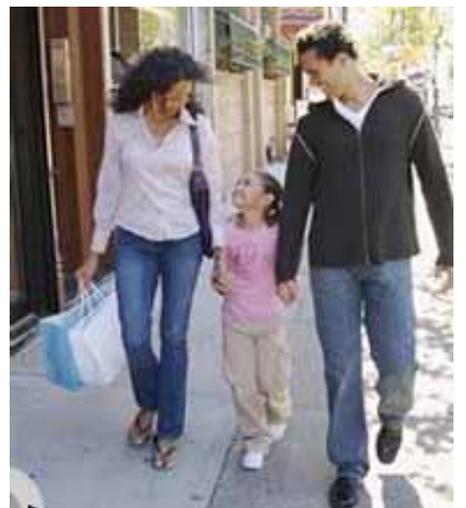


Walk and Bike Lansing!

Making Lansing, Michigan a Walk and Bike Friendly City.

www.walkbikelansing.com



Acknowledgements

This project is primarily a product of the Lansing Walking & Bicycling Task Force. Members of the Task Force are listed at right. The Task Force's efforts are complemented by the Action Plan which was prepared by a consultant team consisting of: The Greenways Collaborative, Inc. JJR, Landscape Architects and Planners, Inc., and LSL Planning, Inc. This project and its implementation were endorsed by the City of Lansing Public Works Department on November 1, 2011.

Designed and coordinated by:

Significant contributors:

- **Josh DeBruyn**, Michigan Department of Transportation
- **Andy Kilpatrick**, City of Lansing
- **John Lindenmayer**, League of Michigan Bicyclists
- **Sarah Panken**, Governor's Council on Physical Fitness, Health, and Sports
- **Janine Sinno**, Ingham County Health Department
- **Jessica Yorke**, Mid-Michigan Environmental Action Council.

Essential resources:

- **Non-Motorized Transportation Planning Resource Book for Lansing**, by Matthew Brinkley, Daniel Guild, Kasif Khowaja, Suzanne Miske, Hyung-Jun Park, Hillary Lewis-Reimers, Quinton Robinson, and Janet Strauss.
- **Design Guidelines for Active Michigan Communities**
- **Chicago Bike 2015 Plan**

Cover photo credits, left to right, Row 1: Corbis Royalty Free Photography, Capital Area Transit Authority, Dan Burden. Row 2: Tim Potter, Safe Routes to School, Jeremy Herlizck (Lansing State Journal). Row 3: Dan Burden, Corbis, Corbis.

Action Plan Consultant Team:

Made possible with generous support from:

- Alicia Armstrong**, Community Partners in Health
- Lyndon Babcock**, Senior, South Lansing resident
- Tom Carmoney**, Senior, Lansing resident
- Jane Dykema**, Engineer, Lansing Public Service Department
- Sgt. Dave Emmons**, Lansing Police Department, Lansing resident
- Kathie Dunbar**, South Lansing Community Development Association
- Eric Glohr**, Lansing Community College
- Lina Goodwin**, Eastside resident
- Jason Harder and Katherine Knoll**, American Heart Association
- John Hodges and Bill Rieseke**, Lansing Planning & Neighborhood Department
- Karen Kafantaris**, AARP
- Emma Koppelman**, Lansing Mayor's Office, Downtown resident
- Murdoch Jemerson**, Director Lansing Parks & Recreation Department
- Helen & Dave Keeney**, South Lansing residents, seniors
- Mickie Kreft**, Sparrow Hospital Children's Safety
- Nancy Krupiarz**, Michigan Trails and Greenways Alliance
- Ken Lane and Tracy Carney-Miller**, Delta Township
- Joel Maatman and Nate Rowen**, Lansing School District
- Rory Neuner**, Michigan Environmental Council
- Lisa Grost**, Michigan Department of Community Health
- Tim Potter**, MSU Bikes
- Vic Randall**, Ingham County Parks
- Bill Savage**, Tri-County Bicycle Association
- Jamie Schriener-Hooper**, Old Town Commercial Association
- Steve Shaughnessy / Hillary Owen**, MDOT Lansing Service Center
- Chris Thelen**, Consumers Energy
- Deirdre Thompson**, Transportation Engineer, MDOT
- Phil Wells**, Westside resident



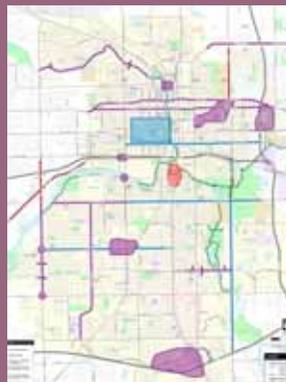
Developing this Plan

Public Workshops

Photo from Workshop to be Added

The City hosted a number of workshops in March 2009 to gauge interest in non-motorized improvements and gather input on goals and objectives for walking and biking in Lansing.

March 2009



Public input in March 2009 identified general segments and areas around Lansing in need of additional or improved bicycle and pedestrian facilities and access.

Walk & Bike Plan Draft



June 2009

Building on public workshops and relying on best practices from communities across the country, the Lansing Walking & Bicycling Task Force prepared a draft plan outlining goals, objectives, and strategies.



June 2009 Walk and Bike Lansing! draft plan identified city-wide goals, performance measures and objectives to improve walking and biking in Lansing through city projects.

Non-Motorized Workshops

Photo from Workshops to be Added

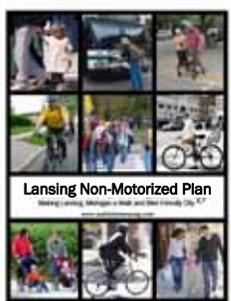
On the heels of the adoption of a "Complete Streets" ordinance by the City Council, another set of workshops focused on identifying a network of priority non-motorized corridors in Lansing, and constraints and projects needed to complete them.

Fall 2009



Another round of workshops in Fall 2009 identified priority corridors for "Complete Streets," neighborhood connectors, and road diets with on-street bike lanes, and priority intersections.

Non-Motorized Plan



January 2010

The Lansing Non-Motorized Plan fulfills the requirements of the Complete Streets ordinance and fulfills several of the goals and objectives of the draft Walk and Bike Lansing! Plan, by creating an inventory and plan for city-wide non-motorized network and prioritizing key corridors.



The Lansing Non-Motorized Plan includes a city-wide non-motorized network plan and prioritizes the top 12 principal non-motorized routes to guide investment decisions.

CONTENTS

1-4 Executive Summary

5 Introduction

6-15 Chapter 1: Non-Motorized Network

16-19 Chapter 2: Walk and Bike Friendly Streets

20-23 Chapter 3: Bicycle Parking

24-25 Chapter 4: Transit

26-31 Chapter 5: Education

32-35 Chapter 6: Marketing and Health Promotion

36-43 Chapter 7: Action Plan

Appendix A: Walkability and Safety

Appendix B: Walking, Cycling, and Neighborhood Quality of Life

Appendix C: Excerpts from Lansing Non-Motorized Transportation Planning Resource Book

Appendix D: Comments from 2009 Public Workshops



“Active living environments are places where all people are able and inspired to use their feet to get them places. They are places where people of all ages, incomes, and abilities can walk and bike—both for recreation and for transportation.”

- Michigan Governor’s Council on Physical Fitness, Health, and Sports



Walk and Bike Lansing!

Making Lansing, Michigan a Walk and Bike Friendly City.

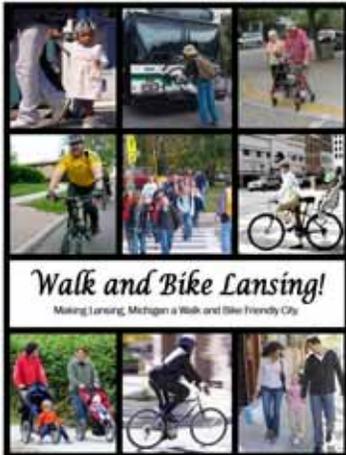
www.walkbikelansing.com

Walk and Bike Friendly Cities...

- Make it safe and easy to walk and bicycle for fun, fitness and transportation.
- Feature “complete streets” which accommodate all road users.
- Build streets and sidewalks as part of the “public realm”, meant for travel, social interaction, commerce and community activities.
- Redesign urban areas to support local businesses and help the environment.
- Lead to diminished crime and other community benefits.
- Experience reduced traffic demands, improved air quality and greater physical fitness.
- Are seen as places with a high quality of life.
- Experience greater business growth and tourism.

Every three days someone is hit while walking or bicycling in Lansing, on average.

In Lansing, 2.45% of trips are by foot and 0.42% bike. In Ann Arbor, 15.79% of trips are by foot; in Madison 3.19% of



The *Walk and Bike Lansing!* plan is a set of 76 recommendations and best practices for making Lansing walk and bike friendly.

Walk and Bike Lansing! goals and objectives are listed on Pages 3-4.

Get the full plan at www.walkbikelansing.com or



Photo by Corbis Royalty Free Photography



Photo by Dan Burden

Your help is needed to make Lansing a Walk and Bike Friendly City– Take Action Today!

- Provide a letter or resolution of support.
- Join our Action Alert! Listserve.
- Advocate by making presentations, writing letters to local media, contacting elected officials, and registering support online.
- Schedule a presentation/discussion with your community, business or civic group.
- Give feedback on *Walk and Bike Lansing!* plan recommendations.
- Contact the Lansing Walking & Bicycling Task Force Co-Chairs for more

Why Make Lansing Walk and Bike Friendly?

1. Ease Residents' Expenses With the rising cost of gasoline, non-motorized travel options allow people to make fewer car trips. This adds up to immediate savings for individuals and families and less traffic on the roadways. A 2007 MSU study confirms that building walk and bike friendly features leads to more walking and bicycling.¹

2. Ease Employers' Expenses Poor exercise habits of employees can result in between 10% and 21% greater employer health care cost.² Businesses that provide opportunities for employees to walk and bicycle during the workday report a 28% reduction in sick-leave absenteeism, 26% reduction in use of health care benefits, and 30% reduction in worker's compensation claims and disability management.³

3. Ease Government Expenses Investing in non-motorized networks helps communities ease the tremendous expense of maintaining roadways and automobile parking facilities. Recent studies show that creating non-motorized travel options helps manage traffic demand, saves money on road and parking facilities, reduces congestion, and saves residents money.⁴

4. Increase Sales for Businesses Sales have increased dramatically as a result of walkability improvements in communities across the nation. Walkability features in downtown Lodi, CA has led to a 30% overall increase in sales for downtown businesses, a drop in the vacancy rate from 18% to 6%, and the addition of 60 new businesses.⁵ Bike friendly communities also benefit from significant recreation and tourism spending.⁶

5. Improve Physical Health The leading cause of death in Michigan is heart disease, with approximately 25,000 deaths per 100,000.⁷ An estimated 32% to 35% of all deaths in the United States attributable to coronary heart disease, colon cancer, and diabetes could have been prevented if all persons were highly active.⁸ In Ingham County, two in three residents are active fewer than 30 minutes per day; two in three



The walkability and bikeability of our city shapes our every day experiences.

It also impacts our economy, environment, health and healthcare



Photo by Steve Longrove

When it's safe, convenient, and fun, people tend to walk and bike more. To see how much money you could save, calories you'd burn, and emissions you'd prevent by walking and bicycling more, visit www.midmeac.org/calc

Percentage of Commuting Trips by Foot and Bicycle

	% of Trips By Foot	% of Trips by Bicycle
Ann Arbor, MI	15.79%	2.28%
Madison, WI	10.68%	3.19%
<u>Lansing, MI</u>	<u>2.45%</u>	<u>0.42%</u>

Walk and Bike Lansing! Making Lansing, MI a Walk and Bike Friendly City.

6. Ease Healthcare Costs In 2003, the Michigan Department of Community Health estimated that if just 1 in 20 sedentary Michigan adults became physically active, Michigan employers would save \$575 million per year in healthcare costs and insurance premiums. In 2005, the Michigan Fitness Foundation reported that physical inactivity costs the state of Michigan almost \$9 billion annually, through higher health insurance premiums, lost productivity, and state-funded Medicaid payments.

7. Improve Air Quality In Michigan, vehicles create 30% of Michigan's ozone-forming pollutants.¹² These pollutants trigger asthma and other respiratory problems.¹³ The Lansing area currently exceeds the EPA's Air Quality Standards for ground-level ozone. 2006 studies show that the more walkable a community, the lower the vehicle emissions.¹¹

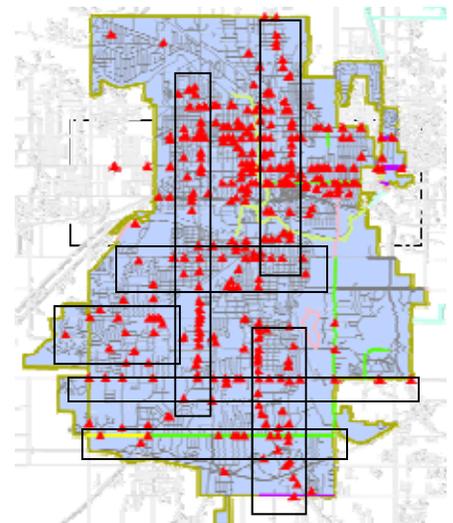
8. Reduce Our Carbon Footprint Global warming is increasing, and the impacts will only accelerate if we don't start cutting carbon emissions.¹⁴ Between 1960 and 2001, Michigan's CO2 emissions from fossil fuels increased by 46%— primarily as a result of oil combustion for transportation.¹⁵

9. Protect Our Children and Seniors Of the 13 pedestrians and bicyclists killed by cars in Lansing between 2000 and 2006, most were children and seniors. Many Lansing Public School students live too close to school for bussing, yet their routes lack sidewalks and crosswalks and force them to cross dangerous intersections and high-speed roads. Most Lansing schools, businesses, libraries, community centers, and even parks cannot be safely reached on foot or bike. More than 50% of older Americans who do not drive stay home on a given day because they lack transportation options.¹⁶

10. Attract Residents 79% of Americans rate "sidewalks and places to take walks" as a top consideration in choosing where to live.¹⁷ Recent college graduates from Michigan schools say that safe streets and neighborhoods, walk-able streets, and affordable living are their top factors in choosing where to live.¹⁸

653 pedestrians and bicyclists were hit by cars in Lansing between 2000 and 2006. Lansing averages around 120 accidents involving non-motorists each year, including 1-3 fatal crashes.

Lansing Non-Motorized Crashes
2001-2005



The map above shows where people were hit by cars while walking or bicycling in Lansing from 2001-2005.

The boxes are areas that need physical changes in order to become walk and bike friendly.

Walk and Bike Lansing! plan goals:

1. Double the percentage of trips made by bicycle or foot in the City of Lansing by 2013.
2. Eliminate pedestrian and bicyclist deaths from motor vehicle crashes in Lansing by 2018.
3. Reduce pedestrian and bicyclist injuries from motor vehicle crashes in Lansing by 20% each year for the next ten years.

Walk and Bike Lansing! plan

chapters:

- 1. Non-Motorized Network:** Establish a non-motorized network that serves all Lansing residents and neighborhoods.
- 2. Walk and Bike Friendly Streets:** Make all Lansing streets safe and convenient for walking and bicycling.
- 3. Bicycle Parking:** Increase bicycle parking options at work-places, retail areas, multi-unit dwellings, and public facilities.
- 4. Transit:** Provide convenient connections between walking, bicycling, and public transportation.
- 5. Education:** Inform bicyclists, pedestrians, and motorists about bicycle and pedestrian safety, and the benefits of walking and bicycling.
- 6. Marketing and Health Promotion:** Increase walking and

How the Walk and Bike Lansing! plan

was created:

- In 2006 the Lansing Walking & Bicycling Task Force formed to find ways to make Lansing a walk and bike friendly city.
- The group includes more than 40 people: mainly Lansing residents and people from economic development, business, neighborhood groups, environmental, health, transportation, children's safety, senior citizen, bicycling, walking, land use, and other organizations.
- In 2007 the Task Force focused on bike lane education, walk to school days, and researching best practices.
- Then the group went to work on a comprehensive, community-driven plan in order to ensure a sustained and successful effort.
- The Walk and Bike Lansing! plan is a draft set of recommendations.
- The Walking & Bicycling Task Force is seeking community

Research Notes

- 1) Igor Vojnovic's study reported in *Engaged Scholar Magazine*, 2007 backs up a 2005 study by John Pucher and Ralph Buehler, reported in *Transport Policy* 13 (2006).
- 2) Chenoweth et al., 2001
- 3) *American Journal of Health Promotion*, 2003
- 4) Quantifying the benefits of non-motorized travel for achieving TDM Goals by Todd Litman, published in *Transportation Research Record*, No. 1441 ("Nonmotorized Transportation Around the World"), 1994, pp. 134-140 and online at www.vtpi.org/hmt-tdm.pdf. Also, Economic Value of Walkability by Todd Litman, published in *Transportation Research Record 1828*, Transportation Research Board (www.trb.org), 2003, pp. 3-11, and available online at www.vtpi.org/walkability.pdf.
- 5) The Economic Benefits of Walkable Communities, by the Local Government Commission. Online at www.lgc.org/freepub/PDF/Land_Use/focus/walk_to_money.pdf
- 6) Participants in the 1999 Michigander ride spent \$207,000 in conjunction with the event, of which \$103,000 was spent in the Pere Marquette Trail area during the event, including 500 hotel nights. Study of 1999 Michigander Ride and Its Participants: A Focus on Midland County's Pere Marquette Rail-Trail, by Vogt et al, 2000. Online at www.prr.msu.edu/miteim/econimpact/michigander.pdf. Midwest Tandem Rally participants spent \$260,000 in conjunction with the event, of which \$218,000 was spent during the rally, including 1,100 hotel nights. Study of 1999 Midwest Tandem Rally and Its Participants: A Focus on Midland County's Pere Marquette Rail-Trail, by Vogt et al, 2000. Online at www.prr.msu.edu/miteim/econimpact/tandem.pdf.
- 7) Michigan Department of Community Health-MDCH, 2000.
- 8) Center for Disease Control, 2007.
- 9) Ingham County Health Department, Behavior Risk Factor Survey, 2003
- 10) In 2004, Robert Wood Johnson Foundation reported that in Marin, CA, 64% more kids were walking to school within two years of a Safe Routes to School effort that included infrastructure changes and encouragement. In 2007, a RWJF study showed that people living in neighborhoods with a mix of shops and businesses within easy walking distance have a 35% lower risk of obesity.
- 11) Two studies by Lawrence Frank, published in 2006 in the Winter 2005/2006 *Journal of the American Planning Association* show the relationship between walkability, physical activity, and physical health (taking into account other variables such as age, income, education, and ethnicity), summarized online at www.planning.org/newsreleases/2006/ftp020706.htm.
- 12) United States Environmental Protection Agency.
- 13) Asthma Initiative of Michigan, 2007
- 14) Intergovernmental Panel on Climate Change, www.ipcc.ch
- 15) U.S. Public Interest Research Group Education Fund. 2006. *The Carbon Boom: National and State Trends in Carbon Dioxide Emissions since 1960*. Washington, DC.
- 16) Complete Streets: Improve Mobility for Older Americans, 2007
- 17) In 2002, The Surface Transportation Policy Project commissioned a study called American's Current Attitudes toward Walking and Creating More Walkable Communities. One of the main findings was that Americans would like to walk more than they are, but they are held back by high auto speeds and dangerous intersections, and community layout that makes it inconvenient to walk to shops, restaurants, and other places of interest. www.transact.org/library/reports_pdfs/pedpoll.pdf

Walk and Bike Lansing!

