RESOLUTION 2016-CPS-R-002, amending a segment of the Comprehensive or Master Plan of Marion County, Indiana, the Thoroughfare Plan Indianapolis and Marion County.

Be it resolved that, pursuant to I.C. 36-7-4, the Metropolitan Development Commission of Marion County, Indiana, hereby amends the Comprehensive or Master Plan for Marion County, Indiana, by the adoption of the Thoroughfare Plan Indianapolis and Marion County, which is attached hereto and incorporated herein by reference as an amendment to the Comprehensive or Master Plan of Marion County, Indiana.

Be it further resolved that the Secretary of the Metropolitan Development Commission is directed to certify copies of this Resolution 2016-CPS-R-004 amending the Comprehensive or Master Plan of Marion County, Indiana, the Thoroughfare Plan Indianapolis and Marion County.

Be it further resolved that the Director of the Department of Metropolitan Development is directed to mail or deliver certified copies of this Resolution 2016-CPS-R-004, to the Mayor of the City of Indianapolis, the City-County Council of Indianapolis and Marion County, the Board of Commissioners of Marion County, Indiana and to the legislative authorities of the incorporated cities and towns of Marion County, Indiana that are directly affected by this plan: Beech Grove, Lawrence, Southport, Speedway, Clermont, Crows Nest, Cumberland, Highwoods, Homecroft, Meridian Hills, North Crows Nest, Rocky Ripple, Spring Hills, Warren Park, Williams Creek, and Wynnedale. The Director shall also file one (1) copy of the Resolution and one (1) summary of the plan in the office of the Recorder of Marion County.

Dan Parker, President
Metropolitan Development Commission

Date: 3.3.2016

APPROVED AS TO LEGAL FORM
AND ADEQUACY THIS 20th
DAY OF JULY, 2016.

Christopher Steinmetz
Assistant Corporation Counsel
ACKNOWLEDGEMENTS

This Official Thoroughfare Plan for Marion County (Thoroughfare Plan or Plan) amends the Plan last updated in 2015 and 2002. This 2016 update continues an evolution of the plan from the 2002 table-based plan into a geographic information system (GIS) format introduced in the 2015 plan update. The 2015 plan update was partially funded by the Indianapolis Metropolitan Planning Organization (MPO) and was overseen by the Indianapolis Department of Metropolitan Development’s Division of Planning.

ADMINISTRATIVE AND POLICY DIRECTION

• The Honorable Joe Hogsett, Mayor, City of Indianapolis
• Emily Mack, Director, Indianapolis Department of Metropolitan Development (DMD)
• Brad Beaubien, AICP, Administrator, Division of Planning, DMD

DEPARTMENT OF METROPOLITAN DEVELOPMENT

• Meredith Klekotka, Principal Planner for Transportation Integration

METROPOLITAN DEVELOPMENT COMMISSION

• Dan Parker, President
• Megan Garver
• Jennifer Gause
• Lena Hackett
• David Hurley
• Adam Kirsch
• John Lewis
• Bruce Schumacher
• William Selm

This technical 2016 update builds extensively on the 2015 Plan update, which substantially migrated the 2002 plan into GIS format and brought the plan in compliance with the City’s Complete Streets Ordinance. The 2015 update, developed through the City’s Plan 2020 initiative, also included a technical stakeholder committee.

STAKEHOLDER COMMITTEE

• Linda Ahlbrand, Division of Planning, DMD
• Don Colvin, Indianapolis Department of Public Works (DPW), Parks
• Annette Darrow, IndyGo
• Andrew Dunkman, DPW, Engineering
• Ryan Gallagher, IndyGo
• Jamison Hutchins, DPW, Sustainability
• Kevin Kastner, Indianapolis Mapping and Geographic Information Systems (IMAGIS)
• George Krack III, Indianapolis Department of Code Enforcement (DCE)
• Andy Lutz, P.E., DPW, Former Director and Chief Engineer
• Mike Miller, Citizens Energy Group
• Donna Price, DCE
• Nathan Sheets, DPW, Engineering
• Jim Stout, IMAGIS
• Stefan Wolfla, DCE
INTRODUCTION

ABOUT THE DEPARTMENT OF METROPOLITAN DEVELOPMENT

The Department of Metropolitan Development is responsible for the planning, zoning, historic preservation, redevelopment, and community development functions of the City of Indianapolis and Marion County. It works under the auspices of the Metropolitan Development Commission, the independent governing body established by Indiana Code as the plan commission for all of Marion County, Indiana.

ABOUT THE THOROUGHFARE PLAN

A Thoroughfare Plan is a long-range plan that identifies the locations, classifications, and different infrastructure elements of roadways within a defined area. The Marion County Thoroughfare Plan supports the region’s long-term growth and goals by planning for the orderly growth of the transportation system as development occurs. Achieving the optimal balance between mobility and access for automobiles is a traditional objective for classifying roadways in a Thoroughfare Plan, but the movement of transit, pedestrians, freight and bicycles should also be prioritized within the transportation system. The purpose of this Thoroughfare Plan is to establish a diverse transportation network that provides the right balance of accessibility and mobility through a combination of multi-modal elements.

The Plan is a segment of the Transportation Element of the Comprehensive Plan for Indianapolis and Marion County.

Indianapolis’ Complete Streets Ordinance states that our streets should work for all users whether on foot or in a wheelchair, bike or car and this policy was adopted by the City-County Council in August 2012 (G.O. 22, 2012, § 1, Sec. 431-801-807). This Thoroughfare Plan implements the Complete Streets Ordinance by ensuring all modes are accommodated within our transportation system, incorporating right-of-way needs for all modes, providing design guidance on multi-modal facilities, and providing guidance on conflicting mode priorities.

GOALS AND OBJECTIVES

Based on the review of Indianapolis city and regional plans and a review of best practices (Appendix G), a set of goals and objectives were developed and approved by the steering committee for this update.

GOAL #1: BALANCE THE TRANSPORTATION NEEDS FOR MOBILITY AND ACCESSIBILITY.

- Enhance the current functional classification system for Indianapolis’ street network to account for changing development patterns (urban, suburban, and rural) as roadways move through the city.
- Create a comprehensive, integrated, and connected transportation network that supports compact, sustainable development and promotes livable communities.
- Reduce disparities in access to employment, education, healthcare, food, and other aspects of daily life by promoting and accommodating multi-modal transportation systems.
- Provide appropriate travel options and choices for all users
- Improve accessibility to regional employment and activity centers.
- Enhance connections between regional employment and activity centers.
- Support commercial goods movement within and through the region.

GOAL #2: PROVIDE FOR A SAFE TRANSPORTATION EXPERIENCE FOR ALL SYSTEM USERS.

- Meet or exceed Americans with Disabilities Act (ADA) standards.
- Increase safety of the transportation system for all motorized and non-motorized uses.
- Preserve, make safe, and improve utilization of the existing transportation system.
- Maintain the existing network in a state of good repair.

GOAL #3: ACCOMMODATE ALL TRANSPORTATION MODES WITHIN THE ROADWAY SYSTEM TO THE EXTENT FEASIBLE.

- Create a functional classification system that addresses multi-modal uses within the public ROW.
- Create walkable communities that promote active living and reduce health disparities.
- Connect pedestrians with transit.
- Identify and connect greenways to bicycle, pedestrian, and transit facilities.
- Encourage connections from the greenway to neighborhoods and vice versa.
- Create connections within the greenway system that will encourage it to be used as a means of transportation and not just recreation.
GOAL #4: BALANCE TRANSPORTATION NEEDS FOR EFFICIENCY AND REDUNDANCY.

- Allow for a system that enhances the efficiency of the transportation network.
- Allow the transportation network to have redundancies, or multiple options across modes for reaching a destination, in order to avoid congestion and increase access.
- Emphasize the preservation of the existing transportation system.
- Provide flexibility for different types of streets, roadway designs, areas, and travelers to enhance the transportation experience.

PLANNING PROCESS

The outline for the rest of this document generally follows the process for the update, which is graphically depicted in Figure 1. First, the desired policy outcomes, or goals and objectives, for the Thoroughfare Plan were assembled. In order to accomplish this, all of the current multi-modal plans were assembled, reviewed, and mapped. A review of national best practices on thoroughfare planning served as a supplemental guidance. The outcomes of the policy plan included the definitions of the functional classes of the roadway network, the identification of appropriate users for each class, and the roadway elements necessary to accommodate all users.

The second step was to develop design examples for each of the classes of the roadway hierarchy. Since there was a high number of potential combinations of different roadway elements (motor vehicle lanes, sidewalks, transit stops, bike lanes, etc.), this step did not exhaustively categorize all of the possible arrangements, but instead developed a methodology that allowed for tradeoffs of different facilities to minimize ROW acquisition as much as possible.

Once the design combinations were outlined, they were assigned to the roadway network. The designation of the collector network was coordinated with the MPO. The designations were packaged in a computerized map, known as a Geographic Information System (GIS) database using a linear reference network (LRN) system. This technical upgrade comprises a significant portion of this update and provides the foundation for better multi-modal transportation planning. A linear reference system divides each roadway into segments of varying lengths, and attaches a range of variables to each segment, such as the presence of different modes of transportation. For the first time, this allows planners to see, in one place, what multi-modal systems are present or planned for every single roadway segment in Marion County. Whereas the previous plan had a one-size-fits-all approach to proposed right-of-way widths, this system will eventually make it possible to be more granular by altering proposed widths based on the planned modes and functional class for each particular segment.

PUBLIC OUTREACH

The Thoroughfare Plan is part of the City’s Plan 2020 initiative, a coordinated creation or update of seven different City plans. This initiative employed a dozen different community engagement vehicles, from social media and website information to task forces and committees, to gather input that was then applied to the plans being developed under the Plan 2020 umbrella.

PLAN 2020 COMMITTEE INPUT

The two primary Plan 2020 committees that provided guidance used to develop this Plan were:

- The “Choose Indy” committee, which is charged with discovering ways to make Indianapolis an attractive and vibrant place for all residents, focused on the creation of new urban villages within Indianapolis. These higher-density, mixed use centers would be walkable and have access to multi-modal options. Rights-of-way will need to be carefully managed in these areas and larger primary arterials should not bisect these villages.
- The “Connect Indy” committee focused on how to move people around within Indy. Relevant issues from their recommendations included the completion of Indianapolis’ regional greenways plan, as well as implementation of rapid transit corridors and placement of their stops in walkable and accessible locations.
AN ELEMENT OF THE COMPREHENSIVE PLAN FOR INDIANAPOLIS AND MARION COUNTY

REVIEW OF EXISTING PLANS AND CONDITIONS

BACKGROUND/PLANNING CONTEXT

In 1962, the Indianapolis Regional Transportation and Development Study (IRTADS) defined the basic thoroughfare system for the City of Indianapolis. The emphasis of IRTADS was on the upper levels of the roadway hierarchy, and only highways and arterial streets were addressed; collectors and local streets were not formally categorized. Unusual for a Thoroughfare Plan, IRTADS also defined a number of specific transportation projects (as noted above, projects are usually defined in a capital improvements program or long-range transportation plan).

Updates to the Thoroughfare Plan were periodically implemented as new transportation needs became apparent, with the last prior update occurring in 2002. These prior updates were overseen by the Indianapolis MPO, which until 2007, served as the transportation planning section within the Indianapolis Department of Metropolitan Development Division of Planning (DOP). These updates followed the scope of the initial IRTADS study, with an emphasis on highways/arterials and a project-based focus. In 2007, with the restructuring of the MPO outside of the DOP, administration of the Thoroughfare Plan fell to the DOP.

