

SAFETY & OPERATIONS

With distracted driving, bad weather, equipment malfunctions, old road designs, deer, alcohol, and more, it can be difficult to keep our roads safe and efficiently operating. Unsafe conditions can cause crashes, our insurance rates to increase, lost time at work, injuries, and even death. That's why the Tri-County Regional Planning Commission (TCRPC) looks at ways to make our roadway designs run more smoothly as our environmental circumstances and travel demands change. Improvements can include signal control, light detection, roundabouts, and more.

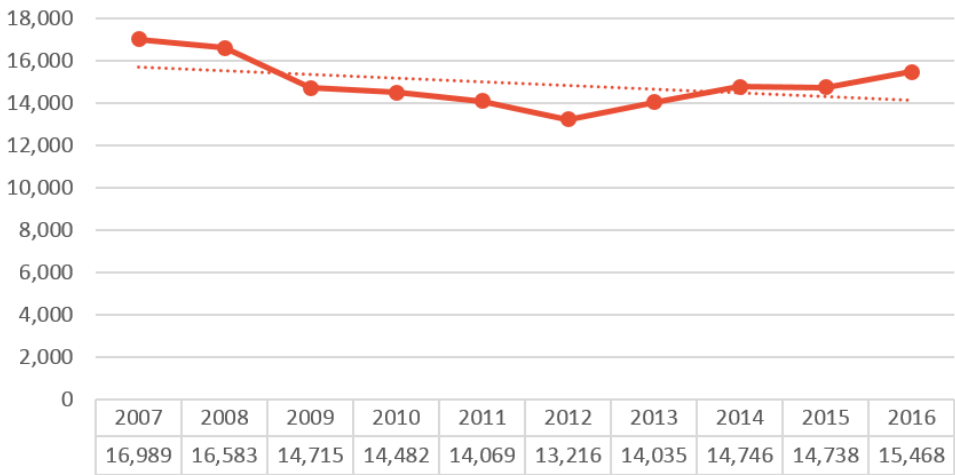


9.83%

reduction in crashes since 2007

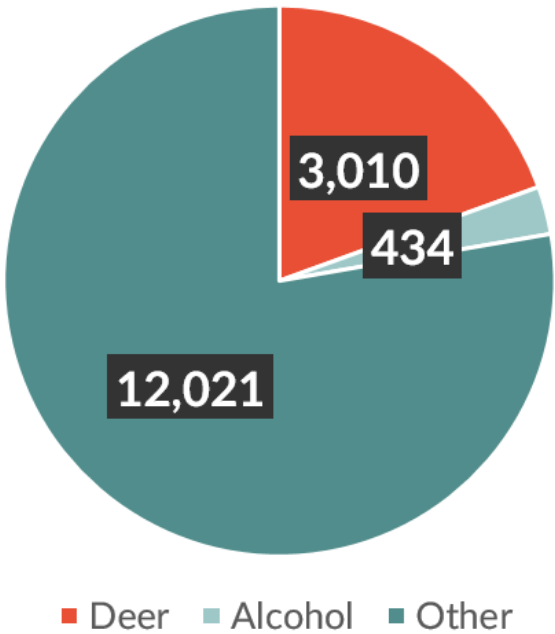
TCRPC 2007-16 Crash Data

Total Crashes in the Region



Causes of Vehicle Crashes

In the Region for 2016

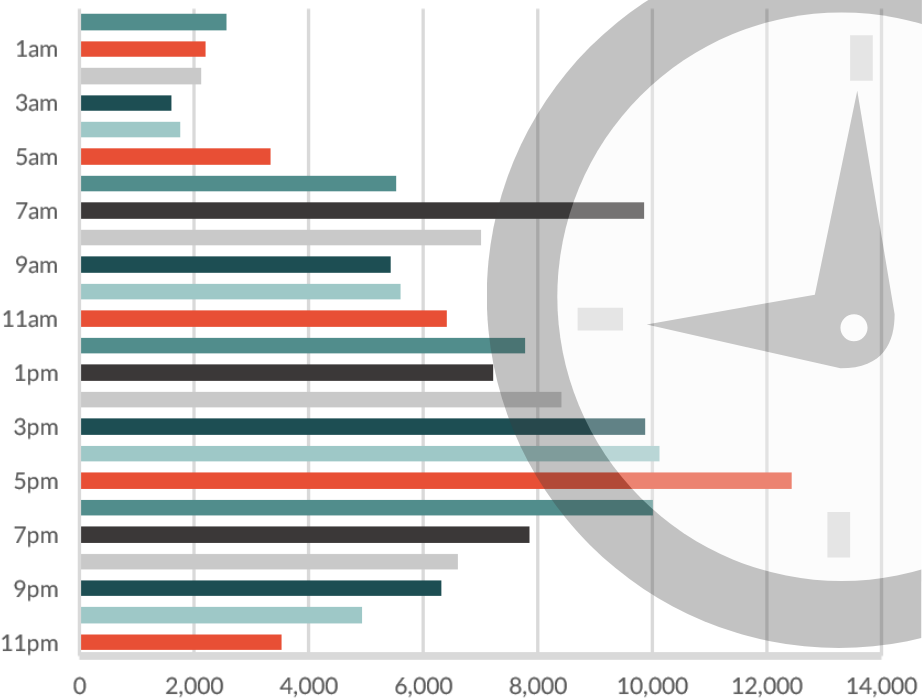


1 in nearly 6 people were injured in crashes in 2016

TCRPC 2007-16 Crash Data

Crashes by Time of Day

From 2007-2016 TCRPC Data



Rear ends accounted for over

30%

of crashes from 2010-14, for a total of over 16,000. Driving off the road came in second at 25%.

66% of crashes occurred on DRY

road conditions in the past 10 years. Only 8% happened in snowy conditions.

