

SOLON CONNECTS

ACTIVE TRANSPORTATION PLAN

EXECUTIVE SUMMARY | June 18th 2021



01 | Introduction

Background

The City of Solon was awarded funding for professional planning services through a competitive grant process from the Cuyahoga County Planning Commission in 2019. County Planning, with help from the City, has developed Solon Connects an Active Transportation and Connectivity Plan for the City. As part of the City's application, there were a number of key issues identified that were subsequently addressed as part of the Solon Connects Plan: 1) provide a detailed analysis of current infrastructure; 2) develop recommendations that meet the evolving needs of residents while remaining competitive in business retention and attraction; 3) create a plan that can help guide decision makers and better plan for infrastructure improvements; 4) outline safe connections, especially for children to walk or bike to school; and 5) discuss collaborative partnerships with regional groups and neighboring communities for larger implementation initiatives and trail connections. 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.



Acknowledgments:

The completion of the Solon Connects Active Transportation Plan was made possible through the support of the City of Solon and the collaboration and assistance of many local and regional stakeholders. County Planning would especially like to thank the following City Council Representatives and City Staff for their efforts.

Project Team

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Jeremy Zelwin, Ward 3

Consultant Team



"To 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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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 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 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

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

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

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

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

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

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

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

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

Source: ULI - Active Transportation and Real Estate 2016



Planning Process:

The 'Solon Connects' planning process began in January of 2020 and consisted of four phases outlined below. 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. Input from County Planning was supported by a variety of city staff, focus groups, and other interested community leaders and stakeholders. Solon residents and the greater public also played a key role in the plans development. 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.



1) Discovery & Analysis

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



3) Recommendations

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



2) Vision & Objectives

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



4) Implementation Strategies

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

Community Engagement

The COVID-19 pandemic drastically and rapidly disrupted nearly every aspect of our daily lives. The Solon Connects Plan was still in its infancy when the world went into lock down, which ultimately required the project to be flexible and remain open minded to the ever-changing environment of conducting community outreach in an era when in person meetings were not permitted. This meant being innovative and creative with public formats and embracing non-traditional methods for community outreach. 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. All the various groups and stakeholders involved met numerous times virtually with Cuyahoga County Planning Commission staff and participated in several online surveys and activities. County Planning also worked closely with City staff to host virtual town halls, which used several platforms to disseminate information. 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. The Solon Connects Plan conducted Live Virtual Town Halls that included:

- Call-in numbers to ask questions during the Virtual Town Hall
- Yard signs distributed throughout the community to announce Virtual Town Hall dates, times, and information
- Printed and mailed postcards to every resident explaining how to view and participate in the Virtual Town Hall
- Live polling software to make each Virtual Town Hall more interactive while generating real time feedback
- Post Virtual Town Hall online surveys and GIS web mapping exercises

Each of these actions allowed participants to be physically involved in identifying opportunities and recommendations while maintaining social distancing requirements. All combined these tools allowed the team to reach as many residents, businesses, and stakeholders as possible during the process, ensuring that each recommendation had the buy-in necessary to be presented and implemented as part of the Solon Connects Plan.

LIVE POLLING | HOW TO RESPOND USING POLL EVERYWHERE

1 JOIN VIA WEB

- 1 Go to [Pollev.com](https://pollev.com)
- 2 Enter **SCONNECTS000**
- 3 Click join to Respond

2 JOIN VIA TEXT

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

SOLON CONNECTS

There will be a moderated Question & Answer session at the end of this presentation

Call 440.337.1384 at anytime to ask a question

SOLON CONNECTS



Online Survey-1

February to April
General opinion survey on existing
active transportation in Solon



Online Survey-2 & Map-1

August to September
Visioning and mapping exercises to identify
location and types of improvements



Online Survey-3 & Map-2

April to May
Survey and Mapping Exercise on proposed
recommendations to determine priorities

Engagement Tracker

+650 Live Broadcast Views on YouTube

+1,250 Survey Responses

+250 Mapped Points

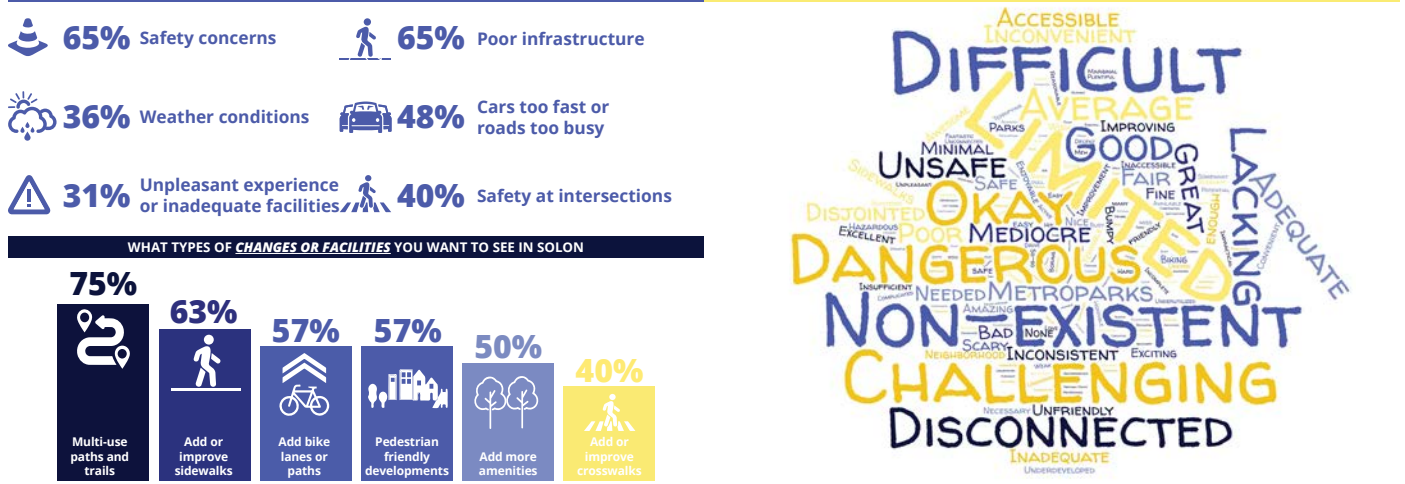
Hundreds of Individual Comments



REASONS FOR *NOT* WALKING & BIKING

REASONS FOR FEELING *UNSAFE*

USE *ONE WORD* TO DESCRIBE WALKING/BIKING IN SOLON?



WHAT TYPES OF *CHANGES OR FACILITIES* YOU WANT TO SEE IN SOLON

75% Multi-use paths and trails

63% Add or improve sidewalks

57% Add bike lanes or paths

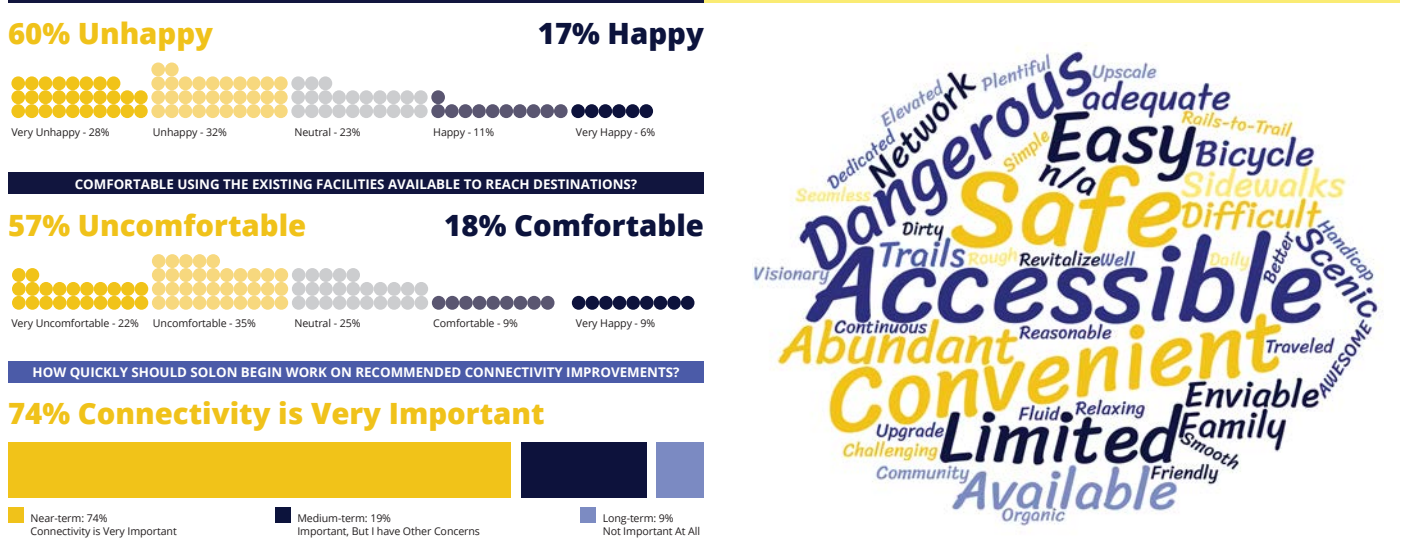
57% Pedestrian friendly developments

50% Add more amenities

40% Add or improve crosswalks

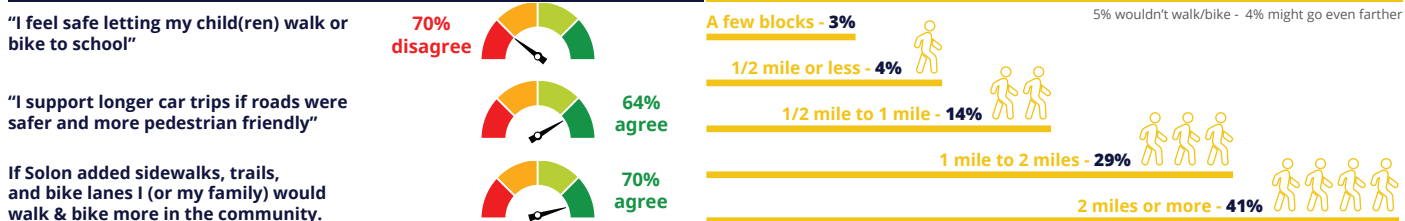
HAPPY WITH THE EXISTING FACILITIES AVAILABLE THROUGHOUT SOLON?

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



DO YOU *AGREE OR DISAGREE* WITH THE FOLLOWING STATEMENTS?

