

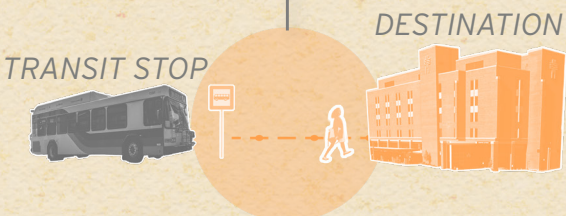
ROUTE AWAKENING
TACTICAL SOLUTIONS TO TRANSIT GAPS

**FIRST
MILE**



First part of transit journey

**LAST
MILE**



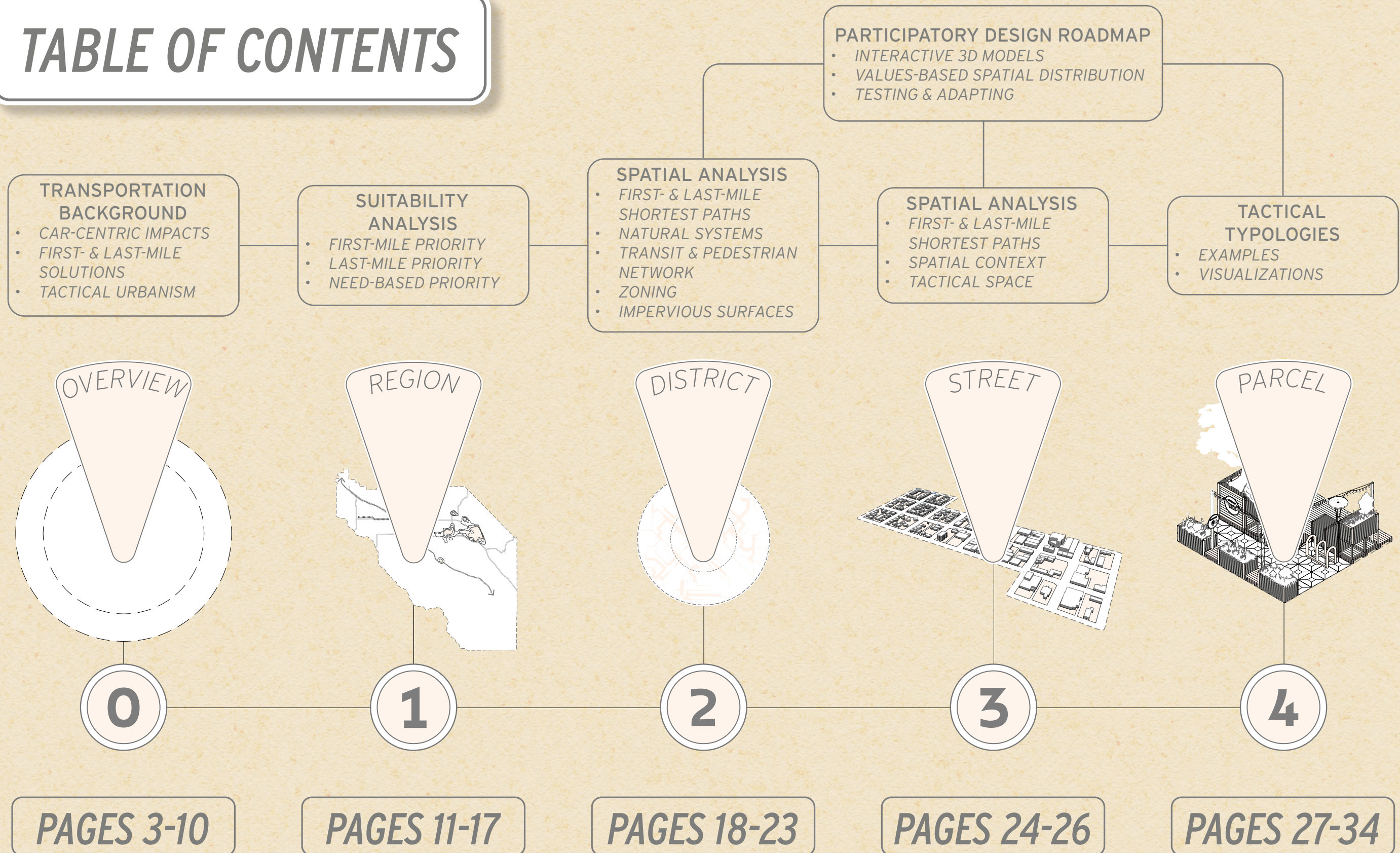
Last part of transit journey

"A STREET WITHOUT A STREET LIFE IS NO STREET AT ALL;
IT IS LITTLE MORE THAN A ROUTE FOR CARS."

- Christopher Alexander
A Pattern Language: Towns, Buildings, Construction, 1977

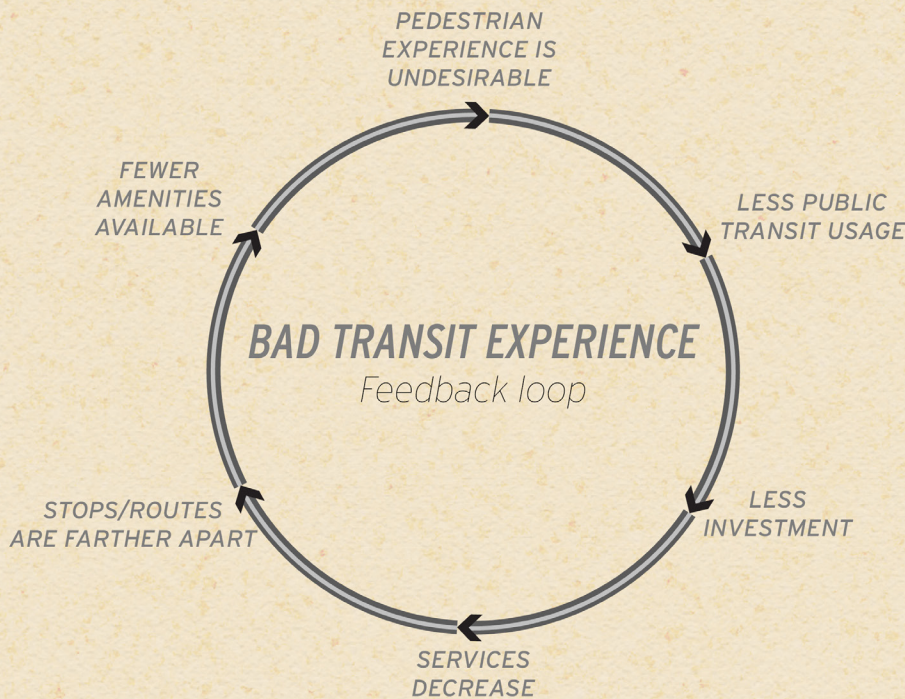


TABLE OF CONTENTS



NO ALTERNATIVES

CAR-CENTRIC PLANNING TURNS THE FREEDOM TO DRIVE INTO THE NEED TO DRIVE



DANGER

- 1/34 deaths are caused by cars¹
- 60-80 million deaths since their invention¹

REDUCED WALKABILITY

- Safety and public health risks reduce willingness to walk⁴
- Exposure to air pollution¹
- Linked to obesity³

URBAN HEAT ISLAND

- Pavement is 20-40°F hotter than surroundings³
- Impacts pedestrian comfort⁴

POLLUTION

- 29% of U.S. greenhouse gas¹
- Exacerbates climate change¹
- More severe weather¹
- Micro-plastics, heavy metals, road salts, oil spills, litter & waste¹

IMPERVIOUS SURFACES

- Increase runoff of sediment and pollutants¹
- Increase flood risk¹

CAR OWNERSHIP

- 20% of household expenses²
- 30% of Americans don't have driver's license²

¹ Miles, P., Smith, B. M., Jari, A., McNeill, G., & Gathorne-Hardy, A. (2019). Car harm: A global review of automobilism's harm to people and the environment. *Journal of Transport Geography*, 75, 102817. <https://doi.org/10.1016/j.jtrangeo.2024.102817>
² American Public Transportation Association. (2022, September). American Public Transportation Association March Savings Report. https://www.apta.com/mediacenter/pressreleases/2016/04/20/Pages/042024_Transit_Savings.aspx
³ Raynault, E., & Christopher, E. (2018). How does transportation affect public health? U.S. Department of Transportation Federal Highway Administration. <https://highways.dot.gov/public-roads/mayme2013/how-does-transportation-affect-public-health>
⁴ Kjaresdatter, E., Page, J., Mørberg, U., Næss, H., & Kjøller, L. (2022). First mile/last mile problems in smart and sustainable cities: A case study in Stockholm County. *Journal of Urban Technology*, 29(2), 115-137.
⁵ Row, A. T., & Jacobs, J. (1962). The Death and Life of Great American Cities. The Yale Law Journal, 71(8), 1597. <https://doi.org/10.2307/794529>
⁶ Park, A., Jari, A., & Chen, S. (2020). First/last mile experience matters: The influence of the built environment on satisfaction and loyalty among public transit riders. *Transport Policy*, 102, 32-42. <https://doi.org/10.1016/j.tranpol.2020.08.003>
⁷ Heinen, E., & Malhotra, G. (2019). Multimodality and CO2 emissions: A relationship moderated by distance. *Transportation Research Part D: Transport and Environment*, 75, 179-196. <https://doi.org/10.1016/j.tran.2019.08.022>

Auto-centrism has lead to auto-dependency, as transportation in most of American has become less about the freedom to drive, and more about the need to drive¹. Personal automobile travel is so ingrained in our culture that anything other than car travel is called “alternative transportation”. Car-centrism is the default development pattern in most of America, but it comes with externalities: automobile accidents, pollution, carbon emissions, sedentary travel, resource extraction, intentional

violence, and the consumption of time and space². Car-centric transportation contributes to climate change, fragments ecosystems, and poses serious risks to public health and mental wellbeing². Paired with sprawl, car-centrism is a feedback loop that constantly demands more time, space, and infrastructure³. To address these challenges, cities are investing in multi-modal transit systems that integrate walking, biking, and public transportation.

Research shows that multi-modal transportation significantly reduces pollution, improves public health, and enhances connectivity⁴. However, spread-out, unsafe, unpleasant car infrastructure limits the feasibility of any other form of transportation⁵. Externalities of car-centrism negatively affects public transit ridership⁴. Dangerous, soulless routes discourage transit use and limit access for those who rely on it most, which creates a feedback

loop⁴. This feedback loop results in less transit ridership, less investment in transit infrastructure, decreased services and degrading the alternative transportation experience⁵. See appendix 5.01 for more car-centric impacts.

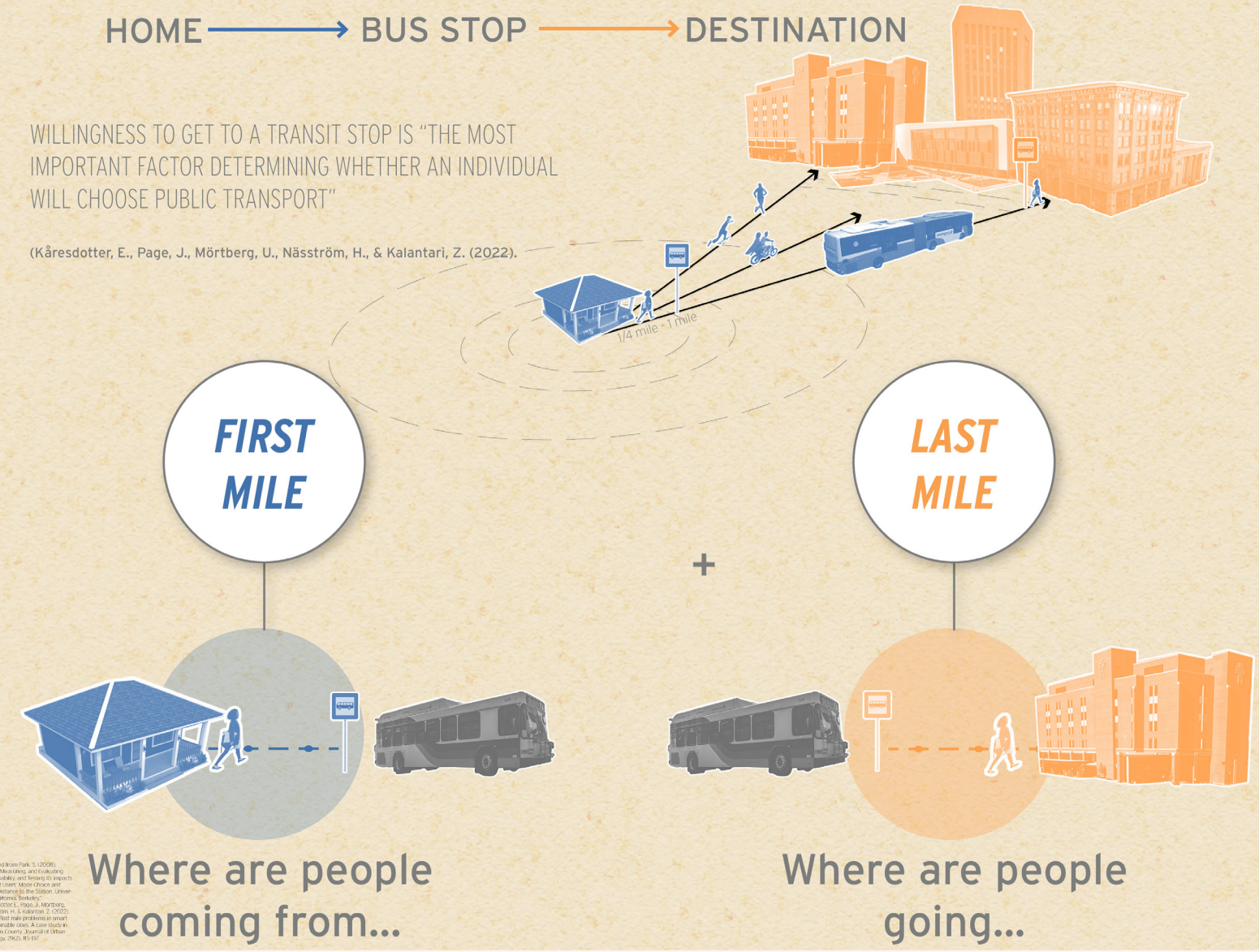
FIRST / LAST MILE IMPROVEMENT

BEGINNING & END OF EVERY TRANSIT JOURNEY

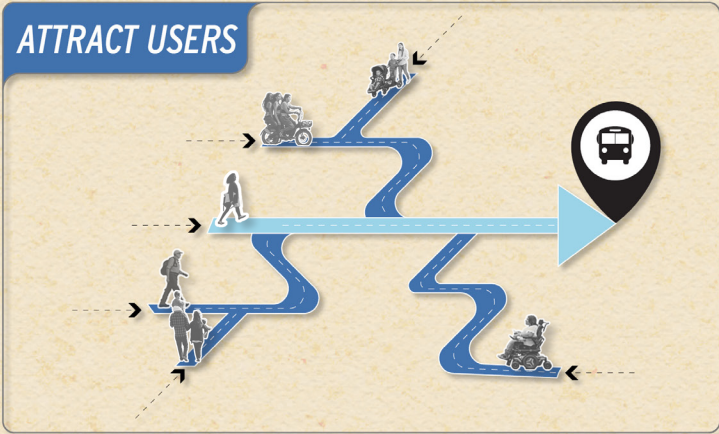
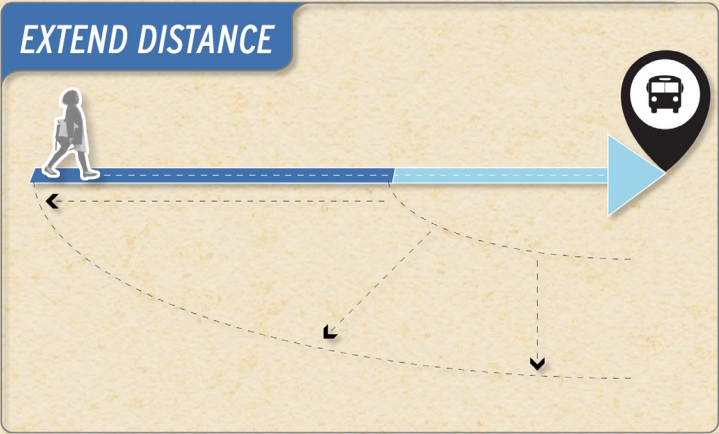
HOME — BUS STOP — DESTINATION

WILLINGNESS TO GET TO A TRANSIT STOP IS “THE MOST IMPORTANT FACTOR DETERMINING WHETHER AN INDIVIDUAL WILL CHOOSE PUBLIC TRANSPORT”

(Kåresdotter, E., Page, J., Mörtberg, U., Näsström, H., & Kalantari, Z. (2022).



PROJECT OUTCOMES



Where are people coming from...

Where are people going...

Where are people coming & going...

Who relies on transit...

The goal of this work is to increase the distance people are willing to travel to or from a transit stop and to encourage broader use of the public transportation network.

First and last mile (FMLM) connectivity refers to a person’s willingness to get to or from a transit stop, a dynamic range shaped by personal preferences and route conditions¹. It includes tangible infrastructure, like sidewalk continuity and pedestrian amenities, as well as less visible qualities

like vibrancy and social connection¹. Strengthening these connections is essential to building a successful transit system and breaking the feedback loop of car dependency².

To increase ridership, it is necessary to understand what influences a person’s decision to walk or roll to a stop. First mile connectivity describes the route from home to transit and relies on safety and multi-modal flexibility³. This includes protected paths, clear crossings, and options to

bike, mosey, or park nearby. It also depends on traffic calming measures that make the journey feel safe. Last mile connectivity covers the path from the transit stop to the final destination, where improvements focus on placemaking, wayfinding, and creating welcoming, active environments¹.

The category of “both” refers to areas that function as both first and last mile connections. These locations offer the most strategic opportunities for investment, as they serve people

at both ends of their trip. The term “need based” refers to populations most likely to use public transit, including those with economic barriers to car ownership, limited mobility, or the inability to drive. Prioritizing improvements in these areas supports equity, health, and enhancing system performance.

¹ Adapted from Park, S. (2008). Defining, Measuring, and Evaluating First Mile Connectivity and Its Impact on Transit User Mode Choice and Willingness to Travel to the Station. University of California Berkeley.
² Kåresdotter, E., Page, J., Mörtberg, U., Näsström, H., & Kalantari, Z. (2022). First mile connectivity: A case study in Stockholm County. Journal of Urban Technology, 26(2), 105-127.

³ Minkus, H. (2020). Planning for the First and Last Mile: A Review of Practices at Selected Transit Agencies in the United States. Transportation Research Board, 2020, 1-10. <https://doi.org/10.31827/TAR.2020.1-10>
⁴ Zou, T., Wu, H., & Chen, H. (2020). Promoting transit use by improving first and last mile accessibility: Lessons from modeling community transit use. Transportation Research Part D: Transport and Environment, 86, 102446. <https://doi.org/10.1016/j.trd.2020.102446>

COMMON BARRIERS TO IMPROVEMENTS

FUNDING

Average Project Costs¹

- Permanent pedestrian and bicycle improvements are costly
- Transit budgets stretched thin

Improvement Category	Number of Projects	Total Cost of Projects*	Average Total Cost*	Total HSIP Cost of Projects*	Average HSIP Cost*
Interchange design	23	\$193,051,802.75	\$8,393,556.64	\$36,388,116.75	\$1,582,092.03
Intersection geometry	439	\$398,585,860.99	\$907,940.46	\$276,314,575.08	\$620,931.63
Pedestrians and bicyclists	182	\$121,344,341.05	\$666,727.15	\$84,651,228.67	\$465,116.64

U.S. Department of Transportation Federal Highway Administration					
Appendix B. Detailed Tables of Project Costs Summaries					
Table B. Number and Cost of 2016 Projects by Improvement Category					
Improvement Category	Number of Projects	Total Cost of Projects*	Average Total Cost*	Total HSIP Cost of Projects*	Average HSIP Cost*
Access management	64	\$78,760,421.43	\$1,188,131.59	\$65,609,068.99	\$1,025,151.08
Advanced technology and ITS	42	\$31,848,611.38	\$758,303.27	\$22,544,587.59	\$536,775.90
Alignment	65	\$138,626,691.05	\$2,109,487.55	\$63,973,225.32	\$970,357.31
Interchange design	23	\$193,051,802.75	\$8,393,556.64	\$36,388,116.75	\$1,582,092.03
Intersection geometry	439	\$398,585,860.99	\$907,940.46	\$276,314,575.08	\$620,931.63
Intersection traffic control	751	\$442,846,841.12	\$590,125.18	\$358,243,478.45	\$472,616.73
Lighting	93	\$46,458,619.35	\$499,555.05	\$40,646,142.63	\$432,405.77
Non-infrastructure	219	\$139,807,086.04	\$638,388.52	\$116,596,054.09	\$527,093.57
Parking	1	\$29,851.00	\$29,851.00	\$29,851.00	\$29,851.00
Pedestrians and bicyclists	182	\$121,344,341.05	\$666,727.15	\$84,651,228.67	\$465,116.64
Railroad grade crossings	42	\$18,450,798.38	\$439,304.60	\$16,761,825.71	\$399,091.09
Roadside	485	\$476,249,772.09	\$989,312.81	\$402,171,182.34	\$829,197.35
Roadway	1357	\$1,096,049,971.39	\$1,076,475.86	\$617,723,044.93	\$385,354.36
Roadway delineation	204	\$184,194,677.28	\$906,475.86	\$157,313,050.64	\$773,686.61
Roadway signs and	287	\$102,659,872.09	\$357,280.09	\$101,395,209.02	\$346,718.46

POLITICS

Idaho Legislature Senate Bills S1140 and S1144^{2 3}

- Prioritize motor vehicle infrastructure
- Introduce new barriers to the development of bike and pedestrian facilities

(2) "Benefit primarily motor vehicles" and "primary benefit of motor vehicles" means highway projects that are designed and constructed to reduce traffic congestion, travel delays, engine idle time, and unproductive fuel consumption.

