

SOLON CONNECTS

ACTIVE TRANSPORTATION PLAN

June 18th 2021





Table of Contents

6	<i>Section 01 Introduction</i> Introduction, Planning Process, Timeline, & Public Engagement
26	<i>Section 02 Discovery & Analysis</i> Land Use, Transportation, & Connectivity
62	<i>Section 03 Vision & Recommendations</i> Plan Objectives, Recommendations, & Action Steps
170	<i>Section 04 Implementation Strategies</i> Partners, Priorities, Timelines, Costs, Early Wins, & Funding



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"To inform and provide services in support of the short- and long-term comprehensive planning, quality of life, environment, and economic development of Cuyahoga County and its cities, villages and townships."

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Section 01 | Introduction



“According to the U.S. Department of Transportation’s 2009 National Household Travel Survey, **half of all trips** taken by people in the United States **are under three miles**” (equivalent to a 20-minute bike ride)

- Urban Land Institute (ULI), Active Transportation and Real Estate, 2016



Welcome!

The intent of the 'Solon Connects' Plan is simple: build safer and stronger pedestrian and bicycle connections between existing civic, commercial, and open space assets to create safe and beneficial active transportation options for everyone.

What is Connectivity?

'Connectivity' refers to the density of connections and the directness of links. A well-connected network has many links, numerous intersections, and minimal dead-ends. As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations through a variety of modes, creating a more unified and accessible system. (Healthy Spaces & Places)

What is a Connectivity Plan?

The City of Solon was awarded funding for professional planning services through a competitive grant process from the Cuyahoga County Planning Commission. County Planning, with help from the City, has developed a Solon Connectivity Master Plan. The 'Solon Connects' Plan is a visioning exercise that considers new methods, opportunities, and technologies to achieve a well-connected city for all residents regardless of age or ability. The 'Solon Connects' Plan is intended to not only guide leaders, but also inspire residents, business owners, and other stakeholders to rethink pedestrian, bicycle, and vehicular mobility in Solon now and into the future.

The plan intends to build upon Solon's sense of community, pride, and amenities that make it an ideal place to visit, conduct business, and call home. The plan examines existing facilities and multi-modal infrastructure both regionally and locally. The goal of the plan is to listen, understand, and balance evolving active transportation trends with the needs and demands of residents. Obtaining input from a diverse cross section of the community during the coronavirus pandemic was critical for the success of this plan. This Master Plan marks only the beginning of this transformation and is intended to serve as a guide for changes over many years. Only with the help of dedicated residents, business owners, and city staff can the Master Plan's goals be achieved. Together, they can work to realize a better Solon.

What is Active Transportation?

'Active transportation' is a means of getting around that is powered by human energy, such as walking or bicycling. The consensus within the field of transportation is that having more people use non-motorized transportation more often is critical to sustainability, economic development, and good public health. Recognizing the importance of walking and biking is one matter, actually getting more people to walk and bike is another. (Center for Disease Control CDC)

Why do we need a plan for it?

The goal of the 'Solon Connects' Plan is to provide a framework for improving walking and bicycling facilities throughout the City of Solon. It furthers the City's mission to *"enrich the quality of life for all our citizens by delivering superior services which promote a safe, active, healthy, and connected learning community."* It is the City's hope that the goals, actions, and investments identified in the Plan will enhance safety for all roadway users and encourage more people to choose walking and biking as a preferred transportation choice throughout Solon. There are many reasons to undertake this effort, but one of simplest reasons is that the Solon Connects Plan allows the community to undertake the follow actions as part of the planning process:



Inventory

Catalog, record, and inventory what facilities exist today, and outline a vision for the future.



Input

Gather local input and ideas and empower residents by designating them as partners in the community's future.



Identify

Outline, guide, and shape future decisions to match the community's vision, helping the city identify specific projects, actions, and opportunities that are desired, feasible, and a high priority.



Implement

Distinguishes long and short-term projects so that project partners can coordinate and leverage additional public and private funding opportunities for implementation, while also providing a competitive advantage when applying for grants and funding.

Planning Process

The 'Solon Connects' planning process began in January of 2020, when the City of Solon was awarded funding for professional planning services through a competitive grant process from the Cuyahoga County Planning Commission. The entire process took about one and a half years to complete due to the 2020 Coronavirus pandemic and subsequent response. County Planning, with help from the Project Team – a committee of City Staff – guided the master planning process. County Planning staff developed an existing conditions assessment to better understand current active transportation (walking & biking) conditions in Solon. County Planning staff also studied best practices around the country, state, and region to create both aspirational and achievable goals. This analysis and review of transportation trends established a baseline for the City of Solon and for the recommendations contained in this plan.

Input from County Planning was supported by a variety of city staff, focus groups, and other interested community leaders and stakeholders. These groups studied the existing conditions analysis and helped generate key ideas to be pursued in this plan. Solon residents and the greater public also played a key role in the plans development. A project website and initial online public opinion survey helped to engage and introduce residents to the connectivity plan. In addition to input from this survey, the residents of Solon were engaged throughout the planning process at virtual town halls and other events to generate a vision and provide opportunities for comments and feedback. Final recommendations located in this document incorporate public input, Project Team guidance, and Focus Group suggestions which have been supplemented by the technical skills, expertise, and feasibility analysis performed by the County Planning staff.

The result of this process is the 'Solon Connects Plan' a comprehensive document that identifies policies, programs, and projects that seek to improve walking and bicycling infrastructure within Solon. Residents are encouraged to use this Connectivity Plan to see what changes may occur in their neighborhoods and assist implementation by developing community groups or volunteer organizations to support it. Business owners are encouraged to use the Connectivity Plan to find where the City is focusing efforts, and to see what opportunities may be available. The City is encouraged to use the Connectivity Plan when deciding what infrastructure investments to make, or what grants to apply for. These are all substantive ways that members of the community can use the Connectivity Plan to guide their decisions and focus on various implementation strategies to achieve the community's vision.

Planning & Zoning: *The Difference*



Planning Proposals

- A general **plan** for future growth
- Describes recommendations for what **should happen** in the future
- Includes **recommendations** that can be undertaken by the City, residents, or partners
- A **flexible** plan that is intended to be interpreted as conditions change

OR

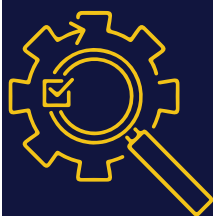


Zoning Ordinance

- Specific **rules** for development
- Describes **what is and what is not allowed** today
- Includes **mandatory regulations** on development that are enforced by the City unless specifically waived
- Relatively **rigid set of regulations** that can only be changed by a legal process

01.1

Project Phases



Discovery & Analysis

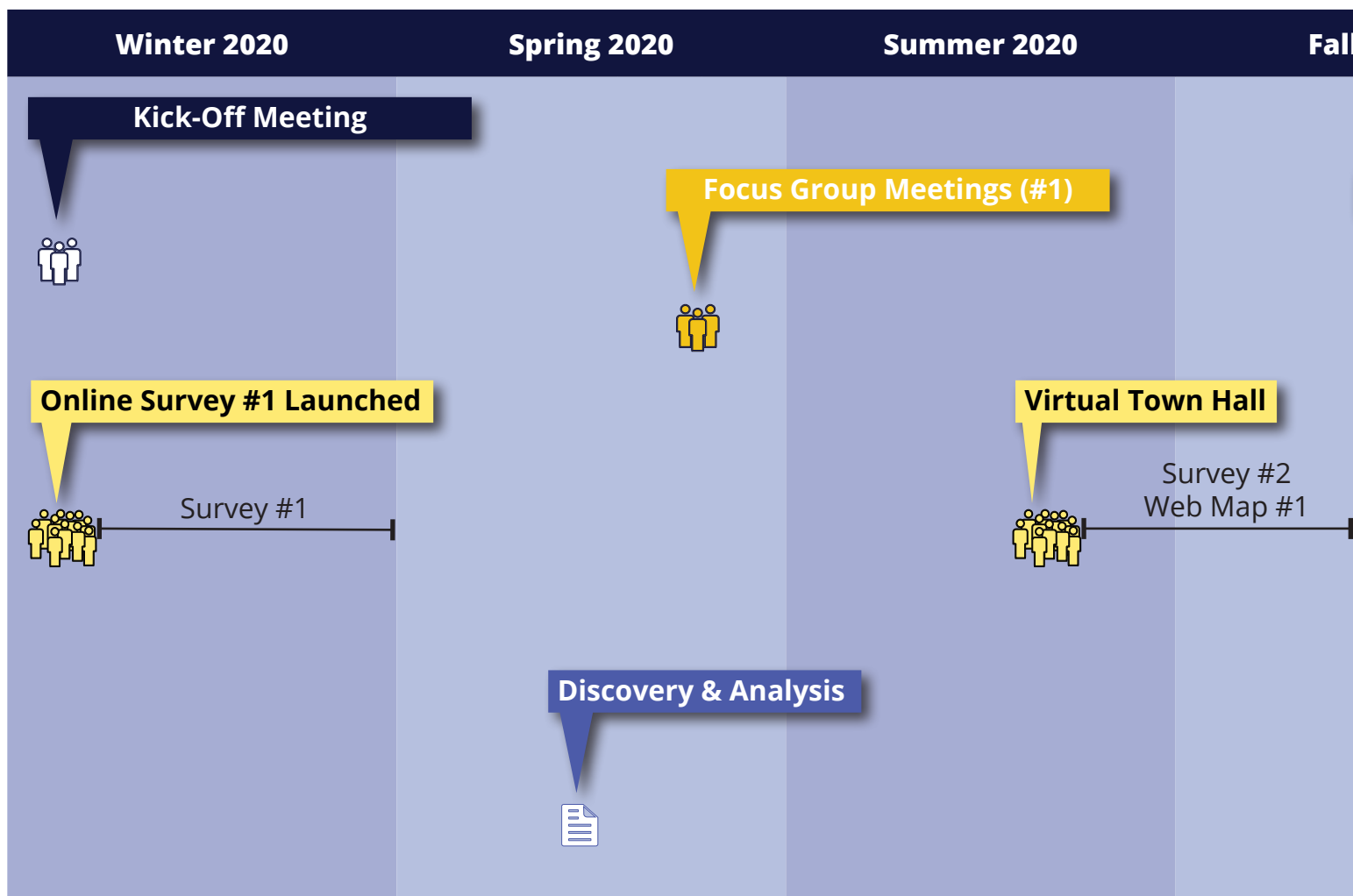
Collection of demographic data and other detailed analysis of the City's existing conditions including land use, zoning, infrastructure, and connectivity patterns.



Vision & Objectives

Broad based concepts and ideas based upon Analysis and Community Input that set the stage for the plan and recommendations.

Project Timeline





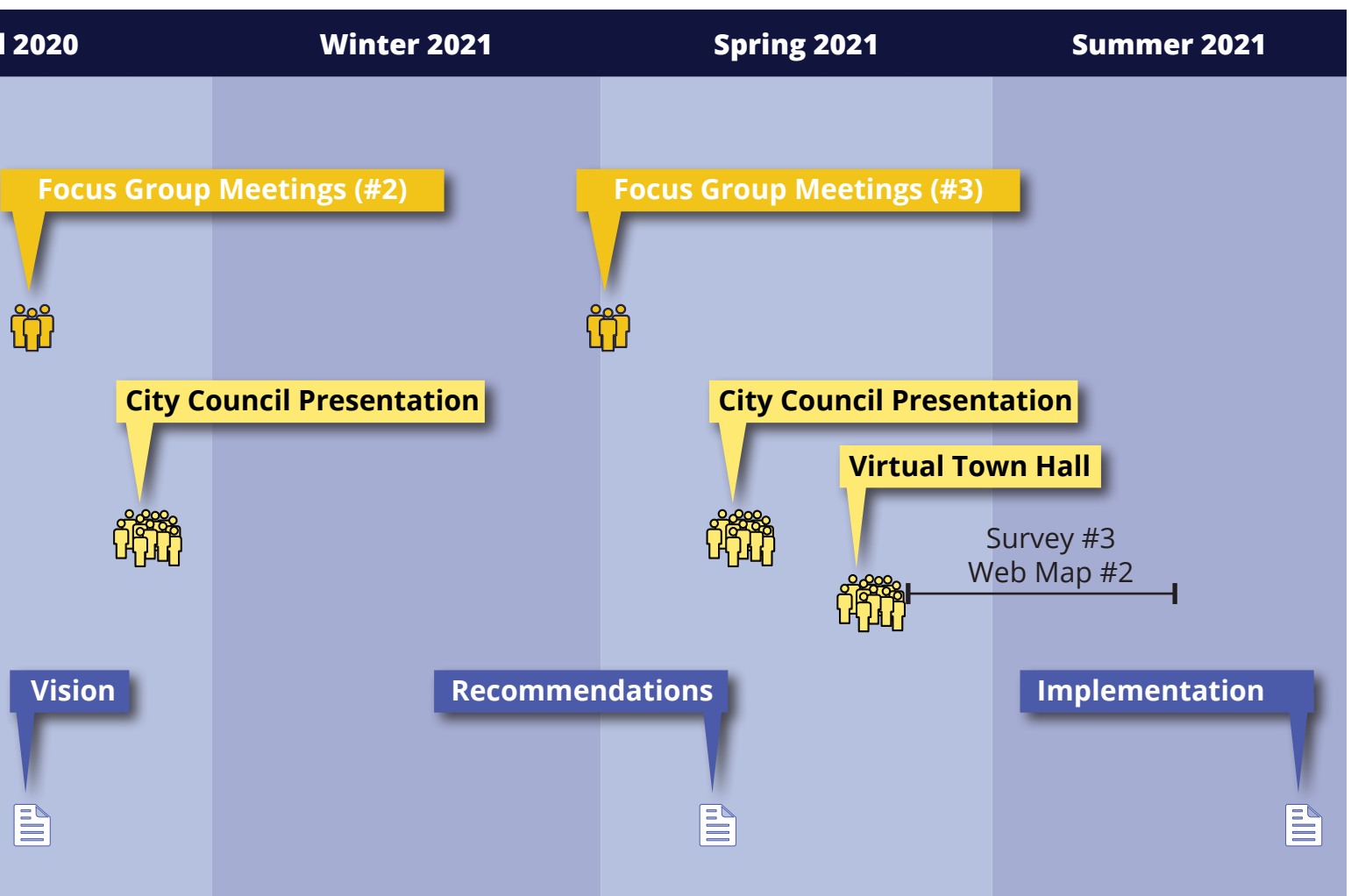
Recommendations

Specific recommendations that the city and various groups can consider in order to accomplish the community vision.



Implementation Strategies

Priorities, Partners, Costs, Funding Resources, and Timelines to put the plan into action.



01.2

Why is This Plan Important?

"The construction of sidewalks, bicycle lanes, shared use paths, and trails; reducing single occupancy vehicle travel; and teaching children to ride and walk safely all contribute to our national transportation goals of safety, mobility, livability, economic growth and trade, improved health, enhancement of communities and the natural environment."

- FHWA Guidance: Bicycle and Pedestrian Provisions of Federal Transportation Legislation 9/15

DEMAND

63% of millennials would like to live in a place where they **do not need to use a car very often**

Source: ULI - America in 2015 report

In a 2012 Survey **72% of Solon residents** agreed that **more trails are needed in Solon**

Source: City of Solon

50% of US Residents say that **walkability is a high priority** when considering where to live

Source: ULI - America in 2015 report

57% of Americans agreed that **business and homes should be built closer together**, so that shops are within walking distance and **don't require the use of an automobile**

Source: CEO's for Cities

Bicycling has become the country's **fastest-growing form of transportation for commuters**

Source: ULI - Active Transportation and Real Estate 2016

PROPERTY VALUES



Houses located in **highly walkable neighborhoods** command between **\$4,000 and \$34,000 more** than similar houses in areas with average walkability levels

Source: "Walking the Walk: How Walkability Raises Home Values in U.S. Cities," CEOs for Cities, 2009

1 point increase in walk score can be associated with a **\$500 to \$3,000 increase in value**

Source: CEOs for Cities



Homes a **¼ mile from the Radnor Trail** were valued on average **\$69,000 higher** than other properties further away

Source: GreenSpace Alliance and the DVRPC

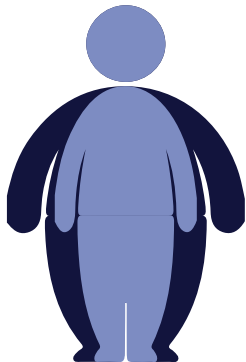
HEALTH

People who live in neighborhoods with **shops and retail within walking distance** have a **35% lower risk of obesity**

Source: American Journal of Preventative Medicine

Use of Pennsylvania's parks and trails, helps residents avoid \$199 and \$596 million per year in direct and indirect medical costs.

Source: GreenSpace Alliance and the DVRPC



If Americans drove **1 mile less per day**, it would **reduce the adult obesity rate** by 2.16% over 6 years

Source: Transport Policy

Approximately **114,000 adults** receive measurable health benefits through their physical activity in the **Cleveland Metroparks system**, yielding an annual medical cost savings of **\$160 million**

Source: Trust for Public Land "The economic benefits of Cleveland Metroparks"

01.3

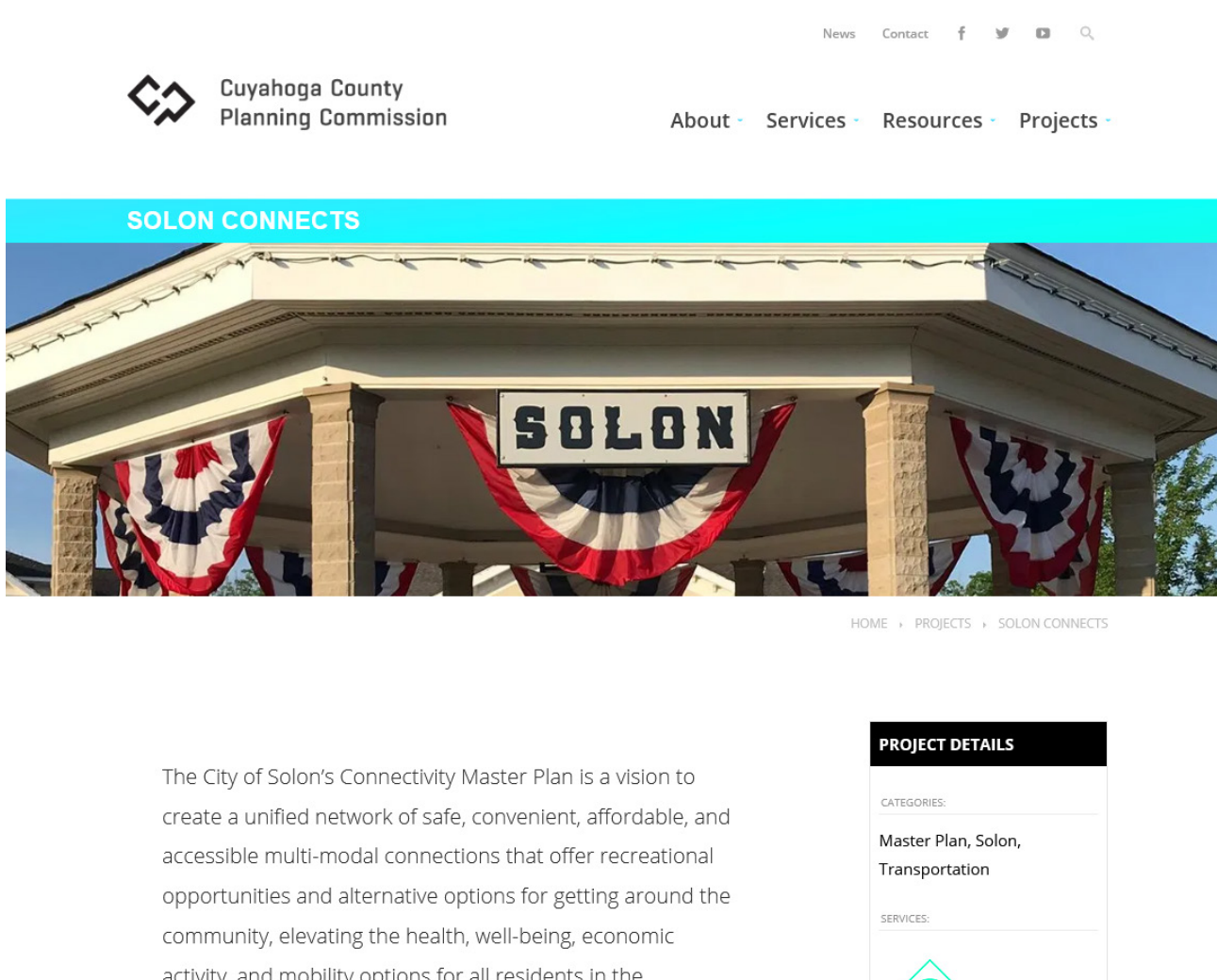
Community Engagement

Project Website

Developing a plan provides the community an opportunity to give input, an integral component of the planning process. Multiple outlets were used to gather input from a diverse group of residents, stakeholders, and employees within the community since this process will affect not only those who live in Solon, but also those who own a business, work, or play in the city. One of the first and simplest methods to inform and reach residents was the launch of a project specific website. www.countyplanning.us/SolonConnects

This website was updated frequently, featuring information about the plan, documents, links to online surveys, presentation materials, and meeting updates. It was designed to provide the tools necessary for residents to stay informed and provide feedback virtually. A critical component since a majority of Solon Connects Plan was developed during the Coronavirus Pandemic and required as much socially distant engagement as possible.

FIGURE 1: SOLON CONNECTS PROJECT WEBPAGE



Virtual Engagement

Due to COVID-19 related directives regarding social distancing and safety, County Planning and the City of Solon used a variety of virtual engagement methods to reach city leaders, project stakeholders, & residents safely and creatively.

Project Team & Focus Groups

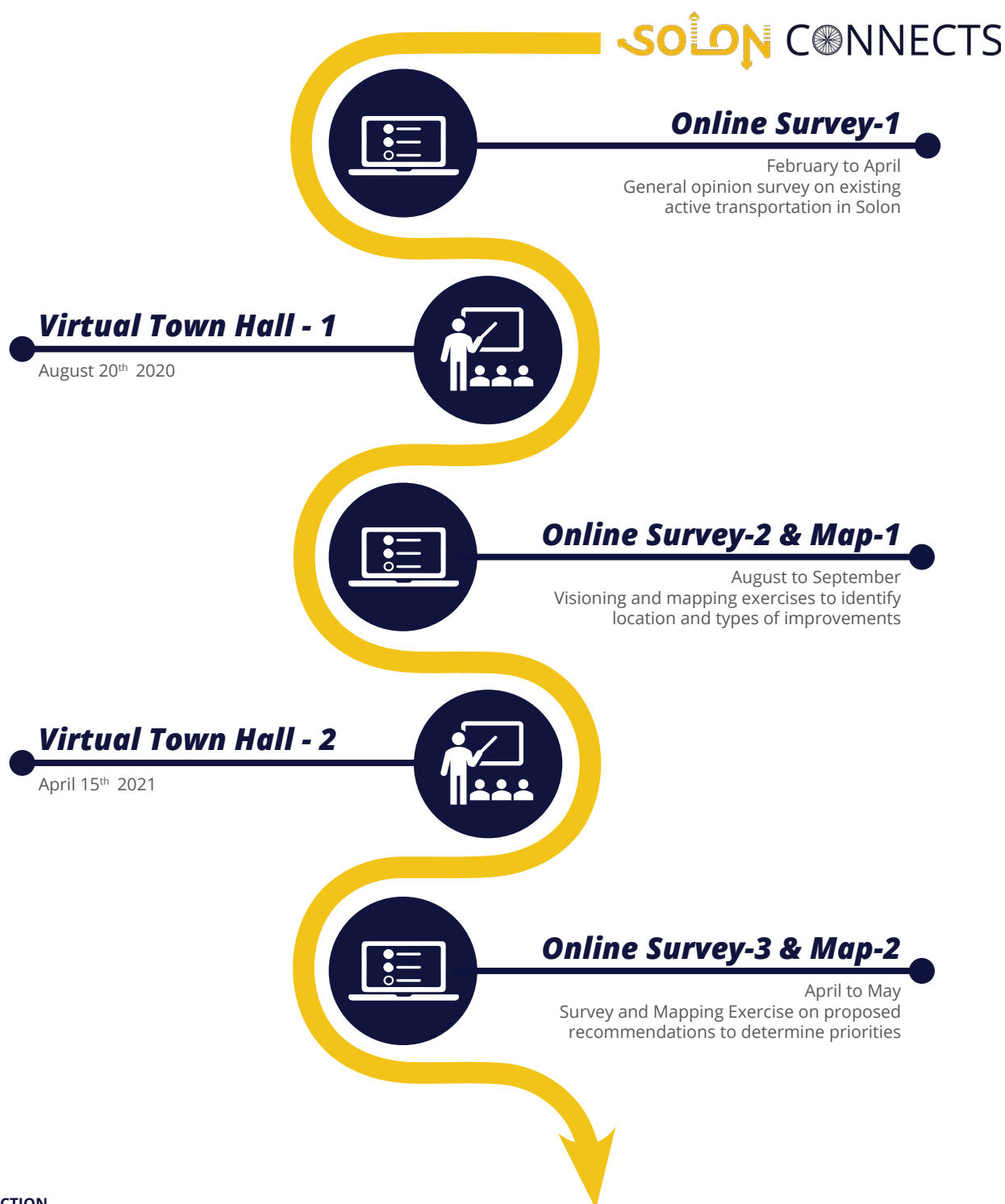
Gathering feedback from local, regional, and community leaders who have on the ground knowledge of connectivity challenges and opportunities was a critical part of the planning process. The Coronavirus pandemic did not stop County Planning's efforts to reach these groups effectively and repeatedly throughout the process. The structure of the planning process included a 10-person project team (a committee of City Staff) and seven different focus groups – Community Life Group, Business Group, Senior Group, Rotary Club Group, PTA Group, & Student Focus Group – with a total of 132 members. One important objective was to give each team and group significant opportunities to participate at a time and place that was not only safe but also one that could fit their changing schedule. Getting a group of 20+ focus group members to agree on one virtual meeting date and time with work schedules and childcare requirements in flux was not going to work. So, the County Planning team used a variety of tools, (in addition to regular scheduled Zoom meetings) that included recorded presentations posted on YouTube, allowing participants to view at their convenience. These presentations were combined with online MURAL activities and several surveys to solicit feedback and comments. In addition to this outreach the planning team would also hold several 'Virtual Office Hours' at significant phases and outreach points during the process. The virtual office hours would include a series of 4-6 meetings at various dates and times over a two-week period, allowing focus group members and stakeholders to sign up and ask questions at a time and day that best fit their schedule. These adaptive and creative engagement methods allowed the plan to develop recommendations and implementation strategies that were created and supported by city leaders and community stakeholders.

FIGURE 2: VIRTUAL ENGAGEMENT ACTIVITY USING MURAL



01.3

Public Engagement Opportunities



Media Coverage

To keep Solon residents engaged and informed on the plans progress, updates, and upcoming virtual public meetings during the Coronavirus pandemic, the Planning team and the City of Solon used various media coverage opportunities via articles on Cleveland.com and features in Northeast Ohio magazines. Leveraging the wider reach of these outlets allowed the team to get more information out to residents quickly and easily. This information included not only the projects status but information on how residents could participate while maintaining safe social distancing requirements. This outreach was a valuable tool to maintain momentum and interest from residents during the critical visioning and recommendation phases of the project.

Community

Solon Connects plan would make walking, biking easier and safer

Updated Aug 21, 2020; Posted Aug 21, 2020



Michael Mears, senior planner for the Cuyahoga County Planning Commission, answers a question during the virtual town hall meeting on the Solon Connects plan Thursday (Aug. 20). (Screenshot)

Community News

Town hall meeting maps out plan for Solon Connects

Updated Apr 18, 2021; Posted Apr 18, 2021



Michael Mears, senior planner for the Cuyahoga County Planning Commission, talks about next steps in the Solon Connects plan at a virtual town hall meeting Thursday (April 15). (Screenshot)

Community Corner

Solon Holding Townhall On Connects Plan

The Solon Connects Plan will strengthen pedestrian and bicycle connections between civic spaces.

Chris Meesby, Patch Staff
Posted Tue, Aug 11, 2020 at 8:57 am ET

Like 2 Share



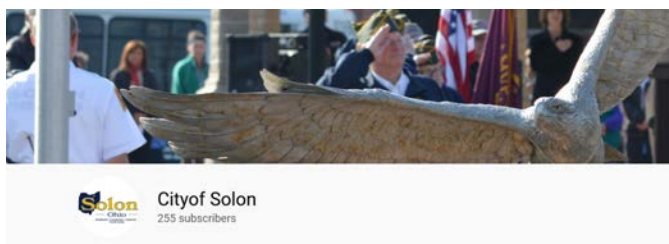
Solon and Cuyahoga County officials are holding a virtual townhall on the Solon Connects Plan. (Shutterstock)



01.3

Virtual Town Halls

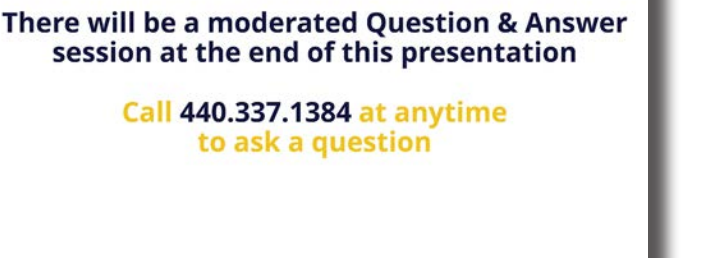
Due to the COVID-19 pandemic traditional in-person public meetings and community engagement was not an option. Therefore, the Solon Connects plan took an innovative and timely approach to reaching all facets of the community to ensure everyone had a voice during in the process. County Planning worked closely with City staff to host virtual town halls, which used several platforms to disseminate information. This included a combination of physical advertisements, such as yard signs and community mailers, in conjunction with online and social media tools. Additionally, these virtual meetings were broadcast live on YouTube and Television where residents could call-in questions to be answered on air or participate in live polling exercises to gauge viewers responses in real time.



VIRTUAL TOWN HALL - 1

The first Virtual Town Hall took place on August 20th, 2020. It was broadcast live on Solon's You Tube Channel and was also featured on their local TV access channel. Numerous signs with meeting information were created and placed throughout the community at key destinations to inform residents and encourage them to participate. The meeting included a live question and answer session where residents could call in and ask questions at any time and wait for their question to be answered by County Planning or City Staff at the end of the meeting.

Community Signage



VIRTUAL TOWN HALL - 2

The second Virtual Town Hall took place on April 15th, 2021. It was also broadcast live on Solon's YouTube Channel and also featured on their local TV access channel. For this event a mailer with all meeting information was sent to every resident in the City of Solon encouraging them to tune in and participate. In addition to another live question and answer session at the end of the event, this meeting included a live poll for Solon residents to answer questions. Using text messages or a web browser on their phones or computer residents were able to participate in real time during the presentation, keeping the meeting engaging and active while maintaining safe social distancing requirements.

Resident Mailer





Virtual Town Hall
April 15, @ 7:00PM

youtube.com/user/solonohiogovchannel

SCAN ME!



OR VISIT OUR WEBSITE TO LEARN MORE
www.countyplanning.us/SolonConnects

City of Solon
34200 Bainbridge Road
Solon, Ohio 44139

Solon Ohio

Solon Connects is a vision to increase mobility for all residents regardless of age or ability by building a comprehensive network of accessible, convenient, and safe bicycle and pedestrian connections between existing civic, commercial, and open space assets.

A Virtual Town Hall has been scheduled to provide you with information on the opportunities available to improve active transportation in Solon.
When: **April 15, @ 7:00PM**
Where: youtube.com/user/solonohiogovchannel

Visit the website below to find more information or contact us with questions. **You can also use this website to access the Virtual Town Hall.**

www.countyplanning.us/SolonConnects

County Planning

Resident
Address
Solon, Ohio 44139

Live Polling

LIVE POLLING | HOW TO RESPOND USING POLL EVERYWHERE

1 JOIN VIA WEB



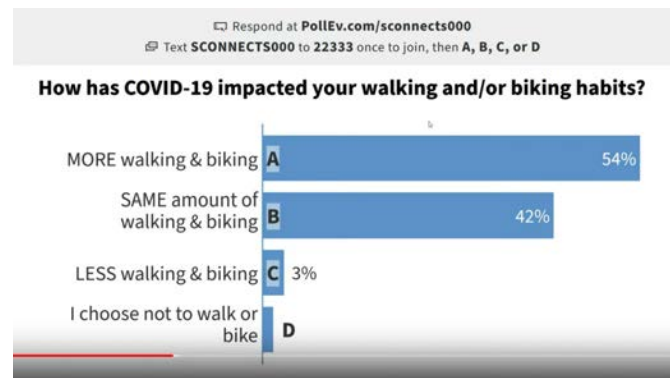
SCAN ME!

- Go to PollEv.com
- Enter **SCONNECTS000**
- Click Join to Respond

2 JOIN VIA TEXT



- Enter # **22333**
- Text **SCONNECTS000**
- Text Responses (A,B,C...)

01.3

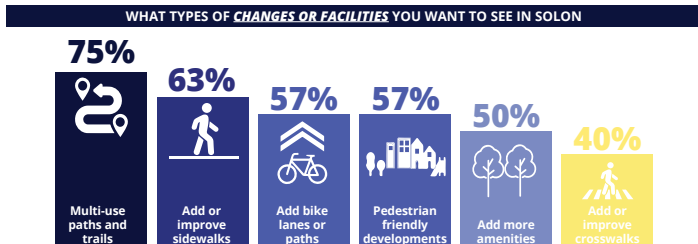
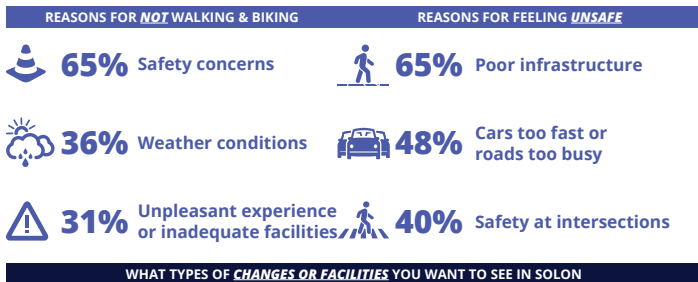
Online Surveys

Online surveys provided a good opportunity to allow residents to share their feedback on the Solon Connects Plan. Due to Coronavirus concerns and social distancing requirements, several different surveys styles and programs were used to gather feedback throughout the process and reach as wide as audience as possible. Summary's of the survey results are provided on the next few pages, the full results of each survey and question are available in the appendix document.



SURVEY - 1 SUMMARY

The first survey was launched in February shortly after the project began. The survey remained open until the end of April and was intended to be a general opinion survey about how people view active transportation in Solon.



SURVEY - 2 SUMMARY

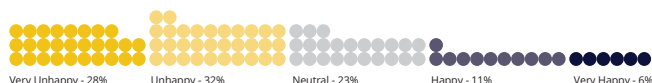
The second survey and online mapping tool was launched in August after the First Virtual Town Hall. The survey remained open until the end of September and was intended indicate where people want to see improvements.



HAPPY WITH THE EXISTING FACILITIES AVAILABLE THROUGHOUT SOLON?

60% Unhappy

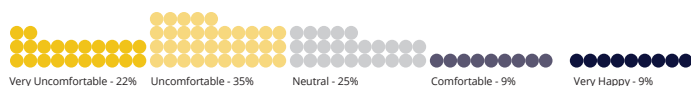
17% Happy



COMFORTABLE USING THE EXISTING FACILITIES AVAILABLE TO REACH DESTINATIONS?

57% Uncomfortable

18% Comfortable



HOW QUICKLY SHOULD SOLON BEGIN WORK ON RECOMMENDED CONNECTIVITY IMPROVEMENTS?

74% Connectivity is Very Important



USE **ONE WORD** YOU WOULD LIKE TO SEE USED TO DESCRIBE WALKING AND BIKING IN THE **FUTURE?**



SURVEY - 3 SUMMARY

The third survey and online mapping tool was launched in April shortly after the Second Virtual Town Hall. The survey remained open until the end of May and was intended identify what recommendations were considered the highest priority.

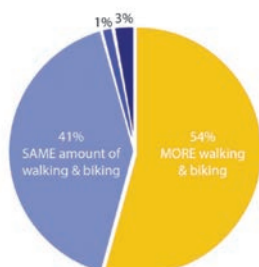


HOW IMPORTANT IS ADDITION OF TRAIL CONNECTIONS AND LINKAGES

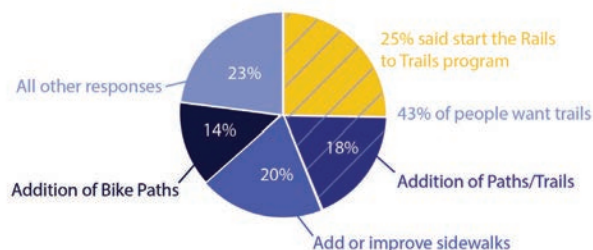
Trail Links are Very Important



HOW HAS COVID IMPACTED YOUR WALKING & BIKING HABITS?



IF YOU HAD TO PICK ONE PROJECT TO BE IMPLEMENTED WHAT WOULD IT BE?

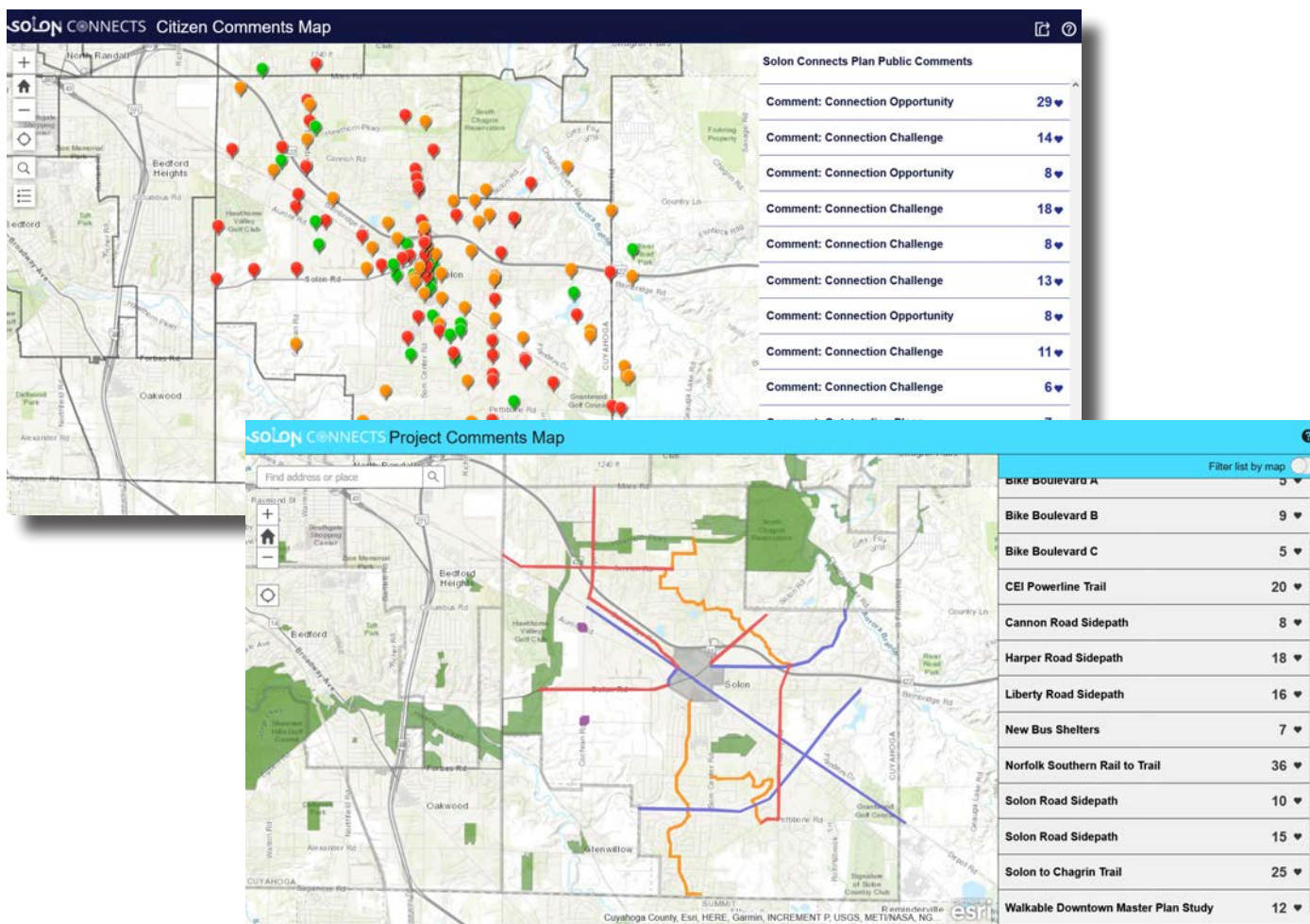


01.3

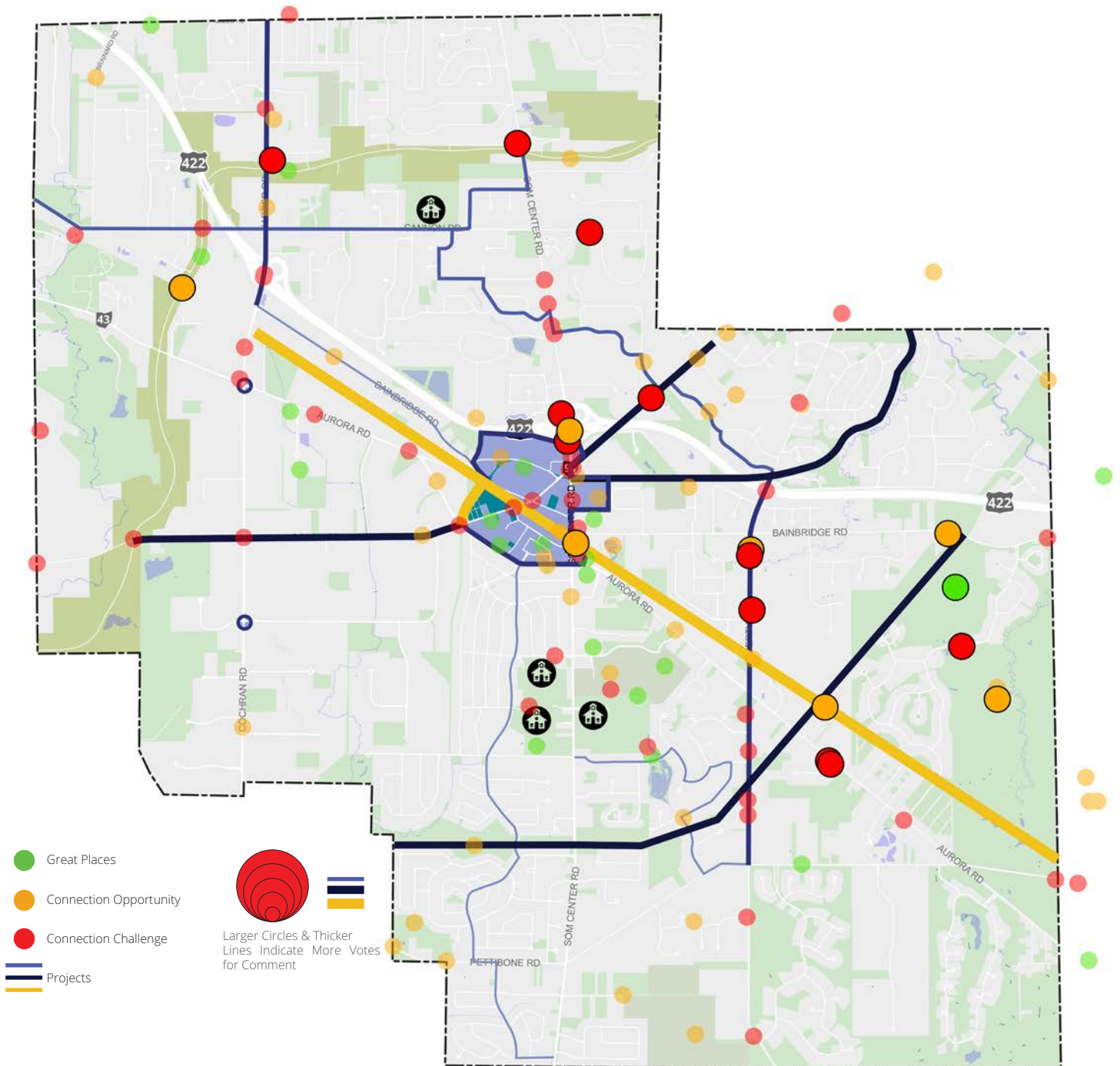
Online Mapping Tools

In addition to creating online surveys to engage residents, County Planning also built two online mapping tools to supplement some of the typical engagement activities that would be completed in person. The first online mapping tool allowed users an opportunity to place pins on specific locations and projects they felt were either a great place, a connection opportunity, or a connection challenge. Users could also “like” other pins and add comments to explain their thoughts. The second online mapping tool allowed users to vote on specific recommendations as a follow up to other engagement opportunities. Combining these two maps together with the previously mentioned online surveys gave the planning team significant information to help prioritize the various recommendations included in the Solon Connects plan.

FIGURE 3: INTERACTIVE CITIZEN COMMENT MAPPING TOOLS USING ARCGIS ONLINE SOFTWARE



MAP 1: CITIZEN COMMENTS & PROJECT COMMENTS MAP 



01.3

Engagement Tracker

+650 Live Broadcast Views on YouTube

+1,250 Survey Responses

+250 Mapped Points

Hundreds of Individual Comments

**"I don't walk or bike
because of safety
concerns"**

**"There is no need for
trails or paths in Solon
whatsoever"**

**"Sidewalks, at least
on the major roads,
are a necessity"**

**"Downtown Solon needs to be
more clearly defined"**



"I support longer car trips if roads were safer and more pedestrian friendly."

"Solon is such a car-centric place"

"Not a fan of bike riders using street"

"Start implementation of rails to trails!"

"Glad My city is planning this way and is encouraging to be part of a more vibrant community."

"Solon has nothing to walk or bike to."






Section 02 | Discovery & Analysis



"Bicycling and walking are important elements to integrated, inter-modal transportation systems that **improve quality of life** by providing access to jobs, education, health care, and other essential services."

- FHWA Guidance: Bicycle and Pedestrian Provisions of Federal Transportation Legislation, 2015

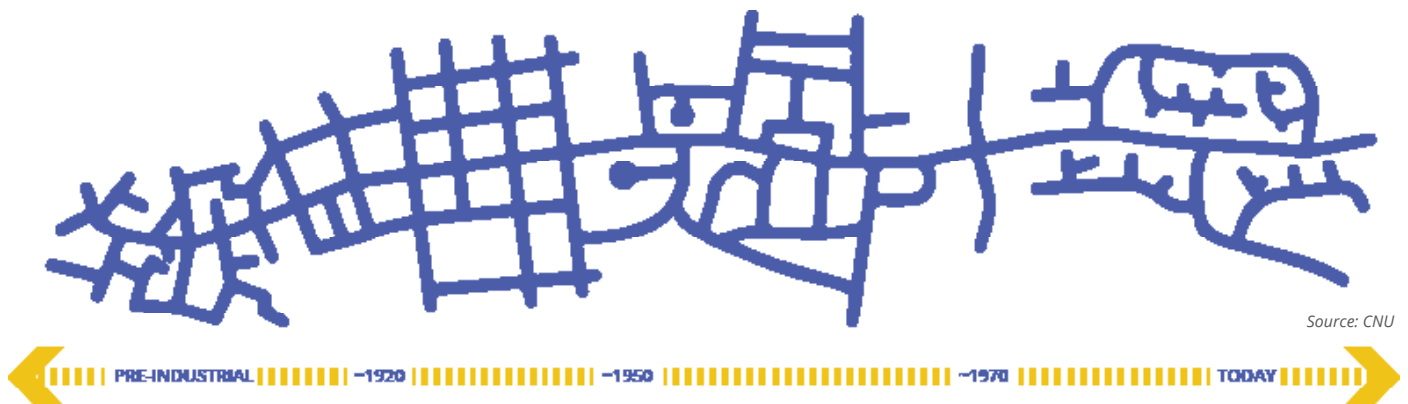


Existing Conditions

The ‘Solon Connects’ Plan examines the current conditions in Solon through a variety of perspectives. These include an analysis of existing zoning, land use, transportation, demographics, and other important features such as community health and the environment. Developing this strategic profile of existing site conditions is essential to determining what trends are shaping connectivity and active transportation today, as well as what elements need to be updated or changed to meet the changing needs or demands of the future. Analysis of these trends combined with stakeholder and public input help outline a vision for the future. This vision is uniquely tailored to the City of Solon and its goals of improving active transportation for residents of all ages and abilities.

What Makes a Place Walkable?

One critical first step to improve “Walkability” is focusing on the conditions by which walking (or biking) is enabled, including those areas that are traversable, compact, physically-enticing, or safe. The second is identifying or perhaps measuring the outcomes of walkable environments, such as making places lively and sociable, enhancing transportation options, or inducing opportunities for exercise.



02.1

Study Area

Study Area

Located in the southeast corner of Cuyahoga County and 18 miles from the City of Cleveland, Solon is adjacent to three other counties (Geauga, Portage and Summit) and surrounded by Moreland Hills, Chagrin Falls, Bainbridge, Reminderville, Twinsburg, Glenwillow, Bedford Heights, and Orange. At approximately 20.49 square miles, it is one of the largest municipalities in Cuyahoga County.

Solon was an earlier adopter of a comprehensive zoning plan and has been able to achieve a strong industrial base that has been further enhanced by the extension of US 422 in 1991, enabling easy access to Cleveland and other parts north and south along the I-271 corridor. In addition to its industrial and planned development areas, the city maintains quality parks, recreation areas, golf courses, and access to the Cleveland Metroparks within its borders.

Solon's economic and community success has garnered it many accolades and appearances on 'Best Places to Live' or 'Best Suburbs' at the national, statewide, and regional levels. One factor in this ranking has been Solon's strong and public-school system, which continually ranks as one of the best in the region and in the State of Ohio.

Excellence at all levels of the community is what makes Solon a diverse and unique neighborhood and one of Cuyahoga Counties most thriving and popular places to live and raise a family. Embracing a connectivity plan and achieving better mobility through active-transportation will help push Solon into the future and main its success and status as a community with high levels of service and amenities.

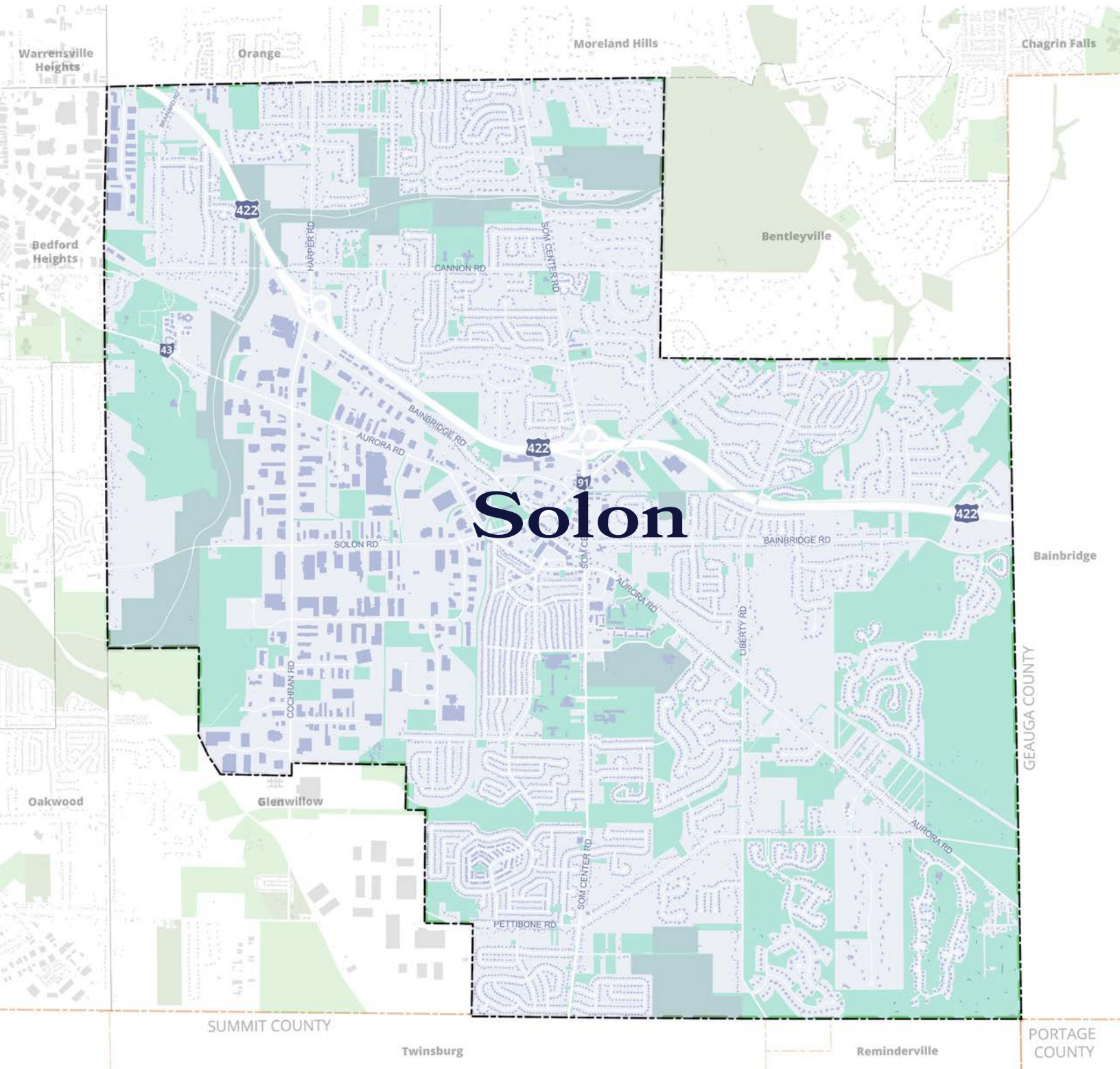
4th Largest Community
in Cuyahoga County
(20.49 Square Miles)

Source: U.S. Census Bureau - Geographic Header Record G001.



Source: City of Solon

MAP 2: STUDY AREA 



02.1

Solon Today

What is now the City of Solon was once part of the Connecticut Western Reserve. The original group of settlers made their home near the current Grantwood Golf Course and established Solon in 1820. A prominent railroad junction and several cheese factories were the first industries in Solon. In the 1850s, SOM (an acronym for Solon, Orange, Mayfield) Center Road became Solon's main thoroughfare. As the name suggests, this road goes through the center of these three cities. Solon was later incorporated into a village in 1927.

Population continued to slowly increase as Solon grew into a small town. In 1951, Solon established a zoning code making it one of the first suburbs in America to do so. This code created an industrial district out of 2,200 acres of farmland. Zoning ultimately led to exponential growth which led the Village to become a City in 1961. US 422 was expanded eastward into Solon and added interchanges at Harper Road and SOM Center Road. Soon after, businesses like Swagelok and Nestle moved their operations into the city and are now Solon's largest employers. This zoning decision not only led to Solon's strong tax base but also regulated residential growth. Though it was projected that with less restricted, or no zoning, the land area in Solon could accommodate a population of 40,000, City leaders decided to maintain zoning that could sensibly manage growth to support a population of up to 25,000.

Today, Solon has become one of the most desirable communities in Northeast Ohio. Its Average Household Income is \$104,000--double the national average. Further, its school district is named "Best School District in America" by niche.



Source: City of Solon



Source: City of Solon

Previous Plans

It is important to closely examine both local and regional planning efforts to fully understand how these studies and plans might influence, support, or enhance the 'Solon Connects' Plan. Additionally, it is important that these previous studies do not go to waste, and to ensure that this plan highlights and reinforces efforts and findings already undertaken by the City and other partner organizations, even if those results don't align with the findings presented herein. Several existing planning documents and studies relevant to the City of Solon were examined to help in the project's initial Discovery and Analysis Phase.

Master Transportation Plan – 2009

In 2008, the City of Solon hired Wells + Associates, Inc. to create a report that identified current traffic patterns as well as predicted traffic patterns for the next ten and twenty years. This study was an update to the City's 1995 Master Transportation Plan, which was used to help in the selection of the 37 study intersections of the 2008 update. The updated plan presented an assessment of future conditions for both the years 2018 and 2028, evaluated accident data, and identified road improvements needed to adequately accommodate future traffic in both 2018 and 2028.

