

# CAHOON PARK AREA CONNECTIVITY STUDY

City of Bay Village

Prepared by the Northeast Ohio Areawide Coordinating Agency

October 2017

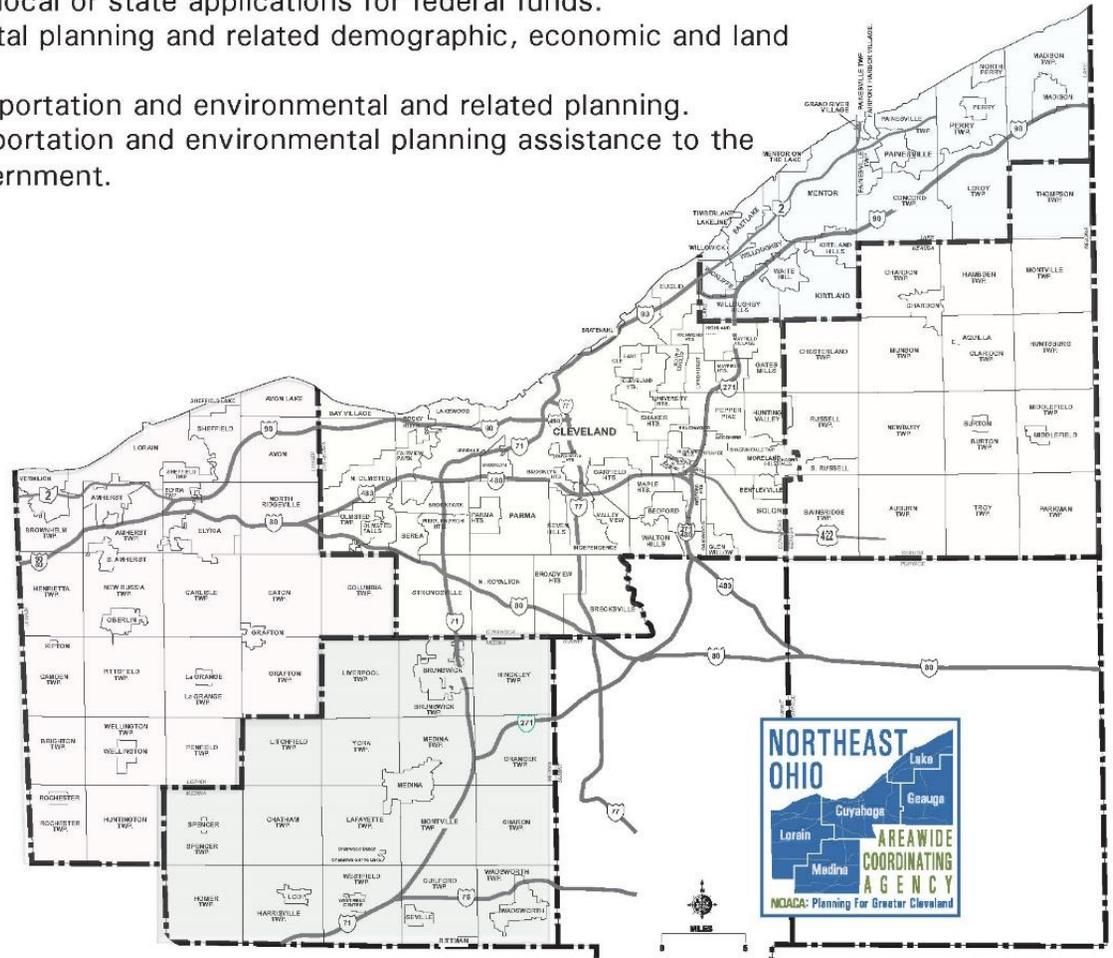


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- Administer the area clearinghouse function, which includes providing local government with the opportunity to review a wide variety of local or state applications for federal funds.
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# Cahoon Park Area Connectivity Study

## Bay Village, Ohio

October 2017



**NORTHEAST  
OHIO  
AREAWIDE  
COORDINATING  
AGENCY**

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## Executive Summary

### Introduction

The City of Bay Village, NOACA, Greater Cleveland Regional Transit Authority (GCRTA), the Ohio Department of Transportation (ODOT) District 12, Cleveland Metroparks, Bay Village Schools, the Cuyahoga County Library Bay Village Branch, Village Bicycle Cooperative, and other engaged citizens partnered to study active transportation connections and facilities in and around Cahoon Memorial Park as shown. The study area for this plan is bounded by Dover Center Road on the east, Wolf Road on the south, a rough approximation of the Cleveland Metroparks' Huntington Reservation property line on the west, and the Lake Road corridor extending to Huntington Reservation on the north.

The study goals were to:

- Improve connectivity within Cahoon Park
- Improve connections to:
  - Cleveland Metroparks Huntington Reservation
  - Bay Village Recreation facilities
  - Bay Middle School
  - Greater Cleveland Rapid Transit Authority's (GCRTA) bus station and turnaround

### Existing Conditions

The study area has a complete network of sidewalks adjacent to the roadway, along with interior park paths. There are gaps in connectivity where there are no facilities, as across Cahoon Creek or connecting Cahoon Park West to the interior paths of Huntington Reservation, or where destinations are disconnected from the network by parking lots. The Huntington Beach Reservation contains multiuse paths and the City of Bay Village has identified on-road bicycle routes, but they do not have bike route signage. In addition, Lake Road has recently been designated as a national bike route (US-30A). The crash rate and frequency for the study area is low. In 2014, ODOT found an average daily traffic (ADT) count of 12,820 vehicles on Lake Road, and NOACA counted an ADT of 6,242 vehicles on Wolf Road.

Cahoon Memorial Park Connectivity Study Planning Area



## Planning Process

The planning process consisted of three stakeholder meetings, two public meetings, field visits, a public survey, and traffic study. The public was asked to participate in the development of recommendations through a survey, provided in hard copy and online. The survey included 22 open-ended and multiple-choice questions. The response rate to the survey was very good (290 completed surveys). The survey indicated that the public perception of Bay Village is very positive and that people are currently biking and walking for transportation.

The traffic analysis investigated the feasibility of a variety of ideas, including a desired traffic signal and roundabout at Lake Road/Cahoon Road, a road diet on Lake Road, and reconfiguring turn lanes at the Cahoon Road/Wolf Road intersection. The traffic analysis indicated that a traffic signal was not warranted, but all other options described above within the study area are feasible.

## Recommendations

Based on the existing conditions analysis, direction from city officials, the stakeholder committee, and comments from the public engagement process, several recommendations were developed. Some of these recommendations include alternatives, which give the City of Bay Village flexibility in developing projects. The major recommendations below are organized by location.

### Lake Road Recommendations

- Road diet: convert the roadway from four lanes to three lanes between Dover Center and Porter Creek Roads (one lane in each direction with a two-way center turn lane). Include five-foot (minimum) bike lanes between the curb and traffic lanes. Buffer bike lanes where a two-way center turn lane is not needed and existing pavement width permits.
- Include pedestrian refuge islands on either or both east and west approaches of the Cahoon and Lake Roads intersection. Install Rapid Rectangular Flashing Beacons (RRFBs) at the Cahoon and Lake Roads intersection and at the Bryson Lane and Lake Road intersection to facilitate safer pedestrian crossings with improved motorist yield rates.
- Continue bike lanes on the Lake Road Bridge that crosses Cahoon Creek in the ODOT design for the bridge replacement.

### Rendering of pedestrian refuge islands



### Cahoon Road Recommendations

- Provide on-street parking on the east side of Cahoon Road:
  - **Alternative 1:** 18 parallel parking spaces with buffered bike lanes and two traffic lanes.
  - **Alternative 2:** 30 reverse angle (back-in) parking spaces with two traffic lanes that have sharrow markings and “bikes may use full lane” signs.
- Extend the sidewalk and landscaping at the entrance to the GCRTA bus roadway/parking lot and Harvey Yoder (Park) Lane parking lot to slow turning vehicles and shorten the distance for pedestrians crossing these drive aprons.
- Construct a landscaped island or stormwater retention basin in the parking lot east of Cahoon Road next to the GCRTA bus station.
- Construct a multiuse path on the west side of Cahoon Road, connecting Lake and Wolf Roads. Include a connection running north of Harvey Yoder Lane that connects to the existing multiuse path at the west end of the parking lot.

### Wolf Road Recommendations

- Reduce pedestrian crossing distances at the Cahoon and Wolf Road intersection:
  - Extend the curb line of the northwestern corner, reducing the turning radius for right-turning vehicles and effectively slowing vehicular speeds.
  - Close the right-turn-only lane on the westbound approach of the Cahoon and Wolf Roads intersection, narrowing the intersection and reducing the right-turn radius for vehicles at the northeast corner of the intersection, slowing vehicles turning north onto Cahoon Road.
- Construct a pedestrian refuge island east of the Cahoon Creek Bridge to provide a safe crossing from the new library building to the south side of the street.
- Construct a multiuse path or striped bike lanes on Wolf Road between Cahoon and Dover Center Roads.

### Rendering of striped bike lanes on Wolf Road



### Cahoon Park Interior Recommendations

- Construct a multiuse path between Cahoon Road and the parking lot next to Bayway Youth Cabin, crossing the disc golf course and Cahoon Creek.
  - Build a pedestrian bridge over Cahoon Creek at the location of the existing sewer pipe.
- Provide a connection from Cahoon Park at the Lake Road bridge to a multiuse path or trail connecting to the lakefront.

### General Recommendations

- Install wayfinding signage around the park to orient pedestrians and cyclists to park destinations.
- Install additional bike parking at the Harvey Yoder Lane and Cahoon Road/GCRTA parking lots, and other places as needed.

### Implementation

The recommendations in this report are both short term and long term; some of them may be accomplished in a year or two (such as road striping and RRFBs), while others may take time to develop and fund. Below is a table of planning-level cost estimates to approximate what each recommendation could cost; further work through engineering and design will lead to true costs for each item. Recommendations are eligible for NOACA Transportation for Livable Communities Initiative (TLCI) Implementation Project funds, among other funding sources such as federal, state, private, and philanthropic investments.

Recommendation	Cost
Lake Road SUBTOTAL	\$ 122,280.77
Wolf Road SUBTOTAL	\$ 312,698.81
Cahoon Road SUBTOTAL	\$ 240,791.77
Cahoon Park Interior/ General Recommendations SUBTOTAL	\$ 238,618.20
SUBTOTAL	\$ 914,389.55
30% CONTINGENCY	\$ 274,316.87
SUBTOTAL	\$ 1,188,706.42
10% DESIGN ENGINEERING COST	\$ 118,870.64
<b>TOTAL</b>	<b>\$ 1,307,577.06</b>

## Introduction

In 2015, the City of Bay Village and NOACA partnered to study active transportation connections and facilities in and around Cahoon Memorial Park as shown in Map 1. Through the course of 2016, the City and NOACA studied how and when the park is used, how people access and move through it, and what barriers exist that discourage people from walking and biking. This plan is the result of a process that began with the following goals:

- Improve connectivity within Cahoon Park
- Improve connections to:
  - Cleveland Metroparks Huntington Reservation
  - Bay Village Recreation facilities
  - Bay Middle School
  - Greater Cleveland Rapid Transit Authority's (GCRTA) bus station and turnaround

To develop feasible alternatives, the partners convened a stakeholder committee that consisted of representatives from the City of Bay Village, NOACA, GCRTA, the Ohio Department of Transportation District 12 (ODOT), Cleveland Metroparks, Bay Village Schools, the Cuyahoga County Library Bay Village Branch, Village Bicycle Cooperative, and other engaged citizens. In addition, the public was engaged through meetings and a survey, which directly influenced the recommendations included in this report.

**Map 1: Cahoon Memorial Park Connectivity Study Planning Area**



## Background

The purpose of the Cahoon Park Area Connectivity Study is to provide solutions to better connect the many assets of Cahoon Memorial Park with the surrounding community. Currently, it is difficult to access all parts of the park by bike or foot, as well as surrounding destinations such as Cleveland Metroparks' Huntington Reservation, due to a lack of safe crossings, lack of biking facilities, and a focus on motor vehicle access. The park has two halves divided by Cahoon Creek, which makes travel difficult in some areas. The eastern half of the park provides the community recreational facilities, including baseball fields; outdoor tennis, basketball, and sand volleyball courts; a playground; and a pool. Cahoon Park East is also the site of the city's senior center and Bay Village City Hall. A new branch of the Cuyahoga County Library will be constructed just south of Bayway Youth Cabin, across from the Bay Village Square shopping center. The northeastern portion of the park includes a Lake Erie overlook and an access road to the Bay Boat Club.

Cahoon Park West is less developed, with hillier topography east of Cahoon Road that is used for sledding when there is enough snow. This area includes the Rose Hill Museum and Osborn House, Village Bicycle Cooperative (part of the Bay Village Community House), Bay Skate Park, and the Cahoon Creek Disc Golf course. West of Cahoon Road there are several fields that are used by Bay Soccer and that generate significant activity spring through fall. Cahoon Park West is also the site of the Bay Village Police Department and is across from Bay Middle School.

**Picture 1: Cahoon Memorial Park Lake Erie Overlook**

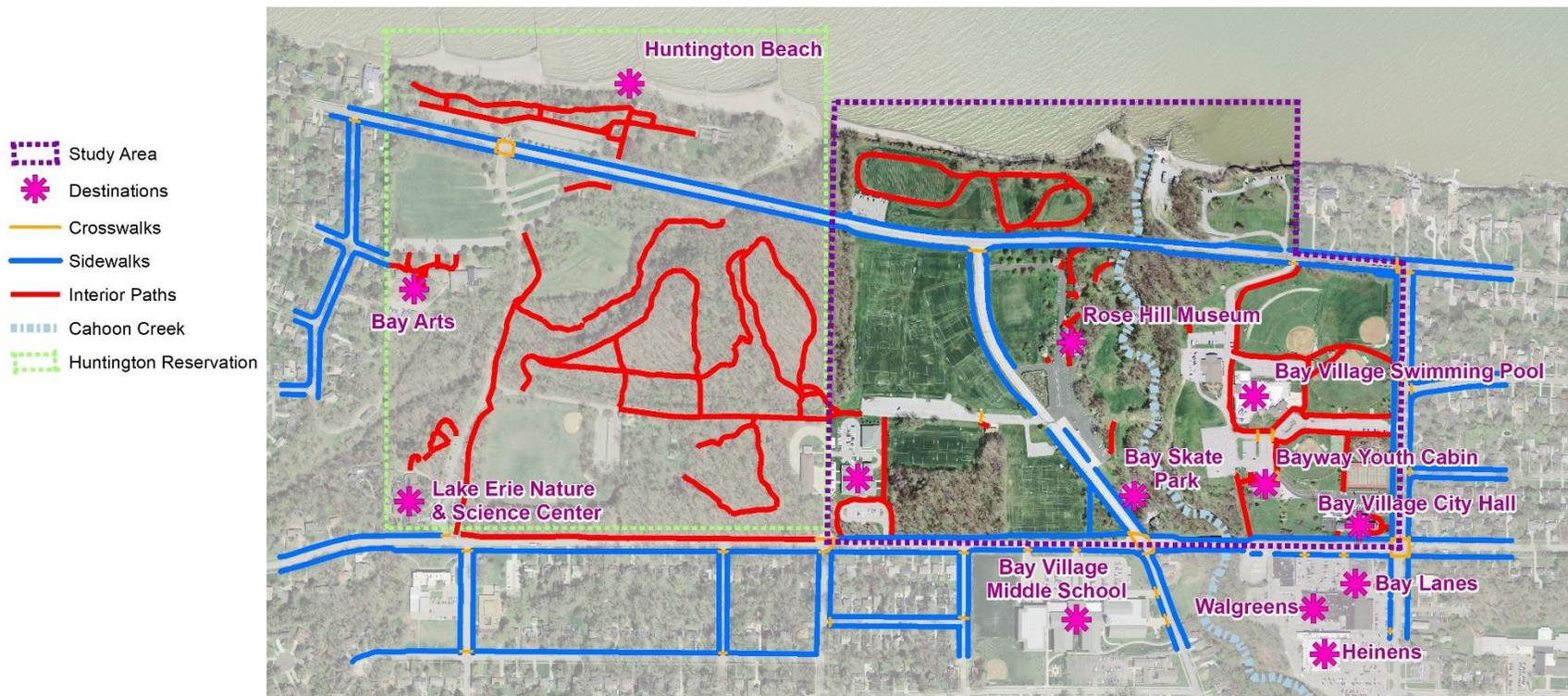


## Existing Conditions

### Nonmotorized Connectivity

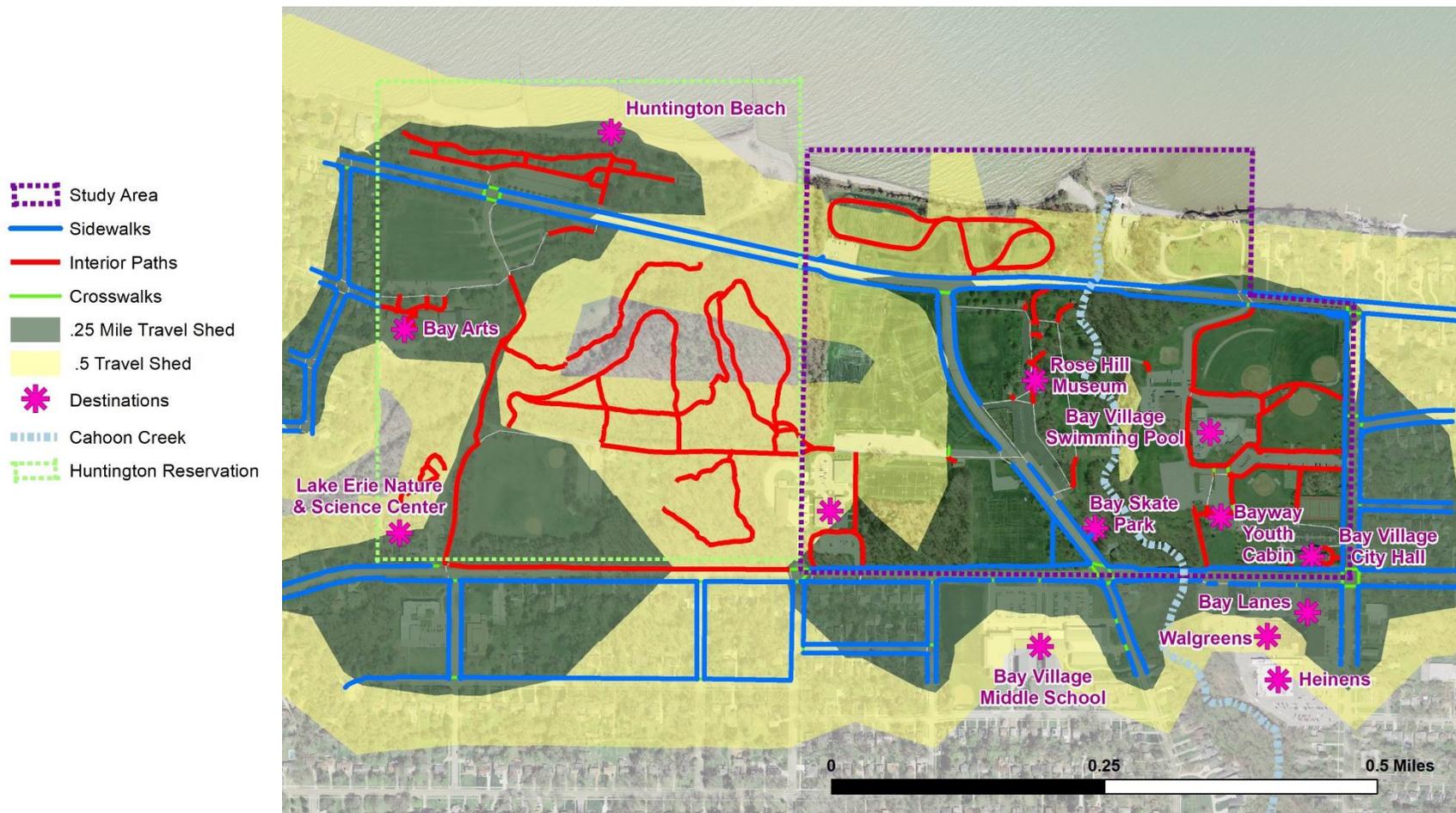
The study area for this plan is bounded by Dover Center Road on the east, Wolf Road on the south, a rough approximation of the Cleveland Metroparks' Huntington Reservation property line on the west, and the Lake Road corridor extending to Huntington Reservation on the north. The area is approximately 5,215,000 square feet, or 119 acres. The study area and surrounding area (including neighboring side streets and Huntington Reservation) have a complete network of sidewalks adjacent to the roadways, roughly totaling 40,000 linear feet of sidewalk. The area also has a network of interior paths, which are used for hiking and accessing different facilities (particularly in Cahoon Park East). These paths roughly equal 27,000 linear feet of dirt or asphalt path. Map 2 shows the locations of sidewalks and interior paths.

Map 2: Sidewalks and Interior Paths



Connectivity between destinations based on the sidewalk and path network is relatively good; most destinations within Cahoon Park are within a quarter-mile trip of each other, though the park is not especially well connected to Huntington Reservation. Map 3 shows the quarter-mile and half-mile travel sheds, or aggregate areas one could travel between destinations on the nonmotorized network. These areas are based on network connectivity, assuming one travels on specific nonmotorized facilities such as a sidewalk, trail, or crosswalk. Gaps in connectivity are apparent where there are no facilities, as across Cahoon Creek or connecting Cahoon Park West to the interior paths of Huntington Reservation, or where destinations are disconnected from the network by parking lots.

**Map 3: Quarter- and Half-Mile Travel Sheds**



### Connectivity Challenges

There are several areas in the study area where nonmotorized facilities are missing or undesignated. There are also several areas with missing painted crosswalks; a lack of a safe mid-block crossing (a crossing that is between signalized intersections), particularly on Lake Road; and the absence of a bridge across Cahoon Creek. In the latter example, it is clear that one way people are crossing the creek is by walking on a sewer pipe, which is very dangerous considering the height of the pipe over the creek. People are also crossing via a goat path across the creek, but the topology makes this crossing difficult. Below are pictures of some of these conditions.

**Picture 2: Missing Crosswalk, Cahoon Park West**



**Picture 3: Lack of Delineated Pedestrian Space**



**Picture 4: Missing Trail Connections across Cahoon Creek**



**Picture 5: Dangerous Improvised Crossing**



## Traffic Volumes and Reported Crashes

Over the period of 2010 to 2015, there were 26 reported crashes in the vicinity of Cahoon Memorial Park. Of those crashes, one was a fatal crash on Lake Road (in 2012) with impaired driving and speed as contributing factors. Three bicycle crashes were also reported to police during that period, two of which occurred when left-turning vehicles hit a cyclist in a crosswalk. The majority of reported crashes were angle and rear end crashes at intersections. These are the most common crashes in Cuyahoga County, per NOACA's *State of Safety 2011–2015* report. Overall, the crash rate and frequency for the study area is low.

Recent traffic counts are available in the area for Lake and Wolf Roads. In 2014, ODOT found an average daily traffic (ADT) count of 12,800 cars and 240 trucks on Lake Road; this number has likely not increased due to low-growth regional projections and an absence of any major new developments in the area. Likewise, in 2014 NOACA counted an ADT of 6,018 cars and 224 trucks on Wolf Road, west of Cahoon Road.

**Map 4: Average Daily Traffic and Crashes, 2010-2015**

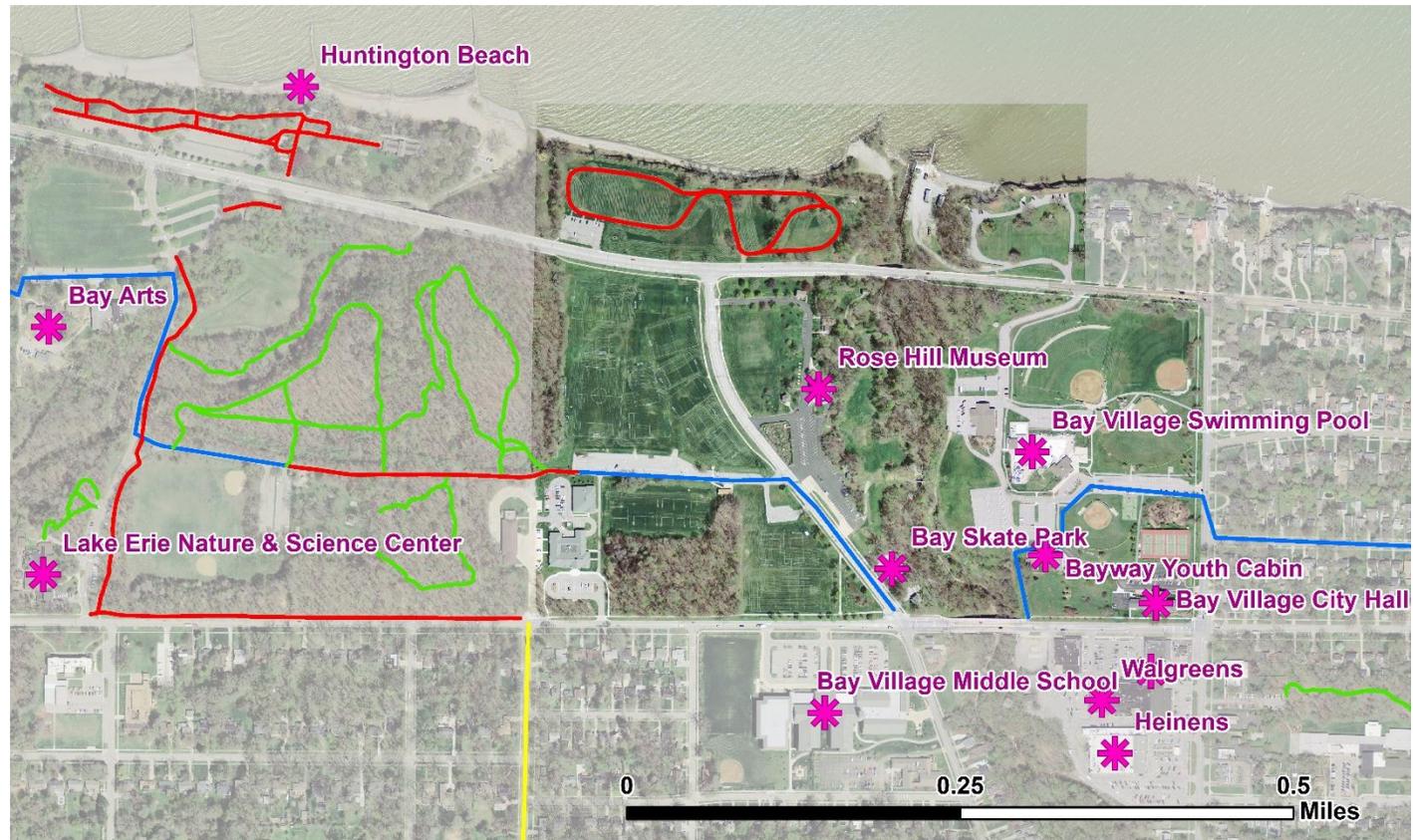


## Bicycle Facilities

There are identified bicycle routes in and around Cahoon Memorial Park, per the Bay Village Bicycle Map (Map 5). While these routes are on the map, most do not have corresponding infrastructure or signage on-site. There are several proposals of note that are not included on Map 5; Lake Road is proposed as US Bike Route 30A. Planning for the national bike route system is currently in progress, being led by ODOT District 12 in the NOACA region. The Westlake Bike Plan from 2012 also proposes bike lanes on Wolf, Cahoon, and Dover Center (south of Wolf) Roads. The Wolf and Cahoon proposals are considered later in this plan. The routes highlighted in blue on Map 5 correspond with the Bay Village Bicycle Map, available from the Village Bicycle Cooperative. The yellow “Connector Street” is a low-traffic-volume, low-speed route that can be used to travel between existing facilities. These routes were developed for the 2016 Cuyahoga County Bike Map published by NOACA.

**Map 5: Bay Village Bicycle Map**

- Multiuse Path
- Hiking Trail
- Bicycle Route
- Connector Street
- ✱ Destinations



## Planning Process

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The planning process for this study began on May 16, 2016, with the first stakeholder committee meeting. Prior to the meeting, NOACA staff compiled preliminary data on traffic volumes, crashes, and nonmotorized facilities through data collection and field work. The stakeholder meeting included 18 representatives from public and nonprofit agencies, as well as citizen interests.