(3) Existing or new pedestrian and bicycle facilities may only be improved as a secondary or collateral benefit to any highway project or as necessary to improve the safety of pedestrian and bicycle facilities near schools, parks, or other designated pedestrian or bicycle areas.

LEGISLATURE OF THE STATE OF IDAHO Sixty-eighth Legislature First Regular Session - 2025	
IN THE SENATE SENATE BILL NO. 1144 BY STATE AFFAIRS COMMITTEE	
AN ACT RELATING TO HIGHWAYS AND BRIDGES; AMENDING SECTIONS 40-103, IDAHO CODE, TO DEFINE A TERM AND TO MAKE TECHNICAL CORRECTIONS; AMENDING SECTION 40-117, IDAHO CODE, TO DEFINE A TERM AND TO MAKE TECHNICAL CORRECTIONS; AMENDING SECTION 40-601, IDAHO CODE, TO REVISE PROVISIONS REGARDING VOTATIONS AND TO PROVIDE FOR PUBLIC EMPLOYEE PROTECTION; AND DECLARING AN EMERGENCY AND PROVIDING AN EFFECTIVE DATE.	
Be It Enacted by the Legislature of the State of Idaho:	
SECTION 1. That Section 40-103, Idaho Code, be, and the same is hereby amended to read as follows:	
40-103. DEFINITIONS -- a. (1) "Base technical concepts" means the project specific concepts and technical information provided in the request for proposals upon which design-build firms will develop their technical and price proposals.	
(2) "Benefit primarily motor vehicles" and "primary benefit of motor vehicles" means highway projects that are designed and constructed to reduce traffic congestion, travel delays, engine idle time, and unproductive fuel consumption.	
(3) "Best value selection" means any selection process in which proposals contain both price and qualitative components and award is based upon on a combination of price and qualitative considerations.	
(4) "Board" means the Idaho transportation board.	
(5) "Business" means any lawful activity, excepting a farm operation, conducted primarily for the purchase, resale, lease and rental of personal and real property, and for the manufacture, processing or marketing of products, commodities, or other personal property; for the sale of services to the public; or solely for the purpose of Section 40-204 (1), Idaho Code, for assisting in the purchase, sale, resale, manufacture, processing, or marketing of products, commodities, personal property, or services by the erection and maintenance of an outdoor advertising display or displays, whether or not displays are located on the premises on which any of the activities are conducted.	
(6) (i) "Business entity" means a corporation, professional corporation, limited liability company, professional limited liability company, general partnership, limited partnership, limited liability partnership, professional limited liability partnership or any other form of business except a sole proprietorship.	
SECTION 2. That Section 40-117, Idaho Code, be, and the same is hereby amended to read as follows:	

PUBLIC BUY-IN

Controversy⁶

- Roads are contentious spaces
- Mistakes are expensive



Pedestrian and bicycle projects in the U.S. are notoriously costly, with the average cost at \$666,727¹. Their price also poses a large financial risk if they are unsuccessful. With many transit budgets already stretched thin, first- and last-mile improvements are easily forgotten.

Laws, ordinances, and zoning can also limit first- and last-mile improvements. For example, in April 2025, the Idaho Legislature passed Senate Bills S1140 and S1144, which prioritize motor vehicle

infrastructure and introduce new barriers to the development of bike and pedestrian facilities, impacting first- and last-mile connectivity^{2 3}. These kind of laws limit the freedom of communities to cultivate their own landscapes.

Even unintentionally, the absence of state support and regional coordination can place a significant strain on local agencies striving to implement multi-modal transportation strategies. The fear of costly mistakes and public backlash can

be a means of shutting down exciting projects before they even start. This zero-sum philosophy of huge capital expenditures or nothing at all leaves no possibility for testing, experimenting, or adapting.

Top-down changes to the urban fabric are politically fraught, because roads are contentious public spaces⁵. Without including public opinion in the planning process, first- and last-mile improvements could be received with hostility, which would undermine their utility. In this regard,

mistakes are expensive, and planners and transit agencies cannot afford to be wrong.

1) Federal Highway Administration. (2016). Appendix B. Detailed Tables of Project Costs Summaries | FHWA U.S. Department of Transportation. Federal Highway Administration. <https://highways.dot.gov/safety/hcip/hcip-2017-national-summary-report/appendix-b-detailed-tables-project-costs-summaries>

2) SENATE BILL 1140 - Idaho State Legislature. 1140. Idaho State Legislature First Regular Session (2025). <https://legislature.idaho.gov/sessioninfo/2025/legislation/s1140/>

3) SENATE BILL 1144 - Idaho State Legislature. 1144. Idaho State Legislature First Regular Session (2025). <https://legislature.idaho.gov/sessioninfo/2025/legislation/s1144/>

4) COMPASS. (2024). Communities in Motion 2050. COMPASS Community Planning Association of Southwest Idaho. https://cm2050.compassidaho.org/?_gl=1%2A12h6y2k%2A_ga%2AMTQ30T13n1zOC4XN2MwNtXc1z3%2A_ga_9DLONCRK25%2AMTCMDU3MTCyN4xLjAuMTCMDU3MTCyN4wLjAuMA

5) Row, A. T., & Jacobs, J. (1962). The Death and Life of Great American Cities. The Yale Law Journal, 71(8), 1597. <https://doi.org/10.2307/794509>

6) TL anti-bike lane protests are a thing. (2017, October 17). [Reddit Post]. R/Bicycling. https://www.reddit.com/r/bicycling/comments/7713f9/tl_antibike_lane_protests_are_a_thing/

7) De La Peña, D., Allen, D. J., Hester, R. T., Hou, J., Lawson, L. L., & McNally, M. J. (Eds.). (2017). Design as Democracy. Techniques for Collective Creativity. Island Press/Center for Resource Economics. <https://doi.org/10.5822/978-1-61091-848-0>

TACTICAL URBANISM AS A SOLUTION

“CITIES HAVE THE CAPABILITY OF PROVIDING SOMETHING FOR EVERYBODY, ONLY BECAUSE, AND ONLY WHEN, THEY ARE CREATED BY EVERYBODY.”

- Jane Jacobs
The Death and Life of Great American Cities, 1961

LOW COST

Average Project Costs

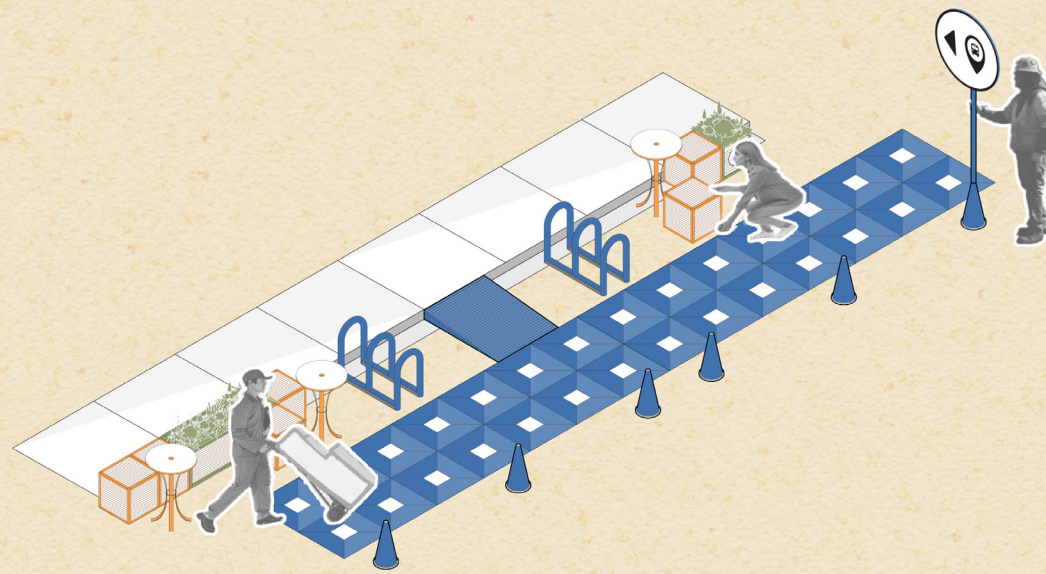
- Tactical pedestrian and bicycle improvements are cheap
- Works with a transit budgets that is stretched thin



DYNAMIC

Experimental and Temporary

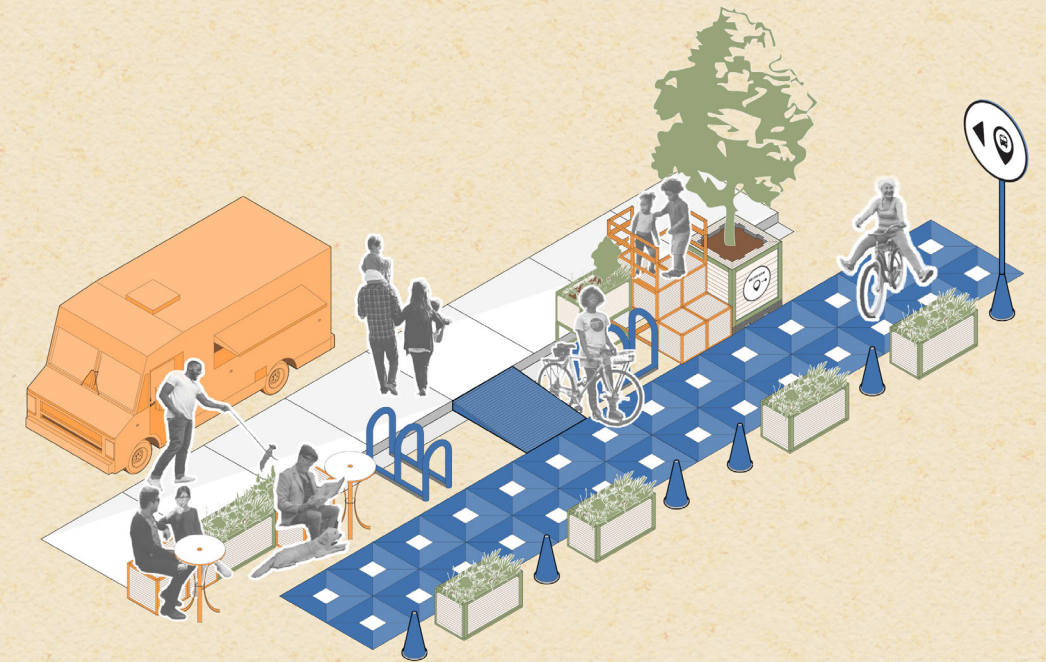
- Works within motor vehicle infrastructure
- Steers clear of barriers to the development of bike and pedestrian facilities



EMPOWERING

Cultivates Ownership in Public Space

- Roads are our spaces
- Participatory design increases public buy-in



1) Lydon, M. & Garcia, A. (2015). Tactical Urbanism. Island Press/Center for Resource Economics. <https://doi.org/10.5822/978-1-61091-567-0>
 2) The Street Plans Collaborative. (2016). Tactical Urbanism Materials and Design Guide. Vol. 1.0. John S. and James L. Knight Foundation, NACTO, Vision Zero Network. <https://tacticalurbanismguide.com/guides/tactical-urbanists-guide-to-materials-and-design/>
 3) Garcia, A. & Wall, D. (with The Street Plans Collaborative, Inc., Transit Cooperative Research Program, Transportation Research Board, & National Academies of Sciences, Engineering, and Medicine). (2019). Fast-Tracked: A Tactical Transit Study. Transportation Research Board. <https://doi.org/10.17226/25571>
 4) Moreno, C., Allam, Z., Chabaud, D., Gall, C., & Pralogn, F. (2021). Introducing the "15-Minute City": Sustainability, Resilience and Place Identity in Future Post-Pandemic Cities. Smart Cities, 4(1). Article 1. <https://doi.org/10.3390/smartcities4010006>
 5) Eichler, N., Garg, R., Magnani, G., Robson, S., Stallard, E., & Cox, M. (2021). Green and Thriving Neighbourhoods: A pathway to net zero, featuring the "15-minute city". C40 Cities and Arup. https://www.c40knowledgehub.org/s/article/Green-and-Thriving-Neighbourhoods-A-pathway-to-net-zero-featuring-the-15-minute-city?language=en_US
 6) Row, A. T., & Jacobs, J. (1962). The Death and Life of Great American Cities. The Yale Law Journal, 71(8), 1597. <https://doi.org/10.2307/794509>

In this landscape, tactical urbanism offers a compelling pathway forward. In their seminal work on tactical urbanism, Lydon and Garcia argue that **temporary, low-cost interventions can create visible, incremental changes that improve the pedestrian experience, generate community feedback, and lead to more permanent improvements¹.**

Many cities and communities have successfully adopted the tactical approach to urban design, as illustrated in the Tactical Urbanism

Materials and Design Guide², and the transit-specific Fast-Tracked: A Tactical Transit Study³. Other research has highlighted how **tactical design can further a multi-modal approach to sustainable transportation**, including the concept of a 15-minute city⁴, and its ability to reduce greenhouse gas emissions⁵.

This is especially valuable in resource-constrained settings, where the risks of large capital investments delay action or leave out the goals of

community members.

Tactical strategies provide a softer, more adaptive touch, well-suited to contested issues like rebalancing street space away from cars. Temporary dynamic experiments lead to more informed permanent solutions. **They also lead to post-evaluations of designs in a fluid on-going process of adaptation and improvement.**

Rather than proposing fixed infrastructure, **tactical transit solutions provide a set of adjustable**

tools that can help communities navigate constraints and advocate for change incrementally, in ways grounded in the lived experience of transit riders. Empowering participatory design is central to this transit planning framework, which intends to go beyond superficial facades of inclusion.

TACTICAL URBANISM AS A SOLUTION

“TACTICAL URBANISM ENABLES PEOPLE TO NOT ONLY ENVISION
CHANGE BUT TO HELP CREATE IT.”

- Lydon & Garcia
Tactical Urbanism, 2015

PORTLAND

Temporary Solutions to Long-term Change¹

- The Pride Plaza at SW 12th Ave and Harvey Milk Street started as a tactical pedestrian and bicycle street
- Now funded for permanent improvements and included in the Green Line



NEW YORK

Power to the Pedestrians²

- A tactical urbanism experiment led to the closing of Times Square to cars in 2009



BARCELONA

Ongoing Urban Sociological Experiments³

- Barcelona's "Superblocks" and the "Open Street" initiative use tactical experiments as a way to continually test planning initiatives without costly consequences



Tactical urbanism offers cities a way to **test bold ideas without waiting for big budgets or permanent infrastructure**. It has been implemented all over the world by governments and communities¹.

In **Portland**, **Pride Plaza** started as a low-cost, temporary intervention to support pedestrian and bike access downtown. The tactical **proof-of-concept gave people a chance to feel what a different kind of street could be**. That experience built momentum. According to the city, it's now federally funded and permanently included in Portland's Green Loop, a long-term plan for a connected, livable urban core¹.

In **New York**, **Times Square's** tactical transformation tested whether people would use reclaimed space. The hypothesis was proven correct, **as pedestrian traffic boomed, retail sales went up, and car traffic adjusted**. That tactical closure led directly to a permanent design in one of the most contested spaces in the world².

In **Barcelona**, tactical urbanism is being used as a **method for continuous testing**. The *Superblocks* and *Open Streets* initiatives are part of a broader strategy to **experiment with new urban forms before making them permanent**. These projects let the city gather real-world feedback and adjust as needed, helping reduce political risk and avoid the cost of locking into plans that might not work. **The city uses short-term changes to inform long-term decisions**³.

¹) Portland.gov (2022, September 30). Federal funding will help create permanent plazas downtown, including a segment of the future Green Loop | Portland.gov <https://www.portland.gov/transportation/news/2022/9/30/federal-funding-will-help-create-permanent-plazas-downtown-including>
²) Lydon, M., & Garcia, A. (2015). *Tactical Urbanism*. Island Press/Center for Resource Economics. <https://doi.org/10.5822/9781610915670>
³) Schreiber, F. (2025). The long road from urban experimentation to the transformation of urban planning practice: The case of tactical urbanism in the city of Barcelona. *Journal of Urban Mobility*, 7, 100100. <https://doi.org/10.1016/j.urbmob.2025.100100>

TACTICAL SOLUTIONS

MOBILITY INFRASTRUCTURE

GUIDE

- Signage
- Lighting
- Spatial cues

MOVE

- Walking
- Rolling
- Biking safety

ACCESS

- Features that enable movement

NATURAL INFRASTRUCTURE

SENSE

- Visual comfort
- Shade
- Scent
- Texture

HEAL

- Protect
- Filter
- Support clean streets

RESTORE

- Native ecosystems
- Pollinator habitat

SOCIAL INFRASTRUCTURE

GATHER

- Amenities that support interaction

CONNECT

- Seating and tables
- Social space

PLAY

- Creative engagement
- Recreation
- Joy



To improve first- and last-mile transit connectivity, tactical design interventions are articulated in three categories of temporary infrastructure: mobility, natural, and social.

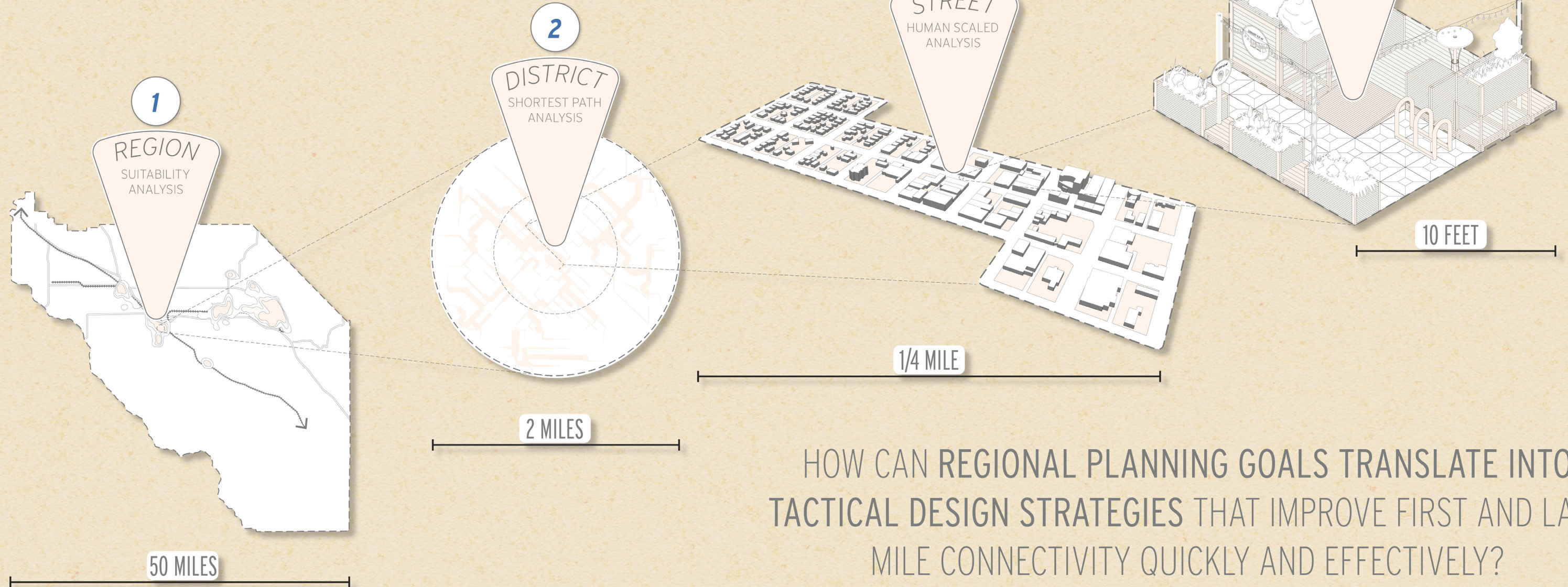
‘Mobility Infrastructure’ – refers to enhancements to the safety of people walking or rolling, like protected bike lanes, ADA ramps, and wayfinding. These are solutions that help people with guidance, movement, and access.

‘Natural Infrastructure’ – refers to temporary, adaptable vegetated planters that provide ecosystem services like shade, transpiration, and pollinator habitat. These are solutions that increase sensory experience and comfort, connection to the land via native ecosystems, and healthy street vegetation to promote clean air and water.

'Social Infrastructure' – refers to enhancements that cultivate interaction, like seating, games, and vibrant public space. These support gathering, play, basic needs, and community connection.

PRIORITIZING ACTION

A MULTI-SCALER FRAMEWORK



HOW CAN REGIONAL PLANNING GOALS TRANSLATE INTO TACTICAL DESIGN STRATEGIES THAT IMPROVE FIRST AND LAST MILE CONNECTIVITY QUICKLY AND EFFECTIVELY?