Ultimately, the updated plan provided a series of recommendations based on a number of factors. These included: forecasted traffic volumes and capacity; traffic mitigation for immediate, near (2018), and long-term (2028) time frames; roundabout designs and operations; and crash reports. As a result, there were 14 recommendations made to the City, which included such improvements as roadway widenings and interchange improvements, to bicycle and pedestrian all-purpose trails and parking strategies.

Community Survey – 2012

In 2012, the City of Solon conducted a community survey in order to gather how residents felt about specific topics important to the community. The paper survey was mailed to 813 randomly selected

Solon households and 332 were completed for a 42.3% response rate. The survey utilized many of the same questions from a similar survey conducted in 2001, which allowed the City to compare the 2012 responses with the responses from 2001. This would help determine where opinions have changed or remained the same over the last decade. Overall, Solon residents confirmed that the City continues to be a desirable place to live, and that the local government has continued to provide high quality services despite the lingering effects of the economic crisis that began in 2007. Solon continues to receive high marks for city services, recreation facilities and other public services.

When respondents were asked whether more multi-purpose bike and hike trails were needed, 72% of respondents agreed that this was an important amenity to have within the community. An additional 53% of respondents agreed that more sidewalks were also needed throughout the City of Solon, which continues to show a desire for safer pedestrian and bicycle connectivity and infrastructure.

02.1

Master Plan – Adopted 2016

In the mid-2000s, the City of Solon prepared its first new Master Plan in more than a quarter of a century. This new plan was officially adopted by the City in 2010 and was updated in-house by Solon's Department of Planning and Community Development, working in association with a Master Plan Citizen's Committee. These updates were completed in 2015 and were officially adopted in 2016 by City Council. The Master Plan included 17 broad objectives that encapsulate the priorities of Solon residents. These objectives focused on a number of key community factors, such as Commercial Design Guidelines, School District Cooperation, Regionalism, and Alternative Transportation Networks.

Much has changed over that time and Solon continues to be at the forefront of planning initiatives, including multi-modal transportation alternatives. As a primary Goal of the Master Plan, the City and its residents acknowledges that "connectivity is a crucial factor in the overall effectiveness of the street, sidewalk, and bicycle system." In order to support this goal, Solon encourages that "when presented with a new development, decision makers should make it a design priority to include some form of public transportation, sidewalks, and/or bicycle routes as project amenities. The benefits of effective transportation planning are not just limited to lessening traffic congestion or reducing parking demand, but also to promote healthy neighborhoods, allowing residents to safely walk, bike, and otherwise socialize with each other."

Solon to Chagrin Falls Trail - 2018

The Solon to Chagrin Falls Trail was initially proposed to residents during a public open house in April of 2018. At that time, the project was estimated to cost just under \$1 Million; the City was awarded \$500,000 from the Ohio Department of Natural Resources (ODNR) and another \$300,000 was awarded through the Ohio Capitol Budget Program earlier that same year. The 2.1 mile stretch of trail would be ten feet wide, fully paved, and ADA accessible for all users. The

path would be a suitable for a number of activities, such as hiking, biking, or strolling. Amenities like benches, rest areas, bike racks, and pet stations would be provided along the pathway.

The trail would start at SOM Center Road, in downtown Solon, and continue east along the former Chagrin Falls and Southern Railroad right of way, to a point just south of the Village of Bentleyville border. Currently, the City of Solon owns the right-of-way in this location, which changes ownership to the Cleveland Metroparks at the Bentleyville/Solon border. This relatively short (2.1 miles), section of trail would open residents to a much large regional network of trails into downtown Chagrin Falls and the Cleveland Metroparks, with the goal to eventually connect into the Cuyahoga Valley National Park and Cleveland with a linkage to the Towpath Trail system.

Zoning Code Updates

In 2019, the City of Solon introduced the potential rezoning of the 21.76-acre former Liberty Ford site and properties immediately adjacent along Aurora Road, Station Street, Melbury Avenue and Solon Road. The proposed change would be from Commercial (C-4) to a newly formed Mixed-Use Planning District (MPD-A). The newly proposed MPD-A zoning district would create the flexibility necessary to address the unique needs of the area and require high-quality, walkable development. Additionally, the City's 2010 Master Plan reflected the opinions of residents to redevelop the downtown area and to provide new housing options for underserved markets. The new mixed-use district would address all of these issues. The proposed rezoning would require that at least 67% of the total area be commercial, with a maximum of 33% residential coverage and 200 units, and a minimum residential coverage of 10%, with 90% commercial. Ultimately, Issue 65 passed with 63.43% residential approval for the Mixed-Use Planning District in the November 2019 election.

Cuyahoga Greenways

Cuyahoga Greenways is a county-wide initiative to envision, plan, and implement over 800-miles of greenways and urban trails throughout the region. Unlike conventional approaches to building non-motorized facilities, like bike lanes, that may only serve a segment of the population, Cuyahoga Greenways seeks to build an interconnected, non-motorized transportation network that is safe and welcoming for people of all ages and all abilities. This initiative, which featured input from 29 regional agencies and 43 participating communities, developed a vision, framework plan, and implementation tools for making the new greenway framework a reality.

The planning process was community-driven and data-enriched, and empowered local leaders and stakeholders with the knowledge necessary to make informed decisions and craft a plan that benefits the community both economically and socially. A cornerstone of the process was a robust public engagement program with over 20 community-wide events. Leveraging both traditional and digital tools, a rigorous spatial analysis of over 300 corridor opportunities was completed. The resulting analysis, coupled with the community's involvement, allowed stakeholders to identify and prioritize actionable greenway proposals that provide the biggest return to the community while dispensing more equitable outcomes.

With the greenway framework plan in place, community leadership has shown a willingness to more effectively collaborate across jurisdictions to leverage resources to implement projects. The Cuyahoga Greenways initiative exemplifies a regionally coordinated and evidence-based process to improve equity, mobility, and expand the benefits of greenways to all neighborhoods in Northeast Ohio.

Solon Transit & Mobility Taskforce

The City of Solon is a vibrant suburban job hub located 20 minutes southeast of Cleveland. The purpose of the Solon Transportation Taskforce is to improve workforce mobility in Solon to better connect great talent with great jobs and careers. Taskforce objectives include:

1. Assessing public transit via employer and employee questionnaires.
2. Developing public/private micro-transit solutions for first mile, last mile service.
3. Collaborating with our partners to determine if bus service should be realigned or expanded to reduce travel time.
4. Overlaying our data with the Solon Connects initiative to improve safety and accessibility.
5. Researching and recommending funding options.

02.1

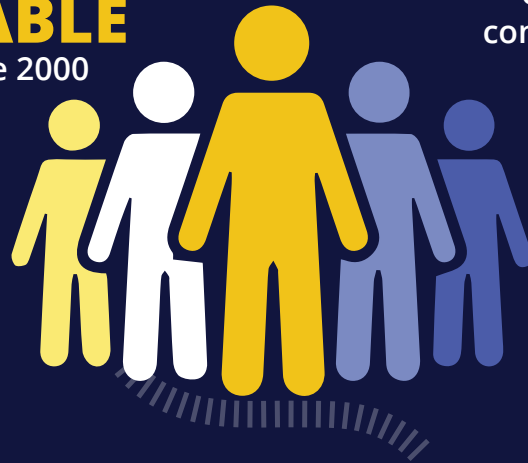
Demographics

After growth in the 80's & 90's
the City of Solon's population

REMAINS STABLE

at > ~22,000 residents since 2000

Source: US Census Bureau



NEARLY 75%
of residents identify as white
compared to 59% in the County

Source: US Census Bureau - ACS, 2018

NEARLY 11%
of Solon's residents are
naturalized citizens

Source: US Census Bureau - ACS, 2018



The City of Solon has seen a
20% INCREASE
from 13' to 18' in residents aged
65 & OVER →

Source: US Census Bureau - ACS, 2018

The City of Solon has
10% FEWER
young adults (ages 20-39)
than Cuyahoga County

Source: US Census Bureau - ACS, 2018



MORE THAN 67%
of Solon's residents have at least
BACHELORS DEGREES

Source: US Census Bureau - ACS, 2018

Since 1970, households
HAVE SHRUNK
FROM 3.51 to 2.78
persons per household

Source: US Census Bureau - ACS, 2018



From 13' to 18'
Solon saw an almost
23% INCREASE
in single-person households

Source: US Census Bureau - ACS, 2018



Solon's Median Household
income of \$104,625 is
MORE THAN 2X
than the Countywide average

Source: US Census Bureau - ACS, 2018

MORE THAN 76%
of Solon households own
AT LEAST 2 VEHICLES



Source: US Census Bureau - ACS, 2018



>85% OF RESIDENTS
say they commute to work
DRIVING ALONE

Source: US Census Bureau - ACS, 2018

45% OF RESIDENTS
say they commute
<10 MILES TO WORK




Source: US Census Bureau - On the Map, 2017



<2% OF RESIDENTS
commute to work
WALKING, BIKING, OR USING TRANSIT

Source: US Census Bureau - ACS, 2018



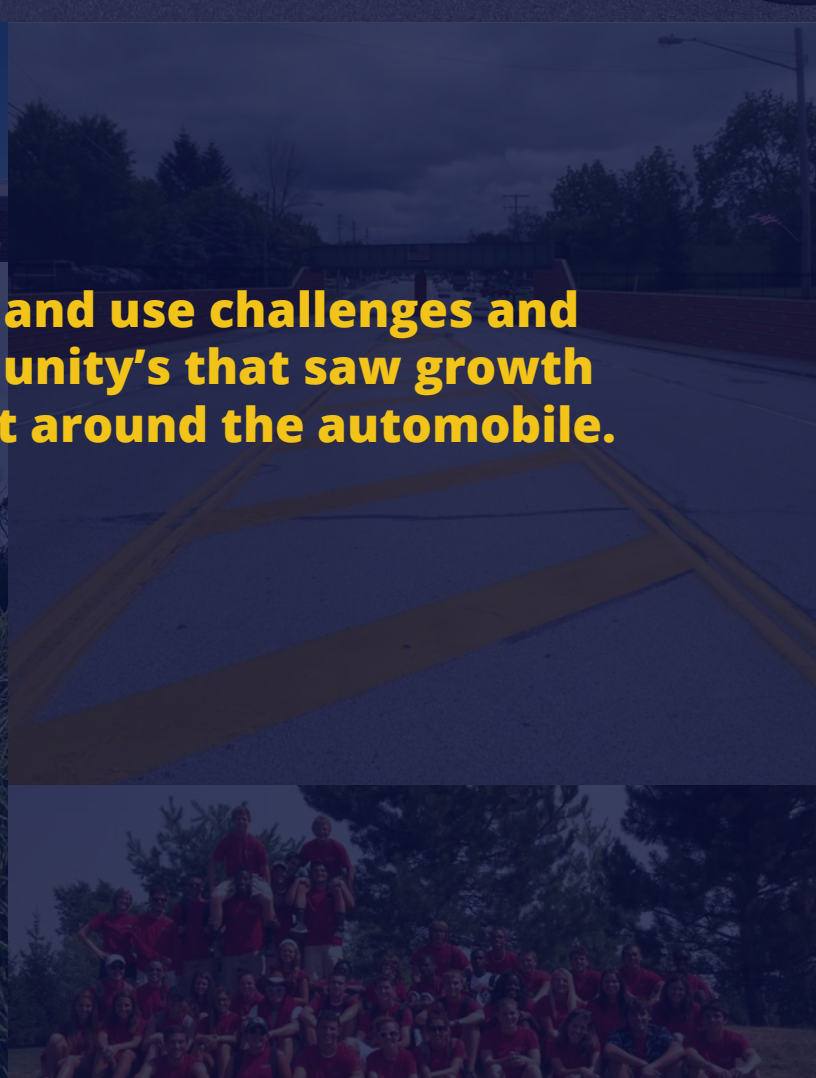


02.2

Land Use & Development: **Key Takeaways**



Solon today is facing similar land use challenges and opportunities as other community's that saw growth and development trends built around the automobile.



1. Solon has lots of high quality existing assets and amenities.

Solon contains a diverse array of commercial, social, entertainment, and community services. The intersections of SOM Center Road with Bainbridge and Aurora Roads, function as the community's entertainment hub. In addition to having numerous entertainment and community services, Solon maintains a strong business and manufacturing base. The 'Solon Connects' plan provides an opportunity to enhance links between these and other key features like schools and parks, connecting Solon residents to its history, assets, and neighborhoods in a safe and healthy manner.



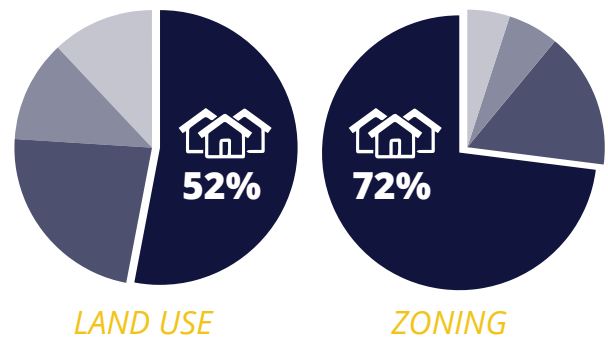
2. Solon is big and spread out.

At 20.4 square miles and approximately 23,038 residents Solon ranks #4 in land area and #12 in population in Cuyahoga County. However, it is only #42 of 59 total communities in population density, which has the potential to make enhanced connectivity through walking and biking difficult. For reference Solon is the equivalent of taking the population of a city like Shaker Heights and spreading out across a community the size (in square miles) of Parma. Which currently has enough space for residents to make it Cuyahoga County's 2nd and Ohio's 7th most populated city.



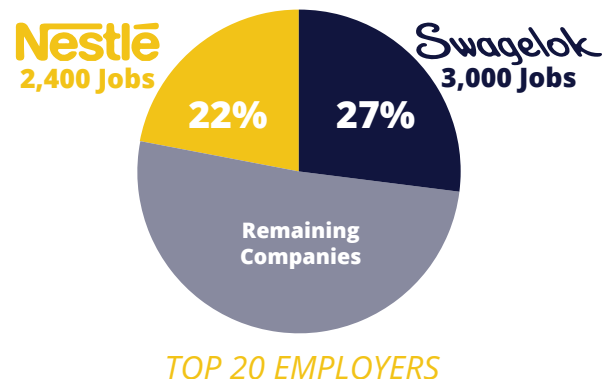
3. Detached single-family homes are the norm in Solon.

Solon is primarily comprised of single-family detached residential dwellings which account for 52% of existing land uses and 72% of the City's zoning districts. However, Solon is also a community with a large percentage of open space and industrial uses. Overall, these make up 23% and 11% of existing land within the community respectively. Large amounts of single-family uses and zoning - with lots sizes up to 5 acres - make connectivity a challenge since more densely packed neighborhoods create enhanced opportunities for mobility without the use of a car.



4. Solon is a job hub.


The City of Solon is a major job hub, with approximately ~26,739 Jobs, Solon is second only to the City of Cleveland in employment within Cuyahoga County. Many of the City's top employers, such as Swagelok and Nestle, the city's 2 largest - accounting for 50% of all jobs from the top 20 companies - have facilities in industrialized areas just west of downtown Solon. These companies and surrounding industrialized areas are an important component of the City's economic base demanding increased mobility options for employers and employees commuting to work or downtown Solon for lunch and entertainment.





02.3

Transportation: **Key Takeaways**

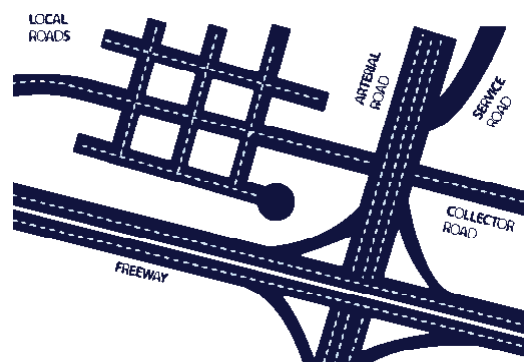


Transportation trends are reshaping communities and the Solon Connects Plan is one tool to help the community meet these changing demands.



1. Road designs have created places for cars but not people.

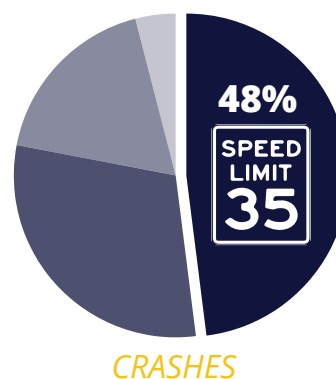
Roadways are shared public space between buildings that should be available to use for any mode of transportation. However, over time streets have become channels for cars through a sophisticated hierarchy of street types – from highways to local streets – who's primary mission is the efficient movement of as many vehicles as fast as possible. This design typology removes the necessary space for people from the equation, resulting in detrimental effects on pedestrian travel, which can be stress-free and accessible on local roads in Solon's Single Family detached subdivisions but virtually impractical anywhere else.



Source: CNU

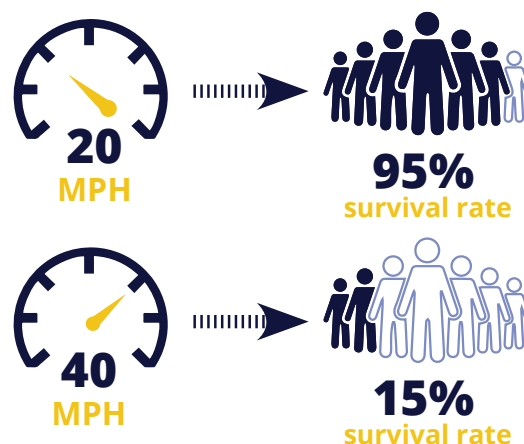
2. Pedestrian and Bicycle Crashes are Low Compared to Overall Total.

Crashes are a key component of connectivity for cars and pedestrians, and efforts to reduce crashes can make streets feel safer for everyone. Between 2017 and 2019 there were only 11 recorded crashes involving a bicycle or pedestrian out of the 1,597 crashes reported or 0.7%, with no fatalities or serious injuries occurring. Maintaining the safety of bicyclists and pedestrians depends on not only on well-designed routes but also most importantly intersections, where it is estimated that 40% of pedestrian crashes occur.



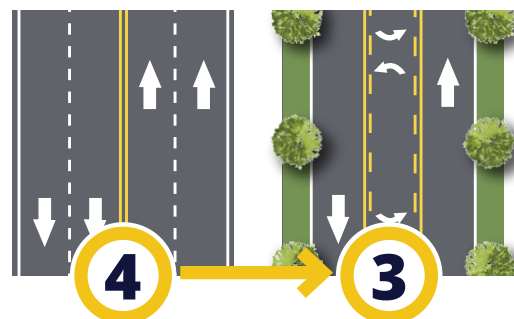
3. Roadway speeds can be disastrous for pedestrians.

Having the necessary space for people isn't the only roadway design issue. In addition to the practice of widening roads and leaving whatever space is leftover to the pedestrian, speed is also critical. Pedestrians are the most vulnerable users of a roadway network and roadway speeds can significantly impact feelings of safety or danger. As cars increase speeds the driver's field of vision is impacted as is their reaction time and stopping distance. In fact, for every 10 miles per hour increase in speed the likelihood of a hit pedestrian perishing increases exponentially.



4. In lower traffic areas road design can improve safety & walkability.

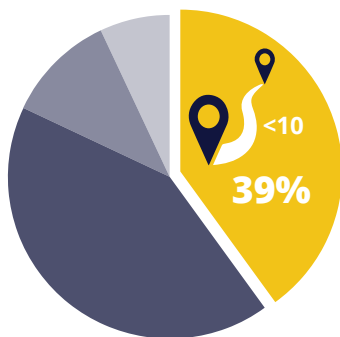
Previous road design strategies - intended to improve efficiency - can be re-purposed to create safer conditions for drivers and pedestrians. One method is a Road Diet, a reconfiguration of travel lanes to calm traffic, provide space for bicycle lanes, turn lanes, streetscapes, wider sidewalks, and other purposes. Many streets have excess capacity due to designs that accommodate peak traffic flow or over-forecasted traffic volumes that were never realized. Streets aiming to relieve rush hour congestion fail to provide a safe environment when traffic is low. A road diet is one example of how to make a street more welcoming for all users during non peak travel times.





5. Over 85% of daily commuters drive to work in Solon alone.

As a job hub, Solon has a large inflow of daily workers on its highways and streets during peak hours in the morning and afternoons. Unfortunately, most of the 25,000 daily commuters who work in Solon, drive to their jobs alone. This not only impacts the environment it also significantly alters the physical landscape in our cities. Decisions for infrastructure, roadway design, and street layouts have largely been influenced by the preference for driving, - leaving less room for pedestrian and cyclists in the roadway - and making streets in Solon during non-peak hours appear bleak and unsafe.



6. 39% of Solon's daily workforce commute less than 10 miles.

This includes Solon residents who make up roughly 7% of the workforce. However only 2% of the City's residents commute to work using alternative methods such as walking, biking, or public transit. Incomplete networks combined with roadways built for faster car speeds and larger volumes can make these types of alternative transportation options feel unsafe or impractical for employees, who have the potential to save money and increase their health if they ultimately began walking, biking, or using transit to commute to work over these shorter distances.



7. More than 76% of households in Solon own two or more vehicles.

Having access to one or more personal vehicles is almost a necessity when living in Solon. Most residents will choose to drive because it is seen as the most convenient option. Those households who don't have access to a personal vehicle - less than 3% in Solon - don't have the same autonomy. Changing the way people think about mobility and overcoming decades of customs that support these perceptions to choose a different transportation option is one of the main challenges in developing a successful plan.



8. Solon has the 4th most popular route for RTA ridership.

The RTA's 41/41F bus route continues to be a significant transportation fixture for commuters who work in Solon and elsewhere. More than 80% of Solon's RTA commuters have access to one or fewer personal vehicles, making safe and equitable connections to reliable public transportation a critical component of this plan. Those that utilize public transportation need safe and complete pedestrian facilities and stops, well placed road crossings, and separation from traffic to feel comfortable and confident navigating to work safely and reliably.

9. Solon has a valuable existing trail and bike network.

Solon has nearly 10 miles of bike lanes and 10 miles of all-purpose trails within the community, of which 54% are located within the Cleveland Metroparks along Hawthorn Parkway. The length of both features paints a portrait of a strong existing network, although some routes connect to other regional systems, most of the current system is fragmented and not distributed though out the community evenly. This makes direct access for some residents unsafe or inconvenient and limits opportunity for residents to choose walking or biking as an alternative transportation option.



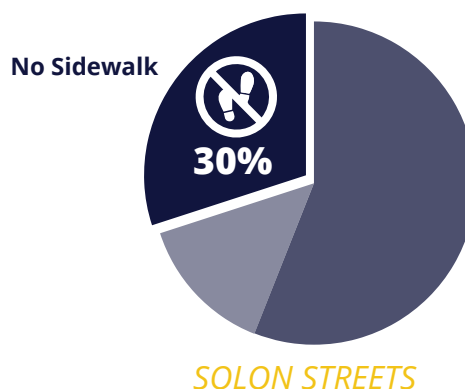
10. Rail corridors and vacant land provide connection opportunities.

Solon is nearing full build out with minimal land remaining for trail development. Much of the vacant land within the community is City owned or under the control of Homeowners Associations, but there are also several vacated rail and powerline corridors that are underutilized. These present a unique opportunity for expanding the pedestrian and bicycle network within the City to areas beyond just street rights-of-way and sidewalks. These connections have the potential to link neighborhoods and connect Solon to other destinations in the region.



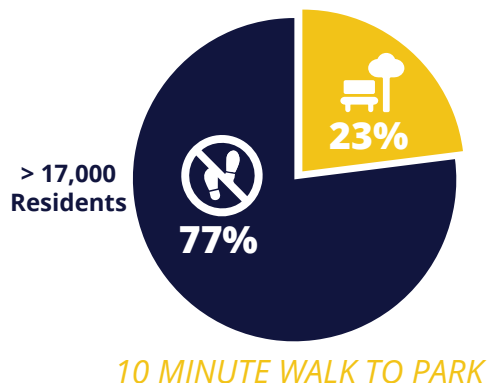
11. Solon has gaps in its sidewalk inventory, limiting some access.


Sidewalks are a vital component when determining mobility, enhancing access for all residents and visitors regardless of age or mode of travel. They act as public spaces for the city activating streets, neighborhoods, and the community. At many points during daily life residents and visitors need a solid pedestrian network for safety and access. Sidewalks are that fundamental piece and a necessary infrastructure investment that improves connectivity and encourages walking. Closing critical gaps in Solon's sidewalk inventory is an important step in improving the health and safety of the community.



12. Solon's has park space, but it is not easily accessible without a car.

Only 4% of Land in Solon is dedicated to park space, below the National Median of 15%. In addition, not many of these existing parks are accessible by pedestrians. According to the Trust for Public Land Database only 23% of residents live within a 10-minute walk to a park, well below the National Average of 54%. In fact, it is estimated that more than 17,000 Solon residents live outside this 10-minute walk to a park. In addition to boosting well-being for entire neighborhoods and fostering community interaction, parks are one destination that people want to access easily on foot or by bike with their family and friends.





02.4

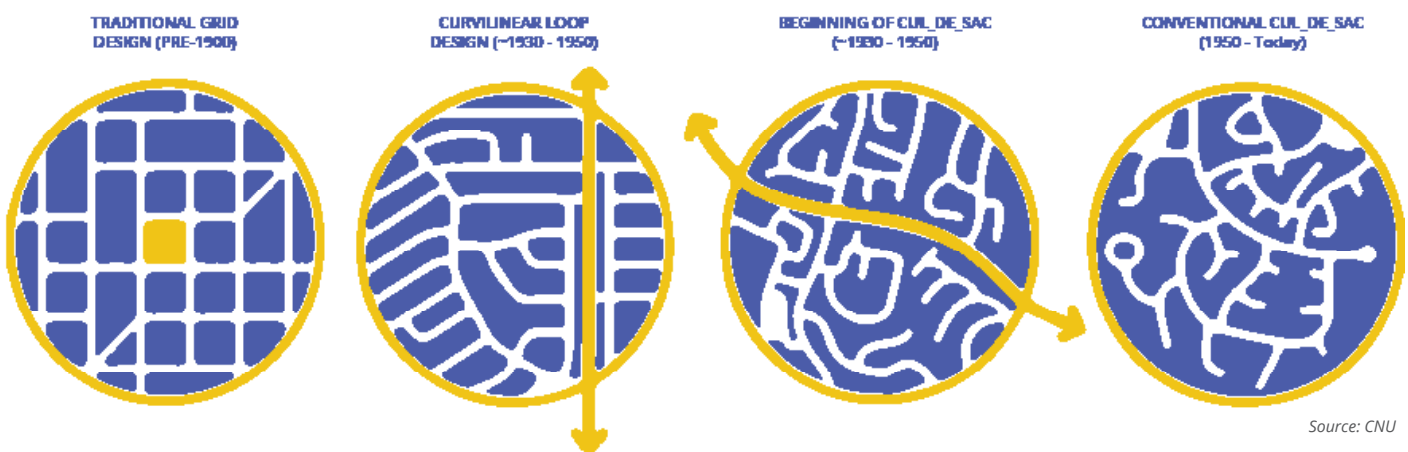
Connectivity: **Key Takeaways**



Solon's large land area and sprawling car-centric street network make connectivity improvements challenging.

What is Connectivity?

'Connectivity' refers to the density of connections and the directness of links. A well-connected network has many links, numerous intersections, and minimal dead-ends. As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations through a variety of modes, creating a more unified and accessible system. (Healthy Spaces & Places)



How do we Measure it?

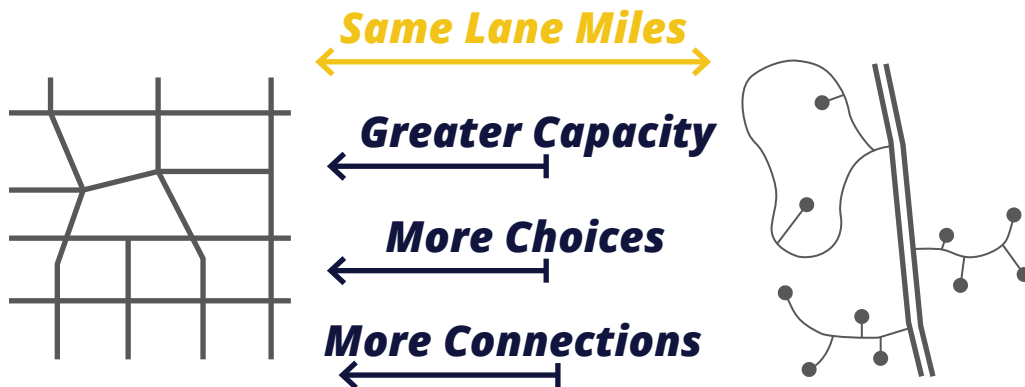
While most understand that 'connectivity' mainly refers to how streets are connected, this section intends to expand on this definition and underscore the key aspects of streets and networks that improve connectivity. Identifying patterns and characteristics that can be measured today to help determine not only where the network functions well for pedestrians and cyclists but also where this network can be improved.

Measurement of existing connectivity in Solon looked at and analyzed these four factors; Street Patterns and Connections using the Connectivity Index, Network Density and Block lengths using Intersections Per Square Mile, Accessibility and the ability to reach destinations using a 'Travelshed' Analysis, and Walkability through an analysis of the networks Quality, Safety, and Urban Form. While the first two measures are good for giving residents and leaders a general understanding Solon's network at a larger scale. The two-remaining measures help determine the more on-the-ground aspects of connectivity that a resident or employee might experience when walking in Solon. These secondary and more detailed evaluations illustrate how sidewalks and corridors for travel are more than just lines on a map and that it is important to not only create more access points but to also understand what positive and negative walking conditions these corridors produce. All four of these factors are key pieces to creating a connected network. A truly connected system that achieves equitable community-wide mobility will have strong metrics in each one of these categories.

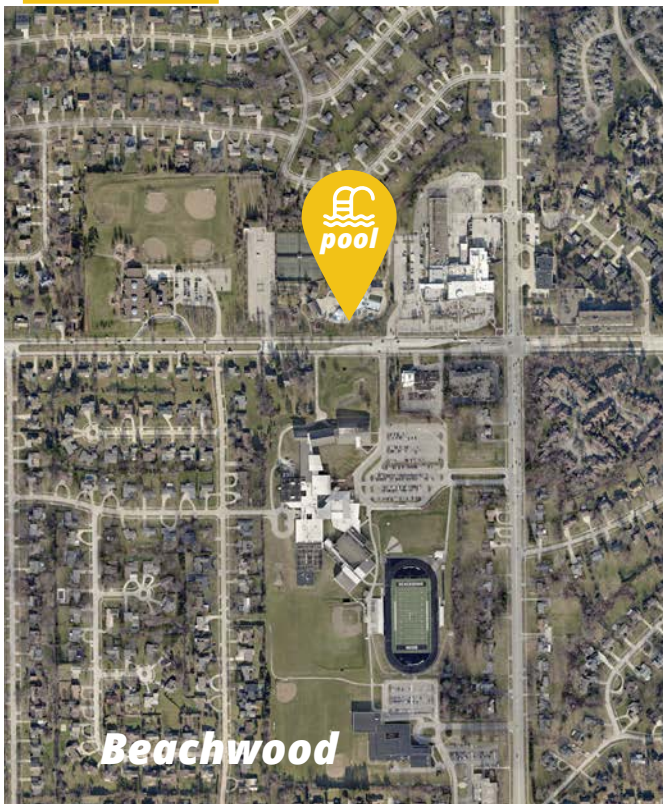
02.4

Connections & Street Patterns

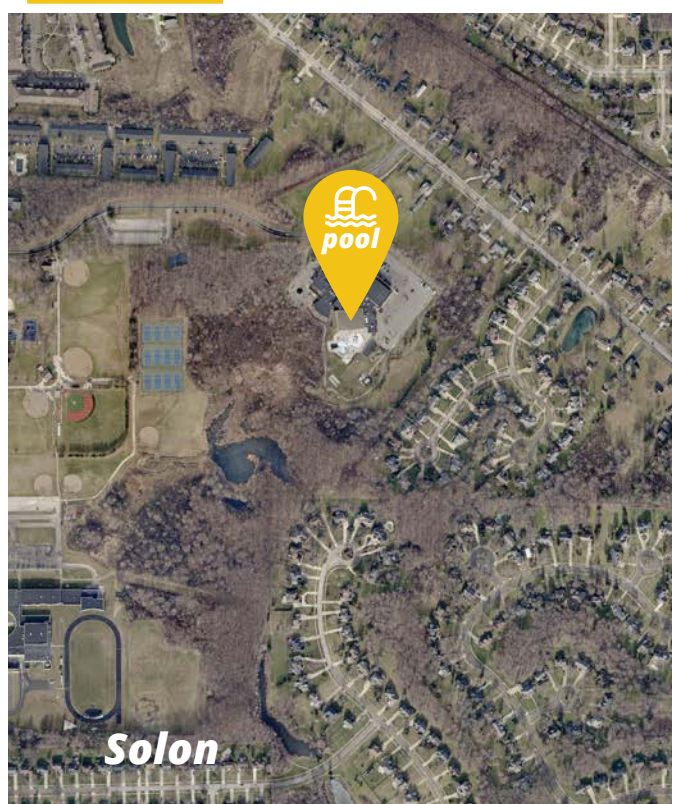
These two networks (in the images below) differ in many ways. The network on the right has fewer intersections than the one on the left, is less of a grid pattern, and has more dead ends (cul-de-sacs). This street layout creates fewer intersections and makes direct access to destinations within the network longer and more difficult. These differences represent key aspects and difficulties in connectivity when dealing with the network that exists in Solon today.



1000'



1000'

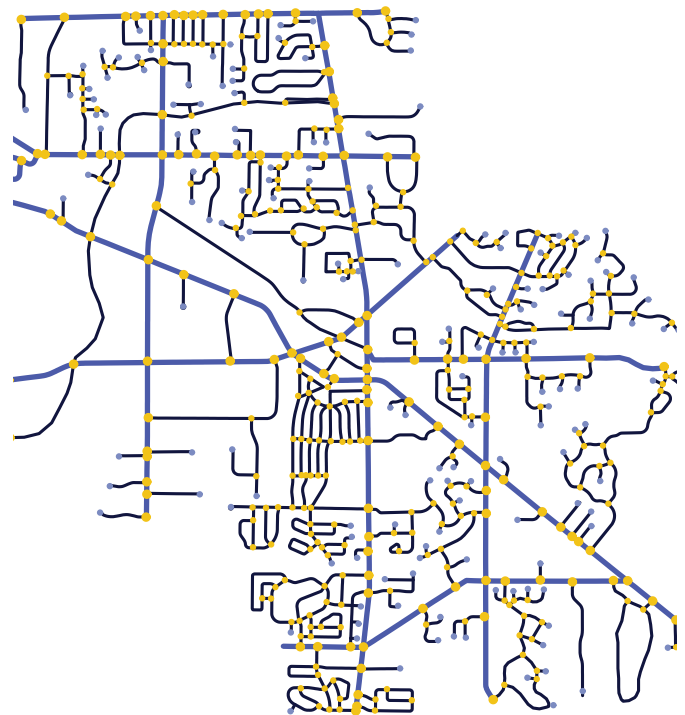


Connectivity Index

There are many different methods to measuring and assessing a community's or neighborhoods connectivity. To better understand existing street connectivity in Solon this plan will use a variety of simple and complex analyses including the Connectivity Index, Intersections Per Square Mile, and Travelshed Analysis.

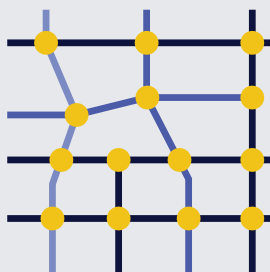
The Connectivity Index measures the relative level of connection happening now in Solon, which is expressed by the ratio of the number of street segments to the number of intersections in a given area. This metric helps articulate how many links a community has and how efficient the intersections of those links are. One key influencer of a well-connected network are intersections that connect to several links (grid pattern) as opposed to intersections that have few, if any, links such as modern cul-de-sac developments. The Connectivity Index helps measure the quality of connections in various street patterns.

MAP 3: STREET LINKS & NODES IN SOLON



Connectivity Index =

of street links
- divided by -
of intersections + dead ends



Index Should be as High as Possible
2.5 is Perfect Score

Dead Ends & Cul-De-Sacs Reduce Value

667 Links

370 Intersections + 157 Dead Ends

= 1.26 Connectivity Index
(1.21 Collector & Above Only)

1.4 is Considered Minimum
for a Walkable Community

Community Based Benchmarks for CI

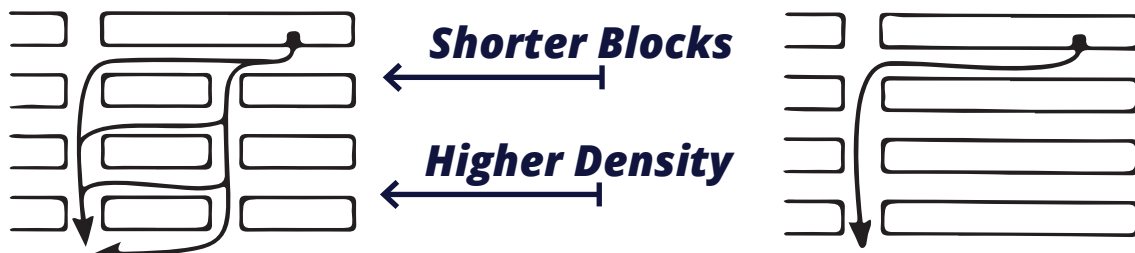
Urban 2.0 - Suburban 1.6 - Rural 1.2

>.75 recommended ratio of
intersections / intersections + dead-ends
Solon = .70

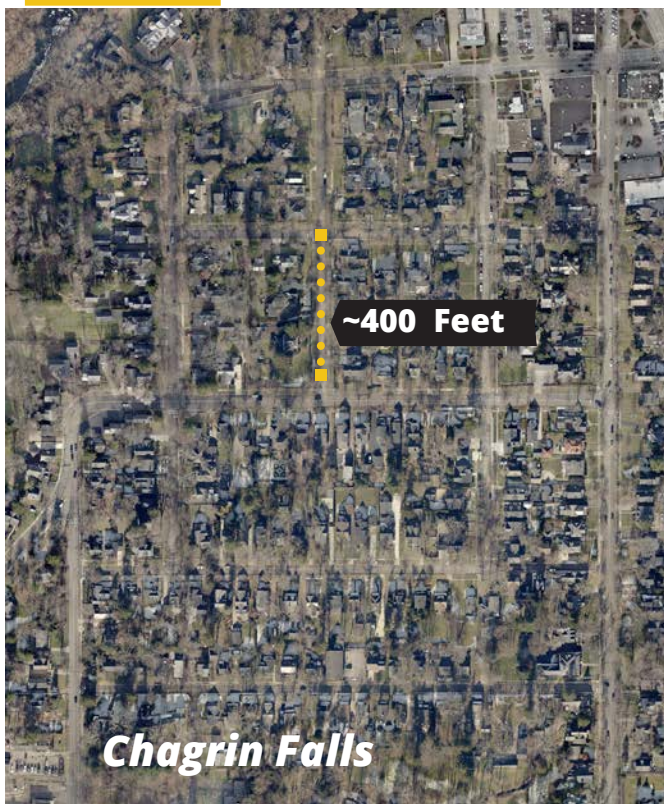
02.4

Network Density & Block Lengths

Two comparable cities could have nearly similar grid patterns; however, one could work differently and feel much more connected due to its network density or Block Lengths. Block lengths—the distance between intersections—represent how far one person might have to walk to change directions or cross the street safely. Longer block lengths like those in Solon can greatly impact a network's density. For example, take the network of the A, B, and C streets in Solon and compare it to a similar neighborhood in Chagrin Falls. Both have basic gridded street patterns; however, with approximately 400' blocks in Chagrin Falls compared to 1,600' in Solon, the Chagrin Falls neighborhood clearly has better network density and overall pedestrian connectivity.



500'



500'



Intersections Per Square Mile

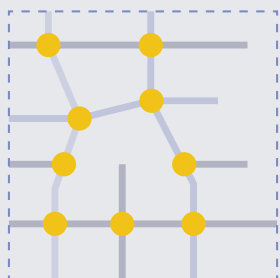
Network density can easily be measured using the metric of Intersections per Square Mile in a given area. Unlike the Connectivity Index, counting the number of intersections per square mile does not include dead ends or cul-de-sacs - only the connections where two or more segments meet. One of the benefits of using Intersections per Square Mile is that it can be easily scaled to a city-wide network like Solon simply by including or limiting the number of street intersections being measured. For example, for the Connectivity Index metric two calculations were taken one using all links and nodes, and a second using only links and nodes that take place on connector level streets or higher. The same rules can be applied for Intersections per square mile, while a neighborhood network might take into account intersections of all streets, a community-wide or regional network might take into account only intersections of arterial streets with other arterial streets, because these are generally used by travelers making trips across the city or region. Intersections are one of the basic units of any street network, therefore it is important to measure the quality of these connections within the existing street pattern.

MAP 4: COLLECTOR & LOCAL INTERSECTIONS



Intersections Per Square Mile =

of intersections
- divided by -
area in square miles



**Intersections Per Square Mile
Should be as High as Possible**

CNU Recommends 150 Intersections sq/m

370 Intersections
20.49 Square Miles

= 18 Intersections sq/m

6 Intersections sq/m
Collector & Above Streets Only
(Based on 128 Intersections)

**Community Based Benchmarks for
Intersections Per Square Mile**

Collector & Above: Urban 7 - Suburban 5 - Rural 3

Suburban Residential Neighborhood: 175

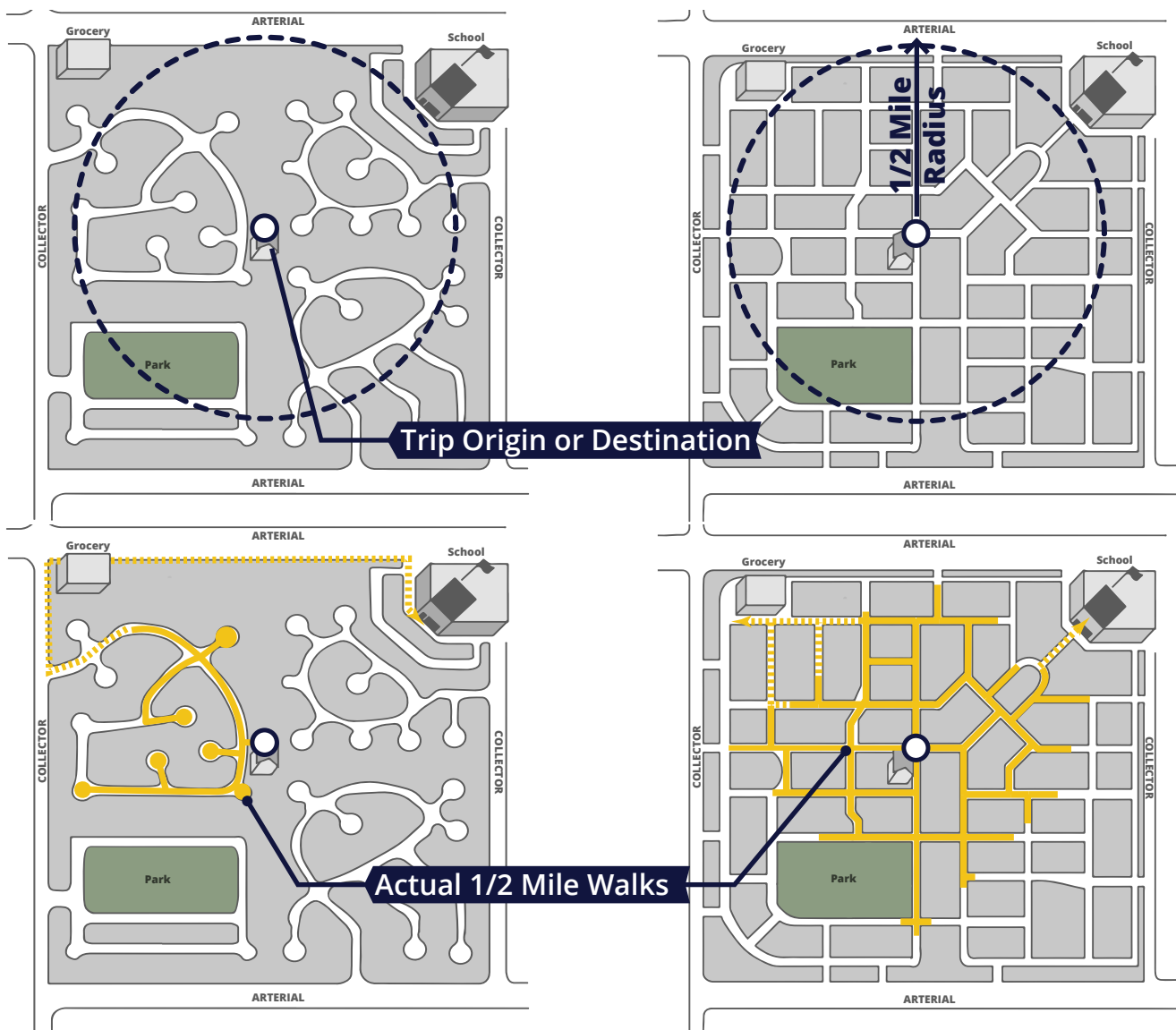
Rural Residential Neighborhood: 50

A,B,C Streets Neighborhood ~ 56

02.4

Accessibility

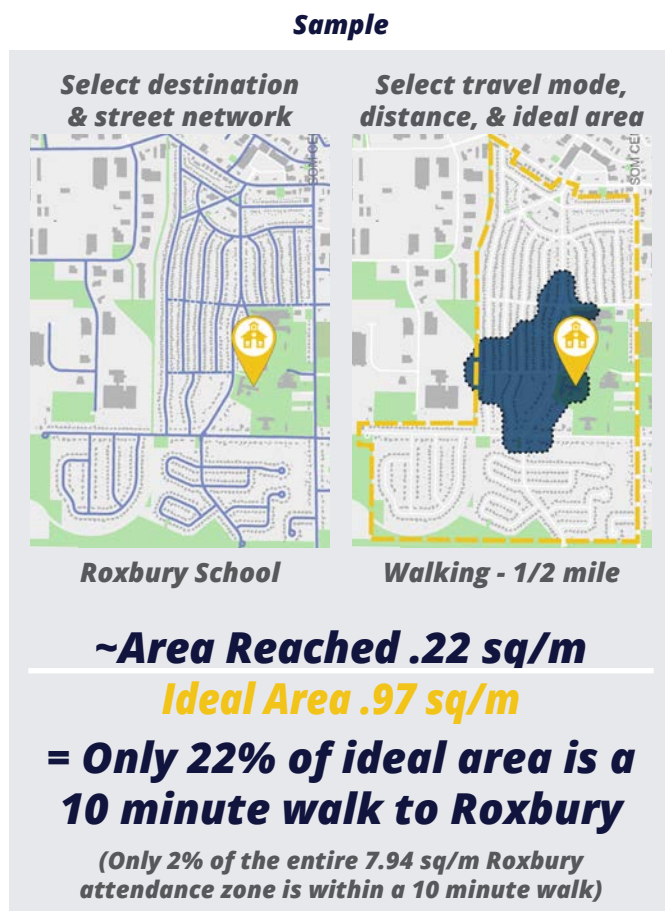
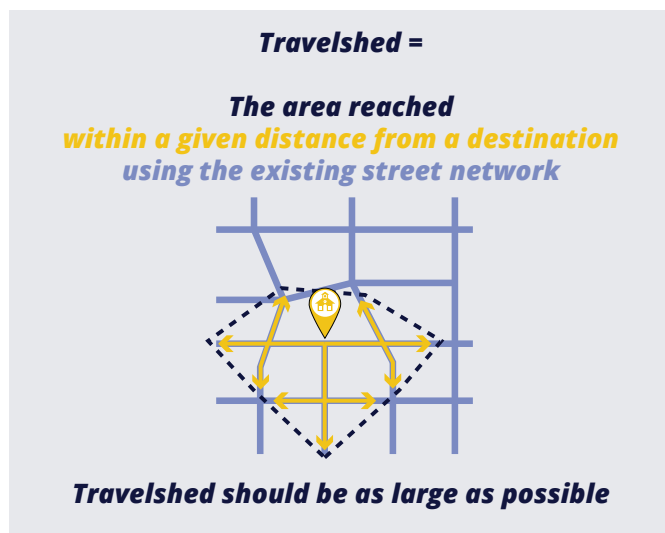
Accessibility recognizes that not all destinations are easy to get to and may not assert a high demand for better connections. Some popular destinations can benefit from a variety of direct multi-modal connections while others might not. A school, city park, job center, or transit node might demand or generate more trips in a network, so it is important to understand how accessible by foot or bike these specific points are and what the desired level of connection should be. Does a community want larger areas around its schools to be walkable? Or to have easily accessible parks within a 10-minute walk by a majority of its residents? It is important to understand how well a given network connects the community via walking and biking to these specific destinations. Incorporating pedestrian and bicycle facilities into city street improvements are the most effective ways a built-out community like Solon can improve connectivity to specific destinations such as schools or parks.



Travelsheds

Accessibility can easily be measured by generating a 'travelshed' for specific destinations, origins, or a set of destinations. This slightly more advanced measurement tool provides a greater understanding of a community's street connections and its capacity to provide safe and pleasant access for various modes of travel from cars, transit, bicycles and pedestrians. Depending on the mode of travel desired, the 'travelshed' analysis can be scaled up from a neighborhood analysis to a citywide study. To determine overall accessibility, the length of the radius being measured depends on the specific travel mode, the desired destination, and its context. In a neighborhood-scale study the radius can be a half-mile, while in a community-scale study the radius could be up to two miles. This metric can easily tell city leaders, stakeholders, and users how well the street network is doing in providing access to a particular destination or group of destinations.

To develop a 'travelshed' analysis, one must select a destination or set of destinations (like schools or parks). The next step is to select the desired travel mode (note that the focus of this connectivity study is on pedestrian and bicycle access, so these will be the most common modes used). The distance for these 'walksheds' or 'bikesheds' can vary, but for pedestrians it is recommended to use a 1/4 mile (5-minute walk) to a 1/2 mile (10-minute walk) to demonstrate how well each destination point can be accessed by residents on foot using the existing network. Sometimes as the diagrams on the previous page show the analysis will find that because of Street Patterns, Network Density, and Block lengths, close proximity to a destination - as the crow flies - does not always result in high pedestrian accessibility. Or conversely, sometimes the analysis will determine that close proximity to the destination may not be the problem but instead a lack of infrastructure (sidewalks & crossings) make traveling this short distance either unpleasant, unsafe, or in some cases not feasible. The final results can help identify for example what percentage of the community has pedestrian access to an elementary school, park, or community center and where that access might need to be improved with upgraded facilities.



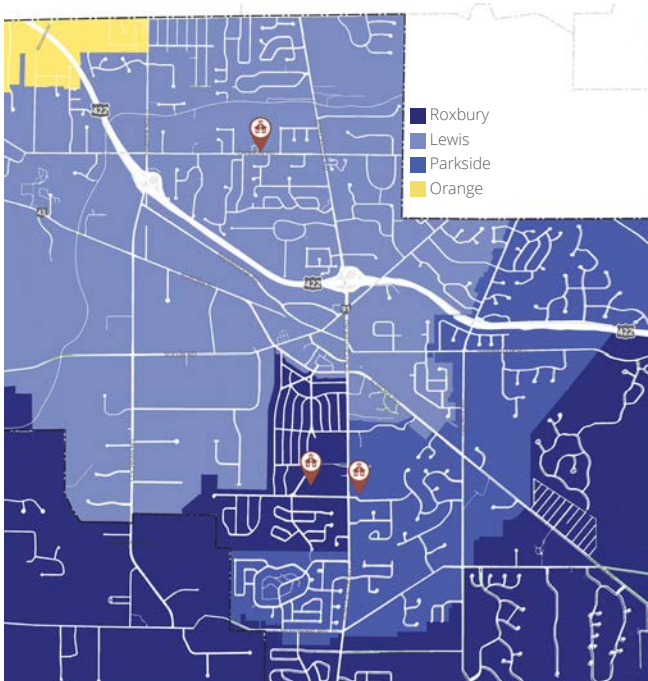
Source: Utah Street Connectivity Guide

02.4

School Access

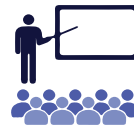
The Solon City School District is comprised of one high school, two middle schools, three elementary schools, and one preschool. All of the District's education facilities are located just south of the downtown area near the center of the community. However, one facility, the Dorothy Lewis Elementary School, is located to the north on Cannon Road. Very few children live within a ten-minute walk to school, but nearly all sections of the City can reach the facilities within a 10-minute bike ride. Due to isolated subdivisions, the eastern and southeastern portions of the City are at the largest disadvantage for safely accessing education by walking or biking.

MAP 5: ELEMENTARY SCHOOL ZONES



#1 **Ranked School District**
in Ohio in 2018 & 2019

Source: Ohio Department of Education - Report Cards 2018, 2019



Ninth Largest District
in Cuyahoga County

Source: Ohio Department of Education - 2019 Enrollment Data

No Safe Routes
to School Plan

Source: NOACA



Walking or Biking to
School Increases Learning

Source: Egelund Et Al. Study of over 20,000 School Children, 2012

MAP 6: 10 MINUTE WALK TO ALL LOCAL SCHOOLS 



02.4

Park, Job, & Transit Access

The City of Solon's winding subdivisions make connectivity to nearby amenities a challenge without the means of a personal vehicle. While the majority of the community lives within a 10-minute bike ride to a park, less than a quarter of Solon residents can safely access a park or recreational amenity within a 10-minute walk; this is 31% below the national average. Additionally, even if residents live within a 10-minute walk to a park, they might not have adequate pedestrian infrastructure to safely access them. Many of the residential areas adjacent to park facilities within the City of Solon do not have sidewalks or only have sidewalks on one side of the street. This can make safe accessibility and road crossings a challenge.

The City of Solon is a major job hub. A large portion of jobs within the City are located within industrialized areas just to the west of downtown Solon. Many of the City's top employers, such as Swagelok and Nestle, have facilities in this area and account for nearly 50% of all jobs within the community.

The City of Solon has access to one of the most well-used Greater Cleveland Regional Transit Authority (GCRTA) routes within the region. Bus Routes 41 and 41F connect the communities of East Cleveland, Shaker Heights, and Warrensville Heights, to Bedford, Solon, and Glenwillow. In the City of Solon, the 41 directly serves the community's industrial core. A number of the City's largest employers, such as Swagelok and Nestle, are located directly on this line with easy access for those employees who utilize public transit.