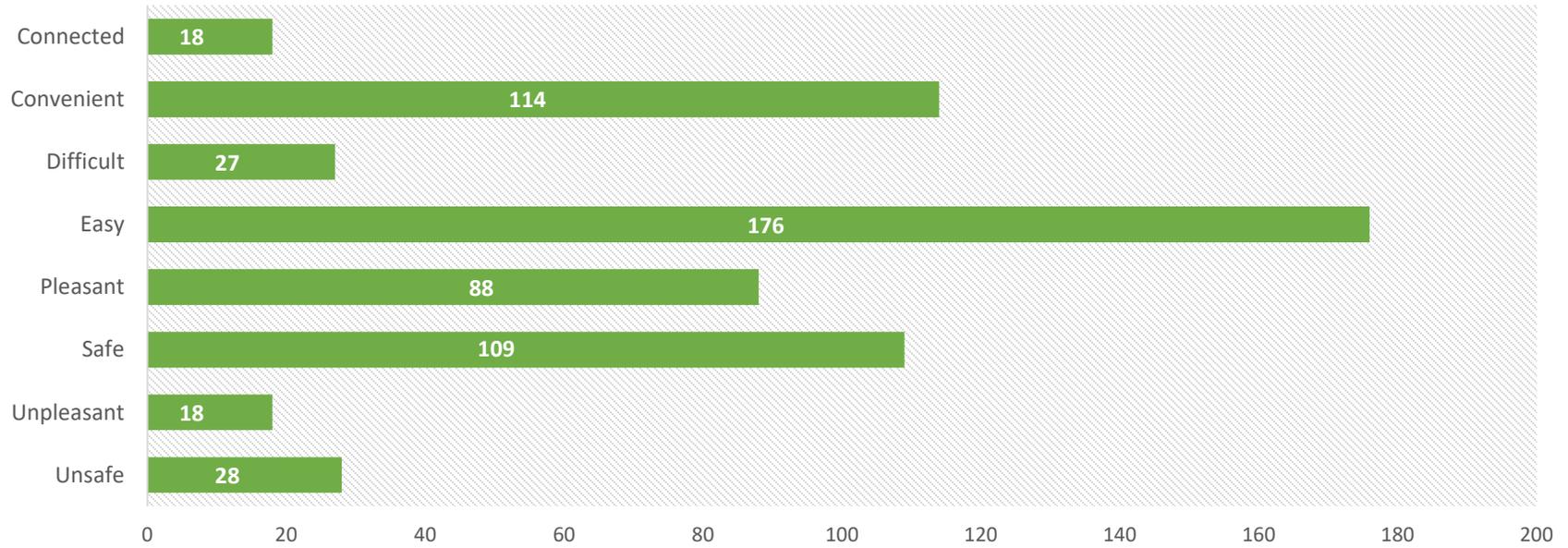
Comments received by the committee in that meeting include:

- Consider the new Cuyahoga County Library Branch on Wolf Road
- Expand Cahoon Park near the boat launch (Bay Boat Club)
- Improve Lake Erie access
- Consider ODOT plans to rebuild Lake Road bridge over Cahoon Creek
- Students cross creek via walking across the sewer pipe—there used to be a bridge in this location
- Parking on west side of Cahoon Road during soccer season is dangerous
- It is difficult to turn left onto Lake Road from Bryson Lane
- Mid-block crossings are needed on Lake and Wolf Roads
- NOACA should observe school and soccer traffic
- Proposed bridge could have asphalt or natural surface
- Traffic circulation outside of study area impacts the park, especially in terms of Bay Middle School parking lot
- Bike racks are needed at soccer fields, GCRTA station, other locations
- Study the intersection of Lake and Cahoon Roads for consideration of a roundabout or traffic signal

Based on these comments, NOACA staff conducted turning-movement traffic counts at the Wolf and Cahoon, Cahoon and Lake, and Lake and Porter Road intersections. These counts were used in conjunction with the other existing conditions data to develop recommendations to address the study goals and stakeholder concerns. These were presented to the stakeholder committee in March 2017. The committee provided comments that helped further refine the recommendations included in this report.



**Chart 2: “Do You Consider Traveling to and from Cahoon Park to Be: Choose All That Apply” (Survey Response)**



**Chart 3: “How Do You Travel Between Destinations In and Around the Park?” (Survey Response)**

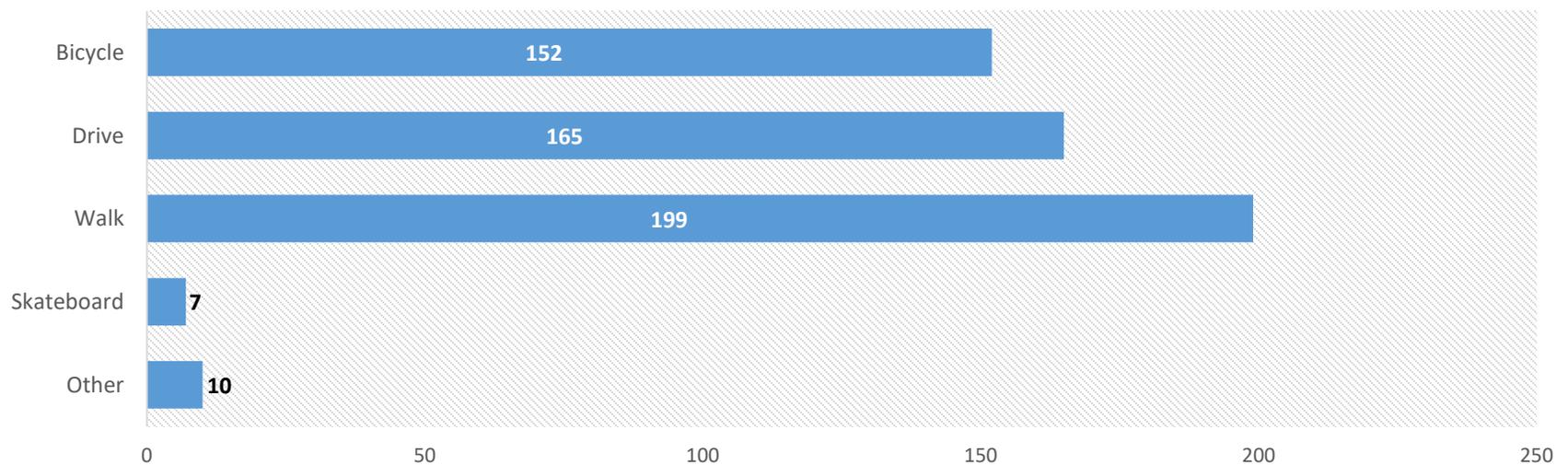


Chart 4: “Do You Feel that Traffic Is a Problem in and around Cahoon Park?” (Survey Response)

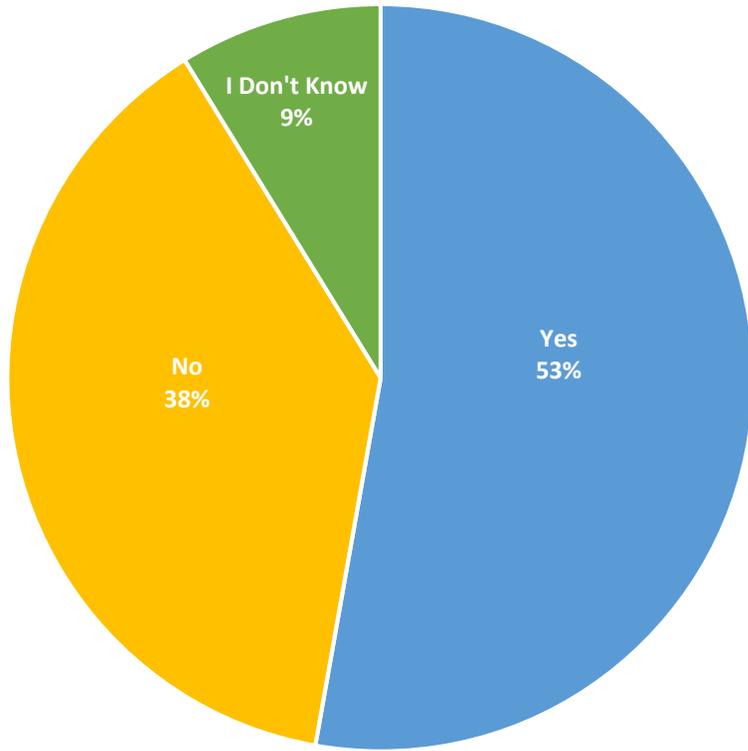
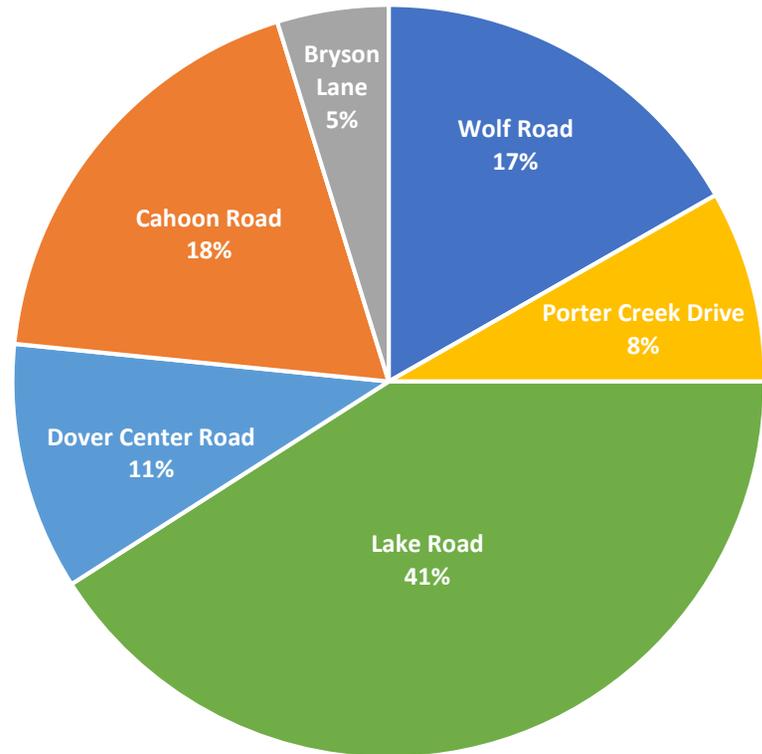


Chart 5: “Where is Traffic a Problem? Choose All That Apply” (Survey Response)



## Recommendations

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Based on the existing conditions analysis, direction from city officials, the stakeholder committee, and comments from the public engagement process, several recommendations were developed. Some of these recommendations include alternatives, which give the City of Bay Village flexibility in developing projects. A summary of the major recommendations below are organized by location; more detail is provided starting on page 14.

### Lake Road Recommendations Summary

- Road diet: convert the roadway from four lanes to three lanes between Dover Center and Porter Creek Roads (one lane in each direction with a two-way center turn lane). Include five-foot (minimum) bike lanes between the curb and traffic lanes. Buffer bike lanes where a two-way center turn lane is not needed and existing pavement width permits.
- Include pedestrian refuge islands on either or both east and west approaches of the Cahoon and Lake Roads Intersection. Install Rapid Rectangular Flashing Beacons (RRFBs) at the Cahoon and Lake Roads intersection and at the Bryson Lane and Lake Road intersection to facilitate safer pedestrian crossings with improved motorist yield rates.
- Continue bike lanes on the Lake Road Bridge that crosses Cahoon Creek in the ODOT design for the bridge replacement.

### Cahoon Road Recommendations Summary

- Provide on-street parking on the east side of Cahoon Road:
  - **Alternative 1:** 18 parallel parking spaces with buffered bike lanes and two traffic lanes
  - **Alternative 2:** 30 reverse angle (back-in) parking spaces with two traffic lanes that have sharrow markings and “bikes may use full lane” signs
- Extend the sidewalk and landscaping at the entrance to the GCRTA bus roadway/parking lot and Harvey Yoder (Park) Lane parking lot to slow turning vehicles and shorten the distance for pedestrians crossing these drive aprons.
- Construct a landscaped island or stormwater retention basin in the parking lot east of Cahoon Road next to the GCRTA bus station.
- Construct a multiuse path on the west side of Cahoon Road, connecting Lake and Wolf Roads. Include a connection running north of Harvey Yoder Lane that connects to the existing multiuse path at the west end of the parking lot.

### Wolf Road Recommendations Summary

- Reduce pedestrian crossing distances at the Cahoon and Wolf Road intersection:
  - Extend the curb line of the northwestern corner, reducing the turning radius for right-turning vehicles and effectively slowing vehicular speeds.
  - Close the right-turn-only lane on the westbound approach of the Cahoon and Wolf Roads intersection, narrowing the intersection and reducing the right-turn radius for vehicles at the northeast corner of the intersection, slowing vehicles turning north on to Cahoon Road.
- Construct a pedestrian refuge island east of the Cahoon Creek Bridge to provide a safe crossing from the new library building to the south side of the street.
- Construct a multiuse path or striped bike lanes on Wolf Road between Cahoon and Dover Center Roads.

### Cahoon Park Interior Recommendations Summary

- Construct a multiuse path between Cahoon Road and the parking lot next to Bayway Youth Cabin, crossing the disc golf course and Cahoon Creek.
  - Build a pedestrian bridge over Cahoon Creek at the location of the existing sewer pipe.
- Provide a connection from Cahoon Park at the Lake Road bridge to a multiuse path or trail connecting to the lakefront.

### General Recommendations Summary

- Install wayfinding signage around the park to orient pedestrians and cyclists to park destinations.
- Install additional bike parking at the Harvey Yoder Lane and Cahoon Road/GCRTA parking lots, and other places as needed.



## Lake Road Recommendations

The road diet recommendation, with bike lanes and pedestrian refuge islands, was developed based on stakeholder and public input, as well as a feasibility analysis. NOACA staff conducted additional traffic counts to determine if a road diet would operate acceptably for motor vehicle traffic. Lake Road is currently 44 feet wide, with two westbound lanes, one eastbound, and a turning lane/shoulder (Figures 1 and 2). The traffic analysis shows that the intersections of Lake Road and Cahoon Road, and Lake Road and Porter Creek Road would operate acceptably if a road diet were implemented. Lake Road is a [Federal Aid Primary Truck \(FAP\) Route](#), which requires one 12-foot lane in each direction. It's possible to implement the road diet alternative with 11-foot lanes in order to provide wider six-foot bike lanes; however, this would likely require completing a [safety analysis](#) as part of the design exception process to allow 11-foot lanes if the project is constructed with state or federal funding. Figure 3 shows the proposed road diet with 12-foot travel lanes and five-foot bike lanes.

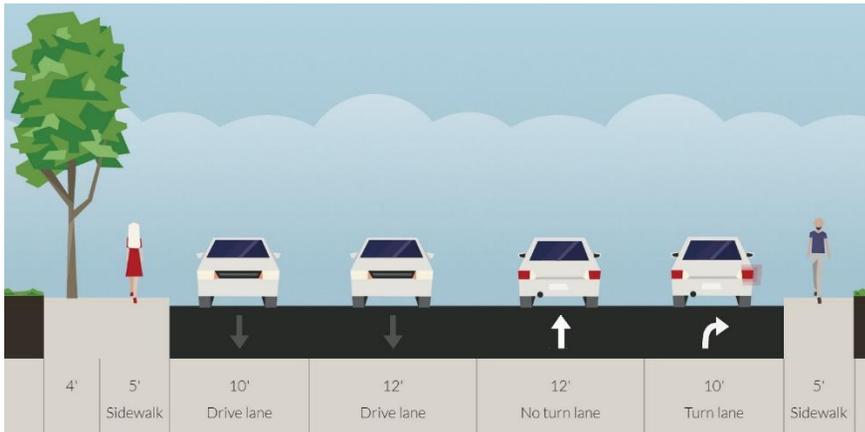
As additional alternatives to facilitate traffic calming and safer pedestrian and bicycle access along Lake Road, the traffic counts were also used to determine if a traffic signal at the intersection of Lake Road and Cahoon Road is warranted and whether a roundabout would work at this location. NOACA's analysis found that a signal does not meet warrant criteria and therefore is not necessary, and that a single-lane roundabout would operate acceptably with existing volumes.

Based on discussions at the stakeholder meetings and with city officials, NOACA found that a four-lane to three-lane reduction, or road diet, on Lake Road between Dover Center Road and Porter Creek Road with pedestrian refuge islands is the most desirable solution to provide safer pedestrian crossings, bicycle facilities, and traffic calming on Lake Road. The City of Bay Village can choose to install either of the pedestrian refuge islands illustrated in Figures 4 and 5, or both if two are deemed necessary. The refuge island in Figure 4 would require shifting the asphalt walkway 20'-30' east, or accepting a shorter left turn lane. The pedestrian refuge islands should include Rapid Rectangular Flashing Beacons (RRFBs) to provide pedestrian-activated warning lights that alert motorists to yield when pedestrians are crossing. Additional RRFBs should be considered for the Lake Road and Bryson Lane intersection.

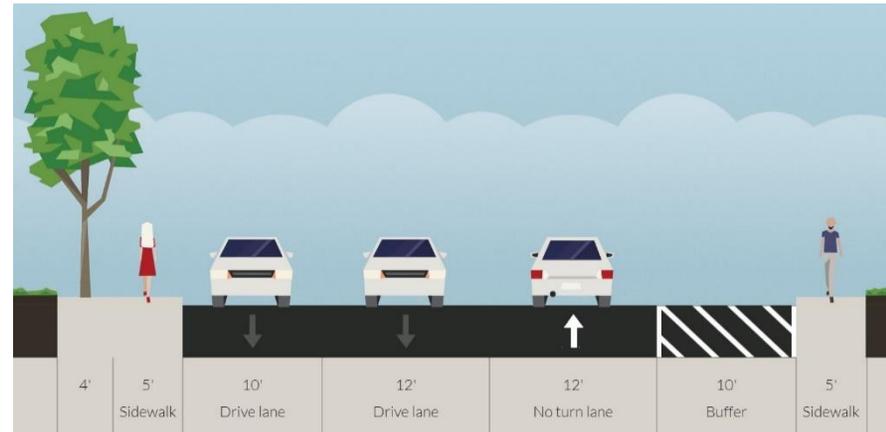
Bike lanes would be included as part of the road diet, beginning on the Lake Road bridge over Cahoon Creek (as part of ODOT's replacement project); they would terminate at Porter Creek Road. The width of Lake Road narrows to one lane in each direction east and west of these limits. The traffic analysis supporting these recommendations is included in the appendices.



**Figure 1: Lake Road Existing Section  
(Eastbound Between Porter Creek and Cahoon Roads)**



**Figure 2: Lake Road Existing Section  
(Eastbound Between Cahoon Road and Lake Road Bridge)**



**Figure 3: Lake Road Proposed Road Diet Section**

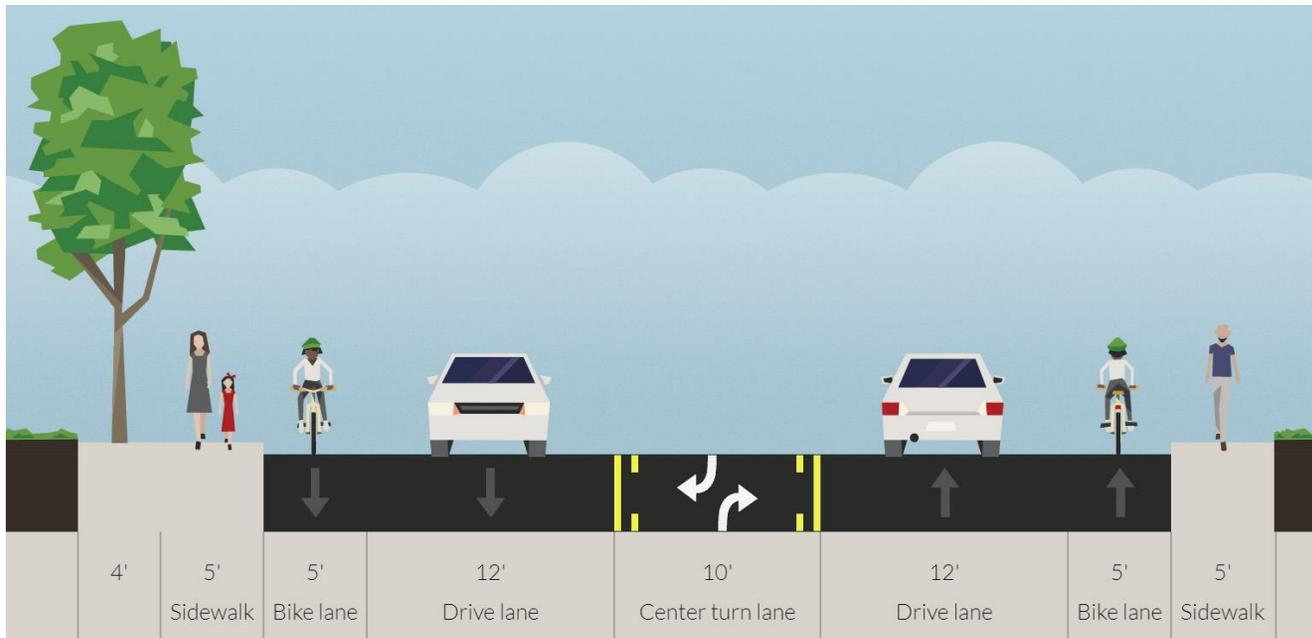




Figure 4: Lake Road Recommendation Facing West

Figure 5: Lake Road Recommendation Facing East



### Cahoon Road Recommendations

Cahoon Road is in the heart of Cahoon Memorial Park and is a primary connection to Lake Road and the lakefront, the soccer fields, Rose Hill Museum and Osborn House, Village Bicycle Cooperative (part of the Bay Village Community House), Bay Skate Park, and the Cahoon Creek Disc Golf course. As shown in Figure 6, the road is currently 35 feet wide with no curb, and includes two northbound lanes and one southbound lane. There is also an unpaved, gravel-filled shoulder on the east side of the road that is used for parking, particularly during soccer season.

**Figure 6: Cahoon Road Existing Section**



There are two alternatives for Cahoon Road that were developed with the stakeholder committee and city officials. For both alternatives, there would be one lane in each direction (north and south), and the existing unpaved area on the eastern side of Cahoon would need to be paved. The first alternative (Figures 7 and 9) calls for on-street parallel parking between Lake Road and the drive north of the Bay Rose Garden. Parallel parking in this location leaves enough room for buffered bike lanes on Cahoon between Wolf and Lake Roads. The second alternative (Figures 8 and 10) includes back-in diagonal (also called reverse angle) parking, with sharrows marked in the travel lanes. A multiuse path can be constructed on the west side of Cahoon Road in either alternative, for users who prefer bicycling separated from the road.

**Picture 6: Buffered Bike Lanes with Parallel Parking**



**Picture 7: Reverse Angle Parking with Sharrows**



**Alternative One**

- A:** Cahoon Road is two lanes, one north and one south, with buffered bike lanes, and 18 parallel parking spaces are added north of Bay Rose Garden. Added pavement is needed for the parking lane.
- B:** Stormwater retention is added to the center of the parking lot to mitigate storm runoff and improve aesthetics. Landscaping and the sidewalk are extended at the bus station to improve safety and connectivity for pedestrians. Thirteen parking spaces are added.
- C:** A multiuse path connecting across Cahoon Creek is built, with a bridge crossing the ravine where the sewer pipe is located. This connects 74 parking spaces to Cahoon Park West.
- D:** A multiuse path is constructed on the western side of Cahoon Road and north of the Harvey Yoder parking lot to provide safety for non-road cyclists and pedestrians.

**Figure 7: Cahoon Road Alternative 1**



**Alternative Two**

- A:** Cahoon Road is two lanes, one north and one south with sharrows, and 30 back-in diagonal (reverse angle) parking spaces are added north of Bay Rose Garden. Added pavement is needed for the parking lane.
- B:** Stormwater retention is added to the center of the parking lot to mitigate storm runoff and improve aesthetics. Landscaping and the sidewalk are extended at the bus station to improve safety and connectivity for pedestrians. Thirteen parking spaces are added.
- C:** A multiuse path connecting across Cahoon Creek is built, with a bridge crossing the ravine where the sewer pipe is located. This connects 74 parking spaces to Cahoon Park West.
- D:** A multiuse path is constructed on the western side of Cahoon Road and north of the Harvey Yoder parking lot to provide safety for non-road cyclists and pedestrians.

**Figure 8: Cahoon Road Alternative 2**



Figure 9: Cahoon Road Alternative 1 Section



Figure 10: Cahoon Road Alternative 2 Section



### Wolf Road Recommendations

The intersection of Wolf and Cahoon Roads is large; though there is an existing pedestrian phase that is activated by push-button, the crossing distance is long. To shorten pedestrian crossings and calm traffic, the intersection should be narrowed. To achieve this goal, the crossing distance can be shortened by extending the northwest and northeast corner curb lines into the intersection, making for tighter turning radii and a smaller intersection overall. This recommendation shortens the crosswalk on all intersection legs aside from the southern one, which is already short, and slows right-turning vehicles heading west on Wolf Road from Cahoon Road southbound and right-turning vehicles heading north on Cahoon Road from Wolf Road westbound. For the latter movement, the right-turn-only lane onto Cahoon Road north (the eastern leg of the intersection) is removed to facilitate this calmed turn and to reduce the roadway width. Reclaiming this space as part of the park also provides room for construction of a multiuse path, which is proposed to connect from the existing path west of the Bay Village Police Department (Sutcliffe and Wolf Roads intersection) east to Dover Center Road.

**Figure 11: Proposed Wolf and Cahoon Roads Intersection Reconfiguration**



Between Cahoon and Dover Center Roads, Wolf Road is wide enough to include five-foot bike lanes in both directions (Figure 12) or a multiuse path on the north side of the road (Figure 13). Including bike lanes on Wolf Road will provide cyclists a dedicated space that connects Cahoon Park West to the eastern half, where there are a number of institutions, recreation facilities, as well as Bay Village Square shopping center. Bike lanes will also effectively narrow the travel lanes on Wolf Road, which will calm traffic in an area where there are significant numbers of children traveling to and from Bay Middle School, soccer fields, recreation facilities, and other destinations. Similarly, multiuse path will also narrow travel lanes on the Wolf Road bridge and provide a safe space for cyclists who don't want to ride on the road. The multiuse path should be extended west to the existing path west of the Bay Village Police Department near Sutcliffe Road.