NEW POLICY DIRECTIONS

INDIANAPOLIS COMPLETE STREETS

Since the time of the last update in 2002, there have been many changes to the city’s transportation network, as well as to the policy environment to which the Plan is responsive. One major impetus for this update was the desire to increasingly accommodate all transportation modes on city streets, as exemplified in the City’s adoption of the 2012 Complete Streets policy.

A large body of multi-modal plans has been developed that partially or completely overlaps with the roadway system, including the following:

- Indianapolis/Marion County Pedestrian Plan (2016)
- Indianapolis Greenways Master Plan, 2014 (Indianapolis DPW)
- The Indy Connect rapid transit vision and supporting studies, including the Red, Blue, and Purple Line Bus Rapid Transit (BRT) Alternatives Analyses, 2010-2014 (Indianapolis MPO)
- Comprehensive Operational Analysis of the transit system of Indianapolis Public Transportation Corporation, 2010 (IPTC, aka IndyGo)
- Indianapolis Bicycle Master Plan, 2012 (Indianapolis DPW)
- Multi-Modal Corridor and Public Space Design Guidelines, 2008 (Indianapolis MPO)
- Regional Pedestrian Plan, 2006 (Indianapolis MPO)

In addition to the new multi-modal emphasis, a new fiscal reality of limited public resources prompted a reevaluation of the right-of-way (ROW) requirements in the 2002 Plan. The 2002 requirements were fairly aggressive – applying the proposed ROW width to all arterial-level streets in Marion County would require approximately 8,832 acres (13.8 square miles) of acquisition. In addition to the overwhelming expense of such a series of acquisitions, by converting this property from private to public ownership, the acquired property would no longer generate property taxes, resulting in tax base and revenue losses. It was therefore a priority in this update to provide policy recommendations that allowed for a more realistic program of ROW acquisition.

In order to accommodate the desired multi-modality of the Plan, its scope had to expand beyond its prior focus on highways and arterial streets, to encompass collectors and local streets as well. Many of the elements of the bicycle and pedestrian plans noted above utilize collector streets. Clarifying the definitions of collectors and local streets, and assigning these functional classes to the network, will assure that coherent and continuous bicycle and pedestrian facilities will emerge with no gaps in network coverage.

INDY REZONE: LAND USE CONTEXT

The Indy Rezone Consolidated Zoning/Subdivision Ordinance was passed by City County Council in 2015 (G.O. 72, 2015), and updated Indianapolis’ zoning code and subdivision ordinances. This ordinance made significant changes to the underlying zoning ordinance, including consolidating 14 separate ordinances into one, accommodating mixed-use districts more easily, and modernizing standards relating to sustainability, parking, and subdivision connectivity.

The ordinance also recognizes that Indianapolis contains both suburban and traditional types of development by introducing two “Context Areas.” The two context areas, compact and metropolitan, distinguish between these types of areas and apply different standards to them. This Thoroughfare Plan uses these geographic areas to define different right-of-way standards to reinforce that, like real estate development, our roadway network traverses a range of different types of places and should adapt accordingly.
• Compact areas are characterized by a higher density of development, structures placed closer or adjacent to the road/ROW edge, and in close proximity to one another. Development in these areas is more likely to be on a street grid pattern and include curb/gutter and sidewalks as part of the existing street infrastructure.
• Metropolitan areas are characterized by moderate to rural density development and a more suburban style development pattern with buildings set back from the road/ROW edge, numerous curb cuts, and more limited on-street parking. Parking lots and cul-de-sacs or curvilinear street systems are not uncommon in these areas. In the more rural of the Metropolitan areas, very low development exists with drainage handled by side ditches rather than curb and gutters.

PLAN 2020 BICENTENNIAL AGENDA

In 2016, Mayor Joe Hogsett unveiled the Bicentennial Agenda, a community-driven plan adopted by the Metropolitan Development Commission (MDC) as the Vision and Values element of the Comprehensive Plan for Indianapolis and Marion County. The Agenda was a product of the City’s Plan 2020 initiative.

The Agenda lays out 15 strategies for making Indianapolis a more healthy, inclusive, resilient, and competitive city. Among the strategies, Transportation Options provides the most relevant vision for this Thoroughfare Plan.

TRANSPORTATION OPTIONS

To maximize participation in economic and civic life, we must maximize the number of residents who have access to local and regional transportation networks. We must promote reinvestment and greater connectivity in our street network. We must incorporate pedestrian and bicycle facilities where they are needed to safely connect neighborhoods with destinations. We must expand our regional greenway system to link our major activity and employment centers. We must build a public transit system and treat it as a critical part of our economic infrastructure rather than a social service.

REVIEW OF EXISTING MULTI-MODAL PLANS AND INITIATIVES

In order to create a comprehensive Marion County Thoroughfare Plan document, other planning documents relating to the city’s transportation system were reviewed as an initial step in this update. The goals and objectives of these plans, and their findings and recommendations, were incorporated into this update wherever possible. This review included initial input received from the Plan 2020 committee and public engagement process and a variety of multi-modal plan documents as described below.
ADOPTED MULTI-MODAL PLANS

The adopted plans described below are important building blocks for Indy’s transportation system and have been or will be guiding investment for years to come. Coordination and consistency of planned projects and focus areas is critical to maximizing investment and identifying priorities. One of the main objectives of this Thoroughfare Plan update is to integrate all of them into the roadway network. A number of these plans cover one mode of transportation. They will be overlaid to designate specific streets with greater multi-modal needs associated with them.

INCORPORATION OF EXISTING MULTI-MODAL NETWORKS

The previous Thoroughfare Plans incorporated limited multi-modal considerations; however, a number of other multi-modal transportation networks have been developed related to many of the plans listed above. As part of the Thoroughfare Plan update, many networks were encoded in a geographic information system (GIS) format and overlaid with the thoroughfare system to see areas where individual mode plans might complement or conflict with one another. As these plans are updated or new modal plans are adopted, these networks will be updated in the GIS map.

These networks include but are not limited to:
- Indianapolis/Marion County Pedestrian Plan
- Indianapolis Greenways Master Plan
- Indianapolis Bicycle Master Plan
- Indy Connect (including three rapid transit lines: Red, Blue, and Purple)
- IndyGo Bus System

INDIANAPOLIS/MARION COUNTY PEDESTRIAN PLAN

This plan was adopted in 2016 by the Metropolitan Development Commission. This plan builds on work initiated through Plan 2020. Funded by an American Planning Association grant awarded to Health by Design, a coalition of local partners and community support guided the plan including Indiana State Department of Health, Local Initiatives Support Corporation, Engaging Solutions and the Indianapolis Neighborhood Resource Center. The plan identifies pedestrian infrastructure needs and prioritizes those investments across Marion County using clear, equitable, and data-driven priorities. This plan allows the city to identify the missing or dilapidated pedestrian infrastructure that requires urgent investment. Projects prioritized through this plan will be included in the digital map for reference.

REGIONAL FREIGHT PLAN FOR THE INDIANAPOLIS METROPOLITAN PLANNING AREA

This plan was adopted by the Indianapolis Regional Transportation Council in 2016. The Plan details how to enhance regional freight movement through infrastructure, policy and partner recommendations. Marion County corridors vital to the existing and future freight network identified through the plan will be included in the digital map for reference. Identifying local freight corridors allows Indianapolis to determine which modes and their supporting infrastructure should be prioritized for key corridors. The plan also identifies bottlenecks within the freight system that may require improvements to maintain mobility.

INDIANAPOLIS GREENWAYS MASTER PLAN

This plan was updated in 2013-2014 for the Indianapolis Department of Public Works. The key points of this update included balancing recreational, transportation, and connectivity functions of the greenway system and significantly expanding the system to all parts of Marion County. While the majority of the system is off-street (with the significant exception of the Downtown Cultural Trail, which is street-adjacent), maintaining connectivity between different facilities and crossings, particularly other pedestrian and bicycle facilities, will require the addition of on-street elements.

INDIANAPOLIS BICYCLE MASTER PLAN

The latest update to the Bicycle Plan was in 2012, and was conducted jointly by the Indianapolis Department of Public Works and the Mayor’s Office of Sustainability. The Plan has key goals oriented around the engineering of safe bicycle facilities, identifying a bicycle network, educating the public on bicycling and safety, increasing ridership, enforcing a safe environment for all transportation methods, monitoring the system’s effectiveness, and ensuring that the bicycle system accommodates all types of users.

INDIANAPOLIS MULTI-MODAL CORRIDOR AND PUBLIC SPACE DESIGN GUIDELINES

These 2008 guidelines were developed in coordination with the planning for the Indianapolis Cultural Trail, and were intended to clarify how to integrate different roadway facilities within a generally-constrained ROW environment. The primary use of this document was as a guide for the roadway facility types discussed in section 4. The Guidelines created a number of new roadway facility types that would act as overlays for the current functional classification system. The roadway types were designed with a set of principles in mind, including mobility; health, safety, and opportunity; adaptability and sustainability; public realm; and character and vitality. The facility types are broken down into a greater detail in order to offer a thorough description of each. The guidelines were flexible in their designs to allow for them to be applied to multiple roadway types.

2035 LONG-RANGE TRANSPORTATION PLAN

The MPO regularly updates this regional plan, which
serves as the basis for federal funding within Central Indiana; it was last updated in 2011 with annual updates since. The Plan is project-specific, and in recent years has encouraged multi-modal transportation facilities, either integrated with roadway facilities or separated. The Plan is evaluated, among other things, on its ability to maintain vehicular emissions within established “budgets;” one of the strategies established is to divert motor vehicle traffic to alternate modes, such as bike, pedestrian and transit. System-wide goals include preserving, improving safety, and improving utilization of the existing transportation system; enhancing regional transportation mobility and accessibility; and coordinating transportation systems improvements to be consistent with regional values.

**INDIANAPOLIS MPO AND CITY OF INDIANAPOLIS: COMPLETE STREETS POLICY**

In 2012, the Indianapolis City-County Council passed a Complete Streets ordinance to ensure that both public and private developments consider the transportation needs of all users when developing new land or road projects. The total miles of bike lanes, total feet of new pedestrian accommodations, and rate of children walking or biking to school, are all examples of specific measures that are used to evaluate the effectiveness of this policy on a quarterly and annual basis. In 2012, the National Complete Streets Coalition named Indianapolis’ Complete Streets Policy as the strongest ordinance of its type in the nation.

In 2014, the MPO adopted its own Complete Streets policy, with the aim of creating a comprehensive, integrated, and connected regional transportation network. This network would, in turn, support compact, sustainable development; ensure safety, ease of use, and ease of transfer between transportation modes; and provide flexibility for different types of streets, areas, and travelers to enhance the transportation experience.

**INDIANA MULTI-MODAL FREIGHT AND MOBILITY PLAN**

This statewide document was prepared by the Indiana Department of Transportation (INDOT) to ensure that freight movements were sufficiently considered in state, regional, and local transportation policies. Its goals include supporting economic vitality, increasing the safety and security of the transportation network, improving accessibility and mobility options, and protecting the environment and promoting energy conservation.
THOROUGHFARE PLAN FEATURES

PLAN PURPOSE

As detailed in the introduction, the purpose of this Thoroughfare Plan is to establish a diverse transportation network that provides the right balance of accessibility and mobility through a combination of multi-modal elements. The plan does this through the policies and tools listed below and described in detail in this chapter.

