SAFETY COMMITTEE – BIKES & TRANSIT

MASTER PLAN COMMITTEE – 10/9/2019

PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

TODAY'S DISCUSSION

- Commuting Data
- Campus Design – Transit and Bikes
- Transit – What are we trying to accomplish?
- Bike – What are we trying to accomplish?
- Behavioral Change
  - Education / Enforcement (videos)

PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

WHAT WE KNOW TODAY

PARKING AND
TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

PRIMARY MODE OF TOTAL POPULATION

YEAR-OVER-YEAR (YOY) WEIGHTED AVERAGE COMPARISON* ACROSS ALL RESPONDENT TYPES

Primary Mode of Transportation	2015	2016	2017	2018	2019	YOY*
driving a personal vehicle	41.6%	37.5%	34.4%	38.6%	39.9%	**1.3%**
taking the bus	17.6%	20.9%	25.4%	25.5%	21.7%	**-3.8%**
walking	17.5%	23.2%	18.0%	18.6%	20.8%	**2.2%**
biking	18.7%	15.3%	19.0%	13.5%	13.1%	**-0.4%**
car[van]pooling	1.3%	1.5%	0.9%	1.9%	1.7%	**-0.2%**
getting a ride	1.1%	0.3%	0.5%	0.9%	0.8%	**-0.1%**
skateboarding	0.3%	0.2%	1.4%	0.6%	0.6%	**0%**
University Provided vehicle	0.1%	0.2%	0.2%	0.1%	0.3%	**0.2%**
ride sharing (Uber, Lyft)	-	-	-	0%	0%	**-**
other	2.0%	0.9%	0.3%	0.3%	1.0%	**0.7%**

*CSU '17-'18 (second semester) compared to CSU '18-'19 (second semester)

# of total population '18-'19 (n=35,891)

PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

SECONDARY MODE OF TOTAL POPULATION YEAR-OVER-YEAR (YOY)

WEIGHTED AVERAGE COMPARISON* ACROSS ALL RESPONDENT TYPES

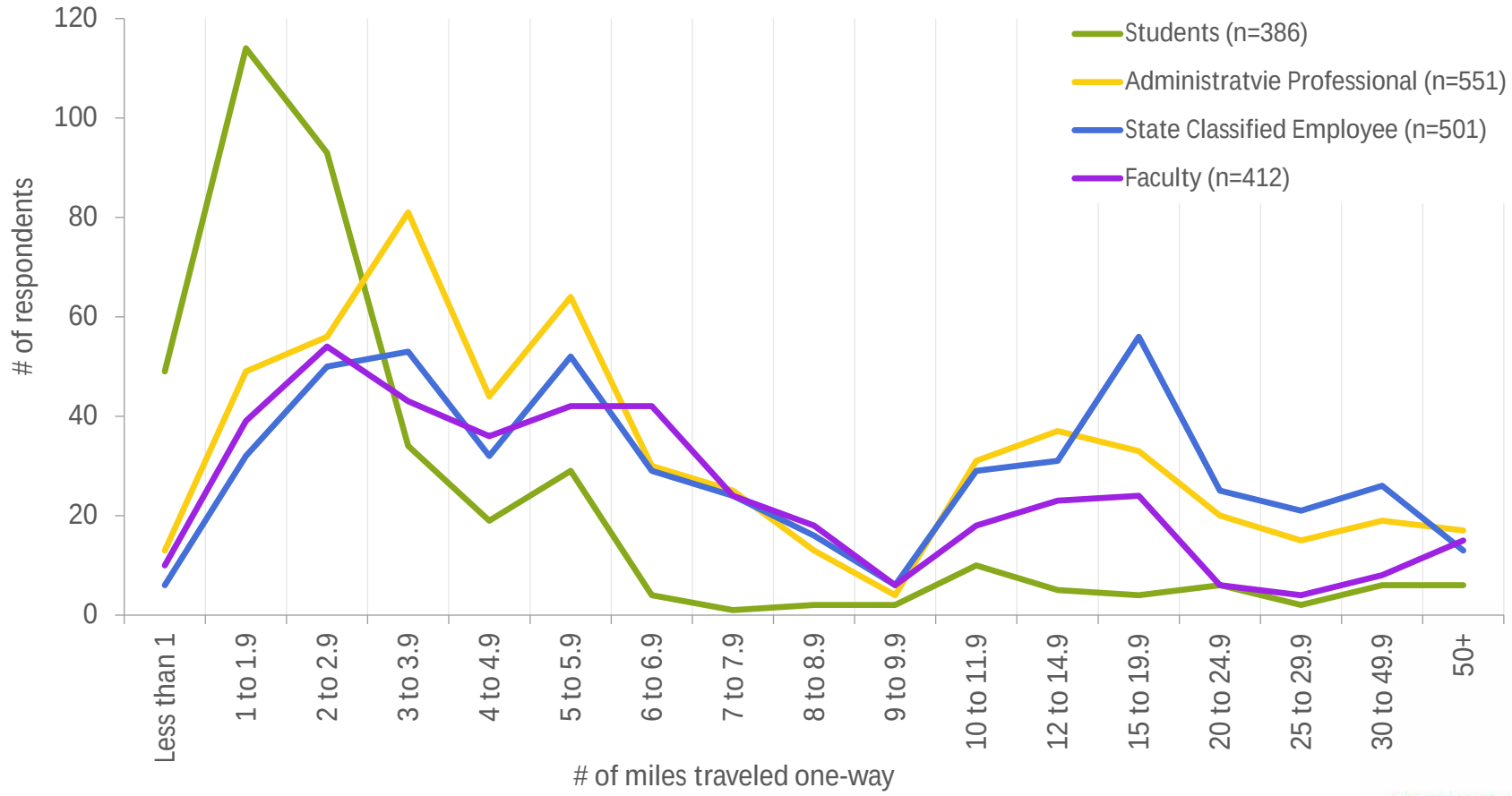
Secondary Mode of Transportation	2015	2016	2017	2018	2019	YOY*
I do not have a secondary mode of transportation	17.4%	16.3%	19.1%	24.3%	23.8%	**-0.5%**
driving a personal vehicle	23.8%	25.6%	20.1%	21.2%	24.1%	**2.9%**
taking the bus	16.1%	12.8%	16.8%	15.1%	13.1%	**-2.0%**
walking	12.7%	14.2%	15.4%	9.8%	12.3%	**2.5%**
biking	20.5%	19.2%	18.4%	18.2%	14.3%	**-3.9%**
car[van]pooling	3.8%	3.9%	4.0%	4.8%	5.1%	**0.3%**
getting a ride	3.5%	4.9%	4.3%	4.4%	5.1%	**0.7%**
skateboarding	0.7%	2.8%	1.6%	2.2%	1.4%	**-0.8%**
University Provided vehicle	0.1%	-	0.4%	0.1%	0.3%	**0.2%**
ride sharing (Uber, Lyft, etc...)	-	-	-	0.1%	0.2%	**0.1%**
other	1.4%	0.1%	-	-	0.4%	**0.4%**

*CSU '17-'18 (second semester) compared to CSU '18-'19 (second semester)

# of total population '18-'19 (n=35,891)

PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

RESPONDENT TYPE BY DISTANCE TRAVELED TO CAMPUS (ONE-WAY)



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COLORADO STATE UNIVERSITY

STUDENTS: YOY PRIMARY MODE

Primary Mode	2017	2018	2019	YoY*
driving a personal vehicle	32%	28%	30%	2%
taking the bus	26%	31%	26%	-5%
walking	19%	23%	26%	3%
biking	20%	14%	14%	--
car[van]pooling	<1%	2%	1%	-1%
getting a ride	<1%	1%	1%	--
skateboarding	1%	1%	1%	--
University Provided vehicle	<1%	0	<1%	<1%
ride sharing (Uber, Lyft)	--	0	0	--
other	<1%	0	1%	1%

*CSU ’17-’18 (second semester) compared to CSU ’18-’19 (second semester)

