

URBAN PLANNING GUIDEBOOK

SENIOR THESIS

Example:



Physical Separation



Delineator Post



Parking Stops

ACTIVE TRANSPORTATION 2.2

INTRODUCTION

Active transportation includes all modes of transport that do not involve motorized vehicles. Walking, cycling, rolling, rollerblading, and skateboarding are all examples of active transportation. These human-powered methods are better for shorter, local trips under 3 miles.²³

Active transportation has many benefits for both individual people and communities.

These include health benefits from the exercise used to power these methods. There are also environmental benefits by using zero-emission modes of transport. Active transportation increases accessibility because it is cheaper than other modes of transport. Active transportation can even reduce road traffic by providing alternatives to driving.

1. Great source of exercise
2. Reduction of air pollution
3. Cheaper than alternatives
4. Reduction of road traffic

Level of Service:

Accommodations for active transport may be side paths, multi-use trails, and shared lanes. Helpful measures of these accommodations include Bike Level of Service (BLOS) and Pedestrian Level of Service (PLOS).

	BLOS	PLOS	COMFORT
A	0-1.5	435+	Very pleasant/ Fit for all
B	1.51-2.5	434-370	Pleasant/ Fit for most
C	2.51-3.5	369-305	Acceptable/ Fit for some
D	3.51-4.5	304-240	Unpleasant
E	4.51-5.5	239-175	Very Unpleasant
F	5.5+	175-0	Unsuitable

These measures use the traits of a road, like its speed, and the state of accommodations to find the BLOS/PLOS score. BLOS measures the experience of cycling in the road. PLOS measures the experience of traveling on a side path. These scores reflect how comfortable it is for people to use the accommodation.

Another consideration is differing levels of cyclists. Poor BLOS scores may be fine for cyclists who are more confident. However, many cyclists are not comfortable with poor scores. The majority of cyclists will only cycle when comfortable accommodations are available.

52% of all trips taken are under 3 miles long.²³

75% of adults and 5 in 6 high school students do not meet daily activity guidelines.³

PROPOSAL

1. Engagement is key to creating better communities

2. Urban planning affects many aspects of life

3. Public participation in planning is currently low

4. Existing resources are often inaccessible in design

5. Accessible information allows people to get involved

6. Good design is key to making information accessible

CONCEPTING Research

1. Current thinking aims to demystify planning

2. Existing few participants are not representative of community

3. Lack of knowledge and resources prevents participation

4. Participation enhances community, life satisfaction, and trust

5. Visualization is key in communicating with the public

6. Current resources are not made with citizens in mind

opments represent a piece of a neighborhood, and very large planning efforts encompass multiple neighborhoods. They have the following characteristics: Each neighborhood has a discernible center. This is often a square or a green, and sometimes is distinguished by a busy or memorable street corner. Buildings in the neighborhood center are placed close to the street, creating a well-defined outdoor room. A transit stop would be located at this center. A variety of dwelling types is available — usually freestanding houses, rowhouses, and apartments — so that younger and older people, singles and families, and people with a range of income levels may find places to live. Shops and offices can be at the edge of the neighborhood, in sufficient variety to supply a household’s weekly needs. The ideal neighborhood has small parks and playgrounds convenient to every dwelling. Certain prominent sites at the termination of street vistas or in the neighborhood center are reserved for civic buildings. These provide sites for community meetings, education, religion, or cultural activities.

The scale of the neighborhood is defined by the five-minute walk, a distance of about a quarter mile. Many new urbanists believe that significant numbers of people will choose to walk this distance to meet daily needs, providing that the physical environment is well suited to pedestrians. New urbanist plans typically are marked with circles identifying the quarter-mile radius. At the Mississippi Renewal Forum conducted for the University of Mississippi, one of the largest new

used either an existing pocket park or corner retail as the center, even knowing that in many cases there are no sidewalks,” Sarah Lewis of Ferrell Madden Lewis, formerly of Ayers/Saint/Gross Architects, said of the plan for Long Beach. The team asked local residents to supply names of the existing neighborhoods and help create names — based on Long Beach’s history — for currently unnamed areas that the team believed should be redeveloped.

The five-minute walk (or “pedestrian shed”) diagrams attempt to anchor the concept of neighborhood, providing a shared space, even if, as planning professor Emily Talen observed, the shared space is only conceptual at the time. A virtue of the five-minute walk as a planning tool, coding specialist Sandy Sorlien noted, is that it says “Look, this is the best spot for your catchment — what do you want in it?”

Some new urbanists wonder whether planners can meaningfully plot a five-minute walk on the basis of an “as the crow flies” quarter-mile radius. When a street network is composed of right angles, people may make slower progress toward their destination than a straight-line measurement would suggest, said Eliot Allen of Criterion Planners in Portland, Oregon. Empirical research has found that different kinds of pedestrian destinations have a considerably varied “gravitational pull,” according to Allen. Despite such quibbles, all new urbanists agree that pedestrian sheds are important — and the quarter-mile radius circle re-

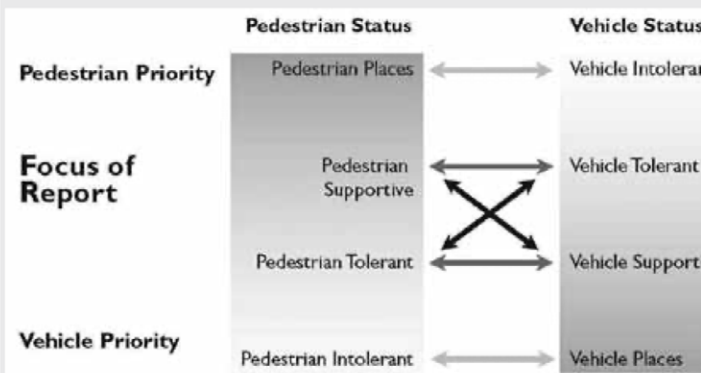
New Urbanism Best Practices Guide:
<https://www.cnu.org/sites/default/files/BestPracticesGuideRed.pdf>

thoroughfare and context by designing thoroughfares that will change as the surroundings vary in urban character.

Walkable communities have the following characteristics:

1. A mix of land uses in close proximity to one another;
2. A mix of density including relatively compact developments (both residential and commercial);
3. Building entries that front directly onto the sidewalk without parking between entries and the public right of way;
4. Building, landscape and thoroughfare design that is pedestrian-scale—in other words, that provides architectural and urban design features scaled and detailed to be appreciated by persons who are traveling slowly and observing from the sidewalk at street level;
5. Thoroughfares designed to serve the activities generated by the adjacent context in terms of the mobility, safety, access and place-making functions of the public right of way; and

urban plans are primarily for pedestrians and generally exclude vehicles. Thoroughfares that are in between these two extremes require trade-offs between pedestrian and vehicle priority. The focus of this report is on the thoroughfares that are “pedestrian supportive” as shown in the spectrum of pedestrian and vehicle supportiveness below. Some of the concepts in this report can be used in pedestrian-tolerant areas as well.




