East Lansing Nonmotorized Plan Public Workshop - Preliminary Inventory and Analysis

May 27, 2009

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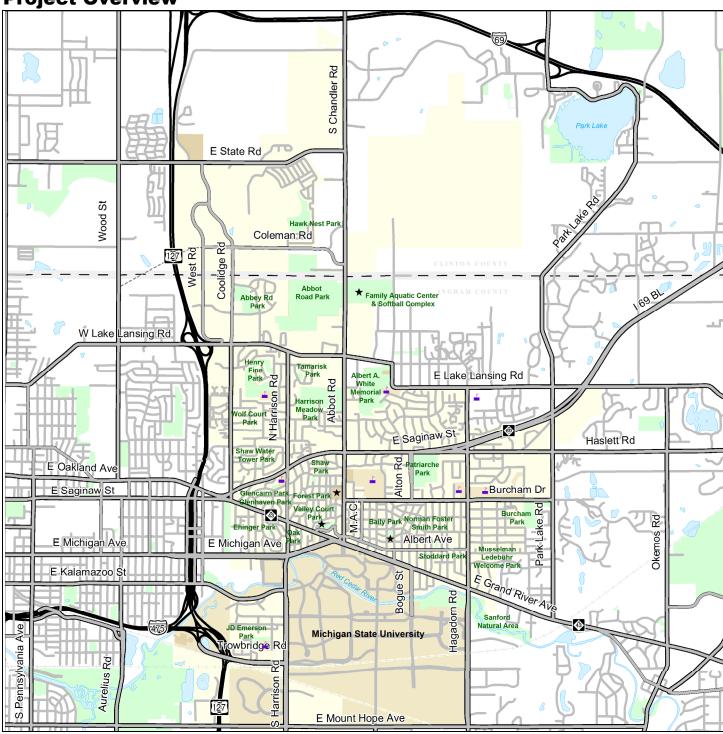
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Project Overview



Legend:

★ Community and Recreational Centers

Schools

Parks

Water

Local Roads

Primary Roads

Rail Roads

Population: currently estimated to be 46,254

Size: 11.25 Square Miles

Journey to Work Data (Based on 2000 Census):

3.1 % By Bicycle 22 % Walked

4.3 % Took Public Transit

29.4 % Non-Car Commute

Existing Bicycle Facilities Inventory S Chandler Rd E State Rd Wood St Coleman Rd West Ro Coolidge Rd Northern Tier Trail W Lake Lansing Rd E Lake Lansing Rd N Harrison Rd Rd E Saginaw St Haslett Rd E Oakland Ave Alton E Saginaw St Burcham Dr Twp Trail Lake Ro 43 Okemos Rd Albert Ave E Michigan Ave E Michigan Ave E Kalamazoo St E Grand River Av Hagadom Trowbridge Ro E Mount Hope Ave

Legend:

Trails
Paved Shoulder/Bike Lanes
Unmarked On-Street Routes
Alleys
Primary Roads
Local Roads

There are 4.7 Miles of Existing Trail and 14.2 Miles of Existing Bike Lanes

Existing Sidewalk Quality Assessment S Chandler Rd E State Rd Wood St Coleman Rd W Lake Lansing Rd E Lake Lansing Rd Abbot Rd N Harrison E Saginaw St Haslett Rd E Oakland Ave Alton E Saginaw St Burcham Dr Albert Ave E Michigan Ave E Michigan Ave E Kalamazoo St E Grand River Av Hagadom Rd

E-Mount-Hope-Ave-

owbridge R

Legend:

Sidewalk Rating A - Facility with Vertical Buffer B - Facility with Buffer C - Facility along Curb D - No Facility/ Passable E - No Facility/ Not Passable

Aurelius Rd

A key factor to a pedestrians comfort on a sidewalk is the degree of separation from the roadway. Buffer (lawn extensions) and vertical elements such as trees and light poles increase the pedestrians comfort level.

Currently, there is 63% (46.5 Miles) of Existing Sidewalk Coverage Along Primary Roads.

