



# ADA Transition Plan

Strategy for bus stop accessibility improvements

Updated May 2021



# Table of Contents

<b>Definitions Section</b>	
<b>Executive Summary</b>	<b>Pg. 1</b>
<b>Introduction</b>	<b>Pg. 2</b>
The purpose of this report	
About IndyGo	
Marion County Transit Plan and Referendum	
IndyGo’s challenge of accessible bus stops	
<b>Bus Stop ADA Requirements/Regulations</b>	<b>Pg. 4</b>
<b>ADA Inventory and Categorization of Bus Stops</b>	<b>Pg. 6</b>
ADA Bus Stop Inventory	
ADA Access Scoring	
ADA Access Scoring Results	
<b>Bus Stop Improvements–Examples &amp; Process</b>	<b>Pg. 12</b>
Four Strategies: How IndyGo Improves Bus Stops	
Lessons Learned & Targeted Area Improvements	
Bus stop improvement planning/design process in action	
<b>Targeted area improvements–Strategy and process</b>	<b>Pg. 18</b>
How to implement targeted area improvements/prioritization	
Process of prioritization	
Data selection and data prep	
Data weighting	

<b>Application of Targeted Area Improvements</b>	<b>Pg. 30</b>
Application of the prioritization data/Prioritization in action	
<b>Tracking bus stop improvements &amp; ADA changes</b>	<b>Pg. 32</b>
<b>ADA Improvement Projections</b>	<b>Pg. 33</b>
<b>Challenges to Achieving 100% ADA Compliance</b>	<b>Pg. 34</b>
Right-of-way constraints	
Bus stops on private property	
On-street parking	
Downtown bus stops	
<b>Conclusion</b>	<b>Pg. 36</b>
<b>Appendices</b>	<b>Pg. 38</b>
Table: ADA Access Scoring Results by Census Tract	
Examples of Bus Stop Improvements & ADA Improvements	

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Title VI & ADA: <https://www.indygo.net/about-indygo/title-vi-and-ada/>

# Definitions Section

**Americans with Disabilities Act (ADA)** - The Americans with Disabilities Act of 1990 (ADA) is a civil rights law that prohibits discrimination based on a disability and provides protections to disabled persons. The ADA requires, among other things, minimum levels of accessibility in the built environment for persons with a disability.

**ADA Access Score** - After the 2019 ADA Inventory, IndyGo bus stops were assigned a score between 0 and 5 that documented and identified their level of accessibility and ADA compliance level. Bus stops with score of 0 have the least accessibility and bus stops with a score of 5 are considered ADA compliant.

**ADA Inventory** - In 2019, IndyGo surveyed all bus stops in the bus network to document their level of compliance with the Americans with Disabilities Act. Bus stops were assigned ADA Access Scores to identify their current level of compliance and accessibility.

**ADA Prioritization Score** - IndyGo bus stops were studied on a spectrum of data as part of this report, and Census Tracts were assigned an ADA Prioritization Score that identifies which Census Tracts are of higher priority to be improved and brought into ADA compliance.

**Alighting** - An alighting is the end of a bus journey or trip, when a passenger exits the vehicle.

**Bench Pad** - A bench pad is additional concrete built at a bus stop for placing seating. Bench pads range in size from 9 feet x 3 feet to 3 feet x 3 feet, depending on the type of seat installed, and are connected to a sidewalk or multi-use path.

**Blue Line** - The Blue Line is a future Bus Rapid Transit (BRT) route that will run east-west through Indianapolis along Washington St, terminating at Indianapolis International Airport to the west and the Town of Cumberland to the east.

**Boarding** - A boarding is the beginning of a bus journey or trip when a passenger enters the vehicle.

**Boarding Pad** - A boarding pad is a concrete platform built at a bus stop for passengers to wait, board, and alight from a bus. ADA requires the platform to be 5 feet wide by 8 feet deep to accommodate passengers with mobility devices and bus ramp deployments.

**Bus Rapid Transit (BRT)** - Bus Rapid Transit (BRT) is a bus-based public transport system designed to improve capacity and reliability compared to conventional bus systems. BRT systems typically include dedicated roadways or lanes for buses, traffic signal priority for buses, off-board fare collection, platform-level boarding at dedicated stations, and larger capacity buses.

## Definitions, continued

**Capital Improvement Projects (CIP)** - Capital projects improve or maintain infrastructure; and include the construction, expansion, or replacement of a physical building or piece of infrastructure. State laws require minimum reporting and planning for capital projects above a specified financial value.

**Corridor** - A corridor is a larger roadway segment served by transit.

**Curb Level** - Typically, sidewalks are constructed at an elevation of 6-9" above street level to accommodate drainage inlets and pedestrian safety considerations. Some multi-use pathways are constructed at street-level.

**Curb Ramp** - A curb ramp is a gradually sloped connection from sidewalk height down to the street grade, allowing for accessible crossing of streets and driveways.

**Demographic Data** - Demographic data are used to describe a community or the population of a geography, such as the average age of residents in a geography or the average size of a household.

**Department of Public Works (DPW)** - The City of Indianapolis Department of Public Works (DPW) is the organizational entity primarily responsible for maintenance and improvements of roadway and pedestrian infrastructure in Marion County, and is a partner of IndyGo.

**Excluded Cities** - Excluded Cities are municipalities located within Marion County but not within the jurisdiction of the City of Indianapolis. The governments of Marion County and the City of Indianapolis were consolidated in 1970 by Indiana state law, also known as Unigov; the excluded cities are Beech Grove, Southport, Lawrence, & Speedway.

**ESRI Community Analyst** - ESRI Community Analyst is proprietary software of ESRI that consolidates geographic data and analysis tools.

**Fixed-Route Transit** - Fixed-route transit uses vehicles to operate on a predetermined route according to a fixed schedule or timetable, with designated bus stops where riders can access the service.

**Geographic Information Systems (GIS)** - A Geographic Information System (GIS) is a framework for gathering, managing, and analyzing data. GIS helps to better communicate data with visualizations and maps of data or information.

**Indiana Department of Transportation (INDOT)** - The Indiana Department of Transportation is the state-level entity responsible for oversight of transportation and transit in the State of Indiana.

**Kneel** - When a fixed-route bus physically lowers the front of the bus, while stopped, for easier access to passengers boarding and alighting the bus.

## Definitions, continued

**Marion County Transit Plan (MCTP)** - The 2016 Marion County Transit Plan (MCTP) is the guiding document for IndyGo's strategic vision for mass transit in Indianapolis and was approved by voters through a ballot referendum.

**Operational Data** - Operational data are related directly to the operation and function of transit service, such as ridership, on-time performance, and average operating speeds.

**Paratransit** - Paratransit is service intended to supplement fixed-route service by providing individualized curb-to-curb service with smaller vehicles. IndyGo's paratransit service, branded as "Open Door", is designed to provide transit accessibility to riders with unique mobility needs.

**Purple Line** - The Purple Line is a future Bus Rapid Transit (BRT) route that will connect the Julia M. Carson Downtown Transit Center (CTC) to Ivy Tech's Lawrence Campus via East 38th Street & Post Road.

**Red Line** - The Red Line is an existing Bus Rapid Transit (BRT) route, running north & south, that connects Broad Ripple to Greenwood via College Avenue, Meridian Street, Capitol Avenue, Virginia Avenue, Shelby Street, & Madison Avenue.

**Ridership** - The number of riders utilizing public transit. Ridership on a bus route or at a bus stop is often measured by the average number of boardings and alightings per bus stop or bus route.

**Right-of-Way** - City right-of-way (ROW) is land legally protected and delineated for public use. Public infrastructure such as roads, sidewalks, and operating space for public transit fall within city right-of-way.

**Shelter Pad** - A shelter pad is additional concrete built at a bus stop for placing a shelter. Shelter pads are 12' wide by 7' deep and connected to a sidewalk or multi-use path.

**Street Level** - The space adjacent to the street that is the same elevation of the street (typically where drainage features and sidewalks are not present).

**Utility Strip** - The physical buffer between the curb and sidewalk that is typically comprised of grass, or gravel, where utility poles and other signage is often located. Utility strips can range in size from non-existent to >15' in width, but are most commonly 2-5' in width.

# Executive Summary

IndyGo, the public transit provider for Indianapolis, Marion County, operates fixed-route service at approximately 2,900 bus stops across Marion County. During the mid-to-late 20th century, the state and city frequently focused their limited funds towards roads and bridges instead of pedestrian infrastructure, resulting in what is now varying levels of accessibility at these bus stops. With direction from the Indiana Department of Transportation (INDOT), IndyGo has worked over the last two years to identify the current level of accessibility at each individual bus stop and also determine the overall rate of compliance with the Americans with Disabilities Act (ADA) requirements for fixed-route bus stops. Currently, 21.7% of IndyGo's bus stops are ADA compliant, which includes all local bus stops, bus rapid transit stations, and Julia M. Carson Downtown Transit Center bus bays. This compliance rate has increased 5% within the last year due to bus stop improvement projects and IndyGo's bus stop balancing efforts.

This document outlines the challenges faced by IndyGo and the City of Indianapolis Department of Public Works (DPW) to bring bus stops into ADA compliance. It also identifies the strategies that will be utilized by IndyGo to bring existing bus stops into ADA compliance, in partnership with DPW and other agency partners. These four strategies include large scale capital projects, coordinated bus stop improvements as part of capital improvement projects (CIP), individual bus stop improvements, and targeted area bus stop improvements.

Outlined in this document is the methodology that was created by IndyGo staff to rank areas within Marion County based on highest to lowest need for ADA bus stop improvements, calculated using operational and demographic data. The map showing priority areas will serve as the guide for IndyGo staff during decision making processes for future bus stop improvement areas.

IndyGo has also identified ways to track any bus stops that are improved to become ADA compliant, including a dashboard that IndyGo staff will utilize. This will help ensure that IndyGo will always have an accurate overall bus stop ADA compliance rate, which will help IndyGo to track progress towards the timeline and goals identified in this document.

Assuming that the current level of annual capital funding remains constant for these bus stop improvement projects, IndyGo expects that approximately 85% of fixed-route bus stops can be brought into ADA compliance within 15 years. This percentage accounts for IndyGo's initial estimate of approximately 15% of existing bus stops which may not have a path to full ADA compliance due to right-of-way constraints (which is a challenge that is outside of IndyGo's control). As partners in this challenge of providing accessible bus stops, IndyGo and DPW are committed to this goal of increasing access to fixed-route bus stops to ensure that accessibility is not a barrier to any person who desires to utilize public transportation in Marion County.



# Introduction

## The purpose of this report

The purpose of this report is to identify an equitable and measurable process to improve accessibility at IndyGo bus stops, with an end-goal of making IndyGo's bus network accessible to all users by bringing bus stops into ADA compliance. This report also provides the Indiana Department of Transportation (INDOT) with an accurate assessment of IndyGo's current rate of ADA compliance for fixed-route bus stops, along with a methodology and framework for how IndyGo – in close coordination with the City of Indianapolis – plans to bring bus stops into ADA compliance over the next 15 to 20 years. This will be accomplished through both IndyGo directed bus stop improvements and City of Indianapolis Department of Public Works (DPW) directed bus stop improvements, by way of larger roadway capital improvement projects. This plan will guide IndyGo's decision-making for how existing bus stops will be prioritized for ADA accessibility improvements.

## About IndyGo

The Indianapolis Public Transportation Corporation (IndyGo) is the largest public transportation provider in the state of Indiana and provides fixed route bus service and paratransit service for Marion County, Indiana. IndyGo provides bus service at 2,908 fixed route bus stops along 31 local bus routes, plus Rapid bus service along the Red Line bus rapid transit (BRT) corridor. The agency provides nearly 10 million passenger trips per year. IndyGo is a municipal corporation of the City of Indianapolis - Marion County, operating under a seven-member Board of Directors. The Board of Directors approves IndyGo policies relating to operations, contracted services, safety, finance, and overall corporate structure. The Mayor of Indianapolis and the City-County Council of Indianapolis and Marion County appoint the bipartisan group. While the IndyGo Board of Directors is a self-governing body, the City-County Council and the Council's Municipal Corporations Committee have the requisite authority to review and approve local funds for the transit agency's operating budget.





## **Marion County Transit Plan and Referendum**

In November 2016, Marion County voters approved a transit referendum to implement the Marion County Transit Plan (MCTP). The referendum included a local income tax to help fund the increase of transit frequency across IndyGo's county-wide service area. The plan proposed a grid-like network of frequent bus routes, with the goal of providing more reliable and predictable transit service across the area. Many proposed routes were planned to increase in frequency, including a sharp increase in routes that would operate every 15 minutes or better. The plan also called for the construction of three bus rapid transit (BRT) lines: the Red Line, Purple Line, and Blue Line. The Red Line began operation in September 2019. The Purple Line will be bid for construction in late-2021, with the Blue Line to follow.

IndyGo had planned to implement the larger route changes associated with the MCTP in June 2020, but this plan was delayed due to the impact of the Covid-19 pandemic. Currently, the MCTP route changes are on hold until there is a clearer understanding of the financial impacts of the pandemic on IndyGo's future fixed-route operations.

A portion of the MCTP tax funding is dedicated towards local bus stop improvements, per IndyGo's board-adopted Capital Plan. From 2021 to 2025, the Capital Plan calls for \$850,000 per year for local bus stop improvements. This \$850,000 annually is used to fund any bus stop design, construction, construction management, and amenity purchases (such as shelters or benches) within a given calendar year. This is the amount of funding that IndyGo plans to have available over the next five years to improve and bring existing bus stops into ADA compliance. Annual funding beyond the current five-year Capital Plan is anticipated to continue, but these future allocations can only be confirmed once future IndyGo Capital Plans are adopted by the Board of Directors.

## **IndyGo's Challenge of Accessible Bus Stops**

Prior to the 1990 Americans with Disabilities Act (ADA), there were no requirements for cities or transit agencies to provide accessible boarding areas at bus stops, nor requirements to provide accessible paths to bus stops. Because of this, a majority of IndyGo's existing bus stops (many of which were implemented prior to ADA becoming law) do not currently meet federal requirements for ADA accessibility. During the mid-to-late 20th century, the state and city frequently focused their limited funds towards roads and bridges instead of pedestrian infrastructure. The result of this has been that many streets on which IndyGo provides fixed-route service do not have sidewalks or have poorly maintained sidewalks. The City of Indianapolis Department of Public Works (DPW) is responsible for ADA compliance within the City's right-of-way, which DPW owns, operates, and maintains. IndyGo – as the public transit provider for Marion County – coordinates closely with DPW to ensure bus stop ADA improvements are included in DPW capital improvement projects. Additionally, IndyGo assists the City in increasing equitable access to transit via IndyGo managed capital projects, including designing and constructing ADA compliant bus stop boarding areas, sidewalks, and curb ramps along IndyGo's fixed route corridors.

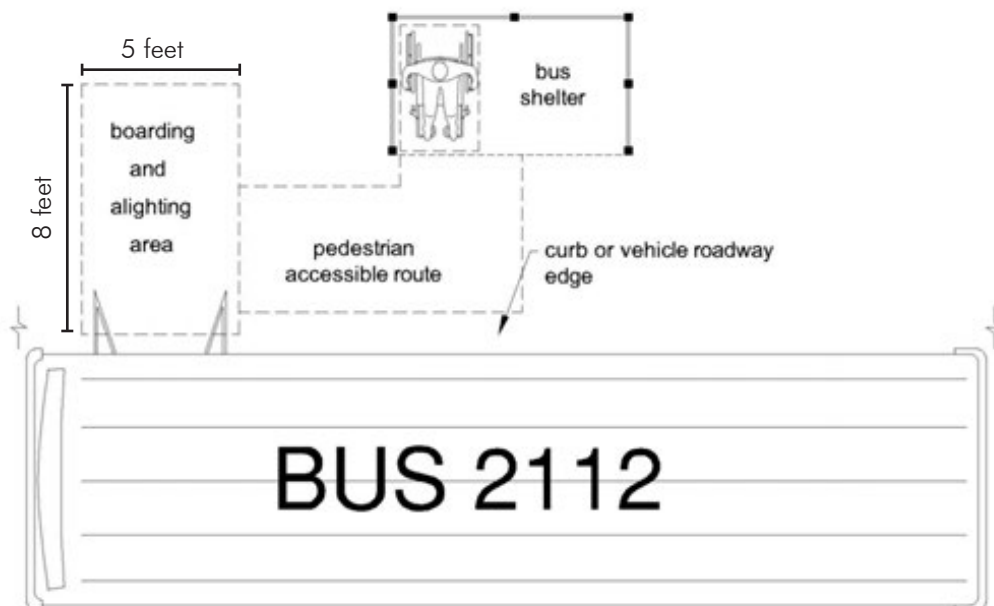
# ADA Bus Stop Requirements/Regulations

Section 810 of the Americans with Disability Act Accessibility Guidelines stipulate minimum requirements for public transportation facilities, including bus stop boarding and alighting areas, sheltered bus stops, and their pedestrian pathway/connections. All hard surfaces must comply with federal standards for the general dimensions of bus stops, as well as maximum slopes for sidewalks, boarding pads, and curb ramps. Final bus stop placement and design is influenced by ADA guidelines, as well as multiple factors, such as roadway design, adjacent and nearby land-use, and pedestrian and traffic volumes.

IndyGo's preference is for the boarding pads at bus stops to be placed on top of a 6-9" curb (above the street level), both for safety considerations adjacent to traffic and to provide a more level connection to accessible routes, but also for ease of bus ramp deployment, which determines the slope of the bus ramp and can be the difference between an accessible bus stop and an inaccessible bus stop. Street-level boarding pads can be ADA-compliant however, in areas where curb level improvements are deemed to be unfeasible from a constructibility standpoint, and all IndyGo buses can "kneel" when deploying the front door ramp.

Bus stop boarding pads must be, at a minimum, 5 feet wide (measured parallel to the curb/roadway) by 8 feet deep (measured perpendicular to the curb/roadway) when public right-of-way allows. All hard surfaces must meet running and cross-slope requirements for sidewalks and boarding pads, and all accessible routes must be at least 4 feet wide. Running slopes describe the direction of pedestrian travel (parallel to the curb for sidewalks and perpendicular to the curb for boarding pads) and cannot exceed a 1:48 slope, or 2%. Cross slopes are perpendicular to the direction of pedestrian travel and cannot exceed 2% in either direction unless the slope of the roadway exceeds 2%.

[Below] A diagram of a bus stop compliant with Section 810 of the Americans with Disabilities Act (ADA) Accessibility Guidelines.



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# Inventory and Categorization of Bus Stops

Existing IndyGo bus stops vary in their level of accessibility, ranging from bus stops with no pedestrian infrastructure (neither sidewalks nor boarding pads) to bus stops with fully ADA compliant boarding areas. IndyGo staff and consultants completed an ADA Inventory in 2019 which documented the evaluation of every bus stop in the system based on existing conditions. Criteria included presence and condition of a boarding pad and/or sidewalk, slope and cross slope of bus stop boarding areas, obstructions in the sidewalk within 50' in either direction, among others. That information led to the categorization of bus stops based on their level of ADA compliance.

## ADA Bus Stop Inventory

IndyGo has historically maintained a database containing data points on a variety of physical bus stop attributes, including, but not limited to, the presence of sidewalks, boarding pads, and bus stop amenities (including benches, bike racks, trash cans, and shelters). While this data has proved useful for the agency, the breadth of the data was not sufficient to fully determine the magnitude of ADA compliance and the variances of accessibility at IndyGo's fixed-route bus stops. In early-2019, IndyGo was informed that the Indiana Department of Transportation (INDOT) was requiring all public transit providers in the state to complete an ADA inventory of all fixed route bus stops, along with submitting a plan on how these bus stops will be brought into ADA compliance in the future.