Making Lansing, Michigan a Walk and Bike Friendly City.

www.walkbikelansing.com

Introduction

Between October and December of 2006, the Lansing Walking & Bicycling Task Force participated in a series of facilitated discussions centered on the question,

“What do we need to do to make Lansing a walk and bike friendly city?”

The outcome was a set of fourteen action items, which led to the creation of this document.

Now that we have documented some strategies and best practices from other communities, we need to know what people in Lansing think of these ideas. ***Even before that, we need to know if having walkable, bikeable communities is important to Lansing residents,*** and what Lansing residents see as major concerns and opportunities.

The strategies in this document are meant to stimulate community conversations, ideas, and feedback. They offer some options for consideration.

Please take a look at them, think about how you might get involved, and what would improve the lives of the people of Lansing.

Above all, tell us what you think. You can give comments online at www.walkbikelansing.com, email comments to yorko446@cs.com, or mail them to Mid-MEAC at P.O. Box 17164, Lansing, MI 48901. You can also schedule a presentation or discussion for your community, business, civic, or any other Lansing-based group that would like to be involved in this project.

GOAL:

Establish a non-motorized network that serves all Lansing residents and neighborhoods.

PERFORMANCE MEASURES:

Establish a 765 mile interconnected non-motorized network in Lansing by 2020.

OBJECTIVES:

- 1. Create and implement a non-motorized network plan for Lansing.*
- 2. Ensure excellent condition of Lansing’s non-motorized infrastructure.*
- 3. Encourage bicycling, pedestrian, and transit oriented development.*

Chapter 1

Non-Motorized Network

A city’s non-motorized network includes the streets, trails, sidewalks, and other facilities that welcome and encourage pedestrian, bicycle, and other non-motorized travel. (See sidebar on page 7.) Such spaces should help pedestrians and bicyclists feel comfortable and keep them safe, whether on streets with heavy motor-traffic or on neighborhood side streets. Research consistently shows that providing safe and attractive non-motorized networks is the most effective way to encourage walking and bicycling, for recreation and transportation.*

The vision of this plan is to establish a 765 mile walking and bicycling network in the City of Lansing that is the equal of all the best in the world. This requires the network to be extensive, attractive, safe, and conveniently located. It must also be accessible to people of all ages and physical abilities. The chart below shows the number of miles in the current network, and goals for the year 2020.

Facility Type	Miles in 2010	Miles by 2020
Bike Lane <small>(4-6’ striped on-road lane with bicycle marking on pavement and signs along the roadway)</small>	10	50
Bike Route <small>(on-road “preferred” routes w/o bike lanes, noted by signage and on bike maps)</small>	0	50
Wide Paved Shoulder <small>(3-5’ on-road shoulder space for bicyclists)</small>	4	20
Off-Street Shared-Use Path <small>(such as the Lansing River Trail)</small>	8	50
Sidewalks	590	625
Total	612	765

* Sources:

- 40% of Americans say they would commute by bicycle if safe facilities were available. Rodale Press Survey, quoted in H.R. 1265– Bicycle Commuter Act.
- Journal of American Planning Association, 1995; 61: 210-225.
- Michigan State University Engaged Scholar Magazine, 2007: 11.

OBJECTIVE ONE:

Create and implement a non-motorized network plan for Lansing aimed at meeting utilitarian and recreational needs, with emphasis on travel to destinations such as work places, commercial districts, transit stops, schools, recreation and surrounding communities.

Strategies:**1.1. Inventory the existing non-motorized system.**

1.1.2. Performance Measure (completed 2011) A detailed non-motorized system “base” map was completed that illustrates existing facilities, including sidewalks, bicycle lanes, wide shoulders, crosswalks, trails, and other non-motorized facilities. Some non-motorized facilities of surrounding communities were also included. (See Chapter 7 for map showing existing facilities)

1.2. Develop a community needs analysis.

1.2.1. Performance Measure: Update demographic information including access to vehicles, income, percentage of children bused to schools, etc, to identify areas with the greatest need for pedestrian and bicycle facilities. Identify major trip origins and destinations including larger multi-family residential developments, schools, retail and employment centers. Develop needs analysis and add to base map in 2012.

(See Appendix C for maps showing access to vehicles, areas with high percentages living at or below the poverty level, and percentage of children bused to school.)

1.3. Develop an analysis of system discontinuities and barriers, including needed links between roadways, neighborhoods, trails, transit and other facilities.

1.3.1. Performance Measures: Analyze bicycle and pedestrian crossings at rivers, highways, arterials and at other locations where facilities do not provide safe, reliable network continuity. Also examine locations with highest concentrations of bike/ped accidents. (See Appendix C for bike/ped accident locations map.)

Non-Motorized Networks Include:

1. Roadways: ALL roads except limited access highways are shared roadways, and are legally open to bicyclists.
2. Bike routes: roadways given a preferred designation for cyclists though the use of way finding signs.
3. Bike lanes: portions of a roadway dedicated for use by bicyclists, designated by striping, pavement markings and signage. * See Page 13.
4. Walkways: pedestrian facilities separated from the road, such as sidewalks and paths, or part of the roadway, such as crosswalks or wide shoulders.
5. Shared Use Paths: facilities, such as the River Trail, which are physically separated from the roadway by a buffer or physical barrier. They may be used by bicyclists, pedestrians, skaters, runners, etc.



Photo by Dan Burden

A 2004 study commissioned by the Surface Transportation Project found that Americans would like to walk more than they are currently, but they are held back by poorly designed communities that encourage speeding and dangerous intersections, and whose design is inconvenient to walk to shops and restaurants. More than half of Americans say that their communities lack destinations within walking distance and a third of the public sees changing to less auto-centric communities as the answer to traffic.

See Appendix A.

1.4. Integrate existing analyses and plans into a draft non-motorized network plan for Lansing.

1.4.1. Performance Measures: By integrating the products of Strategies 1.1 through 1.3 with the items listed below, complete a draft non-motorized network plan.

- Lansing's Major Street Sidewalk Network Completion Analysis, 2005 (See Appendix E)
- Draft bicycle facilities plan for Lansing
- Current master plan for City of Lansing
- Grand Vision Task Force plans
- Heart of Michigan Trails Summit plans
- Capital Area Transit Authority route and stop network
- Non-motorized plans of surrounding communities/MSU

See also Page 29 for recommendations on trainings and events to facilitate the creation of an interconnection regional network.

1.5. Develop funding estimates and funding sources for plan components.

1.5.1. Performance Measure: Determine the amount of funding required to complete the various components of the draft non-motorized network plan, costs of future maintenance, and note possible funding sources. Also determine staffing level required to implement the non-motorized network plan. Specifically note where project costs are largely abated by combining the project into a larger road or public works project (such as combined sewer separation). Obtain all funding estimates and identify possible funding sources by 2012.

Possible Funding Sources: gas taxes (Act 51), general fund revenue, General Obligation Bonds, Congestion Mitigation and Air Quality (CMAQ) grants, and Enhancement Funds.

1.6. Prioritize projects listed in the draft non-motorized network plan.

1.6.1. Performance Measure (Completed 2009) Workshops were held in north Lansing and in south Lansing to obtain stakeholders' input regarding the key improvements that are needed to the City's non-motorized network. 12 key non-motorized routes were identified and an action plan for implementation of these high priority routes is include in Chapter 7. A summary of all suggested improvements identified at the workshops is in Appendix D.

1.7. Establish mechanisms for collecting and analyzing stakeholder input.

1.7.1. Performance Measures: Create systems for collecting and analyzing stakeholder input on the network plan, such as paper and online surveys/ questionnaires, online feedback forms, etc. Determine how stakeholder input will be reviewed and by whom, and how it will be used. Determine and create feedback mechanisms by October 2008.

1.8. Gather input from the Lansing community, transportation agencies, surrounding communities, and other affected stakeholders.

1.8.1. Performance Measures: Meet with affected stakeholders including neighborhood groups, residents, business owners, MDOT, surrounding communities, hospitals, schools, state government and other institutions to get input on a draft non-motorized network plan for Lansing.

1.9. Integrate community and stakeholder input into the non-motorized network plan.

1.9.1. Performance Measures: Integrate input and feedback provided by the groups listed in Strategy 1.8 into the non-motorized network plan, based on systems established in Strategy 1.7. Complete by 2011.

1.10. Seek formal adoption of the Lansing non-motorized network plan.

1.10.1. Performance Measure: Seek formal plan adoption by Lansing Mayor Virg Bernero and Lansing City Council by August 2009. Include with plan adoption the assignment of city staff responsible for plan implementation, and plan implementation performance measures.

Best Practices for creating non-motorized network plans:

- Ann Arbor: www.greenwaycollab.com/AANoMo.htm
- Dozens of U.S. plans: www.bicyclinginfo.org/pp/exemplary.htm
- Burien, Washington: www.ci.burien.wa.us/publicworks/bike_ped.htm
- Oakland, CA: www.oaklandpw.com/Page14.aspx



Photo by Dale Taylor www.istockphoto.com

Guiding Principles of the Design Guidelines for Active Michigan Communities include:

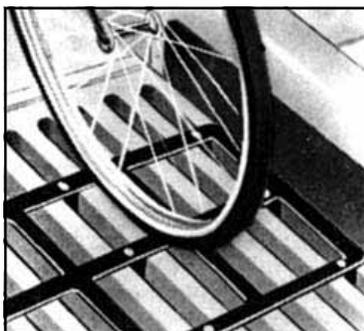
- *Creating walk-and-bike networks with many connections.*
- *Ensuring equitable access to all populations*
- *Creating safe and secure walking and bicycling environments*
- *Embracing downtowns, density, and mixed use*
- *Remembering that aesthetics matter!*



Sidewalks and foot paths along busy roads and school walking routes must be kept clear of snow to prevent pedestrians from walking in the street, where they are more likely to be hit by cars.



Sewer grates with gaps larger than 10 mm can trap road bike wheels, causing cyclist injuries.



The entire grate can be replaced with a smaller-gap grate, or retrofitted with a cover like this

OBJECTIVE TWO:

Ensure excellent condition of Lansing’s non-motorized infrastructure, such as bike lanes, trails, sidewalks, pedestrian crossings, and other non-motorized facilities.

Strategies:

2.1. Keep priority corridors, including major streets and school walking routes clear of snow. Find creative ways to work with schools, MDOT, neighborhood groups, and surrounding municipalities on this issue.

2.1.1. Performance Measures: Explore innovative strategies to ensure snow removals from priority areas, particularly on priority corridors including major streets and school walking routes. Work with neighborhood groups to re-start the “snow angel” program to help elders and others with disabilities keep their areas shoveled. Consistent with Lansing’s goal to achieve a complete streets network with accessible sidewalks for all, adopt a snow removal ordinance that insures that walks will be cleared of snow and ice (completed 2010) . See also *Best Practices*.

2.2. Keep all bike facilities clear of debris, snow, and ice.

2.2.1. Performance Measures: Develop and implement a plan in 2012 to keep all bicycle facilities clear of debris, snow, and ice, including street sweeping, trimming bushes and trees, plowing, and salting.

2.3. Ensure prompt repair of sidewalk cuts and pavement cuts on roads with bikeways.

2.3.1. Performance Measures: Strengthen procedures when issuing right of way permits, and for all activities with blanket annual permits to minimize the length of time sidewalks and bikeways are impassible due to construction. Include specifications that contractors repair damage to walkways and bikeways to a standard, including maximum gaps allowed on walkways and bikeways, and procedures for covering gaps using pedestrian and bicycle-friendly techniques.

2.4. Identify and replace all non bike-friendly sewer grates and bridge grates.

2.4.1. Performance Measures: Inventory and identify all sewer and bridge grates in 2012, and replace or modify all deficient grates by 2015.

2.4. Develop and implement construction sign placement standards that are bicycle and pedestrian friendly.

2.4.1. Performance Measure: Develop and implement construction sign placement standards in 2012, to ensure bicycle and pedestrian comfort and safety on road and other public right of way areas during construction projects.

Best practices for maintaining and preserving non-motorized networks:

- The Sidewalk Study: An Assessment of Pedestrian Needs within the Parental Responsibility Zones of Knox County Schools. (www.knoxmpc.org/pubs/sidewalk.htm#costs)
- City of Bloomington, MN removes snow from over 250 miles of sidewalk in the City focusing, in order, on 1) school walking areas, heavily used wheelchair accessible areas and high use areas by main roads; 2) walks expanding out from the school and along major roads; 3) residential and industrial areas. (www.ci.bloomington.mn.us/cityhall/dept/pubworks/mainten/strmain/snow.htm#notjust)

OBJECTIVE THREE:

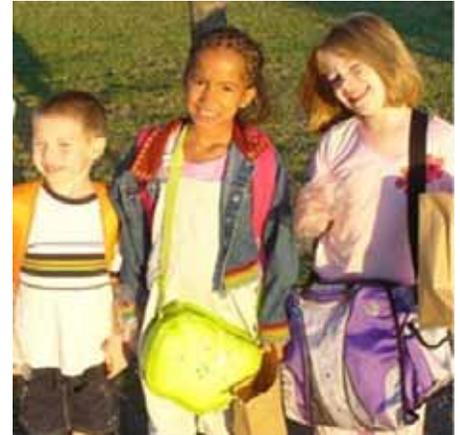
Encourage pedestrian, bicycling, and transit oriented development.

Strategies:

3.1. Assist schools and other large institutions and employers in developing pedestrian and bicycle friendly plans and policies.

3.1.1. Performance Measures: Starting in 2011, help all Lansing Schools create environments and policies that encourage students to walk and bicycle to school. Starting in 2012, work with the state of Michigan, Lansing Community College and other major employers to encourage infrastructure that balances motorized and non-motorized travel and parking needs. Work with at least three schools and three employers each year to construct new bicycle and pedestrian friendly amenities. See Page 29, Objective 3.

A federal **Safe Routes to School** program was authorized as part of the surface transportation bill signed into law in August 2005. As a result, every state now has dedicated dollars to help with infrastructure improvements (e.g. new sidewalks and traffic calming projects) and non-infrastructure activities to encourage and enable students to walk and bicycle to school.



Safe Routes to School:

1. Enables and encourages children, including those with disabilities, to walk and bicycle to school;

2. Makes bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age;

3. Facilitates the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption and air pollution in the vicinity of elementary schools.



Wide roads with no buffer, no sidewalks, large parking lots set back from the street—these features create an environment that is dangerous and unpleasant for pedestrians and bicyclists alike.

3.2. Create city ordinances to require direct and appropriate non-motorized access to all new developments.

3.2.1. Performance Measure: Develop and implement necessary City Ordinance changes in 2011. Monitor compliance through the site plan review process and post-construction inspection by City staff.

3.3. Revise parking requirements.

3.3.1. Performance Measures: Evaluate current parking standards and reduce the minimum requirements for vehicular parking, develop overlay zones and shared parking standards as well as parking maximums as appropriate. Complete by 2011.

See “Big-Box Challenges” section below for the connection between parking lots and non-motorized networks.

Big-Box Challenges

Portions of this section borrowed from Design Guidelines for Active Michigan Communities.

The size of “big box” stores, their site design, and their location, all pose challenges to reaching them by foot, bicycle, transit, or other “active” modes. An average supercenter, for instance, consumes 20 acres of land, most of it under pavement (Hunt and Ginder, 2005). In Michigan and elsewhere, most big-box stores are explicitly designed for customers arriving in cars. There is little or no expectation that someone might walk or bike to these stores. Additionally it is difficult for employees of these businesses, who often rely on transit, walking, and biking for transportation. A few design changes can make these retail centers more friendly to pedestrians, bicyclists, transit users, and others:

1. Roads near big-box retail sites can have sidewalks and designated crosswalks.
2. The building can be located at the street, with entrances available at the sidewalk and parking lots at the back.
3. Parking lots can include islands with shade trees; sheltered, well-lit walkways can allow people to move safely from their cars to the entrances.
4. Bike racks can be provided at all doors.
5. The size of parking lots can also be reduced. Many malls and shopping centers have been built anticipating only one day: the peak day in the retail year, the Friday after Thanksgiving. Awareness of the environmental costs of such overbuilding has led communities to adopt maximum parking standards that decrease the number of parking spaces to reflect more appropriate year-round usage.

A Special Note About Bicycle Lanes

In May of 2007, the Walking & Bicycling Task Force, now Walk and Bike Lansing, began a Bike Lane Education campaign, to increase Lansing residents' understanding of the benefits of bike lanes. The campaign included distributing literature at dozens of events throughout the year, and promoting a special web page (at www.midmeac.org/walkandbike) through emails to thousands of Greater Lansing area residents. Below is the text that appeared in the literature and website. See also Appendix B of this report: Walking, Cycling, and Neighborhood Quality of Life. The bottom line is that bike lanes make walk-able, bike-able communities safer for all road users.

What is a bike lane? No those aren't tiny right turn lanes—the new narrow lanes you may be noticing around town are bike lanes. The official definition of a bike lane is “a portion of the road that has been designated by striping, signing, and pavement marking for the preferential or exclusive use by cyclists.” The bottom line is that bike lanes are safer for both motorists and cyclists in the Lansing area. What is the difference between a bike lane and an off-road trail? Just like it sounds, a bike lane is a lane for bikes on the same roadway cars use. A trail is a separate path along a roadway or through a park that cyclists as well as pedestrians and inline skaters can use. The Walk and Bike Lansing Task Force is working to create a network of bike lanes throughout the city of Lansing. We are also big supporters of trails, are excited about the Lansing River Trail extension from Potter Park to Hawk Island, as well as other new trail projects of the Heart of Michigan Trails group.

Continued, next page.