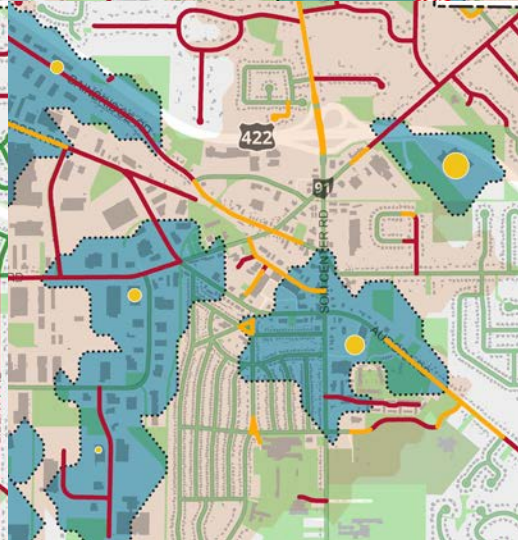
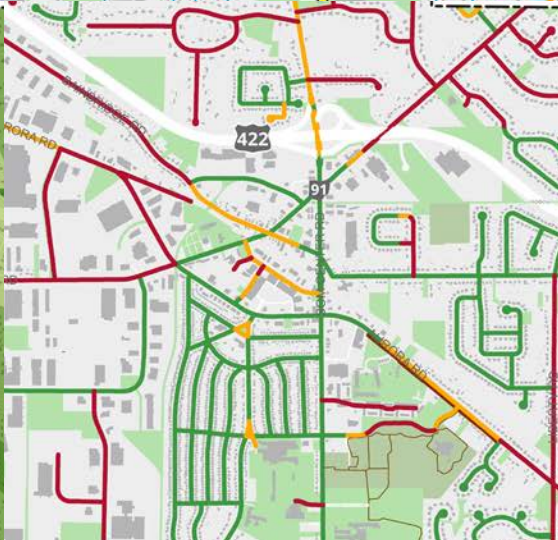
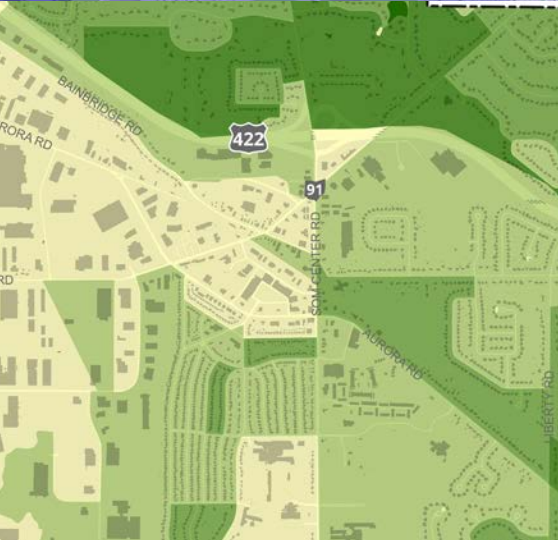
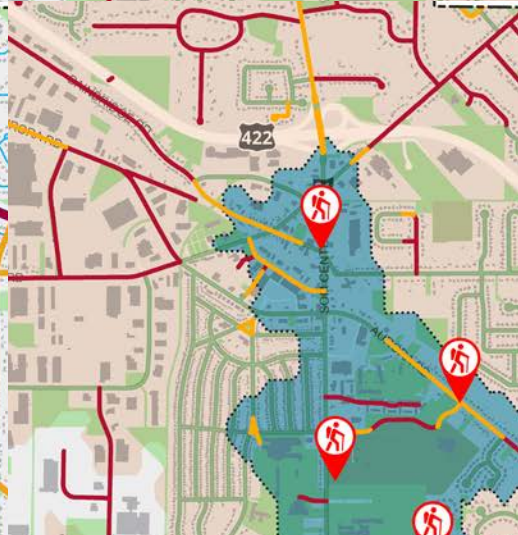
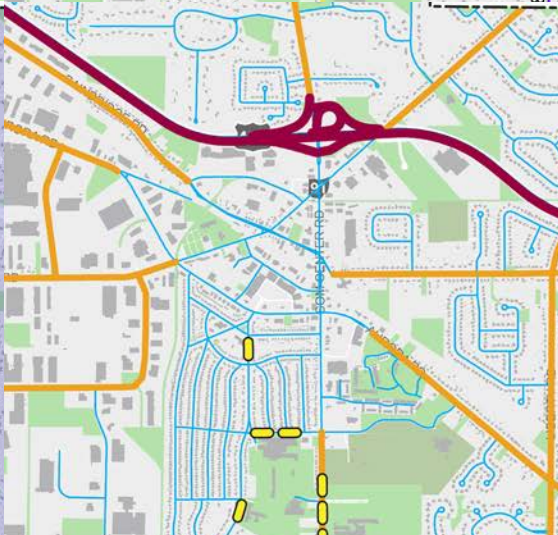
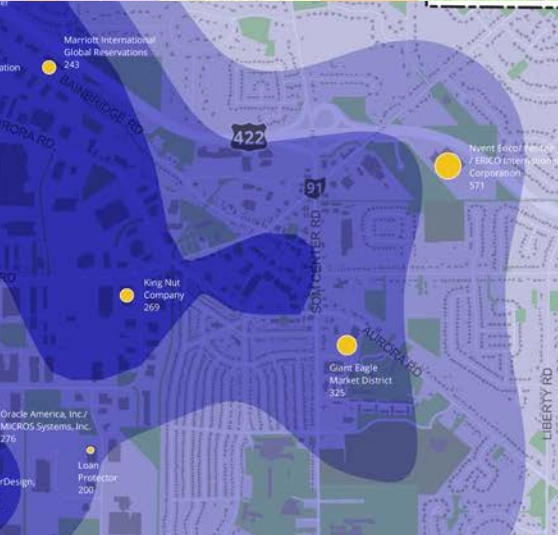
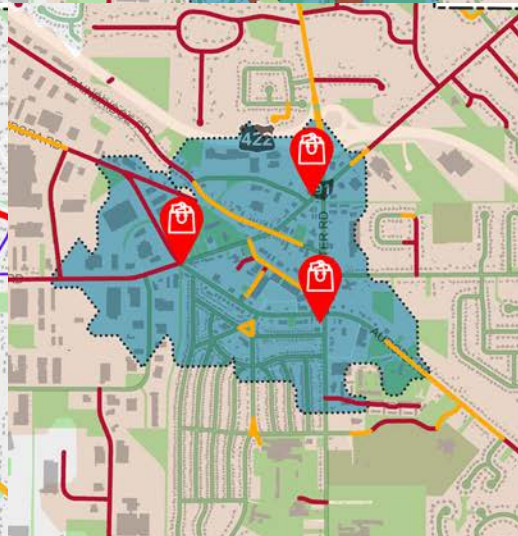
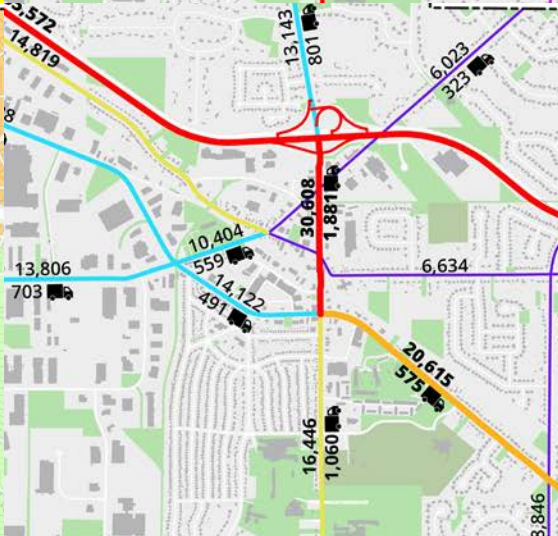
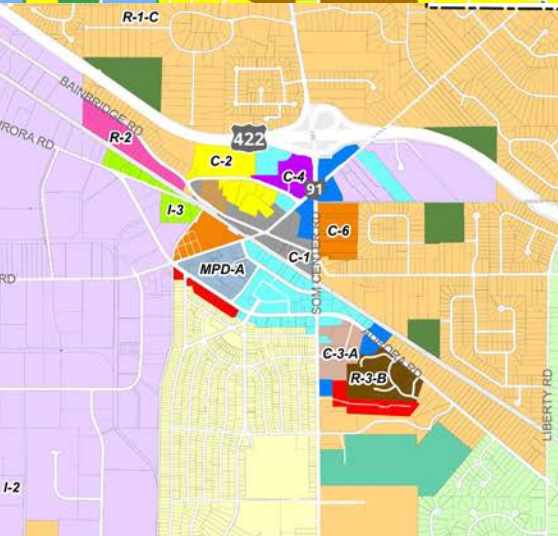
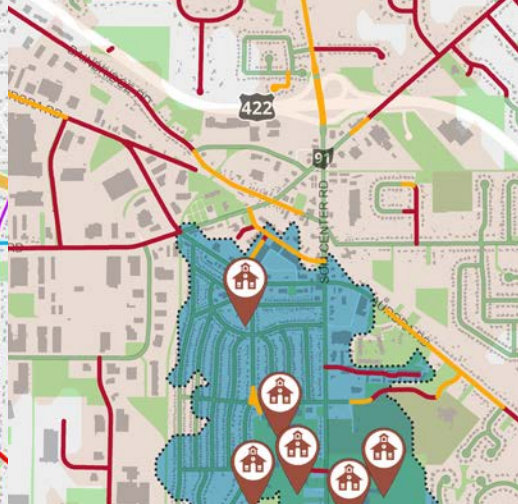
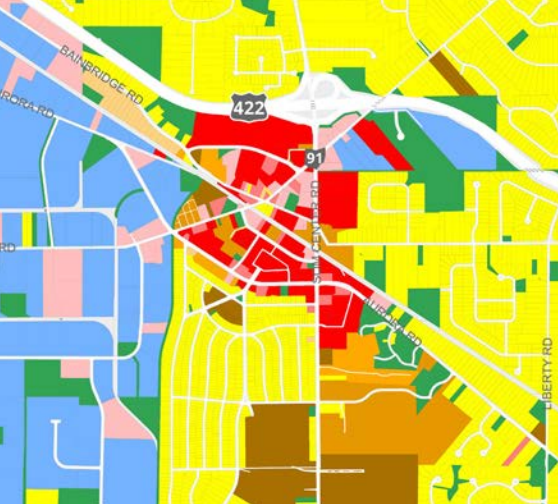
IF NEW FACILITIES WERE ADDED *HOW FAR/LONG* WOULD YOU BE WILLING TO WALK OR BIKE?



Study Area, History & Key Findings

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 connectivity. Developing this strategic profile of existing site conditions is essential to determining what trends are shaping Solon 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.

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.

