BLOOMINGTON • MONROE COUNTY
mpo

POLICY COMMITTEE

January 14, 2022
1:30 – 3:00 p.m.

Virtual Location via Zoom
https://bloomington.zoom.us/j/86015480578?pwd=UTFWUncvUm5aMVlVaWdLN21MUnpFdz09
Meeting ID: 860 1548 0578
Passcode: 404388
Find your local number: https://bloomington.zoom.us/u/kepcF942xZ

Clicking on the link will take you to the meeting. You will automatically receive a dial-in number if you want to use your phone for audio and not your computer microphone.

I. Call to Order and Introductions

II. Approval of the Agenda*

III. Nominations and Election of Officers for Calendar Year 2022*
   a. Chair
   b. Vice-Chair

IV. Approval of the Minutes*
   a. October 8, 2021

V. Communications from the Chair

VI. Reports from Officers and/or Committees
   a. Citizens Advisory Committee
   b. Technical Advisory Committee

VII. Reports from the MPO Staff
   a. Calendar Year 2022 BMCMPO Committee Meeting Schedules
   b. Metropolitan Planning Organization 101 - January 2022 Update
   c. Bloomington Transit - Route #2 Service Change
   d. Fiscal Years 2022-2026 Transportation Improvement Program (TIP) Status
   e. INDOT FY 2022-2026 Statewide Transportation Improvement Program (STIP)
   f. BMCMPO Crash Report Updates - CY 2015-2019

VIII. Old Business
   a. None

IX. New Business
   a. Transportation Planning https://www.ite.org/technical-resources/topics/transportation-planning/
   b. Transportation Engineering (https://www.ite.org/)
   c. Traffic Engineering (https://www.ite.org/technical-resources/topics/traffic-engineering/)

X. Public Comment on Matters Not Included on the Agenda *(non-voting items)*
Limited to five minutes per speaker. The Committee may reduce time limits if numerous people wish to speak.

XI. Communications from Committee Members on Matters Not Included on the Agenda *(non-voting items)*
   a. Communications
   b. Topic Suggestions for Future Agendas

XII. Upcoming Meetings
   a. Citizens Advisory Committee - January 26, 2022 at 6:30 p.m. (Virtual)
   b. Technical Advisory Committee - January 26, 2022 at 10:00 a.m. (Virtual)
   c. Policy Committee - February 11, 2022 at 1:30 p.m. (Virtual or Hybrid)

XIII. Adjournment

**Action Requested / Public comment prior to vote limited to five minutes per speaker. (The Committee may reduce time limits if numerous people wish to speak*).

Auxiliary aids for people with disabilities are available upon request with adequate notice. Please call 812-349-3429 or e-mail human.rights@bloomington.in.gov.

POLICY COMMITTEE
Meeting Minutes
October 8, 2021
1:30 - 3:00 p.m.
Virtual Electronic Location via Zoom

Policy Committee Present: Lisa Ridge, Sarah Ryterband, Steve Volan, Jason Banach, Kent McDaniel, Margaret Clements, Andrew Cibor (proxy), Pam Samples, Kate Wiltz, Chris Wahlman (proxy), Penny Githens

Staff present: Ryan Clemens, Pat Martin

I. Call to Order and Introductions
   a. Lisa Ridge called the meeting to order.

II. Approval of the Agenda*
   **** Sarah Ryterband motioned for approval of the agenda. Kent McDaniel seconded. Motion carried by roll call vote 10:0 - Approved.**

III. Approval of the Minutes*
   a. September 10, 2021.
   Andrew Cibor noted a correction in that Don Griffin was not present at the last meeting. **Kent McDaniel motioned for approval of the September 19, 2021 meeting minutes with the noted correction. Sarah Ryterband seconded. Motion carried by roll call vote 8:0:2 - Approved.

IV. Communications from the Chair - None.

V. Reports from Officers and/or Committees
   a. Citizens Advisory Committee
   (1) Sarah Ryterband reported the CAC met and (1) recommended Policy Committee approval of the FY2020-2024 and FY2022-2026 Transportation Improvement Program (TIP) Amendment for an additional travel lane on SR45 from the SR45/SR46 intersection to Pete Ellis Drive.
   b. Technical Advisory Committee
      (1) In the absence of Lew May, Pat Martin reported that the TAC met and (1) recommended Policy Committee approval of the FY2020-2024 and FY2022-2026 TIP Amendment for an additional travel lane on SR45 from the SR45/46 intersection to Pete Ellis Drive.

VI. Reports from the MPO Staff
   a. FY2022-2026 Transportation Improvement Program - Staff submitted the FY2022-2026 TIP approved by the Policy Committee on September 10, 2021 to the INDOT/FHWA/FTA. FHWA approved the program, FTA will approve the program by the end of October. INDOT will additionally issue a Governor's approval letter in a matter of weeks and amend the BMCMPO FY2022-2026 TIP into the FY2022-2026 INSTIP by reference.

b. 14th Street Extension - Staff contacted the Indiana University Architects Office at the request of the committee regarding any plans for an extension to the SR45/46 Bypass. The University has no current plans for an extension of this roadway.

c. IU Hospital Health Opening - The new IU Health Bloomington Hospital opening remains scheduled for November/December 2021 with the primary entrance along the SR45/46 Bypass. The current IU Health Bloomington Hospital will subsequently close upon opening of the new facility. Discussion ensued.

VII. Old Business

a. BMCMPO Fiscal Years 2020-2024 Transportation Improvement Program Amendment* DES#1800086 – Added Travel Lane on SR 45 from the SR 45/46 Bypass to Pete Ellis Drive. Ryan Clemens noted the project had a recent federal funding program assignment. Chris Wahlman noted that the project remains in the environmental stage of development. ****Sarah Ryterband motioned for approval of the Amendment. Margaret Clements seconded.** Discussion ensued. **Motion carried by roll call vote 8:0:2 - Approved.** Kate Wiltz lost service prior to the vote.

VIII. New Business

(1) None.

IX. Communications from Committee Members (non-agenda items)

Scott Faris recommended improvements along the SR45 corridor, the need for updated IU Health studies and an INDOT examination of SR46 corridor traffic. Margaret Clements agreed. Kent McDaniel announced the retirement of Lew May from Bloomington Transit and the selection of John Connell as the new General Manager.

X. Upcoming Meetings

a. Policy Committee - November 12, 2021 at 1:30 p.m. (Virtual)
b. Technical Advisory Committee - October 27, 2021 at 10:00 a.m. (Virtual)
c. Citizens Advisory Committee - October 27, 2021 at 6:30 p.m. (Virtual)

Adjournment

**Action Requested / Public comment prior to vote (limited to five minutes per speaker*).

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2022 BMCMPO Committee Meeting Schedules

POLICY COMMITTEE	TECHNICAL ADVISORY COMMITTEE	CITIZENS ADVISORY COMMITTEE
1/14/2022, 1:30 pm	1/26/2022, 10:00 am	1/26/2022, 6:30 pm
2/11/2022, 1:30 pm	2/23/2022, 10:00 am	2/23/2022, 6:30 pm
3/11/2022, 1:30 pm	3/23/2022, 10:00 am	3/23/2022, 6:30 pm
4/8/2022, 1:30 pm	4/27/2022, 10:00 am	4/27/2022, 6:30 pm
5/13/2022, 1:30 pm	5/25/2022, 10:00 am	5/25/2022, 6:30 pm
6/10/2022, 1:30 pm	6/22/2022, 10:00 am	6/22/2022, 6:30 pm
July - Summer Recess - No Meetings		
8/12/2022, 1:30 pm	8/24/2022, 10:00 am	8/24/2022, 6:30 pm
9/9/2022, 1:30 pm	9/28/2022, 10:00 am	9/28/2022, 6:30 pm
10/14/2022, 1:30 pm	10/26/2022, 10:00 am	10/26/2022, 6:30 pm
11/4/2022,1:30 pm*	11/16/2022,10:00 am*	11/16/2022, 6:30 pm*
December - Winter Recess - No Meetings		

**Meeting moved ahead one week due to holiday*

ALL MEETINGS WILL BE HELD VIRTUALLY OR IN A HYBRID FASHION AS PER BMCMPO RESOLUTION 22-01 UNTIL FURTHER NOTICE

Technical & Citizens Advisory Committees (4th Wednesdays)
Policy Committee (2nd Fridays)

Bloomington-Monroe County Metropolitan Planning Organization
www.bloomington.in.gov/mpo

“MPO 101”

The Purpose & Function of a Metropolitan Planning Organization (MPO)

MPO 101 Overview

Some Key Concepts

- MPOs – What, Why, Who?
- Functions & Products
- Structure
- Best Practices
- Challenges
- Resources
- Discussion

MPO 101 Overview

Some Key Concepts

- Fiscal Constraint
- Public & Stakeholder Involvement
- Collaboration
- Multimodalism/Intermodalism
- Transportation – Land Use Connection
- Transportation- Economic Vitality Connection
- System Management & Operations (M&O)
- Safety & Security

MPOs - What, Why, Who?

What is an MPO?

- A transportation policy-making and planning body with representatives of local, state & federal government, transportation authorities, multi-disciplinary exerts, and citizens
- Required in urbanized areas of 50,000+
- Ensures federal investment spending on transportation activities occurs through a comprehensive, cooperative and continuing (“3-C”) process
- Variety of organizational arrangements – “hosted” by another agency; stand-alone; existing agency designated as an MPO by Governor

MPOs - What, Why, Who?

Why an MPO?

- Transportation investment means allocating scarce transportation funding resources appropriately.
- Planning must reflect the region's shared vision for its future.
- Requires a comprehensive examination of the region's future and investment alternatives.
- MPO **facilitates collaboration** of governments, interested parties and residents.

MPOs - What, Why, Who?

Who is the MPO?

- Elected Officials
- State Agencies
- Municipalities, Counties, Regional Agencies
- Transit Operators
- Public Representatives
- Federal Agencies
- Private Sector Representatives
- ADA Accessibility
- Other Interest Groups

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MPO – Functions, Process, Products

MPO Core Functions

- Establish a fair & impartial setting
- Evaluate transportation operational and capital investment alternatives
- Maintain a Long Range Transportation Plan (LRTP)
- Develop a Transportation Improvement Program (TIP)
- Involve the public residents and key affected sub-groups (Public Participation Plan)

MPO – Functions, Process, Products

The MPO Process

- Regional Vision & Goals
- Alternate Improvement Strategies – Operations & Capital
- Strategies Evaluation & Prioritization of Strategies
- Development of a Long-Range Transportation Plan
- Development of Transportation Improvement Program
- Project Development and supportive project advancement monitoring
- System Operation

MPO – Functions, Process, Products

MPO Products (All Performance Monitoring)

- *Unified Planning Work Program (UPWP)*
  - 1-2 Year Time Horizon
  - Includes Planning Studies, Tasks, Budget
  - Update Requirements = Annual
- *Transportation Improvement Program (TIP)*
  - 4-5 Year Time Horizon
  - Includes Transportation Investment Projects
  - Local Project Federal Funding Sources: STPBG (80/20); TAP (80/20); HSIP (90/10)
  - Update Requirements = Every 1-2 years
- *Long - Range Transportation Plan (LRTP)*
  - 20 Year Minimum Time Horizon
  - Includes Future Goals, Strategies, Performance Measures & Projects
  - Update Requirements = Every 5 years

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MPO – Functions, Process, Products

Unified Planning Work Program

- Reflects local transportation planning priorities
- Identifies studies & performance tasks by MPO and/or member agencies with MPO funds
- Covers at least one year
- Often includes a “preamble” element explaining a purpose and need
- Identifies funding sources for each planning study task
- Forms the basis for planning (PL) funding & FTA 5303 (planning) transferability
- Identifies Responsible Agencies for each study/task
- Establishes End Product delivery schedules

MPO – Functions, Process, Products

Long Range Transportation Plan

- Statement of regional transportation system performance-based investment priorities & plans
- Minimum 20-year time horizon
- Focused on systems level & intermodal/multimodal in nature
- Clear link with regional land use, development, housing, and employment goals/plans
- Emphasizes safe, efficient & efficient use of the existing transportation system
- Consistent with Statewide Transportation Plan
- Conforms with State Implementation Plan (SIP in non-attainment areas only) for Air Quality
- Fiscally-constrained prioritized listing of projects

“Typical” MPO Structure

MPO Policy Committee

- Locally Elected and Appointed Officials
- Modal Representatives
- State Agency Officials
- Interest Group Representatives
- Tribal Governments

“Typical” MPO Structure

Technical Advisory Committee

- An advisory body to the MPO Policy Committee for technical transportation issues
- Oversees MPO staff technical work and develops recommendations on projects and programs for Policy Committee consideration
- Meets on a regular schedule
- Usually comprised of staff-level technical officials of local, state & federal agencies, Citizens’ Advisory Committee, MPO professional staff

“Typical” MPO Structure

Citizens’ Advisory Committee

- Often acts in an advisory capacity to the MPO on public participation strategies and offers “real world” feedback on issues of jurisdictional concern

- Meets regularly to review and develop plans, and also assists in organizing and managing public meetings and comments; “free flowing” discussions

- Comprised of members of the public
  - Often appointed by localities & MPO Policy Committee
  - May include representatives of community, neighborhood, environmental & other interested organizations

MPO Operating Procedures

MPO Operations

- Decision-making processes
- Effective & ongoing public involvement

Decision-Making

- MPO process is designed as “bottom-up” from stakeholders
- Leadership is also critical to progress
- Policy Committee must clearly delineate roles & responsibilities of committees & staff (through adoption/maintenance of Operational Bylaws)

MPO Operating Procedures

Effective Public Involvement

- *Public Participation Plan* (PPP)
  - Required document
  - Must clearly lay out process, strategy and responsibilities for ensuring continuous public input and education opportunities
  - Public involvement methods stressed in current “FAST Act” federal transportation funding bill

- Innovation in public involvement can enhance the process and make it more cost-effective

MPO Operating Procedures

Effective Public Involvement Examples

- Newsletters/media releases
- Electronic communications
- Public Access TV
- Community meetings
- Interactive workshops/open houses
- Resident surveys
- Interactive & social media websites
- Videos/Animation
- Telephone “hotlines”
- Speakers & Speakers’ kits
- Local liaisons
- Other efforts to reach the “under-involved”

MPO Operating Procedures

MPO Best Practices

- Considerable innovation across MPOs in many different topics
- Small MPOs are sometimes among the leaders being more agile and closer to stakeholders
- Worth considering best practices for lessons learned and local applicability

MPO Operating Procedures

Themes of MPO Best Practices

- Creativity & innovation in public & stakeholder involvement
- Focus on consensus-building for priorities & actions
- “Push the envelope” - use planning tools & process to effectively address hot topics the in region (e.g., visualization)
- Aggressively monitor & report on regional transportation system performance measures
- Develop plans, projects and work programs within a strategic framework
- Strong leadership & involvement is most important determinant of MPO “success”

MPO Operating Procedures

MPO Challenges

- "Meeting fatigue" – MPO participants, citizens, professional staff
- Coordination among different players in MPO process (and knowing who they are!)
- Staying on top of emerging issues and requirements – federal, state, local levels
- Balancing management of in-house work and consultant tasks
- Achieving organizational goals with limited resources

MPO 101 - Resources

Additional MPO Informational Resources

- Transportation Planning Capacity Building Program - https://www.planning.dot.gov/default.aspx
- Association of Metropolitan Planning Organizations (AMPO) https://ampo.org/
- TRB Committee on Metropolitan Policy, Planning and Processes https://www.nationalacademies.org/trb/transportation-research-board
- USDOT Bipartisan Infrastructure Law (BIL) Summary highlights https://www.fhwa.dot.gov/bipartisan-infrastructure-law/ and https://www.transit.dot.gov/BIL

MPO 101 - Questions

- Questions?
- Suggestions?