#2 After Cleveland Solon is
in Jobs in the County
with ~26,739 Jobs

Source: US Census Bureau - On the Map, 2017

 **23% of Residents**
live within a
10 minute walk of a park
Source: Trust for Public Land



The National Average is 54%
Source: Trust for Public Land



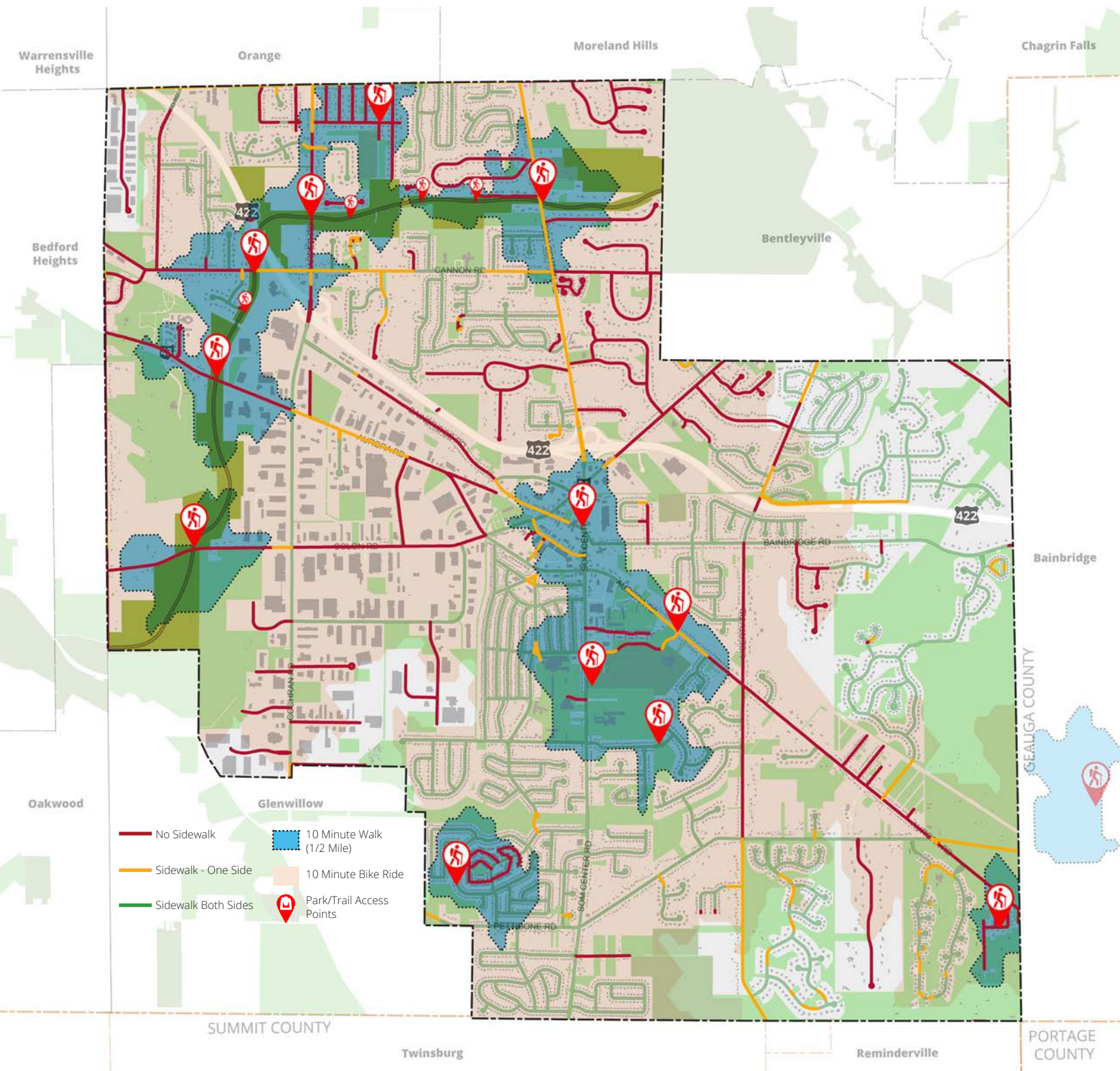
 **>17,000 Residents**
Outside a 10 Minute
Walk to a Park
Source: Trust for Public Land

4th Ranked Route
in RTA Network

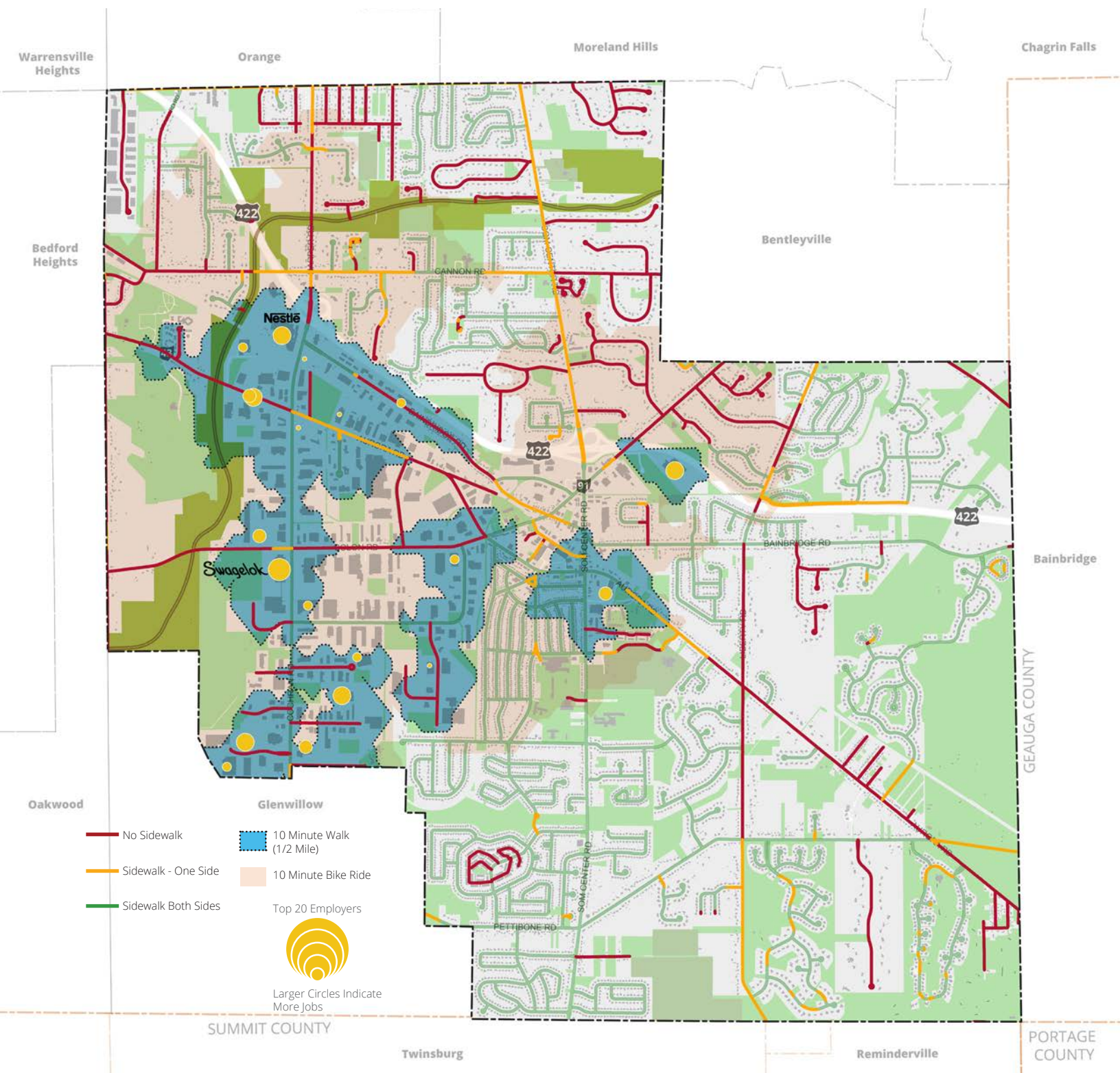


1,164,613 riders in 2019

MAP 7: 10 MINUTE WALK TO PARKS 



MAP 8: JOB ACCESS: 10 MINUTE WALK TO TOP 20 EMPLOYERS 



Overall Connectivity

Due to existing street patterns, block lengths, and accessibility issues, connectivity within the City of Solon is challenging. However, the community has unrealized potential for future pedestrian and bicycle networks through rail corridors and along existing streets. In its current state, the City is largely car-dependent and almost all errands or trips require the use of a personal vehicle. Residents and employees of Solon's workforce who do not have access to a vehicle or those who choose to leave their car in the garage have significant obstacles to safe and equitable access to work and other destinations.

While the City of Solon may be car-dependent, pockets of connectivity do exist. For example, Solon is on par with Hudson in terms of overall walkability based on each city's overall Walkscore. Walkscore like the Connectivity Index, Intersections Per Mile, and Travelsheds, is a free metric that is used to "measure the walkability of any address using a patented system. For each address or community, Walk Score analyzes hundreds of walking routes to nearby amenities. Points are awarded based on the distance to amenities in each category. Amenities within a 5-minute walk are given maximum points, with no points given after a 30-minute walk." When applying this analysis to just the downtown areas of Solon and Historic Hudson you can see the difference in distance to amenities and overall score, with Walkscores of 48 and 62 respectively. While better than each City's community-wide Walkscore of 11, the Hudson score shows how focused improvements in select areas can greatly impact connectivity. While Solon's street network, block lengths, pavement widths, parking requirements, and vacant land may present challenges, they also provide extremely unique opportunities for improving both on and off-street connectivity options.

11 **Solon's Walk Score**
Car-Dependant
Almost all errands require a car

Hudson 11

Westlake 23

Shaker Heights 43

Rocky River 44

48 **Downtown Solon**

62 **Historic Hudson**

74 **Downtown Chagrin Falls**

02.4

Walkability

Having more than just the bare minimum of necessary infrastructure available might be the most important aspect of walkability. On the ground streets can feel much different than just lines on a map. Each path, corridor, and sidewalk facility offer different environments for walkers, bikers, joggers, transit riders, and drivers. Obstructions, topography, crossing locations, traffic, quality of the pavement and especially building location can all make walking and biking a relatively pleasant or unpleasant experience. Pedestrians and cyclists are often the most vulnerable users of the network, so it is critical to pay attention to the various conditions along the street - especially in designated 'walksheds' for popular destinations - to ensure the appropriate infrastructure is in place to make destinations reachable safely and conveniently for all ages and abilities. One way to accomplish this is to divide the corridor into various zones and to determine what the best features and spatial requirements are required for each zone depending on context and potential user groups. The diagram on the facing page illustrates the location of each zone and provides an example of a well-designed street with all necessary infrastructure working in unison to create a welcoming environment designed and built for all mobility groups.

The safety of bicyclists and pedestrians depends on not only on well-designed routes and paths but also most importantly intersections, where it is estimated that 40% of pedestrian crashes occur. Pedestrians will typically walk in places that they feel safe and cross the street at points that are the most convenient. Therefore, all necessary infrastructure requirements need to extend out beyond the curb and into the street at intersections to help encourage walking and increase safety. Raised or high visibility crosswalks, reduced curb radii, curb bump outs, limited curb cuts, and refuge islands are all positive and relatively simple steps forward in creating safe and convenient crossings at all existing intersections. When installing these and other measures, it is important to gather detailed corridor information including inventories of traffic, crash types, and safety issues. Then with input from the public and design guidelines it is essential to select the proper enhanced countermeasures for the highest priority locations.

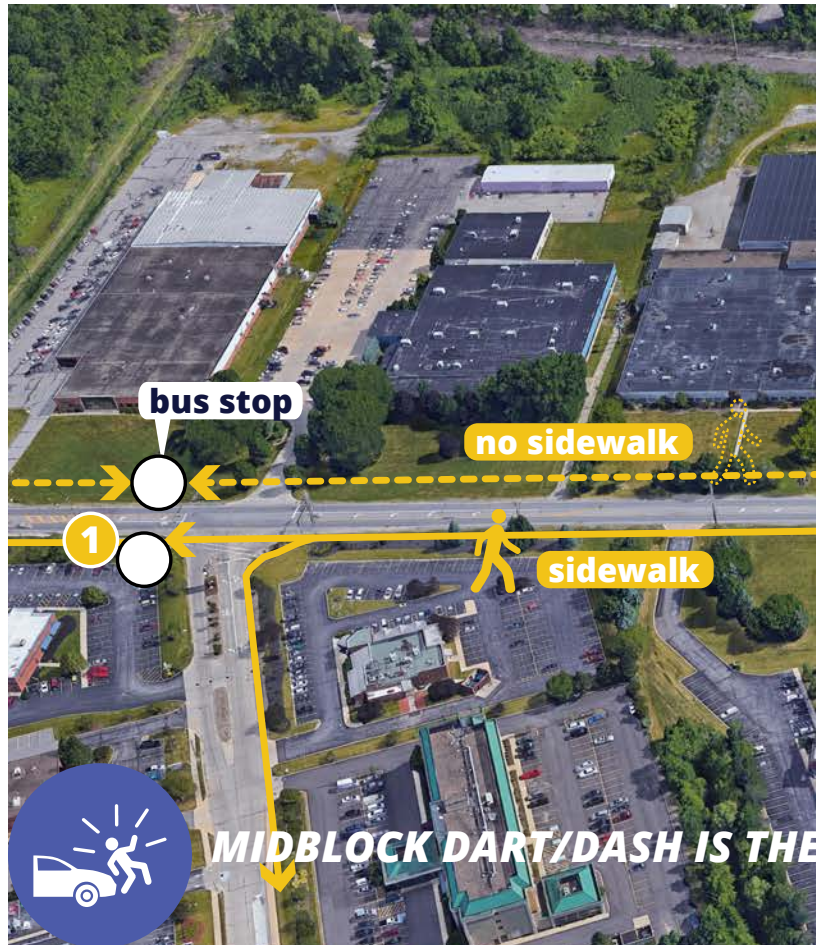


FIGURE 4: STREETS BUILT FOR CARS VS. PEDESTRIANS



Network Quality & Safety

While many of the residential streets in Solon have sidewalks on both sides, several the City's more heavily trafficked roadways do not. These incomplete sidewalk networks can pose safety risks to residents, employees, transit users, and visitors. As seen in the image to the right (top), if you are one of the residents within a 10 minute 'walkshed' to a desired destination (such as a trailhead or park), your only option may be walking along a 35-mph roadway with no existing sidewalks. Here along Cannon Road there is only one existing sidewalk, that connects Nestle employees safely to Hawthorne Parkway, but not one for adjacent residents. Additionally, as seen in the image to the right (bottom), similar situations arise for transit users and employees at one of the many job centers located along Aurora Road or for those who use RTA Bus Route 41. Here we have many different bus stop locations but only one sidewalk on the south side of the street (image-1) and only one marked crosswalk (image 2). Riders and employees who want to safely cross the street might need to walk at least 8 minutes in the opposite direction to reach the marked crosswalk. This situation can force pedestrians to either choose the longer walk or resort to a "dart-dash" move to reach the other side of the street to access the sidewalk or to reach to their preferred destination.

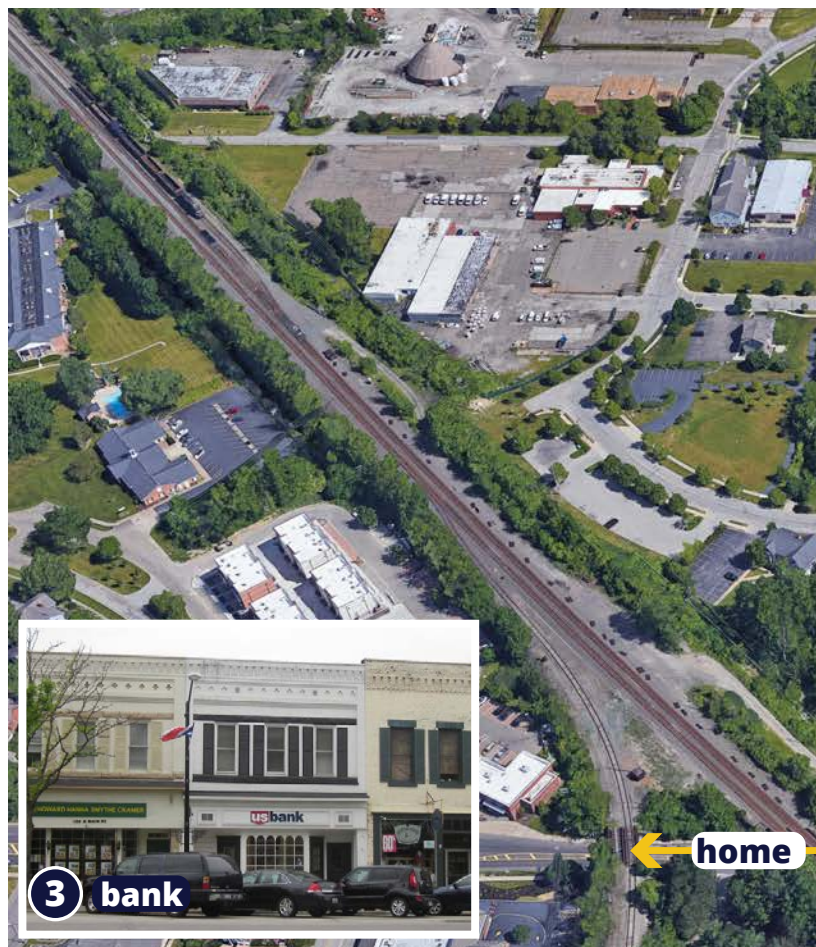


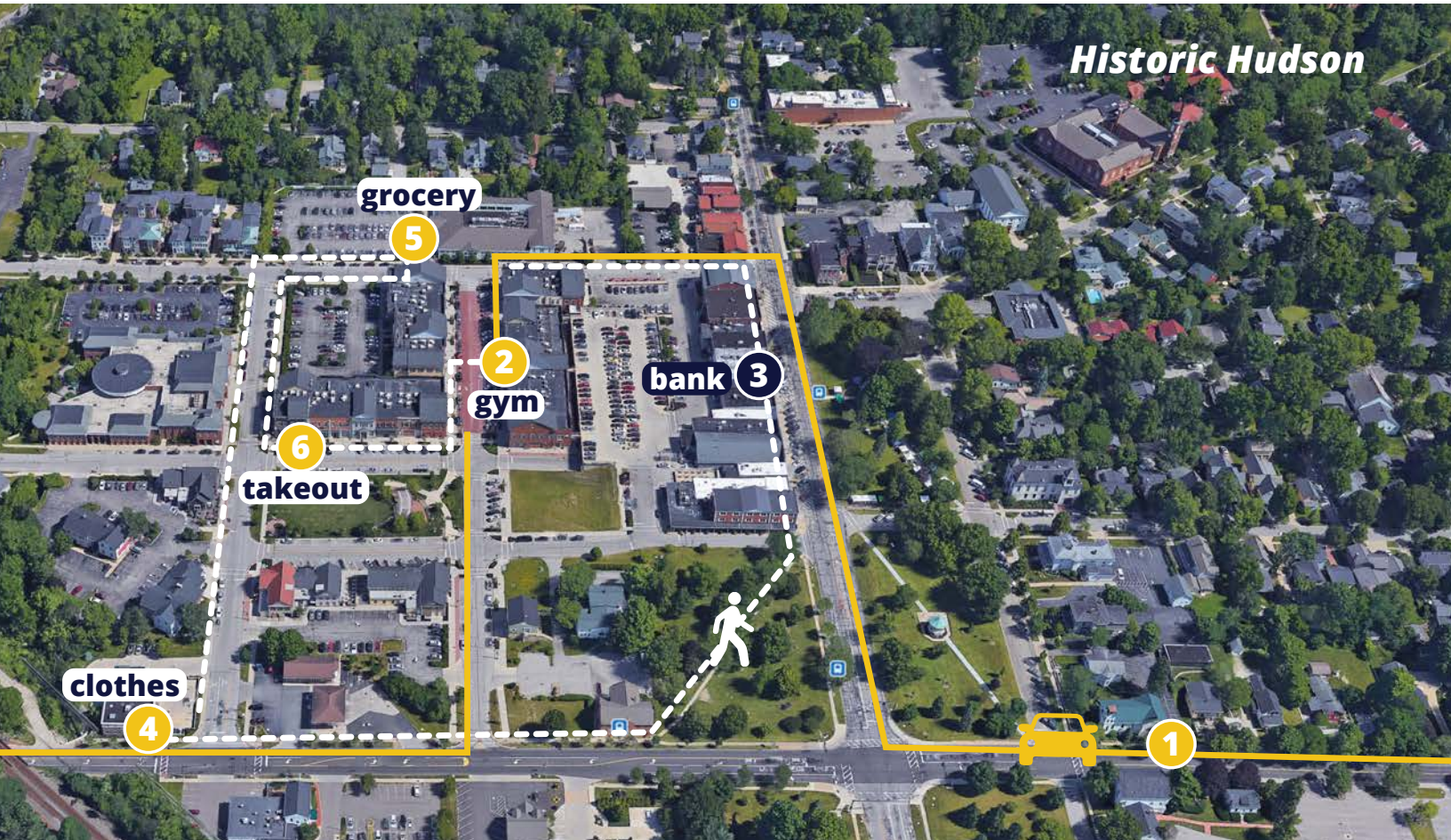


Urban Form

One of last remaining issues that Solon must contend with in building greater connectivity is Urban Form. The way communities are designed and built can create heavy amounts of traffic and demands for driving—especially those communities where cul-de-sac developments and wide streets are the norm. What is built, where it is built, and how it is built affects how much we drive and how safe it can be to walk or bike. As we have seen in the earlier analyses, the sprawling suburban development created in Solon has increased distances between home and other local destinations. New roads and freeways built to serve sprawling development usually attract one development type—car-centered business with deep setbacks from the right-of-way and large parking lots between the sidewalks and buildings. This can be seen in the development of shopping centers across America and at the intersections of Aurora and SOM Center Roads in Downtown Solon (top). Even if a resident wanted to walk while completing a set of errands—to the gym, bank, dry cleaner, grocery and take-out—they might find that it would be extremely challenging and time consuming to reach every destination without a car.


Contrast the experience in Downtown Solon to the one occurring in Historic Hudson (bottom) where First and Main, with its multiple intersections, short blocks, on-street parking, and buildings right at the street helps foster a greater sense of walkability. Here a pedestrian can easily reach all their destinations in a single trip combining both walking and driving. If development is clustered closer together, people can take shorter trips between destinations—sometimes if short enough or safe enough they can make those trips solely by walking or biking. However, if that development is too dispersed and designed for the car like in the Solon example, even if existing sidewalks are in place, people will likely still choose to drive. However, it's an indisputable fact that all drivers must leave their cars and become pedestrians at many points in their journey. Therefore, it is important to create safe pedestrian and bicycle routes wherever possible, and to understand that connectivity is more than just providing a sidewalk in every location—it is the thoughtful combination of design, location, and amenities that makes a street and a community feel safe and welcoming for all users.





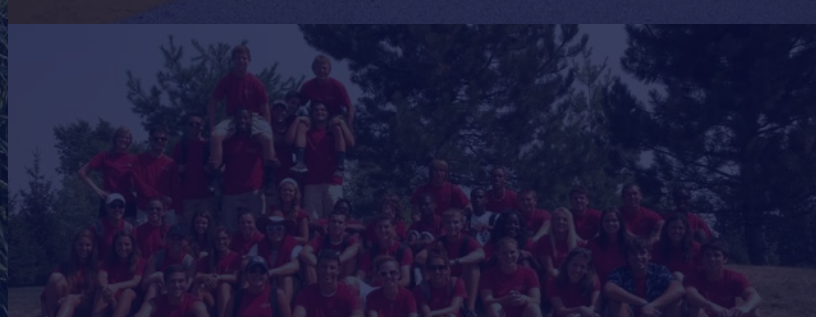


Section 03 | Vision & Recommendations



“Over **half of all people** (52%) and 63% of millennial’s would like to live in a place where they **do not need to use a car very often**, and half of U.S. residents believe their communities **need more bike lanes**.”

- Urban Land Institute (ULI), America in 2015



Vision

The vision of the ‘Solon Connects’ Plan is simple: build safer and stronger pedestrian and bicycle connections between existing civic, commercial, and open space assets to create safe and beneficial active transportation options for everyone.

Plan Objectives

The Solon Connects plan is a coordinated planning effort that aims to provide a comprehensive set of recommendations for improving connectivity in Solon. In an effort to achieve this vision the plan has identified four key objectives surrounding the recommendations outlined herein, Enhance, Expand, Educate, & Evaluate. These objectives are intended to reference some of the more traditional E’s included in Bike and Pedestrian programs: Engineering, Education, Enforcement, Encouragement, and Equity. Re-imagining what a different set of 4 E’s might look like for Solon and the Solon Connects Plan. Each E contains a different approach to improving connectivity, some involve physical infrastructure, while others involve residents, groups, or citywide policies and programs. Taken together they represent an integrated and all-inclusive methodology for improving connectivity in Solon

Recommendations

The Recommendations section is where the Solon Connects plan describes in significant detail the projects, programs, and best courses of action necessary to achieve each objective and fulfill the community’s vision. In this section each one of the plan’s objectives are broken down into a series of physical improvements or policies and programs the City can achieve through partnerships and collaboration. One of the most important stages of the planning process, the recommendations included in the Solon Connects plan respond to input gathered from city leaders, focus groups, and the public. They combine that personal and on the ground knowledge with the significant expertise of County Planning Staff to generate a series of tangible and comprehensive methods to improve connectivity in Solon. Some of these recommendations can immediately move towards execution, while others may require additional study, funding, or long-term phasing efforts, laying the foundation and need for a series of action steps and implementation strategies.

Enhance

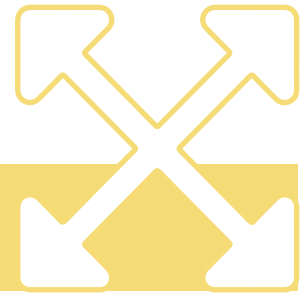


Many residents, students, and employees currently use the existing network of sidewalks, trails, and transit routes in Solon to reach their destinations. However, in many cases they might be faced with dangerous or uncomfortable conditions including a lack of safe or adequate facilities. Enhance recommendations are aimed at improving conditions throughout the existing network for all users.

Recommendations that improve the quality and safety of the existing active transportation network for current users.

- I. Existing Network
- II. Streetscapes
- III. Safety
- IV. Maintenance & Quality

Expand



Many Solon residents choose not to walk or bike to destinations because they don't feel safe or don't have convenient facilities available for them to leave their car in the garage. Expand recommendations are determined to meet this challenge by identifying opportunities to expand the cities all ages and abilities to network to capture more users by providing a variety of accessible multi-modal options to reach destinations safety and easily.

Recommendations that increase mobility options and potential users thanks to a well-connected active transportation network

- V. Space for All Users
- VI. Connections
- VII. Experience & Identity

PHYSICAL IMPROVEMENTS

Educate



Educating the community on the benefits, needs, and challenges to mobility is critical to any successful connectivity plan. Advocating for safer streets, better facilities, and more funding is key to enhancing and expanding the network. The Educate objective is a critical piece to achieving this goal. Through the establishment of new groups and programs, Solon residents can continually campaign and educate each other on the Community's needs and opportunities through a variety of stakeholder groups and events.

Groups and programs that engage and inform residents about events, safety, and benefits surrounding active transportation

VIII. Groups
IX. Programs

Evaluate



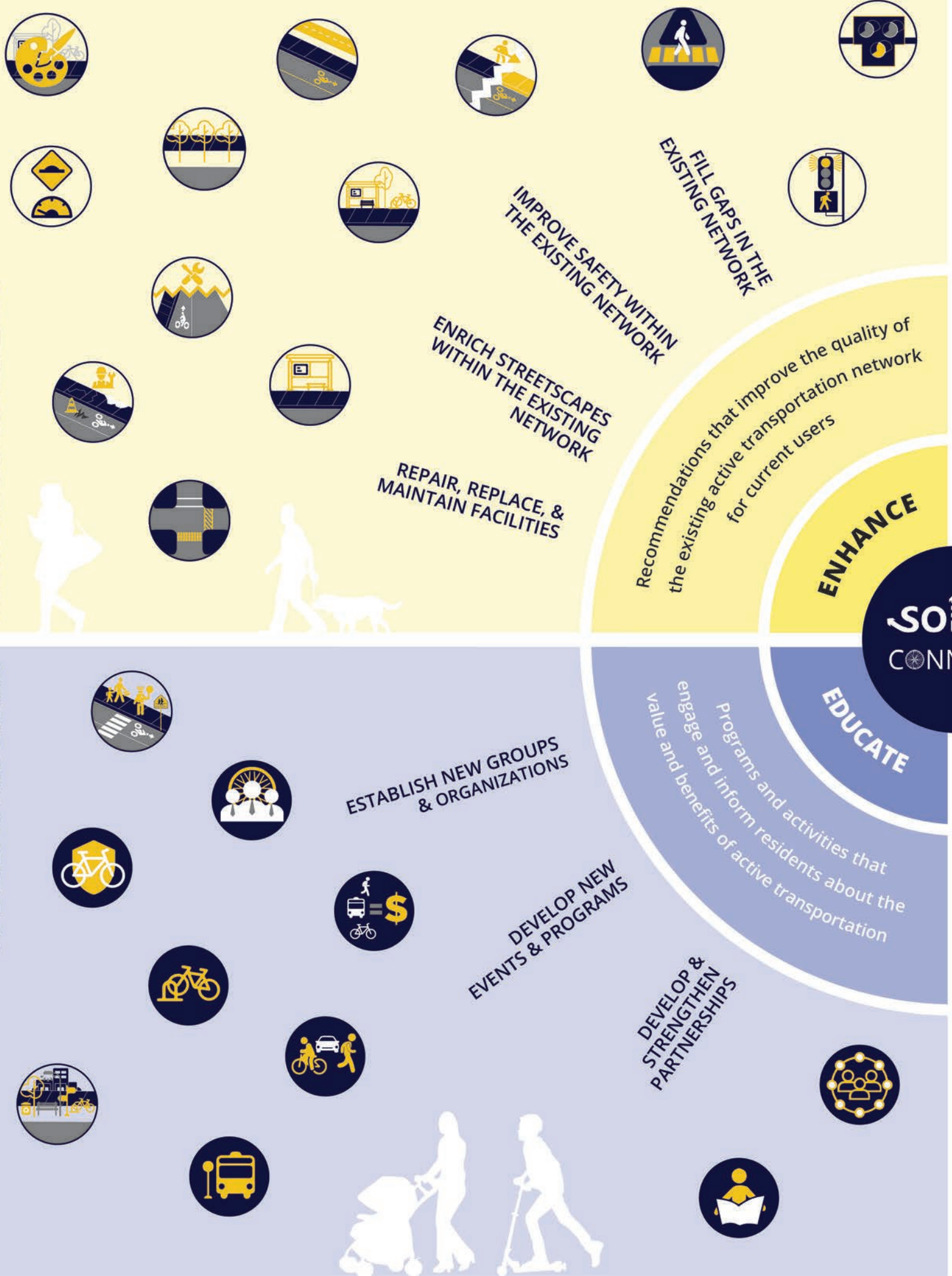
The needs of residents are constantly changing along with transportation technology. Staying up to date is a challenge for any community or organization. However, there are some tried and true emerging policies and programs that can be utilized to help meet any future need by increasing and prioritizing connectivity as part of every infrastructure project. The Evaluate section identifies some tools and technologies that can help build a stronger and more connected Solon now and into the future.

Progressive policies, procedures, and opportunities that will help advance active transportation in Solon now and into the future

X. Collaboration & Funding Opportunities
XII. Policies & Designs
XIII. Technology

POLICIES & PROGRAMS

POLICIES & PROGRAMS





Recommendations

INCREASE BIKE & PEDESTRIAN CONNECTIONS

CREATE A NETWORK THAT HAS SPACE FOR ALL USERS

BUILD WALKABLE BUILDINGS & PROJECTS

BUILD AN IDENTITY WITH SIGNAGE & WAYFINDING



Strategic recommendations that increase mobility options and users thanks to a well-connected network

EXPAND

EVALUATE

Policies and procedures that will continually advance active transportation in Solon for many years to come

EXPLORE NEW POLICIES & PROCEDURES

SURVEY NEW EQUIPMENT & TECHNOLOGY

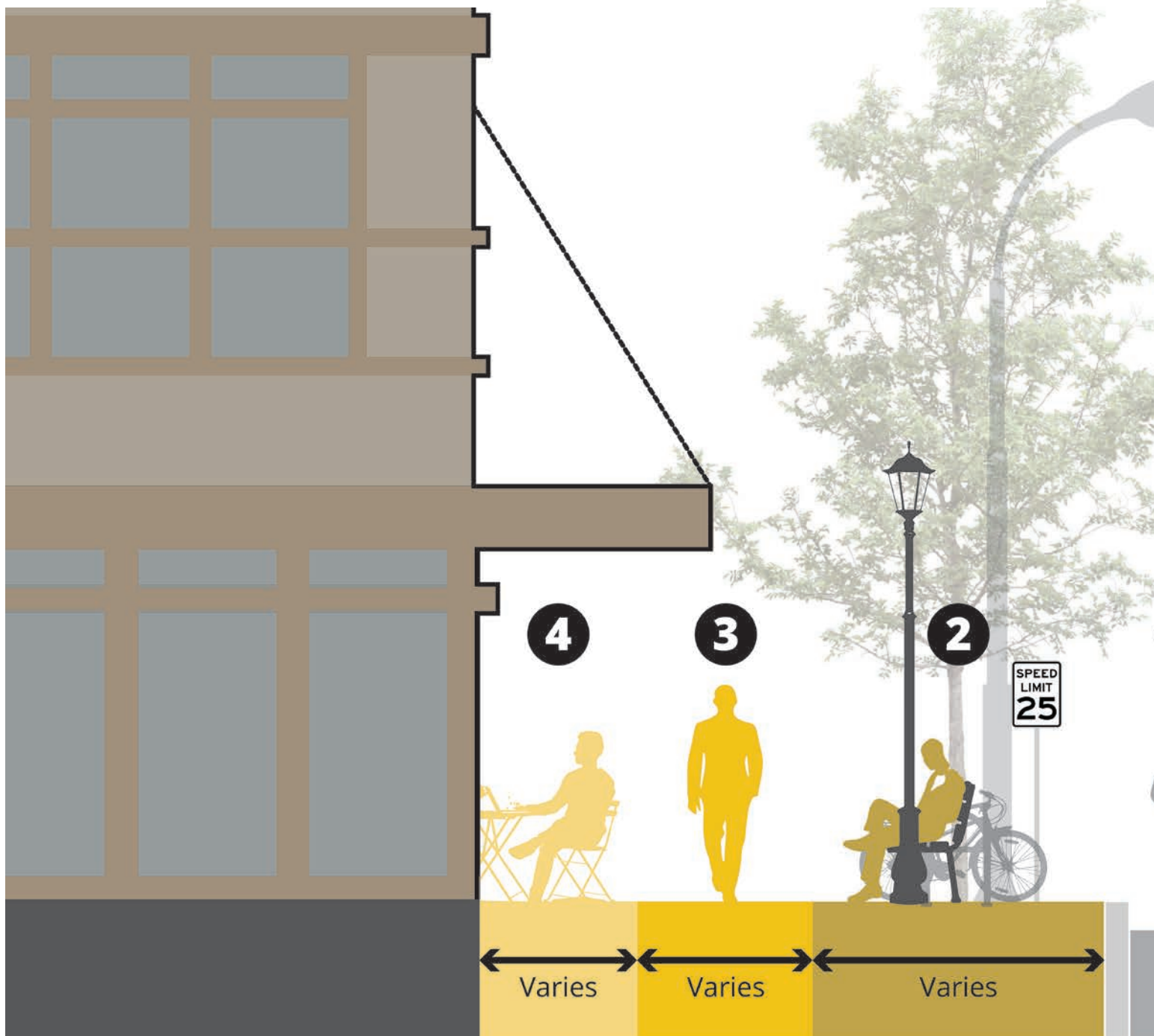
EVALUATE NEW OPPORTUNITIES FOR CONNECTIVITY





Zones of the Street & Sidewalk

A street includes the entire area located within the public right-of-way; however, within this space several different functions may take place, requiring roadway designs that accommodate more than just car traffic. To help identify the space necessary for each user the overall corridor and sidewalk can be divided into a series of different zones, each having minimum and preferred spatial requirements. Combining all these zones together is what defines a street's quality and character. City owned Right-of-Way is valuable public space and when it is designed properly a street can be an inviting and welcoming environment that provides the amenities needed for cars, pedestrians, bicycles, and transit. When these components are unbalanced towards the automobile, the street can become unappealing and bleak. The Solon Connects Plan aims to better balance car needs with the needs of other users and to measure the success and quality of streets not based upon how quickly traffic moves but on how well they create a safe, attractive, fun, and thriving network for all users.



1

Roadway & Extension Zone

- Section of the street that extends beyond the curb into the roadway representing the primary space for car travel.

2

Edge & Furnishing Zone

- Section of the street between the curb and the sidewalk, acting as a buffer and transition space between the roadway (car travel) and the sidewalk (pedestrian travel).

3

Sidewalk & Pedestrian Through Zone

- Section of the street running parallel to the roadway that extends between the furnishing zone and the building frontage zone.

- The sidewalk zone is the primary pathway for pedestrian travel and ensures that pedestrians always have a safe, adequate, and accessible facility to use.

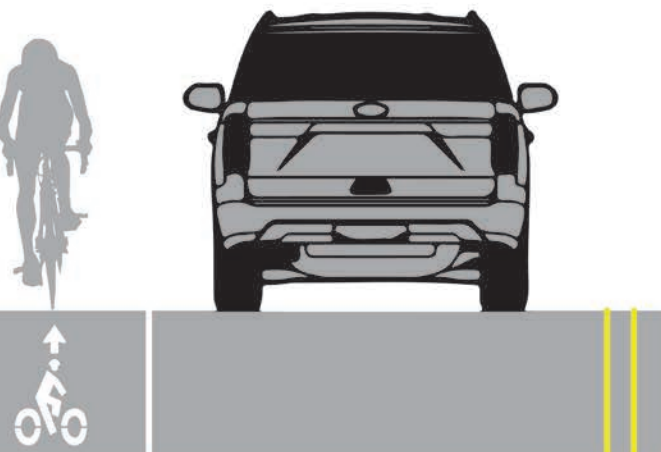
4

Building & Frontage Zone

- Section of the street extending between the sidewalk zone and building (or property line).

- The frontage zone consists of both the structure and of the building and other amenities including parking areas, and is intended to provide adequate space to enter and exit buildings safely.

1



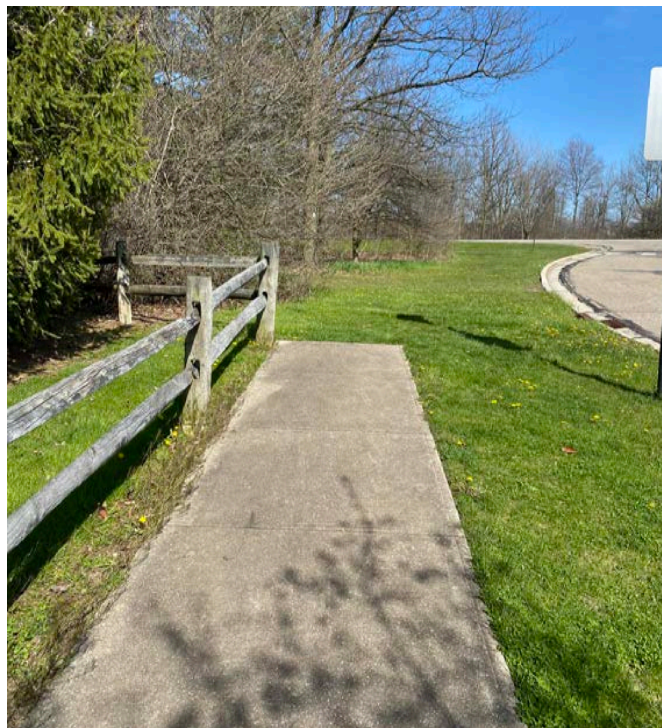


03.1






Existing Network

Sidewalks

The City of Solon is a well-established community of winding residential streets and cul-de-sacs. While this creates a picturesque landscape, it also drastically increases trips generated by vehicles because direct and efficient access to destinations by foot or bike becomes significantly diminished. As seen in the map to the right, for the City to have a complete sidewalk network, the community would need to add over 100 miles of sidewalks to existing roadways that do not currently have them. However, this is probably not necessary in many situations due to pedestrian demand and traffic volumes. Therefore, it is important to identify priority sidewalk projects in the community through community engagement and analysis. These priority improvements should be based upon streets with higher speeds, access to jobs, amenities, or transit. For example, many RTA bus stops in Solon don't have a sidewalk to provide transit riders safe and comfortable access. Closing gaps in the sidewalk network and building facilities with increased minimum design standards would create a much more comfortable and safer environment for transit riders and residents on many local and major streets.



Action Steps:

-  Prioritize new or rebuilt sidewalks on streets with higher speeds, crashes and volumes
-  Prioritize first-mile / last mile connections that provide access to transit and job centers
-  Prioritize streets that provide access to key destinations (schools, parks, etc.)
-  Prioritize streets that local residents and leaders identify as key to improving links
-  Increase minimum standards for sidewalk construction (i.e. width, location, & furnishings) to increase comfort and safety (pg. 72)

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

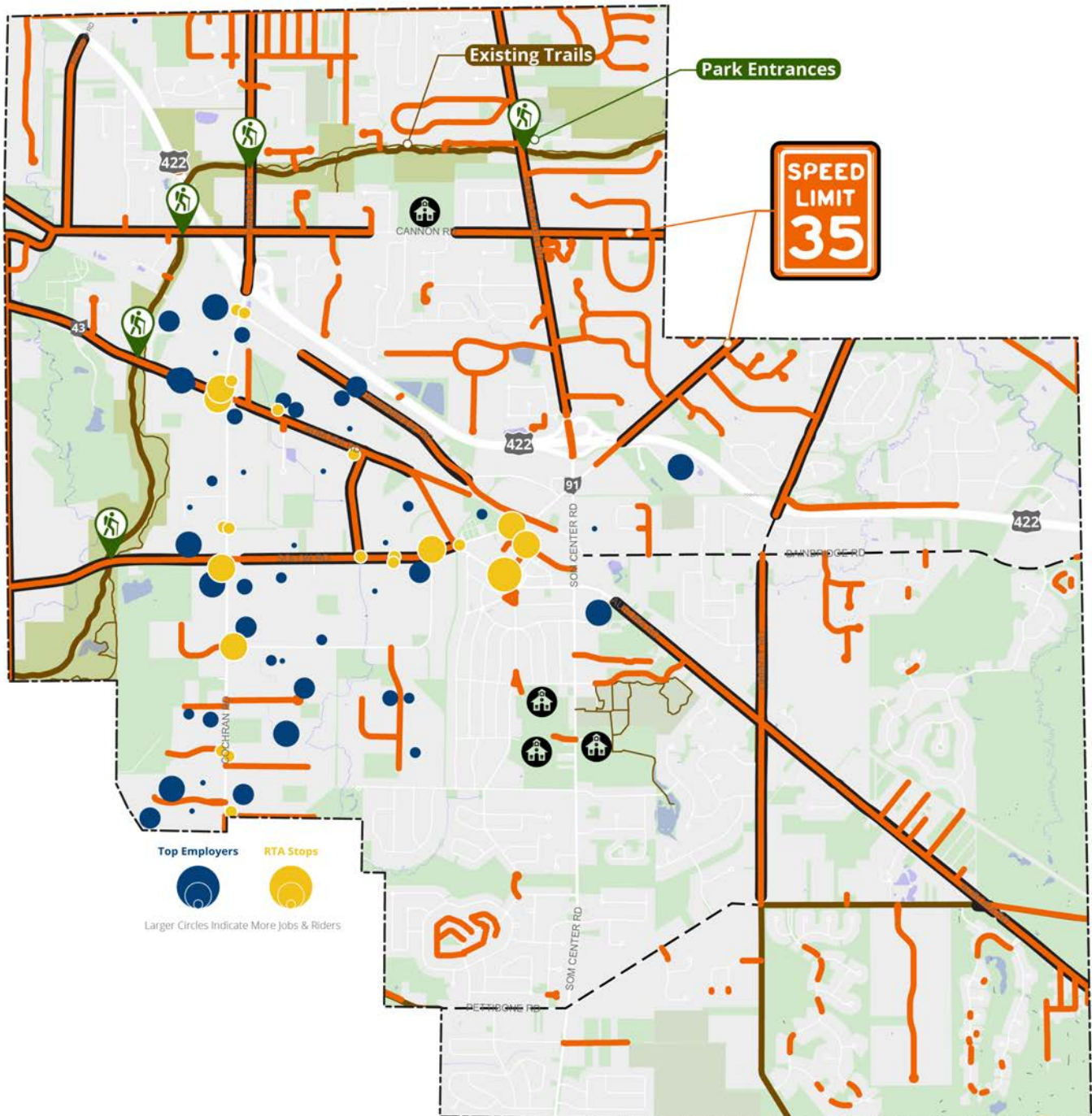
Project Leaders & Partners



City of Solon, ODOT, NOACA, GCRTA, Cuyahoga County Public Works, Cuyahoga County Planning Commission

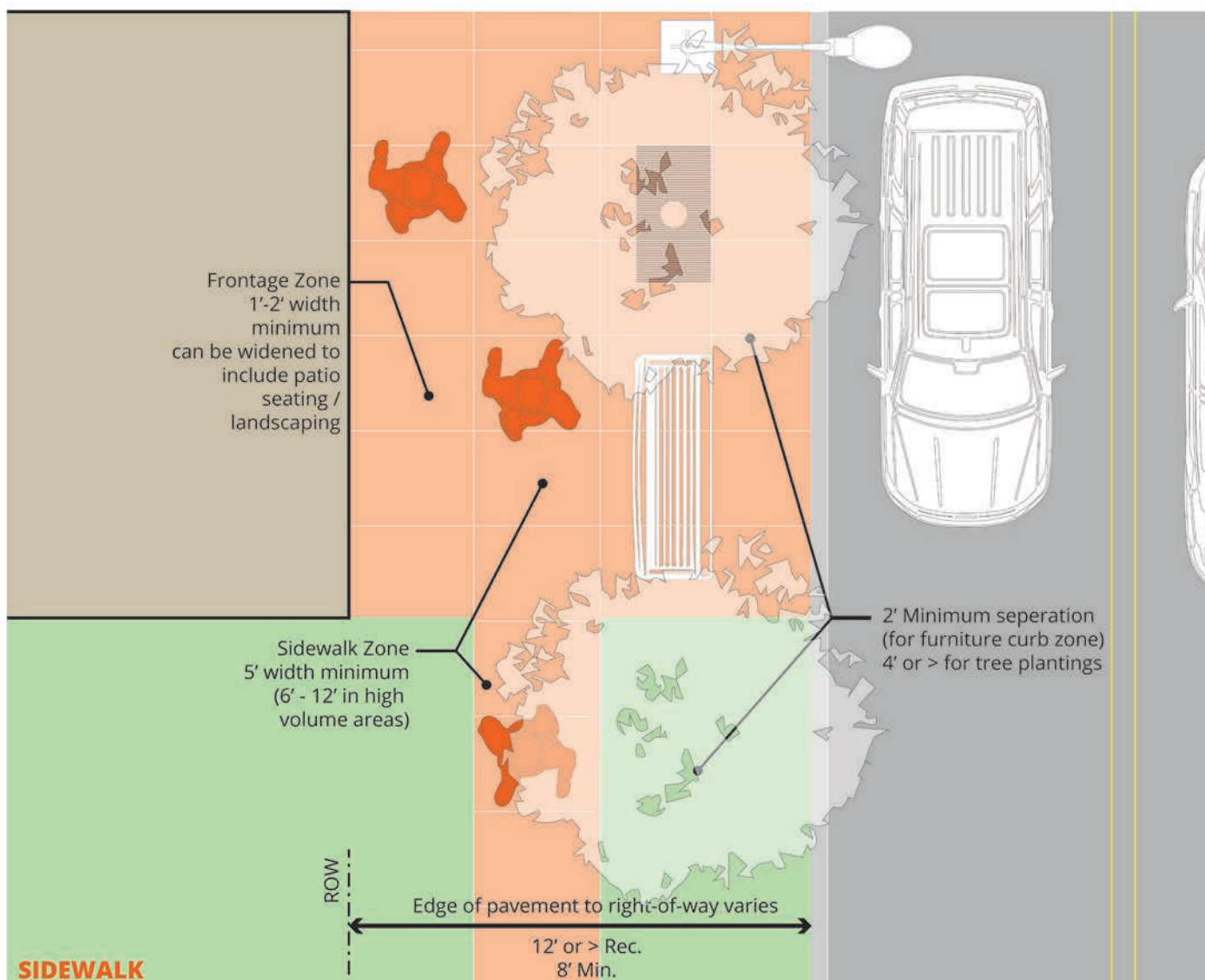
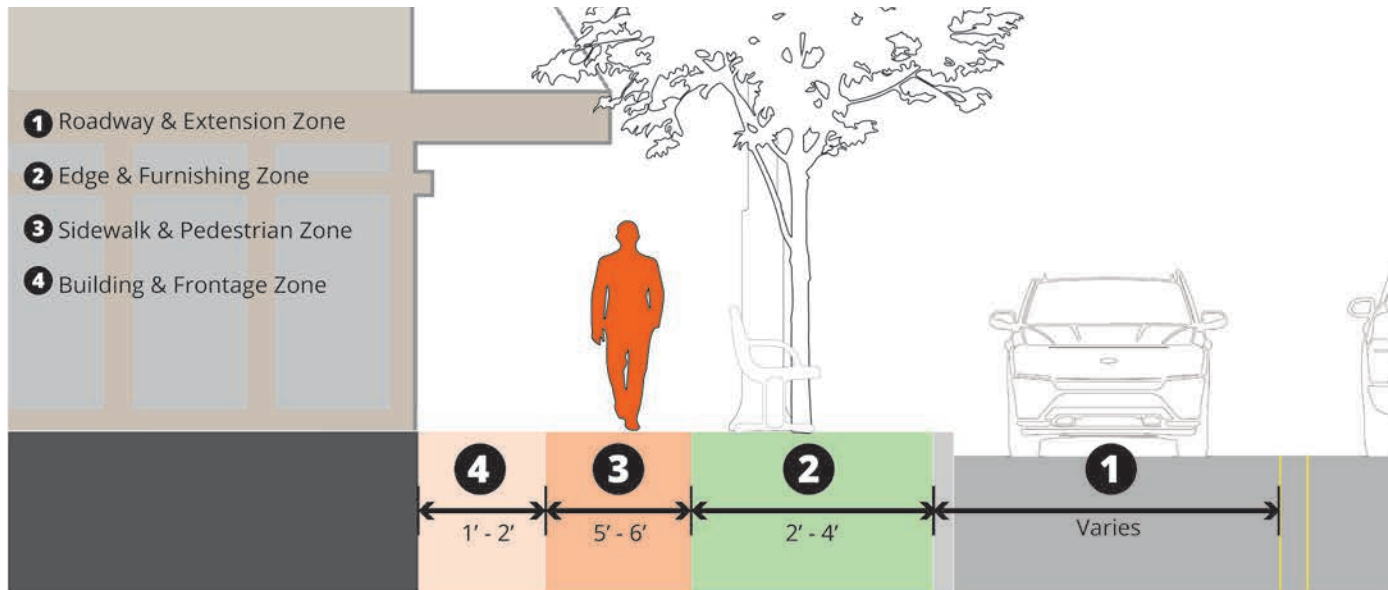


MAP 9: MISSING SIDEWALK NETWORK WITH PRIORITY INFLUENCES (SPEED TRANSIT, ETC.) 

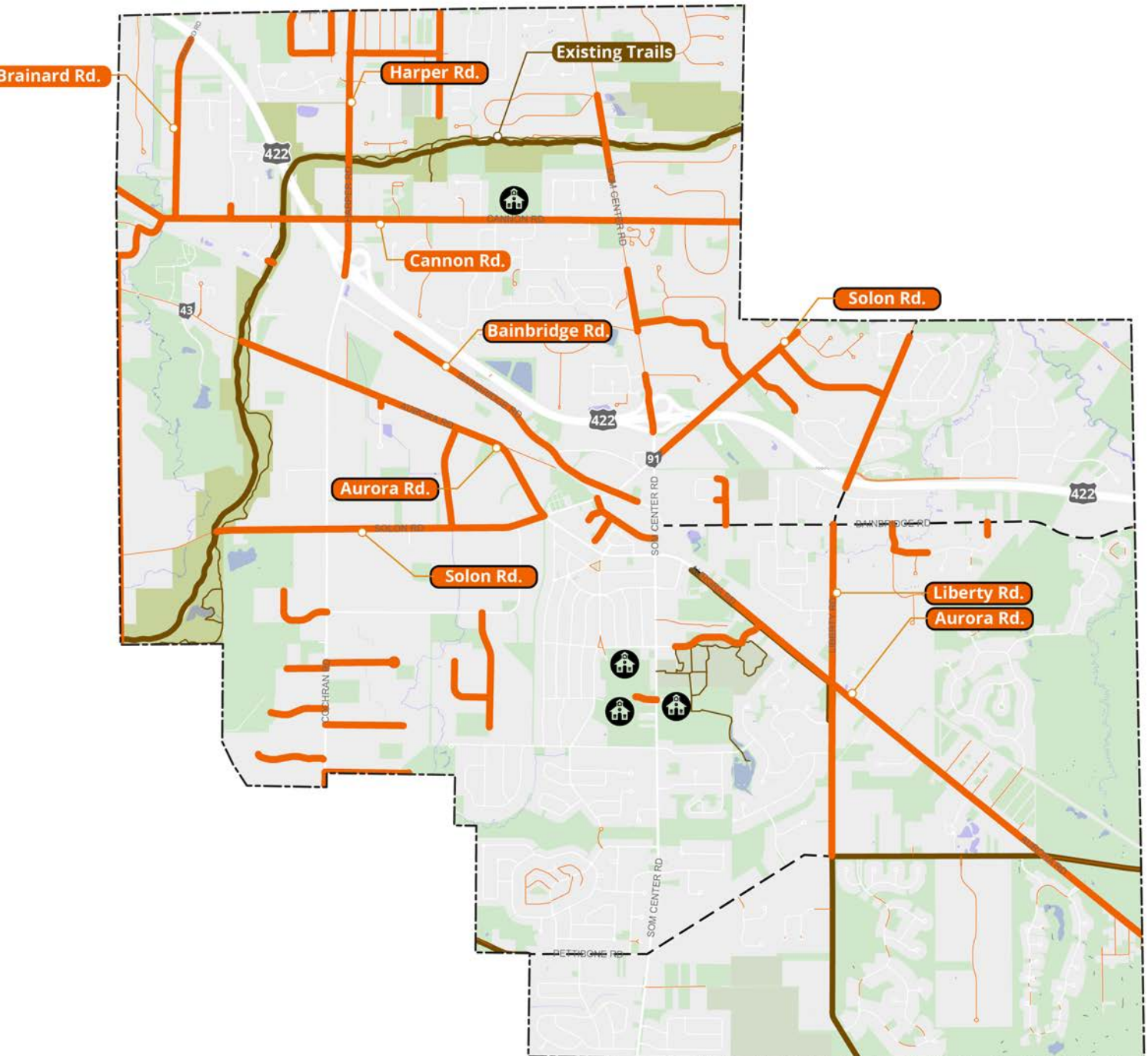


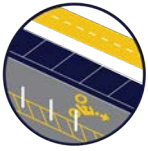


Sidewalks



MAP 10: PRIORITY SIDEWALK NETWORK 



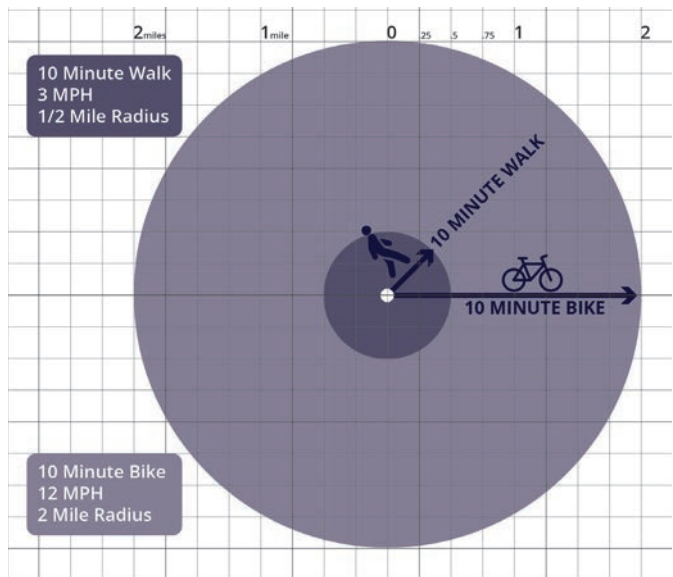


03.1

Bike Facilities

Expanding and enhancing bicycle infrastructure means ensuring that a robust network is in place to make bicycling a more viable mode of travel for Solon residents. It also means ensuring that the infrastructure is safe and comfortable for all users. 45% percent of all vehicle trips in the United States are 3 miles or less, and due to Solon's size, roadway network, and land use pattern, a 10 to 15-minute walk drastically limits the number of destinations someone might be able to reach comfortably before choosing to drive to their destination. However, a 10 to 15-minute bike ride, which can cover a larger distance, as much as 2 miles, can start to bring more destinations within a resident's reach. While Solon does have some bicycle infrastructure in place, very few residents have direct access to such facilities. Additionally, most existing bike facilities in Solon are located on 35mph streets – an environment that can make almost any rider feel uncomfortable. Therefore, it is important that all new bicycle facilities work to capture more riders and work to convert those short cars trips into easy and fun family friendly bike trips.

