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Rachel Cathryn Tepper

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**Mapping Mueller: A Post Occupancy Evaluation of Transportation Choices in A New Urbanist
Community in Austin, Texas**

by

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Abstract

Mapping Mueller: A Post Occupancy Evaluation of Transportation Choices in A New Urbanist Community in Austin, Texas

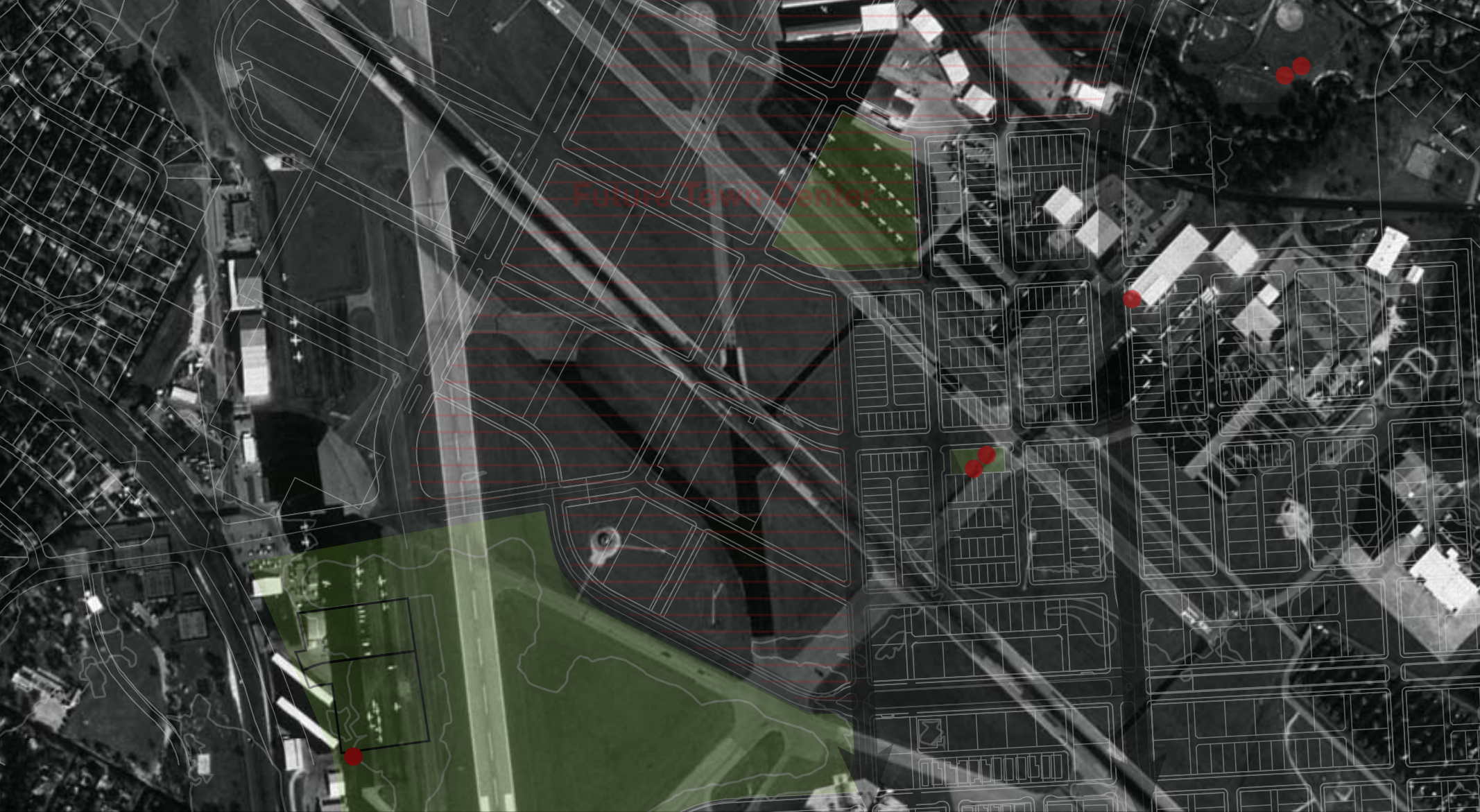
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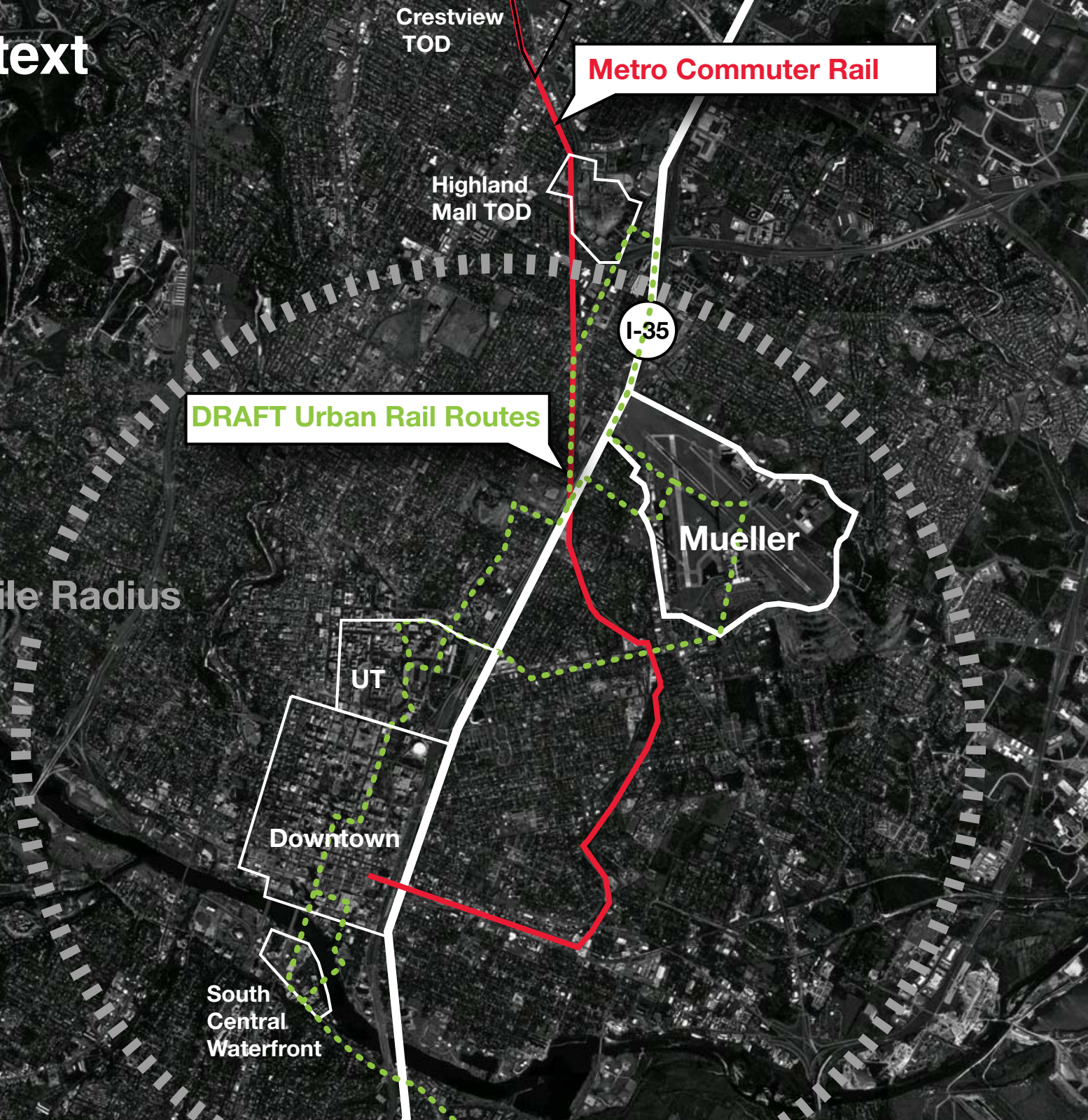
The 711-acre Mueller development is located just three miles northeast of downtown on the former site of the Robert Mueller Municipal Airport. Planned as one of Austin's major transit-oriented New Urbanist developments, Mueller contains a pattern of pedestrian and bike friendly streets to encourage a range of transportation options for residents and visitors. Mueller is 30% complete and provides housing and jobs to over 3000 residents and 3000 employees. This MDS seeks to understand how current residents, employees, and visitors use the bike lanes, sidewalks, and roads in the Mueller community. To evaluate the transportation infrastructure, the author designed and coded a custom Google Maps survey that asked residents to draw common routes, points of interest, and points of concern related to their transportation choices. The results of this study then influenced a future urban design of the undeveloped portion of Mueller.



