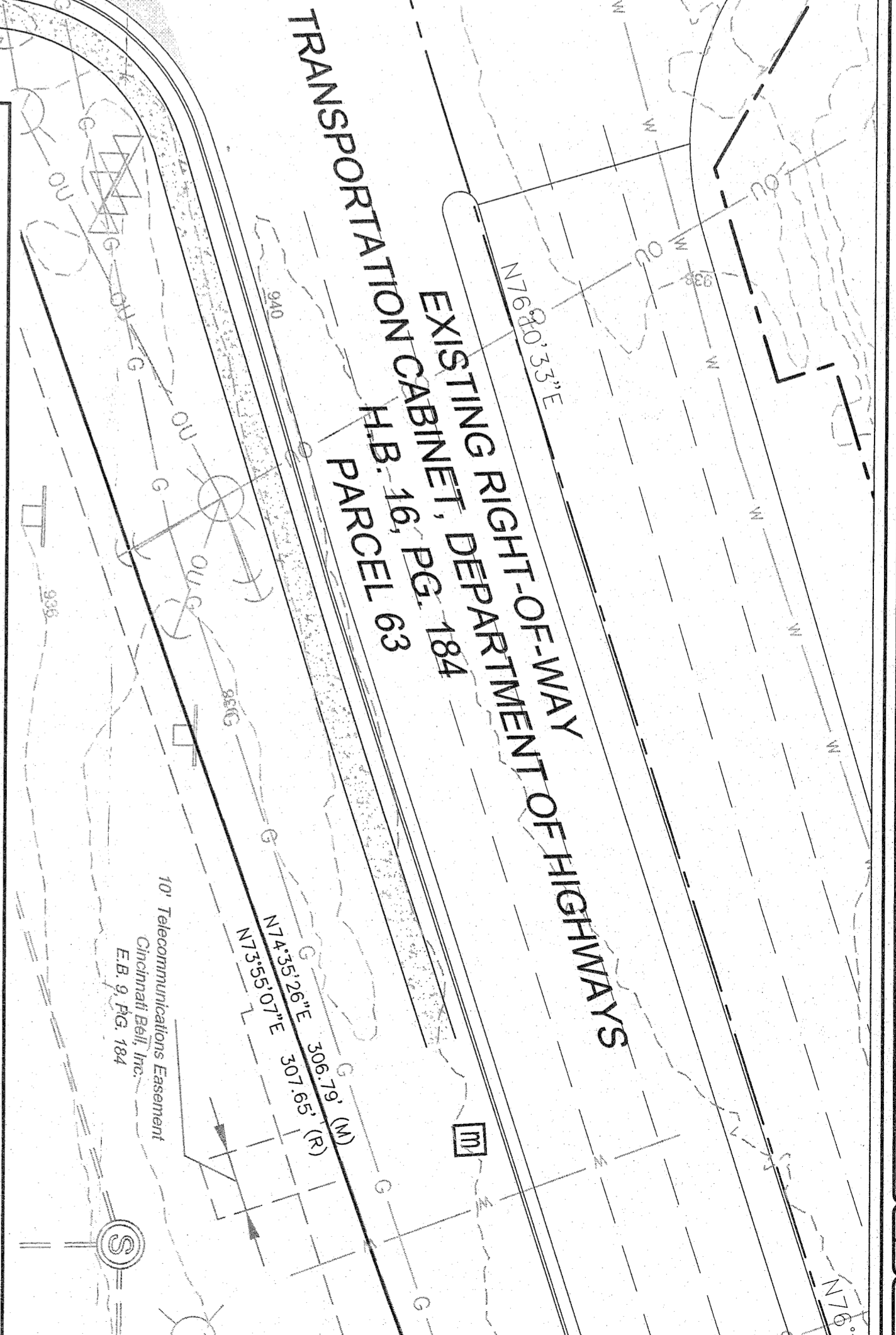
Rev	Date	Description
1	8/5/24	BCPC ZONING MAP AMENDMENT SUBMITTAL



