Pedestrian/Bike Improvements

Middle School-Pedestrian Crossing-
Lake Dr. and Kenesaw Dr. 2015

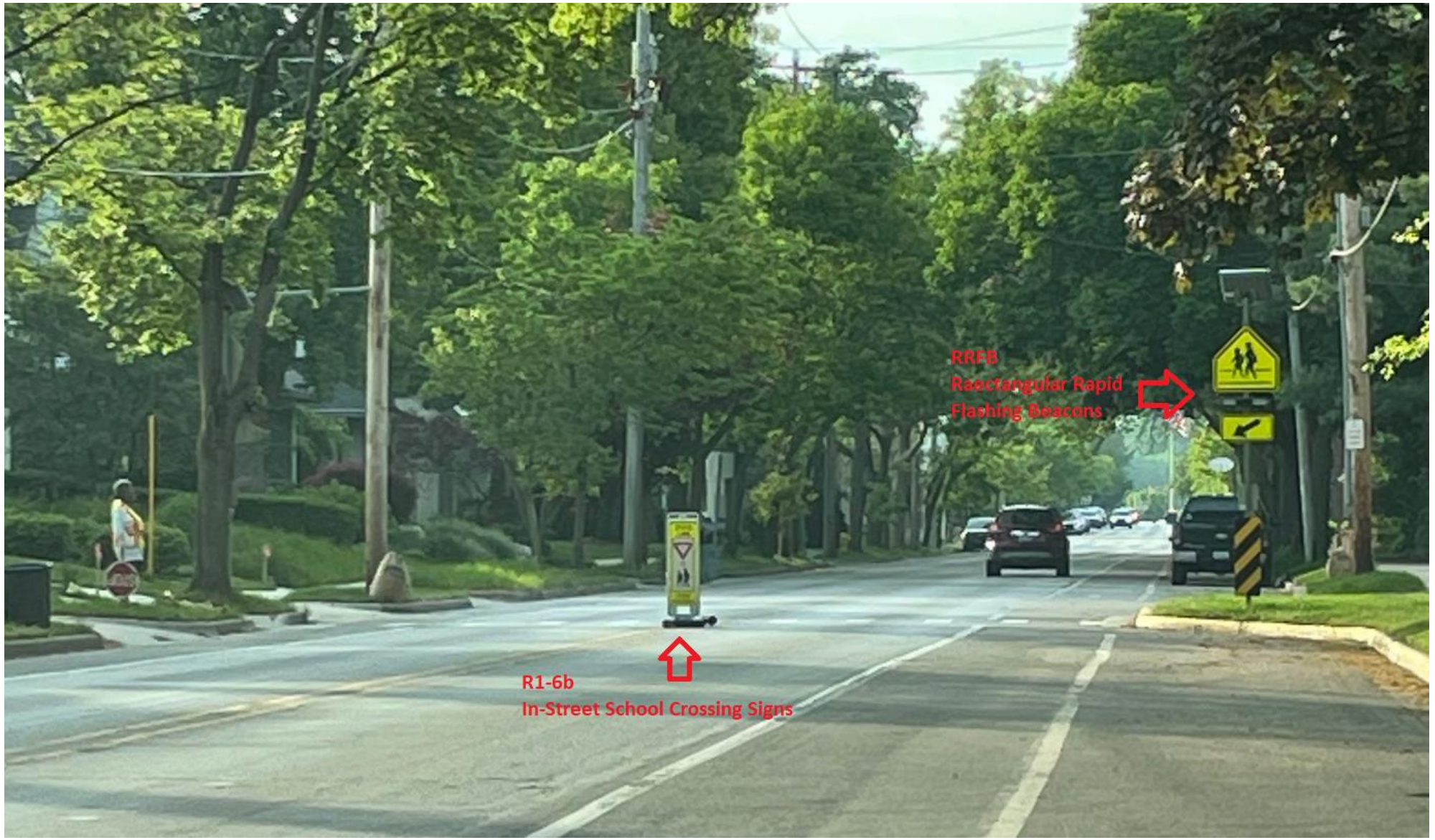
Middle School-Pedestrian Crossing-
Lake Dr. and Kenesaw Dr. 2024