- Pedestrian priority on urban thoroughfares falls into the following ranges:
- Pedestrian places—mixed-use areas with a significant pedestrian presence, not dominated by, and sometimes prohibiting, vehicles;
 - Pedestrian supportive—mixed-use areas with moderate to significant pedestrian presence;
 - Pedestrian tolerant—areas that minimally ac-

Design Walkable Urban Thoroughfares: A Context Sensitive Approach:
<https://www.wite.org/pub/?id=EICFF43C-2354-D714-51D9-D82B39D4DBAD>

CONCEPTING Personas

1. Group contains range of ages and city population size
2. Each persona experiences different issues with urban planning
3. Every persona is unsure of how to see they changes they want in their community

Elise Reed



Age: 36

Gender: Female

Occupation: Social Worker

Family: Married/Kids

Location: Warwick, NY

Bio

Elise is a kind-hearted and confident woman. She grew up in the city and moved to the suburbs when she decided to start a family. While she loves the quiet of the suburbs, she misses the ability to ride her bike to anywhere she needs to go.

As her kids get older, she spends more time looking for fun activities to create family memories while also trying to foster their growth.

Goals

- Stay physically active to keep herself healthy as she grows older.
- Find fun activities that her whole family can participate in.
- Encourage her kids to become more independent as they grow up.

Pain Points


- Unable to continue biking with lack of appropriate infrastructure.
- Constantly working around kids' schedules for drop offs and pick ups.
- Struggles to meet her exercise goals and find family activities.
- Uninformed locals shut down bike infrastructure during public comment.

Quotes

"I would love to bike with my kids, but there isn't anywhere safe for families."

"It would be much easier if my kids could bike to school instead of needing to drop them off everyday."

Leslie Stuart



Age: 76

Gender: Male

Occupation: Retired

Family: Widower/Kids

Location: Greenville, SC

Bio

Leslie is a hard-working, family man. After years of working labor-intensive jobs, he has had to deal with many health issues in his retirement.

Leslie watches over his grandchildren once a week and loves going out to meet with old friends when he can get a ride. He tries to remain connected to his family and community, but it has been much harder with his mobility issues. When without a ride, he spends his all time at home.

Goals

- Remain as independent as possible despite health issues.
- Continue regularly going out to favorite restaurants and bars.
- Take grandchildren out to parks, museums, and libraries.

Pain Points


- Unable to get necessities without ability to drive a car.
- Reliant on other people's schedules to leave his house.
- Feels unsafe to cross intersections with limited mobility.
- Unsure of what to advocate for during public forum sessions.

Quotes

"I should be able to buy my groceries without any help."

"I hate needing to call my son to give me a ride every time I need to go to the bank or pick up a prescription."

Courtney Dean



Age: 22

Gender: Female

Occupation: Student

Family: Single

Location: Tacoma, WA

Bio

Courtney is creative and outgoing. She recently moved away from her family to go to college for a culinary degree. She dreams of opening a bakery, but the rent for a building to run it out of is too expensive.

Courtney has found it difficult to find opportunities to connect with her new neighbors and classmates, but is always looking for any chance to meet with new people.

Goals

- Make connections with the people in her new town.
- Support local restaurants and shops whenever possible.
- Budget money to save up to start her bakery.

Pain Points


- Restaurants and shopping require a long walk or driving to reach.
- Does not have location to meet with people in her neighborhood.
- Unable to open a business in her neighborhood due to zoning restrictions.
- Needs to present case for front lawn businesses to city officials.

Quotes

"If it weren't so expensive, I'd have already started my business by now."

"I wish I didn't have to travel across town to go shopping or eat out, it'd be nice to have some place I could go to every day."

Kris Wagner



Age: 45

Gender: Male

Occupation: Management

Family: Married

Location: Sedona, AZ

Bio

Kris is anxious and hard-working. Due to staff shortages, he has been working overtime for several months. While he loves his job, Kris is always ready to go home to relax with his husband at the end of the day.

Recently, bicycling has become more popular in his community, which has made Kris' commute more stressful with dealing with bikes in the road or riding on a thin shoulder next to the road.

Goals

- Keep commute as short and stress-free as possible.
- Avoid any conflict on the road with drivers or cyclists alike.
- Always arrive to work early or on time.

Pain Points

- Anxious about bicycles riding next to him on the road when he is driving.
- Confused on right-of-way with pedestrians and cyclists.
- Upset about traffic congestion during his daily commute.
- Unsure what solutions will bring about the change he wants.

Quotes

"I wish I could just instantly be home after my shift is over."

"I constantly see cyclists weaving in and out of the road, I'm so scared they might suddenly swerve out in front of me."

CONCEPTING Outcomes

1. Create a guidebook to help citizens engage in urban planning
2. Available as a printed book and digital PDF
3. Includes information on planning concepts and ways to get involved
4. Resource should be accessible, informative, and engaging

CONCEPTING Color/Type Studies



CITIZEN INVOLVED TRANSPORTATION

ACTIVE TRANSPORTATION

This section covers topics relating to pedestrian and bicycle infrastructure, including options for bike lanes, multi-use paths, and safe crosswalks.

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CONCEPTING Visual Aid Studies