Photo by Norm Cox

Federal Highway Administration, Bicycle Safety-Related Research Synthesis in 1995 revealed the following:

- 1. The addition of bicycle lanes in Davis, California reduced crashes by 31%.*
- 2. Bicycle lanes on a major avenue in Eugene, Oregon resulted in an increase in bicycle use and a substantial reduction in the bicycle crash rate. (The crash rate per 100,000 bike miles fell by almost half and the motor vehicle crash rate also fell significantly.)*
- 3. When the city of Corvallis, Oregon installed 13 miles of bicycle lanes in one year, the number of bicycle crashes fell from 40 in the year prior to the installation to just 16 in the year afterwards.*

Striped bike lanes decrease bicycle accidents by 30% or more.



Photo by Heidi Potter

Why are bike lanes important?

1. SAFETY

One of the most frequently asked questions about biking is “**Why can’t cyclists just ride on the sidewalk?**” Although you may think sidewalks are safest, national studies show that bicyclists are much safer on the street. Numerous studies have shown how bicycle lanes have reduced bicycling crashes, typically by 30% or more. Why? A big reason is that when bicyclists are in bike lanes they are always visible to cars, instead of darting on and off the sidewalk, behind trees and parked cars, and out of the view of motorists. In addition, the most common accident for bicyclists is cars turning into them, not cars hitting them from behind. When a bicyclist is on the sidewalk, they must cross many driveways that drivers turn into not expecting to see a bicyclist on the sidewalk. (See “numerous studies” section on Page 15.)

But, what about trails, can’t we use those instead?

Off-road paved trails (like East Lansing’s Northern Tier Trail, and the Lansing River Trail) are another great option for cyclists (especially infrequent or inexperienced cyclists) and should be built when possible. However linking all the places people want to go in the Lansing area by trail would be difficult because land would need to be secured from businesses and homes. Bike lanes can be installed on most roads fairly easily and give people a bicycle link to destinations around the city. Further, trails are used by modes traveling at many different speeds, which do not always mix easily with people bicycling for transportation.

2. EQUALITY

Roads should be for all users including bicyclists, who legally have the right to bicycle on the road, regardless of whether bike lanes are present or not. Bike lanes are only four to six feet wide and relatively inexpensive, and they reduce cycling accidents by 30% or more. Bike lanes are a winning solution to improve the safety of our community for all road users. In addition, some community members in the Lansing area do not own cars and rely on bicycling, walking, and public transit to reach work, run errands, and go to appointments. These “invisible cyclists”, as they are sometimes called, rely on bicycling for transportation and deserve safe routes to travel throughout the city.*

3. BIKING IS GROWING

One frequent comment we hear is “Nobody bicycles in Lansing-why do we need bike lanes?”. However, **more and more people in the Lansing area are choosing biking** as an active and inexpensive way to get around town. Unlike recreational biking where scenery is key, people choosing biking for transportation want to get to their destinations in a timely fashion (just like people in cars). Bike lanes allow cyclists to travel on uninterrupted pavement just like vehicles and travel quickly (while still obeying traffic laws). With bike lanes people can get to most of the destinations in Lansing in 15-20 minutes. In addition, young adults in Michigan name a walkable/bikeable community as one of the top five attributes that they look for in choosing a place to live. Lansing community members choosing bicycling for transportation will only continue to grow and they need safe places to ride.

*In the 2000 U.S. Census, 8,713 Ingham County households did not have a vehicle. Further, Lansing residents include 11,132 seniors over age 65; 9,594 people with two or more disabilities; and 20,657 children between age 5 and 16.

What is happening currently to make the Lansing area more bike-friendly?

INFRASTRUCTURE IMPROVEMENTS

Lansing, East Lansing, Okemos, Lansing Township, MSU and other communities have been working to install some bike lanes where feasible. Meridian, Delhi, and Delta Townships, and MSU have all created non-motorized transportation plans. However, this is just a start. A complete network needs to be installed, and adjacent municipalities need to coordinate their infrastructure and facility maintenance plans to make it convenient and safe for people to bike around town. It makes sense to install bike lanes next to the curb in places where parking isn't allowed, and to accommodate parking in other areas. In addition to bike lanes, we also need signed bike routes, whether we plan to put bike lanes on those routes in the future or not. The signage make cyclists and drivers aware that the route is a preferred bicycling route, meaning drivers need to exercise extra caution for cyclists on that road.

INCREASED EDUCATION

Infrastructure alone won't make everything safer for bicyclists in the Lansing area. There still needs to be a lot of work to educate both drivers and bicyclists about how to behave around each other. One aspect is educating bicyclists about proper use of the bike lanes. Bicyclists should travel with traffic and obey all traffic signals. In turn, drivers should not pull into or park on bike lanes. For complete bicycling safety practices, visit www.midmeac.org/smartcommute. (See also Chapter 5: Education.)

Numerous studies show that bicycle lanes improve safety and promote proper riding behavior:

- In a major study in Denmark, marking bicycle lanes in blue across intersections resulted in a 38% decrease in bicycle crashes and a 71% decrease in fatalities and serious injuries. Source: Søren Underlien Jensen, Karina Vestergaard Andersen and Erling Dan Nielsen, "Junctions and Cyclists," paper presented at Velo-City'97.
- Other Danish studies show that bicycle lanes reduced the number of bicycle crashes by 35%, (Danish Road Directorate, "Safety of Cyclists in Urban Areas", 1994) and that some of the bike lanes reached risk reductions of 70 to 80% (Jan Grubb Laursen, "Nordic Experience with the Safety of Bicycling", 1993).
- According to the Federal Highway Administration, Bicycle Safety-Related Research Synthesis, 1995:
 - The addition of bicycle lanes in Davis, California reduced crashes by 31%.
 - Bicycle lanes on a major avenue in Eugene, Oregon resulted in an increase in bicycle use and a substantial reduction in the bicycle crash rate. The crash rate per 100,000 bike miles fell by almost half and the motor vehicle crash rate also fell significantly.
 - When the city of Corvallis, Oregon installed 13 miles of bicycle lanes in one year, the number of bicycle crashes fell from 40 in the year prior to the installation to just 16 in the year afterwards.
- In 1996, over 2,000 League of American Bicyclist (LAB) members were surveyed about the crashes (accidents) they were involved in over the course of the previous year. From the information, a relative danger index was calculated which shows that streets with bike lanes were the safest places to ride, having a significantly lower crash rate than either major or minor streets without any bicycle facilities; moreover, they are safer than trails and sidewalks as well. Below is a summary of the Facility Danger Indexes that were determined through the study. The findings of the 1996 LAB study are consistent with the findings of a similar study done by the LAB in 1974 (LAW 74), and another similar study done by Washington State in 1994 (WA 94). The table to the right provides a summary of the Facility Danger Index calculated from each of these studies.

Facility Danger Indexes	LAB 96	WA 94	LAW 74
Major w/o bike facilities	.66	.75	1.00
Minor w/o bike facilities	.94	.98	.92
Signed bike route only (BR)	.51	n/a	n/a
On-street signed, striped bike lane (BL)	.41	n/a	n/a
On-street bike facility (BR or BL)	n/a	.54	.53
Multi-use trail	1.39	1.03	2.71
Off road/unpaved	4.49	8.58	n/a
Other (most often "sidewalk")	16.34	n/a	n/a

Source: William E. Moritz, Ph.D., "Adult Bicyclists In The United States Characteristics And Riding Experience In 1996," TRB Preprint Paper, 1998.

- In a national study comparing streets with bike lanes and those without, several important observations were made:
 - Wrong-way riding was significantly lower on the streets with bike lanes.
 - In approaching intersections, 15% of cyclists on streets without bike lanes rode on the sidewalks, vs. 3% on the streets with bike lanes.
 - On streets with bike lanes, 81% of cyclists obeyed stop signs, vs. 55% on streets without.

Source: Federal Highway Administration, "Bicycle Lanes versus Wide Curb Lanes: Operational and Safety Findings", May 1998.



GOAL: Implement “Complete Streets” Network to provide transportation options for all users

PERFORMANCE MEASURE:

Starting in 2010, consider needs of all users relative to the Complete Streets network

Complete Streets: Benefits

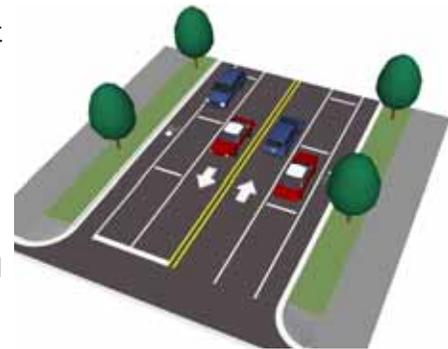
- Improves safety by designing for pedestrian travel.
- Encourages more walking and biking.
- Reduces emissions.
- Eases transportation congestion.
- Bolsters economic growth.

(from National Complete Streets Coalition)

Chapter 2

Complete Streets: Walking and Biking

A “complete streets” approach emphasizes harmonizing streets throughout the city with their surroundings, while interlacing transportation networks to meet the mobility needs of all users – motorists, commerce, pedestrians, bicyclists, and transit users. Implementing a “complete streets” approach balances safe and efficient travel for automobiles and commercial traffic in design of street improvement projects, but also matches the design of the street, streetscape, and other amenities in the right-of-way to the intended users. Not every street gives highest priority to all users – rather a network of streets prioritizes certain types of users for certain streets.



An example of a complete street: sidewalk, bike lane, parking and vehicle lanes, linking to transit stops.

All major corridors in Lansing are part of the Complete Streets Network (outlined in the Lansing Comprehensive Plan) that balances the needs of all users. Recognizing limited funding for implementing improvements, this plan’s Action Plan (Chapter 7) illustrates key non-motorized corridors and prioritizes principal non-motorized routes by synthesizing the extensive public input into this plan with the Comprehensive Plan’s Street Typologies (identifies priorities of each user). While the majority of Lansing streets include sidewalks and permit bicycling (except for on the freeways), there are a number of design factors that create dangers for non-motorized travelers. To minimize barriers and dangers to walking and bicycling in Lansing, pedestrian and bicycle safety protocols must be used in all roadway projects, with special attention to major road, bridges, over and underpasses, and intersections.

Existing facilities must also be upgraded to meet current standards and best practices identified in:

- 1999 AASHTO* Guide for the Development of Bicycle Facilities
- 2004 AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- Most current Americans with Disabilities Act requirements.

* AASHTO = American Association of State Highway and Transportation Officials

OBJECTIVE ONE

Consider the needs of bicycles, pedestrians and other non-motorized users in every road construction, resurfacing, streetscape and traffic calming project within the City of Lansing.

Strategies:**1.1. Develop protocols for assessing bicycle and pedestrian safety features on all roadway projects.**

1.1.1. Performance Measure: Protocols complete and approved by 2011. Begin using the PBCAT (Pedestrian and Bicyclist Crash Analysis Tool) in 2012 to analyze roads and intersections where pedestrians and bicyclists have died and/or been injured.

1.2. Continue to ensure that all new and refurbished bridges and underpasses are safe for bicyclists and pedestrians. Bridges and underpasses are critical for a non-motorized network. Every effort should be made to design these facilities to accommodate bicyclists and pedestrians, such as designing adequate separation of pedestrians from the roadway, and minimizing the adverse effects of winter weather such as spray and slush.

1.2.1. Performance Measures: Review all projects, beginning in 2011 to ensure adequate accommodation for pedestrians and bicyclists.

1.3. Design roadways to accommodate the needs of all users.

1.3.1. Performance Measures: Accommodate bicyclists and pedestrians in all new construction and reconstruction projects according to safety protocols—Strategy 1.1.

1.4. Design transportation infrastructure to be sensitive to its context and the built and natural environments.

1.4.1. Performance Measures: By 2011, establish standards to ensure that every transportation infrastructure project accommodates the needs of the right of way users and is context sensitive.

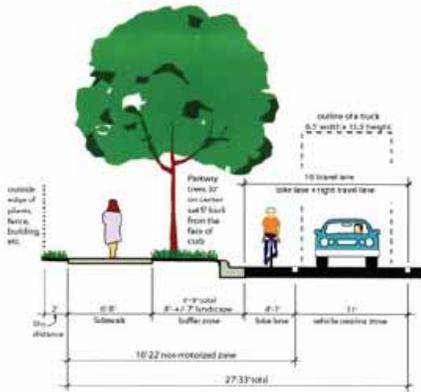
Context Sensitive Design (CSD, also called Context Sensitive Solutions) refers to roadway standards and development practices that are flexible and sensitive to community values. CSD allows roadway design decisions to better balance economic, social and environmental objectives. More at www.vtpi.org/tdm/tdm57.htm and at

OBJECTIVES:

1. Consider bicycles, pedestrians and other non-motorized users in every road construction, resurfacing, streetscape and traffic calming project within the City of Lansing.
2. Upgrade the existing bicycle and pedestrian facilities on a regular basis to make them friendlier to non-motorized users.



Photo by Dan Burden



Cross section of a typical "complete street". Drawing Credit: Norm Cox.

"Pedestrians are a part of every roadway environment, and attention should be paid to their presence in rural as well as urban area."

- American Association of State Highway and Transportation Officials, 2001



1.5. Provide bicycle and pedestrian connections whenever new streets are built, or roads are reconstructed to redirect or eliminate vehicular traffic.

1.5.1. Performance Measures: By 2012, develop bicycle and pedestrian access standards. By 2013, identify existing deficiencies and incorporate improvement plans into the non-motorized network plan.

1.6. Develop pedestrian and bicycle facility* standards.

1.6.1. Performance Measures: By 2012, Develop standards for bicycle and pedestrian facilities for multiple land use and roadway types (e.g. downtown, suburban, collector, arterial, etc.) that recognize and addresses differences in needs and possible solutions depending on the location in the City. Standards should be developed that balance the needs of motorists, bicyclists, pedestrians, and neighborhoods.

* See page seven for a description of the various types of pedestrian and bicycle facilities: roadways, bike routes, bike lanes, walkways, and shared use paths.

Best Practices for pedestrian and bicycle facilities standards:

- www.fhwa.dot.gov/environment/bikeped/design.htm
- www.fhwa.dot.gov/environment/rectrails/guidance_accessibility.htm
- www.dot.state.fl.us/safety/ped_bike/ped_bike_standards.htm

1.7. Develop standards for connections from the public right of way to buildings.

1.7.1. Performance Measures: By 2011, develop standards for all new buildings and facilities on private and public property to require appropriate connections from the road right of way to the front door and to bicycle parking. Implement necessary ordinance changes by 2012.

1.8. Recommend minimum funding levels for non-motorized transportation projects.

1.8.1. Performance Measure: In 2011, evaluate current funding for pedestrian and bicycle projects over the last five years and recommend minimum funding targets over the next ten (10) years. Funding targets should look at all eligible sources and set targets for both steady funding streams such as Act 51 revenues (fuel taxes) and general funds as well as other sources such as Congesting Mitigation Air Quality (CMAQ) and enhancement grants, private foundations, etc.

OBJECTIVE TWO

Upgrade the existing bicycle and pedestrian facilities on a regular basis to make them friendlier to non-motorized users. Opportunities exist to upgrade the signage, striping and other aspects of current bicycle and pedestrian facilities to meet current standards.

Strategies:**2.1. Identify current bicycle and pedestrian facilities that don't meet current design standards.**

2.1.1. Performance Measures: Identify all deficiencies in 2012. Allocate annual funding to correct deficiencies starting with FY 2014 budget.

2.2. Develop standards to improve intersection crossings for pedestrians and bicyclists.

2.2.1. Performance Measures: Develop intersection crossing standards regarding signal operations, pavement markings, sidewalk ramps, etc. Standards should be developed by 2009, to implement with 2013 construction projects. Standards will include the following at a minimum:

- 1) installation of pavement markings at signalized intersections with pavement loops to instruct cyclists where to stop to actuate the signal,
- 2) development of guidelines for the use of countdown pedestrian signals,
- 3) installation of separate pedestrian and/or bicycle phasing in some locations as well as the inclusion of advance phases as appropriate
- 4) installation and maintenance of traffic signal loops and cameras to detect bicycles
- 5) installation of pedestrian signals and push buttons as appropriate,
- 6) installation of ADA compliant curb ramps on all new construction and development of a plan to upgrade or add pedestrian ramps at all signalized intersections, and
- 7) installation of non-slip pavement markings for high pedestrian crossing locations and areas with significant bicycle traffic.

2.3. Develop and update pedestrian, bicycle and trail planning, design, and construction standards.

2.3.1. Performance Measures: By 2012, develop standards for all pedestrian and bicycle facilities including bicycle lanes and routes, walkways, shared use paths and other facilities. Update these standards as needed.

2.4. Develop lighting standards for bicycle and pedestrian facilities.

2.4.1. Performance Measures: Work with the Lansing Board of Water & Light to develop minimum lighting standards for all facilities by 2012, with particular emphasis on intersections, underpasses and other locations where lack of lighting creates a barrier to use of the facilities.

Best practices for intersections, trails, bicycle lanes and routes, and lighting:

- www.fhwa.dot.gov/njdiv/safetyupdate_su07.pdf
- www.activelivingresources.org/assets/chicagosbikelanedesignguide.pdf
- www.johnforester.com/Articles/Facilities/BikelaneGuides.htm
- www.uofaweb.ualberta.ca/utilities/pdfs/LightingStandard.pdf





Photo by Bell Sports/Gareth Walters

GOAL:

Provide convenient and secure short-term and long-term bike parking throughout Lansing and encourage public agencies and private property owners to provide sufficient and appropriate bicycle parking.

PERFORMANCE MEASURES:

Install 500 bike racks and 100 long-term bike parking spaces by 2015.

Chapter 3

Bicycle Parking

Secure, conveniently located bicycle parking is essential for increasing bicycling. The focus of this chapter is to offer a set of goals and objectives for increasing secure, convenient bicycle parking in the City of Lansing.

- Short-term bicycle parking is usually defined as two hours or less, such as might be necessary for visitors of a store, restaurant, office building, or government service center.
- Long-term bicycle parking is defined as an entire day or more.

OBJECTIVE ONE

Create a bike parking program within the City of Lansing.

Strategies:

1.1. Designate staff member(s) within the City of Lansing to design, engineer, and implement the non-motorized network plan, and to address bicycle parking needs.

1.1.1. Performance Measure: Establish a City staff position dedicated to implementing non-motorized transportation facilities and amenities by 2015.

1.2 Continue installing outdoor bike racks. In 2004 Lansing and East Lansing installed 157 inverted “U” bike racks at 30 different sites with the assistance of the Tri-County Bicycle Club, MDOT and other local agencies. In 2008 the City of Lansing will install another 50 inverted “U” racks at 20 locations in Lansing’s five primary business districts. The city should continue this popular program and work with residents and businesses to install bike parking.