High School-Pedestrian Crossing
Lake Dr. and Bagley Ave 2011

High School-Pedestrian Crossing
Lake Dr. and Bagley Ave 2022

Wealthy Elementary School-Pedestrian Crossing
Wealthy St/Schoolhouse Condos 2011

Wealthy Elementary School-Pedestrian Crossing
Wealthy St/Schoolhouse Condos 2024



Pedestrian Crossing-Lake Dr and Lovett Ave 2015

Pedestrian Crossing-Lake Dr and Lovett Ave 2024

Pedestrian Crossing-Hall St and Anderson Dr 2011

Pedestrian Crossing-Hall St and Anderson Dr 2024

Traffic Signal Improvements

- Lead Pedestrian Interval (LPI) all signals: $50,000
  2016-2020
- Breton/Lake/Lakeside Signal Replacement: $135,000
  (EGR share) 2016

  $274,000

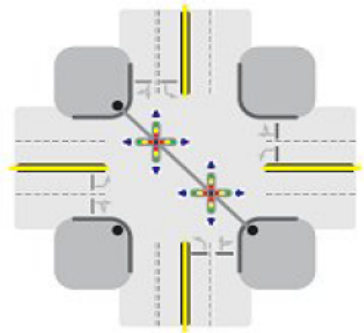
  (Federal Funds/grant)
- Plymouth Rd-Midblock Warning Flasher: $22,000
- Hall/Lake Signal Capital Upgrade: $15,000
  2017
- Lakeside/Robinson Signal Replacement: $54,000 (EGR
  share) 2018

  $54,000

  (KCRC share)
- Breton/Hall Capital Maintenance/Upgrade: $10,000
  2018
- Breton/Boston Signal Replacement $215,000
  (Budgeted Estimate) 2024

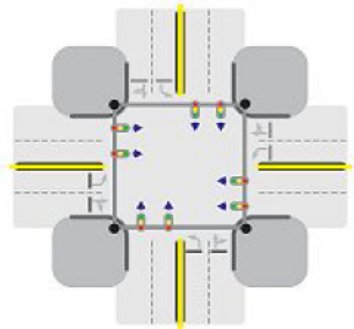
The New Box Span Traffic Signal

Box span signal design is a new method for positioning traffic signals in an intersection. In the course of projects that require upgrading an intersection and/or signal, MDOT will be replacing the traditional signal configuration with the box span design.



Traditional signal design

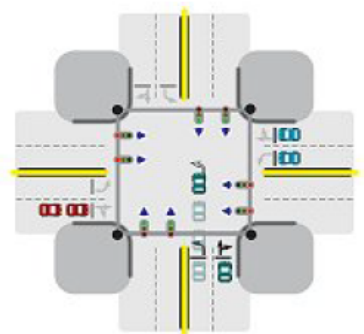
With the traditional signal design, two traffic signals are located in the middle of an intersection. They are suspended on wires secured to two poles placed opposite each other in the intersection.



New box span signal configuration

With the new box span configuration, signals are located near each corner of the intersection (thus, the "box" design).

Advantages of this design include increased safety for maintenance workers who no longer need to be stationed in the middle of a busy intersection to make repairs, and placement of the signal head over each lane which makes it easier for drivers to see the signals.



How a box span signal works

This diagram shows how the new signal configuration works. Motorists will continue to pull up to the stop line and proceed according to the signal directly opposite them at the far side of the intersection. Once this signal turns green, a motorist could go straight or turn, depending on their lane of travel. Motorists turning left need to follow through with the left-turn regardless of what the other traffic signals show; drivers should NOT stop in an intersection for any reason.

