Denver Car-Free Streets Assessment

Team 9

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URPL 5010

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Master of Urban and Regional Planning

COLLEGE OF ARCHITECTURE AND PLANNING

UNIVERSITY OF COLORADO **DENVER**

Introduction

Since 2014, the Denver Streets Partnership (DSP), a coalition of Denver-area organizations that advocate for a more people-friendly built environment (as opposed to car-friendly), has been the client of the Planning Methods (URPL 5010) classes taught at the Master of Urban and Regional Planning (MURP) department at the University of Colorado Denver. The Planning Methods class aims to equip urban planning students with the skills and framework needed to interpret and develop data integral to their future practice in the workplace.

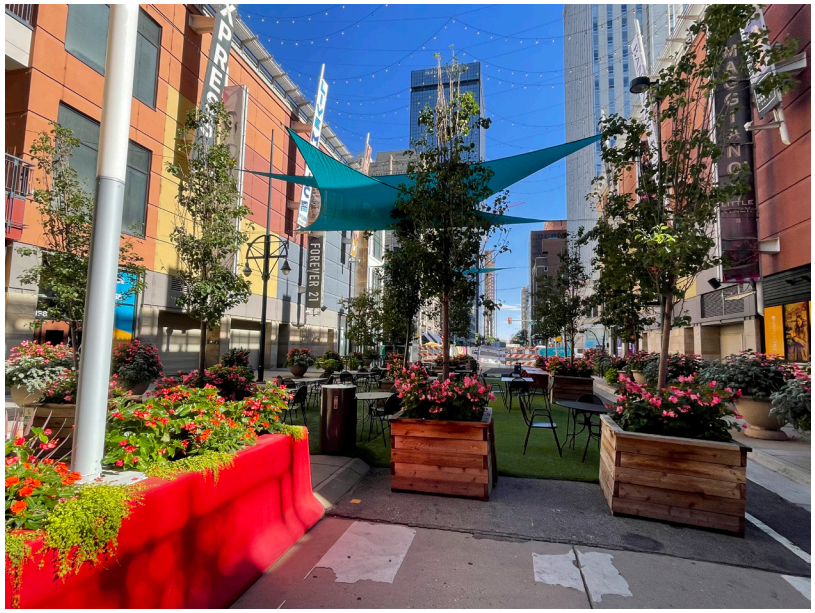
For the Fall 2024 Planning Methods Class, DSP has joined with the Downtown Denver Partnership (DDP) and the City of Denver Office of Climate Action, Sustainability, and Resiliency (CASR) to identify neighborhoods and specific blocks around downtown Denver that either already demonstrate people-friendly urban design, or that could benefit from a renewed examination under that lens. Twelve study areas have been identified and assigned to groups of Planning Methods students, which consist three students or more.

This report examines Study Area 12, which consists of Census Tract 17.07, Block Group 2. The team members are:

- Nicholas Bunce, a second-year MURP student,
- Matthew Schaffer, a senior Geography undergraduate student, and
- Kaitlyn Poynter, a first-year MURP student.

Throughout the semester, this team has engaged in three major tasks: understanding the project context, conducting field data collection, and providing recommendations. In Task A, teams will analyze demographic, land use, and transportation data to create a contextual overview. Task B involves observing and recording data on pedestrian and vehicle movements and conducting interviews with the public to gather insights into street use. Finally, Task C will arrange their findings to develop practical recommendations for making downtown more walkable and bikeable.

Figure 1: Glenarm Place, Survey Zone A

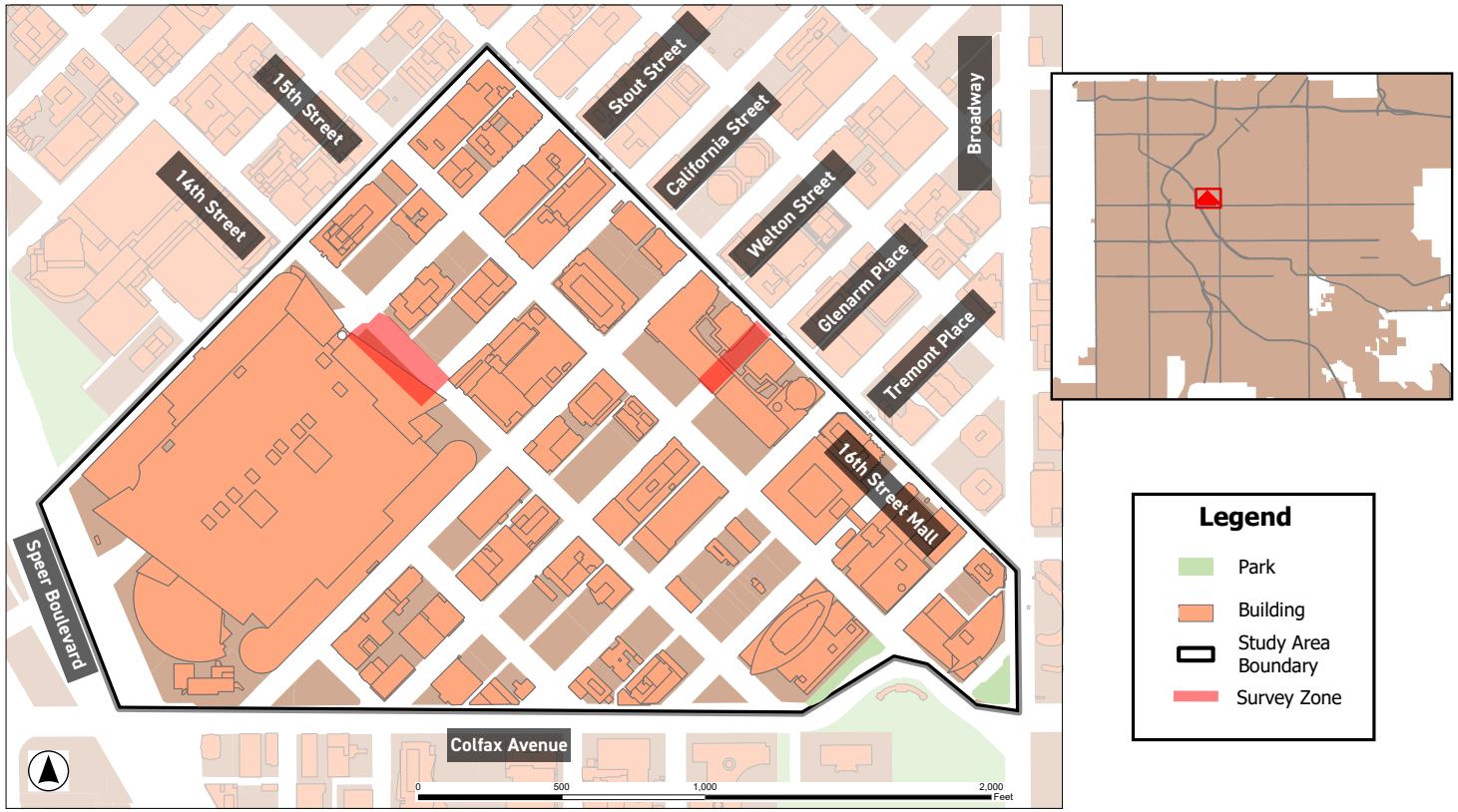


Source: Authors

Boundary Description

Study Area 12, shown in Figure 1, runs between Speer Boulevard to the west, Champa Street to the north, 16th Street Mall to the east over to a small portion of Broadway, and Colfax Avenue to the Southwest. The main attractions for people in the study area are the Colorado Convention Center in the southwest portion of the area and the Denver Pavilions Mall that is just west of the 16th Street Mall.

Figure 2: Overview of Study Area



Source: City and County of Denver

Demographic Profile

Population

Study Area 12 consists of Census Tract 17.07, Block Group 2. In addition to simple population by age statistics, our team pulled tables from the American Community Survey (ACS) Five-Year Estimates. The specific tables we have included here may partly explain the travel behaviors in the area.

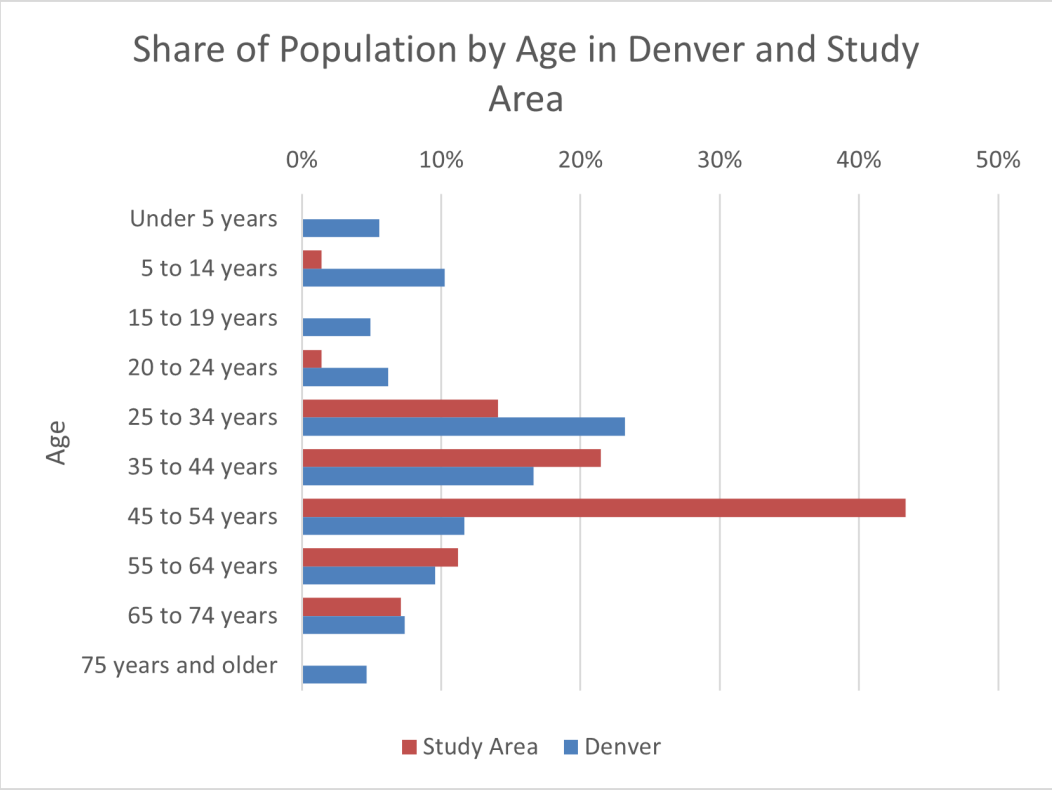
Figure 3: Table of Population by Age in Denver and Study Area

	Denver Count	Study Area Count	Denver Percent	Study Area Percent
Under 5 years	39,520	0	6%	0%
5 to 14 years	72,976	14	10%	1%
15 to 19 years	34,922	0	5%	0%
20 to 24 years	43,951	14	6%	1%
25 to 34 years	164,967	141	23%	14%
35 to 44 years	118,106	215	17%	21%
45 to 54 years	83,031	434	12%	43%
55 to 64 years	68,060	112	10%	11%
65 to 74 years	52,397	71	7%	7%
75 years and older	32,870	0	5%	0%
Total	**710,800**	**1,001**	**100%**	**100%**

Source: Table B01001, ACS 5-Year Estimate, 2022

Population (cont'd)

Figure 4: Chart of Population by Age In Denver and Study Area 12



Source: Table B01001, ACS 5-Year Estimate, 2022

The study area's resident age profile diverges from the city's at three age categories, 15 to 19 years old, 20 to 24 years old, and 45 to 54 years old. This may be reflective of a large population of college-age students for the younger cohort and a concentration of urban professionals for the older one. Conspicuously, there are no children under the age of 5 in the study area at all.