Map 6: Wolf Road Multiuse Path Extent

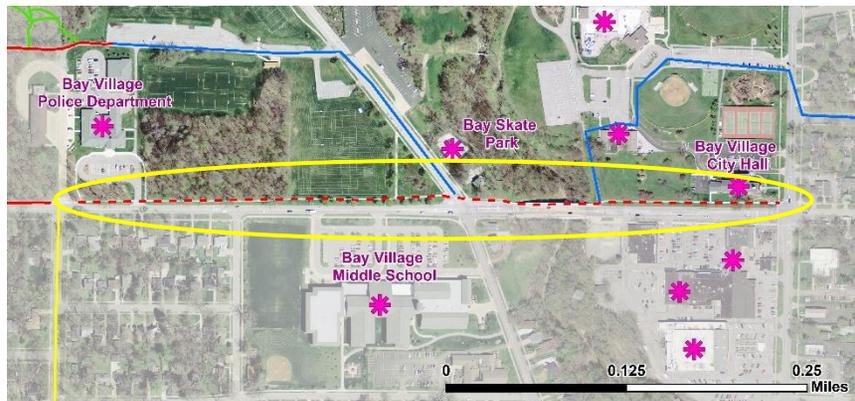


Figure 12: Wolf Road Bike Lanes

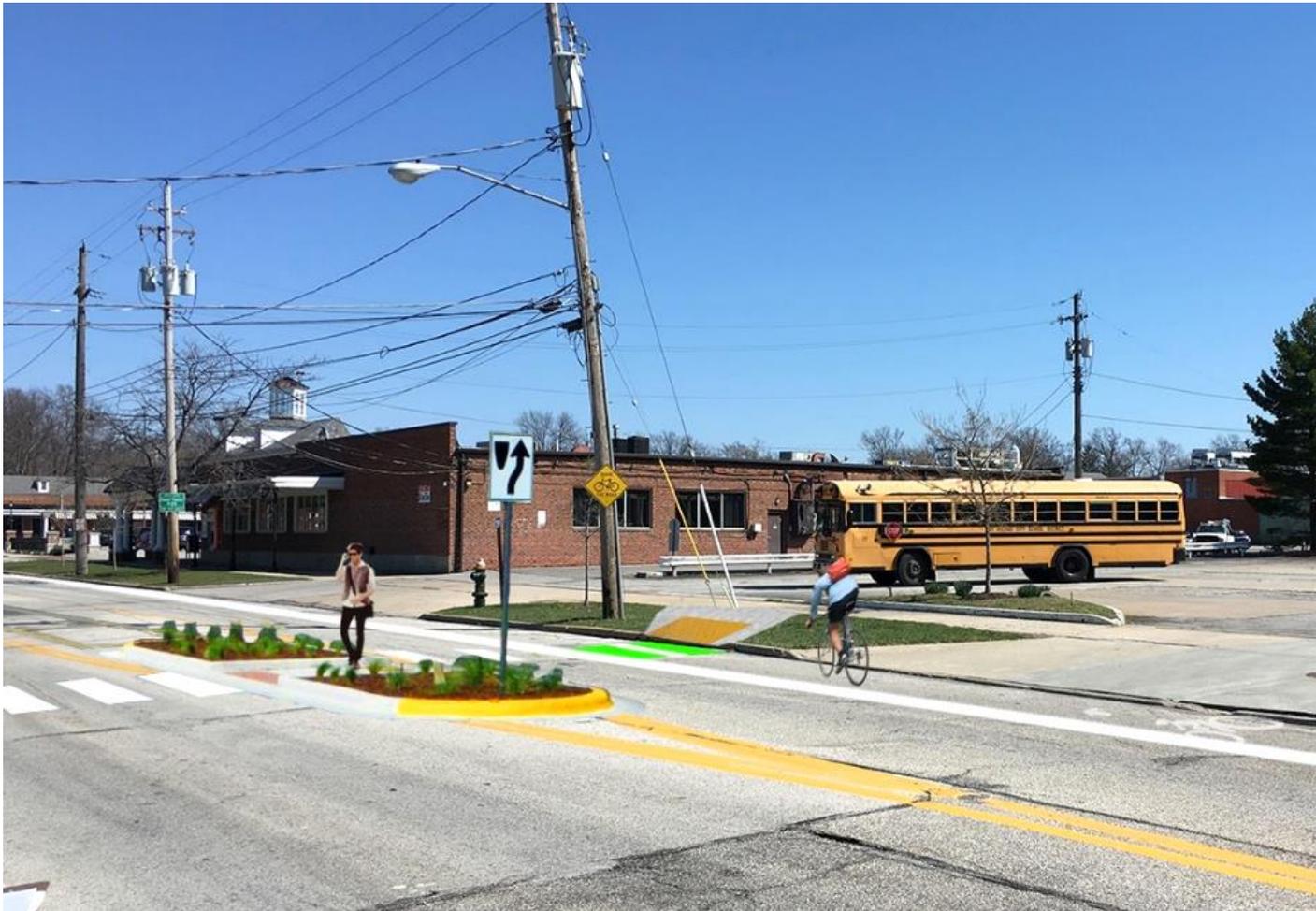


Figure 13: Wolf Road Multiuse Path



East of the bridge over Cahoon Creek, a midblock crossing with a pedestrian refuge island will help pedestrians cross from the south side of Wolf Road to the north; the island should be aligned with access to the new branch of the Cuyahoga County Library. This crossing will also improve pedestrian connectivity to Bay Village Square shopping center and Bay Middle School, as well as any future development on the site currently used for surface parking. RRFBs could also be installed to help alert motorists of crossing pedestrians by indicating they should yield.

**Figure 14: Wolf Road Pedestrian Refuge Island and Bike Lanes**



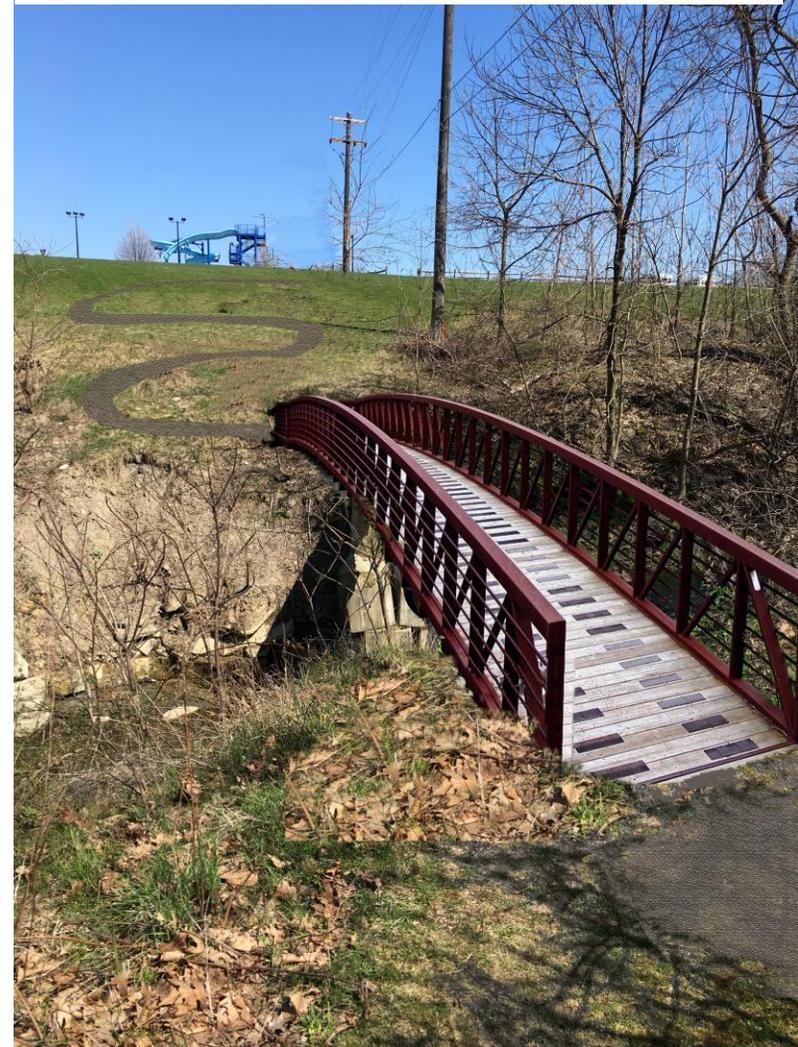
### Cahoon Park Interior Recommendations

A new cross-park multiuse path will better connect Cahoon Park West and East, and will open a 74-parking space lot for use during soccer season, alleviating stress on the Cahoon Road/GCRTA lot and Cahoon Road. The path will provide a direct connection from the western half of the park to Bayway Youth Cabin and the future Cuyahoga County Library branch, via a bridge over Cahoon Creek. The bridge should accommodate a 10-foot multiuse path and be located near the existing sewer pipe, which people are currently dangerously using to cross the creek. There are existing abutments from a bridge that formerly crossed the ravine; these may or may not be able to be reused, and further study is required.

**Figure 15: Multiuse Path Connection Cahoon Park East**



**Figure 16: Example of Bridge Crossing Cahoon Creek**

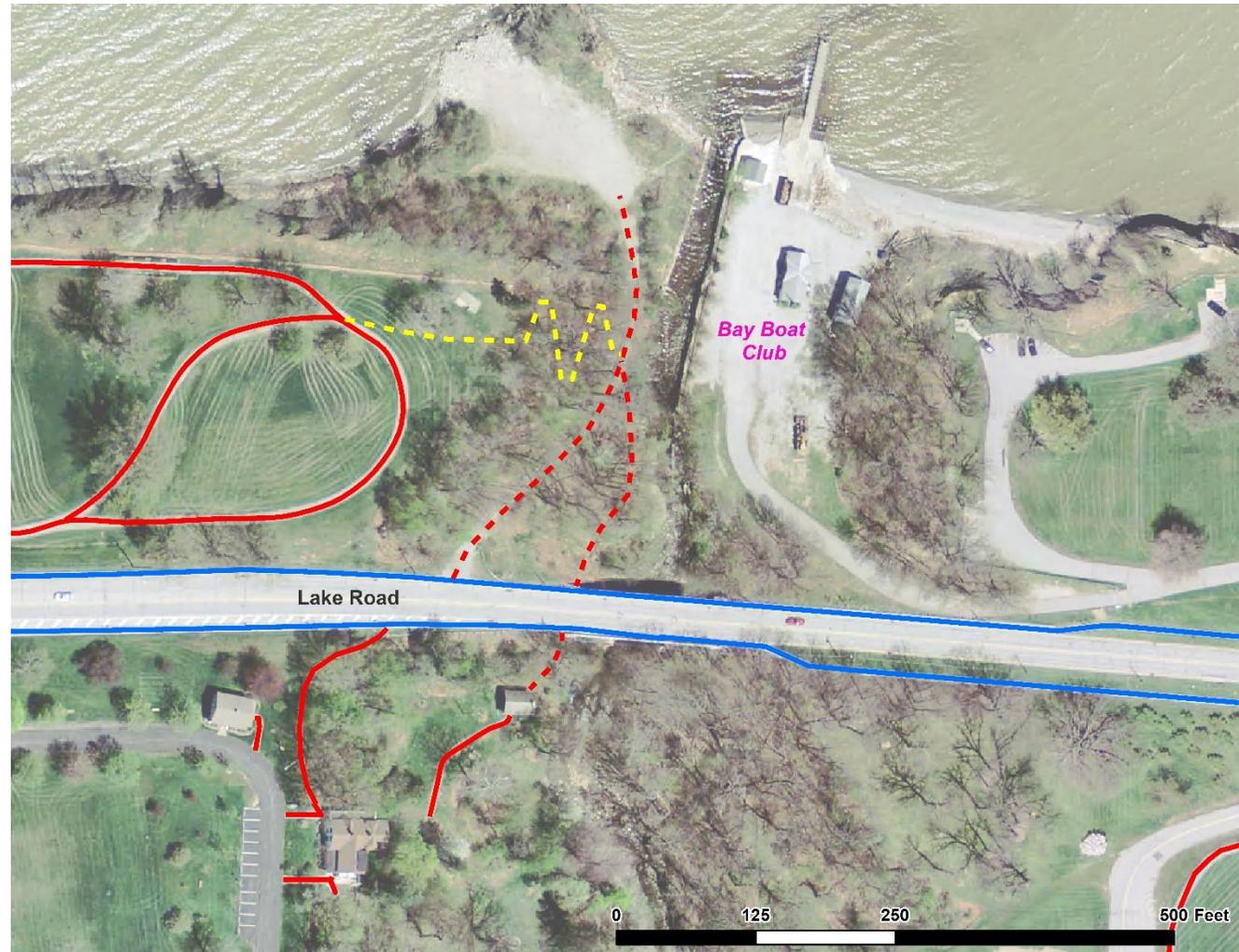


### Lakefront Access

The stakeholder committee and citizens (via the public meeting and survey responses) indicated that access to the Lake Erie shore is important for Cahoon Memorial Park. One option is to include access along an existing service road on the west side of Cahoon Creek. This road used to provide utility access to the lake but is now closed to traffic. ODOT is also working on incorporating access from the Lake Road bridge in its bridge replacement project; the project includes grading beneath the bridge for a future trail, as shown in Map 7.

**Map 7: Possible Lakefront Access Path**

-  Sidewalks
-  Interior Paths
-  Recommended Lakefront Access Path
-  Switchback to Path



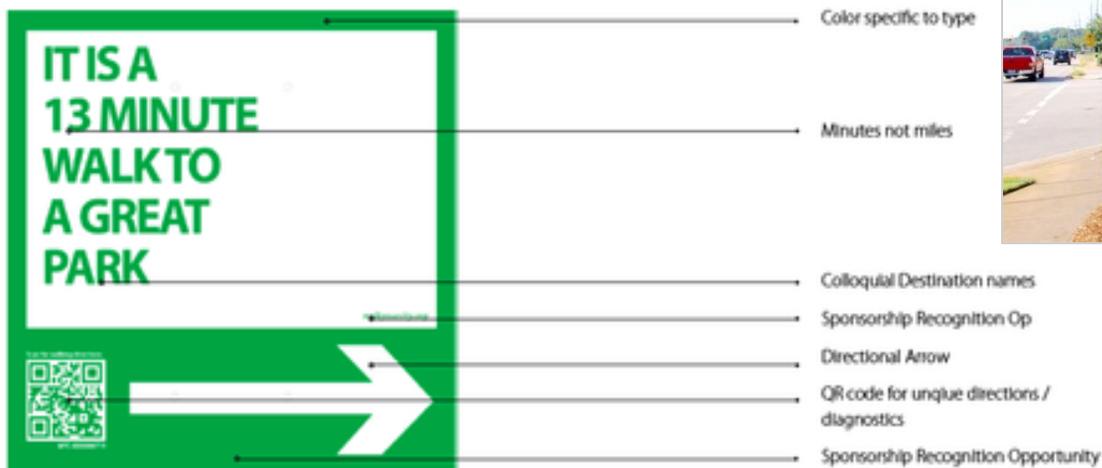
## General Recommendations

### Wayfinding

Wayfinding signage in and around Cahoon Memorial Park will be useful in orienting pedestrians and cyclists to the park’s facilities and destinations. With better connectivity through infrastructure, wayfinding can help visitors navigate active trips, indirectly encouraging them to park once rather than driving between parking lots. A good example of wayfinding that encourages walking and bicycling is Walk Your City, a campaign-funded wayfinding program. The signs generated by this program are legible and clear, provide direction, and are time and place based rather than distance based. For example, a Cahoon Park sign using this format may say, “It is a 5-minute walk to Bay Skate Park” with an arrow pointing in the direction of the skate park. Walk Your City also employs Quick Response (QR) codes to help smartphone users navigate via an app. Regardless of whether the City agrees to use this specific program, employing a similar format that conveys the time it takes to walk or bike between destinations rather than the distance will help people better understand that walking and biking trips are viable alternatives to driving.

Figure 17: Walk Your City Sign Template

SIGN SAMPLE (CREATED VIA WALKYOURCITY.ORG)



Picture 8: Walk Your City Sign Example



### Bicycle Parking

Another common comment from the planning process was that more bike parking is needed in Cahoon Memorial Park, particularly at the soccer fields and GCRTA bus station. Bicycle parking should follow best practices and provide as secure a parking facility as possible. U-racks or other designs that allow the cyclist to lock the frame and front wheel simultaneously are ideal, and sheltered parking is preferred where possible. A good local example of the latter is the Bike Box, which is a structure built from old shipping containers. Bike Boxes have been installed in several neighborhoods in the City of Cleveland and are fabricated locally.

Picture 9: “U” Style Bicycle Parking



Picture 10: Cleveland Bike Box Bicycle Parking



## Implementation

### Cost Estimate

The recommendations in this report are both short term and long term; some of them may be accomplished in a year or two (such as road striping and RRFBs), while others may take time to develop and fund. Below is a table of planning-level cost estimates to approximate what each recommendation could cost; further work through engineering and design will lead to true costs for each item. A more detailed cost estimate can be found in the appendices.

**Table 1: Cost Estimate**

Recommendation		Cost
Lake Road	Road diet with bike lanes	\$ 70,369.94
	New pedestrian crossing, with median refuge island, and RRFB (at Cahoon Road)	\$ 36,000.65
	RRFB (at Bryson Road)	\$ 15,910.18
SUBTOTAL		\$ 122,280.77
Wolf Road	Bike lanes	\$ 21,110.98
	Extend multiuse trail	\$ 268,832.54
	New pedestrian crossing, with median refuge island (at library)	\$ 20,090.48
	Curb extension (at Cahoon Road)	\$ 23,775.80
SUBTOTAL		\$ 312,698.81
Cahoon Road	Parallel parking with buffered bike lanes	\$ 76,440.98
	Back-in angled parking with shared lane markings	\$ 56,282.43
	New pedestrian crossing (at GCRTA bus stop)	\$ 20,090.48
	Multiuse trail	\$ 87,977.88
SUBTOTAL		\$ 240,791.77

Recommendation		Cost
<b>Cahoon Park Interior and General Recommendations</b>	Wayfinding	\$ 4,943.84
	New pedestrian path connecting East & West Cahoon Park	\$ 226,135.45
	New pedestrian path to lake	\$ 7,538.91
	Bike parking	\$ 18,020.00
SUBTOTAL		\$ 238,618.20
SUBTOTAL		\$ 914,389.55
30% CONTINGENCY		\$ 274,316.87
SUBTOTAL		\$ 1,188,706.42
10% DESIGN ENGINEERING COST		\$ 118,870.64
<b>TOTAL</b>		<b>\$ 1,307,577.06</b>

## Funding

The recommendations in this plan can be funded through a variety of local, state, and federal sources, and could attract private/philanthropic investment as well. The infrastructure projects are well suited for NOACA-controlled federal transportation funding; lower-cost projects such as lane striping, pedestrian refuge islands, and curb extensions are well suited and eligible for Transportation for Livable Communities Initiative (TLCI) Implementation funding. The funding horizon for TLCI Implementation projects is short; once a project is programmed and developed, it can be constructed or installed in one to two years. Larger-cost recommendations, such as multiuse paths, are more appropriate for the Surface Transportation Block Grant (STBG) or Congestion Mitigation Air Quality (CMAQ) programs, or through state programs such as the Ohio Department of Natural Resources (ODNR) Clean Ohio Trails Fund. NOACA has an interactive Funding Resource Guide ([www.funding.noaca.org](http://www.funding.noaca.org)) that can help identify possible funding sources for these recommendations. Users can find potential sources by choosing “Project Category” (for these recommendations, “Safety” or “Bike/Pedestrian” is most applicable) and “Eligible Applicants” (choose “Municipalities”). NOACA staff can also assist in identifying potential funding sources and developing funding applications if necessary.

**Picture 11: NOACA Funding Resource Guide Webpage**

**NOACA**  
Northeast Ohio Areawide Coordinating Agency

NOACA Funding Resource Guide

Welcome to NOACA's Funding Resource Guide! ▲

Use the drop down menus to search for transportation and environmental funding programs. Though NOACA's funding programs are included, NOACA is not the main contact for most of the programs. Questions should be directed to the agency who is responsible for managing that program. This guide is updated annually. If you see errors or know of additional programs, please contact Jim Thompson at [JThompson@mpo.noaca.org](mailto:JThompson@mpo.noaca.org) or 216.241.2414 x 275.

Project Category: Bike/Pedestrian ▼

Eligible Applicants: Municipalities ▼

Funding Source: Federal-Northeast Ohio Areawide Coord ▼

Reset

**Congestion Mitigation and Air Quality Improvement Program**

## Appendices

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### A: Community Engagement Materials

- Survey Questions
- Survey Summary Charts
- Survey Comments

### B: Traffic Analysis

### C: Conceptual Cost Estimate Details

**Appendix A: Community Engagement Materials**

## Cahoon Park Area Connectivity Plan Survey

### Cahoon Park Impressions

The Northeast Ohio Areawide Coordinating Agency (NOACA), in partnership with the City of Bay Village, is studying Cahoon Park and the surrounding area to determine how to better provide walking and biking options for the park. The study will focus on connecting the east and west portions of the park and improving safety for everyone traveling within and around the park. The plan will recommend strategies to make getting to and around the park by walking or biking more attractive.

The purpose of this survey is to understand how the community feels about existing walking and biking options and barriers in and around Cahoon Park. We ask that you please take a few minutes to fill out the brief survey below. Your input will help guide us in creating the recommendations and strategies the City could use to make improvements in the park and area.

Thank you for your time!

\* 1. Describe your impression of Cahoon Park in ONE word:

\* 2. What are the best things about Cahoon Park?

\* 3. What could be improved about Cahoon Park?

## Cahoon Park Area Connectivity Plan Survey

### Accessing Cahoon Park

\* 4. How frequently do you use Cahoon Park?

- Every Day
- A Few Times a Week
- Once a Week
- A Few Times a Month
- Once a Month
- A Few Times a Year
- Once a Year
- Never

\* 5. Do you consider travelling to and from Cahoon Park to be: Choose all that apply.

- Easy
- Unpleasant
- Safe
- Unsafe
- Convenient
- Difficult
- Connected
- Pleasant

\* 6. How do you travel between destinations in and around the park? Choose all that apply.

- Walk
- Bicycle
- Public Transit
- Drive
- Skateboard
- Other (please specify)

\* 7. How do you travel between Cahoon Park and Huntington Reservation? Choose all that apply.

- Walk
- Bicycle
- Public Transit
- Drive
- Skateboard
- Other (please specify)

\* 8. Where is it easy to *walk on the way* to Cahoon Park?

\* 9. Where is it NOT easy to *walk on the way* to Cahoon Park

\* 10. Where is it easy to *walk in or around* Cahoon Park?

\* 11. Where is it NOT easy to *walk* in or around Cahoon Park?

\* 12. Where is it easy to *bike* on the way to Cahoon Park?

\* 13. Where is NOT easy to *bike* on the way to Cahoon Park?

\* 14. Where is it easy to *bike* in or around Cahoon Park?

\* 15. Where is NOT easy to *bike* in or around Cahoon Park?

## Cahoon Park Area Connectivity Plan Survey

### Cahoon Park Traffic

\* 16. Do you feel that traffic is a problem in and around Cahoon Park?

- Yes
- No
- I Don't Know

\* 17. Where is traffic a problem and why? Choose all that apply.

- Cahoon Road
- Lake Road
- Dover Center Road
- Wolf Road
- Porter Creek Drive (Huntington Reservation)
- Bryson Lane (Cahoon Park East)
- Why is traffic a problem on any or all of these streets?

## Cahoon Park Area Connectivity Plan Survey

### Connections for Children

\* 18. In what grade is your child (children)? Chose all that apply.

- Pre K/Kindergarten
- First Grade
- Second Grade
- Third Grade
- Fourth Grade
- Fifth Grade
- Sixth Grade
- Seventh Grade
- Eight Grade
- High School
- Not Applicable

\* 19. How far do you live from school? (If you have more than one child attending more than one school, choose more than one option)

- Less than ¼ mile
- ¼ mile to ½ mile
- ½ mile to 1 mile
- 1-2 miles
- More than 2 miles
- Not Applicable

\* 20. On most days, how does your child (children) arrive at school? (If you have more than one child attending more than one school, choose more than one option)

- Walk
- Bike
- School Bus
- Drive
- Car Pool
- Drop Off
- RTA
- Not Applicable

Other (please specify)

\* 21. On most days, how does your child (children) leave from school? (If you have more than one child attending more than one school, choose more than one option)

- Walk
- Bike
- School bus
- Drive
- Car pool
- Drop off
- RTA
- Not Applicable

Other (please specify)

\* 22. On most days, how long does it take your child (children) to travel to school? (If you have more than one child attending more than one school, choose more than one option)

- 0 - 5 Minutes
- 6 - 10 Minutes
- 11 - 20 Minutes
- More than 20 Minutes
- Not Applicable

\* 23. On most days, how long does it take your child (children) to travel from school? (If you have more than one child attending more than one school, choose more than one option)

- 0 - 5 Minutes
- 6 - 10 Minutes
- 11 - 20 Minutes
- More than 20 Minutes
- Not Applicable

\* 24. Which of the following issues affect your decision to allow or not allow you child (children) to walk or bike to school? Choose all that apply.

- Distance
- Convenience of Driving
- Time
- Amount of Traffic
- Sidewalk Conditions
- Speed of Traffic
- Safety of Intersections/Crossings
- Weather
- Neighborhood Safety
- Child (children) Not Interested
- Age of Child (children)
- Not Applicable
- Other (please specify)

\* 25. Would you let your child walk or bike to school if the issue were changed or improved? Choose all that apply.

	Yes	No	Not Sure	Not Applicable
Distance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenience of Driving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amount of Traffic Along Route	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sidewalk Conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speed of Traffic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety of Intersections/Crossings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weather	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Neighborhood Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Child (children) Not Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Age of Child (children)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

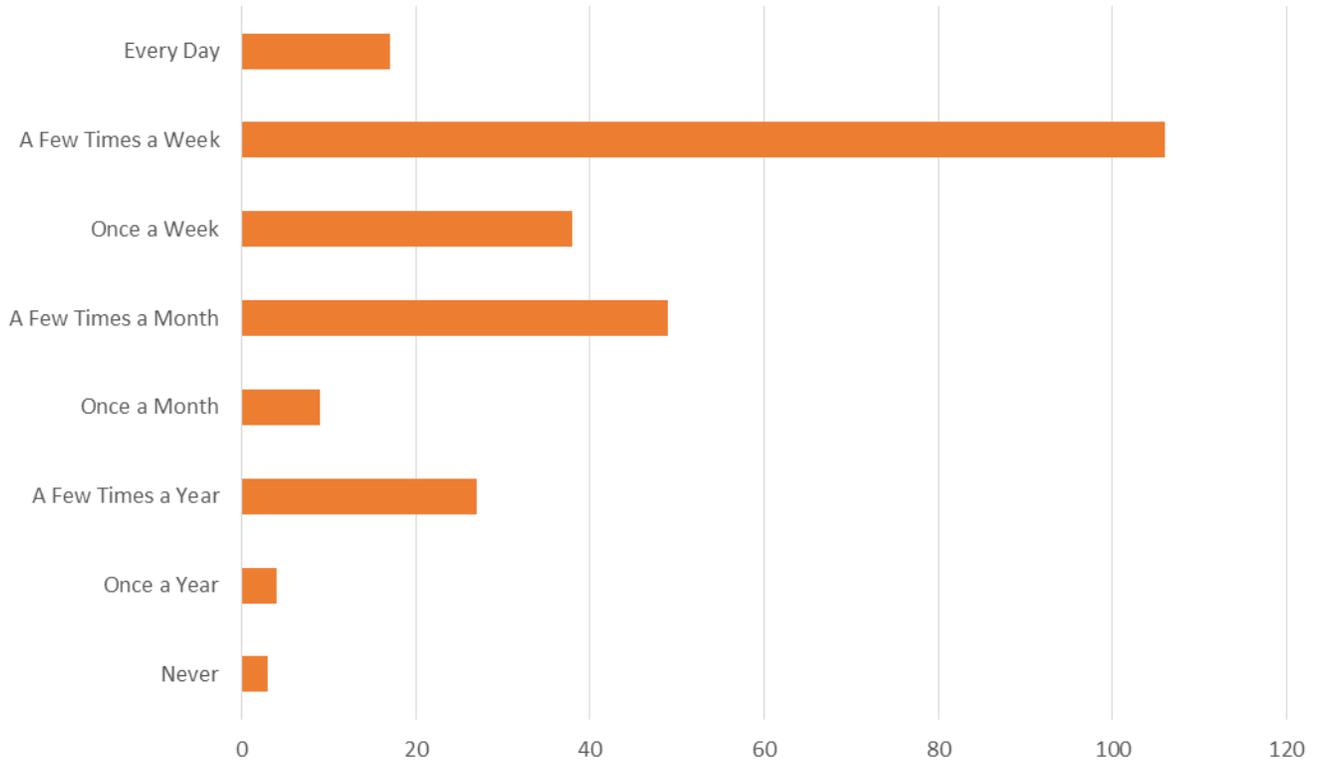
## Cahoon Park Area Connectivity Plan Survey

### Survey Wrap Up

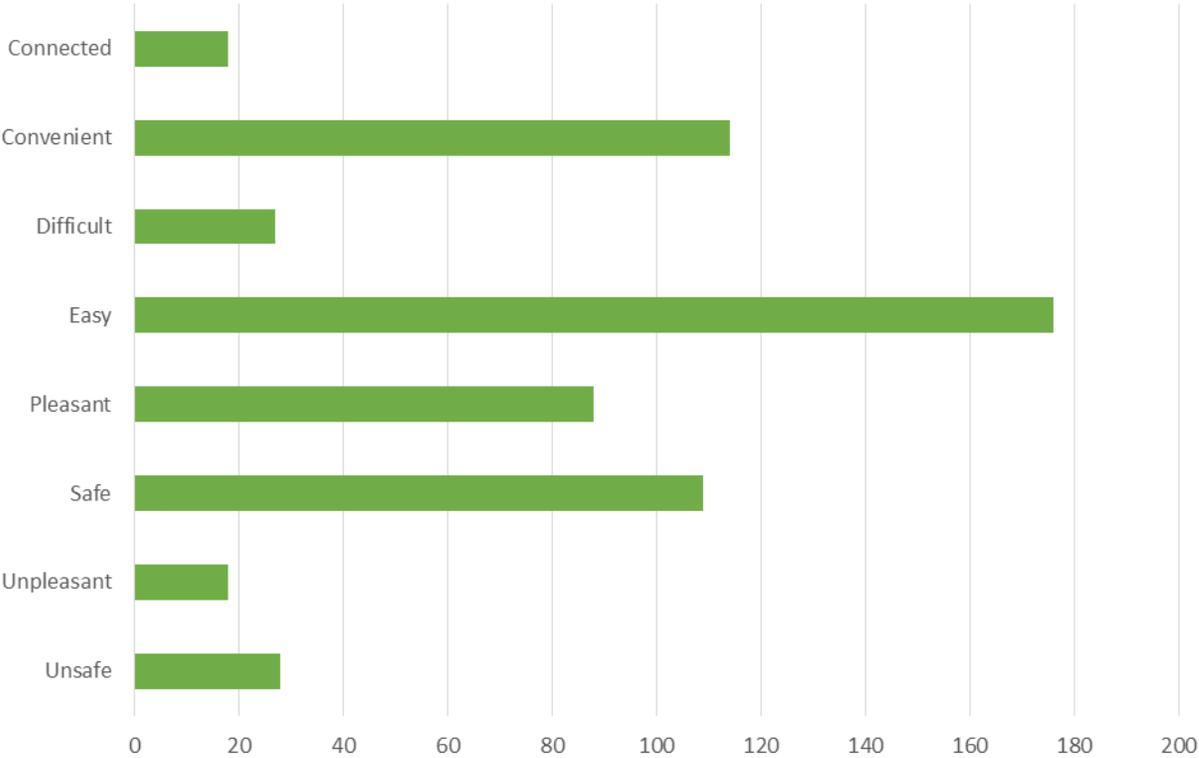
\* 26. On what street or block do you live?

