Diversify our regional transportation network by investing in infrastructure for people who walk, ride bicycles and ride mass transit.
Pedestrian Safety is Critical

Bicycle and Pedestrian Fatalities
Marion County (2011-2015)

<table>
<thead>
<tr>
<th>Year</th>
<th>Pedestrian and Bicyclist Fatalities</th>
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<tbody>
<tr>
<td>2011</td>
<td>86</td>
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<td>2012</td>
<td>78</td>
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<td>2013</td>
<td>80</td>
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<td>2014</td>
<td>83</td>
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<td>2015</td>
<td>97</td>
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<table>
<thead>
<tr>
<th>Year</th>
<th>Total Fatalities (All Crashes)*</th>
</tr>
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<tbody>
<tr>
<td>2011</td>
<td>26</td>
</tr>
<tr>
<td>2012</td>
<td>17</td>
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<td>2013</td>
<td>23</td>
</tr>
<tr>
<td>2014</td>
<td>19</td>
</tr>
<tr>
<td>2015</td>
<td>32</td>
</tr>
</tbody>
</table>

Source: National Safety Council, February 2017

Source: https://cdn.nhtsa.gov/STSI.htm#
Why the Pedestrian Plan

Indy’s Budget Gap

Budget Needed for Sidewalk Repairs and Full Pedestrian Network Buildout: $750M

Current Total Transportation Budget: $50M
Vision and Goals

Indianapolis will be a great place to walk, leading to a community that is healthier, safer, resilient, and economically vibrant.

Create Connected and Complete Communities

Make the Experience Safe

Build Walkable Places for All

Get It Done
Key Outcomes

- Achieve project goals
- Identify priority areas
- Select projects
- Maintain city flexibility
- Reflect mix of land use types
STEP 1: Selecting Priority Areas

- STEP 1: Establish High-Priority Areas Using Quantitative Screening
**STEP 1: Selecting Priority Areas**

**HEALTH**
- Overweight/Obese
- Diabetes
- Access to Groceries
- Access to Parks/Greenways
- Collision Density

**Health Index**
(by Health Planning Area)

- Low (Least Healthy)
- High (Most Healthy)
STEP 1: Selecting Priority Areas

- Population of Color
- Poverty
- Seniors
- Youth
- No Vehicle Households
- Limited English
- Disabilities

Transit Dependency Index* (by Census Tract)

Data Sources: US Census Bureau 2008-2012 American Community Survey 5-Year Estimates, Indianapolis MPO, and City of Indianapolis
STEP 1: Selecting Priority Areas

HIGH PEDESTRIAN COLLISION CORRIDORS

* All collisions between 2004 and mid-October 2015 that involved at least one pedestrian. Collisions are weighted by severity (death=3, injury=2).
STEP 1: Selecting Priority Areas

WALKING COMFORT

- Traffic Volume
- Speed
- Travel Lanes
- Sidewalk Availability
- Street Lighting

Pedestrian Environmental Quality Index (PEQI) Score

- Low (Least Comfortable)
- High (Most Comfortable)
STEP 1: Selecting Priority Areas

PEDESTRIAN GENERATION

- Population/Employment Density
- Transit
- Proximity to Parks, Commercial, Schools, Dense Mixed Use and Residential

Pedestrian Demand Index

Pedestrian Demand Index was calculated based on population and employment densities, proximity to parks, schools, college/university, medical facilities, high activity land use areas (commercial, mixed-use and high density residential) and stop-level transit boarding counts.
STEP 1: Selecting Priority Areas

CITY PRIORITIES

- TOD Station Areas
- Reconnecting Our Waterways
- High Crime Investment Areas
- Catalytic Neighborhoods
STEP 1: Selecting Priority Areas

PRIORITIZING
SAFETY, HEALTH, AND EQUITY
STEP 1: Selecting Priority Areas

HIGH PRIORITY AREAS

- Tier 1
- Tier 2
- Tier 3
STEP 2: Project Types

• STEP 2: Establish Project Types
STEP 2: Project Types

ALONG THE ROADWAY

ACROSS THE ROADWAY

OFF-STREET

MAJOR BARRIER REMOVAL

PLACEMAKING
STEP 3: Score Priority Area Projects

• STEP 3: Score Projects in Priority Areas Using Qualitative Screening
STEP 3: Score Priority Area Projects

ALL PEDESTRIAN PROJECTS
STEP 3: Score Priority Area Projects

ALL HIGH PRIORITY (TIER 1) PEDESTRIAN PROJECTS
STEP 3: Score Priority Area Projects

- Improves transit access
- Improves access to nearby destinations
- Enables active living
- Land use typology

- Removes a pedestrian barrier or fills a pedestrian gap
- Potential to leverage other funding or piggyback on another project
- Favorable considerations
STEP 4: Project List

• STEP 4: Set Up Initial Fiscally-Constrained Project List
STEP 4: Project List

TOP 100 PEDESTRIAN PROJECTS
Beyond Infrastructure

Programs encourage and celebrate walking

Policies allocate and operate the right-of-way

Procedures are day-to-day practices

LOW-COST MATERIALS PILOT PROGRAM

Goal
Develop a pilot program that implements and tests interim pedestrian projects using low-cost materials.