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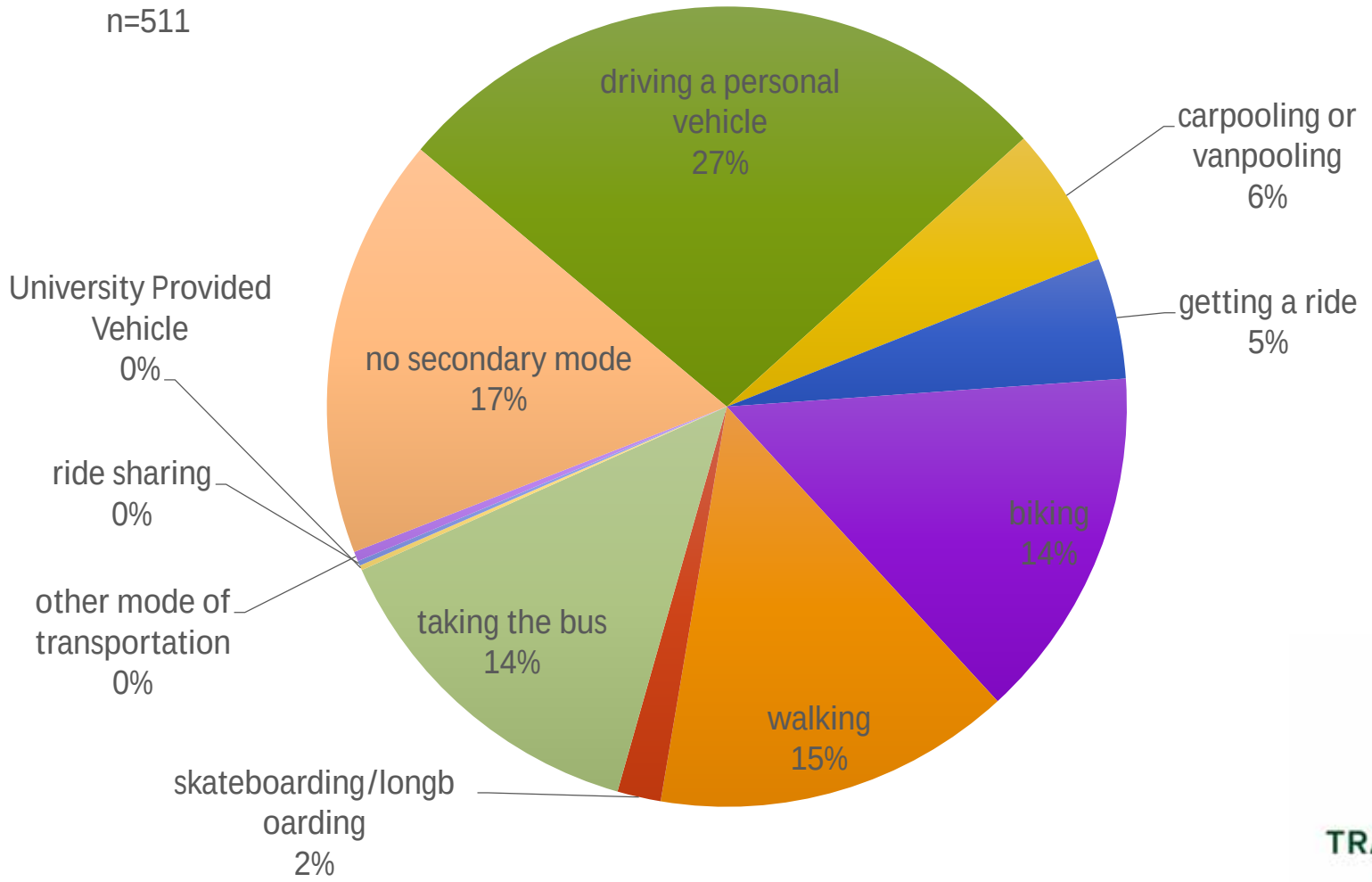
COLORADO STATE UNIVERSITY

STUDENTS: SECONDARY MODE



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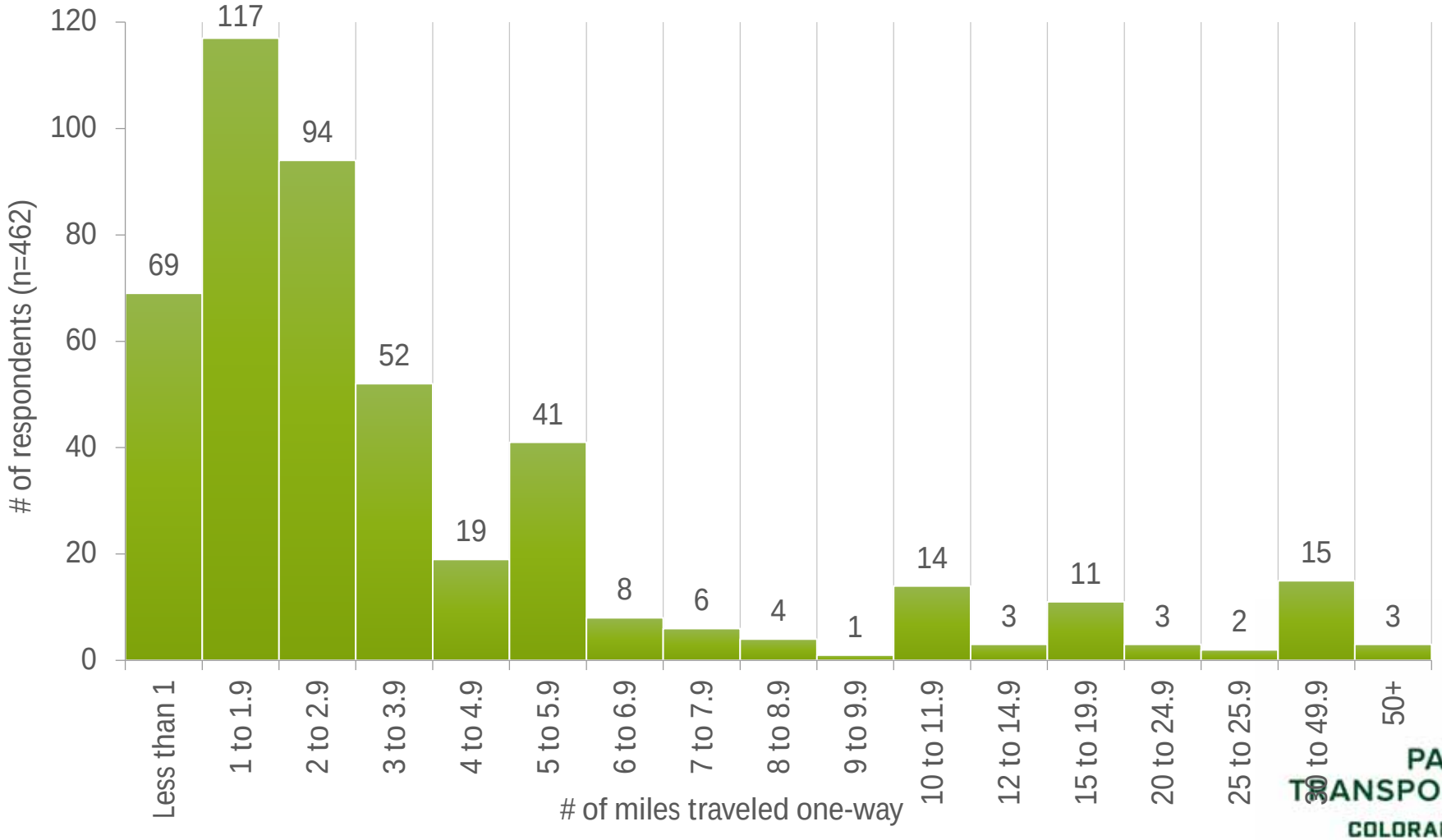
COLORADO STATE UNIVERSITY

STUDENT DISTANCE TRAVELED (ONE-WAY)