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Patrick Martin <martipa@bloomington.in.gov>

Route 2 West Service Changes

1 message

Zac Huneck <huneckz@bloomingtontransit.com> Tue, Jan 4, 2022 at 3:17 PM
Bcc: martipa@bloomington.in.gov

Hello transit supporters!
I trust the new year is starting in the right direction for you. Here at BT we are preparing to move forward with service changes on Route 2 West (map attached), to begin **Monday, January 17th**. BT staff presented and gathered feedback on several iterations of route changes, and last month our board approved the third and final version.

Route 2 West changes include:

- Service on 12th St, instead of 13th St, through Crestmont neighborhood
- Elimination of service on Blair Ave near Tri-North MS
- Elimination of inbound service on Morton St

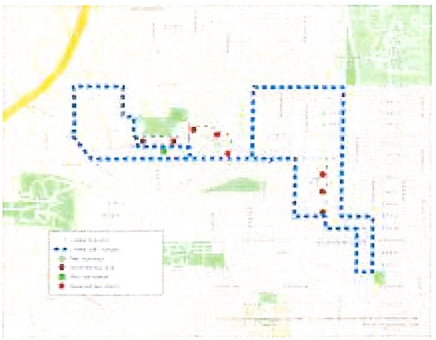
These alterations will allow the route to more easily stay on schedule, provide reliable transfers downtown, while maintaining accessibility.

Please let me know if you have any questions.

Best regards,
Zac

--
Zac Huneck
Planning & Special Projects Manager

Bloomington Public Transportation Corporation
130 W. Grimes Ln.
Bloomington, IN 47403
(O): 812-336-7433 ext. 106



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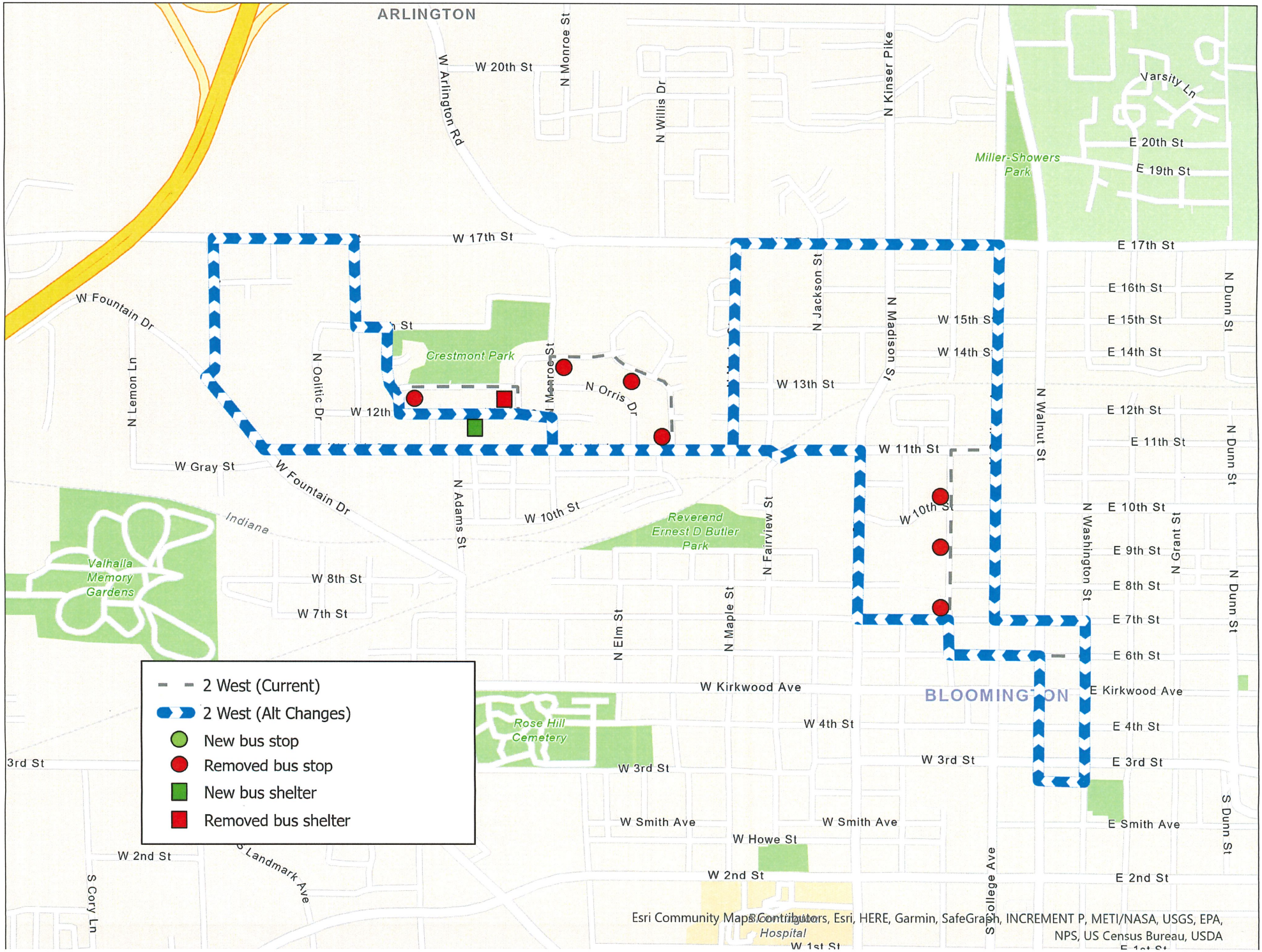
ARLINGTON
W 20th St
N Monroe St
W Arlington Rd
N Willis Dr
N Kinser Pike
Varsity Ln
E 20th St
E 19th St
Miller-Showers Park
W 17th St
E 17th St
W Fountain Dr
N Lemon Ln
N Oolitic Dr
Crestmont Park
N Monroe St
N Orris Dr
W 12th
N Jackson St
N Madison St
W 15th St
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E 14th St
N Dunn St
N Walnut St
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E 11th St
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W Gray St
W Fountain Dr
N Adams St
W 10th St
Reverend Ernest D Butler Park
N Fairview St
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N Washington St
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E 8th St
E 7th St
E 6th St
Indiana
Valhalla Memory Gardens
W 8th St
W 7th St
N Elm St
N Maple St
W Kirkwood Ave
BLOOMINGTON
E Kirkwood Ave
Rose Hill Cemetery
W 4th St
E 4th St
3rd St
W 3rd St
E 3rd St
W Smith Ave
E Smith Ave
W Howe St
W 2nd St
E 2nd St
S Landmark Ave
S Cory Ln
S College Ave
S Dunn St
Hospital
W 1st St
2 West (Current)
2 West (Alt Changes)
New bus stop
Removed bus stop
New bus shelter
Removed bus shelter
Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

MEMORANDUM

To: BMCMPO Policy Committee

From: Ryan Clemens, Pat Martin

Date: January 7, 2022

Re: FY 2022 - 2026 Statewide Transportation Improvement Program (STIP)

Background

The Indiana Department of Transportation (INDOT) is in the process of updating the FY 2022 - 2026 STIP. A draft version of the STIP is available for a 45-day comment period between December 8, 2021 and January 27, 2022 at the following link: https://www.in.gov/indot/resources/state-transportation-improvement-program-stip/stip-fy-2022-to-fy-2026

What is a Statewide Transportation Improvement Program (STIP)?

The STIP constitutes Indiana's four-five year planning and construction document identifying all projects and project phases programmed for federal funding within five years as well as state-funded "regionally significant" projects. INDOT prepares the STIP in cooperation with local government entities throughout Indiana, including Transportation Planning Regions (TPRs), Metropolitan Planning Organizations (MPOs), and Regional Planning Organizations (RPOs). The STIP identifies the funding and the scheduling of transportation projects and programs by State Fiscal Year (July 1 through June 30). It includes all state and local transportation projects funded with federal highway and/or federal transit funding along with 100 percent state funded transportation projects (including highway, passenger rail, freight, public transit, bicycle and pedestrian), and projects in the national parks).

How is the STIP Developed?

Indiana has both a decentralized and centralized programming process. Projects submitted and selected by the six (6) INDOT districts undergo an agency-wide, statewide asset management process in coordination with MPOs, local public agencies, and transit coordinators. INDOT, the MPOs and RPOs collect stakeholder and public input at various points within the STIP development process. The Federal Highway Authority (FHWA) and the Federal Transit Authority (FTA) approve the STIP. The STIP has a two-year cycle and undergoes monthly amendments.

How is the STIP Amended?
Once INDOT achieves STIP approval from the FHWA and FTA, major changes to federally funded projects must receive approval through a formal amendment process by FHWA/FTA. INDOT accomplishes the correction of incorrect information in the STIP through a non-federal approval Administrative Modification process using specific guidelines to define requirements for STIP amendments and modifications.

How to Get Involved?
Proactive public involvement is a key component of the state's transportation planning processes. There are multiple opportunities along the way for the public and stakeholders to have a voice in the STIP process. You can attend annual district public meetings, contact your respective INDOT district office regarding transportation facility needs, contact your respective Metropolitan Planning Organization/Regional Planning Organization office, participate in regional meetings in your area of interest, participate in the STIP public comment period, and provide your comments on a Public Comment Form available at https://www.in.gov/indot/resources/state-transportation-improvement-program-stip/stip-comment-form/. INDOT's STIP Primer document attached to this memorandum provides additional technical background information.

Requested Action
None.

PPM/pm

Statewide Transportation Improvement Program (STIP)

Public Primer

The STIP is a document that identifies the funding and scheduling of transportation projects and programs. It includes projects on the federal, state, city, and county transportation systems, multimodal projects (highway, passenger rail, freight, public transit, bicycle and pedestrian), and projects in the National Parks. The goal of this STIP Primer is to describe a few fundamentals regarding the STIP as well as how to get involved.

Statewide Transportation Improvement Program (STIP)

Public Primer

What is the Statewide Transportation Improvement Program (STIP)?

The Statewide Transportation Improvement Program (STIP) is a federally mandated 4-year funding and scheduling document for surface transportation projects (road, highway, pedestrian trails, bicycle facilities, bridge facilities and transit projects in Indiana). The STIP is important because federal and state money cannot be spent on projects unless they are listed in the STIP. The STIP is NOT a plan; it is a budget document that is used to schedule and fund projects. The projects listed in the STIP typically come from local and/or state-approved plans. Only projects which construction and operating funds can reasonably be expected to be available are included in the STIP.

The Indiana Department of Transportation (INDOT) develops the STIP in accordance with the Fixing America's Surface Transportation Act (FAST Act) and applicable federal regulations. Projects are developed in coordination with the state's metropolitan planning and rural planning organizations. Projects are listed in the STIP by county. The STIP verifies that transportation revenues are available and sufficient to finance the improvements. See the STIP *Users' Guide* or view the adopted STIP at: http://www.in.gov/indot/2348.htm.

When is the STIP is Prepared?

The STIP is completely updated every two years, typically during the odd year. The process is very involved and must be coordinated with various partners; entities at the local, state, and federal levels; and must adhere to our public participation/involvement policy at http://www.in.gov/indot/2366.htm before approved. The update process can take up to 9-months.

Outreach and Public Involvement

Two-way information sharing and stakeholder involvement is critical to the Indiana Department of Transportation (INDOT) in the development of a STIP that best meets the ongoing transportation needs of the state.

Public involvement provides Indiana a road map for assuring everyone's voice is not only heard, but makes sure it makes a difference in moving the Hoosier State forward.

How is the STIP Document Organized?

The STIP is organized in four sections.

- **Section 1: STIP Overview** – Provides an introduction and overview of the STIP and the process used to develop or amend the document and the coordination efforts (MPOs, RPOs, stakeholders, and the general public)

- **Section 2: Requirements** - Describes state and federal requirements and how INDOT meets these requirements (public involvement, environmental justice, ADA, and agreements/coordination between states).
- **Section 3: Financial Information/Permits–** Describes and defines funding programs, revenue history/trends, financial summaries, risk management/mitigation strategies, financial plans for major capital projects (i.e. Ohio River Bridges, I-69 corridor), tables, and related information
- **Section 4: Project Listing** – Projects are listed by project sponsor: state, local, transit, by county, funding source, and phases:
    a. **Preliminary Engineering (PE) –** Engineering analysis and design work to develop specifications, cost estimates to get a project to physical construction. PE can bring plans to 30% complete or lead to final design plans that are 100% complete.
    b. **Right of Way (RW) –** Land acquisition activities, right of way costing, and related activities
    c. **Construction (CN)** - This will include physical building activities approved roadway and transit construction activities and costs.

Who participates in the STIP Development Process?

A multi-disciplinary team participates in the development of the STIP from metropolitan/rural planning organizations, federal partners, freight advisory committees/stakeholders, transit providers, marine ports, local elected officials, and the general public.

How are Projects Chosen for the STIP?

Transportation projects begin through the identification of transportation needs, opportunities, or challenges and can be displayed in the STIP in phased development (e.g. PE, RW, and/or CN). Potential projects for the STIP can come from a number of sources from regional metropolitan plans, corridor studies, environmental studies, technical asset/engineering analysis, and transit providers just to name a few **(See Sources for Projects in the STIP table in this document).**

Each summer, INDOT District Offices open a 6-month Call for State Projects for proposed new projects on state facilities (interstates, U.S. Highways, and State Roads) and a separate Call for Local Projects. Proposed projects from the call are not fiscally constrained. All submitted projects are presented internally, reviewed, adjusted as needed, ranked and prioritized through state and local processes designed to assure the broadest participation in meeting the state's transportation needs. Funding estimates are established and the proposed projects are fiscally constrained based on their performance impacts. These new funded projects are approved by INDOT leadership and programmed into a scheduling system. Once these projects are programmed, they are amended into the STIP.