The functions of the Thoroughfare Plan include:

- Classify roadways based on their location, purpose in the overall network & what land use they serve
- Provide design guidelines for accommodating all modes (automobile, transit, pedestrians, bicycles) within the roadway
- Set requirements for preserving ROW
- Identify roadways for planned expansion or new terrain roadways
- Through its GIS database, coordination of modal plans into a single linear network

FUNCTIONAL CLASSIFICATION OF ROADWAYS

The functional classification of a roadway indicates the roads purpose within the system based in part on the average daily traffic and what land uses it serves. A street’s classification has numerous impacts for users, property owners, and local governments including:

ZONING AND SUBDIVISION CONTROL (CONSOLIDATED ZONING/SUBDIVISION ORDINANCE)

- Right of way requirements
- Sight line requirements
- Setbacks requirements
- Right-of-way widths for subdivision plats

MAINTENANCE JURISDICTION

- Outside of Included and Excluded Cities or Towns, the maintenance, construction, and major reconstruction of roadways in Marion County not under INDOT’s jurisdiction is the responsibility of the Indianapolis Department of Public Works.
- Inside Included and Excluded Cities or Towns, the maintenance (snow plowing and potholes, etc.) for all roadways not under INDOT’s jurisdiction are the responsibility of that Excluded City.

- Inside Included and Excluded Cities or Towns, the construction and major reconstruction for all local and collector streets is the responsibility of that Excluded City, while construction and major reconstruction for all primary and secondary arterial streets is the responsibility of the Indianapolis Department of Public Works. However, the Indianapolis Department of Public Works also has construction and major reconstruction responsibilities for certain collector streets as designated in Appendix C. These collector streets were at one time classified as arterial streets, and while reclassified by this plan, remain defined as thoroughfares and the responsibility of DPW.

FINANCING

- The Thoroughfare Plan identifies and recommends certain regionally significant projects for inclusion in the Indianapolis Metropolitan Planning Organization’s Long Range Transportation Plan, making them eligible for competition for federal funding

DESIGN

- Right of way requirements are determined by the roadways classification and the number of travel lanes
- Certain infrastructure elements are restricted based on classification (e.g. freeways should not have sidewalks or bike lanes)
- Roadway design varies based on classification (e.g. lane width, medians, buffers)

CLASSIFICATION PROCESS

Assigning functional classifications to roadway network segments is a deliberative process, proceeding from the roadway classifications with the most restrictive requirements (generally highways) and moving through the lower classes of arterials, collectors, and local streets. The levels of assigned roadway hierarchy for Marion County were constructed to be consistent with guidance from the Federal Highway Administration (FHWA), which also guides the MPO in its functional class designations.

The Functional Classification System (FCS) developed and maintained by the Indianapolis MPO has historically been different than the classification used in the Thoroughfare Plan for arterials and highways. While Marion County roadway classifications are not required to be the same as the MPO’s coordinating these classifications where possible is important because it can affect availability for federal funds. The MPO’s most recent FCS update looked at adding more Minor Collectors to the system. The effort associated with this new directive coincided with the Thoroughfare Plan update and roadways in Marion County designated as Collectors now substantially match with the MPO.
FUNCTIONAL CLASSIFICATION FOR URBAN ROADWAYS

<table>
<thead>
<tr>
<th></th>
<th>AVERAGE ANNUAL DAILY TRAFFIC (AADT)</th>
<th>POSTED SPEED LIMIT (MPH)</th>
</tr>
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<td></td>
<td>Urban</td>
<td>Rural</td>
</tr>
<tr>
<td>Freeways / Expressways / Highways</td>
<td>&gt; 13,000</td>
<td>4,000 – 34,000</td>
</tr>
<tr>
<td>Primary Arterials</td>
<td>7,000 – 27,000</td>
<td>2,000 – 8,500</td>
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<tr>
<td>Secondary Arterials</td>
<td>3,000 - 14,000</td>
<td>1,500 – 6,000</td>
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<tr>
<td>Secondary Collectors</td>
<td>1,100 – 6,300</td>
<td>150 – 1,110</td>
</tr>
<tr>
<td>Local Streets</td>
<td>80 - 700</td>
<td>15 - 400</td>
</tr>
</tbody>
</table>

Figure 4  AADT and Speed Guidelines by Functional Classification

Streets excluded from the Plan’s functional classification system include:
- Alleys or access drives
- Privately owned and maintained streets
- Unplatted streets, including those outside of public rights-of-way that cross parcel boundaries
- Pedestrian or greenway-only corridors

Highway and arterial network assignments were largely kept consistent with the 2002 Thoroughfare Plan update. Numbers of lanes and metropolitan or compact area definitions were assigned to the network roadways based upon standard criteria including existing infrastructure or planned projects and the location of the roadway.

The initial collector street assignment was done in concert with the Indianapolis MPO, which, due to external requirements, was simultaneously working on a collector classification for its entire planning area (which encompasses all of Marion County and its jurisdictions, as well as another 30 county, city, and town jurisdictions that encompass an additional 600 square miles). Collector assignments generally went to roads that had collectors or higher level functional classes at one or both ends, and intersected with local roadways along its length. As with highways and arterials, collectors were assigned as “metropolitan” or “compact” depending on their location and consistency with Marion County’s current land use plan. At this time, only major collectors were assigned; minor collectors may be assigned after the Thoroughfare Plan’s next update.

Local streets represent the bottom, local-access level, of the roadway hierarchy. Cul-de-sacs (local streets with only one roadway access point) were especially easy to designate. The sole judgment call with this category pertained to longer roadways that a number of local streets tied into, with the decision being made as to whether the larger roadway should be considered a local street, or elevated to a collector. The overall length of the facility and the types of roads at which it terminated usually provided the deciding factor in these cases.

Maps illustrating the roadways that are assigned to each functional classification are provided in Appendix A. Note that these maps indicate the classifications as of the writing of this document only and are subject to change. Subsequent updates and amendments approved by the Metropolitan Development Commission will be reflected in the GIS database, which must be consulted for the most up-to-date classification of a roadway. At the time of writing of this report, an online and publicly accessible map tool to view this GIS database is under development.

ROADWAY ASSIGNMENTS: GIS APPLICATION DEVELOPMENT SUMMARY

This plan upgraded the Thoroughfare Plan’s system from paper maps to electronic mapping in geographic information system (GIS) software. This upgrade provides more accurate and detailed information to the public and allows for better tracking and analysis of the transportation system for government agencies.

GIS will eventually allow the city to calculate right of way needs for roadway projects down to the individual parcel based on planned infrastructure elements along the project. This approach will eventually allow for a more complete and accurate system inventory of right of way needs. Eventually, the mapping tool will determine the space required for relevant modal plans along a road (e.g. Greenways Master Plan or Pedestrian Plan) and calculate right of way based on proposed infrastructure and existing right of way along each parcel. In order to do this, the city first needs to upgrade the plan into GIS which is accomplished in this plan. This plan does not use this dynamic right of way approach; the maximum and minimum right of way required for roadways in this update is based on road classification and the number of lanes.
Prior to the assignment of classifications, an extensive effort was made to identify the existing rights-of-way widths on the network. Using the roadway centerline layer and parcel layer in the City’s GIS database, distances from the centerlines to the nearest parcels were calculated and processed using a mathematical spatial processing script in ArcGIS. This analysis allows for an estimated assessment of the sufficiency of the ROW for each assigned classification. It should be noted, the estimated existing right of way listed in the GIS database is an estimate and is not survey-quality information nor should it be considered for legal purposes.

**FUNCTIONAL CLASSIFICATION DEFINITIONS**

**FREEWAYS/EXPRESSWAYS/HIGHWAYS (THOROUGHFARES)**

These roadways offer high-speed travel with fewer restrictions than a local roadway. Freeways/Expressways are considered limited-access, with no at-grade intersections or controls present. Some highways are limited-access as well; others have at-grade intersections with large separations of approximately one to two miles. Typically these roadways are used for longer commute times between destinations and access to the roadways is limited in order to maximize this mobility. This type of road is mainly focused on accommodating vehicular traffic. Adjacent land uses almost never have direct access to this type of roadway and there is little to no pedestrian access or pedestrian ROW. Major roadways, typically arterials, permit ingress/egress of vehicular traffic access ramps or intersections. The typical speeds along these thoroughfares can range from 45 to 65 mph in urban settings. Since they have the capacity for such high volumes of traffic, these thoroughfares can accommodate 2,000 vehicles per hour per lane. The Indiana Department of Transportation (INDOT) owns and operates all the freeways/expressways and most of the highways within the City’s boundaries. This creates the need for strong inter-jurisdictional cooperation when municipalities desire changes to the interstate system, such as introducing new interchanges. Examples of freeways/expressways/highways in Marion County are I-65 and I-70.

**PRIMARY ARTERIALS (THOROUGHFARES)**

Primary arterials provide a high level of mobility and are used for longer trips. Since they generally serve cross-city movements, their features often resemble those of highways, with large spacing between intersections and minimized access to adjacent land-uses. Some property access points do exist, typically with dedicated turn lanes or traffic signals. These thoroughfares often connect major centers of employment and key amenities within the city.

Primary arterials usually are lined with higher density housing, commercial, and office spaces. These thoroughfares are often built with an emphasis on vehicular traffic, cars, buses, and freight. Within urban and suburban areas, ROW allocated to pedestrians is increased as the density and pedestrian activity increase. As an automotive focused thoroughfare, primary arterials often have wide lanes (11-12 feet), and a design speed between 30 mph (in urban settings) and 55 mph (in rural settings). Because they are relatively large facilities, primary arterials typically avoid going directly through defined neighborhoods and other districts, and can serve an urban design function by defining the edges or boundaries of these areas.

Their higher speeds and wider lanes give primary arterials higher carrying capacities. Capacities vary depending on the number of lanes; six-lane thoroughfares carry up to approximately 50,000 vehicles a day while two-lane thoroughfares carry around 10,000 vehicles per day. Washington Street, Southport, and 38th Street are examples of primary arterials in Marion County.

**SECONDARY ARTERIALS (THOROUGHFARES)**

Secondary arterial roadways provide linkages from primary arterials and highways to major centers and destinations, for instance, shopping centers, educational facilities, and employment complexes. These roads offer more access than primary arterials, at the cost of speed, which is typically posted at 30-40 mph in urban areas. Capacities of secondary arterials are lower than primary arterials but are still significant, ranging from 5,000 for a two-lane road to 20,000 vehicles per day for a four-lane road. Pedestrian movements are higher on these roadways than on the primary arterials due to the slower traffic speeds and their access to a variety of land uses. Mitthoefer Road and Stop 11 Road are examples of Marion County secondary arterials.