1.2.1. Performance Measure: Determine priority bicycle rack locations, with resident input, by 2012. Install 25-50 bike racks per year.

Possible Funding: MDOT and Federal Sources: Congestion Mitigation and Air Quality Improvement Program, Surface Transportation Program, Transportation Enhancement Program Grants; other Government and Foundation Grants; Lansing General Funds.

1.3. Distribute information and encourage the installation of bike parking inside office buildings, covered parking garages and employment centers. Providing bike parking is one of the most effective ways to encourage people to bicycle to work. Indoor bike parking can further increase participation and can often be established with minimal effort and expense. Partner with building owners /managers and other organizations to publicize this service and encourage their cooperation.

1.3.1. Performance Measures: Provide free consulting services materials. Beginning in 2012, work with at least five work sites per year to encourage the installation of indoor bike parking.

1.4. Partner with public institutions (e.g., Lansing Community College, Lansing School District, Sparrow Hospitals, or state office buildings, etc.) to install short and long-term bike parking on their properties. Appropriately located bike parking for employees, visitors, and students encourages bicycling and increases overall parking capacity at minimal cost.

1.4.1. Performance Measure: Beginning in 2012, partner with at least two institutions per year to help them install short and long-term bicycle parking.

1.5. Create and distribute standard bike rack installation procedures. Include preferred rack styles, distance from building and other objects, location in relation to building and visibility, lighting, and other factors to consider when installing bike racks.

1.5.1. In 2012, distribute installation procedures to all known agencies planning to install bike racks, and publish online.

Best practices for bicycle parking programs:

- The Boston Metropolitan Area Planning Council offers a bicycle parking program whereby communities can receive full reimbursement for the purchase of bike racks or related equipment from the MPO. (Federal funds provide the match) www.mapc.org/transportation/bike_parking_program/intro.html
- Los Angeles Sidewalk Bicycle Parking Program and Procedures: www.bicyclela.org/Parking.htm#Sidewalk
- U.C. Berkley's Covered and Secure Bicycle Parking Program: http://pt.berkeley.edu/transportation_alternatives/secure_bicycle_parking/index.html

OBJECTIVES

1. *Create a bike parking program within the City of Lansing.*
2. *Encourage and require bicycle parking at new and existing buildings.*
3. *Increase or provide bike parking at transit transfer points, at high use bus stops and on all CATA busses.*
4. *Provide bike parking at large events, sports facilities and gathering places.*

40% of Americans say they would commute by bicycle if safe facilities were available.

- Rodale Press Survey, quoted in H.R. 1265-Bicycle Commuter Act



Implementing a community bicycle parking requires a combination of three primary strategies:

- 1. Acquire and install bicycle parking devices on public rights of way or at public destinations.*
- 2. Encourage businesses to provide bicycle parking for their customers.*
- 3. Alter zoning regulations to ensure that bicycle parking is provided in new developments.*

— Federal Highway Administration, *Bicycle and Pedestrian Transportation Course, Lesson 22*



OBJECTIVE TWO

Encourage and require bicycle parking at new and existing buildings.

Bike parking is an inexpensive way to encourage people to commute and shop by bike, and increases overall parking capacity at minimal cost. For large multi-unit residential dwellings, bike parking sheds, lockers, and/or storage within parking areas are essential to making bicycling convenient and accessible for residents.

Strategies:

2.1. Review and amend existing policies and ordinances to require installation of bike parking for all new retail business developments, multiple-unit housing developments, entertainment and dining establishments, and commercial parking garages.

2.1.1. Performance Measures: Determine and implement appropriate changes to Lansing's zoning ordinance and other policies in 2011, including the evaluation of bonus provisions for exceeding bike parking requirements.

2.2. Require installation of bike parking for all new retail and mixed-use developments and for businesses being remodeled or redevelopment that exceed a specified dollar value or square footage.

2.2.1. Performance Measures: Once ordinance in 2.1. is adopted, the Planning Commission should annually review approved site plans and building permits for redevelopment or renovation to quantify the number of bicycle parking facilities required and compare to the goals of providing 50-75 bike parking facilities identified in Strategy 1.2.

2.3. Encourage and/or require indoor bike parking and/or outdoor bike parking sheds at all new and existing high-density residential apartment buildings, loft apartments, and condominium developments.

2.3.1. Performance Measure: Develop and distribute guidelines on the bicycle parking program to developers, building managers, and condominium associations, beginning in 2012. Incorporate bicycle parking requirements established by 2.1. into site plan reviews for new buildings.

Best Practices: The Massachusetts Bicycling Coalition has collected and published an online reference guide to bicycle parking ordinances and regulations from around the country at: www.massbike.org/bikelaw/parking.htm

OBJECTIVE THREE

Increase or provide bike parking at transit transfer points, at high use bus stops and on all CATA buses.

See Chapter 4: Transit, Strategy 2.2.

OBJECTIVE FOUR

Provide bike parking at large events, sports facilities, and gathering places. Secure “valet” parking for bicycles or indoor bicycle parking facilities encourage people to bicycle to events and attractions rather than drive, thereby reducing traffic congestion and demand for automobile parking.

Strategies:

4.1. Coordinate and publicize secure and convenient bike parking at large events and festivals. Encourage private sector sponsorship and community operation of this service.

4.1.1. Performance Measures: Provide “valet” bike parking at Lansing’s Common Ground Festival and other large events and festivals beginning in 2010. Publicize in event/festival brochures and media releases.

4.2. Establish indoor or sheltered bike parking at the Lansing Center, Cooley Law School Stadium, and other public sports, recreation and gathering areas.

4.2.1 Performance Measures: Construct at least 25 indoor or sheltered bike parking spaces at these locations by 2015.

Best Practices:

- Every year the Tri-County Bicycle Association and League of Michigan Bicyclists offer a free valet bicycle parking area at the Great Lakes Folk Festival in East Lansing:
www.biketcba.org/cc/2006/Oct06.pdf
- The San Francisco Bicycle Coalition provides free, secure valet bicycle parking at dozens of outdoor events each year. In 1999 the San Francisco Board of Supervisors passed a set of bicycling regulations that included requiring monitored bicycle parking at events where expected attendance is larger than 2,000.
www.sfbike.org/?valet#requirements



Outdoor bike-parking sheds (see photo page 22) and lockers make bicycling far more convenient for residents of multi-unit dwellings.



League of Michigan Bicyclists bicycle parking area in front of Lansing City Hall during the 2006 Lucinda Means Advocacy Day Parade.



Millennium Park in Chicago (shown above), and the Minnesota Metrodome both have enclosed bicycle parking structures.



Photo by: CATA

GOAL:

Provide convenient connections between walking, bicycling, and transit.

PERFORMANCE**MEASURES:**

Increase the number of bike-transit trips by 10% per year, and increase pedestrian-transit trips by 5% per year.

OBJECTIVES:

- 1. Improve schedule adherence.*
- 2. Improve bicycle and pedestrian access to buses.*

Chapter 4**Transit**

Combining bicycling with transit can make bus travel just as timely as automobile travel. Additionally, bike-transit trips can be more relaxing, and lead to fewer high-polluting single-occupant vehicle trips. Improving both pedestrian and bicycle access to Capital Area Transit Authority stations, stops, and buses makes it easier for people to choose these modes of transportation, and to stay safe and comfortable while using transit.

OBJECTIVE ONE

Improve schedule adherence and increase information to transit users on changes due to construction and special events.

Strategies

1.1. Ensure that CATA is informed of all road construction projects with adequate notice to be able to inform riders of anticipated route and/or schedule changes.

1.1.1. Performance Measures: Work with CATA to implement construction website by 2012 with up to date information for all major projects.

1.2. Ensure that CATA is informed at the time special event applications are turned in, and give CATA a voice in routing decisions early in approval process.

1.2.1. Performance Measures: Update special event permit application in 2011 to give CATA an approval or input role.

1.3. Minimize schedule variability.

1.3.1. Performance Measures: Encourage CATA to add new technologies to buses by 2015, such as automatic vehicle location, occupancy counters, schedule adherence software, and transit priority systems to enhance schedule adherence.

Best Practices for schedule adherence technologies:

- www.tc.gc.ca/Programs/Environment/utsp/transitpriority.htm
- www.itstexas.org/presentations/2001annualmeeting/Havinovisk.pdf
- www.aata.org/aos.asp

OBJECTIVE TWO

Improve bicycle and pedestrian access to buses.

Strategies**2.1 Ensure that as many buses as possible have three bike racks.**

2.1.1. Performance Measure: Encourage CATA to add 3rd position to existing racks or replace racks as appropriate so at least half of buses have three position racks by 2015.

2.2. Provide bicycle racks and/or covered bicycle parking at main stops, and destination-rich stops.

2.2.1. Performance Measures: Work with CATA to add a minimum of 30 short-term racks per year at destination-rich stops, through at least 2015. Add at least 25 long-term bicycle parking spaces at the main CATA terminal.

2.3. Improve access to buses for non-standard bicycles.

2.3.1. Performance Measure: Work with CATA to investigate accommodating tricycles, recumbent bicycles, children's bicycles and other non-standard bicycles on CATA buses by 2015.

2.4. Ensure that all existing bicycles racks are functional.

2.4.1. Performance Measure: Work with CATA to develop a maintenance and inspection program for on-bus bicycle racks by the end of 2012.

2.5. Improve sidewalk facilities near locations that currently are, or could be high generators and attractors of transit trips.

2.5.1. Performance Measures: By 2012, perform an evaluation of the sidewalk network with respect to access to transit and develop a plan to eliminate sidewalk gaps, install curb ramps, and bus pads as needed and address maintenance deficiencies. Plan should address all noted deficiencies within 10 years. Create a mechanism for CATA to comment on deficiencies at bus stop locations and in close proximity to these locations. Publish plan online.

2.6. Ensure that busy/priority bus stop locations have concrete pads, benches and/or shelters .

2.6.1. Performance Measure: Work with CATA to determine criteria for installing pads, benches, and/or shelters, and establish a plan for upgrading all stops by 2020.



Bus stops like this one on Willow, lack adjoining sidewalks and do not meet ADA (Americans with Disabilities Act) requirements. On snowy days, those waiting for the bus are forced to choose between walking in and waiting in deep snow, or in the street, where they are more likely to be hit by cars.

A similar situation exists on Old Lansing Road, where many children take the bus and walk to and from the Westside YMCA. Most of Old Lansing road lacks sidewalks, and there is no pedestrian access to the building from the street or the bus stop.

When new developments, such as the Westside YMCA are created, these considerations should be built in at the start, and possibly funded in part by the developer or tenant—not an after thought that comes years later.



This concrete pad, bench, and trash receptacle was installed on MLK in December 2007. These improvements meet ADA requirements, and vastly improve the safety and comfort of transit users.

**GOAL:**

Educate bicyclists, pedestrians, and motorists about bicycle and pedestrian safety, and the benefits of walking and bicycling.

PERFORMANCE MEASURES:

Reach 100,000 people per year regarding bicycle and pedestrian safety and the benefits of bicycling and walking. Work directly with 5,000 people per year, and evaluate the impact of educational efforts.

Chapter 5**Education**

To make Lansing a walk and bike friendly community, it is essential to integrate education and encouragement along with engineering and enforcement. People need to know about safe practices and how to safely share the road with people using different modes of transportation.

OBJECTIVE ONE:

Educate all road users to “share the road” and to walk and bike safely.

Strategies:

1.1. Create a “share the road/pedestrian safety” handout to distribute at events, government offices, and other locations.

1.1.1. Performance Measures: Create a concise, easy to read handout. By 2012, offer the handout online, and place copies in at least 10 government offices that receive visits from the general public (i.e. Parking Office, District and Circuit Courts, Police Department, Health Department, County Clerk’s Office, Secretary of State, etc.), as well as local bicycle shops, sporting good stores, and car dealerships. Explore inserts with utility bills. Distribute at least 3,000 copies in 2012, and at least 5,000 copies every year thereafter.

1.2. Broadcast “share the road” and “bicycle and pedestrian safety” television series.

1.2.1. Performance Measures: Run a series of television programs on City TV by 2013, focused on a) motorists respecting bicyclists and pedestrians and motorists’ most common dangerous behaviors, b) bicyclists riding safely, wearing helmets, and being considerate of pedestrians, and c) pedestrian safety practices in a variety of walking environments.

1.3. Hold a yearly “share the road” awareness event on major streets in Lansing area.

1.3.1. Performance Measure: In 2012, begin an annual “Share the Road with Mayor Bernero” event aimed at generating residents’ participation, and media coverage of the importance of sharing the road with all users.

1.4. Create a “Great Streets” website for Lansing that helps change peoples’ thinking about the streets in and around Lansing.

1.4.1. Performance Measures: Launch and promote website by 2013, targeting Lansing residents, business owners, planners, transportation engineers, and regional partners and leaders. Create and include in the website design guidelines for major Lansing streets, based on the economic, development, neighborhood, and land use goals for each district or neighborhood. (See Chapter 2.) Show how road diets alleviate congestion, not increase it. Also include “share the road” and bicycle and pedestrian safety” information outlined in 1.2.1.

1.5. Create a Mayor’s Bicycle & Pedestrian Ambassadors program to promotes safety for all road-users and helps all Lansing residents walk and bike more.

1.5.1. Performance Measures: Launch a Bicycle & Pedestrian Ambassadors program by 2013. Publish a schedule of Ambassador events, including school-specific outreach, with a goal of reaching at least 5,000 people per year.

1.6. Work with schools to include a “share the road” training modules in drivers’ education.

1.6.1. In 2012, explore options for including share the road training modules in drivers’ education. Create and pilot training modules at four schools in 2012-2013 school year.

Best Practices:

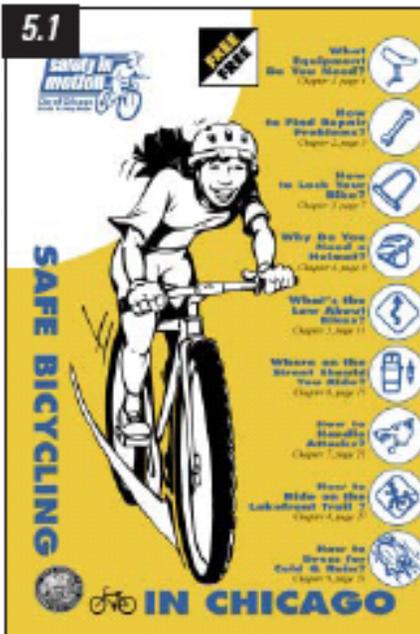
- Chicago Bicycling Ambassadors: www.bicyclingambassadors.org
- Toronto, Ontario Cycling Ambassadors Program www.toronto.ca/cycling/ratsa/index.htm
- Great Streets St. Louis: www.greatstreetsstlouis.net
- Washington, DC, Street Smart Campaign: www.mwcog.org/transportation/activities/planning/safety.asp
- www.marinbike.org/Campaigns/ShareTheRoad/Index.shtml

OBJECTIVES

1. Educate all road users to “share the road” and to walk and bike safely.
2. Deliver bicycle and pedestrian education to specific audiences.
3. Train city staff and partners to implement the Lansing 2020 Non-Motorized Plan and the Lansing Non-Motorized Network Plan.
4. Reduce the incidence of bicycle theft through education and enforcement.



Photo by Tim Potter



In 2006 and 2007, the Mid-Michigan Environmental Action Council worked with the Tri-County Bicycle Association and local bicycle commuters to host free bicycle commuting lessons. More than 200 people have taken the classes to far, which have been a combination of one-hour “brown bag” lunch sessions downtown, and three-hour weekend sessions at community centers and

OBJECTIVE TWO:

Deliver bicycle and pedestrian education to specific audiences.

Strategies

2.1. Work with schools to incorporate lessons on safe walking and bicycling practices into physical education curriculum.

2.1.1. In 2012, explore options for including lessons targeted for specific age groups into physical education. Create and pilot training modules at four schools in 2013. By 2014, all Lansing students taking physical education courses receive lessons on safe walking and bicycling practices. Refer to Safe Routes to School Toolkit online at www.saferoutesmichigan.org for guidance.

2.2. Integrate bicycle and pedestrian education into Lansing’s after-school programs, youth-focused programs, Parks & Recreation classes, and other extra-curricular activities.

2.2.1. Performance Measure: Beginning in 2012, hold at least 20 bicycle and pedestrian education sessions reaching at least 1,000 Lansing youth. Offer age-specific trainings designed for elementary-aged children (age 5-10), middle schoolers (age 11-13), and high schoolers (age 14-18). Work with neighborhood groups, churches, YMCA’s, schools, and others providing after-school programs.

2.3. Educate Lansing residents age 55+ on safety precautions for walking and bicycling.

2.3.1. Performance Measure: Beginning in 2012, reach at least 500 Lansing residents age 55+ with bicycle, pedestrian, and share the road information. Hold at least 15 education sessions per year for this group, focusing on how this age group avoid being hit by vehicles.

2.4. Increase the use of properly fitted bicycle helmets and bicycle locks through education, giveaways, and other incentives.

2.4.1. Performance Measure: Include bicycle helmet and lock information with all education sessions listed above. Starting in 2012, reach another 1,000 people per year with helmet and lock information at local events. Work with area hospitals and children’s safety groups to provide incentives for families to purchase helmets and locks for their children, and free helmets and locks to low-income children.

OBJECTIVE THREE:**Train city staff and key partners to implement the Lansing 2020 Non-Motorized Plan and the Lansing Non-Motorized Network Plan.**

The success of this plan and of the network plan depend on input and support from city staff and leaders, as well as from sister agencies, such as Michigan Department of Transportation, Capital Area Transit Authority, Tri-County Regional Planning Commission, Lansing School District, and Lansing Police Department. It also depends on Lansing developers designing projects that enhance walking, bicycling and transit use.

Strategies:**3.1. Promote the goals, objectives and strategies of the Lansing 2020 Non-Motorized Plan to key staff at the City of Lansing and other key agencies.**

3.1.2. Performance Measures: In 2012, present the Lansing 2020 Non-Motorized Plan to key staff at the City and to partners listed above, and begin exploring partnerships to accomplish the plan objectives and strategies.

3.2. Train engineers, planners, leaders, and developers on techniques, best practices, and progressive approaches to enhancing walking and bicycling in Lansing through design.