Because of this requirement, IndyGo initiated a system-wide bus stop ADA inventory to gather data and measurements for all fixed route bus stops. This helped to augment IndyGo's existing bus stop attribute data and provided a more detailed set of datapoints to better understand ADA accessibility at each individual bus stop. The ADA inventory data collection – which was completed by a contracted planning and engineering firm through site visits to each bus stop – helped to collect data on:

- the condition and width of adjacent sidewalks
- curb height
- boarding area length and width
- slope and cross-slope of the boarding area
- grass utility strip width
- and any obstructions behind or along sidewalks which may impede access to the bus stop.

This multi-month project was completed in December 2019. In total, all 3,385 existing local bus stops were included in the inventory field review process. (IndyGo later completed a Bus Stop Balancing project (additional information available on Page 10) that reduced the number of bus stops down to the existing 2,908 stops.)



## ADA Access Scoring

Using the collected inventory data, IndyGo developed a scoring system - which we are calling ADA Access Levels - to determine ADA compliance and access at each bus stop. While ADA compliance is a binary distinction (either compliant or non-compliant), pedestrian access is a more nuanced distinction. Each of IndyGo's bus stops falls within a spectrum of various accessibility conditions, depending on unique site features and attributes. For this reason, IndyGo found it helpful to categorize bus stops into six levels of access. Bus stops

were categorized using ADA Access Levels which range of 0 to 5, as noted in the table below. This categorization provides IndyGo the ability to accurately determine the current number of ADA compliant bus stops (Level 5 bus stops), while also allowing the agency to better understand, in a more detailed way, the level of access at each ADA non-compliant bus stop. While some non-compliant bus stops currently have a higher degree of accessibility than other non-compliant bus stops, the goal remains for IndyGo and DPW to bring as many bus stops into compliance as is physically possible on an annual basis using the resources available to each agency.

Table: ADA Access Scoring Criteria

Level	Description
0	No sidewalk, no boarding area
1	Boarding area without sidewalk connection
2	Sidewalk with grass buffer
3	Sidewalk adjacent to curb, without full ADA boarding area
4	Sidewalk and full boarding area with non-compliant slope and/or cross slope
5	Fully ADA compliant boarding area with sidewalk and boarding pad

[Above] Bus stops in the IndyGo network were surveyed and categorized into groups based upon their current level of compliance with accessibility standards set forth by the Americans with Disabilities Act.



## ADA Access Scoring

### Level 5 Bus Stops

Level 5 bus stops are considered fully ADA compliant bus stops. These bus stops have an ADA compliant boarding area measuring at least 5 feet by 8 feet, and the running slope and cross slope of the boarding pad are both within the allowable ADA slope requirements. These stops are also connected to a sidewalk and/or crosswalk that can be accessed via a curb ramp. Red Line BRT station platforms and all bus bays at IndyGo's Julia M. Carson Downtown Transit Center are also considered ADA compliant Level 5 bus stops. Because Level 5 bus stops are ADA compliant, there are no accessibility improvements required.

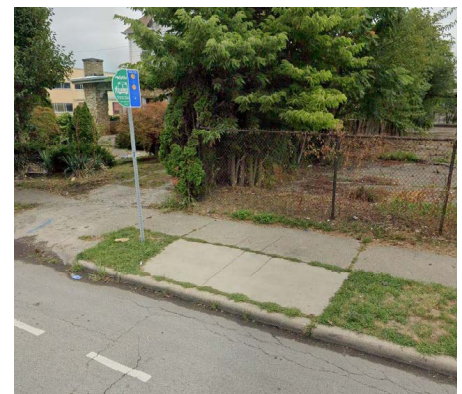
[Below] An example of a Level 5 stop.



### Level 4 Bus Stops

Level 4 bus stops are considered ADA non-compliant bus stops. These bus stops do have a boarding area measuring at least 5 feet by 8 feet, but one (or sometimes both) of the running or cross slopes are greater than the allowable ADA slope requirement. These stops also connect to a sidewalk and/or crosswalk that is accessible via a curb ramp. To be brought into ADA compliance, the boarding area must be rebuilt to be within the allowable ADA slope requirements.

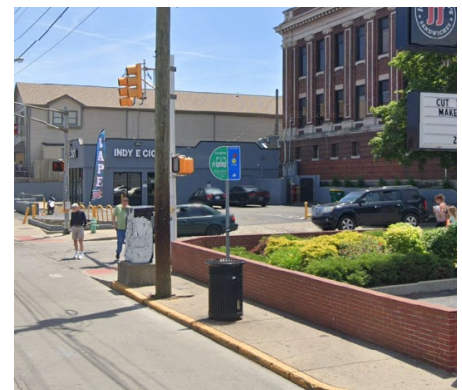
[Below] An example of a Level 4 stop.



### Level 3 Bus Stops

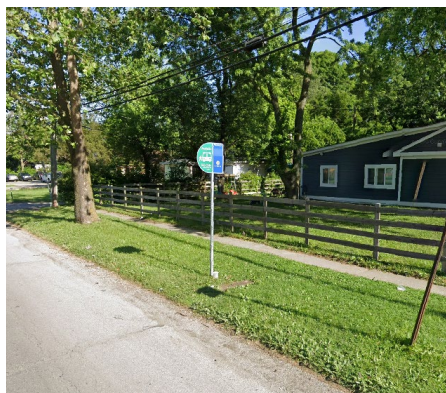
Level 3 bus stops are considered ADA non-compliant bus stops. These bus stops are typically along a street with an existing sidewalk that is adjacent to the street curb. However, the width of the sidewalk at the bus stop location is less than 8 feet, meaning these bus stops do not have the required boarding pad length to be considered ADA compliant. The presence of a sidewalk adjacent to the curb provides accessibility for many (but not all) IndyGo customers, but the stops cannot be considered ADA compliant. To be brought into compliance, a Level 3 bus stop typically requires a concrete boarding pad extension be built off the back of the existing sidewalk.

[Below] An example of a Level 3 stop.





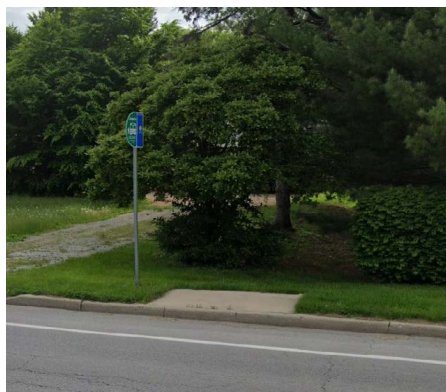
[Below] An example of a Level 2 stop.



## Level 2 Bus Stops

Level 2 bus stops are ADA non-compliant bus stops. These bus stops are on a street with an existing sidewalk that is separated from the curb or edge of the street by a landscaped buffer, usually grass. The bus stop, which is in the buffer, is not accessible from the sidewalk. The width of the buffer from the curb to the sidewalk can vary from 2 feet to 20 feet wide or more. Due to the lack of a connection to the curb, these stops do not provide adequate accessibility nor a comfortable customer experience. A continuous concrete connection from the sidewalk to the curb, to serve as a boarding pad, is typically required to make these stops ADA compliant.

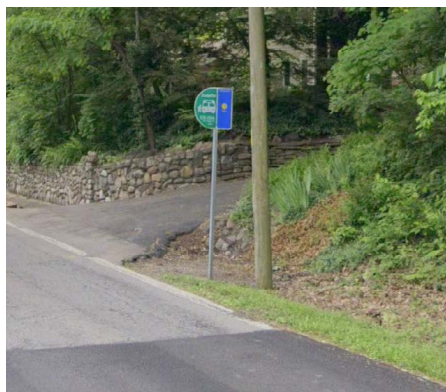
[Below] An example of a Level 1 stop.



## Level 1 Bus Stops

Level 1 bus stops are considered ADA non-compliant bus stops. Level 1 bus stops are typically along a street that does not have a sidewalk. These stops have a concrete boarding area which is not connected to a sidewalk. The lack of an ADA compliant pathway to connect to and from the bus stop requires customers to travel in the street or along the grass adjacent to the street to access the bus stop. Level 1 bus stops do not provide adequate accessibility nor a comfortable customer experience. A sidewalk connection with a curb ramp that leads to a public street, driveway, or pedestrian crossing is required to bring these bus stops into ADA compliance.

[Below] An example of a Level 0 stop.



## Level 0 Bus Stops

Level 0 bus stops are considered ADA non-compliant bus stops and are the least accessible of IndyGo's bus stops. Level 0 bus stops are along a street (or segment of a street) that does not have a sidewalk. There is also not a stable surface provided for a boarding area at these bus stops. The condition of the area surrounding the stop varies, but it is typically a grass or dirt surface. These stops require a sidewalk connection with a curb ramp that leads to a public street, driveway, or pedestrian crossing. Given the lack of pedestrian infrastructure to connect into near many Level 1 bus stops, identifying a safe path to lead customers to and from can be challenging.

## ADA Access Scoring Results

Using ArcGIS computer software, IndyGo was able to run filters on the ADA inventory data using multiple data fields and assign each stop an ADA Access Level score. The results allowed for accurate identification of the level of access for each individual fixed route bus stop across the full IndyGo service area. IndyGo was then able to chart the data to visually show and describe the percentage of bus stops within each ADA Access Level. The initial results for January 2020, shown below, indicated that IndyGo had an ADA compliance rate of 16.3%. However, the use of ADA access levels also helped to indicate that 53.4% of bus stops could, at that time, be accessed directly via a sidewalk (the sum of all Level 3, Level 4, and Level 5 bus stops).

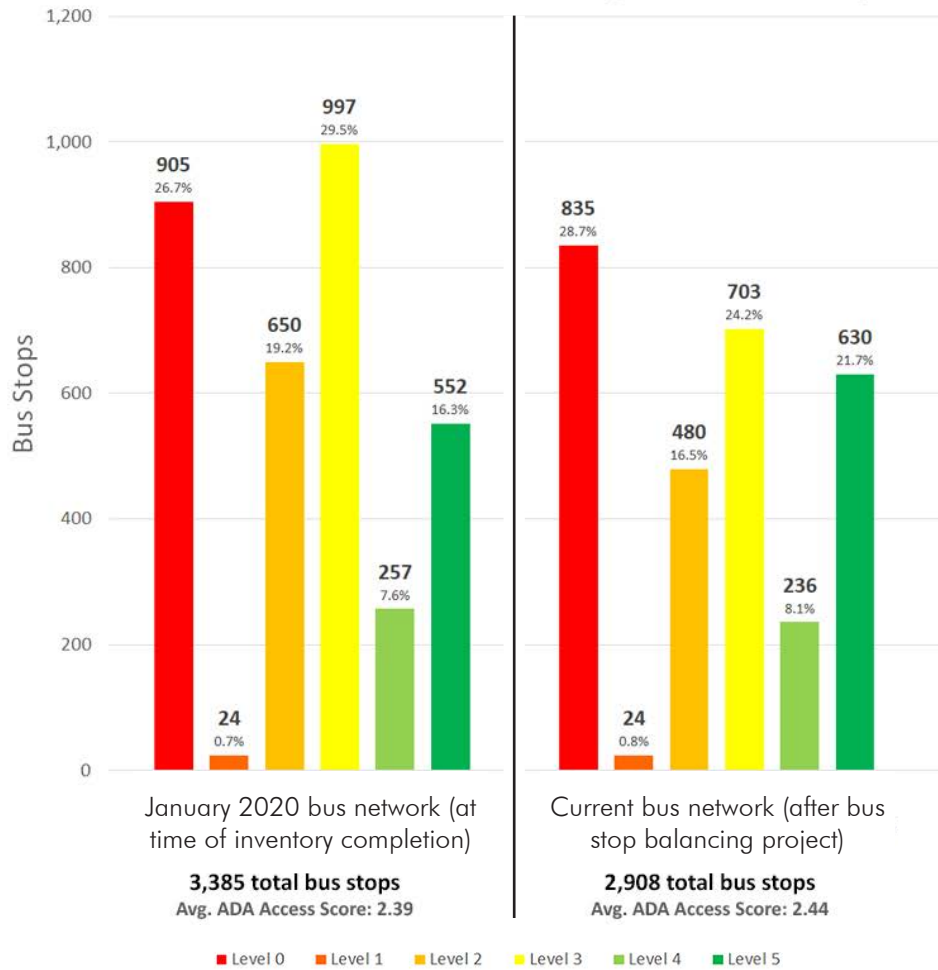
In October 2020, a few months after the ADA access level data was calculated, IndyGo completed a Bus Stop Balancing project. The goal of bus stop balancing is to identify and remove bus stops that are too closely spaced along a corridor, as detailed in IndyGo's Service Standards. Removing bus stops that are too closely spaced results in better operational efficiencies along busy routes, as boardings and alightings from closely spaced adjacent bus stops are now consolidated into one bus stop. This leads to a shorter length of time for IndyGo customers' trips. Additionally, bus stop balancing more efficiently directs funds to bus stops with the highest need based on ridership and transit-supportive land-uses.

In making decisions about which bus stops to remove for bus stop balancing, IndyGo staff considered stop-level ridership (boardings and alightings), land use context, current bus stop ADA compliance or access, the presence of existing bus stop amenities, existing pedestrian infrastructure (sidewalks and curb ramps), and the distance between adjacent bus stops. In areas where sidewalks were present - allowing for a safe walk to an adjacent bus stop - there was a higher rate of bus stops removed for bus stop balancing. In areas where there were no sidewalks present, bus stops were not typically removed since no safe path exists to connect customers to the next closest bus stop. Over 500 bus stops were removed or consolidated as part of IndyGo's initial bus stop balancing project, bringing IndyGo's total fixed route bus stops down to 2,908 bus stops from the original 3,385 bus stops that were inventoried.

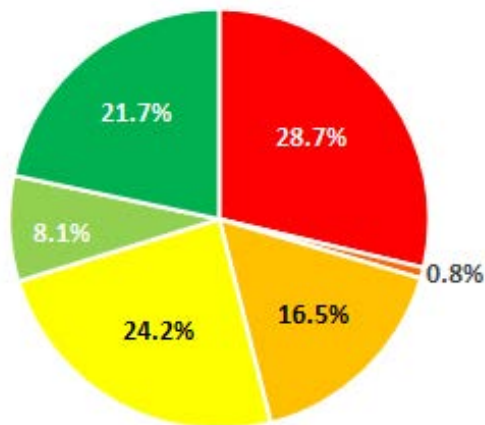
Additionally, around the same time that the bus stop balancing project was implemented, IndyGo wrapped up its initial project for ADA bus stop improvements, funded through the MCTP transit referendum. A total of 105 existing bus stops were improved as part of this project, spread across the IndyGo service area. Taking bus stop balancing and the initial phase of bus stop improvements into consideration, IndyGo's current ADA compliance rate, as of April 2021, has increased to 21.7%, up from 16.3% at the time of the inventory completion in January 2020. While only 21.7% of IndyGo bus stops had fully ADA accessible boarding areas, 54% of bus stops are still accessible to pedestrians via a sidewalk. (the sum of all Level 3, Level 4, and Level 5 bus stops).

## IndyGo Bus Stops, by ADA Access Level

Existing Bus Network & Projected MCTP Bus Network



### Bus Stop Balancing + Phase 1 bus stop ADA improvements



[Above] Number of bus stops in the IndyGo bus network by ADA access level under various scenarios.

[Left] Composition of bus stops by ADA compliance level in the current IndyGo bus network.

Level 0 Level 1 Level 2 Level 3 Level 4 Level 5

# Bus Stop Improvements: What are they and how are they completed?

As briefly described earlier in this document, a bus stop ADA improvement looks different from one site to another since each bus stop site is unique. Some bus stops require minimal improvements due to the existing pedestrian infrastructure that can be tied into, while others require more substantial improvements due to the lack of existing pedestrian infrastructure. This chapter describes what a bus stop improvement may consist of, what the bus stop site planning process entails, and the four strategies that IndyGo and DPW utilize to improve ADA access at bus stops.

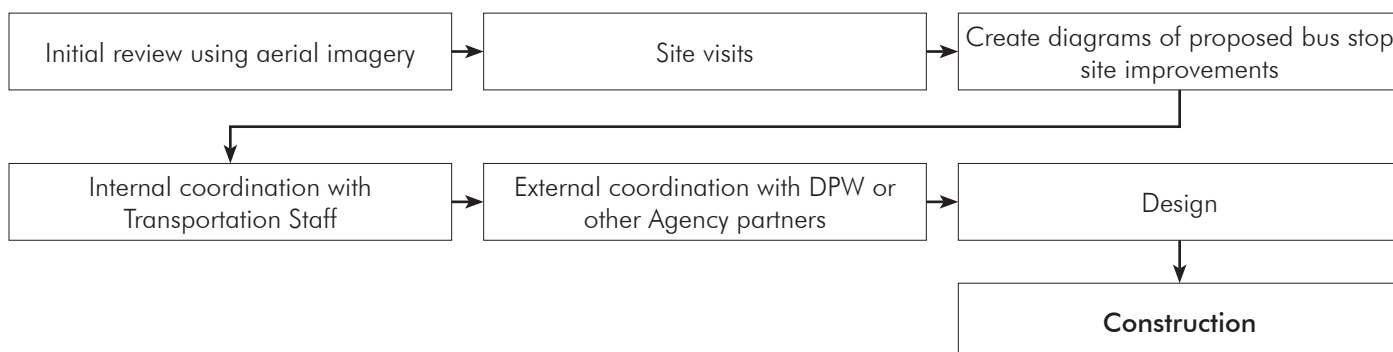
## What does the bus stop improvement planning and design process look like?

When planning a bus stop improvement, IndyGo considers multiple factors. This includes, but is not limited to: existing ridership, current or future amenity needs, current bus routing, future bus routing plans, the existing bus stop location, existing pedestrian crossings, pedestrian crossing needs, vehicle traffic counts, condition of existing sidewalks and curb ramps, adjacent land uses, and street lighting.

Site visits are used for staff to better understand any challenges to improving the existing bus stop location and/or any opportunities that could be realized by relocating the bus stop to a new nearby location. These site visits are also an opportunity for IndyGo staff to get a better understanding of whether bus stops are currently placed too close together. There could be opportunities to improve operating efficiency by adjusting bus stop spacing, or by removing underutilized bus stops entirely, provided that there is an adequate sidewalk network connecting customers to the next closest bus stop.

For IndyGo led projects, coordination with internal IndyGo Transportation staff and with external DPW staff allows for opportunity to gather design input and adjust the bus stop improvement proposals prior to beginning site design. This helps to ensure that any comments are correctly included in the final bus stop design plans that will be used during the construction phase.

## Flow chart of the bus stop improvement process:





## What does a bus stop improvement look like?

[Below] Example images of recent bus stop improvements are shown organized by ADA Access Level. Additional examples of bus stop improvements can be found in the appendix.

### Level 0 to Level 5

This bus stop was originally level 0, with no sidewalk access or boarding area. It was brought to a level 5 by installing a sidewalk connection and 8x5 boarding pad.