27. Do you have any other comments or concerns?

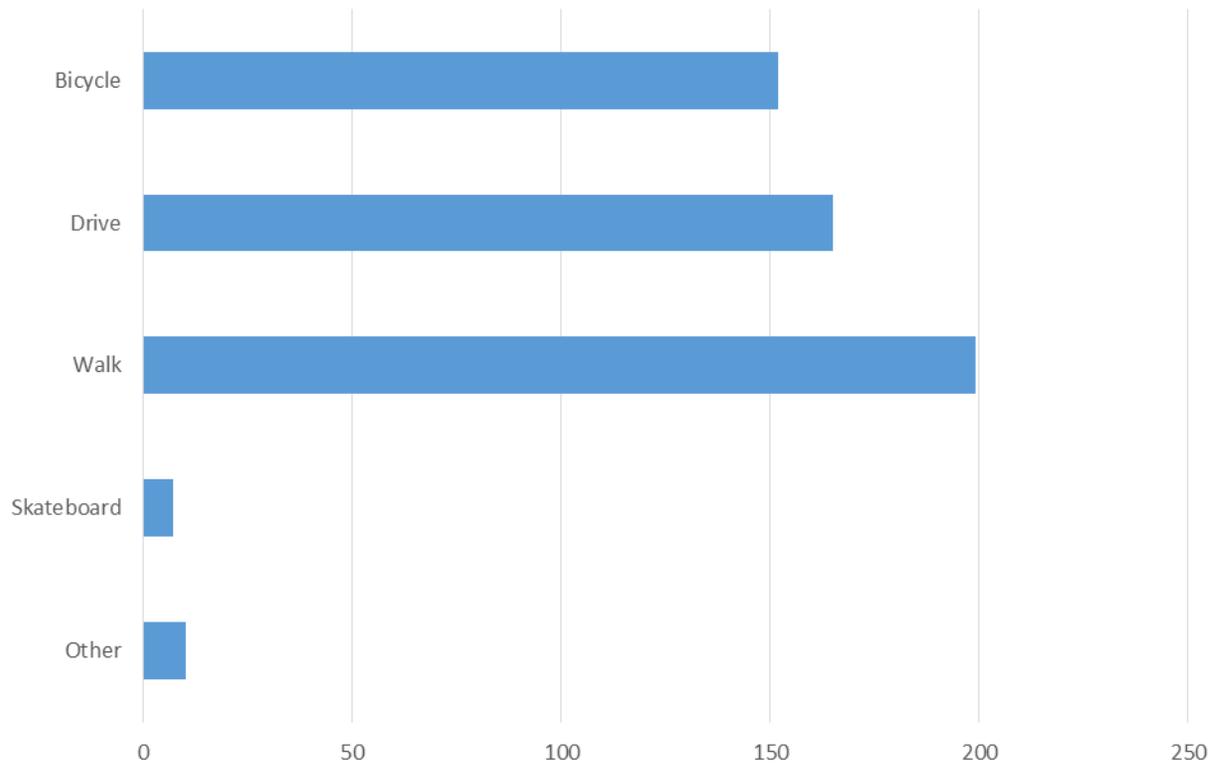
### How Frequently Do You Use Cahoon Park?



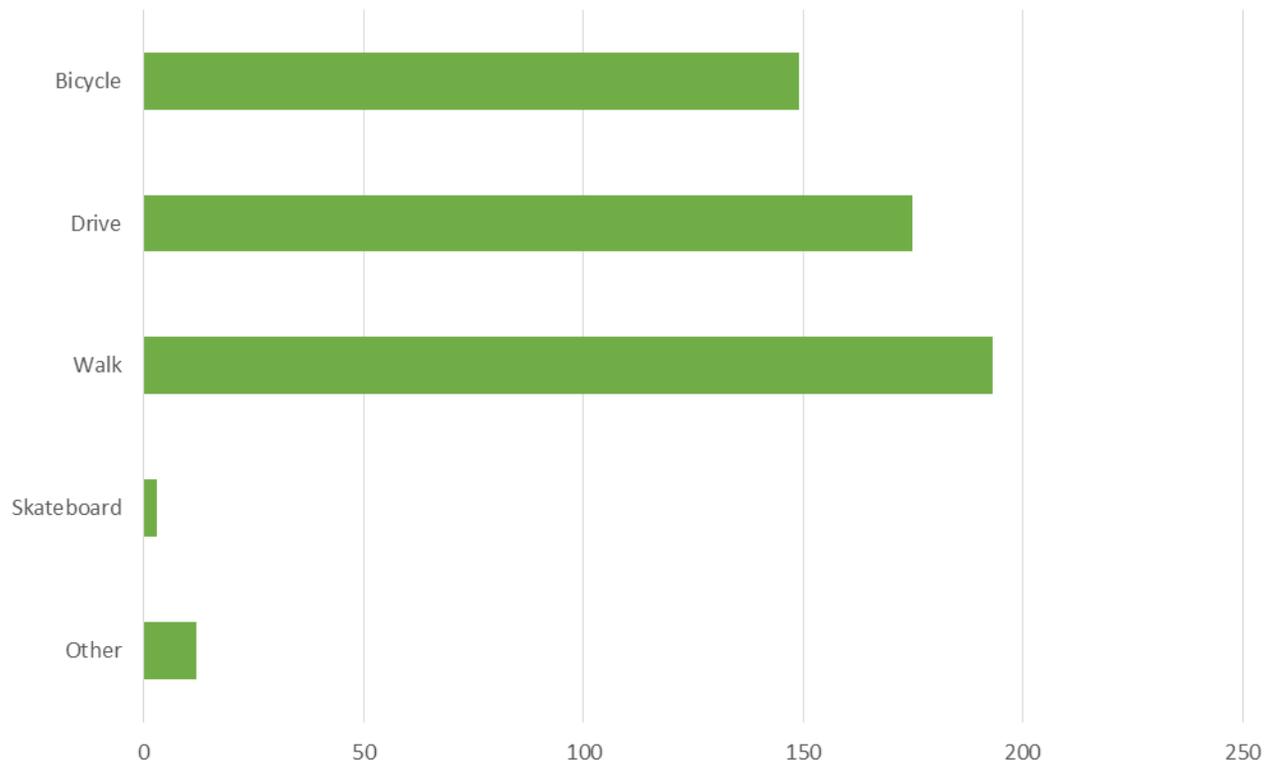
### How Do You Describe Traveling to Cahoon Park?



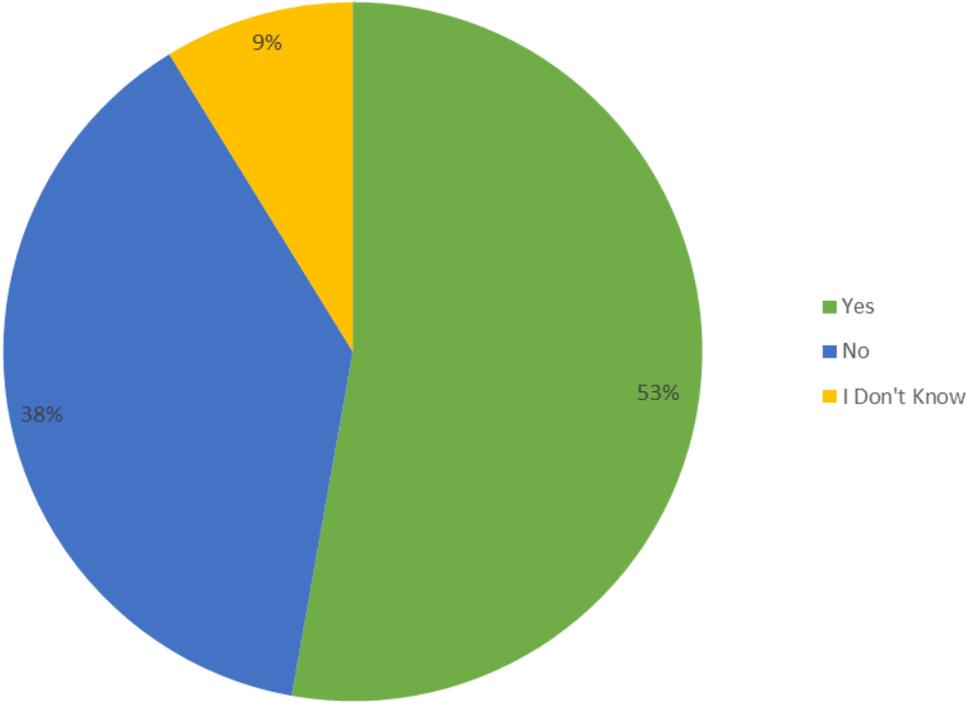
### How Do You Travel to Destinations In and Around Cahoon Park?



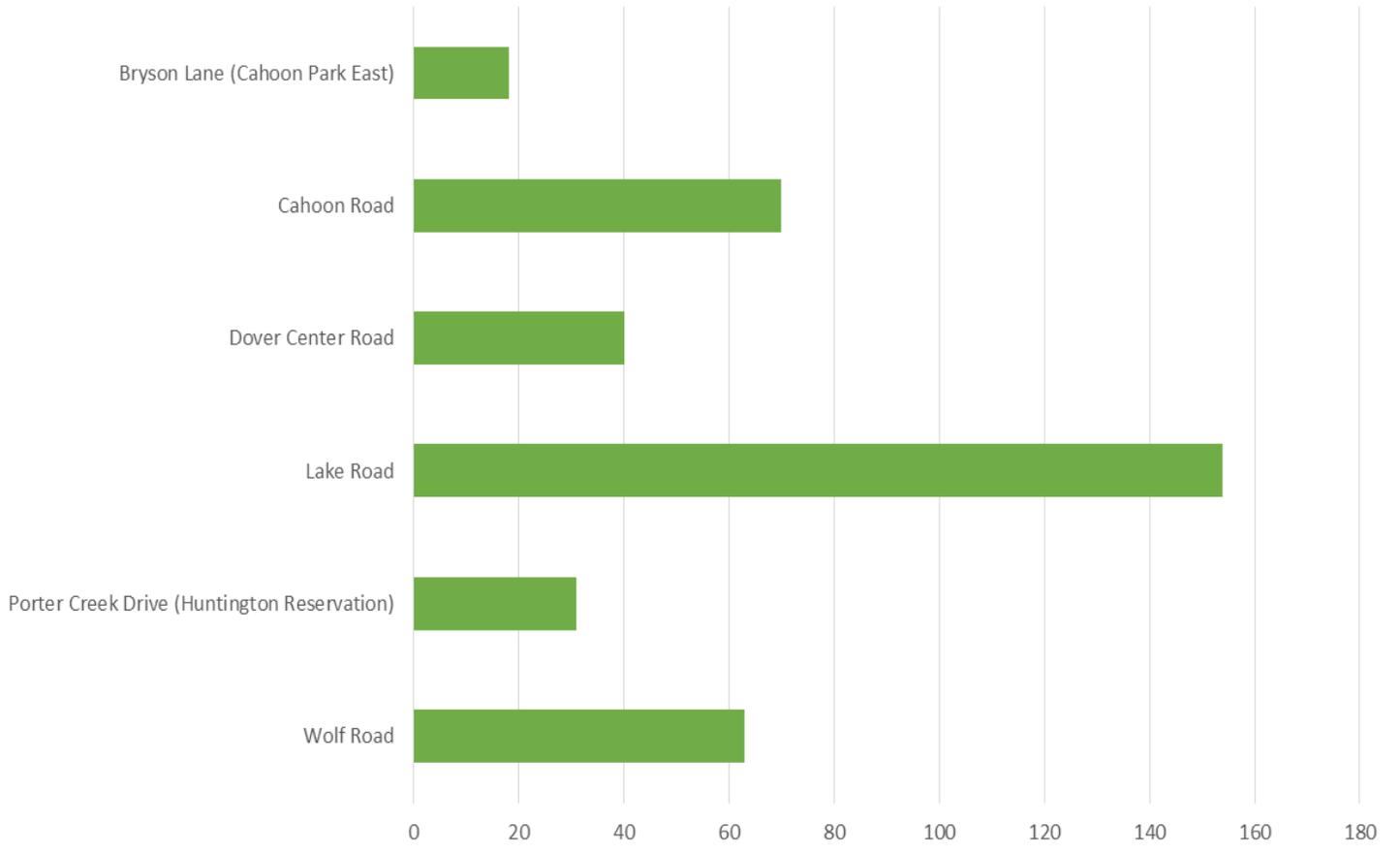
## How Do You Travel Between Cahoon Park and Huntington Reservation?



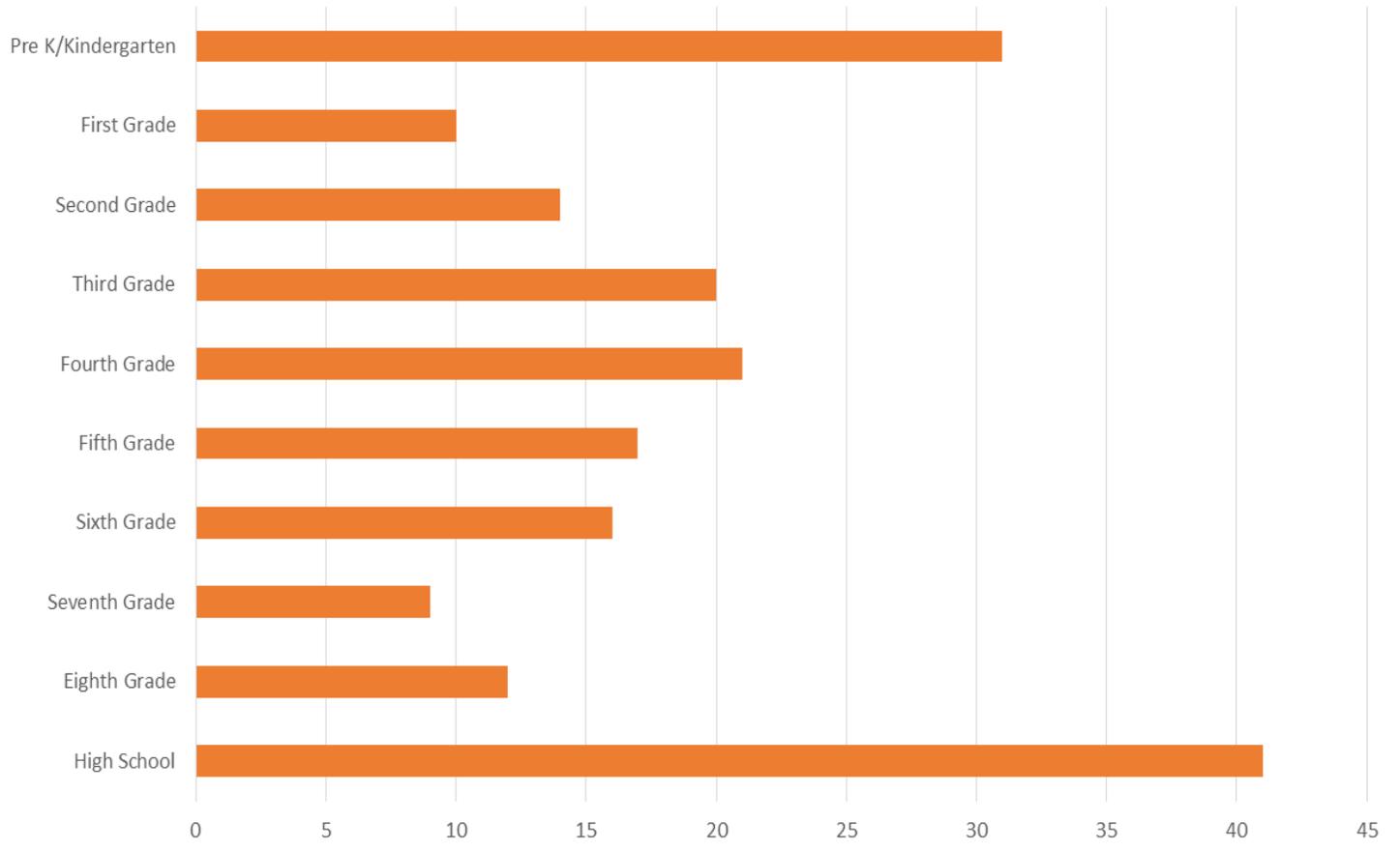
Do You Feel Traffic is a Problem In and Around Cahoon Park?



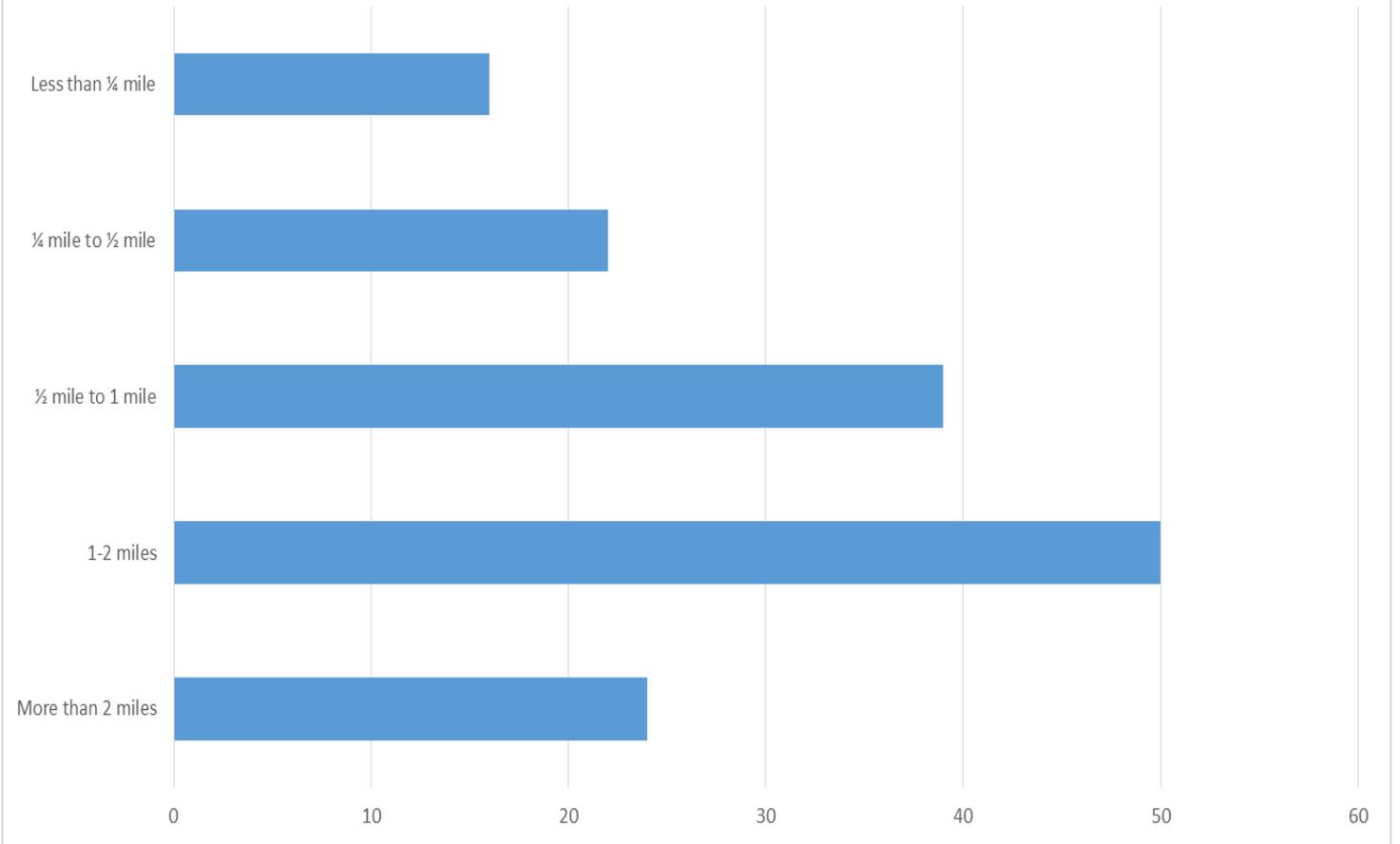
### Where is Traffic a Problem?



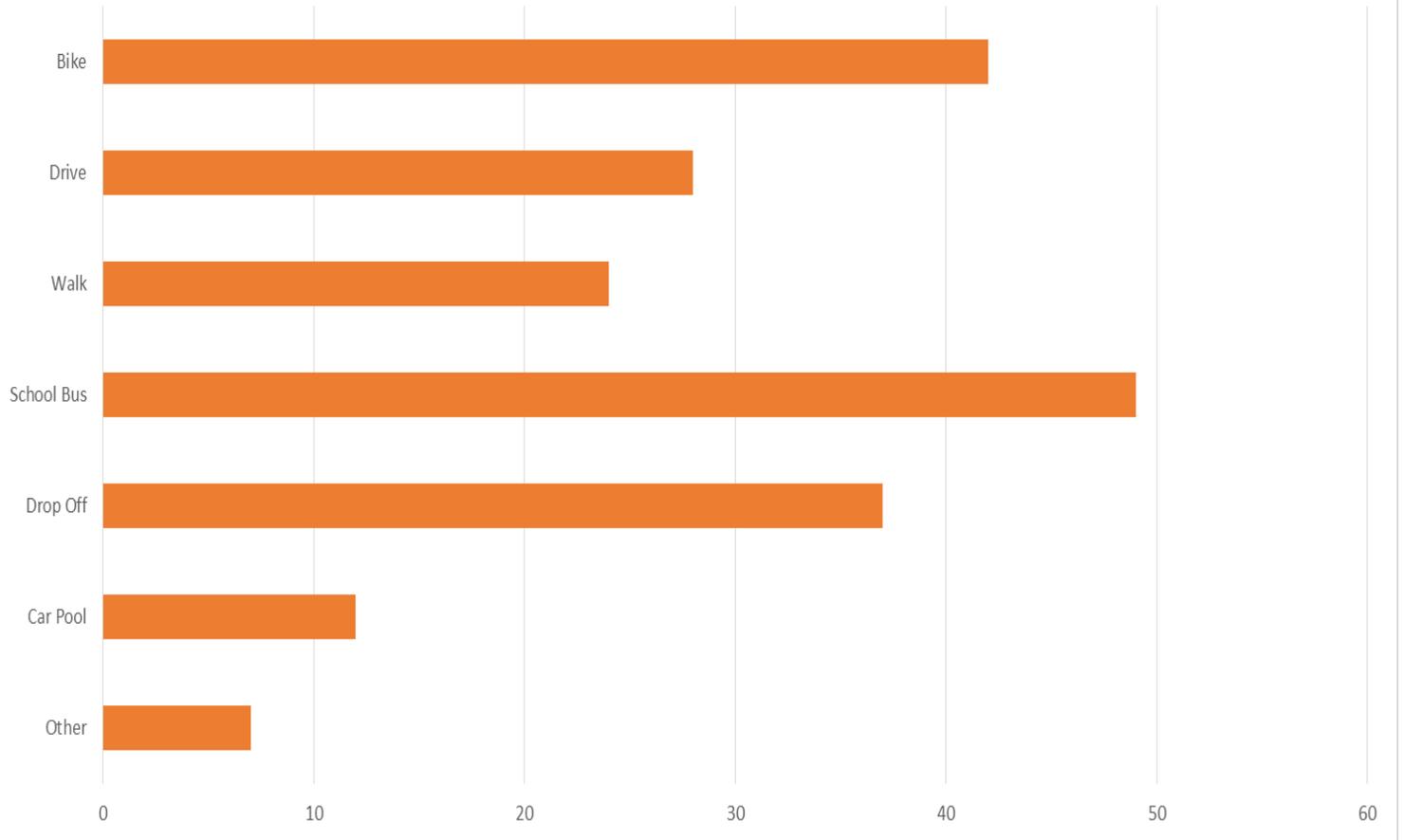
### In What Grade is Your Child?



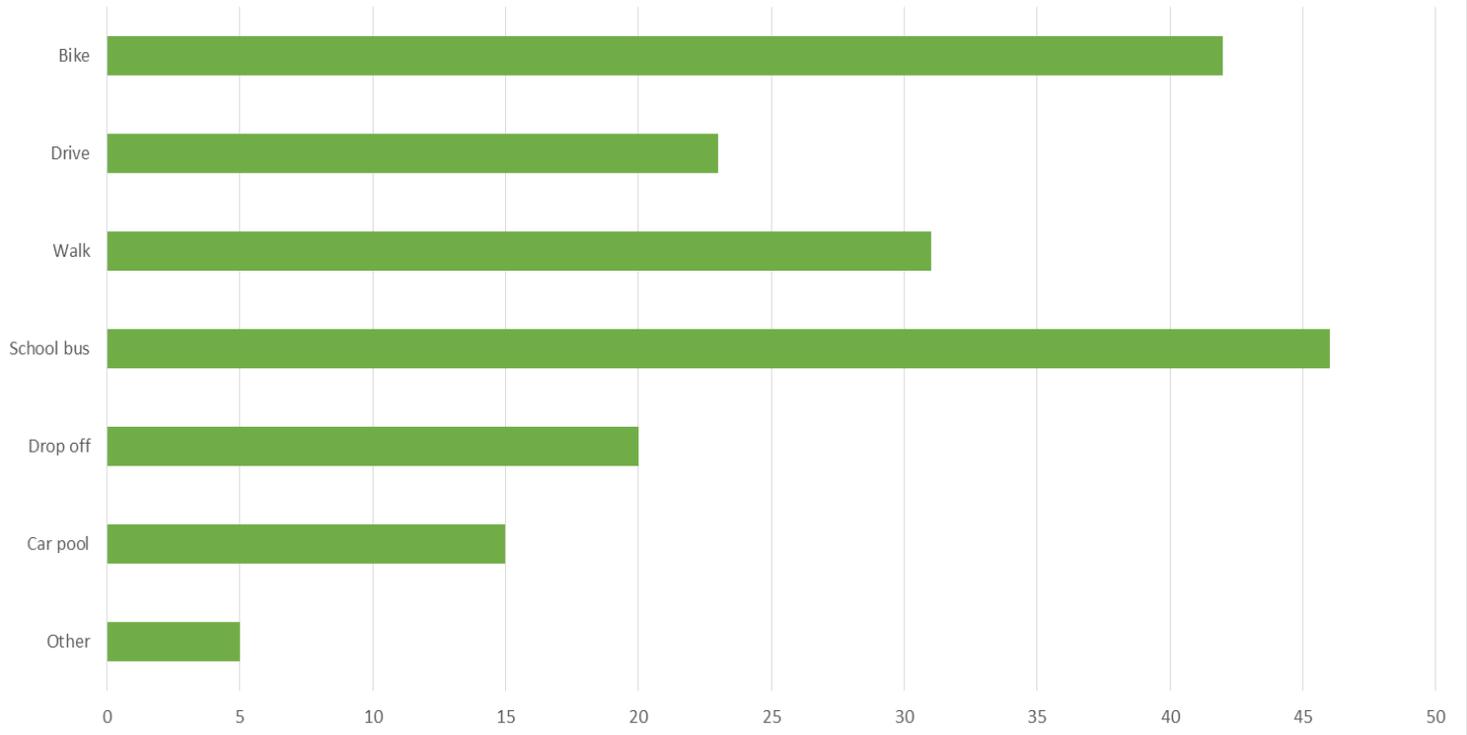
### How Far Do You Live from School?