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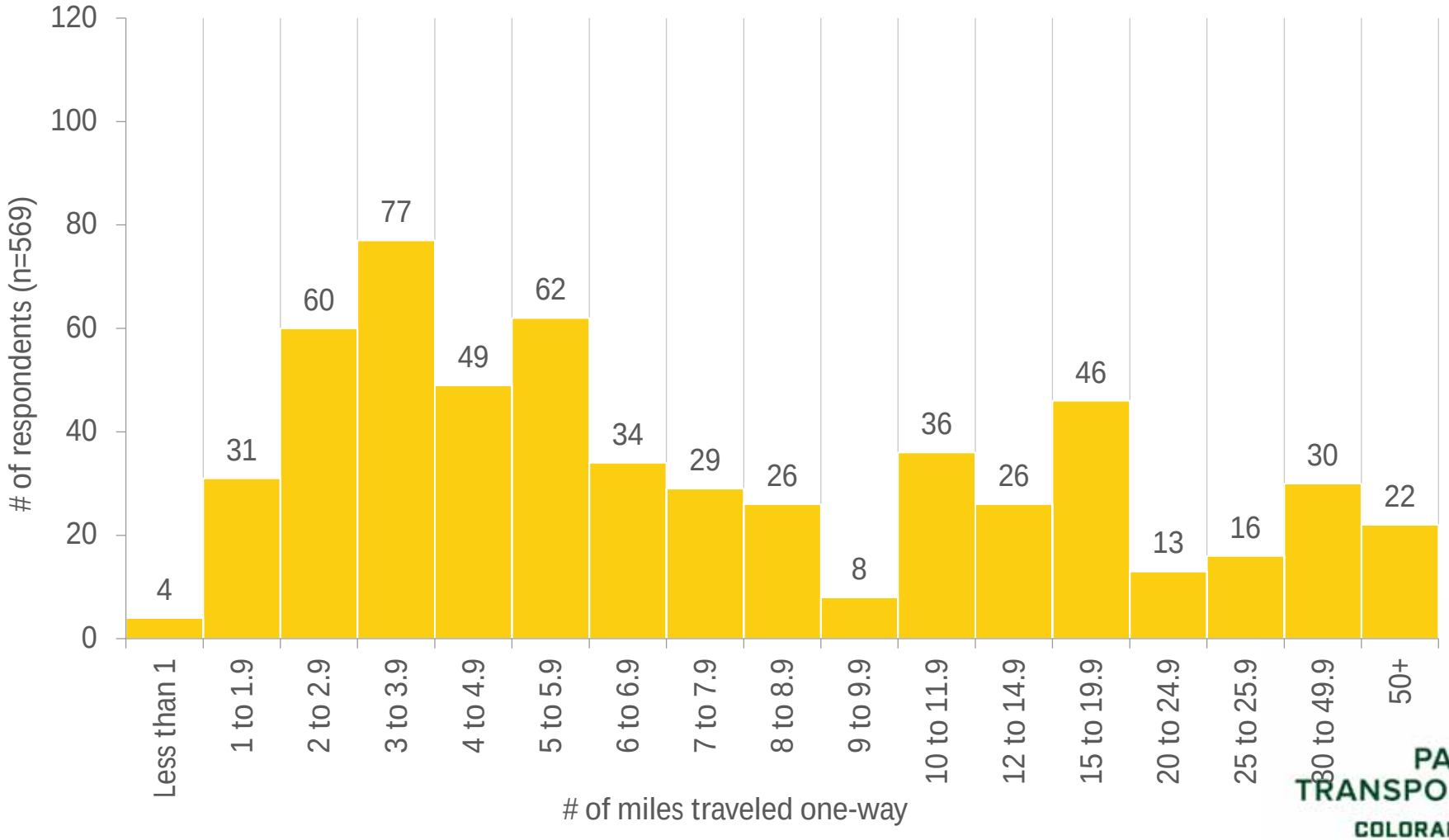
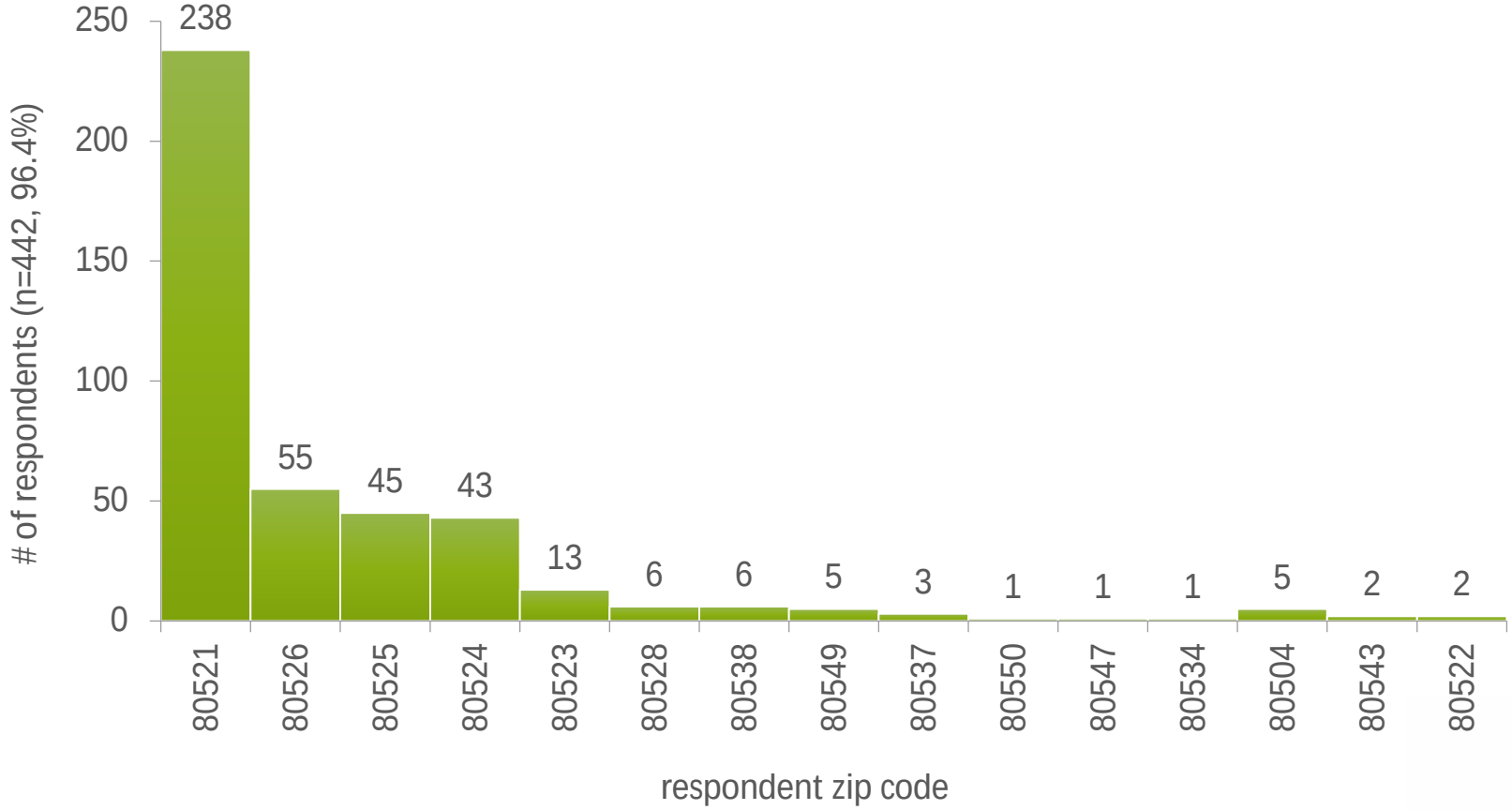
COLORADO STATE UNIVERSITY

ADMINISTRATIVE PROFESSIONAL DISTANCE TRAVELED (ONE-WAY)



PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

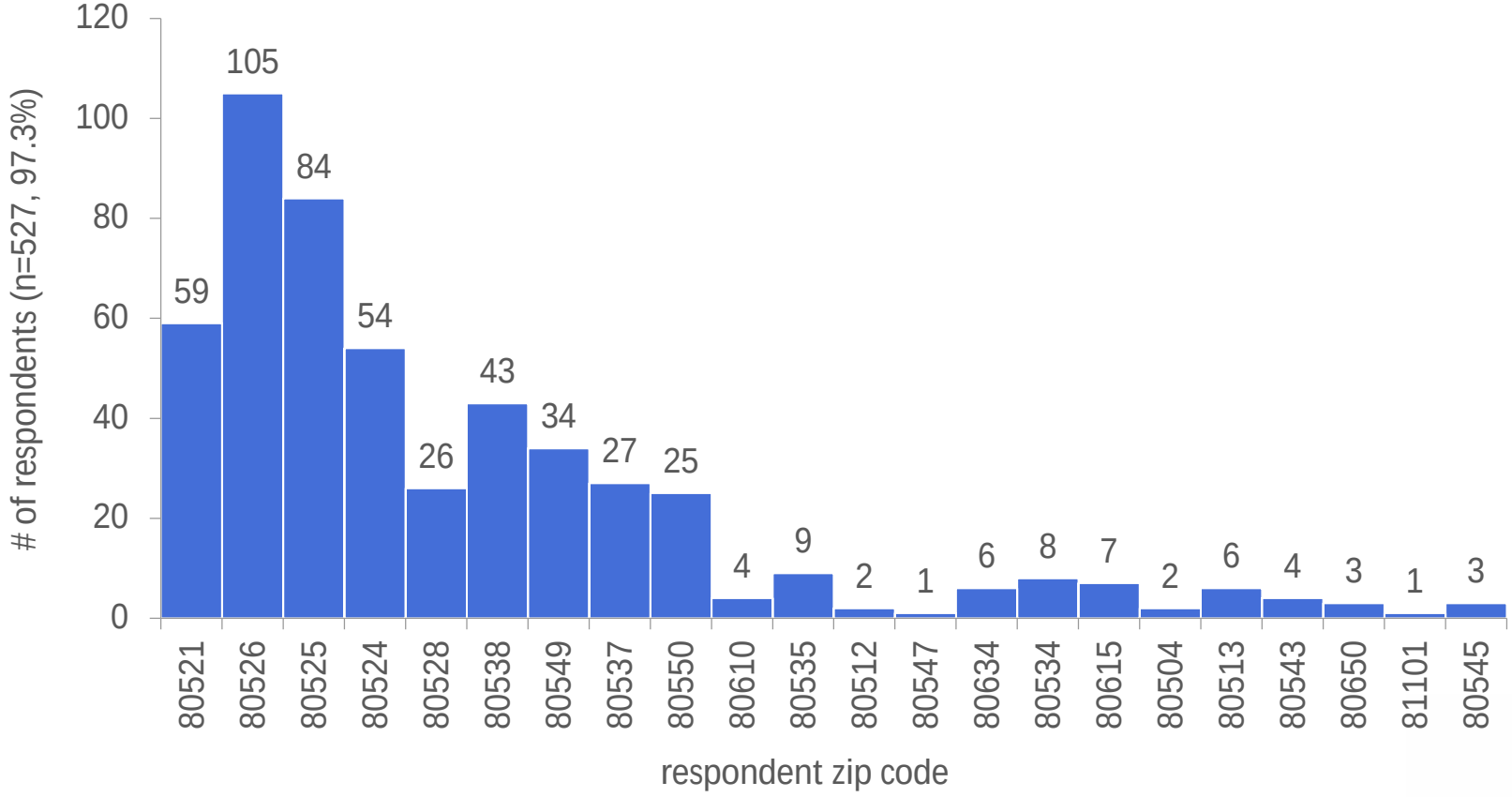
ZIP CODES OF STUDENTS



Student zip codes with less than three respondents (3.6%): 80631 50214 80125 80229 80251 80520 80527 80530 80620 80621 80645 80915 83702 85701 94024

PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

ZIP CODES OF STATE CLASSIFIED EMPLOYEES



State Classified Employee zip codes with less than three respondents (2.7%): 80648 80022 80104 80203 80501 80536 80546 80547 80601 80612 80631 80729 81101 82001 82007

PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

CSU UNC Employee and Student Address Locations

- UNC Student, Fort Collins (525)
- UNC Student, Loveland (239)
- UNC Student, Timnath (8)
- UNC Student, Windsor (266)
- UNC Faculty, Fort Collins (183)
- UNC Faculty, Loveland (118)
- UNC Faculty, Timnath (2)
- UNC Faculty, Windsor (76)
- CSU Student, Greeley (217)
- CSU Student, Windsor (221)
- CSU Student, Loveland (659)
- CSU Faculty, Greeley (92)
- CSU Faculty, Windsor (180)
- CSU Faculty, Loveland (480)