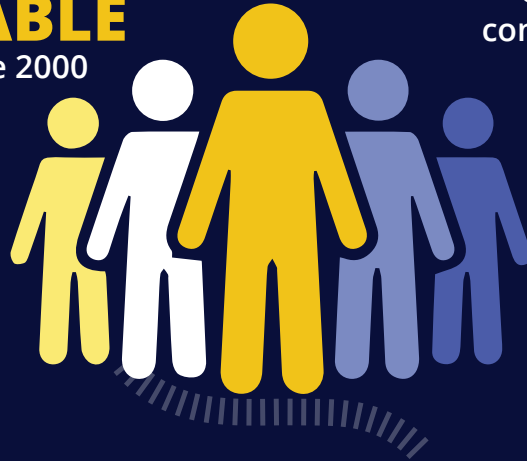


After growth in the 80's & 90's
the City of Solon's population

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





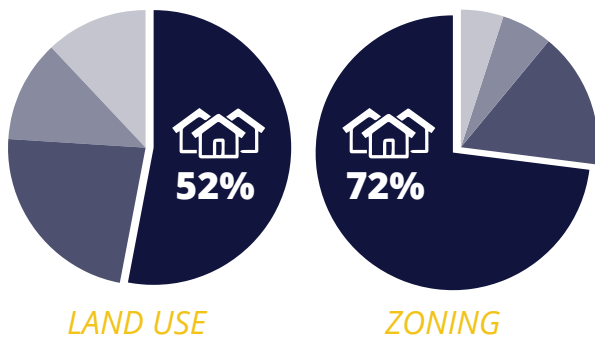
Solon has lots of high quality existing assets and amenities.

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.



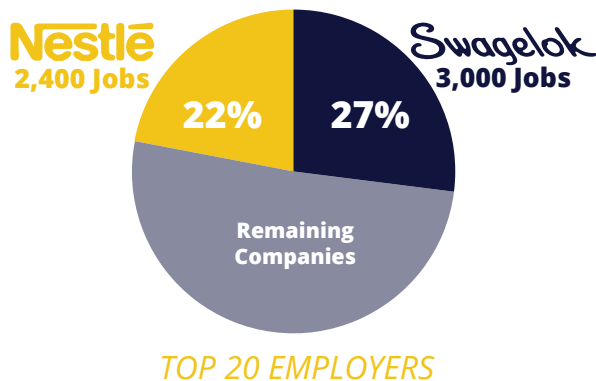
Solon is big and spread out.

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.



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 openspace 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 pack neighborhoods create enhanced opportunities for mobility without the use of a car.



Solon is a job hub.

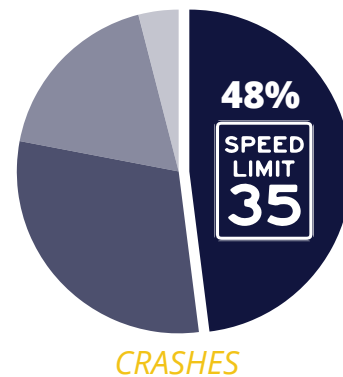
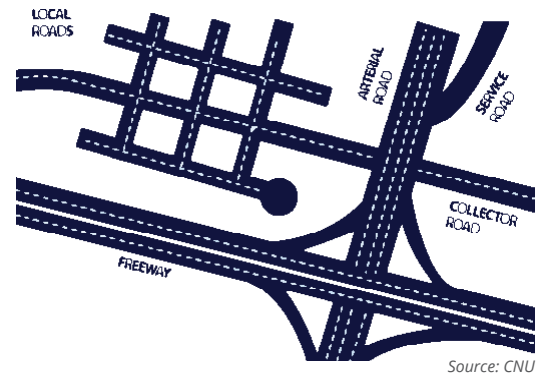
The City of Solon is a major job hub, with approximately ~26,739 Jobs, Solon is second only to the City of Cleveland in employment within Cuyahoga County. Many of the City's top employers, such as Swagelok and Nestle, the city's 2 largest - accounting for 50% of all jobs from the top 20 companies - have 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.

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.

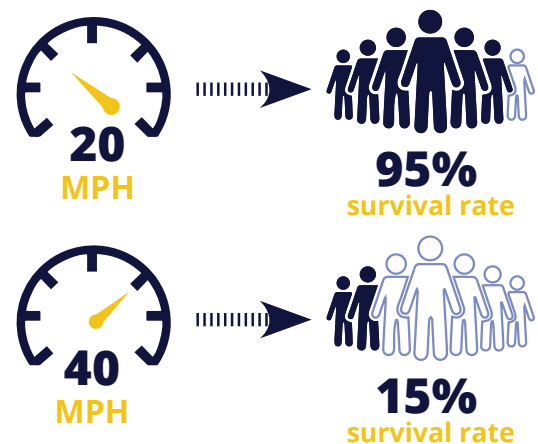
Pedestrian and Bicycle Crashes are Low Compared to Overall Total.

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.



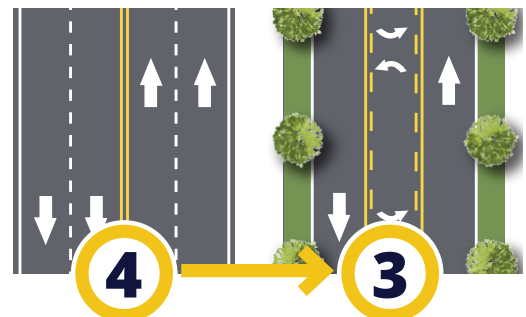
Roadway speeds can be disastrous for pedestrians.

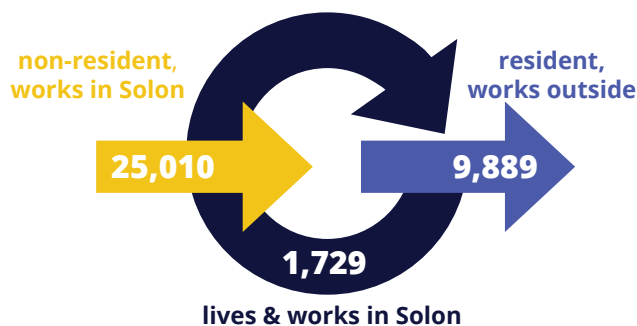
Having the necessary space for people isn't the only roadway design issue. In addition to the practice of widening roads and leaving whatever space is leftover to the pedestrian, speed is also critical. Pedestrians are the most vulnerable users of a roadway network and roadway speeds can significantly 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.



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

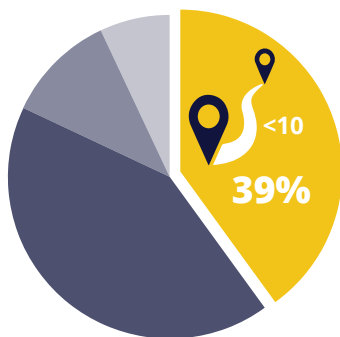
Previous road design strategies - intended to improve efficiency - can be re-purposed to create safer conditions for drivers and pedestrians. One method is a Road Diet, a reconfiguration of travel lanes to calm traffic, provide space for bicycle lanes, turn lanes, streetscapes, wider sidewalks, and other 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.





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.



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.



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.



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.

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.



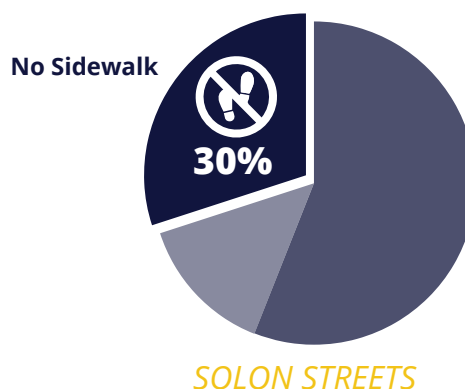
Rail corridors and vacant land provide connection opportunities.

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.



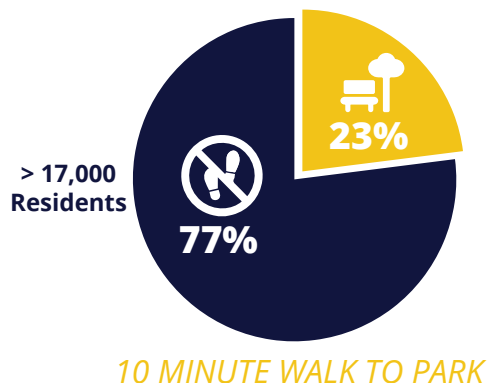
Solon has gaps in its sidewalk inventory, limiting some access.

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.



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

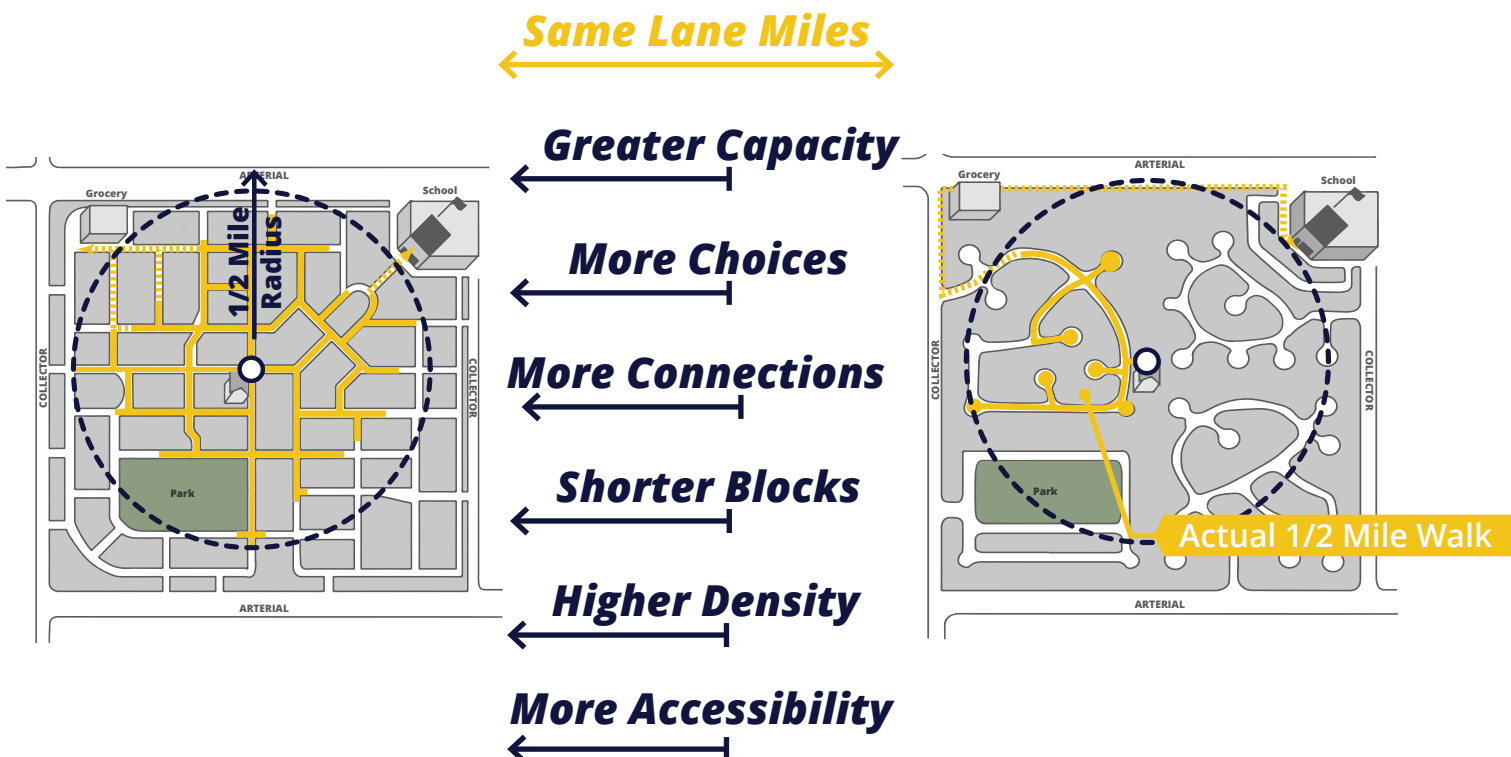
Only 4% of Land in Solon is dedicated to park space, below the National Median of 15%. In addition, not many of these existing parks are accessible by pedestrians. According to the Trust for Public Land Database only 23% of residents live within a 10-minute walk to a park, well below the National Average 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.