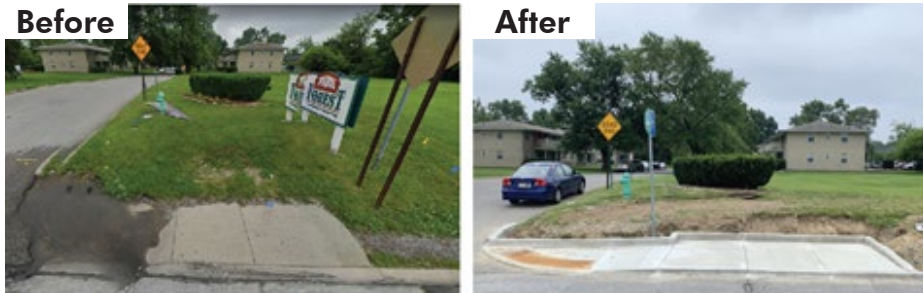
### Level 0 to Level 5

This bus stop was originally level 0, with no sidewalk access or boarding area. It was brought to a level 5 by installing a sidewalk connection and 8x5 boarding pad.



### Level 0 to Level 5

This bus stop was originally level 0, without full sidewalk access and a boarding pad smaller than 8x5. It was brought to level 5 by installing a boarding area and sidewalk connection.



### Level 2 to Level 5

This bus stop was originally level 2, with a landscaped grass strip separating the sidewalk from the curb. It was brought to a level 5 by installing a concrete boarding pad extension to the sidewalk.



### Level 3 to Level 5

This bus stop was originally level 3, with sidewalk access but an inadequate boarding area. It was brought to a level 5 by installing an 8x5 boarding pad extension to the sidewalk.



# How IndyGo Improves Bus Stops—Four strategies towards ADA compliance

IndyGo envisions four strategies to improve a bus stop to become ADA compliant. Though these four strategies are unique, each will positively impact ADA compliance in the short- and long-term.

## 1. Large-scale capital projects

The first strategy consists of the completion of large-scale capital projects that IndyGo designs, constructs, and maintains. This includes investments in BRT stations (Purple Line and Blue Line), Super Stops. These projects typically replace higher ridership local bus stops – or bus stops along a high ridership corridor - with new bus stops or stations that provide a higher-degree of customer amenities. These are unique projects that require multi-year efforts for planning and design, and are typically managed by IndyGo’s Capital Projects team, in close coordination with IndyGo Service Planning and DPW.

## 2. Partner agency coordinated bus stop improvements

The second strategy consists of capital improvement projects (CIP) that are designed, constructed, and maintained by partner agencies, such as DPW or other departments of public works from excluded cities in Marion County (Beech Grove, Lawrence, Southport, and Speedway). For these projects, IndyGo is provided the opportunity to request bus stop for inclusion in design plans, including boarding pads, bench pads, and shelter pads as needed. Partner agencies are responsible for managing of these improvements. Roadway resurfacing/reconstruction projects are the most common types of projects coordinated with IndyGo since these projects often also include concrete sidewalk and curb ramp improvements. These recommendations are typically included in the project at no cost to IndyGo, since the inclusion of boarding pads and sidewalk connections have a minimal impact on the larger project budget. These CIP projects are typically the most efficient and cost-effective way implement bus stop improvements, since there are economies of scale inherent to these larger projects. These economies of scale are less possible with smaller individual bus stop improvements.

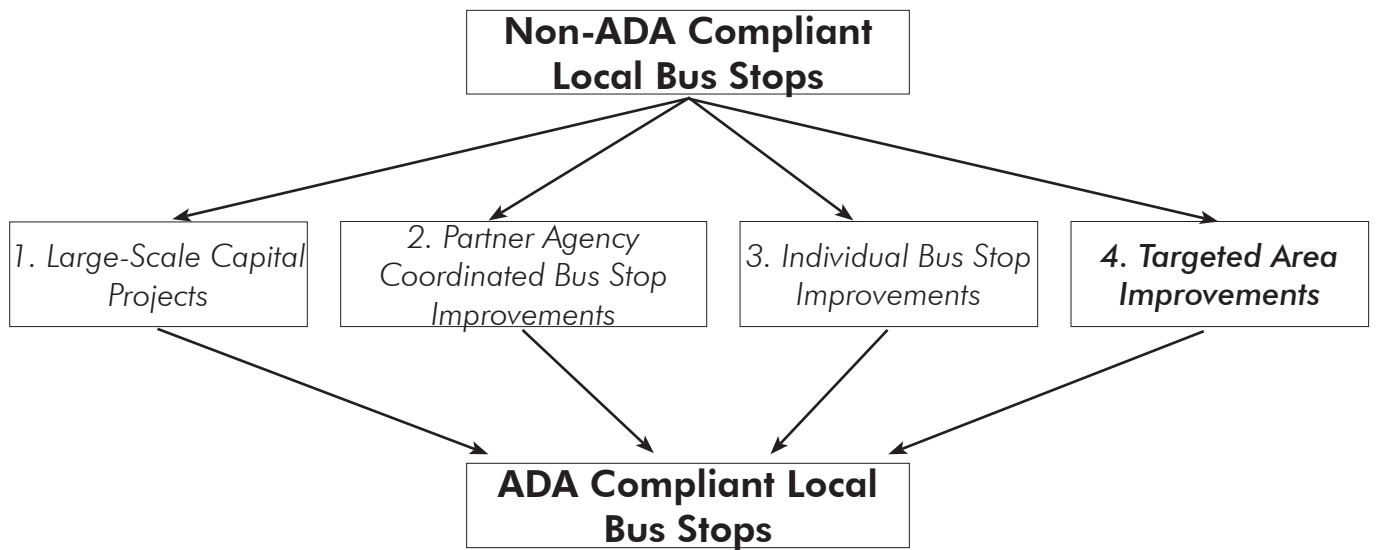
[Below] Large-scale capital projects, like the Red Line, include improvements to nearby bus stops.



[Below] IndyGo coordinates with partner agencies like DPW to improve stops on planned projects.







[Below] Individual bus stops are improved as needs arise due to various special circumstances



[Below] Targeted area improvements focus investment into bus stops in a specific geography or neighborhood.



### 3. Individual bus stop improvements

The third strategy consists of individual bus stop improvements that are designed and constructed by IndyGo. These improvements are smaller in scale, often consisting of one or a handful of bus stops that are considered high priority due to high existing ridership, a specific accessibility challenge that needs to be addressed quickly, a new bus routing change, or a specific partnership opportunity. These are stops that can typically be designed and bid to meet a specific short-term timeline. Also included in this category are bus stops that are improved as part of a partnership or agreement with a developer, or as part of a grant opportunity that IndyGo was awarded. Because these are small project scopes, individual bus stop improvements are often less efficient when considering per-stop construction costs and administrative staff time (particularly as it relates to procurement and bidding). However, these smaller projects do offer IndyGo additional flexibility and timeliness for short-term improvement needs, costs and staff time (particularly as it relates to procurement and bidding). But these improvements can be more flexible in terms of time required from start to completion.

### 4. Targeted area improvements

The fourth and final strategy is what the remainder of this document will address in greater detail. This strategy involves what IndyGo is calling targeted area improvements. IndyGo defines targeted area improvements as batch bus stop improvement projects consisting of approximately 20 to 30 bus stops located in proximity to one another and within a defined geographic area. IndyGo envisions that the bulk of future bus stop improvements managed by IndyGo will fall under this category.

## **Why Targeted Area Improvements is the preferred strategy**

IndyGo has learned from its initial phase of bus stop improvements and views targeted area improvements as a key strategy to implement large scale bus stop improvements moving forward. IndyGo staff believes that a switch to this strategy will improve project outcomes compared to the strategy used to guide the initial phase of bus stop improvements.

The benefits that IndyGo envisions with this strategy ultimately comes down to improved efficiency in project management, design, and construction, as well as the ability to focus initial improvements in areas where there is the greatest need for ADA compliance improvements. By focusing on smaller geographic areas, IndyGo staff can better identify the unique needs of each individual bus stop, which requires detailed site reviews using aerial imagery and field visits to each bus stop.

There are also efficiencies in construction when focusing improvements in smaller geographic areas and IndyGo expects that doing so will attract more contractor bids for these projects in the future. The hope is that this will not only reduce construction costs, but that it will also speed up design and construction schedules, which would allow IndyGo to complete multiple targeted area improvement projects per year.

Finally, by incorporating additional data sources into a target area improvement methodology, IndyGo can better identify where ADA compliance improvements are most needed, according to operational and demographic data inputs. Areas that currently have high transit use and have demographic indicators of high transit dependency will be the areas that see early investment in ADA bus stop improvements. The hope is that this will lead to an equitable distribution of bus stop improvement projects in the IndyGo service area. Furthermore, focusing investments into concentrated areas with high ridership will produce a more transformational change to transit service at a neighborhood level.

## **What does the bus stop improvement planning and design process look like?**

As briefly described earlier in this document, a bus stop ADA improvement looks different from one site to another site, since each bus stop site is unique. Some bus stops require minimal improvements due to the existing pedestrian infrastructure that can be tied into, while others require more substantial improvements due to the lack of existing pedestrian infrastructure. Example images of recent bus stop improvements are shown in the images below.

When planning a bus stop improvement, IndyGo takes into account multiple factors. This includes, but is not limited to: existing ridership, current or future amenity needs, current bus routing, future bus routing plans, the existing bus stop location, existing pedestrian crossings, pedestrian crossing needs, vehicle traffic counts, condition of

existing sidewalks and curb ramps, adjacent land uses, and street lighting. Site visits are used for staff to better understand any challenges to improving the existing bus stop location and/or any opportunities that could be realized by relocating the bus stop to a new nearby location. These site visits are also an opportunity for IndyGo staff to get a better understanding of whether bus stops are currently placed too close together. There could be opportunities to improve operating efficiency by adjusting bus stop spacing, or by removing underutilized bus stops entirely, provided that there is an adequate sidewalk network connecting customers to the next closest bus stop.

Coordination within internal IndyGo Transportation staff and with external DPW staff allows for opportunity to gather comments and make adjustments to the bus stop improvement plan prior to beginning site design. This helps to ensure that any comments are correctly included in the final bus stop design plans that will be used during the construction phase.

[Below] The map on the left shows bus stops chosen for improvements in Phase 1, and the right shows improvements chosen in Phase 2 using Targeted Area Improvements. This strategy concentrates investment in a specific geography.



# Targeted area improvements – Methodology and process

## Application of prioritization rankings

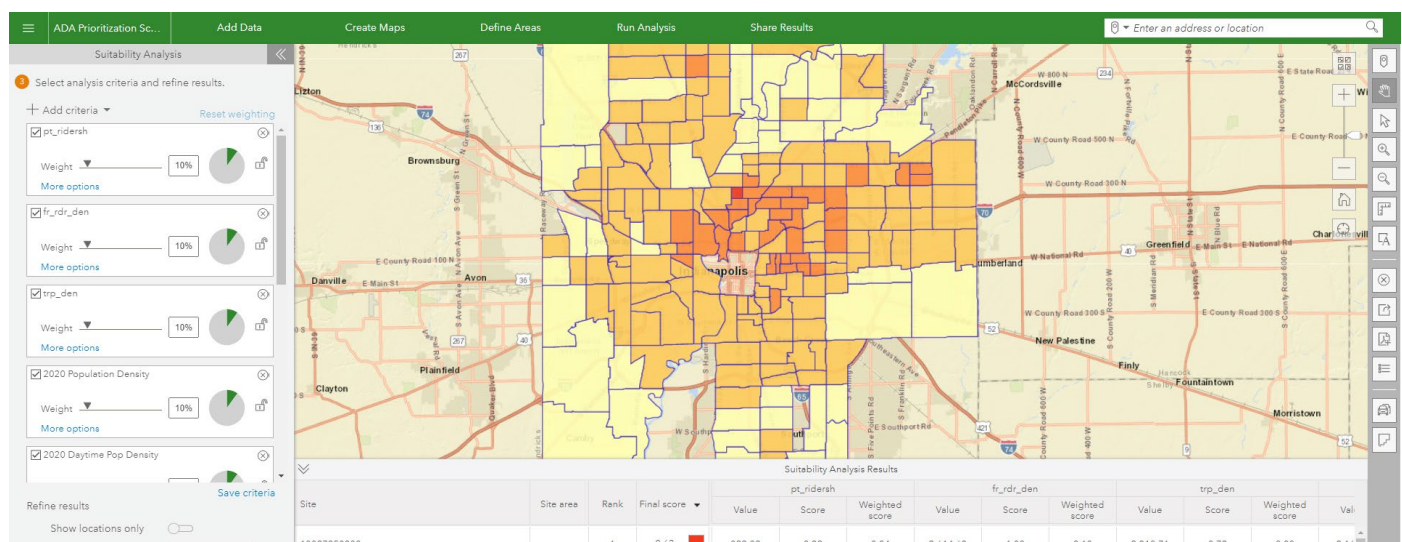
Once the targeted area improvements strategy was agreed upon, IndyGo staff then had to identify a methodology for prioritizing areas. An internal strategy group was identified to discuss several decisions which would impact the final methodology. This included which datapoints to include in the analysis, how the analysis would be conducted, and how to weight the datasets in the final analysis. This group included staff from several IndyGo departments, including Service Planning, Strategic Planning, Customer Service, and Public Affairs.

It was decided that Census tracts made the most sense for geographic areas, as there is demographic data readily available at the tract level. Census tracts are also a large enough area that it is expected that 20 to 30 stops may be able to be identified within a single Census Tract, or between two or three adjacent Census Tracts.

ESRI Community Analyst was chosen as the computer program of choice to collect demographic data and combine with operational data to test different data weighting scenarios and work towards identifying a final weighted scenario. This final scenario would provide a composite score that ranked areas (Census tracts) from high priority to lower priority, using the demographic and operational data inputs. Community Analyst provided data from the most recent Census Bureau's American Community Survey (ACS) as well as from ESRI's current proprietary datasets.

It was also decided that the final weighting of the datasets would need to be an iterative process, where multiple scenarios were considered, mapped, and compared. Then a final weighting scenario would be chosen, which would be the guide for IndyGo's site selection process moving forward.

[Below] ESRI Community Analyst was the primary data analysis and retrieval tool used to collect the data used for prioritization and to determine prioritization scores.





## **Data outliers: Downtown Indianapolis**

Early in the analysis, the four Census Tracts that comprise the central business district and downtown core of Indianapolis were removed from this prioritization analysis for three key reasons. First, data in the downtown area of Indianapolis stood apart from the rest of the service area so strongly that it overshadowed and muted the data from outlying neighborhoods and Census Tracts in the IndyGo service area. This led to an outcome that didn't differentiate areas starkly enough when comparing high priority areas to lower priority areas, which is the goal of this analysis.

Second, recent transit infrastructure investment in the downtown area sets it apart from outlying neighborhoods and areas. The downtown area has seen significant investment recently, with additional capital projects still to be built, whereas many outlying areas have seen less investment.

Finally, many of the stops in the downtown area already meet ADA standards, as this region of the service area has the greatest pedestrian accessibility of Marion County. While there are accessibility challenges that still need to be addressed in the downtown core (which will be addressed by DPW and IndyGo as larger capital projects are completed), the benefits of including the downtown core in this analysis were heavily outweighed by the negative impact that the outlier data of the downtown area would have had on the final outcome of the analysis.

For these reasons, IndyGo believes the downtown area would benefit from a unique evaluation and analysis of the existing bus stops to better understand accessibility challenges. This will help to identify the best way to prioritize and improve these stops in the future, either through larger capital investments or through individual bus stop accessibility improvements.

## **Data inputs: Operational and Demographic**

The prioritization process includes two categories of data inputs: operational data and demographic data, each comprising of several subsets of data. Each subset of data was assigned a score, which ranked how prevalent that feature was in each Census Tract when compared to the overall service area.

## Operational data inputs

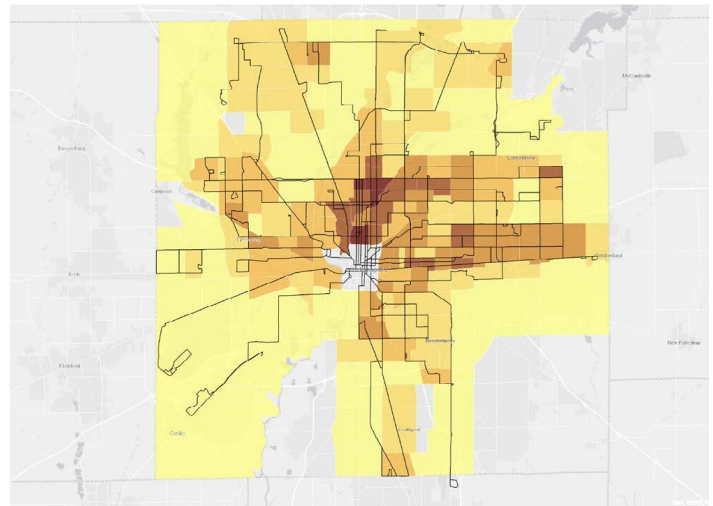
The operational datasets used for this analysis were chosen to measure the frequency of bus service in an area and how many trips are starting or ending within an area. To capture this, three datasets were included:

- **Bus Trips to Stops**, a measure of the volume and frequency of fixed-route bus service to and through a Census Tract;
- **Fixed-Route Ridership per Square Mile**, which measures the volume of average daily passengers that onboard or off-board in a Census Tract;
- and **Paratransit Ridership per Square Mile**, which measures the average daily volume of paratransit passengers that board or alight a paratransit vehicle within a quarter-mile of the fixed-route bus stops in a Census Tract.

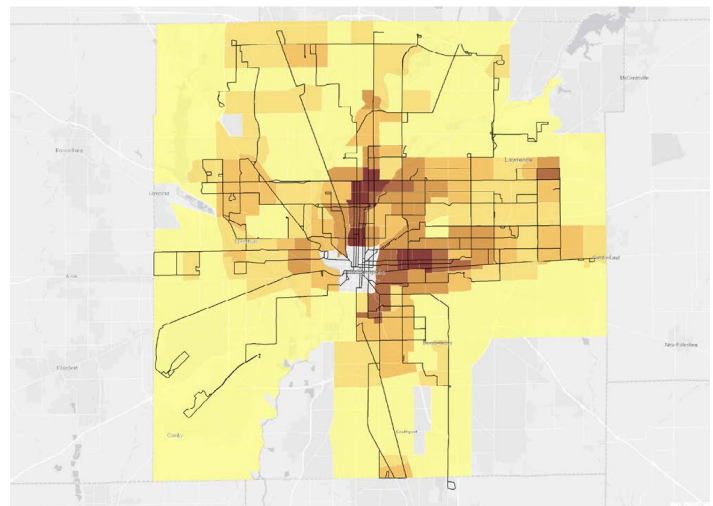
These three indicators are important because they reveal 1) where riders are coming from, and which communities have the greatest share of riders on the network; 2) where riders are using the paratransit network most, indicating a greater need for accessibility improvements; and 3) where the largest network and service presence of the IndyGo system exists.

These operation datasets are combined to form an overall operational score. Half of the final scoring methodology is comprised by operational data. Operational data is important for this scoring because it informs where riders are using the system, and where improvements would affect riders the most.