First- and last-mile improvements should be targeted measures that are quick and efficient to implement. The Route Awakening framework proposes a combined top-down and bottom-up approach, integrating regional planning goals, district level spatial analysis, and street-level tactical urbanism, to serve as an example of how to prioritize and address gaps in the pedestrian experience at the beginning and end of every transit journey.

This multi-scaler approach goes from a regional scale, to a district scale, to a street scale, down to the parcel scale. First, **priority districts for action are based on a suitability analysis** that includes transit dependency, population density, and key destinations. Within each district, **further analysis identifies priority streets** based on shortest-path functions to and from transit infrastructure, as well as site-specific environmental, social, and mobility factors. **At a street-scale,**

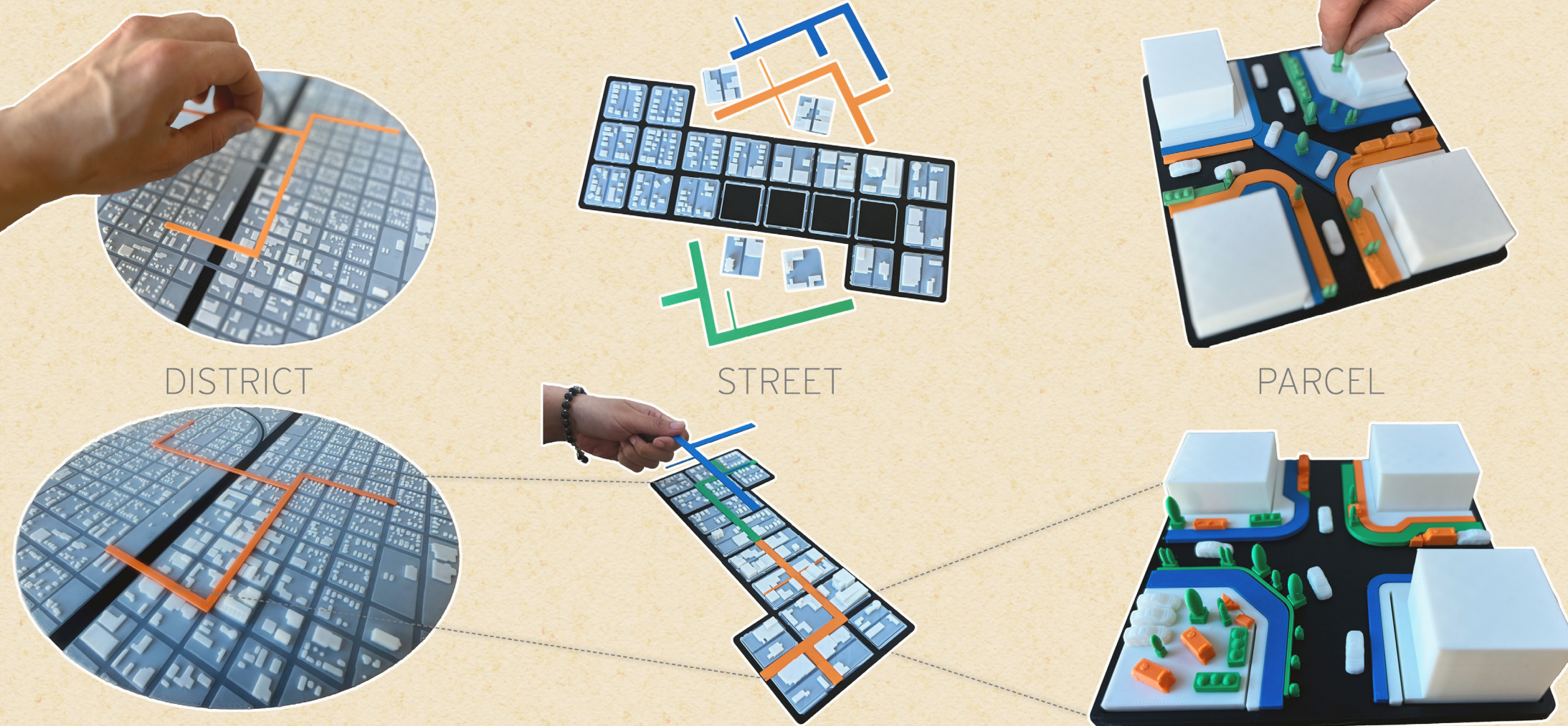
the bottom-up approach focuses on illustrating, articulating, and visualizing tactical typologies that seek to give agency to the communities through participatory design. Temporary, adaptable, dynamic, and cost-effective interventions create safer, more engaging pedestrian environments on the way to transit stops, intended to reclaim public space from car-infrastructure, in places like parking spots, alleys, and wide roads.

By prioritizing immediate, affordable

enhancements, **this framework supports more livable, equitable, and pedestrian-friendly cities.** It provides a replicable model for mid-sized Western cities experiencing rapid sprawl, offering a **flexible design process that aligns regional planning goals with community-driven, site-specific action.**

PARTICIPATORY DESIGN ROADMAP

MODELS TO START CONVERSATIONS AND FOSTER ENGAGEMENT AND AGENCY IN PUBLIC SPACE



"We need something that is..."

- Low cost
- Easy to maintain
- Quick to implement
- Flexible & scalable
- Backed by public support

DECISION MAKERS



"We're aiming for something that..."

- Uses real data
- Solves real problems
- Looks & feels good
- Sets a smart precedent
- Fits the long-term vision

PLANNERS & DESIGNERS



"We just want something that's..."

- Simple & obvious
- Safe for kids & elders
- Comfortable to walk
- Reflective of who we are
- Makes our streets feel alive

COMMUNITY MEMBERS



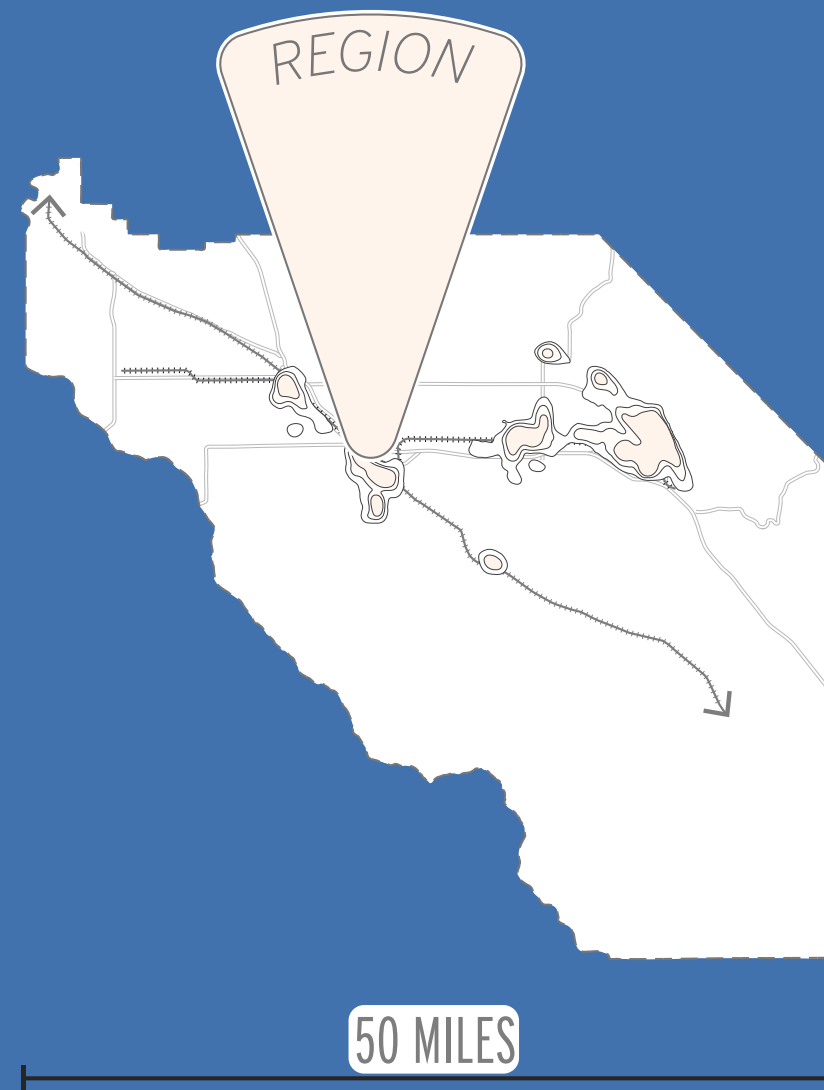
In the spirit of tactical urbanism, the **Route Awakening framework includes a Participatory Design Roadmap at the district, street, and parcel level**. Drawing on the logic of *Design as Democracy* by De La Peña et al.¹, this project recognizes the impact public engagement can have on urban design outcomes, and the level of ownership that a community needs in decisions to make them successful. **Rather than prescribing specific solutions, the Participatory Design Roadmap is**

designed to inform, consult, and support decision makers, planners, and advocates with clear, accessible tools and evidence-based strategies that can be used to work with stakeholders and community members to cultivate meaningful collaboration. By clarifying design opportunities and highlighting the benefits of first- and last-mile improvements, **the Participatory Design Roadmap seeks to build institutional and community-level support for long-term change.**

The goal is to empower planners, designers, community members, and decision makers with tools and strategies that increase buy-in for first- and last-mile improvements, to **ultimately increase public transit ridership and justify more long-term investments in public transportation**. While the project does not involve direct community engagement, it acknowledges the importance of influence and participation in shaping urban systems, and works to equip that process with a

replicable framework.

By using 3D models, analysis, typologies, and visualizations as tools of design communication, **decision makers, planners, designers, and community members can engage in meaningful conversations that foster public support and agency in public space.**



1

REGIONAL ANALYSIS

ROUTE AWAKENING



Idaho (COMPASS), the region's Metropolitan Planning Organization, and **Valley Regional Transit (VRT)**, the regional transit provider, are the **only agencies coordinating mobility at a regional scale** in the Treasure Valley. Their visions seek to accommodate the anticipated growth in the coming decades with a transit system that meets the needs of the valley.

FUTURE TRANSIT PLANNING GAP IN KNOWLEDGE



1) COMPASS. (2024, April). COMPASS - Community Planning Association of Southwest Idaho. <https://compassidaho.org/>
2) Valley Regional Transit. (2022). Transportation Development Plan 2023-2027. <https://www.valleyregionaltransit.org/planning/tdp/>
3) SENATE BILL 1140 - Idaho State Legislature, 1140, Idaho State Legislature First Regular Session (2025). <https://legislature.idaho.gov/sessioninfo/2025/legislation/s1140/>
4) SENATE BILL 1144 - Idaho State Legislature, 1144, Idaho State Legislature First Regular Session (2025). <https://legislature.idaho.gov/sessioninfo/2025/legislation/s1144/>

COMPASS's long-term plan, Communities in Motion 2050 (CIM 2050), outlines regional goals for accommodating growth¹, while VRT focuses on improving coverage and frequency within its limited service area². While both agencies recognize the need for a stronger transit network, their plans focus on infrastructure and service expansion, with less attention to the human-scale design decisions that impact whether people can or will access transit in the first place.

These goals include an expanded bus rapid transit network, as well as acquiring the regional railroad tracks for a commuter rail. While ambitious, **these goals will never reach fruition unless current public transit is viable.** Idaho's lack of dedicated state-level transit funding compounds these legislative barriers. The absence of state support and regional coordination places a significant strain on local agencies striving to implement multi-modal transportation

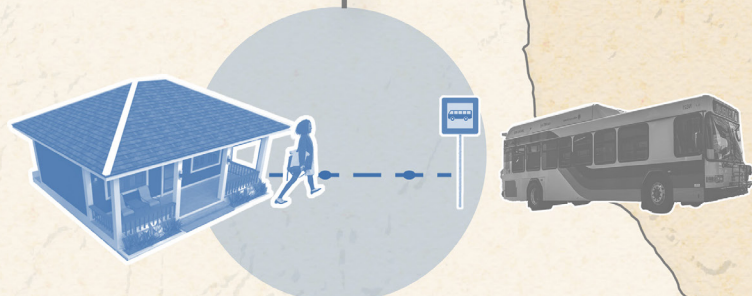
strategies. In addition, Idaho's Treasure Valley presents a uniquely difficult context for advancing pedestrian and bicycle infrastructure. Wild west planning and suburban developers prioritize motor vehicle infrastructure and create barriers to the development of bike and pedestrian facilities, impacting first- and last-mile connectivity. **This presents a challenge for first- and last-mile infrastructure, but an opportunity for a dynamic tactical approach.** Public support for more

permanent solutions can be garnered by testing and implementing soft-touch urban acupuncture in the form of tactical solutions to first- and last-mile transit gaps.

FIRST MILE OPPORTUNITY SUITABILITY ANALYSIS

REGION → DISTRICT

FIRST
MILE



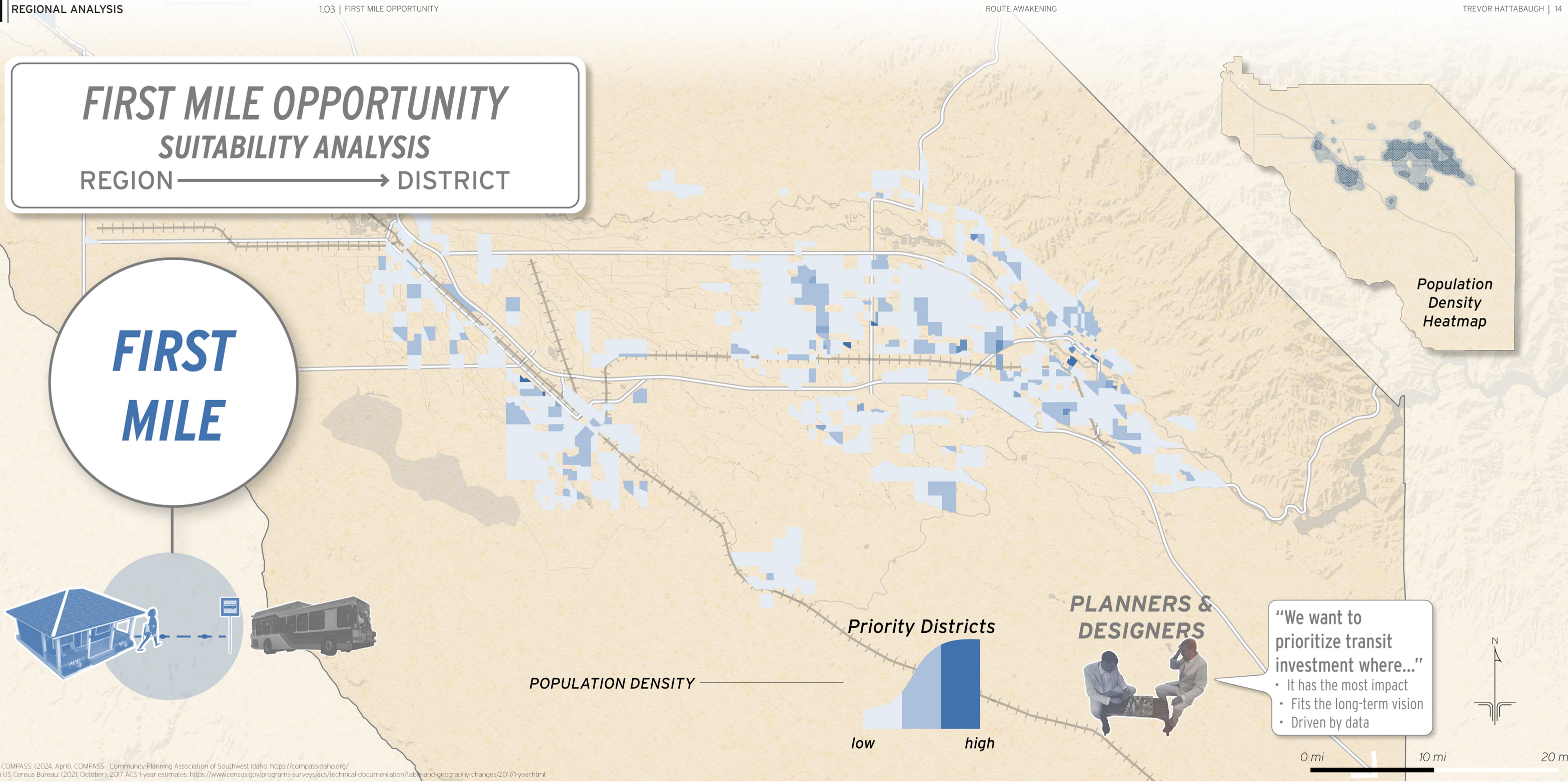
1) COMPASS. (2024, April). COMPASS - Community Planning Association of Southwest Idaho. <https://compassidaho.org/>
2) US Census Bureau. (2021, October). 2017 ACS 1-year estimates. <https://www.census.gov/programs-surveys/acs/technical-documentation/table-and-geography-changes/2017/1-year.html>

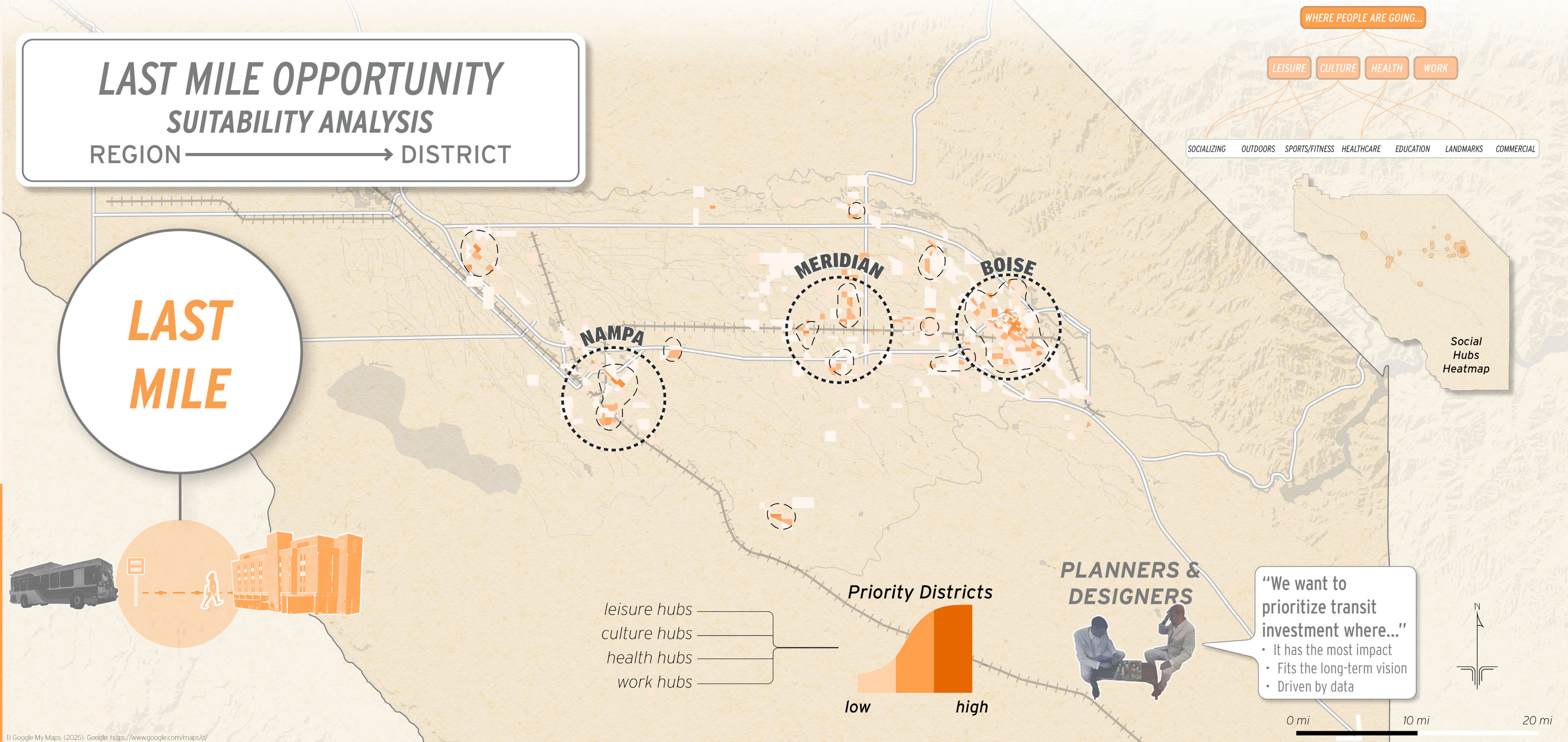
To identify priority districts for first- and last-mile interventions and zoom in from a regional scale to district scale, the first step was to conduct a regional spatial analysis. A GIS-based suitability model was developed using QGIS, selected for its accessibility and replicability. Three spatial layers were normalized and weighted equally to highlight where FMLM interventions could have the most impact on public transit ridership for the least amount of cost. The districts highlighted by this

analysis are Traffic Analysis Zones (TAZ), taken from data from the U.S. Census, and public GIS data made available by COMPASS^{1,2}. Three questions guided the suitability analysis to determine priority districts for FMLM improvement:

- 1) First-Mile - Where are people coming from?
- 2) Last-Mile - Where are people going?
- 3) Need-Based - Who relies most on transit?

1) Where are people coming from?
First-mile priority districts were determined by population density. Where the most people live has the highest potential for increase public transit use.





2) Last-Mile - Where are people going?