Phasing

Rationale
- Walking infrastructure needs are significant and costs are very high.
- Individually, needs to identify cost-effective and creative construction materials for pedestrian projects.

Actions
- Conduct a global scan of low-cost pedestrian infrastructure best management practices.
- Identify potential projects that could be constructed with low-cost materials on an interim basis.
- Procure and test low-cost materials that can be reused for different construction projects.
- Implement at least three (3) walking infrastructure projects using low-cost materials.

Partners
- Department of Public Works.
Programs

• Indy Vision Zero
• Safe Routes to School Plans
• Low-cost Materials Program
• Pilot Project and Placemaking Toolkit
• Open Streets Events Series
• New Safe Routes Program
• Traffic Calming Program
• Walking Education and Marketing Programs
• Sidewalk Cost Share Program
Indy Vision Zero

• Near term goal to eliminate all preventable pedestrian fatalities and severe injuries from roadway crashes in the next 10 years.

• The number of collisions has remained fairly steady over the last 10 years, but fatalities have increases 50%

1. Supportive infrastructure/Planning
2. Engineering
3. Education
4. Enforcement
5. Monitoring, Analysis, and Evaluation
6. Policy
7. Large Vehicles
8. Vehicle Technology
9. Taxi Services/Transportation Network Company

<table>
<thead>
<tr>
<th>Vision Zero Design</th>
<th>Used in Sweden, the Netherlands, and London</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proven</strong></td>
<td><strong>Used in Sweden, the Netherlands, and London</strong></td>
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<tr>
<td>Pedestrian countdown signals</td>
<td>Separated bike lanes</td>
</tr>
<tr>
<td>Senior slow/safety zones</td>
<td>Leading bike interval</td>
</tr>
<tr>
<td>Slow zones around schools/ local streets</td>
<td>Slow zones around schools/ local streets</td>
</tr>
<tr>
<td>High visibility crosswalk (continental crosswalk)</td>
<td>High visibility crosswalk (continental crosswalk)</td>
</tr>
<tr>
<td>Restrict parking near intersections (aka &quot;daylighting&quot;)</td>
<td>Dynamic message signs with safety messaging</td>
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<tr>
<td>Roundabouts</td>
<td>Roundabouts</td>
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<tr>
<td>Traffic Calming Counter Measures</td>
<td>Traffic Calming Countermeasures</td>
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<tr>
<td>Point to point camera</td>
<td>Restrictions on street access</td>
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<td>Red light camera</td>
<td>Pedestrian only streets</td>
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<td>DUI checkpoints</td>
<td>Restrict car access in the city center</td>
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<tr>
<td>Road diet</td>
<td>Shared-space area for cars, bicyclists and pedestrians</td>
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<td>Speed camera</td>
<td>Speed camera</td>
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<tr>
<td>Random breath testing</td>
<td>Bicycle signals</td>
</tr>
<tr>
<td>High visibility enforcement</td>
<td>Protected turns (turn pockets &amp; signal phasing)</td>
</tr>
</tbody>
</table>
Safe Routes to School

- Safe Routes to School program is being developed by Health by Design.
- Over 350 school in Indianapolis
- School Zone Flasher Projects
Low-cost Materials Program

- Mapleton Fall Creek neighborhood used paint to create bumpouts
- Spark the Circle used paint, cones and café seating to create a road diet.
Low-cost Materials Program

- Sparket will test creating pedestrian space through temporary one-way conversion and shipping container cafés
New Safe Routes Programs

- Safe Routes to Transit projects are in design to compliment the IndyGO Bus Rapid Transit program. Pedestrian facilities will be improve for ½ mile either side of a station.
SECTION 900
Neighborhood Traffic Calming

901.01 Purpose

The purpose of this document is to set forth the recommended practices in planning, designing and constructing neighborhood traffic calming devices throughout the City of Indianapolis, Indiana. Likewise, it is important to establish the following definition of traffic calming (this definition was derived by the subcommittee on Traffic Calming of the Institute of Transportation Engineers in 1997):

“Traffic Calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users.”