TCRPC 2016 Regional Transportation Safety Plan

TCRPC 1/1/2007-12/31/2016 GIS Data

PAVEMENT CONDITION

The Tri-County Regional Planning Commission (TCRPC) has staff who are specially trained to use the Pavement Surface Evaluation and Rating (PASER) scale to visually inspect and rate the region's federal-aid roads, along with MDOT, county, city, and village staff. PASER is a 1-10 scale that identifies four major categories of pavement distress: surface defects, surface deformations, cracks, and patches and potholes. The Transportation Asset Management Council (TAMC) then categorizes each PASER rating into a good, fair, or poor definition.

1,970

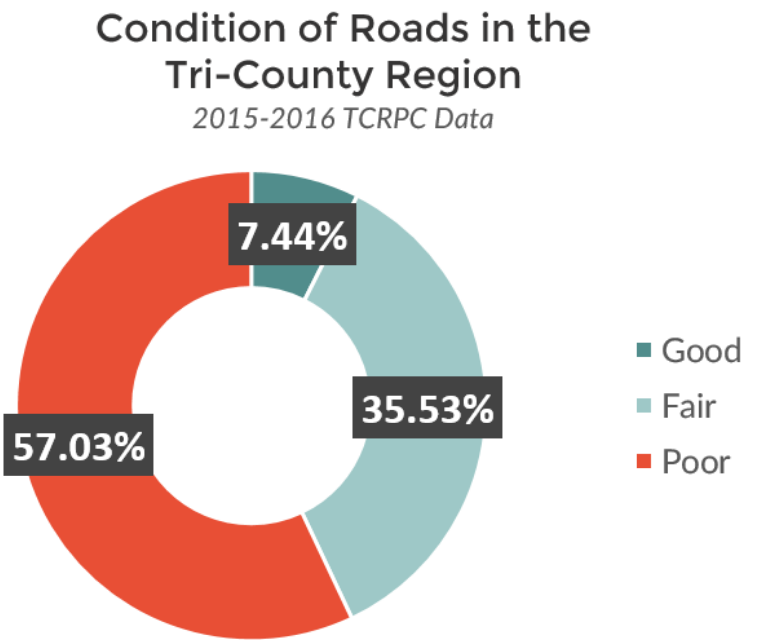
miles of roads rated

Technicians across the region visually inspected nearly 2,000 miles of federal-aid roads in 2015-16 to survey defects and serious road conditions.

\$14.3M

total reconstruction investment in the tri-county region

TCRPC FY 2017 Data



What destroys our roads?

Water

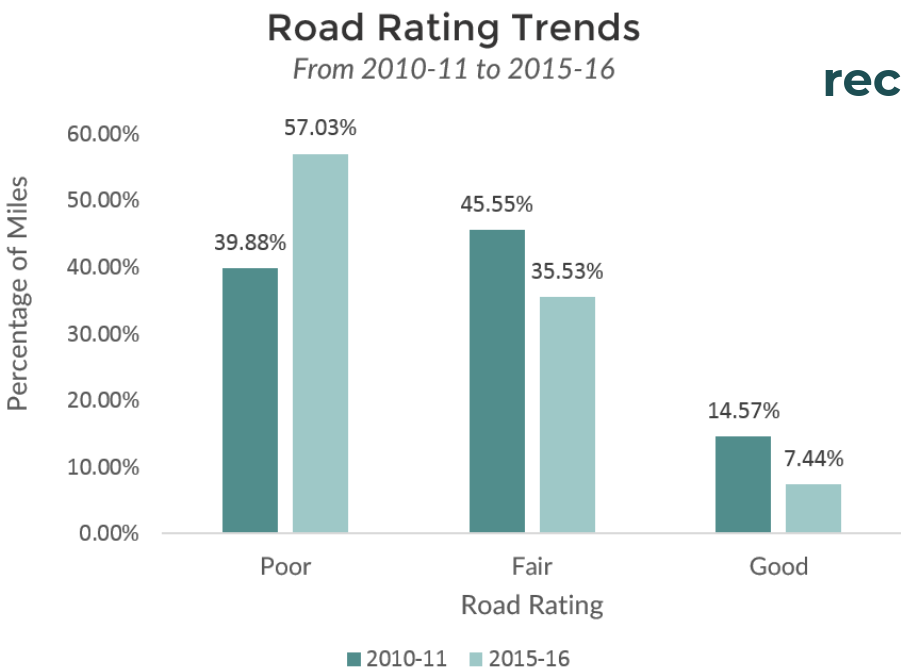
As water seeps into cracks and infiltrates layers of the road, it weakens the structural integrity, which eventually causes potholes.

Traffic

The weathering and aging of our roads are exacerbated by excessive volumes of traffic and heavy freight loads (the movement of goods).

Environment

Cool temperatures cause water in pavement to expand and rise. Oxidation also makes pavement stiffer and more brittle over time.



Why don't we just reconstruct all the bad roads?

Preventative maintenance is significantly more cost-effective than structural improvements or total demolition and reconstruction.

every **\$1** invested on preserving a road in **good** or **fair** condition can save as much as **\$6-14** in reconstruction costs

What is asset management?

Asset management is the systematic process of developing, operating, maintaining, and upgrading physical objects. In this case, it's weighing the pros and cons of cost versus how long certain road fixes will last, but you do it every day if you make repairs on a car or house!

	10 & 9	8	7 & 6	5	4	3	2	1
PASER	Excellent	Very Good	Good	Fair	Fair	Poor	Very Poor	Failed
TAMC	GOOD		FAIR		POOR			



PASER vs. TAMC Rating Scale



BIKING & WALKING



The Tri-County Regional Planning Commission (TCRPC) recognizes the growing exploration of healthier, more cost-effective, and more eco-friendly alternatives of transportation. TCRPC hosts an Advisory Work Group of industry experts and stakeholders in the community to brainstorm ways to improve connectivity and accessibility for bicyclists and pedestrians in the tri-county region. Ideas from the work group will be incorporated into a non-motorized plan that will prioritize projects that will fill gaps of connectivity from county to county.