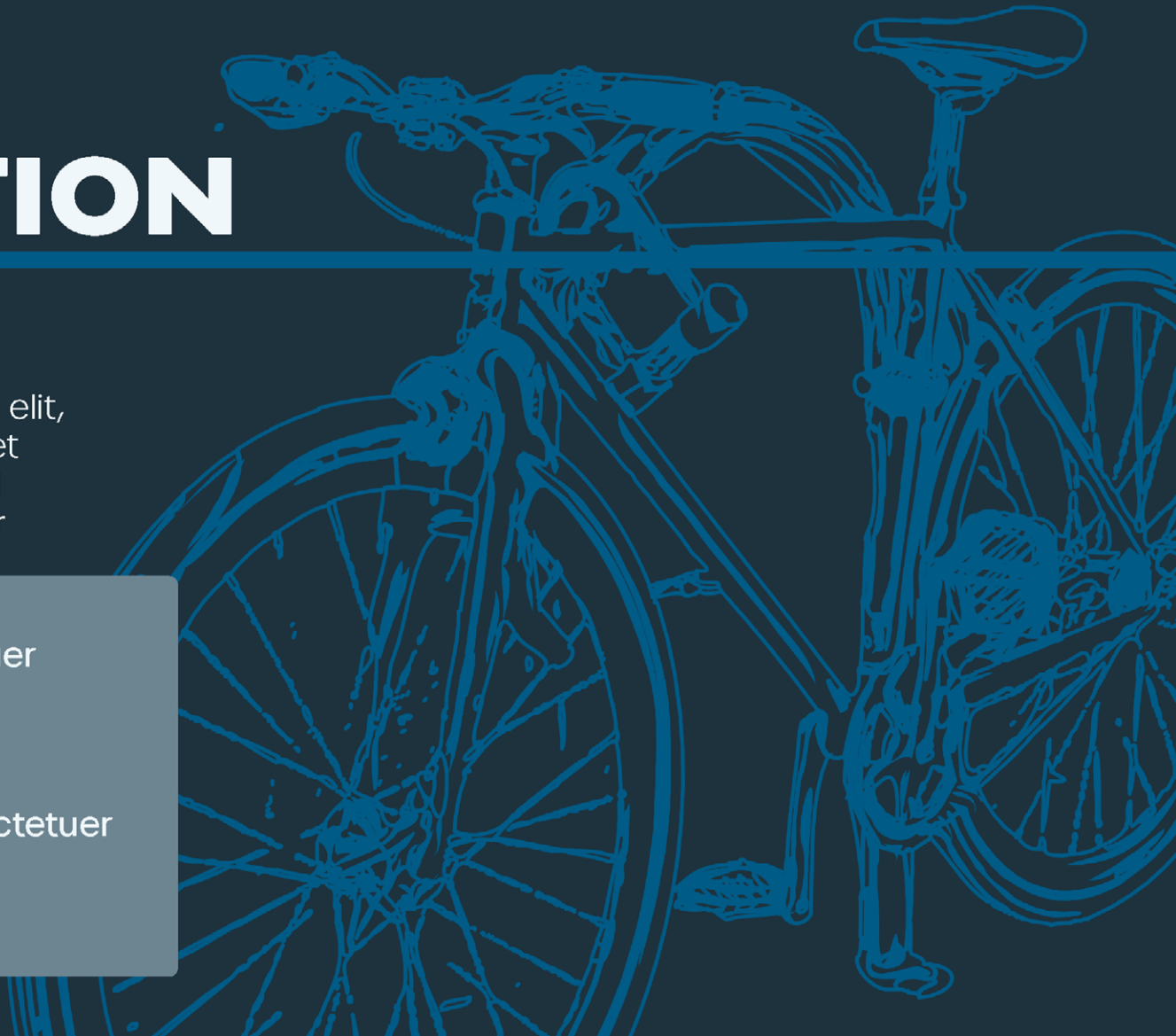
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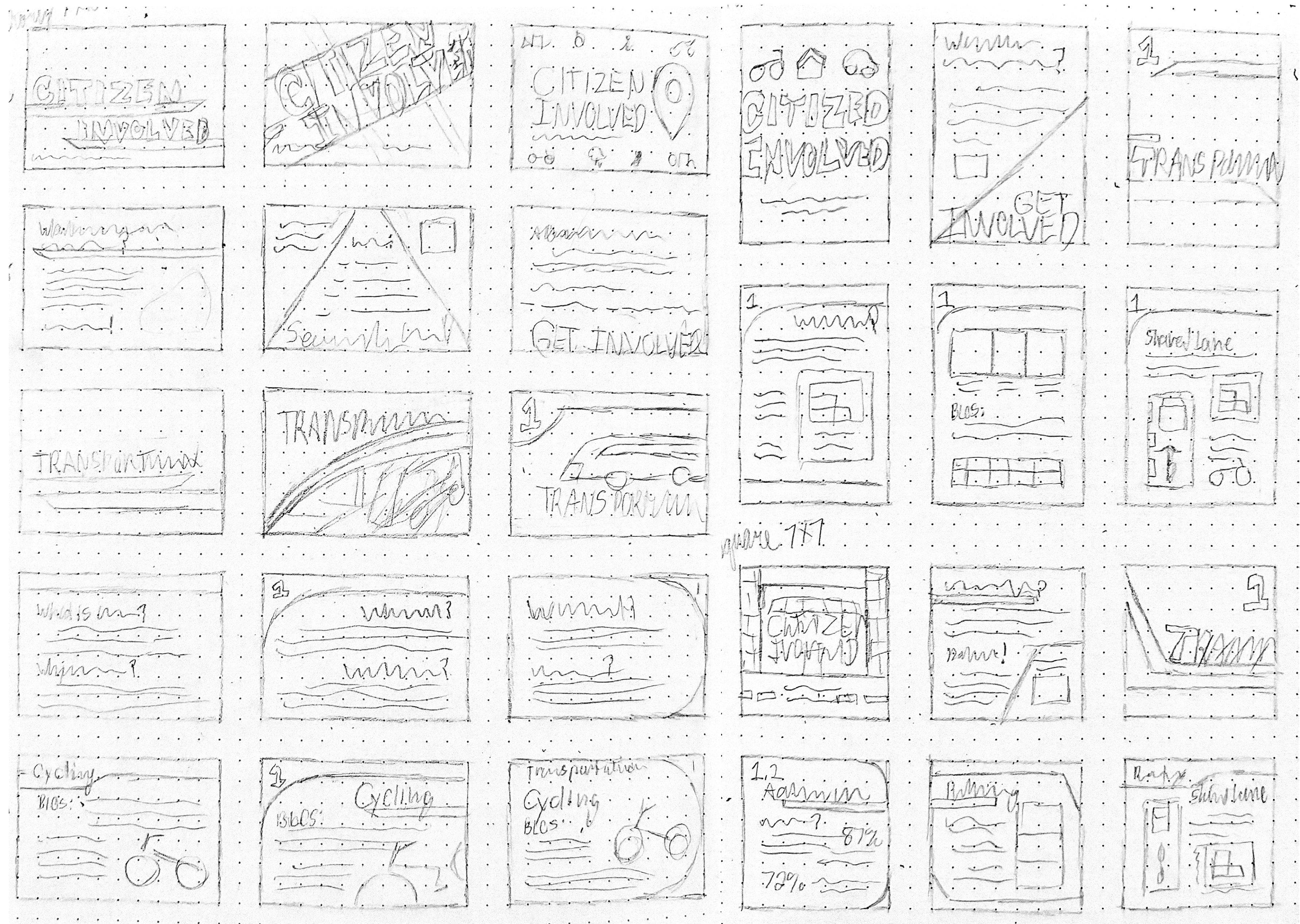
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CONCEPTING Dimensions