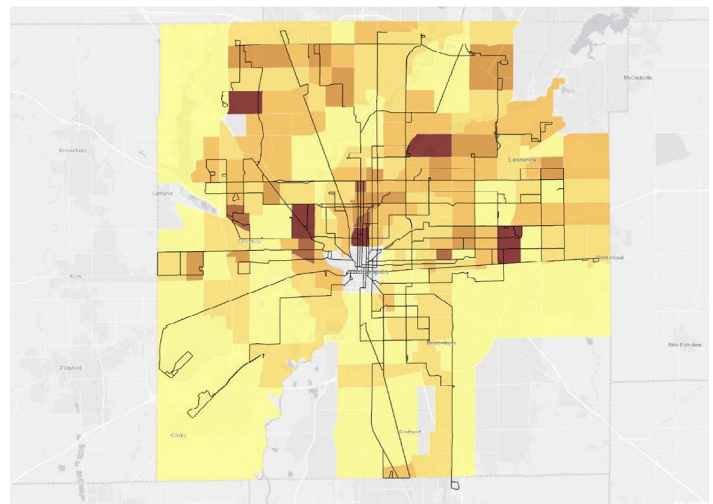
## Trips to Stops



## Fixed-Route Ridership per Square Mile



## Paratransit Ridership per Square Mile





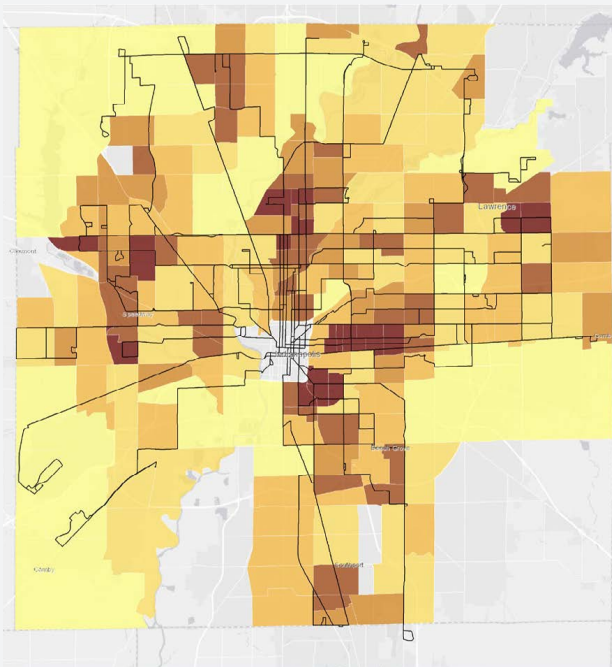
## Demographic data inputs

The demographic datasets used for this analysis were chosen to measure areas with a high share of residents that are statistically more likely to use transit or be more dependent upon transit service for their day-to-day transportation needs. To capture this, seven demographic datasets were included:

- **Population Density**, a measure of persons living in an area per square mile;
- **Daytime Population Density**, a measure of persons located in a Census Tract during daytime hours per square mile and was used as a substitute for employment;
- **Percentage of Residents that are Non-White or Hispanic**, a key indicator for equity and historically marginalized communities;

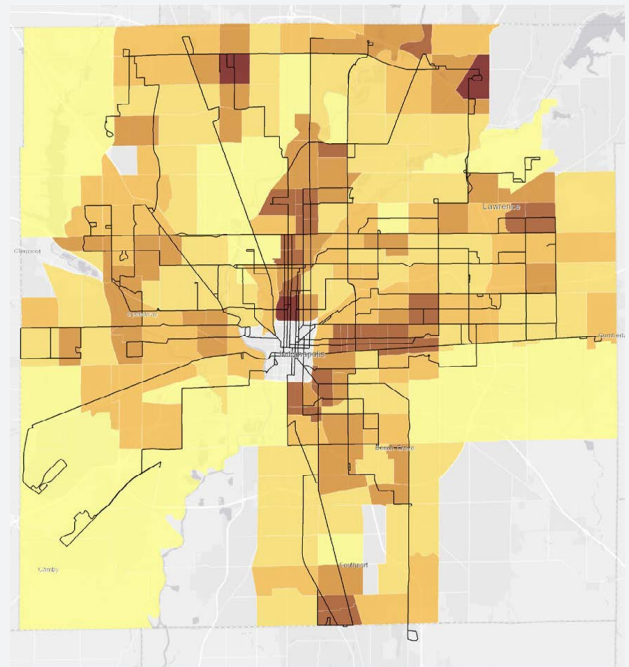
(List continued next page)

### Population Density (persons per square mile)



Population Density shows the number of residents in a Census Tract per square mile, and is directly associated with effective transit service: highly concentrated populations leverage the strengths transit has in moving large volumes of people in tight spaces.

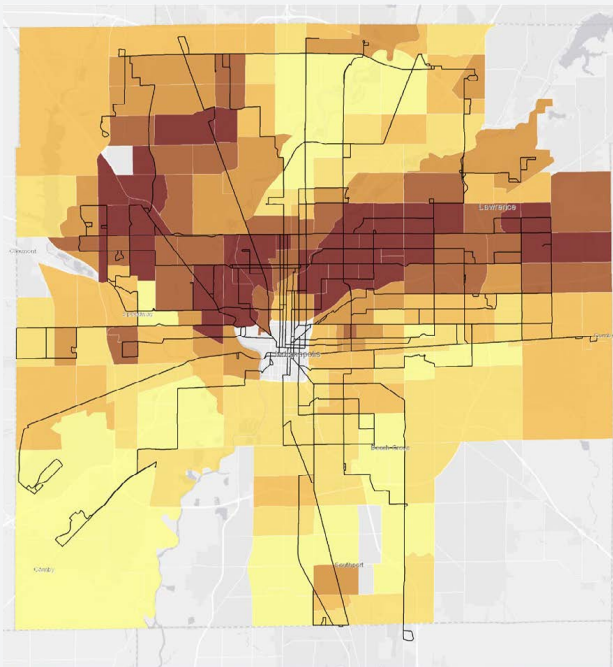
### Daytime population density (employment)



Daytime Population Density is used as a proxy for employment: as the location of jobs is usually tracked to the location of a business's headquarters, Daytime Population captures a greater understanding of the spread of jobs throughout a region. Employment locations are important to understand, as they are often origins and destinations for transit trips for commutes.

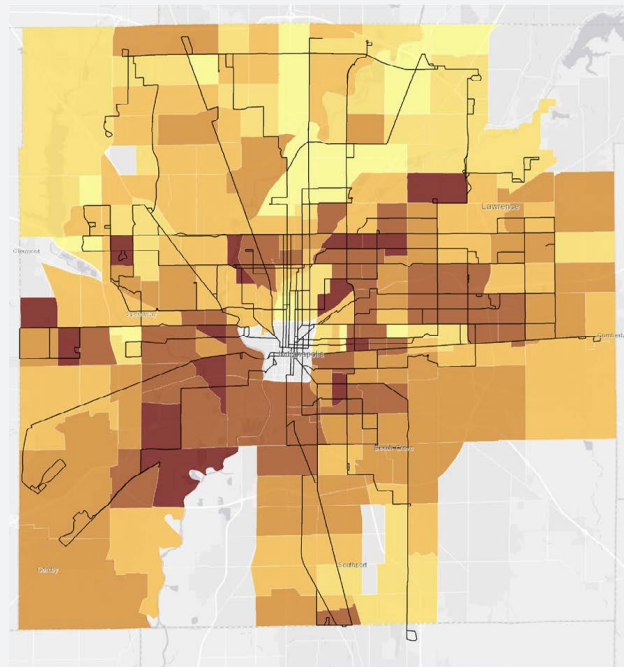
- **Percentage of residents that are part of an age dependent population**, individuals who are either aged below 17 or older than 65, which are two age groups that are generally more dependent on transit service;
- **Percentage of households with one or more members with a disability**, an indicator of areas where ADA accessibility needs may be higher when compared to Marion County as a whole;
- **Percentage of households living below the poverty line**, a key indicator for equity and economic disparities;
- and **Percentage of households without access to a vehicle**, an indicator of transit dependence.

### Minority population (non-white and Hispanic persons)



Minority population is a critical equity consideration in this analysis, which counts the share of a tract's population that is made up by non-white and Hispanic persons. Prioritizing infrastructure investments in communities with higher minority populations is an important objective of IndyGo's mission to further social equity.

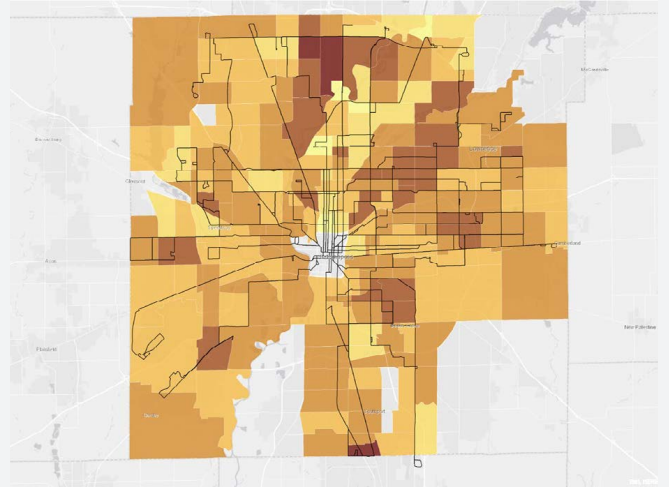
### Disability status (households with 1 or more persons with a disability)



Disability status is another core consideration for determining which locations could most benefit from improvements to ADA accessibility, as these are often the system users most dependent on these improvements for the bus network to work for their needs.

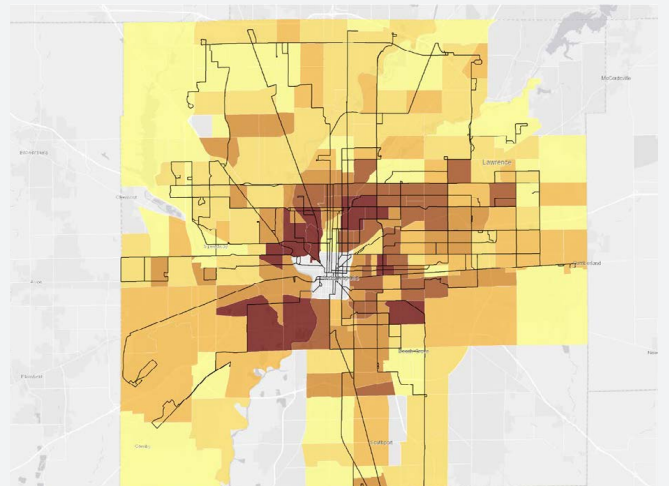
## Dependent population

Dependent Population considers individuals younger than 17 and older than 65, which often rely on transit as a mobility choice. Individuals younger than 17 or older than 65 often do not have the choice drive to the destinations they need to reach, and also are also often transit users under IndyGo's various social programs.



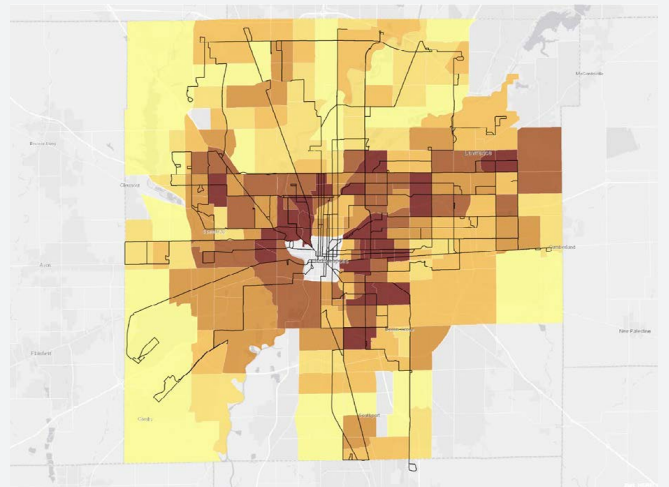
## Vehicle availability

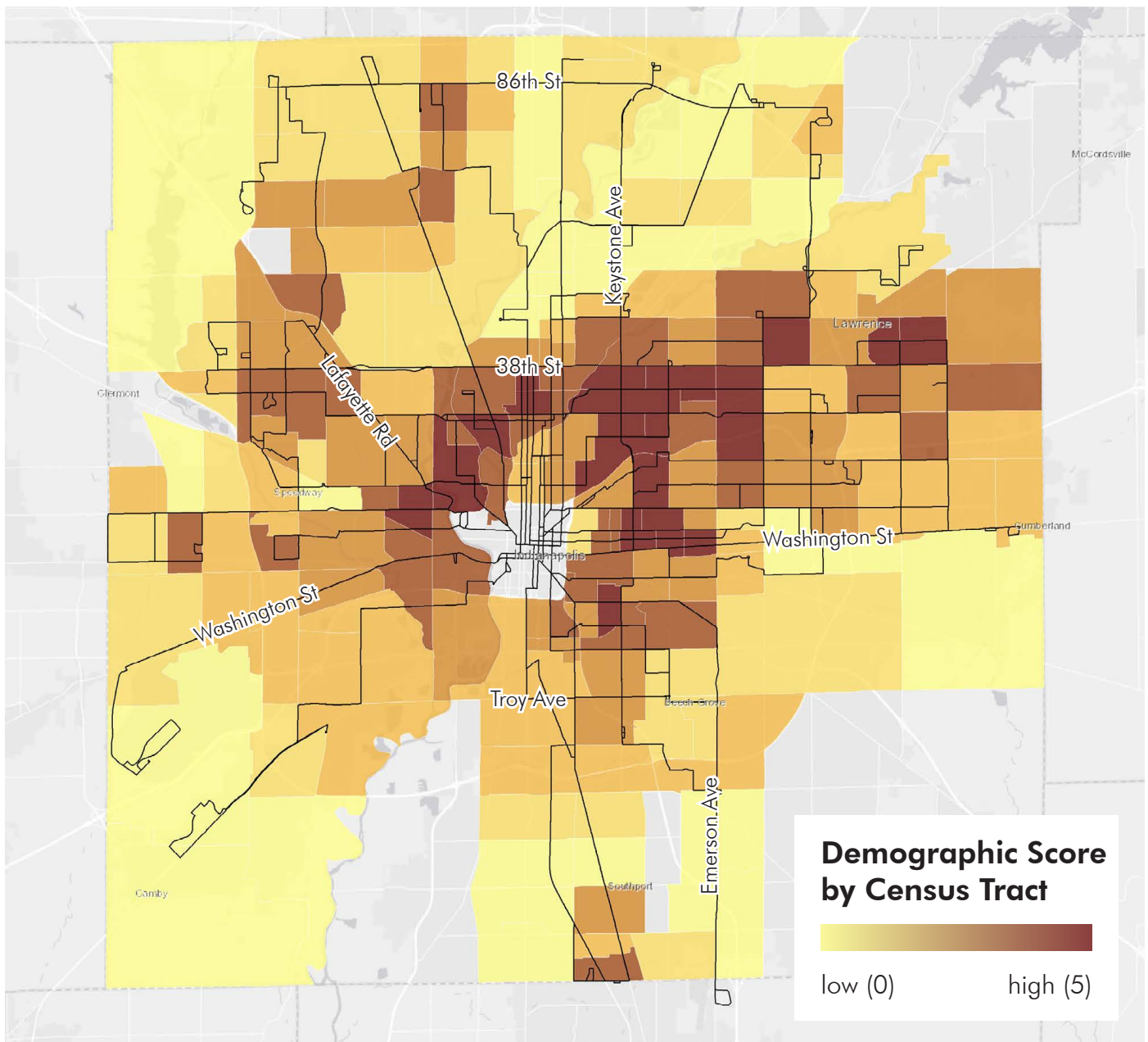
Vehicle Availability is another core consideration for equity: households without access to a vehicle are likely more dependent on transit as a transportation option for meeting their daily needs. As individuals without access to a car cannot drive to destinations they need to reach, they often use other active mobility choices such as walking, cycling, or riding transit.



## Poverty

Finally, poverty is a critical equity consideration: households with limited resources often have less choice in mobility options. Individuals living below the poverty line often cannot afford the costs of driving to destinations they need to reach, and they often use other active mobility choices such as walking, cycling, or riding transit.



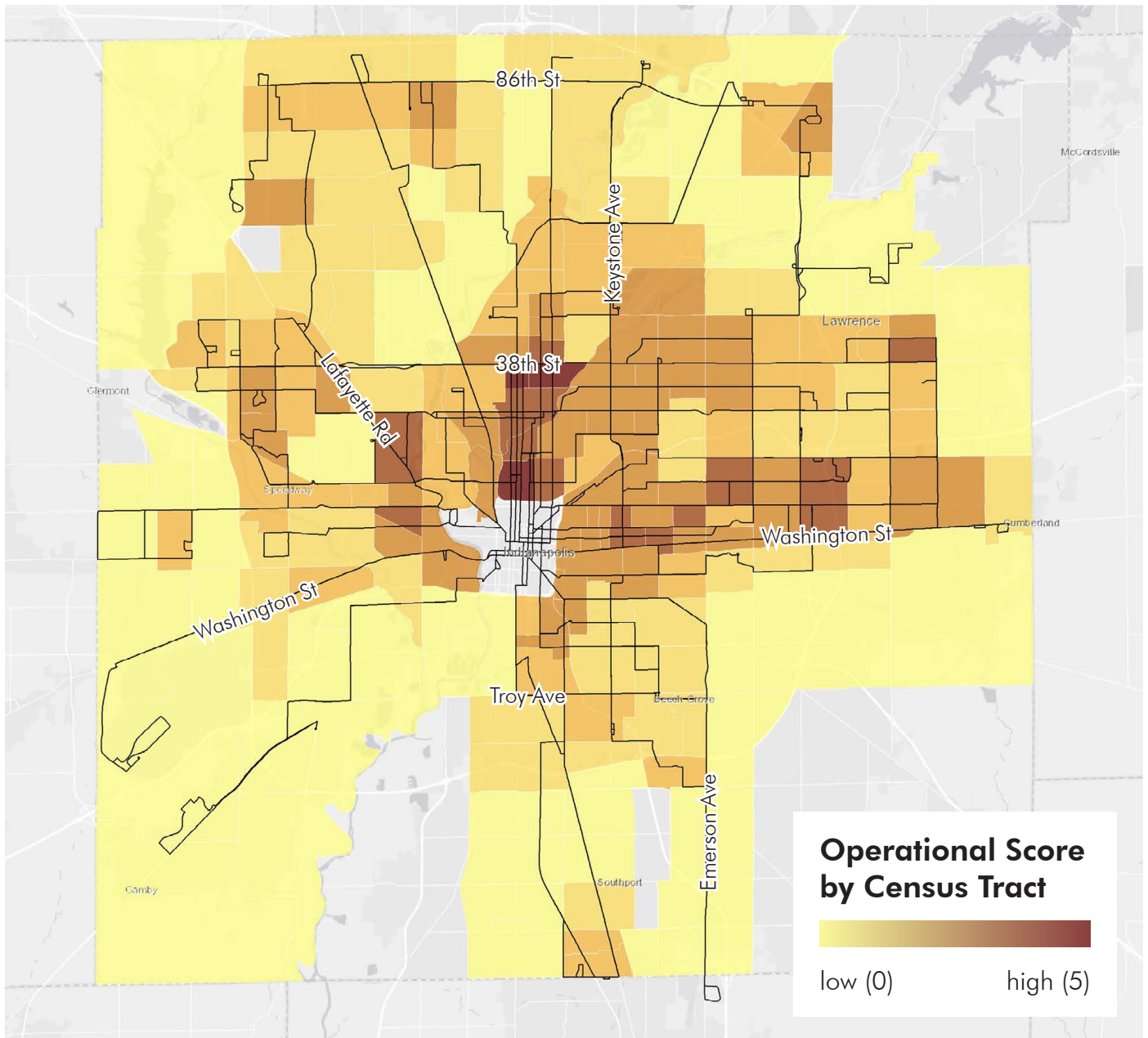


### Overall demographic score

All these data on demographic information (pages 21-22) are combined to create an overall Demographic Score for each Census Tract. Locations with high need for improvements are shown in the above map with darker shades.

Geographies with high demographic scores are often located close to the center of Marion County, but are spread across Marion County. Corridors with the highest demographic score include W Washington St, W 10th St, Rural St, Raymond St, and Tibbs Ave.