3.2. 1. Performance Measures: In 2012, offer a series of workshops for city leaders, staff, and partners, on techniques, best practices, and progressive approaches. Offer audience-specific workshops for engineers, planners, leaders, and developers, and have a capstone session where all the groups come together to discuss how they can work together to use these new techniques. Use the information from these sessions in designing the non-motorized network plan (Chapter 1), and in creating protocols and standards (Chapter 2). Offer additional workshops/training courses every year or every other year.

Best Practices:

- Federal High Way Administration Bicycle and Pedestrian Safety Course: http://safety.fhwa.dot.gov/PED_BIKE/univcourse/swtoc.htm
- Workshops and Courses by Dan Burden: www.walkablecommunities.org
- National Center for Walking & Bicycling Workshops: www.bikewalk.org/workshops

The main reason urban transport policy has not been very effective in the United States is that it has been far too piecemeal. For transport policy to be effective, it must be a coordinated package of mutually supportive policies to restrict auto use, control parking supply, facilitate bicycling and walking, and integrate transit services and fares.

Discouraging low-density sprawl through land-use regulations is also crucial for enabling walking, bicycling, and transit to provide feasible alternatives to the car.

— Dr. John Pucher, Department of Urban Planning at Rutgers University



Photo by Bruce Burgess



According to 2004-2007 larceny reports from the Lansing Police Department, an average of 225 bicycles are reported stolen in Lansing each year.

A GPS and “Bike Bait” theft prevention program at the University of Toronto cut bike theft by nearly 70% in 2007.

OBJECTIVE FOUR:

Reduce the incidence of bicycle theft through education and enforcement.

Strategies:

4.1. Improve Lansing’s bike serial number registration program.

4.2. 1. Performance Measure: In 2012, evaluate and find ways to improve LPD’s bike serial number registration program, including determining who receives registrations made online, and who checks bikes obtained by LPD to see if they are stolen. Educate residents about the importance of, and how to register bicycle serial numbers in all education programs offered in Objective Two of this Chapter. Also develop literature on “Bicycling in Lansing” for bike shops, big-box stores, second-hand stores, and other bicycle dealers to distribute with all bicycle sales.

4.2. Work with Lansing Police Department to more effectively use their screening system with pawn shops to find stolen bicycles. By simultaneously working to increase bicycle serial number registration and incorporating stolen bike checks into the LPD’s stolen goods screening system, Lansing can help get more pawned bikes back to their owners.

4.2.1. Performance Measure: 50% more stolen bicycles returned to their owners in 2015.

4.3. Stage bicycle theft stings.

4.3.1. In 2013, test equipping bicycles with hidden GPS (Global Positioning System) transmitters and receivers to locate stolen bicycles and find professional bicycle thieves. Combine with media outreach on how to prevent bicycle theft, and with a “This Bike Could Be Bait” sticker program, where bicyclists are encouraged to attach stickers to their bike warning potential thieves that they could be traced.

Also See Objective One, Strategy 2.4 of this chapter.

Best Practices:

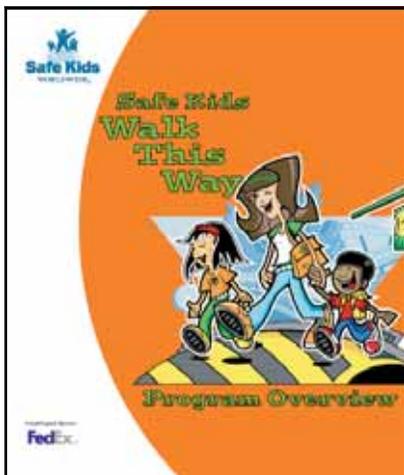
- www.nationalbikeregistry.com/crime.html
- <http://bikeportland.org/stolenbikes#digest>
- University of Toronto bike theft sting and “Bike Bait” program: www.news.utoronto.ca/bin6/070911-3375.asp

Possible Funding Sources:

- Federal Congestion Mitigation and Air Quality Improvement Program
- Federal Surface Transportation Program
- Michigan Department of Transportation Enhancement Program



www.bikemaine.org/



Safe Kids Walk This Way is a national program sponsored by FedEx, that offers training materials and modules to help kids learn pedestrian safety practices to keep them safe when they are out walking.

www.usa.safekids.org/wtw

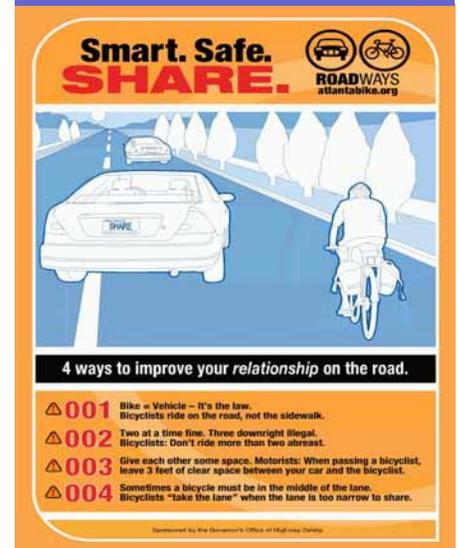


This booklet from the League of Michigan Bicyclists describes safety practices and laws to help keep bicyclists safe, and to help bicyclists and motorists remember to “share the road.”

Studies consistently show that providing safe environments for walking and bicycling, and educating all road users about safe practices drastically reduces pedestrian and bicyclist injuries and fatalities.

Turner C., McClure R., Nixon, J., and Spinks, A., Community-based programs to prevent pedestrian injuries in children 0-14 years: a systematic review: Injury Control and Safety Promotion, Volume 11, Number 4, December 2004, pp. 231-237.

Also see page 15 of this report, listing studies that show injury and fatality reductions as a result of bicycle lanes.



The Atlanta Bike Coalition and Georgia Department of Driver Services (GDDS) worked together to create billboards, PSA's, brochures, posters, t-shirts, bumper stickers, yard signs, water bottles, license plates, and more to campaign “Share the Road.” Literature is online at www.atlantabike.org/RoadWays-MotoristEd.html and in all GDDS locations.

**GOAL:**

Increase walking and bicycling in Lansing through social marketing and health promotion.

PERFORMANCE MEASURES:

Use social marketing and health promotion strategies to encourage 5,000 people per year to make additional walking and bicycling trips in Lansing.

**Chapter 6****Marketing and Health Promotion**

Marketing and health promotion deal with the encouragement aspect of making Lansing walk-and-bike friendly city. The more people use walking and bicycling, the safer and more enjoyable it becomes for everyone. A popular health promotion technique called “community based social marketing” (CBSM) seeks to enhance the benefits of a desired behavior using incentives, rewards, peer encouragement, and group activities, while simultaneously removing barriers to the desired behavior (such as environmental conditions). This chapter uses the principles of CBSM to offer a set of objectives and strategies to promote walking and bicycling as an attractive lifestyle choice.

OBJECTIVE ONE

Promote the health benefits of walking and bicycling.

Strategies

1.1. **Work with Lansing physicians, hospitals, and other health care providers to create a “Walk and Bike for Life” campaign**, promoting the health benefits of walking or bicycling 30-60 minutes per day 3-4 times per week.

1.1.2. At least 30 locations and organizations participating in the program by 2013. At least 150 participating members by 2020. Tie in with Community Partners in Health Winter Warm-Up walking sessions and the Smart Commute Club online calculator. (See www.midmeac.org/calc.)

OBJECTIVE TWO

Market the benefits of walking and bicycling to work, school, and other destinations.

Strategies

2.1. **Help expand the “Smart Commute” program.**

2.1.1. Performance Measure: Ensure that the City of Lansing as a whole, or individual departments, participate in the Smart Commute ‘12 Challenge. Promote Smart Commute ‘12 resources, events, and classes to all City employees, and

challenge other large employers, such as area hospitals, the Lansing School District, insurance companies, and manufacturers to compete against the City of Lansing.

(See www.midmeac.org/smartcommute)

2.2. Help schools determine and promote safe walking and bicycling routes, and parental networks, to help students' walk and bike from home to their schools.

2.2.1. Performance Measures: Starting in 2012, work with at least three schools each year to develop maps for students and parents showing safe walking routes to the school, and create networks such as "walking school buses" to help student walk to school in a group with parental support.

2.3. Organize community and school safe walk/bike days and challenge elected officials, department heads, and school officials to participate.

2.3.1. Performance Measures: Hold a Mayor's Smart Commute Challenge in 2012. Starting in 2012, work with at least two elementary and middle schools to organize walk and bike to school day events, with school principals and officials participating by using a "smart commute" mode to get to school from their homes. Work with an additional two school each year until all Lansing schools are participating.

2.4. Distribute at least 5,000 copies of the Capital Area Smart Commute Guide each year.

2.4.1. Starting in 2012, partner with surrounding municipalities and non-profit groups to print and distribute at least 5,000 copies of the Capital Area Smart Commute Guide each year at locations such as the airport, hotels, visitor centers, places of employment, neighborhood and community centers, transit centers, government offices, bike shops, and other locations where people are likely to pick up such information. (See cover at right. This 30-page booklet on the how's and why's of Smart Commuting in the Capital Area was developed in 2007 by the Mid-Michigan Environmental Action Council.)

OBJECTIVES:

1. *Promote the health, economic, and environmental benefits of walking and bicycling.*
2. *Market the benefits of walking and bicycling to specific destinations.*
3. *Promote Lansing as a center for walking and bicycling events, recreation, and tourism.*





The Tri-County Bicycle Association (TCBA) currently offers a route map for some segments of the tri-county area.

The Chicago Bike Map also contains safe cycling and “share the road” information.



In 1999, spending by bicycle tourists in Maine was calculated to be \$36.3 million.

– maine.gov/mdot/opt/pdf/biketourismexecsumm.pdf

2.5. Work with TCBA to develop cross town bicycle routes to connect people to recreational destinations, such as YMCA’s, parks, the zoo, Oldsmobile Park, etc.

2.5.1. By 2013, create and distribute/ publish online route maps showing people how to bicycle from various part of the Lansing area to recreational areas.

OBJECTIVE THREE

Promote Lansing as a center for walking and bicycling events, recreation, and tourism.

3.1. Work with Downtown Lansing Inc. to host an annual Bike Fest event in downtown Lansing each year. Some cities combine their bike festivals with events related to the environment— like Ann Arbor’s Green Fair, which also features a “Bike Jam.” Other cities have them as stand alone events, or as part of special Health and Fitness Fairs.

3.1.1. Performance Measures: Explore different options for a Bike Fest in downtown Lansing, and plan a first annual event for 2013. For the first year event, reach at least 50,000 people with promotional materials, and aim for at least 1,000 participants.

3.2. Hold monthly May through October “Lansing Rides” bicycling events, from Lansing neighborhoods to downtown locations/events targeted toward different demographics. Group urban rides other than “critical mass rides” are not currently offered in Lansing, and would offer a great option for people to get together and bicycle around town in a group. For example, some rides could be on weekends, with people joining up in their neighborhoods and cycling together to places like Impression Five, Hawk Island, or Potter Park. Other rides could end with a picnic or some other special event. Rides that stop at points of historic and architectural interest could attract visitors and residents alike.

3.2.1. Performance Measure: Begin promoting and holding rides by 2013. Determine demographics to reach, and design rides that fit their best days/times to rides, and interests for ending locations/events. Identify a group of volunteer ride leaders, create ride schedules and calendars, and promote the rides through local event calendars, community announcements, and flyers.

3.3. **Bring the DALMAC back to Lansing.** The Dick Allen Lansing to Mackinac (DALMAC) bicycle ride is named for former Michigan Senator Dick Allen, who was challenged by a friend to bicycle across Michigan in the 1971. In 2007, 2,300 people rode the DALMAC. Bringing the DALMAC starting place back to Lansing would show cyclists that Lansing is a bike-friendly city, and would generate revenue for Lansing businesses (DALMAC riders book hotels, dine out, and use other businesses when they come together for the start of the ride.)

3.3.1. Work with the Tri-County Bicycle Association, and Lansing hotels, restaurants, and LEPPA (Lansing Entertainment and Public Facilities Authority) to bring the DALMAC back to Lansing by 2016.

3.4. **Design and promote historic and scenic walking and bicycling tours of Lansing's business districts and neighborhoods.** Self-guided walking and bicycling tours with maps and details on points of interest are a great way to get more residents and visitors out walking and bicycling in Lansing's business districts, and discovering Lansing's historic charms, unique businesses, and great parks. Maps can be available online as well as in airports, visitor centers, community and neighborhood centers, and at businesses throughout Lansing's various business districts (Downtown, Stadium District, Old Town, ReoTown, Eastside, Westside, and Southside). Bike rentals could be organized with bike shops.

3.4.1. Design, distribute, and promote at least 10 historic and scenic walking tours by 2013. Work with local historians, walking and running groups, and business district coordinators to develop routes and stories describing the various points of interest.

Best Practices:

- Art, History, and other "theme" walks in Dayton, Ohio: www.med.wright.edu/CHC/walks.htm
- Rochester, New York, historic self-guided walks: <http://www.landmarksociety.org/tours/index.html?tourID=7>

4.1. **Accessible Pedestrian Signals.** To improve the function and safety of intersections for the visually impaired, Accessible Pedestrian Signals (APS) provide auditory, vibratory and tactile signals to inform and guide pedestrians. APS systems provide the same basic information that more standard crossing signals and signs provide, but in a different format. For example, a verbal message can be broadcast across intersections notifying pedestrians which street is in the crossing phase. Other techniques involve a series of tones that alert the visually impaired as to the



DALMAC riders assemble in 2005 to prepare for departure.



Capital Walk & Bike in Victoria, BC, offers maps and scenic routes: www.capitalbikeandwalk.org/news/release_walk_map_june.html

“Pedestrians are the life-blood of our urban areas, especially in the downtown and other retail areas”

- American Association of State Highway and Transportation Officials, 2001

location of a pushbutton box that can actuate crossing signals and communicate with pedestrians through vibration, tones, tactile information such as arrows and text in Braille, and verbal messages.

Chapter 7

Action Plan

Introduction

Public workshops were held on November 4th at the Pleasant View Magnet School on Pleasant Grove Road and on November 5th at the Lansing Police Department's LPD North Precinct Gym on May Street. 18 members of the public attended the November 4th workshop and 40 members of the public attended the November 5th workshop. Representatives from the City of Lansing Transportation Department, JJR, The Greenway Collaborative, Inc., Landscape Architects and Planners, Inc, and LSL Planning facilitated the workshops.

The workshops began with a review of the previous workshops conducted for the City of Lansing's Non-motorized Plan and other planning related documents. Information about the City and non-motorized transportation was also provided on a series of displays that the public viewed during the workshops. Following a presentation that provided an overview of non-motorized transportation and the elements that comprise a comprehensive non-motorized transportation system, members of the public were organized into groups and asked to:

1. Review and comment on preliminary concepts based on previous workshops and the city staff/consultant team's research;
2. Identify the top three complete streets that have the potential for bike lanes in Lansing;
3. Identify the top three neighborhood connector streets for bike routes;
4. Identify the top three roads crossed by bicycles and pedestrians that need to be improved; and
5. Identify the top three sidewalk gaps that need to be filled in.

Results of Workshops

The comments from the workshops, previous workshops and the expertise of the Lansing Transportation Department and the consultants were used to develop this Action Plan that identifies necessary improvements to Lansing's non-motorized transportation network and to develop complete streets that accommodate all users. This includes improvements to major crosstown routes, neighborhood connector links, improvements to road crossings, shared use paths, pathway links, and bike lanes on roads.

“If you plan cities for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places.”

- Fred Kent, Founder and Director of the Project for Public Places www.pps.org.



Photo by Russ Soyring

All workshop comments are included in Appendix D

Non-motorized Improvements

The map on the following page (available in larger scale through the City) includes a comprehensive summary of non-motorized facilities and improvements to existing non-motorized facilities that should be undertaken.

These include:

- New street crossings for pedestrians and cyclists, including mid-block crossings;
- Shared use paths;
- Pathway links;
- Trails and greenways;
- New bike lanes and reconfigured street lanes to add bike lanes ;
- Neighborhood connector routes

These improvements will help the City attain its goal of creating a non-motorized network that serves all Lansing residents and neighborhoods. Specifically, the proposed network will have the following outcomes, a number of which are objectives stated in the introduction of this Plan:

1. All parts of the City will be accessible via non-motorized facilities;
2. Reliance on the automobile and the costs related to their operation will be reduced;
3. “Complete streets” will be created to safely and effectively serve the needs all users;
4. There will be greater returns on the investment associated with the road system. Paved surfaces of some road segments will be available to non-motorized use, through the introduction of bike lanes within re-configured traffic lanes or widened shoulders;
5. Access to transit, public open spaces, commercial and non-commercial uses, institutional and government facilities etc. will be enhanced;
6. There will be increased opportunities for recreation and fitness activities through walking, biking, and access to parks and recreation. This is an objective noted in the introduction of this Plan.
7. Non-motorized connections will be created between neighborhoods; and

Benefits of Complete Streets

Complete streets make economic sense by bolstering economic growth and by providing accessible and efficient connections between residences, schools, parks, public transportation, offices, and retail destinations.

Complete streets improve safety by reducing crashes through safety improvements.

Complete streets encourage more walking and bicycling.

Complete streets can help ease transportation woes by increasing the overall capacity of the transportation network and reduce congestion.

Complete streets help children by providing room for bicycling and walking, helping children get physical activity and letting children walk to school

Complete streets are good for air quality.

Complete streets make fiscal sense by integrating sidewalks, bike lanes, transit amenities, and safe crossings into the initial design of a project

(adapted from National Complete Streets Coalition)



Street Crossings

Attaining the non-motorized network presented by this Action Plan requires a large number of street crossings. Most of these crossings are located at existing street intersections that are outfitted with traffic/pedestrians signals and crosswalks to provide safe passage through the intersection by motorized and non-motorized users. The signals will change in response to a timed cycle, or when activated by vehicular traffic approaching the intersection, or when a pedestrian uses a push-button. A signalized intersection provide non-motorized traffic with an assured opportunity to cross the street in a timely manner. Signalization of other street intersections may be needed as vehicular traffic volumes increase and when warrants are met.

Many of the street crossings proposed by this Action Plan will be at mid-block locations. A striped crosswalk, sometimes in combination with a warning sign, is usually satisfactory to identify a crossing on a neighborhood street with little vehicular traffic. Signalized pedestrian crossings are necessary in situations where a mid-block crossing is located on a street with higher vehicular traffic volumes and/or when posted speeds require drivers to be given better warning of the crossing. Options include:

1. Actuated Rectangular Rapid Flash Beacons

Actuated rectangular rapid flash beacons (RFB) are high intensity LED flashers that are paired with crosswalk signs. The are activated by a push-button or by a sensor that identifies a user approaching the crosswalk. A sensor-activated RFB works best when there is a long pedestrian approach, such as a pathway. Advanced warning signs are also helpful to advise motorists that they are approaching the RFB.