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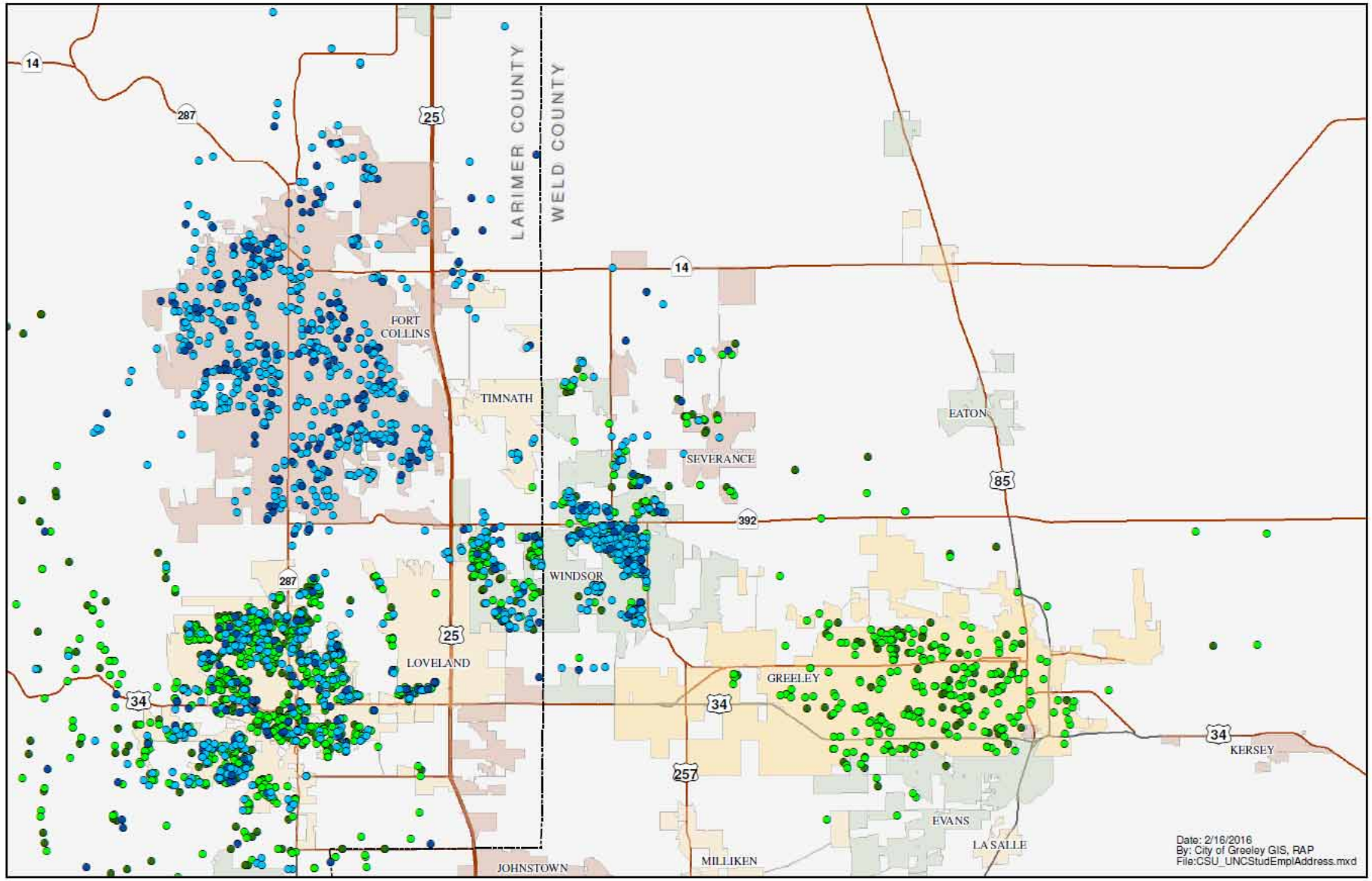

CAMPUS DESIGN – BIKES / TRANSIT

PARKING AND
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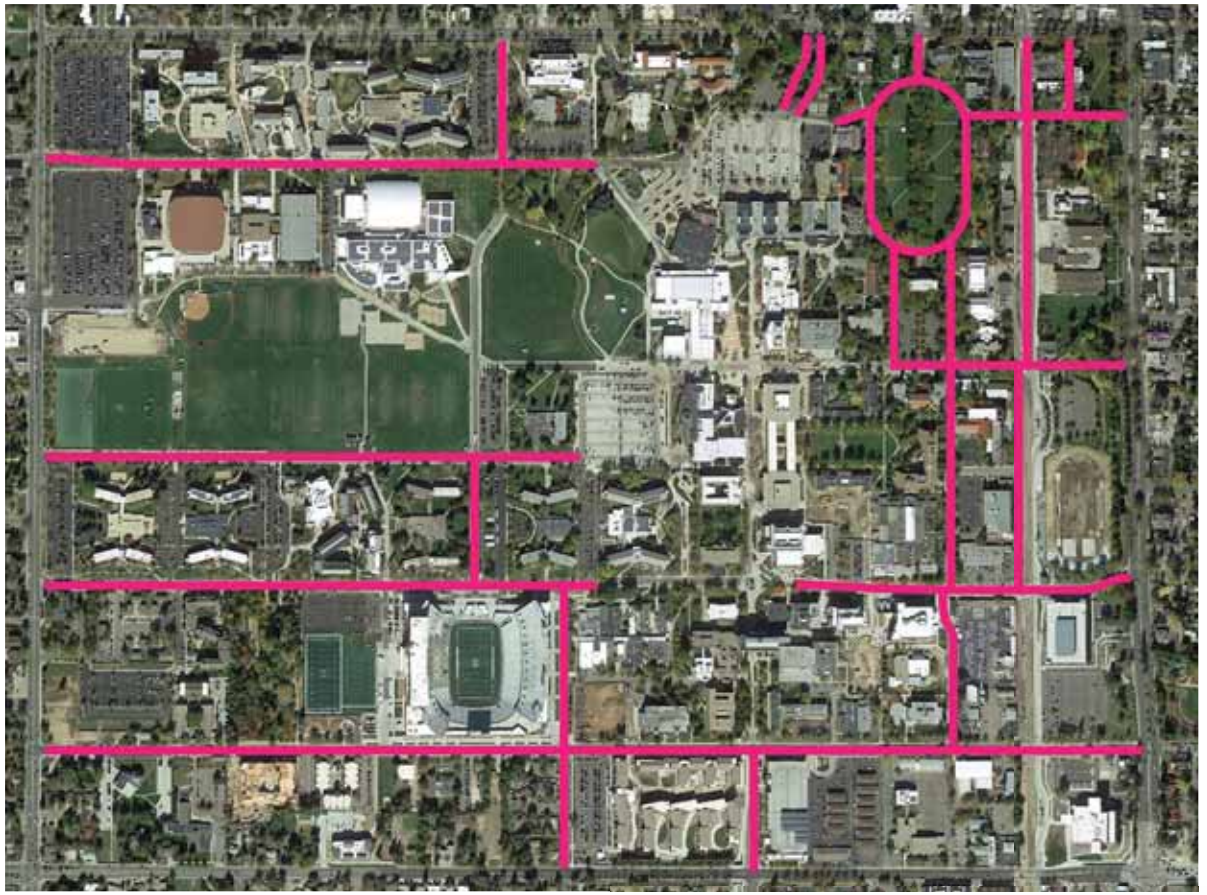
COLORADO STATE UNIVERSITY

Streets: Then and Now

Main Campus 1999



Main Campus 2017

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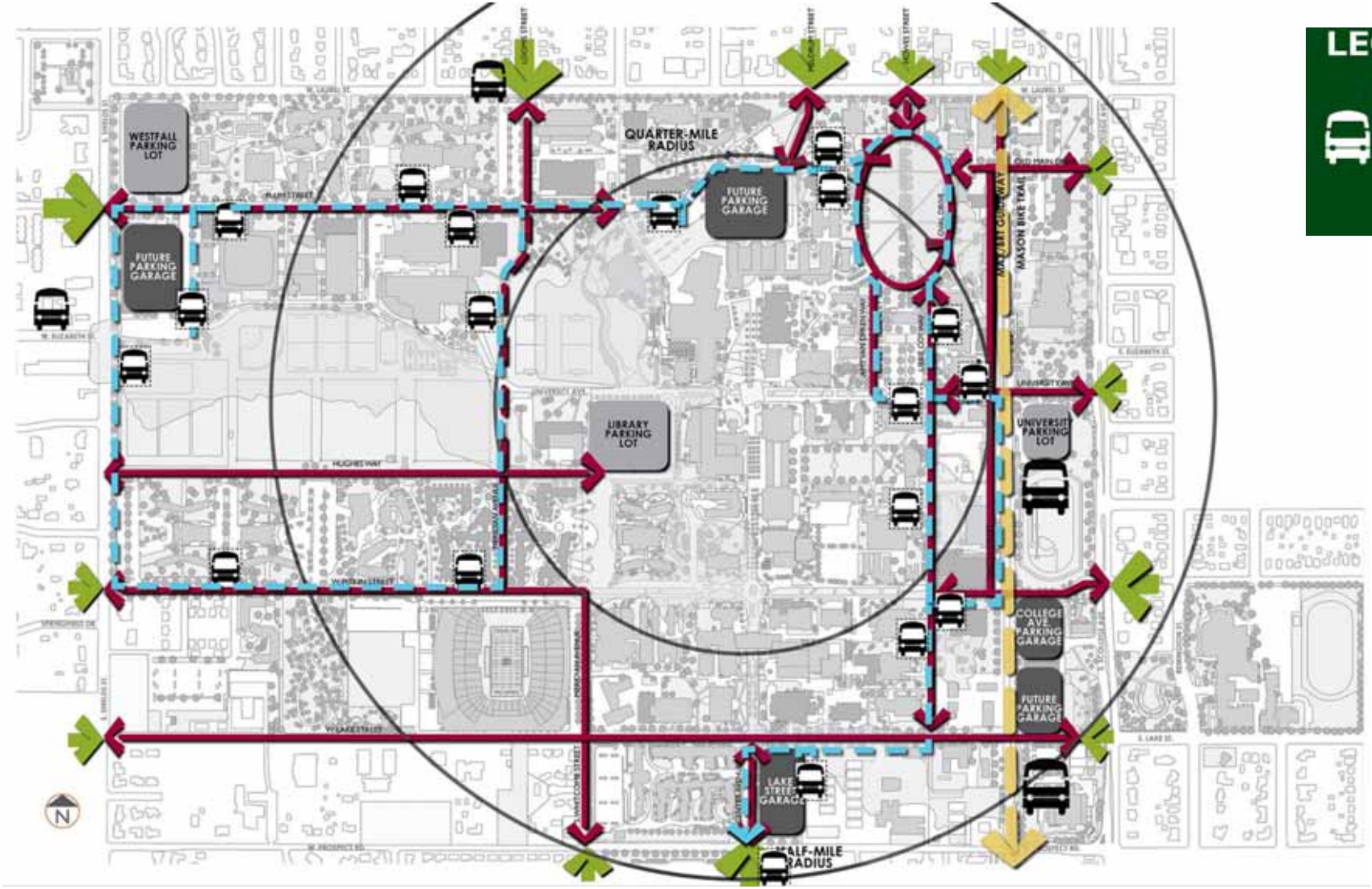
COLORADO STATE UNIVERSITY