Connectivity Analysis

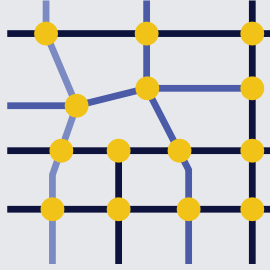
While most understand that ‘connectivity’ mainly refers to how streets are connected, this section intends to expand on this definition and underscore the key aspects of streets and networks that improve connectivity. Identifying patterns and characteristics that can be measured today to help determine 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.



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

Source: Utah Street Connectivity Guide

667 Links

370 Intersections + 157 Dead Ends

= 1.26 Connectivity Index

1.4 is Considered Minimum
for a Walkable Community

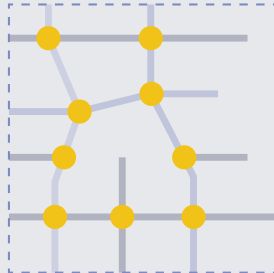
Community Based Benchmarks

Urban 2.0 - Suburban 1.6 - Rural 1.2

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

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

Source: Utah Street Connectivity Guide

370 Intersections

20.49 Square Miles

= 18 Intersections sq/m

6 Intersections sq/m
Collector & Above Streets Only

Community Based Benchmarks

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

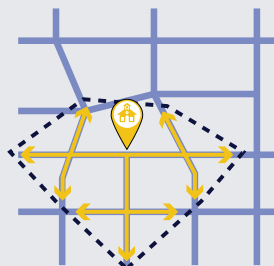
Suburban Residential Neighborhood: 175

Rural Residential Neighborhood: 50

A,B,C Streets Neighborhood ~ 56

Travelsheds:

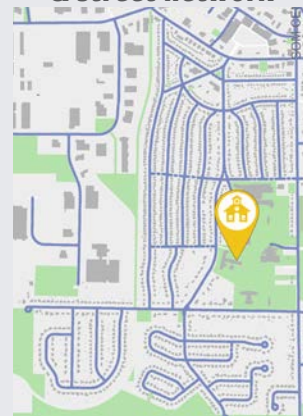
The area reached
within a given distance from a destination
using the existing street network



Travelshed should be as large as possible

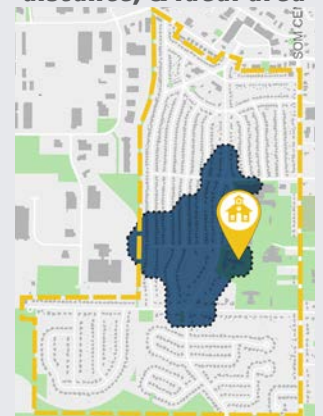
Source: Utah Street Connectivity Guide

Select destination
& street network



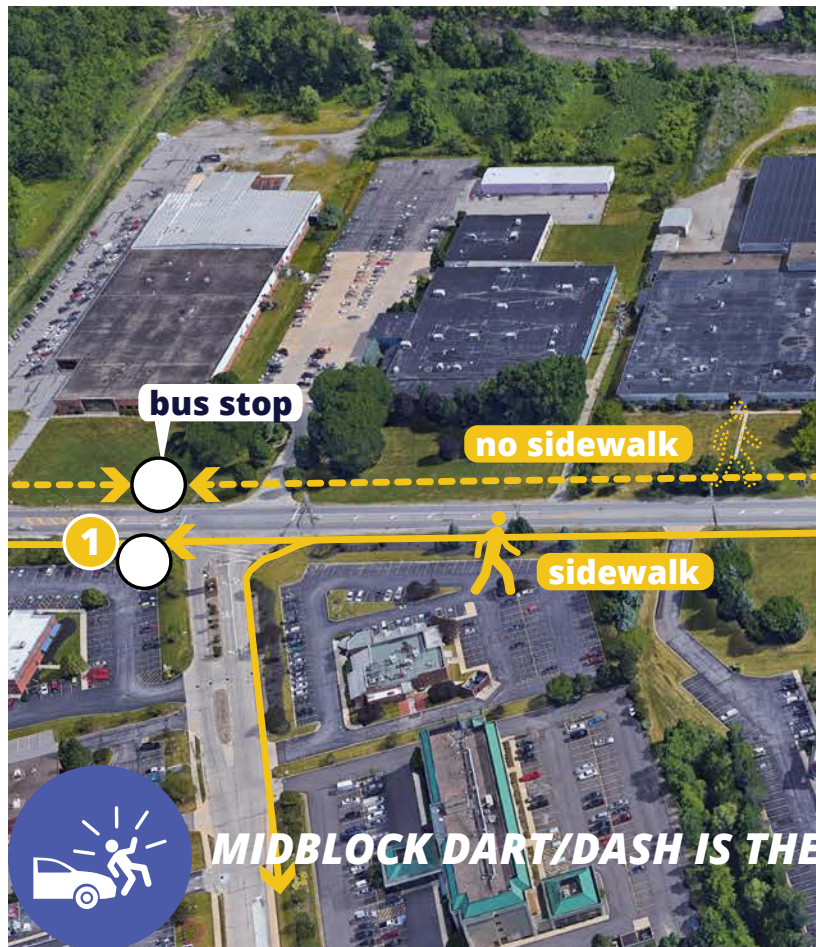
Roxbury School

Select travel mode,
distance, & ideal area



Walking - 1/2 mile

In Solon many of the residential streets in which there are 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.