Mapping Mueller

A Post Occupancy Evaluation of Transportation Choices
in A New Urbanist Community in Austin, Texas

Regional Context



Crestview
TOD

Metro Commuter Rail

Highland
Mall TOD

I-35

DRAFT Urban Rail Routes

Mueller

3 Mile Radius

UT

Downtown

South
Central
Waterfront

History

1936 - AIRPORT OPENS

1961 - RENOVATIONS

1971 - GROWING PAINS

1984 - C.A.R.E. PLAN

1997 - MASTERPLAN

1999 - AIRPORT CLOSES

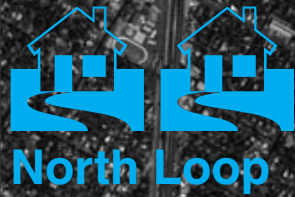
2000 - PLAN ADOPTED

2004 - ZONING APPROVED

2007 - FIRST BUSINESS

2008 - PARKS OPEN

2013 - HEB MARKET DISTRICT



Transportation Principles

1. Development must maintain and enhance the quality of life in adjacent neighborhoods, providing complementary linkages, land uses and transportation patterns.

2. The development be planned in a way that promotes energy efficiency, reduced auto dependency, watershed protection and green space preservation.



Pedestrian Friendly Streets

Mueller streets are designed to serve as an extension of the open space, pedestrian and bicycle network, and contribute to the community's sense of place and identity.

The buildings create friendly, active edges while the roadways and streets are designed to distribute traffic in a way that minimizes the impact on adjacent communities. Homes are oriented towards the street with stoops and porches that encourage neighborliness.



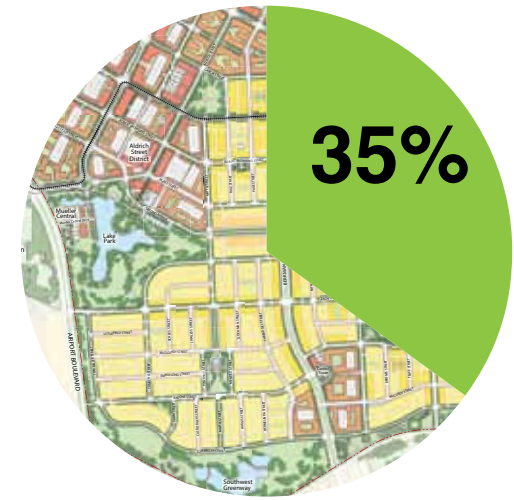
Transit Oriented Development

Mueller is planned as one of Austin's major transit-oriented developments with Capital Metro bus service and a proposed extension of the Capital Metro Rail system upon voter approval. The pattern and intensity of development is planned in conjunction with a comprehensive program of transit improvements aimed at reducing automobile dependence.



Post Occupancy Evaluations

The Post-Occupancy Evaluation (POE) performed at the neighborhood scale can be a useful tool to evaluate New Urbanist communities to determine if they work for their residents, employees, and frequent visitors, and if they effectively achieve the goals of the planner and developer.



Mueller Stats:

- 700 homes built
- A regional retail center
- Two parks
- Anchor offices and businesses.
- 3,500 residents / 3,500 employees.
- 5,700 residential units
- 140 acres of park space
- a mixed-use town center
- The current master plan projects an eventual capacity of 13,000 residents and 13,000 employees.

Mapping Mueller

This professional report is a POE of the current transportation infrastructure at Mueller. The goal is to determine whether the transportation infrastructure works the way the developer and planners intended, and establish lessons learned for the future phases of development. By learning what works and what doesn't, architects and planners can use this information in a feed forward role.

Preliminary Analysis
September/October
2013

Field Observations
February 2014

Online Mapping Survey
November/December/
January 2013-2014

Analysis and Recommendations
March/April/May 2014

The screenshot shows a web browser window titled "Mapping Mueller: A short interactive survey". The browser's address bar shows "www.mappingmueller.com". The page content is split into two main sections. On the left, there is a sidebar with the title "Mapping Mueller" and a sub-heading "Step #1: Draw Routes". Below this, there are "Instructions" with three numbered steps: 1. Click on the "draw route" symbol (a red line icon) located on the top-right of the map. Place your cursor at the start of your route and begin to draw. 2. Use the map zoom controls on the left side of the map to accurately draw on the specific path, sidewalk, lane, etc. 3. Once you have completed your route, click on the route to open an information balloon where you may enter descriptive attributes. Click save once you are done. Below the instructions, there is a button that says ">> Next Step: Add Points". At the bottom of the sidebar, there is a note: "**Please note, to save your route information, you must click save on the individual pop-up window. Once you leave this page, your information will be cleared." On the right side of the browser window, a map of Denver is displayed. A red line is drawn on the map, representing a route. An "Add me!" pop-up form is overlaid on the map. The form has the following fields: "Your route" (with coordinates 30.294238790682193, -97.70025731), "Travel Mode" (a dropdown menu), "Usage (in past month)" (a dropdown menu), "Main reason for travel" (a dropdown menu), "If other, please explain" (a text input field), "Travel Companions" (a dropdown menu), and "Route Description" (a text input field). At the bottom of the form is a blue "Save me" button. The map shows various streets, including E 51st St, Airport Blvd, and U.S. 290 Frontage Rd. The map data is attributed to Google, 2014.

Points of Interest

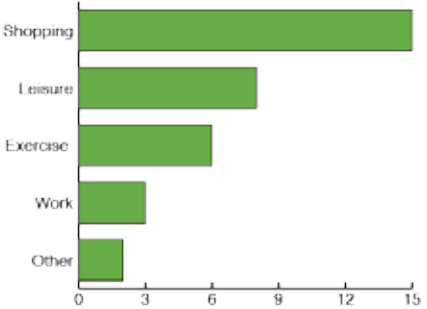
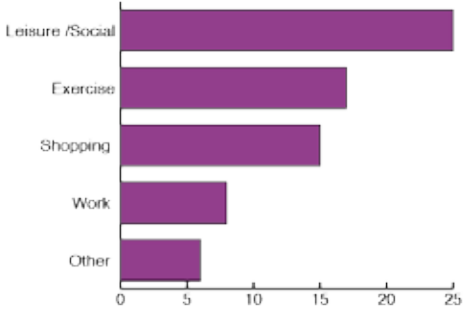
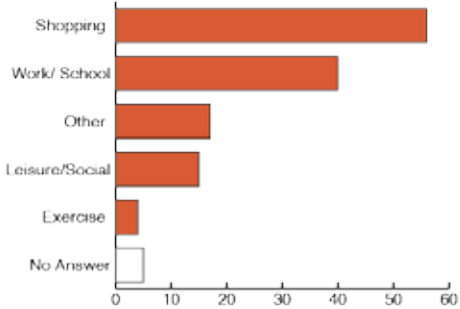
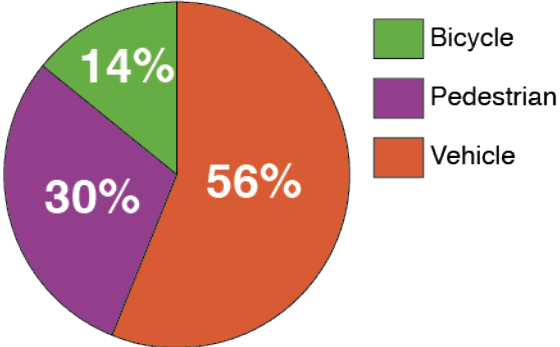
The survey stayed active from December 12, 2013, to February 14, 2014. During the two months, 85 people completed the survey.

Respondents entered a total of 84 points of concerns and 125 points of interest. The points were categorized by location type, frequency of visit, and descriptive details.



Route Density

Survey respondents entered 135 vehicle routes, 70 pedestrian routes, 34 bicycle routes, 2 bus routes, and 1 skate route for a total of 242 routes.