Context: Campus Transit



LEGEND

- Vehicular Entry into Campus
- Campus Road + Bike Lane
- MAX Bus Rapid Transit
- Around the Horn Campus Shuttle

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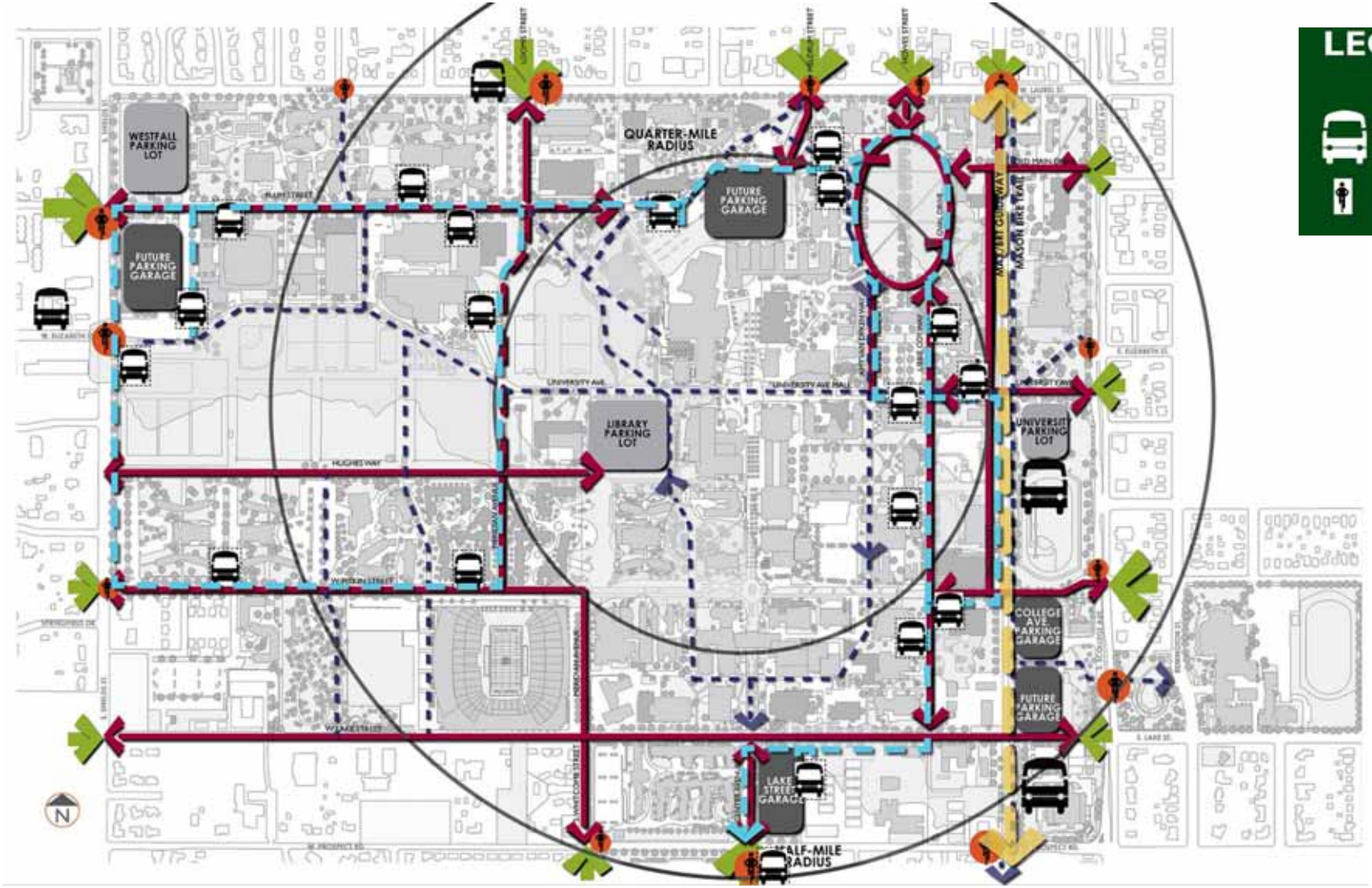
COLORADO STATE UNIVERSITY

Context: Bicycles



LEGEND

- Vehicular Entry into Campus
- Campus Road + Bike Lane
- MAX Bus Rapid Transit
- Around the Horn Campus Shuttle
- Major Bike / Pedestrian Crossing
- Bike Path

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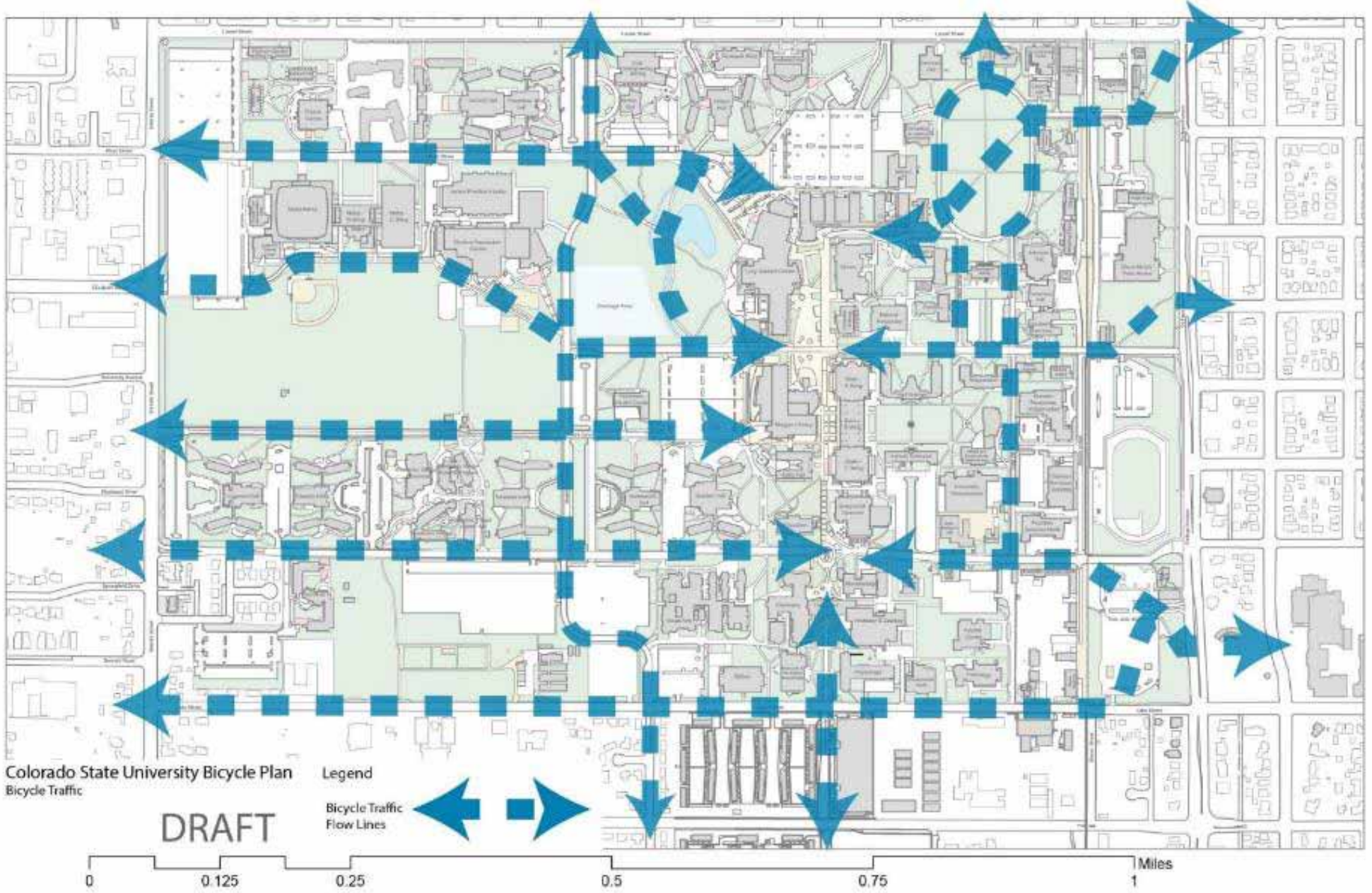