BUFFER YARD PLANT CALCULATION REQUIREMENTS		
BUFFER YARD "A" (WEST PROPERTY LINE - VARIANCE & SHARED) 262 LF		
NOTES		
1. Buffer yard "A" shall be installed per a shared agreement between the proposed development and adjoining property on Parcel 074.00-14-004.01. Buffer Yard length adjoining the shared property is 262 LF.		
PER CODE: PLANT MATERIALS PER 100 LF	REQUIRED PER CODE	PROPOSED PLANTS
5 SMALL TREES PLANT LIST "C" OR	14	—
3 LARGE/MED/EVERGREEN TREES PLANT LIST "A/B/D"	8	8
AND		
30 SHRUBS PLANT LIST "E" OR	79	—
15 SHRUBS PLANT LIST "C"	40	40
BUFFER YARD "A" (WEST PROPERTY LINE - 2' WIDE VARIANCE) 112 LF		
NOTES		
1. A portion of the West Buffer Yard shall be a shared installation (see calculation for the "West Property Line - Variance & Shared" Buffer Yard above). The remainder of the property line (approximately 112 LF) shall be installed by the proposed development.		
PER CODE: PLANT MATERIALS PER 100 LF	REQUIRED PER CODE	PROPOSED PLANTS
5 SMALL TREES PLANT LIST "C" OR	6	—
3 LARGE/MED/EVERGREEN TREES PLANT LIST "A/B/D"	4	4
AND		
30 SHRUBS PLANT LIST "E" OR	34	—
15 SHRUBS PLANT LIST "C"	17	17
BUFFER YARD "B" (SOUTH PROPERTY LINE - 20' WIDE) 119 LF		
NOTES		
1. Existing vegetation may be preserved within the Buffer Yard along the Southern Property Line. Grading and clearing limits will be evaluated within site plan development and may be proposed as a credit towards deciduous tree requirements, if applicable.		
PER CODE: PLANT MATERIALS PER 100 LF	REQUIRED PER CODE	PROPOSED PLANTS
5 EVERGREEN TREES PLANT LIST "D" AND	6	6
6 LARGE/MED/SMALL/EVERGREEN TREES PLANT LIST "A/B/C/D"	8	5*
AND		
30 SHRUBS PLANT LIST "E" OR	36	—
15 SHRUBS PLANT LIST "C"	18	18
BUFFER YARD "A" (EAST PROPERTY LINE - 2' WIDE VARIANCE) 302 LF		
NOTES		
1. A mixture of proposed trees, shrubs, and perennials has been proposed throughout the buffer yard. Required vegetation shall be provided where ample growing space allows. In buffer yard areas with size and utility constraints plants have been proposed at the following substitution rates to fulfill the remainder of zoning code requirements: 1 Large/Med/Evergreen Plant List "A/B/D" Tree = 4 Plant List "E" Shrubs 1 Plant List "E" Shrub = 2 Perennials		
PER CODE: PLANT MATERIALS PER 100 LF	REQUIRED PER CODE	PROPOSED PLANTS
5 SMALL TREES PLANT LIST "C" OR	16	—
3 LARGE/MED/EVERGREEN TREES PLANT LIST "A/B/D"	10	3*
AND		
30 SHRUBS PLANT LIST "E" OR	91	37*
15 SHRUBS PLANT LIST "C"	46	—
PERENNIALS	—	164*
BUFFER YARD "A" (NORTH PROPERTY LINE - 10' WIDE) 92 LF		
PER CODE: PLANT MATERIALS PER 100 LF	REQUIRED PER CODE	PROPOSED PLANTS
5 SMALL TREES PLANT LIST "C" OR	5	—
3 LARGE/MED/EVERGREEN TREES PLANT LIST "A/B/D"	3	3
AND		
30 SHRUBS PLANT LIST "E" OR	28	28
15 SHRUBS PLANT LIST "C"	14	—