Crosswalk Spacing Analysis S Chandler Rd E State Rd Wood St Coleman Rd West Rd W Lake Lansing Rd E Lake Lansing Rd **(** E Saginaw St Haslett Rd E Oakland Ave E Saginaw St Burcham Dr 쮼 43 & Albert Ave E Michigan Ave E Michigan Ave E Kalamazoo St E Grand River Av Bogue St Hagadom Rd Trowbridge Ro

E Mount Hope Ave

Legend:



Aurelius Rd

1/8 to 1/4 Mile 1/4 to 1/2 Mile Over 1/2 Mile

- Signalized Road Crossings
- Unsignalized Road Crossings
- Pedestrian Bridges

Crosswalk spacing is a key factor in directness of travel. Most pedestrian trips for personal business (like walking to the store) are about ½ a mile long. Where there is demand to cross the road and crosswalk spacing is over 1/8 of a mile apart, mid-block crossings are likely to occur.

Road Crossing Difficulty Assessment S Chandler Rd E State Rd Coleman Rd Coolidge Rd West Rd W Lake Lansing Rd E Lake Lansing Rd E Saginaw St Haslett Rd E Oakland Ave E Saginaw St Burcham Dr & Albert Ave E Michigan Ave E Michigan Ave E Kalamazoo St E Grand River Av Hagadom Rd Trowbridge Rd Aurelius Rd E Mount Hope Ave

Legend:

Crosswalk Difficulty (Speed, No. Lanes & ADT)

В С D

Е

- Signalized Road Crossings
- Unsignalized Road Crossings
- Pedestrian Bridges

Road crossing difficulty is a measurement of how difficult a person would typically find it to cross a road at an unmarked mid-block crosswalk. It is based on the number of lanes, speed and average daily traffic.

Grade	Lanes	Speed	ADT
А	2	<30	<5,000
В	3	30	5,000-10,000
С	4	35	10,000-15,000
D	5	40	15,000-20,000
Е	6	45+	20,000+

In-Road Bicycling Quality Assessment S Chandler Rd E State Rd Coleman Rd West Rd W Lake Lansing Rd E Lake Lansing Rd Abbot Rd E Saginaw St **®** Haslett Rd E Oakland Ave Alton E Saginaw St Burcham Dr 43 Albert Ave E Michigan Ave E Michigan Ave E Kalamazoo St E Grand River Av Hagadom Rd Trowbridge Ro Aurelius Rd E Mount Hope Ave

Legend:

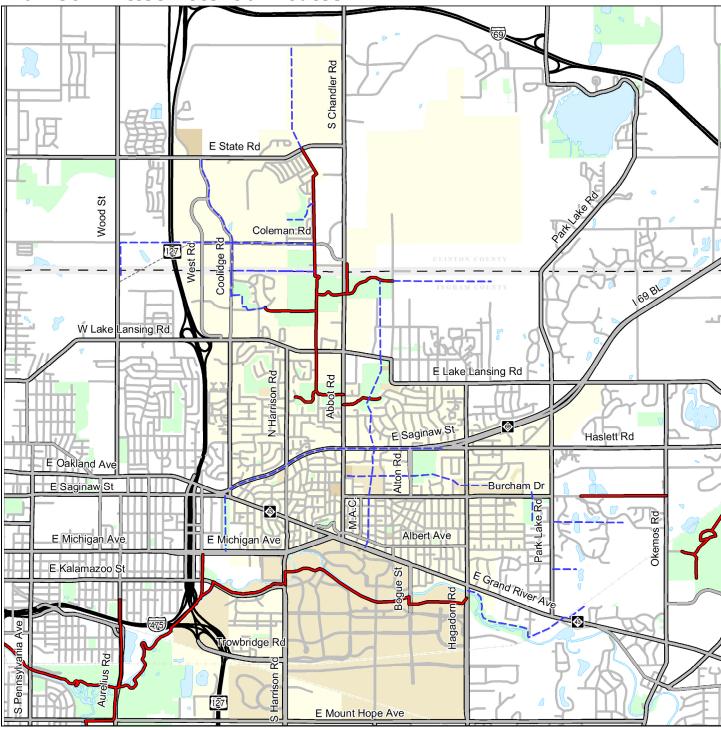
In-Road Bicycling Quality



In-road bicycling facilities improve the quality of the bicycling experience on busy roads. Quality of the in-road bike facilities was based on speed limit and daily traffic volumes.