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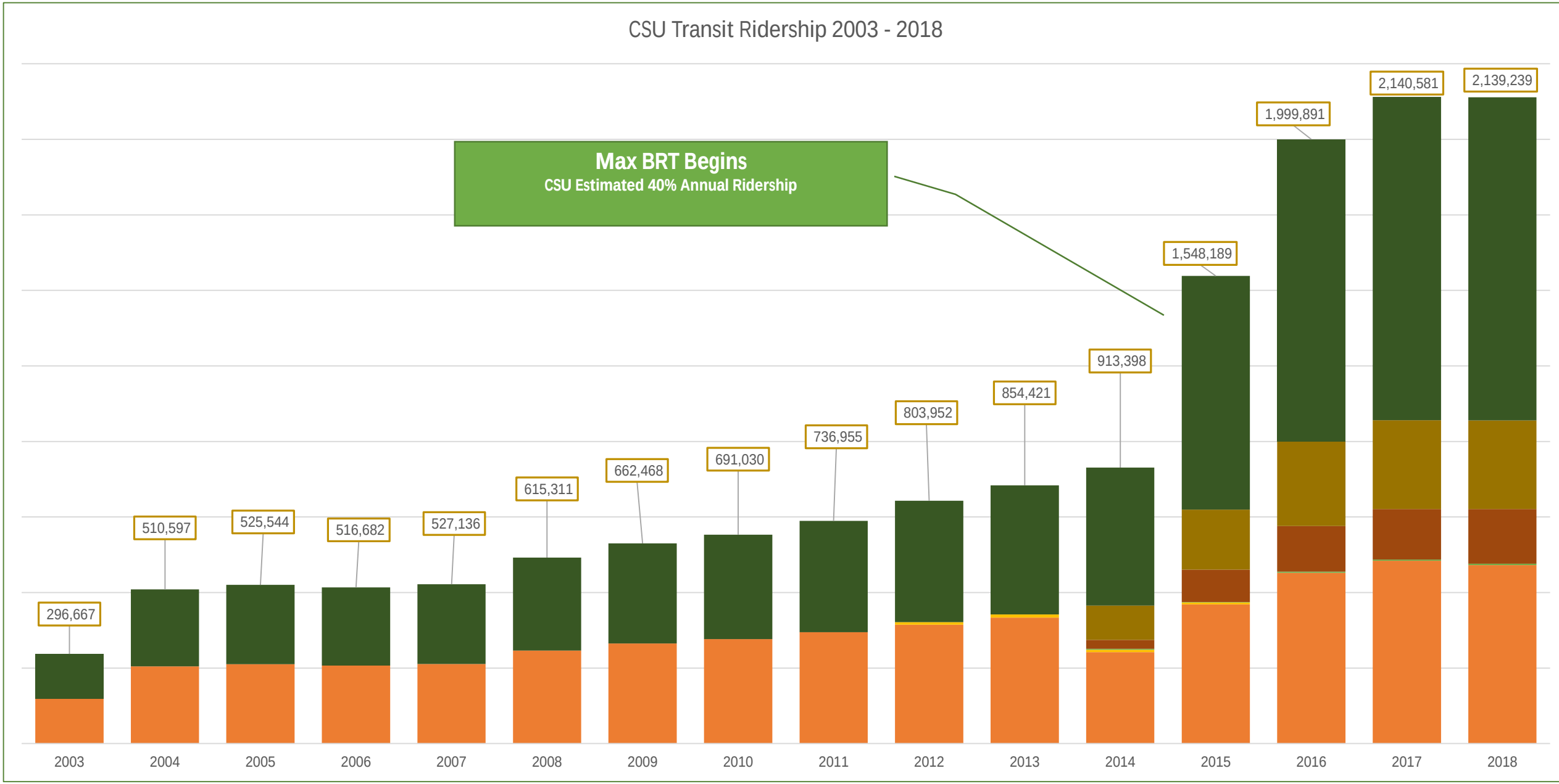
TRANSIT – WHAT ARE WE TRYING TO ACCOMPLISH?

PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

- Economies of Scale
  - Investment in Transfort
  - Systemwide Access / Regional Routes
  - Avoid Redundant, Competing Services (See CU)
- Access
  - Affordable Option
  - Shift Transportation Expenses to Rent/Mortgage
- Dedicated Corridors
  - Expedite Movement on Campus (Plum / Meridian / Mason)
  - Advocate for High-Frequency Corridors (MAX / West Elizabeth)
  - Reduce Interactions with Pedestrians / Longboards / E-Scooters / Bikes
- Reduce Demand for Land Dedicated to Parking Cars

TRANSIT AT CSU

PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY


CSU Transit Ridership 2003 - 2018
Max BRT Begins
CSU Estimated 40% Annual Ridership
296,667
510,597
525,544
516,682
527,136
615,311
662,468
691,030
736,955
803,952
854,421
913,398
1,548,189
1,999,891
2,140,581
2,139,239
2003
2004
2005
2006
2007
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2009
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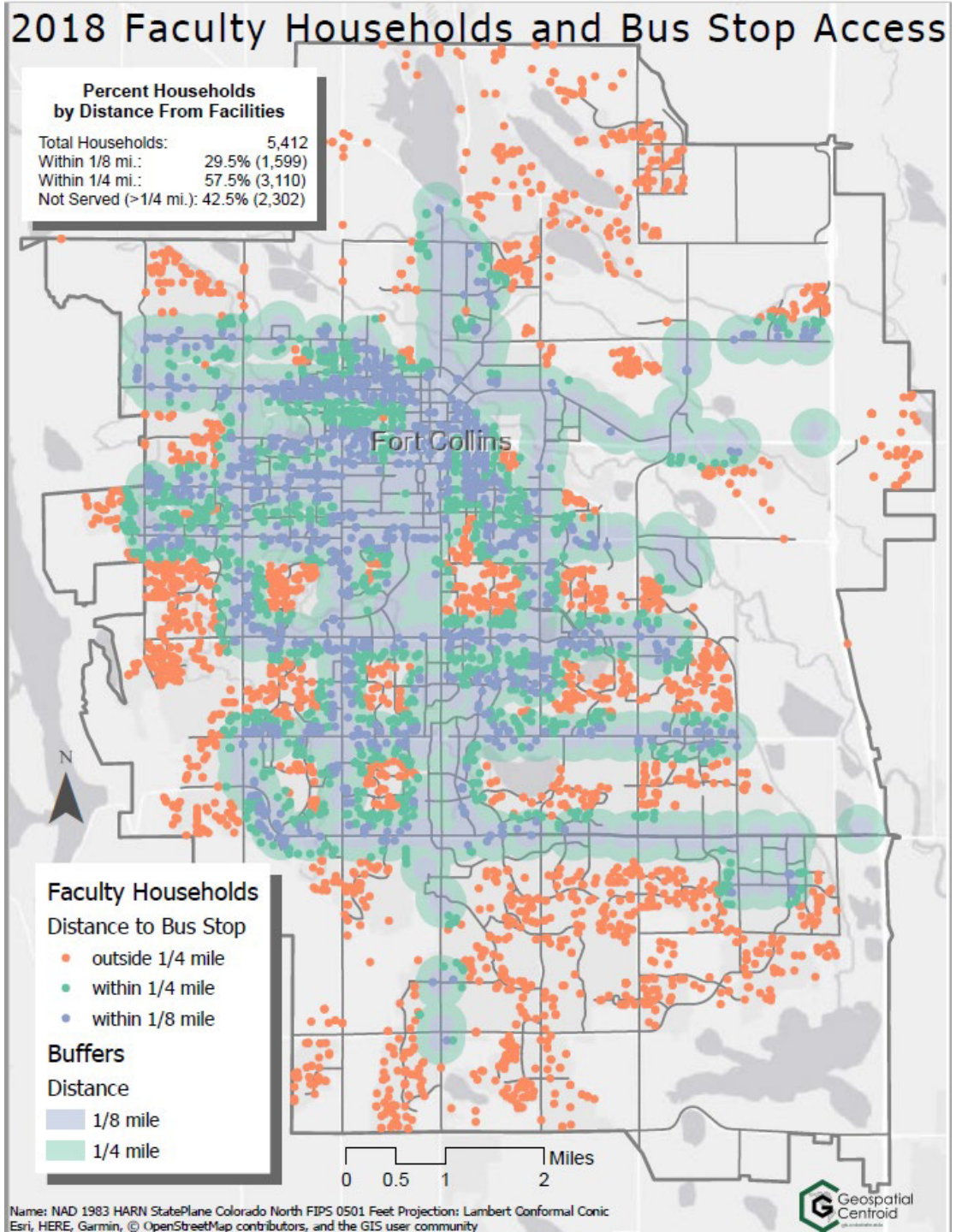
2011
2012
2013
2014
2015
2016
2017
2018