706
miles of non-motorized facilities & modifications in the tri-county region

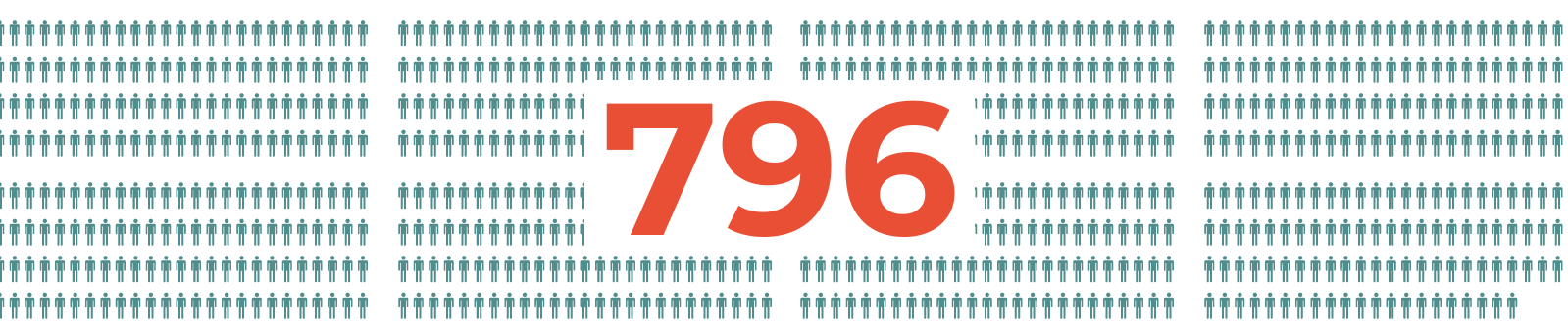
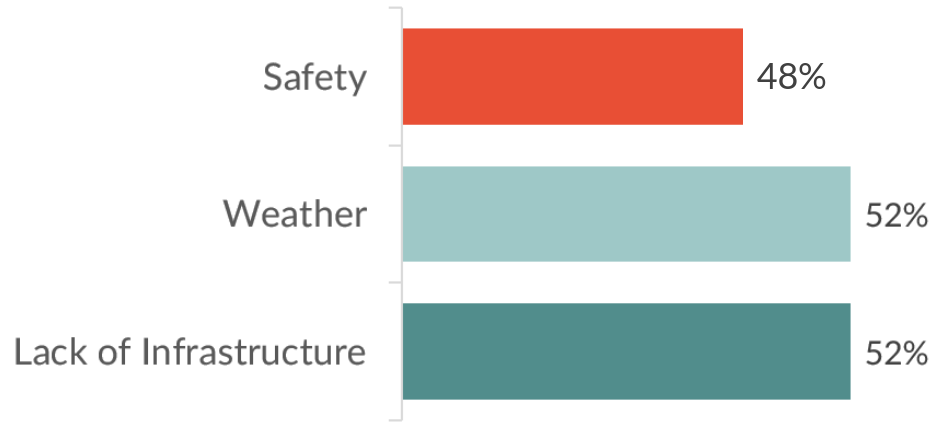
28%
bicyclists who commute by bicycle at least twice a week



2014 MDOT Economic Benefits of Bicycling Study

Top 3 Barriers to Bicycling

2014 MDOT Economic Benefits of Bicycling Study

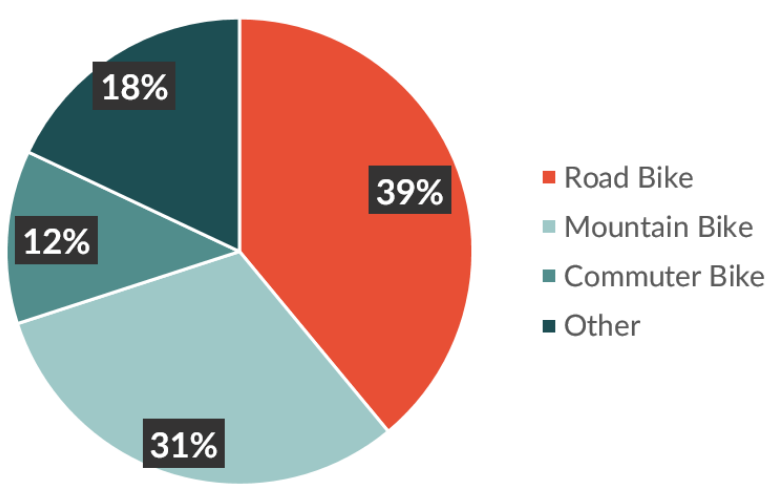


People employed by the bicycling industry in Michigan

2014 MDOT Economic Benefits of Bicycling Study

Top Primary Bicycle Types

2014 MDOT Economic Benefits of Bicycling Study

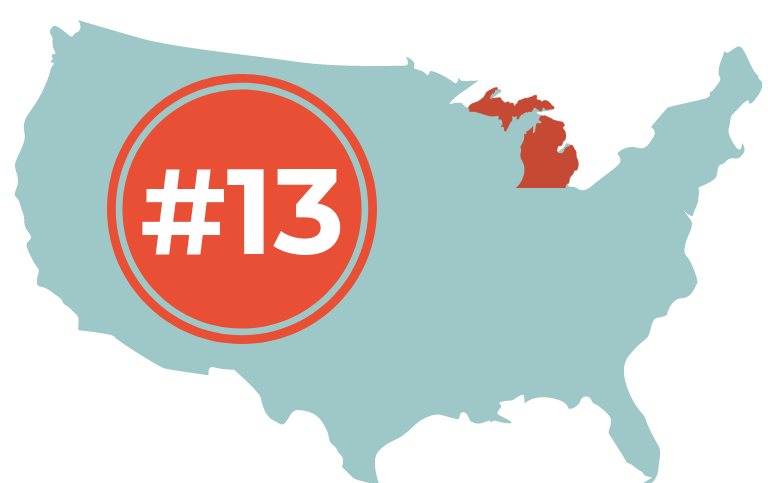


5,502
K-8 students from **14** area schools participated in Walk to School Day 2017 in the tri-county region.