The primary objective of traffic calming is to create safer roads and a better quality of life for the neighborhoods that we live in. The strategic objectives are:

- To improve driver behavior, concentration, and awareness,
- To reduce speed,
- To reduce cut-through traffic,
- To improve safety for pedestrians, bicycles, and vehicles, and
- To enhance the quality of life, and improve aesthetics.
• Signal Timing
• Leveraging Stormwater Funds
• Advance Stop and Yield Bars
• Intersection LOS Tolerance
• Zoning Code and Variance Updates
• No Right Turn on Red
• Clear Sidewalk Rules
Policies

- Flexible Street Design Standards
- Countywide Transportation Levy
- Multimodal Funding Strategy
- Neighborhood Greenway Implementation
Signal Timing

- The entire system was last updated using 4 ft/sec.
- New and upgraded signals use 3.5 ft/sec
- We use slower in special areas
- Pedestrian crossing governs signal timing.
Leveraging Stormwater Funds

• When stormwater projects result in road reconstruction, Complete Street are included as appropriate.
• Regular transportation projects will draw stormwater funds to offset the cost of those elements, potentially freeing up funding for pedestrian facilities included with the project.
Advance Stop and Yield Bars

- DPW Operations has started refreshing stop bars and crosswalks in Pedestrian Crash Focus Areas.
- DPW is starting to use Yield Bars in advance of uncontrolled pedestrian crossings.
- Paddle signs have been placed in several key locations downtown.
No Turn on Red and other restrictions

- DPW is working on City Ordinance to prohibit turns on red in the downtown core.
- Left and right hooks account for a disproportional number of crashes.
Flexible Street Design Standards

- DPW takes advantage of the more flexible design standards that have become available.
- Indianapolis is a member of the National Association of City Transportation Officials and makes use of NACTO Design Guides.
Intersection Level of Service Tolerance

- Indianapolis DPW currently uses LOS D as the preferred level of service for intersections.
- LOS E and F are routinely used for projects and development.
Procedures

- Complete Streets Checklist
- Transit Access Improvements
- Interdepartmental and Interagency Coordination
- Construction Management
- Tracking New Projects
- FHWA Focus Area Status Leverage
- Sidewalk Inspection
- Pedestrian Plan Prioritization Process Integration
Procedures

- Grassroots Placemaking
- INDOT Coordination
- Neighborhood Special Assessments
- Cost Effective Materials
- Active Transportation/Public Space Organization
- Regional Data Clearinghouse
- Utility Cut Requirements
- Pedestrian Plan Update
Complete Streets Checklist

- Indianapolis has a good Complete Streets Ordinance.
- All DPW projects are reviewed for Complete Streets Compliance regarding:
  - Sidewalks
  - Curb Ramps
  - Crosswalks
  - Bikeways
  - Transit Facilities
  - Safe Routes to School
  - Stormwater Issues
  - Community Connections
Transit Access Improvements

• Transit access was identified as a part of the recent Transit Referendum.
• Transit stop elements are currently included with DPW capital projects.
• SR2T projects
Construction Management

- DPW conducts construction inspector training to address sidewalk and ramp construction, ADA compliance, and pedestrian maintenance of traffic methods.
Tracking New Projects

• Mayor’s Action Center is used for citizens to raise all kinds of issues.
• Pedestrian issues are categorized and
  – are funneled to Operations if practical
  – are included as one offs in quoted projects
  – are included in ongoing capital projects as available.
FHWA Focus Area Status Leverage

- FHWA focus city
- Number of fatalities, not rate
- FHWA has a nice suite of training modules, but we were already ahead of them in development
- How to Develop a Pedestrian Safety Action Plan Seminar in December 2016
- Vision Zero Peer Exchange planned for June 2017
INDOT Coordination

- I-65/I-70 over Vermont Street
- Ditch Road over I-465
- I-69 Extension on the southwest side
- I-465 West Leg bicycle and pedestrian facility inclusions
Neighborhood Special Assessment

- Woodruff Place currently has the only special assessment in the city.
- The money is used for capital projects above and beyond what DPW can provide.
ADA Integration Plan

• DPW works with the Indianapolis Mayor’s Office of Disability Affairs.
• We have a tradition of universal inclusion and accessibility.
• We actually have an implementation plan
Monitoring Performance

Create Connected and Complete Communities
• Miles of sidewalk network completed
• Proportion of intersections with pedestrian signals
• Neighborhood WalkScore

Make the Experience Safe
• Number of pedestrian fatalities
• Number of collisions involving pedestrians

Build Walkable Places for All
• Ratio of commute walk and transit trips to all commute trips
• Rate of obesity
• Percent of pedestrian funding allocated using Plan prioritization

Get It Done
• Number of priority projects completed
• Number of pedestrian programs/policies/procedures implemented
Plan was adopted by the Metropolitan Development Commission as a segment of the Comprehensive Plan for Indianapolis and Marion County.

Team continues to meet regularly to move both project selection and other recommendations forward.

Working on rethinking modal advisory group structure to be more integrated.
Lessons Learned

• Successes
  – Strengthened partner relationships
  – Legitimacy with key-leaders, decision-makers
  – Institutionalized processes, practices
  – Transparency & benchmarking

• Challenges
  – Timing
  – Change in administration
  – Capacity of partners
  – Limitations of data
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