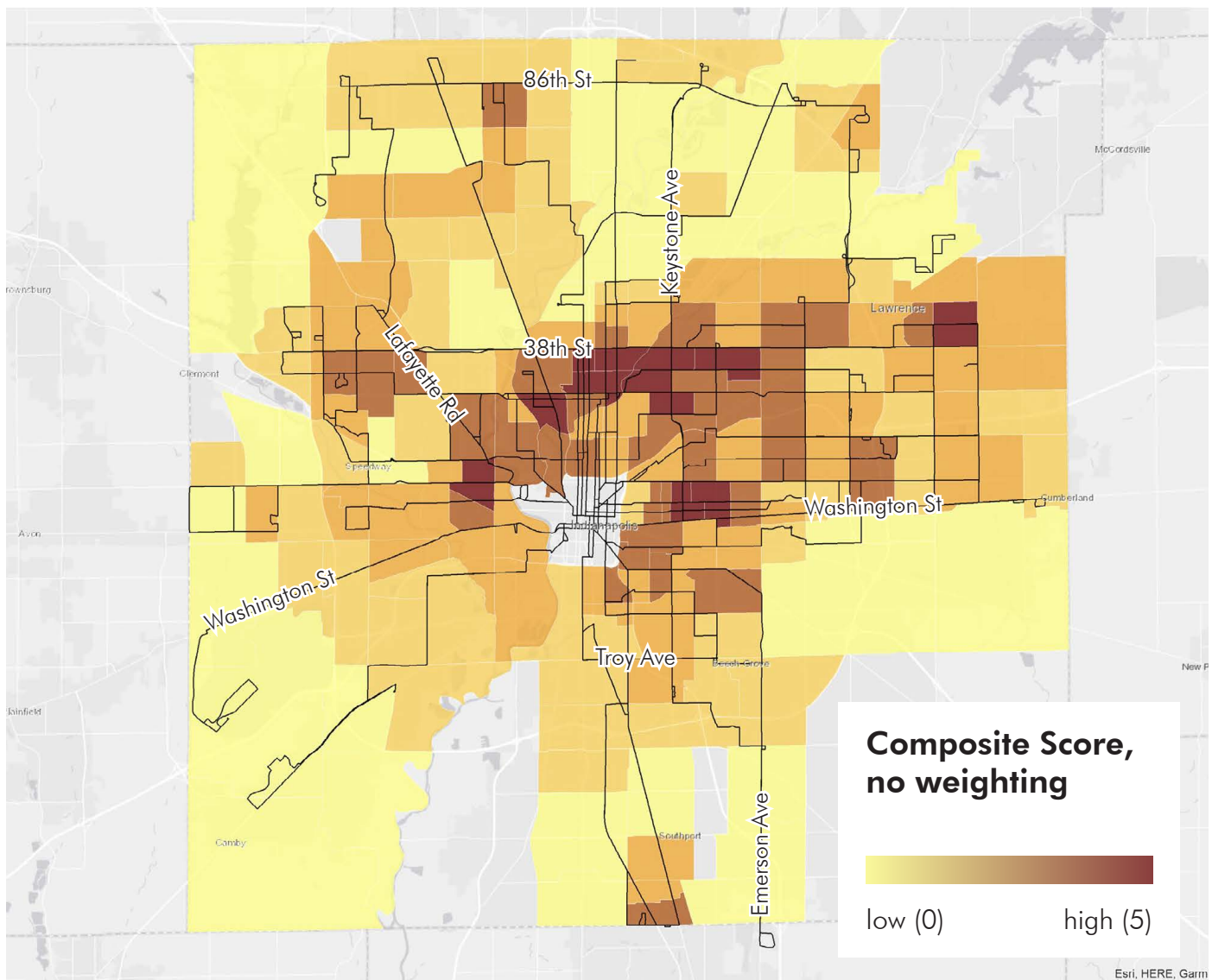




## Overall operational score

Combining the three points of operational data (page 20) created an overall operational score for Census Tracts with IndyGo service. Tracts that score the highest, represented by darker shades of red, have the highest combined scores for fixed-route ridership, paratransit ridership, and daily trips to bus stops. Tracts represented by lighter shades of yellow have the least.

This combined scoring reveals several geographies where bus stop would have the greatest impact on operational success and rider experience by identifying neighborhoods that are more deeply impacted by transit accessibility, rely more on transit as a mobility choice, and use transit more frequently.



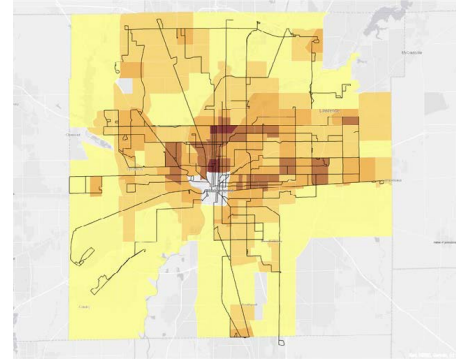
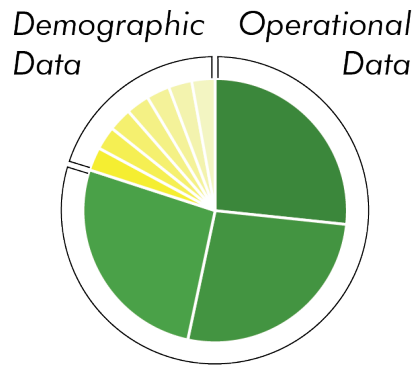
## Data weighting

To prioritize the Census Tracts, IndyGo staff decided to use weighted scoring of the different metrics to determine prioritized targeted areas. The goal was to arrive at a final weighting scenario in Community Analyst, which would rank Census Tracts from those with the highest priority to receive ADA improvements to those with the lowest priority. As data weights were adjusted, the final prioritization score for each Census Tract would shift.

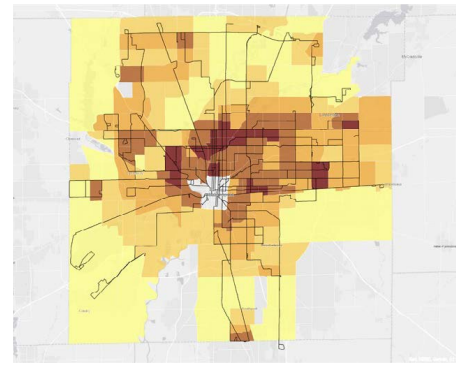
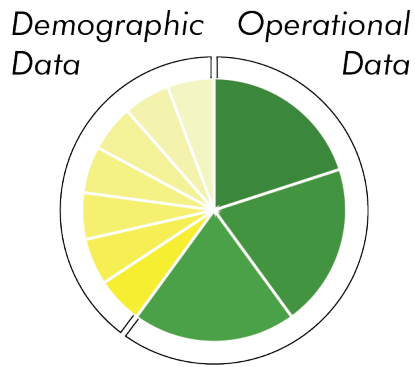
Several weighting scenarios were developed and assessed, mostly using a percentage of overall demographic data compared to overall operational data. These scenarios ranged from extremes on each end of the spectrum (80% operational to 20% demographic, and vice versa) to more balanced scenarios (50% operational to 50% demographic). It also included an “unweighted” scenario where each subset of data was equally weighted (10% weighting for each data subset).



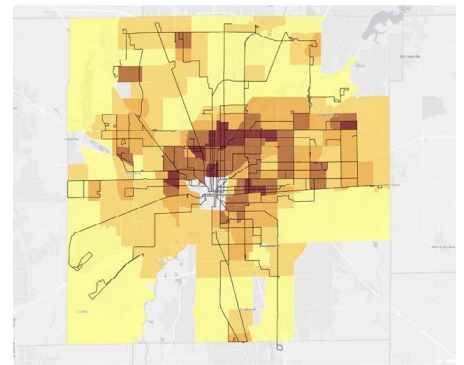
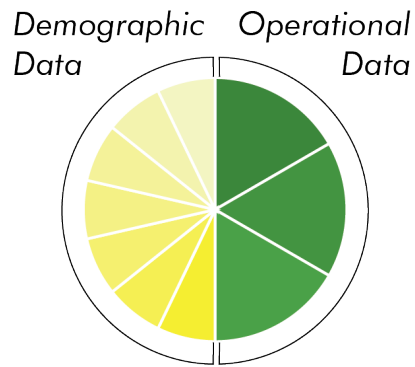
**80% Operational, 20% Demographic**



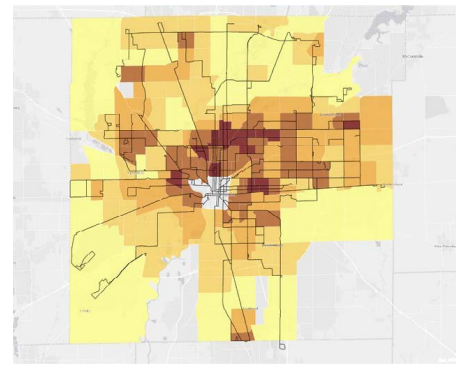
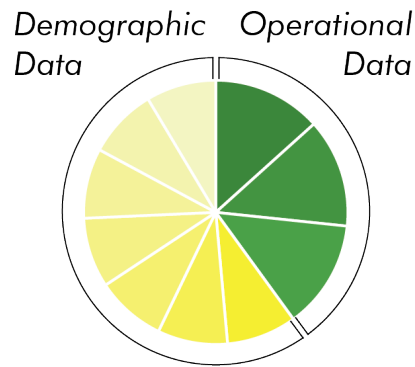
**60% Operational, 40% Demographic**



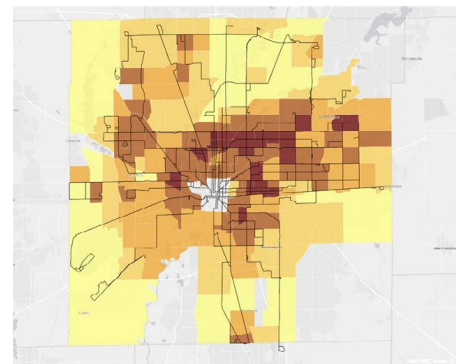
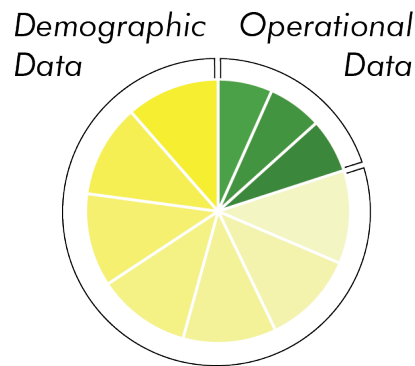
**50% Operational, 50% Demographic**



**40% Operational, 60% Demographic**

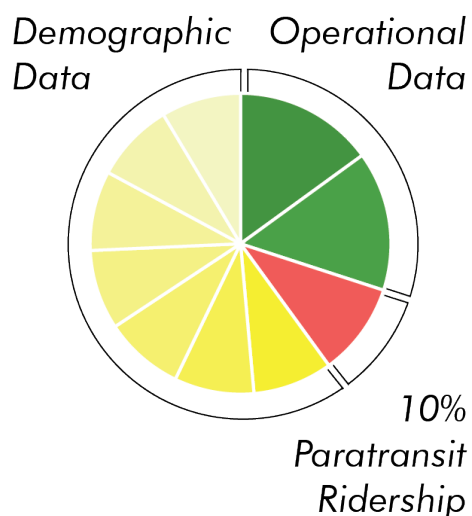


**20% Operational, 80% Demographic**

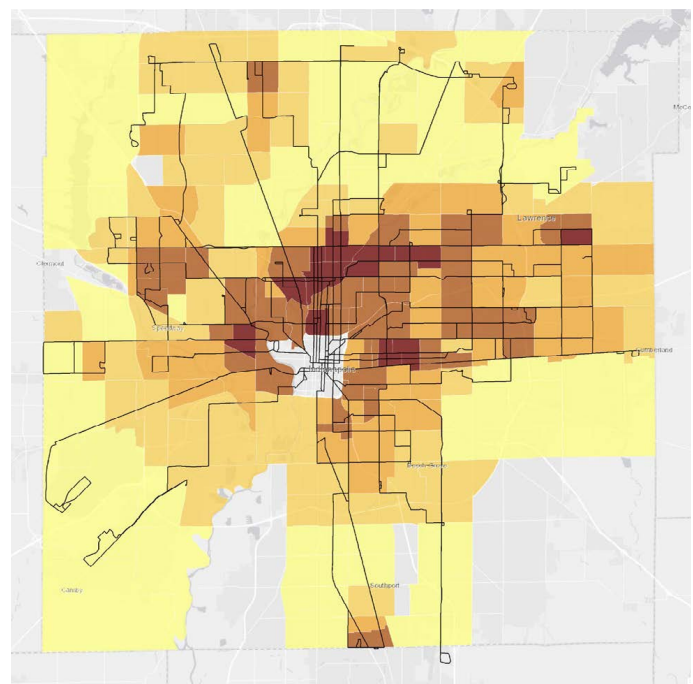
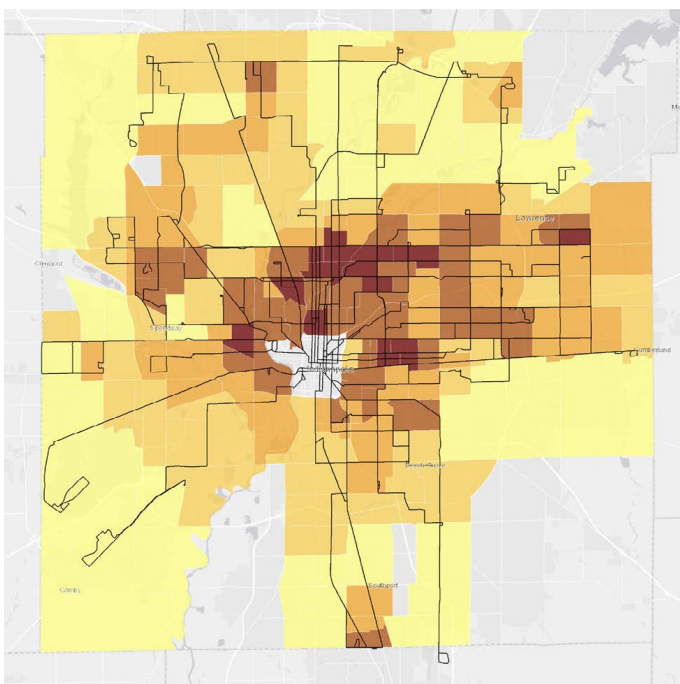
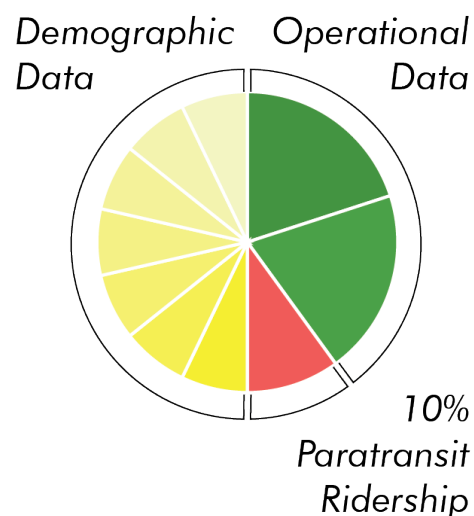


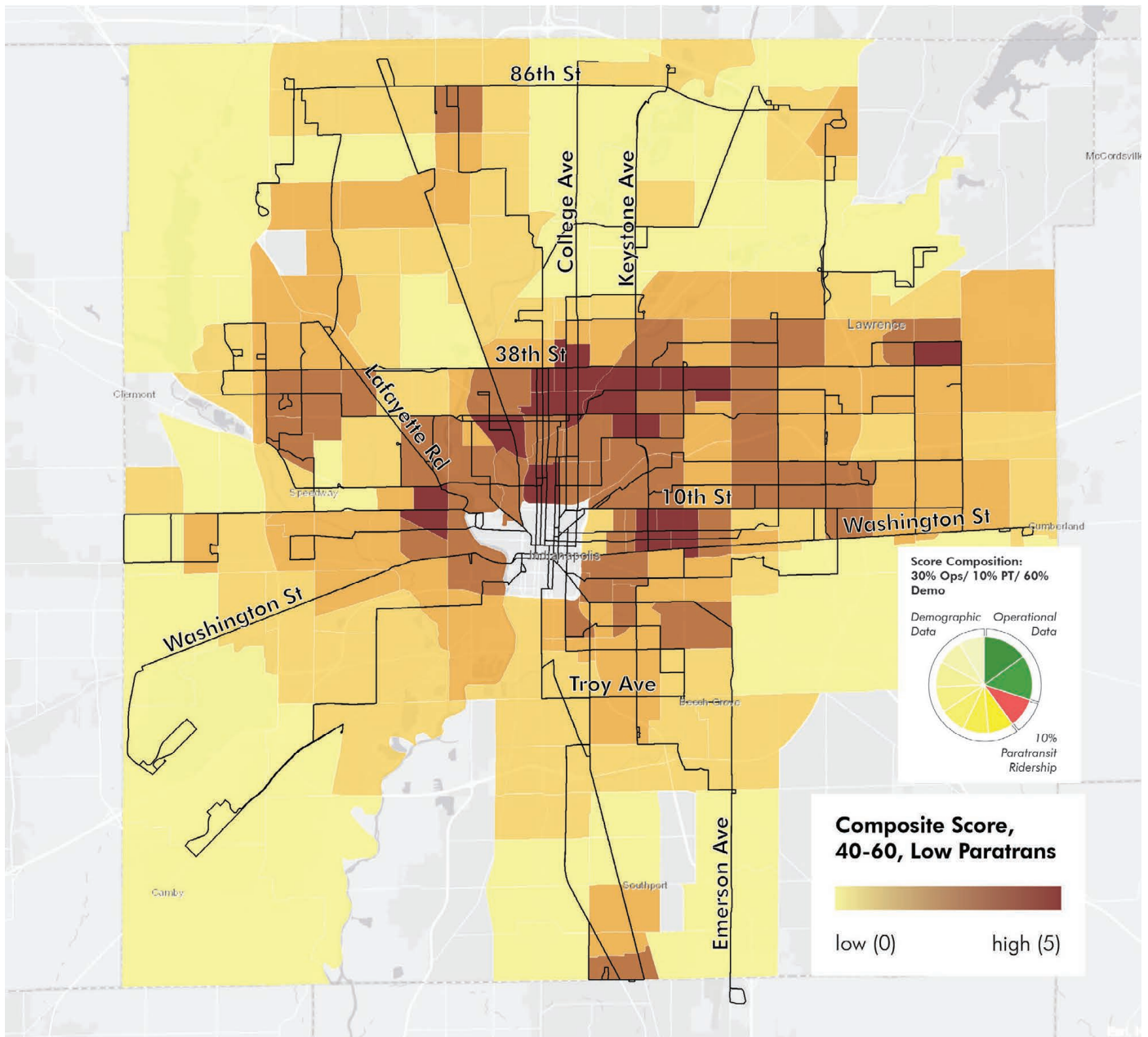
After assessing these five weighting scenarios and the unweighted scenario, it was determined that paratransit ridership, while important to include in this analysis, should not be weighted equally to fixed-route ridership data. First, this analysis is focused on fixed-route bus stops, so IndyGo felt that it was logical for fixed-route ridership to have a higher weight for that reason. Secondly, while there may be opportunities for some paratransit customers to switch their travel mode to fixed-route service if a nearby bus stop is brought into ADA compliance, there are other factors of accessibility and connectivity which may remain as an impediment for some customers. While some customers may be able to switch their mode choice for some trips after a bus stop is brought into ADA compliance, this is not the case for all customers and all trips. For these reasons, two further scenarios were produced that slightly deemphasized paratransit ridership in the data weighting. This included separate versions of the 50% operational and 50% demographic scenario and the 40% operational and 60% demographic scenario. In both of these additional weighting scenarios, paratransit data was reduced to 10% of the overall weighting.