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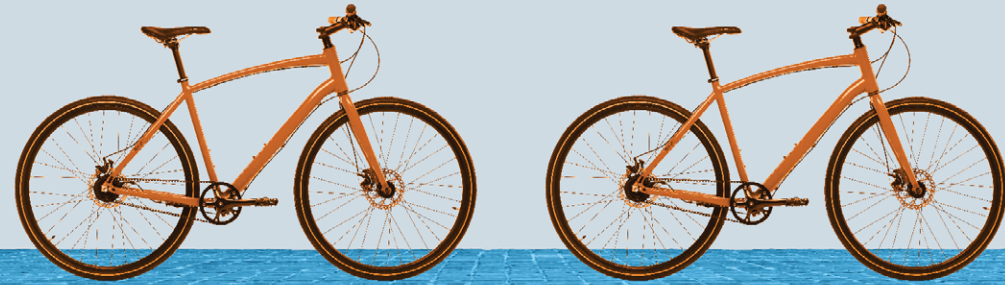
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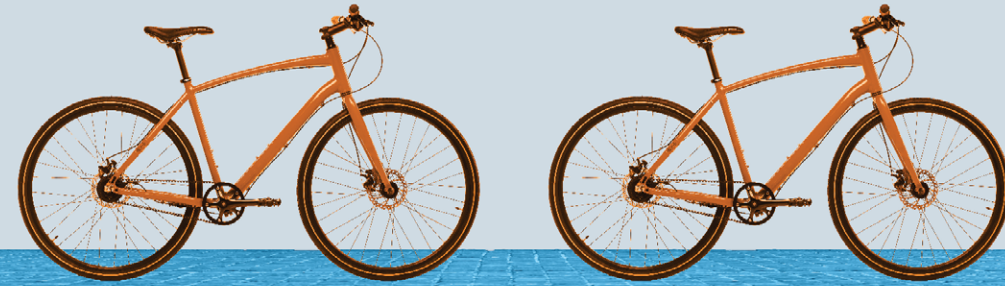
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CONCEPTING Visual Style



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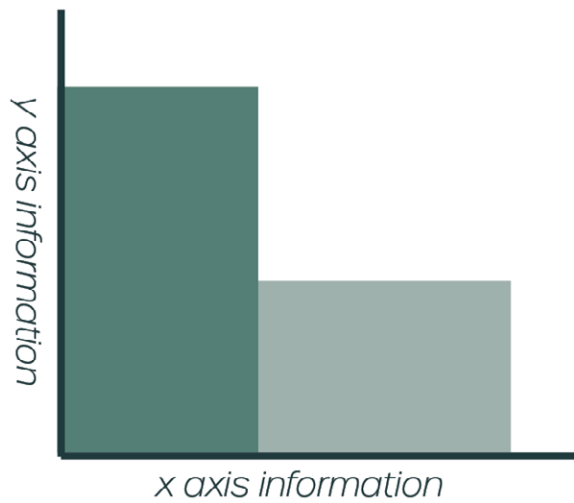
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FINAL DESIGN

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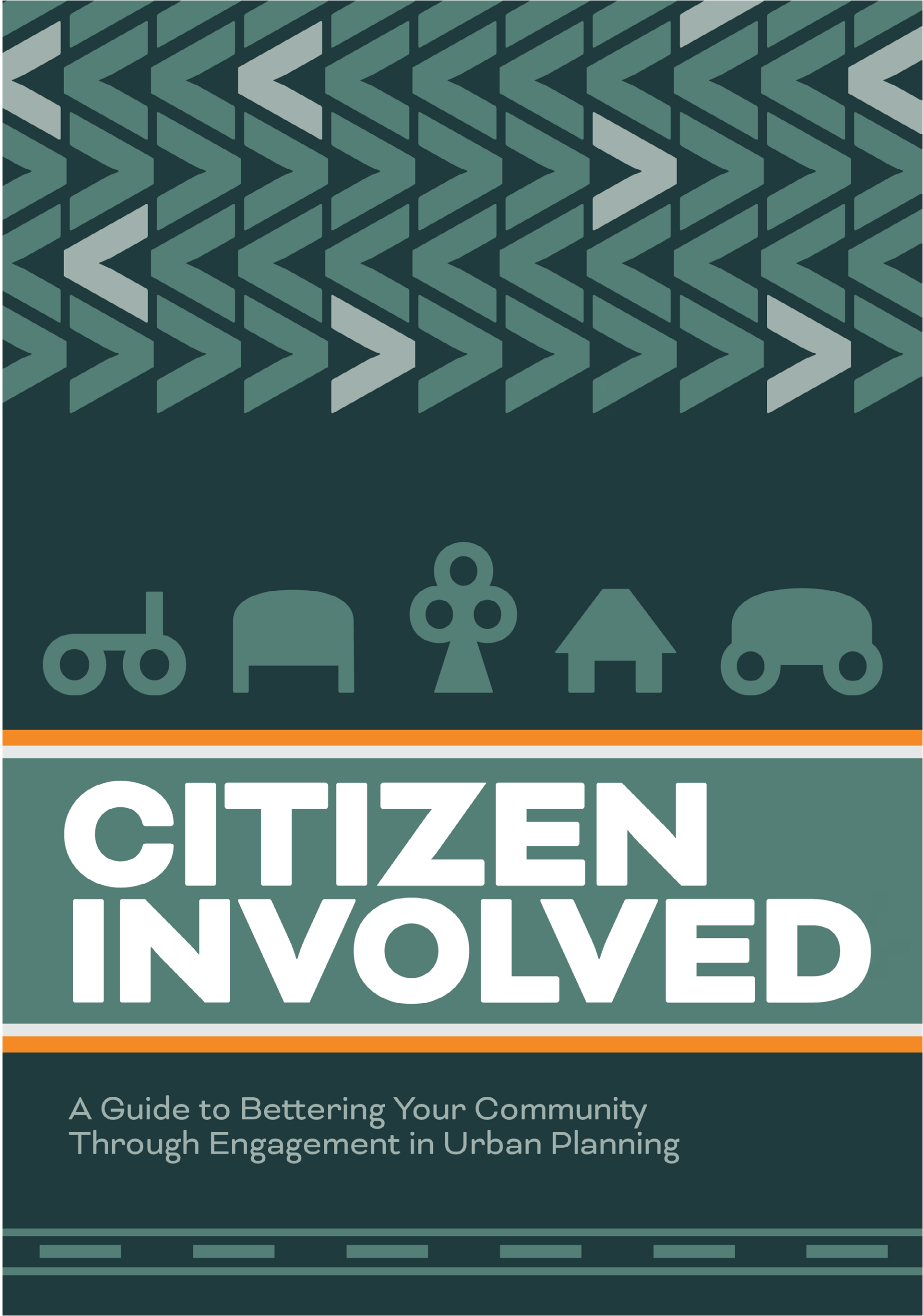


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ACTIVE TRANSPORTATION 2.2

INTRODUCTION

Active transportation includes all modes of transport that do not involve motorized vehicles. Walking, cycling, rolling, roller-blading, and skateboarding are all examples of active transportation. These human-powered methods are better for shorter, local trips under 3 miles.²³

Active transportation has many benefits for both individual people and communities.