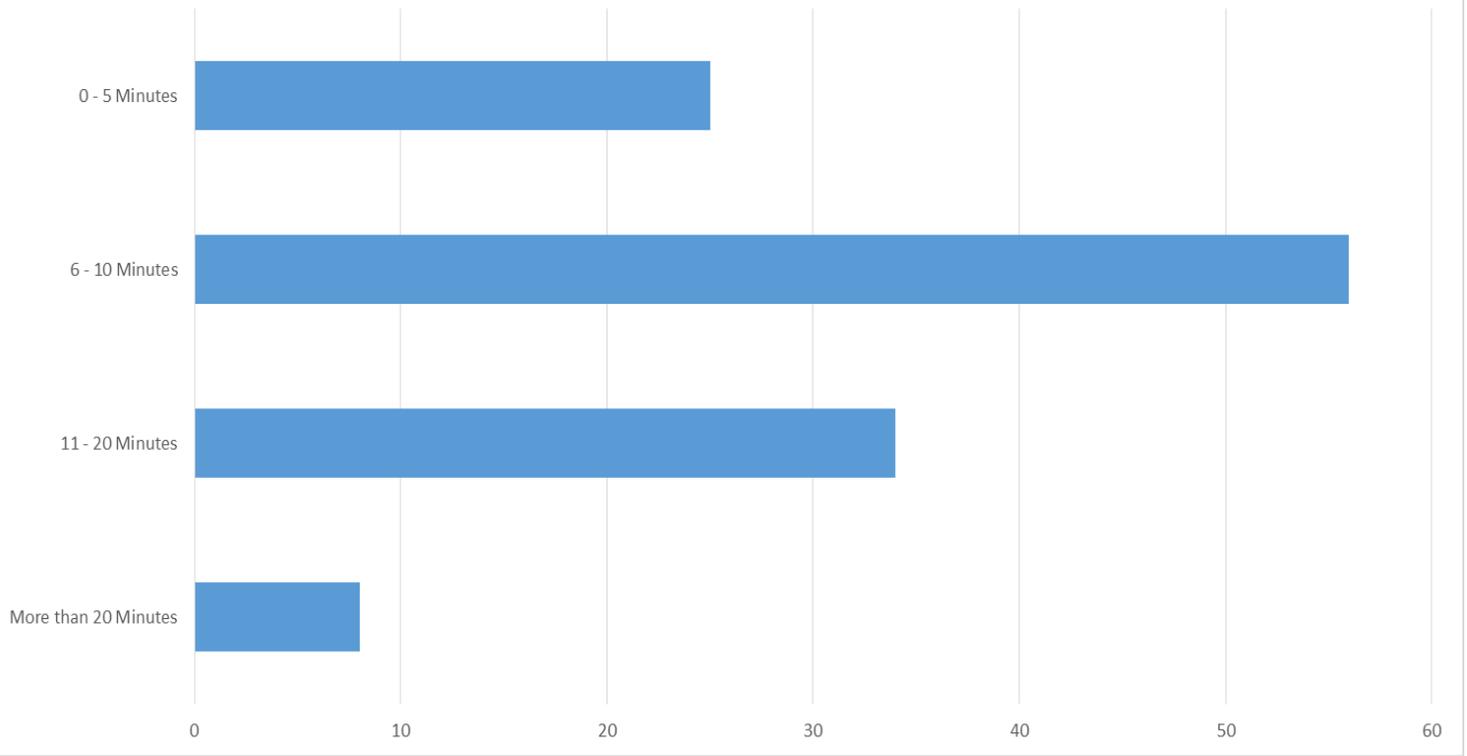
### On Most Days, How Does your Child Arrive at School?



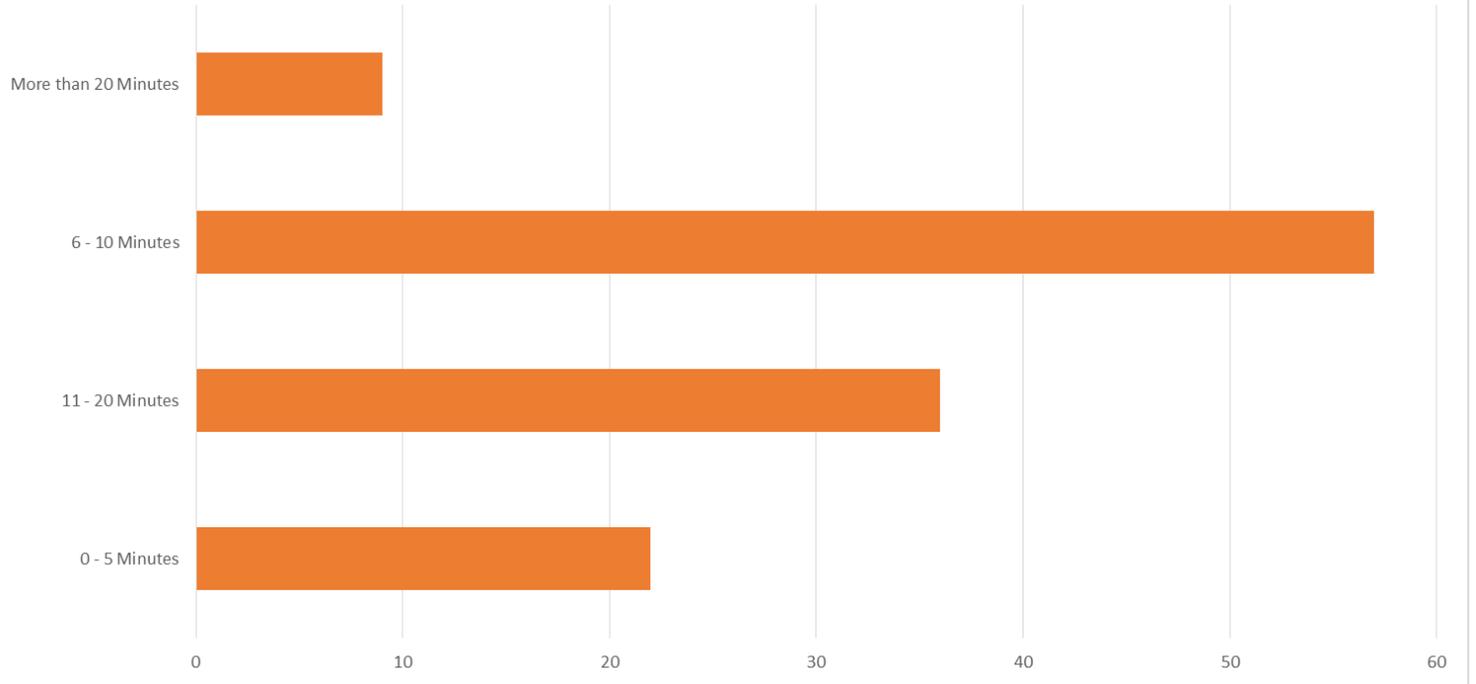
On Most Days, How Does your Child Leave from School?



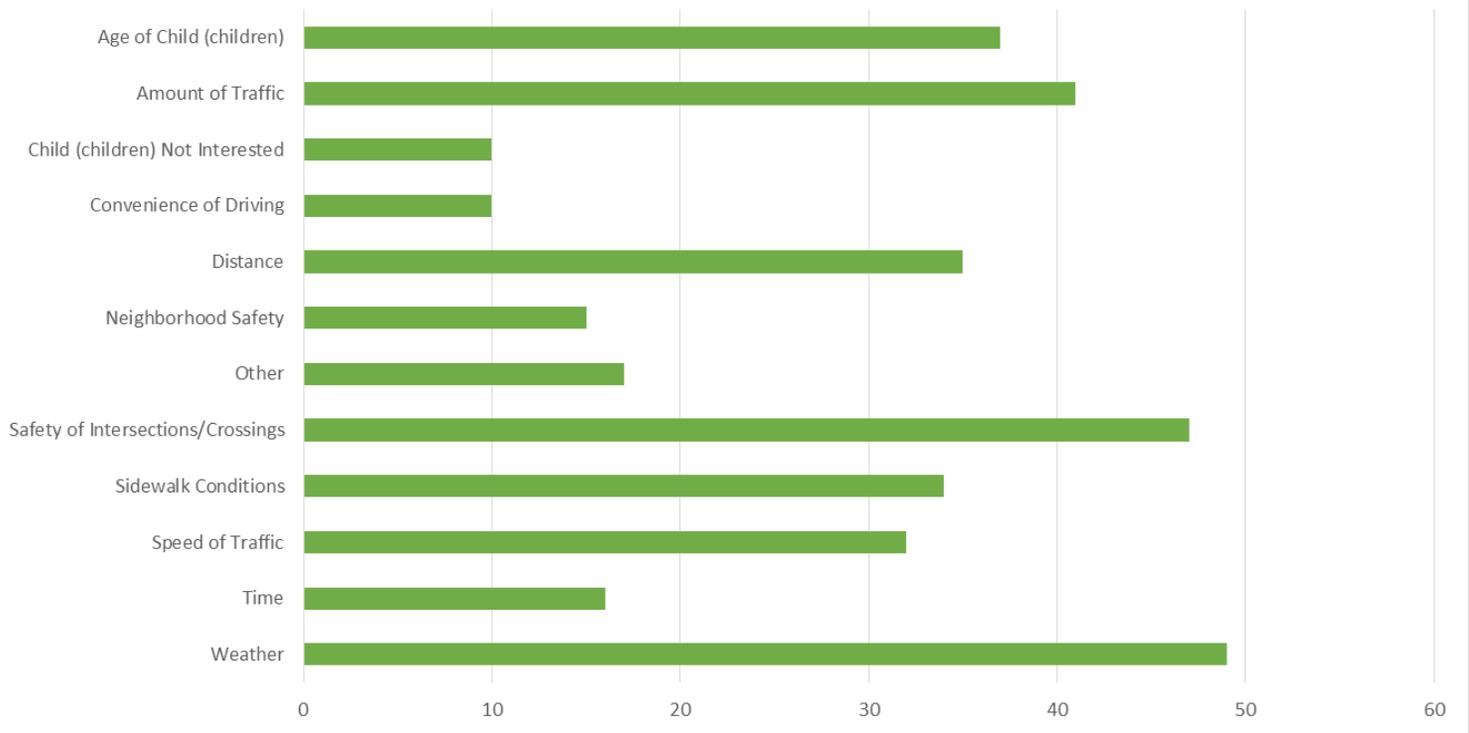
On Most Days, How Long Does it Take your Child to Travel to School?



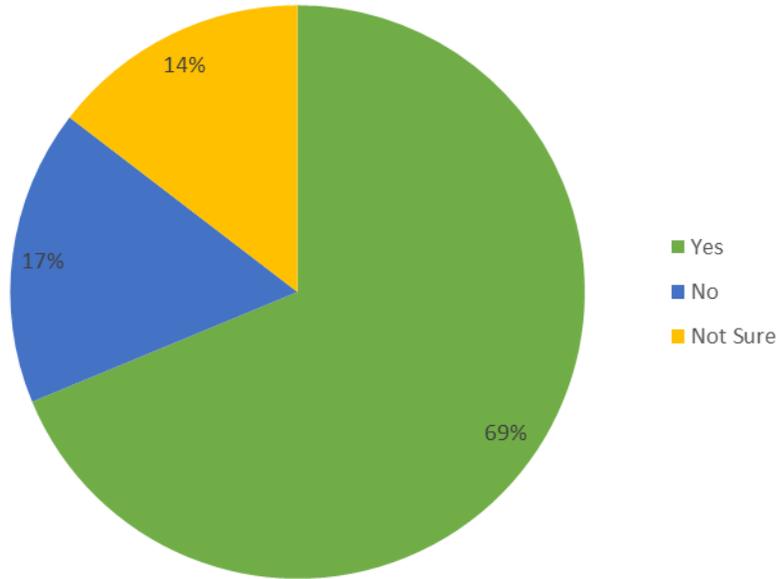
On Most Days, How Long Does it Take your Child to Travel from School?



### Which of the Following Issues Affect Your Decision to Allow Your Child to Walk or Bike to School?



Would You Let Your Child Walk or Bike to School if Distance Were Not an Issue?



## What are the best things about Cahoon Park?

- Community Connectivity
- Bay Boat Club & Sea Scouts Rose Hill Museum & the log cabin The Community House - love - a great rental Bike Co-op Swimming pool - very unfortunate, cannot utilize on Sundays Bay Village Band concerts - awesome! Bay Days Bay Village fireworks BHS/BMS cross country preview & Championship course
- its closed Sundays
- Size, proximity to the lake and Metro Park
- lakefront area north of the road, sledding hill, skate park, rose garden, gazebo
- View to the lake
- love the creek at the bottom of the sledding hill and the old merry go round. I picnic down there with my sons and make a day of playing in the water and enjoying the nature right here in bay.
- The open space, green grass, community meeting place.
- Being a senior citizen, what I prize most at this point in my life about Cahoon Park is that we have a big green park, an island of nature, a refuge for wildlife in the center of our community, with venues for art, nature science, performing arts, sports, community events. And the trees! The trees! The trees!
- The view of the Lake
- Multiple uses from soccer to the lake views, to the boat club, to the historical features, to the gazebo, to the skate park, to the Frisbee golf and on and on..
- It is in a good location in the city. It has multiple recreation venues.
- open land, easy access & The Will
- Open space in the middle of the city. West side of park is adjacent to Huntington Park which adds to open space. Cahoon has numerous recreation facilities ( ball fields-tennis-pool and walkways ). The conversion of the old gun club area to a walking area allows residences to get exercise and view the lake. The three exercise station recent installed are nice additions. Cahoon Park is the jewel of Bay Village and sets it apart from the other surrounding communities
- Washroom and water fountain
- walk, stroll, sit, view sunsets and lake place to walk a dog or play a sport in middle.
- the size, the variety of uses
- Open space for community activities.
- lakefront location
- Spacious, lake views, woods, creek, open to public, variety of terrain and vegetation.
- Large open area; central location; multiple uses
- green space, community area, centrally located
- It is on the lake shore, it is centrally located. It offers fields for many sports and has a pool.
- Open space
- It's many uses. It gives us a wonderful sense of community.
- disc golf, pool, skate park
- location
- Walking through the woods, sports field accessibility
- Skate park and pool
- Nice for local families
- lots of green space
- Open space, good place to see the night sky, opportunity to make it more useful for it's residents and a central meeting place.
- The creek; historical buildings

- Nice green space,
- Greenspace
- The pool; lake access;ballfields;trails
- Large. flat, open, undeveloped green space which is smack in the middle of the community and a stones throw from the lake. Can easily be developed.
- It is a community park and it's dedicated to maintaining the standards it was built upon.
- location along lake; suitable for various activities
- Green space for activities. Rose Garden is well kept.
- Makes the city Bay Village
- Closeness to lake, open spaces, community house, historic homes , etc
- It's proximity to Lake Erie.
- The large amount of green space. The availability of so many activities to be done there.
- Available for team sports for the kids Lakeside trail for walking Rose garden Skate park
- Accessibility. Soccer, baseball, tennis and basketball options. Fabulous pool and children's playground.
- It's big
- The rose garden, herb garden, historic sites, It can be a very peaceful, tranquil place (obviously not during Bay Days!) It's a terrific community gathering place.
- Rose Garden, athletic fields,Rose Hill
- Wide open spaces, connection to the lake and to the woods.
- walking path and beautiful lake
- Openness, for things like flying a kite.
- The open space and the ability to walk around
- Open space for soccer.
- A lot of parking and location....on the lake.
- Plenty of open space
- Size and how natural it is
- We enjoy the pool, the playground, and hiking through the woods.
- swimming pool
- Quiet
- access to lake views, expansive play areas and communal gathering areas; great views; good historical interpretation opportunity; disc golf, the skate park, active recreation, etc. Central location in the community; play in bay playground - though it could use some work, it's a great spot!
- Public, Green space
- History and charm
- View of the lake. Open space. Central Bay location.
- It's spacious on the west side, offers a lot of community amenities on the east side.
- Convenience, green space,views of lake
- Open areas with grass, trees and places to sit and enjoy nature
- Beautiful, well maintained green space that overlooks Lake Erie
- makes a great city center
- Green space, walking trails, access to facilities l, pool etc.
- Walking Trail Center of town Green space Lake views
- The vista and view.
- Setting
- Grass, dirt
- It is kept clean.

- Its limited access to outsiders that do not live in Bay Village and its limited parking to help promote useful green space for its citizens to flying kites, have family reunions, playing frisbee, flag football, running with the dog, and plenty more.
- View of lake, open area, sledding hill, valley -- area next to Cahoon Creek, undeveloped, natural area.
- Lakeside view Walking trail
- flexible and programmable activities areas, concentrated sports zone, and most importantly an area dedicated to the history of Bay. Concentrated Civic functions (City Hall to Dwyer Center).
- Privacy
- You can view the lake. Nice green area.
- The area that everyone may use for many purposes, such as the Gazebo, the soccer fields, the walking paths.
- location by lake
- Pool, skatepark, playground, disc golf course, sledding hill
- Green space
- Pool, Rose Garden, Rose Hill and Cabin, Play-in-Bay, Tennis Courts, Sporting areas, lovely areas to walk and bike, etc!!!
- Village Bicycle Cooperative
- Opportunity for skatepark
- Pool and playground
- The skatepark is easily one of the best in NEO.
- The skateboard park
- It provides an open space for family, community, and sporting activities. The fitness trail provides a free opportunity for families to stay active.
- Location
- Beauty, history, center of town.
- the museums, the view of the lake
- Roses, gazebo
- Lakefront, sports fields, good village gathering place
- Gazebo, community house, skate park
- The space and woods
- I feel like I'm on vacation when I walk around Cahoon Park. It's an attractive area that cultivates a sense of community. Our family loves Cahoon and all the events held there.
- Green space
- The gazebo, the community gatherings, the lake shore
- recreation hub
- Variety of activities and all of the outdoor activities planned for children.
- Walking trail
- Views of the lake, open green space, area for community events.
- Open space
- Natural beauty, family friendly, well maintained, centrally located, access and view of Lake Erie
- playground, skate park, and disc golf
- wooded areas
- Center of town, heart of the City. Unifying location where residents children grow and play.
- Rose Garden. Creek.
- Beautiful views, central location,
- variety of activities on the east side versatility of the open space on the west side
- community

- Openness and thus flexibility to multi-use. And still keeping it a park - i.e., grass, trees, etc.
- Bay residents ONLY. The Will protecting green space.
- The area from Rose Hill to the creek is beautiful and peaceful.
- Walking path, lookout by Dover center
- Size that accommodates several major events including sporting activities and Fourth of July activities.
- The green space
- Location, well kept up. versatile
- Central location
- soccer
- Historical buildings, i.e. Rose Hill, Osborn Learning Center, Log Cabin and Community Building.
- The size is great and has an incredible view of the lake
- Green space
- Lake view
- green spaces, sidewalks, pool, volleyball, ski hill
- \*the grounds are kept in tip top condition \*ample soccer fields to meet the needs of our residents \* location in center of village \*views of the lake \*well used and valued by residents
- The lake
- the open space
- Roses herb gardens the cabin the gazebo and concerts fireworks bikes the soccer baseball all American dream lives
- Lots of wide open spaces
- Pool, soccer fields
- View of the lake
- The other 6 days of the week when we can use the park.
- free green space in center of town
- It is in bay village
- green space, openness, recreational options
- Location
- Open green space
- The open space is maintained nicely. We are lucky to have so much open space.
- Cahoon creek, skatepark, disc golf course, large open fields, and centrally located.
- Around the gazebo area
- Wide spaces.
- Proximity to the lake and activities for kids
- My community and the natural beauty.
- Space and open views. Great place to walk with great lake views and places to play sports and at park with kids.
- Large green space with unobstructed access to Lake Erie, multi-functional and well used by the community.
- Views of the Lake
- The openness to fly kits, play soccer, see nature, play football, ride bikes, play lacrosse,
- Activities
- Openness and uncrowded and lake view
- It's great when used for community functions
- soccer
- the view
- Walking circuit

- Antique buildings
- The pool, play in bay, proximity to Huntington park and beach,
- Central location and view of Lake Erie.
- It's location in central Bay - near the lake, shopping, schools.
- Sledding hill provides options in winter, East side provides some shade, west side connects to Wolf Rd through police station and to metroparks via trail.
- Green space and walking path
- grass,trees, and water.
- plenty of open areas
- Outdoor activity area for kids
- wide open space, peaceful (except during sports and special events)
- Pool, boat club, great place to spend time. Sled riding, Play in Bay
- Open, green space; view to lake.
- wide open green space
- Pool
- It's green and treed with a nice variety of activities and historically interesting.
- The green space and views of the lake
- Green spaces, pool, nature.
- open space, treed space, lake view, gazebo, community house, center of town
- Variety of use
- community gathering spot
- 1.Centrally located 2. Historical 3. located by the lake 4. Nice for walking
- The paths in the woods. The rose garden.
- Variety of uses
- Green space
- Open park that nothing commercial can be built on the land.
- Soccer fields, sledding hill, Frisbee golf, Play in Bay, Pool, Baseball Fields
- Views of the lake! Open grassy areas for adults, children and pets. Shady areas for rest and relaxation. I am so grateful for the access to nature and beauty.
- Variety of activities.
- It's openness
- lots of space, good location
- Green space
- Convenient, safe, well maintained
- Rose Hill Museum and the Osborn Learning Center Community House Soccer field availability having a gazebo
- Great for community gatherings, lots of grass and play area, great for sporting events, very walkable from within the community
- Lakefront view
- Open space for a variety of physical activities and cultural events. Honoring the Cahoon sisters will to keep the park relatively quiet on Sundays-one day of the week for quiet is not a bad thing- on the contrary.
- only walking trail next to the lake, gazebo--underused--with lots of viewing/listening area, gaming areas on the eastern part, play in bay for youngsters and parents,
- Open area and room to roam.
- I love the park - not sure what the proposals are - I like the natural feel next to the fields and other amenities - proposals should complement the existing features
- Community green space; walking path; sports venues

- Baseball fields, proximity to lake
- Hill for sledding in winter
- A place for everyone in town to enjoy.
- Swimming pool
- Central, activities
- lots of open space
- Green space.
- scenic & peaceful walking paths; retained a number of older trees
- Location, natural green space areas.
- View, grass, trees, paths
- Large, open green space
- Location on the lake shore
- The Home, dance ball room, rose garden, sledding hill, RR bridge. Up graded carnival and independence fireworks. Art show. wine garden.
- Bay residents only, lovely views, historic ( although neglected) buildings.
- Gazebo concerts
- It's location & size
- Green space Opportunities for kids to play
- Lake view, sunset view, large space to play outdoor games
- Rose Hill Museum Osborn Learning Center Community House and rose garden
- Open spaces and lake views
- Not over crowded
- View of the lake, usage for soccer and cross country.
- Nice to see the lake.
- Open space
- Open space
- Green space, sledding hill, pool, play in bay
- Soccer fields
- The lakefront walking area
- Sports, boating, green area open to the public.
- The pool, accessibility
- Greenspace, community use for concerts, fairs. But are you referring to East or West parts of the park? The east part gets lots of use with the pool, baseball fields, playground, Dwyer, sand volley ball. Nothing more should go on this land/park. The baseball field still maintains the greenspace or the area would feel very crowded with all the activities that go on at once in the summer. Bay residents protect our greenspace with enthusiasm.
- Creek, history, lake views
- A large park area where kids sports can be played where there isn't as much opportunity to do that.
- Views
- The openness and green of the park.
- Scenery, views
- Open space, variety of recreation opportunities.
- Nature in our midst. Marking Bay's history. Access to Lake Erie.
- Open space
- central location, lots of room, community centers,
- The historic structures. Also the wide open spaces with view of the lake
- Size

- Central location
- Very accessible and has a little bit for everyone
- Sport fields...historic areas
- Lake view
- location, potential
- it's so peaceful and you can imagine being swept back in time.
- It's location and the fact that it can't be developed. An iron clad will!
- Walking trail Access to waterfront view Seating Signage for mileage
- Pleasant environment that is easily accessible to city residents
- Location
- Lake Erie and lots of Green space
- The best thing about Cahoon Park is that it serves as a central location for community and family activities to take place, bringing the city of Bay Village together.
- Pool, disc golf
- Large green space Lake front
- the walking trail along the lake shore, the rose garden and gazebo
- One of the largest open green spaces in bay
- The baseball fields, the creek, the sledding hill, soccer fields, the pool...too many to list.
- Lake views & greenery
- Open spaces. Plenty of grounds for family activities. Very serene feel.
- Lake and trees
- Access to the Lake. Beautiful Green space. Great Aquatic center.....all available only 6 days a week.
- Lake view Open Safe Centrally located
- bay days, sledding hill, rose hill
- Open ground to run around on. Historic area.
- Don't know as I don't go. I have young children I grew up in Bay and never played soccer so I honestly never go to coon p I have young children I grew up in Bay and never played soccer so I honestly never go to it.
- That it is an old-fashioned park tying Bay to its history. View of the lake is priceless. Walking trail on north side is probably one of the most beautiful walking trails in the country.
- Views, access, uncomplicated.
- The historic buildings, gazebo and of course the lake
- The skatepark, Bay Days, wide choice of recreation options.
- No soccer allowed on Sunday
- Open areas for multiple use such as soccer, football
- Pool
- Openness and green spaces along with the areas for activities
- Size
- Centralized. Open and lots of space for different activities.
- Recreational activities
- Lake Erie. The Cahoon will, which continues to insist that the Sabbath is sacred in a society and culture that sets it aside for the rat race.
- Beautiful open space, especially love the walking trail along the lake and the benches.
- Open space, variety of landscaping/activities, center of the community.
- Skatepark
- Open space, multiple uses
- Rose Hill Museum, walking trail, sledding hill, availability
- Historic buildings

## What could be improved about Cahoon Park?

- Laws that prevent usage on Sundays
- better connection to North side (north of Lake Rd) @ Cahoon. Could there be an underground pass? or a walking light? STOP parking for fireworks on the soccer field grass - people & cars do not mix! or have the cars park on the far right and exit onto Lake Road thru the upper part of Cahoon and NOT through all the people walking. Why not permanently mark the BMS & BHS XC courses to encourage kids to run on there own? A 3 page display could be made with pics of each course and 1 page of course description & best times of bay runners! Bad decision to give Bay Way cabin to Kidde College - that should have remained a Bay resident resource! & let the girls use the lighted baseball fields also! - this is the 21st century! Add more outdoor activities, such as Bocce ball or an adult playground / or items that encourage seniors to get outside & more benches to sit & enjoy the lake views!
- space between City hall and Child care center could be more inviting- pathway or gate to draw people in, access to creek and lake would be excellent and best if simple and not high tech.
- Interconnect all areas
- parking and congestion associated with large soccer events
- Open it on Sundays
- would love to see more use out of the gazebo. Live music on friday nights. it would be great to have a wide walkway/bridgeway connecting the 2 sides of the park. currently the lake road and wolf road bridges are not wide enough for a double stroller and 2-way traffic. would be nice to have a small playground structure added close to the soccer fields-- perhaps near the firestation (close to the restrooms).
- The street pavement that divisions the park.
- Please do NOT do any further "improvements" that would in any way diminish its natural state, cause trees to be felled, or create more access to cars.
- Permanent sporting goals, markers...
- Connection between the east and west across Cahoon. Incorporate the historical features of the electric remnants into a walking/biking bridge. Also connect across Lake Road to the assets along the lake.
- We could reduce the amount of thrash that is in and around Cahoon Creek and the mouth of the Creek, particularly on the west side of the mouth. Another improvement could be make it easier to get to Lake Erie from the Park.
- Long-term it would be great to bury the power & telecom lines. Would add to the great view, but probably very expensive.
- Provide pedestrian bridge over creek from east park (senior center / pool) to sled hill area. The old bridge - walkway was removed and is missed. Pedestrian walkway connecting Huntington Beach area (east side) to the old gun club area. Bridge over the creek and stairway up to the gun club walking area. Stairway could be like the one that was just removed from Rocky River Metro park area around the nature center.
- Accessibility. Mixed use. Soccer runs a few times each week. Then you are left with an empty lot
- Structures for easy foot traffic to other parts of Bay parks without being on the road or narrow sidewalks next to the road.