FIGURE 5: 10 MIN. WALK VS. 10 MIN BIKE

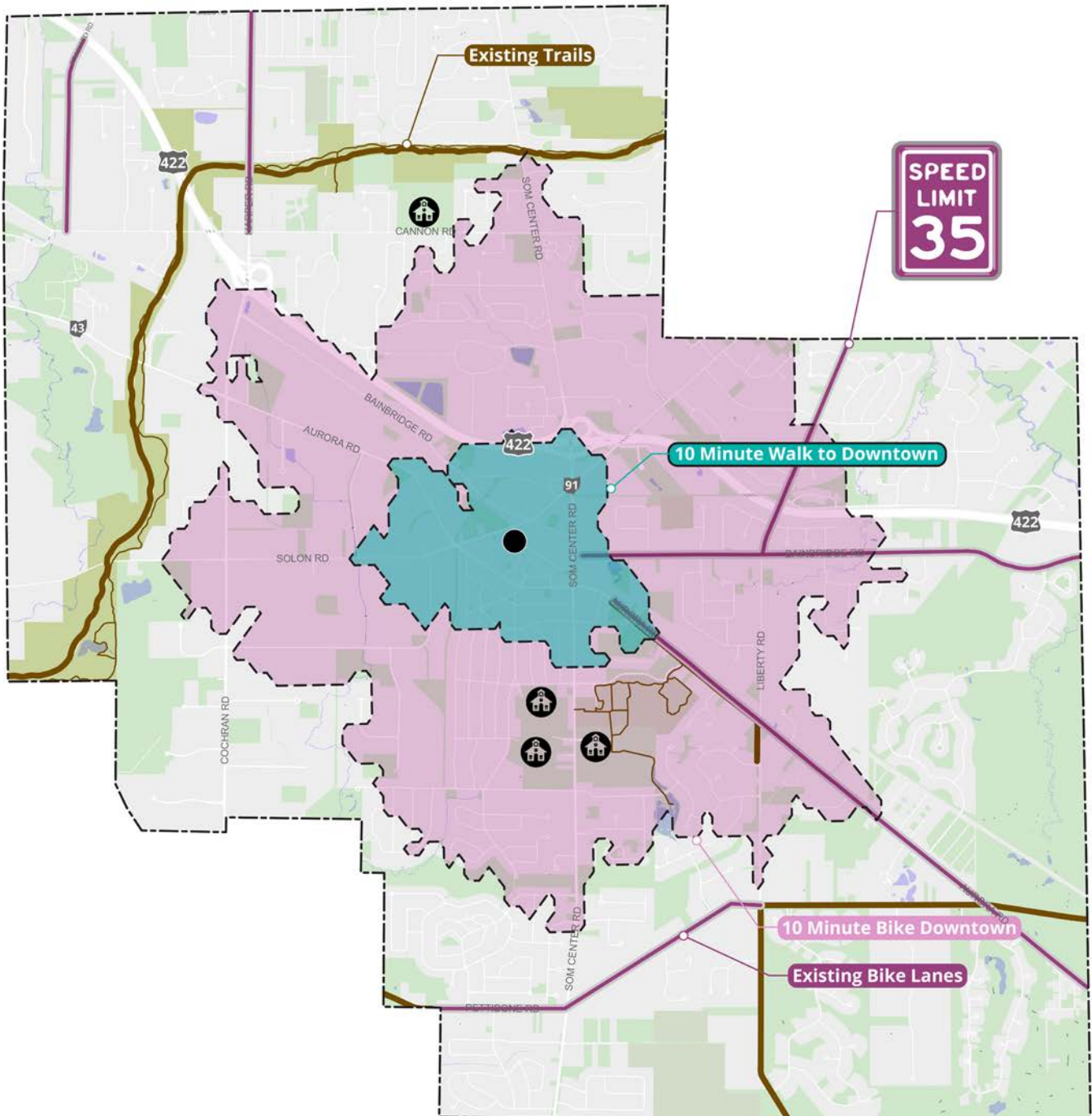


Source: DPZ CoDesign

FIGURE 6: EXISTING CONDITIONS: BRAINARD ONE LANE (LEFT), HARPER NARROW LANE <5 (RIGHT)



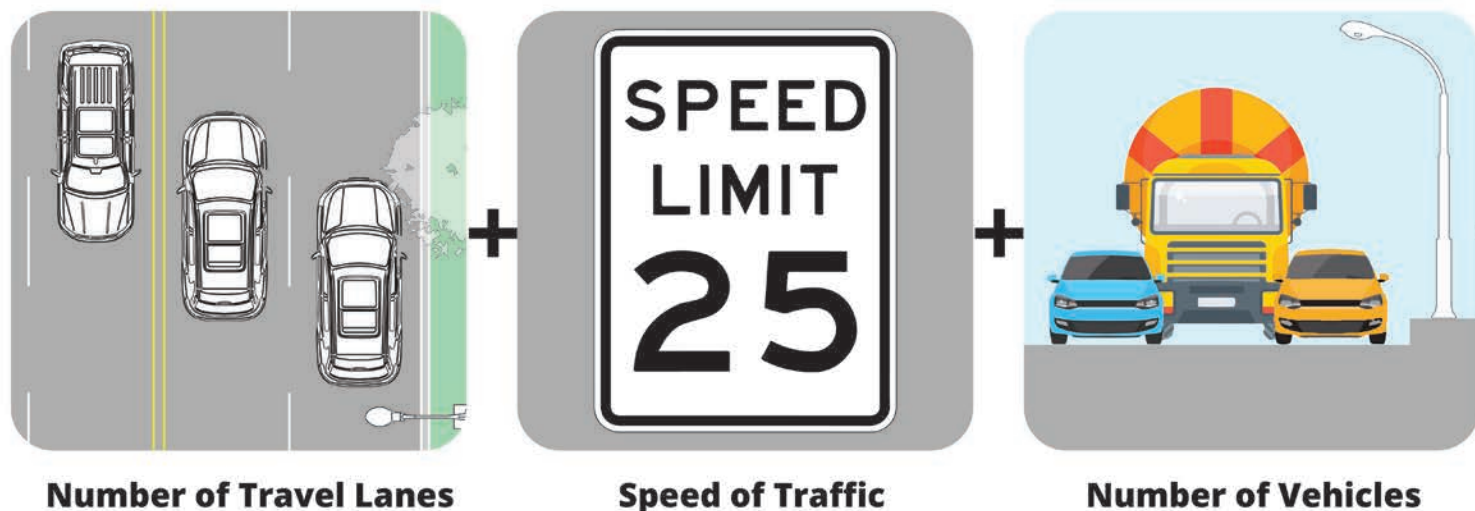
MAP 11: EXISTING BIKE NETWORK WITH 10 MINUTE TRAVELSHED TO DOWNTOWN SOLON 





Bike Facilities: Level of Traffic Stress

As mentioned on the previous page, the chief deterrent to riding a bike in Solon and the U.S. is the stress it may cause when cycling without any protection from cars and traffic. This street or route defining attribute can now be accurately quantified and displayed using a measurement labeled Level of Traffic Stress (LTS). Level of Traffic Stress is a rating given to a road segment that more clearly defines how much stress a bike rider will experience while use that route(s). LTS is a key factor in determining which type of bike facility should be installed and where. A higher LTS number means less physical separation from traffic, high speed limits, more cars, and generally fewer users who would feel comfortable using the facility. In comparison, a low LTS number means more physical separation from traffic, lower speed limits, and generally more users, including families and children. In general, an all ages and abilities network needs to consider a wider spectrum of users including those 'interested but concerned riders' and should strive to build a network where the most desired routes achieve the lowest LTS rating possible (1 or 2). A network of this type will help capture more users and ensure they feel safe and comfortable using a bicycle to reach their destination. Like all analyses, LTS is subject to the availability and thoroughness of data. Common data inputs used to calculate LTS can be seen below.



Strong separation from all except low speed, low volume traffic. All Ages and abilities network.

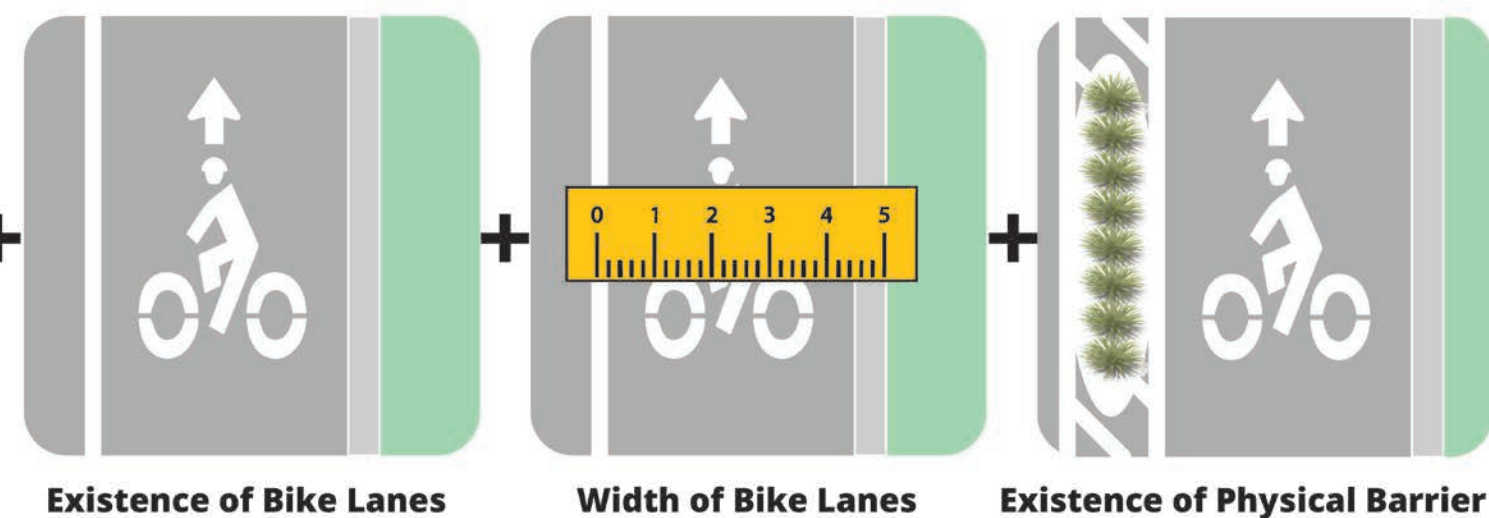
Physical separation from traffic and cyclists have their own space that keeps them from interacting with traffic except at intersections. Comfortable for most adults and those riders classified as 'interested but concerned'.

Low Stress

LTS 1

LTS 2

Source: Peter G. Furth, Low-Stress Bicycling and Network Connectivity. Research report 11-19, Mineta Transportation Institute, 2012.



Limited separation from traffic, involves interaction or close proximity to traffic frequently having only traditional bike lanes as a dedicated space. An acceptable level of stress for 'enthused and confident' riders.

No separation from traffic and no existing bike facilities. Uncomfortable for most riders and an acceptable level of stress to only those classified as 'strong and fearless.'

LTS 3

LTS 4

High Stress



Bike Facilities: Types of Cyclists

A bike rider's comfort on any route is directly related to the level of stress they feel on the bike from cars or traffic during their trip. As part of a national survey of cyclists conducted in 2015, the graphic below shows that most users (51%) including adults, children, and beginners, would all like to bike more but choose not to ride because the existing facilities available, for example bike lanes on 35 mph streets, are deemed too stressful and do not make them feel comfortable enough to ride. This group of riders have a relatively low stress tolerance when it comes to using local streets and different facility types to reach destinations on a bicycle. Facilities on higher speed or higher volume roadways without physical separation are not going to be suitable for them, or most users generally. This target group, the 'Interested but Concerned' riders, is whom the Solon Connects plan aims to create a network for. Right now, only riders that are categorized as confident or expert will feel comfortable using the existing facilities located on most streets throughout Solon.

No Way, No How

Persons that are physically unable, unwilling, or uncomfortable biking anywhere



37%

Interested

Prefer off-street facilities (Bicycle paths, trails, etc.) because existing facilities do not reduce stress.



Children & Beginners



Low Stress Tolerance

Stressed But Concerned

et, separated facilities, or quiet residential
e Boulevards). These riders may not bike if
ot meet needs for comfort and reduced

Most Adults

Confident

Prefer more separated
facilities, but comfortable
using traditional bike
lanes and wide shoulders

Expert

Comfortable riding in all
kinds of traffic conditions,
including roads without
bike lanes



51%

5%

7%

ance

High Stress Tolerance

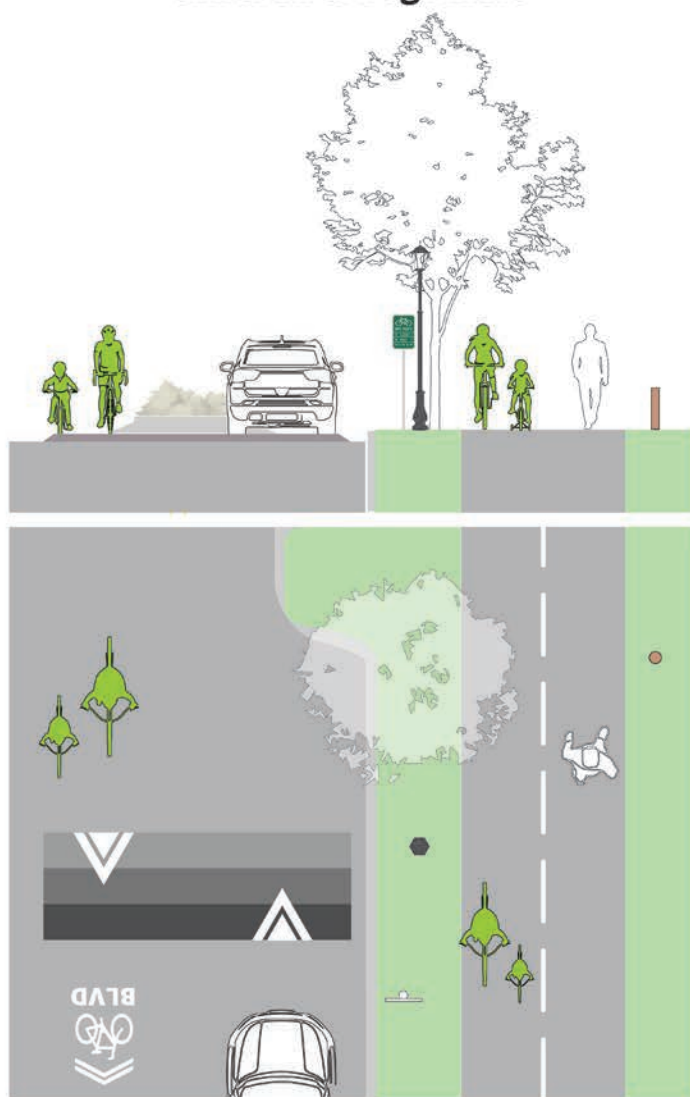


Bike Facilities: Typical Bike Networks

The City of Solon's current bike network only supports advanced riders. However, we also know what type of network to build that will capture the 'Interested but Concerned' group of cyclists and reduce their Level of Traffic Stress: one that is safe and comfortable with more physical separation between riders and vehicles. The types of facilities that should be considered include trails, side paths, separated or buffered bike lanes, and bike boulevards. The Solon Connects Plan recommends building more of these all ages and abilities facilities throughout the city to provide more residents and riders with safe and comfortable ways to reach destinations that might be only a few miles or minutes away.



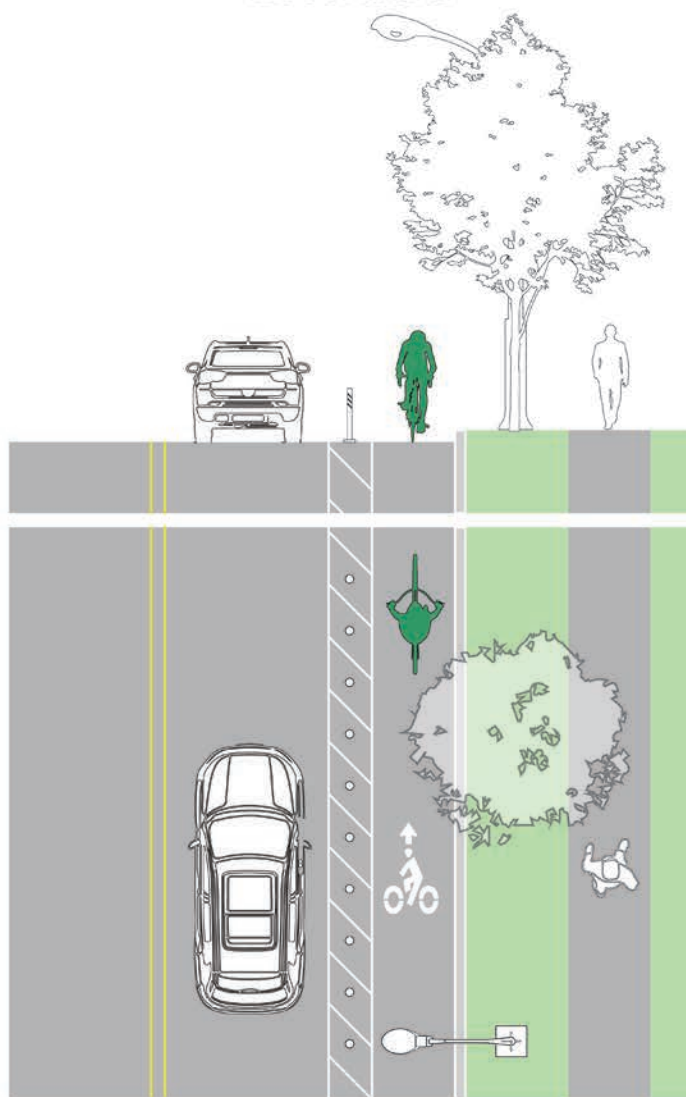
Children & Beginners



Multi-use trails, sidepaths and Bike Boulevards



Most Adults



Protected or buffered bike lanes

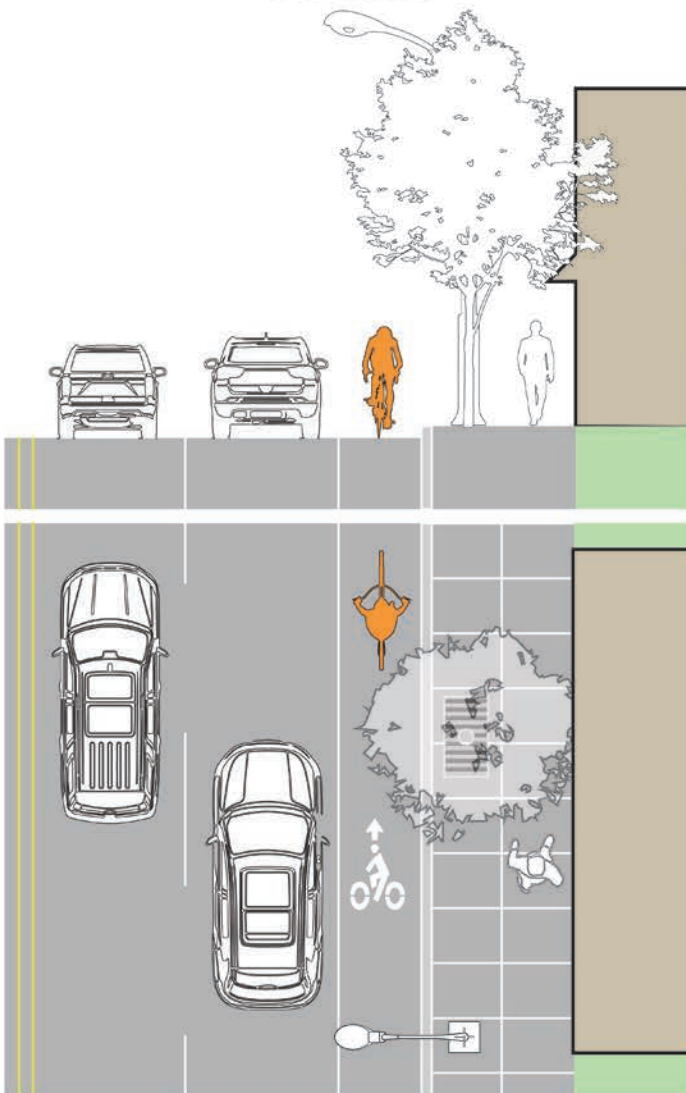
Physical Separation*

LTS 1

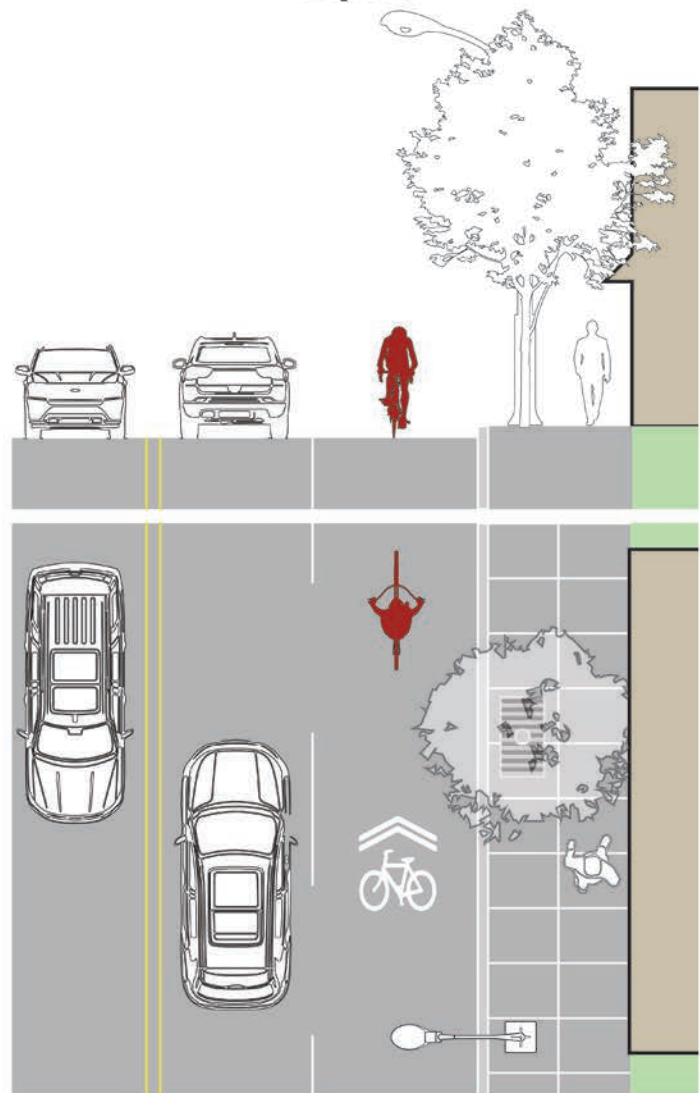
Physical Separation

LTS 2

Source: Peter G. Furth, Low-Stress Bicycling and Network Connectivity. Research report 11-19, Mineta Transportation Institute, 2012 - *Bike Boulevards are not physically separated but qualify as a low stress facility



Conventional bike lanes or paved shoulders



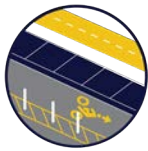
Riding with traffic, no bike lane

Visual Separation

LTS 3

No Separation

LTS 4



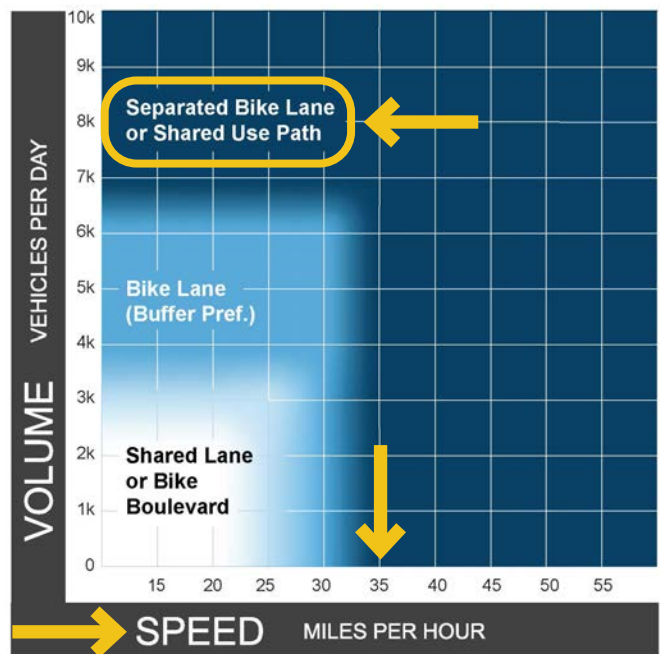
Bike Facility Types

Sidepaths & Separated Lanes

Now that the factors that can influence a rider's comfort and safety are better understood the Solon Connects Plan can properly select the appropriate facility for various roadways in the City based on context and potential costs. Using a selection chart or matrix (as shown) is a good starting point to identify the 'preferred' facility to create an all ages and abilities network based upon the posted speeds and traffic volumes. In this example, to use the chart, one just needs to apply the appropriate traffic volumes and speed to locate the necessary facility specified based upon those variables. Additional variables should also be considered including traffic type including truck volumes (as seen on Cochran), on-street parking, or number of driveways and curb cuts.






To best capture the needs of all users and abilities, using this type of matrix, the Plan identifies several higher-volume and higher-speed streets throughout the city that would be good candidates for a separated bike facility such as a sidepath. Many of these streets like Harper Road or Liberty Road, where no sidewalks currently exist, are currently identified as priority sidewalk candidates. Expanding those sidewalk facilities to create a sidepath will help expand connectivity options by providing a safe and comfortable place for users to walk and/or bike to destinations.

FIGURE 7: BIKE FACILITIES MATRIX: 35 MPH



Source: AASHTO Guide for the Development of Bicycle Facilities, 2020

Action Steps:

-  Use Bike Facilities Matrix to evaluate opportunities and requirements to implement facilities that create an all ages and abilities network
-  Use Bike Facilities Matrix to evaluate opportunities to build better facilities when add adding sidewalks (i.e. Sidepaths on pg. 83) or during roadway resurfacing
-  Use Bike Facilities Matrix to build more protected & separated on road bike lanes when off road facilities like sidepaths are not feasible
-  Don't give up design at intersections or driveways, all should be designed and built to maintain the comfort and level of stress intended
-  Build protected intersections or use necessary signage, signals, and markings for safety

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

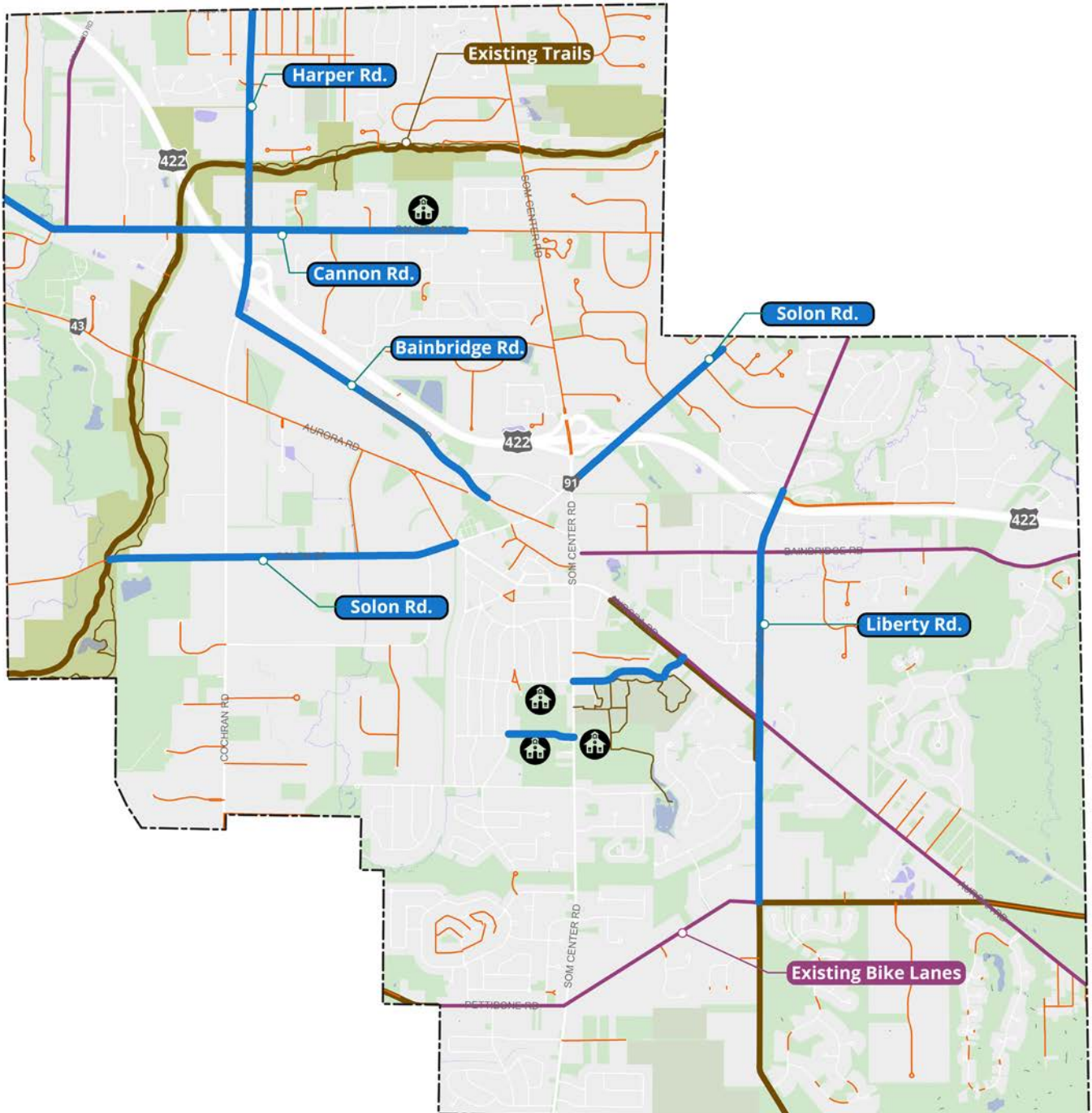
Project Leaders & Partners

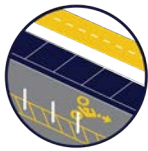


City of Solon, ODOT, NOACA, Cuyahoga County Public Works, Bike Cleveland, Cleveland Metroparks



MAP 12: UPGRADING PRIORITY SIDEWALKS ON 35MPH STREETS INTO SIDEPATHS 



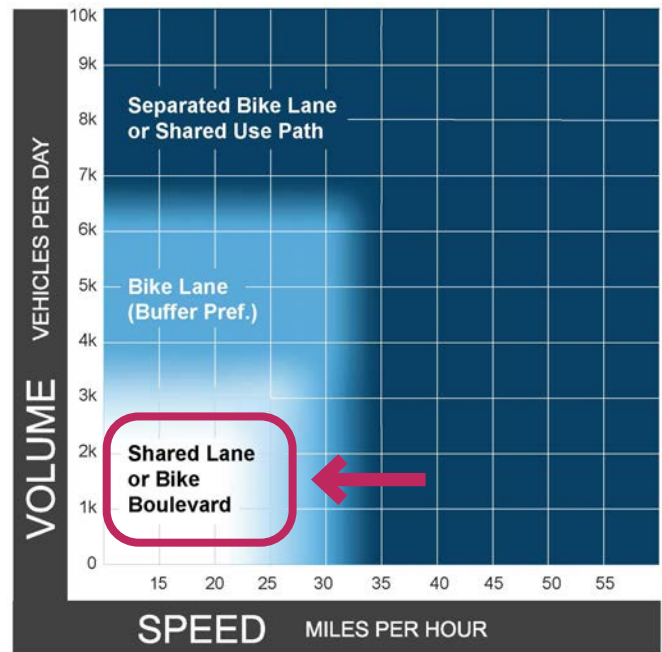


Bike Facility Types

Bicycle Boulevards

In addition to Separated Lanes and Sidepaths, Bicycle Boulevards also offer another unique opportunity for an improved all ages and abilities network. As seen in the earlier study of rider types, many cyclists are less willing to ride with traffic on the high-speed arterials that exist throughout Solon. Cyclists using Bike Boulevards typically share the road with motorists; however, Bike Boulevards are local streets with much lower speeds and traffic volumes, and have been enhanced to create a more comfortable biking experience. Many local and residential streets within the community already offer the basic components of a safe bicycling environment and only need to be retrofitted using a variety of speed and volume treatments such as speed humps or mini roundabouts to help create a comfortable and convenient facility for all users. As seen on Map 13, several key Bicycle Boulevard routes have been identified as alternatives to separated bike facilities on arterial streets, giving Solon bicyclists a safe and comfortable on-street route to reach destinations. Bike Boulevards are an integral part of the all ages and ability network benefiting cyclists, pedestrians, and residents throughout Solon by bringing connections and awareness for other users along the roadway.

FIGURE 8: BIKE FACILITIES MATRIX: 25 MPH



Source: AASHTO Guide for the Development of Bicycle Facilities, 2020

Action Steps:

- Implement bicycle boulevards on low-speed, low-volume residential streets as much as possible a safe and low cost alternative to unsafe routes
- Combine Bicycle Boulevard selection with other traffic calming measures (pg. 102) to maximize effectiveness and safety
- Use wayfinding & signage with traffic calming measures to clearly identify bicycle boulevards
- Use temporary infrastructure as method to test feasibility of Bicycle Boulevards

Details:

Priority:

- High
- Medium
- Low

Timeline

- Near-Term
- Mid-Term
- Long-Term

Costs & Funding

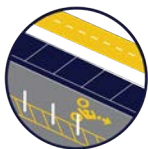
- High
- Medium
- Low

Project Leaders & Partners

- City of Solon, ODOT, NOACA, Cuyahoga County Public Works, Bike Cleveland,

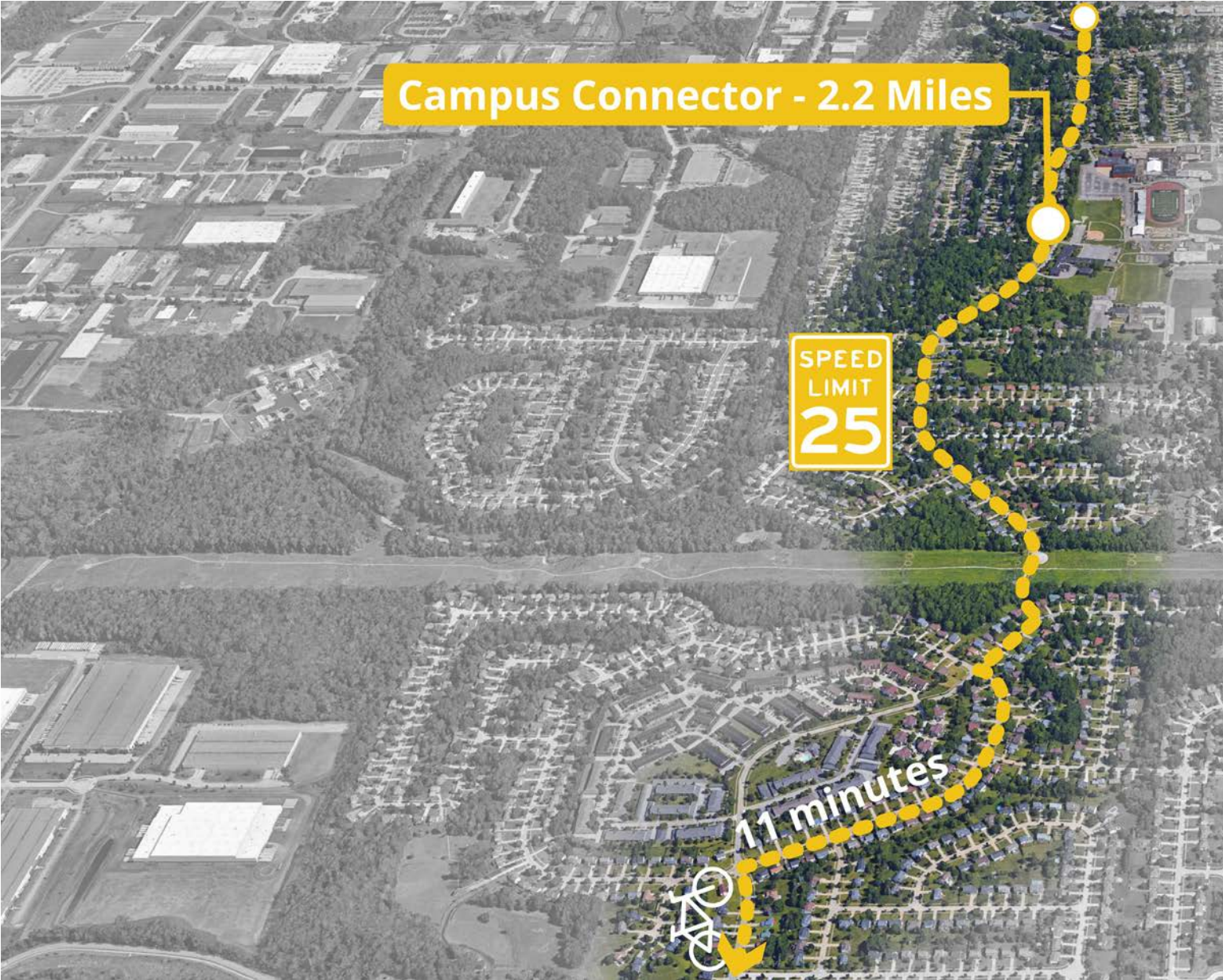
MAP 13: ADDING BIKE BOULEVARD ROUTES ON LOW SPEED AND VOLUME STREETS 





Bike Facility Types

Bicycle boulevards are an efficient and cost-effective way to utilize existing neighborhood streets. For example, a rider traveling from southern Solon to Downtown Solon could choose SOM Center Road, a street with a sidewalk that averages over 15,000 cars a day, has no bike lanes, and a speed limit of 35mph. If a Bicycle Boulevard existed as a parallel route to the west, the rider could make the same trip in an equal amount of time using a safer and more comfortable route. Bike Boulevards are a key element of the plan and provide an immediate opportunity to implement facilities quickly and inexpensively, but they should not serve as long term replacements for separated facilities on busy streets. In Solon, the chances to utilize Bicycle Boulevards are somewhat limited because many residential streets connect directly to high speed arterials or result in dead ends limiting neighborhood connections. Therefore, it is important to take advantage of available opportunities like these.



ROUTE	LENGTH	BIKE TIME	SPEED LIMIT	
Campus Connector	2.2 Miles	11 Minutes	25 mph	
SOM Center	2 Miles	10 Minutes	35 mph	



MAP 14: BENEFITS OF HAVING A BICYCLE BOULEVARD 

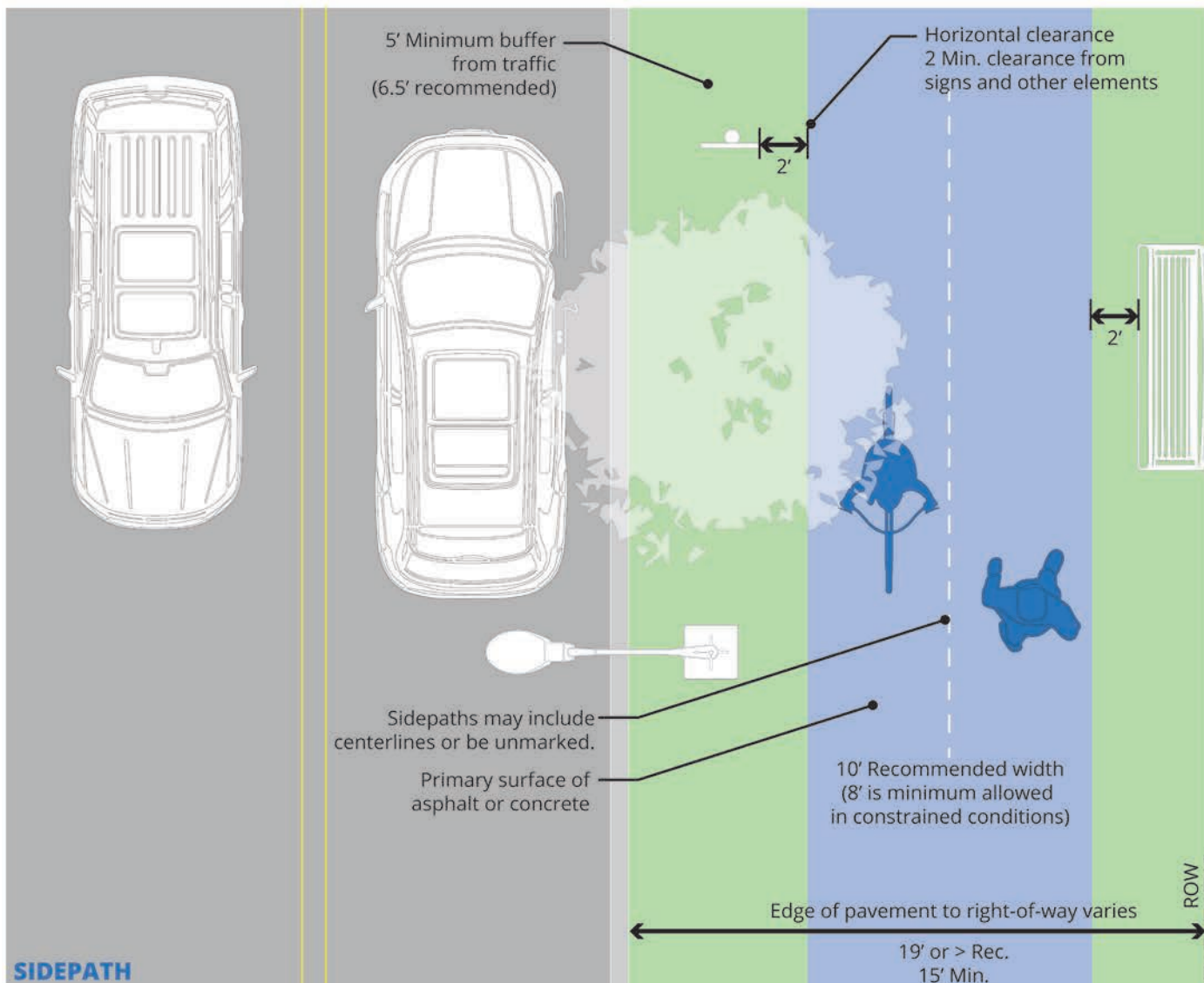
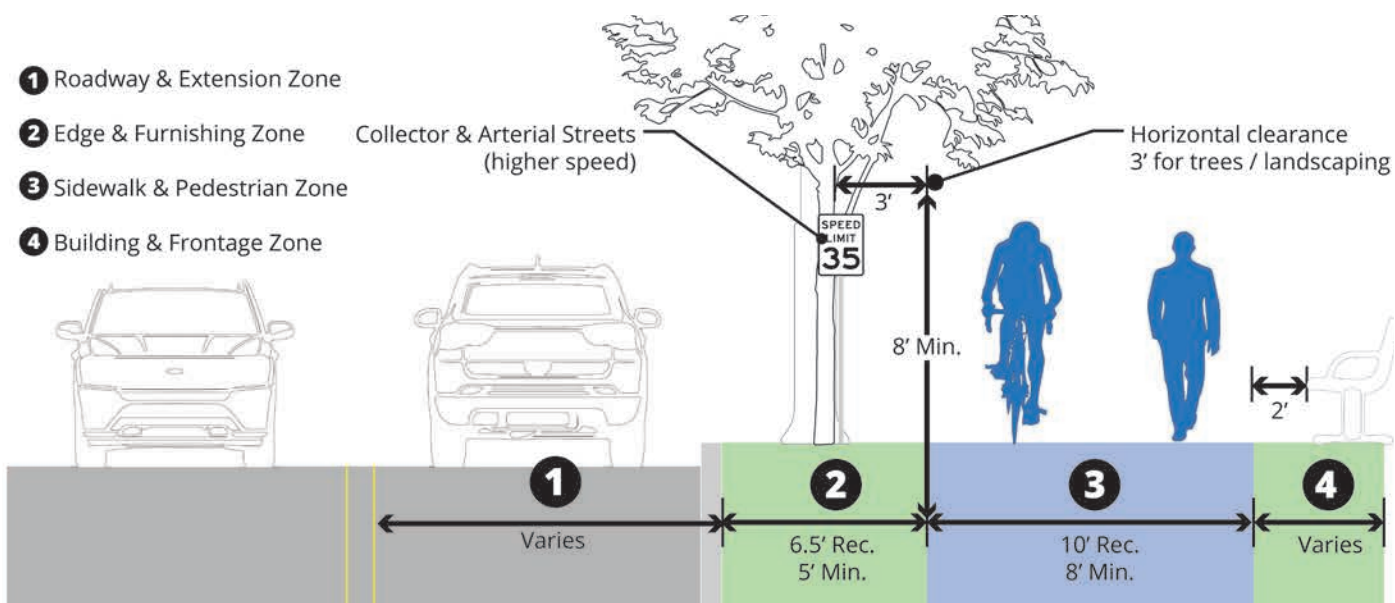


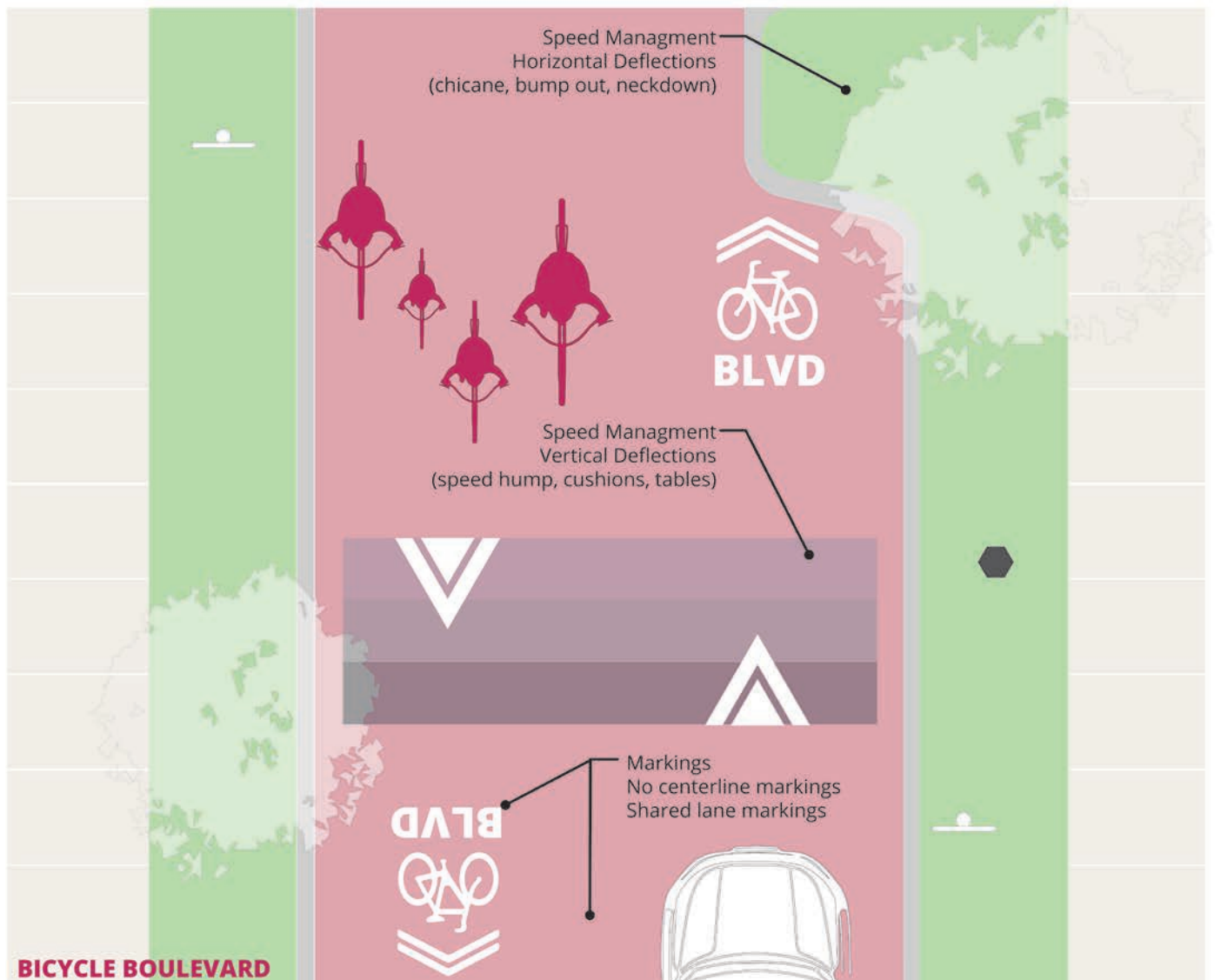
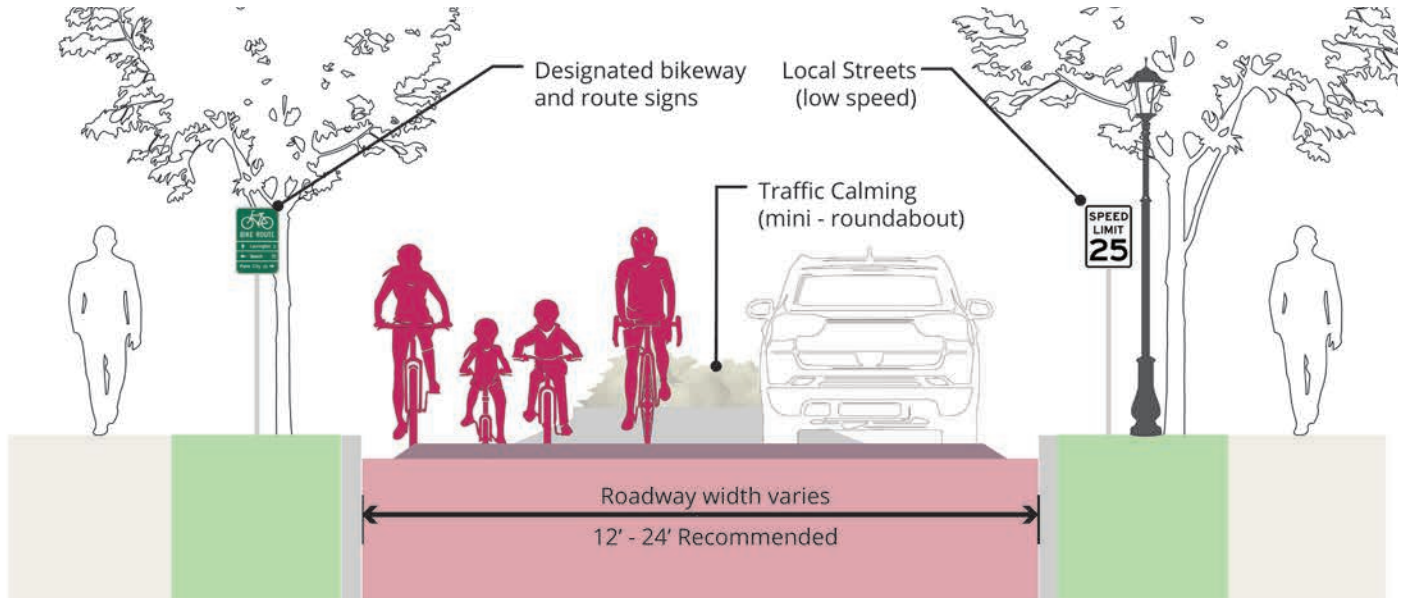
TRAFFIC	FACILITY TYPE	ALL AGES & ABILITIES
Low	Bicycle Blvd.	Yes
High >16,000 Daily	None (With Traffic)	No



Bike Facilities

- ❶ Roadway & Extension Zone
- ❷ Edge & Furnishing Zone
- ❸ Sidewalk & Pedestrian Zone
- ❹ Building & Frontage Zone





BICYCLE BOULEVARD



03.2

Streetscapes

Amenities






Street furniture, trees, lighting, signage and other similar features are key components of creating a vibrant, comfortable, and welcoming environment conducive for walking and biking. City-owned right-of-way is valuable public space and should be filled with comfortable and safe streetscape amenities that support social interaction and equity. Adding these types of features promote a sense of identity by proudly displaying a location's heritage and individual character. Additionally, carefully planted and maintained street trees are also key attributes for creating a comfortable network. Street trees are a great way to not only help absorb stormwater, they also increase the safety of all roadway users by framing the streetscape, softening the visual aesthetics of necessary safety features, all while providing a nice buffer between pedestrians and the sidewalk.

Healthy Urban Tree Canopy Program

This is an initiative of Cuyahoga County Executive Armond Budish to promote a healthy tree canopy in our county with grant funds available for tree planting and maintenance projects. The importance of a healthy tree canopy was emphasized in the 2019 Cuyahoga County Climate Change Action Plan and the 2019 Cuyahoga County Urban Tree Canopy Update. This annual competitive grant program is coordinated by the Cuyahoga County Department of Sustainability, the Cuyahoga County Planning Commission, and the Cuyahoga Soil & Water Conservation District, with assistance from the Cuyahoga County Board of Health.