52% of all trips taken are under 3 miles long.²³

75% of adults and 5 in 6 high school students do not meet daily activity guidelines.³

These include health benefits from the exercise used to power these methods. There are also environmental benefits by using zero-emission modes of transport. Active transportation increases accessibility because it is cheaper than other modes of transport. Active transportation can even reduce road traffic by providing alternatives to driving.

1. Great source of exercise
2. Reduction of air pollution
3. Cheaper than alternatives
4. Reduction of road traffic

Level of Service:

Accommodations for active transport may be side paths, multi-use trails, and shared lanes. Helpful measures of these accommodations include Bike Level of Service (BLOS) and Pedestrian Level of Service (PLOS).

	BLOS	PLOS	COMFORT
A	0-1.5	435+	Very pleasant/ Fit for all
B	1.51-2.5	434-370	Pleasant/ Fit for most
C	2.51-3.5	369-305	Acceptable/ Fit for some
D	3.51-4.5	304-240	Unpleasant
E	4.51-5.5	239-175	Very Unpleasant
F	5.5+	175-0	Unsuitable

These measures use the traits of a road, like its speed, and the state of accommodations to find the BLOS/PLOS score. BLOS measures the experience of cycling in the road. PLOS measures the experience of traveling on a side path. These scores reflect how comfortable it is for people to use the accommodation.

Another consideration is differing levels of cyclists. Poor BLOS scores may be fine for cyclists who are more confident. However, many cyclists are not comfortable with poor scores. The majority of cyclists will only cycle when comfortable accommodations are available.

RESIDENTIAL 3.1

INTRODUCTION

Residential land use defines where and how housing can be built. These rules are known as zoning codes. Zoning codes give direction on housing development with consideration to community character and existing uses.

Residential areas can include many different types of housing, from single-family homes to apartment complexes. Zoning codes inform where each type of housing can be located.

94% of US communities have a minimum lot size rule.²³

75% of residential land in United States is zoned for single-family residential use.³

Modern zoning practices separate residential areas from commercial ones. This means housing, shopping, and offices are not allowed to be built in the same area. This type of zoning is called **Euclidean zoning**. Euclidean zoning is the most common type in the United States²³. However, there are alternative methods of zoning that do not separate these uses.

Mixed-Use Development:

Mixed-use development is a style of development that allows residential and commercial uses in the same area. This creates neighborhoods where residents can easily walk or bike to jobs and shopping from their home.

Mixed-use development is based on older principles of urban design that existed before modern zoning laws. These old areas allowed uses to develop naturally with businesses and homes allowed to mix together.

This development style creates walkable/ bikeable neighborhoods, with reduced reliance on cars. It can also increase housing supply because housing type is not restricted. Because residents stay in the area for their needs, these areas also support small businesses and the development of "third places". **Third places** are public spaces that provide social interaction and build community.

Benefits:

1. Greater access to shopping and employment

2. Increased housing supply

3. Greater support for small businesses

4. Creation of third places

5. Greater social connection

RESIDENTIAL ZONING DISTRICTS

Residential zoning districts can help create a peaceful atmosphere. Modern zoning separates these areas from the heavy traffic and noise that can be caused by commercial and industrial areas.

In addition to separating residential uses from commercial uses, zoning often separates different density levels of housing. Some areas may be zoned exclusively for detached single-family homes. Other areas may be zoned for large apartment complexes. Housing in-between these two types is referred to as “**missing middle**” housing. These housing types include townhouses and duplexes. Higher housing density levels allow for more people to live in one building.

Advantages:

Peaceful atmosphere in residential areas. Keeps disruptive uses away from homes. Preserves character of neighborhood.

Drawbacks:

Increases travel time from home to workplaces or shopping. Limits variety of housing available. Potential to reduce housing supply and affordability.

District Types:

Residential zoning districts include several types of uses. Zoning classifications can vary between communities, but typically R refers to residential. Numbers or letters after this generally refer to the density of housing allowed. They may also refer to what uses other than residential can exist in the district.

CLASS	ZONE TYPE	ALLOWED USES
R-1	Single-Family Residential	Detached, single-family houses
R-2	Two-Family Residential	Duplexes + all above uses
R-3	Small Multi-Family Residential	Triplexes, fourplexes, + all above uses
R-4	Medium Multi-Family Residential	Townhouses, apartments, + all above uses
R-5	High Multi-Family Residential	Condominiums + all above uses
R-MH	Mobile Home Parks	Mobile homes or manufactured homes
R-A	Rural Residential	Single-family homes and agricultural uses
MU-R	Mixed-Use Residential	Mostly residential with some commercial

BUS SERVICES

Bus services use buses to provide public transportation. Bus services work in many different sizes of communities.

These services often serve as a cheap public transportation option. Bus services provide connections within and between cities. They can connect other forms of public transit. Bus services can be used as part of larger transit trips, like taking a bus to a train station.

These services are faster and cheaper to implement than rail systems. They are also more flexible than rail options. This allows services to change to suit the community.

Service Types:

Bus services include many different service types. These types often vary with the size of the community they serve. While all communities can benefit from bus transit, not all have the ridership to support every type. There are four main types of bus services:

Demand-Response:

Responds to desired pick up and drop off locations of users. Users schedule their desired date, time, and location. Recommended for rural areas.

Paratransit:

Type of demand-response service. Required to be provided within three-quarters of a mile of existing public bus or train systems. Assists people who are unable to use fixed-route services.

Fixed-Route:

Follows a set route and schedule. Operates using designated stops and timetables. Works best in densely populated areas.

Flex Route:

Hybrid of fixed-route and demand-response services. Operates using set timetables. Deviates from route for requested locations.

Bus Rapid Transit:

Bus Rapid Transit (BRT) is a transit system that relies entirely on bus services. These systems offer a high-capacity transit option with the lower cost of buses.

BRT systems give priority to buses to allow for faster, more convenient service. This may include dedicated bus lanes, signal priority at intersections, electronic payment systems, and bus stop enhancements, like benches and shelters.