### 40% Operational/ 60% Demographic, Paratransit Ridership limited to 10%



### 50% Operational/ 50% Demographic, Paratransit Ridership limited to 10%





## Final weighting and ADA Prioritization Score

After discussion with the internal IndyGo ADA strategy group and senior leadership at IndyGo, three weighting scenarios rose to the top for final consideration: the 40% operational/60% demographic weighting scenario (with deemphasized paratransit); the 50% operational/60% demographic weighting scenario (with deemphasized paratransit); and the unweighted scenario. When comparing these scenario maps side by side, it became clear that these maps were extremely similar, with very few differences. In general, the same areas scored high in each of the three scenarios.

At the end of these discussions, the scenario that was agreed to be the preferred data weighting option was the 40% Operational and 60% Demographic weighting scenario, with deemphasized paratransit ridership. Through these discussions, it was agreed that this scenario provided a reasonable balance between the operational datasets and the demographic datasets but did also provide a slight additional emphasis for the overall demographic percentage. IndyGo felt that this slightly higher emphasis on social and demographic datasets would boost the importance of social equity in the final prioritization scores, while still also ensuring that early ADA bus stop improvement projects are focused in areas that currently have high levels of ridership and transit use.

# Application of Targeted Area Improvements

## Prioritization methodology

The final ADA prioritization map will be what IndyGo will use to guide future bus stop improvement projects. This map and the final ranking of Census Tracts that the map is based on will allow IndyGo to identify the highest-ranking Census Tract for each subsequent round of bus stop improvements.

Once the highest-ranking remaining Census Tract is identified, staff will conduct site visits to each bus stop to determine what is needed to bring bus stops within that Census Tract into ADA compliance and to identify any opportunities for adjusting bus stop spacing in the area. If a critical mass of 20 to 30 bus stops can be identified for improvement within the Census Tract, those stops will move forward for design. If additional stops need to be added to reach the recommended 20 to 30 bus stops, then adjacent Census Tracts will be evaluated to identify more bus stops to include. Once a scope of work has been detailed for each bus stop and coordinated with internal IndyGo departments and DPW (or other external agencies), then the bus stop design process will begin. Once design is completed, bidding and construction for the bus stop improvements will follow.

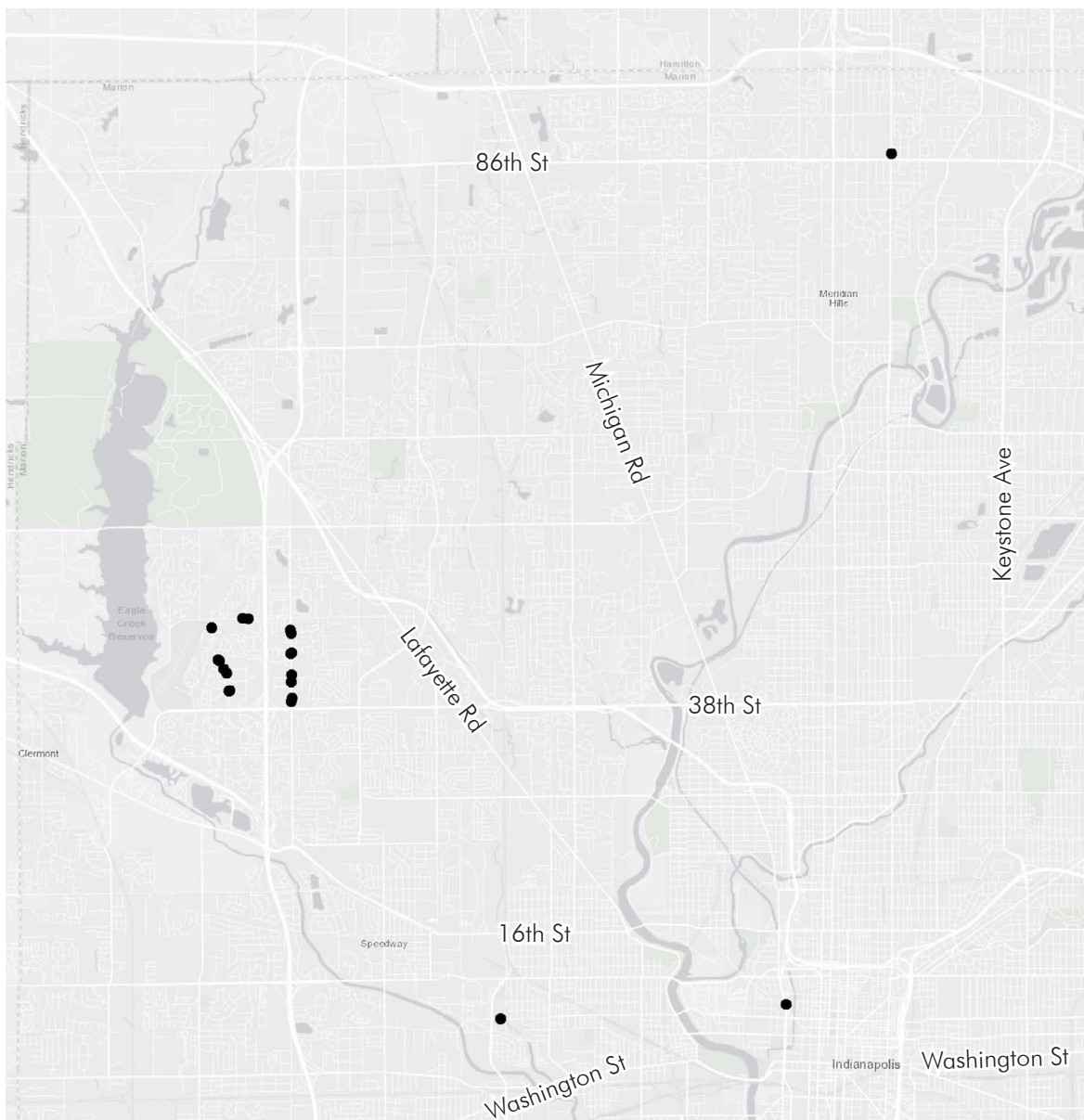
As designs are completed for one project, the next highest ranking Census Tract on the list will be identified and the planning and design process will restart for the next grouping of bus stop improvements. The goal is that three to four packages of bus stops can be designed each year. As one project completes design and begins construction, the design process for the next package of bus stops will begin. IndyGo staff will constantly be evaluating bus stop improvement areas so that this process can continue uninterrupted throughout each year.

When it is determined that there are individual bus stop improvements that require more immediate attention (outside of a targeted area improvement project), these stops will be evaluated and moved forward with design as a stand-alone project. Stops that fall into this category are defined on page 15 under “individual bus stop improvements”.



## Target area improvements example

The image below shows a clustering of proposed bus stop improvements in the northwest portion of IndyGo's service area. Several individual bus stop improvements are also shown more scattered throughout the service area. These scattered individual bus stops are locations that require more immediate improvements for varying reasons. These stops could be bid for construction along with the more compact targeted area improvements, or bid separately as standalone bus stop improvements.



- Bus stops improved under Phase 2 improvements, which prioritized Targeted Area Improvements

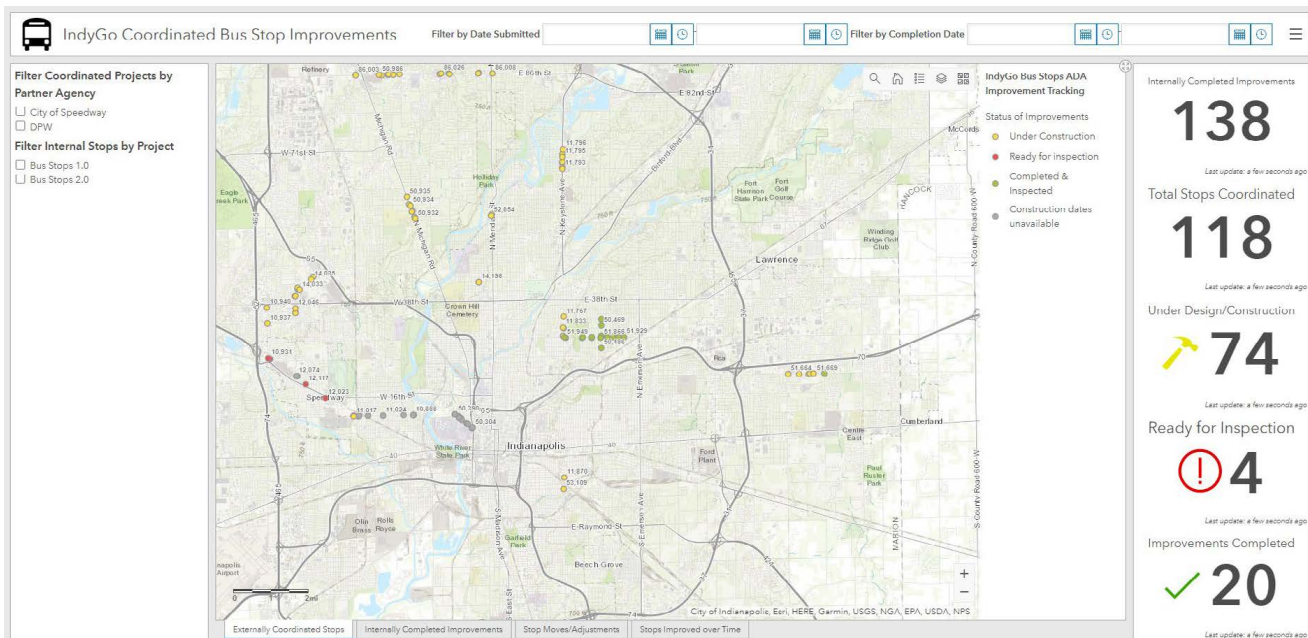
# Tracking bus stop improvements & ADA access changes

The volume of improvements required to bring IndyGo's bus stops into compliance with the standards set forth by the Americans with Disabilities Act will require a multi-year effort by IndyGo, DPW, and other external partner agencies. Furthermore, ongoing coordinated bus stop improvements with DPW and other external partner agencies require more thorough tracking of these projects. With approximately 78% of bus stops requiring ADA access improvements, tracking IndyGo's efforts and progress towards compliance necessitates an organized and centralized tracking system for improvements.

To keep track of IndyGo's progress in improving bus stops to reach compliance with ADA standards, an internal tracking dashboard has been created using ArcGIS Online that will keep record of:

- Internally completed ADA access bus stop improvements;
- Capital improvements to bus stops coordinated with outside partners, such as the Indianapolis Department of Public Works, non-governmental organizations, or the various excluded cities of Marion County; and
- Bus stop moves and consolidations that are implemented as a way to increase the level of ADA access for individual bus stops (not completed as part of a construction project).

## ArcGIS Online Bus Stop Improvements Tracking Dashboard

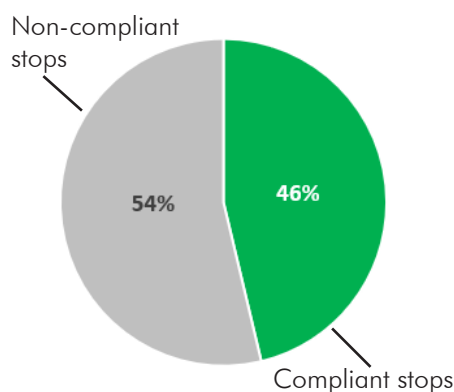


This dashboard will be updated as projects are initiated and will keep IndyGo staff updated on the status and progress of internal and external capital improvements, starting from project initiation and through design, construction, and project closeout. The dashboard will serve as a record of any change to individual bus stop that leads to an increase in accessibility or ADA compliance. It will also help to document the specific amenity improvements added to stops, such as boarding pads or shelter pads.

# ADA Improvement Projections

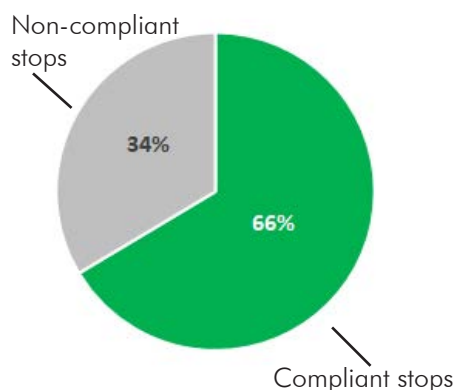
As detailed earlier in this report, IndyGo has a predetermined amount of capital funding each year for local bus stop improvements, as approved by the IndyGo Board adopted Capital Plan. Currently, IndyGo has \$850,000 per year to apply towards capital improvements for local bus stops (non-BRT bus stops). With the assumption that this current level of annual funding continues in future IndyGo capital plans, IndyGo has made some projections for the agency's bus stop ADA compliance rate for the next 5, 10, and 15 years.

Each projection listed below assumes that IndyGo and DPW can improve a minimum of 100 bus stops a year, including 70 bus stops completed by IndyGo and 30 bus stops completed through DPW CIP projects. This does not assume any additional bus stop improvements with other external agencies or partners, as these projects are less predictable.



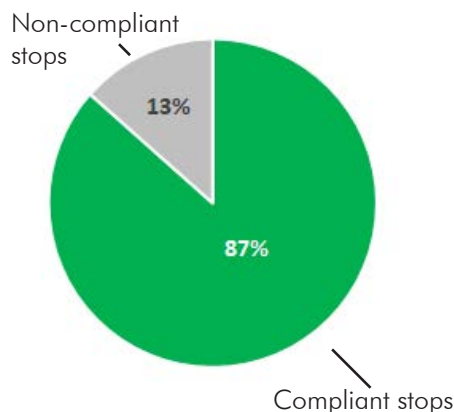
## Five-year projection: 2026

The five-year projection assumes that IndyGo and DPW are able to bring 100 bus stops into compliance through per year, but also accounts for bus stops that will be replaced by IndyGo's Purple and Blue Lines. These projects will replace 254 bus stops with 56 BRT stations, which will be fully ADA compliant. Using GIS data, IndyGo's ADA compliance rate is projected to be around 46% by 2026, provided that the goal of 100 bus stops are improved annually and that the Purple and Blue Line projects are both finished by 2026. This would be an increase of 24.3% from 21.7%.



## Ten-year projection: 2031

The ten-year projection assumes that IndyGo and DPW are able to meet the 2026 five-year projection (at a minimum) and are able to continue to bring 100 bus stops into compliance through construction projects per year between 2026 and 2031. Assuming this, IndyGo projects that the agency's ADA compliance rate should be around 66% by 2031. This would be an increase of 20% from the 2026 projected compliance rate. This works out to an annual increase of approximately 4%.



## Fifteen-year projection: 2036

The fifteen-year projection assumes that IndyGo and DPW are able to meet the 2031 ten-year projection (at a minimum) and are able to continue to bring 100 bus stops into compliance through construction projects per year between 2031 and 2036. Assuming this, IndyGo projects that the agency's ADA compliance rate should be around 87% by 2036. This would be an increase of 21% from the 2031 projected compliance rate. This works out to an annual increase of approximately 4.2%.

# Challenges to Achieving 100% ADA Compliance

It is worth noting that there are several factors within the built environment that can inhibit ADA accessibility improvements which may impact whether specific bus stops can be brought into ADA compliance. Some of these factors are outside of IndyGo's control. This is why IndyGo is not currently providing a projection or timeline for 100% ADA compliance. The goal remains for IndyGo and DPW to improve accessibility as much as possible at all bus stops. However, full compliance may not be physically possible or realistic for all bus stops, depending on physical site conditions and constraints. Examples of these constraints are detailed in the next section.

## Right-of-way constraints

Right-of-way constraints are probably the most common challenge to improving ADA accessibility. Over previous decades, many roadways in the inner core of Indianapolis were widened to accommodate more traffic lanes. In some areas, this has pushed the back edge of existing sidewalks very close to the right-of-way boundary. This sometimes leaves little or no room to build an ADA-compliant bus stop boarding pad unless a property easement is executed between IndyGo and the property owner, which is a time consuming process that seriously inflates project costs. Additionally, some intersections of major thoroughfares have been widened to accommodate vehicle turning lanes or additional thru lanes, which has used up the majority of right-of-way on each corner of the intersection. In these situations, there may be little to no right-of-way available to build an ADA-compliant bus stop, or even a sidewalk. IndyGo plans to work in the coming years to better understand the number of bus stops that may fall into this category of right-of-way constrained bus stops. This will help determine if there is a feasible path to address ADA compliance of the individual bus stops within this category. If there is not a feasible path, then these stops may need to remain as is, or be reconstructed to be as accessible as is possible within the existing right-of-way. Currently, approximately 18% of IndyGo bus stops fall into this category. These decisions will be clearly documented as these right-of-way issues are identified in the future.

## Bus stops on private property

IndyGo also operates many bus stops on private property, most commonly on the site of several shopping centers across the service area. IndyGo uses these properties as recovery points and turnaround points, so they are critical to IndyGo's current operations. Given that these stops are on private property, IndyGo does not have legal right to improve any of these bus stops that may be considered non-compliant without partnering with the property owner. These partnerships are often challenging to coordinate, given that many of these retail properties are owned by national corporations. More research and coordination will be required to better understand opportunities for improving access for this category of bus stops.



## On-street parking

Another major challenge is the accessibility of some bus stops located in the central business district and adjacent neighborhoods. In many of these neighborhoods there is metered on-street parking, and also non-metered on-street parking. The challenge with on-street parking is that buses are sometimes unable to pull up to the curb, thereby not allowing customers to directly access the bus via the sidewalk. IndyGo needs to conduct an additional analysis to better understand how many bus stops are impacted by on-street parking, as it relates to being an accessibility barrier. Currently, any barriers to accessibility due to on-street parking are not factored into the ADA Access Level scores.

Bus stops adjacent to metered parking spaces are the more challenging obstacles. The City of Indianapolis privatized on-street metered parking in the recent past, which means that these parking spaces are operated privately and not by the City of Indianapolis. Metered parking cannot be removed without the City of Indianapolis either purchasing the rights to that parking space back from the private operator or identifying a new location for any parking spaces impacted within a close proximity. Non-metered parking spaces also present an obstacle because adding no parking zones requires a City ordinance to be passed for each location requested.

IndyGo will need to evaluate any bus stops impacted by on-street parking on a case-by-case basis to identify what solutions, if any, are available to improve accessibility. This applies most directly to bus stops in and adjacent to downtown Indianapolis.

## Downtown bus stops

As mentioned previously, downtown bus stops provide their own challenges, including impacts from increased traffic congestion, vehicular turning movements, on-street parking, and utility conflicts. A deeper analysis of downtown bus stops and a review of future plans for the downtown area is necessary to better understand what is necessary to improve access to bus stops in the downtown core.