PLANT SCHEDULE							
SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	CAL.	SIZE (HT)	CONT.	REMARKS
TREES							
(Symbol)	4	Acer Rubrum 'Red Sunset'	Red Sunset Maple	2" Cal.	10-12'	B&B	Full, Even Growth; Straight Trunk
(Symbol)	3	Liriodendron tulipifera 'Fastigiata'	Columnar Tulip Poplar	2" Cal.	10-12'	B&B	Full, Even Growth
(Symbol)	4	Zelkova Serrata 'Village Green'	Village Green Japanese Zelkova	2" Cal.	10-12'	B&B	Full, Even Growth; Straight Trunk
EVERGREEN TREES							
(Symbol)	3	Picea Abies	Norway Spruce	n/a	6'	B&B	Full, Even Growth; Straight Trunk; Single Leader
(Symbol)	12	Thuja X 'Green Giant'	Green Giant Arborvitae	n/a	6'	B&B	Full, Even Growth; Straight Trunk; Single Leader
FLOWERING TREES							
(Symbol)	3	Syringa Reticulata 'Ivory Silk'	Ivory Silk Japanese Tree Lilac	2" Cal.	10-12'	B&B	Full, Even Growth
SHRUBS							
(Symbol)	13	Forsythia x intermedia 'Mindor'	Show Off® Forsythia	3 gal.	24 - 30"	5' 0"	Full, Even Growth
(Symbol)	14	Fothergilla X 'Mount Airy'	Mount Airy Fothergilla	3 gal.	24 - 30"	5' 0"	Full, Even Growth
(Symbol)	30	Rhus Aromatica 'Gro-Low'	Gro-Low Fragrant Sumac	3 gal.	24 - 30"	4' 0"	Full, Even Growth
(Symbol)	14	Spiraea japonica 'Little Princess'	Little Princess Japanese Spirea	3 gal.	24 - 30"	4' 0"	Full, Even Growth
(Symbol)	8	Viburnum dentatum 'Christom'	Blue Muffin Arrowwood Viburnum	3 gal.	24 - 30"	5' 0"	Full, Even Growth
EVERGREEN SHRUBS							
(Symbol)	13	Buxus microphylla japonica 'Winter Gem'	Winter Gem Japanese Boxwood	3 gal.	24 - 30"	4' 0"	Full, Even Growth
(Symbol)	16	Ilex X Meserveae 'Blue Prince'	Blue Prince Holly (Male)	3 gal.	24 - 30"	5' 0"	Full, Even Growth
(Symbol)	30	Juniperus chinensis 'Sea Green'	Sea Green Juniper	3 gal.	30 - 36"	5' 0"	Full, Even Growth
PERENNIALS							
(Symbol)	77	Hemerocallis X 'Double Pardon Me'	Double Pardon Me Daylily	1 gal.	12"-18"	2' 0"	Full, Even Growth; Well Developed Roots
(Symbol)	87	Perovskia 'Little Spire'	Little Spire Russian Sage	1 gal.	18 - 24"	2' 0"	Full, Even Growth; Well Developed Roots

- GENERAL NOTES:**
- A preliminary landscape plan has been shown for the zoning map amendment application. Landscape design and plant selections may be subject to change in site plan development to address Boone County Planning Commission reviewer comments, unforeseen site conditions, preserved existing vegetation, final grading / utility design, plant availability, etc.
 - A portion of the West Buffer Yard shall be installed per a shared buffer yard agreement between the proposed development and the adjoining property on Parcel 074.00-14-004.01.
 - Per Boone County Zoning Regulations, Article 36, Section 3625: Interior Landscaping for Vehicular Use Areas (VUA's):
 - The V.U.A. landscaping shall only be required for uses which have more than fifty (50) parking spaces.
 - The V.U.A. landscaping section is not applicable for the proposed development.
 - Per Boone County Zoning Regulations, Article 36, Section 3630: Building Landscaping:
 - Buildings less than 10,000 SF or smaller shall be exempt from the requirements of this section.
 - The building landscaping section is not applicable for the proposed development.
 - Per Boone County Zoning Regulations, Article 36, Section 3645: Buffer Yards:
 - Buffer Yards shall be calculated and provided per the mentioned section and as shown per preliminary calculation table on this sheet.



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WENDY'S RESTAURANT CONCEPT
MT ZION ROAD & LAKESIDE DRIVE
 UNINCORPORATED BOONE COUNTY, KENTUCKY
 LANDSCAPE PLAN

Project No: 119424001
 Date: 10/29/2024
 Checked: BMM
 Ref: TMZ
 Sheet:

L1.0

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 DEC 03 2024
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 PLANNING COMMISSION