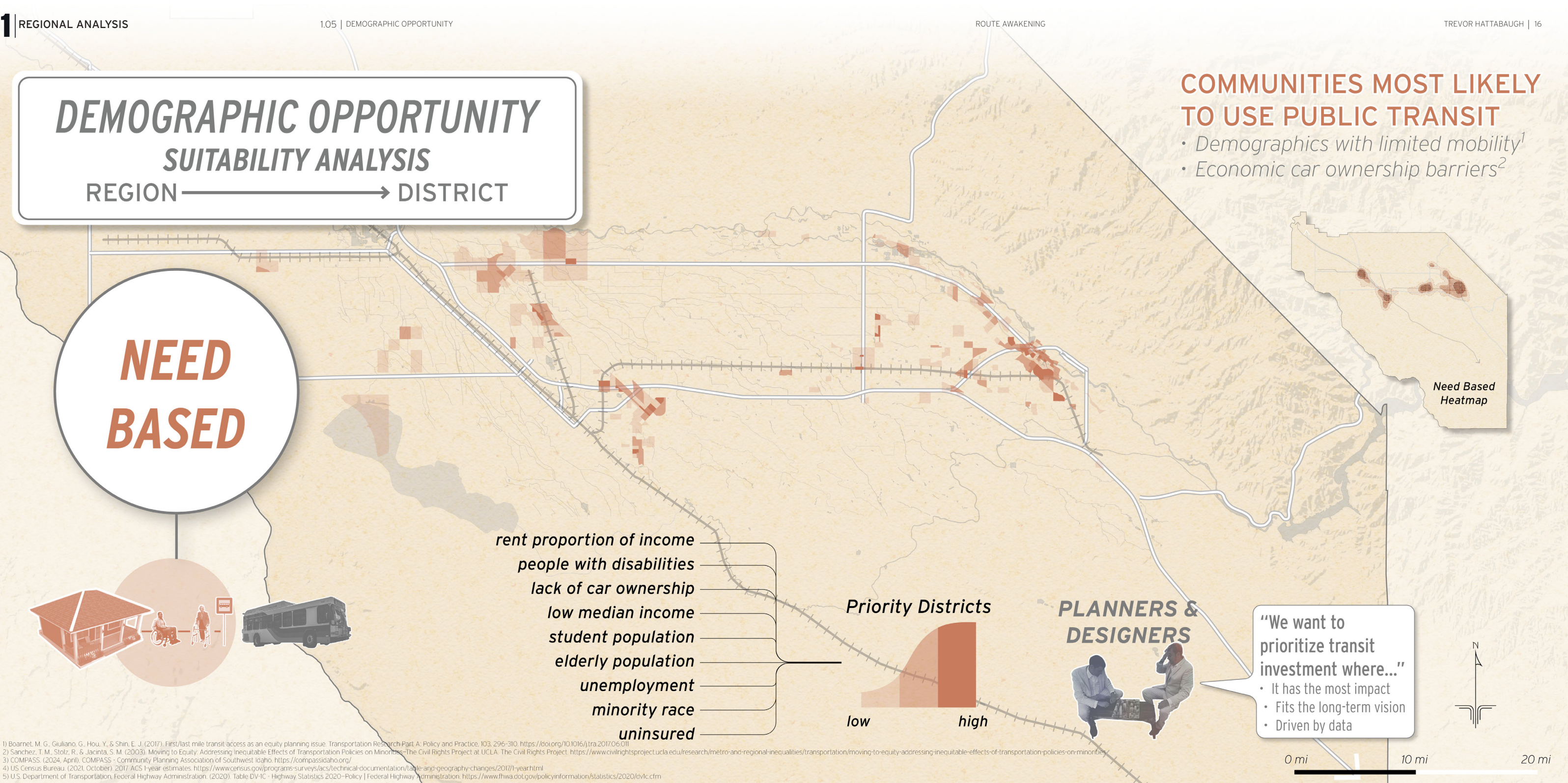
Last-mile priority districts were determined by mapping social hubs across the region. Split into four categories, social hubs were identified by places and institutions of leisure, culture, health, and work. **Mapped using Google MyMaps¹**, These potential destinations of a transit journey are places of industry and work, like hospitals and major employers. They include places of worship, recreation, eating, and events, and many other

social hubs that facilitate socializing, outdoor access, sports/fitness, healthcare, education, landmarks, and commercial activity.

The density of the social hubs compared to population density within the Treasure Valley highlights the sprawling nature of development and suburbs. **A majority of the last-mile social hub density fell within the three main urban centers of the valley: Nampa, Meridian, and Boise.**

REGION

NEED BASED

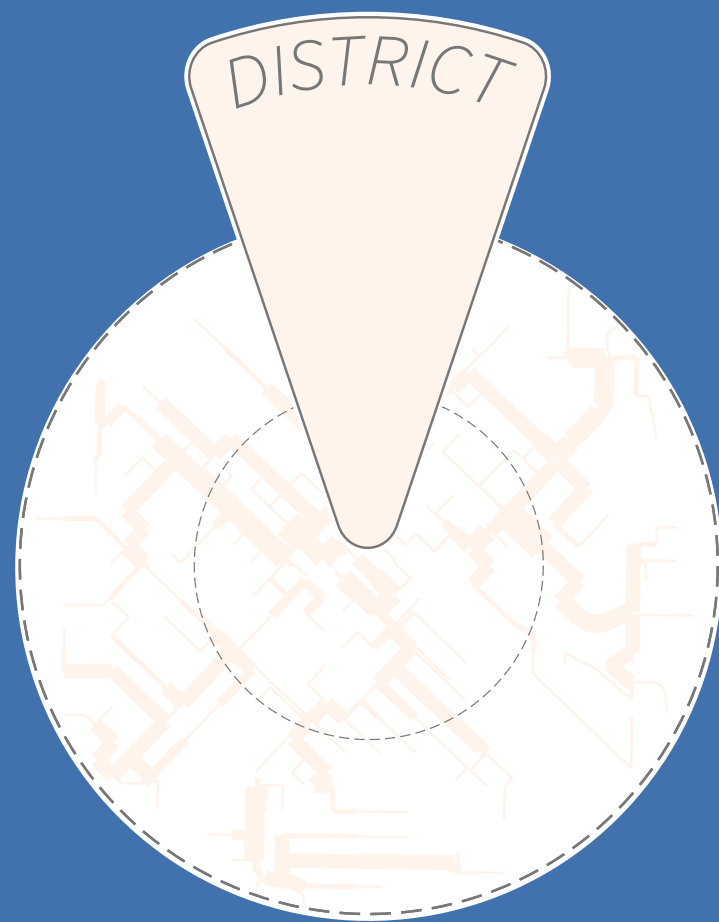


REGION DISTRICT

Transit Reliance Demographics

4) COMPASS: 2024. Communities in Motion 2050. COMPASS Community Planning Association of Southwest Idaho. https://cm2050.compassidaho.org/?_gl=1%2A1zh6y2k%2A_ga%2AMTO3OT13NzixOC4xNzMwNTcxNz13%2A_ga_9DI0NCKR25%2AMTczMDU3MTcyNi4xLjAuMTczMDU3MTcyNi4wLjAuMA..

See appendix 5.02 for QGIS method.



2 MILES

2

DISTRICT ANALYSIS

ROUTE AWAKENING



DOWNTOWN NAMPA

MEDIUM DENSITY URBAN



Nampa Public Library⁴



Farmers' Market⁴



Northwest Nazarene University³



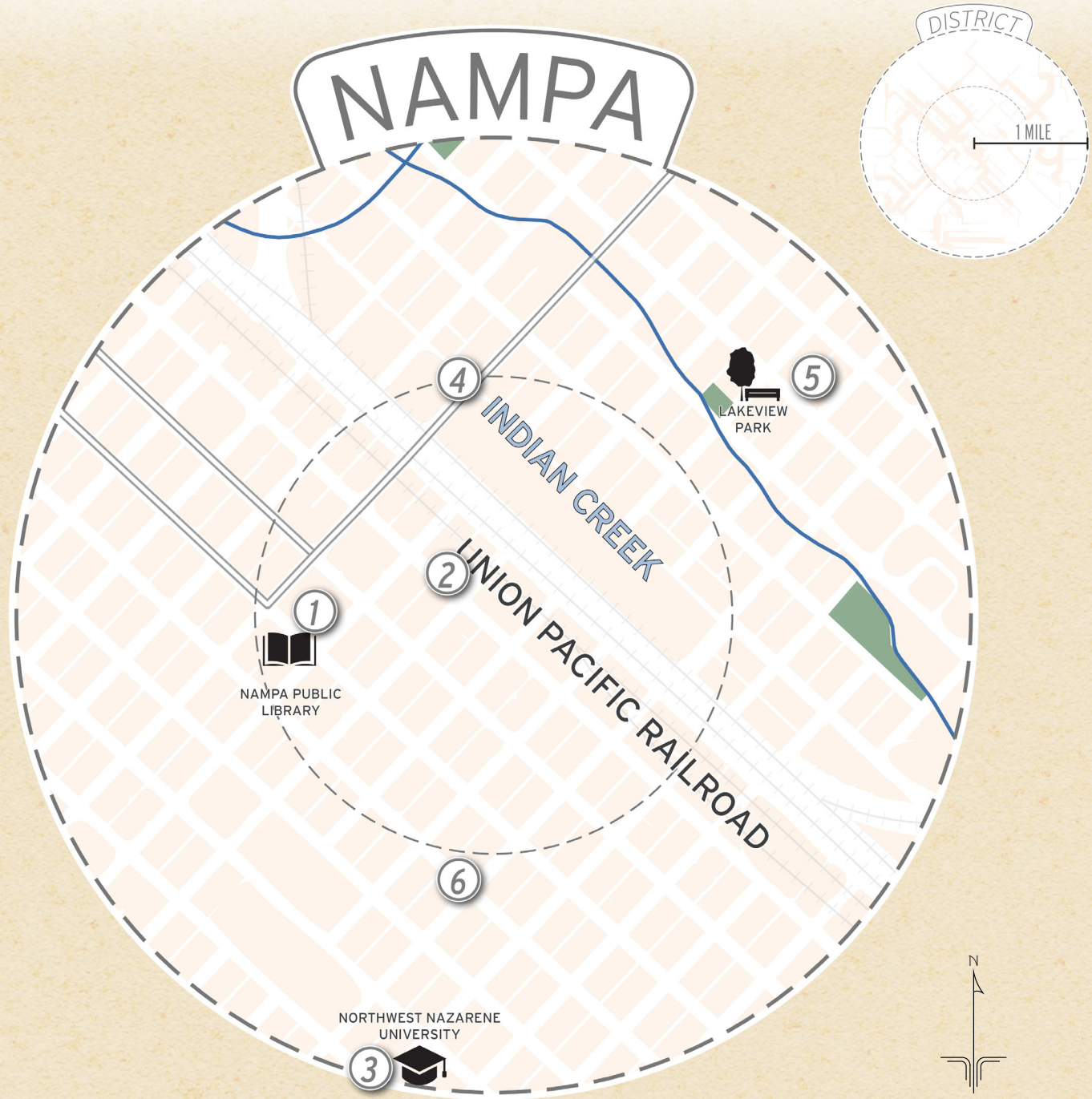
Indian Creek Irrigation Canal⁷



Lakeview Park⁶



Medium Density Residential⁷



1) Idaho State Historical Society. (1966). The Origin of the Name Nampa. Idaho State Historical Society Reference Series. <https://history.idaho.gov/wp-content/uploads/2018/08/0039.pdf>
2) Nampa, ID | Data USA. (n.d.). Retrieved June 10, 2025, from <https://datausa.io/profile/geo/nampa-id/>
3) NNU. (2025). Northwest Nazarene University—Idaho's Premier Christian University. Northwest Nazarene University. <https://nnu.edu/>
4) Erin Banks Rusby, Brian Myrick, & Idaho Press. (2022, August 30). Nampa leaders grapple with vision for downtown. Idaho Press. Retrieved March 26, 2025, from https://www.idahopress.com/news/local/nampa-leaders-grapple-with-vision-for-downtown/article_d6264b20-28ad-11ec-a5fb-9fcb0df2ee4f.html
5) COMPASS. (2024, April). COMPASS - Community Planning Association of Southwest Idaho. <https://compassidaho.org/>

6) CBS 2 News staff. (2023, April 6). Lakeview Park in Nampa celebrates new playground opening. KBOI. <https://idahonews.com/news/local/gallery/lakeview-park-gets-a-new-playground?photo=3>
7) Google Maps (2025) Google Streetview. Available from: <https://www.google.com/maps>
8) Old Nampa Historic District | Nampa, ID - Official website. (2024). Retrieved March 24, 2025, from <https://www.cityofnampa.us/1703/Old-Nampa-Historic-District>

Nampa, Idaho was founded in the 1880s as a railroad town along the Oregon Short Line¹. Today, it is a rapidly growing, working-class community known for agriculture, industry, and a strong sense of local identity. With 74% of workforce commuters driving alone with an average one-way commute time of 24 minutes², Nampa has a large opportunity for transit improvement.

Downtown Nampa is bisected by several Union Pacific Railroad tracks and arterial roads that

lead to the i-84 Interstate to the north. The largest concentrations of biodiversity reside along the Indian Creek irrigation canal (used by nearby agriculture), as well as Lakeview Park.

Northwest Nazarene University, a small Christian Private College, sits at the south end of Downtown Nampa³, in an area of primarily low and medium density residential neighborhoods.

At the heart of Downtown Nampa is the Nampa Public Library, a notable landmark of identity

which contains a large public plaza. This central area also boasts six walkable mixed-use blocks which host the local farmers' market, a shining example of functional tactical urbanism already deployed⁴.

Within this selected district, a finer-grained analysis was conducted to determine where specific interventions should be targeted.

DOWNTOWN NAMPA

MEDIUM DENSITY URBAN



Bus Stop - 2nd St. ⁶



Bus Stop - 16th Ave. ⁶



Bus Stop - Nampa Blvd. ⁶



Bus Stop - 8th St. ⁶

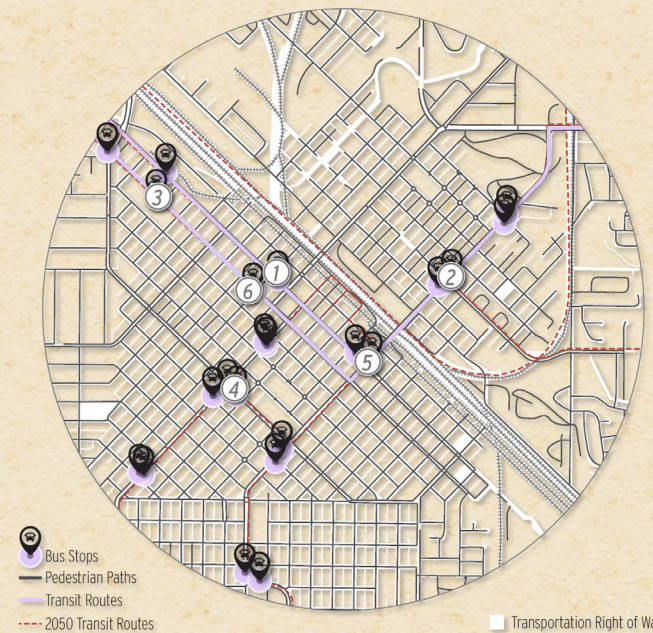


Bus Stop - 2nd St. ⁶

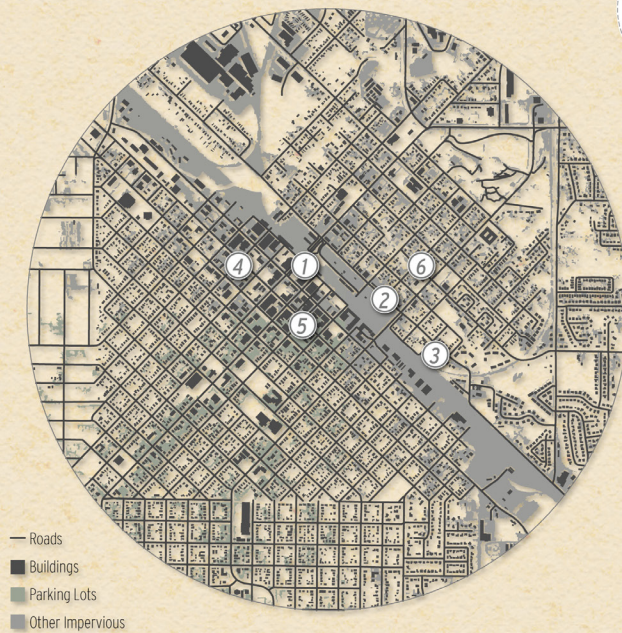


Bus Stop - Nampa Blvd ⁶

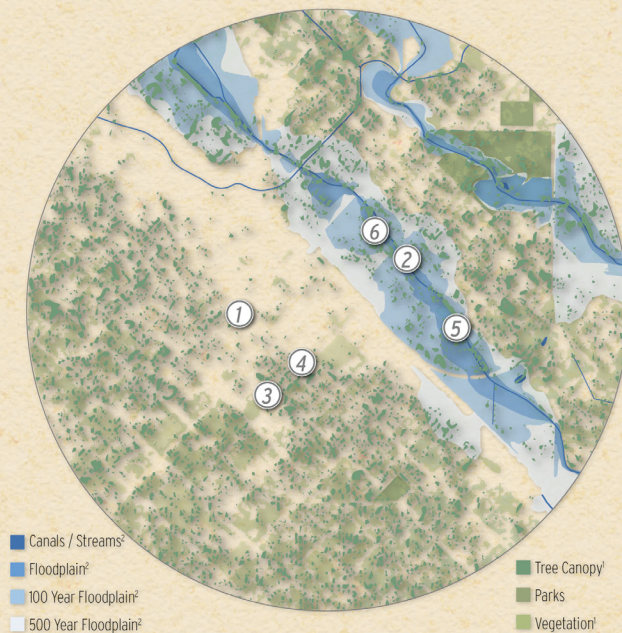
Pedestrian & Transit Network



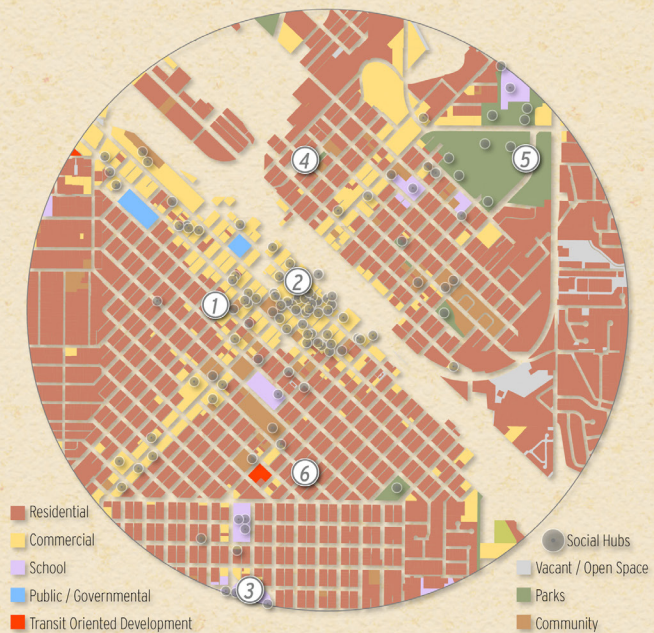
Impervious Surfaces



Natural Systems



Zoning



Downtown Nampa's zoning is characterized by a concentrated commercial area surrounded by low/medium density residential housing. There are several schools, churches, and parks within the district.

Though density is low, this district is highly urbanized, with little to no natural areas. Most of the central area is covered in impervious surfaces¹, which increase storm water runoff. This is concerning, as the neighborhoods to the north of

the railroad tracks reside within the USGS defined floodplain². The lack of impervious surfaces also contribute to the urban heat island effect³, which is compounded by very little established shade canopy, especially in the central core where most of the public social activity is happening. This makes the pedestrian experience extremely unpleasant in the high mountain desert summers of Southwestern Idaho⁴, and it could ultimately decrease public transit ridership for people unwilling to brave the

heat.

Bus stops are scattered along busy roads, with little to no amenities, sense of place, or comfort of any kind. They lack shade, seating, biodiversity, significant signage, wayfinding, and weather protection. They often do not have dedicated space to wait out of the way of sidewalks, and they do not have an ADA recommended 9-14" curb height for enhanced accessibility⁵, which helps reduce the vertical gap between the bus floor

and the curb, improving boarding efficiency and accessibility. The absence of raised curbs at bus stops could make public transit less desirable for people with mobility concerns.

1) Treasure Valley Canopy Network. (2014). Treasure Valley Urban Tree Canopy Assessment (No. a456b62a9f1e42938f8b1a74c2fc8) [Dataset]. https://tiles.arcgis.com/tiles/4HeKjzfX55oq5VCm/arcgis/rest/services/TV_LC_UTC/MapServer
2) U.S. Geological Survey. (2025). USGS Hydrologic Survey [Dataset]. <http://dx.doi.org/10.5066/F7P55KJN>
3) Rutgers University. (2019). How roads can help cool sizzling cities. ScienceDaily. <https://www.sciencedaily.com/releases/2019/08/19/0801105033.htm>
4) COMPASS. (2024, April). COMPASS - Community Planning Association of Southwest Idaho. <https://compassidaho.org/>
5) City of Seattle. (2017). Seattle Right-of-Way Improvements Manual. Seattle.Gov. <https://streetsillustrated.seattle.gov/design-standards/transit/>
6) Google Maps (2025) Google Streetview. Available from: <https://www.google.com/maps>

2) COMPASS. (2024, April). COMPASS - Community Planning Association of Southwest Idaho. <https://compassidaho.org/>

To analyze first- and last-mile potential of routes, the Shortest Walk path frequency was employed using the 3D modeling software, *Rhino 8* and *Grasshopper*, through a script that calculated the shortest paths through the road and sidewalk network. Priority was based on the highest use-frequency of shortest paths.