Michigan Fitness Foundation 2017

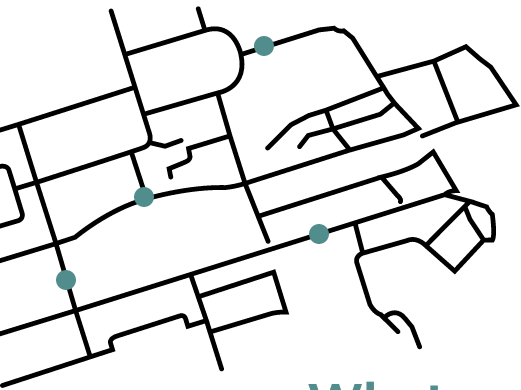
Michigan Bicycle Friendly Statewide Ranking (OUT OF 50)



League of American Bicyclists 2017 Bicycle Friendly State Survey

CONGESTION MANAGEMENT

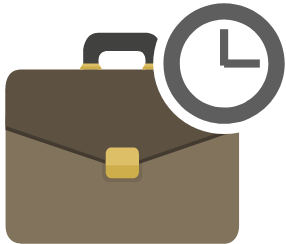
Congestion is caused when traffic approaches or exceeds the available capacity of the road network. There are two types of congestion: recurring congestion, which is when traffic congestion is relatively predictable, and non-recurring congestion, which is when traffic jams are unexpected or out of the norm. The Tri-County Regional Planning Commission (TCRPC) works toward solutions for congestion in several ways, including collecting traffic counts of the region's rural and urban roads, managing a database and interactive map of area road construction, and analyzing data and trends to forecast the region's travel demands in the future.



1,740



locations in the region used for traffic counts



Recurring congestion is caused by routine traffic volumes on typical days, such as rush hour.

What causes non-recurring congestion?



crashes



inclement weather

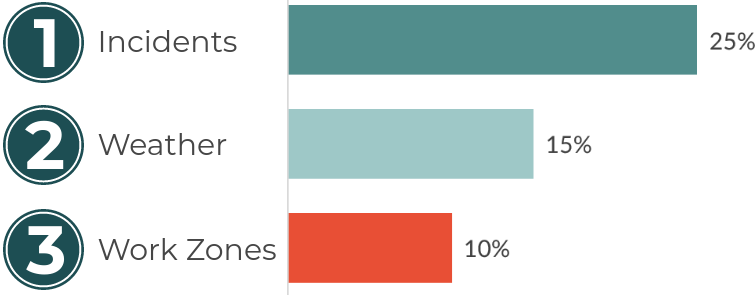


construction



special events

Top 3 Causes of Non-Recurring Congestion



Traffic congestion costs American motorists

\$121 billion

a year in wasted time and fuel costs.

Tripnet.org 2017 Fact Sheet



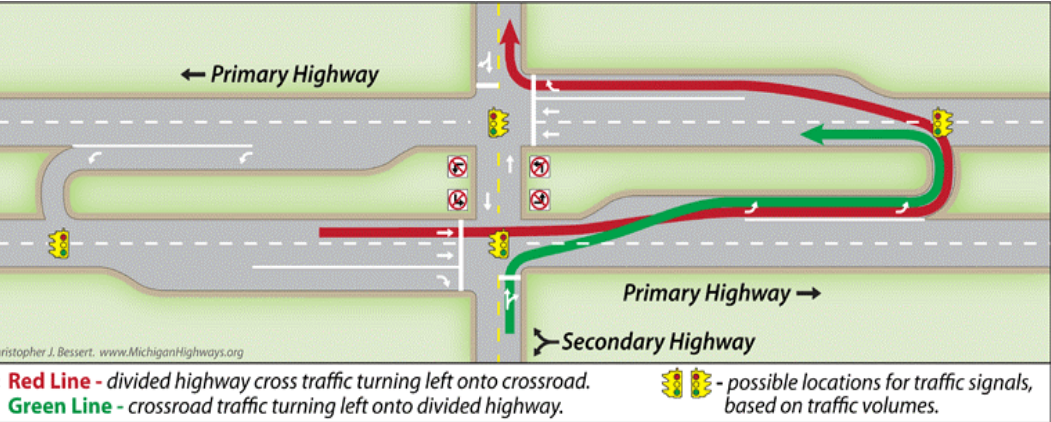
Have you considered?

If an emergency vehicle cannot reach us in an appropriate amount of time because of traffic congestion, it can be a danger to our health, safety, and property.



7% increase in vehicle travel on Michigan's highways from 2000-2016

Tripnet.org 2017 Fact Sheet



How do Michigan Lefts help congestion?

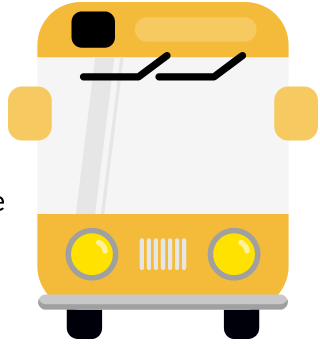
Did you know the average wait times at Michigan Left intersections are much shorter than if that same intersection had a traditional four-phase traffic signal with protected left-turn movements?