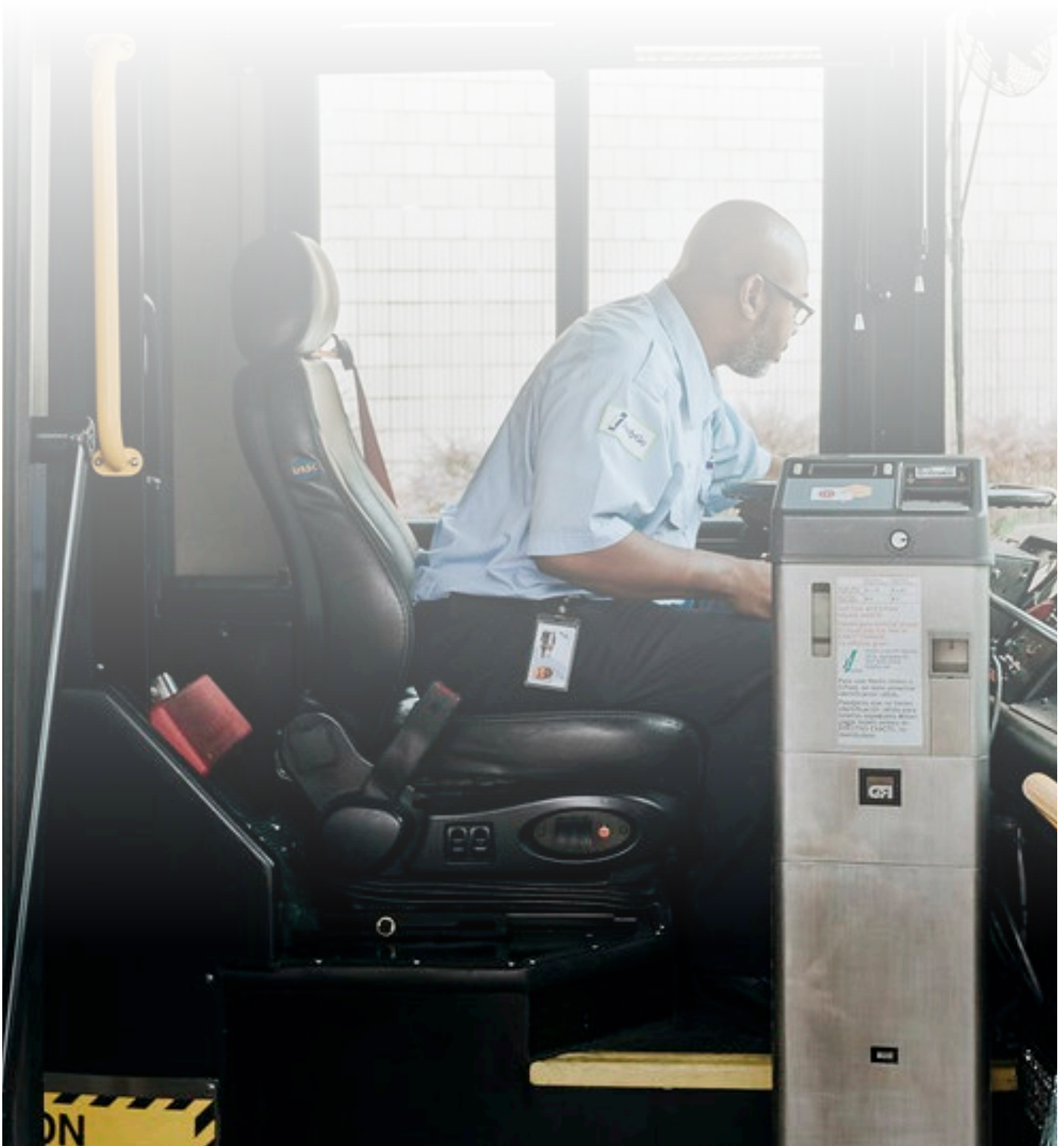


# Conclusion

After the conclusion of the ADA inventory, IndyGo staff has spent the past two years working to better understand and more clearly express the issue and complexity of ADA compliance for the agency's 2,908 bus stops. The accessibility of bus stops is a major challenge for the many local stakeholders and agencies involved, each of whom will need to play a role to positively improve on this issue. IndyGo and its partner agencies are very aware that the current rate of ADA compliance at bus stops greatly impacts the day-to-day experience of IndyGo's customers. This challenge requires a multi-faceted solution and requires that all stakeholders be committed to the level of coordination and cooperation required to continue to improve access at bus stops for all IndyGo customers. It is critical that this issue is addressed in an increasingly urgent manner.

This document will serve as the primary guide for IndyGo staff in the coming years as the agency continues its work to create an equitable and accessible public transit system. The strategies and methodologies identified in this document will serve as the framework for any decision making for how and where to implement bus stop improvements in the future. By closely tracking and monitoring progress on an annual basis, IndyGo will strive to be transparent at all times about the level of ADA access at all of its bus stops. With this document, IndyGo has a plan that agency staff will work to implement to improve the customer experience and the accessibility of the agency's bus stops.

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# Appendix

**Table: Scoring results by Census Tract, ranked by Composite Score**

Site (GEOID)	Composite Score (50/50 weighting)	Composite Score (40% operational/60% demographic weighting)	Composite Score (60% operational/40% demographic weighting)	Yearly Paratransit Ridership Density (per square mile)	Yearly Fixed-Route Ridership Density (per square mile)	Bus Trips to Stops Density (per square mile)
18097350300	0.66	0.64	0.67	822.9	2614.6	2318.7
18097350400	0.56	0.55	0.58	277.5	1986.0	2924.7
18097355000	0.54	0.56	0.51	155.6	1468.3	1711.1
18097354800	0.50	0.53	0.47	23.8	1819.5	948.4
18097353300	0.49	0.45	0.48	1294.3	1538.3	2411.8
18097351000	0.49	0.50	0.52	446.8	1350.1	1638.9
18097341600	0.49	0.52	0.45	816.0	567.8	896.1
18097355100	0.48	0.49	0.46	289.6	1449.4	1502.9
18097341200	0.48	0.52	0.44	736.5	466.7	842.5
18097322100	0.45	0.44	0.44	400.6	2000.6	1413.3
18097350900	0.45	0.46	0.45	517.6	672.9	2070.4
18097330803	0.44	0.46	0.41	399.2	670.6	1813.2
18097350800	0.44	0.47	0.41	582.0	371.7	1313.8
18097351200	0.44	0.48	0.42	315.3	360.5	1426.6
18097350600	0.44	0.48	0.40	350.1	439.3	1293.3
18097350500	0.42	0.45	0.39	247.9	727.6	1304.3
18097360602	0.41	0.40	0.42	2130.8	205.2	849.9
18097354900	0.41	0.44	0.38	207.2	1259.7	423.9
18097340600	0.40	0.40	0.36	1961.8	152.8	578.4
18097351500	0.40	0.41	0.40	466.8	1002.7	1537.2
18097351900	0.40	0.45	0.40	252.7	416.5	709.6
18097360900	0.39	0.40	0.37	465.0	392.2	1679.4
18097353500	0.38	0.40	0.34	232.4	559.8	1308.5
18097355400	0.38	0.41	0.35	191.5	759.0	998.9
18097330804	0.38	0.42	0.35	478.3	374.8	374.0
18097354500	0.37	0.39	0.35	141.6	1129.6	957.6
18097354700	0.37	0.39	0.34	133.5	1495.8	276.8
18097320108	0.36	0.38	0.33	593.1	249.2	843.9
18097360102	0.36	0.40	0.33	298.6	253.5	963.7
18097355300	0.35	0.36	0.31	659.4	847.8	777.6
18097352600	0.35	0.39	0.34	158.5	469.9	764.0
18097352100	0.35	0.38	0.31	191.8	379.0	819.3
18097350700	0.35	0.38	0.31	119.5	360.0	866.2
18097330806	0.35	0.38	0.31	316.8	333.9	582.7
18097351600	0.34	0.34	0.34	711.2	918.2	1123.8
18097357000	0.34	0.36	0.32	141.8	827.6	868.9
18097330900	0.34	0.38	0.29	236.1	212.1	528.7
18097390900	0.33	0.34	0.33	361.7	455.6	1668.8
18097322600	0.33	0.35	0.29	256.5	498.1	993.0
18097360101	0.33	0.37	0.31	313.3	164.6	388.9



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Population Density (per square mile)	Daytime Population Density (per square mile)	Minority Population	Households with 1 + Members with a Disability	Households Without Access to a Vehicle	Age Dependency Ratio	Households Living Below the Poverty Line
9169.6	8293.0	84.6%	31.7%	9.3%	0.3	34.8%
4973.8	4615.7	81.3%	32.2%	10.6%	0.5	24.6%
7140.6	5899.2	59.8%	45.8%	19.1%	0.5	44.8%
8322.2	6930.4	72.2%	33.7%	16.9%	0.6	40.6%
4177.0	13750.4	47.1%	14.6%	0.0%	0.0	20.2%
5732.4	5798.3	79.7%	36.0%	9.9%	0.4	35.1%
5410.4	4890.7	92.5%	44.9%	19.6%	0.6	35.8%
6773.5	5246.5	51.4%	37.2%	10.9%	0.5	40.5%
6193.4	4770.9	91.9%	35.3%	25.1%	0.6	36.2%
6453.7	5244.5	69.8%	23.3%	6.7%	0.5	8.2%
5047.4	3883.6	92.0%	26.2%	14.1%	0.5	22.9%
7522.1	5701.1	91.2%	22.5%	2.5%	0.5	36.1%
3585.3	3014.6	98.3%	34.5%	14.2%	0.6	43.2%
3181.2	2873.0	98.6%	39.3%	16.5%	0.6	44.7%
5015.5	4118.4	98.4%	51.5%	9.2%	0.7	29.6%
3677.9	3203.2	98.6%	42.9%	9.0%	0.7	30.2%
3258.9	3349.4	39.8%	39.5%	2.6%	0.6	15.7%
6931.6	5404.6	63.4%	34.3%	12.2%	0.5	42.0%
3315.3	2734.9	83.5%	25.0%	6.8%	0.5	20.3%
4337.8	5026.1	78.8%	22.0%	8.2%	0.3	28.1%
4387.6	3633.4	99.4%	40.2%	16.6%	0.8	30.5%
5236.4	6514.3	46.7%	33.6%	7.1%	0.6	25.3%
2794.8	3623.7	82.8%	24.0%	14.3%	0.5	37.3%
7388.7	5965.3	49.6%	34.8%	5.6%	0.5	38.4%
7687.5	6067.7	94.1%	23.0%	0.0%	0.8	46.5%
7752.5	5800.5	45.5%	27.2%	11.4%	0.2	30.7%
7602.6	6228.4	59.4%	13.7%	3.3%	0.5	43.9%
5184.9	22375.4	73.2%	25.0%	0.0%	0.3	23.1%
2761.3	2693.5	90.9%	29.4%	9.9%	0.7	39.7%
8559.9	6976.7	41.5%	15.7%	1.9%	0.5	21.5%
4045.6	3415.1	65.2%	33.7%	12.3%	0.5	41.3%
3354.6	3072.0	94.1%	40.6%	8.6%	0.4	33.9%
2353.3	2101.8	97.4%	37.0%	13.7%	0.6	28.3%
6771.2	5374.3	87.5%	27.6%	3.1%	0.5	37.3%
5575.8	5593.5	58.7%	18.3%	2.0%	0.3	13.7%
6364.8	4860.9	25.5%	37.2%	6.3%	0.5	33.1%
5061.0	4176.2	92.7%	26.4%	11.7%	116.0	31.0%
4961.3	4379.2	58.8%	19.4%	9.7%	0.3	14.7%
3036.9	3324.2	91.4%	22.9%	0.0%	0.5	38.7%
2666.6	2806.8	74.2%	38.7%	12.3%	111.0	43.8%

**Table: Scoring results by Census Tract, ranked by Composite Score**

Site (GEOID)	Composite Score (50/50 weighting)	Composite Score (40% operational/60% demographic weighting)	Composite Score (60% operational/40% demographic weighting)	Paratransit Ridership	Fixed-Route Ridership	Bus Trips to Stops
18097353600	0.33	0.37	0.29	110.5	285.9	648.9
18097352800	0.33	0.37	0.29	213.4	206.3	531.7
18097310203	0.32	0.33	0.29	1400.8	98.1	254.7
18097340202	0.32	0.34	0.27	706.3	192.8	801.4
18097351700	0.32	0.33	0.30	346.3	207.0	1259.2
18097390700	0.32	0.36	0.28	304.2	473.4	555.6
18097390500	0.32	0.35	0.30	103.0	228.6	722.8
18097357200	0.32	0.37	0.30	0.0	151.4	467.1
18097355900	0.31	0.34	0.29	174.0	633.1	804.0
18097360800	0.31	0.33	0.28	345.4	365.2	983.1
18097355700	0.31	0.34	0.28	54.1	641.7	690.4
18097331000	0.31	0.34	0.29	251.3	253.5	901.9
18097340400	0.31	0.33	0.28	498.6	254.2	527.9
18097340300	0.31	0.34	0.27	195.3	190.4	538.8
18097352700	0.30	0.32	0.28	148.5	494.4	1022.1
18097340201	0.30	0.33	0.28	329.1	221.8	747.5
18097356400	0.30	0.33	0.27	282.7	338.6	670.9
18097381204	0.30	0.33	0.27	265.8	265.9	571.5
18097361100	0.29	0.29	0.27	191.5	658.9	1276.9
18097322700	0.29	0.31	0.26	444.8	262.6	684.6
18097341100	0.29	0.32	0.27	251.9	323.7	692.7
18097357100	0.29	0.31	0.27	369.1	621.0	324.5
18097322000	0.29	0.31	0.28	309.0	508.7	560.9
18097340102	0.29	0.32	0.24	495.1	133.7	306.8
18097357400	0.29	0.33	0.26	145.3	49.0	344.5
18097322200	0.28	0.30	0.27	16.9	455.6	1307.3
18097352500	0.28	0.30	0.26	248.0	585.1	673.6
18097357800	0.28	0.31	0.24	15.0	700.2	684.0
18097310306	0.28	0.30	0.26	317.9	228.6	609.5
18097352300	0.28	0.32	0.24	216.1	109.1	352.2
18097357300	0.28	0.32	0.25	8.9	330.3	429.5
18097321600	0.27	0.28	0.24	1318.3	57.3	69.1
18097355600	0.27	0.29	0.24	12.7	566.5	794.5
18097360401	0.27	0.31	0.24	306.5	125.8	370.3
18097340108	0.27	0.31	0.25	61.1	200.7	576.1
18097350100	0.27	0.31	0.26	27.4	183.3	589.8
18097330106	0.26	0.28	0.23	546.8	96.5	636.6
18097322500	0.26	0.29	0.24	180.3	187.7	339.0
18097342600	0.26	0.30	0.22	181.6	173.5	252.6
18097310312	0.26	0.29	0.23	232.4	119.0	277.2
18097330500	0.26	0.29	0.22	429.9	45.8	108.0
18097341903	0.26	0.30	0.22	138.8	101.8	221.2
18097360502	0.25	0.27	0.22	163.8	209.2	980.8
18097341904	0.25	0.27	0.23	587.4	201.8	298.4
18097357600	0.25	0.29	0.21	114.6	195.9	371.2
18097320902	0.25	0.28	0.22	331.5	76.8	321.7

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Population Density	Daytime Population Density	Minority Population	Households with 1 + Members with a Disability	Households Without Access to a Vehicle	Age Dependency Ratio	Households Living Below the Poverty Line
1730.7	2038.5	91.7%	26.1%	19.7%	108.0	35.7%
1538.3	2115.7	95.2%	51.3%	11.9%	115.0	23.7%
3984.2	4223.0	72.9%	26.8%	2.7%	0.6	9.0%
4858.5	4825.2	51.5%	28.9%	2.7%	0.6	22.6%
2686.4	2699.4	84.4%	20.3%	14.5%	90.0	16.4%
5439.2	4276.8	62.8%	30.7%	5.4%	98.0	35.0%
1743.7	1445.5	93.1%	37.6%	13.3%	112.0	28.2%
6429.1	5073.2	43.4%	49.2%	12.1%	109.0	31.6%
7095.4	6555.1	31.7%	28.7%	7.1%	96.0	21.6%
2423.7	3511.1	39.6%	40.0%	7.3%	127.0	18.5%
3232.2	3812.0	38.6%	33.5%	12.4%	101.0	36.7%
4008.7	3113.6	96.7%	28.8%	4.0%	122.0	15.3%
5132.3	3976.9	75.3%	26.4%	8.0%	92.0	21.2%
6466.3	5032.4	83.9%	19.5%	1.5%	101.0	39.9%
2880.5	3111.9	59.2%	27.0%	1.9%	87.0	42.1%
4509.0	3610.9	74.3%	43.5%	1.2%	96.0	20.6%
2501.4	2808.4	56.2%	36.5%	6.9%	101.0	34.2%
4284.1	5355.1	36.0%	34.7%	8.1%	167.0	16.6%
6207.1	5229.4	22.0%	27.0%	0.0%	81.0	17.2%
2146.8	1724.2	89.9%	35.5%	0.9%	120.0	15.1%
5647.4	4901.8	57.1%	37.4%	1.0%	103.0	20.2%
6437.9	5776.6	34.5%	32.3%	9.0%	87.0	13.6%
3696.2	3510.4	75.8%	24.0%	6.9%	93.0	18.6%
4503.8	4174.8	60.8%	42.8%	5.4%	124.0	13.8%
2755.0	2418.8	45.1%	39.3%	14.6%	122.0	36.5%
6105.9	5238.1	51.4%	17.7%	0.0%	126.0	11.1%
6085.5	4658.3	34.1%	25.0%	4.8%	85.0	22.5%
4977.5	5403.3	30.1%	35.5%	4.8%	99.0	22.0%
3279.9	3496.4	90.3%	18.0%	1.9%	108.0	26.9%
1736.9	2028.7	94.4%	30.8%	10.3%	123.0	25.7%
2485.3	2431.8	50.2%	35.1%	5.5%	136.0	38.9%
2346.7	2102.3	63.5%	24.3%	2.9%	103.0	12.6%
2298.7	2204.4	43.9%	30.5%	3.5%	103.0	33.9%
5695.9	4694.0	78.0%	24.2%	1.9%	97.0	27.5%
6065.9	4549.4	85.9%	23.6%	0.0%	104.0	24.3%
1755.6	1396.2	91.8%	41.2%	7.7%	87.0	26.1%
3971.9	12900.1	56.8%	20.4%	4.0%	61.0	13.8%
1853.9	2103.4	78.3%	33.4%	11.9%	74.0	29.0%
3007.5	2514.7	41.6%	50.3%	5.8%	96.0	32.2%
4532.7	3552.5	86.2%	23.1%	6.6%	90.0	24.7%
2840.0	2426.4	76.0%	41.2%	2.4%	120.0	19.2%
6823.9	5008.0	71.8%	18.5%	6.3%	89.0	30.6%
1851.5	1942.2	48.4%	29.8%	4.5%	98.0	23.7%
5435.8	4355.8	71.4%	15.8%	0.0%	82.0	20.8%
5041.7	3905.4	33.9%	31.9%	6.2%	104.0	29.7%
5703.7	4386.2	75.5%	20.0%	0.0%	94.0	23.8%