First-Mile was calculated using shortest routes from residences to bus stops.

Last-Mile was calculated using shortest routes from bus stops to social hubs. These were defined previously as places people gather, recreate, work, and spend time.

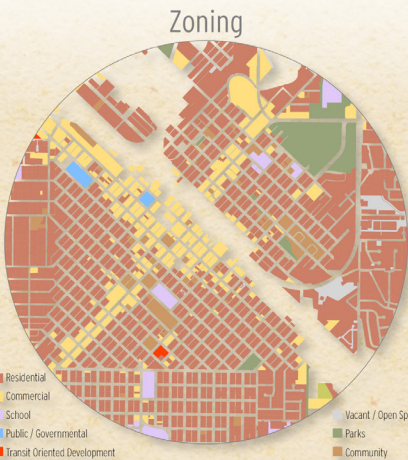
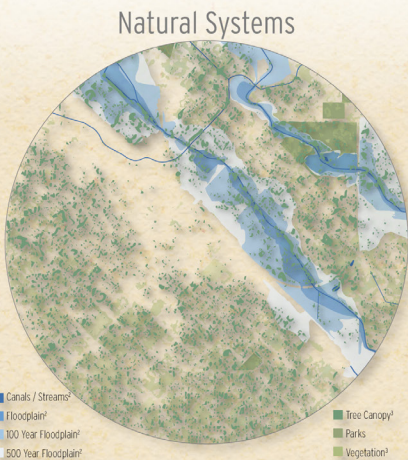
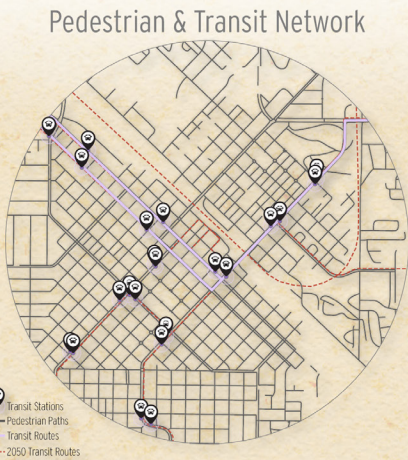
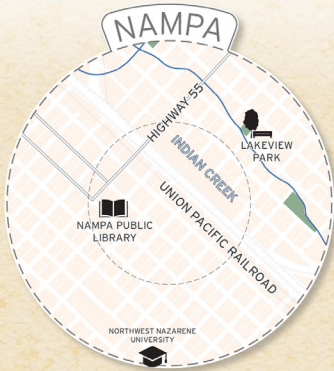
Streets that met **both** criteria are shown overlapped in red. These are streets that are highest priority, as they satisfy both criteria, which illustrate opportunities on these streets that are particularly efficient and cost effective for first- and last-mile interventions.

See appendix 5.03 for Grasshopper script.

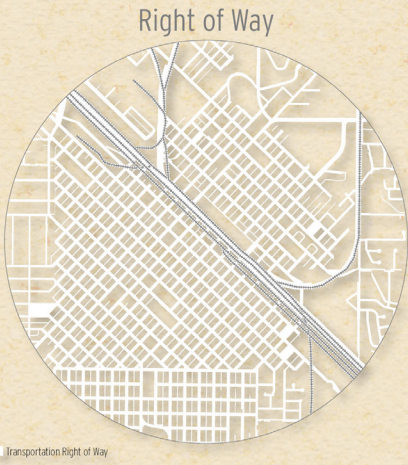
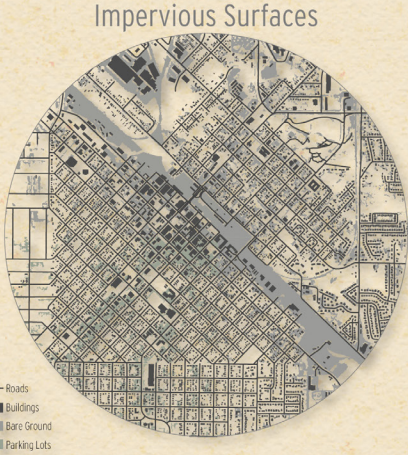
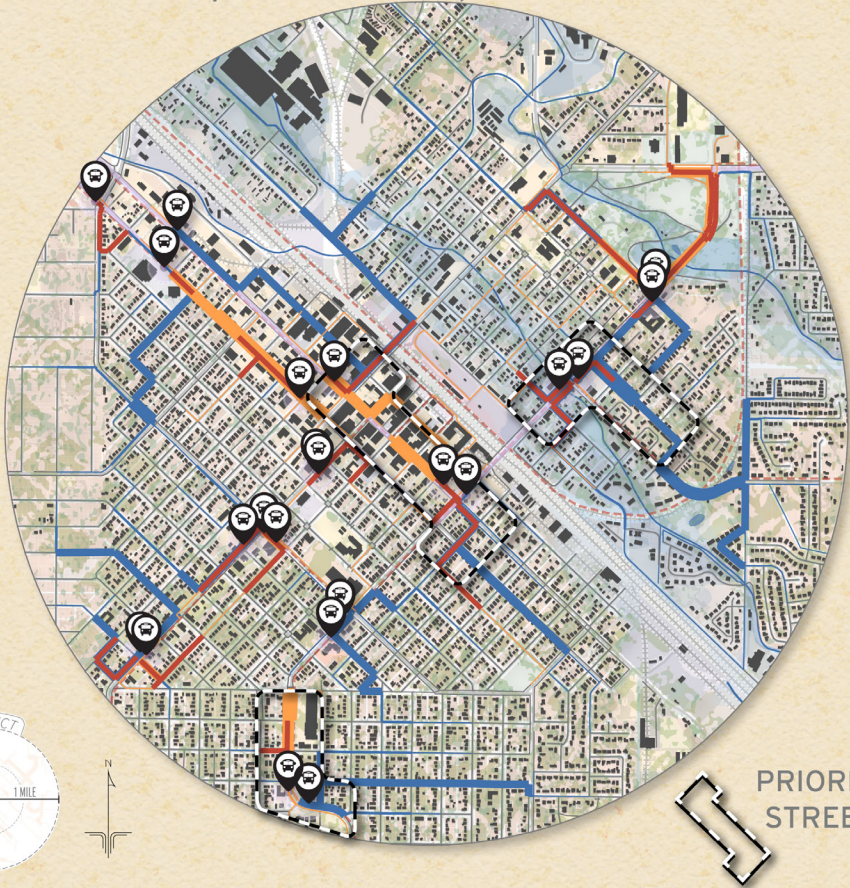
FIRST / LAST MILE OPPORTUNITY

SHORTEST PATH ANALYSIS

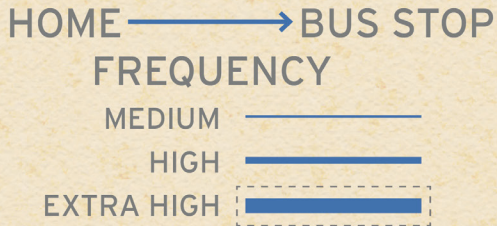
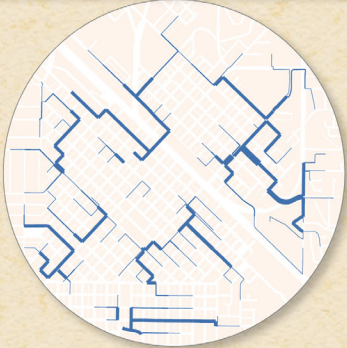
DISTRICT → STREET



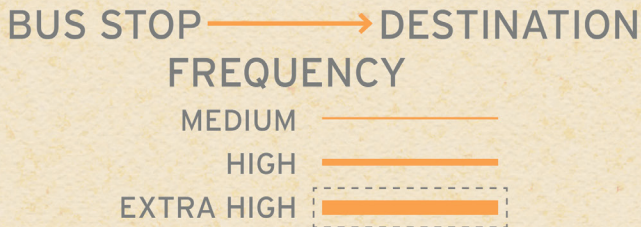
Priority Streets to Improve Transit Use



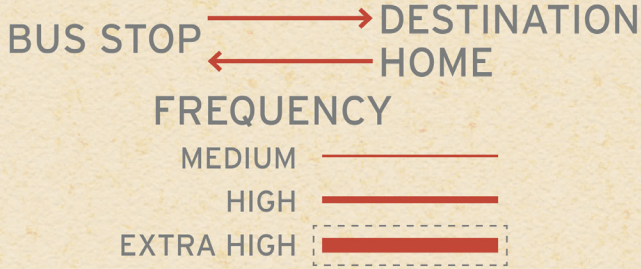
FIRST MILE



LAST MILE



BOTH



1) Speranza, P. (2018). A human-scaled GIS: Measuring and visualizing social interaction in Barcelona's Superilles. Journal of Urbanism: International Research on Placemaking and Urban Sustainability, 11(1), 41-62. <https://doi.org/10.1080/17549175.2017.1341426>
2) McHarg, I. L. (1969). Design With Nature. Natural History Press.

3) Treasure Valley Canopy Network. (2014). Treasure Valley Urban Tree Canopy Assessment (No. a456b62a9f1e42938f8b1a74c2f68) [Dataset]. https://tiles.arcgis.com/tiles/4HeKj2fX5Sq5Vcm/arcgis/rest/services/TV_LC_UTC/MapServer
4) COMPASS. (2024, April). COMPASS - Community Planning Association of Southwest Idaho. <https://compassidaho.org/>

Along with these analyses, Google Street View Audits assessed sidewalk quality, crossings, shade availability, and amenities, following a “human-scaled GIS” approach¹, as well as research evaluating pedestrian and bike infrastructure. Visual Overlay Data Interpretation was employed using methods pioneered by Ian McHarg’s Design with Nature², but adapted to a public transit context.

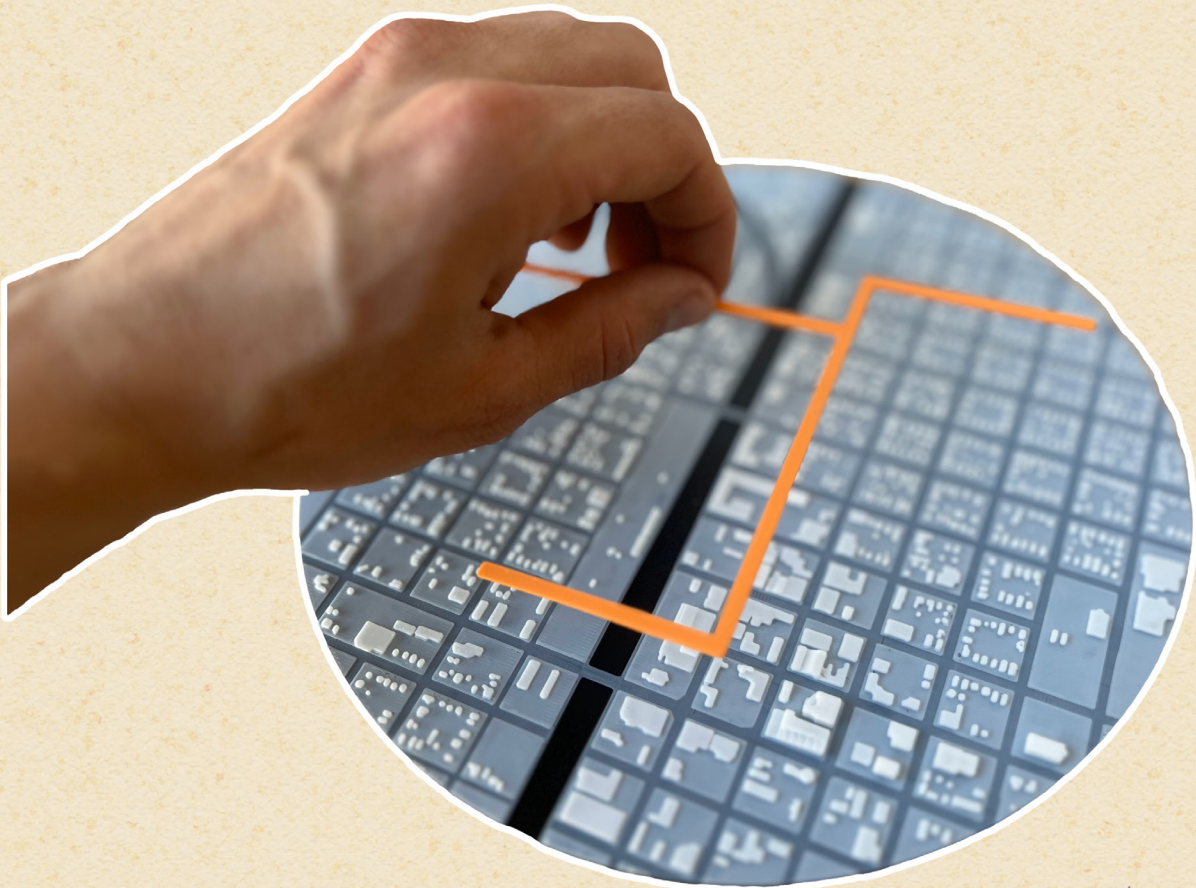
Analysis identified impervious surfaces, canopy gaps³, USGS flood-zones, land-use zoning, current and future transit routes and stations, and pedestrian pathways. Priority streets were selected based on overlapping first-mile (home to transit stop) and last-mile (transit stop to destination) connections, along with contextual overlaps that ensure the most cost-effective and impactful improvements. This analysis identifies priority streets within

the district that could have the most impact in increasing first- and last-mile connectivity.

PARTICIPATORY DESIGN ROADMAP

DISTRICT ANALYSIS

DISTRICT —————> STREET



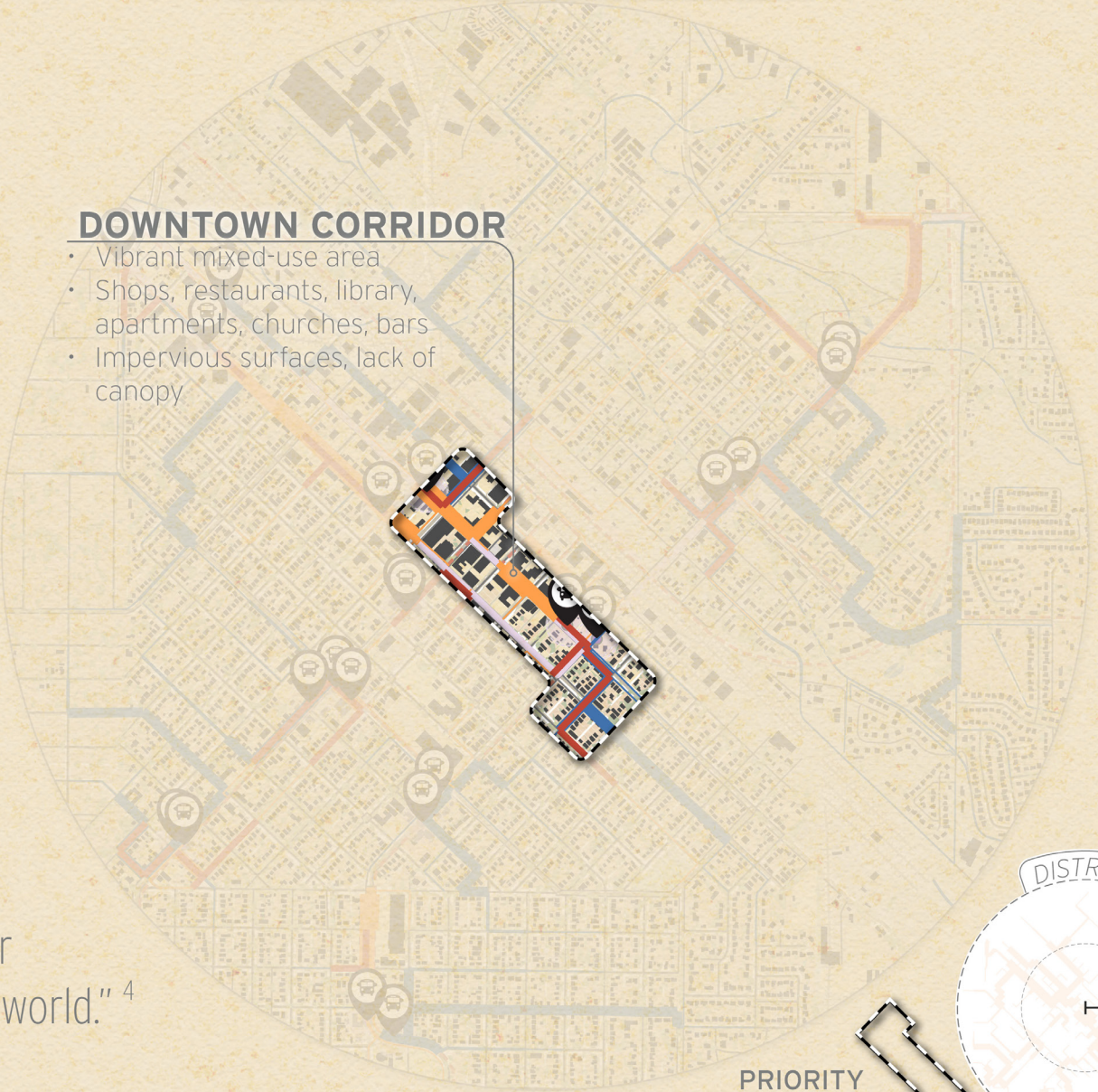
"Mapping is a tool of power
– who draws the map defines the world." ⁴

- De La Peña et al.
Design as Democracy, 2017

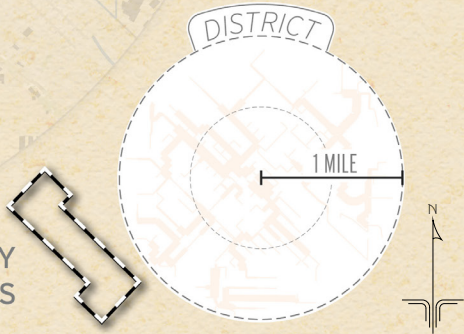
PRIORITY STREETS

DOWNTOWN CORRIDOR

- Vibrant mixed-use area
- Shops, restaurants, library, apartments, churches, bars
- Impervious surfaces, lack of canopy



PRIORITY STREETS

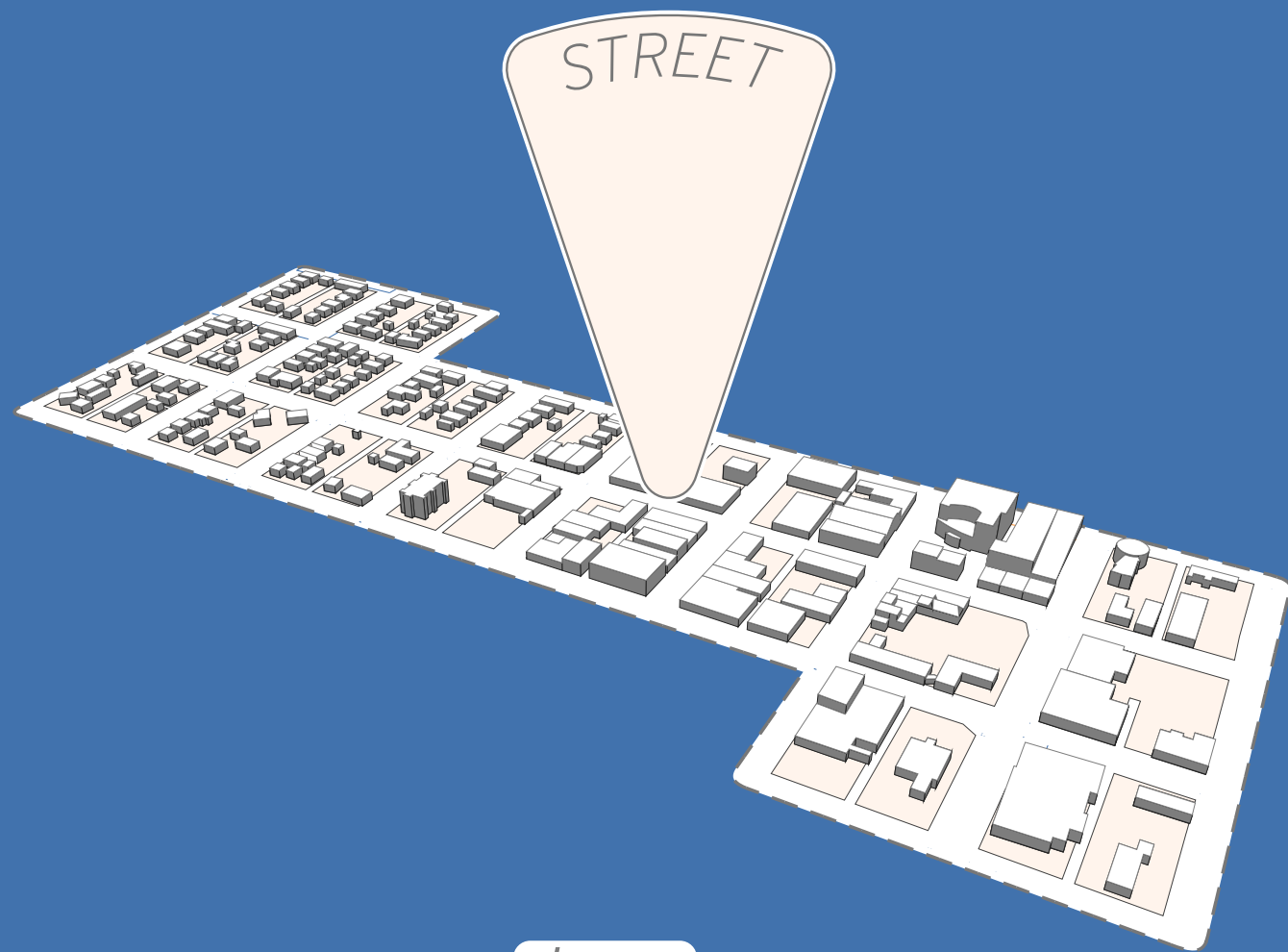


However, top-down spatial analysis is just data and hypotheses. It is a 2D analysis from a computer, not grounded in the lived experience of the people who animate the district. Spatial analysis is a great first step in identifying gaps and illuminating opportunities, but community input is vital at this stage in the process. To prioritize effective action and positive change, decision makers, planners, designers, stakeholders, community members should be collaborating at this scale.