2018 Faculty Households and Bus Stop Access



PARKING AND TRANSPORTATION SERVICES

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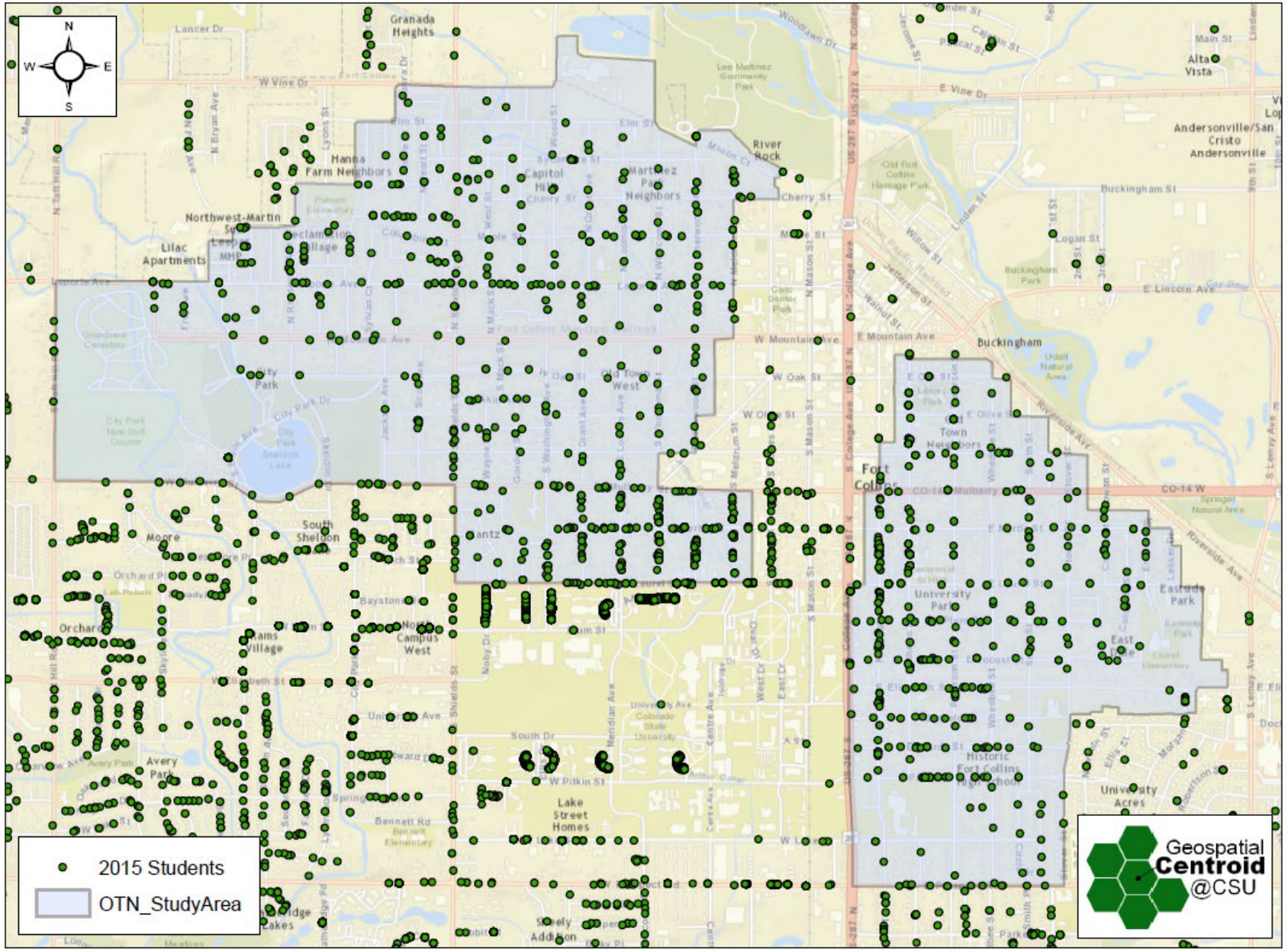
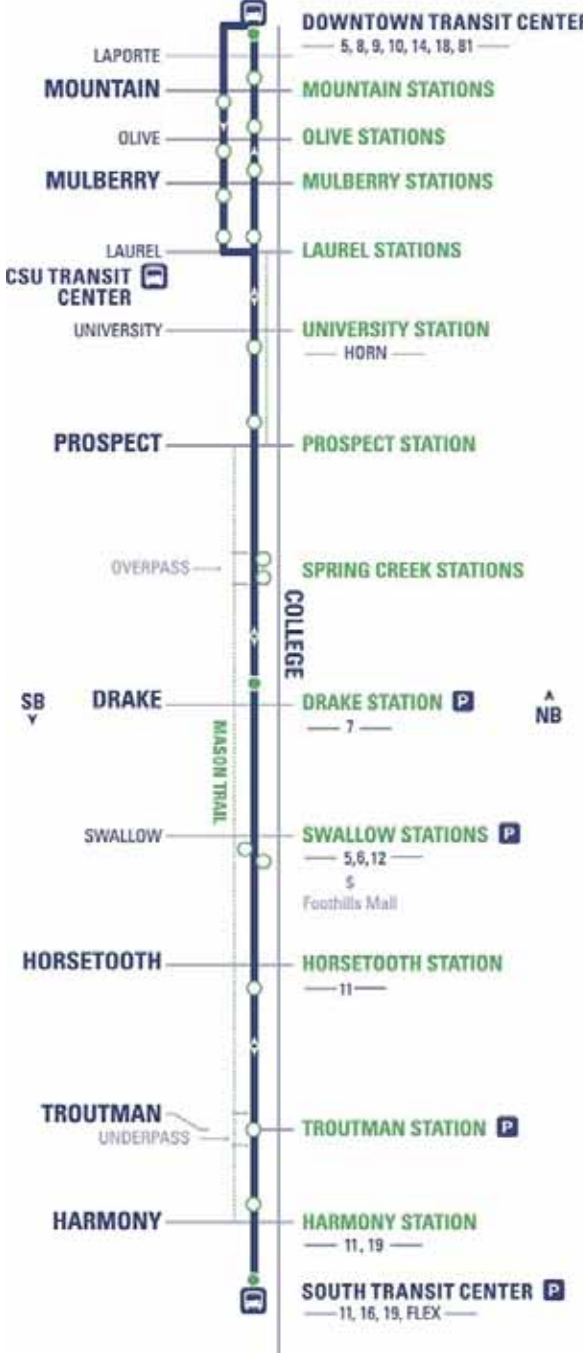
1,417 Students within OTN Study Area



PARKING AND TRANSPORTATION SERVICES

COLORADO STATE UNIVERSITY



West Elizabeth Enhanced Travel Corridor Plan

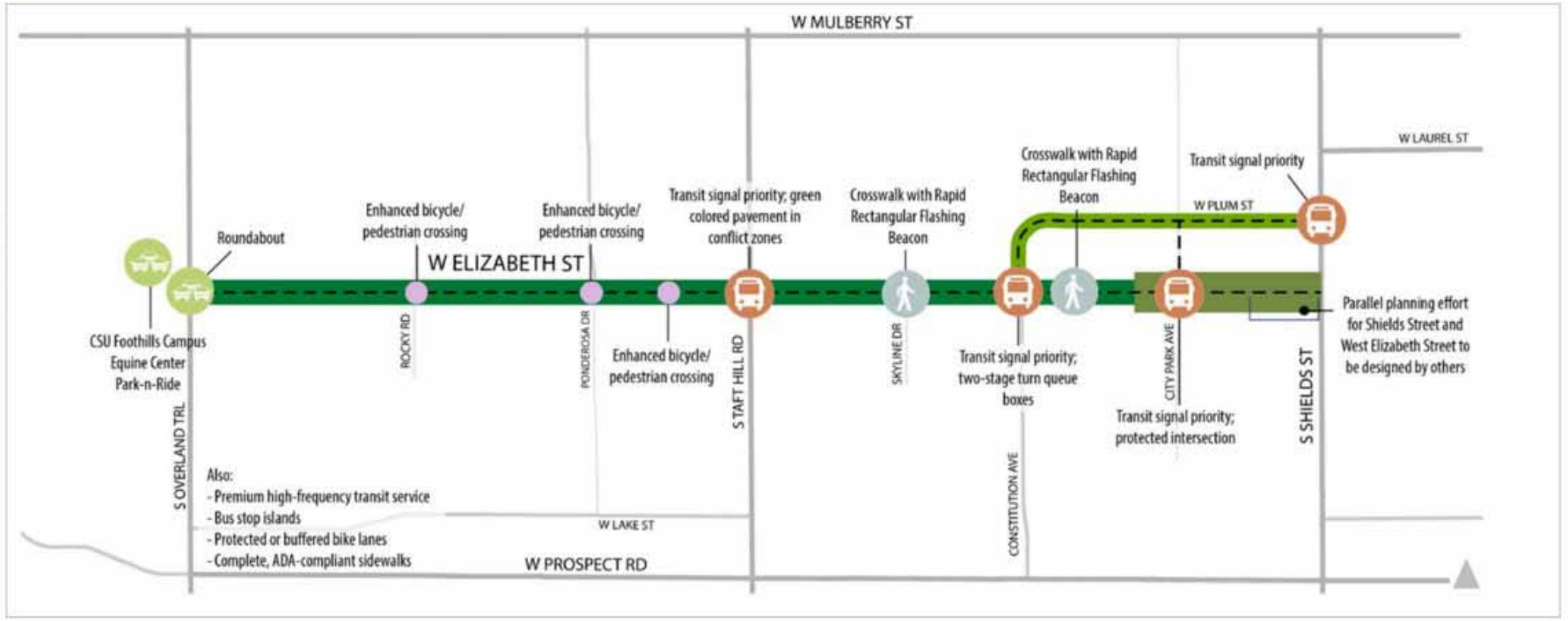
Project Summary Handout—Designs At-A-Glance

Four Travel Lanes with Left-Turns at Select Locations
Two Travel Lanes
Two Travel Lanes with Two-Way Left Turn Lane or Median
West Elizabeth Street Study Corridor

Recommended Design

The Recommended Design includes enhancement for all modes. Key elements are listed in the table below and the locations of improvements are depicted on the Recommended Design At-a-Glance figure that follows

Figure 1: Recommended Design At-A-Glance Map below.