Action Steps:

-  Coordinate the addition of street trees in locations with highest pedestrian activity or in areas with ROW space that can immediately support them
-  Use Healthy Urban Tree Canopy and identify other funding sources to increase street tree plantings
-  Work to incorporate public art elements into projects within the public right-of-way or set up program to fund projects from local artists
-  Add site furniture (benches, trash cans, bike parking, lighting, & signage) in key locations throughout the community to improve comfort
-  Upgrade lighting (LED) or add fixtures throughout community, including areas with transit access to improve nighttime visibility

Details:

Priority:

☐ High ☒ Medium ☐ Low


Timeline

☐ Near-Term ☒ Mid-Term ☐ Long-Term

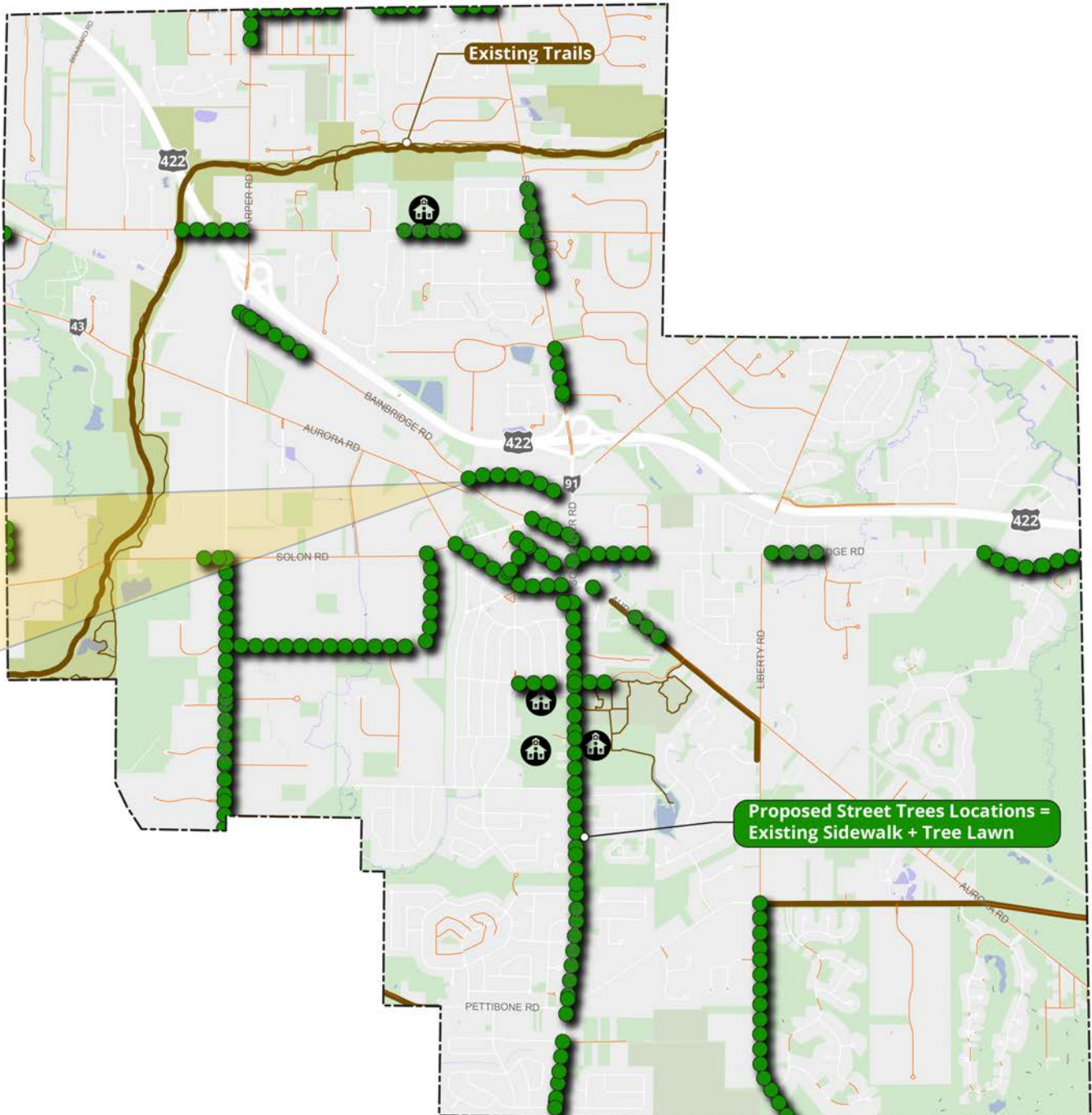
Costs & Funding

☐ High ☒ Medium ☐ Low

Project Leaders & Partners

 City of Solon, ODOT, NOACA, GCRTA, Cuyahoga County Public Works, Cuyahoga County Planning Commission,

MAP 15: POTENTIAL STREET TREE LOCATIONS (EXISTING TREE LAWN SPACE & SIDEWALK) 





Amenities

Landscape

Plants are a key element in any quality streetscape, and they offer visual appeal, soften architecture features, and improve street enclosures. If tree cover declines, those areas also suffer environmental degradation from loss of shade, increased 'heat island' effect, and loss of pollutant and stormwater absorption. Landscaping can be used in a variety of ways from seasonal plantings to green infrastructure; however, the primary landscape features are high-quality street trees located within the 'Edge & Furnishing Zone'

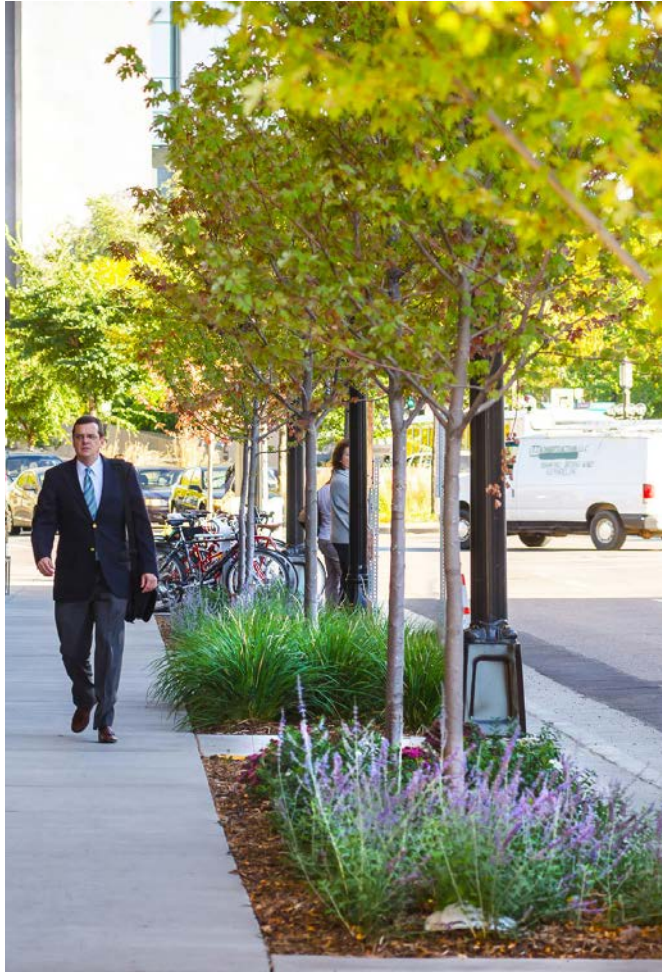
Street Trees

Street trees are chief contributors to a pleasant and dynamic environment. They provide many aesthetic benefits and help generate a sense of enclosure for outdoor spaces and roadways making them more appealing to pedestrians. Available in a variety of sizes, colors, and shapes, street trees are primarily located in the 'Edge & Furnishing Zone' within the public right-of-way. This zone adjacent to the curb and sidewalk provides a great buffer separating pedestrians from vehicular traffic. In suburban and rural areas, street trees are usually planted in grass strips adjacent to the curb, while in more urban areas they are in tree wells with decorative grates. Most street tree plantings are the responsibility of the local government. Therefore, City staff must understand growth, maintenance, and the health of street trees. Salt spray and road salt absorption is a common problem with street trees in Northeastern Ohio. Planting street trees away from curbs or using species that have shown some salt tolerance is one way to help prevent this problem. Other health and maintenance issues include lack of tree diversity and inclusion of native plants. Diversity of tree species should be promoted to not leave an entire city network vulnerable to pests and disease. Native species should be evaluated for selection over non-native and invasive species. Inadequate growing space, soil compaction, and utility conflicts are all problems that can be prevented. The simple and fundamental solution to most of these problems is to select the proper tree for each location, use better soils, and give each tree more room to grow. The following examples from soil and tree specialist James Urban are strategies to achieve better growing environments and well-landscaped cities:

- Plant Easy Places First (See Map)
- Create Bigger Planting Spaces
- Preserve, Reuse, and Improve Existing Soil
- Improve Drainage and Reduce Soil Compaction
- Select the Right Tree for The Right Location
- Establish Tree and Soil Improvement Budgets
- Utilize Detailed Construction Documents
- Design and Select Trees for Maintenance

Shrubs, Walls, & Fencing

These elements are used to define or screen spaces. Screening plants for parking lots and other features should be at least 36" tall and consist of native shrubs or ornamental trees. Evergreen shrubs provide the best year-round opportunities for screening and should be a low maintenance species from an approved plant list. Planting should be done in clusters with a variety of colors and textures to avoid a single species being placed in a singular row. Zoning codes can help further define the height and opacity requirements for any buffer. If privacy, property delineation, or a 100% opacity requirement is needed, walls and/or fences can also be utilized for screening. Fences can provide character and define front patios, side yards, parking lots, and utilities and allow some privacy between the street and semi-private zones. Fence design can be ornamental and short (36") to maintain a visual connection or tall (6') and opaque to provide complete coverage. A variety of types can be utilized, but to preserve harmony within any community or district special attention should be paid to maintaining a good balance between visual appeal and safety.



Street Trees List

GENUS

SPECIES

Small - (Under 25')

Acer Buergerianum
Quercus prinoides
Syringa Reticulate
Tilia cordata
Zelkova serrata

Trident Maple
 Dwarf Chinkapin Oak
 'Ivory Silk' Japanese Tree Lilac
 Littleleaf Linden
 City Sprite, Japanese zelkova

Medium - (25' - 50')

Acer Campestre
Acer Miyabei 'Morton'
Carpinus Betulus
Koelreuteria Paniculata
Quercus Robur x Bicolor 'Nadler'
Ulmus Parvifolia Allee
Ulmus Propinqua Emerald Sun
Zelkova Serrata 'Mushashino'
Zelkova Serrata 'Village Green'

Hedge Maple State Street
 Miyabe Maple
 European Hornbeam
 Goldenrain Tree
 Kindred Spirit Oak
 Lacebark Elm
 Elm
 Columnar Japanese Zelkova
 Japanese Zelkova

Large - (+50')

Acer x Freemannii 'Autumn Blaze'
Betula Nigra
Ginkgo Biloba
Gleditsia Triacanthos Var. Inermis
Platanus x Acerfolia 'Exclamation'
Quercus Palustris
Quercus Rubra
Tilia Cordata
Ulmus Americana
Zelkova Serrata 'Green Vase'

Fremanii Maple
 River Birch
 Ginko (Male Clones Only)
 Honeylocust
 London Planetree
 Pin Oak
 Red Oak
 Greenspire, Littleleaf Linden
 American Elm Cultivars
 Japanese Zelkova

Source: Cleveland Tree Plan, 2015 - Davey Resource Group



Amenities

Lighting

Lighting is an essential element in the overall composition of streetscapes and public spaces. Lighting design and technology has evolved tremendously with the performance of longer lasting LED units and the acknowledgement of light pollution and its effects on neighborhoods and the environment. Even with the adoption of cut off luminaires, light zones, and legislation aimed at preventing light pollution, the main lighting objectives of safety, security, and aesthetics have not changed. Lighting should provide a clear view of obstacles and pathways and facilitate the safe movement of pedestrians on sidewalks and vehicles in the street. Lighting also helps serve as a deterrent, offering the natural surveillance needed to help create feelings of safety and comfort for inhabitants, while minimizing the potential for trespassing, vandalism, theft, and personal harm. Lastly, lighting helps highlight important areas and features within a city or District, drawing attention to critical buildings, landmarks, and intersections while encouraging nighttime use for activities and social interaction.

Street Lighting

The foundation of lighting for the public realm is street lighting; its design can have a major impact on the overall quality of a streetscape and atmosphere of neighborhood. Developing design guidelines for poles, fixtures, and light selection (with the option of burying underground wires and connections) can dramatically change the appearance of a street while still providing the desired lighting required for clear and safe movement.

Pedestrian & Specialty Lighting

Pedestrian lighting is placed at a lower height than roadway and parking lot lighting and is used to highlight those corridors and spaces occupied by pedestrians and cyclists. Correct spacing of pedestrian-scale lighting is very important in achieving uniform light levels along a path to allow object and people recognition without the creation of unnecessary shadows. Adequate light presents the natural surveillance needed to help create feelings of safety and comfort for pedestrians. A wide range of pole and fixture styles are available, and those selected should be consistent throughout the community or neighborhood. Uniform lighting, along with a signage and wayfinding strategy, helps reinforce the appearance and character of the community or downtown districts. Specialty lighting can be used to illuminate outdoor spaces, plants, buildings, and special objects such as benches, walls, or public art. Used in collaboration with pole mounted street and pedestrian lights, specialty lighting can be installed in bollards, wall mounts, recessed lighting, string lights, and spotlights. Each has its own distinct qualities that contribute to the overall atmosphere and safety of the nighttime environment.



Source: Landscape Forms



Source: Landscape Forms



Source: Ideastream



Source: Landscape Forms





Amenities

Site Furnishings

Site furnishings are elements such as benches, tables, signage, bike racks, bus stops, and artwork placed in a streetscape or other public space for accessibility, comfort, information, and enjoyment. The proper selection, placement, and design of these features requires special consideration. Style, material, durability, maintenance, and cost are just a few of the factors that should be considered to ensure appropriate design, placement and installation. It is important for each item to respond to the existing and proposed character of the site, as well as the current and future needs of users.

Bicycle Parking

The simplest and most necessary amenity to promote bike use should be utilized throughout the City of Solon. Available in a variety of styles, bike racks can be no-frills or composed of whimsical shapes, colors, and icons focused on drawing attention to the City of Solon, a specific district, or specific streets and business within the community.

Benches, Tables, & Seating

Benches and seating make the streetscape and public realm more enjoyable and accessible for all and provide places for pedestrians and visitors to sit, rest, wait, eat, and socialize. Generally, all benches are fixed to the pavement, building, or built into a wall to avoid theft and/or vandalism; however, temporary or movable furniture can be provided in public spaces to support events, activities, and community gatherings.

Trash Bins & Recycling

Characteristically utilitarian in nature, trash receptacles are aimed at keeping the public area clean. However, with proper selection and potential utilization of a City logo, they can reinforce the uniform appeal and character of the City's furniture. They should be visible, plentiful, and durable and allow ease of use, maintenance, and cleaning.

Public Art

Public art can create attention, enthusiasm, and add individuality to cities and streets where it does not currently exist. Murals, sculptures, and temporary installations create a sense of vibrancy and interest that draw people to an area and transform some of the most monotonous buildings and ordinary street items into exciting and distinctive elements. Public art, whether horizontal, vertical, abstract, or symbolic, helps activate spaces while emphasizing community participation, investment, and stewardship.



Source: Landscape Forms



Source: Landscape Forms



Source: City of Shaker Heights



Source: City of Shaker Heights



Source: SWA Group








03.2

Transit Waiting Environments

The City of Solon is one of the largest employment hubs in Cuyahoga County, meaning that many workers commute into the community daily for their jobs. Even though most Solon residents do not use transit and most commuters prefer to drive, many workers still rely on public transit to reach their place of employment. Many of the stops along the current RTA route in Solon not have sidewalks – which the plan has worked to address – but as Map 16 shows only one stop currently provides a shelter. This makes for a daunting and uncomfortable waiting environment for transit users. To increase user comfort at these high-volume transit stops, the Plan recommends improvements, including shelters, at two of the City's highest frequency stops. The Solon Connects Plan recommends all businesses and employees be within a 10-minute walk to a bus shelter. However, the addition of these 2 new shelters would expand the number of businesses and employees having access to a more comfortable and safer waiting environment.



Action Steps:

-  Prioritize addition of new shelters at the highest frequency stops: Cochran & Carter and Cochran & Aurora
-  Add landing pads and sidewalks to allow access to stops and any new shelters along route
-  Utilize Mid-Block Crossing and other elements to create convenient and safe access to shelters
-  Add amenities to shelters including trash cans, street trees, signage, and lighting
-  Continually add shelters with goal of having only a 10-15 minute walk from all job hubs to a shelter

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

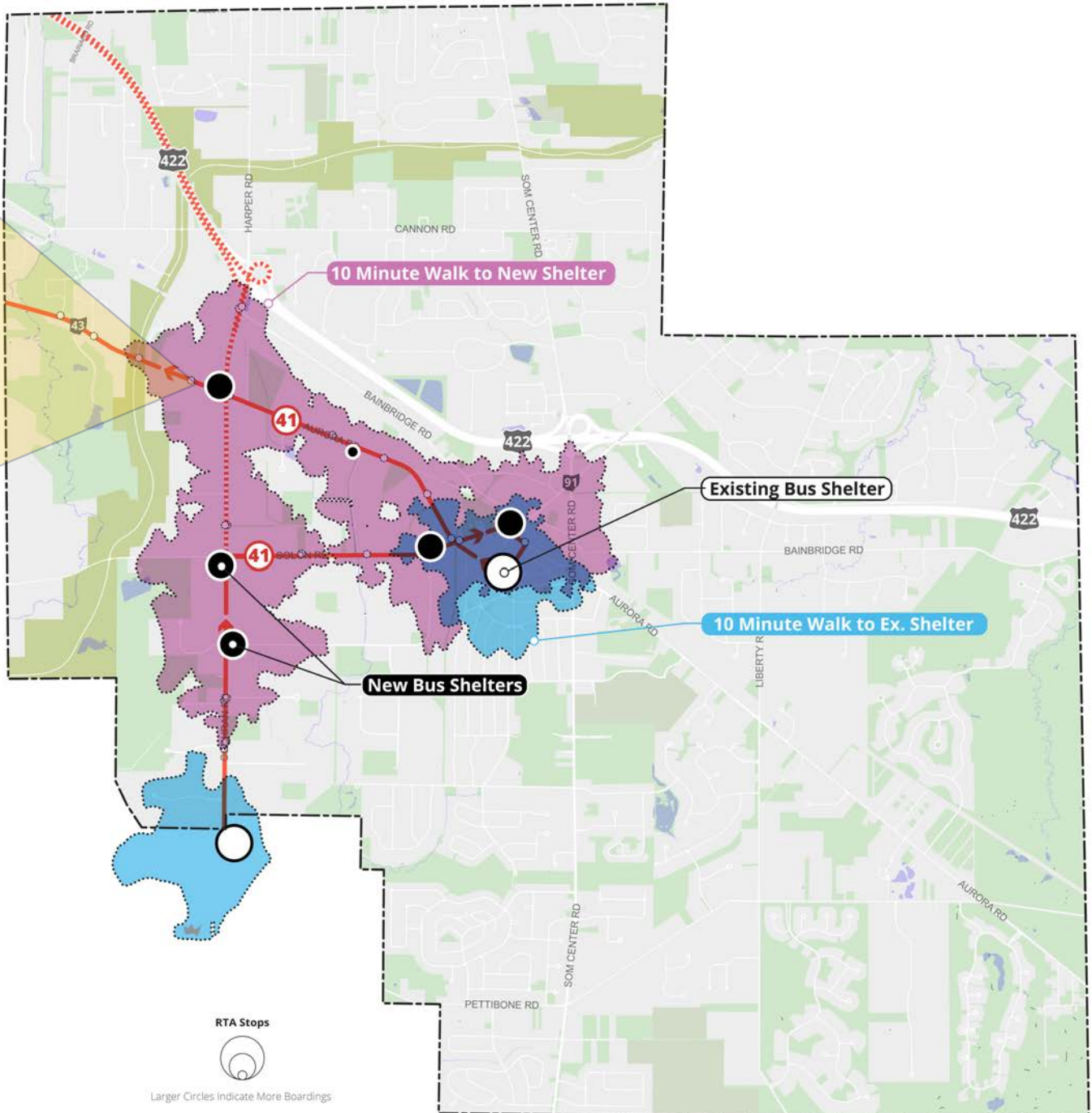
Project Leaders & Partners



City of Solon, NOACA, GCRTA, Local Businesses,



MAP 16: POTENTIAL BUS SHELTER LOCATIONS 










03.2

Bike Parking

Convenient and safe bicycling facilities reinforce a high quality of life for residents. However, there needs to be a thoughtful approach to the moment cyclists become pedestrians and how key destinations handle bicycle parking. Bicycle parking can generally take on two forms: 1) short term parking, which is usually uncovered and exposed to the elements; and 2) long term parking, which is typically covered or fully enclosed. Either way, the location of such facilities needs to be safe, highly visible, close to destinations, and away from moving traffic. A dedicated bike parking program will help support a growing bike infrastructure network in Solon by providing parking in new areas along with updated racks in existing locations. A bike parking program would provide the necessary guidelines, support, and opportunities for City-supplied bike racks to be placed on private property and within the public right of way when needed. In addition to establishing a bike parking program with Solon-branded racks, this plan recommends that the City update any necessary policies or codes to create a unified bicycle parking standard, including materials, location, and style. This will allow implementation to remain consistent across the community. This also includes simple and clear processes for business owners to apply for bike racks and/or the potential removal (or reduction) of parking spaces in lieu of additional of bike racks.

Action Steps:

-  Inventory and create GIS database of existing bike racks and bike parking in Solon
-  Design and develop the color and style of Solon branded racks
-  Explore the purchase of racks in bulk through Bike Cleveland so a portion of sales receipts can be shared with local Bike Solon Chapter
-  Install racks at municipal locations and create program which allows racks to be provided to applicants for a small fee
-  Update code to provide guidelines and technical assistance about the proper location of racks at business or within the right-of-way



Details:

Priority:

-  High  Medium  Low


Timeline

-  Near-Term  Mid-Term  Long-Term

Costs & Funding

-  High  Medium  Low

Project Leaders & Partners

-  City of Solon, Bike Cleveland, Local Businesses



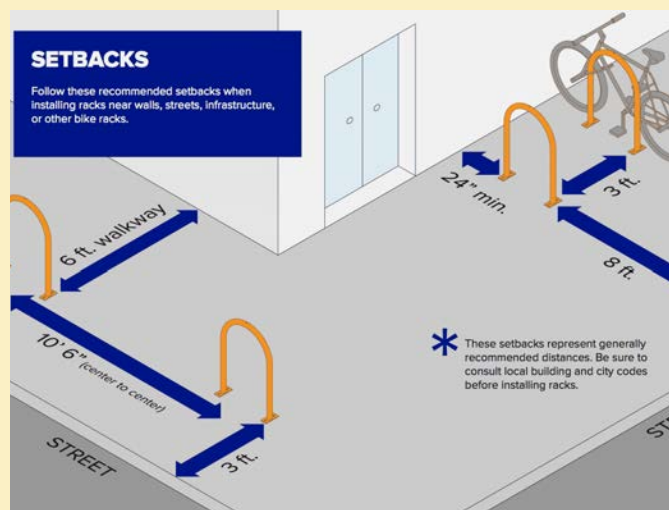


Source: City of Lakewood



Source: Rust Belt Cleveland

FIGURE 9: SAMPLE LOCATION GUIDELINES



Source: Dero

Bike Parking - Lakewood, Ohio

Many communities have embraced a bike parking program or have established branded racks through the community. In Pittsburgh, the City installed sidewalk bike racks and does not charge any fees. Willing applicants can apply for a rack permit whereby the City installs the rack through their rack installation program. All applications are evaluated to ensure they meet spatial or other regulatory requirements. In Minneapolis, the City provides guidelines for where bike parking can be located, and the applicant and City share the cost of the rack and installation equally. The City maintains ownership of the rack with the applicant responsible for upkeep and maintenance. In Seattle, racks can be installed at the request of citizens and businesses, and remain the property of the Seattle Department of Transportation.

Locally, the City of Lakewood established the Bike Racks for Business Program in 2014 and relaunched it in 2017. Similar to the earlier examples the City of Lakewood made a onetime purchase of racks in 2017, and accepted the first 25 qualifying applicants into the program. Each applicant was required to schedule a site visit with city staff to ensure the location met City Codes and received City approval before installation. All racks for this program were to be installed in the public right-of-way and made available for public use. Each rack cost the applicant \$200 dollars, with the purchases supporting Bike Lakewood (a local Bike Cleveland Chapter). In addition Lakewood has been installing bike corrals on public streets in key locations throughout the community using existing public right-of-way.



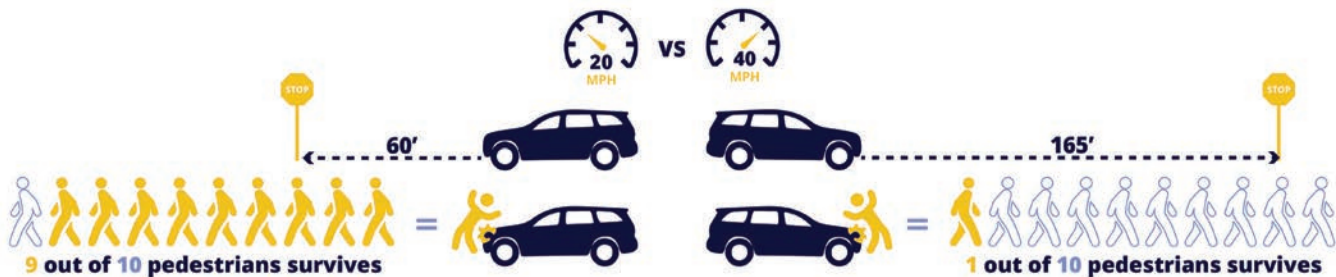
03.3

Safety

Traffic Calming Measures

Designing roads for high speeds dramatically increases the likelihood that a person struck will be killed. In fact, the actual likelihood of surviving a crash at any speed is declining due to the increase in sizes of vehicles on the road. While it is extremely important to consider lowering speed limits on Solon streets, additional design treatments can help reduce traffic speeds and collisions while improving safety for all users. Traffic calming is used to mitigate the effects of speeding and cut-through traffic in residential neighborhoods. The goal of traffic calming is to create an environment that improves safety for pedestrians, cyclists, and residents who travel along these neighborhood streets. The use of vertical speed controls (speed humps and raised crosswalks) and horizontal speed controls (min-roundabouts, medians, and curb bump-outs) forces motorists to slow down while improving reaction times and awareness of their surroundings. These improvements can convert ordinary City streets into bicycle boulevards. This approach is strengthened through community education and appropriate signage indicating the network is built for all users. Traffic calming approaches will be different for neighborhood streets versus arterial streets, however, residents, block groups, and community leaders should be encouraged to have their street evaluated and tested using temporary features (pg. 114) for applicable traffic calming devices.

FIGURE 10: IMPACTS OF CAR SPEED IN CRASHES WITH PEDESTRIANS



Source: County Planning; Virginia Safe Routes to Schools, Virginia DOT

Action Steps:

- With resident input identify possible pilot projects for implementation of traffic calming measures, especially on any proposed Bicycle Boulevards
- With resident input identify possible pilot projects for reducing speed limits from 25 to 20, especially on any proposed Bicycle Boulevards
- Use temporary infrastructure as method to test feasibility and outcomes of various traffic calming measures on pilot projects
- Identify any funding sources available for implementation of traffic calming features
- Implement permanent features from successful pilot projects and update all signage accordingly

Details:

Priority:

- ☐ High ☐ Medium ☒ Low


Timeline

- ☐ Near-Term ☐ Mid-Term ☒ Long-Term

Costs & Funding

- ☐ High ☒ Medium ☐ Low

Project Leaders & Partners

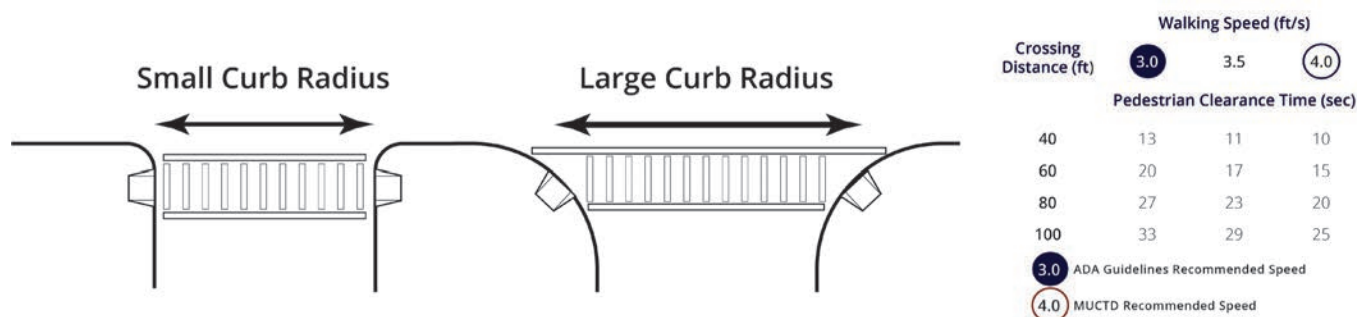
-  City of Solon, ODOT, NOACA, Cuyahoga County Public Works, Cuyahoga County Planning Commission



Intersections, Markings, Crossings, & Signals

It is important to slow down motorists to improve reaction times, stopping distances, and safety. Additional markings and design treatments at intersections—where a majority of crashes occur—are important features that can improve driver awareness of pedestrians and bicyclists and ultimately lead to fewer mistakes, or mistakes with less deadly outcomes. Pavement markings such as high-visibility crosswalks, Bike Boxes, HAWK Signals, and Rectangular Rapid Flashing Beacons (RRFB) can help make drivers more aware of pedestrians and cyclists at intersections and mid-block crossings. Leading Pedestrian Intervals (LPI) can help give pedestrians a head start when entering a crosswalk. The size of the street corner can also directly relate to the length or safety of a crosswalk. Longer crosswalks take more time to cross and increase pedestrian exposure. Eliminating right-turn “slip” lanes and using smaller curb radius at intersections not only produces slower and safer turns, it also expands the pedestrian area by shortening crossing distances and times. Other crossing improvements that increase safety include the addition of pedestrian islands and mid-block crossings at key locations. “Pop-up” and temporary installations (pg.114) are an important method to demonstrate recommended improvements and study their impacts and benefits throughout the community.

FIGURE 11: IMPACTS OF CURB RADIUS ON CROSSING DISTANCES AND CROSSING TIMES



Action Steps:

- Reduce Curb Radii and add Curb Extensions, Median Refugee Islands, and Mid-Block Crossings to reduce crossing distances and improve Safety
- Focus on safety at all driveways and develop an access management plan to help reduce curb cuts and conflict points between cars and other users
- Increase visibility and safety for pedestrians and cyclists by using high visibility markings, signage and other safety measures at intersections
- Add Rectangular Rapid Flashing Beacons, Pedestrian Hybrid Beacons, or signalized intersections to improve visibility.
- Prioritize recommendations and improvements around transit stops, schools, and other high activity areas such as downtown Solon

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

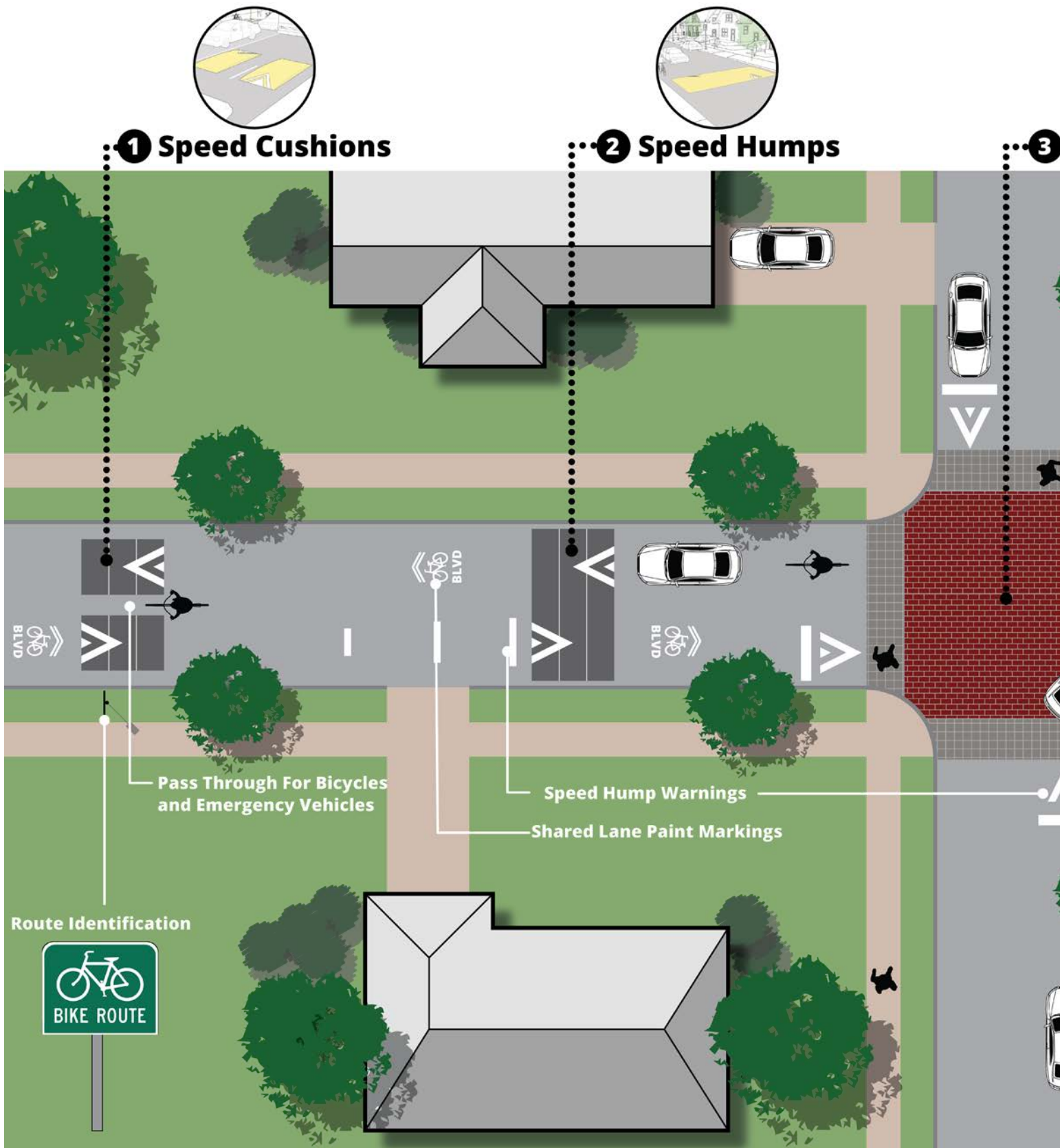
Project Leaders & Partners



City of Solon, ODOT, NOACA, Cuyahoga County Public Works



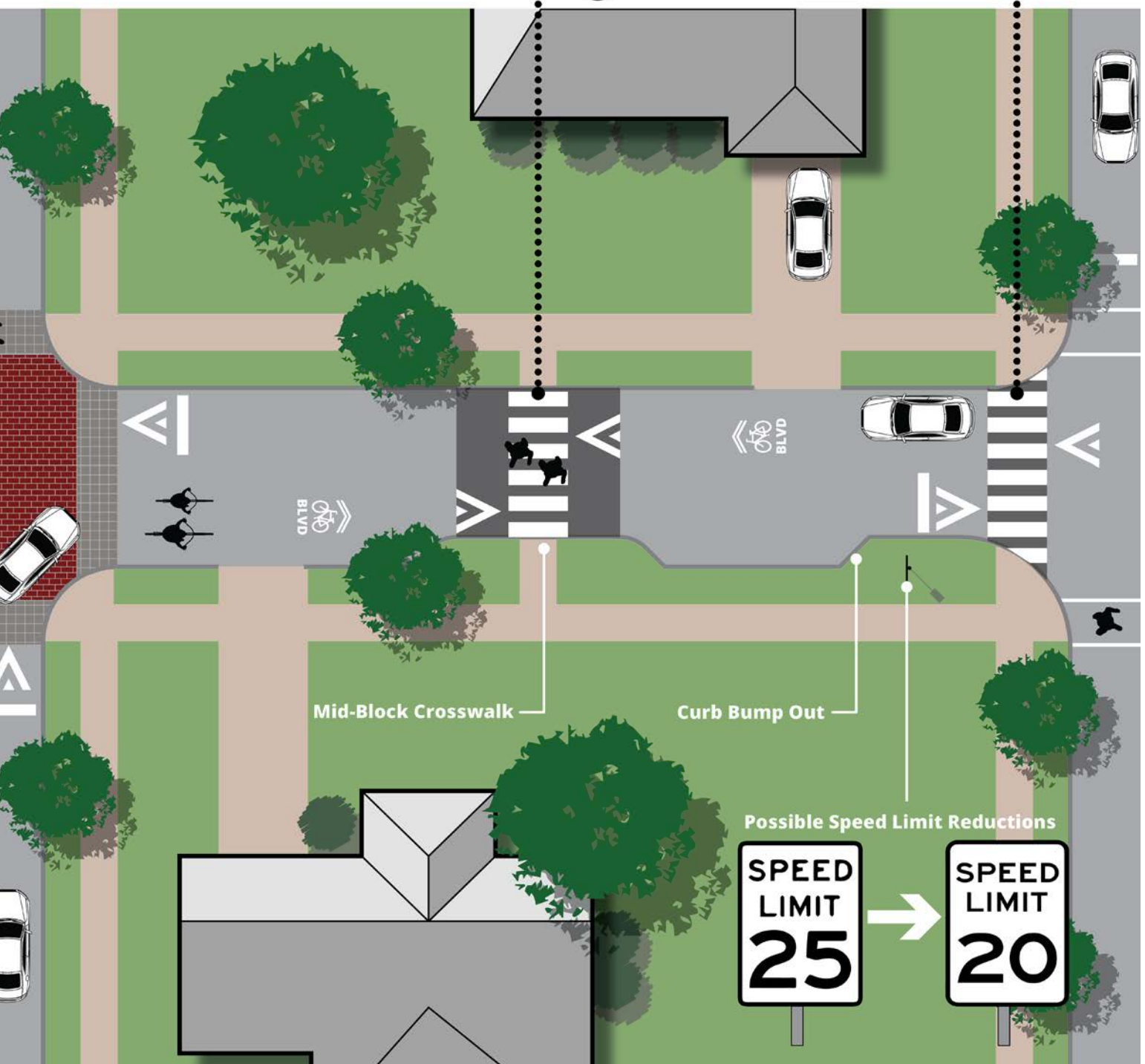
Vertical Traffic Calming Measures





Raised Intersections

4 Raised Crosswalks





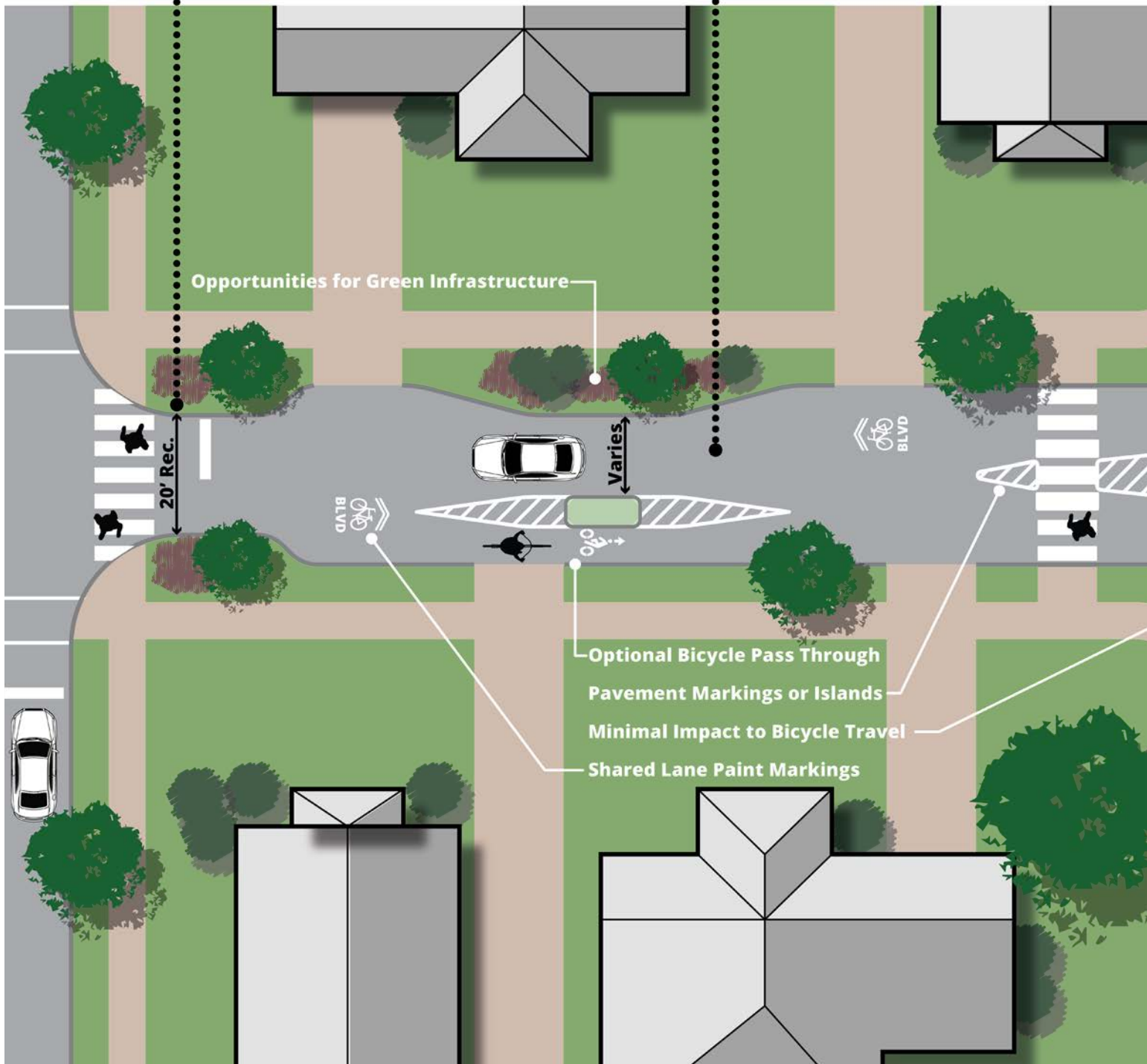
Horizontal Traffic Calming Measures



5 Neckdown / Bump Outs



6 Pinchpoint / Choker

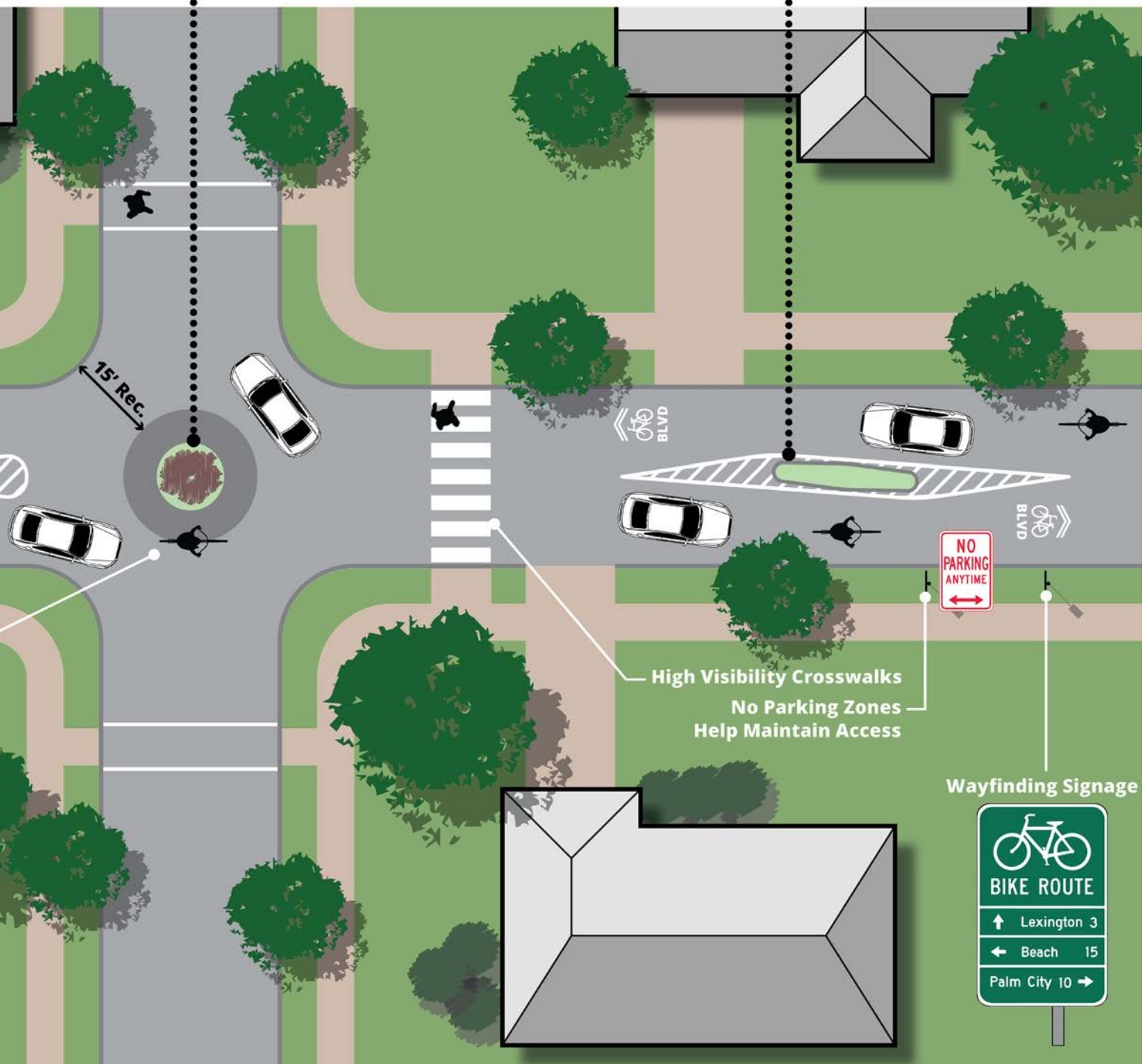




7 Mini Roundabout



8 Median





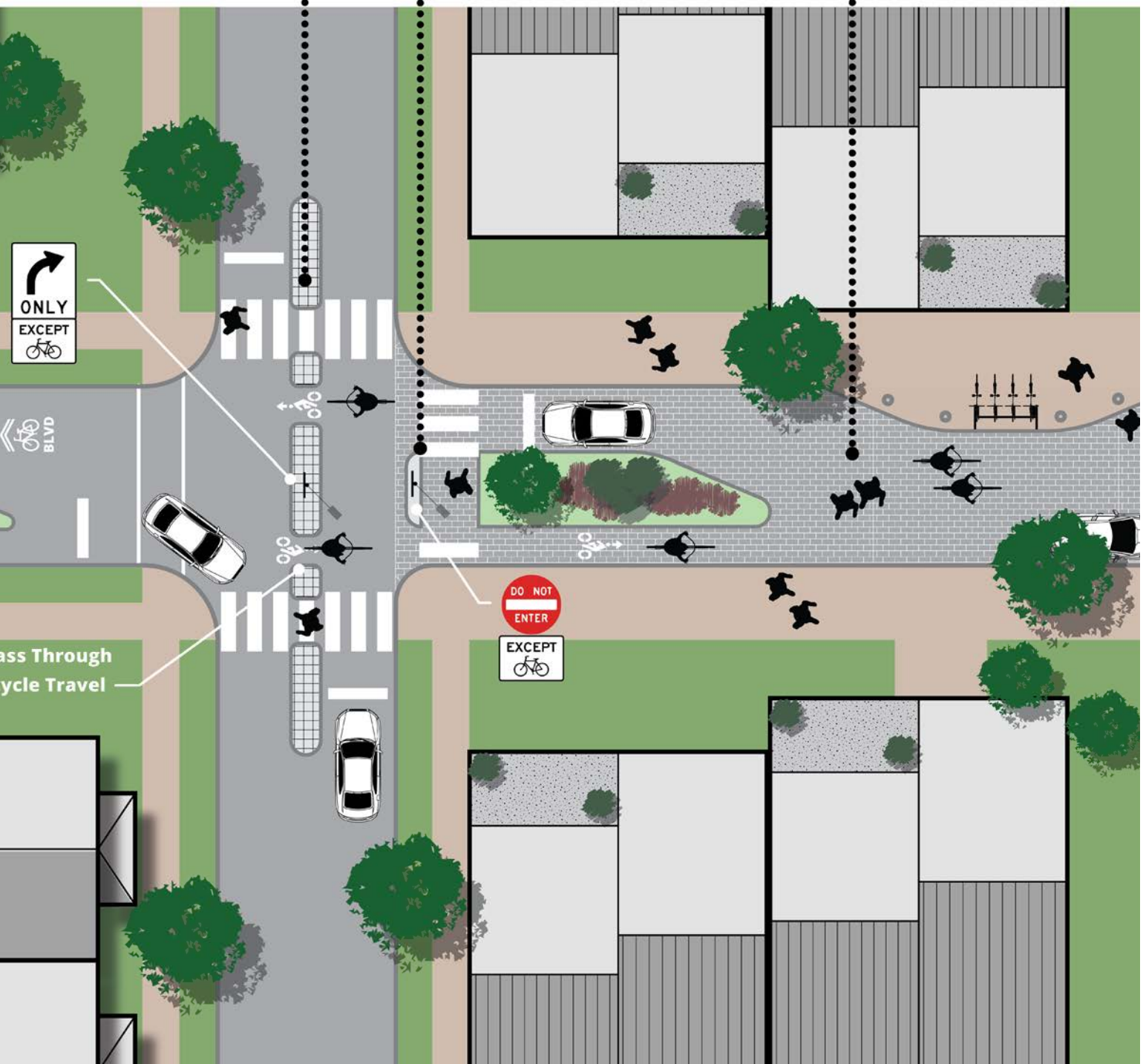
11 Median Islands...



12 Partial Closures



13 Shared Street





Intersections, Markings, Crossings, & Signals

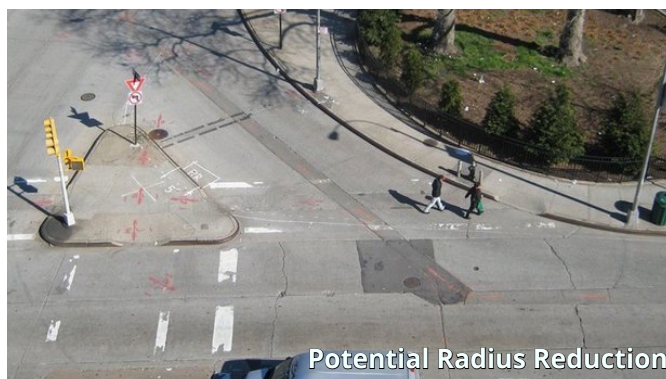
Layout

The inclusion of slip lanes and large corner radii directly impact vehicle turning speeds and compromise pedestrian safety. Removing slip lanes and minimizing the size of a curb radius is critical to creating compact and safer intersections. The size of the corner can directly relate to the length of a crosswalk. Larger radii equal longer crosswalks which take more time to cross, increasing pedestrian exposure. Radii exceeding 15' should be the exception rather than the rule. In some cases, a reduction in curb radius can be as simple as using interim materials such as paint, planters, and bollards (pg. 114) until funding becomes available for more permanent reconstruction. "Sneckdowns" (shown below) result from large snowfalls and are a natural form of traffic calming. They can be helpful in identifying intersections where smaller curb radii can be implemented.



Potential Sneckdown

Source: Strong Towns



Potential Radius Reduction

Source: Strong Towns

Markings

The design and materials used to identify pedestrian and bicyclist zones should provide as much visibility, comfort, and protection as possible. Many locations only provide the bare minimums required with narrow striping that does not reinforce awareness or yielding requirements. Crosswalks should be striped as wide as possible using high visibility ladder, zebra, and/or continental markings which have been shown to improve yielding behavior. On streets with lower volumes and speeds high visibility crosswalks might not be necessary at every intersection, however at schools, parks, and transit stops, high visibility markings might be useful regardless of traffic circumstances. Colored pavement as part of any recommended bicycle facility also helps increase visibility and potential conflict points while reinforcing a cyclist right to safe travel space within the roadway. Colored pavement, or "Green Lanes" can be applied along the entire length of bike lane or used as a spot treatment (i.e. bike box) at intersections and potential conflict points like driveways.



Green Lanes

Source: NACTO



Colored Pavement

Source: New York Times

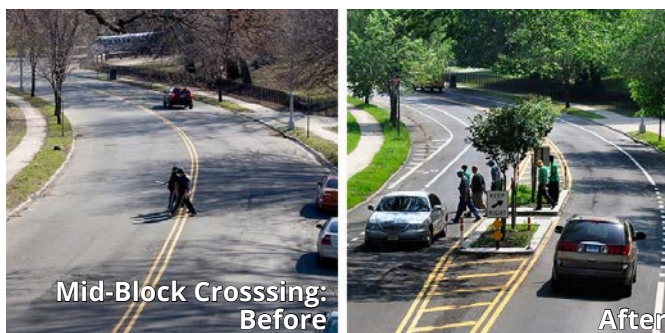


High Visibility Crosswalk

Source: NACTO

Crossings

Improving safety at all crossings for pedestrians is critical. Mid-block crossings – installed at locations between intersections – can improve connectivity and safety for pedestrians, helping prevent the common mid-block “dart/dash” crash typology. Mid-block crossings can help provide a more direct and safer route to key destinations - like parks, schools, and bus stops - when navigating long block lengths prevalent in Solon. When appropriate for maximum comfort and safety, mid-block crossings can be combined with pedestrian refuge islands and high visibility signals to notify motorists of pedestrian or bicyclist activity. Median Refuge Islands are located at the mid-point of any crossing and increase safety by permitting pedestrians to cross one direction of traffic at a time helping to limit pedestrian exposure. Preferred applications for pedestrian islands include roadways with center turn lanes or existing medians that are at least 6’ wide.



Signals

Equally important to pavement markings are signalization and allotment of time required to traverse the street. High-intensity Activated Crosswalk (HAWK) Signals and Rectangular Rapid Flashing Beacons (RRFB) are both used to improve crossings on major streets. RRFBs are pedestrian activated lights at that use a high visibility strobe effect at unsignalized intersections or mid-block crossings. The RRFB system will flash when a pedestrian is present and requires motorists to yield and stop until all pedestrians (or cyclists) have cleared the intersection. A HAWK signal has two red lights over a single yellow light to alert drivers to stop at unsignalized intersections or mid-block crossings when pedestrians are present. Unlike ordinary traffic signals, HAWK and RRFB's are dark until activated by push buttons, unless they are triggered by other detectors. Additionally, research has found that nearly 2/3 of older pedestrians and 1/3 of younger pedestrians do not have adequate time to cross the street based upon current designs. A Leading Pedestrian Interval (LPI) located at key signalized intersections can help give all pedestrians more time to cross the street by providing a 3-7 second head start. LPIs help enhance the visibility of pedestrians in the intersection and have been shown to reduce pedestrian-vehicle collisions by as much as 60%.





Vertical Traffic Calming Measures

Speed Tables - Akron, Ohio

The AMATS (Akron Metropolitan Area Transportation Study) is going to install 28 speed tables throughout the City of Akron. An AMATS press release states "After the successful testing of temporary speed tables in two Akron neighborhoods in 2020, the City will install 28 speed tables throughout Akron's 10 Wards." Speed tables are raised areas placed at mid-block points across roadways and are designed to limit the speed at which vehicles travel. Unlike speed bumps, tables have tapered ends and long flat tops to accommodate the entire wheelbase of most passenger cars.

Akron's tables consist of interlocking pieces made from recycled rubberized material and will be bolted and glued into place on street surfaces. During last year's pilot program, there was a 23% reduction in the number of speeders (from 90 percent to 67 percent of traffic) and survey responses from residents showed support for the speed tables. The cost budgeted for the purchase and installation of the temporary speed tables is \$155,000 (\$5000 per table) and the installation will begin in early Summer 2021. The tables will be removed in late fall to help with snow clearance during the winter months.



Source: AMATS



Source: AMATS



Source: AMATS

Intersections, Markings, Crossings, & Signals



Source: Green City Blue Lake: Cleveland Museum of Natural History



Source: Cleveland.com



Source: Bike Cleveland

Bike Lane Markings - Cleveland, Ohio

The addition of bike lanes on Detroit-Superior Bridge began in October 2017. The new eastbound bike lane has a physical barrier separating bikes from vehicles. Additionally, the lane increased from 7' to 15'. The new westbound bike lane has no traffic buffer but is 8 feet wide. Both lanes however use textured green paint in "strategic spots". Additionally, a bike signal was added at West 9th Street and Superior Avenue allowing bikes to enter the intersection on their own signal. Two-stage left-turn bike boxes delineated by green paint at West 9th and Huron Road and at Detroit Avenue and West 25th Street were also installed. The project is a collaboration between the city, ODOT and NEORS. The City-funded project cost \$81,000








03.3

Temporary Installations

Temporary infrastructure, “Pop-up” demonstrations, pilot projects, or tactical urbanism are all terms used to describe low-cost alternatives to permanent design solutions. They are all considered methods for displaying, testing, or evaluating new pedestrian, streetscape, or traffic calming projects cheaply and quickly. Temporary projects can be designed to meet all safety and engineering standards, but are implemented using low cost materials and resources (including volunteer labor) and are mainly carried out over a short period of time (days, weeks, or months) with the support and approval of local governments. These projects have the potential to help generate excitement around recommendations since they allow residents to envision and test what various improvements might look like. By allowing residents to test these potential new features, the community will gain a better understating of how certain roadway modifications will impact drivers, pedestrians, and bicyclists. They also provide significant low-cost opportunities to harvest traffic data and community feedback on any project, helping to determine if all the desired goals and/or safety metrics have been achieved. Since these solutions are temporary, any modifications and adjustments to the design can be made before investing significant capital funds towards full implementation and permanent improvements.

Action Steps:

-  Use low cost temporary improvements as method to test or implement bike and ped improvements
-  Use low cost temporary improvements as method to test or implement traffic calming or other roadway safety improvements
-  Monitor outcome and engage public on results to determine if desired goals have been achieved
-  Adjust, revise, redesign, and retest if needed and proceed towards long-term and permanent implementation measures if desired
-  Dedicate funding to pilot projects, explore existing resources, (NOACA Street Supplies) or partner with local groups to help identify and test projects



Source: Site Design Group



Source: City of Palo Alto

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon, ODOT, NOACA, Cuyahoga County Public Works



Source: NOACA



Source: NOACA

NOACA Street Supplies - Euclid, Ohio

Street Supplies is a program by NOACA that gives communities a free library of resources such as paint, tape, cones, signs, bike racks, and planters to use for temporary infrastructure projects. Funded by a grant from the Ohio Department of Transportation and the Ohio Department of Health, the purpose of the program is to allow communities to see the benefits of potential infrastructure projects before they are permanent. In the fall of 2018, volunteers came with brooms, brushes, rollers and cans of paint to transform a stretch of Lake Shore Boulevard. The goal was to help slow traffic and make the city's downtown safer and more inviting for pedestrians and cyclists. The project, called "Pop-up Parkway," was a 30-day experiment that involves roughly 750 feet of the boulevard from East 218th to East 220th Streets. The design removed two of four travel lanes and reapportioned the space with on-street parking on the north and south sides of the street, plus dedicated bike lanes and a center median with turn lanes at intersections.