90% less CO2 emissions when compared to cars.²³

55% travel time savings for BRT systems compared to normal bus service.³

SHARED LANES

Shared lanes allow active transportation to share existing roadways. Low vehicle speeds/volumes can allow pedestrians and cyclists to be in the street with cars. Higher speeds and volumes will be less suitable for pedestrians. Many shared streets will only include cyclists alongside cars.

These roads are typically limited to one lane per direction. They also have speeds under 25 miles per hour. Shared lanes are usually found in residential areas.

In shared lanes, cyclists behave like cars. Cyclists must follow the direction of traffic. Motor vehicles use the same space and speed as cyclists. Cyclists must observe traffic signals and signs. Cyclists use their arms to signal turning direction. At intersections, preference is given to cyclists. Both cyclists and cars must yield to pedestrians.

Markings:

Shared lanes are marked with this symbol. Share the road arrows, or "sharrows," tell drivers to share the road with cyclists.



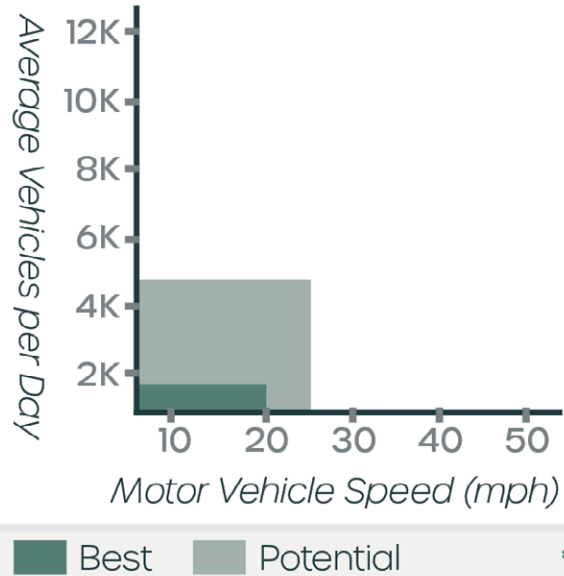
Benefits:

- 1. Increases awareness of cyclists on street
- 2. Reduces cyclists riding in sidewalk
- 3. Encourages cyclists to follow rules of the road

Example:



BEST USE CASES

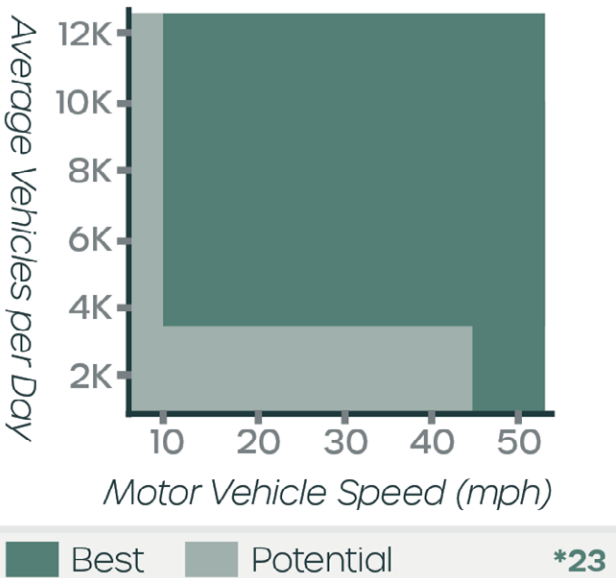


MULTI-USE PATHS

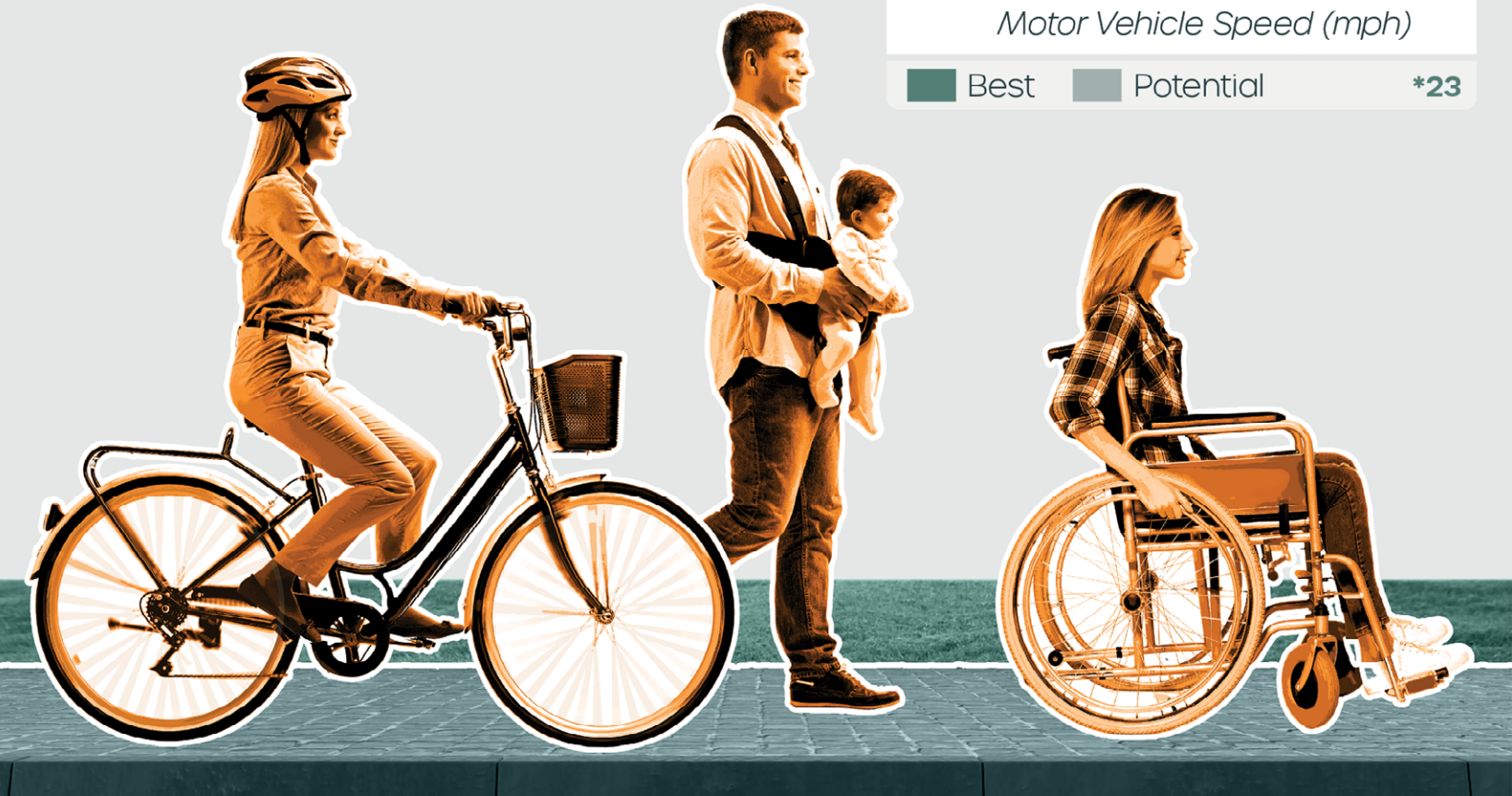
Multi-use paths are located off roads and are shared by pedestrians and cyclists. These paths may be separated from the road by a curb and unpaved space. They may not run alongside a road at all. Some paths avoid roads to provide a quieter experience.