Breton/Boston Traffic Signal 2022

Breton/Boston Traffic Signal 2024

Lake Dr between Bagley Ave and Breton Rd

Before 2016

After 2016

Figure 1: Crosswalks Treatment Before and After Year 2016

Before 2016-Below

After 2016-Below

Pre-Post 2016 Pavement Markings-Crash Data-Below-To 2023

Table 1: Summary of Crash Analysis

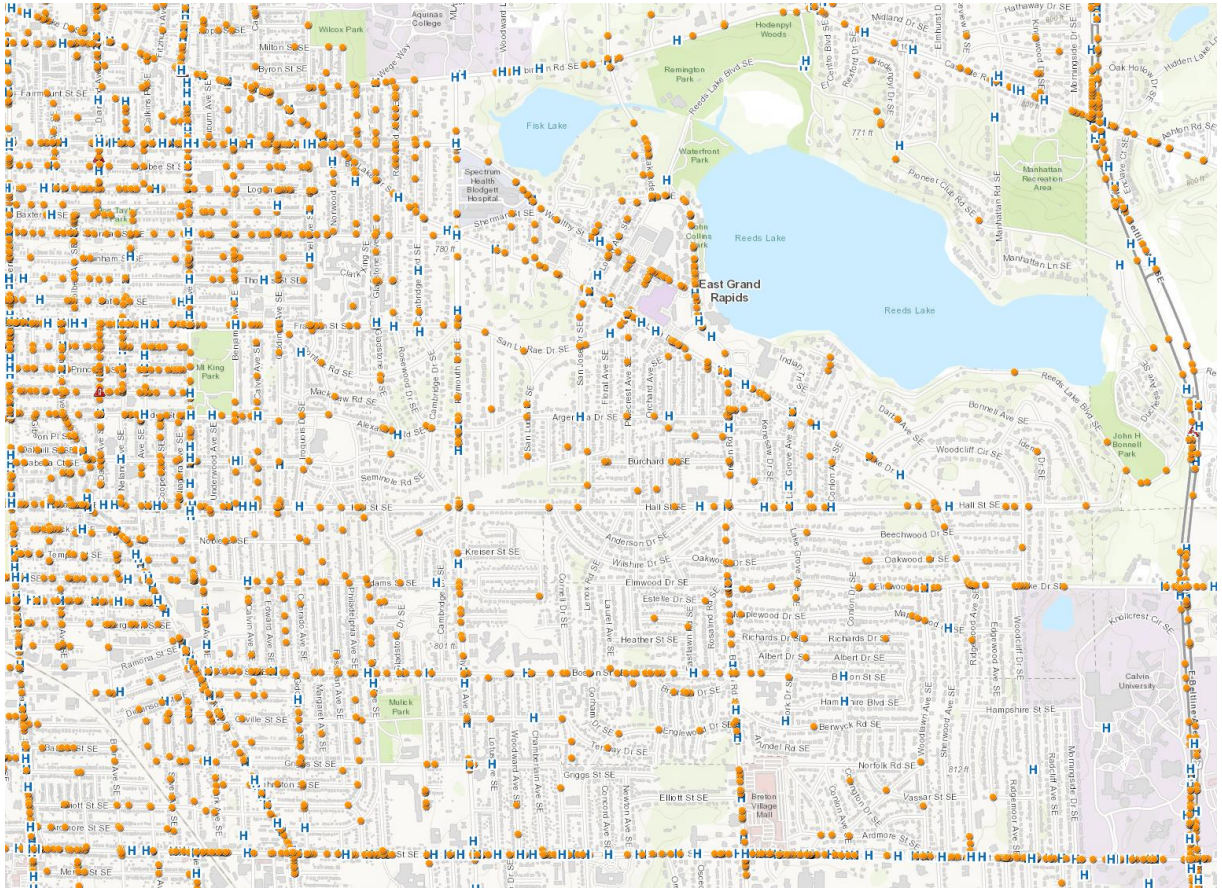
City-Owned Intersection	Total Crashes		Pedestrian Crashes	
	Before 2016	After 2016	Before 2016	After 2016
Breton Road SE and Lade Drive SE	28	16	0	0
Lake Drive SE and Ogden Avenue SE	6	2	0	0
Lake Drive SE and Maxwell Avenue SE	5	2	0	0
Lake Drive SE and Lakeside Drive SE	10	14	1	0
Lake Drive SE and San Lue Rae Drive SE/Bagley Avenue SE	31	23	0	1
Total	80	57	1	1

Lake/Bagley 2016-Below

Lake/Bagley 2023-Below

Lake Drive-Bagley Ave-Breton Rd Traffic Volume History- Volumes are relatively static