**PRIMARY COLLECTORS (NON-THOROUGHFARES)**

Primary collector roadways move traffic from local streets to other amenities or higher classification roadways. This roadway’s main purpose is to connect arterials and local streets; however, schools, churches, parks, hospitals, and other such destinations are also serviced by these types of thoroughfares. Primary collectors often provide more access than mobility and support a range of trip purposes. Many move through local streets and neighborhoods, often taking on the character of the places they travel through and sometimes resulting in design challenges as communities strive to achieve a level of context-sensitivity. Pedestrians and bicyclists are often assigned more ROW on this type of roadway than on higher classification roads. Speeds on these roads are comparable to that of a secondary arterial at 30 to 45 mph but can vary depending on surrounding land uses. These roads can carry up to 8,000 vehicles per day and typically only have two lanes of traffic. 64th Street and Guion Road are examples of primary collectors.
Secondary collectors connect local streets to arterials and other amenities. These streets often will have greater access to the bordering properties than other roadways, thereby creating connections on a more local scale, whereas arterials work on a regional scale. Collector streets are also more likely to have a greater mix of transportation modes than the higher classifications, resulting in the need for balancing of priorities in order for them to function properly and serve all the uses effectively. Typical speeds on secondary collectors vary from 30 to 45 mph and they generally have two lanes of traffic, although their cross section can be dependent on the land use or zoning of the surrounding parcels. Secondary collectors have not been assigned in this version of the plan. Note that while collectors are not generally designated as thoroughfares, certain collectors listed in Appendix C in Included and Excluded Cities or Towns are defined as thoroughfares.

Local streets are the slowest speed facilities and have the highest level of access to surrounding properties. They are likely to have mostly residential uses along them. Trips are generally very short. The main purposes of local streets are to give access to higher classifications of roadways and to the adjacent properties, which thereby frequently leads to greater pedestrian and bicycle activity. Semi-trucks and other large vehicles are typically not capable of traveling on local streets because of narrow widths, small turn radii and/or posted restrictions. Speeds on these streets usually are 25 to 30 mph. With little through traffic, these roadways typically serve 1,000 vehicles per day or less. They are sometimes constructed by private developers and then adopted by the City of Indianapolis into its network. Most residential neighborhood streets are examples of local streets.

RIGHT-OF-WAY PRESERVATION AND DESIGN GUIDELINES

The Thoroughfare Plan allows the City of Indianapolis to preserve right of way based on system needs or the planned project list. Indianapolis typically acquires right of way using commitments made by property owners through the zoning process or purchases the needed land directly.

OVERVIEW

In order to provide sufficient guidance for implementing Complete Streets, design guidelines were created to determine right-of-way preservation and implement multi modal design. These guidelines identify opportunities to incorporate a variety of multi-modal facilities within a minimum ROW corridor. The ROW Standards and Design Guidelines Table provides information on standard right of way need based on land use and classification and provides guidelines on appropriate street design to ensure compliance with the complete street ordinance.

The amount of right of way needed varies based on classification, topography, land use context, and street design. In cases where the right of way standard is insufficient due to such conditions as irregular topography, creek and river crossings, bridges, or major intersections, additional right of way may be required if substantiated by technical justification from the Department of Public Works. Note that some roads, such as those listed on the National Register of Historic Places (including Fall Creek Parkway and Pleasant Run Parkway), or that serve frequent non-transportation purposes (including Georgia Street and Monument Circle Downtown) for example, will not fit within the parameters of the design guidelines. These instances should be addressed on case-by-case basis.

In addition to being classified by function and context, Figure 11 shows major and minor arterials also subdivided by number of lanes. Note that the listed number of lanes includes the total lanes regardless of direction, for example, a six-lane facility could be comprised of three lanes in each direction or four in one direction and two in the other.

It is a key tenet of this plan update that the public ROW be shared by people who walk, bike, drive, and ride transit. The available space, however, does not always afford all users the ideal or desired level of accommodation. It is in these cases that priorities must be established. The ROW Standards and Design Guidelines Table shown in Figure 11 should be used as a preliminary tool for determining which roadway elements and user are prioritized for each type of the roadway by functional classification and context area. This information should be considered together when selecting the most appropriate design for a given roadway segment. Note that the widths contained in this table represent target widths and may vary depending on local constraints or context. The design guidelines provide a framework for selecting the desired roadway elements in both compact and metropolitan areas, and should be applied as appropriate to the specified roadway classification.

ROW STANDARDS AND DESIGN GUIDELINES TABLE PROVIDES

- Right-of-way requirements
- Guidance on complete streets facilities (e.g. travel lanes, on-street parking, landscape areas, bike lanes, sidewalks)
**PROPOSED RIGHT-OF-WAY**

The definition of “proposed right-of-way,” including in reference to the Consolidated Zoning/Subdivision Ordinance, is:

<table>
<thead>
<tr>
<th>TYPE OF ROADWAY SEGMENT</th>
<th>PROPOSED RIGHT-OF-WAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>For roadways that are classified as freeway or expressway.</td>
<td>Existing ROW</td>
</tr>
<tr>
<td>For a roadway segment identified as a new-terrain thoroughfare (a new roadway where one does not exist today)</td>
<td>Maximum ROW (per ROW Standards and Design Guidelines Table)</td>
</tr>
<tr>
<td>For subdivision platting</td>
<td>Maximum ROW (per ROW Standards and Design Guidelines Table)</td>
</tr>
<tr>
<td>For a roadway segment identified for planned expansion</td>
<td>Maximum ROW (per ROW Standards and Design Guidelines Table)</td>
</tr>
<tr>
<td>For a roadway segment with an existing right-of-way less than the minimum listed in the ROW Standards and Design Guidelines Table.</td>
<td>Minimum ROW (per ROW Standards and Design Guidelines Table)</td>
</tr>
<tr>
<td>For all other roadway segments</td>
<td>Existing ROW</td>
</tr>
</tbody>
</table>

Note that, in cases where the right-of-way standard is insufficient due to such conditions as irregular topography, creek and river crossings, bridges, or major intersections, additional right of way may be required if substantiated by technical justification from the Department of Public Works.

*Figure 5. Proposed Right-of-Way Definition*

**DEVELOPING THE STANDARDS AND GUIDELINES**

As indicated by the Thoroughfare Plan project goals, a Complete Streets approach was utilized in the development of the design guidelines to ensure multi-modal transportation accommodations would be considered in design. The following are key principles utilized in crafting these design guidelines:

**DESIGN FOR PEDESTRIANS**

Where it has been deemed appropriate, per the roadway classification, facilities will be designed for pedestrians, providing accessible and safe means of travel. This can be accommodated through the construction of sidewalks, shared-use paths or greenways adjacent to the street and within the corridor ROW. Size of these facilities will vary according to the facility type (shared-use path vs. sidewalk) as well as the surrounding context/land use (neighborhood residential vs. commercial corridor).

**DESIGN FOR ALL BICYCLISTS**

Bicyclists have a range of skill levels, from inexperienced or recreational bicyclists (especially children and seniors) to experienced cyclists (adults who are capable and comfortable sharing the road with motor vehicles). These groups are not always exclusive - some elite level athletes still like to ride on shared-use paths and some recreational cyclists will still use their bicycles for utilitarian travel.

**DESIGN FOR ALTERNATIVE MODES OF TRANSIT**

As Indianapolis continues to evolve, alternative modes of transit, including Bus Rapid Transit, could be introduced to the transportation infrastructure. In addition to the expansion of the bus facilities currently operated by IndyGo, these transit options provide increased mobility options. The design elements/accommodations associated with these facilities may impact existing roadway ROW corridors. Wherever local bus routes currently operate or are planned to operate per the most recent Comprehensive Operations Analysis (COA), adequate ROW should be provided to accommodate safe and accessible stops (see Appendix F).

To further refine and provide guidance to the appropriate design application and ROW needs, the ROW Standards and Design Guidelines Table were used to create cross sections to visually illustrate the desired design styles and ROW extents necessary to accommodate the associated facilities. The following cross sections demonstrate the various transportation modes to be incorporated in each of the different functional roadway classifications.

The guidelines are respectful of the functional need of a particular roadway (highway, collector, local road, etc.) but also illustrate the desire to incorporate multiple modes of travel into a given ROW. The guidelines are based on current state and national documents, including the AASHTO Guide for Development of Bicycle Facilities.
(AASHTO, 2012), the Manual for Uniform Traffic Control Devices (MUTCD, 2009), National Association of City Transportation Officials Urban Bikeway Design Guide (NACTO, 2014) and Indiana Design Manual (INDOT, 2013). The design guidelines illustrated in this section use these documents as the baseline for minimum conditions and are intended to facilitate creative solutions to a wide range of multi-modal elements and facility types.

**DEFINITIONS**

To ensure a shared understanding of the guidelines for this plan document and their implications, a list of terms and their usage have been developed. This list is intended to create uniformity in understanding the concepts illustrated in the design guidelines.

- **BICYCLIST:** A user of a bicycle with skills ranging from advanced rider to novice or recreational.

- **NEIGHBORHOOD GREENWAY:** A local/neighborhood street that is modified, by way of traffic calming, to function as a through street for people walking or riding bicycles while maintaining local access for automobiles. Neighborhood greenways may be referred to as bicycle boulevards and are intended to provide an advantage for people walking or riding bicycles while accommodating those who drive vehicles, by designing for low speed and low volume traffic conditions. They significantly improve the safety for people who walk or ride a bicycle. See Figure 6.

- **BICYCLE LANE:** A portion of the roadway that has been designated by striping, signs and pavement marking (bicycle stencil and directional arrow) for the exclusive use of people on bicycles. This facility is typically used by people who are experienced bicyclists. The bicycle lane is located adjacent to motor vehicle travel lanes and generally flows in the same direction as vehicle traffic. Shoulder bike lanes are on the shoulder striped on the far right of the travel lane.

- **BUFFER (BUFFER ZONE):** Any type of natural or constructed barrier (trees, shrubs, fences, turf) used between the curb/shoulder and adjacent facilities to minimize impacts (physical or visual) and provide a transition between adjacent land uses.

- **BUFFERED BIKE LANE:** Conventional bicycle lanes paired with a designated buffer space typically striped or installed on the pavement and separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. See Figure 7.

- **CLEAR ZONE:** The area over and beside the roadway that is free of other vertical obstructions like trees, tree branches, and utilities. The clear zone varies depending on the design speed for a given functional roadway classification (cf 2013 INDOT Design Manual, Section 49-2.0).

- **GREENWAY:** A shared-use path that is one of the officially designated trails that are part of the Indy Greenways Parks & Recreation System. See shared-use path for definition. All greenways are shared-use paths, but not all shared-use paths in the city are officially designated greenways. Per the 2014 Indy Greenways Full Circle Plan, there are both existing and proposed greenways in or adjacent to the roadway ROW.

- **MEDIAN:** A parkway strip or similar raised area in the center of a roadway that divides opposing directions of traffic. It may be paved or landscaped.

- **NON-MOTORIZED TRANSPORTATION:** Walking, bicycling, use of small-wheeled vehicles (skates, skateboards, push scooters and hand carts), or wheelchairs. This may also be referred to as active transportation.

- **ON-STREET PARKING:** The designated area along a roadway for vehicle parking. Typically 8-10’ in width and signed/marked on pavement for parking use.
• **PROTECTED BIKE LANE/CYCLE TRACK:** A designated bicycle facility separated by a vertical barrier (bollard, curb, or similar) from the adjacent motor vehicle lane. The physically separated lanes allow bicycle movement in one or both directions, and if two-directional, may require additional considerations at driveway and side-street crossings. Protected bike lanes are sometimes referred to as cycle tracks. See Figure 8.