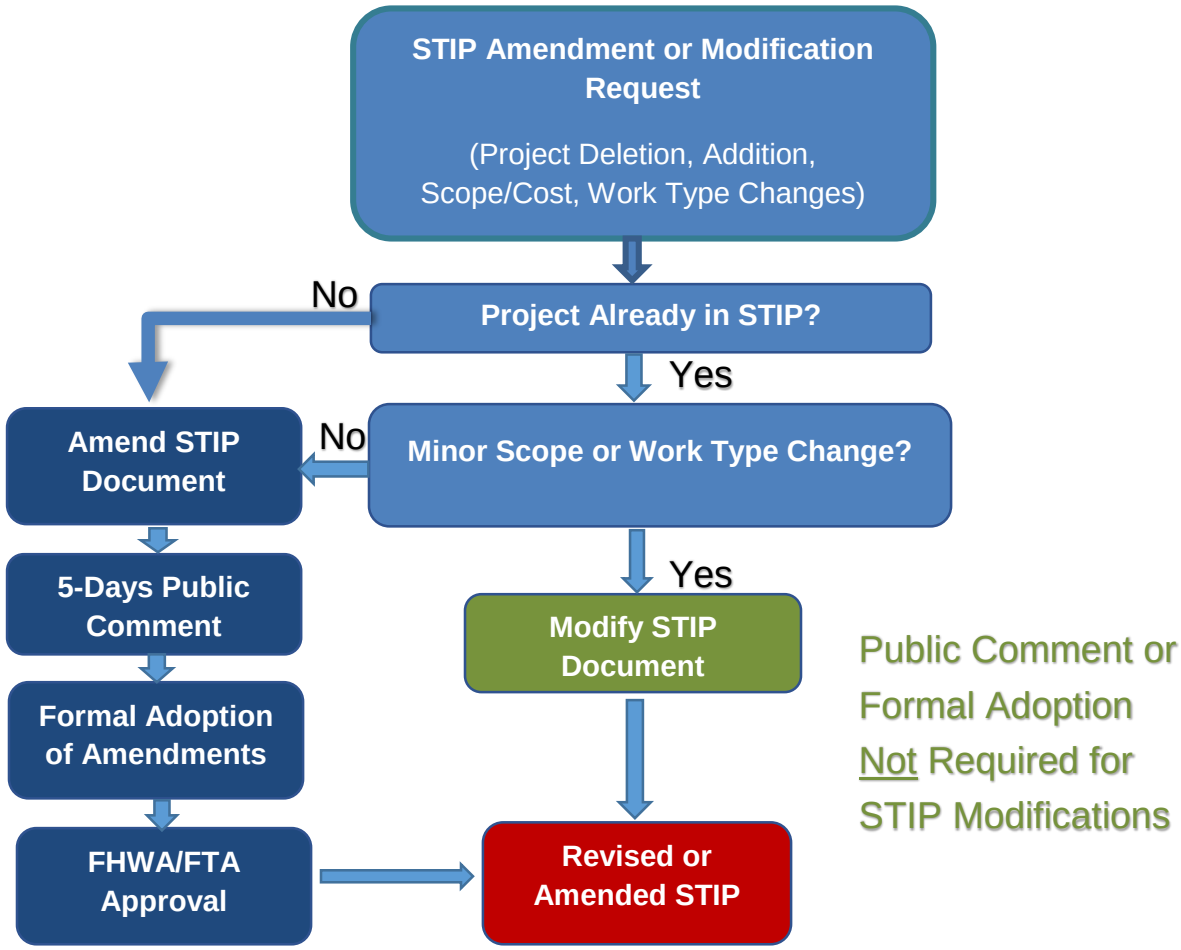
How are Projects Maintained in the STIP?

The STIP does undergo various amendments and modifications between complete updates (roughly an amendment occurring monthly). INDOT Transportation Planners, Project Managers, and Engineers work closely with Metropolitan Planning Organizations (MPOs) and non-metropolitan local officials to address needed changes between formal STIP update cycles. The updated document and amendments are publically listed on our website at: http://www.in.gov/indot/2348.htm.

Two Types of STIP Changes:

- **STIP Amendment** - is a formal process that must be approved by FHWA, FTA, and must be associated with the MPO's TIP and formally approved by the MPO Policy Board. Amendments may include changes to phases of work, major project scope changes or project work type (e.g. bridge replacement to bridge repair).
- **STIP Modification** - is not as formal and does not require formal approval from FHWA, FTA or the MPO Policy Board. Examples of modification include project advancement or deferment without changes to the project scope or cost or splitting a project.

INDOT Monthly STIP Revision Process



How Can You Get Involved with the STIP Development Process?

There are multiple opportunities along the way for the public and stakeholders to have a voice in the STIP process. The most effective way to get involved is to participate in the project discussion early, frequently, and strategically.

1. Attend local MPO Council Meetings in your area of interest. INDOT planners, engineers, and project managers often meet with MPO Board members, and Technical Advisory members to discuss and present project concepts, and answer questions from regional and local officials. Depending on the MPO, these opportunities may come every 2-4 months.
2. INDOT will have two opportunities for early involvement during our annual call process.
    a. Local officials outside of MPO areas should meet with their INDOT District to discuss transportation needs and challenges. District Contact Information: https://entapps.indot.in.gov/dotmaps/districtmaps/
    b. INDOT has a 45-day STIP public comment period. Public comments may be submitted by mail, email, or via our public comment form: www.in.gov/indot/3132.htm

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315 E. Boyd Blvd.
LaPorte, IN 46350
Toll Free: 1-855-464-6368
LaPorteDistrictCommunications@indot.in.gov

INDOT Fort Wayne District
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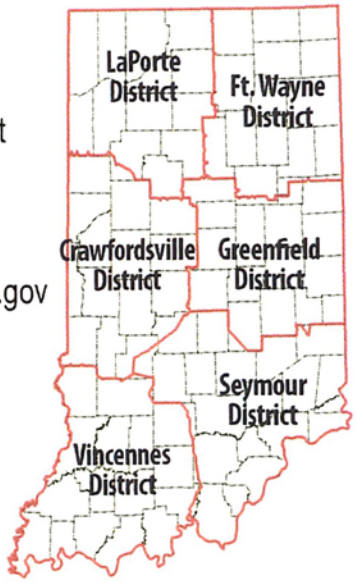
Fort Wayne, IN 46808
Toll Free: 1-866-227-3555
NEinformation@indot.in.gov



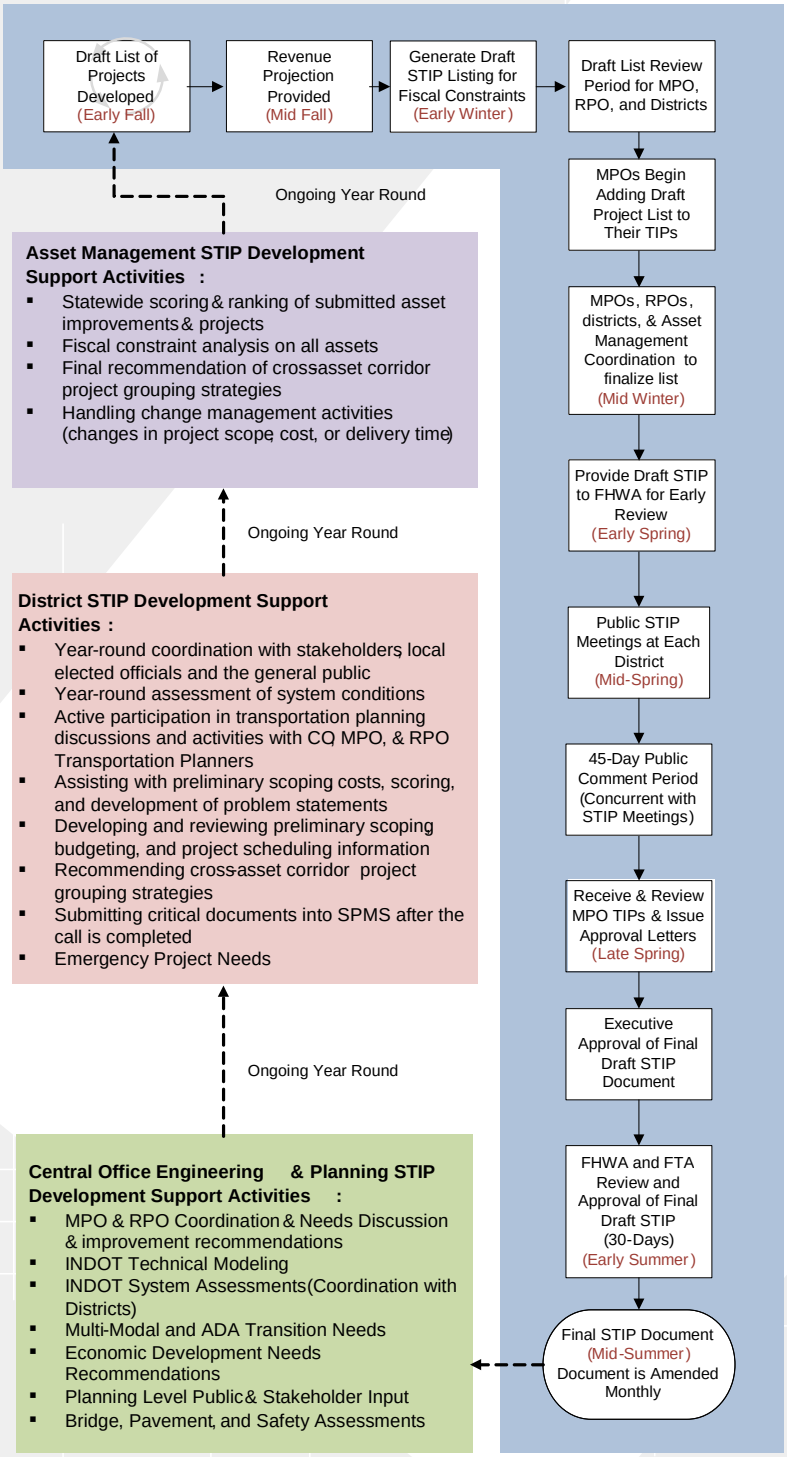
INDOT Crawfordsville District
41 West 300 North
Crawfordsville, IN 47933
Toll Free: 1-888-924-6368
westcentralIndiana@indot.in.gov

INDOT Greenfield District
32 South Broadway
Greenfield, IN 46140
Toll Free: 1-855-463-6848
eastcentralin@indot.in.gov

INDOT Vincennes District
3650 South U.S. Highway 41
Vincennes, IN 47591
Toll Free: 1-800-279-5758
swincommunications@indot.in.gov

INDOT Seymour District
185 Agrico Lane
Seymour, IN 47274
Toll Free: 1-877-305-7611
secommunications@indot.IN.gov

State Transportation Improvement Program (STIP) Development Process Every 2-Years



STIP Coordination Activities

- Development and maintenance of the STIP document
- Continuous discussions with transportation planning officials, LPA, MPO, and RPO planners.
- Continuous Coordination with INDOT's Executive Funds and Capital Program Management Teams
- Continuous Coordination with District and Central Office Project Managers
- Routine Coordination with Executive Funds Management Team for Project Change Management Activities
- Coordination with Multi-modal groups relative to funded projects
- Coordination with various federal funding programs (CMAQ, TE, and others)
- Coordinating with INDOT's 5-Year Asset Management Construction Plan

Acronym Description

- ADA = American Disability Act
- AM = Asset Management
- CMAQ = Congestion Mitigation Air Quality
- CN = Construction
- CO = Central Office
- LPA = Local Program Administration
- MPO = Metropolitan Planning Organization
- PM = Project Manager
- RPO = Rural Planning Organization
- SPMS = Scheduling Project Management System
- STIP = State Transportation Improvement Program
- TE = Transportation Enhancement

RN
Rev. 04/05/2013

Sources for Projects in the STIP

Document Type	Prepared By	Contents
Regional Long-Range Transportation Plans	Metropolitan Planning Organizations	A minimum of 20-years of projects or identified needs as part of a local land-use plans
State Long-Range Transportation Plans	INDOT Transportation Planning Department	Minimum of 20-years of identified needs or high priority corridors
Statewide Corridor Vision Planning Study (under development)	INDOT Transportation Planning Department	20-25 year vision and needs for major facilities at a corridor level.
Statewide Interchange Planning Study	INDOT Transportation Planning Department	Interchange analysis on state facilities with recommendation for operational improvements and potential new interchange locations. Updated every 3-5 years
Corridor/Project Specific Studies	Prepared by project sponsor (INDOT, Local, MPO, using in-house or consultant resources)	
Statewide Bike & Pedestrian Reports/Documents	INDOT Planning Department MPOs, RPOs, State Department of Health, Natural Resources, and Tourism as well as special interests groups	Links to regional and local bike and pedestrian plans/reports, state trails, recommendations, goals, and objectives specific to non-motorized forms of travel.
Transit Provider Plans	Local transit providers	
America with Disabilities Act Program and Initiatives	INDOT Legal Team Department with coordination with local cities and counties	Identified improvements and schedules for addressing pedestrian accommodation issues and obstacles that limit the accessibility of individuals with disabilities.
State Initiatives and Programs	INDOT Planning Department and Project Sponsors	Specifically funded projects that varies.
Pavement Management System	INDOT Pavement Asset Management Group	Condition/performance reports, maps, and location of deficient roadway segments and identification of major road construction and resurfacing projects.
Bridge Management System	INDOT Bridge Management Asset Group	Condition/performance reports, maps, and location of deficient large and small infrastructures
Congestion Management Programs	INDOT Mobility Asset Management Group and Traffic Management Center	Condition/performance reports, maps, and location of deficient large and small infrastructures and recommended strategies including operational improvements and intelligent transportation system implementation
Safety Management System	INDOT Safety Asset Management Group	
Geotechnical Assessments	INDOT Pavement Asset Management Group	Information on roadway infrastructure with identified issues with slides and rock falls
Freight Mobility Report/Plan	INDOT Multimodal Department	Various recommended improvement strategies on roadways, rail lines, and marine ports to address freight bottlenecks

Demographic and Socioeconomic Profile
SEYMOUR District

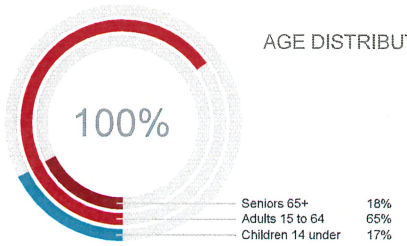
KEY FACTS

1,023,618	39.4	2.5	$60,014
Population	Median Age	Average Household Size	Median Household Income

EDUCATION

9%	36%	28%	27%
No High School Diploma	High School Graduate	Some College	Bachelor's/Grad/Prof Degree

AGE DISTRIBUTION



HOUSING

$188,105	$9,087	$669
Median Home Value	Average Spent on Mortgage & Basics	Median Contract Rent

AT RISK

12%	27%	0%	2%
Households Below the Poverty Level	Households with 1+ Persons with a Disability	Population 65+ speak Spanish & No English	Owner Households with No Vehicles

JOURNEY TO WORK

83%	9%	1%	1%	0%
Drove Alone	Carpooled	Took Public Transportation	Took a Bus or Trolley Bus	Took Light Rail, Streetcar or Trolley

0%	0%	0%	2%	4%
Took a Subway or Elevated	Took a Long-distance Train	Bicycled	Walked	Worked at Home

Households By Income

The largest group: $50,000 - $74,999 (19.5%)

The smallest group: $200,000+ (4.6%)

Indicator ▲	Value	Diff
<$15,000	8.9%	-0.9%
$15,000 - $24,999	9.1%	-0.2%
$25,000 - $34,999	9.4%	-0.3%
$35,000 - $49,999	12.8%	-0.9%
$50,000 - $74,999	19.5%	+0.2%
$75,000 - $99,999	13.8%	+0.9%
$100,000 - $149,999	15.9%	+1%
$150,000 - $199,999	5.9%	+0.4%
$200,000+	4.6%	-0.2%

Bars show deviation from Indiana

EMPLOYMENT

White Collar	62%
Blue Collar	28%
Services	11%

3.9% Unemployment Rate

BUSINESS

31,464	416,428
Total Businesses	Total Employees

INSURANCE

2019 Pop <19: No Health Insurance Coverage (ACS 5-Yr) (%)	1%
2021 Medical insurance covers you and other household or family members (%)	44%
2021 Have home insurance coverage for earthquake or flood (%)	3%
2021 Have any homeowners or personal property insurance (%)	60%
2021 Currently carry life insurance (%)	46%

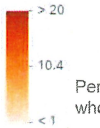
Race, Ethnicity, and Language Profile
SEYMOUR District