Conclusion

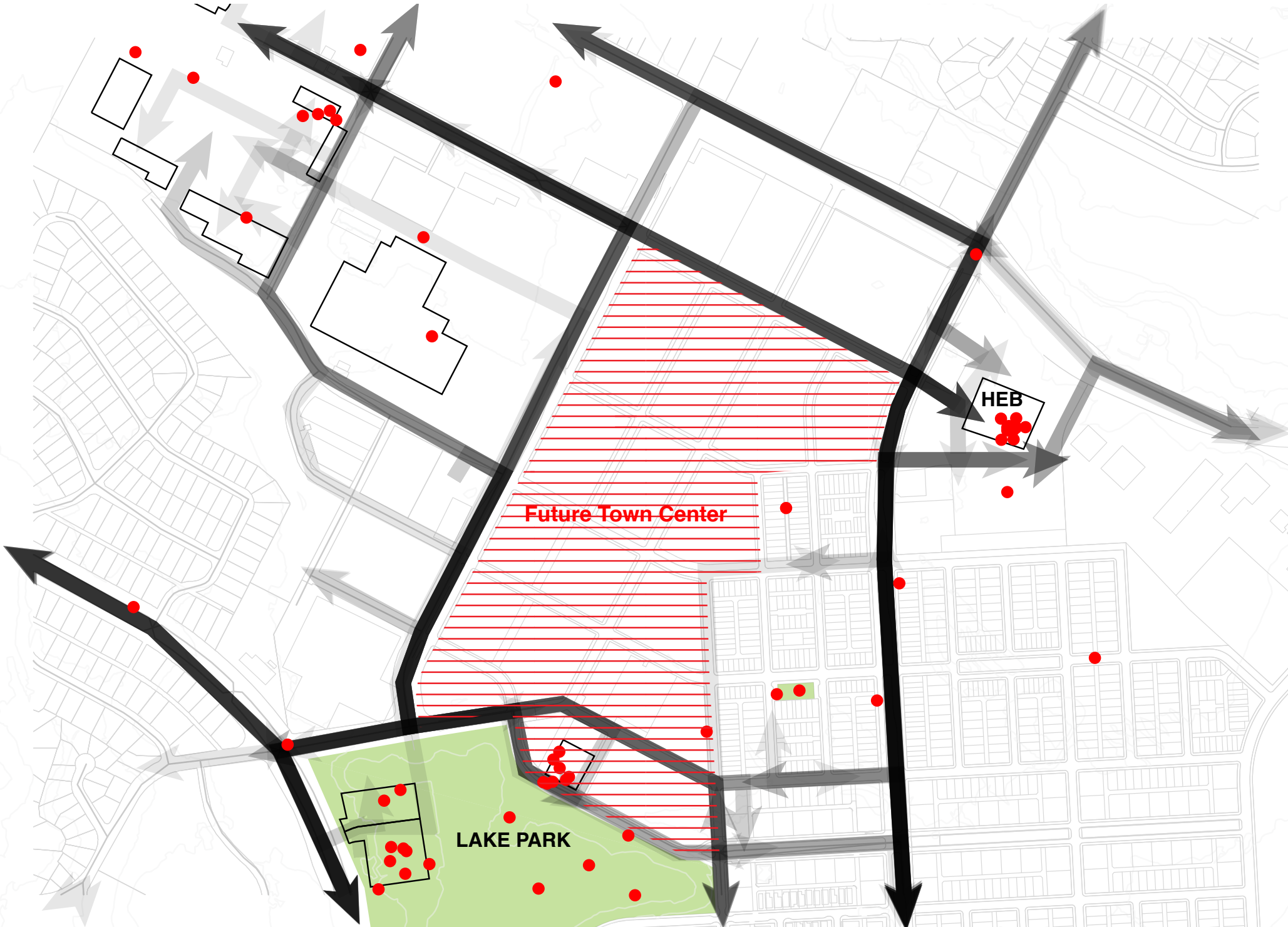


- **Respondents are ready for alternative transit!**
Mueller developers should consider short-term solutions for transit use such as improving the existing bus service and creating temporary paths around construction.
- **Respondents are mostly walking and biking for leisure and exercise**
Mueller is achieving its goals of encouraging pedestrian and bicycle transit—especially for leisure and exercise. The majority of respondents still use vehicles for shopping and work routes, and the majority of shopping and work destinations.

Recommendations

- **Create more intersections at major arterials along the edges of the development.**
- **Link the future Town Center to the HEB Market District.**
Many residents visiting the town center will shop at HEB. The vehicle, bicycle, pedestrian, and future transit systems in the town center should all acknowledge HEB as a part of the system.

Existing Vehicle Routes and Points of Interest



Proposed "Pulls" based on Mapping Mueller Analysis



Existing Bicycle Routes and Points of Interest



Proposed "Pulls" based on Mapping Mueller Analysis



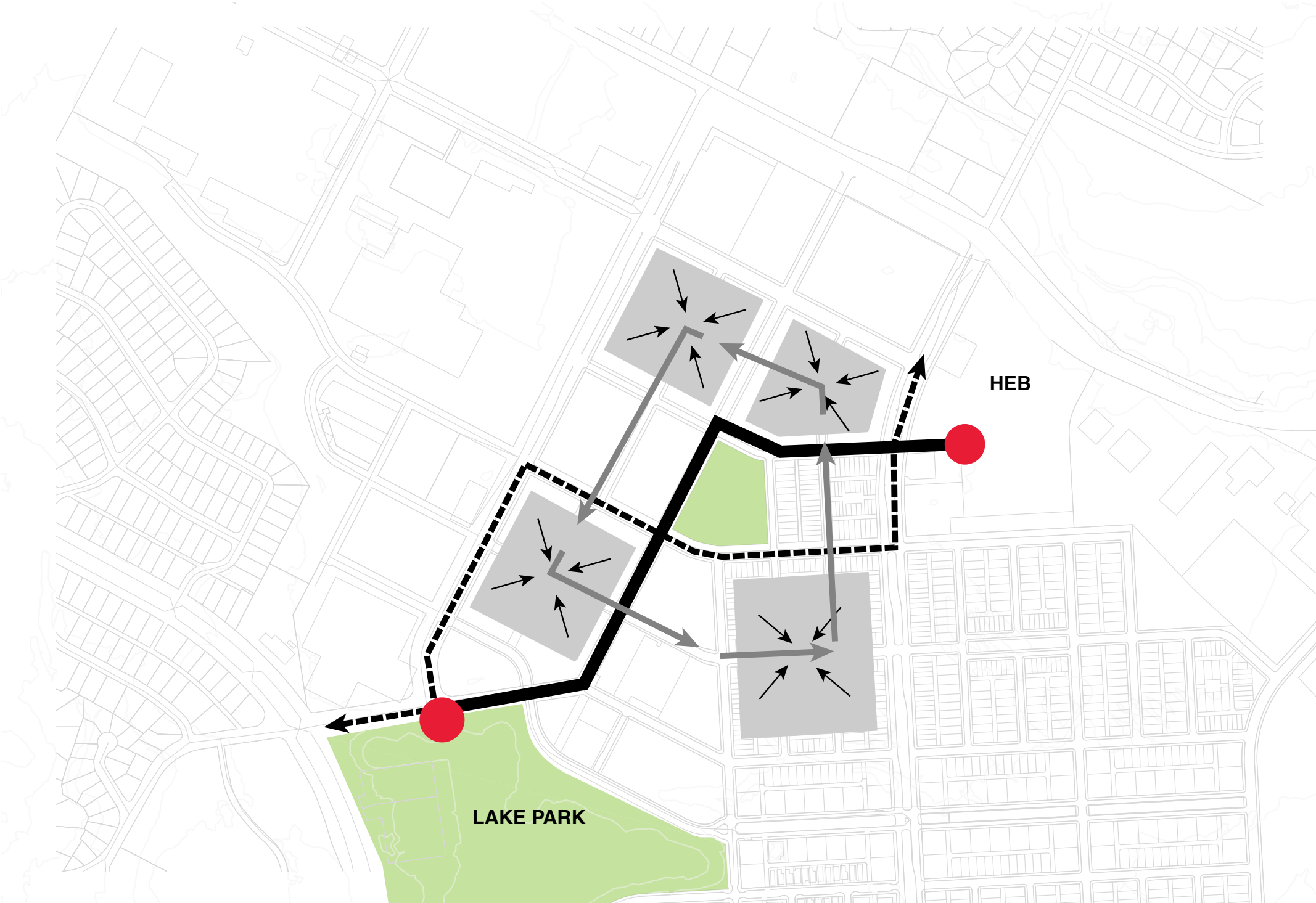
Existing Pedestrian Routes and Points of Interest