• **RIGHT-OF-WAY:** The corridor of land held for public infrastructure purpose (roadway, railroad, utility, etc.). For the purposes of this study, it refers to the width of land necessary to accommodate the desired roadway and multi-modal facility types of a variety of functional roadway classifications.

• **SHARED-USE PATH:** Shared-use paths may be used by pedestrians, bicyclists (all experience levels), skaters, wheelchair users, joggers and other non-motorized users. Shared-use path is a term adopted by the American Association of State Highway and Transportation Officials (AASHTO) to encompass a bicycle facility that is physically separated from motorized vehicular traffic by an open space or barrier. It can also be called a path, trail, multi-use path, and greenway. The facility ranges from ten to twelve feet in width and is typically asphalt.

• **SHARROW:** A pavement marking which indicates that motor vehicles should share the travel lane with people who bicycle. A sharrow is typically used on a standard width vehicular lane.

• **SHOULDER:** A paved portion of the roadway contiguous with the travel way. This facility is also used by stopped vehicles and emergency vehicles. It is not intended to serve as a pedestrian facility and should not be treated as a bicycle lane without adequate width, markings, and signage (see “Bicycle Lane”). A commitment to keeping this portion of the roadway clear is essential. This treatment is often used on rural or suburban roads (those with the Metropolitan Area designation per this plan) or other roads without curbs.

• **SIDEWALK:** A paved strip (typically concrete) that runs parallel to vehicular traffic and is separated from the road surface by at least a curb and gutter and sometimes a grass buffer. Sidewalk widths vary, but should be no less than 4'. A width of 5’ to 6’ is desirable, and in areas of high pedestrian activity, such as in the downtown area or urban villages, they are often 10’ to 15’ or more in width.
• **TRANSIT:** The system of public transportation typically comprised of buses, Bus Rapid Transit and trains. Shelters, pull-off space, benches, boarding pads, bicycle parking, and in some cases dedicated lanes, are typical accommodations that impact ROW characteristics and needs along roadway corridors. Appendix F provides IndyGo’s current design standards for local bus stops.

• **TRAVEL LANE:** Dedicated roadway space for vehicular travel. Width depends on functional roadway classification and design speed, but typically varies from 10’ to 12’.
### FIGURE 11: ROW STANDARDS AND DESIGN GUIDELINES TABLE

<table>
<thead>
<tr>
<th>Facility and Context Area</th>
<th>Minimum ROW (FT.)</th>
<th>Maximum ROW (FT.)</th>
<th>Speed</th>
<th>Transition/Grading</th>
<th>Sidewalk</th>
<th>Transit/Bus Shelter</th>
<th>Shared-Use Path</th>
<th>Landscape Buffer</th>
<th>Protected Bike Lane</th>
<th>Buffered Bike Lane</th>
<th>Bike Lane</th>
<th>Sharrow</th>
<th>Curb &amp; Gutter/Shoulder</th>
<th>On-Street Parking/Bump-Out</th>
<th>Travel Lane</th>
<th>Travel Lane</th>
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<td><strong>SPECIAL Corridors (THOROUGHFARE)</strong></td>
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### On-Street Separated Bike Street Side

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<th>Group 2: Highway</th>
<th>Arterial</th>
<th>Collector</th>
<th>Local Streets</th>
<th>Special Corridors</th>
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<tr>
<td>Travel Lane</td>
<td>Median/Center Turn Lane</td>
<td>Travel Lane</td>
<td>Travel Lane</td>
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<td>On-Street Parking/Bump-Out</td>
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Notes:
- The values contained in this table represent target widths and may vary depending on local constraints or context.
- Through technical evaluation, the Department of Public Works may request additional ROW to accommodate left and/or right turn lanes at Collector or Arterial intersections with enough turning movements to sufficiently reduce travel lane capacity.
- DPW may also request additional ROW where irregular topography or slopes necessary for bridges require more than the typical transition area width.
- Bus stops/stations require an 8' deep (perpendicular to roadway) paved boarding area separate from any sheltered space. Where shelters are provided, a minimum of 10' of ROW is required, which can include sidewalk and/or landscape buffer area.

Options:
- Landscape Buffer or On-Street Parking with Landscape Bump-Out
ILLUSTRATIVE CROSS-SECTION: PRIMARY ARTERIAL 6 LANE

COMPACT AREA

METROPOLITAN AREA

For illustrative purposes only. Refer to ROW Standards and Design Guidelines Table (Figure 11) for complete information.
ILLUSTRATIVE CROSS-SECTION: PRIMARY ARTERIAL 4 LANE

COMPACT AREA

METROPOLITAN AREA

For illustrative purposes only. Refer to ROW Standards and Design Guidelines Table (Figure 11) for complete information.
ILLUSTRATIVE CROSS-SECTION: PRIMARY ARTERIAL 2 LANE

For illustrative purposes only. Refer to ROW Standards and Design Guidelines Table (Figure 11) for complete information.
ILLUSTRATIVE CROSS-SECTION: SECONDARY ARTERIAL 4 LANE

For illustrative purposes only. Refer to ROW Standards and Design Guidelines Table (Figure 11) for complete information.
ILLUSTRATIVE CROSS-SECTION: SECONDARY ARTERIAL 2 LANE

For illustrative purposes only. Refer to ROW Standards and Design Guidelines Table (Figure 11) for complete information.
ILLUSTRATIVE CROSS-SECTION: PRIMARY COLLECTOR 4 LANE

For illustrative purposes only. Refer to ROW Standards and Design Guidelines Table (Figure 11) for complete information.
ILLUSTRATIVE CROSS-SECTION: PRIMARY COLLECTOR 2 LANE

For illustrative purposes only. Refer to ROW Standards and Design Guidelines Table (Figure 11) for complete information.
ILLUSTRATIVE CROSS-SECTION: SECONDARY COLLECTOR 2 LANE

COMPACT AREA

METROPOLITAN AREA

For illustrative purposes only. Refer to ROW Standards and Design Guidelines Table (Figure 11) for complete information.
For illustrative purposes only. Refer to ROW Standards and Design Guidelines Table (Figure 11) for complete information.
The Thoroughfare Plan’s purpose is to maintain a diverse transportation network that provides the right balance of accessibility and mobility. Since the roadway network is largely built out, the Thoroughfare Plan’s focus is maintaining the existing network, identify key missing connections or bottlenecks for improvement, and retrofitting existing roadways to accommodate all modes. Appendix B provides maps that highlight planned expansion or new terrain roadway projects contained within this Thoroughfare Plan.

It is anticipated that, as the city and transportation systems evolve, so too will the need to change, remove, and add planned expansion and new terrain projects to this Plan. Such changes require amendment of the Plan by the Metropolitan Development Commission and the requisite public engagement process.

Note that this list only highlights projects identified for priority implementation. A complete inventory of projects is included in Appendix B maps.

### THOROUGHFARES

<table>
<thead>
<tr>
<th>ROADWAY SEGMENT</th>
<th>PROPOSED CLASSIFICATION</th>
<th>PROPOSED LANES</th>
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<tr>
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<td>CAMBY ROAD - S.R. 67 (KENTUCKY AVENUE) TO CAMBY ROAD</td>
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<td>COOPER ROAD - MICHIGAN ROAD TO W. 62ND STREET</td>
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### NON-THOROUGHFARES

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<td>PADDOCK ROAD - REYNOLDS ROAD TO MOORESVILLE ROAD</td>
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<td>SERVAAS BOULEVARD - 10TH STREET TO INDIANA AVENUE</td>
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<td>W. 62ND STREET - MICHIGAN ROAD TO COBURN STREET</td>
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## PLANNED EXPANSION PRIORITY PROJECTS

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<td>21ST STREET - EMERSON AVE TO RITTER AVE</td>
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<td>21ST STREET - POST RD TO MITTOWEEF RD</td>
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<td>21ST STREET - RITTER AVE TO ARLINGTON AVE</td>
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<td>56TH STREET - DANDY TRAIL TO I-465</td>
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<td>56TH STREET - GUION RD TO COOPER RD</td>
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<td>56TH STREET - RACEWAY RD TO BAY COLONY LN</td>
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<td>82ND STREET - SARGENT RD TO FALC CREEK RD</td>
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<td>96TH STREET - KEYSTONE AVENUE TO FALL CREEK PARKWAY</td>
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<td>BLUFF ROAD - BANTA RD TO SOUTHPORT RD</td>
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<td>BLUFF ROAD - HANNA AVE TO BANTA RD</td>
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## PLANNED EXPANSION PRIORITY PROJECTS (CONTINUED)

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<td>Lynhurst Drive - Morris St to Bradbury St</td>
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<td>Lynhurst Drive - Washington St to Morris St</td>
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<td>Mann Road - I-465 to Milhouse Rd</td>
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<td>Post Road - Rawles Ave to Brookville Rd</td>
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<td>Post Road - Raymond St to I-74</td>
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<td>Rockville Road - High School Rd to I-465</td>
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<td>Rockville Road - Raceway Rd to Country Club Rd</td>
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<td>STOP 11 ROAD - HEARTHSTONE WAY TO EMERSON AVE</td>
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<td>THOMPSON ROAD - HIGH SCHOOL RD TO WYCLIFF DR</td>
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<td>THOMPSON ROAD - TINCHER RD TO MANN RD</td>
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PLAN IMPLEMENTATION

LEGISLATIVE AUTHORITY

In Indiana, a Thoroughfare Plan is considered an optional element of a Comprehensive Plan, per Indiana Code 36-7-4-503, and is developed by a local planning department (the Department of Metropolitan Development in Indianapolis-Marion County) in consultation with other units of local government. Since the Thoroughfare Plan is an element of land use plans and associated regulations, it can be used as the basis for local private developers to implement transportation improvements when land is subdivided or developed, along with other requirements. Public agencies such as public works departments may take ownership of projects that require more extensive funding, engineering, and coordination. The Department of Metropolitan Development’s Current Planning Division implements the Plan during case review.

To the extent that multi-modal transportation elements such as bicycle, pedestrian and transit are included in the Thoroughfare Plan, transit and parks agencies may have supporting roles in the implementation of the Plan.

It should be noted that while recommendations from the Thoroughfare Plan may identify specific projects, generally a Thoroughfare Plan does not identify timelines for implementation, project owners, or funding sources, as this specificity may inhibit the Plan’s ability to provide long-term guidance; that is, such a Plan would quickly become out-of-date or irrelevant. Instead, recommendations from the Plan may be incorporated into more specific tools such as a Capital Improvements Program (overseen by the municipality’s Department of Public Works) or a Long-Range Transportation Plan (developed by the region’s metropolitan planning organization).

DETERMINING RIGHT OF WAY NEEDS

WHEN DOES INDIANAPOLIS RESERVE RIGHT OF WAY?

Indianapolis reserves right of way to maintain a diverse transportation network that provides the right balance of accessibility and mobility and in a way that reduces tax base loss. Since the roadway network is largely built out, the Thoroughfare Plan’s focus is on maintaining the existing network, identifying key missing connections or bottlenecks for improvement, and retrofitting existing roadways to accommodate all modes. Generally, ROW is only reserved when:

• A new road is planned to be constructed (new terrain)
• A road is planned for expansion by this Plan, INDOT, or a Thoroughfare Plan of an adjacent jurisdiction
• The existing Right of way is less than the minimum for that road’s classification and land use context (Minimum’s available in Figure 11)
• Through the subdivision platting process

If a parcel falls into one of these categories, the amount of ROW required can be determined using Figure 11. In cases where the right of way standard is insufficient due to such conditions as irregular topography, creek and river crossings, bridges, or major intersections, additional right of way may be required if substantiated by technical justification from the Department of Public Works. Likewise, less right of way may be required if substantiated by planning or engineering justification. Note that some roads, such as those listed on the National Register of Historic Places (including Fall Creek Parkway and Pleasant Run Parkway), or that serve frequent non-transportation purposes (including Georgia Street and Monument Circle Downtown) for example, will not fit within the parameters of the design guidelines. These instances should be addressed on case-by-case basis.