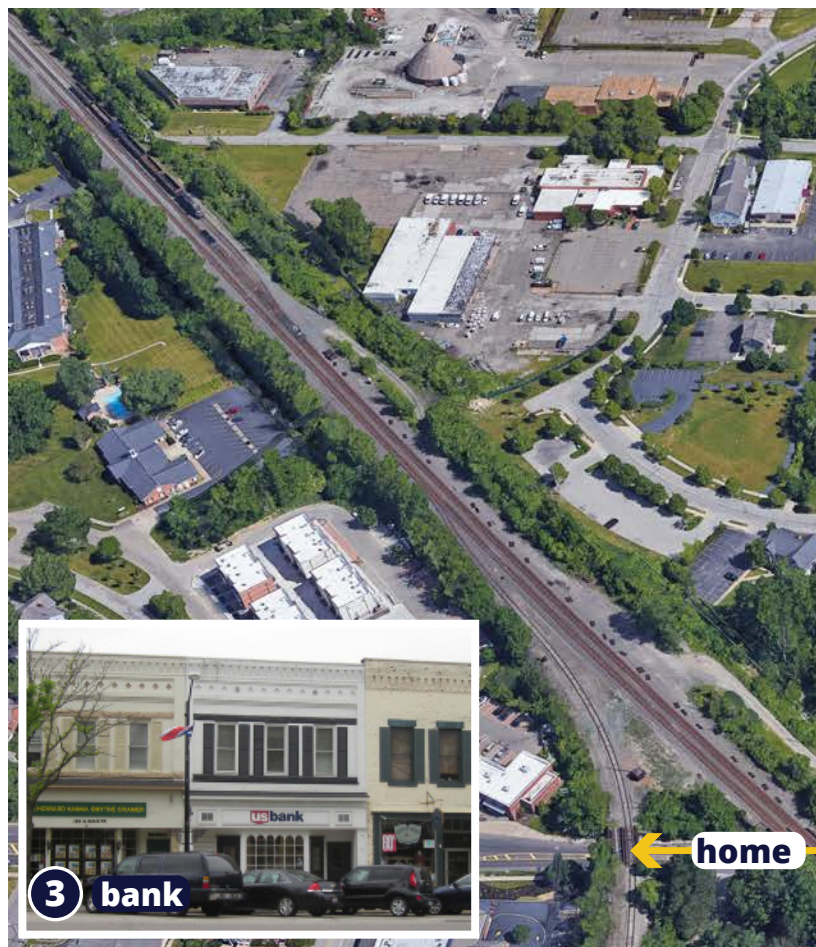


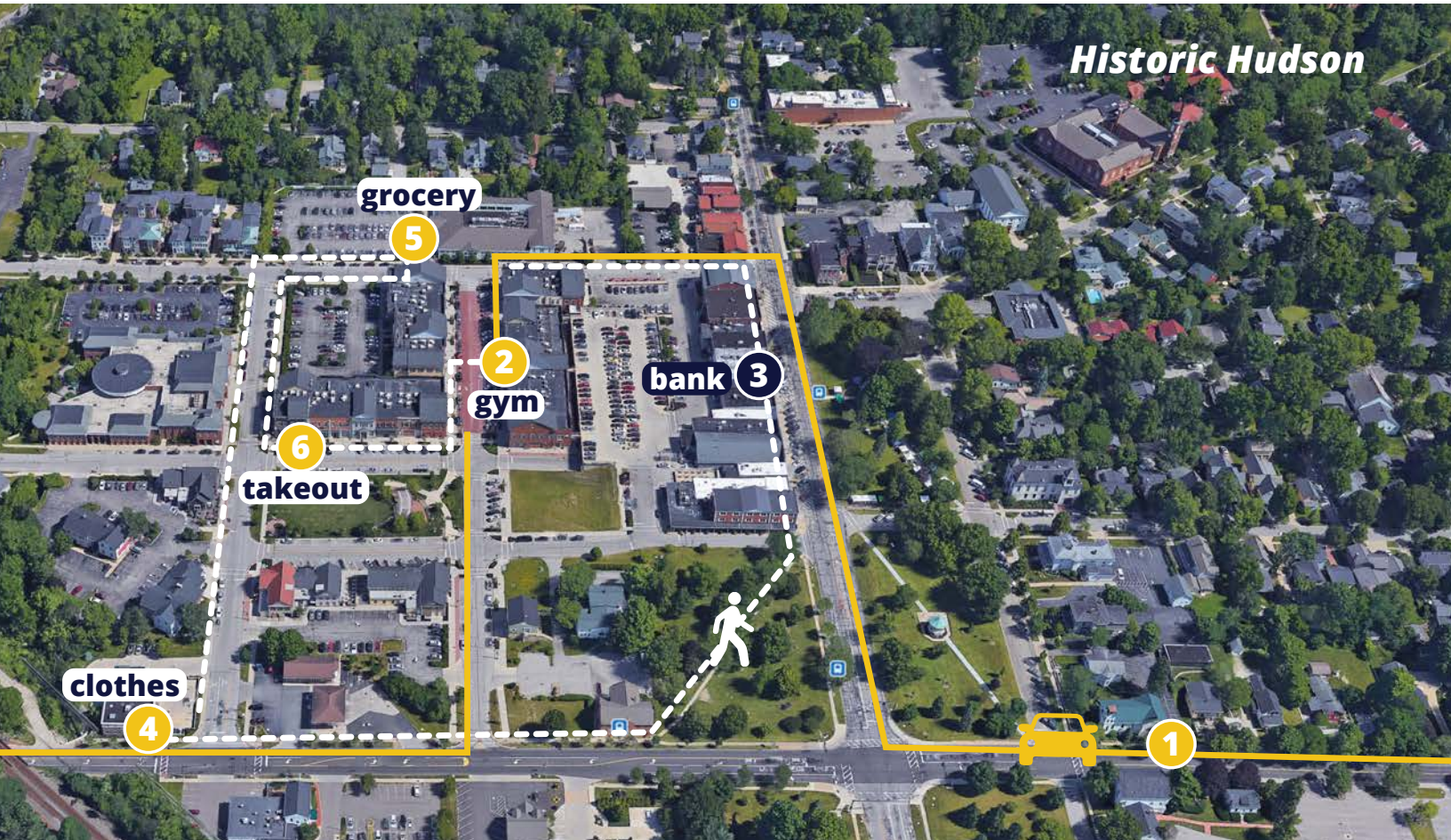


Urban Form:

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 home, groceries, entertainment, and other destinations—sometimes if short enough or easy enough they can make those trips solely by walking or biking. However, if that development is dispersed along a corridor and designed for the car, even if existing sidewalks are in place, people will likely still choose to drive, thereby creating more traffic and deemphasizing the need for active transportation connections. 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—it is the thoughtful combination of design, location, and amenities that makes a corridor feel safe and welcoming for all users.





03 | Vision & Recommendations

Vision

The vision of the Solon Connects Plan is simple:

Build safe & strong pedestrian and bicycle connections between existing civic, commercial, and open space assets to create 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. To achieve this vision the plan has identified four key objectives or approaches to the recommendations outlined herein, Enhance, Expand, Educate, & Evaluate. Each E contains a different approach to improving connectivity. Enhance focuses on recommendations that improve the quality and safety of the existing network for current users. Expand creates recommendations that increase mobility options and users thanks to a well-connected network. Educate identifies groups and/or programs that engage and inform residents about events, safety, and benefits surrounding active transportation. While lastly, Evaluate looks at progressive policies, procedures, and opportunities that will help advance active transportation in Solon now and into the future. Taken together each of these objectives 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. 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.







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





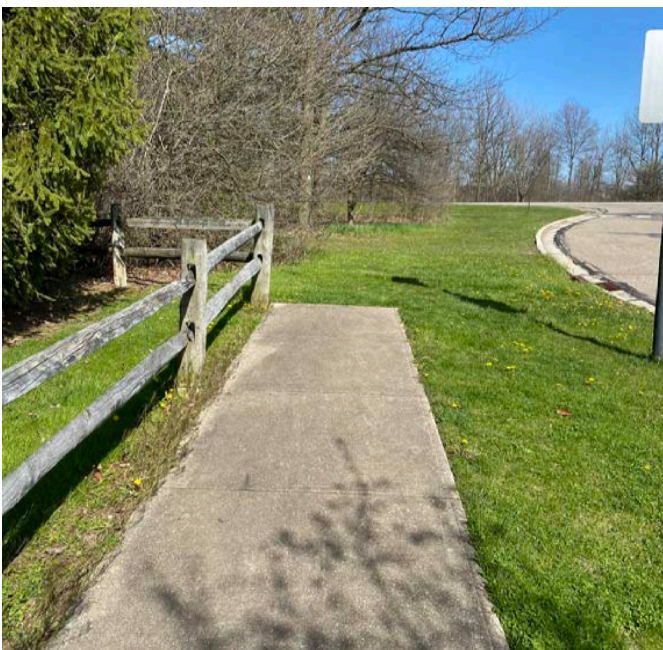
Fill Gaps in Sidewalk Network

The City of Solon is a 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 access to destinations by foot or bike becomes significantly diminished. 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, therefore, 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.



Add Bus Shelters at Key Locations

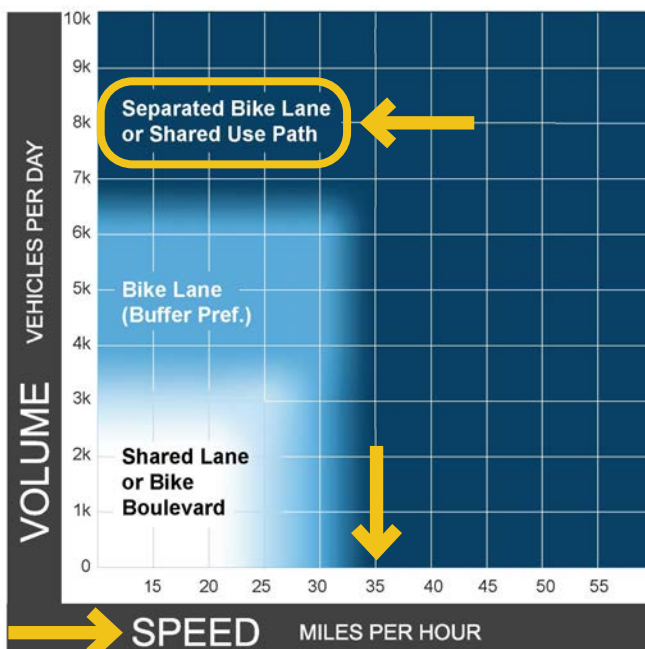
The City of Solon is one of the largest employment hubs in Cuyahoga County, meaning that many workers commute into the community daily for their jobs. Even though most Solon residents do not use transit and a large portion of commuters prefer to car pool or drive alone, many still need public transit to reach their place of employment. Not only do many of the stops along the existing RTA route in Solon not have sidewalks – which the plan has worked to address – but 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 Solon Connects plan recommends improvements at 2 of the City's highest frequency stops, including the addition of shelters at these locations.





Build a Protected Bike Network

Using a selection chart or matrix (as shown) is a good starting point to identify the 'preferred' facility to create and all ages and abilities network based upon an existing roadways posted speed and traffic volumes. Additional variables should also be considered including traffic type including trucks (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 has identified 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 where no sidewalks currently exist, are have been identified as priority sidewalk candidates. Expanding those sidewalk facilities to sidepaths will help expand connectivity options by providing a safe and comfortable place for users to walk and/or bike to destinations.



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



Calm Traffic & Create Bicycle Boulevards

In addition to separated bike lanes and sidepaths on major arterials, Bicycle Boulevards also offer another unique opportunity for an improved all ages and abilities network. Many cyclists are less willing to ride with traffic on 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 that 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.





Build New Multi-Use Trails

Solon has many unique opportunities for trails in the city along vacated railway corridors, utility corridors, and through existing neighborhoods. As seen in the map to the right, 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 what type of facility they would be most comfortable using, 90% of respondents said trails.