Source: Authors

Education

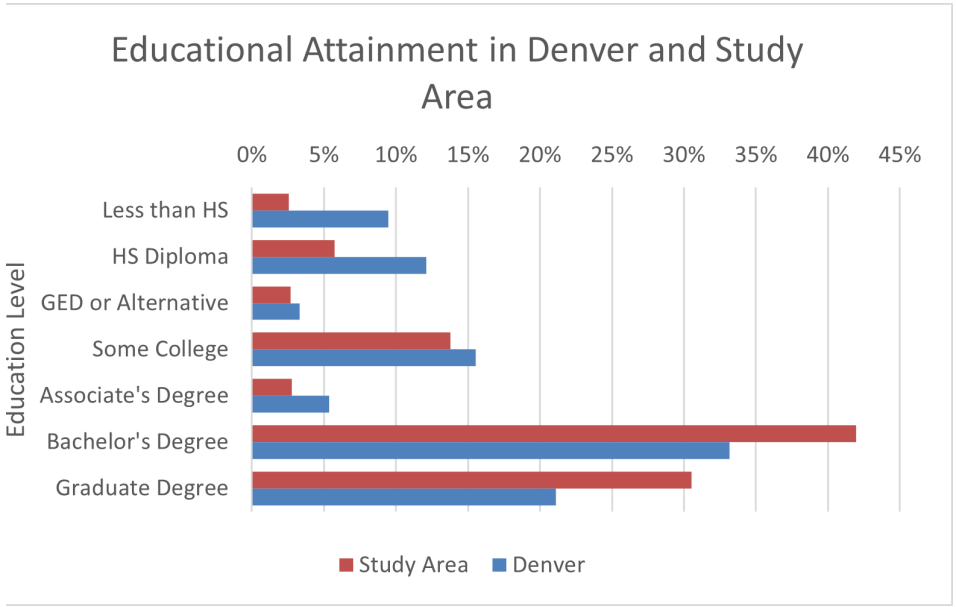
The residents of the study area are generally more educated than the rest of Denver. This is especially true for residents with graduate degrees. The share of residents with such educational credentials are 11 percentage points higher than the rest of Denver.

Source: Table B15003, ACS 5-Year Estimate, 2022

Figure 5: Table 2 - Educational Attainment in Denver and Study Area 12

	Denver Count	Study Area Count	Denver Percent	Study Area Percent
Less than HS	49,094	25	9%	3%
HS Diploma	62,842	56	12%	6%
GED or Alternative	17,111	26	3%	3%
Some College	80,809	134	16%	14%
Associate's Degree	27,791	27	5%	3%
Bachelor's Degree	172,213	408	33%	42%
Graduate Degree	109,571	297	21%	31%
Total	**519,431**	**973**	**100%**	**100%**

Figure 6: Chart of Educational Attainment in Denver and Study Area 12



Source: Authors

Means of Transportation

Perhaps the most encouraging sign for walkability in the study area is the share of workers who walk to work, which is nearly half of the entire population and over ten times the share in Denver. Despite the ample public transit connections (see "Transportation" section below), fewer workers took advantage of bus and rail transit than Denver as a whole. This suggests that residents may live in the neighborhood to be within walking distance of work rather than reverse-commuting to outlying areas of employment.

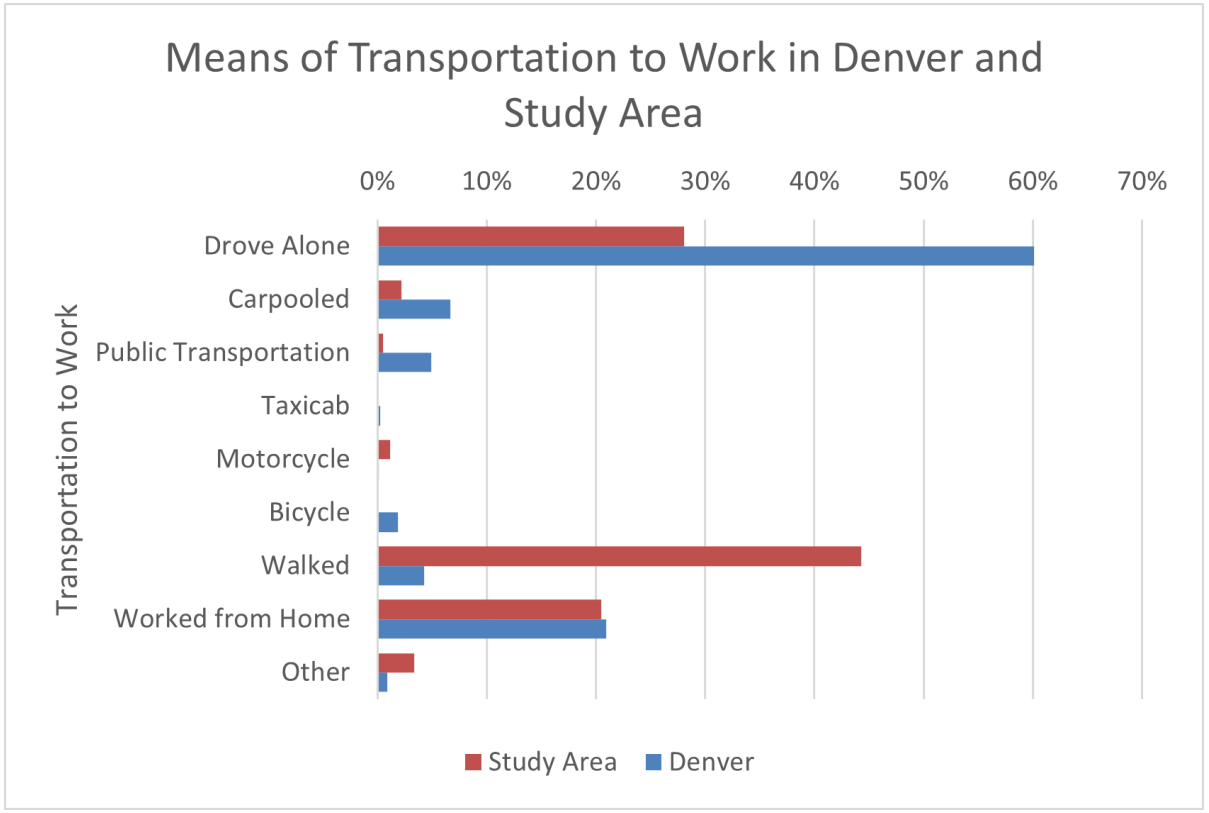
Figure 7: Means of Transportation to Work in Denver and Study Area 12

	Denver Count	Study Area Count	Denver Percent	Study Area Percent
Drove Alone	245,990	218	60%	28%
Carpooled	27,216	17	7%	2%
Public Transportation	20,009	4	5%	1%
Taxicab	1,099	0	<1%	0%
Motorcycle	506	9	<1%	1%
Bicycle	7,746	0	2%	0%
Walked	17,358	344	4%	44%
Worked from Home	85,669	159	21%	20%
Other	3,731	26	1%	3%
Total	**710,800**	**1,001**	**100%**	**100%**

Source: Table B08301 ACS 5-Year Estimate, 2022

Means of Transportation (cont'd)

Figure 8: Chart of Means of Transportation to Work in Denver and Study Area 12



Means of Transportation (cont'd)

The household income distribution in the study area is highly bifurcated, as the majority of households in the study area earn either less than $49,999 or over $200,000. Looking back at the age profile of the area, this lends credence to the hypothesis that there is a large student population who would not be making much income, combined with a large urban professional population in their prime earning years.

Figure 9: Households by Household income in Denver and Study Area 12

	Denver Count	Study Area Count	Denver Percent	Study Area Percent
Less than $49,999	93,384	449	29%	39%
$50,000 to $74,999	48,357	37	13%	3%
$75,000 to $99,999	40,549	61	10%	5%
$100,000 to $124,999	31,967	58	<1%	5%
$125,000 to $149,999	24,686	0	8%	0%
$150,000 to $199,999	34,624	133	11%	12%
$200,000 or more	49,397	414	15%	36%
Total	**322,964**	**1,152**	**100%**	**100%**

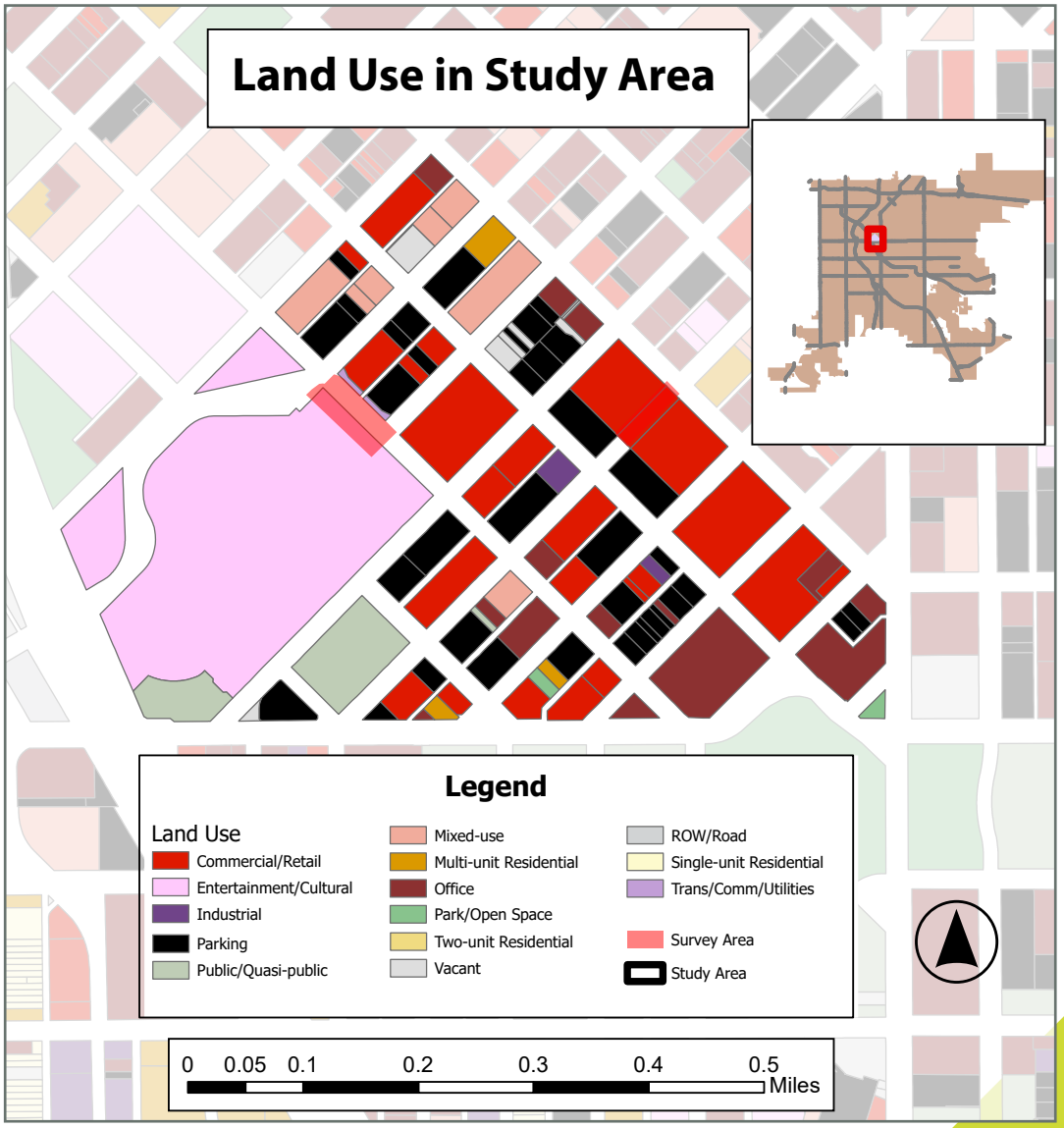
Source: Table B19001 ACS 5-Year Estimate, 2022

Land Use

Land use in the study area follows a development pattern typical of the rest of downtown Denver, with predominant uses being commercial/retail, entertainment/cultural uses, offices, and some mixed use. There are very few patterns or gradients of development that appear to govern the spatial distribution of these uses, with the main exceptions being the line of commercial/retail spaces lining 16th Street on the northeast border of the district and the Colorado Convention Center occupying almost the entire western half of the area. Surface and structured parking lots are also dispersed throughout the district. Almost every street in the study area has parking somewhere along its length, except parcels that face 16th Street.