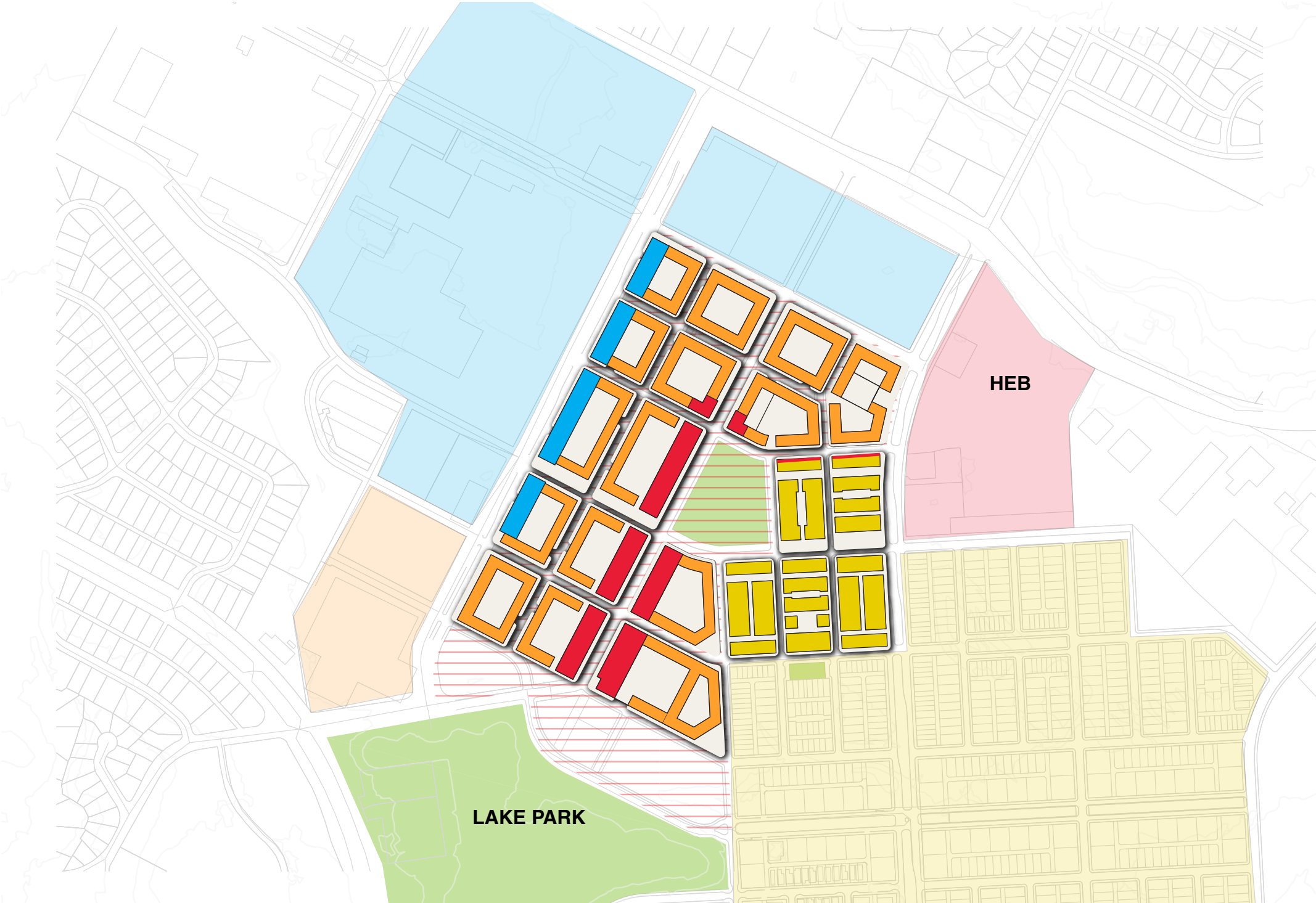
Proposed "Pulls" based on Mapping Mueller Analysis