Michigan Lefts provide 20-50% greater capacity than direct left-turns, which reduces average delays to left-turning vehicles and through-traffic.

www.michigan.gov/mdot

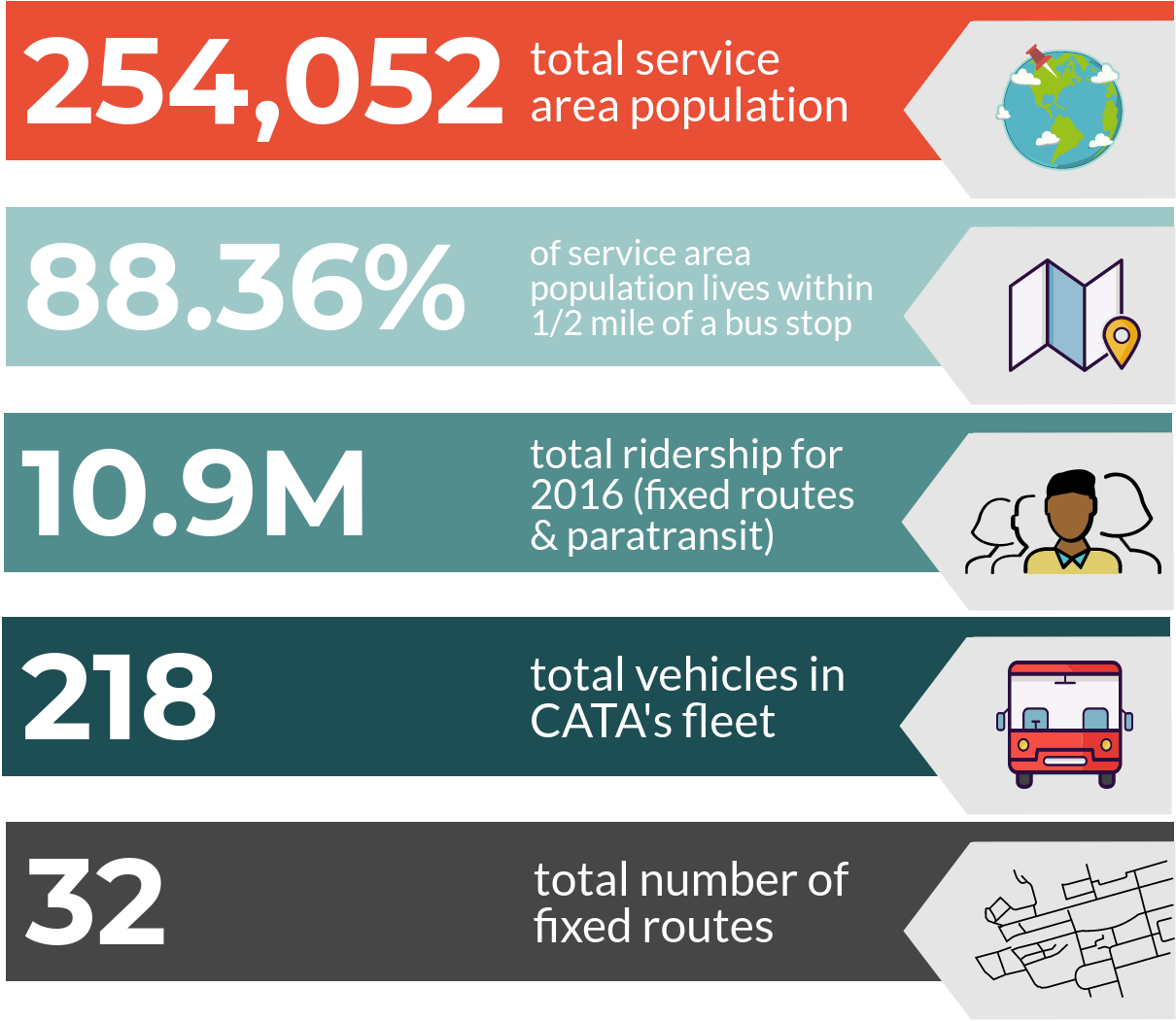
TRANSIT PLANNING

The Tri-County Regional Planning Commission (TCRPC) works with multiple public transportation service agencies in the region to examine changes in our region's demands and coordinate planning efforts.



Capital Area Transportation Authority (CATA)

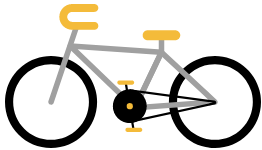
The Capital Area Transportation Authority provides public transportation services in Clinton, Eaton, and Ingham counties. The Authority's governmental membership includes the Cities of Lansing and East Lansing, and the Townships of Delhi, Lansing, and Meridian. Curb-to-curb and disability services include Redi-Ride, Spec-Tran, and CATA Rural Service (CRS). CATA also provides commuter and recreational transportation routes, namely, "The Limiteds" and Entertainment Express.



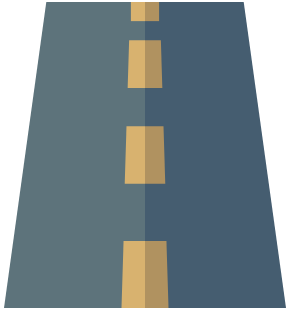
Did You Know?

41%

of CATA's large buses are hybrids



all fixed route buses have bike racks



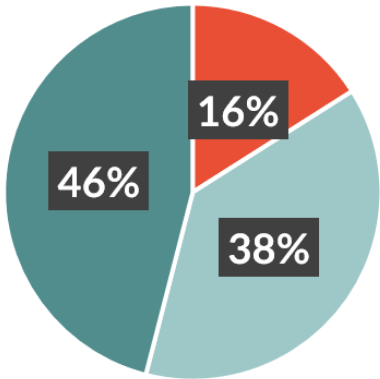
Eaton County Transportation Authority (EATRAN)

EATRAN provides open-door, curb-to-curb public transportation throughout Eaton County, including demand response services, a downtown Lansing express, and out-of-county medical trips.