FIGURE 12: FROM POP-UP TO PERMANENT

Project Type (time interval - relative cost)	DEMONSTRATION (1 day - 1 month • \$)	PILOT (1 month - 1 year • \$\$)	INTERIM DESIGN (1 year - 5 years • \$\$\$)	LONG-TERM/CAPITAL (5 years - 50 years • \$\$\$\$)
Project Leaders	Can be led by anyone (city, citizen group, or both!)	Government / organizational leadership + involvement required	Government / organizational leadership + involvement required	Government / organizational leadership + involvement required
Permission Status	Sanctioned or unsanctioned	Always sanctioned	Always sanctioned	Always sanctioned
Materials	Low-cost, typically low-durability. Can be borrowed or easily made	Relatively low-cost, but semi-durable materials	Low-moderate cost materials, designed to balance flexibility with maintenance needs	High-cost permanent materials that cannot easily be adjusted
Public Involvement	Public input + public action	Public input, champion engagement, government / organizational stewardship	Public input, government / organizational stewardship	Public input, government / organizational stewardship
Flexibility of Design	High: organizers expect project to be adjusted and removed.	High: organizers expect project to be adjusted; it may be removed if it does not meet goals	Moderate: organizers expect project to be adjusted, but it is intended to remain in place until capital upgrades are possible	Low: project is considered a permanent capital upgrade that is unlikely to be adjusted significantly once installed
Collect data to refine approach for current or future projects?	Recommended	Always	Always	Always - project performance can inform future investments

Source: Street Plans Collaborative

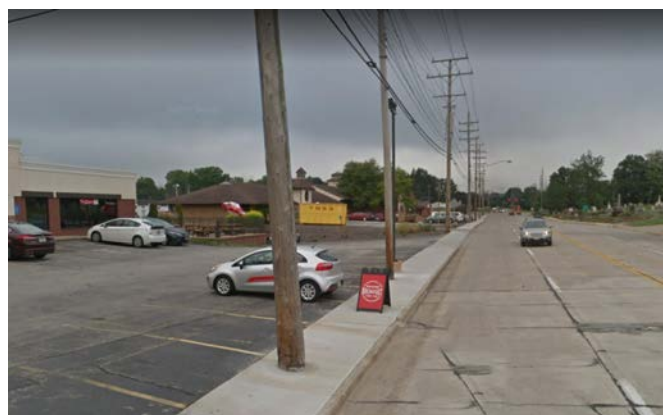


03.4






Maintenance & Quality

Access & Comfort

User-friendliness is key when maintaining a practical and safe network. Sidewalks and bike lanes are designed to specific standards; however in many areas the width or actual usable space, is much smaller due to obstructions within the 'Sidewalk Zone'. Due to many factors such as bad design, too much parking, constrained rights-of-way, or poor coordination, many common features (signs & poles) end up being located within the 'Sidewalk Zone', creating spaces that might be impassable for pedestrians, cyclists, and strollers. No matter how permanent or temporary the obstruction might be, it is extremely important to consider all modes of transportation when working to maintain comfort and safety. Sidewalk closures and/or obstructions may force re-routing, which may require users to walk in the street (or parking lot). All facilities must consider ADA requirements and ensure that every route has convenient and well-maintained access for those with disabilities. Plans to identify and address all fixed and temporary objects within the 'Sidewalk Zone', should be undertaken. In addition, no new construction or sidewalk improvement should result in the placement of an obstacle or barrier. Minimum standards should also be established to require space for a 'Furnishing Zone' allowing room for all fixed and temporary objects to be located outside of the sidewalks useable space.



Action Steps:

-  Ensure ADA accessibility is achieved in all locations and remove and/or limit fixed obstructions (utility poles, etc.) to maintain clear access
-  Implement specific city ordinances or a monitoring and enforcement program with penalties for un-permitted closures of sidewalks or bike lanes
-  Dedicate funding to purchase necessary equipment (like sweepers) and establish a routine schedule to maintain trails and bike lanes
-  Partner with existing agencies, businesses, block clubs, or friends of trail groups to help cleanup or fund maintenance of facilities
-  Maintain markings for visibility and upgrade to high visibility markings when repainting

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon



Inventory & Repairs






To better understand where investments need to be made to improve facilities, it is important for the City of Solon to inventory what currently exists within the community today. This inventory should include all sidewalks that are in poor condition, too narrow, have obstructions, or are not ADA compliant. The city should also target areas or corridors where the sidewalk is directly adjacent to the 'back of curb', resulting in no buffer between the pedestrian and traffic. This is typical of many roads in Solon where cars traveling 35mph or more create very unsafe and uncomfortable environments. No new sidewalk should be built that results in this type of condition. Minimum standards for sidewalk widths should be increased including the additional requirement of a 'Furnishing Zone' to buffer traffic and increase comfort. Repairs of existing facilities can be identified and ranked either by condition (areas in most need of repairs) or by location (higher traffic areas, 10-minute walks to parks, schools, and bus stops etc.). An online portal or app could be used to identify issues and allow members of the public to actively take part in identifying places where problems exist, and where repairs or replacements are needed. This would allow City staff to better assess, plan, and coordinate maintenance with any upcoming infrastructure projects.



Source: Institute of Transportation Engineers (ITE)



Action Steps:

-  Ensure ADA accessibility is achieved in all locations and prioritize replacement in any area that is not accessible
-  In addition to obstructions, inventory constrained sidewalks or those adjacent to curb and prioritize these locations for repair or replacement.
-  Use classification system to focus on high traffic areas and/or areas in most need of repairs
-  Increase minimum standards for sidewalk construction (i.e. width, location, furnishings) to increase comfort and safety (pg. 72)
-  Explore creation of web based app or online mapping system for residents to report issues (cracks, pot holes, & missing paint etc.)

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon



Access & Comfort

AARP Walk Audit Guides & Toolkits

The AARP Livable Communities initiative supports efforts to make all communities great places for people of all ages and abilities by providing safe and walkable streets, age-friendly housing, and various transportation options. Walkable communities promote increased health and help make a neighborhood livable for people at all life stages. This is critical, because by 2030 one in five Americans will be age 65 or older. One method to ensure access and comfort is preserved, and all barriers to mobility for seniors are properly identified and corrected, is to routinely conduct Walk & Bike Audits or Walkability Workshops.

Walkability Workshops and Walk Audits provide ways for local leaders, community groups, and concerned citizens to assess an area's connectivity by observing streets, intersections, and various infrastructure components and recording information about those facilities. If needed, advocates can make a case to the community and local leaders for change.

The AARP Walk Audit Leader Guide & Walk Audit Tool Kit can help provide a step-by-step tool for assessing walking conditions in Solon. The guides help communities conduct walkability audits consisting of on-the-ground events in which teams of City staff or volunteers observe and document the safety of local streets. The goal of any Walk and/or Bike Audit Program is to identify obstruction issues, safety issues, maintenance issues, or other concerns and to use these walk/bike audit experiences to create positive change in places like Solon.

► SIDEWALKS

Complete one sheet for each sidewalk-equipped street within your walk area.

Street observed: _____ between _____ and _____
Street Name Cross Street 1 Cross Street 2

Day and Date of week: _____

Time observations began: _____ AM | PM Time observations ended: _____ AM | PM

DIRECTIONS: Place a ☒ next to any items that are a problem for pedestrians and note:

- What might be especially problematic for a child, older adult or person with disabilities?
- What is the exact location of each problem? Record a landmark or side of street (North, South, East or West) on the line to the right of each item you check.

PROBLEMS FOR PEDESTRIANS	LOCATION
<input type="checkbox"/> There are no sidewalks, paths or shoulders.	_____
<input type="checkbox"/> The sidewalks are not continuous (i.e., segments are missing).	_____
<input type="checkbox"/> The sidewalk isn't wide enough for two people to walk together side-by-side (minimum width needed: 5 feet).	_____
<input type="checkbox"/> The sidewalk is broken or cracked.	_____
<input type="checkbox"/> There's no buffer between traffic and the sidewalk.	_____
<input type="checkbox"/> The sidewalks are interrupted by driveways.	_____
<input type="checkbox"/> There are no ramps (i.e., curb cuts) or they're misplaced. (Note: There should be two curb cuts per corner.)	_____
<input type="checkbox"/> The curb cuts aren't textured or marked for people with visual impairments.	_____
<input type="checkbox"/> The sidewalk is blocked or interrupted by poles, signs, shrubs, dumpsters, low-hanging trees, etc.	_____
<input type="checkbox"/> Cars, trucks, vendors are blocking the sidewalk.	_____
<input type="checkbox"/> Other issues and observations:	_____

Overall Rating of the Street Crossing(s) in the Survey Area: ☐ Excellent ☐ Good ☐ Fair ☐ Poor

Additional observations:

Source: AARP

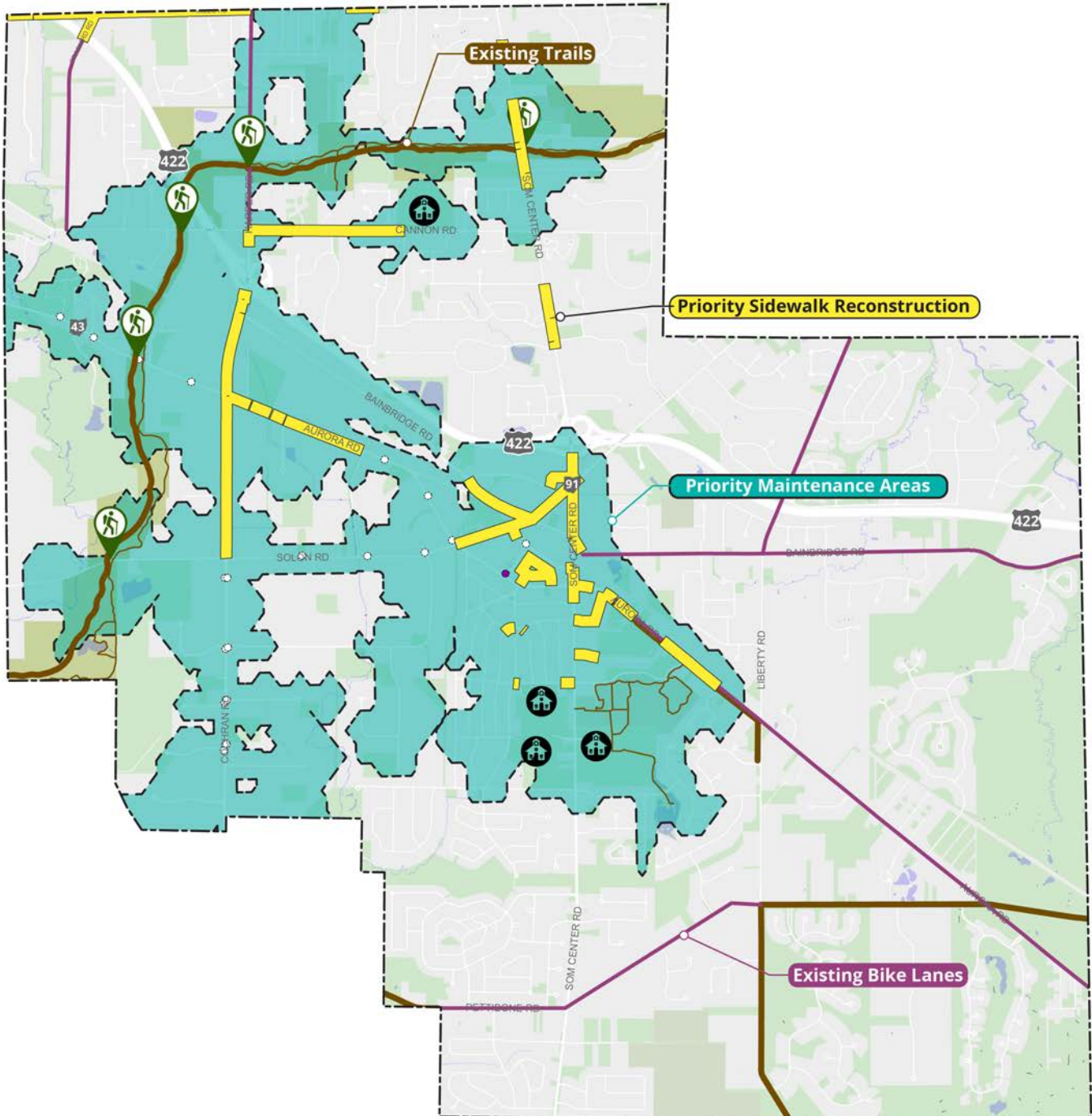


Source: Bike Walk Montana

Inventory & Repairs



MAP 17: SAMPLE PRIORITY SIDEWALK REPLACEMENT & MAINTENANCE OF HIGH TRAFFIC AREAS 





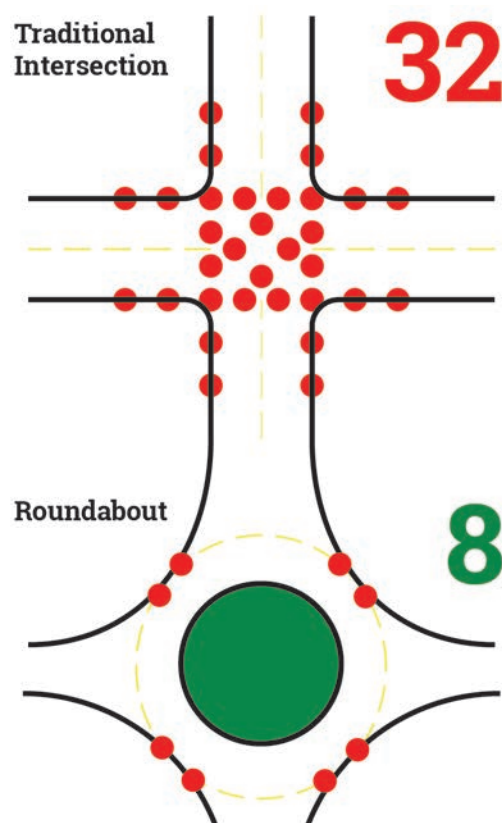
03.5

Space For All Users

Multi-Modal Streets






Building safe, multi-modal, and inclusive streets is a critical component of this plan. The number of people struck and killed each year has grown by 45 percent between 2010 and 2019 and 2019 saw the highest numbers of pedestrian deaths since 1990 (NHTSA). The major contributing factor responsible for these deaths are street designs that prioritize the movement of cars over the needs and safety of all users. This is important because more and more people are driving trucks and SUVs which are 2 to 3 times more likely to kill pedestrians when involved in a crash. Safer roadway designs have many livability and connectivity benefits while helping to make driving mistakes and collisions less deadly. Many of the earlier recommendations including reducing speed limits, removing slip lanes, and using traffic calming measures have been suggested to help alleviate safety issues for pedestrians and cyclists. However, there are many other proven FHWA approved safety counter measures that can help create calmer and safer streets using physical improvements such as medians, narrow lanes, roundabouts, and road diets. Incorporating these recommendations into any future infrastructure project will help the City of Solon continue to emphasize that roadways should be safer for all users including motorists and pedestrians.

FIGURE 13: POTENTIAL CONFLICT POINTS



Source: Indiana Department of Transportation

Action Steps:

-  Identify key permanent infrastructure improvements that could be applicable in Solon (i.e. Road Diets, Roundabouts, Medians, etc.)
-  Using upcoming TIP and other infrastructure programs, identify upcoming projects that could support infrastructure improvements
-  With input from various departments and groups, identify potential intersections and streets that could be potential locations for improvements
-  Explore temporary improvements to test potential recommendations in various locations to help educate residents on changes and benefits
-  Utilize funding resources available to implement measures to build more complete streets

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon, ODOT, NOACA, CGRTA, Cuyahoga County Public Works, Cuyahoga County Planning Commission







Building Access

Urban form - where buildings are placed on a site - is an often-overlooked element of active transportation plans. Buildings that are oriented towards the street with easily accessible primary entrances, are an important element to a more connected experience. The City could invest funds to create the safest walking and biking network only to find out that the final 200 feet, from the sidewalk to the front door, is the most dangerous, uncomfortable, or least accessible part of the journey. Good urban form would not require the user to traverse large parking lots with no accessible path to the building entrance. If residents are constantly faced with this situation, they might think twice about continuing to use any sidewalk, trail, or bike path to reach their destination. To prevent this scenario from happening, Solon should require all new developments to be placed directly adjacent to the sidewalk when possible. It would be a waste of resources were the City to spend significant energy on connectivity improvements only to have urban form work against the Solon Connects Plan. One method to help implement these recommendations consistently, is for the City of Solon to modify various zoning regulations to support walkable developments.



Action Steps:

-  Ensure that all buildings have a safe accessible route to the entrance from sidewalk.
-  For buildings with no access, determine proper steps to help create access either with new construction or possible change in ownership
-  Require new buildings be placed adjacent to sidewalk to make them more walkable.
-  Review zoning code for setback deficiencies and propose updates to code to require walkable buildings in all or some districts / locations

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon, Local Businesses



Multi-Modal Streets

South Green Road - South Euclid, Ohio

A road diet is a useful tool for improving safety and integrating multi-modal options into an existing street. A road diet reduces the number of travel lanes on a roadway and re-balances this space for other users and travel modes. The most common road diet reconfiguration is the conversion of a four-lane road into a three-lane road (two through lanes and a center turn lane). The reallocated space can then be used for bicycle infrastructure, pedestrian infrastructure, green infrastructure, or transit infrastructure. Road diets can be a low-cost option if no curb adjustments are required and planned in conjunction with repaving or re-striping projects. Each community has developed its own standards for applicability, but it has been shown that roads with an Average Annual Daily Traffic (AADT) of 15,000 or less have shown good results in safety, operations, and livability after the implementation of a Road Diet. However, in addition to AADT many additional operation and volume factors need to be considered when exploring a road diet including, number of curb cuts, intersections, and transit needs. Road diets are an FHWA-approved safety counter measure and have grown in popularity as more case studies are able to quantify and measure reductions in vehicular accidents in addition to increases in livability and comfort.

Between April 2021 and Fall 2022, the city of South Euclid will be implementing a Road Diet on South Green Road from Monticello Blvd. The project costs \$5.7 million and aims to optimize street space to benefit all users including pedestrians, bicyclists and transit riders. Reducing the number of lanes on South Green will improve crossing distances and exposure for pedestrians, while also reducing the potential for various vehicular collisions. A common misconception is that reducing the number of lanes by installing a Road Diet will cause traffic to become more congested. With proper signalization control and turning lanes at major intersections (i.e., Mayfield Road) a road diet creates minimal impacts to automobile drivers and travel times. The South Green Road Improvements will make it easier for people to safely walk, bike, bus or drive along this important corridor. This will improve the quality of life and livability of residents and visitors to the area which includes direct access to jobs, shopping, parks, housing, medical and educational institutions.



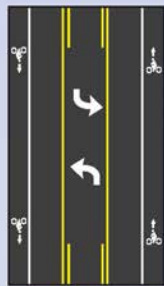
ROAD DIETS SAVE LIVES

CONVERTING A ROAD FROM FOUR LANES TO TWO LANES
CAN REDUCE VEHICLE ACCIDENTS BY 19% TO 47%

US DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION



BEFORE



AFTER



CROSSWALKS

PEDESTRIANS WILL BE ABLE TO SAFELY CROSS SOUTH GREEN RD AT WHITEHALL OR AT A MIDBLOCK CROSSWALK. RED STAMPED CONCRETE CROSSWALKS WILL BE INSTALLED TO INCREASE VISIBILITY & IMPROVE STREETSCAPE DESIGN.



PARKING NO LONGER PERMITTED



UNCHANGED

SIGNALIZED INTERSECTIONS

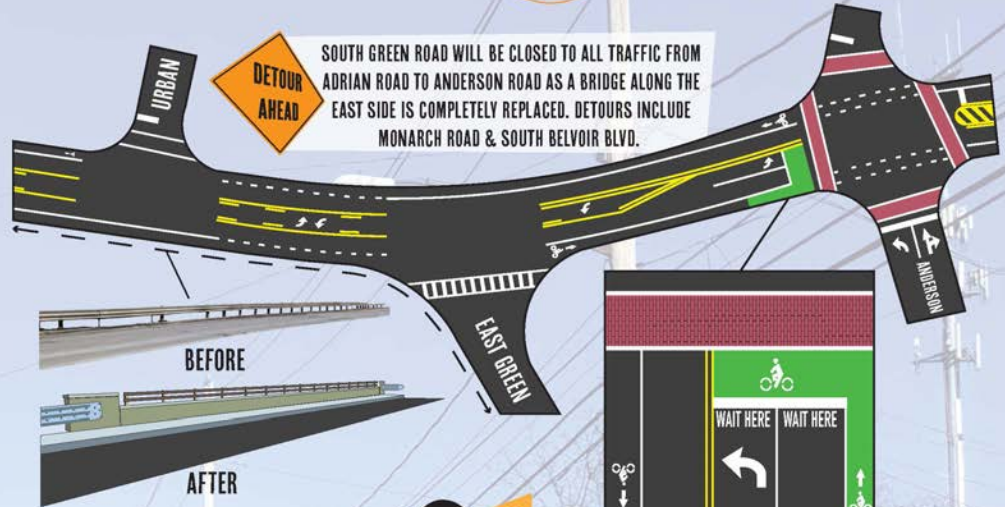
- ✓ MAYFIELD ROAD
- ✓ EDMOND ROAD
- ✓ LIBERTY ROAD
- ✓ ANDERSON ROADS
- ✓ MONTICELLO BLVD

- ✗ LAUREL ROAD
- ✗ ELMWOOD ROAD

DID YOU KNOW?
TRAFFIC SIGNALS ARE OVER 4 FEET TALL!



ELECTRIC SCOOTERS & BIKES ARE PERMITTED TO RIDE ON THE STREET AND IN BIKE LANES.



SOUTH GREEN ROAD WILL BE CLOSED TO ALL TRAFFIC FROM ADRIAN ROAD TO ANDERSON ROAD AS A BRIDGE ALONG THE EAST SIDE IS COMPLETELY REPLACED. DETOURS INCLUDE MONARCH ROAD & SOUTH BELVOIR BLVD.



WHAT'S A BIKE BOX?

DESIGNATED AREA AT THE TOP OF A SIGNALIZED LANE PROVIDING BICYCLISTS A SAFE & VISIBLE WAY TO GET AHEAD OF TRAFFIC DURING A RED SIGNAL PHASE.



5 FOOT BIKE LANES WILL BE INSTALLED WITH SIGNAGE AND ROAD MARKINGS.

Source: City of South Euclid



03.6

Connections






Trails

Trails offer enormous benefits to communities, in addition to creating recreational opportunities they can also deliver positive impacts to the economy, health of residents, property values, quality of life, and much more. Solon has many unique opportunities for trails in the city along vacated railway corridors, utility corridors, and through existing neighborhoods. As seen on Map 18, this plan outlines several trail opportunities, such as the Solon to Chagrin Trail, Norfolk Southern Trail, A Powerline Corridor Trail, and the Richmond Connector as an extension of the Hawthorne Parkway Trail. Like Sidepaths and Bike Boulevards, the opportunities to add multi-Use trails in these locations can provide a huge boost in connecting Solon residents to desired destinations quickly, safely, and comfortably. In a 2012 survey, 72% of residents agreed that more trails are needed in Solon, and when asked, 90% of residents said they would be most comfortable using trails. These trail projects create a game-changing opportunity for expanding active transportation in Solon. Building these all ages and abilities facilities is where the City can start to change people's perceptions of mobility by having the necessary infrastructure and network that supports converting car trips into short and fun walking and biking trips that are safe for the entire family.



Source: Jefferson County Co

Action Steps:

-  Prioritize implementation of Solon to Chagrin Trail to utilize ODNR funding and existing partnerships
-  Work with neighboring communities such as Aurora to gain ownership of vacated NS RxR
-  Reach out First Energy to discuss construction of trail through powerline corridor easement and/or on Solon and First Energy owned properties
-  Identify opportunities for East-West trail connections through Hawthorn Valley property
-  Identify Funding Sources and bundle projects together with partners to increase collaboration and competitiveness of application

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

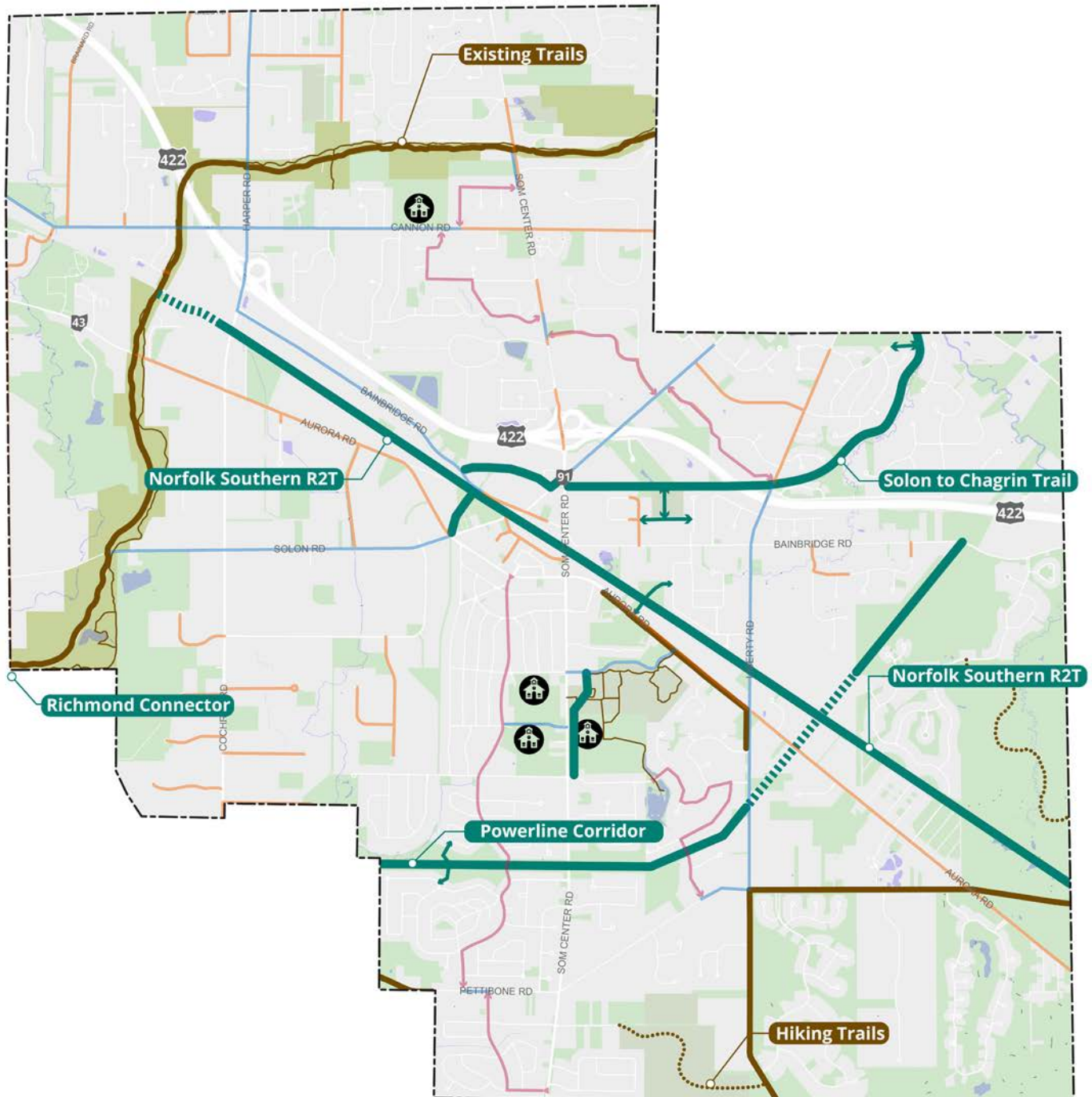
Project Leaders & Partners



City of Solon, ODOT, NOACA, ODNR, Cuyahoga County Public Works, Cuyahoga County Planning Commission, First Energy, Cleveland Metroparks, Norfolk Southern RxR, Neighboring Communities, HOAs, Solon City School District



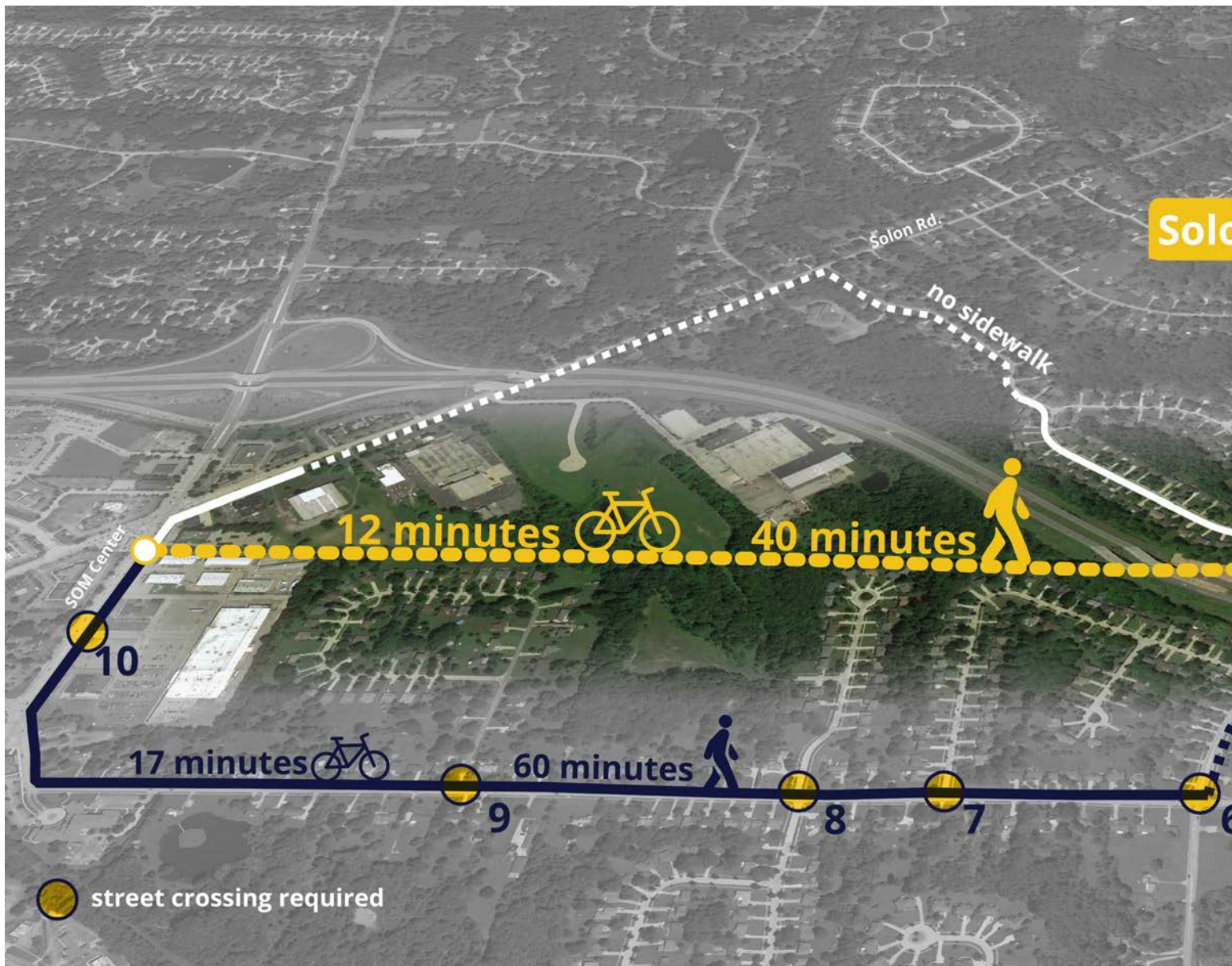
MAP 18: RECOMMENDED TRAILS 





Trails

The connectivity analysis of Solon's existing street network showed that finding direct and safe options for pedestrians and bicyclists to reach destinations efficiently is challenging. As displayed in the map below, active trail corridors offer an immense opportunity to not only create more direct routes for non-motorized transportation, but also to greatly improve the safety of those choosing to walk or bike throughout the community. For example, if a Solon resident wanted to walk or bike the Solon to Chagrin Trail Route using the existing road network, they would need to travel 3.2 miles, cross streets 10 different times, and be redirected onto the street in locations where no bike lane or sidewalk exists. A trail at this location would remove many of those physical and psychological barriers, and would reducing travel time, travel distance, and potential conflict points with cars.



ROUTE	LENGTH	BIKE TIME	WALK TIME	
Trail	2 Miles	12 Minutes	40 Minutes	
Route - A	3.2 Miles	17 Minutes	60 Minutes	



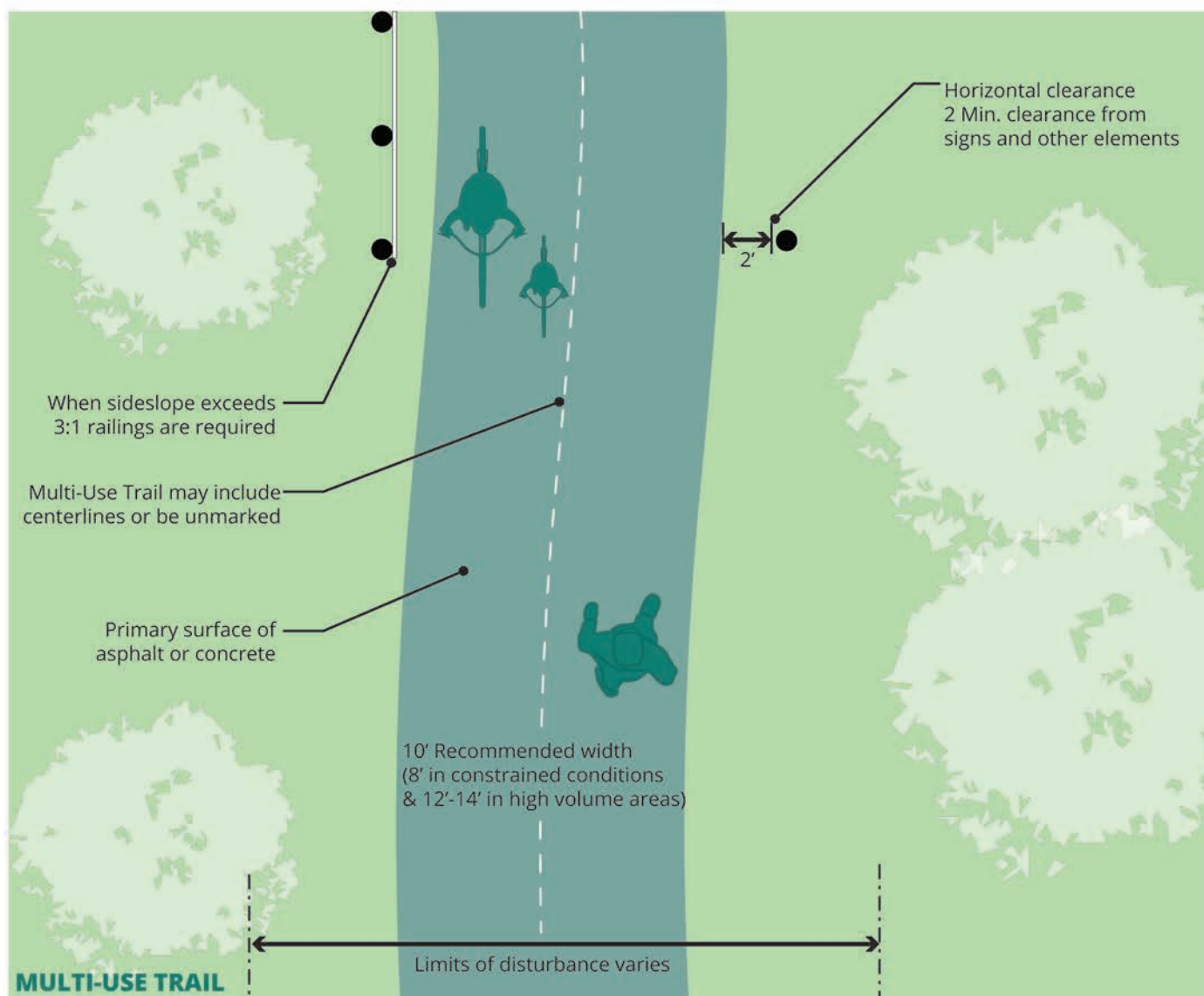
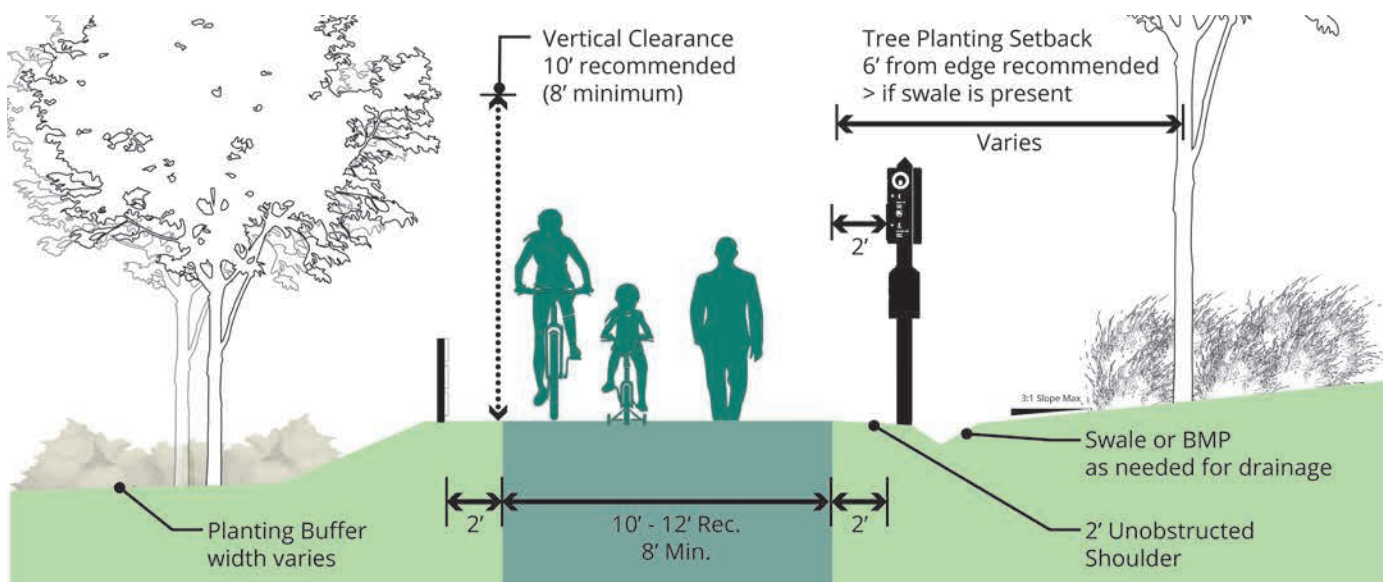
MAP 19: BENEFITS OF A TRAIL



STREET CROSSINGS	FACILITY TYPE	MISSING SIDEWALK
1 (Mid-Block)	Multi-Use Trail	No
10	Mixed (Sidewalk & Bike Lanes)	Yes



Trails







03.6

Easements, Partnerships, & Land Acquisitions

With numerous large-scale projects identified as part of this plan, it is important to strategically consider how these projects can safely and efficiently navigate and connect a nearly built-out community. From focusing on areas where existing city-owned land can be assembled, to exploring utility easements and vacated railroad corridors, the city has a wealth of options for creating a well-connected community. This Plan recommends carefully analyzing all opportunities- including both publicly and privately-owned land - for adding new connections to existing and proposed facilities, giving residents greater access and flexibility to reach trails and their destinations. Many tools are available to add or create these access points throughout Solon, including partnerships with landowners to provide access. Dedicated conservation or trail easements, or the purchase of specific parcels of land, allow public access opportunities. Together these tools will help make the proposed network more convenient for Solon residents, allowing them the opportunity to choose walking and biking to reach friends, neighbors, or destinations in and around the community.



Source: The Trail Foundation



Action Steps:

-  Engage all current and future land owners and projects along proposed trail corridors for potential easement opportunities
-  Identify all existing City of Solon or other municipally owned property adjacent to existing or proposed trails for access opportunities
-  Identify all other vacant properties and open space that could provide trail access, such as HOA properties and other private land
-  Approach land owners and groups about allowing a recreation or other access easement through their property to improve connectivity
-  Explore the creation of, or partnership with, non-profits that could help strategically acquire key parcels that would increase access

Details:

Priority:

-  High  Medium  Low


Timeline

-  Near-Term  Mid-Term  Long-Term

Costs & Funding

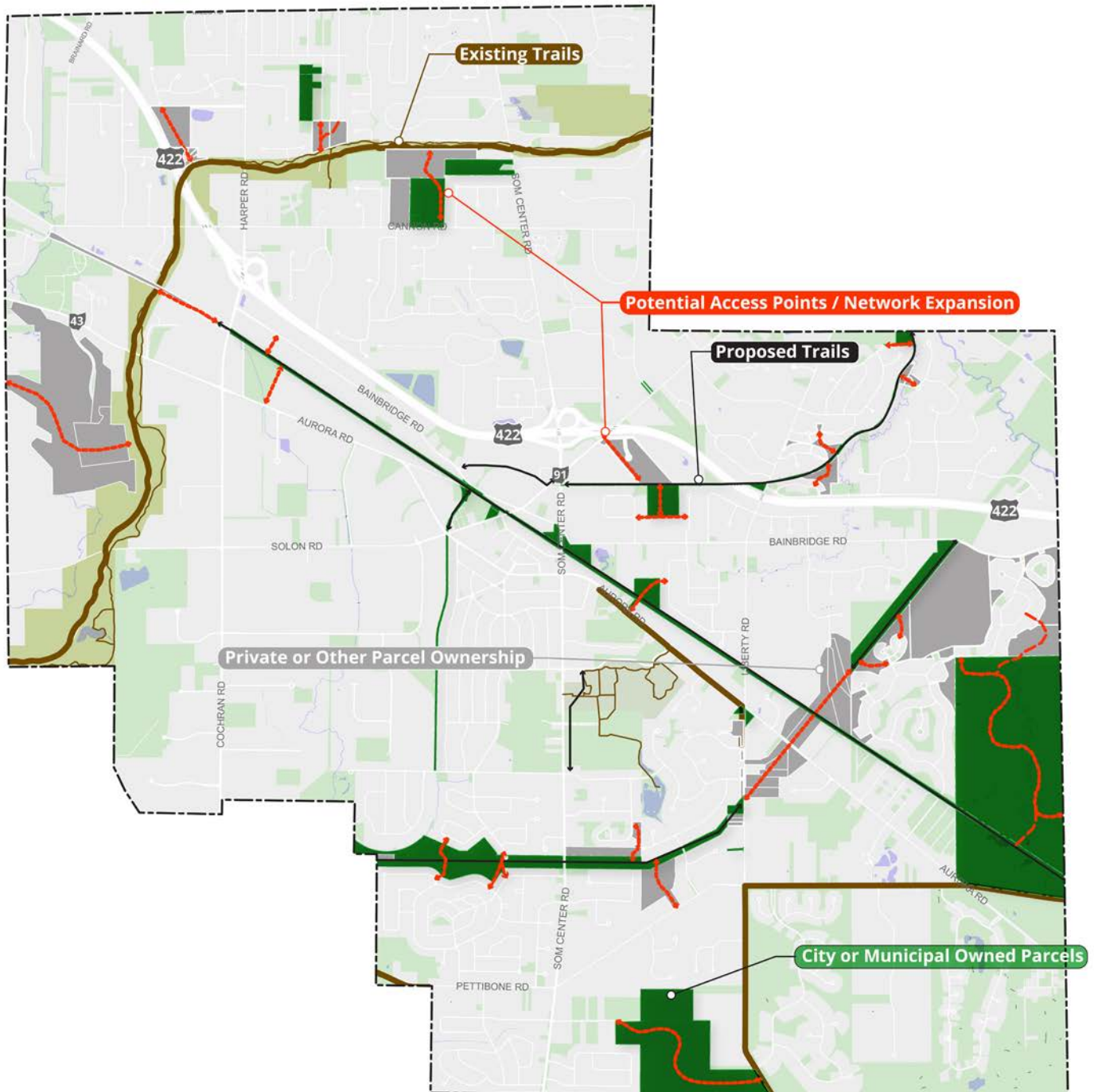
-  High  Medium  Low

Project Leaders & Partners

-  City of Solon, ODOT, NOACA, Cuyahoga County Public Works, Cuyahoga County Planning Commission, First Energy, Cleveland Metroparks, Norfolk Southern RxR, Neighboring Communities, HOAs, Solon City School District



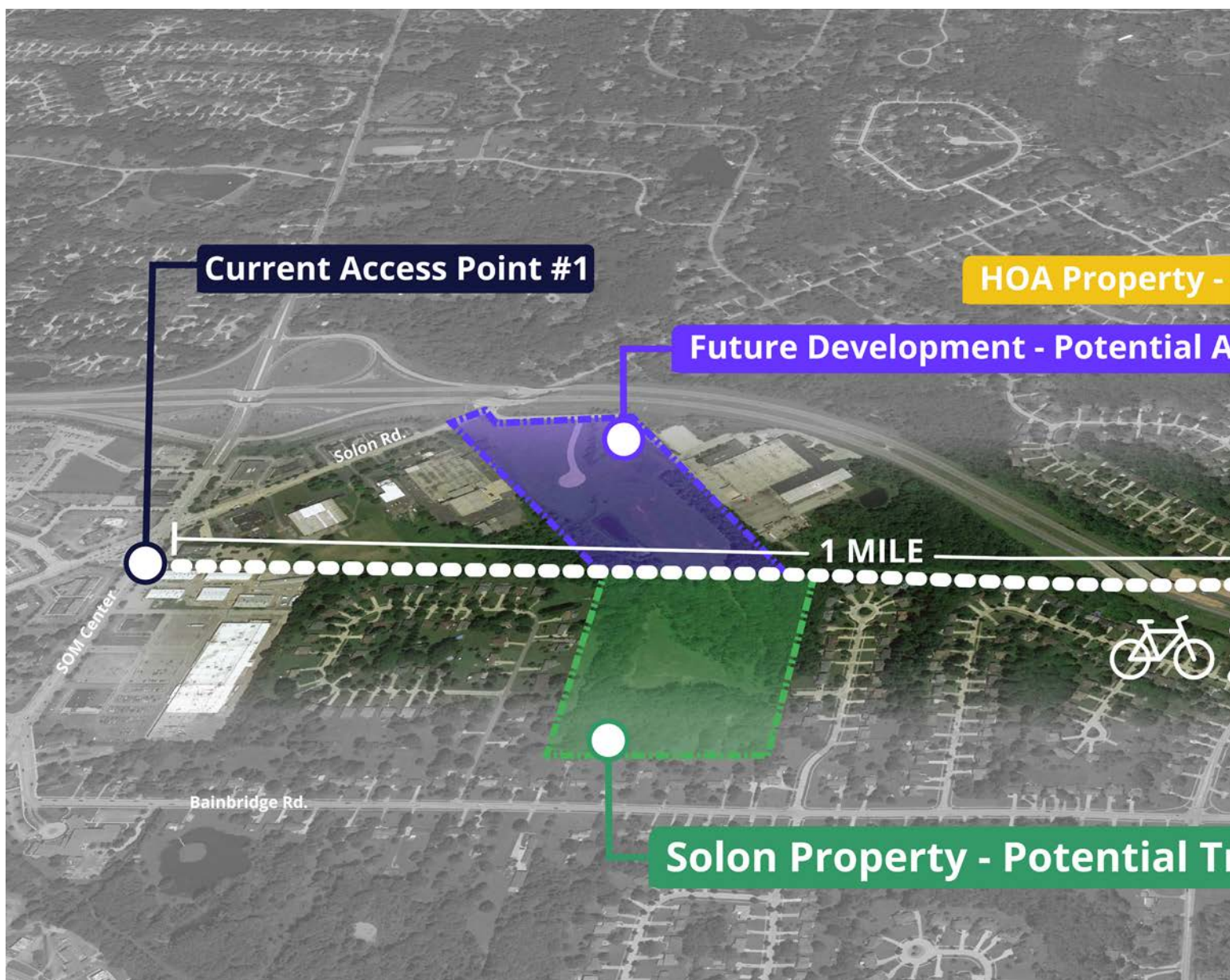
MAP 20: TRAILS NETWORK WITH EXPANSION AND ACCESS OPPORTUNITIES (I.E. EASEMENTS) 





Easements, Partnerships, & Land Acquisitions

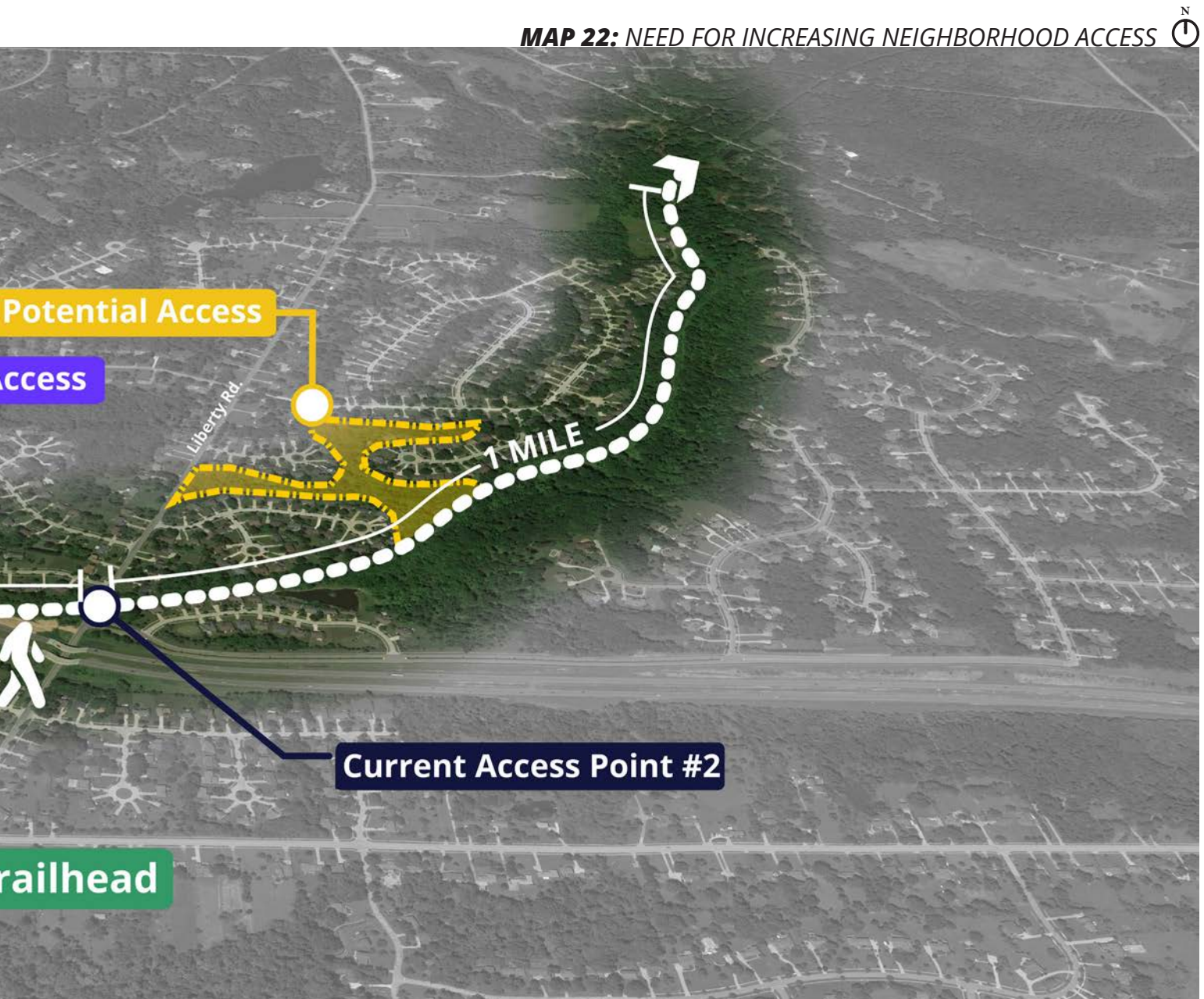
Increasing the City's network to reach into various neighborhoods is important; however, having access to those options within each neighborhood is just as critical. If residents live 5 minutes away from a trail but do not have a safe way to access it, they might not consider using this facility as a viable option for recreation, exercise, or commuting. Map 21 illustrates the neighborhood access provided by the Summit Hike and Bike Trail. Every trail facility in Solon should have this type of access. In some cases, this access may be quite simple: the City may already own adjacent land necessary to create trailheads or access points. However, in other places, future access might require easements or partnerships with landowners, HOAs, and businesses to ensure everyone has convenient and safe entrance points on and off the trails throughout the entire community.



MAP 21: EXAMPLE OF GOOD NEIGHBORHOOD ACCESS



MAP 22: NEED FOR INCREASING NEIGHBORHOOD ACCESS



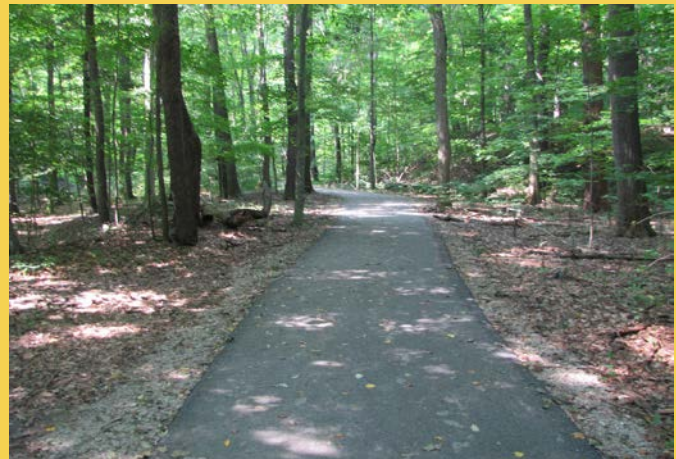


Easements, Partnerships, & Land Acquisitions

West Creek Conservancy - Parma, Ohio

West Creek is a land conservancy serving Greater Cleveland. The 501(c)3 non-profit works to protect natural areas by acquiring land and conservation easements through purchase or donation. They have a strong focus on streams, rivers, watershed protection, and stream restoration. They excel at working collaboratively to reclaim and re-use urban land and restore water quality and natural habitats in the urban environment.

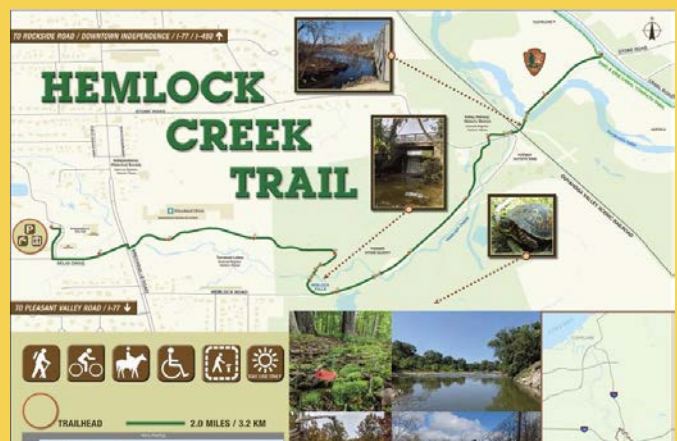
In addition to reclaiming and re-using urban land, West Creek has facilitated the planning and construction of recreational trails and greenways. Most recently they helped with the creation of the Treadway Creek Trail and Hemlock Trail that connect to the Ohio & Erie Canal Towpath Trail. West Creek has become a model for conserving, protecting, and connecting land throughout the County through partnerships and perseverance, working to provide links to regional resources across municipal boundaries. The West Creek Greenway, a vision for 20-mile natural public trail network interconnecting the communities of Seven Hills, Parma, Brooklyn Heights, and Independence, is an ideal example of this effort to open new links and pathways in fully developed communities where such opportunities seem remote. Work on this project is progressing steadily as new trailheads, links, and land acquisitions are made.



Source: West Creek Conservancy



Source: West Creek Conservancy



Source: West Creek Conservancy

River's Bend Community - Maineville, Ohio

The Little Miami Scenic Trail is a jewel in the 330-mile network of paved, off-road trails in Ohio's Miami Valley. It is one of the longest paved trails in the United States, running 74.9 miles through five counties and connecting Springfield to Cincinnati - and a dozen towns along the way. The trail passes through beautiful state parks, picturesque scenery, old and new bridges, and natural habitat.

River's Bend is a premier residential golf community located adjacent to the Little Miami Trail in Warren County. It provides direct access to the Little Miami Trail from the neighborhood using a mix of private and HOA land at the terminus of Turning Point Lane.



Source: River's Bend



Source: River's Bend



Source: River's Bend



03.7

Experience & Identity

Wayfinding & Signage

Accurate, reliable, and easy to understand signage programs are an important element for any community, especially those where pedestrian and bicycle use is a priority. Wayfinding components such as signs, markers, kiosks, and maps help users and visitors identify routes that better connect them to community assets. A strong wayfinding system has a distinct brand and style that provides easy-to-follow and legible directions, and can give visitors an experience that is unique to Solon.

This Plan recommends that the City develop a wayfinding package that incorporates the City's brand, and works to integrate regional and statewide systems. This system should be clear and concise and integrate pedestrian and bicycle scaled signage with local street signs and traffic guidance. As Solon builds out its active transportation network, the number of residents and visitors using it will increase. It is therefore important that Solon have a wayfinding system ready that will enable all users to easily navigate the city and its surroundings.