- maybe some additional features, a smaller toddler focused playground on the western side (play in bay is so large and easy to "lose" a small kid in. Huntington only has swings). A way to connect from one to the other side on bike without using wolf or lake road.
- Better drainage for soccer fields. More places for people to gather/sit. A walking path? Some landscaping? Open on Sunday for activities (but that won't happen.)
- Add bike paths around the park that are safe for use. Have adult exercise programs there. The park is oriented to youth activities but offers little for adults.
- Connecting access among its different areas would be wonderful, especially bridging across from area south of Dwyer Center to area south of Community House.
- No ready answer
- I know it isn't possible but I wish we could have events and activities on Sunday :-(
- It is open on Sundays. It would be nice if someone could easily walk to each of the sections of the park.
- Less activity on Sunday
- Connecting it across the gully with a walking/bike path through the center of the park would be wonderful.
- full weekend access
- Add pickle ball courts (or put lines for pickleball on one or two of the tennis courts). Great game for adults and kids.
- Signage that tells when you are entering the park
- Sidewalks
- Walking to park-very hard to cross clague Rd on foot
- walking bridge over the creek
- it is underutilized. It's nice to have the green space but there are no trails, benches, pavilions, etc to draw us to hang out or have a picnic there. The area north of the pool (south of Lake) seems to be not used at all, and aside from soccer season the fields are empty - would like to see multi-use options. Love the wooded area and the sledding hill but it does divide the park.
- Better access to the creek and lake, picnic facilities, less soccer space
- More trees
- Signage explaining history and purpose.
- A fishing pier would be a good addition, but I don't believe it needs any more structures within the park itself. Keep the trees and fields.
- Without impinging too much on space for athletic fields, need to cut down the open "prairie" look of it. Shaded picnic areas would be nice. The areas by gazebo needs to have better drainage, as with heavy rains, that area becomes a quagmire. Walking trail that connects into wooded area of Metro Park would be nice. Some type of crosswalk at the intersection of Cahoon and Lake, to safely navigate to cross Lake road to gain access to walking trail there. The Skate Park was perfectly placed to create a nice niche environment for kids (people) to use. Need that kind of planning, thinking to facilitate areas in Cahoon park where people can use without destroying the integrity of the park as a whole.
- More seating areas and drinking fountains
- soccer fields don't have to take priority (in terms of space, use, and importance)
- More trees planted LESS sporting events.

- Access along the lake to the metro park.
- Provide a bridge again to connect it to other side
- Too much open space. More trees and pathways would make it better for nature hikes.
- A few more areas for picnicking, in the shade.
- More seating for seniors or walkers in general - invite people to use it when not being used for organized youth sports
- Sunday opening not an option. More seating.
- Definitely more biking options, but that really goes for all of Bay Village. Better, safe interconnection from east to west
- I'd like to see some bike racks.
- More walking paths
- No chemical treatments.
- would love a way to easily get down to beach from Cahoon Park
- To be open on Sundays. Period.
- More bike paths to and from Cahoon park
- Get rid of Sunday restriction. More trash containers, more recycling containers. There are lots of water out there that get thrown away.
- ?????
- Not sure
- The bike path from soccer fields to nature center needs repaved!
- More accessibility though the park itself so you don't have to cross roads.
- connection to lake erie
- Sunday activities
- living in Bay, I don't exactly know the specifics of the Deed Restrictions that limit Sunday 'organized' usage. But....half the activities that could occur there, don't because of such! That needs to be better explained to the community. Access to the lake could be improved, similar to the Solstice Steps in Lakewood, which are a tremendous asset to the community. Recreational connection to the greater community is awkward; CMP trail stops at their park boundary, which I understand, but what about continuing such an APT throughout the community, especially since BV put in that 1-rider rule on Lake. Wolf should be a corridor, attractive and safe to all forms of transportation; like a separated/protected bike path, in lieu of a sidewalk? Plenty of room.
- Sunday access
- nothing I can think of
- Fewer soccer fields. More picnic and family space.
- Not sure. Aside from the pool and play in Bay, it only seems suitable to team sports. For biking and walking, I pass it up to go to the metroparks. Perhaps they could be connected?
- Walkways between the Cahoon and Dover Center parks
- Keep Non residents out of the Bay Boat club area. Walking bridge to connect east with west. Zip line next to the bridge.
- Walking path from Rose Hill to the creek area.
- is fine the way it is

- Replacing the bridge over Cahoon creek. It was removed several years ago because he was not in good condition. Extending walking trails that have been added in Dover Center and connecting them to the Metroparks would provide a trail for Bay residents throughout Cahoon park and Metroparks. Increasing safety for pedestrians along Lake Road from both the East and West is important.
- Access between east and west portions of the park Pedestrian access across Lake Road to the walking trail
- Adjusting the Cahoon Will to allow swimming and boating on Sundays.
- Bridge over Cahoon Creek for connectivity
- New bridge across rivers
- Connect it with over Center park
- Do not ruin Cahoon Park by accommodating outsider traffic. Bay Village thrives without the footprint of outsiders. By adding a road or bike/walk path, it's destruction of beautiful green space that allows Bay Village to remain "small" even with a growing population. Bay Village should not accommodate exceed growth. It should remain a prestigious place where outsiders remain envious of Bay Village's ability to keep itself vibrant without relying on outside traffic. It's a great place to live because Bay Village is a small beautiful city with a wonderful history and it thrives by its own community, not outsiders and not industry. Do not screw with Cahoon Park to accommodate traffic. Traffic needs to accept the fact that Bay Village does not need to conform to ever expanding roadways nor does the city need to change for the masses.
- Less paved parking. That is, there is a lot of blacktop, rather than add more, are there ways to replace some of the blacktop with permeable pavers? If there was to be a redevelopment of any of the paved areas, could there be bioswales to capture parking lot run-off before it hits the creek or the lake.
- Slow down traffic on Lake Road and Wolf Road
- destination connectivity - link from East to West features (ie, from Pool or Rec Dept across a bridge to a New Field Sports Pavilion.)
- Keeping it private
- Make Lake Rd one lane in each direction between Huntington and Cahoon with left turn only lane at beach.
- It would be nice to have some trails for biking either in the woods or out, walking paths more defined.
- sunday access; sogginess of soccer fields for weeks in Spring; traffic on Lake road impairing access to park land north of Lake
- Make it easier to get from one end to the other. You have to leave the park to go from the pool to the skatepark.
- To be able to use on Sundays
- Current connections are at busy Lake Road and at Wolf. I love the idea of a scenic bridge connecting the Community House side to the Senior Center side!!!
- Less restrictions
- Build another skatepark
- No skate park

- The skatepark is in need of a few maintenance issues. The cracks in the bottom of the pool and between the pool coping need to be patched up. It would be nice to have a walk way between the skatepark and the water fountain across the street. Dehydration is a major issue at the skatepark in the summer months because of the lack of water access. Either adding a water fountain at the park or an easier way to get to the current fountain without the police giving me a jay walking ticket would be nice.
- The skateboard park needs maintenance and expansion (more features and the installation of a second, more challenging, pool / bowl).
- Pool open on Sundays. Skate park enlarged.
- More beauty of nature- flowers, bushes, etc
- Do not update or build anything else on the property.
- Better maintenance on the buildings
- Connect to walking loop on north side of lake road
- Only Sunday use, which cannot be changed
- Picnic area, more trees
- More activation of space, more direction in area usage, and landscaping non essential areas for easier maintenance, for example planting trees on the hills to provide shade along with installation of benches to allow people to sit and relax, as well as putting some native trees along the road to create more sense of place instead of a vast expanse of green that quickly becomes repetitive
- At minimum, there needs to be a crosswalk at the end of Cahoon and Lake Rd to get to the other side of the park. A pedestrian bridge would be great at this location too. The chain link fence between the park and the lake could be changed to a more aesthetically pleasing barrier. Improve landscaping.
- Less organized more natural
- Find a way to provide access to the lake
- Better connect the two halves of the park. Access the lakefront. Provide better trail/pedestrian access/spaces on the western half.
- Parking
- Access to Lake Erie, safe road crossings (pedestrian bridge?)
- Access from east to west for pedestrian and cycling. More trails.
- Use of the pool on Sundays
- More bathrooms, more drinking fountains, paint the Osborn Learning Center, looks terrible and could lead to deterioration of the building if not addressed real soon, recycling containers, pedestrian crosswalk on Cahoon Road between soccer fields and Community House parking lot
- Public Restrooms
- nothing !
- Eliminate above ground utilities, beautify Cahoon and Wolf Intersection. Crest a roundabout there with decorative lamp posts that continued to Lake Rd. Make that stretch have three lanes and additional two lanes parallel parking, permeable pavers. Incorporate green initiatives like City Hall parking lot.
- Field drainage on the soccer fields. They are disgusting after any rain. That is one of the reasons my kids gave up soccer young. They hated playing there. Bathrooms are also disgusting.

- Possibly a walking / biking bridge or tunnel to make access easier during peak times.
- access to the Senior Center
- connections
- Nothing - I would stop developing it. That said, I agree a simple bridge/path/link between the two sides would be useful.
- Some sort of architecturally pleasing pedestrian/bike walkway bridge Lake Rd like you see on I90 and elsewhere
- Benches for sitting in the area near the creek would be nice.
- Easier accessibility, more seating options, access to the lake.
- More street parking, eastern part of park could have more opportunities for activities, walking and cross country ski paths connected to metro parks and pool area.
- Better connection across the two sides
- More resident friendly rather than to many organized events
- Close Cahoon rd. Between lake and wolf to automobiles. Dover Center already connects these roads a block away. Connect the existing cahoon parking lot with an access road on the western edge of the park to Lake rd. This would eliminate traffic on the pedestrian through way from Huntington to Cahoon park. With the removal of traffic from cahoon rd. There could be an uninterrupted multiuse path from Huntington all the way to the Dwyer center/pool/city hall
- sundays
- Better use of grounds around the historical buildings
- It's a great area and should be used for more than soccer/lacrosse fields
- Better care of rose garden and landscape. Soccer fields could be used for other activities
- More shade trees
- more activities to draw residents to the park on a regular basis
- We NEED a new facility to replace the soccer shed. Other communities have well constructed, permanent buildings with kitchen facilities, ample restrooms and picnic patios. The new building should blend in with the style of the police station and City Hall.
- More trees and walking paths. Pool open on Sunday's.
- nothing
- Not a thing.
- Bike trail connecting everything
- Access East and West, perhaps a bridge from Pool to Gazebo area.
- Make it look better
- nothing!
- How about allowing us to use the park on a Sunday.
- More trees along cahoon rd , splash park, playground area,
- Bay resident access only.
- public restroom facilities
- New Bridge over Creek connecting Cahoon Park to the city buildings on the east side of the Creek, such as the pool, playground, baseball fields and basketball courts.
- Keep it open and green

- As mentioned above, I think the parking lots could be re-designed to function better with the soccer traffic. I also think they could be made a little more pedestrian friendly. I would like to see some kind of pedestrian bridge better cross-walk across Lake Road.
- Bike and pedestrian-friendly bridge installed over Cahoon Creek where it was previously located.
- Nothing
- There must be SOME way to open the park to various activities on Sunday. We have a POOL for pete's sake that is inaccessible EVEN if you have paid for a membership (which technically isn't a paid activity on a Sunday if I have paid long ago for said activity). It truly is ridiculous at this point. Also, do something with the soccer field for the 9 months of the year they aren't being used.
- Since you have mentioned it, having easy access by bike or walking would be great.
- Nothing. Leave it be! The Cahoons would have agreed!
- Bridge over Cahoon Creek and make an easier walk to cross from Lake Road to figure eight walk trail. Strollers can't safely cross with low curb to low curb when you have to run across a busy street.
- No additional development, preserve the legacy.
- Parking and safety for pedestrians/bikers on Lake Road
- The parking lot could have the power poles moved, the bathrooms should be updated, a picnic pavilion could be made, the ground should be level, drainage for water, bike racks added, lights for evening games and fall training,
- Nothing
- Need bike paths and parking seems to be an issue at times
- Too much emphasis on soccer
- Add restrooms and water fountains near walking circuit.
- move the pool to land with 7 day availability
- Splash pad operating on Sundays, occasional food truck nights encouraging picnics in the park, put put through the rose garden, cool playground equipment like what's in Millenium Park in Chicago or the Lurie Garden in Millenium Park with its wild flower section.
- Less restrictions on the use.
- Pedestrian/bike bridge from behind the skate park/sledding hill over to the pool.
- Trail connecting to metroparks needs improvements, crossing from east to west could be improved, and more picnic tables on east side
- Get rid of skate park
- A pedestrian/biking bridge to cover the ugly drainage pipe crossing cahoon creek just west of the community pool would be awesome. lower the speed limit on lake road from dover, west to beyond huntington park, add bike lanes on lake and wolf road.
- more public art
- Safer walking and biking areas around parking lits
- nice picnic area bike path
- too many underutilized buildings. Boat club is ugly
- Move playground away from road
- I love the connectivity idea - I want safe biking/walking space

- Pool open Sunday's. Better road access to all facilities. Right now the roads create strange twisting drives between facilities. A pedestrian path could help with this but car access is still strange. Better signage. Improved playground - Less tore up wooden structures and a splash pad would be nice. More seating areas with trees or other shade and nice views or grilling amenities to invite staying outside of specific events. A few more paths besides a pedestrian bridge to invite walking and biking. Those should be what wind not the roads. Improved parking by widening the access to the soccer side to lessen car backups on Saturdays. Make the bus station look nicer and more comfortable. Talk to RTA about upping bus service. Can't we have a community route for students or others who want to use public transportation even in the winter time. Make that garden by the gazebo look nicer and more up to date. So boring. Looks like a cemetery. How much space do I have?
- Dog owners should lease their dogs so people who don't necessarily like dogs don't have to worry about "he/she won't bother you" biting you. I no longer use the park because of this situation.
- East west access to avoid Wolf rd and Lake rd.
- bike paths, walking paths, lighted paths, bridge to connect
- Sunday open especially pool
- don't know
- More fitness around the park 2. Added walking trails on the south side. 3. a safer way to walk across the street. A light and cross walk is needed. It is a busy area with no direction. I feel it has just as much traffic as Dover Center. The light should be on a sensor when there are cars at Cahoon and Lake to try and keep traffic moving. 4. Making some family picnic areas. A pavilion maybe. 5. Use of it on Sunday of course is always on the list!
- A destination, pavillion etc
- Infrastructure and connectivity.
- Better use instead of just soccer. Take advantage of multiple sports instead of soccer.
- parking is horrible and borderline dangerous on Saturday mornings...Allow parking behind the police department...they really do not need all those spaces. \*\*\*For the purposes of this survey\*\*\* I had to really think about what East and West side of "Cahoon Park" meant. Most people that I know describe the Eastern section as the fields by Play in Bay or the park on Dover or Dover Field #1 etc... Your survey might be mixed up. It would be great if you could create a bridge that would cross over from the pool area over to the Rose Hill area IF it would not interfere with the sledding hill and Frisbee Golf. Its not that hard to walk or Bike around. It would be great to be able to connect the two however.
- I live on Huntmere Road and would love to be able to access the Bay Village Parks without having to walk down Wolf or Lake Roads. Having multiple ways to connect to all the parks for pedestrians and bikers would be absolutely wonderful!
- Number one (and two through nine): Sunday use. Number ten: Improved connections, which is already being considered
- Use on Sunday
- Remove skateboard park
- Parking
- increased parking in the soccer area.

- we need to get cars off of the grass, whether dropping kids off at the skate park or soccer parents, it makes the park look rag tag. Not a fan of the skate park, especially with Sunday use.
- Access to the lake
- Remove the sailboat sculpture on the north side of Lake Rd. It has no clear sense of the nature of wind in sails.
- enclosed pool for year round use with adjacent REAL gym for all to use, get rid of kiddie college (only for-profit activity in Cahoon Park.
- Shaded alcoves at ends, not interfering with the feeling of expansiveness.
- Open it up on Sundays. The deed requirements actually prohibit family activities on one of the few days that working parents have off.
- Expanded walking paths and trails; traffic avoidance
- Fix the soccer fields....they are an embarrassment...always flooded/wet....closed half the spring because of lack of drainage. Act on the proposal presented to the mayor a couple years ago for another turf field with track and skating rink across from middle school. it would be a great thing, especially giving residents somewhere to congregate during the winter.
- Open it up so there is swimming on Sunday's
- Since the number one activity in the park is the soccer fields, we should make every effort in conjunction with Bay Soccer Club to improve the turf. We have music, walking, not much in biking but that is not critical. We fly kites, drones and play volley ball, baseball, softball, basketball and swim.
- More park land less playing fields
- Landscaping, or more visual variances of some kind
- pool open on Sunday
- Nothing leave it a park. No need to build thing that take away from it being a natural area
- renovate the Community House instead of spending \$ on "connecting" the park. Very few community groups use the House anymore due to its deteriorated condition and lack of handicap accessibility.
- The pool should be open on Sunday's, the outdated rule is silly and going swimming should not be seen as an organized activity in the first place.
- Connect East and West away from loud, busy Lake Road
- Make it more of a park and less of an athletic facility. It should not just be crammed with sports fields.
- Access to Lake, quiet, area
- 24hrs bathrooms that would bring people vacation to bay. The carnival should be Bates Brothers amusements. Up grading Bay days will have all residents of Bay and there families enjoying the park.
- Less activities for children's sports! Adults cannot enjoy the park anymore on weekends. Enough already!
- It's not very functionable. Everything is separated.
- Paved trail along the lake with a rail for the handicapped (similar to Veterans Park in AL at 83 & Lake). Benches along the trail facing the lake.
- It could be open on Sundays It could be better integrated with Huntington Park The east and west sides are only accessible to each other via the road. There are no "trails" in the park

- More benches and a patio-type area with flowers and small bushes and trees
- Repair WPA built walls remove dead vegetation
- Connectivity from sledding hill area to pool.
- Easier access across Lake Rd
- Designated bike lines that connect with the metro parks mixed used paths!!! Extending those would significantly increase access for cyclists to move about the city while freeing up roadways.
- The middle school should be using their own field for gym since that's what we paid for in our taxes and should be respecting the Cahoon estate. The kids have to cross the street to get there to use the land for their classes and sports. What was the point of even having a field on campus and it's not even used for educational purposes??
- Entrance to the parking area
- Larger
- Nothing
- Playspace
- More opportunities for exploring the lesser known areas of the park, paths, small gathering areas, etc.
- Open the area west of Cahoon creek to the public north of Lake Road. Walking path or Bike trails by Cahoon creek itself on the West Bank
- Modernization
- The community building in the west park is in serious need of upkeep/remodeling. I believe there's leaks during rain. There seems to be a lack of community policing at the skate park and the area in general. The skate park has garbage thrown on the ground constantly and there's gallon bottles with yellow fluid, probably urine. There's no restroom facilities near there and there's not enough garbage cans. There's now graffiti all under our gorgeous bridge nearby with actual wooden structures built down by the river. This would be a great opportunity for our Bay PD to start stopping by to just talk informally to the kids there, to build relationships with the kids that use that park. And at the same time, they could check things out to be sure things are safe and that there are no rules being broken. They go by this skate park so many times a day that they could randomly stop and chat on a regular basis. Would LOVE to have that bridge over the little river rebuilt.
- More trees less soccer fields
- Open Sunday. But since that is impossible, more connection between things...it seems very segmented. You have the area where they play soccer which lays unused except during soccer. The pool area is totally separate from the rest of the soccer area.
- Having an active area(East side) and passive area(West side).
- Bring it back to just resident use. Expand the rose garden.
- Could be used for more than soccer nets and parking for soccer
- Pool open on Sunday's!!
- Rustic bridge(s) across Cahoon Creek.
- More benches, seating
- parking, crossing from one side to the other, restrooms, connect from park to pool,
- Flush toilets on the east side of the park, perhaps by parking area and community house. Better walkway to the meadow below Community House and Rose Hill. More picnic tables.

- Shade
- Basketball area is not family friendly at all. Needs to be moved so that the playground and baseball kids aren't around that type of language.
- Maybe it's better to leave it underused. Not creative enough to know how to improve.
- Many more trees
- east/west sides of creek connectivity and restrooms
- it is perfect as is
- Boardwalk to take advantage of the lake.
- Chain link replacement Walking bridge to Huntington Access to Creek and beach Landscaping or treescaping Raise the sailboat sculpture higher or move it to a location where the scale is not so wrong. Connect it to boat launch and other park through walking bridges of some sort. Connect parking lot on south side of Lake Road to the park via new walking or biking trails.
- East-west connection
- Sunday usage. Please challenge Ida Cahoons will. Forever is a long time. Times change. Early 20th century values don't apply today.
- More landscaping possible water fountain
- The best improvement would be to permit Sunday activities to take place. The basis of the restriction is the Cahoon family will, which was written in a very different time. Now, most families have two working parents, and family activities take place on both Saturday and Sunday, yet the park's facilities cannot be used on Sunday. The prohibition in the Cahoon will is presumably based on a religious objection to Sunday activities, and it's difficult to understand in 2016 how this can still be relevant.
- Better soccer fields, bigger skatepark, more disc golf, Sunday use
- It needs a lake front area devoted to restful activities. Reading, lake watching, relaxing.
- it should not be so cut up by Lake road
- Used for things other than soccer! Improve & update Community House. Make a cross walk from parking lot by community house to the fields. Put s bridge over creek to walk or bike from Cahoon park to Dover center park without using Wolf or Lake.
- I think it's perfect.
- Slow or eliminate vehicle traffic
- Better maintained walking trails.
- Sport infringing on the beauty such as the bridge is becoming a political with the \$3,000 plaques.
- Allow Sunday Usage
- Bike/foot trail around entire park Nicer bathrooms- they are creepy Pole out of entrance to parking lot by shed - that's dangerous Better drainage for fields Crosswalks better marked - like the one on Dover center by play in bay
- open on Sundays
- Easier access from east to west crossing creek.
- It would be great to have a splash pad for residents only installed as the pool has a poorly designed sea for babies. A splash pad would be so great! I would be there every day in the summer.
- I like it just the way it is.
- Roadways and parking.

- walking/biking bridge between the east and west sections
- Lighting on the skatepark and expansion.
- Make it not all soccer based park.
- ?
- Connectivity at Cahoon creek
- Drainage
- A way to bridge east to west.
- Mini golf, ice cream, organized activities such as bocci tournaments, age bracketed athletic events, and drawing cards to fill all of empty time and space.
- Close Cahoon between Wolf and Lake and make the entire park green space.
- Restroom at walking trail. Make the skate park bigger and add lights. There is a light on the sledding hill! Certainly could put one at the skate park.
- Level the soccer fields; need better draining, community house need new paint on the south end.
- Larger skatepark
- Sundays Feels like buildings not used as well as they could be
- Nothing
- Stop adding stuff that gets in the way of it being an "historic park"

**Appendix B: Traffic Analysis**

## Appendix B

### Bay Village Technical Assistance Traffic Analysis Summary, Analysis Results, & Traffic Count Data

Based on feedback from Stakeholder Meeting 1, on May 16, 2016, NOACA obtained traffic counts for the following intersections, and assessed the traffic operations impacts of various alternatives that involve lane configuration changes.

- Lake Rd and Porter Creek Rd
- Lake Rd and Cahoon Rd
- Wolf Rd and Cahoon Rd

The traffic analysis was completed using Synchro software (Version 8), and the results are expressed in terms of motor vehicle Level of Service (LOS). LOS is a measure of the average delay experienced by a motor vehicle, in units of seconds. The delay is translated in to a score of A through F, where A is the best LOS, and F is the worst. In the NOACA region, an urban intersection is considered to operate acceptably if the LOS is D or better.

#### Signal & Roundabout Analysis – Lake Rd & Cahoon Rd

Based on concerns from Stakeholder Meeting 1, traffic operation at intersection of Lake Rd & Cahoon Rd was evaluated with regard to determining if a traffic signal is warranted, and if a roundabout would operate acceptably.

The existing condition of a one-way stop-controlled intersection was shown to operate acceptably for motor vehicle traffic. Because the main street (Lake Rd) is free-flowing, and there are no crosswalks to cross Lake Rd, the existing condition does not operate acceptably for pedestrians wishing to cross Lake Rd.

The analysis showed that a traffic signal is not warranted at this location. The traffic volumes of the minor approach are too low, and there is not a substantial crash pattern occurring to warrant a signal based on crashes, and the pedestrian volumes are too low to warrant a signal based on pedestrian volumes.

A single-lane roundabout was shown to be feasible, based on 24-hour traffic volumes and planning-level guidance from FHWA's Roundabouts: An Informational Guide, 2<sup>nd</sup> Edition (2010, Exhibit 3-14). In addition, analyzing the operational performance of a proposed roundabout based on the intersection turning movement counts and Synchro traffic analysis software showed that a single-lane roundabout would operate acceptably, but worse than existing, at this location. Though a roundabout increase motor vehicle delay, it would facilitate traffic calming, provide refuge islands for pedestrians crossing each leg of the intersection, and could be designed to be an aesthetic asset for the community.

Lake Road and Cahoon Rd Intersection – Synchro LOS Results					
Movements		Existing Conditions – Stop Controlled		Alternative - Roundabout	
		Delay(Sec)/LOS		Delay(Sec)/LOS	
		AM	PM	AM	PM
Lake	Eastbound	0.0/A	0.0/A	41.8/E	14.5/B
	Westbound	0.9/A	0.9/A	6.2/A	29.2/D
Cahoon	Northbound	27.3/D	26.1/D	11.1/B	8.8/A
Intersection Delay/LOS		1.3/A	2.3/A	32.6/D	21.9/C
Intersection v/c		0.59	0.37	n/a	n/a

This analysis did not include geometric design of a roundabout, or detailed cost estimating. If this is a desired alternative, further study should be done to determine the desired layout and to gain a better understanding of the construction cost. Moreover, the some of the benefits provided by a roundabout could be achieved using lower-cost solutions, such as installing pedestrian median islands.

### Road Diet Analysis – Lake Rd from Porter Creek Rd to Cahoon Rd

Road diets improve safety and livability along a roadway corridor without degrading motor vehicle traffic to unacceptable levels. Although the number of lanes decreases from four to three, capacity is not lost because the middle lane serves both directions of traffic. A road diet consolidates both left-turn lanes into one shared left-turn lane, creating extra space that can be used for other purposes, such as bike lanes, on-street parking, extended sidewalks, landscaped medians and more.

#### Road Diet: Safety

More than a decade of thorough analysis in the United States has proven that road diets result in a 29% reduction in crashes, improved visibility for left-turning cars and crossing pedestrians, and reduced speeding. Road diet conversions are successful in reducing all crash types as a result of reducing average travel speed, as well as significant reductions in excessive speeding (more than 5 mph over the limit). Speed reduction directly reduces the severity of crashes, especially for bicyclists and pedestrians.

#### Road Diet: Livability

Because traffic is calmer, quieter and less intimidating, road diets improve the livability of neighborhoods and districts. By reducing from four lanes to three and making room for a bike lane,

the roadway becomes more inviting for pedestrians and bicyclists. The bike lane acts as a buffer between motor vehicles and pedestrians while providing a lower-stress dedicated space for bicyclists to ride. In addition, the center-turn lane is an ideal location for implementing pedestrian refuge islands, which allow pedestrians to cross one direction of traffic at a time, and further calm motor vehicle traffic.

#### Road Diet: Traffic

Federal guidance recommends considering road diets as a tool that will consistently improve safety, livability and operations of an existing four-lane street of less than 15,000 vehicles per day. Streets of slightly higher volumes, between 15,000 and 20,000 Average Daily Traffic (ADT), are also recommended for four- to three-lane road diet conversion, though a more detailed traffic operations evaluation and thoughtful design is recommended prior to implementation. Lake Rd has an ADT of 13,040, which is less than FHWA 15,000 rule of thumb threshold.

#### Road Diet: Implementation

To further evaluate the feasibility of a road diet from a motor vehicle traffic operations perspective, a roadway capacity analysis was performed using Synchro traffic analysis software, and the peak-hour intersection turning movement counts, for both the existing four-lane roadway configuration and the proposed three-lane configuration. Overall, the results of the traffic analysis, in concurrence with the Federal Highway Administration (FHWA) traffic-volume-based recommendations, show that traffic on Lake Road will operate at acceptable levels in a three-lane configuration and will do so in such a way that is very similar to the current configuration.