2. Crossing Islands

Crossing islands consist of one or more raised islands that provide a safe refuges for pedestrians that cannot safely cross a street in one movement. The islands are used on streets with high traffic volumes and allow pedestrians to cross one direction of traffic at a time. The islands allow pedestrians to wait for gaps in traffic before crossing the other direction of traffic. Crossing islands are also applicable to streets with three or more busy lanes and streets with medians. In these cases, the time for pedestrians to cross the street storage of pedestrians

An actuated rectangular rapid flash beacon is sometimes used to warn motorists they are approaching a crossing island.

3. Hybrid Pedestrian Signals

A hybrid pedestrian signal (HPS) is used to help pedestrians and cyclists cross mid-block with minimal delays to vehicular traffic. The HPS is appropriate for locations with few gaps in traffic, usually on high speed/high volume streets. The signal is kept dark until a pedestrian/cyclist activates the crossing button. The signal goes to yellow to warn motorists that pedestrians are preparing to cross the street. The signal then turns red and a walk signal is provided to the pedestrian/cyclist. A flashing red signal is then displayed and, if the pedestrian/cyclist has already made the crossing, motorists may then move forward.



Actuated Rectangular Rapid Flash Beacon



Crossing Island



Hybrid Pedestrian Signal

Neighborhood Connectors

The City of Lansing is comprised of various neighborhoods. One of the objectives of the non-motorized plan is to interconnect neighborhoods using the following facilities. Many of the neighborhood connectors are components of the crosstown connectors discussed on the next page.

1. Guided Bike Routes

Guided bike routes are primarily located on low speed, low traffic volume roads and connecting pathways. Wayfinding signs provide the direction and distance to key destinations (e.g. schools, parks and downtown Lansing) and to other routes that provide access to other neighborhoods and destinations.

Some major corridor segments are not suitable to accommodate bike lanes due to traffic volumes, limited right-of-way and other road conditions in such cases it is preferable to direct cyclists to parallel roads that are signed as bike routes.

2. Named Bike Routes

Named bike routes are generally used to identify key connections between major destinations within the city. They are typically long-distance routes that pass through a number of neighborhoods and are named after the route they follow or the destinations along the route. The route is often comprised of different facility types (i.e. trails, bike routes, greenways etc.)

For major CATA routes without bike lanes, signs should direct cyclists on nearby bike routes to the CATA stations.

3. Bicycle Boulevards

Bicycle boulevards are routes that are designed to optimize bicycle and pedestrian travel while discouraging motor vehicle traffic. Diverter islands, traffic calming measures and the orientation of stop or yield signs are techniques that give priority to bicycles and pedestrians. Bicycle boulevards can be elements of a guided bike route or named bike route.

4. Neighborhood Greenways.

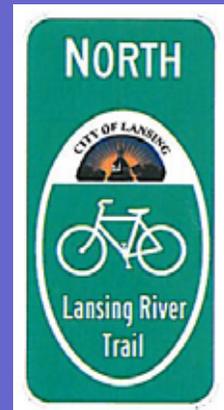
Neighborhood greenways are designed for pedestrians and cyclists. They typically contain elements that reflect the character of the surrounding community such as natural areas, community gardens, local art and historic features. They usually have sustainable design elements such as rain gardens and permeable pavement. Neighborhood greenways can be elements of a guided bike route or named bike route.

Existing Overpasses

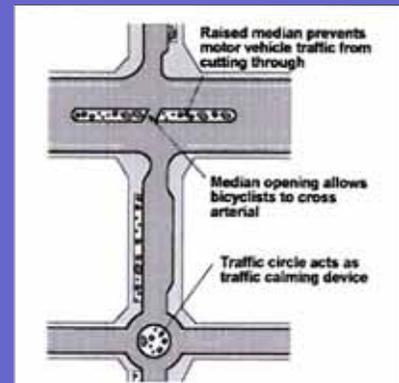
There are approximately 20 mid-block pedestrian overpasses in Lansing, many of which provide pedestrians and cyclists with access to schools. Some are older structures that may eventually be removed. Removed overpasses should be replaced with well-designed and safe at-grade crossings. The use of enhancements such as striped crosswalks, bump-outs, signs and signals will warn motorists of a crossing and will make pedestrians and inexperienced cyclists feel more comfortable when using them.



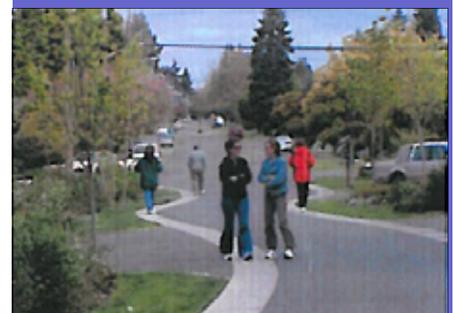
Sign Identifying a Guided Bike Route



Sign Identifying a Named Bike Route



Bicycle Boulevard



Neighborhood Greenway

12 Principal Crosstown Routes

12 crosstown routes have been identified and are listed below and shown on Map 7-1. The principal crosstown routes are a key components of a comprehensive non-motorized system for the City of Lansing. They allow an individual to travel across the City in a relatively direct manner to connect to activity areas, other crosstown routes, or transit. Some of these routes do not require the use of on-road bike lanes, making them safe for all users.

-  **Crosstown Route 1.** This segment is part of the greenway system and consists of proposed off-road trails and routes along local neighborhood roads. This segment would require multiple bridges and easements along the river.
-  **Crosstown Route 2.** This segment is part of the greenway system and consists of a combination of existing and proposed pathways through schools and parks and routes along local neighborhood roads. This segment would become an extension of the Lansing River Trail connecting to Delhi Township. This segment would include a non-motorized bridge to be built across the Grand River at Tecumseh Park.
-  **Crosstown Route 3.** This segment is part of the greenway system and consists of a proposed off-road trail along an abandoned railroad corridor connecting with to the Northern Tier Trail in East Lansing. Access along the edge of the landfill is required to make this connection complete.
-  **Crosstown Route 4.** This segment is part of the greenway system and consists of a combination of existing and proposed pathways through schools and parks and routes along local neighborhood roads. This connection would include two non-motorized bridges. One to be built across US -127 on the East side of the City and a one to be built over the Grand River in the Downtown.
-  **Crosstown Route 5.** This segment is a principle non-motorized crosstown route. It links downtown Lansing to East Lansing, MSU, The Frandor Mall and Meridian Township. This route consists of a combination of existing and proposed pathways through Schools and parks, routes along local neighborhood roads and bike lanes through the downtown areas. This connection has the potential to expand westward depending on the future development of the GM site.
-  **Crosstown Route 6.** . This segment is part of the greenway system and consists of a combination of existing and proposed pathways through schools and parks along with routes along local neighborhood roads. This segment is proposed in the City of East Lansing non-motorized transportation plan and connects the Northern Tier Trail to downtown East Lansing and MSU.

-  **Crosstown Route 7.** This segment is part of the greenway system and consists of a combination of existing and proposed pathways through schools and parks and routes along local neighborhood roads. This segment already includes many bicycle and pedestrian boulevard elements and would be an easy transformation into a neighborhood greenway by adding traffic diverters, rain gardens and crossing improvements at major road intersections.
-  **Crosstown Route 8.** This segment is a principle non-motorized crosstown route. It links the Grand River on the west to the Lansing River Trail on the east side of town. This route consists of a combination of existing and proposed pathway through schools and parks, routes along local neighborhood roads and bike lanes on West Holmes Street. This connection would include a non-motorized bridge to be built across the Grand River at Fine Park allowing for the route to extend over to the west side of the river. The intersection of W Holmes Street at M.L.K. Boulevard presents a challenge.
-  **Crosstown Route 9.** This segment is a principle non-motorized crosstown route. It provides a primary north-south connection linking to the downtown area to north and south Lansing. This route consists of a combination of existing and proposed pathway through schools and parks, routes along local neighborhood roads and bike lanes through the downtown area and north on Turner Street.
-  **Crosstown Route 10.** This segment is part of the greenway system and consists of a combination of a proposed off-road trail along the Consumers Energy Power Corridor, existing and proposed pathways through schools and parks along with routes along local neighborhood roads. It provides a north-south link and connects south Lansing to East Lansing and MSU.
-  **Crosstown Route 11.** This segment is part of the greenway system and consists of a proposed off-road trail along the Consumers Energy Power Corridor. It provides an east-west link and connects the south side of Lansing to the Lansing River Trail.
-  **Crosstown Route 12.** This segment is part of the greenway system and consists of a proposed off-road trail that runs north-south following Sycamore Creek and then east-west along the south side of I-96. It also consists of a proposed pathway through park land and a route along a local neighborhood road.

Principal Non-Motorized Routes



-  Principal Non-motorized Crosstown Routes
-  Greenway System
-  Existing Off-Road Trails

Appendix A

Walkability and Safety

Several studies have examined the relationships between crime, safety, perceived safety, walkability, and quality of life. This appendix summarizes some of those issues, which are essential considerations in making Lansing a walk and bike friendly city.

How Important is Walking to Americans?

In 2002, the Surface Transportation Policy Project commissioned a national random telephone survey of 800 adults age 18 and over, to measure public attitudes toward walking. The full report from the study is online at http://www.transact.org/library/reports_pdfs/pedpoll.pdf.

One of the survey questions was:

“In deciding where to live, please tell me how important each of the following would be to you: very important, somewhat important, not very important, or not at all important...”

This chart highlights the levels of “very important” and “somewhat important” responses to the choices offered:

	Very Important	Somewhat Important	Very + Somewhat
Feeling safe from crime	86%	10%	96%
The quality of public Schools	69%	12%	81%
Sidewalks and places to take walks for exercise or fun	44%	35%	79%
Being within walking distance to stores and restaurants	25%	31%	56%
Being within walking distance to schools	29%	21%	50%
Places to walk your pet	23%	27%	50%
Being within walking distance to public transit	25%	23%	48%



Feeling safe from crime (96%), quality of public schools (81%), and having sidewalks and place to take walks for exercise or fun (79%) were obviously big factors for the survey participants. Being able within walking distance of stores, restaurants, schools, good pet-walking, and transit— those things are all important too— but only about HALF of Americans said these were very or somewhat important.

While there may be other, even more important factors to Americans that weren't asked in the study (like jobs, affordable housing, anti-discrimination laws, etc.), of the factors that were offered, these responses send a clear message that feeling safe, good schools, and walking opportunities are each of nearly equal importance to Americans.



“The current four lanes encourage speeding, compromise pedestrian safety, and aren’t compatible with the character of the neighborhood.

And a sewer rehabilitation project schedule for this winter creates an opportunity to reconfigure the lane striping on the street at little to no additional cost.”

Appendix B

Walking, Cycling, and Neighborhood Quality of Life

By Jason Patton, Walking and Bicycling Coordinator, City of Oakland, CA. Published in the Grand Lake Guardian on November 13, 2006

If you bicycle, you know that bike lanes create space on the streets that help cyclists and drivers share the road. They make it safer and more comfortable for bicyclists and thereby encourage more people to leave their cars at home, especially for short trips.

But if you don’t bicycle, why should you care about bike lanes?

To put it briefly, bike lanes are good for neighborhoods because they help streets work better.

Consider the proposal now under discussion to reconfigure Lakeshore Avenue from Mandana Blvd. to Harvard Road/Winsor Avenue. Currently, the street has four travel lanes, two in each direction, plus parallel parking on both sides. The proposal is to re-stripe the street with one travel lane in each direction, a two-way center turn lane, and bike lanes in both directions. The current parallel parking would stay just as it is.

This proposal arises from longstanding community concerns that the current four lanes encourage speeding, compromise pedestrian safety, and aren’t compatible with the residential character of the neighborhood. And a sewer rehabilitation project scheduled for this winter creates an opportunity to reconfigure the lane striping on the street at little to no additional cost.

These projects are commonly called “road diets” because they take wider streets and make them narrower (without the expense of literally moving the curbs). The bike lanes soak up the extra width and create buffers that improve both safety and operations. These projects are sometimes called “bike projects” but they are really neighborhood projects because of the following benefits:

- **Safer walking:** On such a street, pedestrians cross only two travel lanes instead of four. This configuration eliminates what are called “multiple threat” collisions on four-lane streets: when the driver in the first lane yields but the driver in the second lane doesn’t because the pedestrian is hidden behind the stopped

car. Additionally, bike lanes create an additional buffer between the sidewalk and the travel lanes such that drivers and pedestrians both have more time to react. These pedestrian safety benefits are especially fitting for the school crossing on Lakeshore Avenue at Prince Street that serves the Mandana Green.

- **Safer driving:** With a two-way center turn lane, drivers making left turns no longer stop in a travel lane and run the risk of rear-end collisions. Providing this lane for turning vehicles avoids these types of collisions while helping traffic move more smoothly.
- **Safer parking:** Whether parking at the curb or in a driveway, the bike lane creates a buffer between the parking area and the travel lane that improves visibility and helps motorists maneuver. (However, always remember to check for bicyclists before opening a car door.)
- **Lower speeds:** With two travel lanes in each direction, the fastest driver sets the speed. With one travel lane in each direction, the safe driver sets the speed and everyone else drives the speed limit behind that person. This is an example of a design that is self-enforcing and thus encourages safe behavior.
- **Less noise:** Lower speeds mean less noise, an especially important issue for people with homes (and bedrooms) on busier streets.

Who doesn't benefit from such a project? Those would be the people who want to speed through other people's neighborhoods.

And by the way, bike lanes do make it safer, easier, and more enjoyable for cyclists to get around town along with all the other environmental and public health benefits of bicycling. They even encourage people to bicycle, with the added benefit of getting more neighbors out and about.

For additional information on the Lakeshore Ave project (Mandana Blvd. to Harvard Road/Winsor Ave.), contact Joanne Karchmer (JKarchmer@oaklandnet.com, 238-7021) in the office of Councilmember Pat Kernighan. For more information on bicycle-related projects in Oakland, see www.oaklandpw.com/bicycling.

This article is available online at <http://grandlakeguardian.org/index.php/patton>

And who doesn't benefit from such a project?

Those would be the people who want to speed through other people's neighborhoods.

Benefits of road diets:

- *Safer Walking*
- *Safer Driving*
- *Safer Parking*
- *Lower Speeds*
- *Less Noise*



Photo by City of Royal Oak

Transportation expenses consume an average of 19 percent of a family's budget. The growing trend towards sprawling residential developments and physical inactivity costs the state of Michigan almost \$9 billion annually, through higher health insurance premiums, lost productivity, and increased state-funded Medicaid payments. With the rising cost of gasoline, providing non-motorized options empowers people to make fewer driving trips and add up to immediate savings for both individuals and families while reducing traffic on the roadways.

Appendix C

Excerpts from Lansing Non-Motorized Transportation Planning Resource Book

The Lansing Non-Motorized Transportation Planning Resource Book was created in March 2007 by Michigan State University Urban Planning Practicum Students: Matthew Brinkley, Daniel Guild, Kasif Khowaja, Suzanne Miske, Hyung-Jun Park, Hillary Lewis-Reimers, Quinton Robinson, and Janet Strauss. The book is available online at www.midmeac.org/walkandbike, or on CD or hard copy, by contacting Matthew Brinkley at mbrinkley@redarrowpdr.com. Below are highlights from the book that provide additional support to the concepts and recommendations noted in this plan.

Economic Benefits of Walk-able, Bike-able Communities: (Chapter 1.0, Pages 28-29)

Aesthetics. Improving the economic viability of a community by making it an attractive place to locate a business while simultaneously reducing public and private health care costs associated with inactivity. Reducing the need for downtown parking spaces and parking decks improves the aesthetics of the roadway and community by adding landscaping and medians that improve the pedestrian environment and safety, which makes the city a more attractive place to live, work, shop, and recreate.

Attracting Residents. Active community design, which includes facilities for walking and biking, makes good economic sense. Researchers working for the Cool Cities Initiative surveyed university students and recent college graduates to get an idea for what characteristics they find desirable in a community, with the end goal of economic development and retention of young professionals. The survey identified safe streets and neighborhoods as the most highly rated attribute when choosing a place to live. Whether the respondent lived in a downtown, the suburbs, or a small rural town walkable streets and safe streets appeared on the top 10 lists of desirable community characteristics. Similar research on Fortune 500 companies of what factors attract them to regions or communities found that walkable, livable communities always rank in the top 10 attributes, over and above tax incentives.

Cost of Oil. The increasing cost and subsequent dwindling global supply of gasoline make this non-renewable resource an important economic cost, incurred every day, by almost every resident in the city of Lansing. If you consider the average yearly consumption of gasoline gallons per person, multiplied by the average price, multiplied by all the vehicles owners in the City of Lansing, which is a hefty sum whose resources could be diverted elsewhere if more residents switch to increasing their use of NMT networks for their trips.

Ease Expenses Incurred By Families. Transportation expenses consume an average of 19 percent of a family's budget. The growing trend towards sprawling residential developments and physical inactivity costs the state of Michigan almost \$9 billion annually, through higher health insurance premiums, lost productivity, and increased state-funded Medicaid payments. With the rising cost of gasoline, providing non-motorized options empowers people to make fewer driving trips and add up to immediate savings for both individuals and families while reducing traffic on the roadways.

Fiscal Sense. Integrating sidewalks, bike lanes, transit amenities, and safe crossings into the initial design of a project spares the expense of retrofits later. By fully considering the needs of all non-motorized travelers (pedestrians, bicyclists, and persons with disabilities) early in the life of a project, the costs associated with including facilities for these travelers are minimized.

Foot and Street Traffic. Communities with pedestrian friendly downtowns enhance economic vitality by encouraging visitors to stop and shop at businesses. In addition, bicycle and pedestrian facilities are much less expensive to build and maintain than auto-related infrastructure.

Increased Property Values. The value people place on bicycle and pedestrian facilities can be reflected in increased real property values and increased marketability for property located near trails and open space. One study estimates that houses located in developments that incorporate good design principles – including walkability – command a premium of anywhere from 4 to 25 percent of the home's value, compared to houses in surrounding areas.

The value people place on bicycle and pedestrian facilities can be reflected in increased real property values and increased marketability for property located near trails and open space. One study estimates that houses located in developments that incorporate good design principles – including walkability – command a premium of anywhere from 4 to 25 percent of the home's value, compared to houses in surrounding areas.