Roadways planned for expansion or new terrain projects are available as maps in Appendix B.

WHERE DO I FIND OUT IF THE CITY REQUIRES ADDITIONAL RIGHT OF WAY FOR A PLANNED PROJECT?

The city reserves right of way for new or planned expansion or if the existing right of way does not meet the minimum. Routes for planned expansion or new terrain roadways are available as maps in Appendix B. The amount of right of way is based on the road’s classification, topography, land use context, and street design. Figure 5 on page 12 provides information on proposed right of way needs for each of these project types.
In cases where the right of way standard is insufficient due to such conditions as irregular topography, creek and river crossings, bridges, or major intersections, additional right of way may be required if substantiated by technical justification by the Department of Public Works. Likewise, less right of way may be required is substantiated by planning or engineering justification.

If the right of way adjacent to your parcel falls below the minimum ROW for the land use context from the ROW Standards and Design Guidelines Table (Figure 11), the city requests commitment of the land from the property owner as part of any zoning and subdivision processes to meet the minimum. These minimums help ensure the city’s ability to build out its pedestrian and multi-modal networks.

Please be aware that other city departments may request or purchase additional right of way outside of these guidelines for projects such as greenway construction or stormwater improvements.

**Row Standards and Design Guidelines Table**

The ROW Standards and Design Guidelines Table (pX) provides information on standard right of way need based on land use and classification and provides guidelines on appropriate street design to ensure compliance with the complete street ordinance.

**What Information Can I Find in the Thoroughfare Plan and Where Is It Available?**

The Thoroughfare Plan provides information in a variety of formats. The most up to date and comprehensive information is contained in the Plan’s GIS database, which will be made available through the public planning portal (anticipated release 2017).

- Land Use context (Compact or Metropolitan)
- Functional Classification of roadways
- Planned new roadways or streets planned for expansion
- Maximum and minimum right of way requirements
- Other adopted transportation plans relevant to the roadway

A map of new roadways or expansion projects in Appendix B. Existing right of way is also available in the Thoroughfare Plan, but this is an estimation based on parcel location, not a survey-quality number and should not be relied upon for legal purposes.

All information can be provided over the phone or in person from the Department of Metropolitan Development’s Division of Planning:

Phone: (317) 327-5155
200 East Washington Street, Suite 1842
Indianapolis, Indiana 46204

**My Property Is on a Route for Planned Expansion or New Roadway. When Will This Project Be Built?**

It should be noted that while recommendations from the Thoroughfare Plan may identify specific projects, generally a Thoroughfare Plan does not identify timelines for implementation, project owners, or funding sources, as this specificity may inhibit the Plan’s ability to provide long-term guidance; that is, such a Plan would quickly become out-of-date or irrelevant. Instead, recommendations from the Plan may be incorporated into more specific tools such as a Capital Improvements Program (overseen by the municipality’s Department of Public Works) or a Long-Range Transportation Plan (developed by the region’s Indianapolis Metropolitan Planning Organization (MPO).

**Will There be Any Changes to This Plan?**

If transportation needs are identified that require expansion or new terrain, increases in project length, or removal of projects from the maps in Appendix B, the City of Indianapolis will go through a public hearing and notification process. Formal adoption of such changes, or for any reclassification of roadways, by the Metropolitan Development Commission (MDC) is required.

As other modal plans are adopted, the Thoroughfare Plan’s GIS will be updated to reflect all relevant plans associated with a roadway segment, but these updates will not alter the adopted classifications or right-of-way requirements.

**How Does a Road’s Classification Affect My Property?**

Maps illustrating the roadways that are assigned to each functional classification are provided in Appendix A. Note that these maps indicate the classifications as of the writing of this document only and are subject to change. The GIS database must be consulted for the most up-to-date version of a roadway’s functional classification. At the time of writing of this report, an online and publicly accessible map tool to view this GIS database is under development.

Roadway classification impacts on private property are related to the City’s Consolidated Zoning/Subdivision Ordinance:

- Right-of-way requirements
- Sight lines vary depending on roadway classification
- Setbacks vary depending on roadway classification
- Right-of-way widths for subdivision plats.

The classification also has impacts relating to the maintenance, financing, and design of roadway corridors, as detailed on page 8.
HOW TO USE THE DESIGN GUIDELINES

The illustrations included as part of the design guidelines are intended to be prototypical cross-sections, not a “one-size-fits-all” solution. In order to graphically illustrate a particular concept, such as a bicycle mode of travel along a Collector Street, one bicycle mode was selected and illustrated (such as a buffered bike lane), although several bicycle facility types (such as protected bike lanes or off-street paths) may also be appropriate per the ROW Standards and Design Guidelines Table (Figure 11) for a particular roadway type classification. The facility type chosen should not be viewed as the preferred mode and is not intended to be shown at the exclusion of other types/modes that have been noted as compatible with a particular roadway classification. Refer to the ROW Standards and Design Guidelines Table for other multi-modal elements that are appropriate and can be substituted for what is graphically illustrated.

The typical cross-section illustrations in these design guidelines also do not include special considerations or applications in distinct districts such as the Regional Center or along the historic George Kessler-designed parks and boulevards network, which is designated part of the National Register. Both require special consideration and review. Additional characteristics may be present in these areas that are not specifically illustrated in these prototypical cross section applications.
APPENDIX A: FUNCTIONAL CLASSIFICATION MAPS

CONTEXT AREAS

OVERALL THOROUGHFARE SYSTEM

ARTERIAL NETWORK

ARTERIAL NETWORK (CORE AREA ZOOM)

COLLECTOR NETWORK

COLLECTOR NETWORK (CORE AREA ZOOM)
APPENDIX C: COLLECTOR STREETS IN INCLUDED AND EXCLUDED CITIES OR TOWNS THAT REMAIN AS THOROUGHFARES WITH CITY OF INDIANAPOLIS RESPONSIBILITY

Inside Included and Excluded Cities or Towns, the construction and major reconstruction for all local and collector streets is the responsibility of that municipality, while construction and major reconstruction for all primary and secondary arterial streets is the responsibility of the Indianapolis Department of Public Works. However, the Indianapolis Department of Public Works also has construction and major reconstruction responsibilities for certain collector streets defined as thoroughfares as designated below. These collector streets were at one time classified as arterial streets, and while reclassified by this plan, remain as thoroughfares and the responsibility of DPW. The intent of this designation is to result in no net change in responsibilities for either DPW or any Included and Excluded City or Town.

<table>
<thead>
<tr>
<th>Street Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>16TH STREET</td>
<td>CUNNINGHAM RD. TO MAIN ST.</td>
</tr>
<tr>
<td>212T STREET</td>
<td>HIGH SCHOOL RD. TO CUNNINGHAM RD.</td>
</tr>
<tr>
<td>46TH STREET</td>
<td>SHADELAND AVE. TO CARROLL RD.</td>
</tr>
<tr>
<td>62ND STREET</td>
<td>OAKLANDON RD. TO CARROLL RD.</td>
</tr>
<tr>
<td>63RD STREET</td>
<td>LEE RD. TO VERDIN ST.</td>
</tr>
<tr>
<td>65TH STREET</td>
<td>OAKLANDON RD. TO CARROLL RD.</td>
</tr>
<tr>
<td>71ST STREET</td>
<td>FALL CREEK RD. TO LEE RD.</td>
</tr>
<tr>
<td>86TH STREET</td>
<td>OAKLANDON RD. TO CARROLL RD.</td>
</tr>
<tr>
<td>CARROLL ROAD</td>
<td>86TH ST. TO 62ND ST.</td>
</tr>
<tr>
<td>CARROLL ROAD</td>
<td>62ND ST. TO 46TH ST.</td>
</tr>
<tr>
<td>CHURCHMAN AVENUE</td>
<td>13TH AVE. TO N. 1ST AVE. (EMERSON AVE.)</td>
</tr>
<tr>
<td>CHURCHMAN BYPASS</td>
<td>ARLINGTON AVE. TO HANNA AVE.</td>
</tr>
<tr>
<td>CHURCHMAN ROAD</td>
<td>N. 1ST AVE. (EMERSON AVE.) TO CHURCHMAN BYPASS</td>
</tr>
<tr>
<td>CUNNINGHAM ROAD</td>
<td>21ST ST. TO 16TH ST.</td>
</tr>
<tr>
<td>HANNA AVENUE</td>
<td>CHURCHMAN RD. TO MUNICIPAL LIMITS</td>
</tr>
<tr>
<td>HIGH SCHOOL ROAD</td>
<td>30TH ST. TO CRAWFORDSVILLE RD.</td>
</tr>
<tr>
<td>LEE ROAD</td>
<td>71ST ST. TO 56TH ST.</td>
</tr>
<tr>
<td>MAIN STREET (SPEEDWAY)</td>
<td>10TH ST. TO 16TH ST.</td>
</tr>
<tr>
<td>OAKLANDON ROAD</td>
<td>86TH ST. TO PENDLETON PIKE</td>
</tr>
<tr>
<td>POLCO STREET</td>
<td>10TH ST. TO 16TH ST.</td>
</tr>
<tr>
<td>POST ROAD</td>
<td>59TH ST. TO 56TH ST.</td>
</tr>
<tr>
<td>SUNNYSIDE ROAD</td>
<td>79ST ST. TO OAKLANDON RD.</td>
</tr>
</tbody>
</table>
APPENDIX D: ONE-WAY STREET STUDY

SCOPE

Although candidates have not yet been formally identified, there is considerable interest in converting a number of one-way streets to two-way, particularly in the Downtown area. Such conversions are expected to make network segments more supportive of multimodal traffic, lower crashes, improve economic activity, and calm traffic speeds. Because the one-way system was intended to serve access to and from the interstate system, the Indianapolis MPO will be included in these planning studies to ensure regional and air quality implications are addressed. Because the one-way street system has been in place for a number of years, and has accordingly resulted in adaptations to street signalization and local land use patterns, implementation of such projects should proceed in a deliberative fashion. The following steps are suggested as typical scope items for studying the conversion of one-way streets:

1. Confer with DPW to establish the study area, study corridors, study intersections, peak hours, and alternatives to be analyzed. Study intersections should be identified based on engineering judgment of area of potential impacts and selection of key intersections within that area. Study of signalized and/or major intersections along the corridor to be converted ("Subject Corridor") are a must. Signalized or major intersections on parallel or cross streets to the Subject Corridor should also be considered for traffic analysis, especially at locations that are likely to receive diverted traffic.