<b>Lake Road and Cahoon Rd Intersection – Road Diet</b>					
<b>Movements</b>		<b>Existing Conditions</b>		<b>Alternative I – Road Diet</b>	
		<b>Delay(Sec)/LOS</b>		<b>Delay(Sec)/LOS</b>	
		<b>AM</b>	<b>PM</b>	<b>AM</b>	<b>PM</b>
<b>Lake</b>	<b>Eastbound</b>	0.0/A	0.0/A	0.0/A	0.0/A
	<b>Westbound</b>	0.9/A	0.9/A	0.7/A	0.6/A
<b>Cahoon</b>	<b>Northbound</b>	27.3/D	26.1/D	29.1/D	64.5/F
<b>Intersection Delay/LOS</b>		<b>1.3/A</b>	<b>2.3/A</b>	<b>1.3/A</b>	<b>4.8/A</b>
<b>Intersection v/c</b>		0.59	0.37	0.62	0.72

Lake Road and Porter Creek Drive Intersection – Road Diet					
Movements		Existing Conditions		Alternative I – Road Diet	
		Delay(Sec)/LOS		Delay(Sec)/LOS	
		AM	PM	AM	PM
Lake	Eastbound	15.7/B	12.0/B	39.2/D	15.9/B
	Westbound	7.5/A	23.7/C	11.8/B	21.9/C
Porter	Northbound	23.3/C	22.2/C	25.5/C	22.2/C
Creek	Southbound	21.8/C	29.6/C	24.0/C	28.9/C
Intersection Delay/LOS		14.2/B	19.6/B	32.5/C	20.1/C
Intersection v/c		0.56	0.82	0.96	0.80

#### Westbound Right-turn Lane Removal Analysis –Wolf Rd & Cahoon Rd

As an additional method to reduce pedestrian crossing distances at the intersection of Wolf Road and Cahoon Road, a Synchro traffic analysis was completed to assess the impact of removing the westbound right-turn lane. The delay and LOS shown in parentheses indicate how the signal operates if the pedestrian phase is not activated. Removing the westbound right-turn lane is shown to have minimal impact on motor vehicle delay.

Cahoon Rd and Wolf Rd Intersection - Westbound right-turn lane removal					
Movements		Existing Conditions		Alternative I	
		Delay(Sec)/LOS		Delay(Sec)/LOS	
		AM	PM	AM	PM
Wolf	Eastbound	37.4/D (30.7/C)	53.0/D (41.8/D)	49.1/D (28.2/C)	48.4/D (32.3/C)
	Westbound	29.1/C (24.7/C)	41.0/D (32.5/C)	38.2/D (26.2/C)	48.0/D (33.0/C)
Cahoon	Northbound	55.1/E (46.7/D)	82.9/F (67.9/E)	33.6/C (23.6/C)	80.0/E (82.4/F)
	Southbound	62.7/E (56.7/E)	55.4/E (50.2/D)	47.9/D (36.4/D)	53.2/D (53.8/D)
Intersection Delay/LOS		40.6/D (34.5/C)	54.2/D (44.0/D)	42.8/D (27.7/C)	54.9/D (44.6/D)
Intersection v/c		0.71 (0.62)	0.85 (0.78)	0.73 (0.46)	0.85 (0.91)

**Intersection**

Int Delay, s/veh 1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	915	59	21	278	22	30
Conflicting Peds, #/hr	0	20	20	0	20	20
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	995	64	23	302	24	33

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1015
Stage 1	-	-	1015
Stage 2	-	-	197
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.43
Critical Hdwy Stg 2	-	-	5.83
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	683
Stage 1	-	-	349
Stage 2	-	-	817
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	672
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	343
Stage 2	-	-	770

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	23.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	173	272	-	-	672	-
HCM Lane V/C Ratio	0.138	0.12	-	-	0.034	-
HCM Control Delay (s)	29.1	20	-	-	10.5	0.2
HCM Lane LOS	D	C	-	-	B	A
HCM 95th %tile Q(veh)	0.5	0.4	-	-	0.1	-

Lanes, Volumes, Timings  
8: Cahoon Rd & Wolf Rd

7/13/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	276	17	40	211	12	18	24	93	27	51	16
Satd. Flow (prot)	1770	1843	0	1770	1863	1583	0	1601	0	1770	1769	0
Flt Permitted	0.615			0.447				0.940		0.466		
Satd. Flow (perm)	1128	1843	0	822	1863	1507	0	1507	0	839	1769	0
Satd. Flow (RTOR)		2				123		58			8	
Lane Group Flow (vph)	17	318	0	43	229	13	0	147	0	29	72	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2				6
Permitted Phases	4			8		8	2			6		6
Total Split (s)	22.7	65.7		22.7	65.7	65.7	43.9	43.9		43.9	43.9	
Total Lost Time (s)	3.7	5.7		3.7	5.7	5.7		6.9		6.9	6.9	
Act Effect Green (s)	62.4	54.8		65.2	60.1	60.1		14.7		14.7	14.7	
Actuated g/C Ratio	0.53	0.47		0.55	0.51	0.51		0.12		0.12	0.12	
v/c Ratio	0.03	0.37		0.08	0.24	0.02		0.62		0.28	0.32	
Control Delay	22.4	31.1		21.7	26.6	0.0		46.7		63.5	53.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	22.4	31.1		21.7	26.6	0.0		46.7		63.5	53.9	
LOS	C	C		C	C	A		D		E	D	
Approach Delay		30.7			24.7			46.7			56.7	
Approach LOS		C			C			D			E	

Intersection Summary

Cycle Length: 174.3

Actuated Cycle Length: 117.7

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 34.5

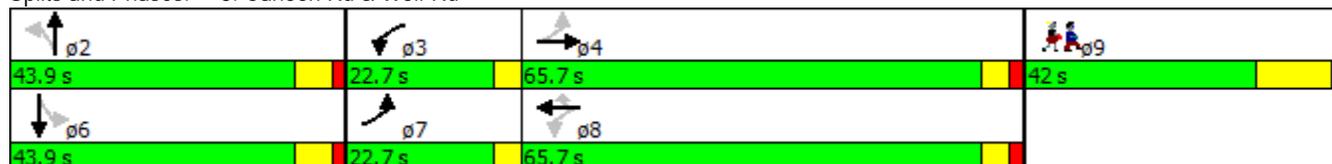
Intersection LOS: C

Intersection Capacity Utilization 70.6%

ICU Level of Service C

Analysis Period (min) 15

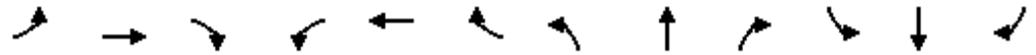
Splits and Phases: 8: Cahoon Rd & Wolf Rd



Lane Group	ø9
Lane Configurations	
Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Total Split (s)	42.0
Total Lost Time (s)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings  
11: Porter Creek & Lake Rd

7/13/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Volume (vph)	5	940	41	87	202	8	21	4	20	3	3	7
Satd. Flow (prot)	1770	3511	0	1770	1848	0	1770	1559	0	0	1621	0
Flt Permitted	0.616			0.180			0.748				0.963	
Satd. Flow (perm)	1128	3511	0	334	1848	0	1308	1559	0	0	1567	0
Satd. Flow (RTOR)		5			2			22			8	
Lane Group Flow (vph)	5	1067	0	95	229	0	23	26	0	0	14	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	3	8		7	4			2				6
Permitted Phases	8			4			2			6		
Total Split (s)	25.6	55.6		25.6	55.6		37.6	37.6		37.6	37.6	
Total Lost Time (s)	5.6	5.6		5.6	5.6		5.6	5.6				5.6
Act Effect Green (s)	55.3	50.2		61.2	59.3		19.1	19.1				19.1
Actuated g/C Ratio	0.60	0.55		0.67	0.64		0.21	0.21				0.21
v/c Ratio	0.01	0.56		0.27	0.19		0.08	0.08				0.04
Control Delay	5.2	15.7		7.0	7.7		32.2	15.3				21.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	5.2	15.7		7.0	7.7		32.2	15.3				21.8
LOS	A	B		A	A		C	B				C
Approach Delay		15.7			7.5			23.3				21.8
Approach LOS		B			A			C				C

Intersection Summary

Cycle Length: 118.8

Actuated Cycle Length: 92

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 14.2

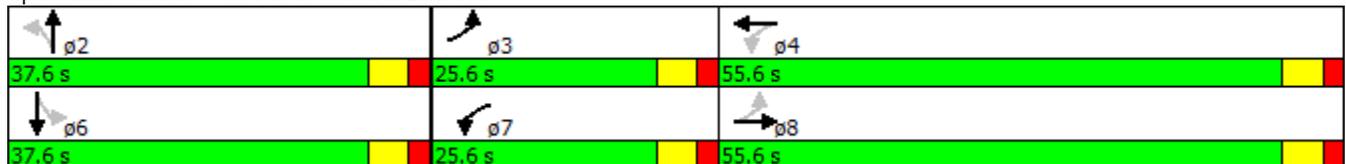
Intersection LOS: B

Intersection Capacity Utilization 75.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 11: Porter Creek & Lake Rd



**Intersection**

Int Delay, s/veh 2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	576	93	55	818	47	68
Conflicting Peds, #/hr	0	20	20	0	20	20
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	626	101	60	889	51	74

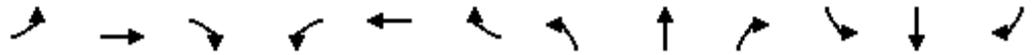
Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	646
Stage 1	-	-	646
Stage 2	-	-	564
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	5.43
Critical Hdwy Stg 2	-	-	5.83
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	939
Stage 1	-	-	521
Stage 2	-	-	534
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	923
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	512
Stage 2	-	-	458

Approach	EB	WB	NB
HCM Control Delay, s	0	1	24.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	159	443	-	-	923	-
HCM Lane V/C Ratio	0.321	0.167	-	-	0.065	-
HCM Control Delay (s)	38	14.7	-	-	9.2	0.5
HCM Lane LOS	E	B	-	-	A	A
HCM 95th %tile Q(veh)	1.3	0.6	-	-	0.2	-

Lanes, Volumes, Timings  
8: Cahoon Rd & Wolf Rd

7/13/2017

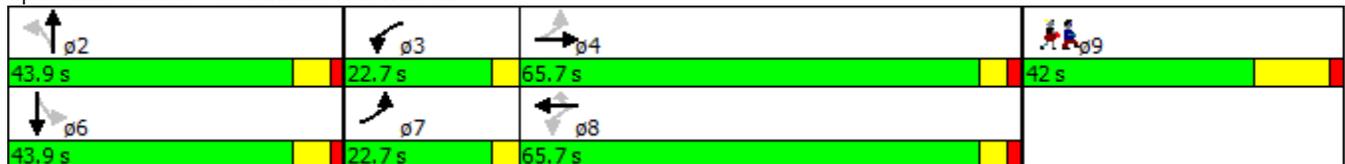


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	300	28	103	344	64	39	94	113	38	61	34
Satd. Flow (prot)	1770	1831	0	1770	1863	1583	0	1680	0	1770	1720	0
Flt Permitted	0.432			0.364				0.927		0.367		
Satd. Flow (perm)	796	1831	0	670	1863	1507	0	1560	0	667	1720	0
Satd. Flow (RTOR)		3				123		22			15	
Lane Group Flow (vph)	50	356	0	112	374	70	0	267	0	41	103	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2				6
Permitted Phases	4			8		8	2			6		6
Total Split (s)	22.7	65.7		22.7	65.7	65.7	43.9	43.9		43.9	43.9	
Total Lost Time (s)	3.7	5.7		3.7	5.7	5.7		6.9		6.9	6.9	
Act Effect Green (s)	65.1	54.1		71.9	60.5	60.5		28.7		28.7	28.7	
Actuated g/C Ratio	0.47	0.39		0.52	0.44	0.44		0.21		0.21	0.21	
v/c Ratio	0.11	0.50		0.25	0.46	0.10		0.78		0.30	0.28	
Control Delay	27.8	43.7		27.5	40.0	0.3		67.9		60.3	46.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	27.8	43.7		27.5	40.0	0.3		67.9		60.3	46.2	
LOS	C	D		C	D	A		E		E	D	
Approach Delay		41.8			32.5			67.9			50.2	
Approach LOS		D			C			E			D	

Intersection Summary

Cycle Length: 174.3  
 Actuated Cycle Length: 138.1  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 44.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 82.9%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 8: Cahoon Rd & Wolf Rd

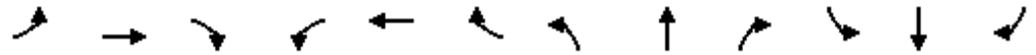


Lane Group	ø9
Lane Configurations	
Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Total Split (s)	42.0
Total Lost Time (s)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

11:

7/13/2017

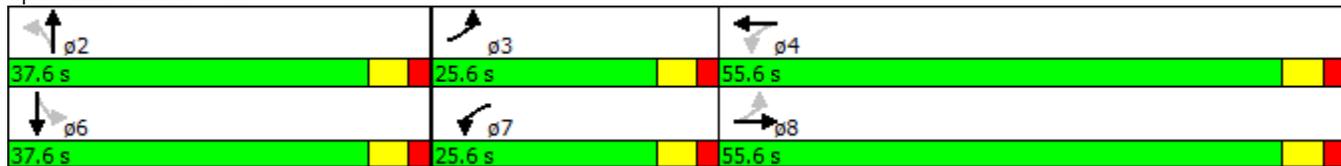


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Volume (vph)	29	559	23	58	767	47	30	9	32	51	16	33
Satd. Flow (prot)	1770	3512	0	1770	1841	0	1770	1582	0	0	1687	0
Flt Permitted	0.130			0.366			0.703				0.825	
Satd. Flow (perm)	242	3512	0	676	1841	0	1246	1582	0	0	1402	0
Satd. Flow (RTOR)		4			3			35			21	
Lane Group Flow (vph)	32	633	0	63	885	0	33	45	0	0	108	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	3	8		7	4			2				6
Permitted Phases	8			4			2			6		
Total Split (s)	25.6	55.6		25.6	55.6		37.6	37.6		37.6	37.6	
Total Lost Time (s)	5.6	5.6		5.6	5.6		5.6	5.6				5.6
Act Effect Green (s)	55.8	50.2		57.9	53.2		19.1	19.1				19.1
Actuated g/C Ratio	0.61	0.55		0.64	0.58		0.21	0.21				0.21
v/c Ratio	0.12	0.33		0.12	0.82		0.13	0.13				0.35
Control Delay	6.2	12.3		5.7	24.9		32.3	14.7				29.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	6.2	12.3		5.7	24.9		32.3	14.7				29.6
LOS	A	B		A	C		C	B				C
Approach Delay		12.0			23.7			22.2				29.6
Approach LOS		B			C			C				C

Intersection Summary

Cycle Length: 118.8  
 Actuated Cycle Length: 91  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 19.6  
 Intersection Capacity Utilization 73.4%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service D

Splits and Phases: 11:



**Intersection**

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	915	59	21	278	0	22	0	30	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	0	-	-	0	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	995	64	23	302	0	24	0	33	0	0	0

**Major/Minor**

	Major1		Major2		Minor1				
Conflicting Flow All	302	0	0	1059	0	0	1375	1375	1027
Stage 1	-	-	-	-	-	-	1027	1027	-
Stage 2	-	-	-	-	-	-	348	348	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1259	-	-	658	-	-	160	145	285
Stage 1	-	-	-	-	-	-	345	312	-
Stage 2	-	-	-	-	-	-	715	634	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1259	-	-	658	-	-	154	0	285
Mov Cap-2 Maneuver	-	-	-	-	-	-	154	0	-
Stage 1	-	-	-	-	-	-	345	0	-
Stage 2	-	-	-	-	-	-	690	0	-

**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0.7	24.9
HCM LOS			C

**Minor Lane/Major Mvmt**

	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	154	285	1259	-	-	658	-	-
HCM Lane V/C Ratio	0.155	0.114	-	-	-	0.035	-	-
HCM Control Delay (s)	32.6	19.3	0	-	-	10.7	-	-
HCM Lane LOS	D	C	A	-	-	B	-	-
HCM 95th %tile Q(veh)	0.5	0.4	0	-	-	0.1	-	-

Lanes, Volumes, Timings  
8: Cahoon Rd & Wolf Rd

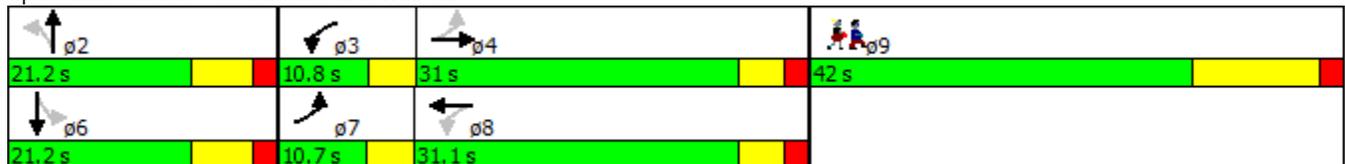
7/13/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	276	17	40	211	12	18	24	93	27	51	16
Satd. Flow (prot)	1770	1841	0	1770	1842	0	0	1572	0	1770	1759	0
Flt Permitted	0.476			0.281				0.938		0.471		
Satd. Flow (perm)	868	1841	0	514	1842	0	0	1471	0	836	1759	0
Satd. Flow (RTOR)		3			3			87			12	
Lane Group Flow (vph)	17	318	0	43	242	0	0	147	0	29	72	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6	6	
Total Split (s)	10.7	31.0		10.8	31.1		21.2	21.2		21.2	21.2	
Total Lost Time (s)	3.7	5.7		3.7	5.7			6.9		6.9	6.9	
Act Effct Green (s)	31.2	25.2		32.0	27.4			11.5		11.5	11.5	
Actuated g/C Ratio	0.29	0.23		0.30	0.25			0.11		0.11	0.11	
v/c Ratio	0.05	0.73		0.18	0.51			0.63		0.33	0.36	
Control Delay	26.2	50.4		28.0	40.0			33.6		56.7	44.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	26.2	50.4		28.0	40.0			33.6		56.7	44.4	
LOS	C	D		C	D			C		E	D	
Approach Delay		49.1			38.2			33.6			47.9	
Approach LOS		D			D			C			D	

Intersection Summary

Cycle Length: 105  
 Actuated Cycle Length: 107.7  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 42.8  
 Intersection LOS: D  
 Intersection Capacity Utilization 56.5%  
 ICU Level of Service B  
 Analysis Period (min) 15

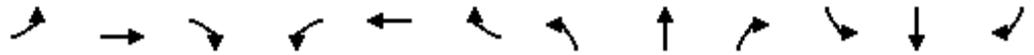
Splits and Phases: 8: Cahoon Rd & Wolf Rd



Lane Group	ø9
Lane Configurations	
Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Total Split (s)	42.0
Total Lost Time (s)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings  
11: Porter Creek/ & Lake

7/13/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Volume (vph)	5	940	41	87	202	8	21	4	20	3	3	7
Satd. Flow (prot)	1770	1848	0	1770	1849	0	1770	1526	0	0	1630	0
Flt Permitted	0.616			0.060			0.748				0.962	
Satd. Flow (perm)	1130	1848	0	112	1849	0	1320	1526	0	0	1568	0
Satd. Flow (RTOR)		4			3			22			8	
Lane Group Flow (vph)	5	1067	0	95	229	0	23	26	0	0	14	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	3	8		7	4			2				6
Permitted Phases	8			4			2			6		
Total Split (s)	11.6	65.2		11.8	65.4		25.0	25.0		25.0	25.0	
Total Lost Time (s)	5.6	5.6		5.6	5.6		5.6	5.6				5.6
Act Effect Green (s)	64.5	59.8		68.0	66.8		19.0	19.0				19.0
Actuated g/C Ratio	0.65	0.60		0.68	0.67		0.19	0.19				0.19
v/c Ratio	0.01	0.96		0.53	0.18		0.09	0.08				0.05
Control Delay	4.6	39.4		23.2	7.0		35.4	16.6				24.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	4.6	39.4		23.2	7.0		35.4	16.6				24.0
LOS	A	D		C	A		D	B				C
Approach Delay		39.2			11.8			25.5				24.0
Approach LOS		D			B			C				C

Intersection Summary

Cycle Length: 102  
 Actuated Cycle Length: 99.3  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 32.5  
 Intersection Capacity Utilization 86.9%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service E

Splits and Phases: 11: Porter Creek/ & Lake



**Intersection**

Int Delay, s/veh 3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	576	93	55	818	0	47	0	68	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	0	-	-	0	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	626	101	60	889	0	51	0	74	0	0	0

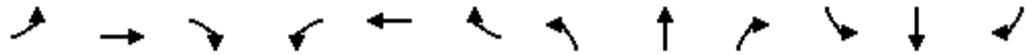
Major/Minor	Major1	Major2	Minor1						
Conflicting Flow All	889	0	0	727	0	0	1686	1686	677
Stage 1	-	-	-	-	-	-	677	677	-
Stage 2	-	-	-	-	-	-	1009	1009	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	762	-	-	876	-	-	103	94	453
Stage 1	-	-	-	-	-	-	505	452	-
Stage 2	-	-	-	-	-	-	352	318	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	762	-	-	876	-	-	96	0	453
Mov Cap-2 Maneuver	-	-	-	-	-	-	96	0	-
Stage 1	-	-	-	-	-	-	505	0	-
Stage 2	-	-	-	-	-	-	328	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	40.8
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	96	453	762	-	-	876	-	-
HCM Lane V/C Ratio	0.532	0.163	-	-	-	0.068	-	-
HCM Control Delay (s)	78.9	14.5	0	-	-	9.4	-	-
HCM Lane LOS	F	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	2.4	0.6	0	-	-	0.2	-	-

Lanes, Volumes, Timings  
8: Cahoon Rd & Wolf Rd

7/13/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕		↖	↗	
Volume (vph)	46	300	28	103	344	64	39	94	113	38	61	34
Satd. Flow (prot)	1770	1831	0	1770	1805	0	0	1667	0	1770	1709	0
Flt Permitted	0.345			0.398				0.927		0.286		
Satd. Flow (perm)	636	1831	0	732	1805	0	0	1544	0	519	1709	0
Satd. Flow (RTOR)		4			8			27			18	
Lane Group Flow (vph)	50	356	0	112	444	0	0	267	0	41	103	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6	6	
Total Split (s)	10.7	55.7		10.8	55.8		26.5	26.5		26.5	26.5	
Total Lost Time (s)	3.7	5.7		3.7	5.7			5.7		5.7	5.7	
Act Effect Green (s)	61.9	52.4		63.0	55.3			21.8		21.8	21.8	
Actuated g/C Ratio	0.50	0.42		0.51	0.45			0.18		0.18	0.18	
v/c Ratio	0.13	0.46		0.26	0.55			0.91		0.45	0.33	
Control Delay	22.9	33.6		23.3	35.4			82.4		72.5	46.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	22.9	33.6		23.3	35.4			82.4		72.5	46.4	
LOS	C	C		C	D			F		E	D	
Approach Delay		32.3			33.0			82.4			53.8	
Approach LOS		C			C			F			D	

Intersection Summary

Cycle Length: 135  
 Actuated Cycle Length: 124.2  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 44.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 81.9%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 8: Cahoon Rd & Wolf Rd



Lanes, Volumes, Timings  
8: Cahoon Rd & Wolf Rd

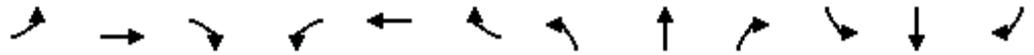
7/13/2017

Lane Group	ø9
Lane Configurations	
Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Total Split (s)	42.0
Total Lost Time (s)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

11:

7/13/2017

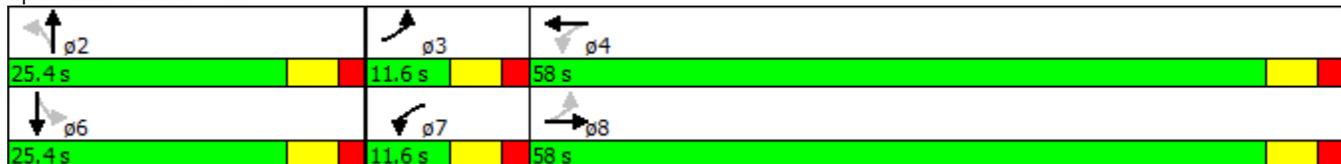


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗			↕	
Volume (vph)	29	559	23	58	767	47	30	9	32	51	16	33
Satd. Flow (prot)	1770	1849	0	1770	1842	0	1770	1557	0	0	1695	0
Flt Permitted	0.140			0.288			0.702				0.824	
Satd. Flow (perm)	260	1849	0	533	1842	0	1256	1557	0	0	1398	0
Satd. Flow (RTOR)		3			5			35			24	
Lane Group Flow (vph)	32	633	0	63	885	0	33	45	0	0	108	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	3	8		7	4			2				6
Permitted Phases	8			4			2			6		
Total Split (s)	11.6	58.0		11.6	58.0		25.4	25.4		25.4	25.4	
Total Lost Time (s)	5.6	5.6		5.6	5.6		5.6	5.6				5.6
Act Effect Green (s)	57.2	52.6		58.3	54.8		19.1	19.1				19.1
Actuated g/C Ratio	0.62	0.57		0.63	0.60		0.21	0.21				0.21
v/c Ratio	0.12	0.60		0.15	0.80		0.13	0.13				0.35
Control Delay	6.2	16.4		6.1	23.0		32.5	14.7				28.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0				0.0
Total Delay	6.2	16.4		6.1	23.0		32.5	14.7				28.9
LOS	A	B		A	C		C	B				C
Approach Delay		15.9			21.9			22.2				28.9
Approach LOS		B			C			C				C

Intersection Summary

Cycle Length: 95  
 Actuated Cycle Length: 91.9  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 20.1  
 Intersection Capacity Utilization 73.4%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service D

Splits and Phases: 11:



HCM 2010 Roundabout  
2: Cahoon Rd. & Lake Rd.

7/13/2017

Intersection			
Intersection Delay, s/veh	32.6		
Intersection LOS	D		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	1059	325	57
Demand Flow Rate, veh/h	1080	331	58
Vehicles Circulating, veh/h	23	24	1015
Vehicles Exiting, veh/h	332	1049	88
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	41.8	6.2	11.1
Approach LOS	E	A	B
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	1080	331	58
Cap Entry Lane, veh/h	1104	1103	409
Entry HV Adj Factor	0.981	0.982	0.983
Flow Entry, veh/h	1059	325	57
Cap Entry, veh/h	1083	1083	402
V/C Ratio	0.978	0.300	0.142
Control Delay, s/veh	41.8	6.2	11.1
LOS	E	A	B
95th %tile Queue, veh	18	1	0

Intersection			
Intersection Delay, s/veh	21.9		
Intersection LOS	C		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	727	949	125
Demand Flow Rate, veh/h	742	968	127
Vehicles Circulating, veh/h	61	52	639
Vehicles Exiting, veh/h	959	714	164
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	14.5	29.2	8.8
Approach LOS	B	D	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	742	968	127
Cap Entry Lane, veh/h	1063	1073	596
Entry HV Adj Factor	0.980	0.981	0.984
Flow Entry, veh/h	727	949	125
Cap Entry, veh/h	1042	1052	587
V/C Ratio	0.698	0.902	0.213
Control Delay, s/veh	14.5	29.2	8.8
LOS	B	D	A
95th %tile Queue, veh	6	14	1

Intersection: Lake Road and Cahoon Road  
 Location : Bay Village  
 Number of Lanes per approach: N= 2 E= 2 W= 2  
 Does 70% warrant apply?  
 Major Street speed limit: 35

Analysis By : NOACA  
 Traffic count date : 5/25/2016



		Hourly volumes			WARRANT #1								WARRANT	
					Condition A				Condition B				#2	#3
Condition	No. of Lanes	Major St. 2-way	Minor St. 1-way	Minor St. 1-way	100%		80%		100%		80%		FOUR HOUR	PEAK HOUR
					Major	Minor	Major	Minor	Major	Minor	Major	Minor		
Normal	1				500	150	400	120	750	75	600	60		
	2+				600	200	480	160	900	100	720	80		
70%*	1				350	105	280	84	525	53	420	42		
	2+				420	140	336	112	630	70	504	56		
MID to 1 AM														
1 AM to 2 AM														
2 AM to 3 AM														
3 AM to 4 AM														
4 AM to 5 AM														
5 AM to 6 AM														
6 AM to 7 AM														
7 AM to 8 AM		1273	52		*		*		*		*			
8 AM to 9 AM		919	53		*		*		*		*			
9 AM to 10 AM														
10 AM to 11 AM														
11 AM to 12 Noon														
12 Noon to 1 PM		874	84		*		*		*		*	*		
1 PM to 2 PM		903	70		*		*		*		*	*		
2:30 PM to 3:30 PM		1040	83		*		*		*		*	*		
3:30 PM to 4:30 PM		1299	91		*		*		*		*	*		
4:30 PM to 5:30 PM		1488	116		*		*		*	*	*	*	*	
5:30 PM to 6:30 PM		1464	112		*		*		*	*	*	*	*	
6 PM to 7 PM														
7 PM to 8 PM														
8 PM to 9 PM														
9 PM to 10 PM														
10 PM to 11 PM														
11 PM to MID														
Hours Met					0	0	2	6	1	0				
WARRANT SATISFIED					No	No	No	No	No	No				

\* Condition is determined by environment: Use 70% values if the speed limit exceeds 40 mph on the major road or if the location is in a build up area of an isolated community with a population of less than 10,000.