Race and Ethnicity

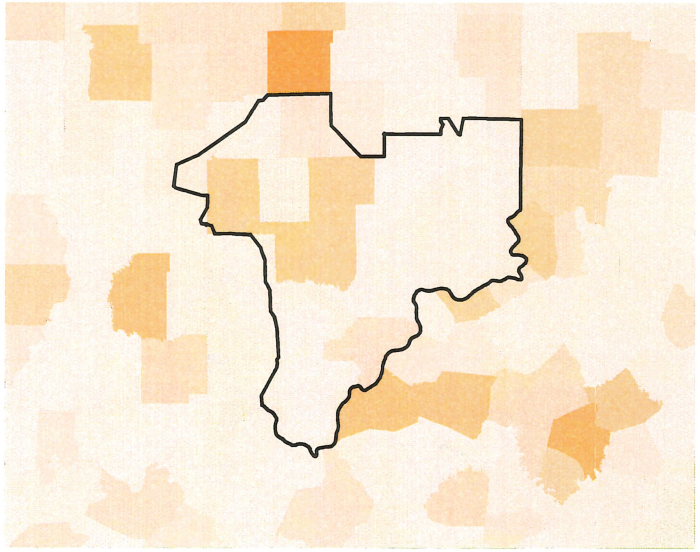
The largest group: White Alone (90.08)
The smallest group: Pacific Islander Alone (0.06)

Indicator ▲	Value	Diff
White Alone	90.08	+9.07
Black Alone	2.95	-6.88
American Indian/Alaska Native Alone	0.28	-0.04
Asian Alone	2.77	+0.01
Pacific Islander Alone	0.06	+0.01
Other Race	1.69	-1.67
Two or More Races	2.17	-0.5
Hispanic Origin (Any Race)	3.91	-3.72

Bars show deviation from Indiana



Percent of adults 18 years and over who have limited English ability

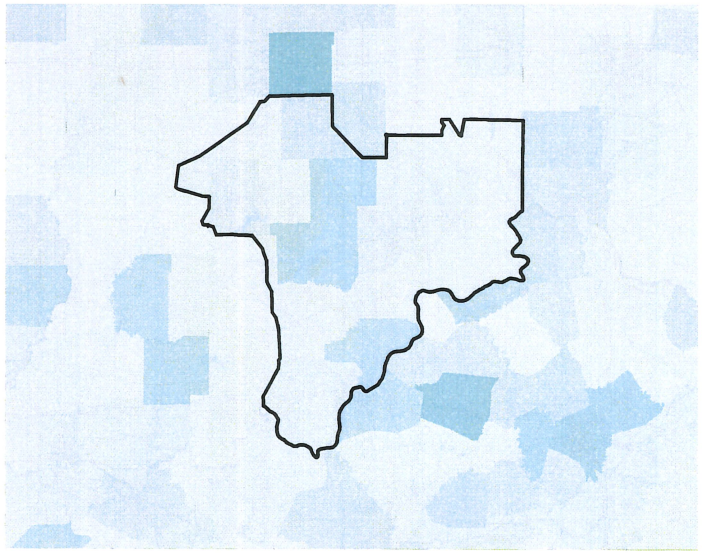


SPANISH ACTIVITIES

3%

2021 Used Spanish Language Website or App Last 30 Days

Percent of Population Age 5+ Who Speaks Spanish at Home



LIMITED ENGLISH PROFICIENCY ADULTS 18-64	HH %
Speak Spanish & No English	0%
Speak Spanish & English Not Well	0%
Speak Indo-European & No English	0%
Speak Indo-European & English Not Well	0%
Speak Asian-Pacific Island & No English	0%
Speak Asian-Pacific Island & English Not Well	0%
Speak Other Language & No English	0%
Speak Other Language & English Not Well	0%

LIMITED ENGLISH PROFICIENCY SENIORS 65+	HH %
Speak Spanish & No English	0%
Speak Spanish & English Not Well	0%
Speak Indo-European & No English	0%
Speak Indo-European & English Not Well	0%
Speak Asian-Pacific Island & No English	0%
Speak Asian-Pacific Island & English Not Well	0%
Speak Other Language & No English	0%
Speak Other Language & English Not Well	0%

Digital Usage Profile
SEYMOUR District

DEVICE OWNERSHIP (HH)

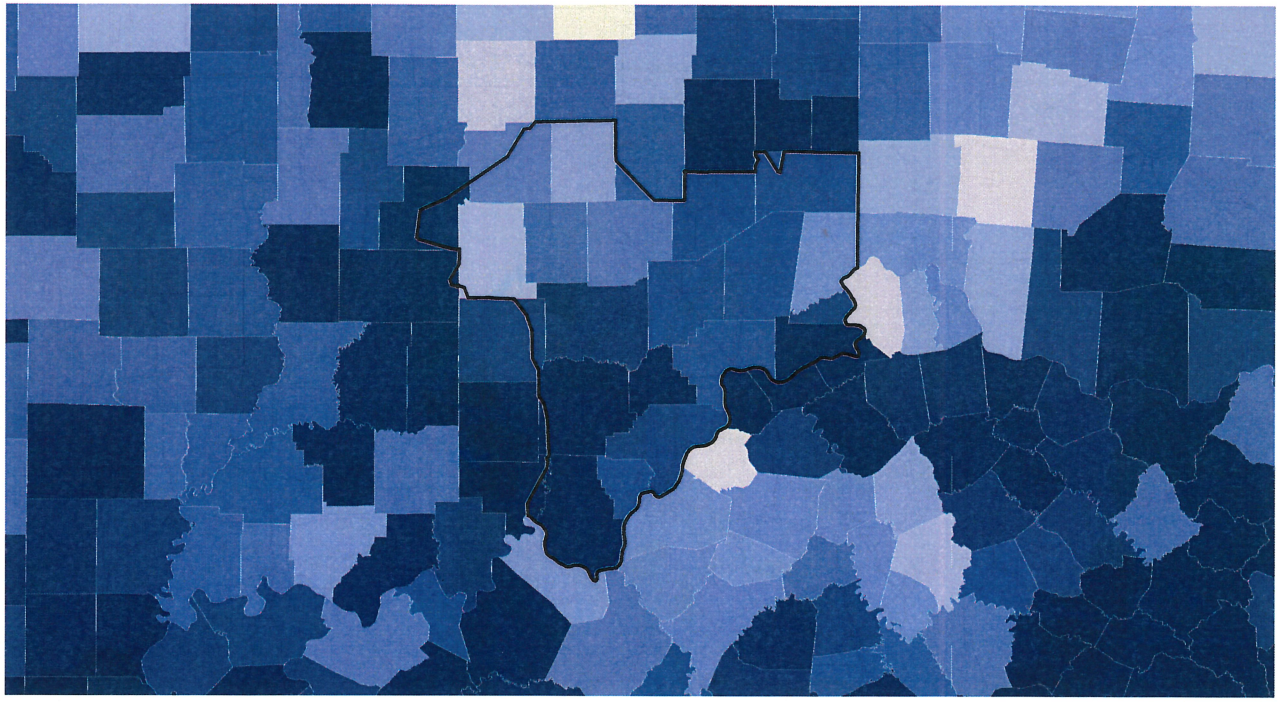
- 34% Household owns desktop computer
- 58% Household owns laptop or notebook
- 49% Own any tablet
- 88% Have a smartphone
- 44% Have a smartphone: Android phone (any brand)
- 44% Have a smartphone: Apple iPhone

INTERNET ACCESS (HH)

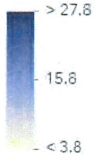
- 67% Use Computer
- 79% Use Cell Phone
- 30% Use Tablet

INTERNET CONNECTIVITY	HH %
2019 Have access to Internet at home (%)	91%
2019 Connect to Internet at home via cable modem (%)	44%
2019 Connect to Internet at home via DSL (%)	11%
2019 Connect to Internet at home via fiber optic (%)	11%
2019 Access Internet at home via high speed connection (%)	90%

INTERNET & SOCIAL MEDIA USAGE in Last 30 Days	HH %
Visited online blog (%)	12%
Watched TV program online (%)	20%
Used Spanish language website in last app (%)	3%
Facebook.com (%)	67%
Instagram.com (%)	30%
Linkedin.com (%)	11%
Tumblr.com (%)	3%
Twitter.com (%)	14%
Youtube.com (%)	53%
Social network used to track current events (%)	15%
Search engine: bing.com (%)	10%
Search engine: google.com (%)	82%
Search engine: yahoo.com (%)	17%



Percent of Households with No Internet Access



Bloomington-Monroe County
Metropolitan Planning Organization

Crash Report -
Calendar Years 2015 through 2019

November 17, 2021

BLOOMINGTON • MONROE COUNTY
mpo

2015-2019 Crash Report

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2015-2019 Crash Report

Executive Summary

The Bloomington-Monroe County Metropolitan Planning Organization (BMCMPO) 2015-2019 Crash Report represents a continuation of the MPO's effort to provide an analysis of the crash location causes and trends within Monroe County. This report includes an analysis of crash data from the Indiana State Police (ISP) Department ARIES data portal (https://www.in.gov/isp/3147.htm) for Calendar Years 2015, 2016, 2017, 2018, and 2019.

This crash report prepared by the BMCMPO staff from the ISP crash data provides relevant generalized information for the MPO Citizen's Advisory Committee (CAC), the Technical Advisory Committee (TAC), and the Policy Committee (PC). The crash report shall additionally achieve distribution to local units of government, Indiana University, and the general public through the BMCMPO website hosted by the Bloomington Planning and Transportation Department.

A summary of the specific calendar year crash trends provided below highlight general information on crash data within Monroe County. Detailed tables, charts, and summaries provided in subsequent chapters highlight information on annual and daily observational trends involving total numbers, frequency, and other related characteristics of crashes that occurred within the calendar years of 2015 through 2019.

Introduction

Mobility is a defining aspect of life in the United States and around the world. Transportation infrastructure investments have led to new opportunities for trade, travel, recreation, relocation, and economic growth. The BMCMPO receives approximately $3.7 million per year of federal transportation funding allocated from the Indiana Department of Transportation (INDOT) for local transportation network investments. Despite this continued investment, tangible and intangible costs attributable to motor vehicle crashes undermine the effectiveness of the local transportation system.

The BMCMPO crash reports demonstrate that motor vehicle crashes contribute to be a significant loss of life, property, and productivity in Monroe County. A better understanding of crash trends is attainable through continued efforts in crash reporting and analysis. Targeted infrastructure investments should further improve safety on roads within Monroe County.

The purpose of this Crash Report is twofold. First, the Crash Report provides a consistent and straightforward means to disseminate annual crash data for use by any interested individual or organization. Second, the Crash Report provides another useful tool for civil engineers, transportation planners, and local policy makers when considering both funding and design strategies aimed at reducing the frequency and severity of transportation-related crashes. Specifically, the Indiana Department of Transportation (INDOT) and the BMCMPO require Local Public Agencies (LPAs) to use crash data as part of the Highway Safety Improvement Program (HSIP). This program provides federal funding to target areas with high incidences of crashes. The HSIP primary goal is reducing fatal and incapacitating injury crashes. Furthermore, information found in the Crash Report is used as criteria within the BMCMPO's Complete Streets Policy to guide the MPO in the selection of transportation projects. The implementation of effective mitigation strategies further curtail crashes within Monroe County through annual reporting and analysis.

This Crash Report focuses on a five-year period for Calendar Years 2015, 2016, 2017, 2018, and 2019, with some tables and figures including the Calendar Years 2013 and 2014 to depict a longer time period trend to inform five-year rolling averages. By focusing on a longer time horizon, random variations in annual crashes do not unduly influence the trends reported. For instance, annual variations in crashes, fatalities and incapacitating injuries, and location-specific

crashes can be significant, even though there may not be an actual change in the likelihood of those crashes. By using a five-year analysis window, identified trends are more likely to be meaningful than by using a three-year analysis window like previous reports. The crash data tabulated from 2019 alone provides a snapshot of the most recent year we have data for at the moment. Furthermore, information from this Crash Report will help inform future crash reports.

Methodology and Data Considerations

The data for the Bloomington-Monroe County Crash Report originates from the "Automated Report and Information Exchange System" (ARIES) of the Indiana State Police (https://www.in.gov/isp/3147.htm). This system maintains statewide crash data from law enforcement agency reports dating back to 2003. The Indiana law enforcement report data are organized by collisions, units (vehicles), and individuals. These data elements, related to one another by a common master field (e.g., Master Record Number) offer independent analysis capability. It is possible to retrieve information regarding collisions (e.g., locations and dates of greatest crash frequency), number of vehicles involved, and individuals involved. It is also possible to perform more complex analyses using attributes from each of these entities.

As with any database, the validity of conclusions resulting from the data is contingent upon accurate and complete data entry. Lack of data information from hit-and-run collisions, confusion surrounding alternate names of roads (e.g., Country Club Drive and Winslow Road, SR 46 and 3rd St., and similar road names being used in multiple jurisdictions like 2nd St. or Walnut Ave.), misspelled or mis-entered street names, GPS errors, and incomplete data entry undoubtedly introduce some error into the results of this report. Therefore, results of the Crash Report should not have a rigid interpretation. With that being mentioned, all efforts were made to correct these issues in the raw data before analysis and inclusion in this Crash Report.

The BMCMPO staff corrected obvious data errors to achieve valid results. Consequently, some minor inconsistencies may be evident when comparing crash reports from prior years. For instance, data may be updated from previous years' reports for consistency reasons, if errors were found and need updating, and if new analyses need to be reported for a number of reasons. Therefore, the most recently issued Crash Report reflects the best and most accurate crash information. Regardless of methodological changes and slight differences between reports, the overall findings of this report are consistent with those of past years. The most recent report before this Crash Report was the 2013-2015 Crash Report, so methodologically, the raw data for years 2016-2019 have all been analyzed in the same way, with the year 2015 being updated to reflect the processes of the subsequent years.

Collisions were analyzed using available geographic, road inventory, and traffic count data. Individual crashes were located according to reported geographic coordinates which were available for more than 93% of all records. A crash frequency was determined for each intersection (where enough data was available) by tabulating the total number of crashes that occurred within a maximum of a 250-ft radius of the center of the intersection. Crash rates were determined from available traffic data from the City of Bloomington, the Town of Ellettsville, Monroe County, and the Indiana Department of Transportation using standard adjustments and engineering judgment as necessary.

When reading the Crash Report, it is important to understand the distinction between "crashes" and "individuals." The term "crash" refers to the characteristics of the crash itself under consideration. For example, a "Fatal Injury" column (e.g., "Fatalities and Fatal Crashes by Year, 2015-2019") shows how many crashes resulted in a fatal injury; it would be incorrect, however, to interpret this column as the number of fatalities since more than one fatality can result from a single crash.

2015-2019 Crash Report

Crash Characteristics

This section provides a summary of crash characteristics in Monroe County, including the type and severity of crashes from 2015-2019. These factors reflect trends in the overall safety of the transportation system.