Looking just outside the study area's boundaries serves as a useful comparison with the rest of downtown land uses. Office space is more common on the other side of 16th Street, while commercial/retail uses continue north between 16th and 15th Streets beyond the study area boundary. Compared to areas further north of the study area, it seems that there are more parking areas. The impact of these spaces dedicated to parking is discussed further in the Urban Design section.

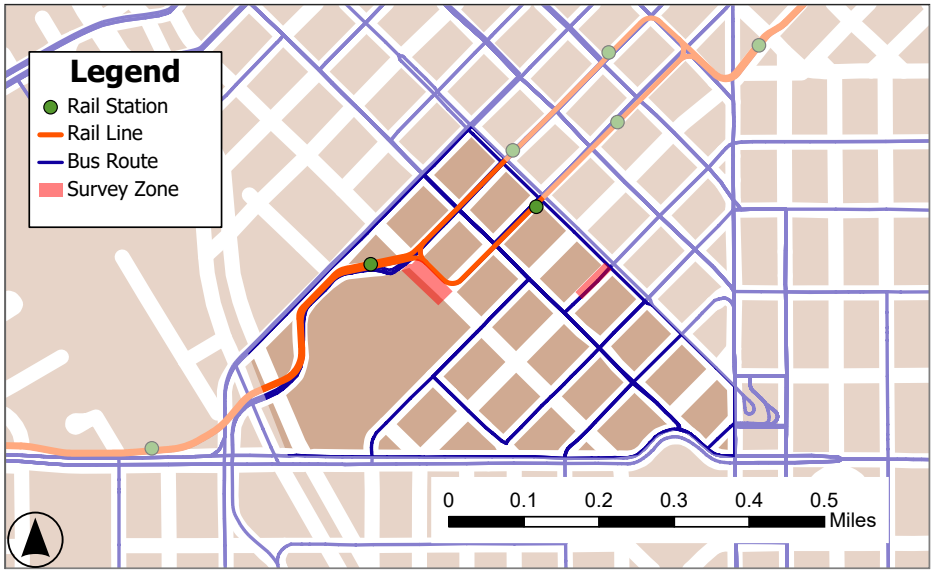
Figure 10: Land Use in Study Area



Source: City and County of Denver

Transportation

Figure 11: Transportation in Study Area



Source: City and County of Denver

The study area boasts some of the best public transportation connections in all of Denver. In total, 24 bus routes operated by the Regional Transportation District intersect the study area, including RTD's two busiest and most frequent routes: the 15 and 0. The D, H and L light rail lines also traverse the study area along Stout and California Streets, but only two stops, Theatre District/Convention Center as well as 16th St. and Stout, are located within the area's boundaries.

Along with the rest of downtown, the study area has benefited from Denver's recent push to install bicycle facilities (Minor, 2024). High-comfort, protected bike lanes run south along 14th Street and north along 15th Street. Additional bicycle lanes are located on Welton, Glenarm Streets, and Cleveland Place along their entireties. Designated "shared roadways" run on Tremont and Court Places. In total, X miles of bike facilities are currently installed within the study area.

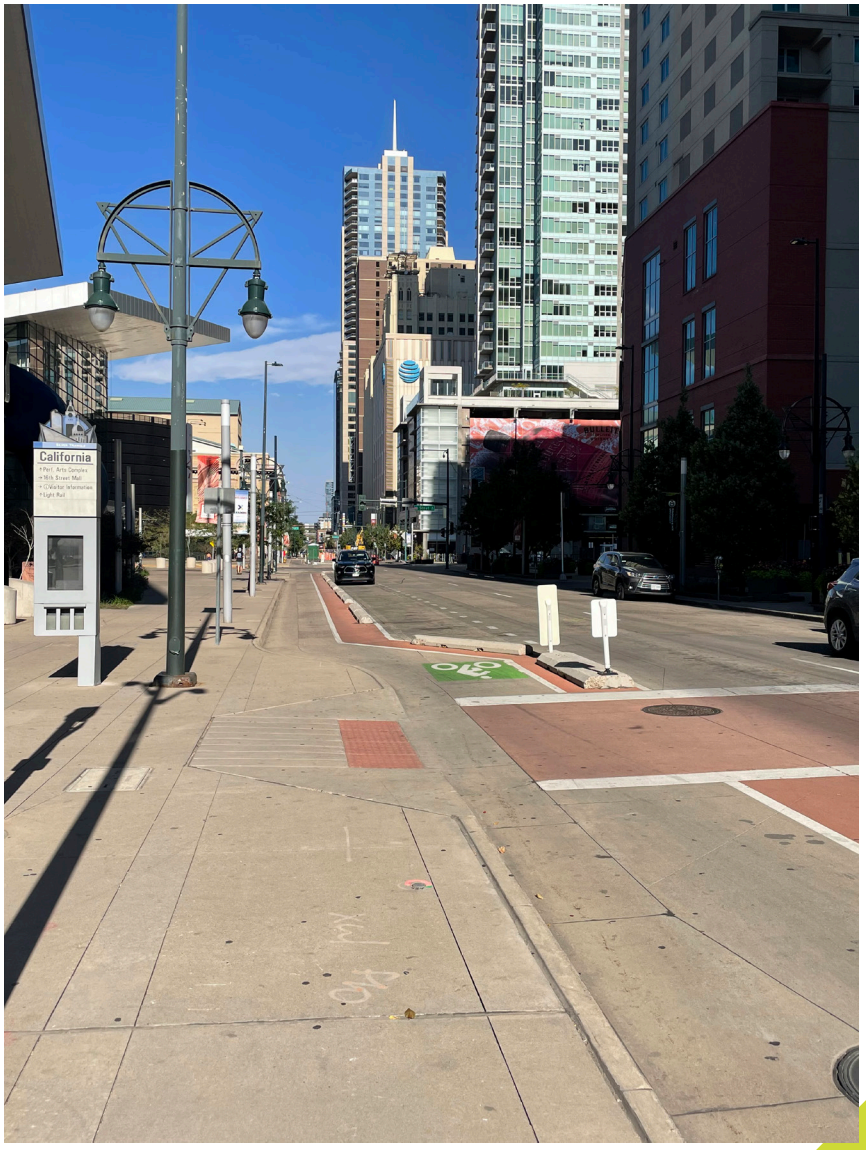
All streets within the study area are classified as arterials (as are most streets within the whole of downtown Denver) except for Glenarm Street, Cleveland Place, Cheyenne Place. Most if not all sidewalks within the boundaries are fully ADA compliant with ramps and widths greater than 5 feet. Most sidewalks are 8 feet or greater with few obstacles within the right of way. More discussion on pedestrian realm elements are under the Urban Design section.

Urban Design

The overall urban design of the study area is consistent with most of Downtown Denver. Streets are wide arterials consisting of two to four travel lanes plus one or two parking lanes. However, in recent years, travel and parking lanes have been converted into protected or standard (i.e., unprotected) bicycle lanes as shown in Figure 8. Sidewalks are amply wide with minimal obstructions to pedestrians. Where obstructions exist, there is typically the ADA-standard space of 6 feet available to maneuver around them. ADA-compliant sidewalk ramps and tactile pads are also widely present, if not ubiquitous in the study area. Crosswalks are well-marked and all intersections are signalized with timed crossings.

Figure 13: Surface parking with building shadows

Figure 12: 14th Street at California Street, looking north



Source: Authors

Field Data Collection

Introduction

For the second part of our study, our group zoomed down to finer detail by examining two Survey Zones on the ground. The our goals for these site visits are to get a better sense of how people use the urban space as it is currently designed and to record their actual opinions of the survey zones. In this manner, our team will be able to go beyond statistics, building forms and to the purpose of these urban spaces: people and how they use cities.

Source: Authors

Methodology

For the execution of our field work, we created and communicated various processes in order to have a successful field work survey. We started with coming together to figure out how this whole process would look like. We organized the work into 3 differing tasks with subtasks included within. We surveyed dwellers that occurred in the survey zone for an hour, and it was broken up into 15-minute increments. The first task was:

1. People Dwelling

   This task had one of person counting the number of people dwelling within our survey zone, someone dwelling classified as someone within our survey zone that was sitting, standing, resting, socializing, taking photos, using an electronic device, or any sort of activity that kept them within the zone for longer than one minute. These surveys were broken up into 4 categories:

   1.1. Dwelling Alone

   1.2. Dwelling in Groups

   1.3. Dwelling in a Restaurant

   1.4. Other

Methodology (cont'd)

We surveyed dwellers that occurred in the survey zone for an hour, and it was broken up into 15-minute increments.

2. People Passing Through

This task had one person counting the number of people passing through our survey zone, someone passing through classified as someone within our survey zone that was walking or rolling with a mobility device, a person on a scooter, skateboard, or bicycle. We surveyed people passing through the survey zone for an hour, and it was broken up into 15-minute increments. These observations were divided into four categories:

2.1. Pedestrian

2.2. Scooter

2.3. Bicyclist

2.4. Other

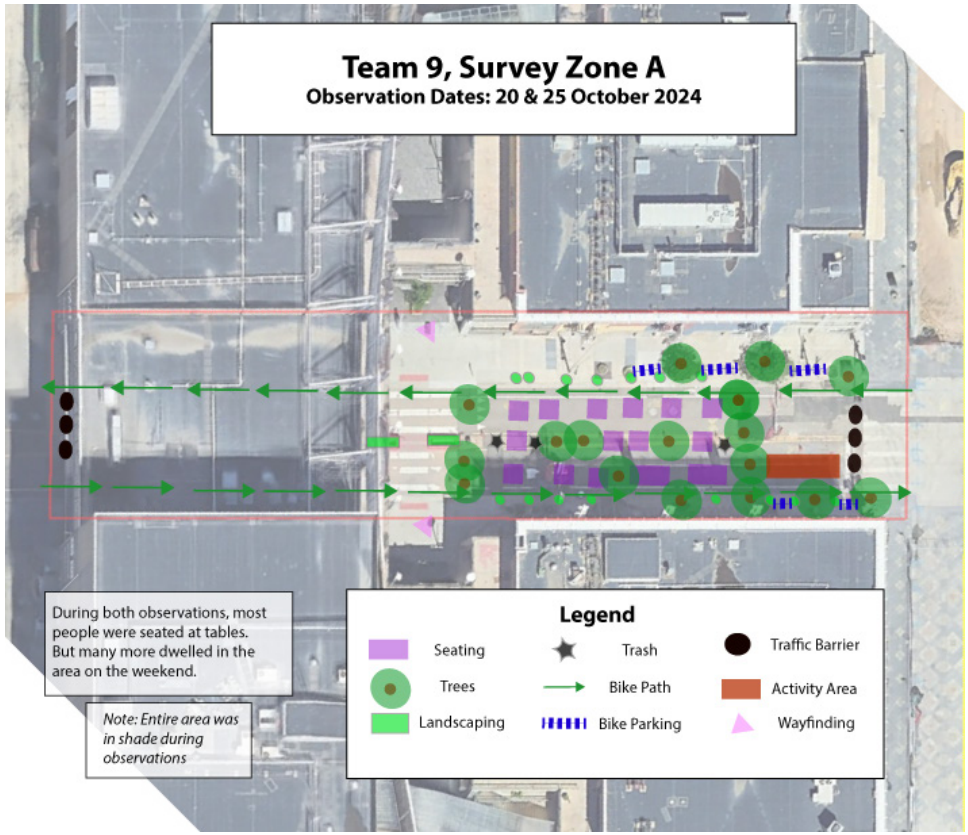
3. Public Realm Urban Design Feature Analyzer and Interviewer

This task grouped together the urban designer survey and intercept interviewer tasks. For the urban designer survey responsibilities, satellite site plans of each zone were printed and taken to the survey zone. The site plan of each zone was used to record the public realm urban design features. These features included green elements, shade, seating, wayfinding, safety features, bike/ped/transit infrastructure, and any other notable features that added to the urban landscape of our survey zones. This information was recorded at each zone twice during our field survey time to better reflect the environment we were analyzing and surveying. For the interviewer, their main tasks were to intercept people and conduct interviews with them. This could be either in the form of face-to-face conversations with the interviewer and interviewee, or for the interviewee to independently fill out their survey.