Source: Guide Studio



Source: Portage County

Action Steps:

-  Develop a comprehensive wayfinding system with local branding for all users and routes (off-road and on-road + vehicular and pedestrian)
-  Using existing resources develop signs that not only reflect locality (Solon) but also work with any future regional networks (Cuyahoga Greenways)
-  Use signs to convey most important information, like key destinations and amenities, plus time and/or distance to locations
-  Reference all current and future standards (NACTO, MUCTD, State and US Bike Routes) for uniform style, locations, and materials.
-  Explore various funding opportunities and prioritize implementation in key locations

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon, Cleveland Metroparks, Destination Cleveland, Neighboring Communities, Local Businesses



Source: Guide Studio

Lakefront Bikeway Wayfinding & Signage Cleveland, Ohio

Cleveland continues to expand its bike and trail network, giving residents and visitors a multitude of mobility options to reach neighborhoods and destinations. Although these pathways provide great access and opportunities, many don't have established identities and even fewer have dedicated wayfinding and signage. In addition to off road facilities, many on-road routes throughout Cleveland and the suburbs only utilize sign standards established by federal guidelines, which may not include any content, branding, or character.



Source: Canalway Partners

To address this issue, Destination Cleveland and Guide Studio collaborated with stakeholders to develop a standard citywide trail navigation system for Cleveland and the Cuyahoga Greenways Network. A key pilot project for this initiative was the 'Lakefront Bikeway', a multipurpose path between West 25th Street and Edgewater Park. User feedback was generated through surveys to determine what elements should be refined to help foster a better city and countywide system. This "best practices" approach has been used to develop a seamless program that will integrate existing signage and branding into one unified system that is applicable for all current and future routes throughout the City and County. Creating visual consistency across all trails and bike routes that go beyond neighborhood, community, municipal, and county boundaries is critical.

SIGNS SHOULD ANSWER:	Trail Information	Standard Symbols
What can I do on the trail?	  	Standard Symbols
Where am I?	City/Neighborhood	Established Naming
	Trail Name	Simplified Trail Name (drop Donor Names, etc)
Where can I go?	↑ Gordon Square  8 min connects via on-road route W. 73rd Street	Programming:
How do I get there?	→ Edgewater Park  4 min	<ul style="list-style-type: none"> Destinations & Landmark within a mile Distance in minutes not n Amenities available
How long will it take me?	logo	Name or Logo of organization that maintains trail

Source: Guide Studio



03.8

Groups

Bike Solon Chapter

Bike Cleveland, a 501(c)(3) advocacy non-profit in the Greater Cleveland area, is dedicated to creating a region that is sustainable, connected, healthy, and vibrant by promoting bicycling as safe and equitable transportation for all. Creating a dedicated group of residents and businesses that can advocate and educate the community on the importance of establishing an all ages and abilities bike network is an important step in the implementation process. Bike Cleveland works on behalf of cyclists across Greater Cleveland and has developed a local chapter program to help residents raise bicycle awareness within their own communities. Local chapters can leverage Bike Cleveland's extensive expertise and experience with their firsthand knowledge of their city and its needs. This includes hosting rides, events, safety and education programs, and advocating for better infrastructure in their communities. Having a local chapter in Solon will help residents cultivate community support for projects and events by building relationships with neighbors, friends, and businesses.



Source: City of Solon & Bike Solon

Action Steps:

- ☒ Contact Bike Cleveland to discuss forming a Local Bike Solon Chapter
- ☒ Identify any potential residents, stakeholders, or departments to lead potential chapter
- ☒ Identify potential outreach opportunities throughout the summer that could help generate memberships and support for local group
- ☒ Contact other local chapters and Bike Cleveland to identify potential events or programs that could be utilized in Solon (i.e. Bike Parking Program)
- ☐ Use Chapter as way to advocate, educate, and support active transportation projects, events, and opportunities in Solon

Details:

Priority:

- ☒ High ☐ Medium ☐ Low

Timeline

- ☒ Near-Term ☐ Mid-Term ☐ Long-Term

Costs & Funding

- ☐ High ☐ Medium ☒ Low

Project Leaders & Partners

- ☒ City of Solon, Bike Cleveland, Local Businesses





Walk & Bike Committee

In addition to local advocacy groups to help raise awareness about connectivity within the community, the City should also look to establish a more formalized stakeholder committee to ensure that this remains a priority for the City of Solon. This formal group could meet on a regular basis and advise City Council and City Administration on bicycle and pedestrian planning and implementation. The committee could support and coordinate bicycle and pedestrian education programs, promote bike and pedestrian events, and seek public input and feedback on projects or programs. To formally assist this committee, the City could dedicate a staff member to help implement or oversee execution of the recommendations included in this plan. The establishment of a Bike and Pedestrian Coordinator position, would increase efficiency, provide greater oversight of active transportation projects, and serve as a central contact for all sidewalk and bikeway projects and active transportation programs in Solon. The creation of this committee or hiring of a dedicated staff member would signify a significant long-term commitment to improving active transportation and connectivity in Solon.







Source: City of Olympia, WA



Source: City of Nampa, ID

Action Steps:

-  Research existing communities that utilize a Bike and Pedestrian Committee to help with implementation of recommendations
-  Determine proper board structure (# of members, terms, and appointments)
-  Potentially transition existing Mobility Task Force into a Committee, Board, or Commission
-  Create a dedicated staffer or manager of bike and pedestrian projects (i.e. Bike & Ped Coordinator) to help with implementation

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon



Bike Solon Chapter

Bike Euclid- Euclid, Ohio

Bike Euclid is a Chapter of Bike Cleveland. Formed in 2014, working to promote a comprehensive, low-stress bicycling network for transportation and pleasure, and to encourage and connect bicyclists to resources which support their safe and legal use of their bicycle.

Bike Euclid's goal is for the city to be a Bicycle Friendly Community and be designated as such by the League of American Bicyclists. A community recognized by the League as Bicycle Friendly welcomes bicyclists by providing safe accommodation for cycling and encouraging people to bike for transportation and recreation. Encouraging bicycling is a simple to help improve public health. With more people bicycling, communities experience reduced traffic demands, improved air quality and greater physical fitness. Building such a community can translate into a more connected, physically active, and environmentally sustainable community that enjoys increased property values, business growth, increased tourism, and more transportation choices for citizens.

Bike Euclid works closely with the City of Euclid Administration and Council and Bike Cleveland to make Euclid a great place for bicycling by focusing on the 5 E's: Engineering, Education, Encouragement, Enforcement, Evaluation and Planning. Some examples of efforts around these programs include:

- Explore your Ward- organized group rides hosted by Ward Council;
- Annual Bike to the Beach and Campout at Sims Park; and
- Cranksgiving - a food drive in partnership with Bike Cleveland to benefit the Euclid Hunger Center



Source: Bike Euclid



Source: Bike Euclid

Walk & Bike Board or Committee



City of Worthington, Ohio
@WorthingtonOhio

Are you interested in getting involved and serving your community? The City of Worthington is accepting applicants to serve on the Bicycle and Pedestrian Advisory Board. The deadline to apply is Wednesday, June 9. worthington.org/CivicAlerts.as...



Source: City of Worthington



Source: This Week News

Bike & Pedestrian Advisory Board - Worthington, Ohio

Worthington, Ohio is northern suburb of Columbus, who in 2015 established a Bicycle and Pedestrian Advisory Board to advise and consult with the City Council and City Administration on the implementation of bicycle and pedestrian plans. Establishment of a Bicycle and Pedestrian Advisory Board is one clear signal to residents that the City of Worthington is committed to promoting health, wellness, and a high quality of life for all residents by providing a safe and connected network of bike and pedestrian infrastructure.

Establishing a Bicycle and Pedestrian Advisory Board (BPAB) was one of the recommendations outlined from a previous study and report adopted by City Council in 2104. The Board consists of Nine (9) members, seven (7) of which must reside within the City limits and all members serve without compensation for staggered three year terms. The BPABs mission is to "connect the community by advocating for enhanced mobility for all citizens and visitors on bicycle and on foot, through sustainable infrastructure and programs leading to improved health, safety, welfare, and positive economic impact."

Accomplishments since inception include:

- Intersection crossing improvements,
- Trail head improvements,
- Bike and pedestrian accommodations
- Bike events
- Complete streets policy
- Trail signage



03.9

Programs

Safe Routes to School Program

One way to work towards building a safe, connected, and active network is to start with children. In an earlier Solon Connects survey, 55% of respondents said they would not feel safe letting their children walk or bike to school. A program of the Ohio Department of transportation (ODOT) Safe Routes to School (SRTS) provides resources, assistance, and funding as part of a comprehensive approach to promote walking and biking to school through both infrastructure and non-infrastructure projects. SRTS provides \$4M to annually fund projects in 5 categories: Engineering, Encouragement, Education, Enforcement and Evaluation. The program will fund a variety of infrastructure projects within two miles of a school (including engineering, right-of-way acquisition, and construction). It also funds non-infrastructure activities as well including education, encouragement, enforcement, or evaluation programs. Map 23 illustrates how much of Solon lies within 2 miles or a 10-minute bike ride to school. Many of these households could benefit from a new SRTS program in Solon. This plan recommends that Solon develop a SRTS program so that the entire community becomes a better place for everyone to walk and bike.








Ohio Safe Routes to School

Source: NOACA



Source: Bike Cle

Action Steps:

-  Utilize outreach methods like school surveys to better understand and tally student and teacher travel patterns and safety needs.
-  Develop a School Travel Plan (STP). Applying for SRTS Funding starts with a School Travel Plan.
-  Apply for funding of projects and programs and ensure all applications meet the necessary eligibility requirements including a review by ODOT
-  Research and utilize additional resources in support of SRTS programs including events, education, and Active Transportation safety.
-  Evaluate and update the School Travel Plan (STP) as required

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

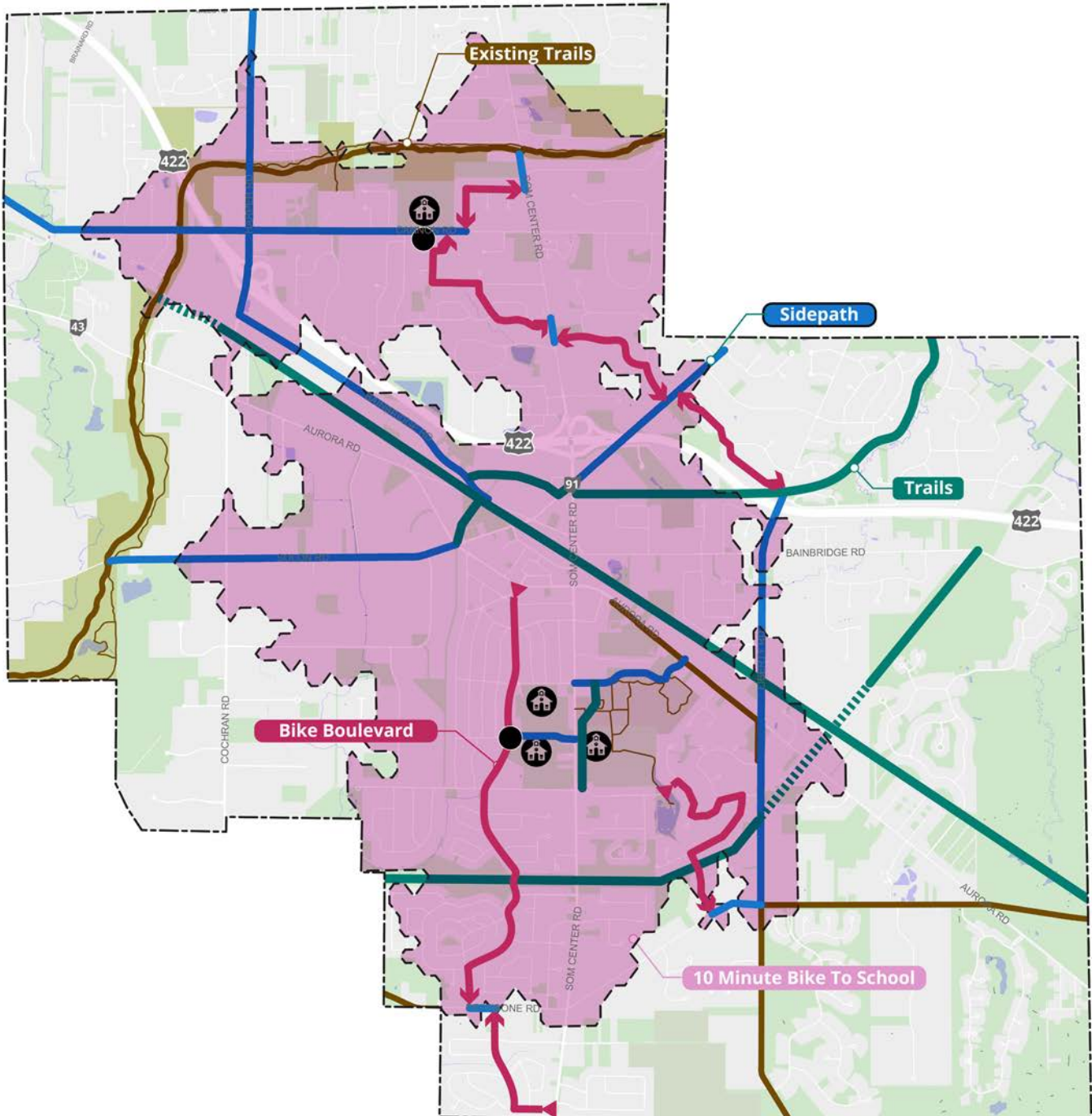
Project Leaders & Partners



City of Solon, ODOT, NOACA, Solon City School District, Local Businesses



MAP 23: 10 MINUTE BIKE SHED TO SCHOOLS WITH PROPOSED ALL AGES & ABILITIES ROUTES 





Safe Routes to School Program

Safe Routes Chagrin - Chagrin Falls, Ohio

Safe Routes Chagrin is one of the most recognizable, established, and award-winning Safe Routes to School Programs in Ohio. Safe Routes Chagrin works to promote healthy and active lifestyles for school age children, with a mission to encourage and support habits that incorporate walking and biking to and from school and around town as part of daily physical activity, while boosting personal responsibility, safety, and independence.

Established in 2007, the Safe Routes to School Program has helped Chagrin Falls develop many programs, while funding infrastructure improvements that encourage alternative transportation for students in grades 4-8. These changes have also made the community a more pedestrian-friendly environment for residents and visitors of all ages and abilities.

Safe Routes Chagrin is sponsored by various local merchants and the planning of programs and events is led by a variety of representatives and volunteers from the school district, police force, Village Council, library, local business owners, community organizers, and many parents and grandparents.

Many successful events include Bike-a-Palooza (Bike Rodeo), Bike to School Day, July 4th Bike Parade, and Walk to School Day.



Source: All Pictures - Safe Routes Chagrin



03.9

Events Program

The City of Solon maintains a robust and exciting community events calendar. However, the implementation of an all ages and abilities trail network presents the community with even more event opportunities for residents to come together and celebrate Solon. In conjunction with existing programs and potential new partnerships with groups like Bike Solon and/or a Safe Routes to School program, this Plan recommends that the City integrate programs focused on celebrating, learning, and gathering around connectivity to schools, parks, shopping, jobs, and the many assets available throughout the community.








Source: City of Solon



Source: Cleveland.com

Action Steps:

-  Utilize existing resources (Rec Department & others) to identify Bike/Ped event opportunities
-  Build bike/ped events around existing events (Home Days) and new opportunities (Temporary Infrastructure Pop-Ups or SRTS)
-  Research events and programs from other communities that could be applicable for use in Solon
-  Support groups like Bike Solon, and bike/pedestrian events, through funding, promotion, or providing logistics
-  Help streamline the application process for organizations and residents to establish new bike and pedestrian events throughout Solon

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon, Neighboring Communities, Bike Cleveland, Solon City School District, Local Businesses



Safe Solon Campaign

While an important part of any connectivity plan, Solon does not currently have an outreach program that is focused on educating residents and improving pedestrian and cyclist safety. Various projects are being studied, designed, and constructed, so the City can begin educating its residents about any topics, laws, and concerns that will result from changes in infrastructure, traffic patterns, or behaviors.

Plan recommendations have focused on various engineering improvements such as traffic calming strategies and building more protected bike facilities. The City of Solon should also invest resources in programming efforts that focus on the E's of Active Transportation: Education, Enforcement, and Encouragement. This plan recommends the City implement various programs to raise awareness about multi-modal options and how active transportation can be a part of residents' daily lives. This can be accomplished in partnership with the Bike & Ped Board, Bike Solon Chapter, and a Safe Routes to School Program. It could also include expanded partnerships with Solon law enforcement, senior facilities, and child care centers to make this a true community-led effort.







Source: Heights Bicycle Coalition



Source: Tom Flood @tomflood1

Action Steps:

-  Develop a Safe Solon campaign that educates and encourages the use of active transportation
-  Use the Safe Solon campaign in conjunction with any Safe Routes to School Programs or activities to maximize outreach and programing
-  Partner with other organizations to incorporate materials in K-12 school programming and other groups including seniors
-  Partner with police, fire, and other groups to help target enforcement and also educational opportunities

Details:

Priority:

- ☐ High
 ☒ Medium
 ☐ Low


Timeline

- ☐ Near-Term
 ☒ Mid-Term
 ☐ Long-Term

Costs & Funding

- ☐ High
 ☒ Medium
 ☐ Low

Project Leaders & Partners

-  City of Solon, ODOT, NOACA, Bike Cleveland, Solon City School District, Local Businesses



Events Program

Bike Smarts & Others - Bike Cleveland

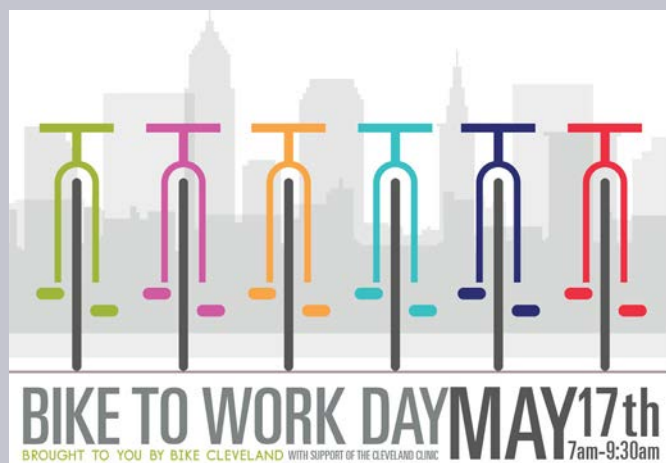
Bike Cleveland provides a wealth of information for coordinating bicycle efforts and infrastructure throughout the region. They also host or co-host events within individual communities - another reason why establishing a Bike Solon Chapter is so important.

Bike Cleveland hosts year-round events, including cycling seminars, family-friendly Bike Smart programs, and fun group rides. In addition to in-person and virtual events, Bike Cleveland provides support to its local chapters which help raise bicycle awareness in their communities, advocating for better infrastructure, more bicycle parking, creation of bicycle master plans, and much more.

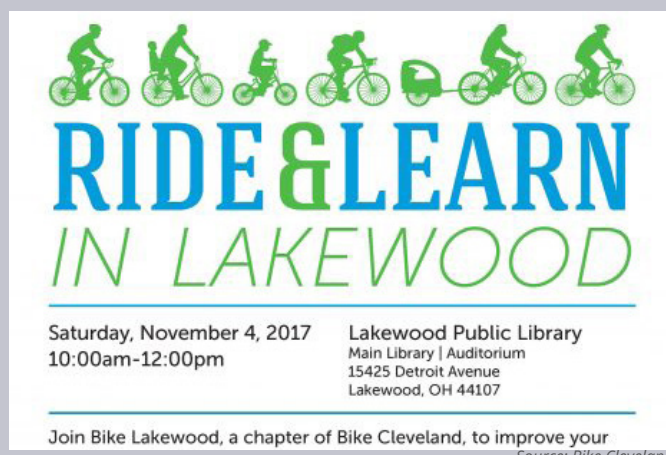
In 2021, Bike Cleveland celebrated its 10-year anniversary, and will continue to be a leader and advocate for bicycle safety, education, and access across northeast Ohio. One example of their successful Bike events programming and an opportunity for Solon is their 'Bike Smarts' series. This monthly program is hosted at a variety of locations, and provides participants a variety of bike safety tips and other cycling topics to learn about, from trail planning, work commuting, and riding safety to helmet tips and child carrier information for families.



Source: Bike Cleveland



Source: Bike Cleveland



Source: Bike Cleveland

Safe Solon Campaign



We're All Drivers - Bike Cleveland

Bike Cleveland launched a public awareness campaign that aimed to personalize and characterize cyclists as more than just people choosing not to drive but instead portray these people from all walks of life - fathers, sons, daughters, and members of the community - as only wishing to 'share the road'. "The We're All Drivers campaign highlights that people on bikes are more than just perceived obstructions to impatient motorists and they deserve the same courtesy and respect on the road as they do anywhere else. Bicycles are legal road vehicles, and people on bikes are 'drivers' subject to the same rules and rights as people in cars. Despite this, some motorists are angered when they encounter bicycles on streets and are unaware that bicycles have a right to the roads like any other vehicle. Bikes are not blocking traffic, they are traffic." A campaign of this type, using local leaders, aimed at elevating public awareness for biking and cyclists would be very helpful in a community like Solon.



Source: Bike Cleveland

Your Move - ODOT

The Ohio Department of Transportation (ODOT) provides several educational tools and resources to help communities develop programming in support of bicycle and pedestrian safety. In response to a decade of statewide increases in fatal pedestrian and bicycle crashes and epidemic levels of chronic disease ODOT developed 'Your Move' an approach to educate and encourage more Ohioans to choose active transportation and to make it safer for them to walk and bike. Your Move's goals are to: Educate all road users how to use the road safely, Encourage Ohioans to choose active transportation, and Increase safety for people walking and biking. This program includes an extensive set of existing campaign materials as an easy to use resource to educate, encourage, and increase safety. Each set of materials has been created for different media (Billboards, TV, Radio, Digital, Social Media) and audiences (Females, Males, Drivers, Bicyclists, and Transit Riders). Participation in this program with partners from health departments, hospitals, law enforcement, schools and others, is an effective way to leverage any money spent and increase the programs reach throughout the community.



Source: ODOT



03.10 Collaboration & Funding Opportunities




Coordinate & Combine Projects

The Plan identifies several projects and other opportunities that have varying timelines, priorities, and costs associated with implementation. In addition, many of these projects are regional in nature, and provide connections to adjacent communities, regional park systems, or major job centers, providing benefits to all residents of Northeast Ohio. As the City begins to implement connectivity improvements, it is important to involve adjacent communities and regional groups at every step of the process. Even if a project ends at a municipal boundary, it still provides connections beyond the local area. The Richmond Connector (pg. 125), a critical gap in the Cuyahoga Greenways Plan, is a great example of this type of connection and project. This connection is located just outside of Solon; however, a new link here would provide Solon residents uninterrupted all ages and abilities access to the Bedford reservation. Demonstrating the need for Solon to constantly identify where collaboration across boundaries is needed to ensure facilities provide maximum benefits while remaining consistent and comfortable. New partnerships and ongoing coordination will maximize results at local, regional, and state-wide levels. Collaboration will make funding applications more competitive and help ensure that key goals and benefits are met and distributed equitably throughout the region.



Source: Xenia Gazette

Action Steps:

-  Coordinate with adjacent Cities and Partners on implementation of Bike/Ped Projects and to strengthen funding applications for projects
-  Work with partners to gain ownership of vacated RxR's and discuss potential powerline corridor trails with First Energy via easements
-  Collaborate with and encourage State Reps. to join the Ohio Trails Caucus to support more funding and laws that emphasize active transportation and the Ohio Trails Vision

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



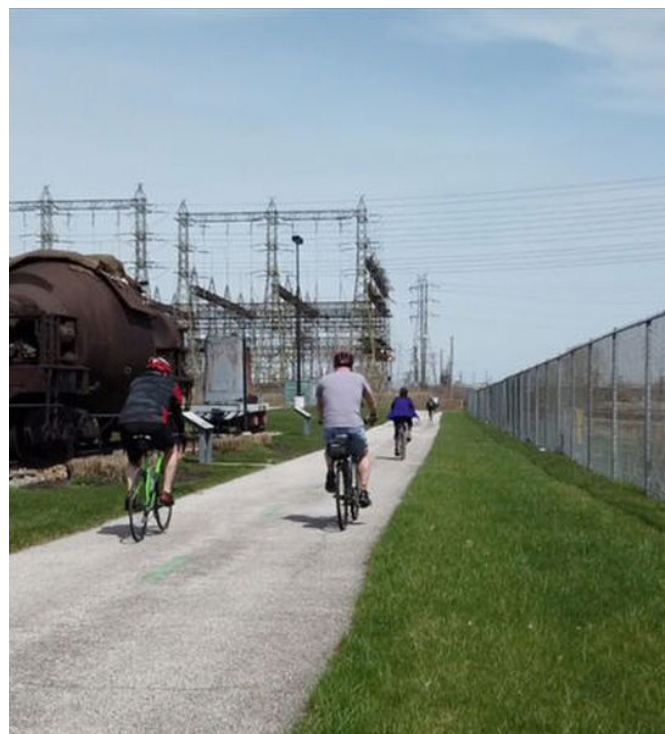
City of Solon, ODOT, NOACA, Cuyahoga County Public Works, First Energy, Cleveland Metroparks, Norfolk Southern RxR, Neighboring Communities, HOAs, Solon City School District, State Representatives, Bike Cleveland









Public & Private Partnerships

Batching projects together with adjacent communities to secure funding through competitive application processes or support from regional groups is one way to move projects from vision to reality. Public-Private Partnerships (PPP) have become another popular tool to build trails when public resources are limited or competition for funding resources is high. A PPP is an arrangement between a public agency (i.e., Solon) and a private sector entity (i.e., Business) to construct, operate, maintain, or manage a facility that provides some public benefit or service. In this arrangement the skills, risks, and rewards of each are shared in the delivery or operation of a service or facility. PPPs can be used for a variety of projects, and have become a way to leverage public money to secure private contributions for trails and parks projects. PPPs are not a one size fits all approach and cannot close any funding gap alone, but when combined with other programs they can be a valuable tool to get projects completed on time and on budget, when communities might not have all the resources necessary to build the infrastructure it needs.



Source: Cleveland.com

Action Steps:

-  Identify successful PPP infrastructure projects including Greenways that can be utilized as a model for projects in Solon
-  Identify other successful PPP projects including operations and maintenance of facilities that might applicable to Solon's growing network
-  Develop criteria for companies that might want to enter cost-sharing projects with the city for infrastructure items
-  Partner with businesses and organizations to help fund projects or programs in Solon that support active transportation

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

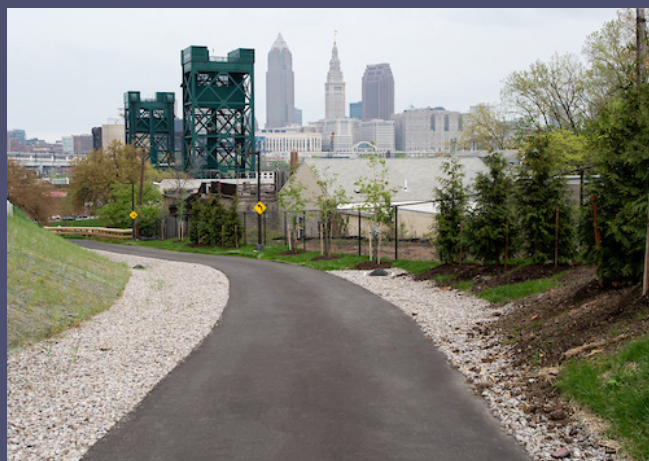
Project Leaders & Partners



City of Solon, ODOT, NOACA, Cuyahoga County Public Works, First Energy, Cleveland Metroparks, Norfolk Southern RxR, Neighboring Communities, HOAs, Solon City School District, State Representatives, Bike Cleveland, NESTLE, Swagelok



Coordinate & Combine Projects



Source: Cleveland Metroparks



Source: Cleveland Metroparks



Source: Cleveland Metroparks

Red Line Greenway - Cleveland, Ohio

At nearly two miles the Red Line Greenway is a paved all-purpose trail that links the Cleveland Foundation Centennial Lake Link Trail to two GCRTA Red Line Rapid Transit stations. Additionally, the trail also acts as the primary active transportation corridor from West 65th Street to downtown Cleveland, connecting eight densely-populated neighborhoods and over 66,000 people to an even wider regional trail network.

The project has been several years in the making, and represents extremely high levels of collaboration through funding applications and implementation strategies. Costing almost \$6.5M to build, the project was part of a larger batch of connectivity improvements on Cleveland's near west side that were funded through the Federal Department of Transportation's TIGER grant program (now known as the RAISE program).

Led by the Cleveland Metroparks, this application and resulting projects required support and coordination among numerous regional agencies and non-profit partners, such as LAND studio, The Trust for Public Land, Greater Cleveland Regional Transit Authority (RTA), Northeast Ohio Areawide Coordinating Agency (NOACA), and the Cleveland Rotary Club. Through this long-term commitment and cooperation, the Red Line Greenway brings a wealth of benefits to the region and connections to numerous employment, education, recreation, and shopping destinations. This makes for healthier, more livable neighborhoods and communities in Cleveland and beyond.



Towpath Trail Stage 2 - Cleveland, Ohio

Public Private Partnerships allow private developers to create projects that provide public benefits. One could argue that no trail project has provided more community benefits to the residents than the Ohio & Erie Towpath Trail. Stage 2 of the Towpath Trail runs along the Steelyard Commons shopping center, a project built by developer First Interstate Properties. First Interstate took it upon itself to build the Towpath Trail through the projects property using its own sources of funds. This act of corporate collaboration is the type of support that is sometimes necessary to complete trail projects. Beyond the physical infrastructure built by First Interstate for the trail, the developer placed funds raised through a Tax Increment Financing program (TIF) into a trust for future improvements and maintenance along the trail. As this trust grows in value, the opportunities for trail amenities and improvements increase, bringing even more potential benefits to residents of the region.



Source: Freshwater Cleveland

Sidepaths - Orange Village, Ohio

Orange Village has over seven miles of recreational trails that connect its neighborhoods to the Pinecrest Mixed-Use District where guests can shop, dine, work and live. The 6-foot-wide meandering, all-purpose trails of Orange Village allow users to connect with Orange Village Park and its state-of-the-art playground along with other destinations in neighboring Solon. These new recreational trails were paid for by Fairmount Properties, the developers of Pinecrest, as part of an assessment. Fairmount Properties and Orange Village established an agreement by which Fairmount Properties provided funds for the design and construction of the Orange Village Trails. Orange Village staff managed all aspects of the project from planning through design and construction. Construction of these trails began in 2018 with a total estimated cost of \$4.59M to date. The Village has not only created a new destination for residents to visit, but also incorporated years of resident feedback into trail design and programming to better connect existing community assets with the trail system.



Source: County Planning



03.10

Alternative Funding Sources




Finding the right funding model to implement projects can take on many forms. While the City of Solon should continue to integrate projects into annual budgets and Capital Improvement Plans, other funding mechanisms may be a good fit for various project types and locations.

Alternative funding sources, such as Special Improvement Districts (SIDs), Tax Increment Financing (TIF), or Ohio's Transformational Mixed-Use Development Tax Credit (TMUD) are all great methods for incorporating mobility improvements while enhancing an area's overall aesthetics and usability. However, these funding mechanisms require additional legislative and administrative steps to establish the specialized zones or districts in which these improvements would ultimately be made. This in turn may require zoning code and map modifications, a review of related ordinances and regulations, and opportunities for public engagement.



Source: Cleveland.com

Action Steps:

-  Identify successful funding models that could be used to help implement active transportation recommendations in Solon
-  Explore opportunities for creating a Special Improvement District for Downtown Solon to fund amenities and projects like signage and furniture
-  Explore opportunities to utilize Tax Increment Financing (TIF) structures to help fund active transportation infrastructure projects
-  Establish new revenue streams for funding construction or maintenance of bike and pedestrian facilities in Solon

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon, Cuyahoga County Planning Commission, Local Businesses



Source: Cedarlee.org



Source: City of Cleveland Heights



Source: City of Cleveland Heights

Cedar Lee Special Improvement District Cleveland Heights, Ohio

The Cedar Lee Special Improvement District is in the heart of Cleveland Heights and has many notable anchor businesses and institutions including the Cedar Lee Theater, Cleveland Heights High School, the Heights Libraries Main Branch, and Cain Park. The business district itself is more than a mile long with different design aesthetics and business types along the corridor.

To tie the business district together, vendors along the street sought various physical enhancements including streetscape improvements. Working together, the City and business district finalized a streetscape improvement plan to add amenities such as decorative lamp posts, additional landscaping, benches, trash receptacles, and new crosswalks. The Cedar Lee Special Improvement District contributes \$30,000 annually to fund elements of the streetscape plan. In 2016, the city was awarded federal funding which, combined with county and local funding, allowed for the completion of the project. The streetscape improvements began in the summer of 2016 and were completed by the end of the year. Since then, numerous businesses have opened their doors including a winery, brewery, and new restaurants. The city also reopened a request for proposals for the development of a city-owned site in the center of the Cedar Lee business district. The SID's contribution to the streetscape effort allowed Cedar Lee to rebuild its major thoroughfare and add the amenities that can attract shoppers, visitors, and new businesses to the area.

The County Planning offers a wealth of resources to the communities in Cuyahoga County, including a Special Improvement District (SID) Guidebook. To learn more about SIDs and to see if one might be a good fit for Solon, please visit: www.countyplanning.us/resources/guidebooks/special-improvement-districts-guidebook/

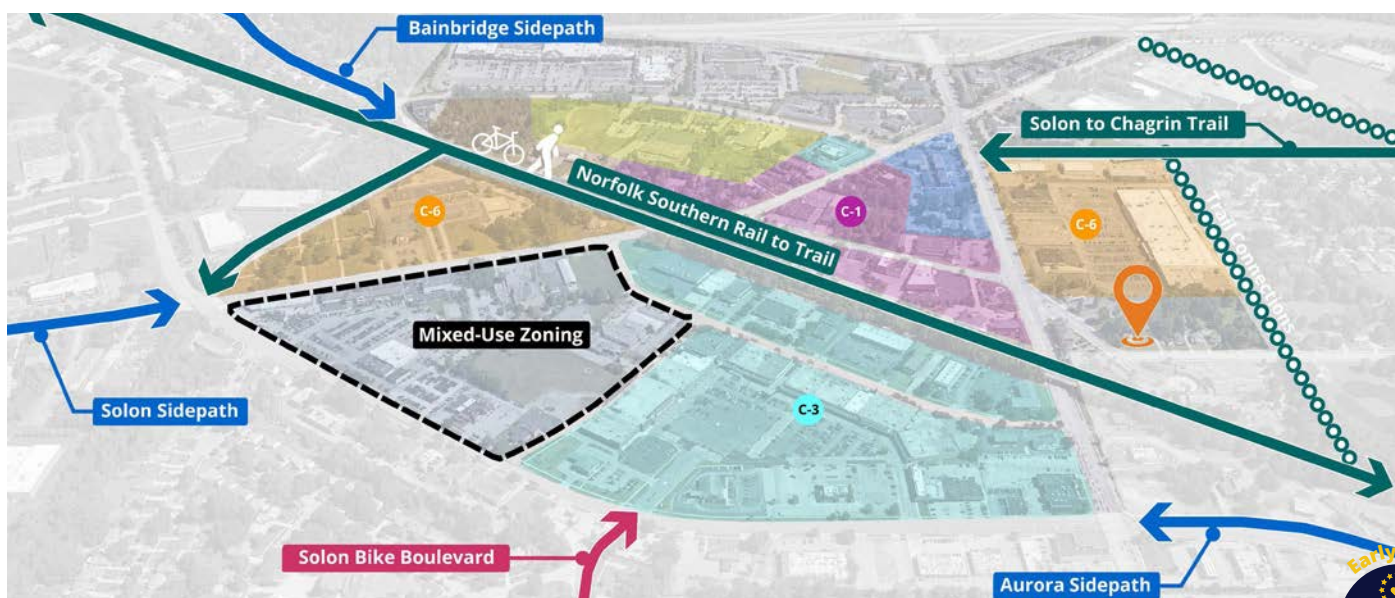


03.11






New Policies and Designs

Downtown Master Plan

One method to ensure that land use policies and connectivity properly align, and to identify the types of zoning updates needed, is to develop a Downtown Master Plan for the City's commercial and civic center. The City of Solon has taken the initiative to plan for stronger pedestrian and bicycle connections throughout the entire community. However, Downtown Solon, developed in and around the intersection of Solon and Bainbridge Roads, is a major convergence point for many proposed trails, sidepaths, and bicycle boulevards proposed in this Plan. Where could potential trailheads be located? How does a trail user get to Downtown Solon safely and easily? A Downtown Master Plan would provide answers to these questions and give the City a long-term vision for how future decisions and policy recommendations will align with the continued momentum for citywide connectivity.



Action Steps:

-  Conduct walkability audits of downtown and develop recommendations that support the Solon Connects plan and its objectives
-  Hire consultant to develop Downtown Master Plan or host design charrette
-  Use master plan process to gather community feedback and buy-in on the plan and goals
-  Use master plan as guide for any zoning updates or future development opportunities
-  Host pop-up events during and after the planning process to engage public and demonstrate community support for a new Solon

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon, Cuyahoga County Planning Commission, Local Businesses





Source: MKSK



Source: MKSK



Source: MKSK

Van Aken District - Shaker Heights, Ohio

Shaker Heights wanted to create a cohesive downtown area for the Cleveland suburb, known for its historic homes, so the development of The Van Aken District began in 2000. Recently completed and thriving, this almost 20-year and \$100 million mixed use district opened to much acclaim. In addition to various studies, the project began with a strategic investment in the reconfiguration of a dangerous six-way intersection at Warrensville Center Road, Chagrin Boulevard and Van Aken Boulevard to create a four-way intersection that was much more pedestrian-friendly. The planning process also broke the District into smaller more manageable areas to identify strengths, weaknesses and opportunities. District strengths included its location on main streets, the presence of a transit station, and a full collection of civic uses nearby. Identified weaknesses were the inability to function as an effective village center, and the lack of a coherent pattern of pedestrian circulation. Soon after completion nearly all office and residential space is occupied, restaurants and retail spaces are continually being filled, and future phases are already in process.

The Van Aken District was named winner of the American Planning Association's Gold Award in 2019. 2019 APA Awards Jury Chair Wendy Shabay stated "The Van Aken District demonstrates the long-term view of planning. A significant level of coordination and public engagement was necessary for the Van Aken District to become a reality."



03.11






City Codes & Ordinances

The City of Solon Zoning Code outlines specific regulations for how property in Solon can be developed; primarily, the Code regulates private land uses through established minimum area, setback, and design requirements. These are enforced by the City unless specifically waived by the Planning Commission and can only be changed by a legal process. Unfortunately, as connectivity and mobility improvements are made these regulations can still lag the demands and needs of the community. The City's Transportation and Land use policies must work together if Solon is going to achieve its desired goals of increased mobility and connectivity. Therefore, it is important for Solon to update local Zoning Codes to accurately correspond with the Community's Vision.

Conventional Zoning Codes typically focus on automobile circulation, designing streets for cars and designating large areas for parking. An updated code could focus more on the pedestrian and other users by reducing parking requirements and designing buildings that create more walkable environments. Another fundamental rule of Zoning Ordinances is typically the separation of uses. Cities have been consistently divided into single-use zoning districts (Residential, Commercial, & Industrial) that have segregated activities and functions. Best practice codes allow more mixed-use zones, where complimentary uses can coexist, and the physical form and character of the project are the primary concern.

In addition to physical improvements for connectivity, this Plan also recommends several policy changes to the City's current zoning code. Many of the trails and multi-modal facilities proposed connect directly to Downtown Solon. It is therefore important to ensure that the end of everyone's journey into Downtown on foot or by bike is as safe and comfortable as the beginning. For example, right now the downtown area has multiple zoning districts each with their own land use and design requirements. How do each of these districts support walkability? Some existing ordinances would not permit the types of development discussed within this plan and should be reviewed for relevance and applicability to better meet the needs of the community. This should include guidance to support more walkable developments along with integrating best practices from prominent transportation resources, such as FHWA, ODOT, and NACTO into bike and pedestrian planning and design. All combined these zoning and design guidelines will help to create a more walkable and bikeable Solon.

Action Steps:

-  Code updates, including complete streets, should incorporate best practices from current resources (FHWA, NACTO, ODOT)
-  Continually review and update zoning code based upon best practices and emerging technology
-  Update code to remove language requiring bike riders to ride single file.
-  Update code to have more uniform requirements and more walkable developments and streets. (see sample recommendations)
-  Update code to allow more mixed-use districts and increased density with more variety in housing types downtown and elsewhere

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon, Cuyahoga County Planning Commission,



Source: City of Dublin



Source: Bridge Street District



Source: Bridge Street District

Bridge Street District - Dublin, Ohio

The City of Dublin introduced their first form-based code in 2017 in the Bridge Street District. Bridge Street is a major commercial corridor that runs through Dublin, Ohio, a Columbus suburb known for its high quality of life. Bridge Street is a mix of various uses including low-density office parks adjacent to Dublin's historic town center. City leaders and planners worked to position this area of the City as one ripe for new development that could attract residents and employers. The City envisioned transforming the district into a more walkable neighborhood that would maintain Dublin's high quality of life while positioning the City to remain competitive well into the future. One recommendation that arose from this visioning process was to create a form-based zoning district for this area.

Form based codes are an alternative to traditional, single-use zoning. Form-based codes emphasize urban form rather than a prescribed use of the land. This type of zoning allows for more flexibility in terms of use while maintaining specific design standards for buildings, streets, sidewalks, and public space. Rather than taking the typical bird's eye view and separating uses, form-based codes get down to the human level and focus on how the height, scale, form, and facade of the buildings impact the users experience. The goal of form-based codes is to create better neighborhood character and connectivity by addressing the style, location, and materials used on the buildings as opposed to just the uses (commercial, residential, or office) contained inside. Form based codes can allow places like Bridge District and Downtown Solon - locations without any historic main streets or buildings - to grow and change overtime without losing any of its humans scale, style, or character.



City Codes & Ordinances

Zoning Code updates can take on a variety of forms; described below are three different options for the City of Solon to consider. These range from more comprehensive to more focused in scope.

Option-1 Complete Zoning Code re-write

This option requires a complete re-write of the Solon Zoning Code to increase walkability and bikeability. This could include a form-based code approach or a more graphic code that is based upon the Community Vision for improved connectivity.

Option-2 Re-write of select Zoning Districts or Creation of an Overlay District(s)

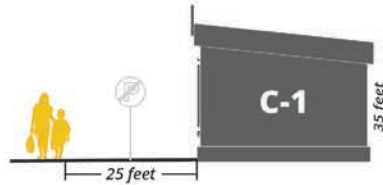
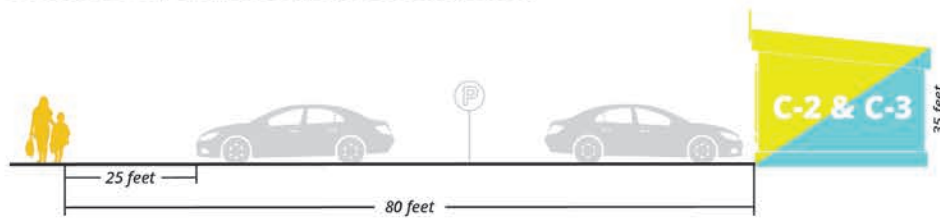
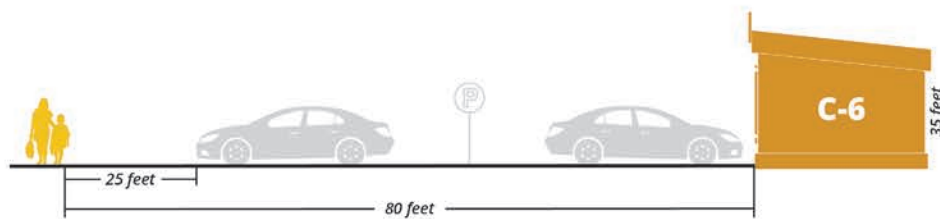
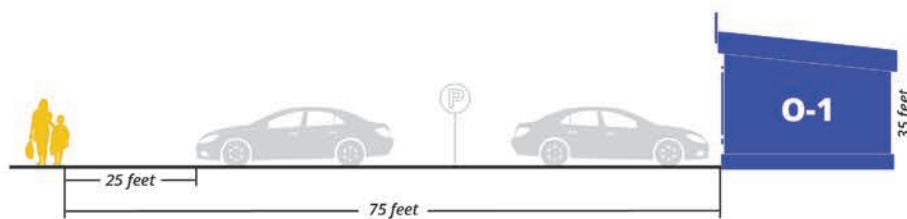
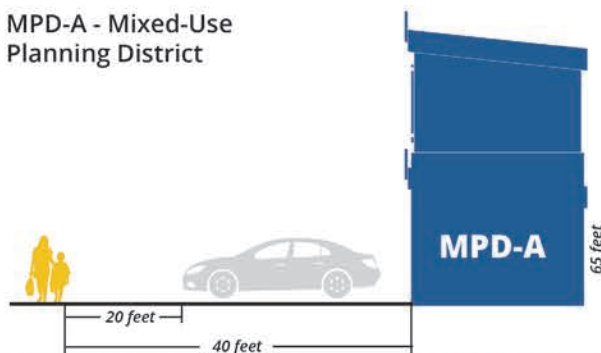
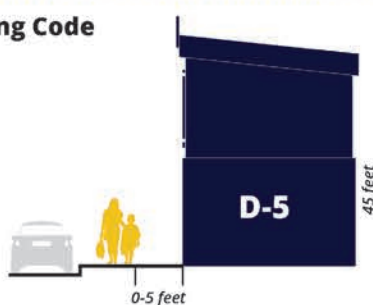
This option describes a complete re-write of select Zoning Districts, specifically those located Downtown to increase walkability. One example would be to re-write existing code sections including Commercial or Historic Commercial Districts. Another option would be to designate an overlay district for Downtown Solon such as a Pedestrian Retail Overlay (PRO). The PRO District would focus on locating buildings at the sidewalk edge to encourage the development of a more walkable mixed-use district. The Overlay District would run parallel with the current code; however, the Overlay regulations would control and supersede any areas that may be inconsistent with the current ZoningCode. It is also recommended that any Overlay District contain development incentives like reduced parking requirements, increased density, mixed-use, and faster permitting. Without such incentives, the City may never realize the desired outcomes identified in any overlay District.

Option-3 Update Portions of Zoning Code or Add New Design Standards

A third option would include changing elements, such as a reduction in parking minimums or required setbacks, within the code to help stimulate the desired form of development. Supporting adjustments to design standards could also aid in achieving the desired Community Vision. Design Standards reinforce or complement the existing character of an area and can be utilized to help maintain the style and scale of historic Districts. Design standards can take on many forms, from regulating architectural styles, materials, and facade treatments-- to building patterns, parking lot locations, and pedestrian enhancements. Recommendations can vary throughout the City and be applied to different areas, allowing flexibility to match the distinct nature and features of each District. While attempting to maintain specific typologies and materials, design standards should also encourage innovation, by acknowledging the need for flexibility in response to the desires of businesses and residents.

FIGURE 14: EXAMPLE OF A PEDESTRIAN RETAIL OVERLAY OR FORM BASED CODE



FIGURE 15: REQUIRED BUILDING SETBACKS IMPACT ON WALKABILITY & URBAN FORM**CURRENT DOWNTOWN SOLOON ZONING REQUIREMENTS****C-1 Historic Commercial****C-2 Restricted Commercial & C-3 Commercial****C-6 General Commercial****O-1 General Office****MPD-A - Mixed-Use Planning District****First & Main Zoning Code Hudson, Ohio**



03.11






Complete & Green Streets

At their core, roadways are designed to move people from one location to another, whether by car, bike, bus, or walking. Many of the previous recommendations identified ways to retrofit existing streets to include active transportation features or incorporate traffic calming measures into all new roadway projects. One method to ensure those efforts become the rule and not the exception is to adopt a 'complete and green streets' policy in Solon. With a complete and green streets policy in place, all road and infrastructure projects will be designed and constructed with the safety, mobility, and accessibility needs of all users in mind. Further stormwater management features will capture and allow stormwater to runoff to soak into the ground in a more natural manner. Complete and Green Streets provide a wealth of benefits, such as reduced infrastructure costs and improved stormwater management, and also help beautify streetscapes as well. A Complete and Green Streets policy will help Solon create a better transportation system that is more equitable, balanced, and effective and which offers every user of the public right-of-way safe, connected, and sustainable multi-modal options.



Source: PAWalkworks

Action Steps:

-  Research existing complete and Green Street Policies in Cleveland Heights, Cleveland, & NOACA for examples of best practices
-  Evaluate existing code to determine what current regulations do not support complete and green street goals
-  Engage city departments and regional organizations (RTA, NEORS) to identify feasibility, cost, or implementation concerns
-  Create draft policy for review to ensure goals are met and concerns addressed
-  Create public campaign before and during implementation to explain results and benefits

Details:

Priority:

- ☐ High
 ☒ Medium
 ☐ Low


Timeline

- ☐ Near-Term
 ☒ Mid-Term
 ☐ Long-Term

Costs & Funding

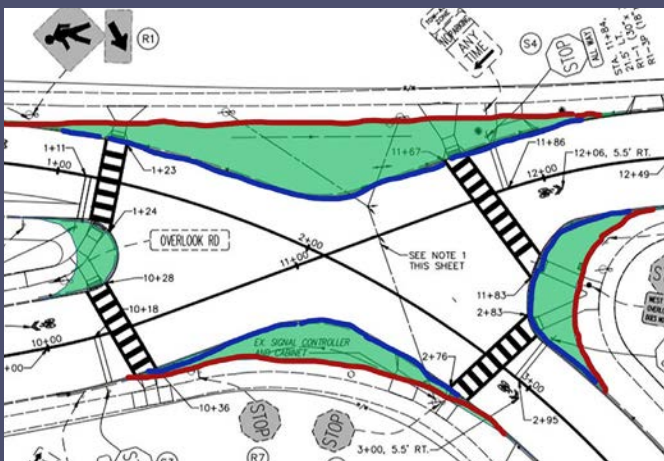
- ☒ High
 ☐ Medium
 ☐ Low

Project Leaders & Partners

-  City of Solon, NOACA, Cuyahoga County Planning Commission

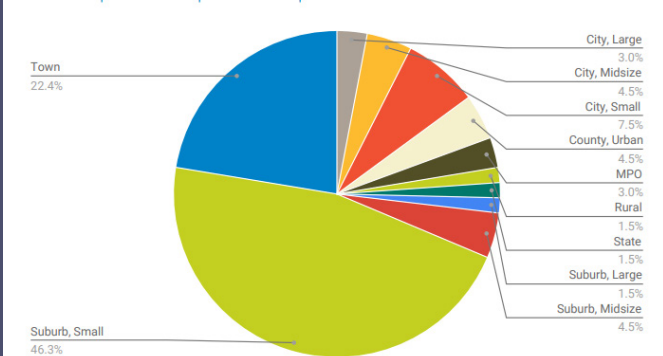


Source: Ideastream



Source: Ideastream

Places that passed Complete Streets policies in 2018⁵



Source: Smart Growth America

Complete & Green Streets Policy Cleveland Heights, Ohio

In May 2018, Cleveland Heights City Council approved a Complete and Green Streets Policy for the Community. The policy codifies the City's commitment to the comfort and safety of all users of streets with special attention to the least mobile and most vulnerable. Of 66 Complete Streets policies submitted in 2018, the National Complete Streets Coalition of Smart Growth America chose Cleveland Heights' policy as #1 in their Best Complete Streets Policies of 2018 report (receiving 91 points).

The policy focuses on equity, attention to detail, and binding language to spur implementation. The formation of a Complete and Green Streets Policy demonstrates that the City of Cleveland Heights is "committed to improving the economic, environmental, and social well-being of its residents; and providing safe and desirable travel for users of all ages and abilities."

The Complete and Green Streets program includes additional features like bike parking, repair stations, and amenities at Cedar-Lee, Cedar-Fairmount, Coventry, Cedar-Taylor, North Park, Edgemoor at Overlook, and Noble Road. Many current projects in the city are already incorporating the Complete and Green Streets recommendations.



03.12

New Technology

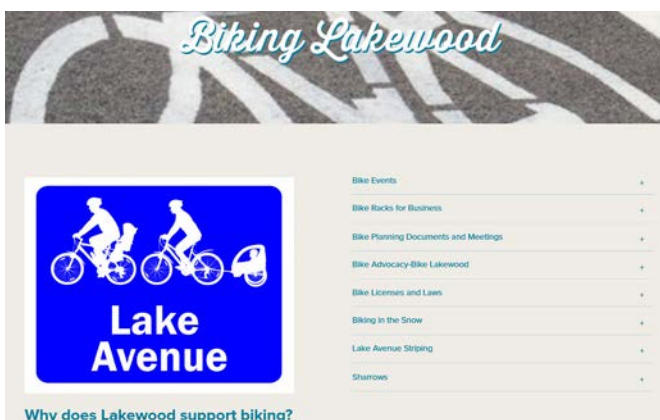
Web & Mobile Apps

Keeping residents up to date on what walk and bike events are happening is a key element in generating interest in active transportation. In addition, regularly updating the community on the status of projects or what future meetings they might attend to advocate for projects is also important. Solon, like many other communities, should establish a webpage where this type of information can be found. This website can be aided in development through a Bike Solon chapter or a Bike and Pedestrian Advisory Board.

Since Solon occupies over 20 square miles, locating and documenting where infrastructure issues are can also be a challenge. Technology can allow residents, visitors, and businesses to accurately pinpoint where issues exist in real time, and can drastically help Solon keep up with maintenance. Many communities have launched online GIS mapping software or mobile apps to allow users greater access to community services and information. Through these web portals or apps residents can report problems with sidewalks and streets, including any potential 'near misses' at dangerous intersections. Many platforms also include the ability to upload photos from a smartphone. Solon should work to integrate similar applications to help make public information and community resources more streamlined and accessible.







Source: Bike Cleveland



Source: City of Lakewood

Action Steps:

-  Develop webpage specific to pedestrian and bike projects and improvements in Solon
-  Use webpage as location for project updates and information on status of any new developments
-  Use webpage as source for information on all bike and pedestrian events and programs in the community including SRTS and Bike Solon events
-  Create online portal, GIS map, and/or mobile application for residents to report and upload photos of issues occurring on bike lanes, trails, sidewalks, and roads throughout Solon.

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



City of Solon



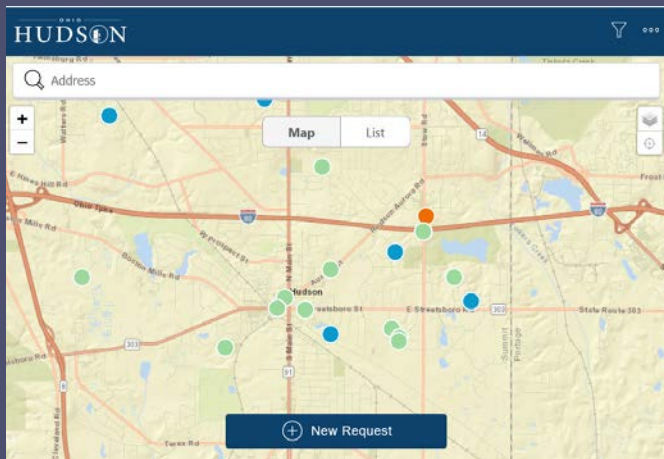
Source: City of Hudson

Engage Hudson - Hudson, Ohio

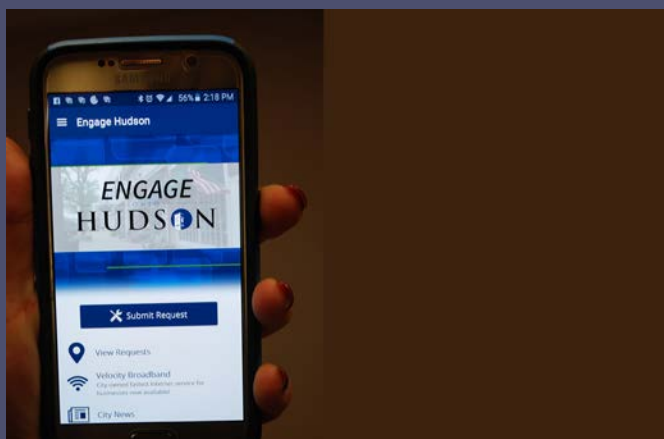
In 2015 the City of Hudson launched “Engage Hudson,” a mobile app designed to allow users greater access to Hudson’s services through iPhone and Android platforms. Users of the app can identify and submit issues and submit service requests directly to the City. This allows requests for service to be responded to quickly and efficiently. Once the request is in the system, users are notified as problems are addressed and completed. Anyone can visit the City’s website and view submitted, reviewed, and completed requests in real time.