By using scaled 3D models along with spatial analyses, a narrative about what needs to happen can be written by everyone. Interactive pieces allow visualizations to become tangible ideas. Through testing and conversation, planners and designers can eliminate biases and face realities that could be missed in analysis. Community members are the experts of their own experience¹.

In lieu of community engagement outside the scope of this project, the downtown corridor was chosen for zoomed in analysis at a street scale, to illustrate the utility of the Route Awakening framework.

1) De La Peña, D., Allen, D. J., Hester, R. T., Hou, J., Lawson, L. L., & McNally, M. J. (Eds.). (2017). Design as Democracy: Techniques for Collective Creativity. Island Press/Center for Resource Economics. <https://doi.org/10.5822/9781-61091-848-0>



1/4 MILE

3

STREET ANALYSIS

ROUTE AWAKENING

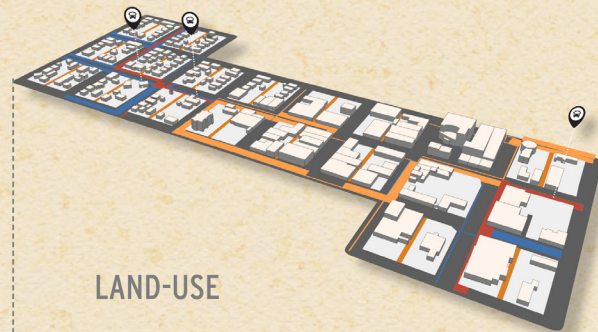


FIRST / LAST MILE OPPORTUNITY

STREET SCALED ANALYSIS

STREET → PARCEL

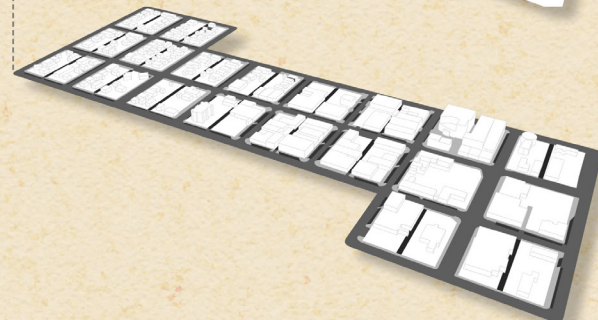
SHORTEST PATH ANALYSIS



LAND-USE



POTENTIAL TACTICAL SPACE



MOBILITY INFRASTRUCTURE

NATURAL INFRASTRUCTURE

SOCIAL INFRASTRUCTURE

MOVE

Walking, rolling, and biking safely

ACCESS

Features that enable movement

GUIDE

Signage, lighting, art, and spatial cues

HEAL

Protect, filter, and support a healthier street

SENSE

Shade, scent, texture, and visual comfort

RESTORE

Native ecosystem identity

GATHER

Amenities that support interaction

CONNECT

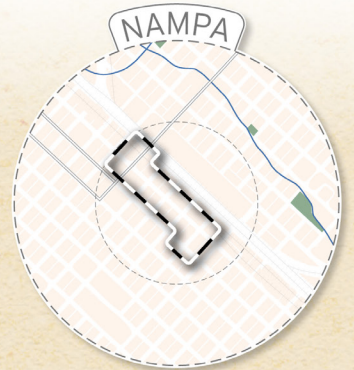
Food, social exchange, seating and tables

PLAY

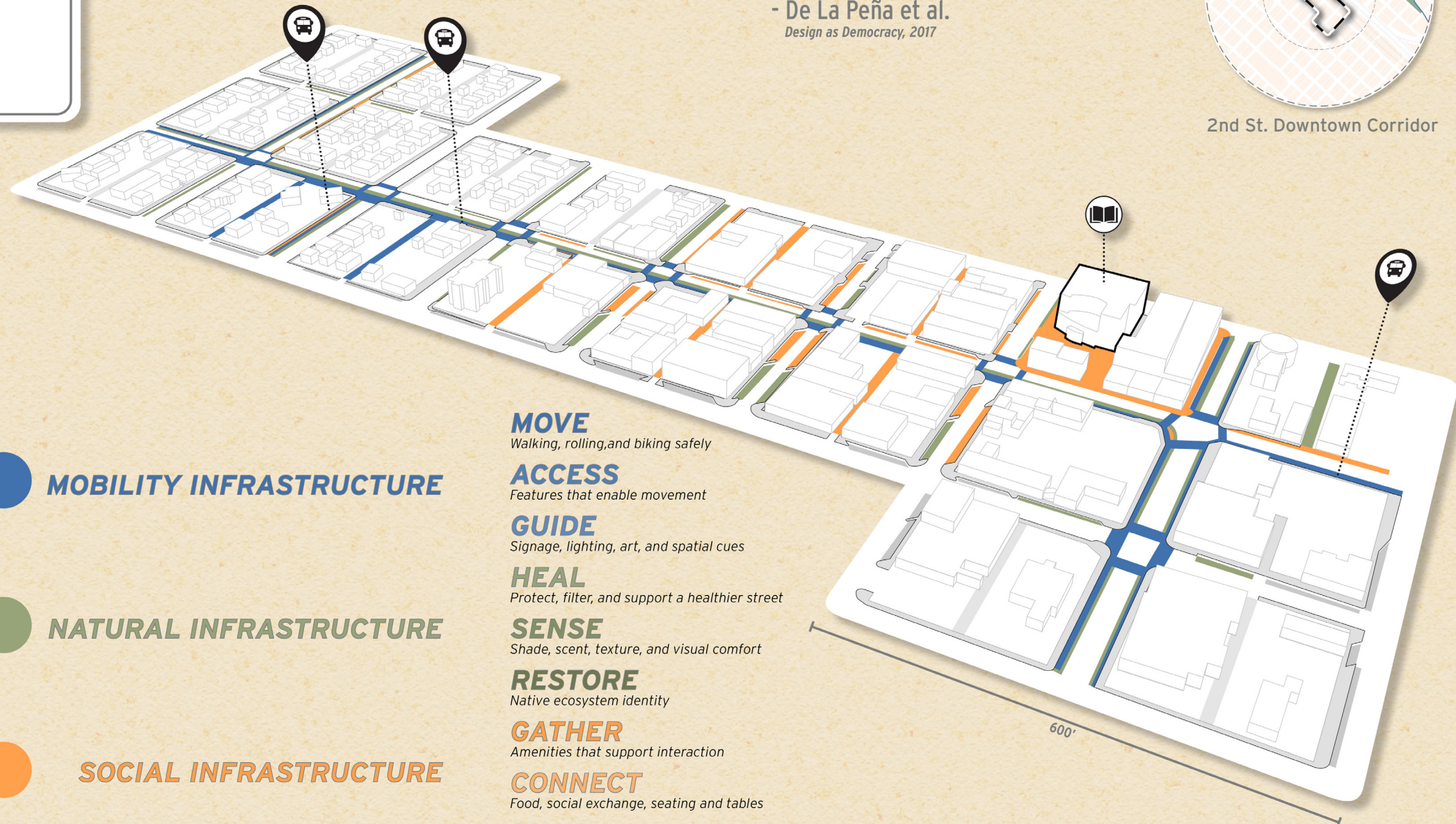
Joy, recreation, and creative engagement

"People are experts in their own lives and communities."

- De La Peña et al.
Design as Democracy, 2017



2nd St. Downtown Corridor



1) Speranza, P. (2018). A human-scaled GIS: Measuring and visualizing social interaction in Barcelona's Superilles. Journal of Urbanism: International Research on Placemaking and Urban Sustainability, 11(1), 41-62. <https://doi.org/10.1080/17549175.2017.1341426>

The downtown corridor on 2nd Street was selected as a priority corridor because it meets the previously defined criteria and connects low-density residential neighborhoods to the urban core of Nampa, Idaho. This transition from edge to center presents a range of spatial and social conditions relevant to first and last mile interventions.

To explore the potential for tactical improvements, shortest path routes to bus stops were analyzed in relation to land use, zoning, and

street context. These were overlaid on potential tactical spaces, which are available public spaces including: alleys, parking areas, sidewalks, and the plaza outside the Nampa Public Library. Based on this analysis, the available space was organized into three categories of temporary infrastructure:

Mobility infrastructure

A primary pathway runs through the corridor, linking residential neighborhoods to the library plaza, bus stops, and downtown. Secondary paths through

alleys offer lower-stress alternatives near key stops, and all major intersections are candidates for safety and mobility upgrades.

Natural infrastructure

A linear strip of planting buffers the main path from vehicle traffic, while additional green elements are distributed throughout to support healthy environments, sensory comfort, and ecological function.

Social infrastructure

Most social spaces are concentrated in the urban core, where activated alleys and mixed-use contexts create opportunities for gathering, play, and public life.

This layout is a proposed design informed by spatial analysis and site context, but **final decisions about space allocation should be guided by community members, transit riders, and local stakeholders to ensure these interventions meet the needs of those who use them daily.**

PARTICIPATORY DESIGN ROADMAP

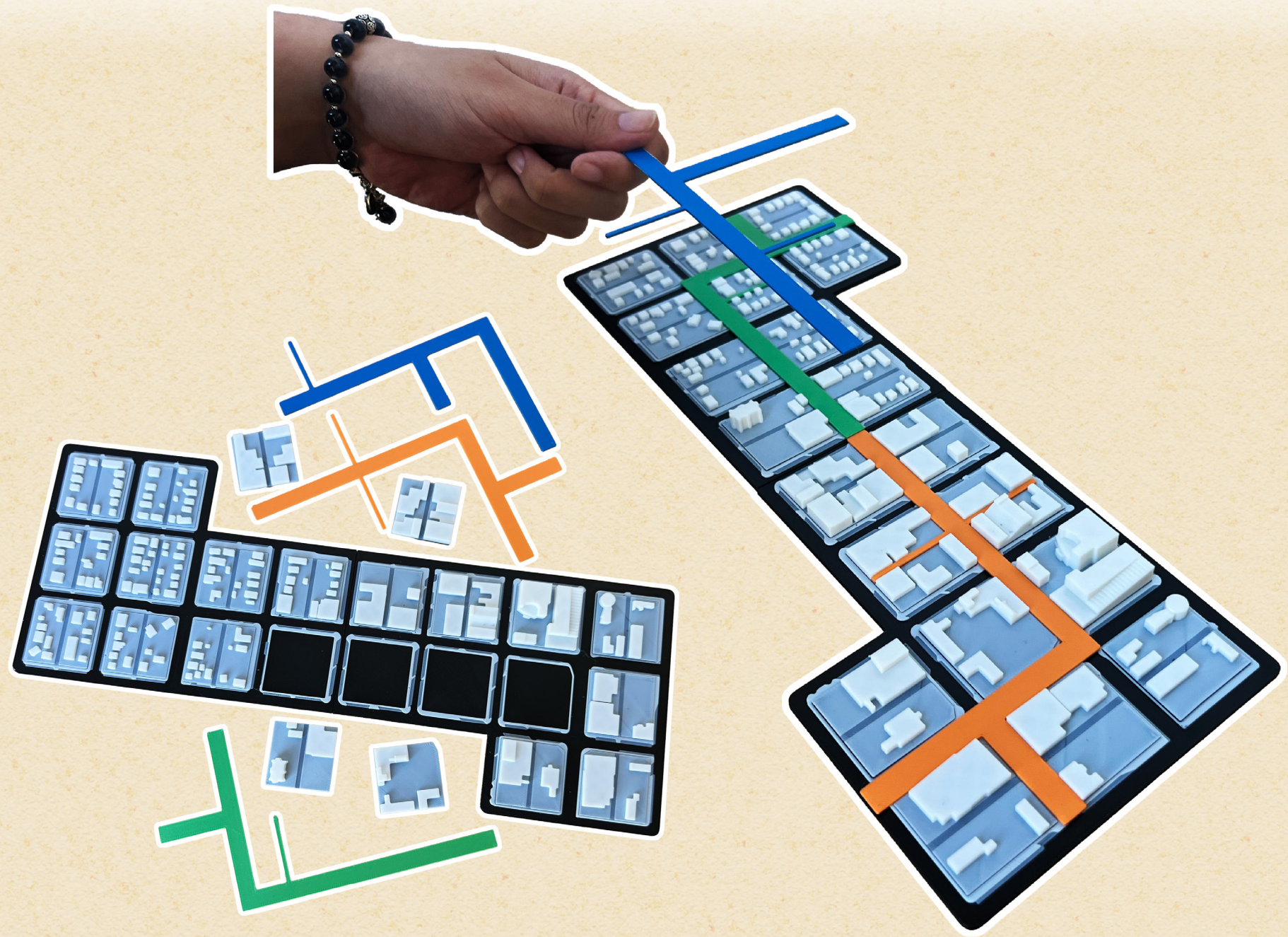
STREET ANALYSIS

STREET → PARCEL

● **MOBILITY INFRASTRUCTURE**

● **NATURAL INFRASTRUCTURE**

● **SOCIAL INFRASTRUCTURE**



1) Alexander, C., Ishikawa, S., & Silverstein, M. (1977). *A Pattern Language: Towns, Buildings, construction*. Oxford University Press.

2) Arnstein, S. R. (1969). A Ladder Of Citizen Participation. *Journal of the American Institute of Planners*, 35(4), 216-224. <https://doi.org/10.1080/01944366908977225>

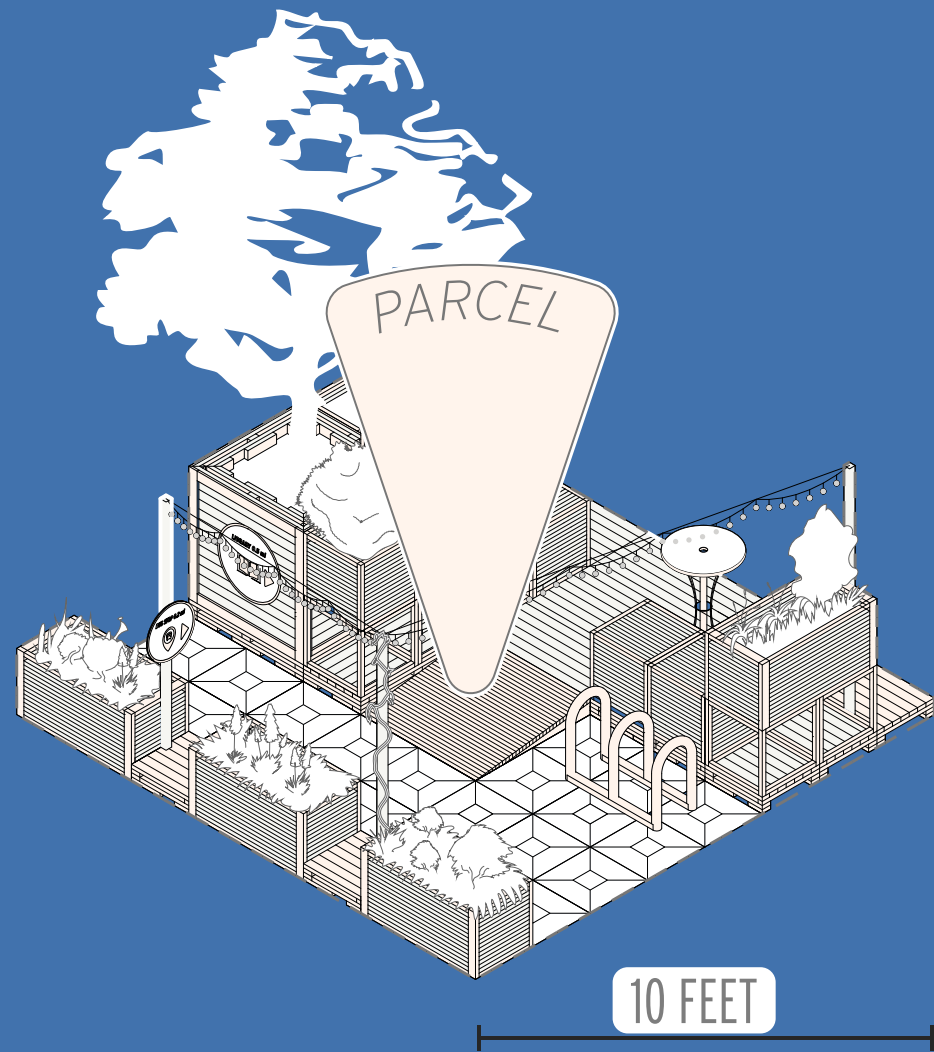
3) De La Peña, D., Allen, D. J., Hester, R. T., Hou, J., Lawson, L. L., & McNally, M. J. (Eds.). (2017). *Design as Democracy: Techniques for Collective Creativity*. Island Press/Center for Resource Economics. <https://doi.org/10.5822/978-1-61091-848-0>

Christopher Alexander argues in *A Pattern Language* that “when people have no way to shape their surroundings, they become hostile, helpless, and full of despair”¹. Top-down urban design does not effectively include the community, stakeholders, and residents, or it leaves them out of the process altogether. That is why inclusion in shaping public spaces has been shown to increase public buy-in for urban projects³. A communal sense of ownership in the process is pivotal to a project’s success².

This 3D model exemplifies how to use modular pieces to represent the three categories of temporary infrastructure: **mobility, natural, and social**. Each piece can be placed in different tactical spaces, with the added ability to remove and modify entire blocks to plan for long-term change.

Planning with the community through participatory design at the street scale allows for more nuanced conversations about specific goals for different blocks. Because this specific

street has distinct spacial contexts (low density residential neighborhoods at one end and mixed use commercial downtown at the other), strategies for increasing first- and last-mile connectivity can be better tailored to meet the specific and varied needs and wishes of the community.



4

TYPOLOGIES

ROUTE AWAKENING



TACTICAL DESIGN TYPOLOGIES

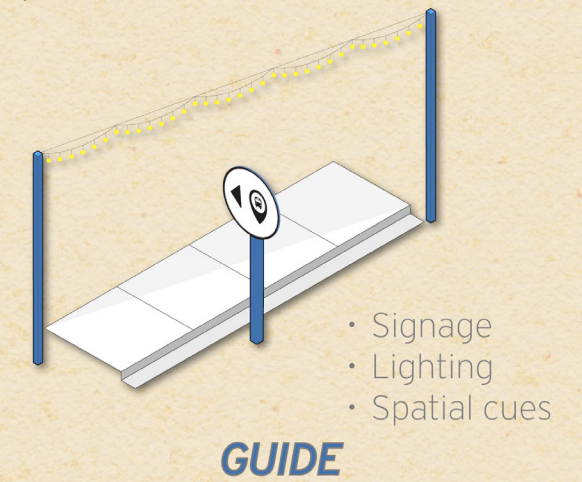
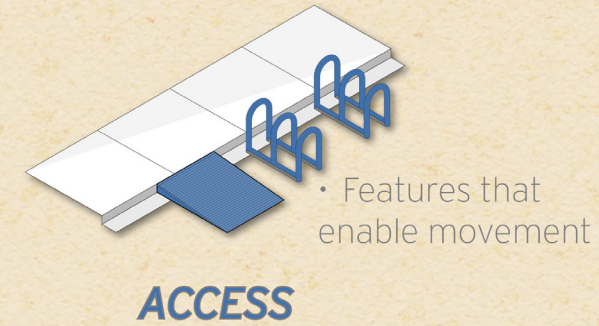
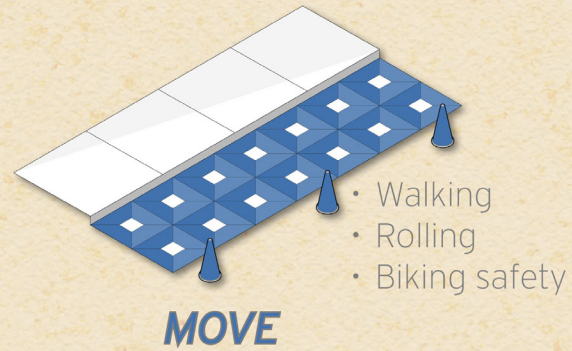
TYPOTOLOGIES AS COMMUNICATION TOOLS

"THE PATTERNS ARE NOT DESIGNS, BUT RULES FOR GENERATING DESIGN."