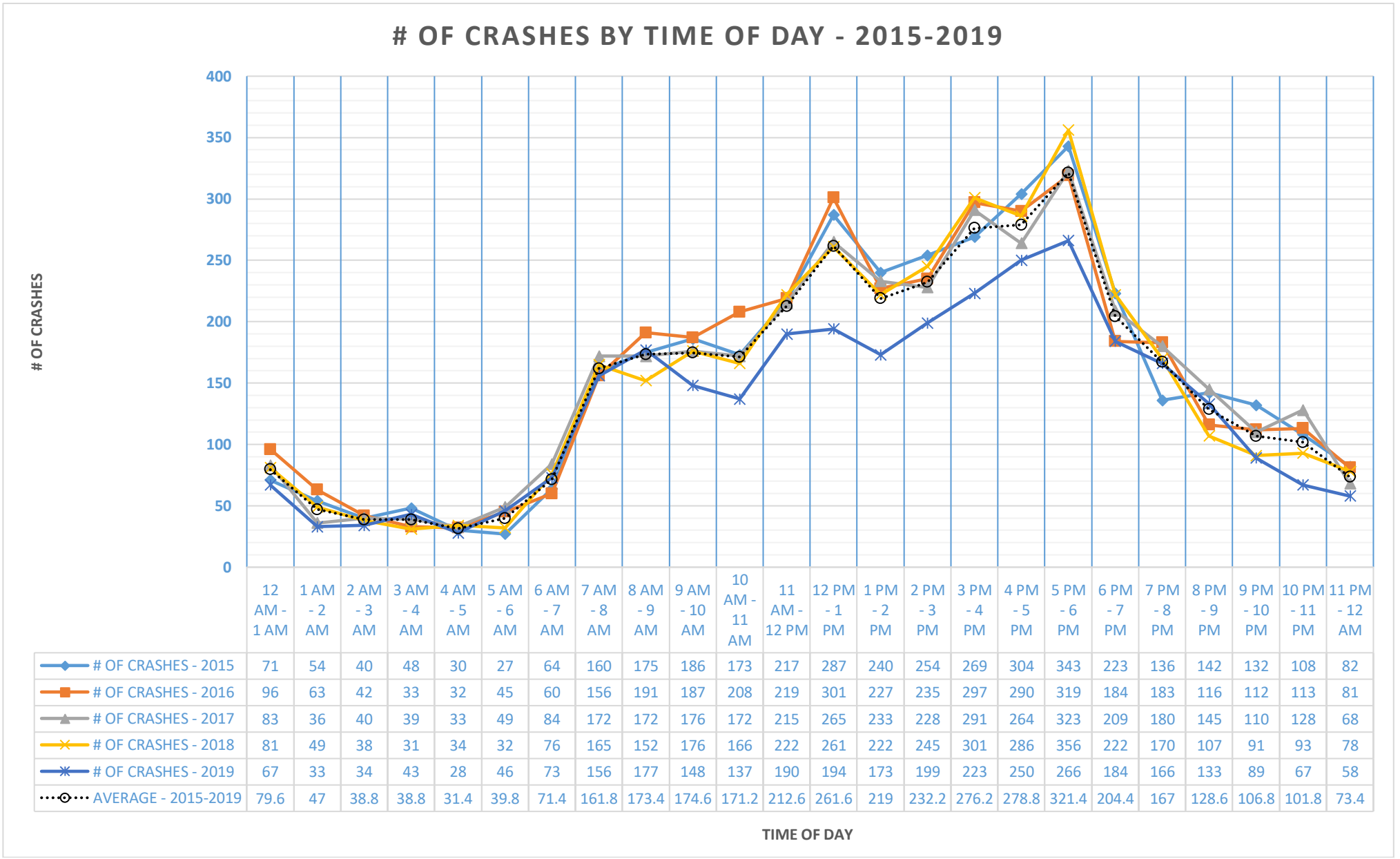
A further breakdown of the Calendar Year 2015-2019 crash totals provides insights into trends involving pedestrians, bicyclists, buses, mopeds/motorcycles, scooters, and crashes that resulted in fatalities. Over the course of the five years analyzed, there were **forty-three (43)** fatal crashes resulting in **forty-eight (48)** fatalities (Figure 9), slightly fewer than the **fifty (50)** fatalities reported from 2014 to 2018.

The time distribution of crashes (Figure 1) continues to follow a predictable pattern correlating with peak hour and off-peak hour traffic volumes. The greatest number of crashes occurred during weekday rush hours between 4:00 P.M. and 6:00 P.M., with an average slightly greater than one (1) crash per hour for the entire county. There is also a peak from 12:00 P.M. to 1:00 P.M on weekdays. The weekend also follows a similar pattern in terms of frequency of crashes, but the crash rate has a more even distribution through the day and early evening hours. Between the hours of 7:00 PM and 4:00 AM, the weekend experiences a higher crash frequency compared with weekdays. Friday continued to have the highest number of crashes overall, while Sunday had the lowest number of crashes.

State and federal designated highway routes are prominently featured in the list of the highest crash frequency intersections or the total number of crashes over a given time period. Higher traffic volumes on these roads are undeniably the primary factor. INDOT jurisdictional intersections at SR 37 and 3rd Street, SR 45/46 and 10th Street, and SR 37 and Bloomfield Road are consistently high frequency crash locations. These intersections therefore warrant constant monitoring as do several local jurisdictional intersections that exhibit consistently high crash frequencies.

The leading cause of crashes during the Calendar Year 2015-2019 study period was once again a "**failure to yield right of way**" with **3,593** incidents (Table 5). A typical leading cause of this includes **"following too closely"** with **3,464** incidents, and **"ran off road right"** with **1,500** incidents. Most "unsafe backing" incidents have been omitted in this report due to them not occurring in the public right-of-way, such as within private parking lots or driveways, although several of these incidents still occur within the public right-of-way and are counted in this report. Many causes of these crashes are addressable through education efforts as well as through selective physical improvements. "Running off the right side of the road" and "speeding in adverse weather" additionally present opportunities for physical safety improvements, such as guard rails, rumble strips, and interactive signage. These types of improvements warrant further exploration for crash reductions; however they are designed to decrease the amount of crashes resulting in injuries and fatalities.

Crashes involving pedestrians and bicyclists are considerably important within the BMCMPO's Metropolitan Planning Area given a relatively high number of urbanized area non-motorized trips, the vulnerability to injury of individuals using these modes, and the BMCMPO's goals for increasing walking and bicycling modal shares. Compared to other types of crashes, those involving pedestrians and bicyclists are much more likely to result in a fatality or an incapacitating injury. Reducing the frequency and severity of these crashes is therefore a priority and will be addressed in a future report.



	12 AM - 1 AM	1 AM - 2 AM	2 AM - 3 AM	3 AM - 4 AM	4 AM - 5 AM	5 AM - 6 AM	6 AM - 7 AM	7 AM - 8 AM	8 AM - 9 AM	9 AM - 10 AM	10 AM - 11 AM	11 AM - 12 PM	12 PM - 1 PM	1 PM - 2 PM	2 PM - 3 PM	3 PM - 4 PM	4 PM - 5 PM	5 PM - 6 PM	6 PM - 7 PM	7 PM - 8 PM	8 PM - 9 PM	9 PM - 10 PM	10 PM - 11 PM	11 PM - 12 AM
# OF CRASHES - 2015	71	54	40	48	30	27	64	160	175	186	173	217	287	240	254	269	304	343	223	136	142	132	108	82
# OF CRASHES - 2016	96	63	42	33	32	45	60	156	191	187	208	219	301	227	235	297	290	319	184	183	116	112	113	81
# OF CRASHES - 2017	83	36	40	39	33	49	84	172	172	176	172	215	265	233	228	291	264	323	209	180	145	110	128	68
# OF CRASHES - 2018	81	49	38	31	34	32	76	165	152	176	166	222	261	222	245	301	286	356	222	170	107	91	93	78
# OF CRASHES - 2019	67	33	34	43	28	46	73	156	177	148	137	190	194	173	199	223	250	266	184	166	133	89	67	58
AVERAGE - 2015-2019	79.6	47	38.8	38.8	31.4	39.8	71.4	161.8	173.4	174.6	171.2	212.6	261.6	219	232.2	276.2	278.8	321.4	204.4	167	128.6	106.8	101.8	73.4

Figure 1: Number of Crashes by Time of Day in Monroe County - 2015-2019

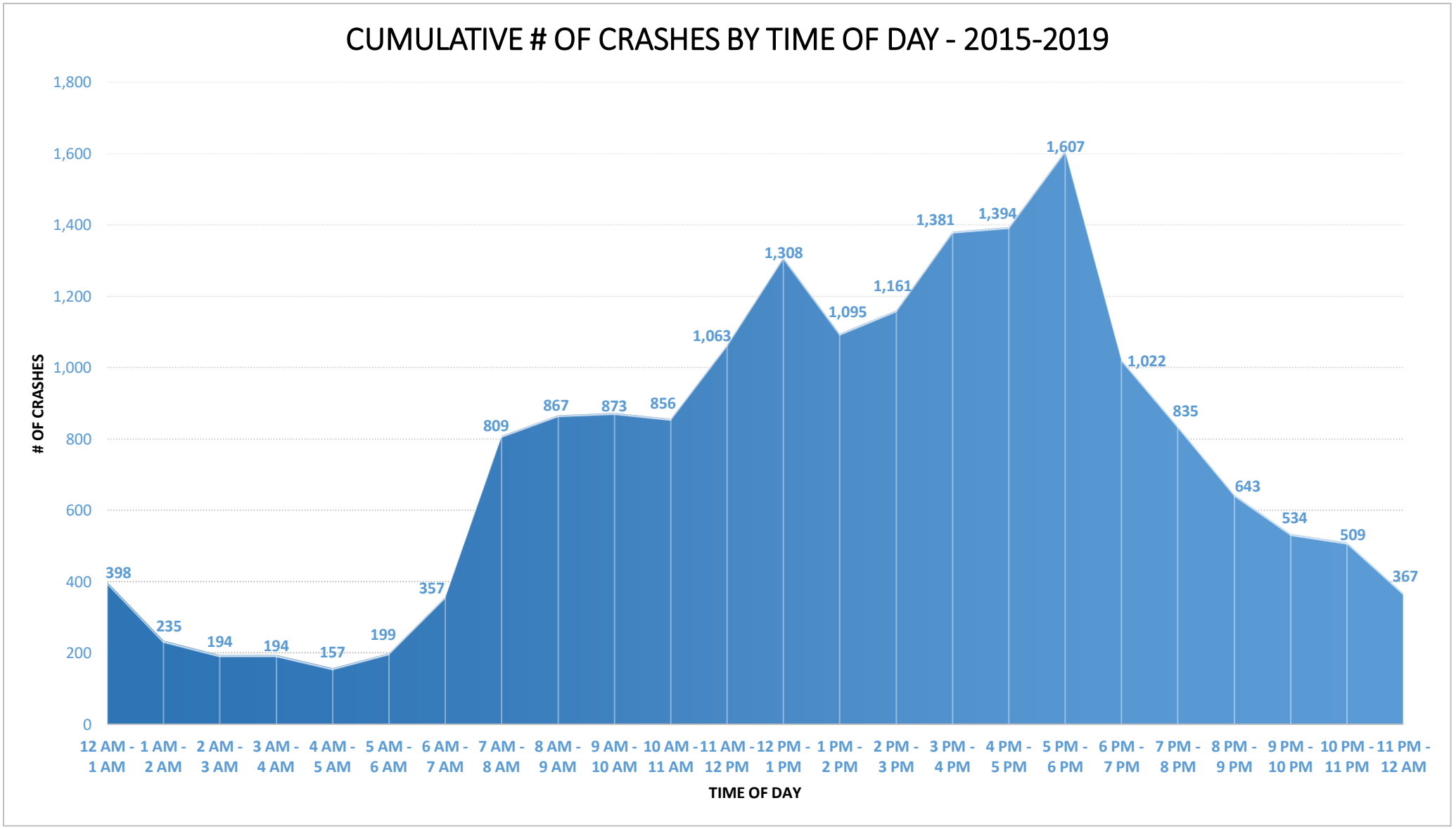
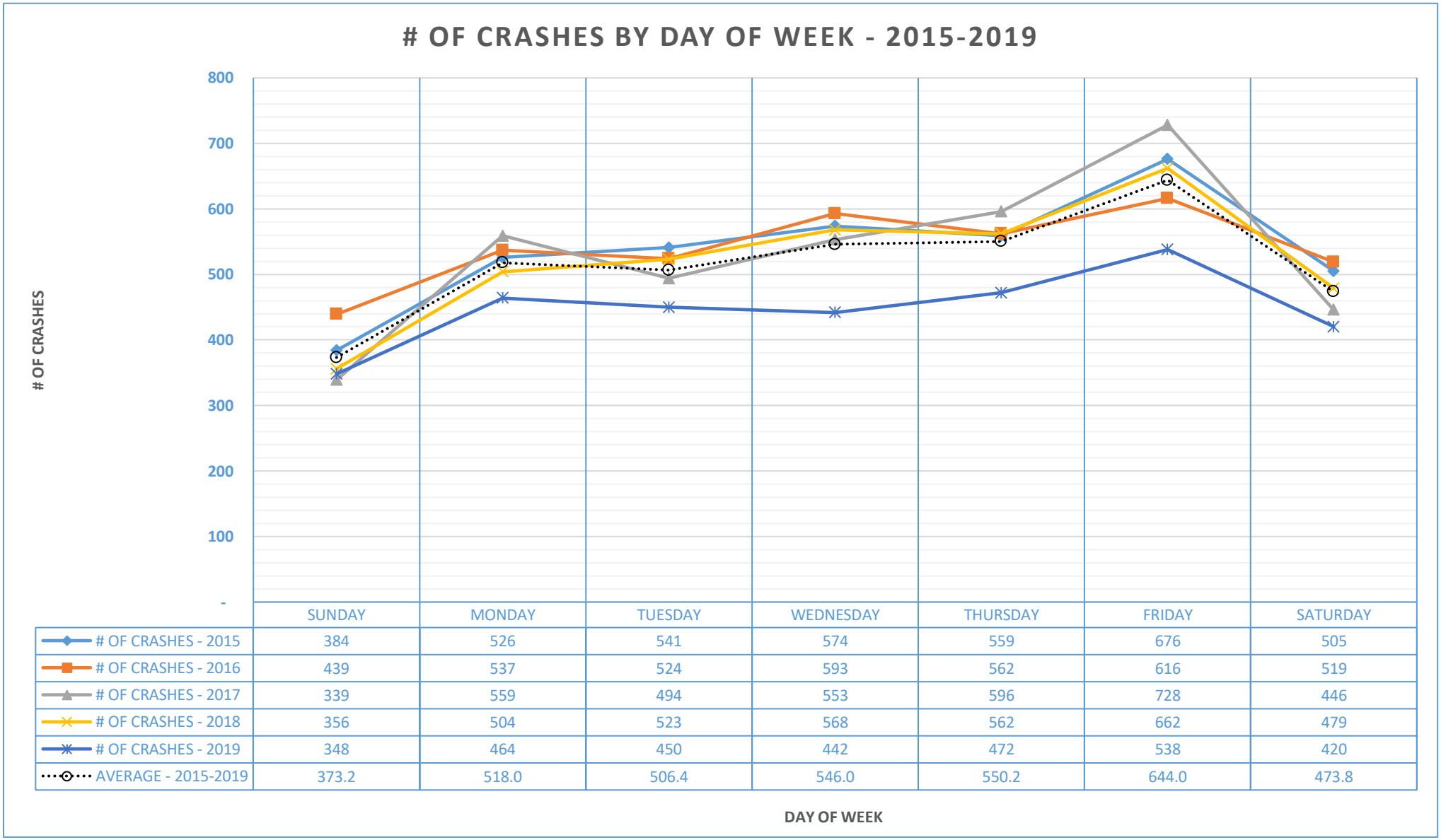


Figure 2: Cumulative Number of Crashes by Time of Day in Monroe County - 2015-2019



	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
# OF CRASHES - 2015	384	526	541	574	559	676	505
# OF CRASHES - 2016	439	537	524	593	562	616	519
# OF CRASHES - 2017	339	559	494	553	596	728	446
# OF CRASHES - 2018	356	504	523	568	562	662	479
# OF CRASHES - 2019	348	464	450	442	472	538	420
AVERAGE - 2015-2019	373.2	518.0	506.4	546.0	550.2	644.0	473.8