We worked together on October 20 from 11:00 AM - 2:30 PM and October 25 from 3:30 PM -5:30 PM, meeting at the CU Denver CAP Building and walking to the sites together in a group. To prepare for these periods of field study, we gathered materials needed to go into the field along with communicating how we were going to collect data, created a safety plan, and finding out how to get to our study zones. Materials we utilized were clickers, highlighters and pens, binders to hold our work, extra paper, and a QR code for ease of independently filled out surveys for people not interested in an interview.

Public Realm Design

On Sunday, October 20th and Friday, October 25th, our team conducted investigations for Survey Zones A and B, which are located on Glenarm Place between 16th and 17th Streets and in front of the Colorado Convention Center on 14th Street, respectively. During our two, roughly two-hour visits, we counted the number of people dwelling and passing through. A third member of our team conducted intercept interviews simultaneously. Despite our weekend visit occurring first chronologically, our following data and findings naming scheme follows the system designated by our clients: "Observation 1" is the weekday observation, and "Observation 2" is the weekend observation. Of further note, the American Society of Reproductive Medicine national conference was kicking off on Oct. 20th, which is reflected in our elevated dwell and pass-through counts for Survey Zone B on that day. In comparison, our visit to Survey Zone B on Oct. 25th occurred in between conferences. To our knowledge, the ASRM conference is the only major event that could have influenced our numbers.

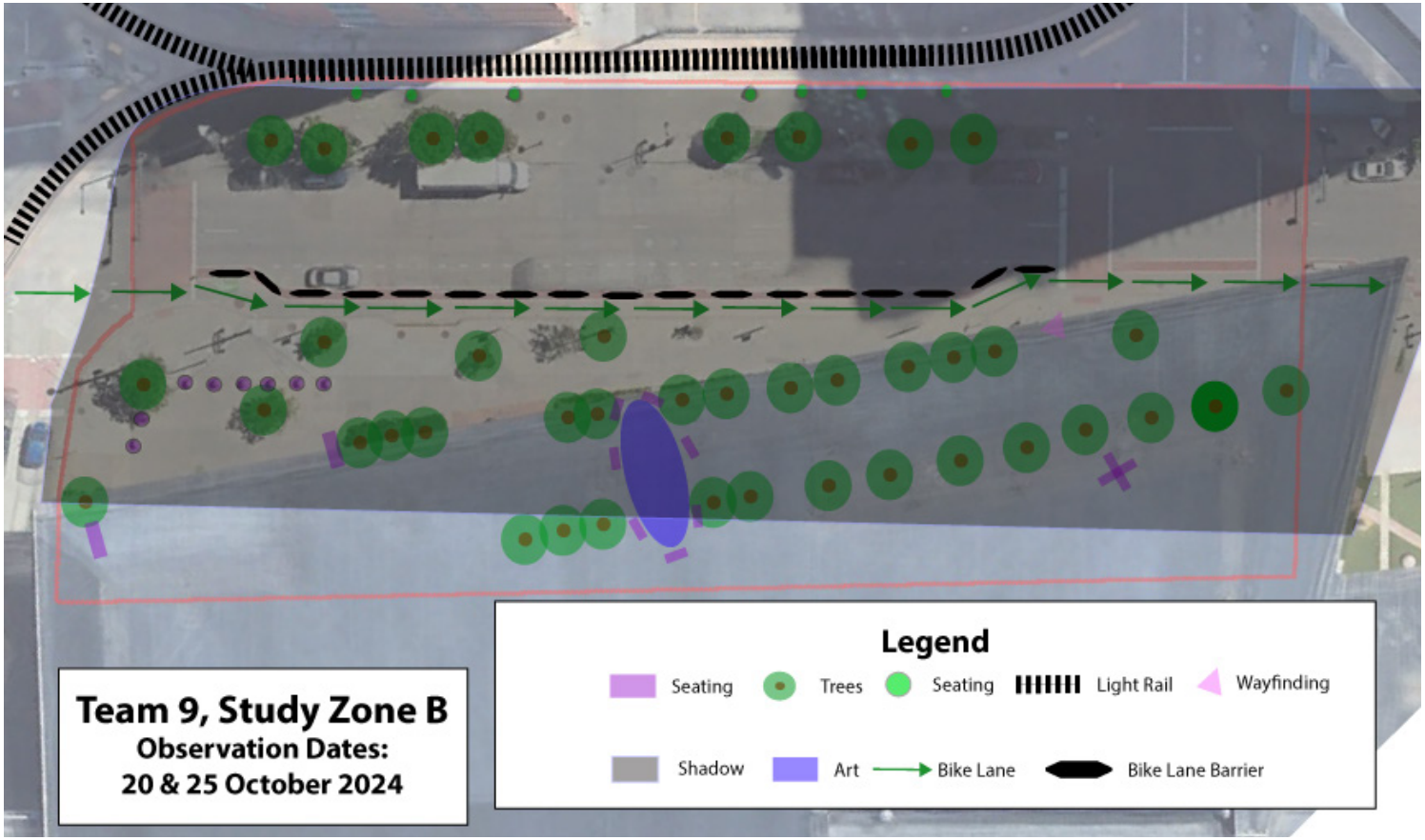


Survey Zone A

Survey Zone A, located along Glenarm Place, southeast of the 16th Street Mall, is currently blocked off from automobile traffic by three jersey barriers on either side of the block. Under the Denver Pavilions Mall overpass, the space is relatively empty, but going northeast on Glenarm, the newly, but temporarily, pedestrianized area has been programmed with patio furniture, additional landscaping, lighting, and an activity area. The Denver Pavilions Mall buildings flank this zone on both sides. Just southwest of this programmed area is the main pedestrian walkway that connects the northern block of the mall with the southern block. Bike lanes run in both directions of traffic on Glenarm.

Survey Zone B

Survey Zone B is mainly the pedestrian plaza directly next to the Colorado Convention Center, with a smaller section located across 14th Street. The convention center and its entrances dominate this space, although care has been given to pedestrians passing through as evidenced by recently installed landscaping that runs parallel to the convention center building on 14th Street, which consists of parallel rows of shrubs and trees. This would make a nice pedestrian promenade, but it is blocked by a large sculpture of a blue bear on the northern end, however this also serves as a draw for visitors to the zone. A high-comfort bike lane runs with traffic going south on 14th Street on its western side. Around the entrances to the convention center there is plenty of seating, including bollards which many zone visitors were using as seating.



People Dwelling

For both Survey Zones, the counts of people dwelling were significantly higher on the weekend (Observation 2) than on the weekday (Observation 1), which is illustrated by the line chart in Figure 1. This is explainable for Survey Zone B as no conference was taking place that Friday, but the reasons for Survey Zone A attracting fewer dwelling visitors is less apparent. Anecdotally, many of the people we approached for intercept interviews at that time and place told us they were on their way somewhere else. This indicates that Survey Zone A may not be attracting "opportunity dwellers" as its programming intends. Across both observations, the share of people dwelling alone was higher in Survey Zone B, likely due to individual conference attendees or visitors. For our study, we counted people dwelling at the patio furniture as in the "Restaurant/Patio" category, despite no actual restaurant service being present. Most people there were eating, drinking and participating in the same activities they would have at a restaurant. In Survey Zone B, there were a significant number of people who stayed in the zone to take pictures with the big, blue bear sculpture, which was recorded in the "Other" category to capture the unique activity.

Tables 1 & 2 - Survey Zone A, Observation 1, Dwell Counts and Percentage Share by Category

Date: October 25, 2024

Observation Time: 4:55 pm to 5:55 pm

Weather: 65 F, Sunny

Time Span	Alone	Groups	Restaurant	Other	Totals
15-min Increment #1	3	9	7	1	**20**
15-min Increment #2	1	4	4	0	**9**
15-min Increment #3	3	7	4	0	**14**
15-min Increment #4	3	5	8	3	**19**
Totals	**10**	**25**	**23**	**4**	**62**

Time Span	Alone	Groups	Restaurant	Other	Totals
15-min Increment #1	15%	45%	35%	5%	**100%**
15-min Increment #2	11%	44%	44%	0%	**100%**
15-min Increment #3	21%	50%	29%	0%	**100%**
15-min Increment #4	16%	26%	42%	16%	**100%**
Totals	**16%**	**40%**	**37%**	**6%**	100%

Tables 3 & 4 - Survey Zone B, Observation 1, Dwell Counts and Percentage Share by Category

Date: October 25, 2024

Observation Time: 3:45 pm to 4:45 pm

Weather: 67 F, Sunny

Time Span	Alone	Groups	Restaurant	Other	Totals
15-min Increment #1	5	3	0	5	**13**
15-min Increment #2	7	9	0	0	**16**
15-min Increment #3	1	0	0	3	**4**
15-min Increment #4	2	2	0	3	**7**
Totals	**15**	**14**	**0**	**11**	40

Time Span	Alone	Groups	Restaurant	Other	Totals
15-min Increment #1	38%	23%	0%	38%	**100%**
15-min Increment #2	44%	56%	0%	0%	**100%**
15-min Increment #3	25%	0%	0%	75%	**100%**
15-min Increment #4	29%	29%	0%	43%	**100%**
Totals	**38%**	**35%**	0%	**28%**	100%

Tables 5 & 6 - Survey Zone A, Observation 2, Dwell Counts and Percentage Share by Category

Date: October 20, 2024

Observation Time: 2:25 pm to 3:25 pm

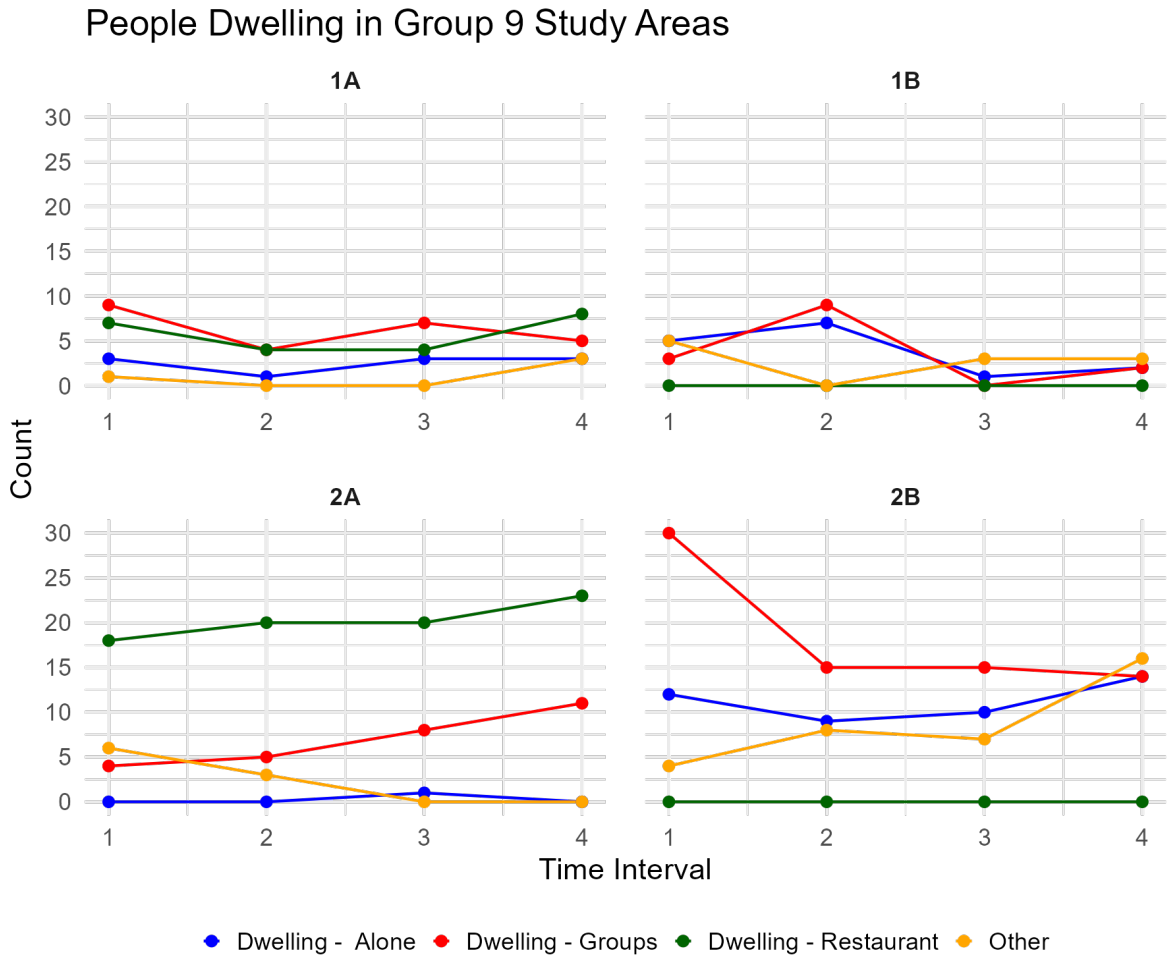
Weather: 72 F, Sunny

Time Span	Alone	Groups	Restaurant	Other	Totals
15-min Increment #1	0	4	18	6	**28**
15-min Increment #2	0	5	20	3	**28**
15-min Increment #3	1	8	20	0	**29**
15-min Increment #4	0	11	23	0	**34**
Totals	**1**	**28**	**81**	**9**	**119**