Source: Jefferson County Colorado

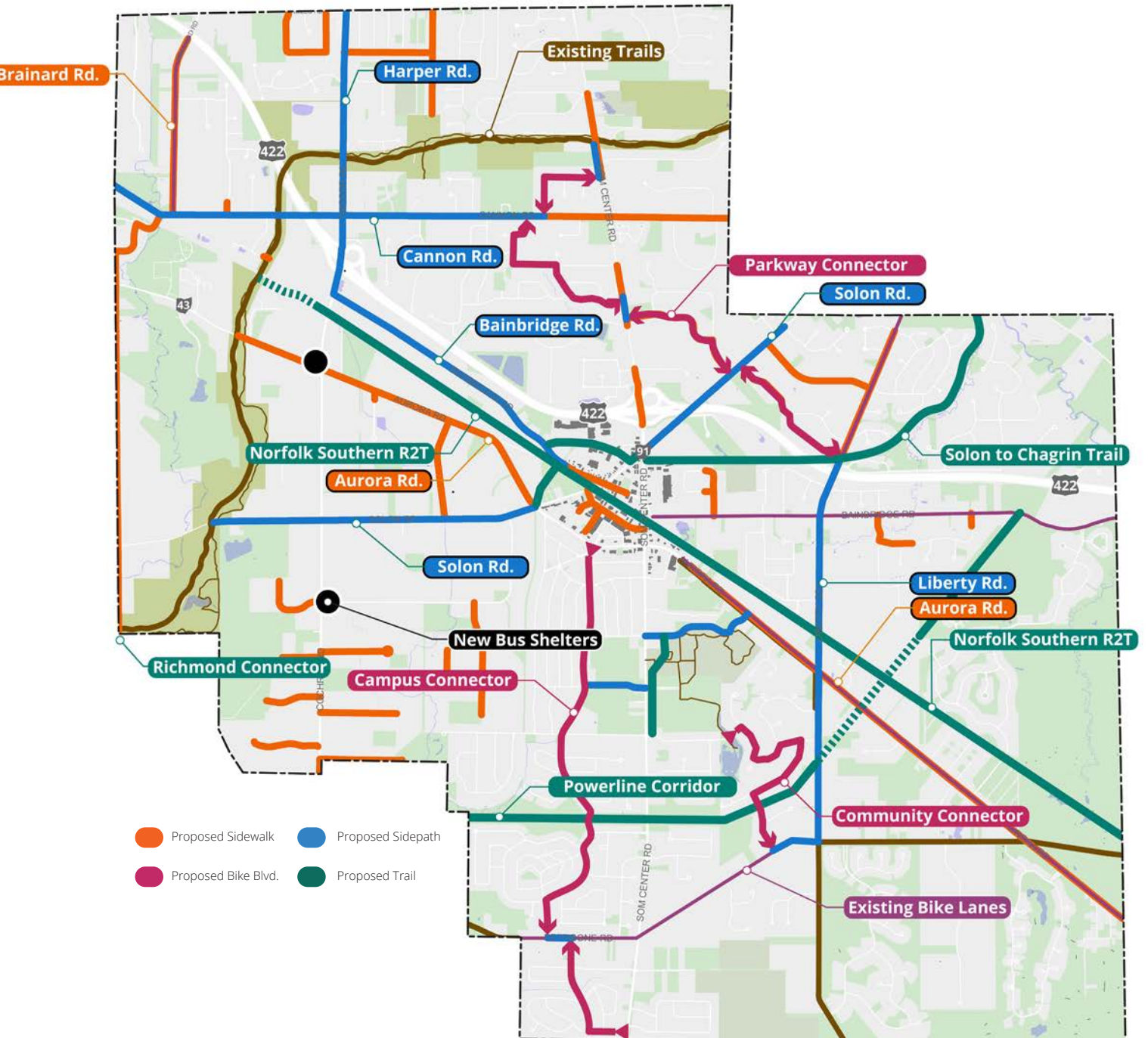


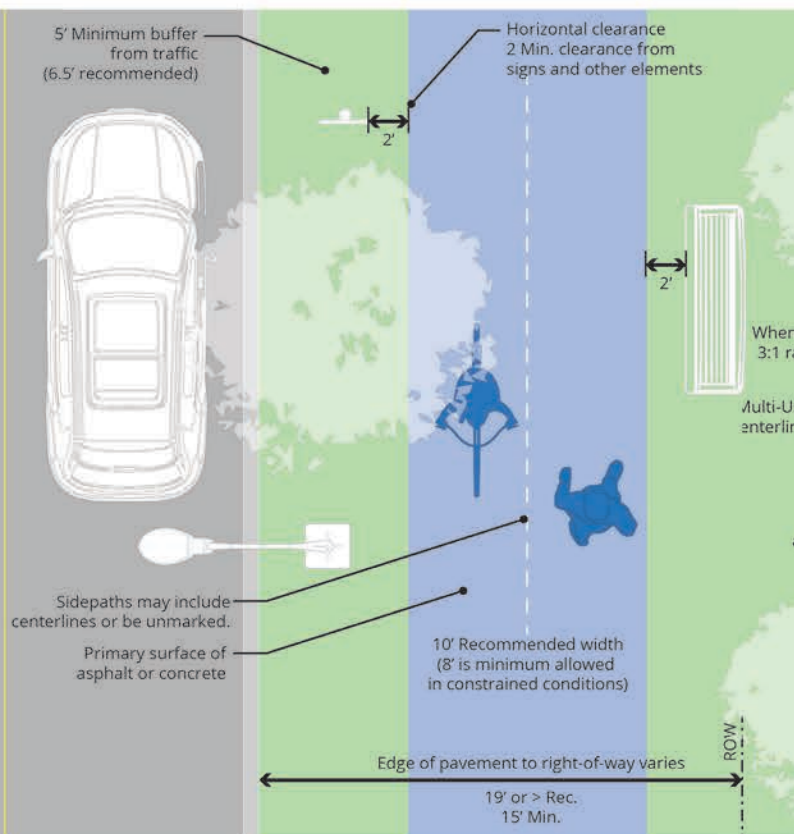
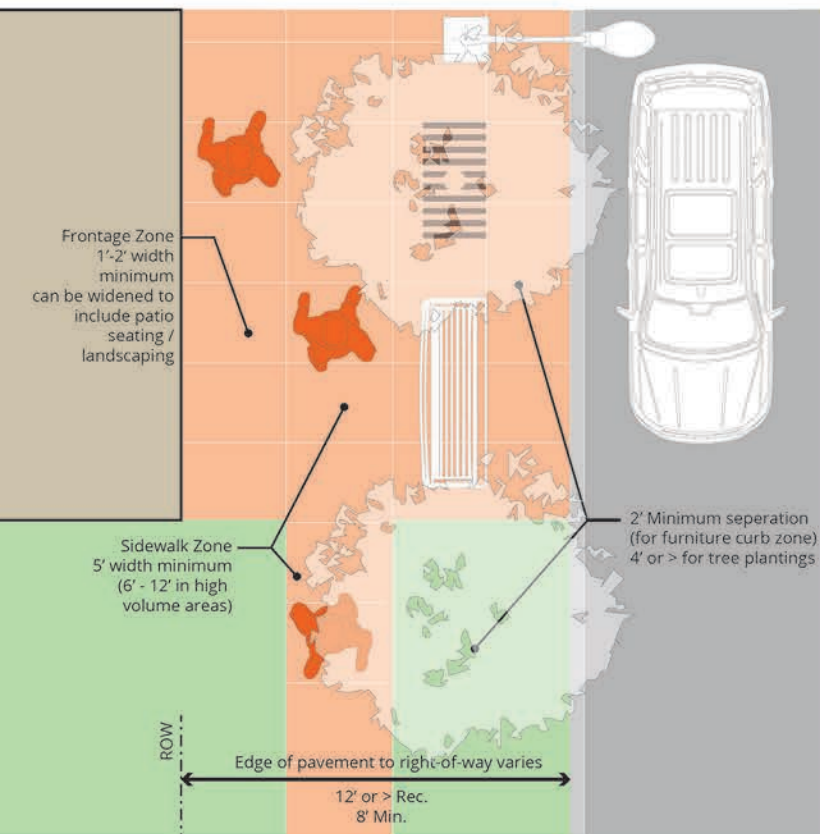
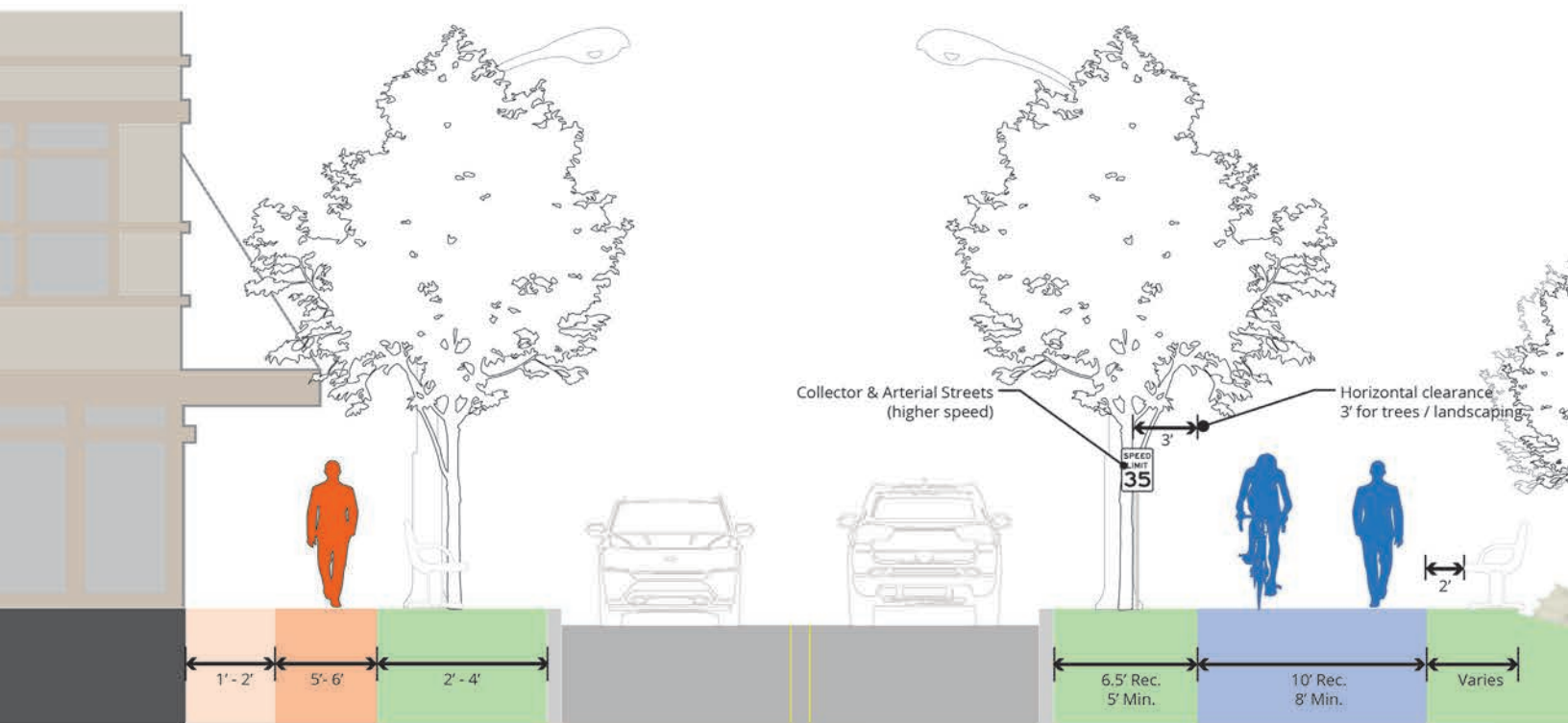
Create a Bike Parking Program

Convenient and safe bicycling facilities reinforce a high quality of life for residents. However, with that there needs to be a thoughtful approach to the moment cyclists become pedestrians and how key destinations handle bicycle parking. 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.