EATRAN Funding Sources
2014 EATRAN Data

27 buses maintained by EATRAN

137,168 rides provided by EATRAN in 2016



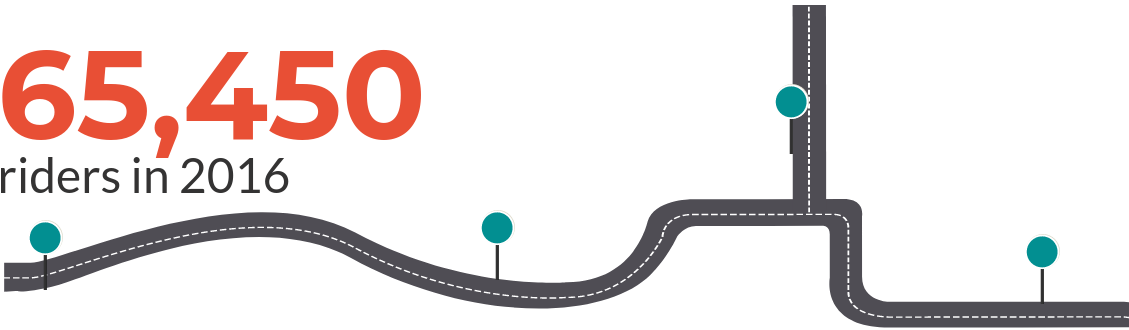
Federal State Local

Clinton Area Transit System

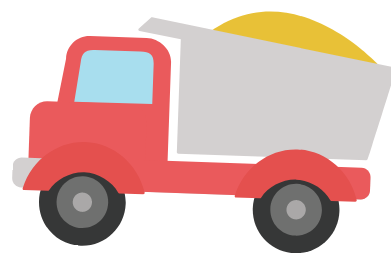
Clinton Transit provides origin-to-destination services to meet transportation needs of passengers in all of Clinton County. The Blue Bus is a demand-response system; there is no fixed route bus service due to Clinton County's population size.

21 blue buses and 5 minivans in operation

65,450 riders in 2016



FREIGHT PLANNING



An efficient and well-maintained transportation system serves as the backbone for all economic activity. Accessibility to a network for freight, which is defined as any good, product, or raw material carried by a commercial means of transportation, plays a critical role in influencing where businesses operate, how roads are maintained, and what solutions to poor traffic flow are implemented. The tri-county region is at the center of truck, rail, and air freight routes, and there is a growing need for freight services resulting from increased consumer demand, congestion, and the ability of our transportation infrastructure to support such demand.