Photo by Dan Burden

Recreation. The economic impact of multi-use linear trails can also be significant. A study conducted by MSU and funded by MDOT evaluated two bike related events, which took place on the Pere Marquette Trail. In 1999, the Midwest Tandem Rally and the Michigander Ride included a portion of the ride along the Pere Marquette Trail. As a result of the study it was determined that participants and their parties spent \$207,000 in conjunction with the event, of which \$103,000 was spent during the event, with approximately 500 hotel nights generated in the local areas. The Midwest Tandem Rally participants and their parties spent \$260,000 in conjunction with the event, of which \$218,000 was spent during the rally, with approximately 1,100 hotel room nights generated in the local area. With tourism being one of Michigan's top three industries, the economic impact of bicycle tours and recreational users should not be under-estimated.

Tourism. Tourism is one of the State's top three industries, and many people come to Michigan to bicycle. Bikes are allowed on all non-freeway paved and non-paved roads in the state and in all 97 state parks and recreation areas. Bikes may also be operated on all designated public bike paths. The systems of roads through both peninsulas, many of which have low traffic volumes make excellent bike routes. These roads not only promote opportunities for scenic bike riding, but also provide access to recreational areas. In addition, the North Country National Scenic Trail passes through Michigan and many parts are accessible to bicyclists and hikers.

Environmental Factors Influencing Willingness to Walk (Chapter 3.0, Page 95)

Safety was also an important subjective factor influencing willingness to walk in traditional neighborhoods. Inclement weather was not a significant constraint on walking. For modern neighborhoods, where pedestrians tend to walk for recreation, respondents indicated that "walkway continuity and trees, shade, and interesting things to look at are the most important environmental attributes."

Source: Targa, F. and K. J. Clifton. (2005). Built environment and Non-motorized travel: Evidence from Baltimore City using the NHTS. *Journal of Transportation and Statistics*, 8.3, 55-70. Retrieved February 12, 2007, from www.wam.umd.edu/~ftarga/downloads/Papers/Targa-Clifton-2005.pdf, p. 72.

Impact of Accidents on Walking and Bicycling Rates (Chapter 3.0, Pages 125-127)

These high numbers of traffic accidents involving non-motorists have consequences for NMT. For example, researchers John Pucher and Ralph Buehler argue that the rate of accidents and bicycle fatalities explain the marked difference between rates of bicycle commuting in the United States and Canada. Despite colder average temperatures than their American counterparts, bicycle modal share is as much as six times higher in Canadian cities. After analyzing several variables commonly associated with NMT modal splits, fatalities were found to be strongly associated with fewer bicycle trips to work: for every additional cyclist killed per 100,000 cyclists, there are 0.15 percent fewer bike trips to work.

This research confirms the importance of safety efforts that seek to increase the bicycle modal share. The United States has a bicycle fatality rate of 5.74 deaths per 100 million kilometers cycled per year compared to Denmark where the fatality rate is less than 2.0 deaths per 100M kilometers cycled per year. The higher level of safety afforded cyclists in European cities is reflected, at least to some degree, in a much higher cycling modal share.

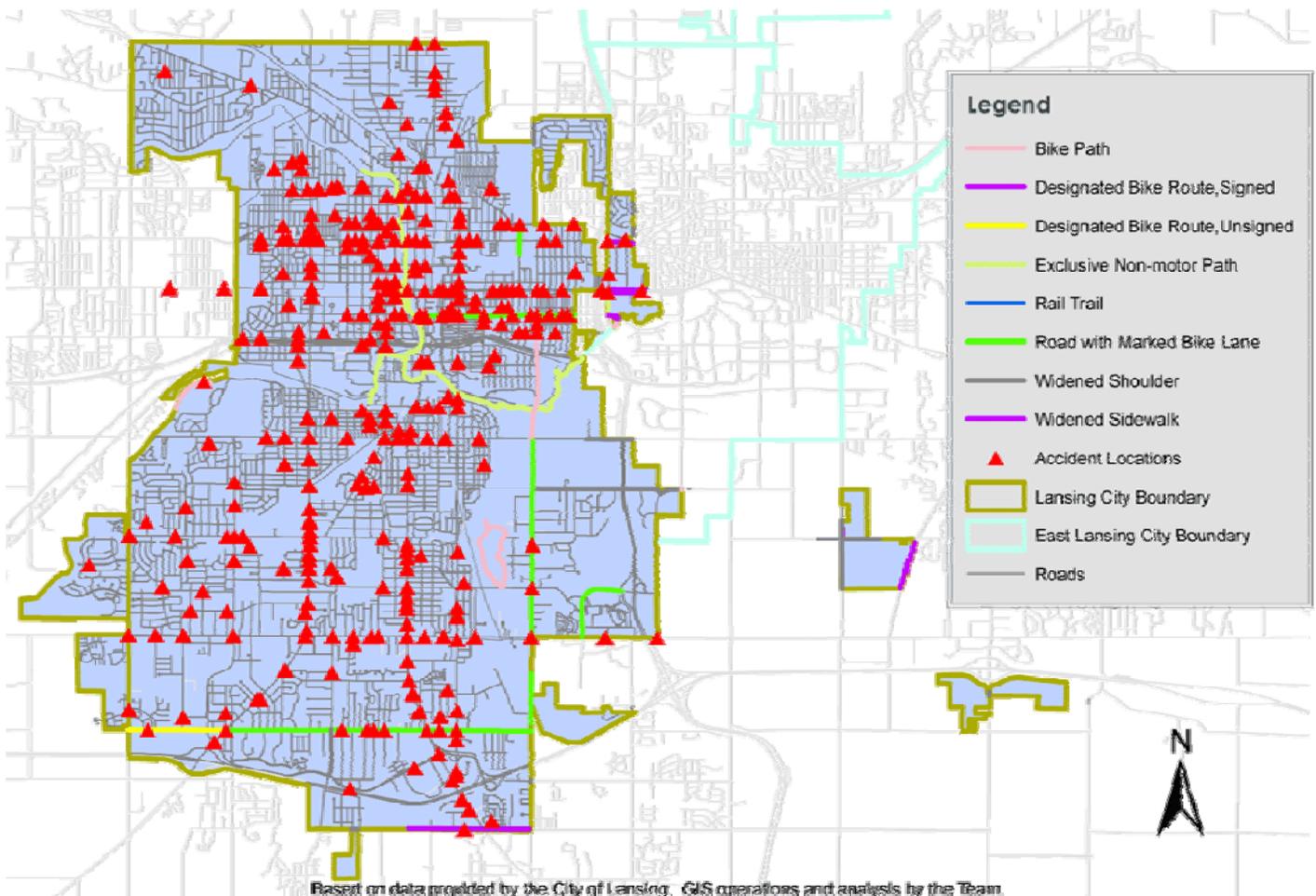
Locations of Non-Motorist/Motorist Accidents (Chapter 3.0, Page 133)

Many accidents occur along major urban arterials including Martin Luther King Jr. and Cedar Street where 58 accidents involving pedestrians and bicyclists between 2001 and 2005. As in other cases, these 58 accidents occurred along a relatively busy street (5 lanes of in some places), with relatively high speed limits for an urban thoroughfare (35 MPH), and no on-road bicycle facilities. As the final map in this series demonstrates, many of these 58 accidents happened in areas along Cedar characterized by “higher” connectivity, tightly gridded neighborhoods.

On the other hand, streets with NMT facilities as identified by the Tri-County Planning Commission had 48 traffic accidents involving pedestrians and bicyclists. Some of the roads included in this set are similar to Cedar in terms of traffic speeds and number of lanes. And yet there were roughly 20% fewer non-motorist traffic accidents along these roads where NMT facilities have been provided for pedestrians and bicyclists.

On Kalamazoo Avenue, where marked bikes lanes run from downtown Lansing to the edge of East Lansing, only 6 traffic accidents involving bicyclists have occurred over the past 5 years.

Existing Conditions: Locations of Non-Motorist/Motorist Accidents (2001 - 2005)



Data provided by the National Highway Traffic Safety Administration for 2005 substantiates several other characteristics of fatal motorist/non-motorist accidents that are worthy of mention:

1. The vast majority occurred at urban intersections.
2. The majority also occurred at night.
3. Like bicycle traffic fatalities, a significant majority were men who also had higher rates of injury due to traffic accidents.
4. As one might expect, fatalities occur most often during times of higher bicycle usage – namely the summer months of June, July, and August when recreational riding is at its peak.
5. The average age for fatalities among cyclists has shifted upward dramatically (from 22.7 in 1995 to 29 ten years later).
6. Deaths among cyclists, under 16 years of age, has fallen from 34 percent of all pedalcycle fatalities in 1995 to 18 percent in 2005. Nonetheless, nearly 17 percent of victims of fatal accidents were among the youngest riders on the road, ranging in age from 5 to 15.
7. Children accounted for a disproportionate number of traffic injuries (28%). In the State of Michigan, 137 pedestrians died in traffic accidents in 2005.
8. Men, who are much more likely to cycle than women according to other studies, were also much more likely to die while cycling. They experienced a mortality rate that was 7 times that of women.

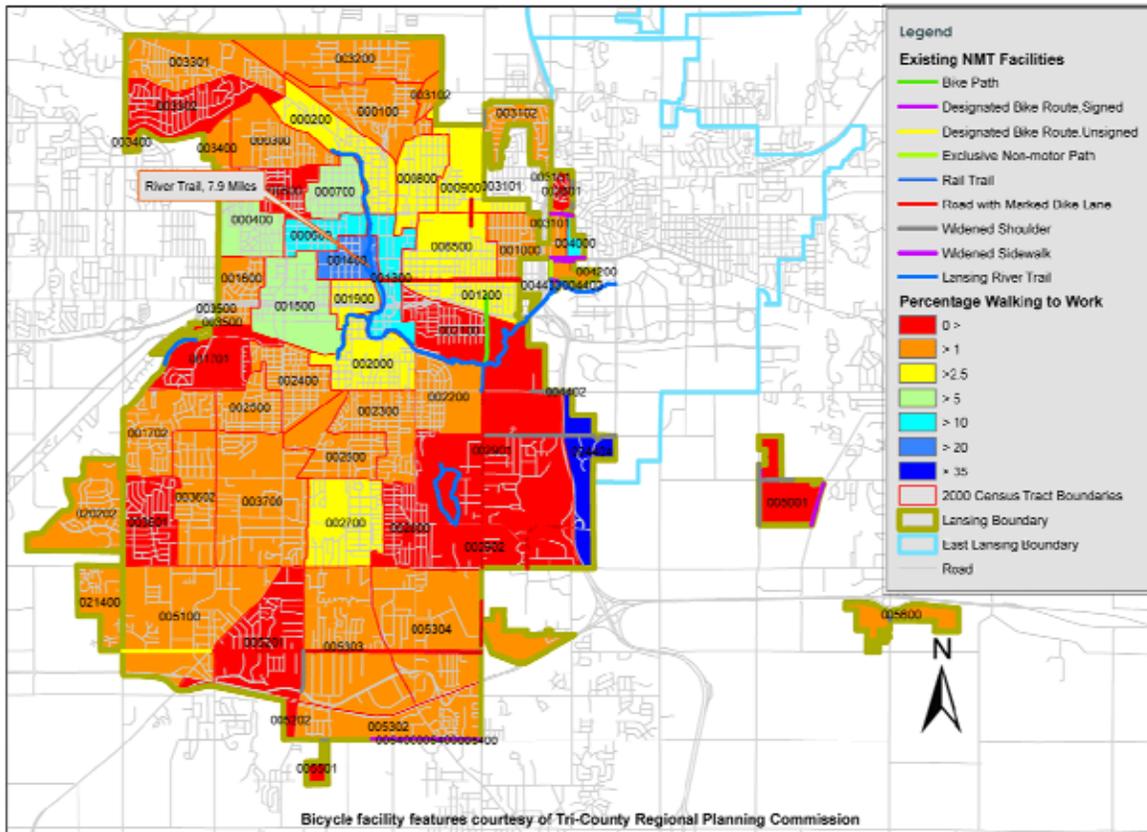
How safe is NMT in Lansing today? Altogether, there have been more than 560 accidents involving pedestrians, bicyclists and automobiles from 2001 to 2005. Lansing averages around 120 accidents involving non-motorists every year. It should be noted that this number includes a variety of types of accidents including those where fault cannot be determined and/or are not necessarily related to non-motorized travel per se (e.g. a parked coming out of gear and rolling over a mechanics outstretched leg). A slight trend toward an increasing number of accidents appears in the Figure 31, but this could be accounted for by improved reporting of accidents. Again, local knowledge of the NMT environment may contribute to a better understanding of this and other trends. These accidents are responsible for approximately 521 injuries, split almost equally between pedestrians and bicyclists. The number of fatal injuries is the one important exception: during the past 5 years, only one bicyclist has been killed in a traffic accident while 5 pedestrians have been killed during the same period.

Sources:

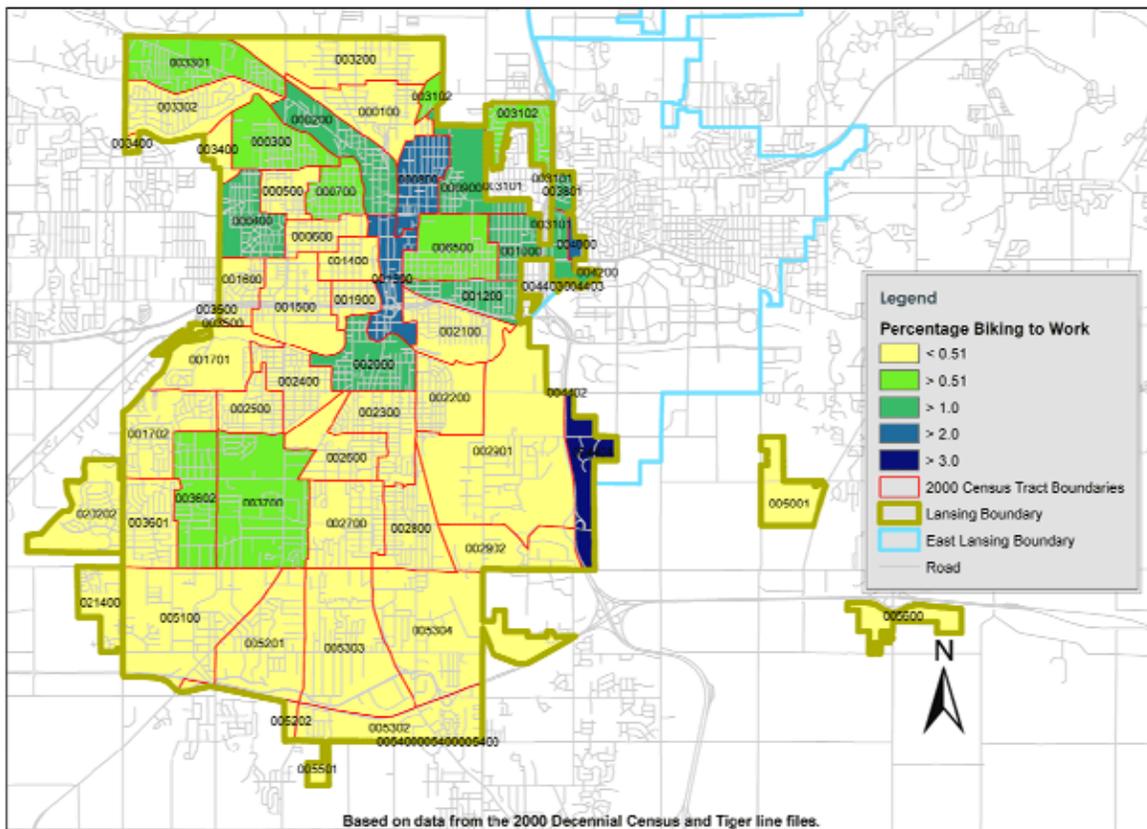
- Pucher, J., and R. Buehler. (2006). Why Canadians cycle more than Americans: a comparative analysis of bicycling trends and policies. *Transport Policy* 13, p. 266, 276, and 267.
- National Highway Traffic Safety Administration. Traffic safety facts: pedestrians. Retrieved February 4, 2007 from <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2005/PedestriansTSF05.pdf>
- National Highway Traffic Safety Administration. Traffic safety facts: pedestrians. Retrieved February 4, 2007 from <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2005/PedestriansTSF05.pdf>.; National Highway Traffic Safety Administration. Traffic safety facts: bicyclists and other cyclists. Retrieved February 4, 2007 from <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2005/BicyclistsTSF05.pdf>.
- Based on records provided to the Team by the City of Lansing. Records for 2001 were did not include data for the months of October, November, and December. Data entry and analysis performed by the Team.