Time Span	Alone	Groups	Restaurant	Other	Totals
15-min Increment #1	0%	14%	64%	21%	**100%**
15-min Increment #2	0%	18%	71%	11%	**100%**
15-min Increment #3	3%	28%	69%	0%	**100%**
15-min Increment #4	3%	32%	68%	0%	**100%**
Totals	**1%**	**24%**	**68%**	**8%**	100%

Dwell Count Analysis

Figure 14: Line Chart of People Dwelling in Each Survey Zone Grouped by Observation



Tables 5 & 6 - Survey Zone A, Observation 2, Dwell Counts and Percentage Share by Category

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15-min Increment #3	1	8	20	0	**29**
15-min Increment #4	0	11	23	0	**34**
Totals	**1**	**28**	**81**	**9**	**119**

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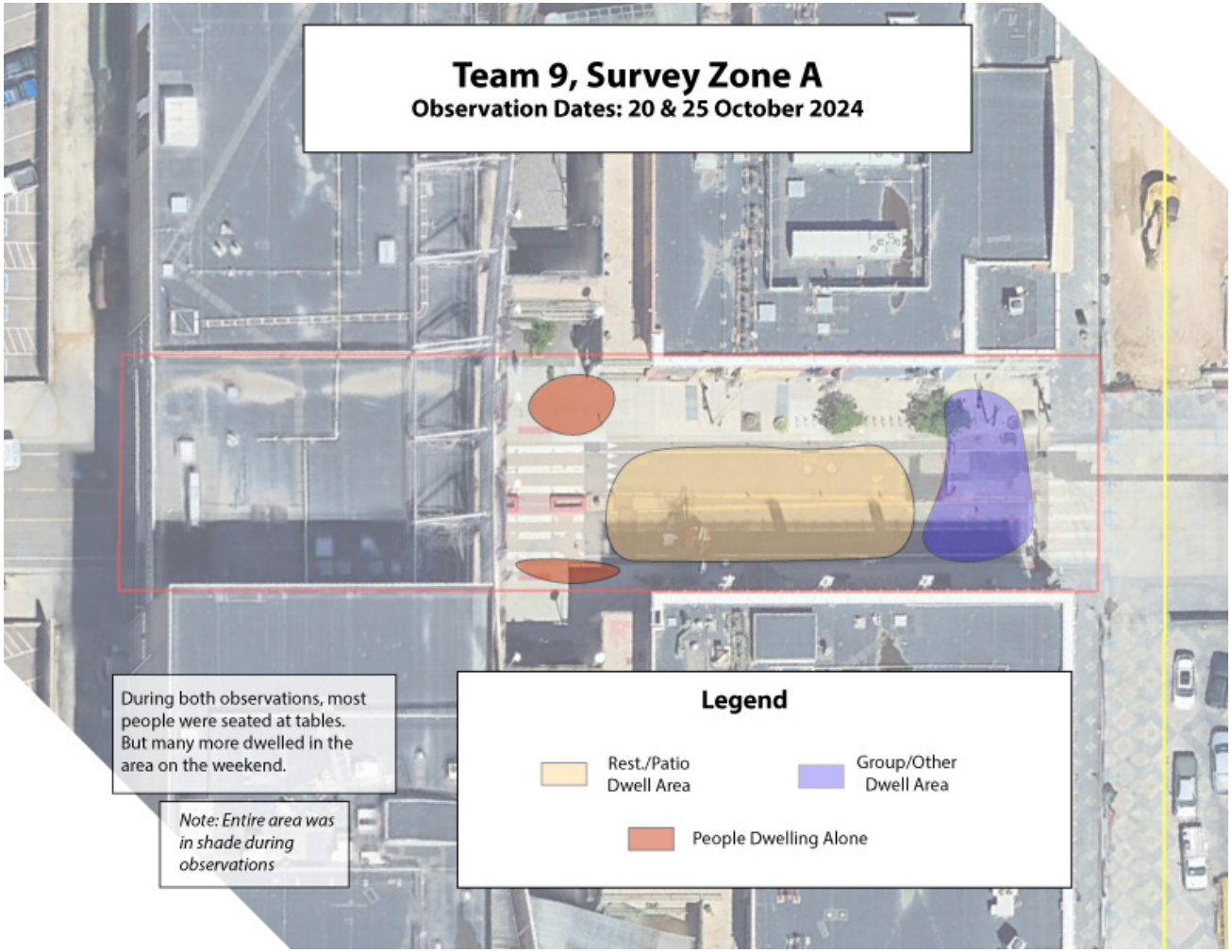
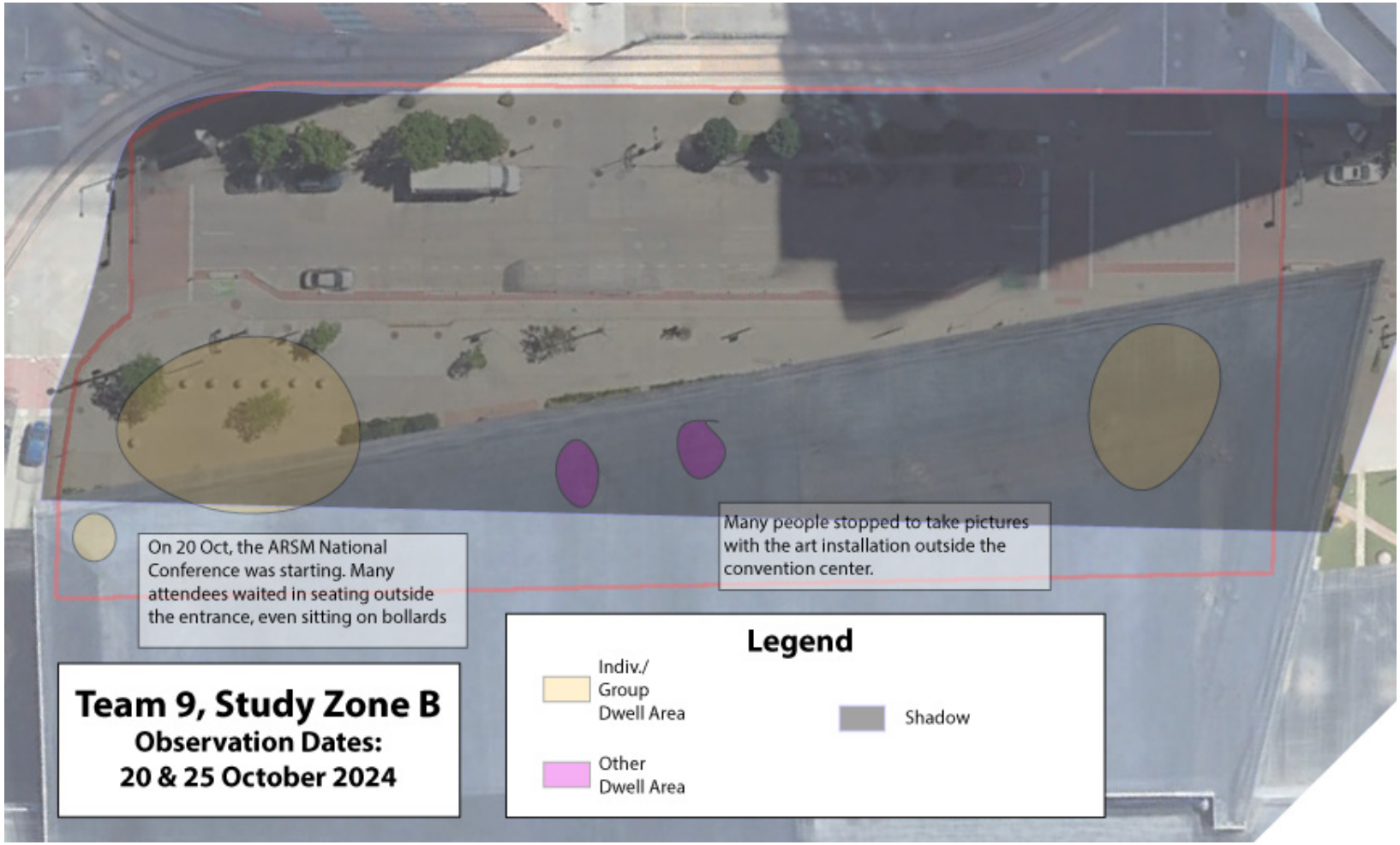
15-min Increment #3	3%	28%	69%	0%	**100%**
15-min Increment #4	3%	32%	68%	0%	**100%**
Totals	**1%**	**24%**	**68%**	**8%**	100%

Dwell Count Analysis

The spatial distribution of people dwelling in both survey zones largely followed its programing, with the exception of bollards outside the entrance of the convention center which people also used as seating. In Survey Zone A, most groups stopped at the activity area, which consists of a slack line. Individuals in this area stopped on the sidewalks to take calls or look at maps.