Parti Diagram based on Mapping Mueller Analysis

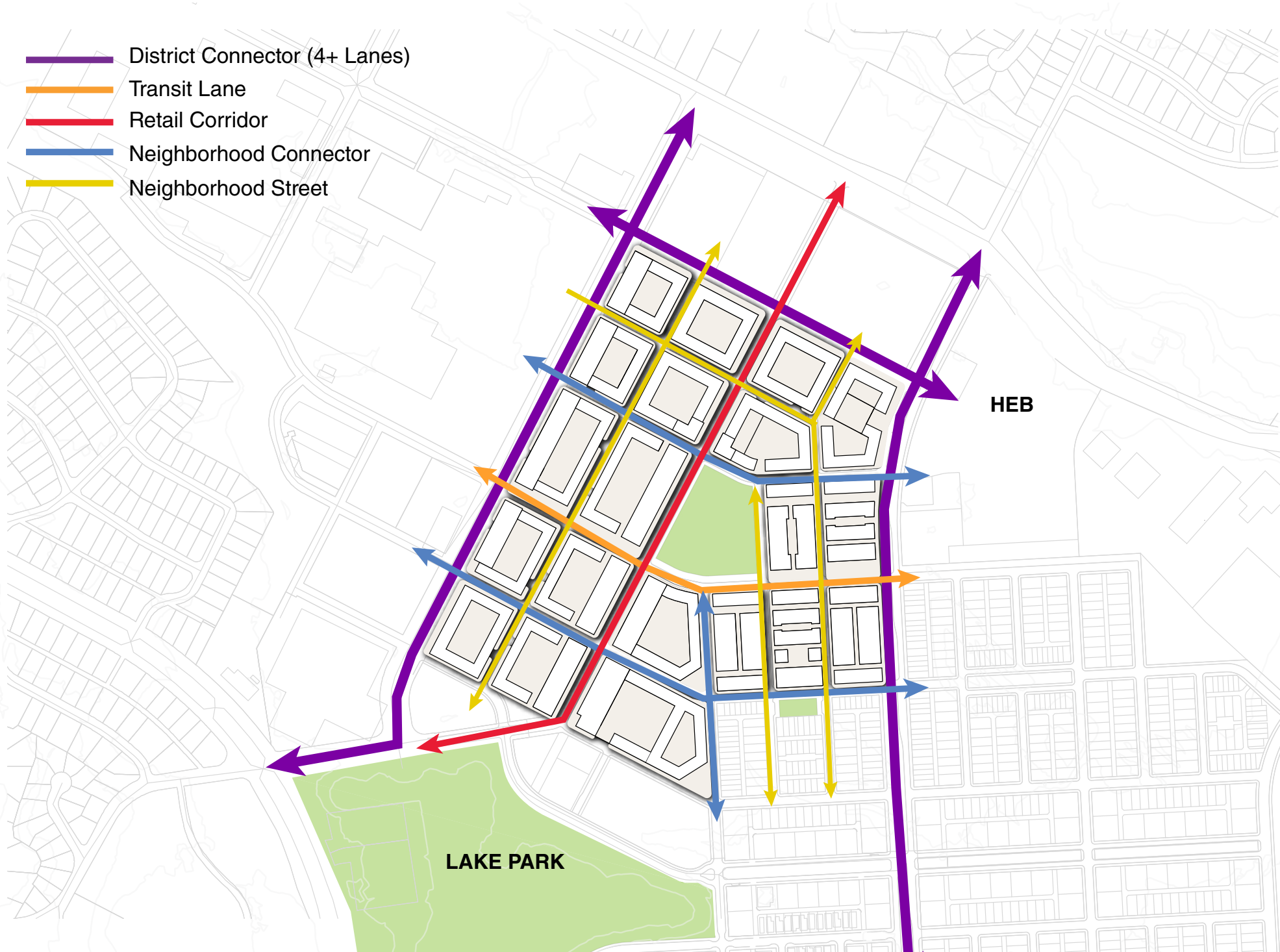


Land Use based on Mapping Mueller Analysis



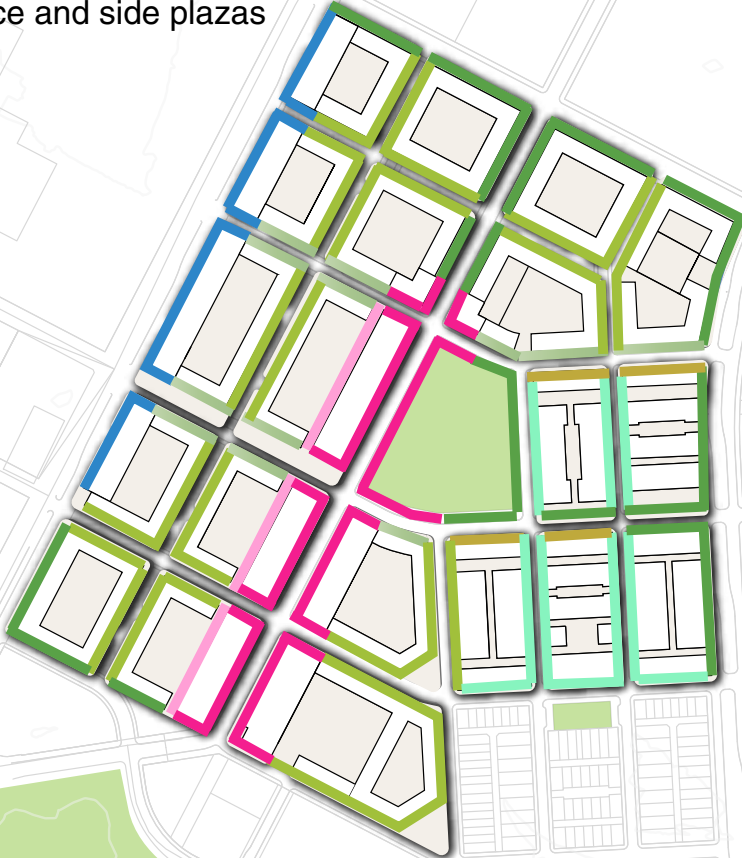
Street Types based on Mapping Mueller Analysis

-  District Connector (4+ Lanes)
-  Transit Lane
-  Retail Corridor
-  Neighborhood Connector
-  Neighborhood Street



Edge Condition Typologies

- Public/Active ground floor
- Retail Alley for public and private use
- Multi Family with shared gardens buffer the street
- Multi Family with ground floor entrances
- Multi Family with elevated entrances
- Shop Housing with large alley for easier access
- Row Housing and Single Family with porch entrances
- Office - Welcoming main entrance and side plazas