2. Confer with DPW to establish a public engagement plan. The plan should identify specific people and organizations that, at a minimum, include the Department of Metropolitan Development Division of Planning, the engineering, operations, and greenway planning Divisions of the Department of Public Works, the Department of Public Safety, and the Indianapolis Public Transportation Corporation (IndyGo), and transportation-related citizen advocacy organizations with paid staff, that need to be consulted through the course of study, how they should be consulted, and how often. At a minimum, the identified stakeholders should be invited to participate at three stages in the process: to gather information, to vet findings, and to share final recommendations. At the “gather information” stage, it will be helpful to listen to the stakeholders and identify what their project goals and objectives are. By fully understanding what they are trying to achieve and what their concerns are, the engineer can better evaluate the alternatives and select the recommendation that best meets those objectives. The public engagement plan should define this and other outreach activities fully.

3. Conduct AM and PM turning movement counts at all study intersections during AM and PM peak hours.

4. Request signal timing/phasing information and crash data from DPW for all study intersections and study corridors. Signal timing and phasing data will be used to calculate the level of service (LOS), which are represented by an A-F letter grade, and also identify costs for modifying signals to accommodate a potential conversion. Crash data should be analyzed to identify possible impacts to safety that could result from each alternative (i.e. more conflicts for pedestrians crossing or more potential for right-angle crashes).

5. Inventory street and intersection configurations and conduct a parking inventory along the study corridors. For parking inventory, identify existing parking restrictions and (estimated if unmarked) number of spaces. Identify the existing subject corridor cross section: number of lanes, width of lanes, width of pavement, and width of ROW.

6. Identify and assess existing multi-modal elements within the right-of-way and the potential impact of a one-way to two-way conversion on these facilities. Local bus routing and stops, pedestrian crossings, and bicycle facilities may all be affected by such a conversion.

7. Determine AM and PM Peak hour traffic volumes that could be expected for a number of feasible alternatives (alternatives should be determined in conjunction with DPW and in consideration of the Thoroughfare Plan per step 1 above). Possible scenarios may include (but should not be limited to):

   a. Current Configuration

   b. Alternate Configuration A: Subject corridor is converted to two-way operation within existing ROW. All parallel streets remain in existing configuration. Consider whether on-street parking will/will not be maintained.

   c. Alternate Configuration B: Subject corridor is converted to two-way operation within existing ROW. One or more parallel streets are also converted in some manner in order to accommodate traffic diversions. Consider whether on-street parking will/will not be maintained.
d. Alternate Configuration C: Subject corridor is converted to two-way operation—with modifications to right-of-way in order to accommodate turn lanes or other features. One or more parallel streets may be converted in order to accommodate traffic diversions. Consider whether on-street parking will/will not be maintained.

e. Other as determined through consultation with DPW

8. Prepare AM and PM Synchro networks of the entire identified network (all study corridors and intersections) for each of alternatives identified above (Current Configuration and Alternate Configurations). Identify AM and PM peak hour Levels of Service (LOS), impacts to traffic operations, and recommended mitigation to achieve LOS D or better in the peak hours of each alternative. Identify any possible safety implications associated with each alternative.

9. Estimate construction costs for each alternative, taking into consideration signal modifications, signage, pavement markings, pavement resurfacing, and other corridor-specific needs.

10. Prepare draft summary report describing assumptions, analysis, and findings. Provide LOS results, diagrams of recommended mitigation as necessary, and overall positive and negative impacts related to each alternate. Transportation impacts, including those to parking, transit access/service, pedestrian and traffic safety, traffic operations, and other factors should be discussed and quantified (where applicable). The economic development or ‘livability’ impacts to the neighborhood might also be discussed, using citations or relevant examples. A draft report should be provided to DPW for review and comment.

11. Final recommendation for conversion (or no build) should be identified in consideration of stakeholder input and through consultation with DPW. There is often not a definitive answer as to which alternative is best and there will be both positive and negative impacts associated with every one of the alternatives. A decision will need to be made about which alternative comes closest to meeting the goals of the stakeholders and DPW and then how to best mitigate the possible negative impacts of that alternative.

12. A final summary report should be submitted that summarizes the data, methodology, findings, and conclusions, and incorporates and addresses comments from DPW and project stakeholders.

13. If conversion of one-way to two-way operation is selected as the recommended alternative, DPW would be responsible for developing design plans for the conversion, overseeing a contractor in construction of the necessary modifications, and phasing (if necessary) of its implementation, including temporary signage and maintenance of traffic.
APPENDIX E: SAMPLE INTERCHANGE JUSTIFICATION SCOPE

The products of this section are as follows:
- Draft Interchange Justification Report that complies with INDOT and FHWA guidelines.
- Final Interchange Justification Report that complies with INDOT and FHWA guidelines.

COORDINATION

These activities will be coordinated through INDOT’s project manager with input from the affected INDOT district, local agencies, and officials.

ACTIVITY

The FHWA approval for revisions in interstate access has the following requirements, each of which will be addressed in final Interchange Justification Study Report:

Existing Facilities - demonstrate that the existing interchanges and/or local roads cannot provide the necessary access nor be improved to satisfactorily accommodate design-year traffic.

Transportation System Management (TSM) – demonstrate that all reasonable alternatives for design options, locations, and TSM (including ramp metering, mass transit, and high-occupancy vehicle (HOV) facilities) have been assessed and provided for if justified.

Operational Analysis – show that the access point does not have a significant adverse impact on the safety and operation of the interstate facility based on current and future traffic.

Access Connections and Design – show that the access connects to a public road only and will provide for all traffic movements. The proposed access will be designed to meet or exceed current standards for Federal-aid projects on the interstate.

Transportation Land Use Plans – the proposal considers and is consistent with local and regional land use and transportation plans.

Comprehensive Interstate Study – demonstrate that the plan addresses coordination within context of long-term plan interstate improvement plans.

Coordination with Transportation System Improvements – request generated by new or expanded development demonstrates appropriate coordination between development and related or required transportation system improvements.

Status and information on National Environmental Policy Act (NEPA) process – request contains information relative to the planning requirements and the status of the environmental processing of the proposal.

The consultant will address these requirements in the draft report to be submitted to Federal Highway Administration (FHWA) and INDOT through the completion of the following specific tasks:
- Confirm the study intersections and interchanges together with INDOT and FHWA.
- Collect turn lane lengths, lane configurations, speed limits, and existing signal timing information for all study intersections and interchanges.
- Determine AM and PM peak hour Levels of Service (LOS) at each location using Highway Capacity Manual (HCM) methodology. Include the appropriate volume of heavy vehicles in all analyses. In addition to signalized intersections, conduct capacity analysis for weaving sections, freeway merge and diverge areas, ramps, unsignalized intersections, and crossroad arterials within the study area.
- Determine future year volumes using an INDOT-approved method and growth rate for 1) the build year and 2) build year + 20 years. Adjust volumes where necessary to balance.
- Conduct future year capacity analyses of each study intersection and interchange in the AM and PM peak hours using HCM methodology. In addition, conduct capacity analysis for weaving sections, freeway merge and diverge areas, ramps, unsignalized intersections, and crossroad arterials in each of the two future scenarios.
- Provide recommendations for mitigation at any locations that are found to operate below LOS D.
- Prepare figures to demonstrate the existing conditions, future conditions, and findings.
- Prepare a report summarizing the methodology and assumptions used along with a detailed description of the analysis results.

A draft report will be submitted for review and comment by INDOT and FHWA. Once comments are received by the reviewing agencies these comments will be addressed and submitted in a Final Interchange Justification Report for approval.
DATE: February 18, 2013

TO: Annette Darrow (IndyGo)

FROM: Ericka Miller (PB)

Cc: Jennifer Pyrz (PB)

RE: Updated IndyGo Specifications

The following memo summarizes IndyGo’s specifications for the placement and design of bus stops and bus turnouts, and the design/layout of shelters, benches and bike racks that may be installed at these locations. The information summarized within this document primarily references criteria summarized in the Indiana Department of Transportation (INDOT) 2013 Design Manual and the 2010 ADA Standards for Accessible Design. A review of best-practices was also conducted and used to guide the specifications herein. This information may be helpful to engineering consultants incorporating IndyGo bus stops in design.

The following accessibility criteria apply to the construction of a bus stop in general:

1. Boarding Area. A new boarding area constructed to be used in conjunction with a lift or ramp should be in accordance with the following:
   a. A firm, stable surface must be provided (IndyGo prefers concrete, at least 4” deep).
   b. It must have a minimum clear length of 8’ measured perpendicular to the curb, and a minimum clear width of 5’ measured parallel to the roadway.
   c. It must be connected to the street, sidewalk, or pedestrian path by at least one accessible route.
   d. The slope of pad parallel to the roadway must be the same as that of the roadway to the maximum extent practical.
   e. For drainage purposes, a maximum cross slope of 2% perpendicular to the roadway is allowable.
   f. No obstructions may be placed within this 5’ x 8’ boarding area, but a sidewalk may run through the boarding area.
   g. A curb-height between 6” and 9” is necessary at the boarding area for safe deployment and boarding of the wheelchair ramps. If no curbs are present, a platform should be constructed for the boarding area to provide proper boarding access. In these cases, drainage must be considered and accommodated, and the platform must be designed so as not to create a hazard to vehicles or pedestrians within the right-of-way.

1 Chapter 51, Special Design Elements
2 http://www.ada.gov/regs2010/2010ADASTandards/2010ADASTandards.htm#c4
2. **Signage.** All IndyGo stops should be designated with appropriate IndyGo signage. It is IndyGo’s preference that bus stop signage faces oncoming traffic and is located on the far-side of the boarding area to increase visibility for waiting passengers. IndyGo signs are typically installed approximately 3’ behind the curb, if possible.

3. **Sidewalk.** The minimum width of the sidewalk along an accessible route should be 3 ft, per ADA standards; the accessible route should be clear of obstructions. The cross slope of sidewalk along an accessible route should not exceed 2%. If the longitudinal gradient exceeds 5%, the sidewalk must be constructed in accordance with the accessibility criteria for a ramp (see Section 51-1.07 of the INDOT 2013 Design Manual). Each curb ramp along an accessible route should be ADA-compliant. Where conditions allow, the City of Indianapolis prefers Type A curb ramps.

### Bus Stop

If local bus routes are located on an urban or suburban highway, the designer should consider their impact on normal traffic operations. The stop-and-go pattern of local buses will disrupt traffic flow, but certain measures can minimize this disruption. The location of a bus stop is particularly important. It is determined not only by convenience to patrons but also by the design and operational characteristics of the highway and the roadside environment. Common bus-stop locations are shown in Figure 1, On-Street Bus Stops.

Figure 1 also provides the recommended distance for the prohibition of on-street parking near a bus stop. Where articulated buses are expected to use a stop, an additional 20 ft should be added to this distance. An additional 50 ft of length should be provided for each additional bus expected to stop simultaneously at any given bus-stop area. This allows for the length of the extra bus (40 ft) plus 6 ft between buses.

Some considerations in selecting an appropriate bus-stop location are as follows.

1. **Far-Side Stop.** The far side of an at-grade intersection is superior to a near-side or mid-block bus stop. A far-side stop produces fewer impediments to through and right-turning traffic, it does not interfere as much with intersection sight distance, and it lends itself better to a bus turnout. IndyGo prefers far-side stops in most situations.

2. **Mid-Block Stop.** A mid-block bus stop may be advantageous where the distance between intersections is large or where there is a fairly heavy and continuous transit demand throughout the block. It may be desirable if there is a high bus-stop demand located at mid-block. A mid-block bus stop may also be considered if right turns at an intersection are frequent (250 in peak hour) and a far-side stop is not practical.