**WARRANT #1 (Combination)**  
 Conditions A & B are each met at the 80% level:..... **No**

**WARRANT #4 (Pedestrian Volume)**  
 Hours with 100 or more pedestrians:.....  
 Hours with 190 or more pedestrians:.....  
 Pedestrian crossing time (t):.....  
 Number of gaps greater than (t) during period:.....  
 Warrant Satisfied?..... **NA**

**WARRANT #5 (School Crossing)**  
 On approved school route?.....  
 Gap analysis made during period from.....  
 Pedestrian crossing time (t):.....  
 Number of gaps greater than (t) during period:.....  
 Number of vehicles during analysis period:.....  
 Approximate vehicular speed:.....  
 Number of children crossing during period:.....  
 Warrant Satisfied?..... **NA**

**WARRANT #6 (COORDINATED SIGNAL SYSTEM)**  
 Distance to nearest signal in each direction on major street:..... **1980**  
 Time space diagram (attached) shows that this location can be implemented into a system:.....  
 Warrant Satisfied?..... **No**

**WARRANT #7 (CRASH EXPERIENCE)**  
 Adequate trial of less restrictive measures:.....  
 Number of crashes per year which could be prevented :.....  
 80% of warrant #1 or #2 satisfied:.....  
 Will signalization disrupt progressive movement?.....  
 Warrant Satisfied?..... **NO**

**WARRANT #8 (ROADWAY NETWORK)**  
 Both streets are considered major routes:.....  
 At least 1000 V.P.H. during weekday peak hour:.....  
 5-Year projection meets Warrant 1, 2, or 3:.....  
 At least 1000 V.P.H. for any 5 hours on a Saturday or Sunday:.....  
 Meets Characteristic requirements?.....  
 Warrant Satisfied?..... **NA**

**Warrant # 9 ( Intersection Near a Grade Crossing)**  
 Warrant Satisfied?..... **NA**



LOCATION: Lake Road and Cahoon Road Intersection

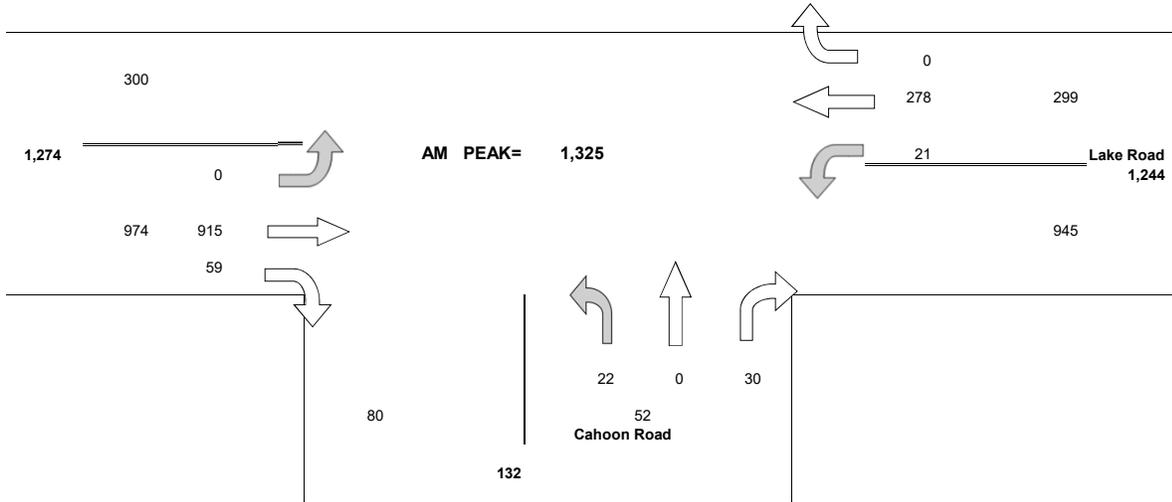
CITY: Bay Village

DATE: Wednesday, May 25, 2016

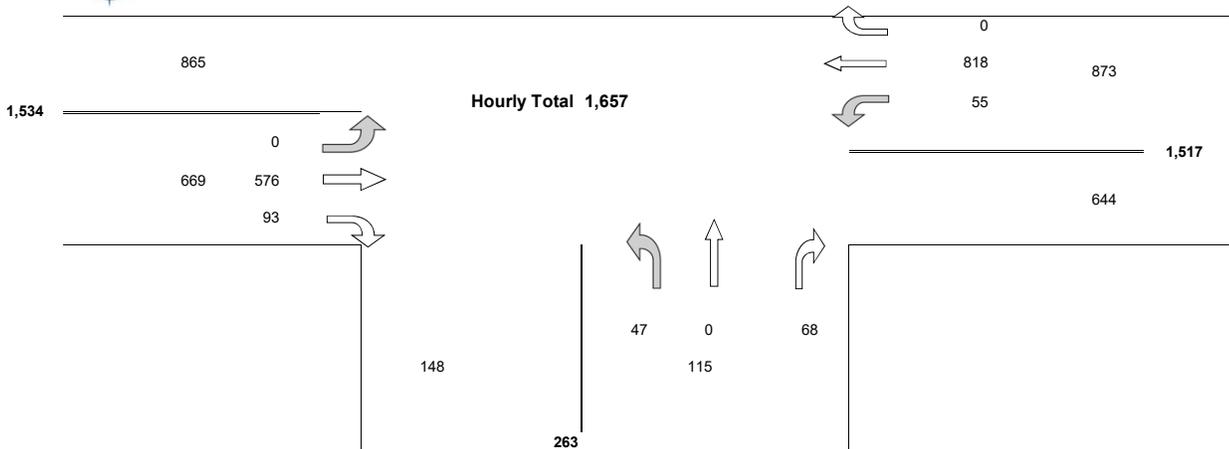
SEASONAL ADJUSTMENT FACTOR: ###

AM PEAK HOUR TRAFFIC  
7:00-8:00

COUNTED BY :  
# OF HOURS COUNTED : 8.0  
ADT ADJUSTMENT FACTOR :



PM PEAK  
5:15-6:15



**LOCATION** Lake Road and Porter Creek Road Intersection

**CITY** Bay Village

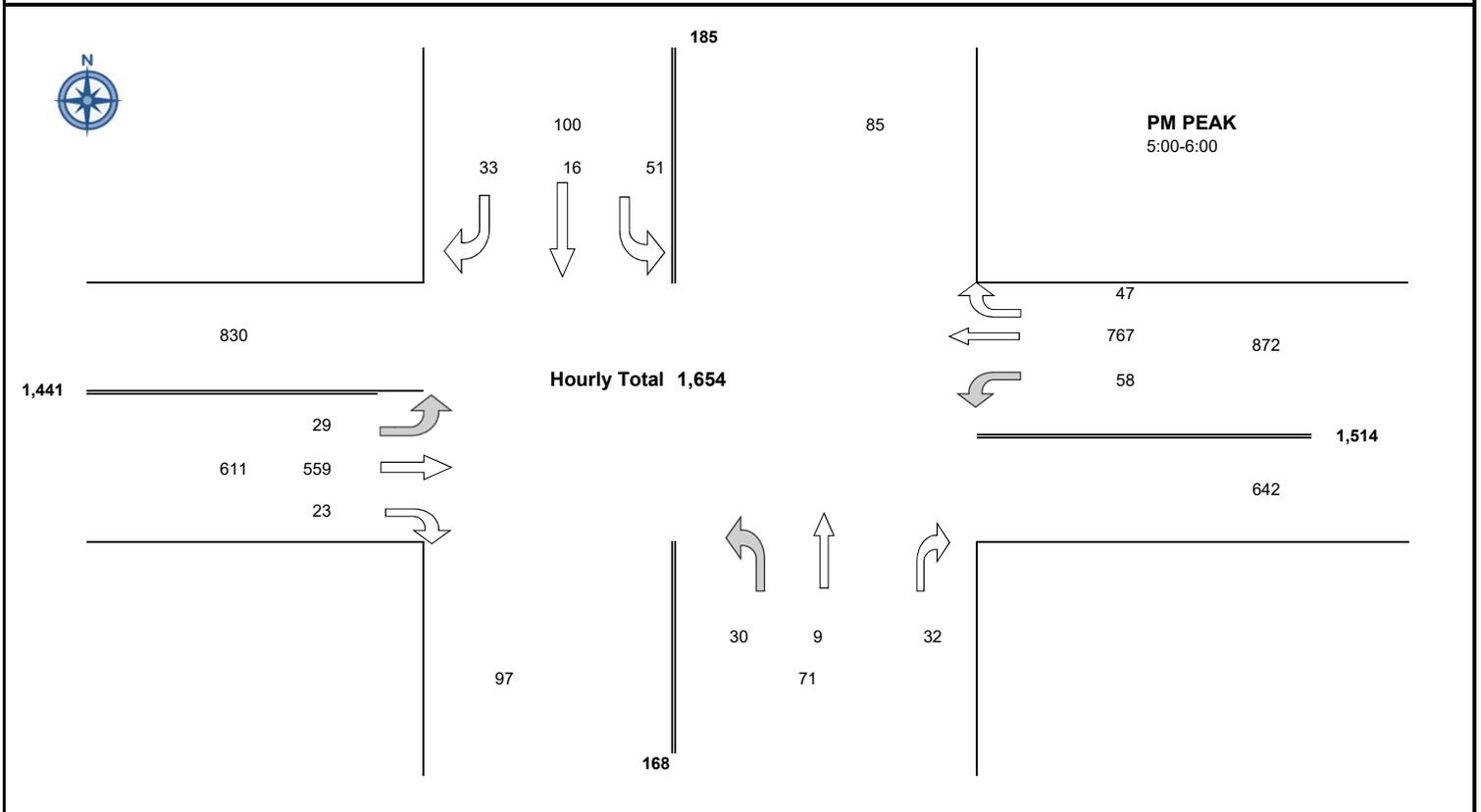
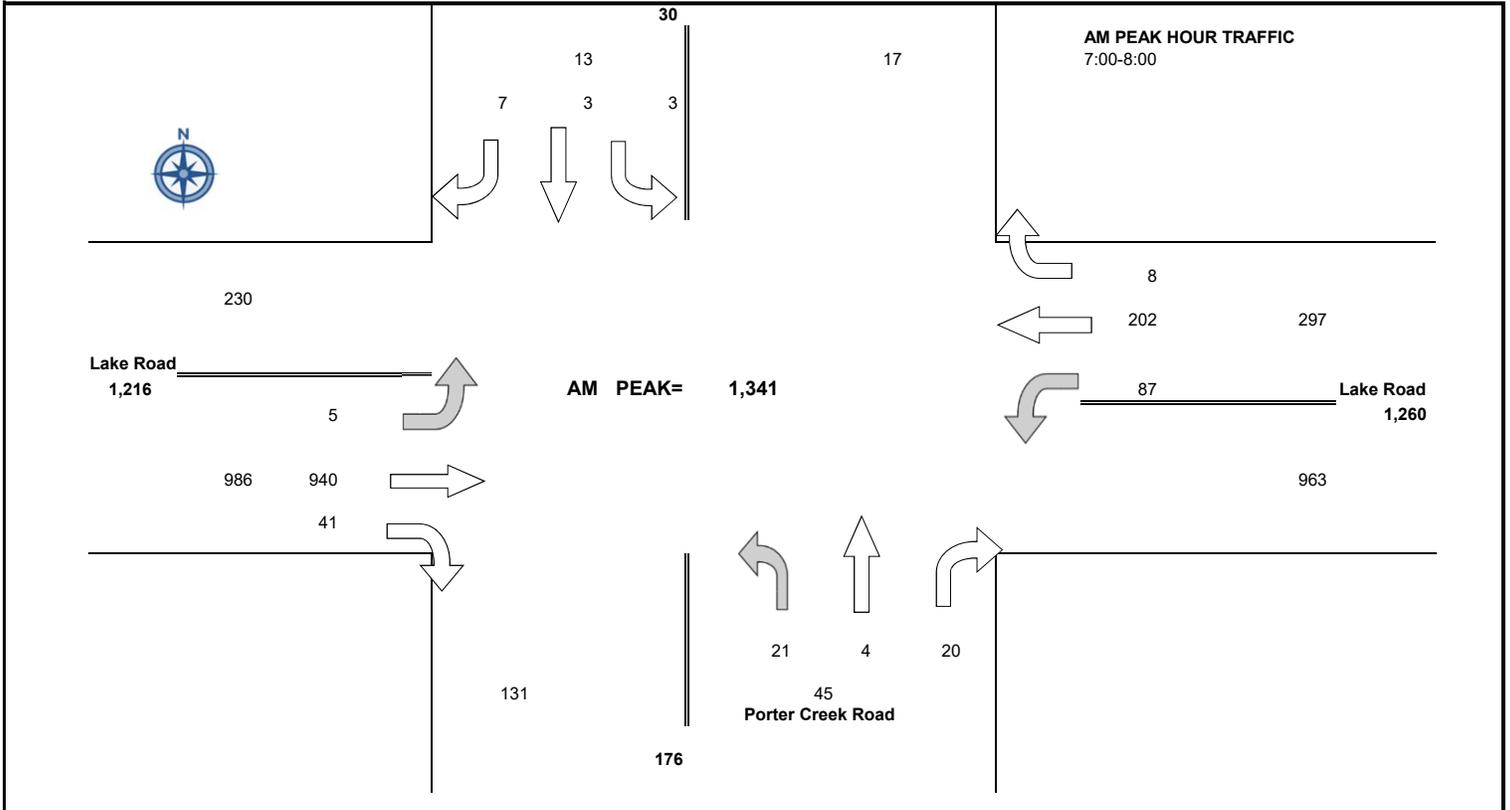
**DATE** Wednesday, May 25, 2016

**COUNTED BY**

**# OF HOURS COUNTED** 4.0

**ADT ADJUSTMENT FACTOR** 4.274 4.274

**SEASONAL** 1.00



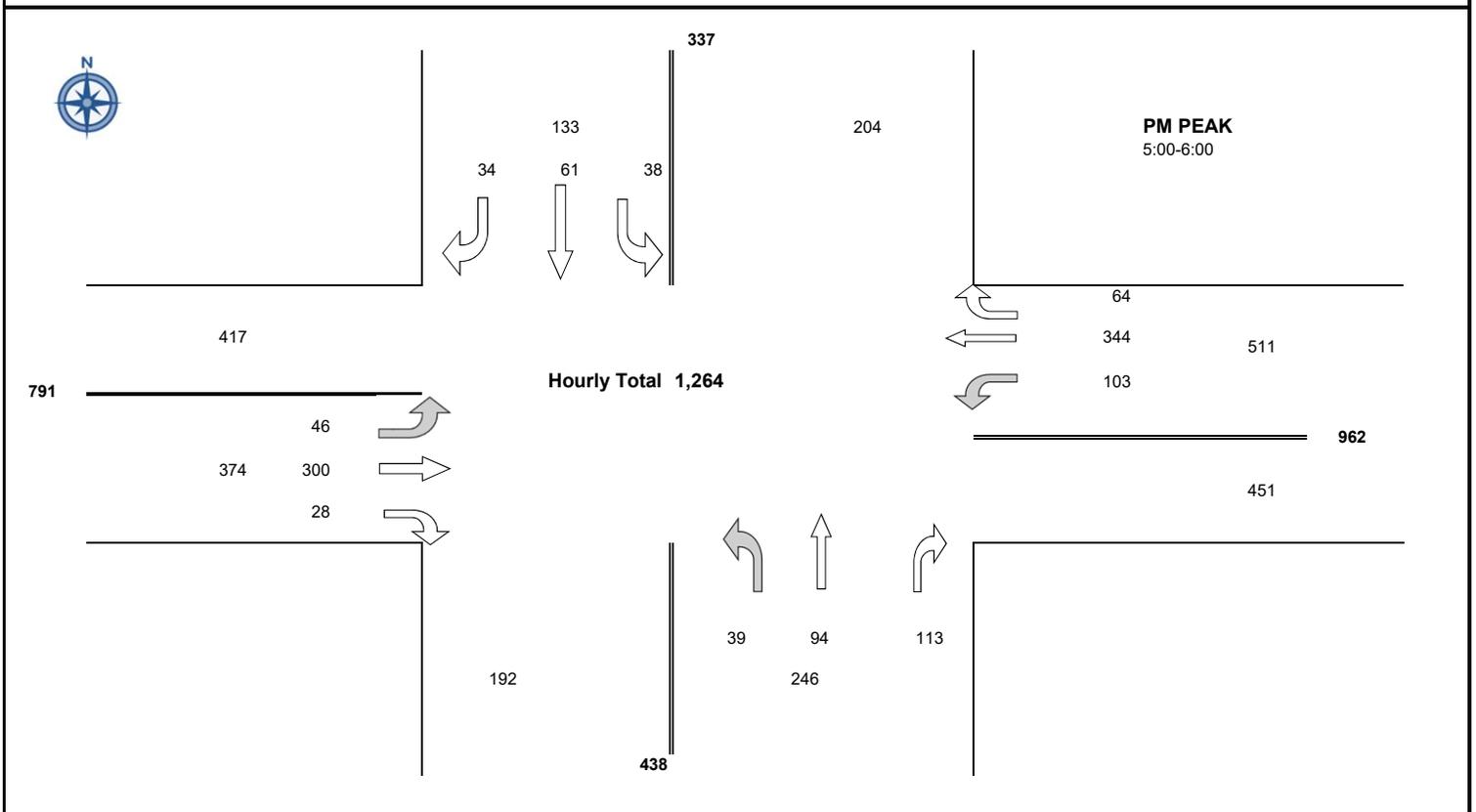
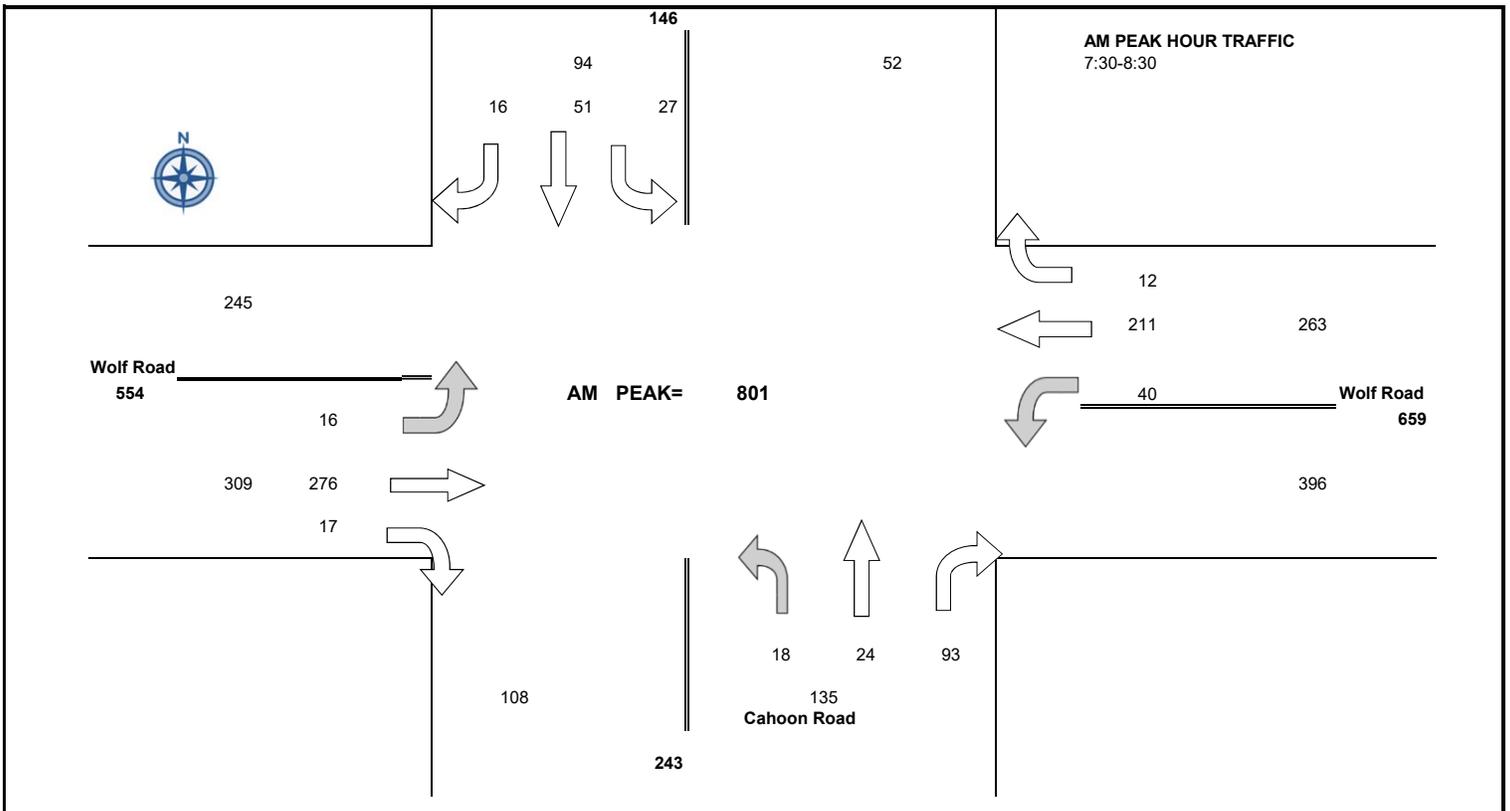
LOCATION **Wolf Road and Cahoon Road Intersection**

CITY **Bay Village**

DATE **Wednesday, May 25, 2016**

COUNTED BY :  
# OF HOURS COUNTED : **4.0**  
ADT ADJUSTMENT FACTOR :

SEASONAL ADJUSTMENT FACTOR: **1.000**



**Appendix C: Conceptual Cost Estimate Details**

Conceptual Cost Estimate

Melissa Thompson  
Andrew Stalkhe  
9/29/2017

Recommendation	Item	Quantity	Unit	Unit Cost		Item Cost		Total Recommendation Cost	Note
				2017	2022 (projected)	2017	2022 (projected)		
<b>Lake Road</b>									
Road Diet/w bike lanes	Paint Removal & Restriping	0.7	mile	\$94,838	\$100,528	\$66,387	\$70,370	\$70,370	Porter Creek Dr. to Cahoon Creek access drive
New Pedestrian Crossing, with median refuge island, and RRFB (at Cahoon Rd)	Pedestrian refuge island	1	each	\$11,088	\$11,753	\$11,088	\$11,753	\$36,001	\$740 per ramp + \$37/sq. ft. for truncated dome/detectable warning (2 sq. ft. for each ramp)
	Ladder Crosswalk Striping	2	each	\$3,070	\$3,254	\$6,140	\$6,508		
	Curb ramp	2	each	\$863	\$915	\$1,726	\$1,829		
	RRFB	1	each	\$15,010	\$15,910	\$15,010	\$15,910		
RRFB (at Bryson Rd)	RRFB	1	each	\$15,010	\$15,910	\$15,010	\$15,910	\$15,910	
<b>SUBTOTAL</b>								\$122,281	
<b>Wolf Road</b>									
Bike Lanes	Paint Removal & Restriping	0.21	mile	\$94,838	\$100,528	\$19,916	\$21,111	\$21,111	Cahoon Rd. to Dover Center Rd.
Extend All Purpose Trail	10' asphalt trail	0.21	mile	\$276,660	\$293,260	\$58,099	\$61,585	\$268,833	Cahoon Rd. to Dover Center Rd. ROW costs not included. ODOT 2013 Conceptual Cost Estimating Spreadsheet
	Widen Bridge Sidewalk	350	linear foot	\$29	\$30	\$10,017	\$10,618		
	Rebuild bridge curb/gutter/drainage**	350	linear foot	\$530	\$562	\$185,500	\$196,630		
New Pedestrian Crossing, with median refuge island (at Library)	Pedestrian refuge island	1	each	\$11,088	\$11,753	\$11,088	\$11,753	\$20,090	At Cahoon Rd. and at new Library \$740 per ramp + \$37/sq. ft. for truncated dome/detectable warning (2 sq. ft. for each ramp)
	Ladder Crosswalk Striping	2	each	\$3,070	\$3,254	\$6,140	\$6,508		
	Curb ramp	2	each	\$863	\$915	\$1,726	\$1,829		
Curb Extension (at Cahoon)	Ladder Crosswalk Striping	4	each	\$3,070	\$3,254	\$12,280	\$13,017	\$23,776	
	Curb Extension	1	each	\$10,150	\$10,759	\$10,150	\$10,759		
<b>SUBTOTAL</b>								\$312,699	Bike Lanes not included in Subtotal.
<b>Cahoon Road</b>	<b>Cahoon Road</b>								
Parallel Parking w/Buffered Bike Lanes	Paint Removal & Restriping	0.3	mile	\$94,838	\$100,528	\$28,451	\$30,159	\$76,441	ODOT 2013 Conceptual Cost Estimating Spreadsheet
	Widen Asphalt Pavement**	0.09	mile	\$406,333	\$430,713	\$35,400	\$37,524		
	Parking Striping & Signage	0.09	mile	\$94,838	\$100,528	\$8,262	\$8,758		
Back-In Angled Parking w/Shared Lane Markings	Widen Asphalt Pavement**	0.09	mile	\$406,333	\$430,713	\$35,400	\$37,524	\$56,282	ODOT 2013 Conceptual Cost Estimating Spreadsheet No source for this cost item.
	Parking Striping & Signage	0.09	mile	\$94,838	\$100,528	\$8,262	\$8,758		
	Education & Marketing	1	each				\$10,000		
New Pedestrian Crossing (at GCRTA Bus Stop)	Pedestrian refuge island	1	each	\$11,088	\$11,753	\$11,088	\$11,753	\$20,090	At Park Ln. At Park Ln. \$740 per ramp + \$37/sq. ft. for truncated dome/detectable warning (2 sq. ft. for each ramp)
	Ladder Crosswalk Striping	2	each	\$3,070	\$3,254	\$6,140	\$6,508		
	Curb ramp	2	each	\$863	\$915	\$1,726	\$1,829		
All Purpose Trail	10' asphalt trail	0.3	mile	\$276,660	\$293,260	\$82,998	\$87,978	\$87,978	
<b>SUBTOTAL</b>								\$240,792	
<b>Cahoon Park Interior Improvements/General</b>									
Wayfinding	Signs	20	each	\$233	\$247	\$4,664	\$4,944	\$4,944	
New pedestrian path connecting East & West Cahoon Park	Pedestrian footbridge*	70	linear foot	\$2,000	\$2,120	\$140,000	\$148,400	\$226,135	Based on Metroparks estimate Based on Metroparks estimate Estimated east and west sides combined
	Pedestrian footbridge abutments*	2	each	\$30,000	\$31,800	\$60,000	\$63,600		
	Unpaved pedestrian path	0.15	mile	\$88,902	\$94,236	\$13,335	\$14,135		
New pedestrian path to lake	Unpaved pedestrian path	0.08	mile	\$88,902	\$94,236	\$7,112	\$7,539	\$7,539	
Bike Parking	Repurposed Container Shipping Box	1	each	\$15,000	\$15,900	\$15,000	\$15,900	\$18,020	
	Traditional Bike Racks	10	each	\$200	\$212	\$2,000	\$2,120		
<b>SUBTOTAL</b>								\$238,618	
<b>SUBTOTAL</b>						\$225,112	\$238,618	\$914,390	
<b>30% CONTINGENCY</b>						\$67,533	\$71,585	\$274,317	
<b>SUBTOTAL</b>						\$292,645	\$310,204	\$1,188,706	
<b>10% DESIGN ENGINEERING COST</b>						\$29,264	\$31,020	\$118,871	
<b>TOTAL</b>						\$321,909	\$341,224	\$1,307,577	

Data Sources: Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public, 2013 (unless otherwise noted). Median estimated 2012 values used, adjusted for inflation to 2017 values and 2022 projected values.

\* Metroparks estimate

\*\*ODOT 2013 Conceptual Cost Estimating Spreadsheet