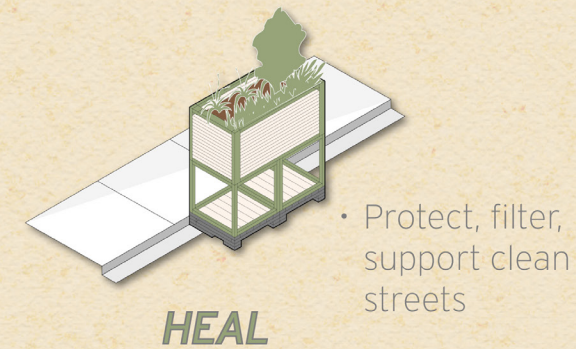
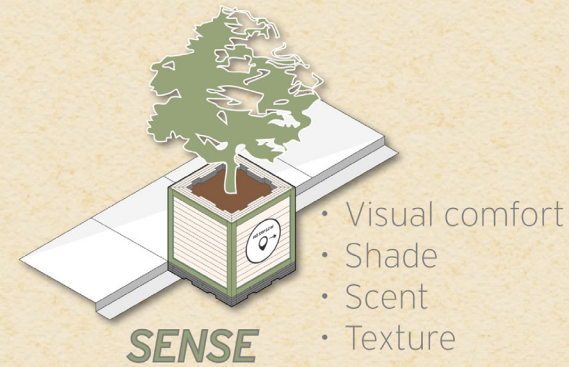
- Christopher Alexander

A Pattern Language: Towns, Buildings, Construction, 1977

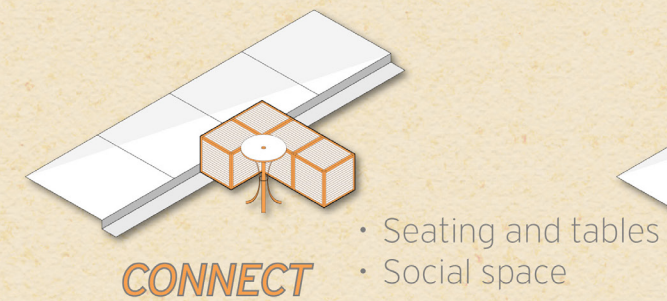
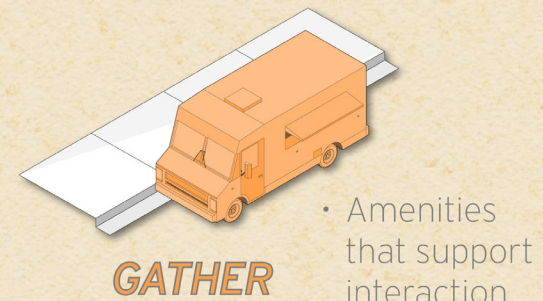
MOBILITY INFRASTRUCTURE



NATURAL INFRASTRUCTURE



SOCIAL INFRASTRUCTURE



1) Alexander, C., Ishikawa, S., & Silverstein, M. (1977). *A Pattern Language: Towns, Buildings, construction*. Oxford University Press.

2) METRO. (2014). *First Last Mile Strategic Plan & Planning Guidelines*. Los Angeles County Metropolitan Transportation Authority (Metro). <https://media.metro.net/docs/first-last-mile-strategic-plan.pdf>

3) Mohluddin, H. (2021). Planning for the First and Last Mile: A Review of Practices at Selected Transit Agencies in the United States. *Sustainability*, 13(4), Article 4. <https://doi.org/10.3390/su13042222>

4) Garcia, A., & Wall, D. (with The Street Plans Collaborative, Inc., Transit Cooperative Research Program, Transportation Research Board, & National Academies of Sciences, Engineering, and Medicine). (2019). *Fast-Tracked: A Tactical Transit Study*. Transportation Research Board. <https://doi.org/10.17226/25571>

5) The Street Plans Collaborative. (2016). *Tactical Urbanism Materials and Design Guide*. Vol. 1.0. John S. and James L. Knight Foundation, NACTO, Vision Zero Network. <https://tacticalurbanismguide.com/guides/tactical-urbanists-guide-to-materials-and-design/>

Typologies were developed to fulfill FMLM enhancements through the lens of Christopher Alexander's *'A Pattern Language'*, "each pattern is a relationship between a certain context, a certain system of forces which occurs repeatedly in that context, and a certain spatial configuration which allows these forces to resolve themselves"¹.

Developing mobility, natural, and social temporary infrastructure into refined patterns of use helps articulate the specific programming

goals of a street. These nine use-pattern typologies represent common FMLM strategies^{2,3}, adapted to a temporary, low-cost, modular utility^{4,5}. Built out of **common, accessible, potentially repurposed materials**, these typologies act as placeholders for what can actually be implemented and modified through further community engagement and participatory design.

The typologies operate at a deliberately small scale to maximize flexibility and responsiveness.

Most are designed to fit within a standard 9-by-18-foot parking stall, allowing them to be deployed with minimal disruption, while being easily rearranged, combined, or expanded.

This scale also encourages overlap. A single intervention can serve multiple functions at once, offering shade, seating, wayfinding, and ecological value in the same footprint. Rather than dividing streets into rigid zones, edges are blurred and layered uses reflect the complexity of everyday

life. These interventions aim to shift the feel of the street, not just its form, helping to create an environment where walking, gathering, and taking transit become more intuitive and inviting.

VALUES TRANSLATED INTO ACTION

TOOLS FOR ENGAGEMENT AND AGENCY IN PUBLIC SPACE

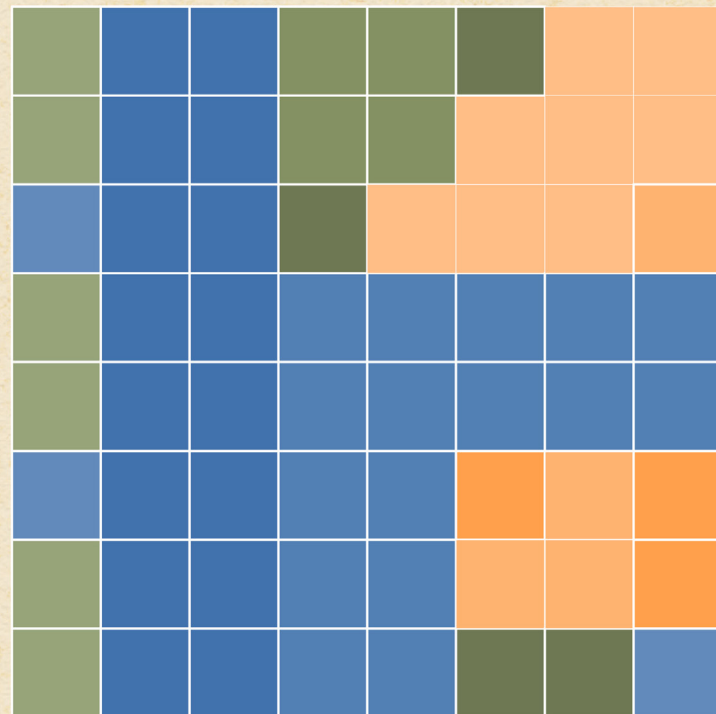
1

PROGRAMMING PATTERNS



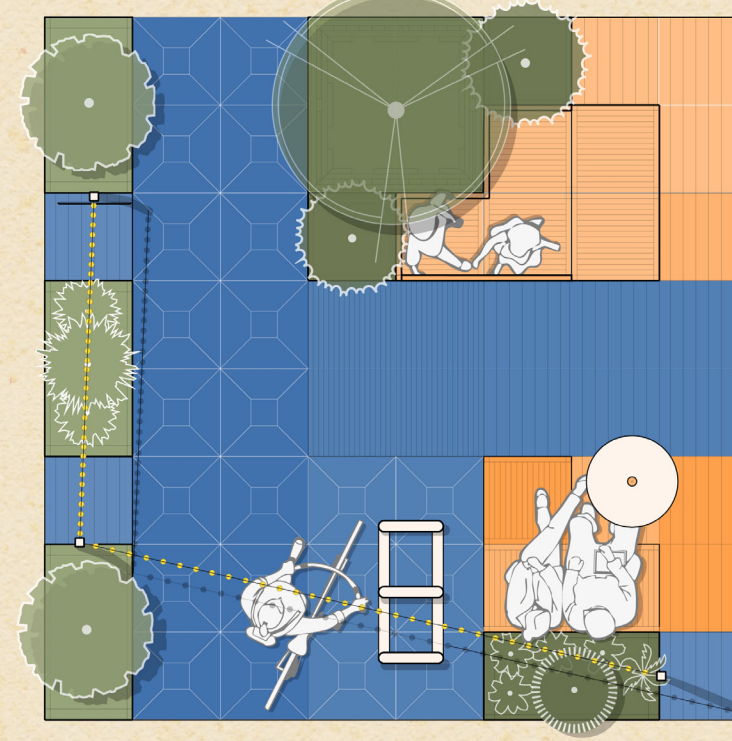
2

VALUE TRADE-OFFS SCORED



3

TRANSLATED INTO SPATIAL DISTRIBUTION



4

TRANSLATED INTO TACTICAL TYPOLOGIES

"We just want something that's..."

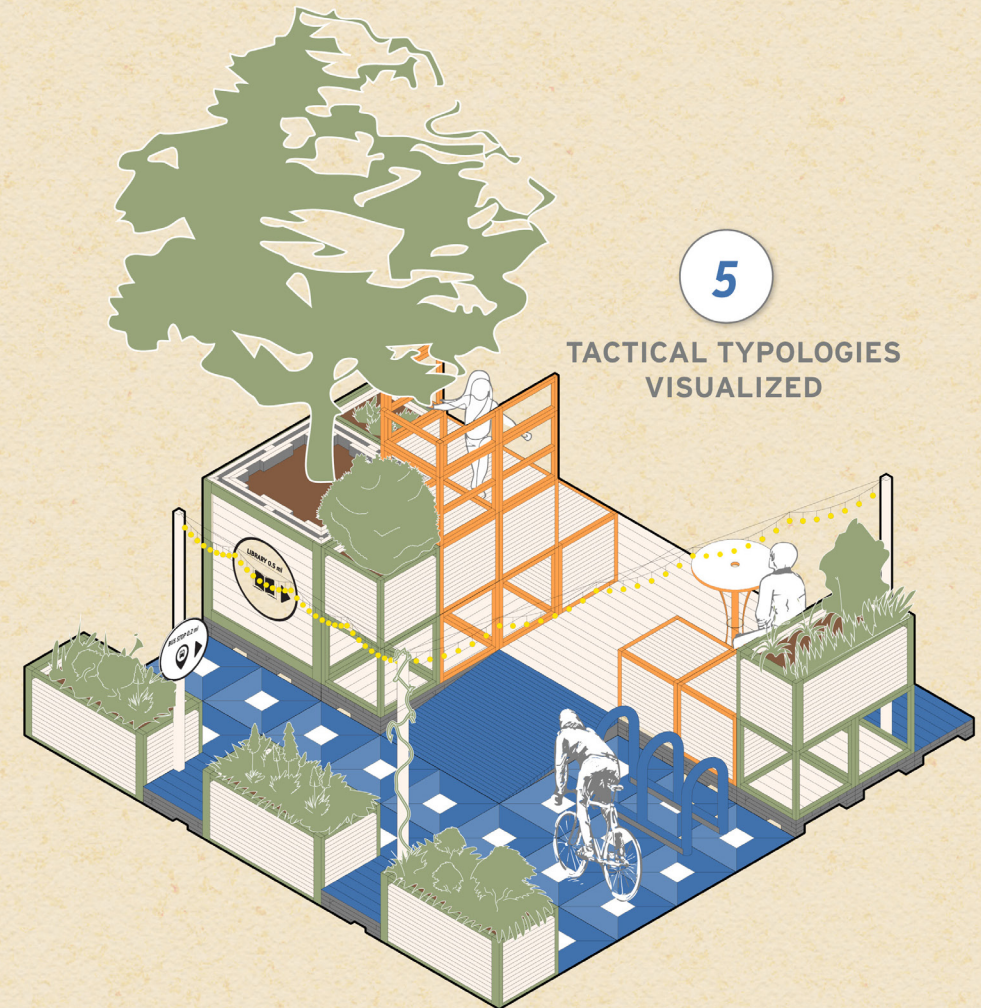
- Simple & obvious
- Safe for kids & elders
- Comfortable to walk
- Reflective of who we are
- Makes our streets feel alive

COMMUNITY MEMBERS



5

TACTICAL TYPOLOGIES VISUALIZED



These typologies reflect values that can be evaluated based on trade-offs. This starts by community members scoring each typology category based on their values, which are used in **participatory design to invite community members to shape the character of a street**. Each participant is given a limited number of units, represented as squares, corresponding to the physical footprint sections. These units are allocated across nine pattern-based values: move, access, guide, sense,

heal, restore, play, gather, and connect. Because the number of units is finite, **participants must make trade-offs, prompting reflection on what spatial values matter most in a given context**.

These value scores are then translated into a spatial distribution using the established typology logic, where each square represents one unit of that typology (in this case they are 2'x2' squares). **The result is a spatial configuration that reflects collective priorities and makes abstract values**

visible. Results can be visualized by designers to brainstorm ideas.

This approach serves not only as a planning method, but also as a tool for exploration, design communication, and participation, allowing the public to prototype and visualize how their choices shape the experience of a street.

PARTICIPATORY DESIGN ROADMAP

DISTRICT ANALYSIS

PARCEL → REALITY

"TACTICAL URBANISM SHOWS HOW WITH A LITTLE IMAGINATION AND THE RESOURCES AT HAND, CITIES CAN UNLOCK THE FULL POTENTIAL OF THEIR STREETS."

- Janette Sadik-Khan
Tactical Urbanism, 2015



1) The Street Plans Collaborative. (2016). Tactical Urbanism Materials and Design Guide: Vol. 1.0. John S. and James L. Knight Foundation, NACTO, Vision Zero Network. <https://tacticalurbanismguide.com/guides/tactical-urbanists-guide-to-materials-and-design/>
2) Lydon, M., & Garcia, A. (2015). Tactical Urbanism, Island Press/Center for Resource Economics. <https://doi.org/10.5822/9781610915670>

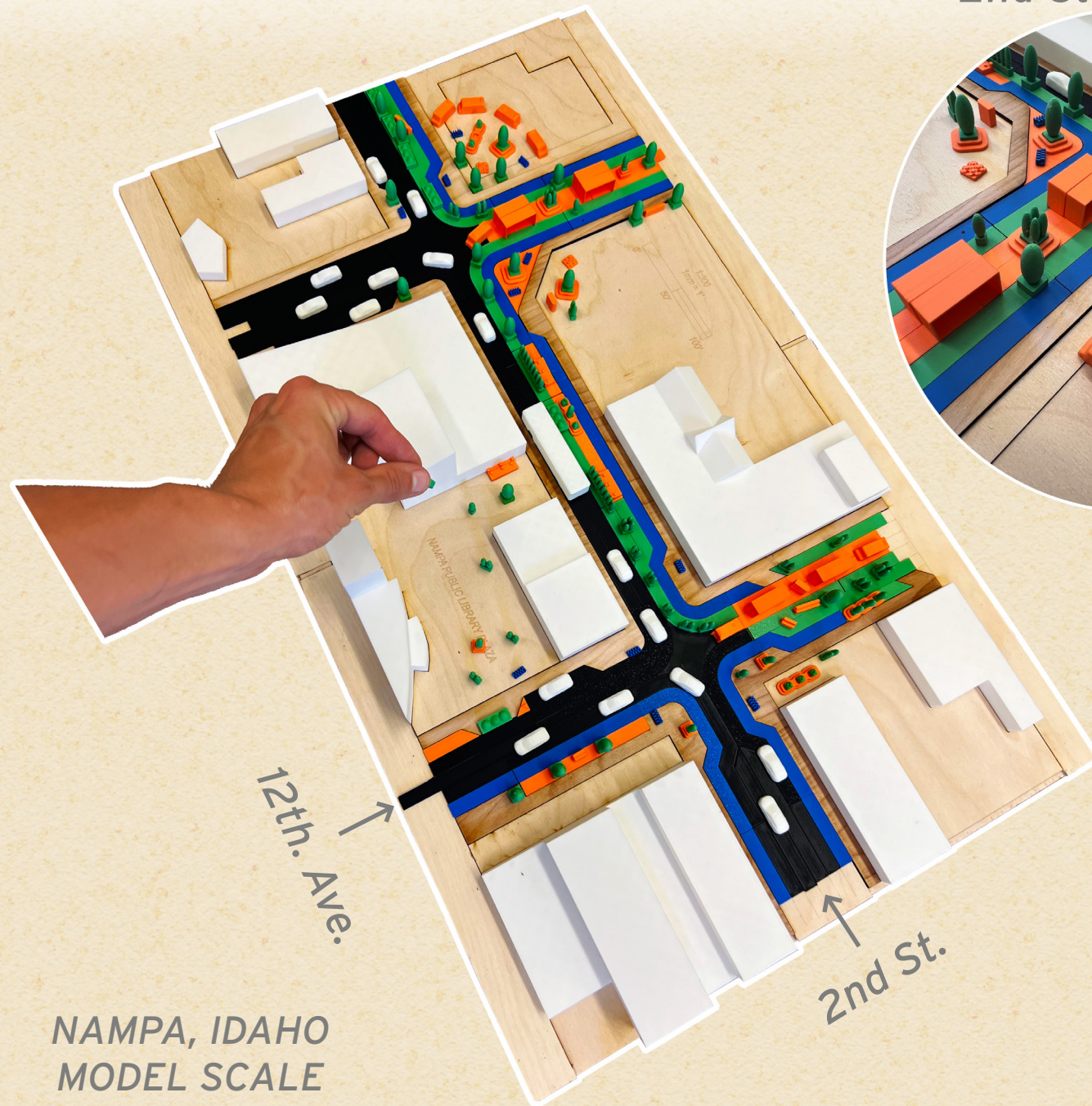
Building off the idea of tactical typologies representing spatial distributions, 3D models of streets are used as planning tools to create a dynamic way to explore first- & last-mile interventions. These models allow for real-time testing of spatial changes like curb bump-outs, street furniture, planters, and pop-up plazas, helping stakeholders and community members visualize how small, low-cost moves can dramatically shift the experience of a street. Rather than relying on

abstract diagrams or policy documents, the model becomes a stage for hands-on experimentation. It is a tool that bridges scales, connecting site-specific details to broader urban goals like walkability, access, and safety. According to the Tactical Urbanist's Guide to Materials and Design, temporary interventions "are a way to prototype solutions that can lead to more permanent outcomes"¹, and the model acts as a testing ground for those prototypes.

2nd St. & 11th Ave.

PARTICIPATORY DESIGN ROADMAP DISTRICT ANALYSIS

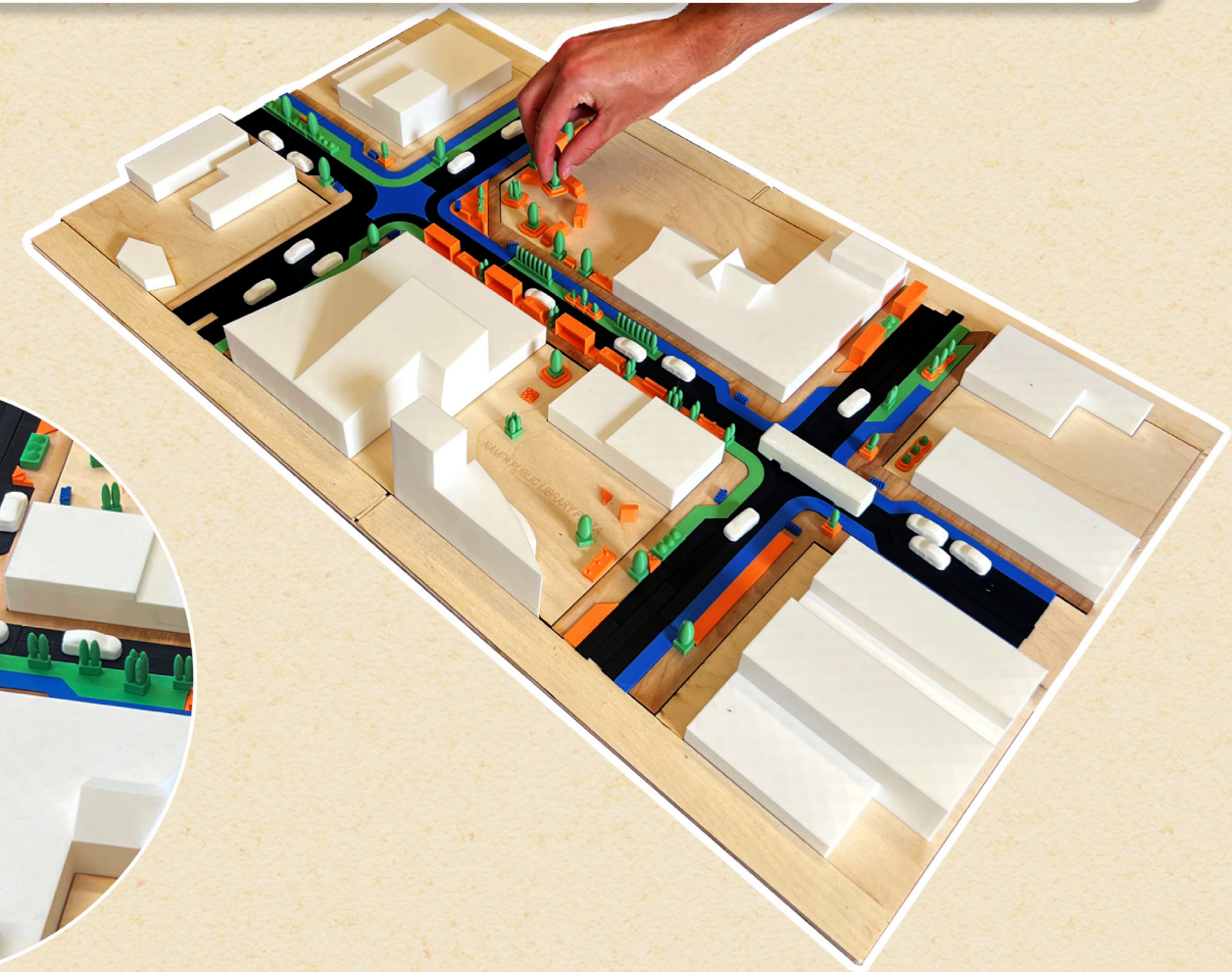
PARCEL → REALITY



NAMPA, IDAHO
MODEL SCALE
1:300



2nd St. & 12th Ave.