Figure 3: Number of Crashes by Day of Week in Monroe County - 2015-2019

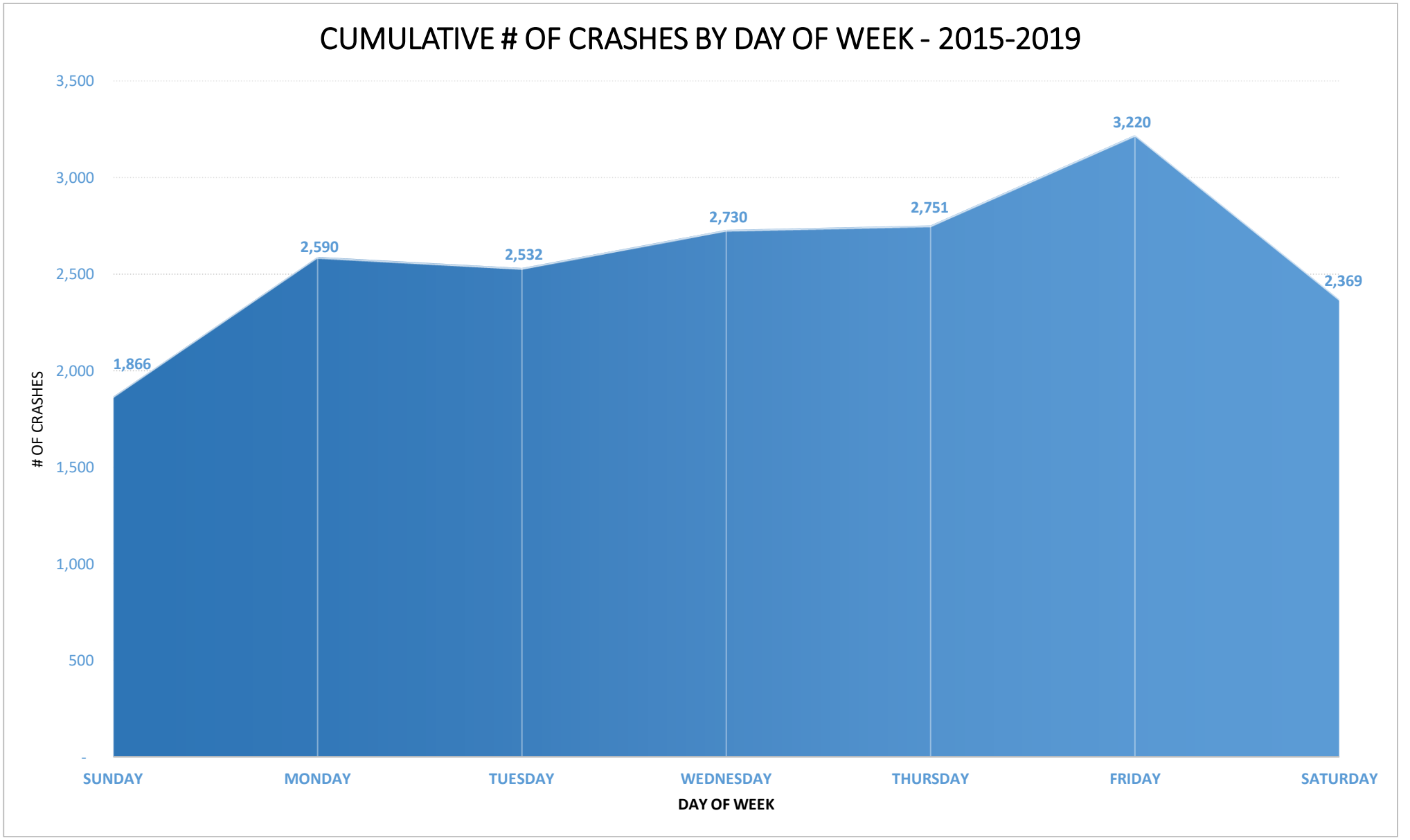
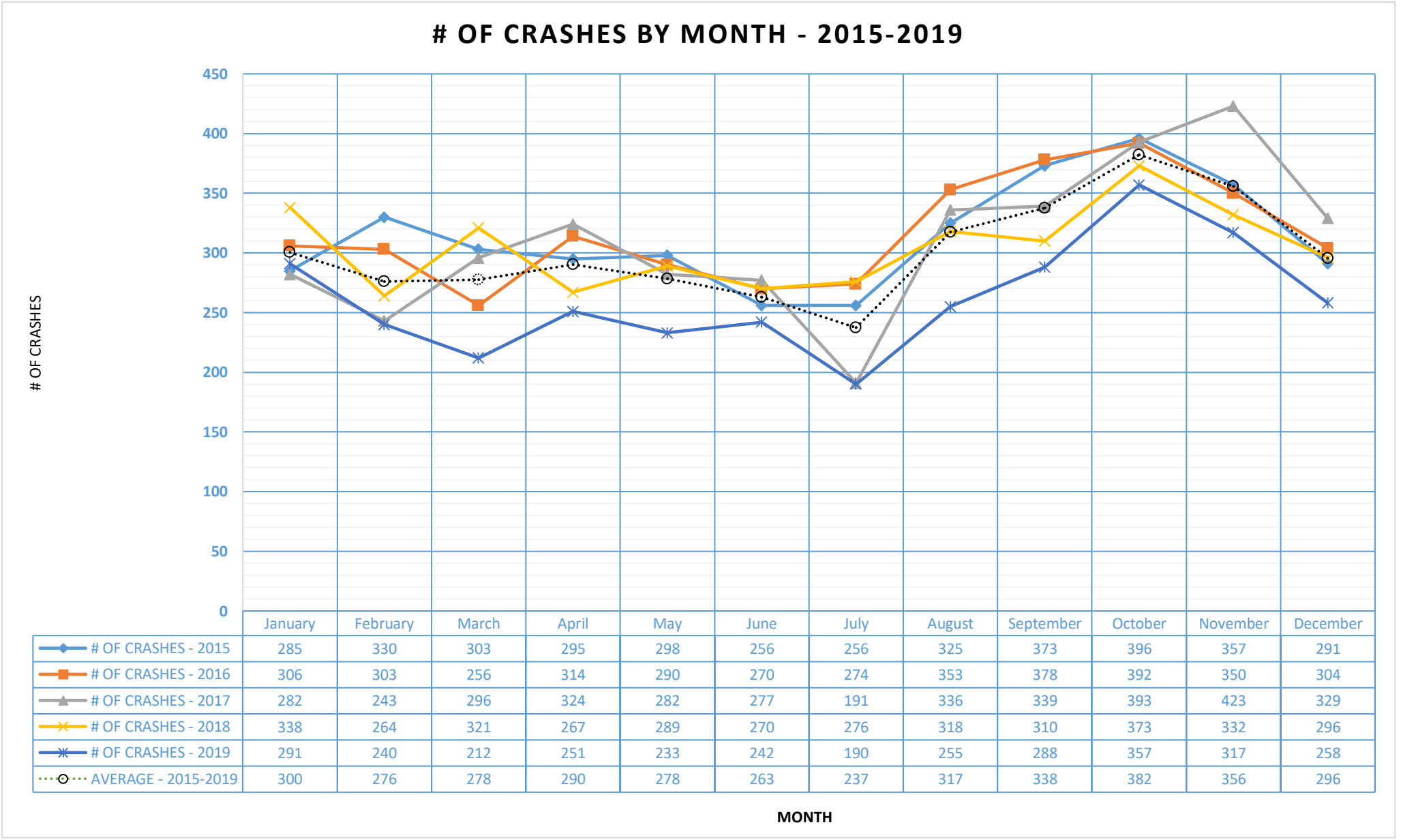


Figure 4: Cumulative Number of Crashes by Day of Week in Monroe County - 2015-2019



	January	February	March	April	May	June	July	August	September	October	November	December
# OF CRASHES - 2015	285	330	303	295	298	256	256	325	373	396	357	291
# OF CRASHES - 2016	306	303	256	314	290	270	274	353	378	392	350	304
# OF CRASHES - 2017	282	243	296	324	282	277	191	336	339	393	423	329
# OF CRASHES - 2018	338	264	321	267	289	270	276	318	310	373	332	296
# OF CRASHES - 2019	291	240	212	251	233	242	190	255	288	357	317	258
AVERAGE - 2015-2019	300	276	278	290	278	263	237	317	338	382	356	296

Figure 5: Number of Crashes by Month in Monroe County - 2015-2019

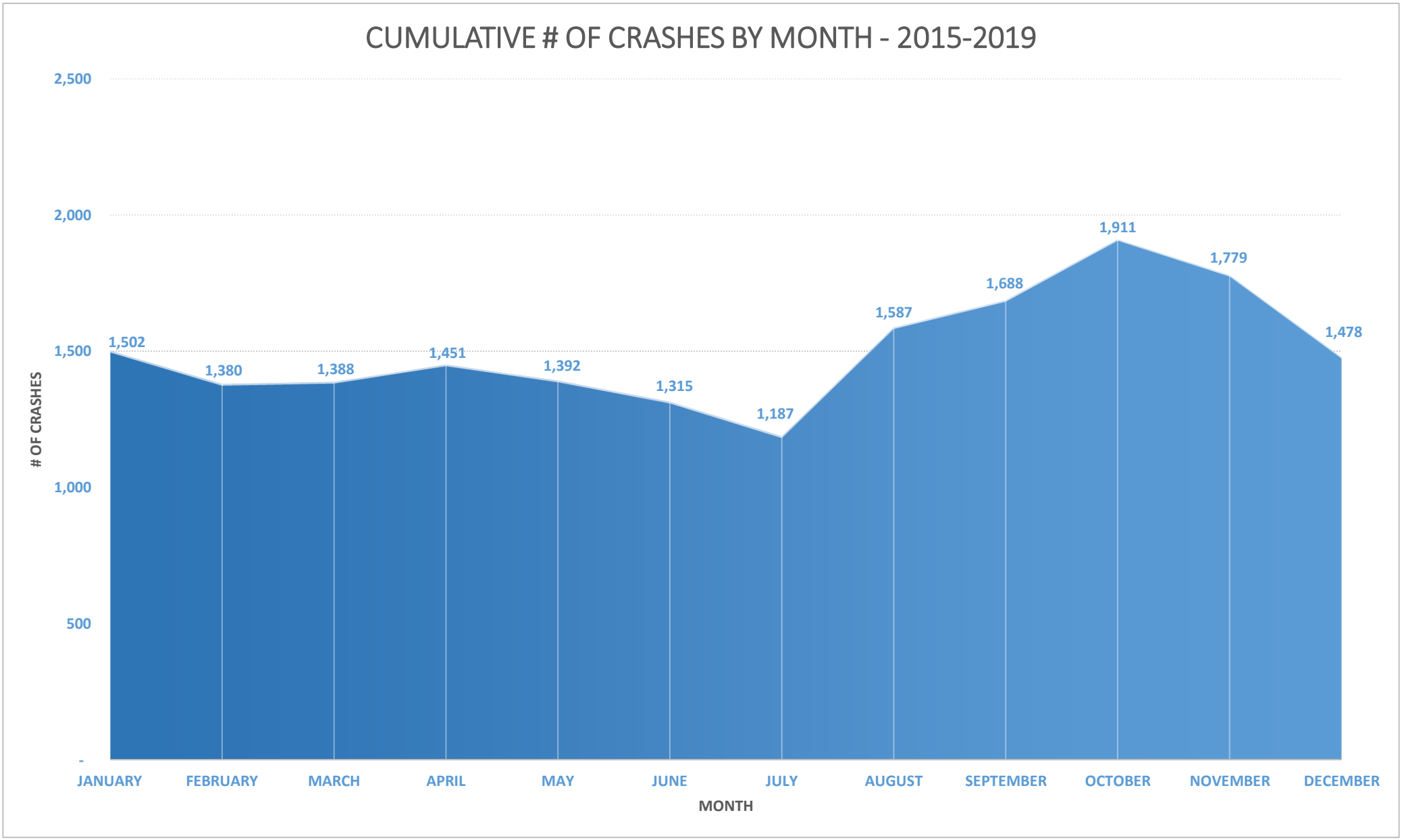


Figure 6: Cumulative Number of Crashes by Month in Monroe County - 2015-2019

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Crash Locations

This section addresses the spatial distribution of crashes in Monroe County highlighting locations of high crash frequency and crash rates. This identification process used a stepwise approach: (1) ranking the sum total of all CY 2015-2019 all Monroe County intersection crash locations into the "Top 50 Crash Locations" (Table 1) and (2) adjusting these crash locations with traffic volume data thereby deriving five-year crash rates (Table 2).

The methodology used in this report does not identify locations which have a higher than expected (i.e. statistically significant) crash totals, crash rates, or severity indices. Future crash reports should therefore consider a comparative analysis of intersections with similar operating characteristics. The BMCMPO staff shall additionally explore a network solution for calculating crash rates at lower crash frequency locations.