KEY NETWORK RECOMMENDATIONS

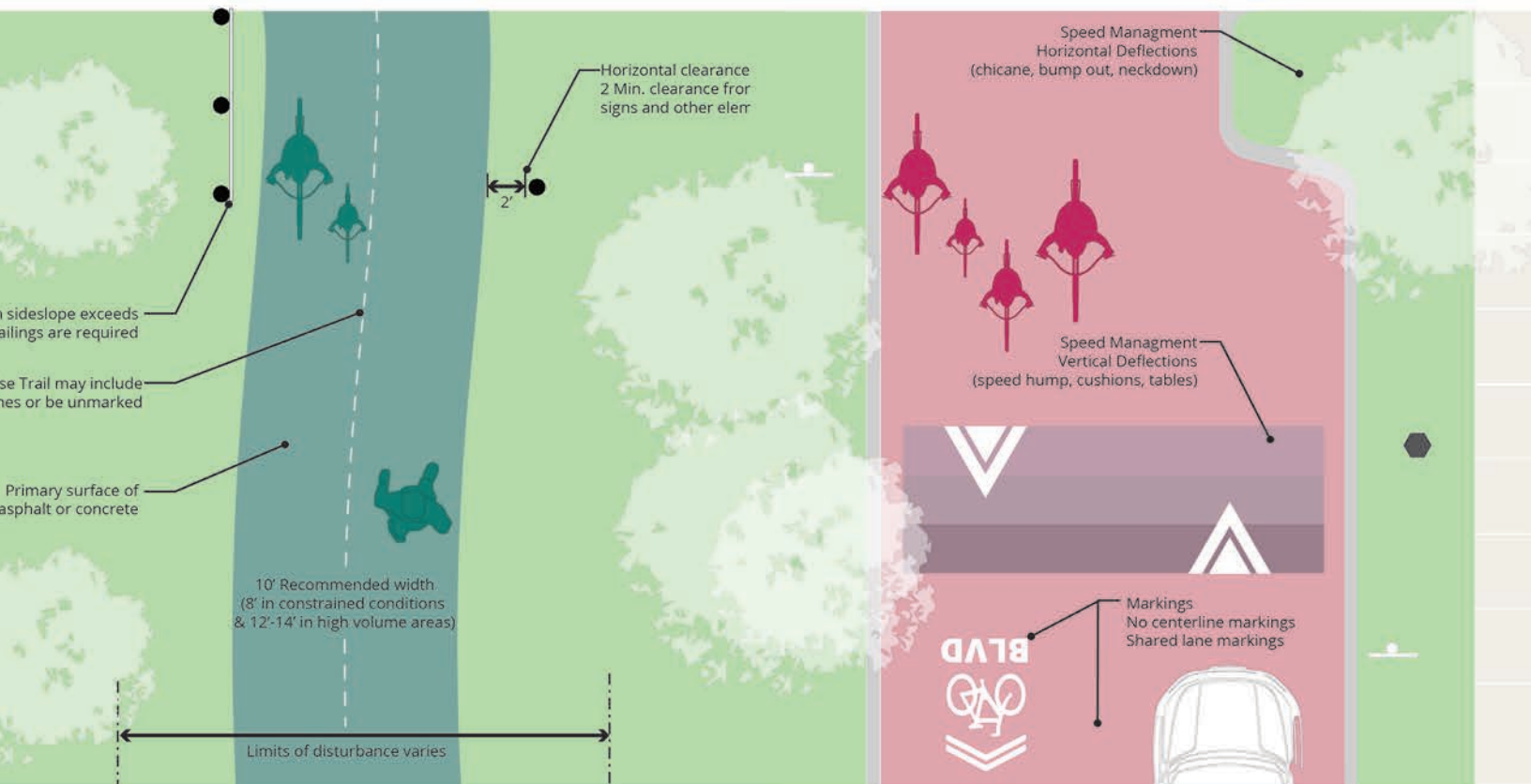
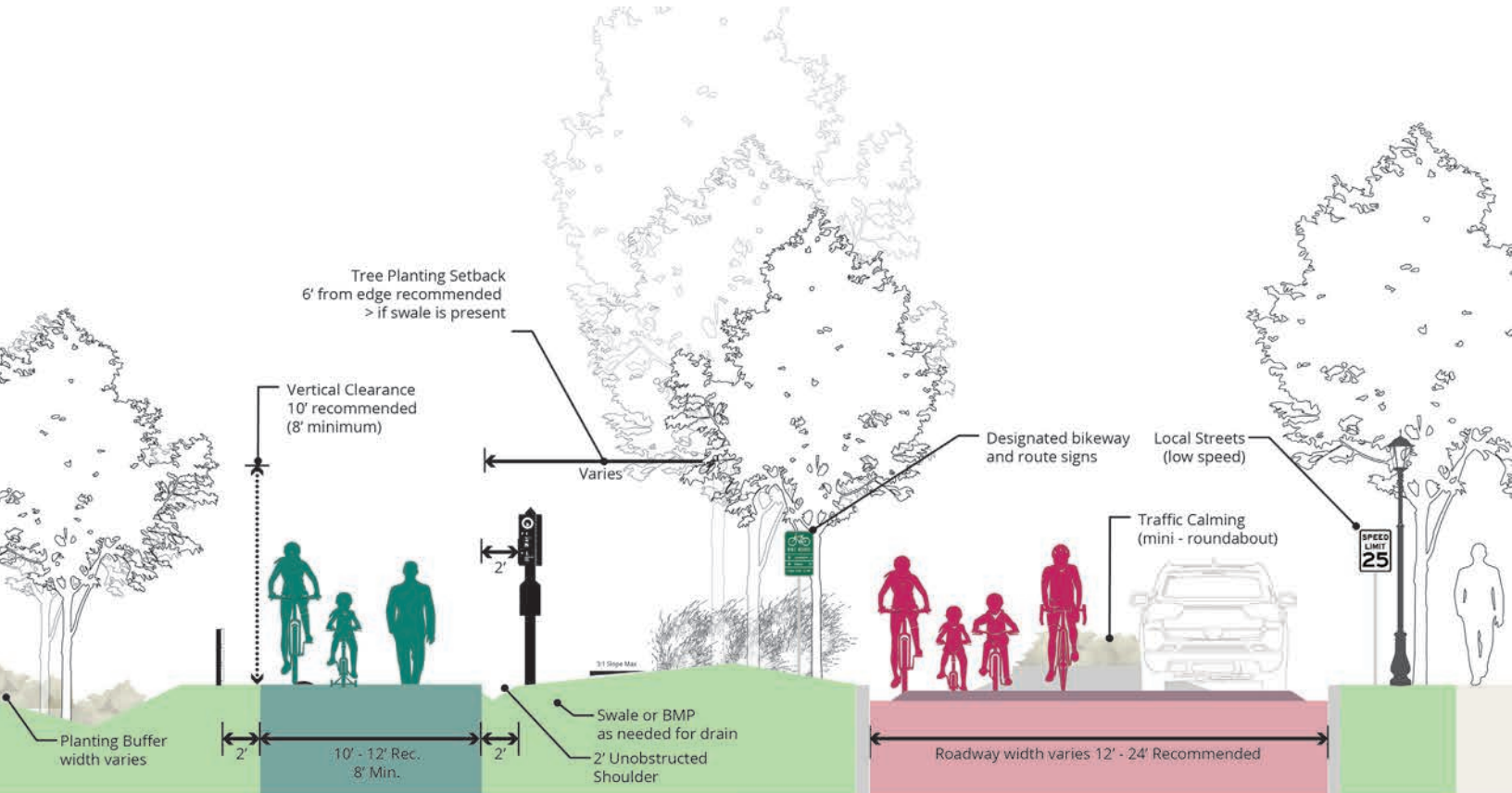




SIDEWALKS

SIDEPATHS

RECOMMENDED FACILITY TYPES



MULTI-USE TRAILS

BICYCLE BOULEVARDS



Create a Bike Solon Chapter

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 network is important step in the process. Bike Cleveland, a 501(c)(3) advocacy non-profit in the Greater Cleveland area, has dedicated their mission to creating a region that is sustainable, connected, healthy, and vibrant by promoting bicycling and safe and equitable transportation for all. Bike Cleveland has developed a local chapter program to help residents raise bicycle awareness within their own communities, helping to reach as many residents in the region as possible. Local chapters can leverage Bike Cleveland's extensive expertise and experience with their firsthand knowledge of their city and its needs. This includes hosting fun rides, events, safety and education programs, or advocating to city leaders and stakeholders to build better infrastructure in their communities.



Establish a 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 survey – 55% of respondents told us they would not feel safe letting their children walk or bike to school. A Safe Routes to School (SRTS) program 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. Infrastructure projects must be located within two miles of a school with 100% reimbursement of any eligible costs including engineering, right-of-way acquisition, and construction. Non-infrastructure activities include education, encouragement, or evaluation. When cities choose to develop a SRTS program the entire community becomes a better place for everyone to walk and bike.



Source: City of Solon & Bike Solon



Event details & registration at [SafeRoutesChagrin.com](https://www.SafeRoutesChagrin.com)

Source: Safe Routes Chagrin

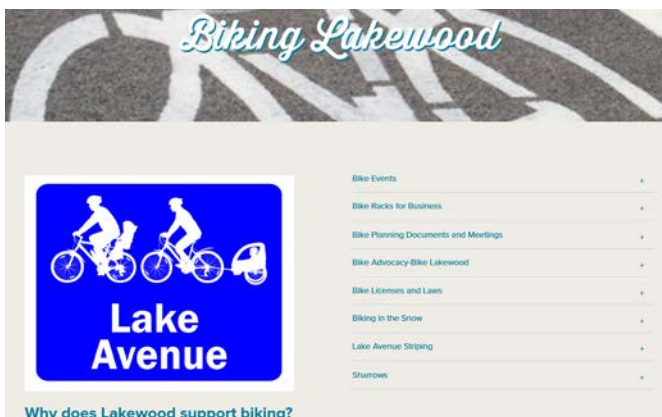


Develop Web Pages and Mobile Apps

Keeping residents up to date on what bike events or projects are happening is a key element to generate interest in active transportation. Solon occupies over 20 square miles, locating and documenting where infrastructure issues can be a challenge for such a large area. Utilizing technology as a means to allow residents, visitors, and businesses to accurately pinpoint where issues exist in real time can drastically help Solon keep up with the demands of maintaining the network. 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, apps, or programs residents can report a problem with sidewalks and streets including any potential 'near misses' at dangerous intersections. Solon should work to integrate similar applications to help make bike events and maintenance issues more accessible.



Source: Bike Cleveland



Source: City of Lakewood



Use Temporary & Pop-Up Projects

Temporary infrastructure, pop-up demonstrations, 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 volunteers. Unlike permanent features these programs 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.



Source: Site Design Group



Source: City of Palo Alto



Develop a Downtown Master Plan

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 network is important step in the process. Bike Cleveland, a 501(c)(3) advocacy non-profit in the Greater Cleveland area, has dedicated their mission to creating a region that is sustainable, connected, healthy, and vibrant by promoting bicycling and safe and equitable transportation for all. Bike Cleveland has developed a local chapter program to help residents raise bicycle awareness within their own communities, helping to reach as many residents in the region as possible. Local chapters can leverage Bike Cleveland's extensive expertise and experience with their firsthand knowledge of their city and its needs. This includes hosting fun rides, events, safety and education programs, or advocating to city leaders and stakeholders to build better infrastructure in their communities.