Top 3 Commodities moved by truck throughout Michigan

NONMETALLIC METALS
such as sand and gravel
75.6 million tons

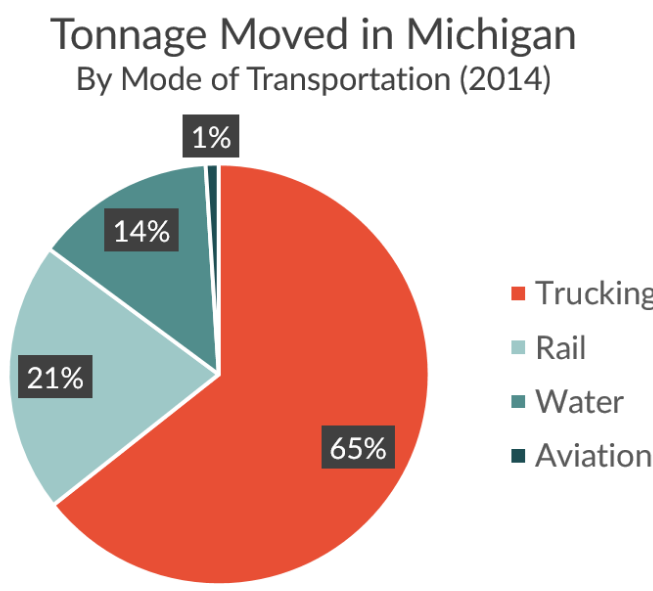
1

AGRICULTURAL COMMODITIES
38.6 billion tons

2

FOOD PRODUCTS
32 million tons

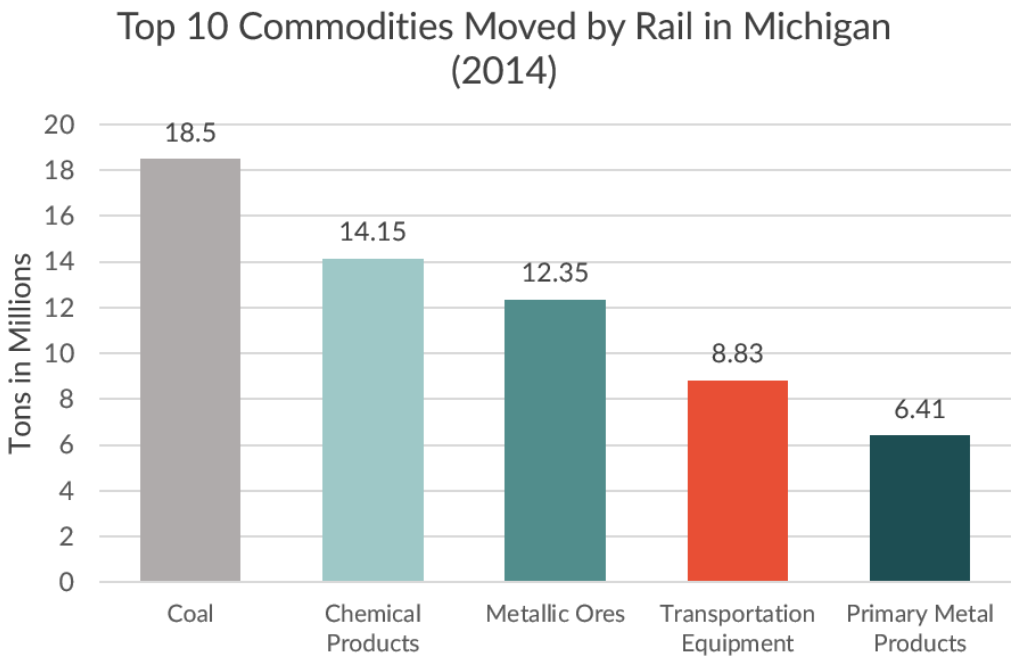
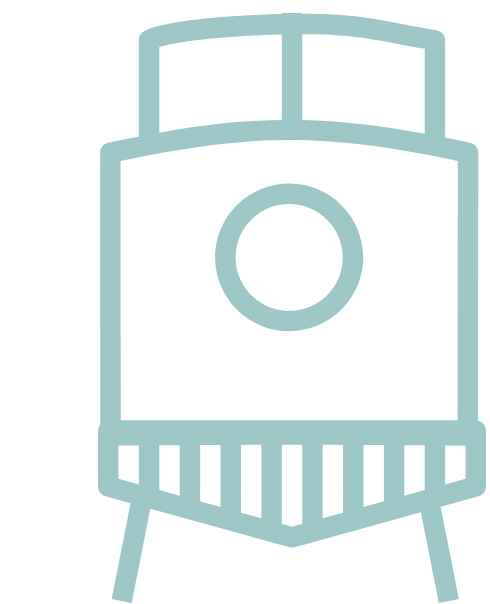
3



22,948
tons of products shipped by
Lansing's Capital Region
International Airport

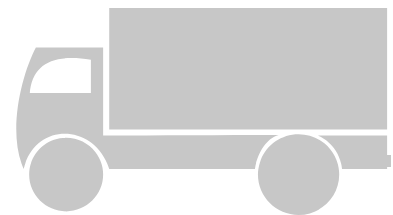


479 million tons
of commodities moved to, from, and within Michigan

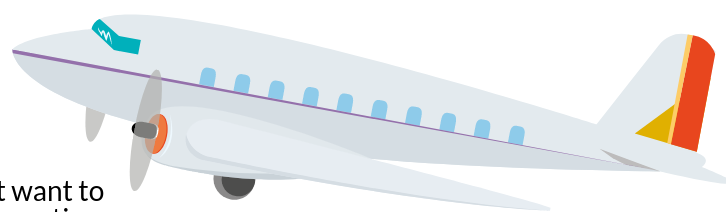


#1

TRANSPORTATION EQUIPMENT is the top commodity by value moved by truck in Michigan, at \$139.01 billion in 2014



PASSENGER AIR PLANNING



Increasing air travel to Michigan supports businesses and individuals that want to locate and invest in Michigan. It also diversifies the public's transportation options. In July 2017, the Tri-County Regional Planning Commission TCRPC helped facilitate a Capital Region International Airport and Regional Transportation study group to explore how to better improve signage and increase connectivity and accessibility to and from the airport. In October 2017, TCRPC followed up on those discussions and collected traffic count volume, freight, and speed data on 14 specific road locations surrounding the airport to assess its accessibility.

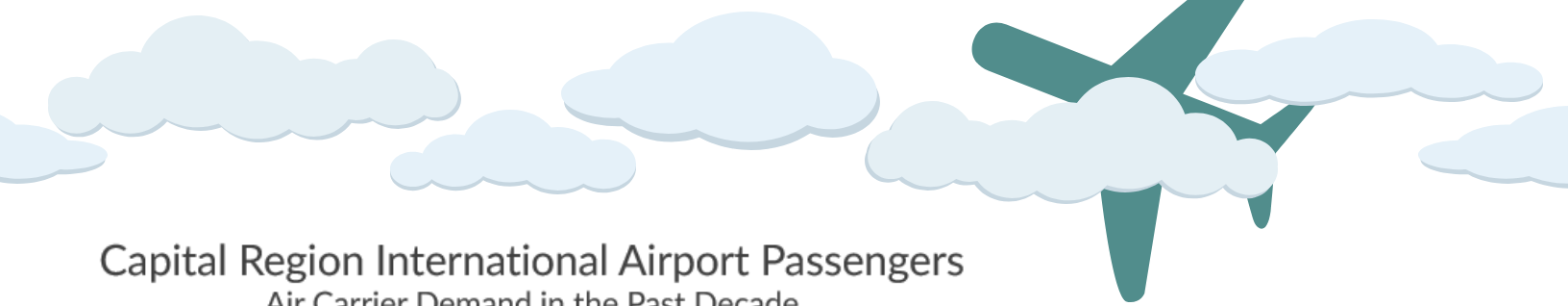
Direct Flights from the Capital Region International Airport