1) De La Peña, D., Allen, D. J., Hester, R. T., Hou, J., Lawson, L. L., & McNally, M. J. (Eds.). (2017). *Design as Democracy: Techniques for Collective Creativity*. Island Press/Center for Resource Economics. <https://doi.org/10.5822/9781-61091-848-0>

Game-like activities like this model invite community members to become co-designers. Instead of filling out surveys or attending rigid meetings, participants can physically place or move elements that represent values such as mobility, natural, or social space. This process creates a sense of ownership and transparency while making the stakes and tradeoffs more legible. The book *Design as Democracy* articulates, “play cultivates a different way of knowing, one that is embodied,

improvisational, and relational” (Pena et al., 2017). These game-inspired frameworks turn planning into an exploratory and inclusive process, where the built environment becomes something to be shaped, challenged, and reimaged together.

This kind of **interaction shifts decision-making from abstraction to expression**. It invites participants to think with their hands, test their priorities, and see how **collective values translate into physical space**. Because the pieces are modular

and movable, no choice feels final. People are encouraged to experiment, imagine alternatives, and respond to others in real time. It sparks dialogue by encouraging negotiation, collaboration, and reflection. **The model becomes a shared platform for civic imagination.**

Ultimately, **this approach changes who gets to participate and how**. It lowers the barrier to entry, makes planning tactile and intuitive, and treats uncertainty as an opportunity. **The goal is not to**

produce a perfect plan, but rather to test values, disseminate assumptions, and build relationships through the act of playful participatory design.

DOWN THE ROAD

2nd St & 15th Ave. Nampa, ID, 83651

1

This is where it begins. An ordinary bus stop, unnoticed, unused. This is a fragment of a system that isn't working for the people who need it the most.

2

Small changes signal a shift. A few volunteers, a coat of paint, traffic cones redirecting space, and suddenly, **the street starts to take on a new role.**

3

With low-cost materials and a simple idea, the space begins to awaken. A few additions make it clearer how this place could serve more than just vehicles. **It starts to function, not perfectly, but purposefully.**

4

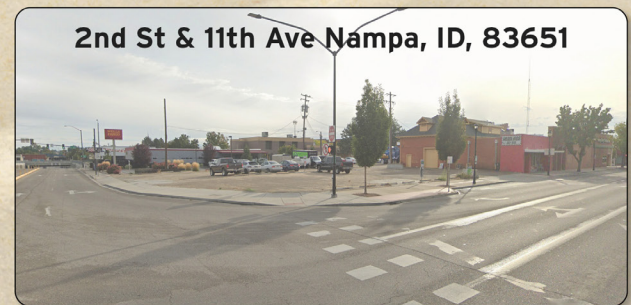
Over time, **temporary gestures evolve**: cones become planters, the stop offers rest, people return, and the street responds.

This is the power of starting small. With simple tools - paint, cones, wood, and will - we open the door for something bigger: **Not just infrastructure, but invitation. Not just transit, but transformation.**

DOWN THE ROAD



2nd St & 11th Ave Nampa, ID, 83651



We can imagine this process in vacant corners, built for turning, not for staying. They move cars effectively at the detriment of everyone else. That **excess becomes opportunity, opening space for something new**: not a fixed design, but a shift in priorities. A corner that once pushed people out now has room to hold them.

If an idea doesn't work, that is not a failure; it is a valuable outcome. **The tactical nature of this approach avoids locking communities into costly**

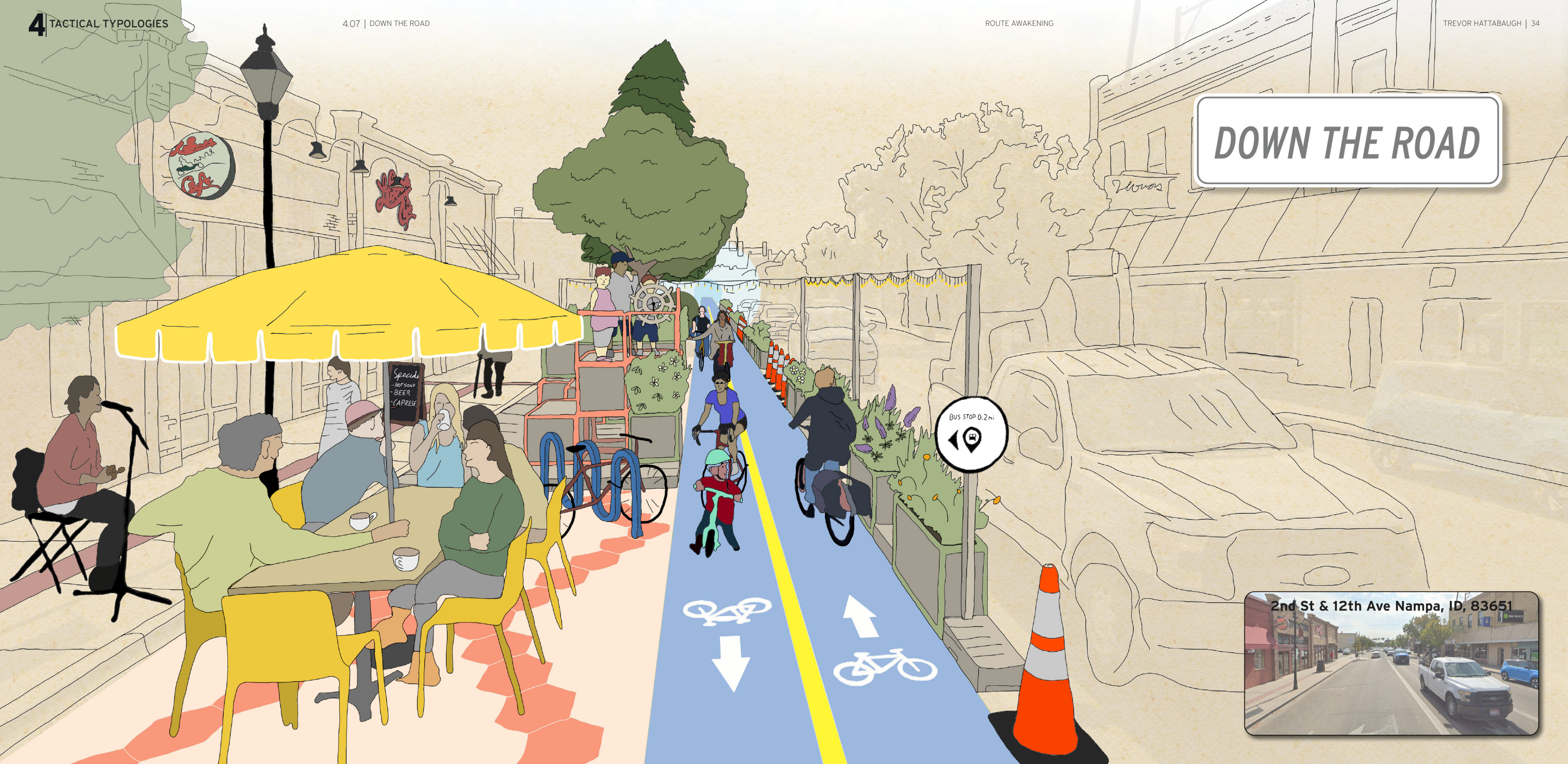
and unpopular decisions. This drawing is not a finish line; it is a snapshot of possibility, a moment in an ongoing process of testing, learning, and adjusting. It shows a street brought to life through temporary, people-centered interventions.

Post-evaluation is the heart of the Route Awakening framework. The purpose is not to claim victory with one design but to observe how people use the space, gather feedback, and adjust as needed. Human behavior is unpredictable. People

shift routines, change opinions, and adapt.

This framework is designed to keep pace with that reality. **Tactical interventions make it possible to treat public space as something that evolves through use.** Every reaction, whether positive or critical, becomes part of the design loop. Rather than trying to control the outcome, we build a system that can respond, learn, and improve with time, together with the communities it serves.

DOWN THE ROAD



Generic streets fill our landscapes. They're functionally complete as corridors for cars, but empty of all meaning. If we treat them instead as living spaces, their purpose expands. They become something else: a space that reflects how people actually move, live and come together.

This project reframes the street as a dynamic site of interaction and movement, rather than fixed infrastructure. Through spatial analysis and a system of tactical typologies, it identifies moments where

low-cost design actions can shift both perception and behavior.

Opportune moments exist in overlooked spaces between transit gaps, where journeys begin and end, but formal investment rarely reaches. Working within right-of-ways and hamstrung budgets necessitates creativity and flexibility. It also depends on sustained community involvement to align design outcomes with how spaces are actually used. Tangible models and optimistic design

communication break down the fear of failure, to challenge a car-centric transportation system that continues to compromise safety, health, and convenience.

This framework doesn't offer final answers. It offers a way to test, to adapt, to respond. Change doesn't start with a perfect plan. It starts by asking who the street is really for.

THANK YOU

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GIS DATA



COMPASS: Community Planning
Association of Southwest Idaho



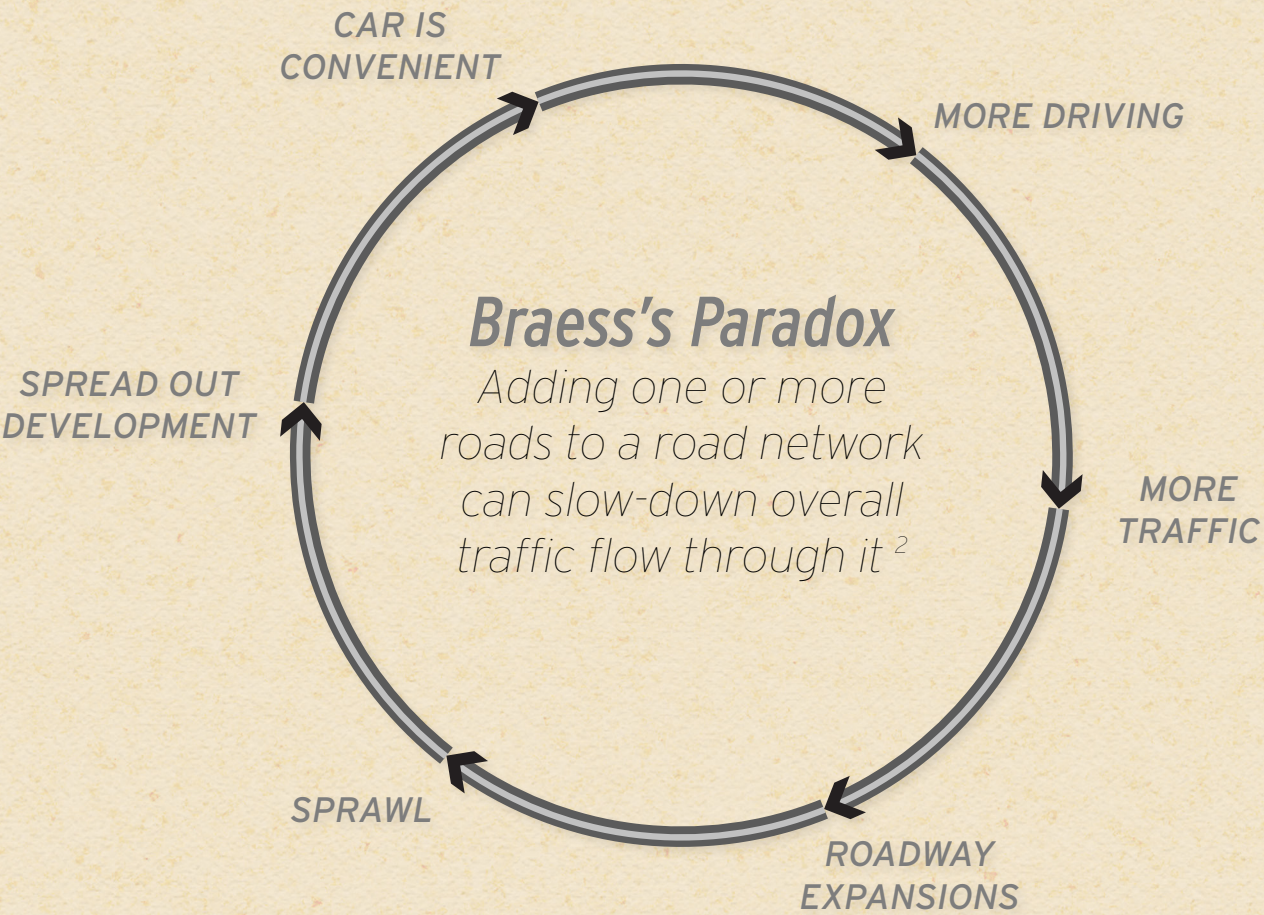
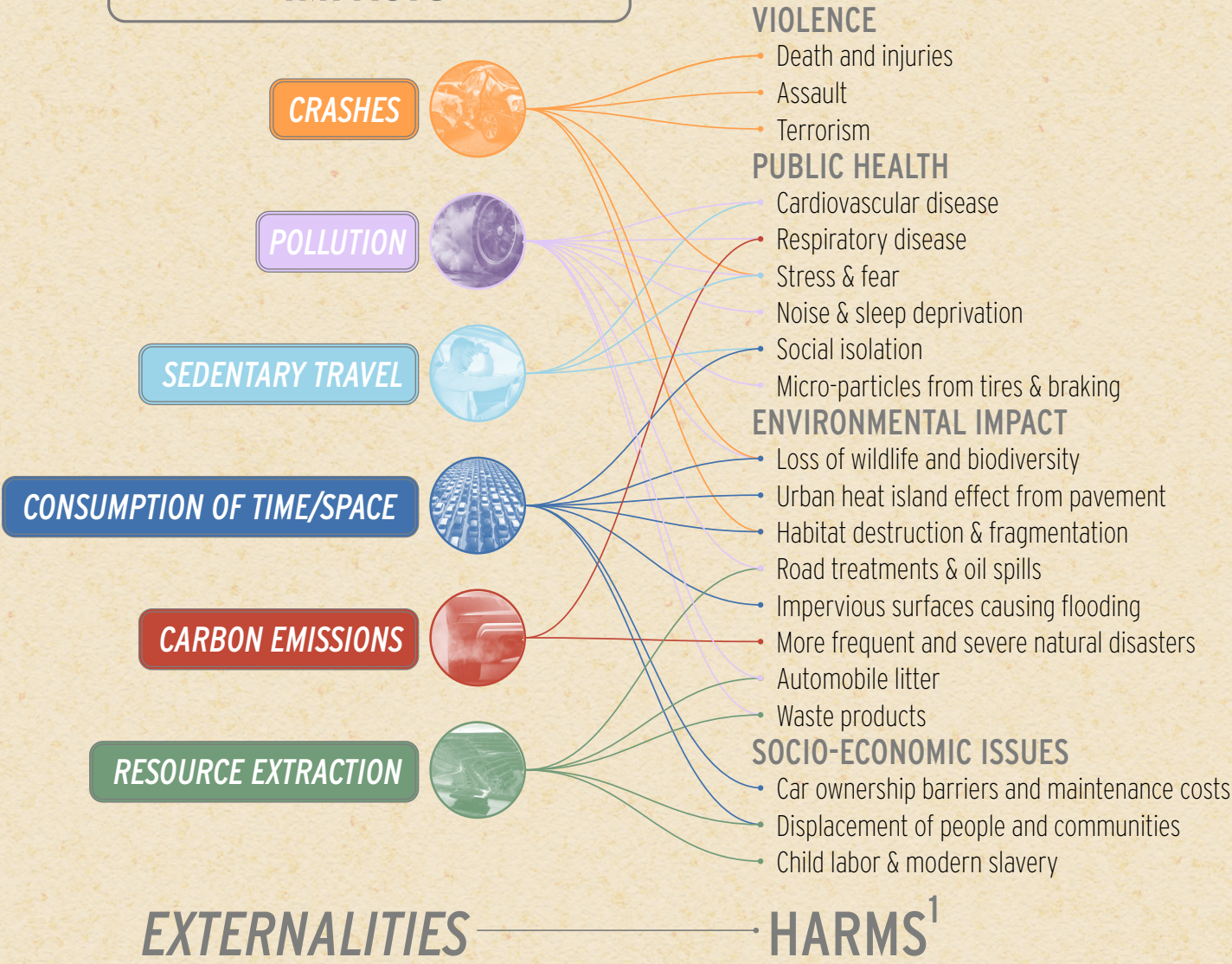
Valley Regional Transit



TO EVERYONE WHO HAS SUPPORTED THIS PROJECT AND MY MASTER OF LANDSCAPE ARCHITECTURE JOURNEY, FROM MENTORS AND FACULTY TO CLASSMATES, FRIENDS, FAMILY, AND PROFESSIONALS, THANK YOU. YOUR FEEDBACK, GUIDANCE, EXPERTISE, AND ENCOURAGEMENT MADE THIS PROJECT POSSIBLE. I HAVE GROWN BECAUSE OF YOUR KNOWLEDGE, PATIENCE, CARE, AND KINDNESS. I'M DEEPLY GRATEFUL.

APPENDIX

CAR-CENTRIC IMPACTS



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2) Braess, D. (1969). Braess's Paradox. *Unternehmensforschung*, 12, 258-268. (<http://homepages.uni-bochum.de/Dietrich.Braess/paradox.pdf>) (<http://homepages.uni-bochum.de/Dietrich.Braess/Paradox-BNW.pdf>)

APPENDIX

FIRST / LAST MILE OPPORTUNITY SUITABILITY ANALYSIS QGIS METHOD REGION → DISTRICT

QGIS SUITABILITY ANALYSIS DATA NORMALIZATION TO TRAFFIC ANALYSIS ZONES (TAZ)

Min-max normalization formula: Normalized value
= $X - X_{min} / X_{max} - X_{min}$

X = Original value
 X_{max} = Maximum value in the dataset
 X_{min} = Minimum value in the dataset

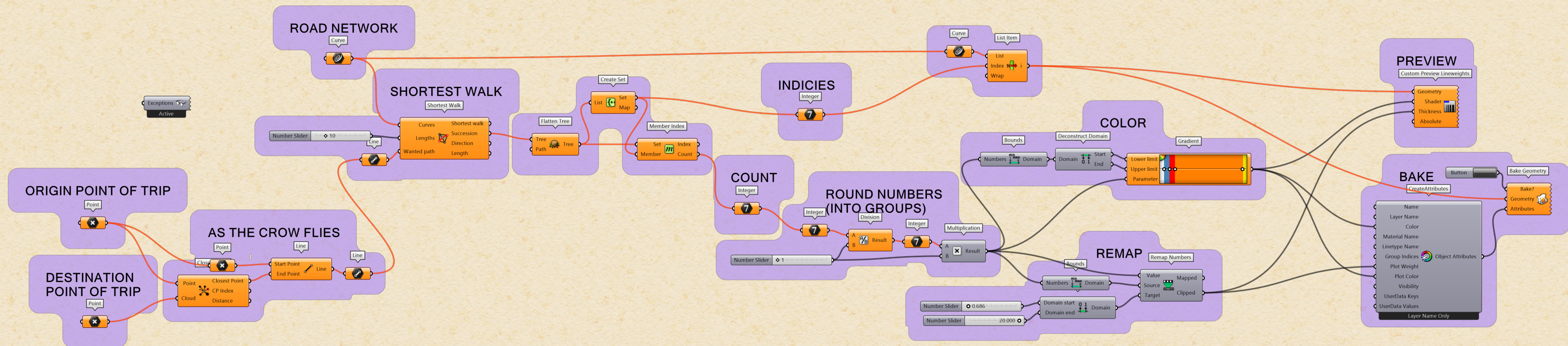
Input into QGIS field calculator:
("FIELD_NAME" - minimum("FIELD_NAME")) /
(maximum("FIELD_NAME") - minimum("FIELD_NAME"))



APPENDIX

FIRST / LAST MILE OPPORTUNITY
SHORTEST PATH FREQUENCY ANALYSIS
DISTRICT —————→ STREET

RHINO 8 - GRASSHOPPER SCRIPT



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