HEB

LAKE PARK



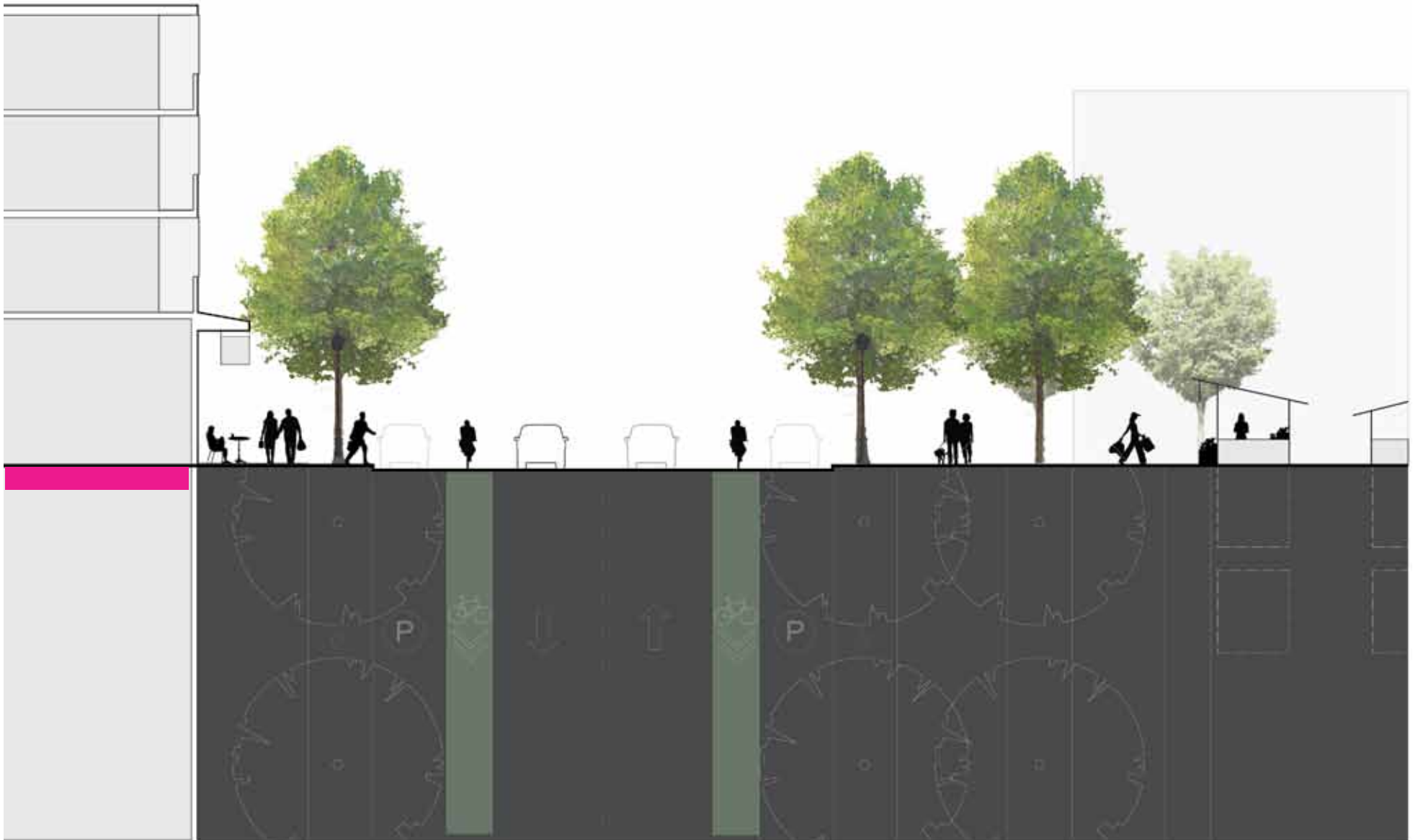
Public/Active ground floor



Retail Alley for public and private use



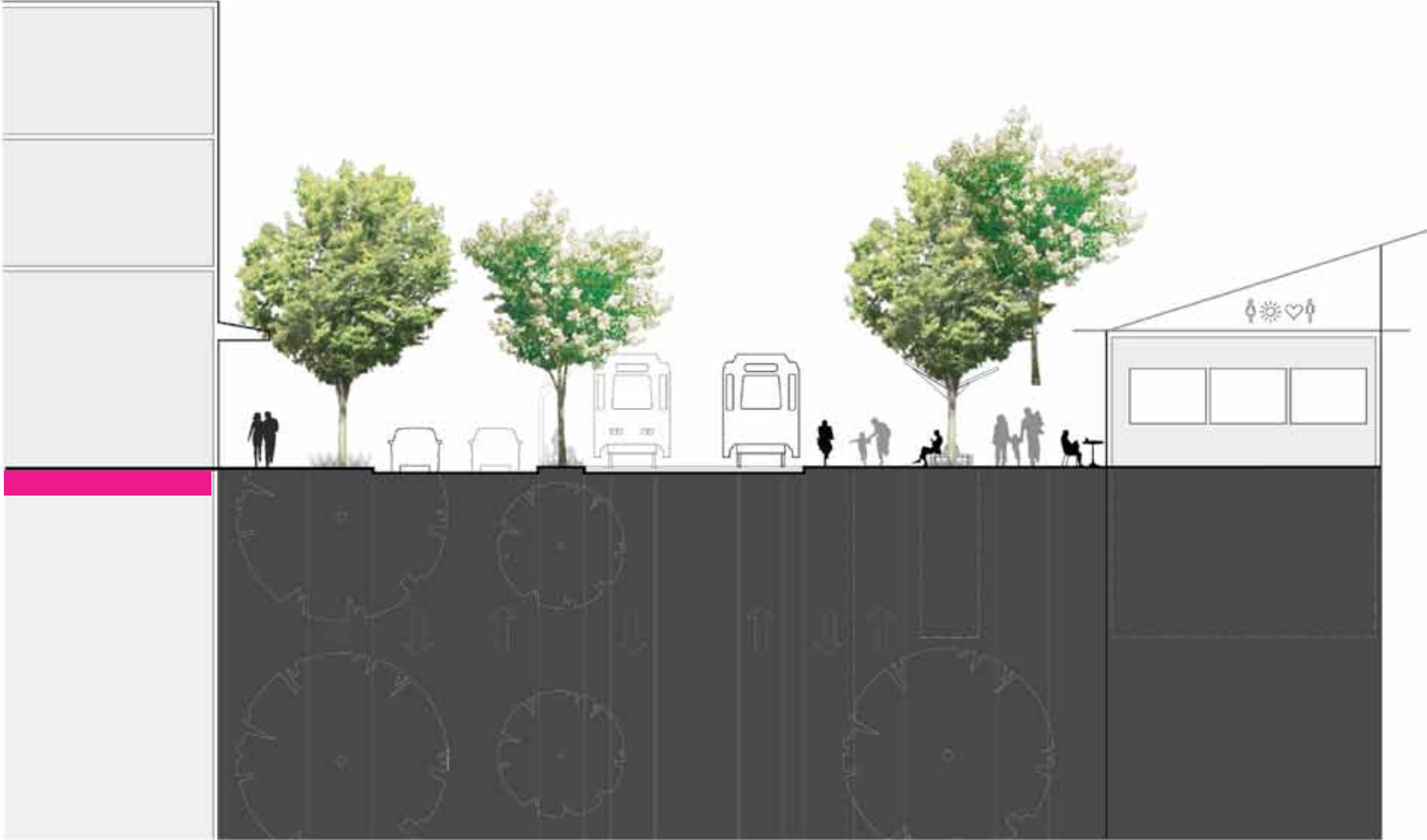
Public/Active ground floor



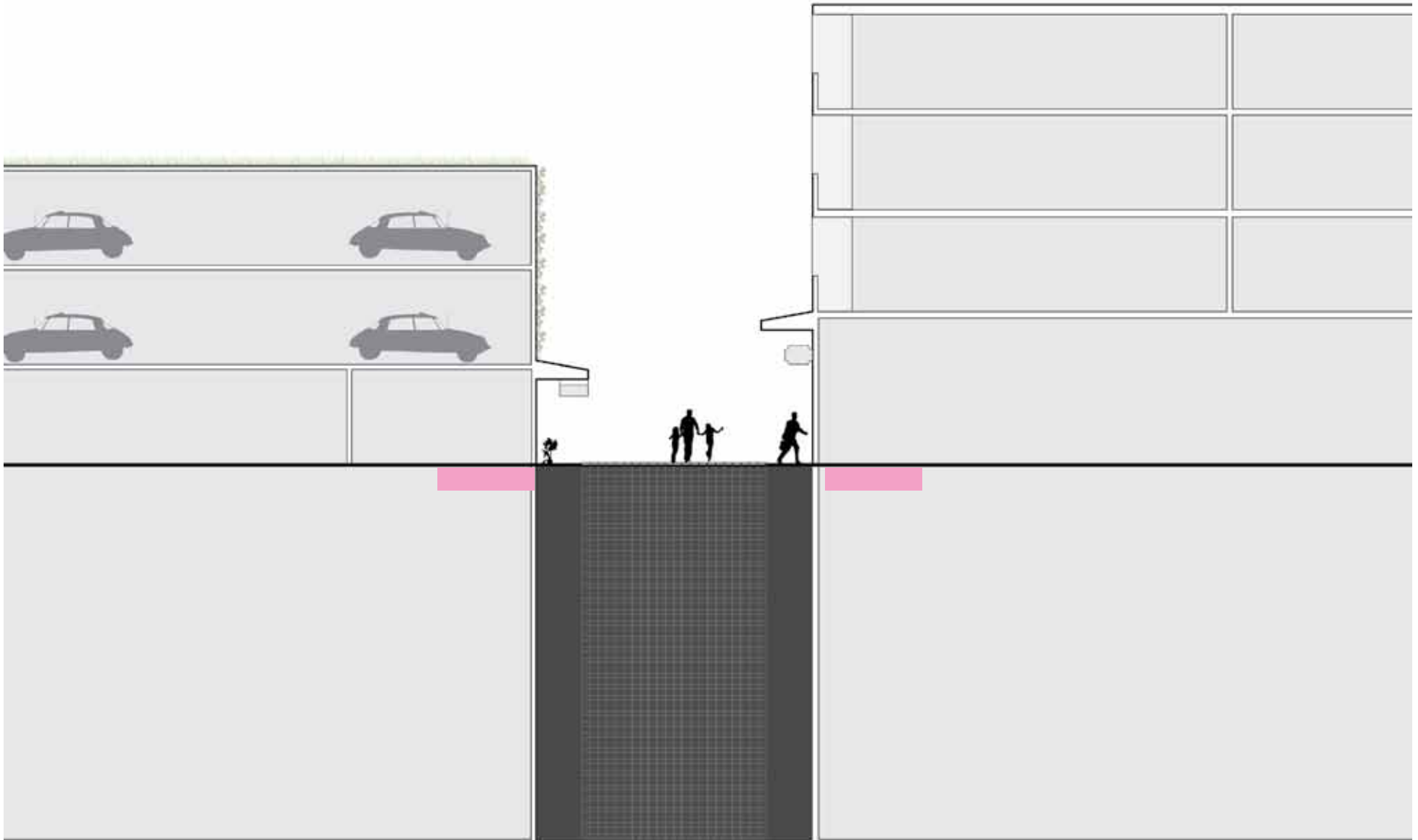
Public/Active ground floor



Public/Active ground floor



■ Retail Alley for public and private use

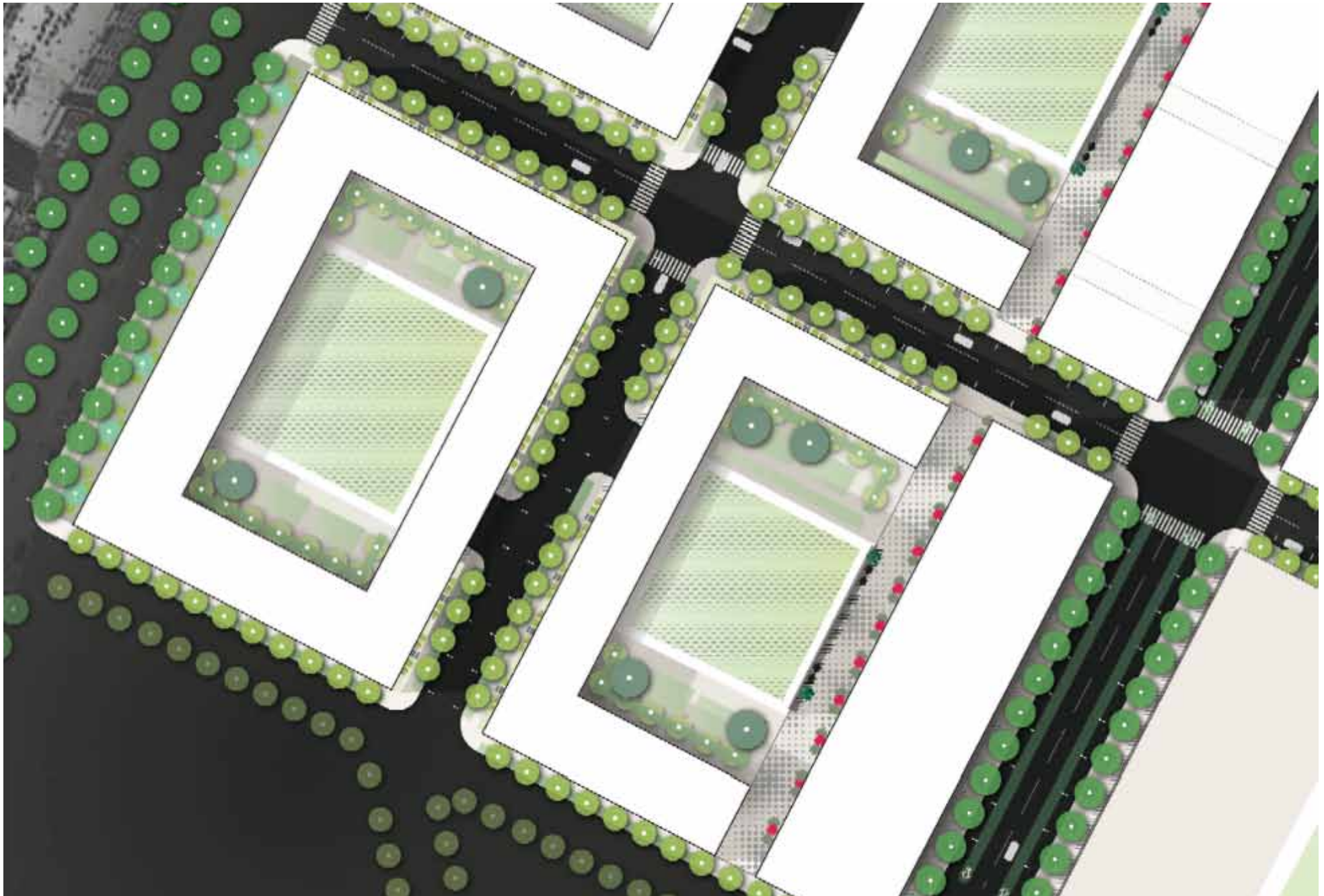