**Table: Scoring results by Census Tract, ranked by Composite Score**

Site (GEOID)	Composite Score (50/50 weighting)	Composite Score (40% operational/60% demographic weighting)	Composite Score (60% operational/40% demographic weighting)	Paratransit Ridership	Fixed-Route Ridership	Bus Trips to Stops
18097360302	0.25	0.29	0.23	85.1	133.6	431.7
18097330805	0.25	0.28	0.22	147.9	126.2	483.9
18097360202	0.25	0.29	0.22	190.0	139.5	131.9
18097360402	0.24	0.27	0.22	82.6	216.8	659.0
18097355500	0.24	0.27	0.21	196.2	432.2	307.2
18097380300	0.24	0.27	0.22	89.9	230.2	473.2
18097356900	0.24	0.27	0.21	18.3	154.0	633.0
18097352400	0.24	0.27	0.20	109.1	69.4	396.6
18097354400	0.23	0.24	0.19	94.8	683.6	815.3
18097360601	0.23	0.25	0.19	82.6	138.9	776.1
18097360201	0.23	0.25	0.22	81.2	136.5	698.9
18097342500	0.23	0.26	0.20	29.9	83.5	718.7
18097310204	0.23	0.26	0.20	332.4	95.1	204.9
18097381203	0.23	0.25	0.20	67.6	116.3	637.6
18097310309	0.23	0.25	0.20	289.2	134.4	192.8
18097320903	0.23	0.27	0.20	126.4	91.3	23.2
18097360404	0.23	0.27	0.20	125.7	60.1	33.7
18097330202	0.23	0.26	0.19	231.9	35.3	37.5
18097360700	0.22	0.22	0.19	359.8	489.1	905.2
18097310106	0.22	0.23	0.18	308.8	311.9	566.9
18097322400	0.22	0.24	0.19	264.9	280.7	449.9
18097357900	0.22	0.24	0.22	21.0	238.3	765.1
18097341700	0.22	0.25	0.20	34.8	98.3	496.9
18097340902	0.22	0.24	0.20	199.5	164.6	374.9
18097310305	0.22	0.25	0.18	116.9	114.9	282.1
18097358100	0.22	0.26	0.19	173.1	25.3	67.5
18097381001	0.22	0.25	0.20	62.3	71.0	297.4
18097310105	0.21	0.22	0.18	556.1	120.8	365.3
18097380402	0.21	0.23	0.18	155.3	142.4	568.5
18097380502	0.21	0.24	0.19	211.3	239.9	68.9
18097321001	0.21	0.23	0.18	258.0	40.9	211.7
18097310308	0.21	0.23	0.19	340.3	68.7	98.5
18097340700	0.21	0.24	0.18	47.1	72.4	237.6
18097322300	0.20	0.21	0.19	206.8	446.8	727.5
18097361000	0.20	0.21	0.18	8.7	267.5	1070.6
18097310111	0.20	0.22	0.17	313.7	151.0	579.8
18097361200	0.20	0.23	0.17	33.0	331.8	364.4
18097340500	0.20	0.23	0.20	165.1	98.4	180.9
18097360301	0.20	0.22	0.19	241.6	85.6	143.8
18097342200	0.20	0.23	0.17	194.6	63.4	114.6
18097320109	0.20	0.23	0.17	261.0	23.3	62.6
18097330700	0.20	0.24	0.17	91.3	1.1	0.0
18097342300	0.20	0.23	0.16	70.9	26.5	172.6
18097320500	0.19	0.21	0.17	254.9	107.4	245.4
18097320901	0.19	0.21	0.16	403.4	10.4	170.5
18097360501	0.19	0.22	0.17	107.6	172.4	252.0



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Population Density	Daytime Population Density	Minority Population	Households with 1 + Members with a Disability	Households Without Access to a Vehicle	Age Dependency Ratio	Households Living Below the Poverty Line
1322.0	2166.7	79.8%	35.6%	5.4%	99.0	29.7%
2463.2	2840.9	73.1%	27.1%	2.5%	98.0	31.9%
2986.6	2804.5	76.7%	29.4%	12.1%	97.0	22.1%
1945.5	3228.1	84.1%	33.0%	0.0%	108.0	15.9%
3879.2	3122.0	29.3%	30.6%	9.3%	105.0	16.9%
4551.5	4138.3	33.1%	24.9%	8.2%	73.0	35.5%
5899.1	5527.5	31.5%	33.5%	4.6%	87.0	19.2%
3748.5	3091.2	56.9%	31.3%	3.5%	103.0	26.6%
2792.9	3471.7	41.1%	19.9%	5.7%	61.0	16.9%
3079.1	2538.3	26.6%	36.8%	4.3%	104.0	17.0%
2086.6	2150.6	68.4%	26.8%	2.9%	96.0	21.1%
3673.2	3237.1	22.7%	38.8%	5.9%	90.0	23.7%
2418.1	2718.5	83.6%	32.2%	1.7%	89.0	19.2%
4843.6	5220.7	49.7%	23.5%	0.0%	104.0	19.5%
5235.7	3786.7	83.9%	18.6%	0.0%	94.0	15.1%
5600.5	3967.1	91.8%	23.9%	0.0%	102.0	21.3%
4169.5	3102.0	84.2%	19.2%	3.3%	97.0	34.4%
2858.7	2128.7	79.1%	27.3%	0.9%	104.0	31.5%
2276.2	2194.2	24.7%	17.8%	3.0%	101.0	9.7%
4835.8	4832.4	63.2%	14.6%	0.0%	75.0	7.4%
5799.4	4420.6	65.8%	14.2%	3.0%	62.0	10.7%
3482.1	3246.3	24.8%	34.8%	6.8%	81.0	15.0%
2102.6	3132.4	48.0%	38.1%	1.1%	94.0	29.9%
5216.5	4327.0	51.7%	23.7%	0.0%	79.0	20.2%
4552.2	3611.1	86.7%	22.0%	0.0%	94.0	17.4%
1031.0	1184.2	33.2%	38.9%	14.1%	109.0	28.2%
5364.3	4677.3	54.5%	17.1%	4.7%	110.0	19.5%
1345.2	2951.6	57.4%	21.4%	0.0%	87.0	17.7%
5315.1	4395.0	21.5%	26.3%	0.0%	99.0	16.4%
4924.2	3865.7	34.3%	30.4%	7.5%	73.0	16.9%
1815.5	1577.0	76.8%	21.9%	6.1%	111.0	13.4%
2713.1	2709.2	79.0%	24.5%	5.9%	86.0	9.7%
2254.7	2020.7	71.3%	29.0%	1.1%	98.0	28.1%
6569.0	5655.6	28.7%	12.0%	0.8%	63.0	4.0%
4684.5	3912.1	13.1%	18.0%	4.0%	91.0	8.0%
3136.6	3110.7	65.7%	24.5%	1.3%	70.0	6.7%
3537.4	2869.1	20.3%	31.2%	11.1%	96.0	8.4%
3041.5	2638.0	75.6%	23.5%	1.3%	71.0	26.6%
3083.9	3410.4	57.5%	23.0%	2.8%	101.0	16.8%
2122.4	3746.2	37.1%	32.2%	4.2%	103.0	22.7%
2590.4	2314.8	24.3%	26.2%	3.8%	167.0	14.7%
4819.8	4295.8	49.4%	31.5%	2.3%	113.0	17.7%
3245.3	3028.2	19.2%	43.6%	4.6%	95.0	22.0%
2595.3	2509.3	34.0%	28.1%	2.3%	108.0	15.5%
2871.8	2445.6	46.1%	21.3%	3.6%	114.0	9.0%
3711.2	3011.5	50.1%	26.5%	3.0%	92.0	12.0%

**Table: Scoring results by Census Tract, ranked by Composite Score**

Site (GEOID)	Composite Score (50/50 weighting)	Composite Score (40% operational/60% demographic weighting)	Composite Score (60% operational/40% demographic weighting)	Paratransit Ridership	Fixed-Route Ridership	Bus Trips to Stops
18097340110	0.19	0.21	0.16	59.9	60.2	367.3
18097330600	0.19	0.22	0.17	221.0	15.4	21.3
18097358000	0.19	0.22	0.16	35.2	42.9	189.4
18097330105	0.18	0.19	0.16	486.7	69.8	336.2
18097320105	0.18	0.21	0.16	122.3	182.1	170.3
18097380600	0.18	0.21	0.15	177.6	115.8	95.4
18097360405	0.18	0.21	0.16	262.4	26.6	0.0
18097310104	0.18	0.19	0.16	200.1	101.9	314.4
18097342101	0.18	0.21	0.15	113.2	40.8	190.4
18097380200	0.18	0.20	0.17	19.6	160.3	303.0
18097370202	0.18	0.21	0.15	137.3	13.2	89.3
18097342400	0.18	0.21	0.15	22.0	9.8	142.6
18097380501	0.18	0.22	0.14	15.0	37.5	47.5
18097340113	0.18	0.21	0.16	54.6	11.9	0.0
18097321900	0.17	0.18	0.15	145.5	39.9	685.2
18097380403	0.17	0.19	0.15	73.0	96.1	401.6
18097320204	0.17	0.19	0.15	164.6	70.0	242.9
18097310311	0.17	0.20	0.15	293.3	51.6	0.0
18097357500	0.17	0.19	0.14	113.0	47.6	269.4
18097390102	0.17	0.19	0.15	94.3	53.8	110.9
18097341902	0.17	0.19	0.14	58.5	76.0	63.5
18097321800	0.16	0.17	0.14	73.9	238.7	524.7
18097341000	0.16	0.16	0.15	14.5	106.9	871.4
18097310201	0.16	0.18	0.14	218.7	59.8	304.6
18097380404	0.16	0.19	0.14	108.2	68.2	240.2
18097320203	0.16	0.18	0.15	285.7	36.6	0.0
18097380700	0.16	0.18	0.13	59.6	30.6	102.1
18097321700	0.15	0.16	0.13	244.6	73.1	408.2
18097321200	0.15	0.16	0.13	61.7	252.2	515.6
18097320202	0.15	0.17	0.13	145.3	92.8	258.7
18097390600	0.15	0.18	0.13	226.3	8.5	21.7
18097361300	0.15	0.16	0.14	18.3	168.1	368.3
18097310110	0.15	0.16	0.13	234.4	33.1	131.6
18097321100	0.15	0.18	0.14	57.1	19.4	110.2
18097340109	0.15	0.18	0.13	0.0	31.0	122.4
18097320106	0.15	0.18	0.13	7.9	23.6	63.5
18097340101	0.15	0.17	0.12	216.8	21.2	75.5
18097370201	0.15	0.17	0.13	39.5	16.7	61.6
18097321400	0.14	0.15	0.12	325.2	75.7	326.2
18097380800	0.14	0.16	0.13	57.0	44.7	260.6
18097381205	0.14	0.17	0.12	124.6	27.6	40.6
18097340901	0.14	0.17	0.12	107.0	31.2	65.2
18097321002	0.14	0.17	0.12	21.1	18.6	64.8
18097340800	0.14	0.16	0.11	0.0	39.8	42.7
18097320700	0.13	0.13	0.11	32.5	463.7	398.3
18097321300	0.13	0.13	0.11	284.6	258.3	179.3

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Population Density	Daytime Population Density	Minority Population	Households with 1+ Members with a Disability	Households Without Access to a Vehicle	Age Dependency Ratio	Households Living Below the Poverty Line
6685.7	4629.9	73.4%	14.0%	0.0%	69.0	8.1%
5043.1	4096.3	50.5%	25.5%	2.7%	86.0	15.1%
820.7	1259.8	27.6%	38.1%	10.8%	84.0	26.9%
1732.0	4882.6	45.1%	17.7%	1.2%	93.0	9.4%
4543.1	3814.1	43.1%	18.1%	3.1%	95.0	14.2%
2702.8	2523.4	41.1%	28.2%	5.4%	102.0	12.6%
3179.8	2490.8	70.1%	28.5%	0.0%	94.0	12.2%
968.9	2825.1	40.3%	28.0%	1.2%	102.0	15.7%
2681.1	2872.0	51.5%	25.5%	2.8%	95.0	19.4%
1558.1	1835.6	25.9%	36.6%	2.0%	107.0	19.6%
2073.2	1688.0	22.9%	41.1%	3.7%	113.0	20.1%
415.9	984.9	14.4%	34.0%	16.2%	102.0	24.6%
3247.4	2682.0	29.2%	31.9%	10.1%	102.0	15.8%
3443.2	3340.6	30.5%	42.5%	2.6%	107.0	12.9%
6442.6	6111.4	22.7%	10.7%	3.0%	38.0	11.2%
4967.9	4276.7	7.5%	32.7%	0.0%	91.0	10.0%
2365.2	4827.3	56.1%	19.4%	2.4%	69.0	17.4%
2914.4	2356.7	77.9%	23.8%	1.1%	92.0	3.5%
2597.9	2854.9	11.5%	31.9%	1.4%	119.0	15.7%
2057.0	2628.1	28.0%	28.8%	2.1%	105.0	23.1%
2636.0	2413.0	28.6%	33.6%	2.4%	125.0	10.2%
5266.7	4548.5	15.5%	13.4%	0.7%	93.0	4.8%
2573.6	3149.3	12.0%	21.8%	0.9%	90.0	8.5%
1235.8	2475.4	64.8%	26.4%	0.8%	83.0	3.3%
3208.3	2577.5	14.9%	29.5%	0.9%	111.0	14.9%
3774.7	3215.2	41.4%	24.0%	0.0%	84.0	11.7%
2889.3	2624.5	31.2%	29.5%	0.0%	98.0	17.6%
3645.2	4423.4	24.6%	13.1%	2.3%	75.0	9.4%
4230.9	4238.8	12.2%	13.9%	2.4%	87.0	4.1%
1575.1	2631.5	9.2%	24.1%	1.3%	125.0	13.3%
839.5	1073.7	63.1%	19.5%	0.0%	101.0	18.7%
1159.0	1258.5	14.4%	24.6%	5.7%	84.0	18.0%
3899.4	2894.7	63.0%	13.3%	0.0%	57.0	10.4%
1026.4	914.8	54.5%	27.4%	1.5%	117.0	12.0%
3409.0	2307.5	64.1%	18.0%	0.0%	107.0	10.0%
2517.4	2256.5	41.8%	24.7%	1.4%	123.0	12.6%
2356.3	2321.0	23.4%	27.5%	1.7%	104.0	9.1%
1754.8	1613.5	17.6%	36.0%	0.0%	117.0	16.5%
2727.4	2442.0	34.8%	13.9%	1.8%	78.0	5.2%
2004.4	2078.1	10.2%	28.1%	3.3%	91.0	18.1%
4029.3	2980.1	24.0%	20.7%	2.1%	89.0	13.6%
2740.3	2096.7	40.8%	23.0%	3.8%	96.0	6.2%
1552.9	1223.5	54.6%	24.3%	1.3%	113.0	8.7%
3484.2	2678.2	10.8%	31.4%	3.0%	108.0	8.7%
4055.6	4177.5	15.8%	7.0%	2.0%	49.0	7.3%
5771.0	5712.7	10.9%	5.6%	1.1%	36.0	8.5%

**Table: Scoring results by Census Tract, ranked by Composite Score**

Site (GEOID)	Composite Score (50/50 weighting)	Composite Score (40% operational/60% demographic weighting)	Composite Score (60% operational/40% demographic weighting)	Paratransit Ridership	Fixed-Route Ridership	Bus Trips to Stops
18097320107	0.13	0.14	0.11	266.5	113.8	167.9
18097320400	0.13	0.15	0.12	88.7	10.3	119.3
18097342000	0.13	0.15	0.12	51.8	15.8	130.5
18097361400	0.13	0.16	0.12	33.5	3.5	14.3
18097390404	0.13	0.15	0.11	33.5	52.5	124.3
18097320600	0.12	0.14	0.11	144.0	50.3	196.7
18097320304	0.12	0.14	0.11	66.5	39.9	266.5
18097320800	0.12	0.13	0.10	125.2	28.3	164.6
18097330401	0.12	0.14	0.10	139.3	2.6	10.3
18097381201	0.12	0.14	0.10	93.4	4.0	0.0
18097381102	0.12	0.13	0.10	82.3	12.8	58.8
18097381002	0.11	0.13	0.10	22.8	31.3	268.9
18097361600	0.11	0.13	0.10	44.4	68.7	89.8
18097320301	0.11	0.13	0.09	97.1	19.9	29.2
18097380902	0.11	0.12	0.09	117.6	43.0	123.1
18097340111	0.11	0.13	0.09	81.4	28.7	0.0
18097390405	0.11	0.13	0.09	66.4	28.8	75.9
18097320303	0.11	0.13	0.09	86.8	29.8	0.0
18097381101	0.11	0.13	0.09	40.4	3.7	75.0
18097390800	0.10	0.12	0.08	60.7	18.7	41.2
18097370302	0.10	0.12	0.09	9.9	2.4	0.0
18097310103	0.10	0.11	0.08	22.8	3.2	15.2
18097370301	0.10	0.12	0.08	13.4	0.5	1.9
18097330103	0.09	0.11	0.08	104.9	4.4	0.0
18097310108	0.08	0.09	0.06	16.0	0.8	0.0



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Population Density	Daytime Population Density	Minority Population	Households with 1 + Members with a Disability	Households Without Access to a Vehicle	Age Dependency Ratio	Households Living Below the Poverty Line
1463.3	3232.1	21.9%	13.2%	1.1%	108.0	5.2%
2109.9	2667.2	44.3%	19.1%	4.1%	77.0	9.1%
1357.9	1560.6	48.1%	22.5%	2.8%	91.0	7.5%
1191.3	1146.9	34.0%	31.0%	3.0%	95.0	13.4%
3522.1	2728.6	15.1%	22.8%	2.0%	104.0	4.2%
2136.3	1680.6	14.6%	20.8%	4.6%	75.0	11.5%
2182.2	2779.1	19.5%	15.7%	0.8%	106.0	8.4%
1224.3	1182.1	9.1%	13.7%	2.4%	156.0	4.0%
1970.3	1819.1	36.5%	17.4%	1.0%	116.0	4.5%
3093.7	2473.8	15.2%	27.8%	0.0%	107.0	5.0%
3197.8	2777.7	15.2%	24.8%	1.3%	97.0	2.7%
1960.8	1712.1	7.6%	24.9%	3.2%	103.0	3.8%
881.4	824.2	39.6%	26.0%	0.6%	100.0	3.6%
1858.0	1904.0	14.2%	18.3%	0.0%	131.0	7.1%
2371.3	2347.0	13.8%	17.2%	2.0%	91.0	6.0%
2052.7	1953.1	48.1%	24.1%	0.0%	72.0	4.1%
1876.9	3203.1	31.8%	16.8%	2.2%	75.0	9.5%
5728.3	5353.5	44.6%	8.2%	0.0%	29.0	8.4%
2660.0	2158.1	14.6%	22.6%	0.0%	103.0	6.1%
398.0	519.0	15.5%	30.0%	3.5%	91.0	7.3%
1820.3	1281.0	14.4%	26.8%	1.8%	89.0	10.9%
503.9	476.8	45.7%	19.1%	0.6%	102.0	4.2%
862.0	683.8	21.2%	28.0%	0.0%	103.0	7.1%
2363.5	3013.8	37.0%	13.9%	0.6%	70.0	3.5%
919.9	765.4	26.8%	19.1%	0.0%	96.0	3.3%

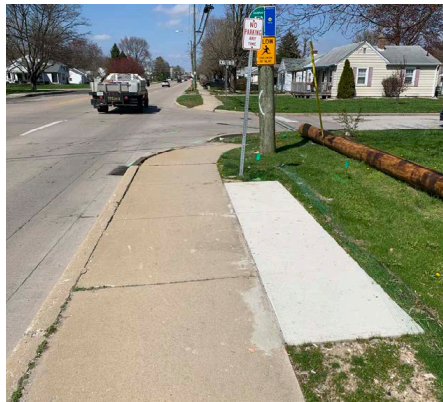


## Examples of Bus Stop Improvements & ADA Improvements





[Below] The following images show bus stops after completion of ADA improvements. These improvements vary in scope and design, but typically include sidewalk extensions, boarding pad extensions, and installation of new boarding pads.







ADA Transition Plan | Updated May 2021