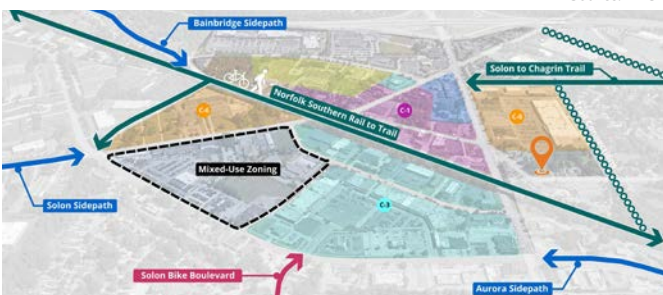


Update City Codes & Ordinances

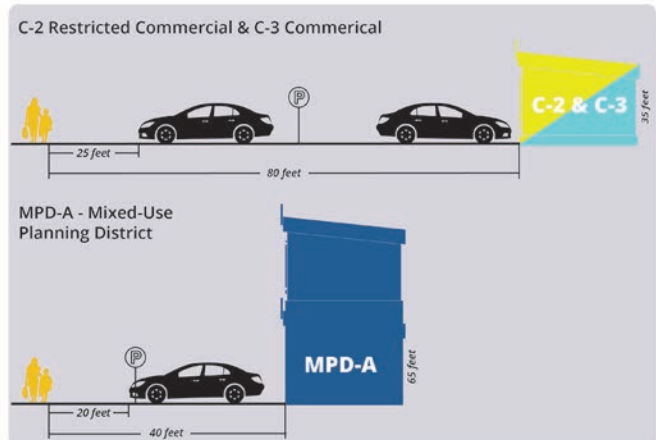
The City of Solon Zoning Code outlines specific regulations for how property in Solon can be developed; primarily, the Code regulates private land uses through established minimum area, setback, and design requirements. Unfortunately, as connectivity and mobility improvements are made these regulations can still lag the demands and needs of the community. 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. 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.



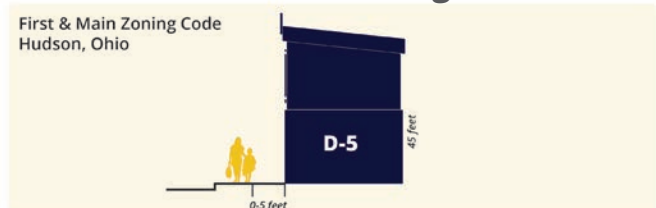
Source: MKSK



Solon Zoning



Hudson Zoning





Draft a Complete & Green Streets Policy

At their core, roadways are designed to move people from one location to another, whether by car, bike, bus, or walking. One method to ensure those efforts include all roadway users 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 are designed and constructed with the safety, mobility, and accessibility needs of all users in mind, in addition to capturing and allowing stormwater 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 runoff management, but they 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



Create a Wayfinding & Signage Program

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 and locations. A wayfinding system with a distinct brand and style that provides easy-to-follow and legible directions can give visitors an experience that is unique to Solon. This plan recommends the City of Solon develop a signage package that not only incorporates the community's brand but also works to integrate any regional or statewide program to create a comprehensive non-motorized network of materials. This system should be clear and concise, integrating pedestrian and bicycle scaled maps and signage with larger vehicular focused signs and traffic guidance.



Source: Guide Studio



Source: Canalway Partners

04 | 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. 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 component and 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.

Prioritization

The Solon Connects Plan has identified a comprehensive list of opportunities to improve connectivity, after developing these recommendations, the first step towards implementation is to prioritize them. Prioritizing projects helps to establish a potential order for the construction of projects, which can be based on variety of inputs determined through the planning process. The Solon Connects Plan used the qualitative approach to help determine this list of priority projects and recommendations. Project Team members, Focus Group members, and the Public through online surveys, online GIS mapping tools, and interactive MURAL exercises voted on what recommendations they considered the highest priority or most important. 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. This flexibility will allow the community to take advantage of opportunities when they appear, while increasing prospects for coordination, collaboration, and cost savings when constructing projects or evaluating new policies and programs.



HIGH PRIORITY RECOMMENDATIONS

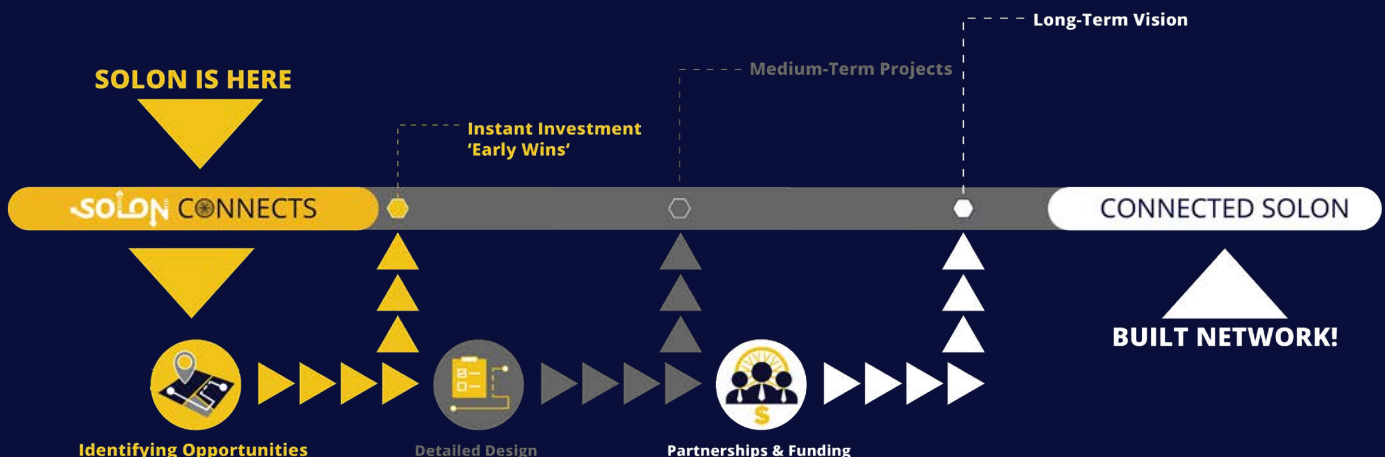


'Early Wins'

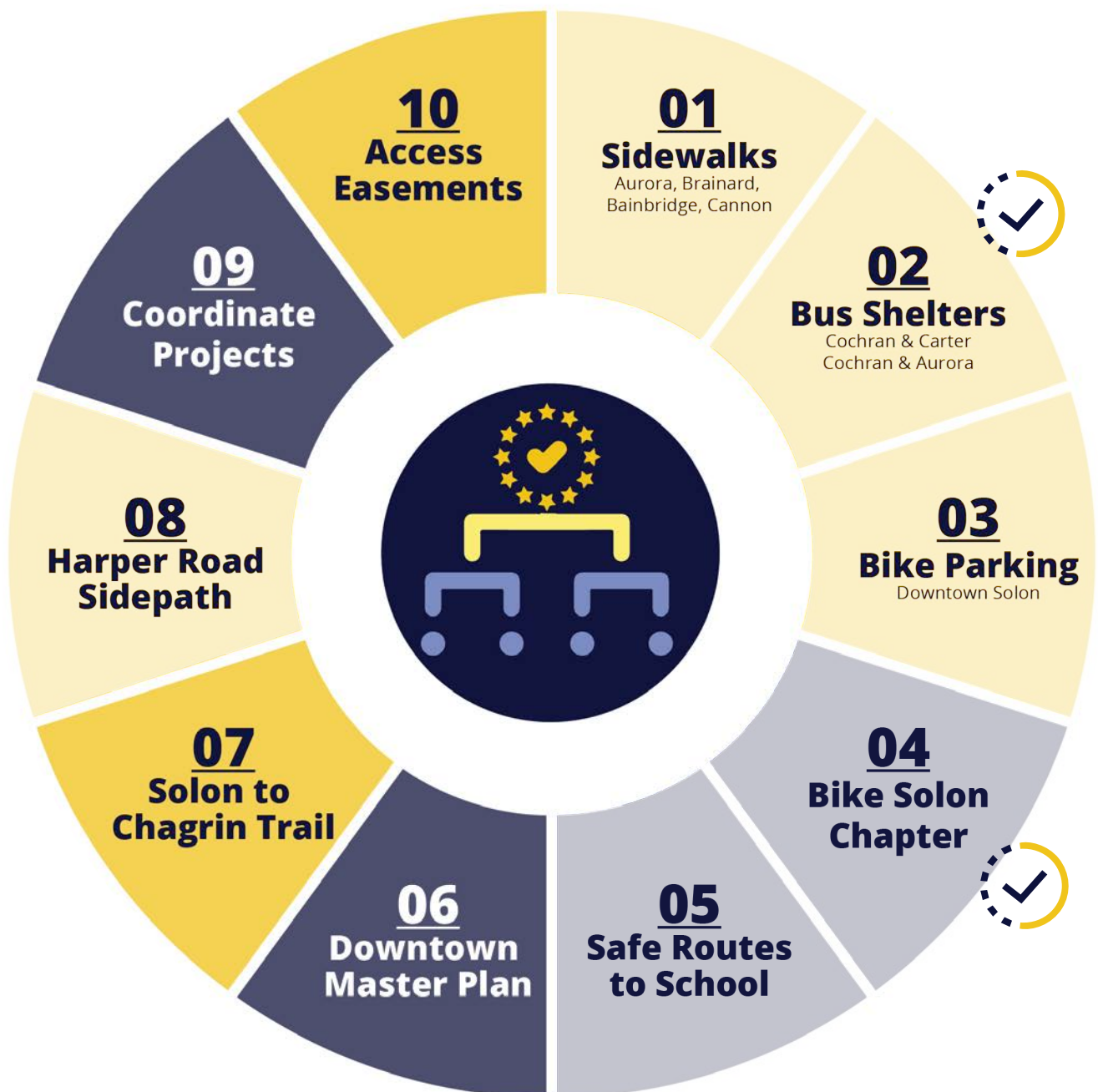
In addition to identifying community priorities it is also important to suggest some 'early wins'. Over 80% of residents felt implementation of recommendations included in the Solon Connects Plan should begin immediately upon completion. To help jump start this effort and help the City know where to begin when transitioning from plan to implementation, 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 that 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 working to solve current issues.



EARLY WIN RECOMMENDATIONS





County Planning

FOR OUR COMMUNITY
FOR OUR REGION
FOR OUR FUTURE