Retail Alley for public and private use

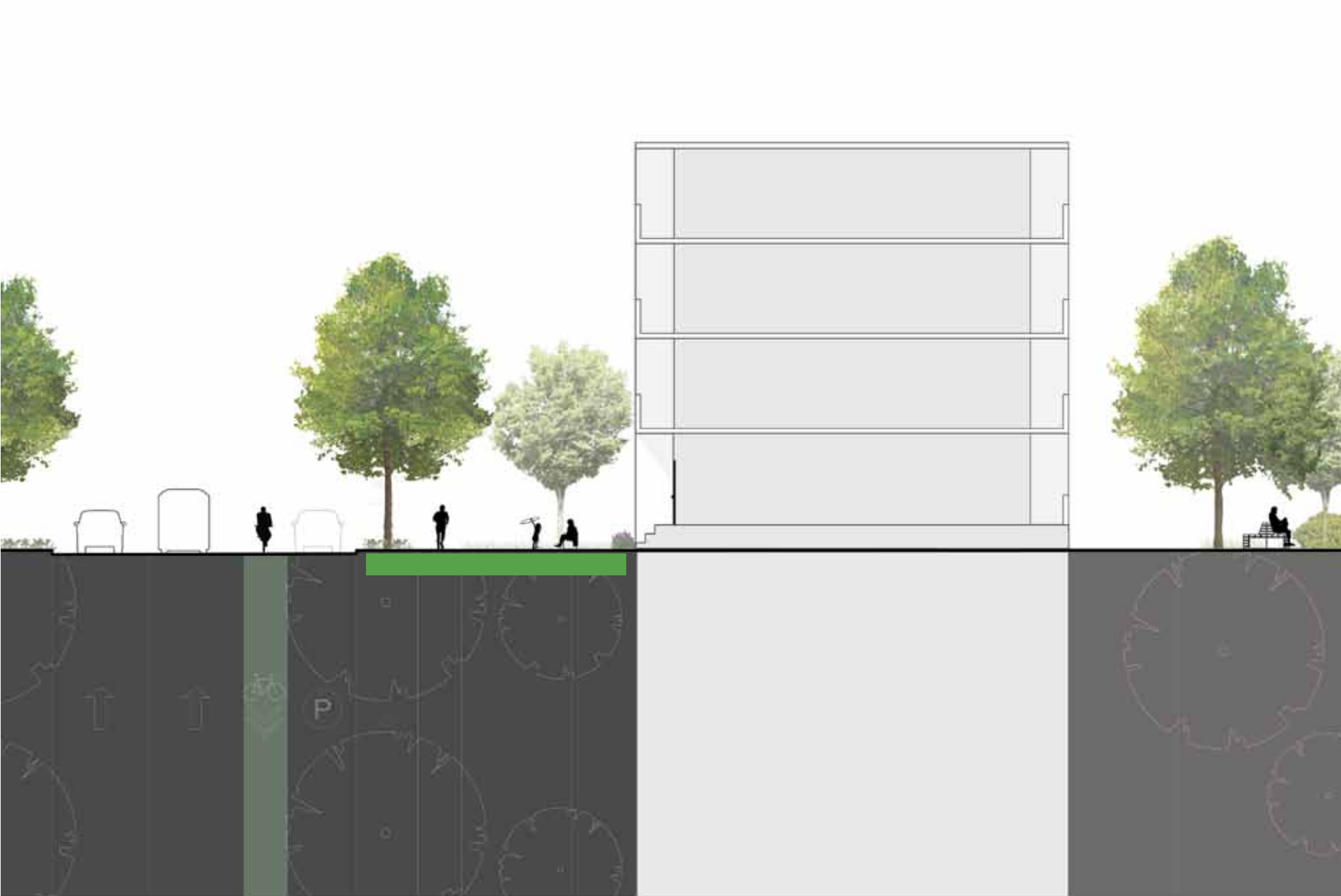


Multi Family with shared gardens buffer the street

Multi Family with ground floor entrances



Multi Family with shared gardens buffer the street



Multi Family with ground floor entrances



Multi Family with elevated entrances

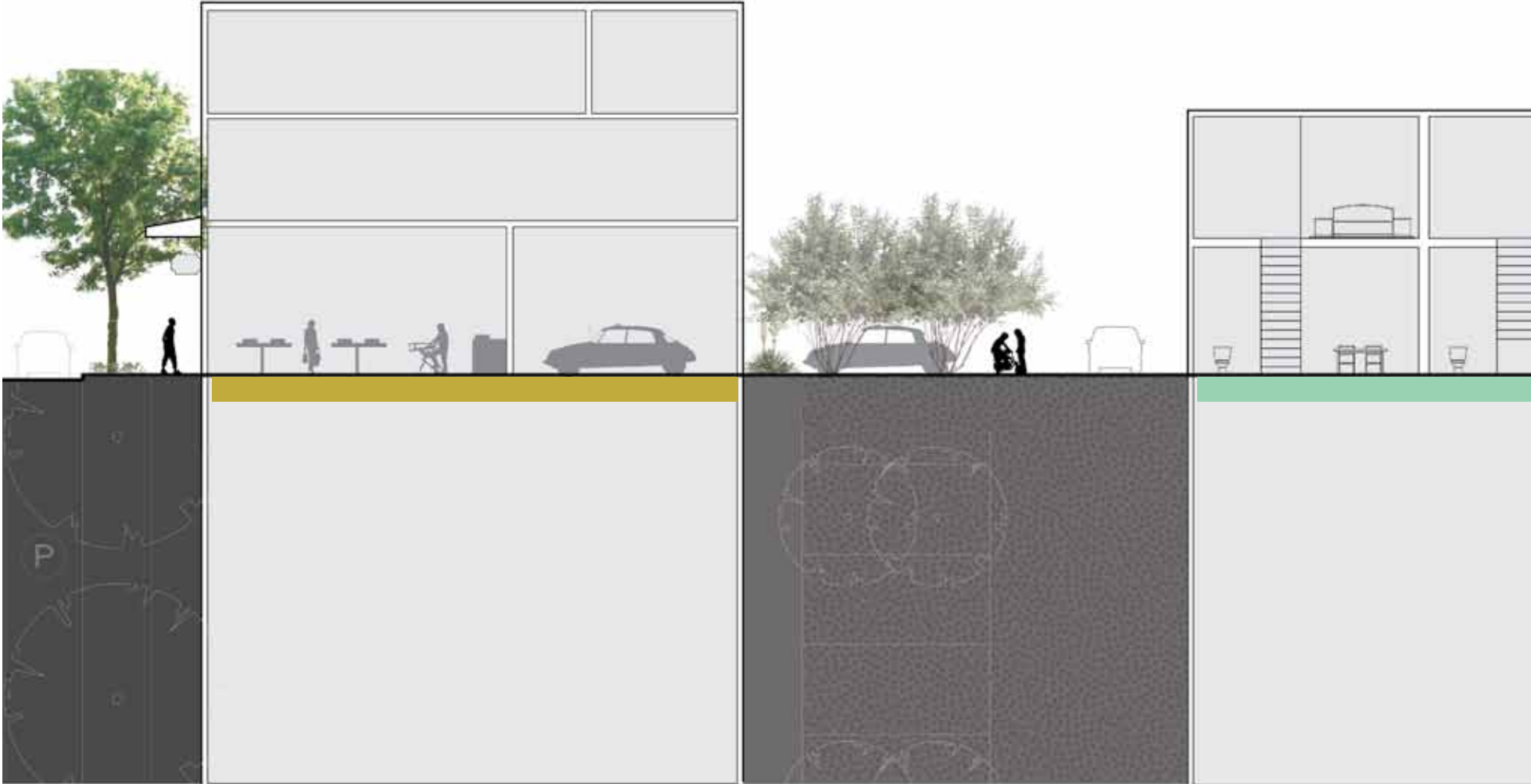
Shop Housing with large alley for easier access