Dwell Count Analysis



Pass Through Counts

Tables 1 & 2 - Survey Zone A, Observation 1, Pass Through Counts and Percentage Share by Category

Date: October 25, 2024

Observation Time: 4:55 pm to 5:55 pm

Weather: 65 F, Sunny

Time Span	Pedestrian	Bicycle	Scooter	Other	Totals
15-min Increment #1	253	3	7	0	**263**
15-min Increment #2	208	0	9	0	**217**
15-min Increment #3	205	7	12	2	**226**
15-min Increment #4	303	3	5	0	**311**
Totals	**969**	**13**	**33**	**2**	1,017

Time Span	Pedestrian	Bicycle	Scooter	Other	Totals
15-min Increment #1	96%	1%	3%	9%	**100%**
15-min Increment #2	96%	0%	4%	0%	**100%**
15-min Increment #3	91%	3%	5%	1%	**100%**
15-min Increment #4	97%	1%	2%	0%	**100%**
Totals	**95%**	**1%**	**3%**	**<1%**	100%

Tables 3 & 4 - Survey Zone B, Observation 1, Pass Through Counts and Percentage Share by Category

Date: October 25, 2024

Observation Time: 3:45 pm to 4:45 pm

Weather: 67 F, Sunny

Time Span	Pedestrian	Bicycle	Scooter	Other	Totals
15-min Increment #1	39	8	7	1	**55**
15-min Increment #2	32	5	15	1	**53**
15-min Increment #3	58	10	17	0	**85**
15-min Increment #4	39	5	7	0	**51**
Totals	**168**	**28**	**46**	**2**	244

Time Span	Pedestrian	Bicycle	Scooter	Other	Totals
15-min Increment #1	71%	15%	13%	2%	**100%**
15-min Increment #2	60%	9%	28%	2%	**100%**
15-min Increment #3	68%	12%	20%	0%	**100%**
15-min Increment #4	76%	10%	14%	0%	**100%**
Totals	**69%**	**11%**	**19%**	**1%**	100%

Tables 5 & 6 - Survey Zone A, Observation 2, Pass Through Counts and Percentage Share by Category

Date: October 20, 2024

Observation Time: 2:25 pm to 3:25 pm

Weather: 72 F, Sunny

Time Span	Pedestrian	Bicycle	Scooter	Other	Totals
15-min Increment #1	217	1	3	1	**222**
15-min Increment #2	261	2	7	2	**272**
15-min Increment #3	273	4	3	1	**281**
15-min Increment #4	214	5	5	3	**227**
Totals	**965**	**12**	**18**	**7**	**1,002**

Time Span	Pedestrian	Bicycle	Scooter	Other	Totals
15-min Increment #1	98%	<1%	1%	<1%	**100%**
15-min Increment #2	96%	1%	3%	1%	**100%**
15-min Increment #3	97%	1%	1%	<1%	**100%**
15-min Increment #4	94%	2%	2%	1%	**100%**
Totals	**96%**	**1%**	**2%**	**1%**	100%

Tables 7 & 8 - Survey Zone B, Observation 2, Pass Through Counts and Percentage Share by Category

Date: October 20, 2024

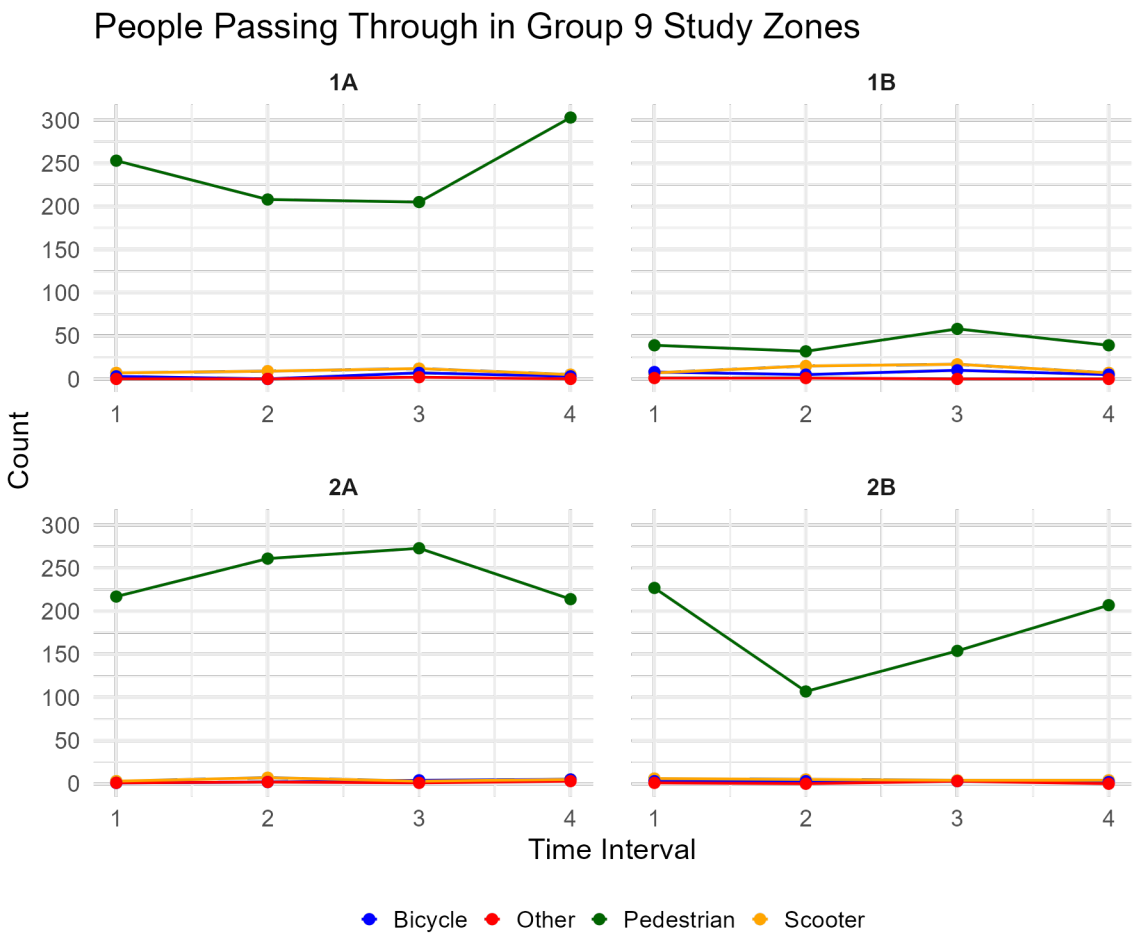
Observation Time: 12:09 pm to 1:09 pm

Weather: 62 F, Sunny

Time Span	Pedestrian	Bicycle	Scooter	Other	Totals
15-min Increment #1	227	3	6	1	**237**
15-min Increment #2	107	3	5	0	**115**
15-min Increment #3	154	3	4	3	**164**
15-min Increment #4	207	2	4	0	**213**
Totals	**695**	**11**	**19**	**7**	**729**

Time Span	Pedestrian	Bicycle	Scooter	Other	Totals
15-min Increment #1	96%	1%	3%	<1%	**100%**
15-min Increment #2	93%	3%	4%	0%	**100%**
15-min Increment #3	94%	2%	2%	2%	**100%**
15-min Increment #4	97%	1%	2%	0%	**100%**
Totals	**95%**	**2%**	**3%**	**1%**	100%

Pass Through Analysis



Pass Through Analysis

Zone A: The Pavilions

- Pedestrian Patterns: Weekday and weekend pedestrian counts were nearly identical. However, more people passed through on scooters, bicycles, or other forms of transportation on the weekday, likely due to the observation occurring during rush hour as people were commuting.
- Behavioral Differences: On the weekend, pedestrians were more leisurely, frequently engaging with surrounding businesses and moving in and out of the study site. Notably, more groups were observed on the weekend, indicating a social and relaxed atmosphere.

Zone B: Denver Convention Center Area (14th Street between Stout and California)

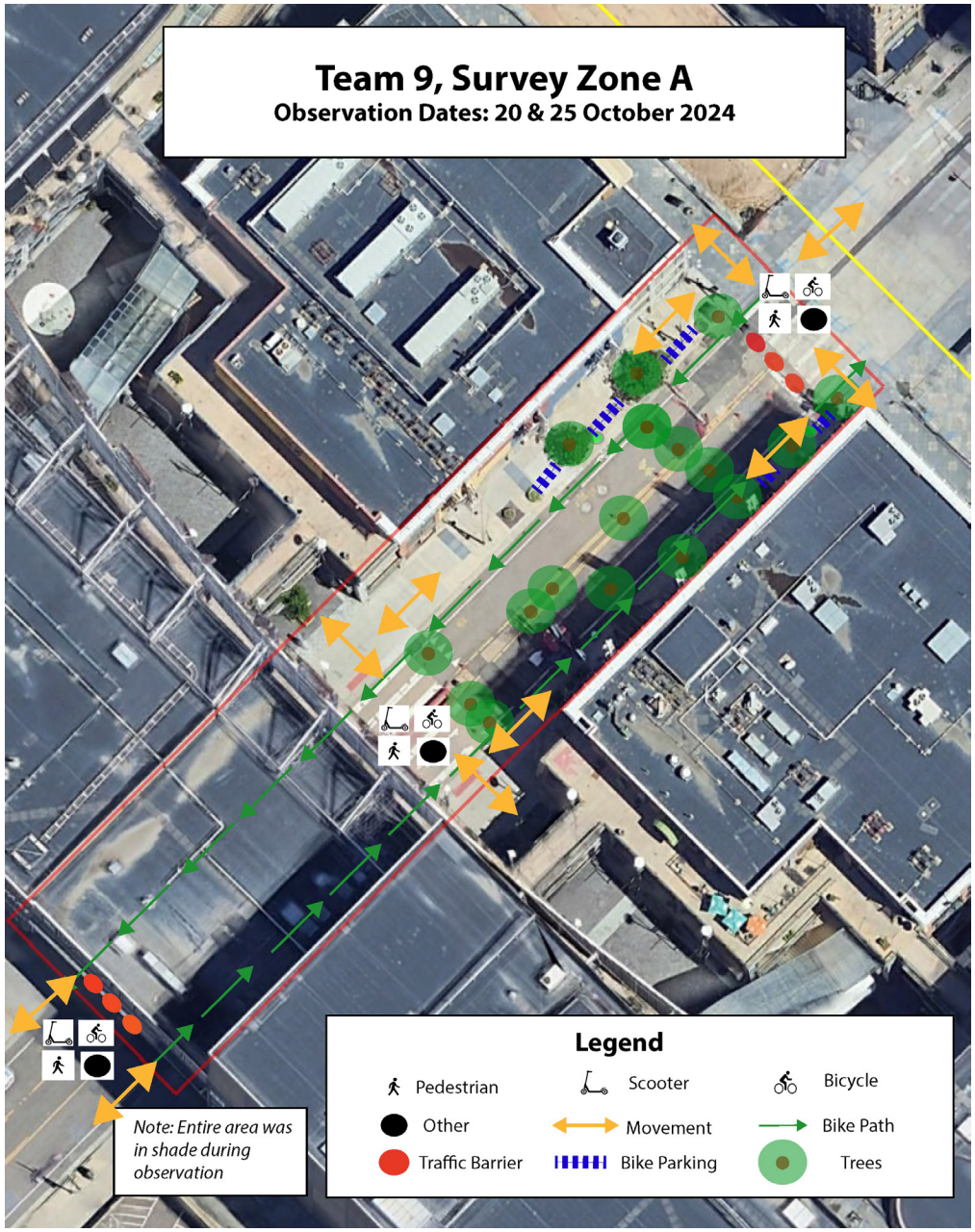
Traffic Volume Differences: Pedestrian traffic was significantly higher on the weekend, likely due to a conference at the convention center, whereas the weekday observation saw fewer pedestrians but more people on scooters and bicycles during rush hour.

General Observations

- Weather Influence: Favorable weather conditions on both visits likely contributed to higher pass-through rates. Adverse weather might have reduced traffic at both sites.
- Impact of 16th Street Mall Construction: Ongoing construction did not appear to impact traffic patterns significantly, as consistent behaviors were observed across both visits.

In conclusion, these findings suggest that rush hour impacts weekday transportation modes, while weekend visits see more leisurely pedestrian behavior and group activity. This information could guide scheduling and promotional strategies for businesses or events in these areas.