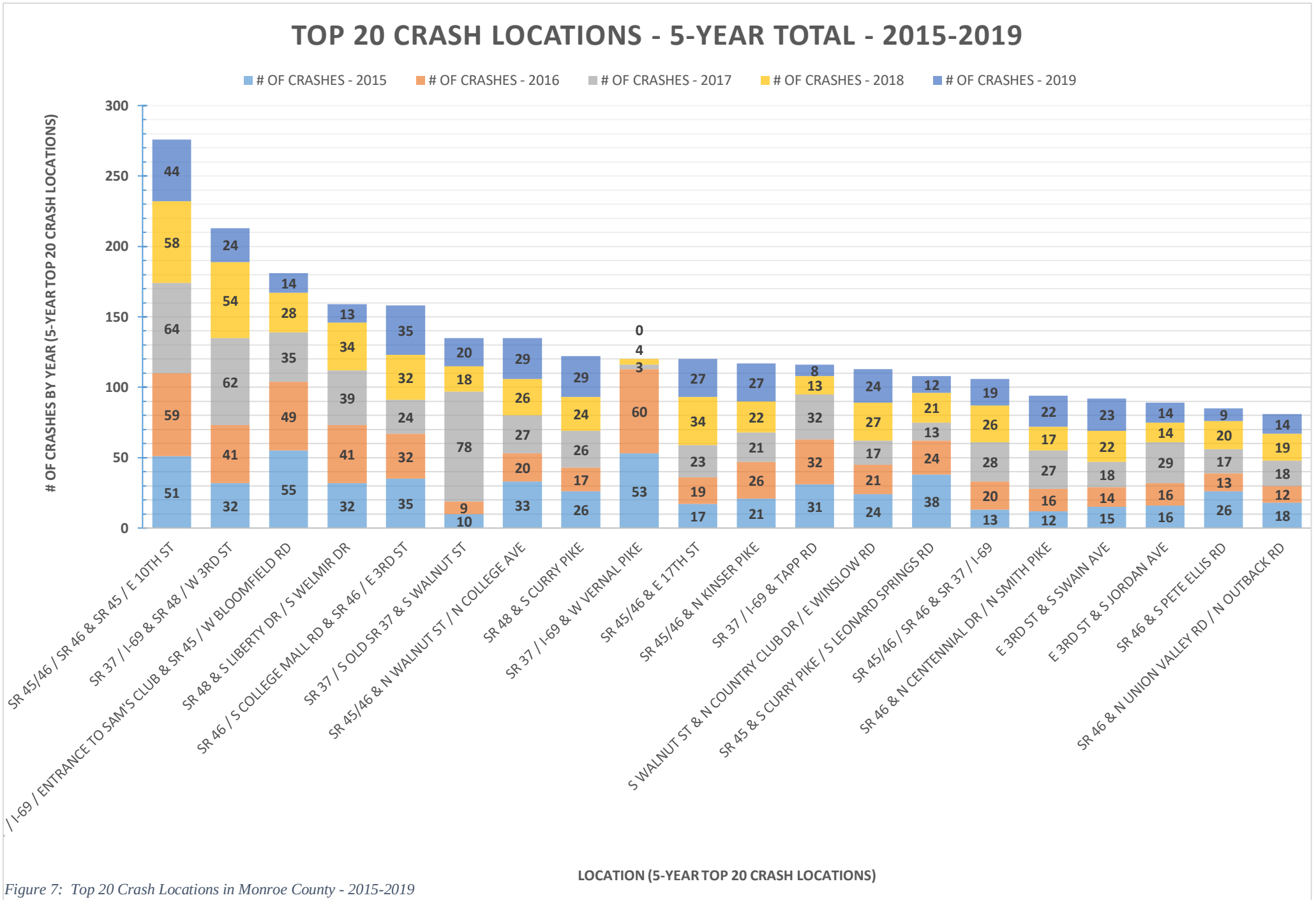

Figure 7: Top 20 Crash Locations in Monroe County - 2015-2019

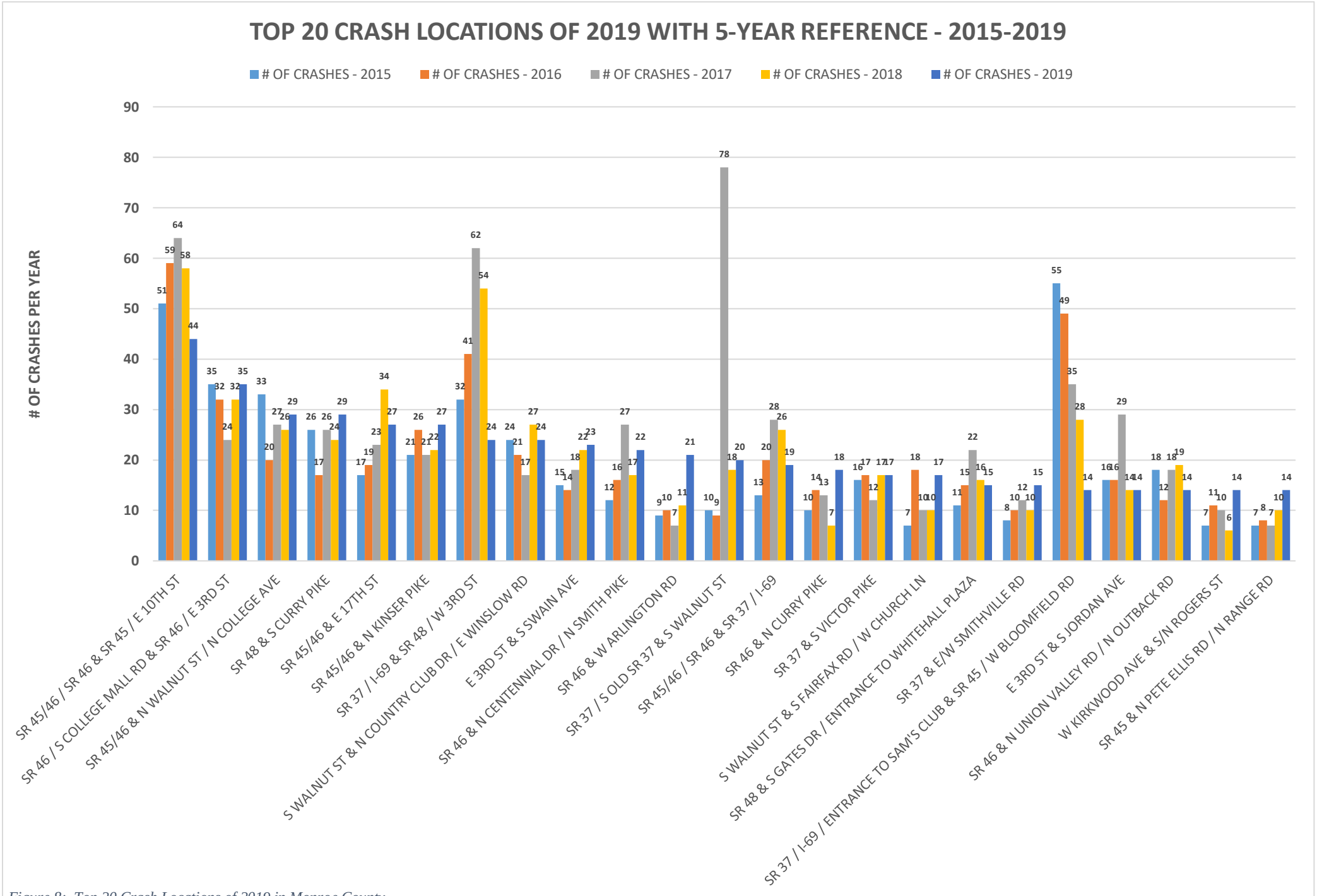

Figure 8: Top 20 Crash Locations of 2019 in Monroe County

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Table 1: Top 50 Crashes by Location in Monroe County

TOP 50 CRASHES BY LOCATION (5-YEAR RANKS, AVERAGES, TOTALS, AND PROGRESS)					
Intersection	**INTERSECTION RANK - 2015-2019**	**AVERAGE INTERSECTION RANK - 2015-2019**	**5-YEAR TOTAL # OF CRASHES RANK - 2015-2019**	**5-YEAR AVERAGE # OF CRASHES - 2015-2019**	**5-YEAR TOTAL # OF CRASHES - 2015-2019** (Green = Improving, Red = Worsening)
SR 45/46 / SR 46 & SR 45 / E 10TH ST	1	1.8	1	55.2	276
SR 37 / I-69 & SR 48 / W 3RD ST	2	4.6	2	42.6	213
SR 37 / I-69 / ENTRANCE TO SAM'S CLUB & SR 45 / W BLOOMFIELD RD	4	6.8	3	36.2	181
SR 48 & S LIBERTY DR / S WELMIR DR	6	8.4	4	31.8	159
SR 46 / S COLLEGE MALL RD & SR 46 / E 3RD ST	3	6.0	5	31.6	158
SR 45/46 & N WALNUT ST / N COLLEGE AVE	5	7.6	6	27.0	135
SR 37 / S OLD SR 37 & S WALNUT ST	25	32.4	6	27.0	135
SR 48 & S CURRY PIKE	7	11.0	8	24.4	122
SR 45/46 & E 17TH ST	9	11.8	9	24.0	120
SR 37 / I-69 & W VERNAL PIKE	115	119.4	9	24.0	120
SR 45/46 & N KINSER PIKE	8	11.2	11	23.4	117
SR 37 / I-69 & TAPP RD	16	22.8	12	23.2	116
S WALNUT ST & N COUNTRY CLUB DR / E WINSLOW RD	9	11.8	13	22.6	113
SR 45 & S CURRY PIKE / S LEONARD SPRINGS RD	12	17.0	14	21.6	108
SR 45/46 / SR 46 & SR 37 / I-69	11	15.0	15	21.2	106
SR 46 & N CENTENNIAL DR / N SMITH PIKE	15	22.0	16	18.8	94
E 3RD ST & S SWAIN AVE	13	20.0	17	18.4	92
E 3RD ST & S JORDAN AVE	14	21.8	18	17.8	89
SR 46 & S PETE ELLIS RD	20	27.4	19	17.0	85
SR 46 & N UNION VALLEY RD / N OUTBACK RD	18	24.6	20	16.2	81
SR 37 & S VICTOR PIKE	17	23.4	21	15.8	79
SR 48 & S GATES DR / ENTRANCE TO WHITEHALL PLAZA	21	28.0	21	15.8	79
SR 45 & S LIBERTY DR / S HICKORY LEAF DR	22	30.0	23	15.6	78
S WALNUT ST & E/W GRIMES LN	19	26.8	24	15.0	75

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E 10TH ST & N JORDAN AVE	23	30.6	25	14.6	73
S WALNUT ST & E RHORER RD / W GORDON PIKE	31	41.0	26	14.4	72
E 10TH ST & N UNION ST	24	31.6	27	14.0	70
E/W 10TH & N COLLEGE AVE	30	40.8	28	14.0	70
W 2ND ST & S PATTERSON DR	25	32.4	29	13.2	66
N CURRY PIKE & W VERNAL PIKE	27	35.6	30	12.8	64
SR 45/46 & N RANGE RD	28	35.8	30	12.8	64
SR 37 / I-69 & E/W SAMPLE RD	44	52.0	30	12.8	64
SR 46 & N CURRY PIKE	34	43.6	33	12.4	62
S WALNUT ST & S FAIRFAX RD / W CHURCH LN	37	46.4	33	12.4	62
W OLD SR 37 & N WALNUT ST / N SR 37 BUSINESS	29	38.0	33	12.4	62
SR 46 & N HARTSTRAIT RD	32	41.2	36	12.2	61
W 17TH ST & N KINSER PIKE / N MADISON ST	36	45.4	37	11.8	59
SR 46 & W ARLINGTON RD	46	56.2	38	11.6	58
E COVENANTER DR & S COLLEGE MALL RD	33	41.4	38	11.6	58
W 3RD ST & S COLLEGE AVE	45	54.8	40	11.4	57
SR 45/46 & N DUNN ST	35	44.6	40	11.4	57
N/S COLLEGE AVE & W KIRKWOOD AVE	39	47.4	40	11.4	57
SR 46 & N/S SALE ST (2 INTERSECTIONS)	38	46.6	43	11.2	56
SR 37 & E/W DILLMAN RD	49	58.8	43	11.2	56
SR 37 & E/W SMITHVILLE RD	40	49.2	45	11.0	55
E/W 3RD ST & S WALNUT ST	66	78.6	46	10.8	54
W 2ND ST & S COLLEGE AVE	41	50.6	46	10.8	54
E/W 7TH ST & N WALNUT ST	43	51.0	46	10.8	54
W 3RD ST / S ADAMS ST & S PATTERSON DR	42	50.8	49	10.6	53
N/S WALNUT ST & E/W KIRKWOOD AVE	48	58.0	49	10.6	53
SR 46 & KINGSTON DR S	61	73.4	51	9.8	49
E 3RD ST & S HIGHLAND AVE	54	64.4	51	9.8	49
SR 37 & E/W MONROE DAM RD	65	77.6	51	9.8	49

Table 2: Top 50 Crash Locations by Crash Rate in Monroe County - 2015-2019

TOP 50 CRASH LOCATIONS BY CRASH RATE – 5 YEAR AVERAGES AND RANKS – 2015-2019				
INTERSECTION	**JURISDICTION**	**2015-2019 INTERSECTION CRASH RATE (# OF CRASHES / MEV) - AVERAGE**	**INTERSECTION CRASH RATE RANK - 2015-2019**	**AVERAGE INTERSECTION CRASH RATE RANK - 2015-2019**
W OLD SR 37 & N DUNN ST	COB	6.107	1	19.4
E 3RD ST & S SWAIN AVE	COB	5.205	2	1.8
SR 45/46 / SR 46 & SR 45 / E 10TH ST	INDOT	3.526	3	4.4
SR 37 / S OLD SR 37 & S WALNUT ST	INDOT	3.006	4	36.4
W OLD SR 37 & N WALNUT ST / N SR 37 BUSINESS	COB	2.806	5	11.0
SR 446 & S SWARTZ RIDGE RD	INDOT	2.790	6	25.2
S WALNUT ST & S FAIRFAX RD / W CHURCH LN	MC	2.671	7	14.8
SR 48 & W VERNAL PIKE	INDOT	2.608	8	46.6
E 3RD ST & S JORDAN AVE	COB	2.585	9	14.2
E/W 10TH & N COLLEGE AVE	COB	2.413	10	20.0
S FAIRFAX RD & S WALNUT ST PIKE	MC	2.263	11	17.0
W 6TH ST & N COLLEGE AVE	COB	2.149	12	28.0
SR 45/46 & E 17TH ST	INDOT	2.127	13	20.0
S FAIRFAX RD & E SCHACHT RD	MC	2.042	14	26.2
N CURRY PIKE & W VERNAL PIKE	MC	1.990	15	18.8
SR 46 / S COLLEGE MALL RD & SR 46 / E 3RD ST	INDOT	1.962	16	22.0
SR 46 & S PETE ELLIS RD	INDOT	1.954	17	27.0
SR 37 & S VICTOR PIKE	INDOT	1.954	18	21.0
SR 46 & S PARK RIDGE RD	INDOT	1.931	19	27.4
S LIBERTY DR & W CONSTITUTION AVE	COB	1.924	20	25.6
S WALNUT ST & W COUNTRY CLUB DR / E WINSLOW RD	COB	1.914	21	24.2
S HENDERSON ST / S INDIANA AVE & E ATWATER AVE	COB	1.903	22	23.4
E 17TH ST & N JORDAN AVE	COB	1.814	23	27.4

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SR 45/46 & N WALNUT ST / N COLLEGE AVE	INDOT	1.747	24	30.6
E 7TH ST & N JORDAN AVE	COB	1.698	25	37.0
E 3RD ST & S FESS AVE	COB	1.678	26	39.2
SR 37 & W DILLMAN RD	INDOT	1.675	27	38.8
E 10TH ST & N JORDAN AVE	COB	1.665	28	33.0
SR 45 & E MARTIN DR	INDOT	1.635	29	46.6
N SMITH PIKE & W WOODYARD RD	MC	1.591	30	41.4
N CURRY PIKE & W WOODYARD RD	MC	1.557	31	36.8
SR 37 & E/W SMITHVILLE RD	INDOT	1.498	32	40.4
S WALNUT ST PIKE & E WINSLOW RD	COB	1.498	33	41.6
N HARTSTRAIT RD & W VERNAL PIKE	MC	1.482	34	47.2
W OLD SR 37 & E BETHEL LN	INDOT	1.448	35	53.0
E RHORER RD & S WALNUT ST PIKE	MC	1.430	36	48.0
E/W 14TH ST & N WALNUT ST	COB	1.419	37	46.6
W 2ND ST & S PATTERSON DR	COB	1.406	38	40.2
SR 46 & N UNION VALLEY RD / N OUTBACK RD	INDOT	1.398	39	41.8
W 4TH ST & S COLLEGE AVE	COB	1.384	40	49.6
W 1ST ST & S COLLEGE AVE	COB	1.380	41	55.2
E 3RD ST & S INDIANA AVE	COB	1.379	42	54.2
E 3RD ST & S WOODLAWN AVE	COB	1.367	43	46.0
E 17H ST & N INDIANA AVE	COB	1.346	44	58.6
W 3RD ST & N KIMBLE DR	COB	1.327	45	50.8
SR 46 & N CURRY PIKE	INDOT	1.324	46	50.8
W 9TH ST & N COLLEGE AVE	COB	1.296	47	55.2
S WALNUT ST & E/W GRIMES LN	COB	1.270	48	48.4
SR 46 & SR 446	INDOT	1.266	49	55.4
E/W 7TH ST & N WALNUT ST	COB	1.253	50	50.4

Crash Factors, Fatalities, and Injuries

This section summarizes the primary crash factors from 2015 to 2019. An understanding of these causes informs infrastructure investments, enforcement activities, and educational efforts. Traffic law enforcement and road design can address unsafe speeds, while guardrail, rumble strips, or safety education can mitigate the tendency of motorists to drive off the road. Similarly, enforcement and education could reduce the number of crashes attributable to alcohol potentially leading to a decrease of weekend/late night hit and run crashes.