Multi Family with elevated entrances



Shop Housing with large alley for easier access



Shop Housing with large alley for easier access



Row Housing and Single Family with porch entrances



Mapping Mueller: Future Town Center TRANSPORTATION NETWORK ANALYSIS



Vehicle Network

TRANSPORTATION STRATEGIES

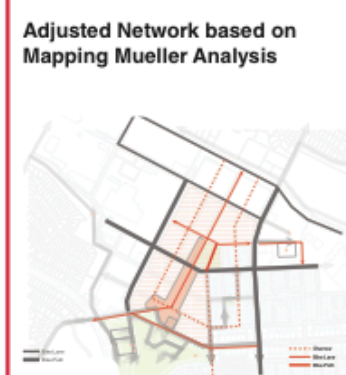
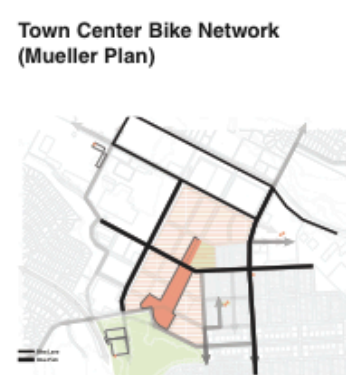
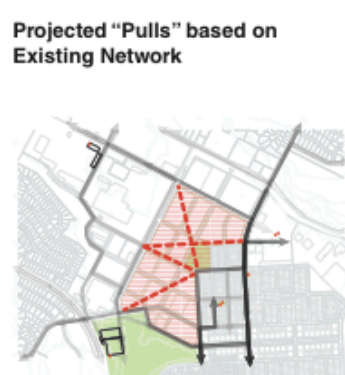
- Reduce Priority of the Automobile
- Locate Parking Off the Main Street
- Create More Choice, Not Speed



Bicycle Network

TRANSPORTATION STRATEGIES

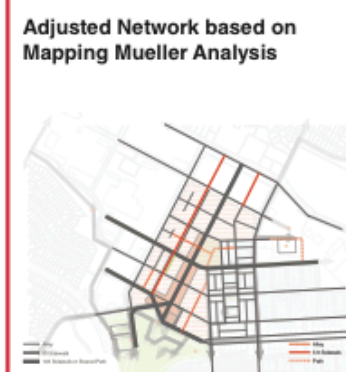
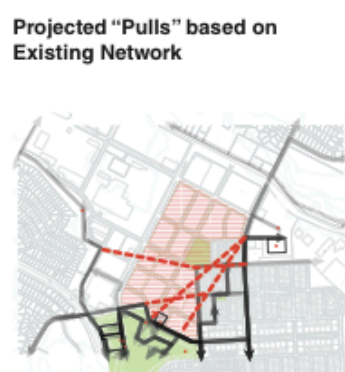
- Add bike lanes on priority streets
- Create a network that connects key locations



Pedestrian Network

TRANSPORTATION STRATEGIES

- Pedestrian amenities
- Human scale architecture
- Human comfort
- Connect high interest locations



Mapping Mueller: Future Town Center PROPOSED MASTERPLAN

PARTI
Create Neighborhood "Conv" while connecting two anchors

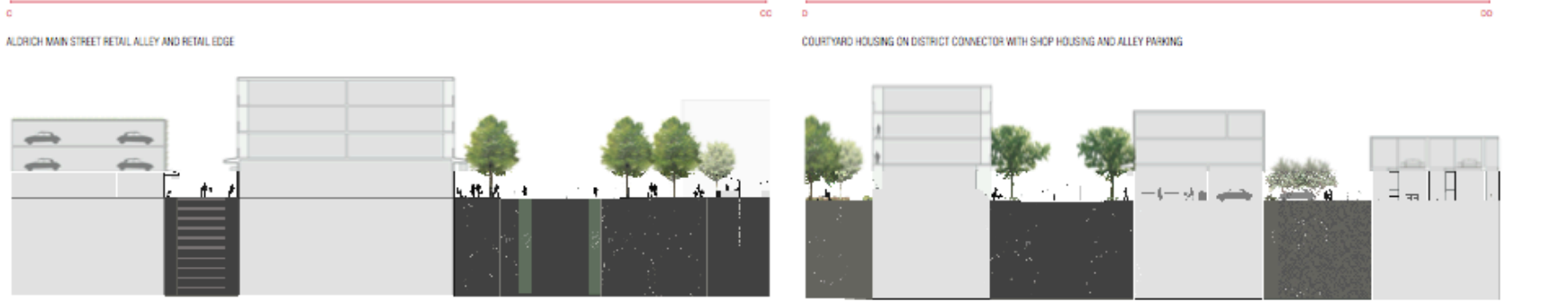
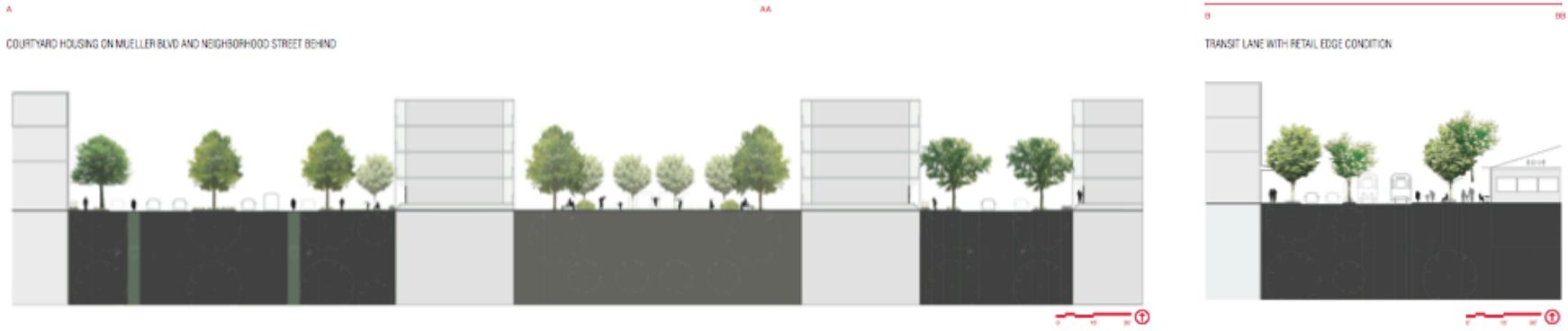
LAND USE
Connect use with adjacent development

STREET TYPOLOGY
Create street networks that respond to the developing context

EDGE CONDITION
Articulate the ground floor of buildings to respond to transportation behavior



Mapping Mueller: Future Town Center EDGE CONDITION AND STREET TYPOLOGY TRANSECTS



VIEW OF THE RETAIL ALLEY LOOKING DOWN TO ACTIVITY BELOW



VIEW OF THE CORNER OF PHILOMENA AND ALDRICH - LOOKING TOWARDS RETAIL



VIEW OF THE CORNER OF PHILOMENA AND ALDRICH - LOOKING TOWARDS THE PARK



VIEW OF THE PARK EDGE DIRECTLY ADJACENT TO SINGLE FAMILY HOUSING

Vita

Rachel Cathryn Tepper grew up under the sunny skies of Albuquerque, New Mexico. She earned her high school diploma from Bosque School and went on to earn a Bachelors of Fine Arts in Design from the University of Texas at Austin. She is expecting to complete dual masters' degrees in Community and Regional Planning and Urban Design at the University of Texas in the spring of 2014. Upon graduation, she will work as a planner at Design Workshop's Austin office.

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This report was typed by Rachel Tepper.