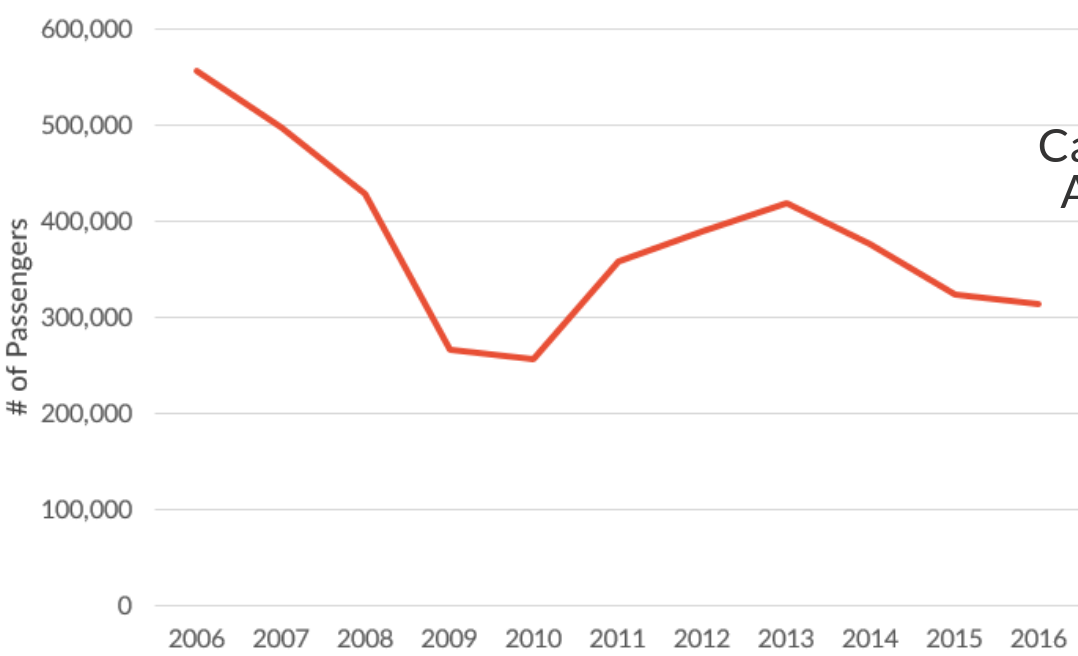
- International**
- Cancun, Mexico
 - Montego Bay, Jamaica
 - Punta Cana, Dominican Republic



- Domestic**
- Detroit
 - Chicago
 - Minneapolis
 - Washington, D.C.



Capital Region International Airport Passengers
Air Carrier Demand in the Past Decade



314,659

Capital Region International Airport passengers in 2016

39.5M

passengers traveled by air in Michigan in 2016

PASSENGER RAIL PLANNING

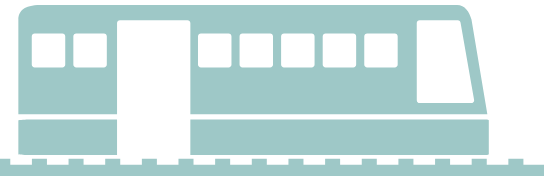
Preserving and developing city-to-city passenger rail diversifies the public's transportation network and increases safety by relieving congestion on the highway. It also reduces emissions over other modes of travel. The Tri-County Regional Planning Commission (TCRPC) works with partners and agencies across the state to research new ways to connect citizens with long distance, commuter, and regional passenger rail travel options.



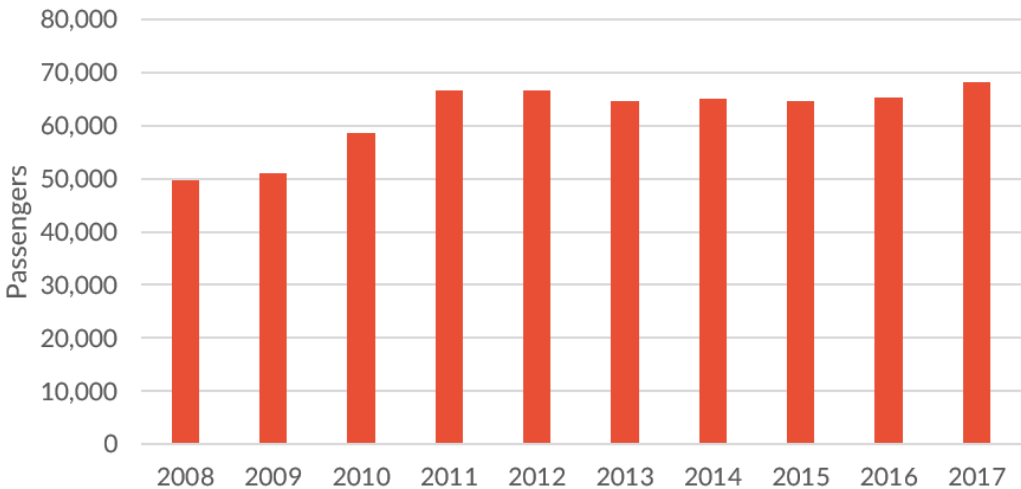
68,216

riders of the East Lansing Capital Area Multi Modal Gateway station in FY 2017

National Railroad Passenger Corporation (Amtrak) as compiled by MDOT, Bureau of Transportation Planning



East Lansing Amtrak Station Ridership
Fiscal Year 2008-2017



Types of Passenger Rail



Intercity rail includes express long distance passenger train services. MDOT sponsors three passenger rail routes serving 22 station communities in Michigan. Operated by Amtrak, these trains provide safe, affordable transportation alternatives. The services in Michigan include:

- Wolverine service
- Pere Marquette service
- Blue Water service



Commuter rail includes passenger rail between a city center and nearby suburbs or towns/cities to draw large numbers of commuters. Michigan's Commuter Rail Program is actively working to help plan and implement locally-led projects in the state. Efforts include:

- Lansing to Detroit Passenger Rail Study
- Ann Arbor to Detroit Regional Rail Project



Light rail is a form of urban public transportation, which operates within dense urban areas with exclusive rights-of-way. It can be elevated or on the ground, but it is smaller than a traditional metro system. Light rail in Michigan is evolving, with exploration of new projects such as:

- Detroit People Mover
- Detroit's M-1 Electric Rail Project (QLine)