Without Bike Lane	With Bike Lane	ADT	Speed Limit
Α	А	0 -5,000	25
В	Α	5,000 – 10,000	30
С	В	10,000 - 15,000	35
D	С	15,000 – 20,000	40
E	С	20,000 - 25,000	45
E	D	Over 25,000	50

Trail Committee Potential Routes

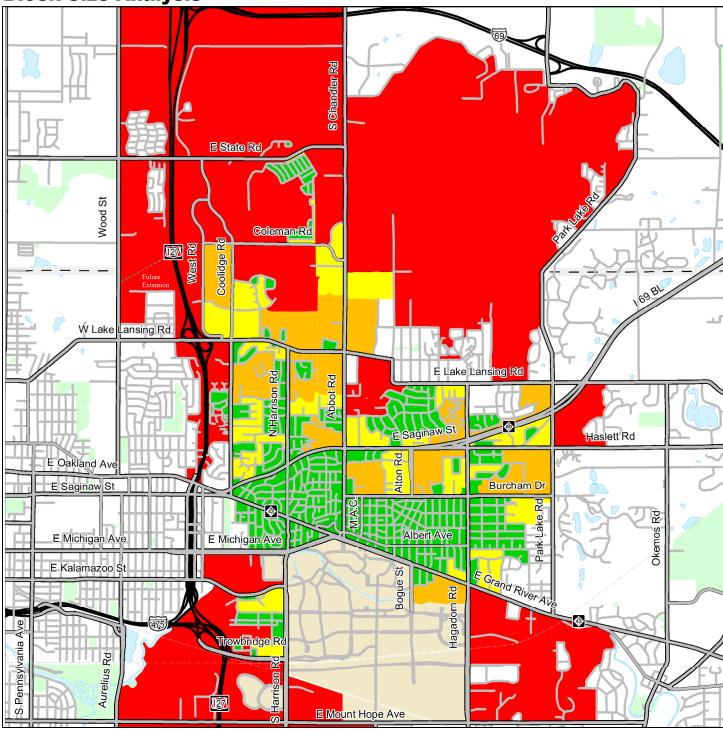


Legend:

Protential Routes
Existing Trail

These potential routes where identified by the City of East Lansing Trails Committee.

Block Size Analysis



Legend:

Block Size in Acres

Over 100

50 to 100

15 to 50

0 to 15

Block size is an excellent measurement of directness of travel.

Sidepath Suitability Assessment The AASHTO Guide for the Development of S Chandler Rd Bicycle Facilities generally considers sidewalks undesirable as Shared-use Paths. This is due to the inherent conflicts between bicycles and motorists where a pathway E State Rd intersects with driveways and roads. Suitable sidepath locations are uninterrupted by driveways and roadways for long distances and provide safe and convenient road crossing opportunities to Coleman Rd destinations on the other side of the road. W Lake Lansing Rd E Lake Lansing Rd E Saginaw St Haslett Rd

Iton

E_Mount_Hope_Ave

Albert Ave

43

E Michigan Ave

rowbridge Ro

Legend:

Sidepath Suitablity Rating Conflict Points Per Mile

E Oakland Ave

E Saginaw St

E Michigan Ave

E Kalamazoo St

A - Less than 2

B - 2 to 3

C - 3 to 4

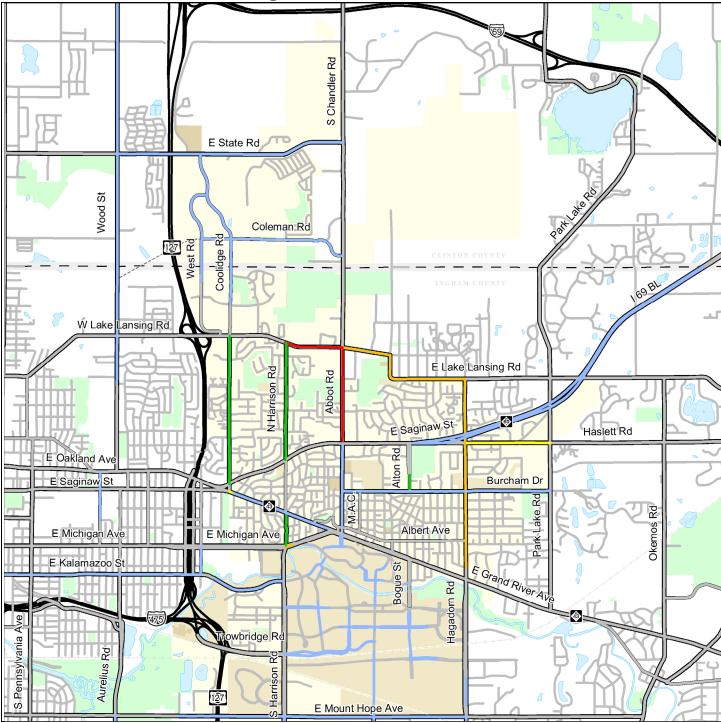
D - Over 4

A conflict point is a local road or high traffic volume commercial driveway. For this analysis, ten minor/residential driveways were considered equal to one conflict point.

Burcham Dr

E Grand River A

Bike Lane Potential Through 4 to 3 Lane Conversions



Legend:

Potential 4 to 3 Lane Conversion To Add Bike Lanes

High Potential

Moderate Potential

Marginal Potential

Low Potential

Existing Bike Lane and Paved Shoulder

Four lane roads may be converted into three lane roads with bike lanes. The suitability of the conversion depends on the traffic volume and the delay at signalized intersections.

Grade	ADT
High Potential	<15,000
Moderate Potential	15,000-17,500
Marginal Potential	17,500-20,000
Low Potential	20,000+

Bike Lane Potential Through Lane Narrowing S Chandler Rd E State Rd Wood St Coleman Rd West Rd W Lake Lansing Rd E Lake Lansing Rd E Saginaw St Haslett Rd E Oakland Ave E Saginaw St Burcham Dr R Albert Ave E Michigan Ave E Michigan Ave E Kalamazoo \$ E Grand River A Hagadorn Rd Trowbridge Ro Aurelius Rd

E Mount Hope Ave

Legend:

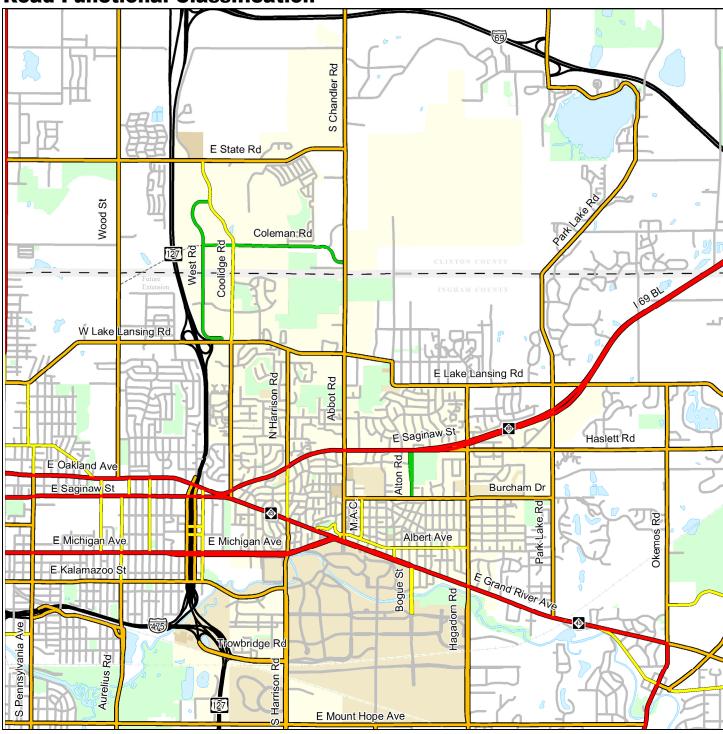
Lane Narrowing



By narrowing the travel lanes of wide roads, bike lanes can easily be added by restriping the road. The ideal lane width for a travel lane is 11' for Principal Arterials; however there are areas where a 10' lane width is appropriate and/or desirable for Minor Arterials and Collectors.