Pass Through Analysis



Intercept Interviews

During our interviews with pedestrians within our study zone, we engaged in many conversations about people's thoughts and ideas on the area. We received feedback from people from the area, the state, outside of the state, and outside the country. Because of the diverse array of people, we noticed at times that the survey wasn't inclusive to their feedback to us, creating gaps in documented feedback. However, despite this, we were able to get a lot of amazing data to help us reflect on what these zones need, and what we can do as planners to better reinforce the built

Zone A Data

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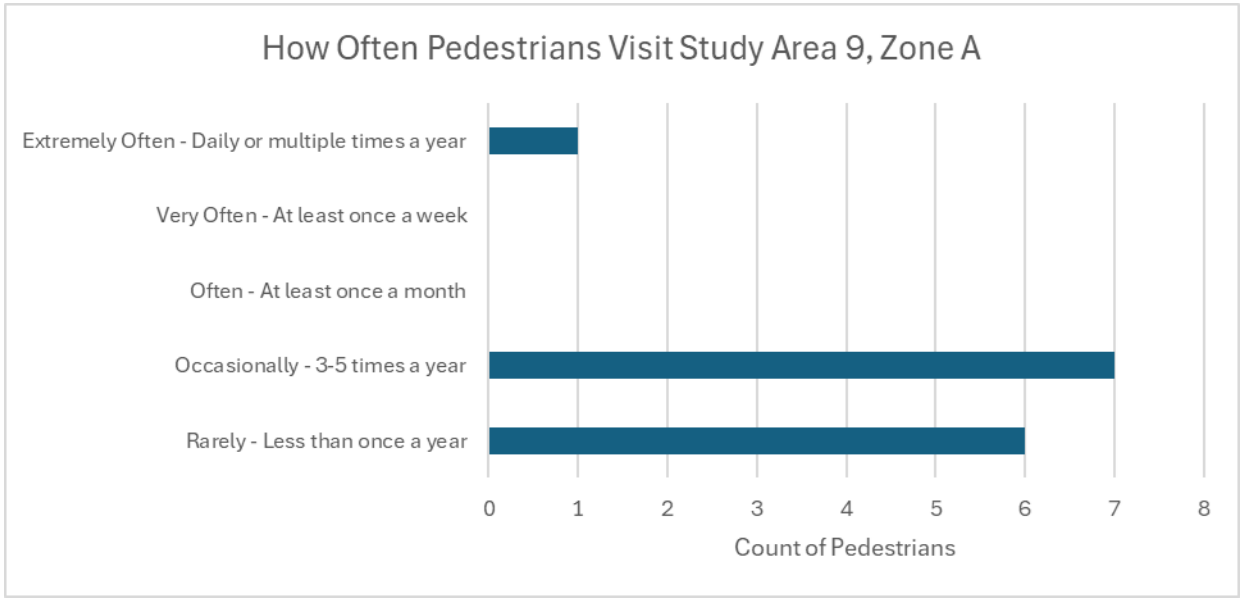
Zone A Data (cont'd)

Another assumption with the utilization of the space could be reflected within Chart 2. This graph reflects the level of comfort pedestrians felt in the space on a scale of 1-5, with 1 being the least level of comfort and 5 being the most level of comfort. The overall representation of comfort was more towards the middle of the scale at a Level 3, having the majority of pedestrians feeling this way (43%). The rest of the ratings of this zones Level of Comfort lean more towards higher levels of comfort rather than lower, which signifies a level of satisfaction with the zone, however there is things that can be done to improve its overall comfort for everyone. To tie this in, we believe that the use of commercial space has a regulated level of safety and comfort displayed within a public space as it is meant to attract people, but if this space was altered for a more productive mixed-use space, more components could aid in its level of comfort for pedestrians. Of the people surveyed

Figure 15: Table 1 - Level of Importance of Public Features

	1st	2nd	3rd
Green Elements	73%	18%	9%
Shade	30%	50%	20%
Seating	29%	29%	43%
Programming/ Activation	70%	10%	10%
Mobility Infrastructure	17%	67%	17%
Wayfinding	33%	17%	50%
Safety Features	43%	23%	31%

Figure 16: How Often Pedestrians Visit Zone A



Zone A Data (cont'd)

that come to this space, the majority of people (44%) use this space for shopping, dining, and entertainment (Chart 3). Another notable point about the surveyed data is that pedestrians appear to either be walking in and out of the space or spending 30+ minutes in the space.

Figure 17: Rated Comfortability of Zone A

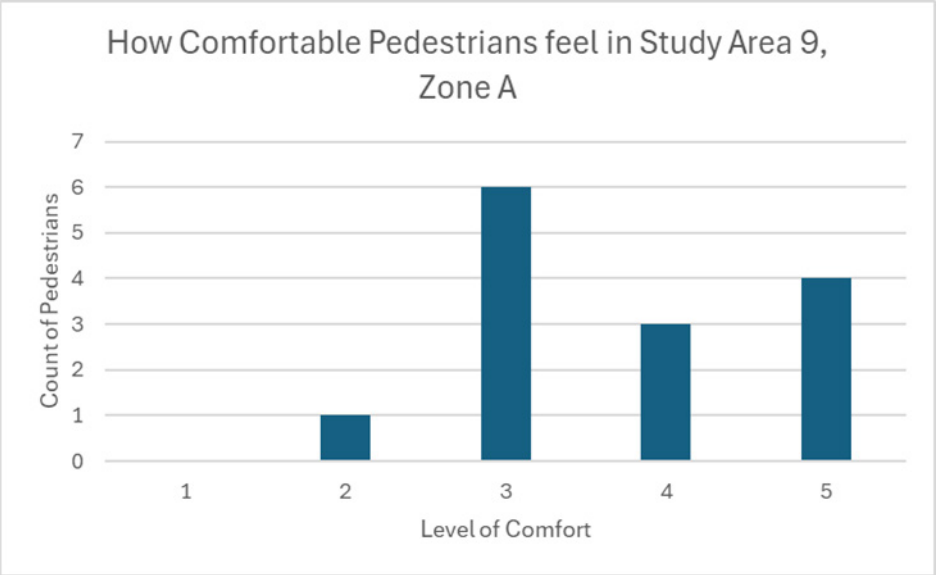
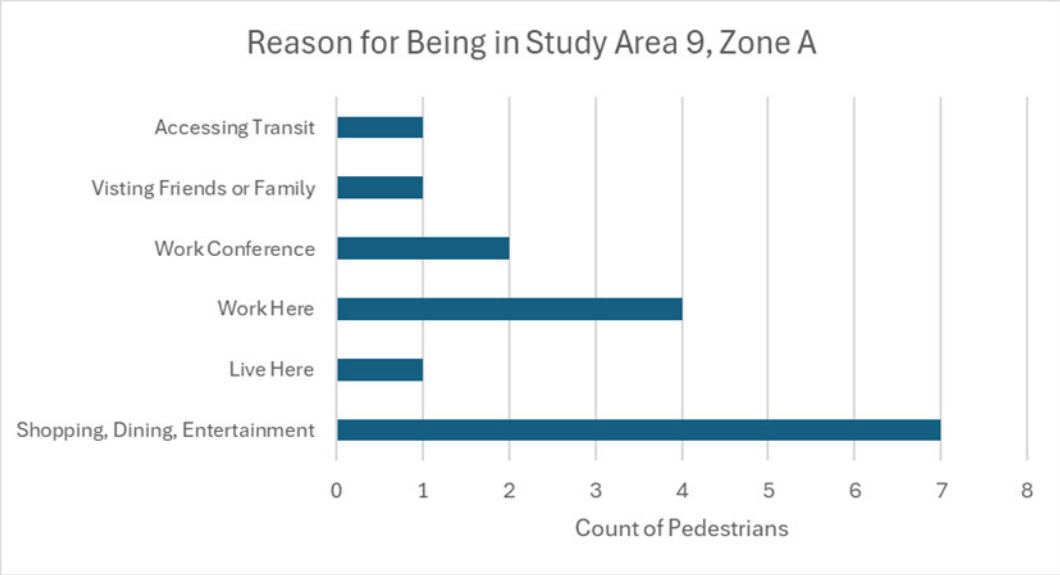


Figure 18: Reason for Being in Zone A



Zone B Data

Study Area 9, Zone B focuses on the main pedestrian plaza along the Denver Convention Center with segments along 14th Street. This space is largely influenced by the convention center, providing a lot of space for pedestrians to congregate or disperse. Within the area there is landscaping running along the building next to the blue bear sculpture that acts as a tourist attraction.

According to Figure 20, there is a split of importance between 4 different public features within Zone B. Safety Features comes as the most important public feature with 57%, then Green Elements and Wayfinding at 50% and then Mobility Infrastructure at 45%. The data all together seems to be a more generalized importance from people filling out surveys or attending interviews. Combining an understanding of both Figure 21, Figure 22 and Figure 23, we can assume that the dominating field of Shopping, Entertainment, and Dining in Figure 21 categorizes for the work conference going on since none of those activities do not take place in this study area and there was no option for conference goers to categorize themselves unless they selected other and filled out "work conference" like 2 other people did within the survey. This is assumed with Figure 23 since a majority of participants within the survey rarely come to the study area and spend 30+ minutes there. With these points in mind in relation to Figure 20, it appears that a generalize level importance for public features was represented unlike Zone A where people were expressing their

Figure 19: Time Spent in Study Area

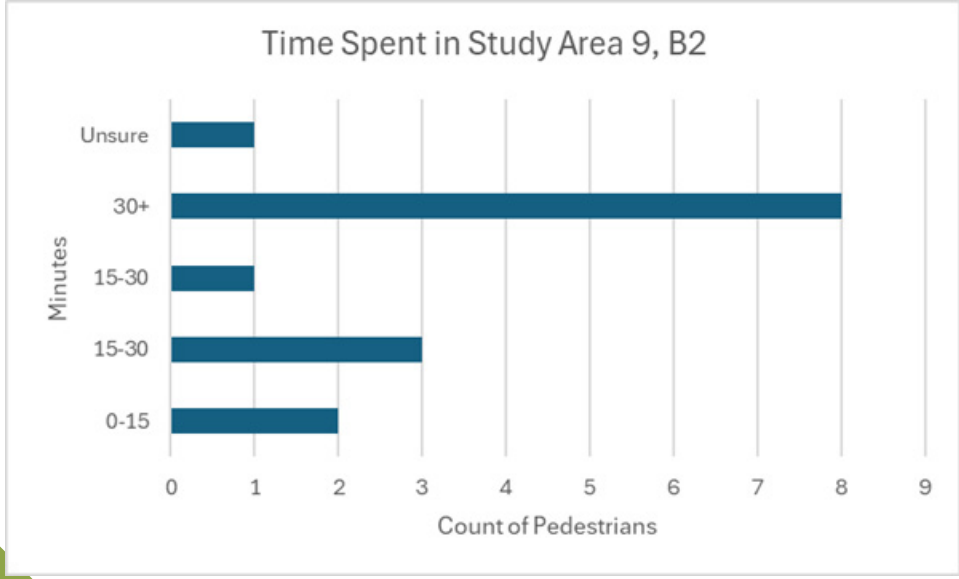


Figure 20: Level of Importance of Public Features

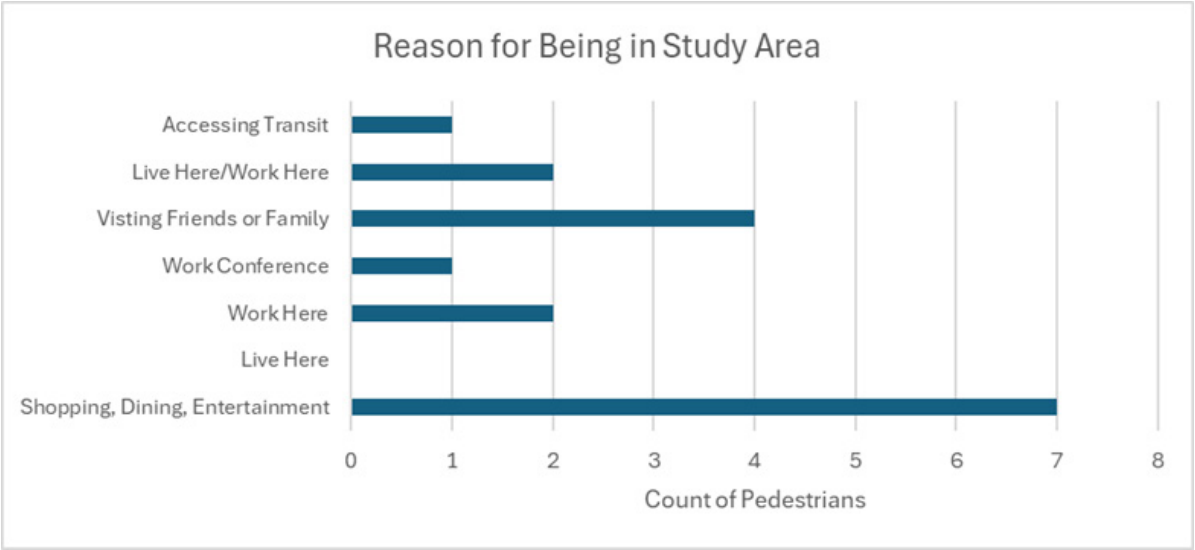
	1st	2nd	3rd
Green Elements	50%	40%	10%
Shade	36%	64%	0%
Seating	25%	33%	42%
Programming/ Activation	25%	33%	42%
Mobility Infrastructure	45%	45%	9%
Wayfinding	50%	40%	10%
Safety Features	57%	36%	7%

Level of Importance for public features that were visibly lacking within the public space.