Multi-use paths are shared by all types of active transportation. These paths provide enough space for cyclists and pedestrians to travel in either direction. Wide widths also allow users to pass one another. Faster users, like cyclists, are not affected by slower users. This makes it ideal for all uses.

BEST USE CASES



Example:

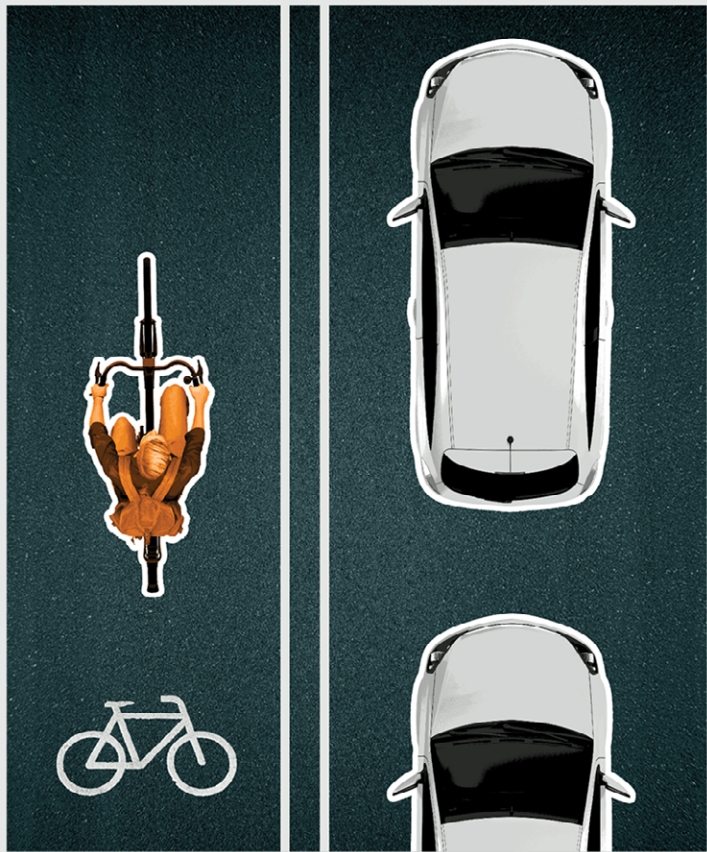


These facilities are regarded as the most comfortable experience for active transportation. They reduce risk by completely separating from traffic. They provide a more pleasant experience away from road noise. Multi-use paths can be used for travel, exercise, or recreation.

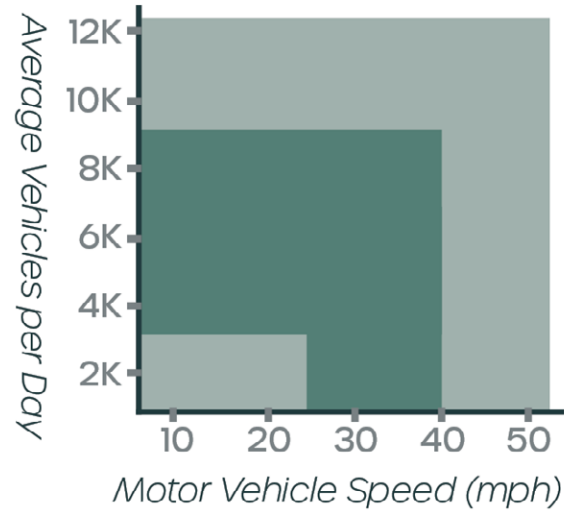
- 1. Reduced risk from car traffic
- 2. Peaceful atmosphere
- 3. Community building
- 4. Suitable for all users
- 5. Recreation opportunity
- 6. Connection to green spaces

FINAL DESIGN Visual Aids - Full Page

Example:



BEST USE CASES



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Physical Separation Methods:



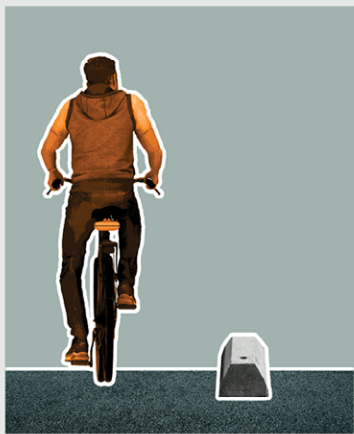
Delineator Posts



Bollards



Planters



Parking Stops



Concrete Barrier

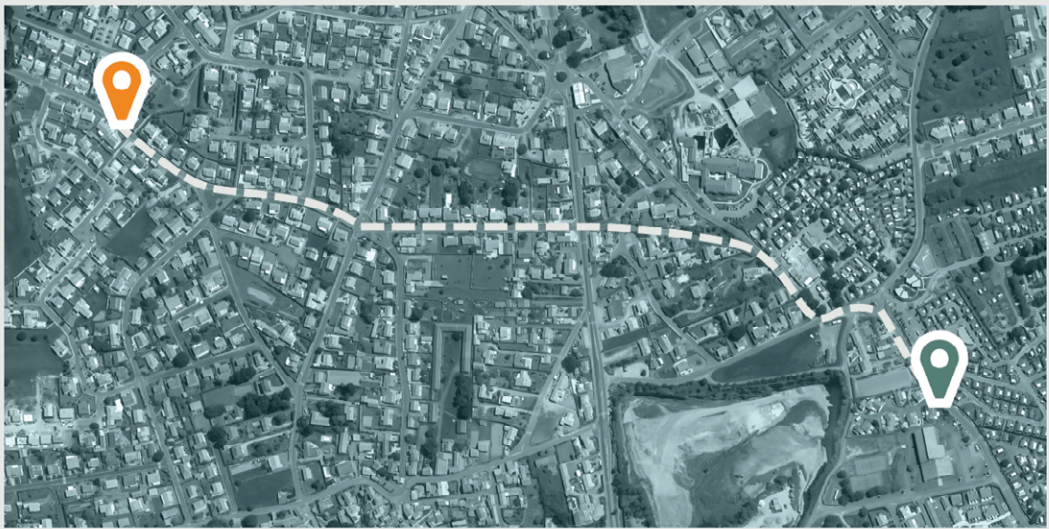


Raised Median

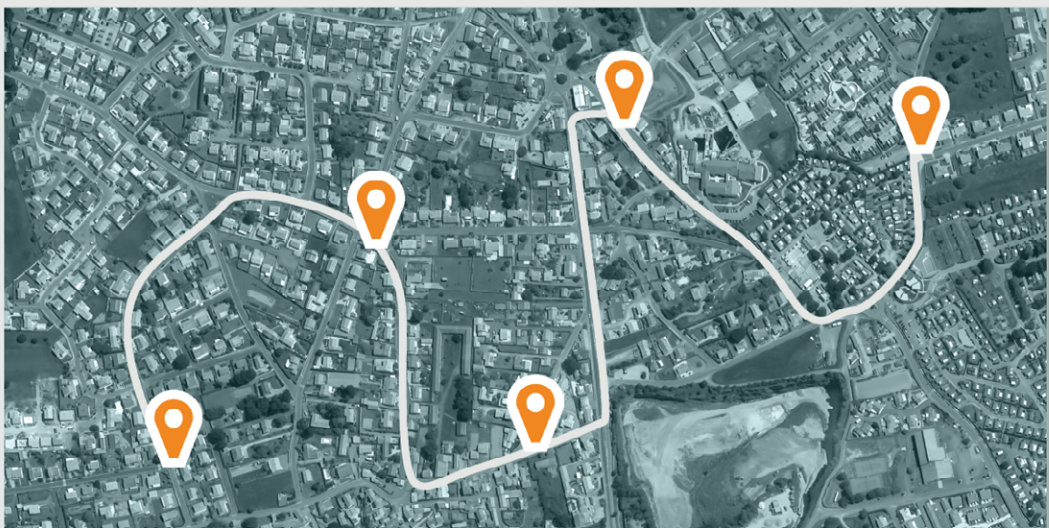


Raised Lane

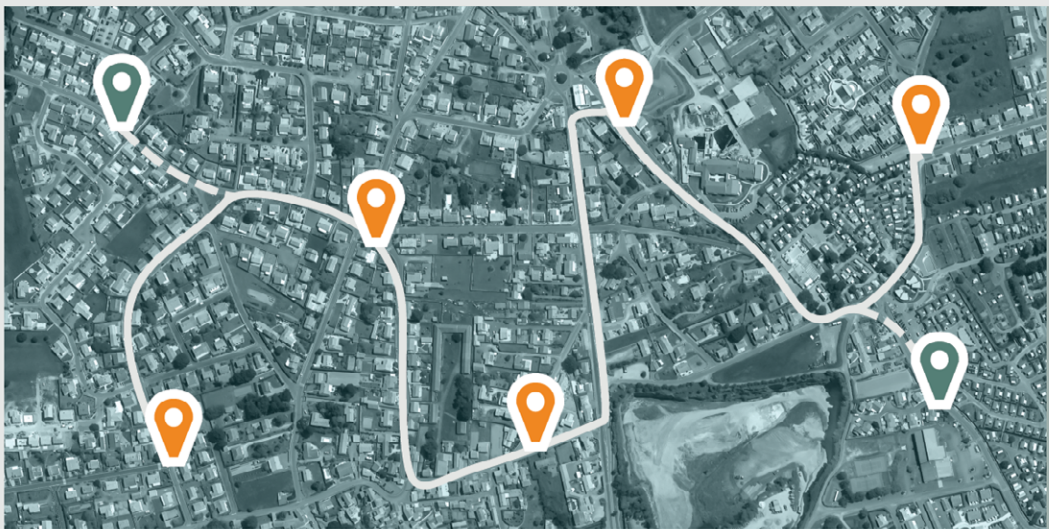
Demand-Response:



Fixed-Route:



Flex Route:



WHY PUBLIC PARTICIPATION?

1.2

INTRODUCTION

Public participation engages the public in urban planning decisions. Urban planners may seek input from the public on decisions. The public is then able to help shape the future of their community

Participation is sought when making large decisions that may greatly affect the community. Community input is given on new building developments, changes to zoning codes, and plans for certain areas. Public participation is especially needed to develop a master plan, which is used to guide community improvement over a long period of time.

Public participation serves many functions: informing the public of new developments, building community, incorporating diverse opinions, improving trust in planners, and increasing approval of decisions. Including the public on decisions allows planners to assess community needs. It also allows them to see decisions from different perspectives.

Greater emphasis has been placed on public participation in recent years. There has been recognition of the positive impacts it has on urban planning decisions.

- | | |
|------------------------------|---------------------------------|
| 1. Informs public of changes | 4. Builds sense of community |
| 2. Provides diverse opinions | 5. Improves trust in planners |
| 3. Gives community a voice | 6. Increases community approval |

How To Get Involved:

There are many ways to get involved with the planning of your local community. This guidebook will give you the tools you need to help shape your community.

Information on urban planning concepts will help you communicate with your local urban planners. Learning about these concepts can help you decide what you would like to see in your community's future.

There will also be information on ways to **Get Involved**. This will include an overview of how urban planning is done. Suggestions will be given for the best ways to get involved in public participation in your area. A list of resources will give you tools to get started in helping shape your community.

This guidebook is intended to be a starting point in engaging in your community and helping better it through urban planning.

RESOURCES

4.3

Tools:

- **BLOS/PLOS Calculator:** <https://rideillinois.org/blos/losform.htm>
Calculator giving BLOS/PLOS scores based on street information
- **Close - Travel Time Map:** <https://close.city>
Application showing the time needed to walk/bike/transit in communities
- **Streetmix:** <https://streetmix.net>
Website allowing people to visualize potential street redesigns

Citizen Organizations:

- **Strong Towns:** <https://www.strongtowns.org>
Organization advocating for safe, inviting, and financially solvent cities
- **PeopleForBikes:** <https://www.peopleforbikes.org>
Coalition working to making biking safer and more accessible
- **Voices for Public Transit:** <https://voicesforpublictransit.org>
Movement advocating for expansion of public transit

Where To Learn More:

- **Planetizen - Planopedia:** <https://www.planetizen.com/planopedia>
Platform offering education and news about urban planning
- **Strong Towns - Action Lab:** <https://actionlab.strongtowns.org>
Organization providing articles on various urban planning topics
- **PedBikeInfo:** <https://www.pedbikeinfo.org>
Center providing information for improving safety of pedestrians/cyclists