Table 5 illustrates all Primary Crash Factors for 2015-2019. "Failure to Yield Right-of-Way" and "Following Too Closely" were both once again the most common causes of crashes from 2015 to 2019 as it was from 2013 to 2015. "Running Off the Road to the Right" and "Animals/Objects in the Roadway" were additional significant crash factors. While "Failing to Yield Right-of-Way" was the most frequent crash cause, "Running off the Road to the Right" was more dangerous based on the percentage of crashes that resulted in fatality or incapacitating injury. Table 4 shows the Primary Crash Factors for 2015-2019 ranked in order of percent of fatalities resulting from the crash. Of the most during the time period, which resulted in 48 fatalities occurring in 43 crashes.

The frequency of crashes ranked by primary factor provides information about which crashes happen most often. The percentage comparison reveals which primary factors for crashes have previously resulted in injury and which are less likely to result in injury. For example, unsafe backing ranked ninth as a primary factor in a crash, but comparing likelihood of injury, 98% of crashes from unsafe backing result in no injury.

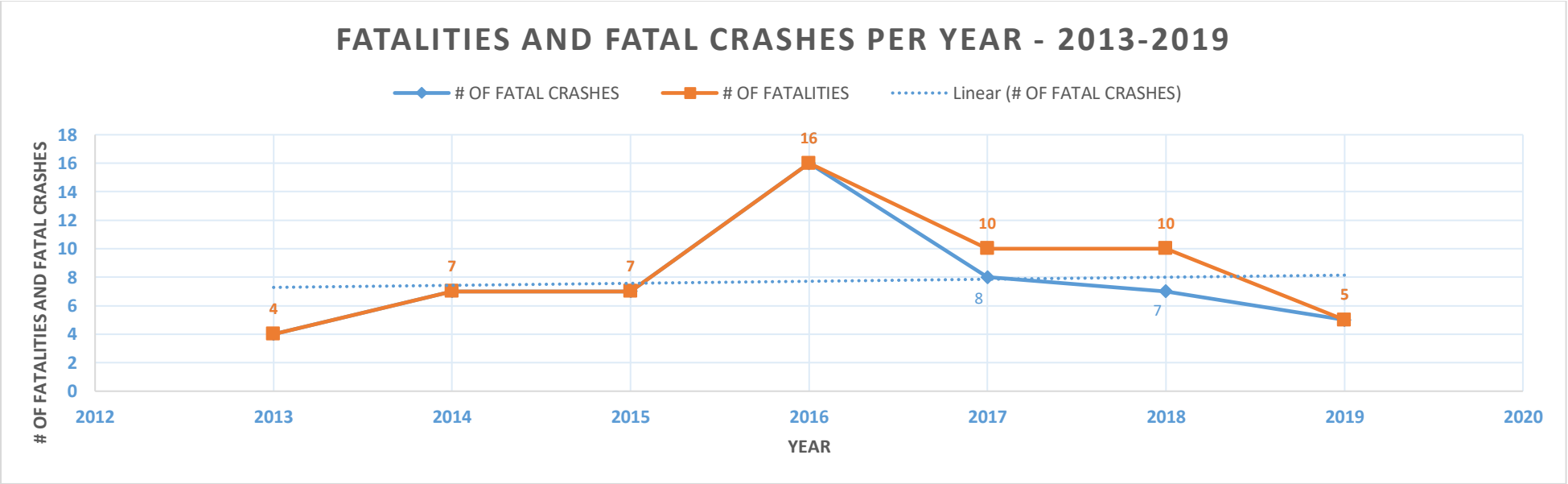

Figure 9: Fatalities and Fatal Crashes per Year - 2013-2019

Table 3: Fatal Crash Primary Factors by Year for Years 2015-2019

FATAL CRASH PRIMARY FACTORS - 2015			
RANK	**PRIMARY FACTOR**	**FATAL INJURY**	**% OF TOTAL**
1	RAN OFF ROAD - RIGHT	4	57%
2	UNSAFE SPEED	1	14%
2	DISREGARD SIGNAL / REG SIGN	1	14%
2	LEFT OF CENTER	1	14%
TOTAL		7	100%

FATAL CRASH PRIMARY FACTORS - 2016			
RANK	**PRIMARY FACTOR**	**FATAL INJURY**	**% OF TOTAL**
1	RAN OFF ROAD - RIGHT	4	25%
1	LEFT OF CENTER	4	25%
3	UNSAFE SPEED	3	19%
4	SPEED TOO FAST - WEATHER CONDITIONS	2	33%
5	DISREGARD SIGNAL / REG SIGN	1	6%
5	PEDESTRIAN ACTION	1	6%
5	FAILURE TO YIELD RIGHT-OF-WAY	1	6%
TOTAL		16	100%

FATAL CRASH PRIMARY FACTORS - 2017			
RANK	**PRIMARY FACTOR**	**FATAL INJURY**	**% OF TOTAL**
1	RAN OFF ROAD - RIGHT	3	30%
1	DRIVER DISTRACTED	3	30%
3	ANIMAL/OBJECT IN ROADWAY	1	10%
3	OVERCORRECTING/OVERSTEERING	1	10%
3	FAILURE TO YIELD RIGHT-OF-WAY	1	10%
3	LEFT OF CENTER	1	10%
TOTAL		10	100%

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FATAL CRASH PRIMARY FACTORS - 2018			
RANK	**PRIMARY FACTOR**	**FATAL INJURY**	**% OF TOTAL**
1	LEFT OF CENTER	5	50%
2	FAILURE TO YIELD RIGHT-OF-WAY	1	10%
2	IMPROPER LANE USAGE	1	10%
2	UNSAFE BACKING	1	10%
2	ENGINE FAILURE OR DEFECTIVE	1	10%
2	PEDESTRIAN ACTION	1	10%
TOTAL		10	100%

FATAL CRASH PRIMARY FACTORS - 2019			
RANK	**PRIMARY FACTOR**	**FATAL INJURY**	**% OF TOTAL**
1	REAR-END - CAR TO BICYCLIST	1	20%
1	PEDESTRIAN ACTION	1	20%
1	RAN OFF ROAD - RIGHT	1	20%
1	RAN OFF ROAD - LEFT	1	20%
1	DRIVER ILLNESS	1	20%
TOTAL		5	100%

Table 4: Fatal Crash Primary Factors - Cumulative - 2015-2019

FATAL CRASH PRIMARY FACTORS - 2015-2019			
RANK	**PRIMARY FACTOR**	**FATAL INJURY**	**% OF TOTAL**
1	RAN OFF ROAD - RIGHT	12	25%
2	LEFT OF CENTER	11	23%
3	UNSAFE SPEED	4	8%
4	PEDESTRIAN ACTION	3	6%
4	FAILURE TO YIELD RIGHT-OF-WAY	3	6%
4	DRIVER DISTRACTED	3	6%
7	DISREGARD SIGNAL / REG SIGN	2	4%
7	SPEED TOO FAST - WEATHER CONDITIONS	2	4%
9	ANIMAL/OBJECT IN ROADWAY	1	2%
9	OVERCORRECTING/OVERSTEERING	1	2%
9	IMPROPER LANE USAGE	1	2%
9	UNSAFE BACKING	1	2%
9	ENGINE FAILURE OR DEFECTIVE	1	2%
9	REAR-END - CAR TO BICYCLIST	1	2%
9	RAN OFF ROAD - LEFT	1	2%
9	DRIVER ILLNESS	1	2%
TOTAL		**48**	**100%**

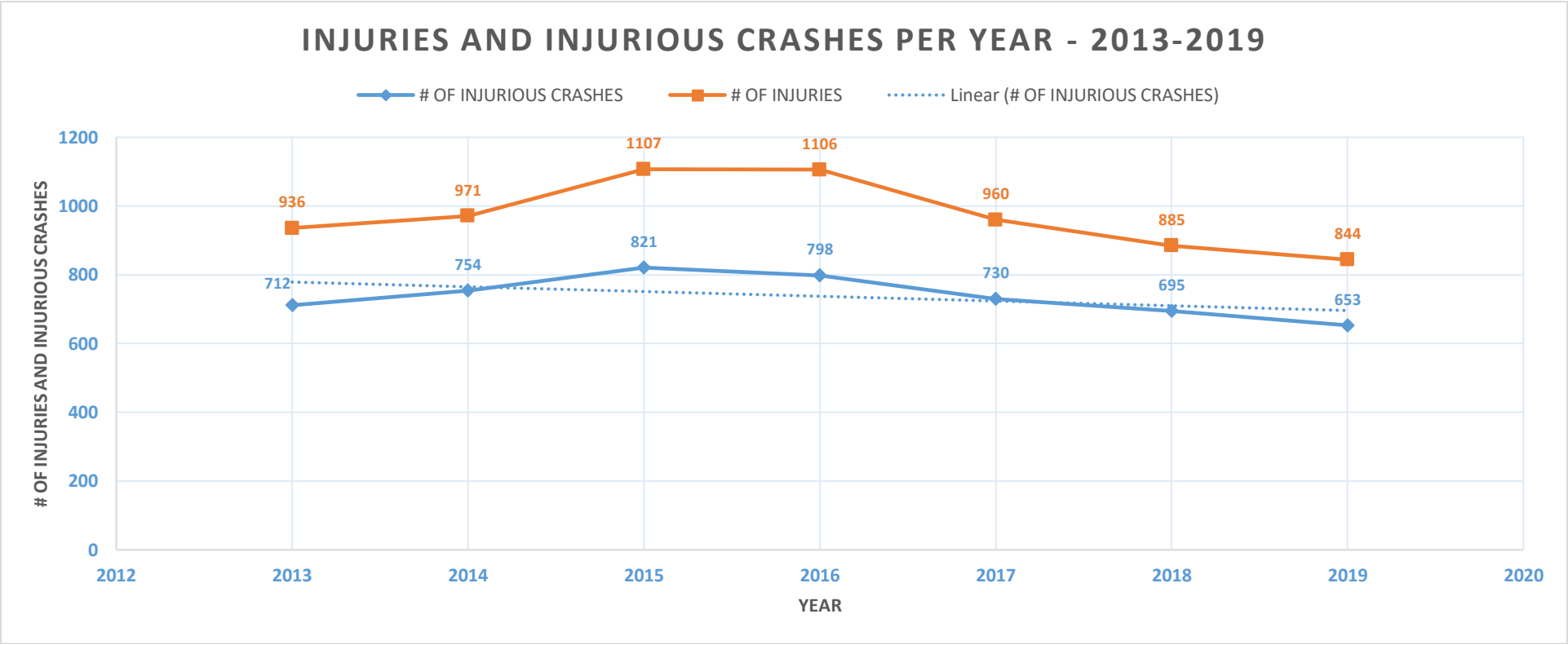

Figure 10: Injuries and Injurious Crashes per Year - 2013-2019

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Table 5: Cumulative Number of Crashes by Primary Factor - 2015-2019

# OF CRASHES PER YEAR BY PRIMARY CRASH FACTOR – 2015-2019			
PRIMARY CRASH FACTOR	**5-YEAR TOTAL # OF CRASHES PER PRIMARY FACTOR - 2015-2019**	**5-YEAR AVERAGE # OF CRASHES PRIMARY FACTOR - 2015-2019**	**5-YEAR AVERAGE PRIMARY FACTOR RANK - 2015-2019**
FAILURE TO YIELD RIGHT OF WAY	3,593	1	1.0
FOLLOWING TOO CLOSELY	3,464	2	2.0
RAN OFF ROAD RIGHT	1,500	3	3.0
OTHER (DRIVER)	1,111	4	4.8
ANIMAL/OBJECT IN ROADWAY	979	5	5.2
UNSAFE LANE MOVEMENT	843	6	7.4
IMPROPER TURNING	841	7	7.4
SPEED TOO FAST FOR WEATHER CONDITIONS	763	8	8.0
UNSAFE BACKING	762	9	8.2
DISREGARD SIGNAL/REG SIGN	744	10	7.6
DRIVER DISTRACTED	472	11	12.0
UNSAFE SPEED	467	12	11.8
LEFT OF CENTER	376	13	13.4
UNKNOWN WITH NO OFFICER NARRATIVE	369	14	13.6
IMPROPER LANE USAGE	358	15	14.2
ROADWAY SURFACE CONDITION	210	16	17.0
IMPROPER PASSING	180	17	17.4
OVERCORRECTING/OVERSTEERING	172	18	17.6
OTHER (VEHICLE)	132	19	19.0
BREAK FAILURE OR DEFECTIVE	126	20	19.2
PEDESTRIAN ACTION	96	21	21.4
DRIVER ASLEEP OR FATIGUED	91	22	21.6
OTHER (ENVIRONMENTAL)	88	23	22.2
DRIVER ILLNESS	50	24	24.4
VIEW OBSTRUCTED	48	25	25.2

CELL PHONE USAGE	38	26	26.2
WRONG WAY ON ONE WAY	32	27	27.2
TIRE FAILURE OF DEFECTIVE	27	28	28.0
INSECURE/LEAKY LOAD	17	29	30.2
ACCELERATOR FAILURE OR DEFECTIVE	17	29	30.8
STEERING FAILURE	15	31	30.8
HEADLIGHT DEFECTIVE OR NOT ON	14	32	32.2
ENGINE FAILURE OR DEFECTIVE	13	33	31.4
OBSTRUCTION NOT MARKED	13	33	31.6
HOLES/RUTS IN SURFACE	11	35	32.6
TRAFFIC CONTROL MISSING/INOPERABLE/OBSCURED	8	36	33.8
OVERSIZE/OVERWEIGHT LOAD	7	37	34.4
OTHER LIGHTS DEFECTIVE	4	38	36.2
TOW HITCH FAILURE	3	39	36.6
REAR END - CAR TO BICYCLE	1	40	38.4
RAN OFF ROAD LEFT	1	40	38.4
OTHER TELEMATIC IN USE	1	40	38.0
LANE MARKING OBSCURED	1	40	38.4

Transportation Planning, Transportation Engineering, and Traffic Engineering Studies

- Aggregate "area wide traffic studies" completed for the *2030 Long-Range Transportation Plan* and the *2045 Metropolitan Transportation Plan* using sophisticated travel-demand forecast models
- Countywide traffic studies completed by INDOT for compliance with FHWA reporting requirements,
- Sub-area analyses
- Corridor-level analyses
- Multimodal studies on whatever scale, and
- Traffic studies down to spot locations where warranted for other disaggregate purposes.

Traffic engineering is the sub-discipline of transportation engineering that addresses the planning, design, and operation of streets and highways, their networks, adjacent lands, and interaction with other modes of transportation, air, water, and rail, and their terminals. Traffic engineering studies cover a broad category of purposes, needs, and usage such as the following:

- Traffic Volume Studies
- Speed Studies
- Intersection and Driveway Studies
- Traffic Control Device Studies
- Travel-Time and Delay Studies
- Simulation Studies
- Pedestrian and Bicycle Studies
- Public Transportation Studies
- Freight Goods Movement Studies
- Parking Usage Studies
- Traffic Collision Studies
- Alternative Safety Studies
- Traffic Conflict Studies
- Transportation Planning Studies
    - Origin-Destination Surveys
    - Travel-Demand Forecast Modeling
- Traffic Access and Impact Studies
- Transportation Demand Management