Level of Comfort is also displayed within the data, showing the level of comfort pedestrians felt in the space on a scale of 1-5, with 1 being the least level of comfort and 5 being the most level of comfort. The overall representation of comfort was more towards the middle of the scale at a Level 3, having the majority of pedestrians feeling this way (50%). There was no jump in an expressed level of extreme discomfort (Level 1), or extreme comfort (Level 5), leading us to assume that expressed level of importance in public features (Figure 20) could also be a more well rounded display of mandatory missing elements within the public space.

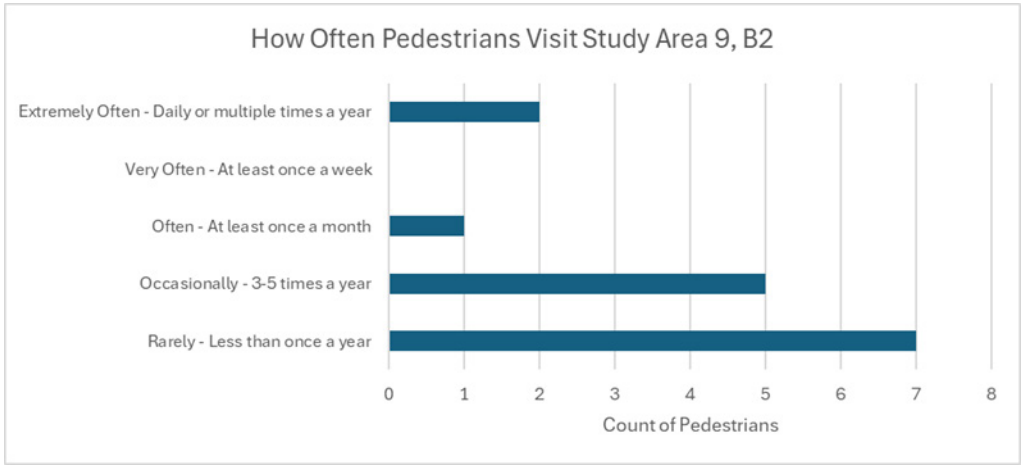
Figure 22: Comfort Ratings in Zone B

Figure 21: Why Pedestrians Visit Zone B



Zone B Data (cont'd)

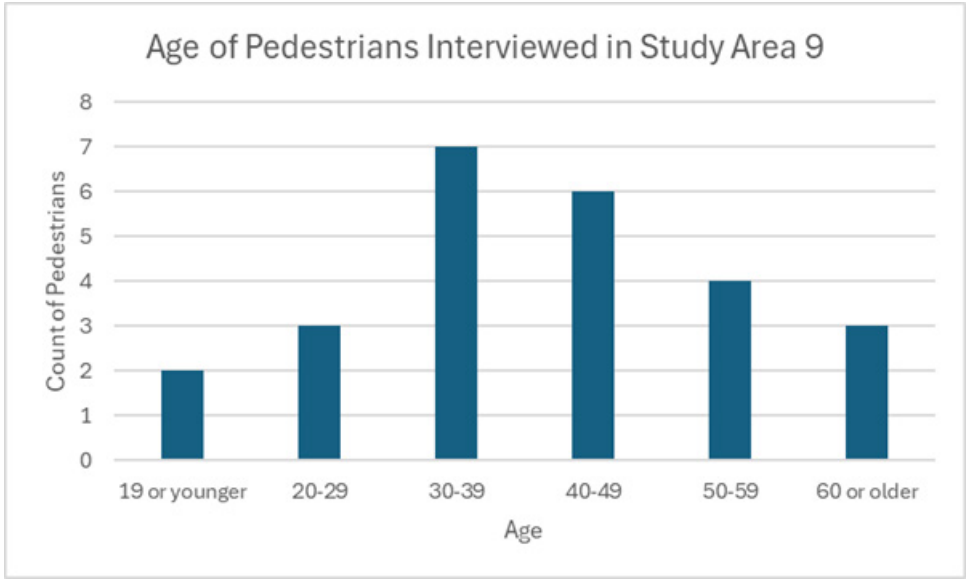
Figure 23: How Often Pedesrians Visit Zone B



Combined Data

Within Figure 24, we noticed that there was a jump within the 30-39 age bracket from the 20-29 age bracket with a descending order of people filing out the survey within the older age brackets. This shows us that the highest representation of voices are middle aged people and above, losing the opportunity to get a more diverse array of voices to be heard within the survey. (Would also like to utilize some more demographic data here if applicable with the future study analysis)

Figure 24: Age of Pedestrians Across Study Area 9



Critique

In conducting this site investigation, we experienced several challenges in observing and recording data that could be more easily dealt with if our team had done the following:

- Additional practice before the first site visit.
- Taking a moment to observe visitor patterns before recording, so we would know what to expect.
- Our team ran into considerable hurdles getting the recorded data from the interviews. This could have been prevented on our part by a plan to retrieve the data as soon as possible. Instructions to all participating groups on how to retrieve their data without accidentally deleting others' data would have also helped.

Our site investigation was helped considerably by the clicker counters. We would not have been able to count all passers-by without them. Our collection was also helped by the distribution of responsibilities in the field. Our intercept interviewer had plenty of time to conduct the required number of surveys and also make sketches of the site plan.

Issues and Recommendations

The Revitalization of two areas in Denver is the focus of the project. The two areas include the Denver Pavilions (Site A) and the Colorado Convention Center (Site B). Safety and accessibility are the primary focus of the Denver Pavilions. The introduction of redesigned bike lanes, new level curbs, and the replacement of temporary roadblocks with durable bollards are a few of the recommended enhancements. The Colorado Convention Center is a unique space full of underutilized areas. Redesigned greenspaces, additional seating, vendor kiosks, and artistic enhancements will transform the area into a welcoming, functional space. The recommended changes will help build community interactions and support local business.

Zone A

There are several challenges with functionality, safety and the aesthetics of the Denver Pavilions. To address the challenges, we propose making these changes. Relocating the bike lanes on each side of the space to one side of the area will improve safety because pedestrians and bikes will have fewer conflict points. Removing the raised street' curb while introducing level or soft curbs will allow pedestrians to move about the area without any psychological barriers which may make visitors feel like they are only allowed on the sidewalk. Additional trash cans will be installed throughout the area to help mitigate issues with littering and cleanliness concerns. To address safety in the area, temporary roadblocks will be replaced with durable bollards, such as those seen in Larimer Square. Additionally, permanent public street furniture and planters will create a cohesive and visually appealing streetscape by making the space welcoming to people passing through, shopping, or dining.

To create a more inviting space, empty exterior walls on the adjacent buildings will be painted over with vibrant murals, and the now empty space beneath the overpass will become an activity area with games. Lighting across the area will also be upgraded to create a more vibrant atmosphere, including fixtures that brighten building facades and string lights that create a sense of warmth and safety. These improvements will enhance the area's usability and aesthetics while promoting a pedestrian-friendly gathering point.

Zone A (cont'd)

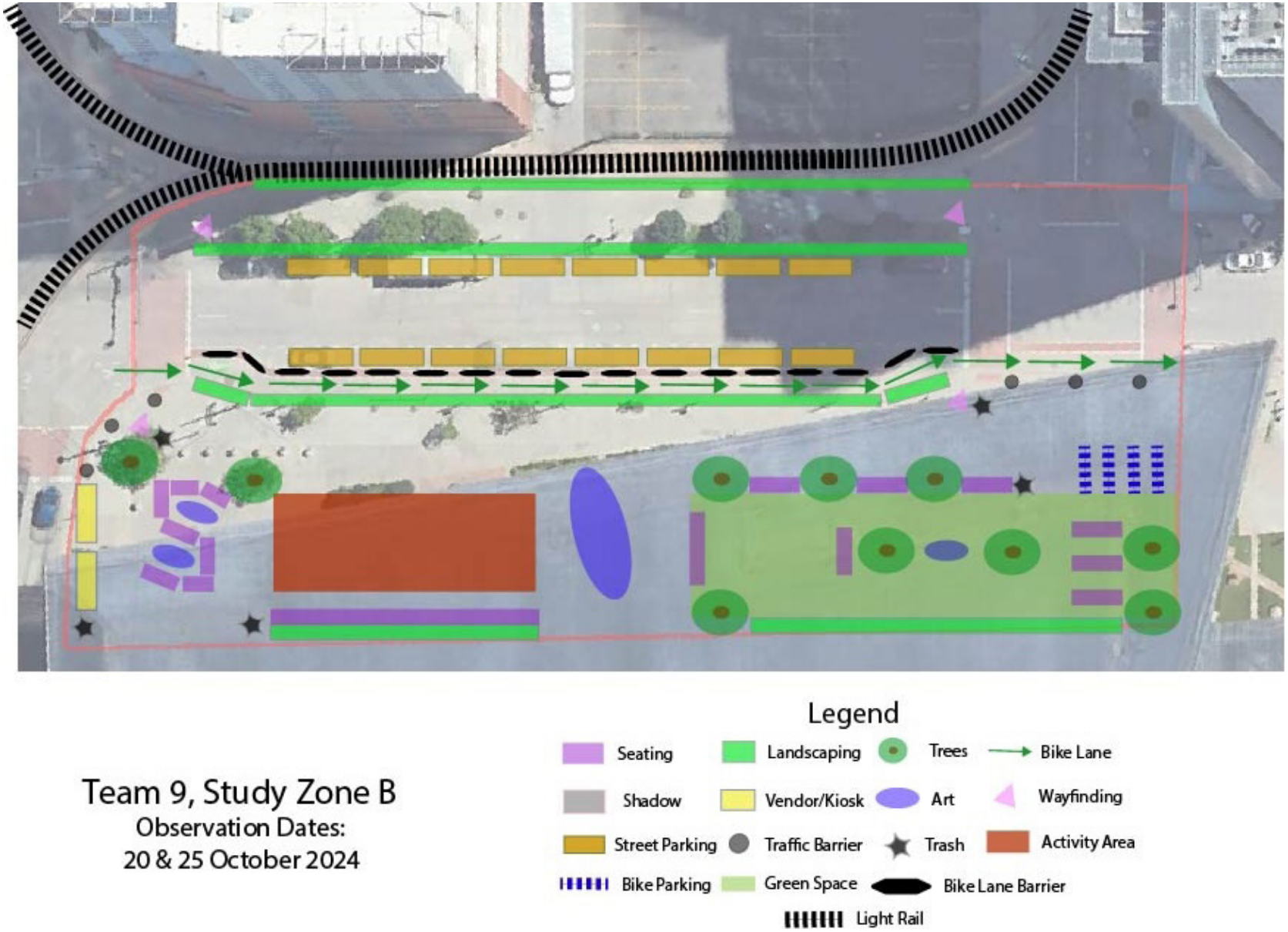
Figure 25: Zone A Recommendations

Zone B

Several changes are proposed to enhance the area's usability. The underutilized greenspace will be redesigned by realigning landscaping to avoid dead-ends near the bear sculpture and widening the landscaped areas to create inviting spaces where people can linger. The issue of muddy areas near the bear will also be addressed as part of this landscaping effort. Seating will be installed to improve comfort. The addition of vendor kiosks will give pedestrians, commuters, or convention attendees a reason to gather in the space.

Digital wayfinding kiosks will be introduced to assist visitors in navigating the surrounding areas of Downtown more effectively. Softening the convention center's appearance by incorporating more artistic elements will help enhance the space's appeal. Additionally, parcels that are currently occupied by parking lots should be encouraged to be redeveloped to include street-level retail or restaurants, creating a friendly streetscape while supporting local businesses. These changes will help create a more functional urban space.

Figure 26: Zone B Recommendations



Conclusion

Implementing improvements will address challenges at the Denver Pavilions and the Colorado Convention Center by enhancing safety, accessibility, and aesthetics. The spaces will be transformed into vivid pedestrian-friendly destinations that encourage community engagement and support local businesses. The revitalized areas will improve functionality and usability among residents and visitors, ensuring a more welcoming urban experience.