Grade	Lane Min Width	
High Potential	11' + Bike Lane	
Moderate Potential	10-11' + Bike Lane	
Marginal Potential	10' + Bike Lane	
Low Potential	Too Narrow	

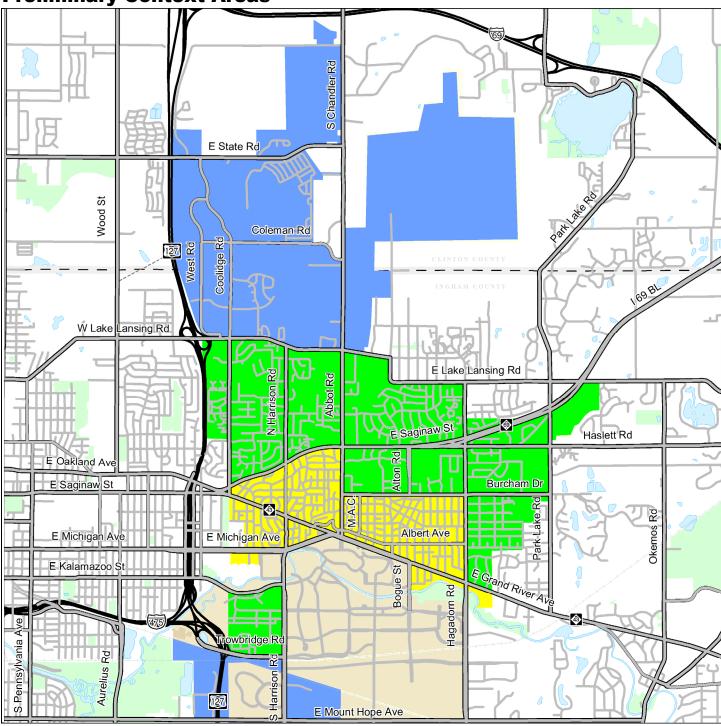
Road Functional Classification



Legend:



Preliminary Context Areas



Legend:

Zones

Inner Ring

Middle Ring

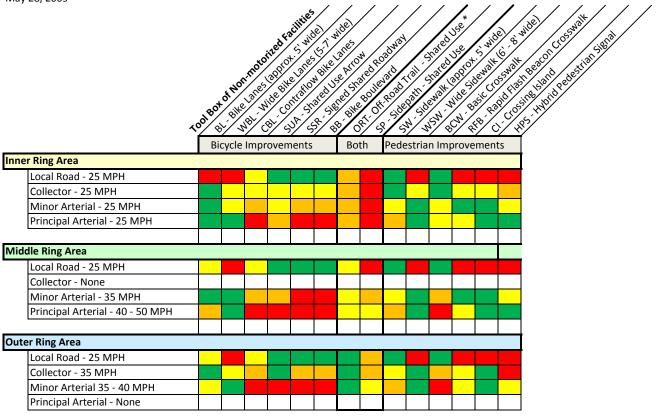
Outer Ring

The city has been divided into three zones based on Land Use, Population Density, Street Layout, and Existing Nonmotorized Facilities. The Inner Ring consists of high density development where there is a complete sidewalk system intact. The Middle Ring consists of moderate density development, with some trail connections and a partially complete sidewalk system. The Outer Ring consists of low density development where there are long segments of shared use trails.

City of East Lansing Non-motorized Plan

Preliminary Suitability Matrix

May 28, 2009



Legend:

Typical Location
Under Certain Circumstances
Rarely

Not Typically Used

Outside of Road ROW

Notes:

- **1.** In some Middle Ring and most Outer Ring Areas no sidewalks exists and bike lanes may be also used as a pedestrian facility.
- 2. Rapid Flash Beacons may be used in conjunction with Crossing Islands.