Appendix C Excerpts from Lansing Non-Motorized Tran. Planning Book

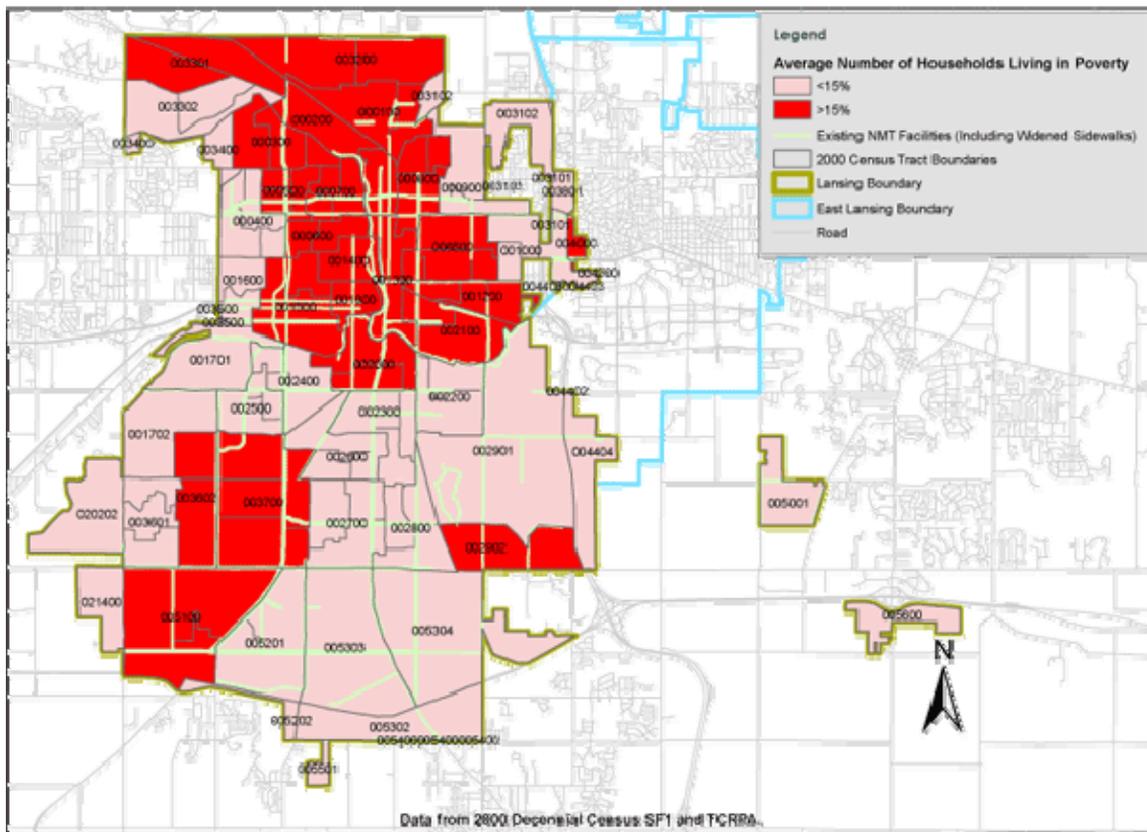
Existing Conditions: Percentage Walking to Work & NMT Facilities



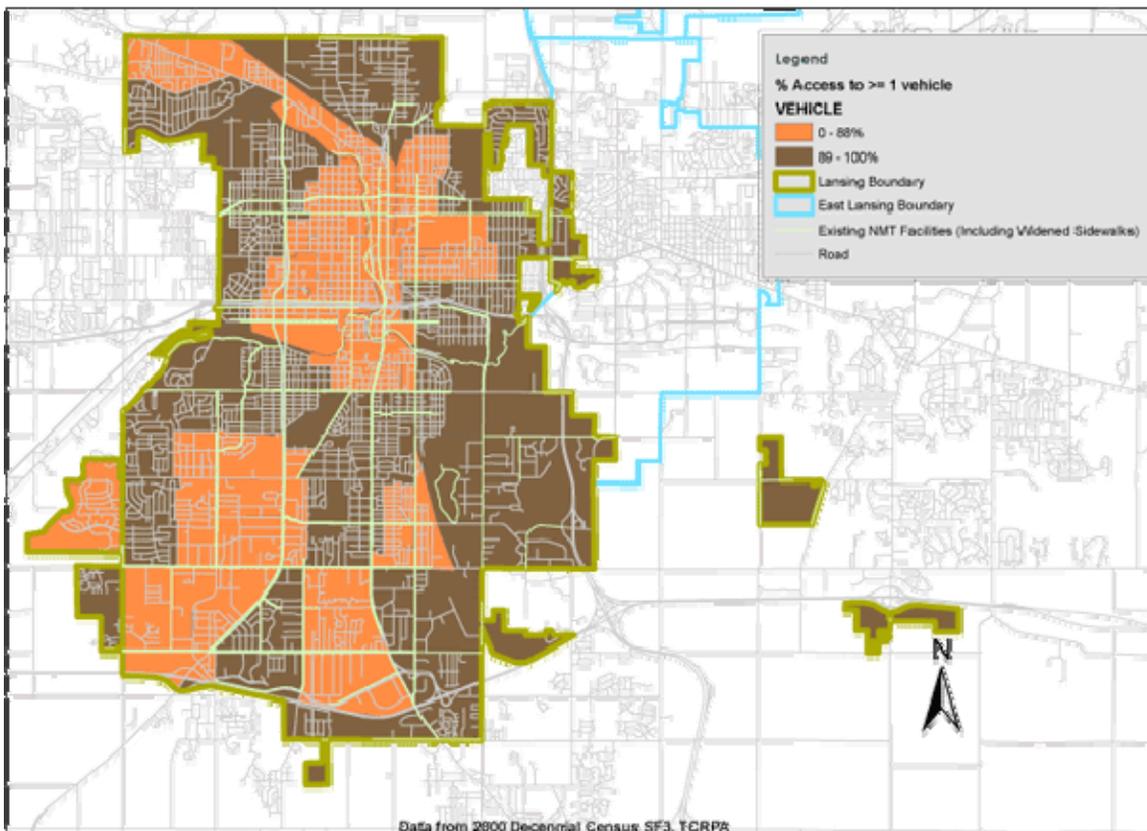
Existing Conditions: Percentage Commuting to Work by Bicycle



Existing Conditions: Percentage of Households Below/Above Poverty

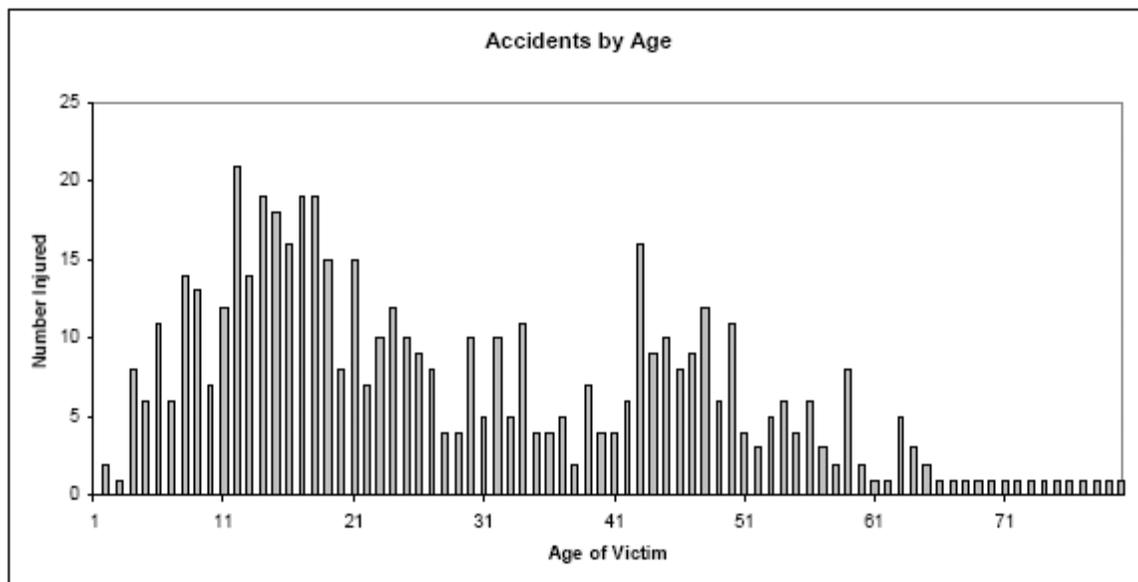
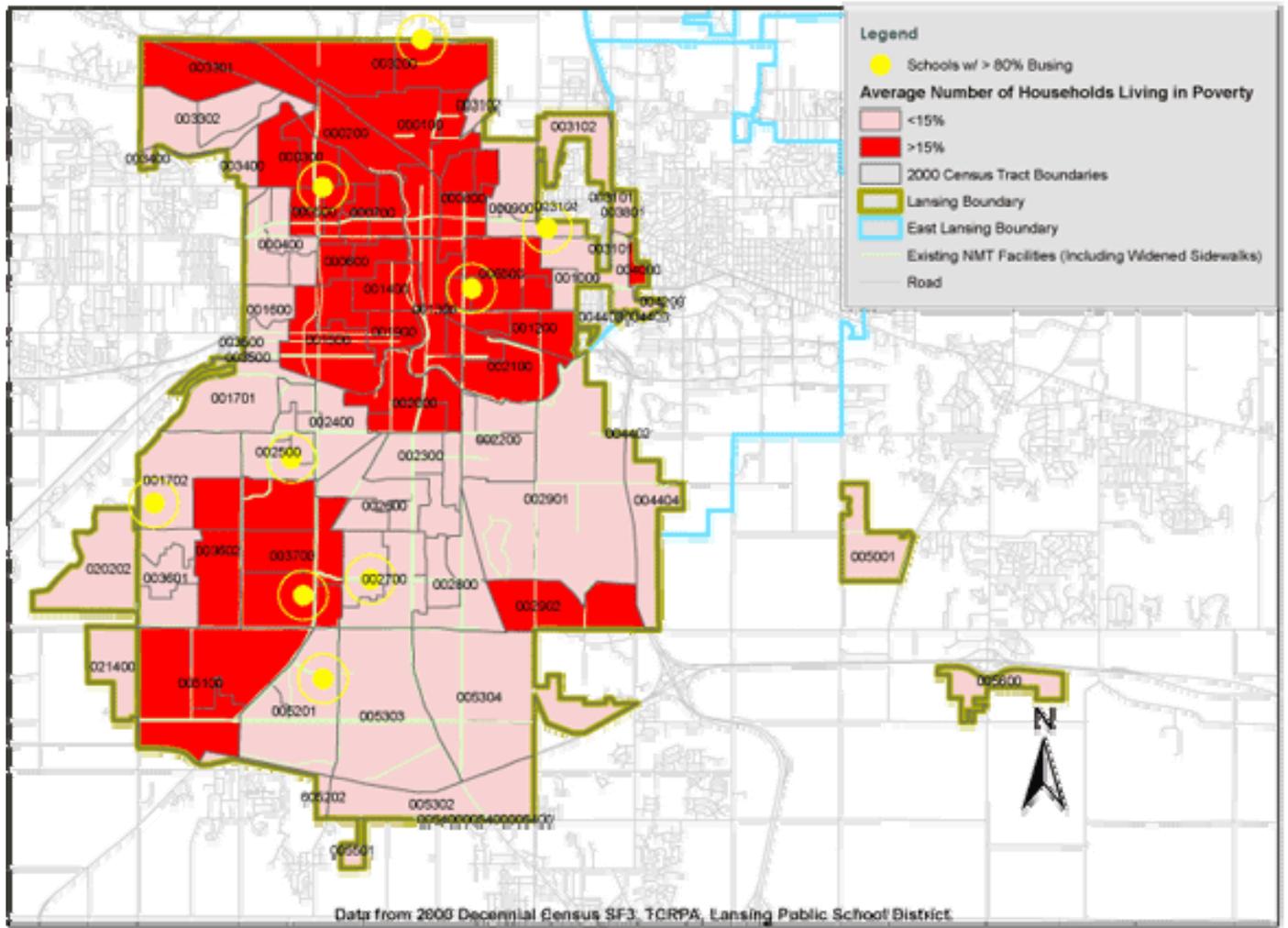


Existing Conditions: Access to a Vehicle



Appendix C Excerpts from Lansing Non-Motorized Tran. Planning Book

Existing Conditions: Schools with Over 80% of Students Not Bused



Source: City of Lansing Accident Reports 2001 - 2005, Analysis/Calculations by the Team

City of Lansing Non-motorized Network Workshops

Public workshops were held on November 4th at the Pleasant View Magnet School on Pleasant Grove Road and on November 5th at the Lansing Police Department's LPD North Precinct Gym on May Street. 18 members of the public attended the November 4th workshop and 40 members of the public attended the November 5th workshop. Representatives from the City of Lansing Transportation Department, JJR, The Greenway Collaborative, Inc., Landscape Architects and Planners, Inc, and LSL Planning facilitated the workshops.

Members of the public were organized into groups and asked to:

1. Review and comment on preliminary concepts based on previous workshops and the city staff/consultant team's research;
2. Identify the top three complete streets that have the potential for bike lanes in Lansing;
3. Identify the top three neighborhood connector streets for bike routes;
4. Identify the top three roads crossed by bicycles and pedestrians that need to be improved; and
5. Identify the top three sidewalk gaps that need to be filled in.

Key Findings from Workshops

Results of "Top Three" Rankings

If more than one group provided the same response, the number of responses is indicated in parentheses.

Corridors identified as Top 3 complete streets that have the potential for bike lanes:

Holmes (4)

Saginaw & Oakland (3 in entirety, 1 Oakland between Wood and Waverly)

Pleasant Grove (2)

Mount Hope (2)

Cavanaugh (1 entirety, 1 between Aurelius and Everett High School)

Cedar/Larch/East (US-127 Business), between Granger Park and Kalamazoo

Frondor Area

I-496 service drive west to Walnut

Kalamazoo in downtown

Martin Luther King Boulevard (MLK), between Ottawa and Willow

Miller, between Waverly and MLK

Moore's River Drive, between Francis Park and Moore's Park

Oakland/Capitol/Kalamazoo to Old Lansing (southwest to Mount Hope)

Washington, between LCC and Mount Hope

Corridors identified as Top 3 key neighborhood connector streets/routes that have the potential for bike lanes:

- Frandor (3): Access Road, Shopping Area, Cut Through
- Baker Street, Pennsylvania to MLK
- Barnes Route
- Boston Boulevard Route
- Cut through Washington Park
- Dunlap feeder Route to Boston Boulevard
- Forest/Stapler/Kessler
- Genesee Street Route, west of Washington
- Holmes/Potter Route
- Holmes, Hawk Island Park to Washington
- Hosmer Route, from Hazel to east North Street
- Jerome Route, from Hosmer to Frandor
- May Street Route, from Marshall
- Neighborhood connectors connecting Frandor/Eastwood shopping areas

Non-motorized crossings identified as Top 3 road crossings that need to be improved:

- Holmes Road @ MLK (3)
- Frandor @ Saginaw and Grand River/Coolidge (3)
- River path/Moores River @ MLK (2)
- Cedar/Larch/East (US-127 BR) @ Oakland, Saginaw, Lake Lansing MLK @ Genesee
- Edgewood @ Target
- Holmes @ Pleasant Grove
- Holmes @ Stabler
- Hughes @ Jolly
- Jolly @ Kessler
- Lake Lansing @ US 127
- Marshall @ Saginaw/Oakland
- Michigan Avenue, between Pennsylvania and Fairview (for pedestrians)
- Wood Street @ Oakland
- Waverly @ Mt. Hope/Grand River

Sidewalk gaps identified as Top 3 sidewalk gaps:

- Cedar Street, Baker to north of I-496 (3)
- Waverly (intermittent, Grand River south) (3)
- MLK, south of Jolly (2)
- West St. Joe and Main Street/I-496 Service Drives (2)
- Cedar, through Edgewood 'knot'
- Grand, between Saginaw/Oakland
- Grand River/Oakland, from Wood to US 127
- River Street, the Main Street connector bridge over the Grand River
- Scott Wood – short road connection
- Shiawassee Route
- Utility/rail corridor, diagonal from Holmes/Pleasant Grove to Washington

Marshall and Saginaw/Oakland
MLK @ Holmes
Jolly, between Cedar and Collins
Main Street, east of Holmes
Oakland/Saginaw, west end under/around railroad viaduct
Oakland and Saginaw, sidewalks over US-127
Pleasant Grove, south of Jolly
Wood Street, Lake Lansing to Oakland

Other Key Findings from Workshops

In addition to Top ratings for the categories above, large-scale maps were marked up with other ideas, preferences, questions and other comments on the draft concepts shown. The attached map, Public Comments Summary summarizes those comments (which generally include those listed in the top three lists and more). Additional comments, made verbally at the workshops or written on the map, have been categorized and are listed below. If more than one person provided the same response, the number of responses is indicated in parentheses.

Parks and recreation

Need better connections to Granger Park
Paving East Willard Road would provide quick connection into Scott Woods Park
New extension of River Trail is key connection to Tecumseh Park
Grand River crossing between Anderson Nature Park and Pine Park would provide a key link
River Point Park area needs trail signage and a trail head
Add River Street connector bridge
Connect Hawk Island from the west
The viaduct under I-96, at the south end of Kenneth A. Hope Soccer Complex is too narrow
Is the path along the south side of I-96, west of the viaduct, needed?

Education/health care destinations

Need link to LCC's west campus (four responses)
Locked gate is a barrier at Gardner Middle School
Don't cut through North Elementary School playground
Connect Mason Street and Holmes Road to library
Guidance to and from Sparrow needed

Other destinations

How does this Plan tie into Delta Township's plan?
Signage needed to alternate route to Lake Lansing
Forest/Collins is a major high tech destination and should be connected to east side housing and downtown Lansing
Shared use arrows downtown (2)
Edgewood is good for shopping, but difficult to get to (2)

Routes and specific locations

Cedar Street needs a bike route
 Need a north-west connector
 Prefer Michigan Avenue bike route
 West Michigan Avenue has high concentration of families
 North East Street north of Bangheart Street is tough to bike – needs better crossings
 Add pedestrian friendly roundabout at Michigan Avenue and Mifflin Avenue
 Line up shared use path connection with Harrison Road at service road
 Victor Avenue has higher traffic than Dunlap: use Dunlap as alternate route between South Deerfield Ave, Pleasant Grove and Boston Blvd
 Shiawassee is a better connector than Genesee. Genesee has poor road pattern
 Need an at-grade railroad crossing on Old Lansing Road
 Trowbridge/Harrison interchange/railroad crossing

Written Comments

The following written comments were received:

“River Trail (e.g. east of Aurelius) is low and has easily flooded spots. River Trail needs be cleared on weekends. Aurelius has lots of delivery truck (FedEx, UPS, USPS) + bus traffic (CATA, Dean Trans., school buses)”

“Multi-use trail north of Northrup along power lines needed”

“Bike parking is an issue at some (most) retail locations. Would like to see more Fußgängerzone (pedestrian only walkways) in highly trafficked (pedestrian) areas.”

“Need better training for drivers on what these lines mean & rights of non-motorized. Crossing points on Waverly.”

“Major destinations require secure bike storage. Long bike trips require places to rest & toilet facilities for kids.”

“The bridges on the Riverwalk are not bike friendly due to corduroy nature of boards at right angles to the flow of traffic. Too jarring. Would prefer a smoother surface.”

“Bike lanes are very important. Even street markings help drastically. Policies go a long way in helping make areas able to be safer. Anyways, those can be addressed later.”

“If this effort does not fix Frandor area, it will all be for naught! People need a good way to get downtown from the east.”

“We recommend expanding the riverfront trail from Didrick Park to and through Tecumseh Park.”

“My main issues to connect our neighbor (Grand River/Mich/I-127/Clemens) to shopping areas around us (Frandor/Eastwood Town Center/Lake Lansing Meijers) and to downtown.”

“Mid-block crossing needed between Holmes/Jolly. Neighborhood connections need good signage.”

“Thank you for the opportunity to bring up our personal issues with access to roadways. I am specifically interested in access to major attractions. Frandor, Parks, Eastwood are surrounded by major arteries that are not friendly to bikers. Also, I would like to encourage extending the River Trail beyond Lansing to other cities.”

“Sidewalks and bike lanes in Frandor please! Thank you for providing us the opportunity to provide input on this important issue.”

“Careful with signs – make them artistic & cool, but ‘too many’ may diminish this artistic return. Permaculture perspective (bring this perspective on board during design) – natural professional collaborators.”