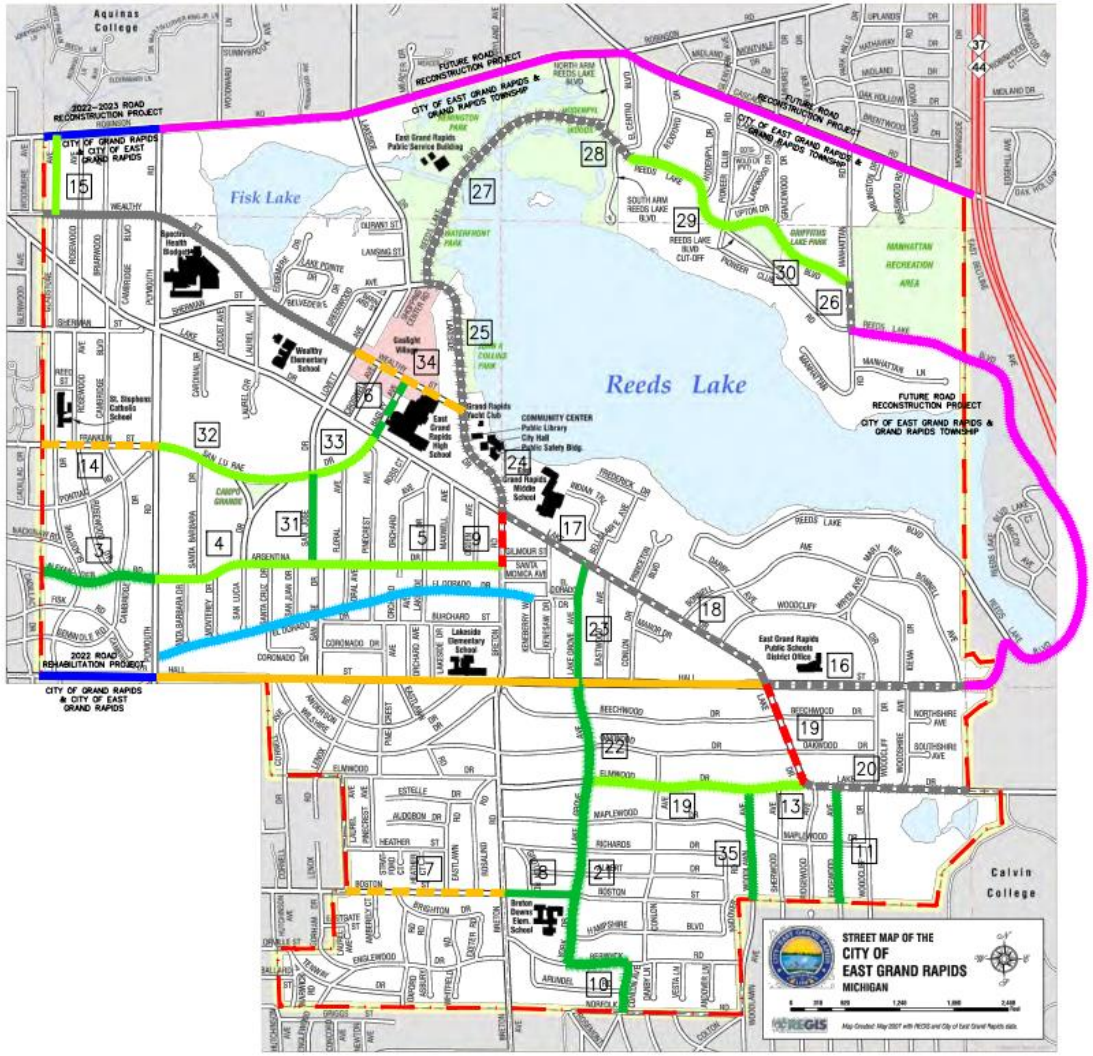
AADT	Year	AADT
	2019	10,012
	2016	10,164
	2013	10,683
	2010	10,498
	2007	9,464



5 Year Crash Map (2018-2022). No unusual pattern for Lake Drive in terms of a higher volume roadway compared to others in EGR or surrounding areas.

MOBILITY/BIKE ACTION PLAN

UPDATES & COMMUNITY ENGAGEMENT OPPORTUNITIES



MAP LEGEND: SHORT TERM PHASE ROAD TYPE

- CROSSTOWN CONNECTOR
- NETWORK RESIDENTIAL
- LINK RESIDENTIAL
- NEIGHBORHOOD RESIDENTIAL
- PEDESTRIAN WALKING PATH
- EX. EGR MULTI-USE, BICYCLE, OR PED FACILITIES
- EX. FACILITIES (UPDATED IN BIKE MOBILITY PLAN)
- FUTURE PROJECT WITH CITY OF GRAND RAPIDS
- FUTURE PROJECT WITH KCRC, GR TOWNSHIP
- CITY LIMITS