3. **Near-Side Stop.** A near-side stop allows easier vehicle re-entry into the traffic stream where curb parking is allowed. At an intersection where there is a high volume of right-turning vehicles, a near-side stop can result in traffic conflicts and should be avoided. However, a near-side stop should be used where the bus will make a right turn at the intersection.

### Bus Turnout

Interference between buses and other traffic can be reduced significantly by providing a bus turnout. A turnout helps remove stopped buses from the through lanes and provide a well-defined user area for a bus stop. A turnout should be considered under the following conditions:
Over a Century of Engineering Excellence

Memorandum

1. The street provides arterial service with high traffic speeds and volumes and high-volume bus patronage.
2. Right-of-way width is sufficient to prevent adverse impact on sidewalk pedestrian movements.
3. Curb parking is permitted but is prohibited during peak hours.
4. There are at least 500 vehicles per hour in the curb lane during peak-hour traffic.
5. There are at least 100 buses per day and at least 10 to 15 buses during the peak hour.
6. The average bus dwell time exceeds 10 seconds per stop.
7. At a location where specially-equipped buses are used to load and unload handicapped individuals.

The following design criteria apply to bus turnouts:

1. The desirable width is 12 ft, and the minimum width is 10 ft.
2. The full-width area of the turnout should be at least 50 ft long. Where articulated buses are expected, the turnout should be 70 ft. For a two-bus turnout, add 50 ft.
3. Figure 2 illustrates the design details for a bus turnout. In the transition areas, an entering taper not sharper than 5:1 and an exit taper not sharper than 3:1 should be provided. As an alternative, a horizontal curve of 100 ft radius may be used on the entry end and a horizontal curve of 50 ft to 100 ft radius may be used on the exit end. When a turnout is located at a far-side or near-side location, the cross-street area can be assumed to fulfill the need for the entry or exit area, whichever applies.

Shelters

Where a new or replacement bus shelter is provided, it must be installed or positioned to permit a wheelchair user to enter from the public way and reach a location within the shelter having a minimum clear floor area of 2.5 ft by 4 ft. An accessible route shall be provided from the shelter to the boarding area.

IndyGo currently uses three-sided shelters; manufacturer may vary. A trash can is often included, at IndyGo’s discretion, and a map panel should be installed on the upstream side of the shelter to provide schedule and route information. Additionally, in placing the shelter, the following IndyGo guidelines should be followed:

- The shelter must be installed on a concrete shelter pad, at least 6” deep.
- Horizontal obstructions must be a minimum of 2’ from the edge of the street.
- For a 5’ x 10’ shelter, a 7’ x 12’ concrete pad should be provided.
- For a 5’ x 15’ shelter, a 7’ x 17’ concrete pad should be provided.
- For a 5’ x 16’ shelter, a 7’ x 18’ concrete pad should be provided.
- For forward-facing shelters (opening towards the street), the shelter must be installed at least 3’ back from the curb to allow an accessible walkway (the City of Indianapolis prefers 6’-wide sidewalks where possible).
- For backward-facing shelters (opening away from the street), there must be a minimum 2’-wide clearance between the shelter and the roadway edge.
- See Figure 3, Minimum Standards for Shelter Installation and Figure 4, Shelter Pad Details
Memorandum

Benches

Where a new or replacement bench is provided, an accessible route shall be provided from the bench to the boarding area. Additionally, in placing the bench, the following IndyGo guidelines should be followed:

- The bench must be installed on concrete sidewalk or a concrete pad, at least 4" deep.
- IndyGo uses a variety of benches. Typically a concrete area of 3’ x 9’ is adequate for installation (with the 9’-length parallel to the curb).
- The bench should be installed facing the street.
- The bench should be installed at the back of the sidewalk (furthest from the curb), for the sake of safety.
- The bench must be installed at least 3’ back from the curb to allow an accessible walkway (the City of Indianapolis prefers 6’-wide sidewalks where possible).
- See Figure 5, Minimum Standards for Bench Installation

Bike Racks

Where a new or replacement bike rack is provided, an accessible route shall be provided around the bike rack. Additionally, in placing the bike rack, the following IndyGo guidelines should be followed:

- The bike rack must be installed on concrete sidewalk or a concrete pad, at least 4” deep.
- IndyGo may use a variety of bike racks. Typically a concrete area of 4’ x 6’ is adequate for the installation of one rack (this area allows for the rack itself and the space occupied by two parked bikes). Bike racks should be separated by at least 4’
- The position of the bike rack shall be determined by the space available at the installation-location. Although IndyGo prefers for bike racks to be installed perpendicular to the curb/roadway (length-wise) where space allows, it is often the case that there will be more room for a bike rack to be installed parallel to the curb/roadway (length-wise).
- If the accessible route (3’-wide minimum) is provided behind the bike rack (with the bike rack between the accessible route and the curb/roadway), there must be a minimum 2’-wide clearance between the bike rack and the curb/roadway.
- If there is a shelter or bench at the bus stop, the bike rack shall not be installed in between the shelter/bench and the boarding area.
- See Figure 6, Minimum Standards for Bike Rack Installation
AN ELEMENT OF THE COMPREHENSIVE PLAN FOR INDIANAPOLIS AND MARION COUNTY

FAR-SIDE BUS STOP

MID-BLOCK BUS STOP

NEAR-SIDE BUS STOP

ON-STREET BUS STOPS

Figure 1
NEAR-SIDE CORNER LOCATION

FAR-SIDE CORNER LOCATION

MID-BLOCK LOCATION

BUS TURNOUT DESIGNS

Figure 2
FIGURE 3. MINIMUM STANDARDS FOR SHELTER INSTALLATION

MINIMUM CLEAR FLOOR AREA (2'-6" WIDE BY 4' DEEP) ENTIRELY WITHIN PERIMETER OF SHELTER TO PERMIT WHEELCHAIR OR MOBILITY AID USER ACCESS.

NOTE: BUS STOP PAD MUST BE CLEAR OF UTILITY POLES, FIRE HYDRANTS, STREET FURNITURE OR SIMILAR OBSTACLES.

NOTE: SHELTER CAN BE PLACED BEHIND OR BESIDE THE 5'X8' BOARDING AREA, OR ANYWHERE SUCH THAT PEDESTRIAN ACCESS IS MAINTAINED BETWEEN THE SHELTER AND THE PAD.
**CONCRETE SHELTER PAD**

**PLAN VIEW**

<table>
<thead>
<tr>
<th>SHELTER LENGTH</th>
<th>10'</th>
<th>15'</th>
<th>16'</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAD LENGTH</td>
<td>12'</td>
<td>17'</td>
<td>18'</td>
</tr>
</tbody>
</table>

NOTE: IndyGo RESERVES THE RIGHT TO CHANGE THE SHELTER TYPE TO BE INSTALLED AT ANY LOCATION PRIOR TO CONTRACTOR PICKING UP SHELTER FROM IndyGo.

**LEGEND**

A. EXISTING CONCRETE SIDEWALK

B. PLAIN CONCRETE, 4000 PSI COMP. STRENGTH, 6 INCH, PLACED ON COMPACTED SUBGRADE

C. EXISTING EARTH, REGRADE AS NEEDED, SLOPE NOT TO EXCEED 3:1, APPLY MULCH SEEDING, CLASS R PER SECTION 621.

---

IndyGo

STOP IMPROVEMENTS
FEBRUARY 2013

FIGURE 4
SHELTER PAD DETAILS

NOT TO SCALE

PARSONS BRINCKERHOFF
BENCH INSTALLATION
PLAN VIEW

*If bench pad is immediately adjacent to boarding area, back of concrete pad should be extended to align with back of boarding area.

IndyGo
STOP IMPROVEMENTS
FEBRUARY 2013

FIGURE 5
MINIMUM STANDARDS
FOR BENCH INSTALLATION

PARSONS BRINCKERHOFF

AN ELEMENT OF THE COMPREHENSIVE PLAN FOR INDIANAPOLIS AND MARION COUNTY
- Bike rack parallel to curb/roadway
- Accessible route between curb/roadway & bike rack

- Bike rack parallel to curb/roadway
- Accessible route behind bike rack
- Min. 2'-wide clearance between curb/roadway & bike rack

- Bike rack perpendicular to curb/roadway
- Accessible route between curb/roadway & bike rack

IndyGo
STOP IMPROVEMENTS
FEBRUARY 2013

FIGURE 6
MINIMUM STANDARDS
FOR BIKE RACK INSTALLATION

PARSONS BRINKERHOFF
LEGEND

T = Curb embedment 12" min.
* = Curb face exposure height

1/4" min, 1/4" max, 10' c to c

INDIANA DEPARTMENT OF TRANSPORTATION
CONCRETE AND ASPHALT CURBS AND SAWS JOINTS
SEPTEMBER 2008
STANDARD DRAWING NO. E 605-CCSJ-01

/s/ Richard L. VanClaves 09/02/08
DESIGN STANDARDS ENGINEER
DATE

/s/ Mark A. Miller 09/02/08
CHIEF HIGHWAY ENGINEER
DATE
APPENDIX G: REVIEW OF NATIONAL BEST PRACTICES ON THOROUGHFARE PLANNING

As part of the 2015 Thoroughfare Plan update process, national “best practices” for thoroughfare planning were reviewed. An emphasis was put on plans that had the same multi-modal emphasis as the desired Indianapolis Plan.

COLLEGE STATION, TEXAS

The City of College Station, Texas was chosen as a best practice case study because it has a comprehensive transportation plan that includes several interactive, web-based Thoroughfare Plan maps. The City’s Transportation Plan is included in the Comprehensive Plan, which includes the locations of existing and proposed roads in the city and its “extraterritorial jurisdiction.” Provided on the City’s website are the:

- Functional Classification Map - identifies necessary ROW, width, number of lanes, and designed speed for streets;
- Context Class Map - identifies the context within which each segment of major arterial, minor arterial, collector, and minor collector corridors exists; and the
- Thoroughfare Types Map - identifies the appropriate thoroughfare type for each of the functional classification.

GEORGETOWN, TEXAS

The City of Georgetown, Texas provides a practical application of interactive Thoroughfare Plan maps and GIS data. Georgetown was chosen as a case study because the interactive maps on the City’s website are easy to use and contain both proposed and current Thoroughfare Plan information. The interactive “Future Land Use/Official Thoroughfare Plan” map displays land use information and roadway classifications on one map. This makes viewing land uses adjacent to roadway functional classifications easy to interpret, especially for developers.

ARLINGTON, TEXAS

Arlington created a thoroughfare plan that was based largely on guidance contained in the “Designing Walkable Urban Thoroughfares: A Context Sensitive Approach” report. This document was developed by the Institute of Transportation Engineers and Congress for the New Urbanism. Arlington developed a new classification system for their roadways network, keeping titles such as expressway, arterial, and collector, but adding context zones to describe the area in which each type of roadway is situated. The context zones are identified as Urban, Suburban, and Rural. These zones enable the City to further distinguish between the needs of each type of road within these specific contexts and provide them with an opportunity to account for changes in a roadway as it travels through the city.

The Arlington Plan document also includes a prioritization matrix to assist in determination of which elements of the street are more useful in given contexts.

ATLANTA, GEORGIA

The Thoroughfare Plan for Atlanta, Georgia adopted a classification system of urban, suburban, and rural types with twelve different classifications created under them. The Plan’s main purpose was as a federal funding document.