Through Engage Hudson, residents can report a pothole, report problems with streets or sidewalks and notify the City of other service-related issues. If residents don’t have a smartphone or don’t want to download the app, they can create the same convenient work request through the City’s website.

The Engage Hudson phone app also offers quick access to City news, key seasonal service programs, social media pages and other information. “Smartphones have transformed the way we live our lives, so it is imperative that Hudson use the latest technologies to make it easier to engage our citizens and solve problems,” said City Manager Jane Howington. “This is all part of our ongoing effort to make information, data and services transparent and available to all our citizens. It is just one of a number of future technologies we hope to add that will encourage citizen engagement in our local government.”



Source: City of Hudson



Source: City of Hudson



03.12

Shared Micromobility

Bike and scooter share, or “micromobility” programs, are becoming popular choices for transportation and recreation. In some cases, these programs have filled a gap in mobility options including ‘first mile, last mile’ trips. In general, ‘first mile, last mile’ refers to the problem many travelers face, especially those using public transit. The distance between the transit stops, parking garage, or trail, to any destination may be longer than desired or requires traveling on facilities that do not meet the users comfort level. Micromobility has become a readily available tool to not only meet ‘first mile, last mile’ needs but also the demands of a wide group of users who can now access multiple destinations in an area much more quickly and easily. This is changing perceptions on mobility and the infrastructure required to provide safe operation for all users. These programs are increasing in reach and demand each year by expanding connections between employees and businesses or residents and entertainment. Though Solon might not be ready for any shared micromobility program at this time, the City should diligently work to establish potential locations, necessary application or permit processes, licensing requirements, and potential sponsorship or partnership opportunities as needed.








Source: Cleveland.com



Source: Cleveland.com

Action Steps:

-  Work with regional partners to establish processes for applications, permits, licenses, & regulations
-  Identify potential locations for pilot projects when network and micromobility programs expand beyond urban core
-  Work on integrating micromobility program with RTA service and stops to improve first mile & last mile connections for transit riders
-  Work on establishing a public/private partnership to help sponsor or fund the implementation or ongoing maintenance of bike share programs
-  Identify any additional funding sources available and city departments responsible for implementation & maintenance of programs

Details:

Priority:



High



Medium



Low

Timeline



Near-Term



Mid-Term



Long-Term

Costs & Funding



High



Medium



Low

Project Leaders & Partners



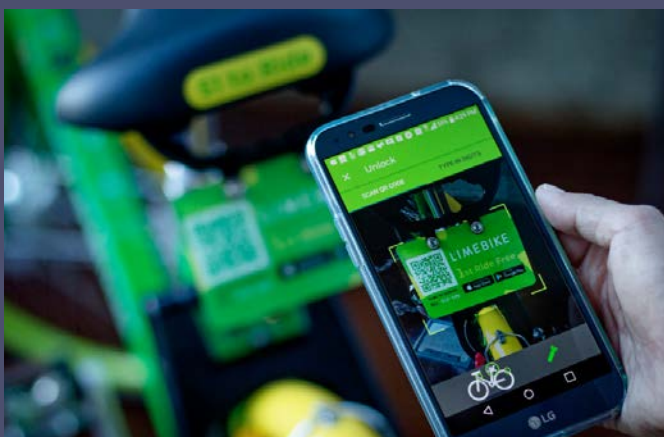
City of Solon, City of Cleveland, Bike Cleveland, Cuyahoga County Department of Sustainability, Cuyahoga County Planning Commission



Source: LimeBikes



Source: LimeBikes



Source: LimeBikes

Lime Bike Share Pilot - Dublin, Ohio

In 2018 the City of Dublin, Ohio partnered with Lime Bike to test out a dockless pilot bike share program in the Columbus suburb. This program didn't include permanent docking stations, allowing users more flexibility in where they could pick up or drop off a bicycle. Dockless bike-sharing can pose challenges, and some cities have banned them because bikes have been left in awkward spaces cluttering the sidewalk. Rides cost \$1 for 30 minutes, or 50 cents for Dublin students with a valid ID. Once riders reach their destination it was suggested they park the bike in a safe area where it does not block traffic, pedestrians, or encroach on private property. Lime tracked bike usage to ensure that enough bikes were available in higher demand areas such as downtown, giving people access to parks, schools, businesses, and events.

Lime rolled out 100 bikes in Dublin, its first location in Ohio, with hopes of expanding into other areas. The program was free to the City, since it was a pilot to test the feasibility of dockless bike sharing in a suburb. Though the pilot program ended in 2019, the City was able to gather valuable data and information on peak usage, routes, and overall demand. Dublin was a good location to test this program because of the area's expanding network of safe biking facilities and residents' familiarity with bike share, having the CoGo bike system available in nearby Columbus. Expansion of CoGo is also an option for Dublin and other suburban communities in the future. CoGoBike has recently expanded service to Upper Arlington and is expected to grow even further in the Columbus region. Solon could learn about from this Dublin example, due to the pilot program, Dublin is now well positioned to capitalize on any future growth and technological advances in micromobility in the future.



03.12

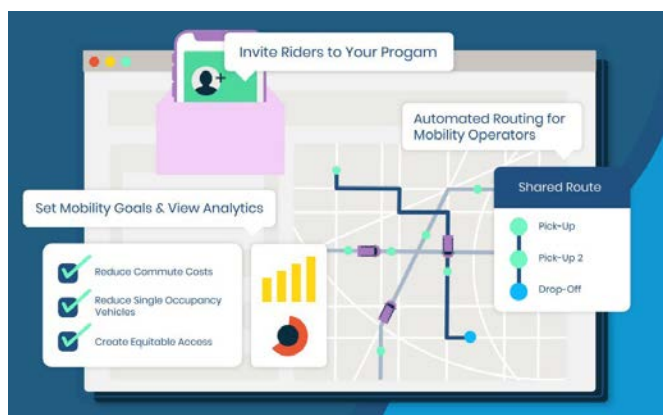
Shared Transportation

Solon is one of Cuyahoga County's largest job hubs, resulting from a decades-long pattern of industrial, commercial, and residential development migrating outward from the urban core. This spread has not resulted in meaningful job or population increases, but has instead created situations where jobs are located farther and farther away from where any potential workforce lives. This cuts off some residents from job opportunities, or makes the ownership of an automobile a requirement for employment in Solon.

Improving mobility for these potential employees who have been left behind, or for whom public transportation to work is the only reliable option, is critical for the businesses in Solon who need to attract talent and fill vacant positions. It is also critical for those individuals and families who need better access to the job opportunities that exist in Solon. Many technological advancements and pilot programs, including the Paradox Prize, have worked to fill this gap and reduce the spatial mismatch between jobs and people. The City of Solon should work with local business partners Nestle and Swagelok and regional partners at RTA to continually test efforts that may provide greater access to jobs in Solon.








Source: Share Mobility



Source: Share Mobility

Action Steps:

-  Collaborate with RTA on the potential expansion of RTA service to include more of downtown Solon including Som Center Road.
-  Continue to expand and utilize work of Solon Mobility Task Force as opportunity to expand job access for transit users
-  Partner with RTA and utilize their expertise, resources, and potential ConnectWork program to improve first mile & last mile connections
-  Research existing examples of shuttle services and other job connection services in Ohio regions including paradox prize winners (see p. 169)
-  Partner with existing businesses and agencies to survey employees and employers to identify best opportunities to increase job access

Details:

Priority:

- ☐ High
 ☒ Medium
 ☐ Low


Timeline

- ☒ Near-Term
 ☐ Mid-Term
 ☐ Long-Term

Costs & Funding

- ☒ High
 ☐ Medium
 ☐ Low

Project Leaders & Partners

-  City of Solon, ODOT, GCRTA, Cuyahoga County Planning Commission, Nestle, Swagelok



Source: Laketrans

LakeTran - Mentor, Ohio

LakeTran is the Regional Transit Authority in Lake County. It provides three different types of service: local fixed routes; commuter express routes; and Dial-a-Ride. Working closely with large employers such as Lincoln Electric and Component Repair Technologies along Tyler Boulevard (a major manufacturing hub in Lake County), LakeTran was awarded \$75,000 through the Paradox Prize Program to tailor transportation programs to get employees to these job sites in effort to attract and retain employees where transportation to and from the workplace remains a consistent barrier.

These improvements include growth of its Dial-a-Ride and Route 8 & 9 services to provide more on-demand service from underserved areas to the more than 300 employers located along or near Tyler Boulevard.

The Dial-a-Ride programs include door-to-door van transportation (available Monday through Friday until 8pm, and Saturday until 7pm) that can be booked online or by phone from 1 to 12 days in advance. This service, combined with Routes 8 and 9, connects major destinations, and equipped with bike racks, stop cords, destination signs, and a fare box.

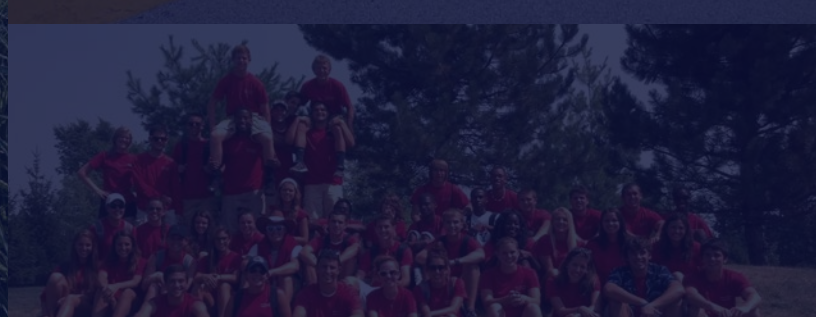


Section 04 | Implementation Strategies



“Analyses of more than **45,000 residential property sales near trails** in Franklin and Delaware Counties show there are **no adverse effects** on prices associated with proximity to trails.”

- Mid-Ohio Regional Planning Commission (MORPC), Central Ohio Greenways and Trails Group (COG), The Impacts of Central Ohio Trails, 2015



Implementation Strategies

Finishing the planning process and developing the Solon Connects Plan is just the first step in a much longer, and in many cases, a more challenging aspect of improving mobility in Solon. The Implementation Strategies section aims to inform city leaders and the public about how they can successfully transition from plan to implementation using public input, partnerships, and a variety of funding resources available. Moving from vision to implementation requires commitments of time and resources and is much more of a marathon than a sprint. The Solon Connects Plan includes recommendations to meet Solon’s mobility challenges and opportunities, and it is up to the City, its partners, and the larger community to move from idea to action during the implementation phase. As part of the planning process, it is necessary to identify ‘early wins’, or projects with significant support that can be built relatively quickly and easily. These projects help build momentum towards more long-term goals while showing residents that Solon is committed to active transportation and implementing recommendations included in the Plan.

The Plan is intended to be flexible when it comes to recommendations and implementation strategies. It is designed to provide the community a menu of different options to choose from to help achieve its goals. In addition, what might be considered a low priority now could become a higher priority later as circumstances and opinions change, projects get built, or technology and funding expand. Changes in community support and available resources should be constantly reevaluated against the recommendations as they arise. This flexibility will allow the community to take advantage of opportunities and potential cost savings when constructing projects or evaluating new policies and programs. Results are the goal of any planning process and the steps to get there can vary. However, there are a few key steps and critical features that should be part of any implementation strategy. This section includes a summary of those components: partnerships, priorities, costs, timing, and funding. Each component is described in detail, as is its application to the Solon Connects Plan. The Solon Connects Plan is intended to be a valuable tool, resource, and reference for the City of Solon — as well as property owners and developers — when deciding where, when, and how to make investments and act upon recommendations.



04.1

Background & Partners

Overview

The first step to Implementation is often the most overwhelming. Where to start? Who should do what? While every community's path to implementation is different, some strategies remain the same regardless of the project or recommendation. The following pages cover some of those key strategies that should be considered: recognizing potential partners, setting priorities, establishing timelines, developing cost estimates, identifying funding resources, and monitoring outcomes. While all of these various strategies have been summarized for each recommendation in the Solon Connects Plan, it is important to recognize that they only serve as a guide and are intended to be updated as circumstances change.

Partners

Implementation is the result of hard work and collaboration with a variety of departments, agencies, staff members, and groups. The Solon Connects Plan helps identify potential opportunities for engaging and coordinating with local and regional entities. It is critical to recognize that some factors that impact Solon are beyond its control, making it more important than ever to forge and maintain supportive partnerships with those who can provide assistance. In many cases, the construction of projects or the establishment of programs cannot be completed by the City alone. These efforts might require aid or support from other communities or organizations. In a region facing declining populations, collaboration is a must. This assistance can come in many different forms from technical support to funding for construction. The City of Solon has the legal authority and jurisdiction to implement many of the recommendations in the Plan, and will in many cases act as the lead agency responsible. With this in mind, the City needs to serve as the project champion and leverage its local knowledge and resources when communicating and/or collaborating with other internal and external groups during the development of plans and projects. Working in partnership will help maximize the knowledge, experience, and resources necessary to support active transportation improvements in the City.



Organization/Group	Departments/Programs	Additional Notes
City of Solon	Planning, Public Works, Recreation, Economic Development	Legal jurisdiction and local authority to incorporate walk and bike facilities into city owned or city sponsored projects as part of its local infrastructure program.
Ohio Department of Transportation (ODOT)	Safe Routes to School, Walk & Bike Ohio, State and US Bike Routes	ODOT has legal authority over state routes and highways, and works to implement walk and bike elements into projects. They can also provide a variety of technical assistance and resources through various programs including Safe Routes to School and Walk. Bike.Ohio.
Northeast Ohio Areawide Coordinating Agency (NOACA)	Transportation For Livable Communities (TLCI) Program, Congestion Mitigation and Air Quality Improvement Program	NOACA is the region's metropolitan transportation agency (MPO) and does not own any roadways, but does support walk and bike projects and a variety of other technical assistance and federal funding programs including (CMAQ, TLCI, etc.).
Cuyahoga County Public Works	Road & Bridge Program, 50/50 Program, Preventative Maintenance Program	Responsibility for County Road and Bridge improvements in Cuyahoga County. It allows for the inclusion of bike or pedestrian improvements on bridge reconstruction or other roadway improvement programs
Cuyahoga County Planning Commission	Master Planning Grant Program, Healthy Urban Tree Canopy Program, DOPWIC, SCIP	Provides technical planning and zoning assistance including the administration of the County's healthy urban tree canopy grant program
Ohio Department of Natural Resources (ODNR)	Clean Ohio Trails Fund	This Ohio program works to improve outdoor recreational opportunities by funding trails for outdoor pursuits including land acquisition of all kinds.
Greater Cleveland Regional Transit Authority (GCRTA)	Disadvantaged Business Enterprise (DBE) Program, Commuter Advantage Program, U-Pass Program	Regional Transit Agency responsible for RTA access and expansion in Solon
Cleveland Metroparks	Planning & Real Estate	Regional Park Agency Responsible for Hawthorn Parkway and South Chagrin Reservations located in Solon
Bike Cleveland	Community events, education, advocacy, and bike parking programs	Bike Advocacy Group working to support safer and more inclusive transportation
Federal Representatives	RAISE Program Funding, Earmarks	Funding through the RAISE Program or advocacy to federal representatives for project earmarks from the federal budget
State Representatives	Ohio Trails Caucus	Funding through the State Capital Budget
Non-Profits	West Creek Conservancy, Western Reserve Land Conservancy	
Other Groups & Organizations	Solon Chamber of Commerce, Nestle, Swagelok, local businesses	



Priority Projects

The Solon Connects Plan has identified a comprehensive list of recommendations that can be implemented to improve connectivity and active transportation for everyone in Solon. After developing these recommendations through significant analysis and public outreach, the first step towards implementation is to prioritize them. Prioritizing projects helps establish a potential order for the construction of projects, which can be based on variety of inputs either determined through the planning process or established by the agency responsible for implementation. As mentioned earlier, cities and organizations have limited funding streams that may be limited to specific project types or to competitive application processes. Prioritization can help the City of Solon determine which projects provide the greatest benefits to the largest number of residents, or which recommendations have gathered the most support through stakeholder engagement activities. Prioritization can help the City determine which projects they should immediately allocate capital improvement dollars towards or match with existing funding sources to efficiently execute active transportation infrastructure investments.

Two different methodologies can be used to help prioritize recommendations: a qualitative approach; and a quantitative approach. The qualitative approach is a much simpler method and works best when trying to compare recommendations that include both physical projects and programs like these in the Solon Connects Plan. The quantitative approach to prioritization is a much more complex method that can use a variety of Geographic Information System (GIS) data and analysis to score projects on a variety of predetermined criteria, including safety, feasibility, cost, or potential benefits to those residents in most need. Data for each criterion can be publicly available but in some cases, might require additional analysis or study. The qualitative methodology is a much less data-intensive exercise that, in most cases, involves simple voting activities (online or in-person) done as part of the planning process. Due to the nature of recommendations in the Solon Connects Plan (Physical Improvements, Policies, and Programs) and the difficulty in evenly applying scoring criteria (a new trail versus a Safe Routes to School program), the quantitative approach was not used. However, the Cuyahoga Greenways Plan (www.cuyahogagreenways.org) provides a good example of how a quantitative approach could be applied to future projects.

The Solon Connects Plan used the qualitative approach to build the following maps and lists of priority projects. Project Team members, focus group members, and the public-- through online surveys, online GIS mapping tools, and online interactive MURAL exercises - ranked the various recommendations from highest priority to lowest priority, or from most important to the least important. These projects not only represent those that have significant community support, but also provide significant benefits in terms of safety and accessibility, including increased access to jobs, schools, parks, and transit. These benefits can be seen when comparing the number of households with access to an all ages and abilities facility within a ¼ mile from their home both before and after implementation of the priority projects.

Prioritizing Solon Connects

Prioritizing Recommendations for the Solon Connects Plan was done using a variety of methods including online surveys and GIS web mapping tools, thus giving residents and stakeholders opportunities to vote for those recommendations or projects they considered high priorities or most important to improving connectivity in Solon. The results were used to identify high priority recommendations included in the plan.

FIGURE 16: ARC GIS ONLINE PROJECT COMMENT MAP

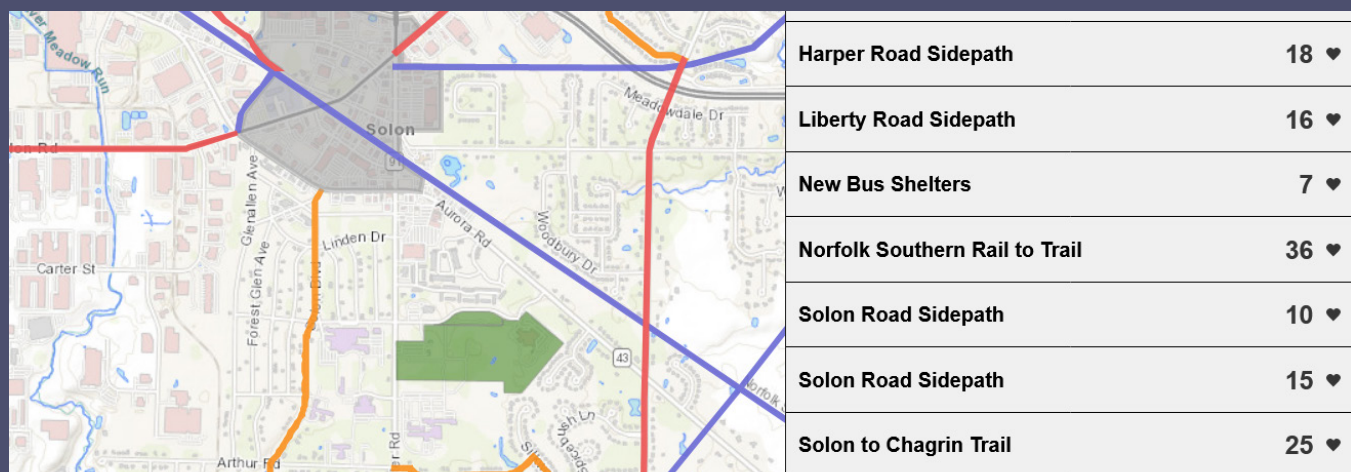


FIGURE 17: ONLINE SURVEY

3 → How important is it for Solon to install Bike Boulevards on specific neighborhood roadways within Solon?

1

2

3

4

5

Not Important

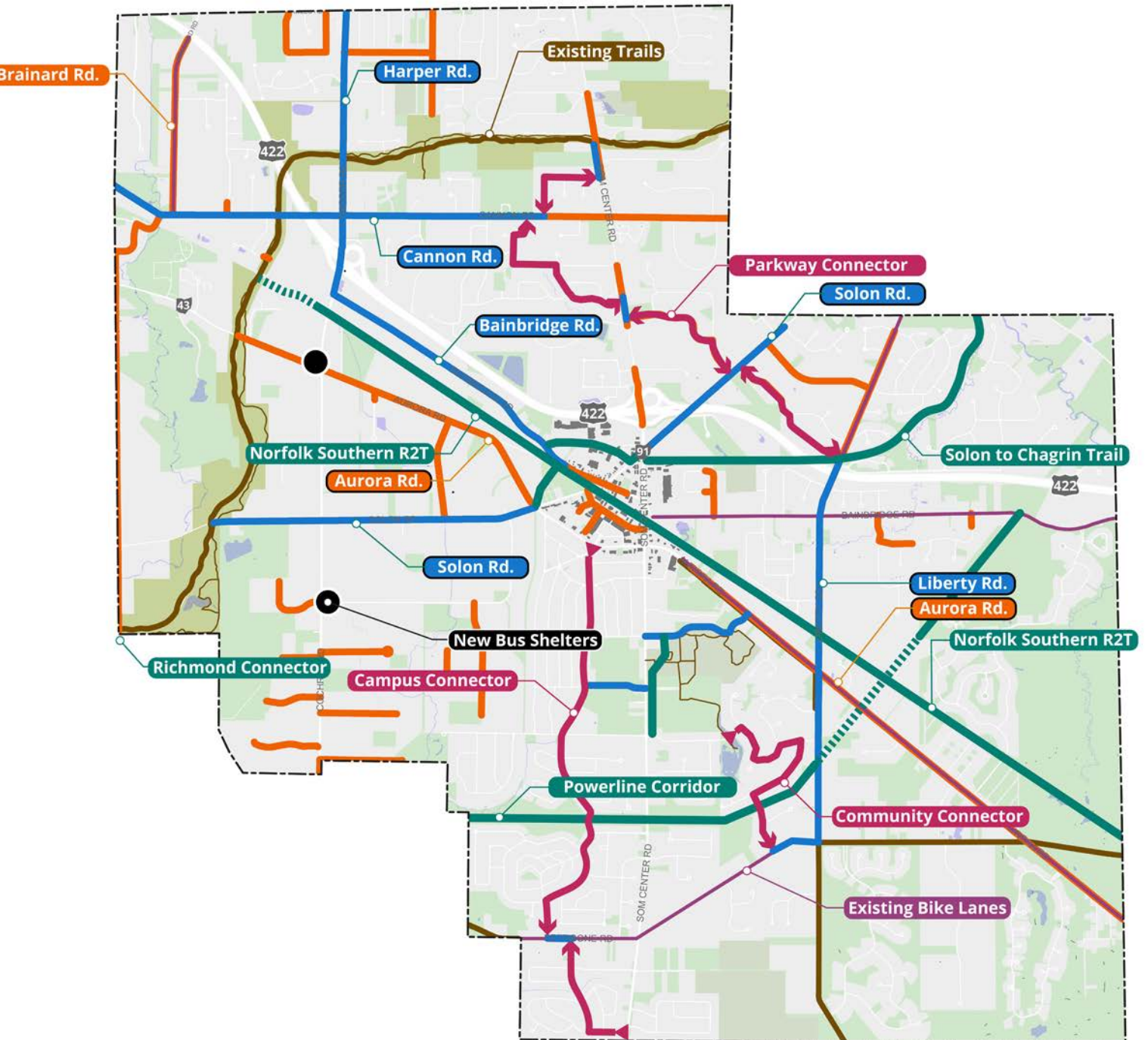
Neutral

Very Important

Summary of High Priority Recommendations



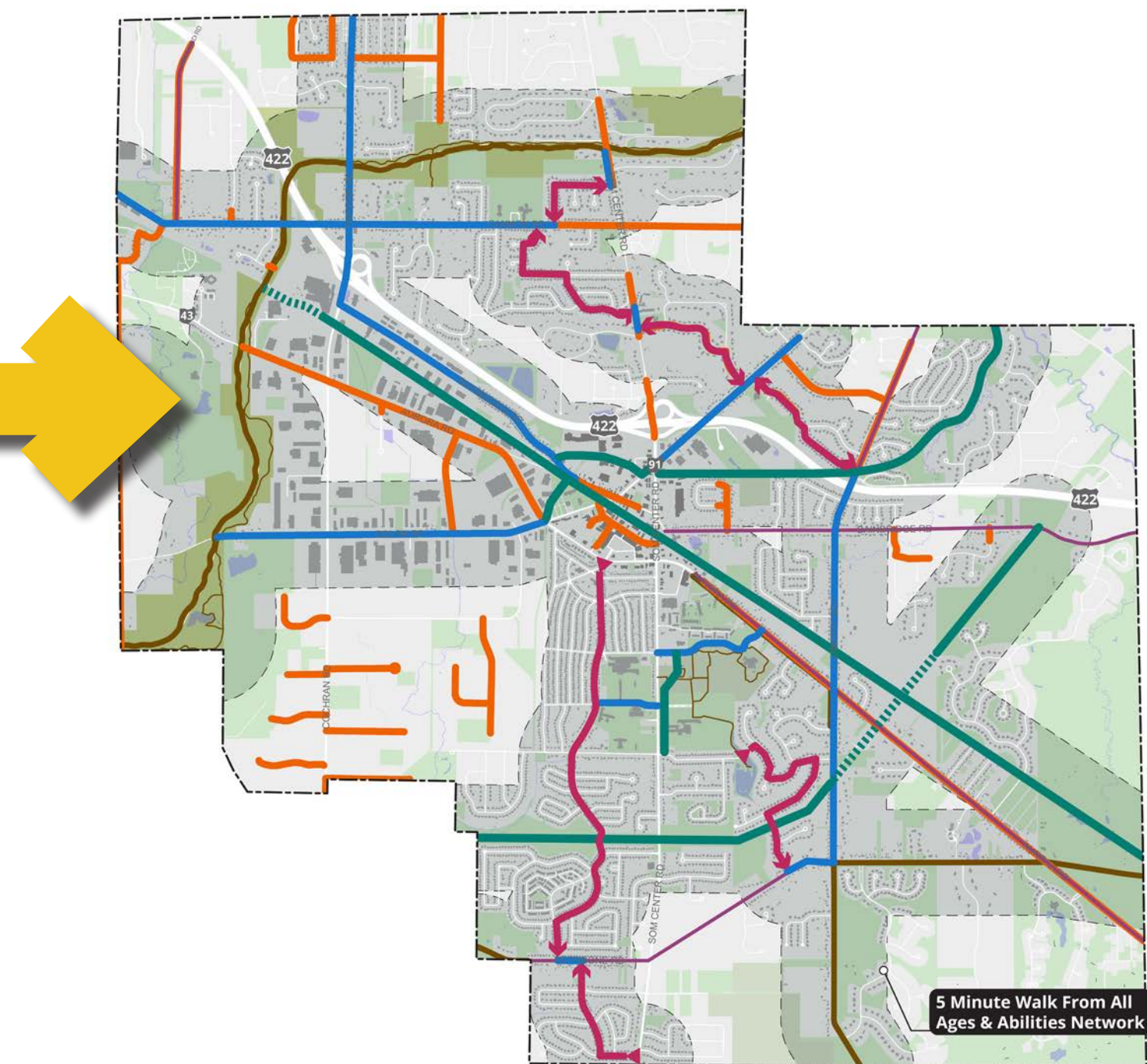
MAP 24: PRIORITY SIDEWALK, BIKE, TRAIL, & BUS SHELTER PROJECTS 



MAP 25: CURRENT HOMES ¼ MILE FROM AN ALL AGES FACILITY 



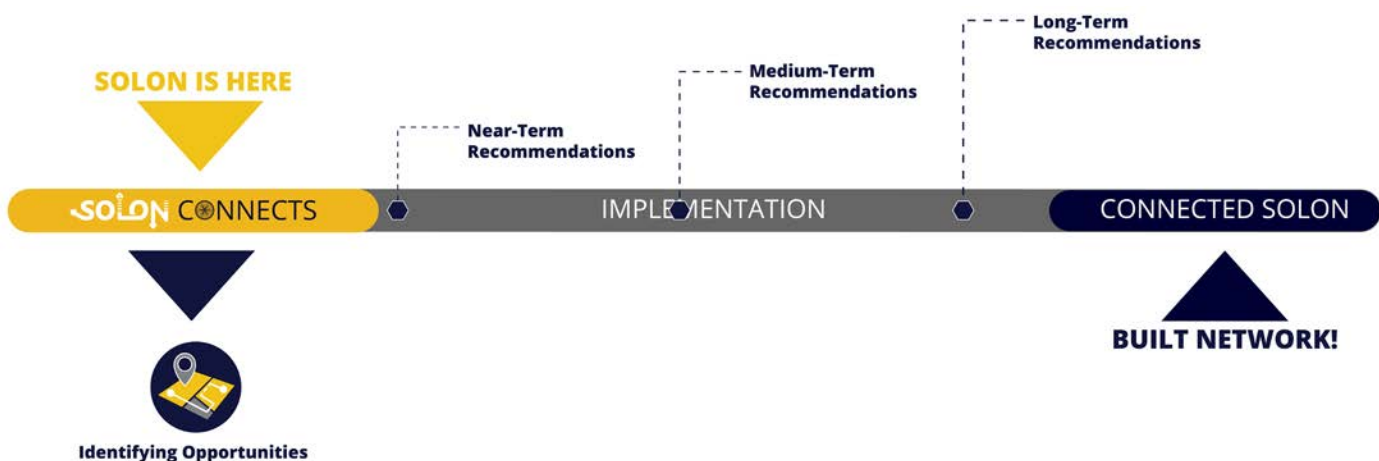
MAP 26: HOMES ¼ MILE FROM AN ALL AGES FACILITY AFTER PRIORITY PROJECT IMPLEMENTATION 



Scheduling Projects

Focusing efforts on executing high priority recommendations – those that score very high, or gather significant community support through public engagement - is one manner by which to implement the Solon Connects Plan. Ideally, building these projects would be easier than focusing on lower-ranked projects. Unfortunately, this is not always the case. Many times those recommendations that rank high during the prioritization process are not nearly ready for construction, and require further study, design, or funding. In some instances, significant barriers may already exist, thus preventing these recommendations from moving forward. Therefore, it is important to both rank projects and set time frames based upon local information, support, and resources. Placing recommendations into near-term, medium-term, and long-term time frames helps maximize resources and manage expectations. It is important however, to maintain flexibility when estimating time frames. In many cases unexpected challenges (recession) or opportunities (grant awards) may require the City to shuffle long-term and near-term projects to better coordinate and collaborate on those opportunities. Having a project phasing strategy will allow the City to be flexible and accomplish goals early. This will build momentum and maintain community support for the Solon Connects Plan.

Near-term recommendations are often considered the easiest options to implement. These can be high priorities, but are mainly those recommendations that are simple to execute because they can be completed in-house using existing resources, have low costs of construction, or lack significant challenges to execution. Sometimes considered boring or not as flashy as other higher priorities, near-term recommendations are still a significant part of any implementation strategy. These projects may serve those in most need, solve a significant transportation issue, or simply demonstrate a commitment to executing the Plan and supporting active transportation in Solon. Medium-term recommendations often build upon the results of near-term projects, and work on expanding the network using additional resources and funding. As with Near-term recommendations, many Medium-term projects can also score high during the prioritization process. Long-term projects can sometimes be the most dramatic and iconic of recommendations, resulting in high-cost projects with significant phasing and timelines. These projects can also include smaller recommendations - like micro-mobility - that Solon might not be ready for, but still remain a significant component of the Solon Connects Plan. No matter the significance, each project should build upon efforts from previous phases, and become key components of a comprehensive and multi-modal implementation strategy.



Summary of Near-Term Recommendations



Project Cost Estimates

Many near-term recommendations include those that can be implemented quickly or at a fairly low cost to the City. Many higher priority projects may include more 'iconic' projects that require additional design and feasibility studies after the Solon Connects Plan is complete. Developing conceptual designs and layouts for these projects is one successful way to more accurately determine what exact resources and funding will be required. In addition to delivering preliminary cost estimates, conceptual designs can also help communicate to residents what elements are included in the project. Like temporary projects, these preliminary designs are critical pieces of the implementation process because they illustrate valuable and detailed information to residents and leaders about what exactly is included in the proposal. If a preliminary design shows a very ambitious concept (as opposed to a more fiscally constrained version to enlist community support) leaders should be aware that residents might be disappointed if the final product - such as a trail or mixed-use development - does not live up to what was described. Therefore, it is important to identify lower cost options early so that other projects can go through more detailed design and feasibility studies to determine whether any fiscal constraints might limit the recommendation from reaching its full potential. Once constraints are identified, the City can use various funding programs or partnerships to help fill funding. The Plan has identified three levels of cost estimates (Low, Medium, and High) to identify those recommendations that may provide immediate opportunities. These projects are feasible using current resources and can build momentum, while other recommendations undergo additional studies to determine what additional resources are required. However, it should be understood that this Plan is intended to act as a guide and costs of materials and labor can vary.

FIGURE 18: SAMPLE IMPROVEMENT COSTS

Improvement Type	Unit	Estimated Cost*
Street painting (Bikelanes, Pavement Marking)	Mile	\$100,000.00
Sidewalk (Remove and Replace)	Sq Foot	\$10.00
Sidewalk (New)	Sq Foot	\$8.00
Multi-Use Path/Trail (Simple)	Mile	\$1,000,000.00
Multi-Use Path/Trail (Avg)	Mile	\$2,000,000.00
Multi-Use Path/Trail (Complex)	Mile	\$4,000,000.00
Monument Signs	Each	\$8,000 - \$50,000
Wayfinding Signs	Each	\$300.00
Streetscape Minor Enhancements [#]		\$10 - \$ 50
Streetscape Major Enhancements [#]		\$275 - \$500
Bike Racks	Each	\$200.00
Streelights	Each	\$150 - \$500
Street Trees	Each	\$150 - \$400
Benches	Each	\$1,500.00
Bump Out Traffic Calming	Sq Foot	\$100.00
Raised Crosswalk	Sq Foot	\$100.00
Ladder Crosswalk	Intersection	\$10,000.00
ADA Curb Ramps	Intersection	\$12,000.00
Pedestrian Refuge Island	Each	\$20,000.00
Pedestrian Signals- RRFB	Per Crossing	\$100,000.00
Pedestrian Signals - HAWK	Intersection	\$200,000.00

* All costs are estimates only, actual costs of labor, materials, and projects can vary

Summary of Low Cost Recommendations

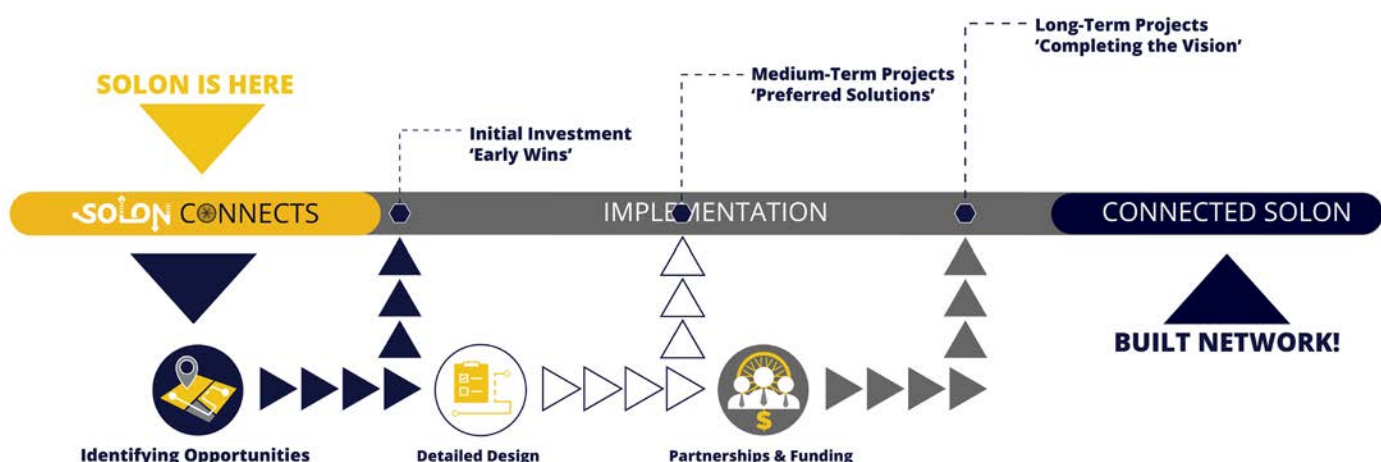


'Early Wins'

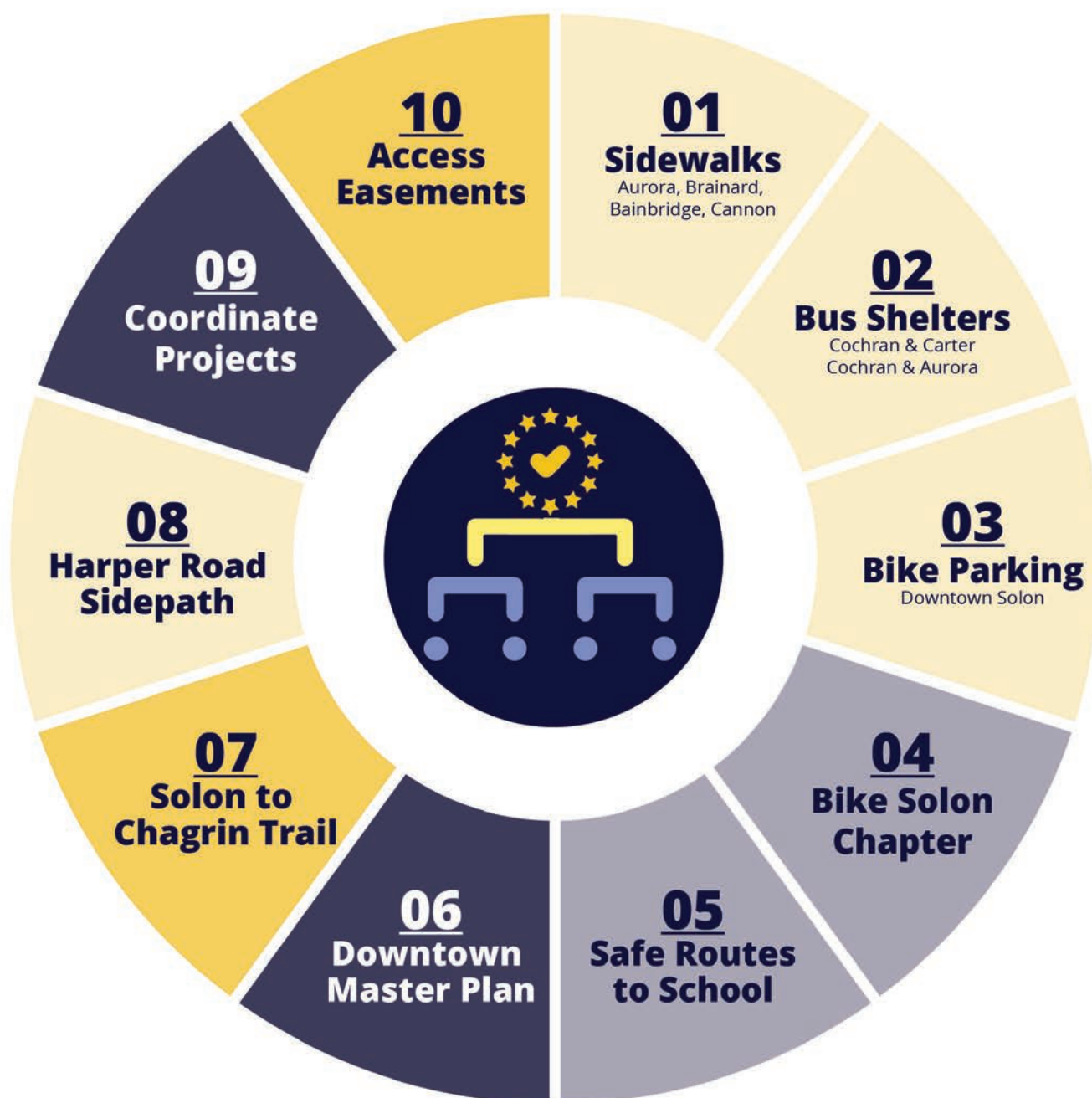
Over 80% of residents felt implementation of the Solon Connects Plan recommendations should begin immediately upon completion. To help jump start this effort, and to help the City know where to begin, the Solon Connects Plan has identified some key 'Early Wins'. These initial investments can be described as recommendations that can be accomplished in a reasonable amount of time to deliver active transportation and connectivity improvements in Solon. These projects represent those that are:

- 1. Higher Priorities**
- 2. Near-Term Opportunities**
- 3. Relatively low-cost (or have some dedicated funding in place)**

Getting "early wins" helps build momentum quickly and shows residents that leadership is working to build connectivity in Solon. These projects can help energize the community by taking advantage of existing opportunities or by working to solve current issues.



Summary of 'Early Wins'



Potential Funding Sources

Funding projects is one of the most critical and most challenging aspects of Implementation. Many organizations and Cities are facing budget constraints and very competitive grant application processes. This requires Solon to get creative and potentially rely on more local, regional, state, federal, and private funding opportunities for active transportation outside of their traditional capital improvement program. Matching projects with the appropriate funding programs and timelines provides more opportunities for cost savings through coordination and collaboration. In addition to identifying these opportunities it is also important to explore adding active

Transportation Projects

Name	Agency	Location
AARP Community Challenge Grant	AARP	https://www.aarp.org/livable-communities/community-challenge/
Clean Ohio Green Space Conservation Program	Ohio Public Works Commission/ Administered by Cuyahoga County Planning Commission	www.countyplanning.us/services/grant-programs/clean-ohio-conservation-greenspace-program/
Clean Ohio Trails Fund	Ohio Department of Natural Resources	https://ohiodnr.gov/wps/portal/gov/odnr/buy-and-apply/apply-for-grants/grants/clean-ohio-trails-fund
Cleveland Foundation Grants	Cleveland Foundation	https://www.clevelandfoundation.org/grants/impact-areas/
Congestion Mitigation and Air Quality Improvement (CMAQ) Program in Ohio	Northeast Ohio Areawide Coordinating Agency (NOACA)	https://www.noaca.org/community-assistance-center/funding-programs/congestion-mitigation-air-quality-program
Conservation Loan Program	The Conservation Fund	www.conservationfund.org/what-we-do/land-conservation-loans
Dominion Energy Charitable Foundation	Dominion Energy	https://sustainability.dominionenergy.com/community-development/philanthropy/
George Gund Foundation Grants	George Gund Foundation	https://gundfoundation.org/grantmaking/what-we-believe

transportation projects to any new infrastructure or development proposal. For example, stormwater and gas line work in new residential or commercial developments provides great opportunities to add in active transportation pieces while construction is in progress. In many cases, some of the highest priority projects are not realistic given the funding required. It is therefore important for Solon to maintain flexibility by using temporary infrastructure improvements, developing projects in phases, or exploring additional funding resources. The tables on the next pages will help the City of Solon identify some available funding opportunities and the type of projects they support to help with the implementation of recommendations included the Solon Connects Plan.

Description	Project Types
The AARP Community Challenge provides small grants to fund "quick-action" projects that can help communities become more livable for people of all ages. Applications were accepted for projects to improve housing, transportation, public space, technology ("smart cities"), civic engagement and more. Areas of focus include creating vibrant public spaces, delivering a range of transportation and mobility options, and other community improvements.	Sidewalks, Streetscapes, Transit, Trails, Bikes, Inclusiveness, Placemaking
The Clean Ohio Green Space Conservation Program funds the preservation of open spaces, sensitive ecological areas, and stream corridors. Special emphasis is given to projects that provide pedestrian or bicycle passageways between natural areas and preserves; enhance eco-tourism and economic development related to outdoor recreation in economically challenged areas.	Sidewalks, Streetscapes, Trails, Bikes, Environment
Funding for trails to Improve outdoor recreational opportunities for Ohioans	Nature, Environment, Health
The Cleveland Foundation invests in projects that invigorate Metropolitan Cleveland's neighborhoods through supportive collaborations. It supports economic and racial inclusion for residents and the provision of quality schools, transportation, and employment.	Planning, Road Safety Analysis, Safety Education, Streetscapes, Transit, Trails, Bikes
The CMAQ program supports transportation projects that to contribute air quality improvements and provide congestion relief. The Ohio Department of Transportation (ODOT) sub-allocates a portion of available CMAQ funds to Metropolitan Planning Organizations (MPO) in U.S. EPA-designated air quality areas through the Metropolitan Planning Organizations (MPO) and Large Cities Program. Bicycling and walking projects can be funded through this program because of their link to air quality improvements.	Mapping, Sidewalks, Transit, Trails, Bikes
The Conservation Loan Program offers versatile, low-interest loans to help conservation efforts of all sizes and protect land, water, and wildlife while generating jobs and and balancing human demand with the responsible use of natural resources.	Land, Conservation Easement, Trail/Park Aquisitions/ Construction, Nature Centers, Arboretums, Historic Lands
The Dominion Foundation is dedicated to improving the physical, social and economic well-being of the communities served by Dominion companies. The Foundation annually awards \$20 million to causes that protect the environment, promote education and help meet basic human needs. The Environmental Stewardship Grants program is designed to protect and preserve natural habitats, improve open spaces, and make nature accessible.	Planning, Road Safety Analysis, Safety Education, Streetscapes, Trails
Funding projects that contribute to the fight against climate change; promoting a vibrant and diverse arts community in Cleveland; supporting schools, primarily the Cleveland Municipal School District and partners, to produce engaged citizens; invest in growth and development opportunities for historically marginalized people at critical life junctures; work to achieve inclusive growth and opportunity for all of Cleveland's neighborhoods and residents.	Community Revitalization, Economic Development, Arts, Education, Environment

04.6

Name	Agency	Location
Highway Safety Improvement Program (HSIP)	Ohio Department of Transportation (ODOT)	https://www.transportation.ohio.gov/wps/portal/gov/odot/programs/highway+safety/highway-safety-improvement-program#page=1
Kresge Foundation	Kresge Foundation	https://kresge.org/opportunities
Land and Water Conservation Fund	Ohio Department of Natural Resources	https://ohiodnr.gov/wps/portal/gov/odnr/buy-and-apply/apply-for-grants/grants/lwcf_olpp
Municipal Grant Program	Cuyahoga County Department of Development	https://cuyahogacounty.us/development/municipalities/municipal-grant-program
National Recreation and Park Association (NRPA) Grants	National Recreation and Park Association (NRPA)	www.nrpa.org/grant-fundraising-resources
Nature Works	Ohio Department of Natural Resources	https://ohiodnr.gov/odnr/buy-and-apply/apply-for-grants/grants/natureworks
People for Bikes Grant	People for Bikes	https://www.peopleforbikes.org/grants
Pilot Program for Transit-Oriented Development Planning – Section 20005(b)	Federal Transportation Administration	https://www.transit.dot.gov/TODPilot
RAISE Discretionary Grants	U.S. Department of Transportation	https://www.transportation.gov/RAISEgrants
Recreational Trails Program	Ohio Department of Natural Resources	https://ohiodnr.gov/wps/portal/gov/odnr/buy-and-apply/apply-for-grants/grants/recreational-trails-program
Rivers, Trails, and Conservation Assistance Program	National Park Service (NPS)	www.nps.gov/orgs/rtca/index.htm
Robert Wood Johnson Foundation Grants	Robert Wood Johnson Foundation	www.rwjf.org/en/how-we-work/grants/funding-opportunities.html

Descriptionz	Project Types
<p>HSIP funds are available for safety projects aimed at reducing traffic fatalities and serious injuries. Bike lanes, roadway shoulders, crosswalks, intersection improvements, underpasses and signs are examples of eligible projects. Projects in high-crash locations are most likely to receive funding. States that have identified bicycle safety and pedestrian safety as Emphasis Areas are more likely to fund bicycle and pedestrian safety projects</p>	<p>Road Safety Analysis, Sidewalks, Trails, On Road Bike Facilities, Transportation</p>
<p>The Kresge Foundation provides grants to nonprofit organizations and government agencies seeking financial assistance for projects that contribute to improving health at the community level, including those that promote the use of new financial models to achieve cost-effective solutions. The goal of these grants is to create a comprehensive system that improves health outcomes, promotes health equity, reduces per-capita health costs, remove barriers to health and offers the greatest promise for adoption on a larger scale.</p>	<p>Community, Health, education, Planning, Road Safety Analysis, Safety Education, Sidewalks, Streetscapes, Transit, Bikes</p>
<p>Provides reimbursement assistance for state and local government subdivisions (townships, villages, cities, counties, park districts, joint recreation districts) for the acquisition, development, and rehabilitation of recreational areas.</p>	<p>Nature, environment, health, Planning, Trails</p>
<p>Cuyahoga County's Municipal Grant Program awards grants up to \$150,000 to our municipal governments for projects that improve their community. The Municipal Grant Program makes awards to urban county communities to help strengthen cities, encourage regional collaboration, and improve quality of life for County residents.</p>	<p>Community Master Plans, Housing & Commercial Demolition, Infrastructure, Public Safety, Streetscapes</p>
<p>NRPA routinely partners with foundations to provide grants for projects in parks, such as the Walk With Ease Grant, which is a partnership between the NRPA and the Centers for Disease Control, or the NFL Play 60 After-School Kick Off Grant, a partnership with the NFL Network to fund fields, equipment and staff</p>	<p>Road Safety Analysis, Safety Education, Sidewalks, Transit, Trails, Bikes</p>
<p>Acquisition, development, and rehabilitation of recreational areas</p>	<p>Nature, environment, health</p>
<p>People for Bikes Grants support bicycle infrastructure projects and advocacy initiatives that make it easier and safer for all people to ride. Most grant funds are awarded towards infrastructure projects such as bike paths, lanes, trails, and bridges, and end-of-trip facilities such as bike racks, bike parking, and bike storage.</p>	<p>Transit, Trails, Bikes</p>
<p>Provides funding to local communities to integrate land use and transportation planning with a new fixed gateway or core capacity transit capital investment</p>	<p>Transportation</p>
<p>Projects for RAISE funding is evaluated based on merit criteria that include safety, environmental sustainability, quality of life, economic competitiveness, state of good repair, innovation, and partnership. Within these criteria, the Department will prioritize projects that can demonstrate improvements to racial equity, reduce impacts of climate change and create good-paying jobs.</p>	<p>Transportation, Planning, Infrastructure</p>
<p>Funding for development of urban trail linkages, trail head and trailside facilities; maintenance of existing trails; restoration of trail areas damaged by usage; improving access for people with disabilities; acquisition of easements and property; development and construction of new trails; environment and safety education programs</p>	<p>Nature, Environment, Health, Transportation, Sidewalks, Trails, Bikes</p>
<p>This program, administered by the National Park Service, helps to connect Americans to their parks, trails, rivers, and other places. When a community asks for assistance with a project, NPS staff provides free, on-location facilitation and planning expertise from conception to completion. Assistance can include visioning and planning, developing concept plans for trails, parks and natural areas, setting priorities and identifying funding sources.</p>	<p>Planning, Road Safety Analysis, Safety Education, Nature, environment, health</p>
<p>The Robert Wood Johnson Foundation provides grants for projects that improve community health and the health care system with a focus on non-infrastructure projects. Most grants are awarded through calls for proposals available on their website. Brief proposals for projects that suggest new and creative approaches to solving health and health care problems can be submitted at any time. Most active transport funding would come through the Healthy Communities section.</p>	<p>Planning, Road Safety Analysis, Safety Education</p>

04.6

Name	Agency	Location
Rockefeller Foundation Grants	Rockefeller Foundation	https://www.rockefellerfoundation.org/
Safe Routes to Schools (SRTS)	Ohio Department of Transportation (ODOT)	https://www.transportation.ohio.gov/wps/portal/gov/odot/programs/safe-routes-srts#page=1
Section 402 State and Community Highway Safety Grant Program	Ohio Traffic Safety Office	http://ohiohighwaysafetyoffice.ohio.gov/
State Capital Improvement Program	Ohio Public Works Commission/ Administered by Cuyahoga County Planning Commission	http://www.countyplanning.us/services/grant-programs/infrastructure-programs/
State Infrastructure Bank	Ohio Department of Transportation (ODOT)	https://www.transportation.ohio.gov/wps/portal/gov/odot/working/funding/resources/state-infrastructure-bank
Street Supplies for Temporary or “Pilot” Transportation Projects	Northeast Ohio Areawide Coordinating Agency (NOACA)	https://www.noaca.org/community-assistance-center/planning-assistance/street-supplies
Supplemental Grant Program	Cuyahoga County Department of Development	https://cuyahogacounty.us/development/municipalities/supplemental-grant-program
Transportation Alternatives Program	Ohio Department of Transportation (ODOT)	https://www.transportation.ohio.gov/wps/portal/gov/odot/programs/local-funding-opportunities/resources/transportation-alternatives-program
Transportation for Livable Communities Initiative (TLCI)	Northeast Ohio Areawide Coordinating Agency (NOACA)	https://www.noaca.org/community-assistance-center/funding-programs/transportation-for-livable-communities-initiative-tlci
The Trust for Public Land	The Trust for Public Land	https://www.tpl.org/how-we-work

Description	Project Types
The Rockefeller Foundation works to spread the benefits of globalization to more people in more places around the world. Funding inquiries must fit within four core issue areas: Advance Health, Revalue Ecosystems, Secure Livelihoods & Transform Cities. Transform Cities focuses on pushing the U.S. toward transportation planning and infrastructure policy that serves the needs of 21st century America.	Planning, Road Safety Analysis, Safety Education, Transit, Trails, Bikes
The Safe Routes to School program provides funds for safety projects that encourage or enable children in grades K-8, including those with disabilities, to walk or ride their bikes to school. Ohio sets aside \$4 million yearly to continue the Safe Routes to School program.	Planning, Safety Education, Mapping, Sidewalks, Trails, Bikes
The Section 402 program provides grants to states to improve driver behavior and reduce deaths and injuries from motor vehicle-related crashes. The program is jointly administered by the National Highway Traffic Safety Administration and the Federal Highway Administration at the federal level and by State Highway Safety Offices at the state level.	Road Safety Analysis, Safety Education, Sidewalks, Bikes
Local public infrastructure improvement projects such as roads, bridges, culverts, water supply systems, wastewater systems, storm water collection systems, solid waste disposal facilities	Roads, bridges, water, sewer
A direct loan and bond financing program, authorized under the Ohio Revised Code, Chapter 5531, for the purpose of developing transportation facilities throughout Ohio. The State Infrastructure Bank (SIB) is used as a method of funding highway, rail, transit, intermodal, and other transportation facilities and projects which produce revenue to amortize debt while contributing to the connectivity of Ohio's transportation system.	Transportation, Highway/ Transit, Aviation, Rail, Intermodal Facilities
A free library of borrow and return roadway materials available to communities to evaluate the potential benefits of a temporary transportation project before its permanent installation.	Transportation, community planning
The Supplemental Grant Program is a competitive grant that makes awards to cities, villages, townships, and non-profit organizations that help strengthen communities and neighborhoods, encourage regional collaboration, and improve the quality of life for Cuyahoga County residents.	Safety, Streetscape, Lighting & Landscaping, Road Maintenance, Parks
Projects that advance bicycle, pedestrian, and recreational trail facilities. ODOT encourages adding alternatives to planned transportation projects rather than stand-alone projects. Eligible activities include separated bike lanes, new sidewalks, bicycle parking racks, bicycle lockers, safety lighting, and adjustments for meeting ADA requirements. Projects that connect activity centers such as businesses, schools, libraries, shopping areas, or recreational areas will receive higher priority.	Sidewalks, Streetscapes, Transit, Trails, Bikes
NOACA's Transportation for Livable Communities Initiative (TLCI) provides assistance to communities and public agencies for integrated transportation and land use planning and projects that strengthen community livability.	Planning, Road Safety Analysis, Safety Education, Mapping, Sidewalks, Streetscapes, Transit, Trails, Bikes
From helping raise funds for conservation; to protecting and restoring natural spaces; to collaborating with communities to plan, design, and create parks, playgrounds, gardens, and trails; the Trust for Public Land works with communities to ensure that development happens for them, and not to them	Planning, Land Acquisition, Land Protection, Parks, Playgrounds, Trails, Gardens



County Planning

FOR OUR COMMUNITY
FOR OUR REGION
FOR OUR FUTURE