MAP LEGEND: MID & LONG TERM PHASE ROAD TYPE

- CROSSTOWN CONNECTOR
- NETWORK RESIDENTIAL
- LINK RESIDENTIAL
- NEIGHBORHOOD RESIDENTIAL

SHEET INDEX – PLAN VIEW BY STREET	
SHEET	DESCRIPTION
3	ALEXANDER RD (CITY LIMITS TO PLYMOUTH RD)
4	ARGENTINA DR (PLYMOUTH RD TO FLORAL AVE)
5	ARGENTINA DR (FLORAL AVE TO BRETON RD)
6	BAGLEY AVE (LAKE DR TO WEALTHY ST)
7	BOSTON ST (CITY LIMITS TO BRETON RD)
8	BOSTON ST (BRETON RD TO LAKE GROVE AVE)
9	BRETON RD (ARGENTINA DR TO LAKE DR)
10	CONLON AVE (CITY LIMITS TO BERWYCK RD) BERWYCK RD (CONLON AVE TO YORK DR)
11	EDGEWOOD AVE (CITY LIMITS TO LAKE DR)
12	ELMWOOD DR (LAKE GROVE AVE TO WOODLAWN AVE)
13	ELMWOOD DR (WOODLAWN AVE TO LAKE DR)
14	FRANKLIN ST (CITY LIMITS TO PLYMOUTH RD)
15	GLADSTONE AVE (WEALTHY ST TO ROBINSON RD)
16	HALL ST (LAKE DR TO TO CITY LIMITS)
17	LAKE DR (LAKESIDE DR/BRETON RD TO PRINCETON BLVD)
18	LAKE DR (PRINCETON BLVD TO HALL ST)
19	LAKE DR (HALL ST TO ELMWOOD DR)
20	LAKE DR (ELMWOOD DR TO CITY LIMITS)
21	YORK DR (BERWYCK RD TO BOSTON ST) LAKE GROVE AVE (BOSTON ST TO MAPLEWOOD DR)
22	LAKE GROVE AVE (MAPLEWOOD DR TO HALL ST)
23	LAKE GROVE AVE (HALL ST TO LAKE DR)
24	LAKESIDE DR (LAKE DR TO WEALTHY ST)
25	LAKESIDE DR (WEALTHY ST TO REEDS LAKE BLVD)
26	MANHATTAN RD (REEDS LAKE BLVD TO REEDS LAKE BLVD)
27	REEDS LAKE BLVD (LAKESIDE DR TO PEDESTRIAN CROSSING)
28	REEDS LAKE BLVD (PEDESTRIAN CROSSING TO EL CENTRO BLVD)
29	REEDS LAKE BLVD (EL CENTRO BLVD TO GRACEWOOD DR)
30	REEDS LAKE BLVD (GRACEWOOD DR TO MANHATTAN RD)
31	SAN JOSE DR (ARGENTINA DR TO SAN LU RAE DR)
32	SAN LU RAE (PLYMOUTH RD TO SAN LUCIA DR)
33	SAN LU RAE (SAN LUCIA DR TO LAKE DR)
34	WEALTHY ST (LOVETT AVE TO LAKESIDE DR)
35	WOODLAWN AVE (CITY LIMITS TO ELMWOOD DR)

NOTE: THE IMPLEMENTATION OF THE MOBILITY – BIKE ACTION PLAN ADDRESSES ALL SHORT TERM PROJECTS, SOME MID AND LONG TERM PROJECTS WITH INTERMEDIATE UPGRADES SLATED FOR FUTURE RECONSTRUCTION, AND UPDATES SOME EXISTING FACILITIES IDENTIFIED IN THE MOBILITY-BIKE ACTION PLAN PREPARED BY PROGRESSIVE AE-JUNE 2021.

SOURCES:
MANUAL ON UNIFORM TRAFFIC CONTROL FOR STREETS AND HIGHWAY, 2009 EDITION;
AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES, 2012 FOURTH EDITION;
MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD PLAN (PAVE-900-G, PAVE-961-C, PAVE-962-B)

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HALVERSON Engineering, LLC

CITY OF EAST GRAND RAPIDS
KENT COUNTY, MICHIGAN
MOBILITY - BIKE ACTION PLAN

DRAWN BY	DATE
JLH	4/4/22
CHECKED BY	DATE
JLH	4/4/22
PROJECT NUMBER	
1060	
SHEET NUMBER	
2 of 48	