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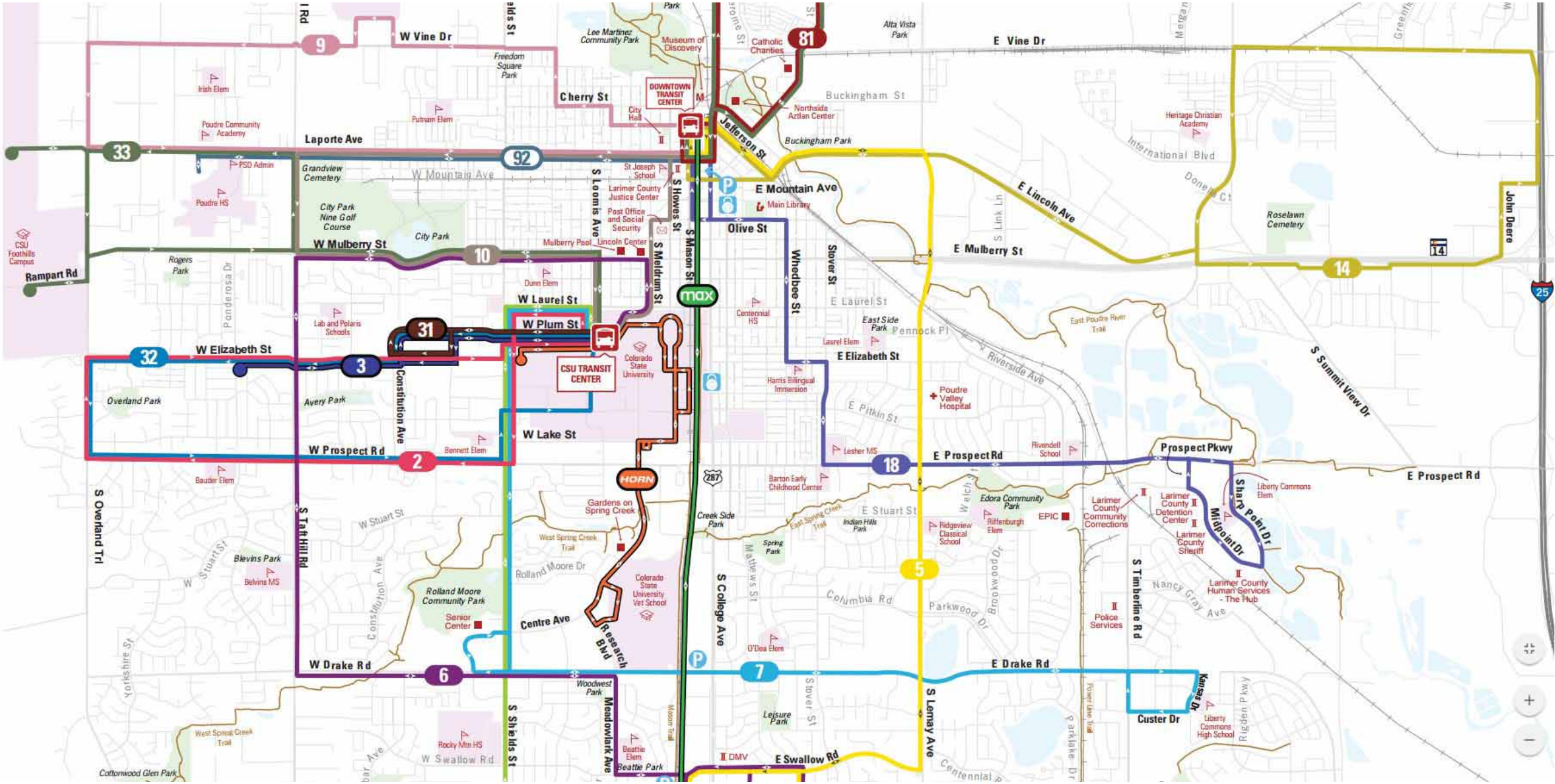
W Vine Dr
E Vine Dr
Cherry St
Laporte Ave
W Mountain Ave
E Mountain Ave
Olive St
W Mulberry St
E Mulberry St
W Laurel St
E Laurel St
W Plum St
W Elizabeth St
E Elizabeth St
W Lake St
W Prospect Rd
E Prospect Rd
Prospect Pkwy
W Drake Rd
E Drake Rd
Centre Ave
Columbia Rd
E Swallow Rd
W Swallow Rd
W Stuart St
E Stuart St
Buckingham St
Pennock Pl
E Pitkin St
Riverside Ave
Rampart Rd
Ponderosa Dr
Constitution Ave
S Overland Trl
S Taft Hill Rd
S Shields St
S College Ave
S Lemay Ave
Research Blvd
Meadowlark Ave
Rolland Moore Dr
Woodwest Park
Rolland Moore Community Park
Overland Park
Avery Park
Blevins Park
Cottonwood Glen Park
Leisure Park
Beattie Park
Creek Side Park
Spring Park
Indian Hills Park
East Side Park
Alta Vista Park
Roselawn Cemetery
Freedom Square Park
Lee Martinez Community Park
Grandview Cemetery
City Park Nine Golf Course
City Park
Rogers Park
Museum of Discovery
Buckingham Park
East Poudre River Trail
West Spring Creek Trail
East Spring Creek Trail
Mason Trail
Power Line Trail
Parklake Dr
Brookwood Dr
Parkwood Dr
Mathews St
Stover St
Whedbee St
S Howes St
S Loomis Ave
S Meldrum St
S Mason St
S Link Ln
Donella Ct
International Blvd
Nancy Gray Ave
Rigden Pkwy
Kansas Dr
Custer Dr
S Timberline Rd
S Summit View Dr
Sharp Point Dr
Midpoint Dr
John Deere
Jefferson St
Welch St
Yorkshire St
Irish Elem
Poudre Community Academy
Putnam Elem
PSD Admin
Poudre HS
CSU Foothills Campus
Lab and Polaris Schools
Dunn Elem
Bennett Elem
Bauder Elem
Belvins MS
Rocky Mtn HS
Beattie Elem
Senior Center
Mulberry Pool
Lincoln Center
St Joseph School
Larimer County Justice Center
Post Office and Social Security
Main Library
Centennial HS
Harris Bilingual Immersion
Laurel Elem
Lesher MS
Barton Early Childhood Center
O'Dea Elem
Ridgeview Classical School
Riffenburgh Elem
Edora Community Park
Rivendell School
Poudre Valley Hospital
EPIC
Larimer County Community Corrections
Larimer County Detention Center
Larimer County Sheriff
Larimer County Human Services - The Hub
Police Services
Liberty Commons Elem
Liberty Commons High School
Heritage Christian Academy
Northside Aztlan Center
Catholic Charities
City Hall
DOWNTOWN TRANSIT CENTER
CSU TRANSIT CENTER
Colorado State University
Colorado State University Vet School
Gardens on Spring Creek
HORN
max
DMV
9
33
92
10
31
32
3
2
6
7
81
14
18
5
287
25

TRANSIT CENTER

PARKING AND
TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

CSU UNC Employee and Student Address Locations

- UNC Student, Fort Collins (525)
- UNC Student, Loveland (239)
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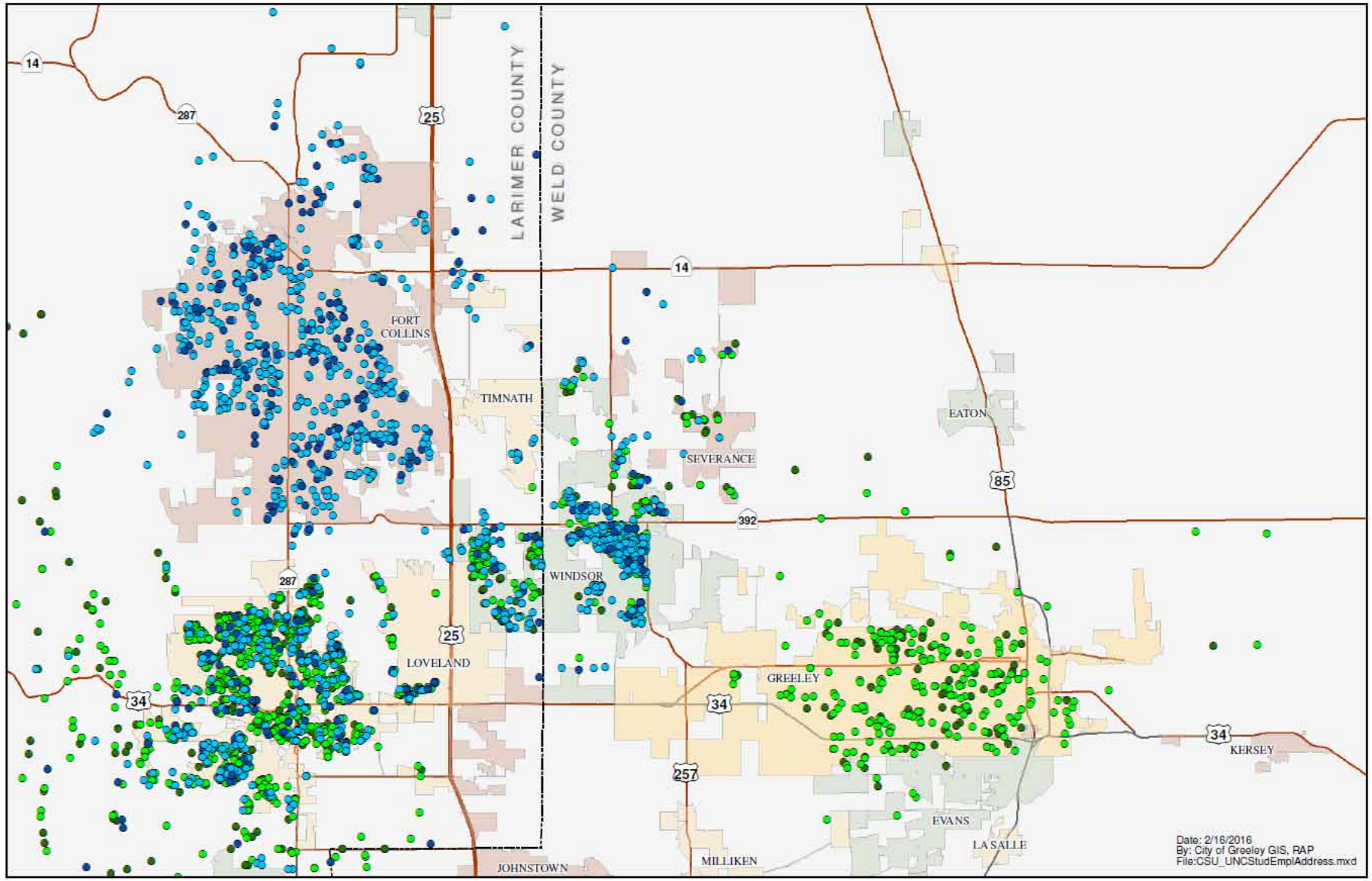

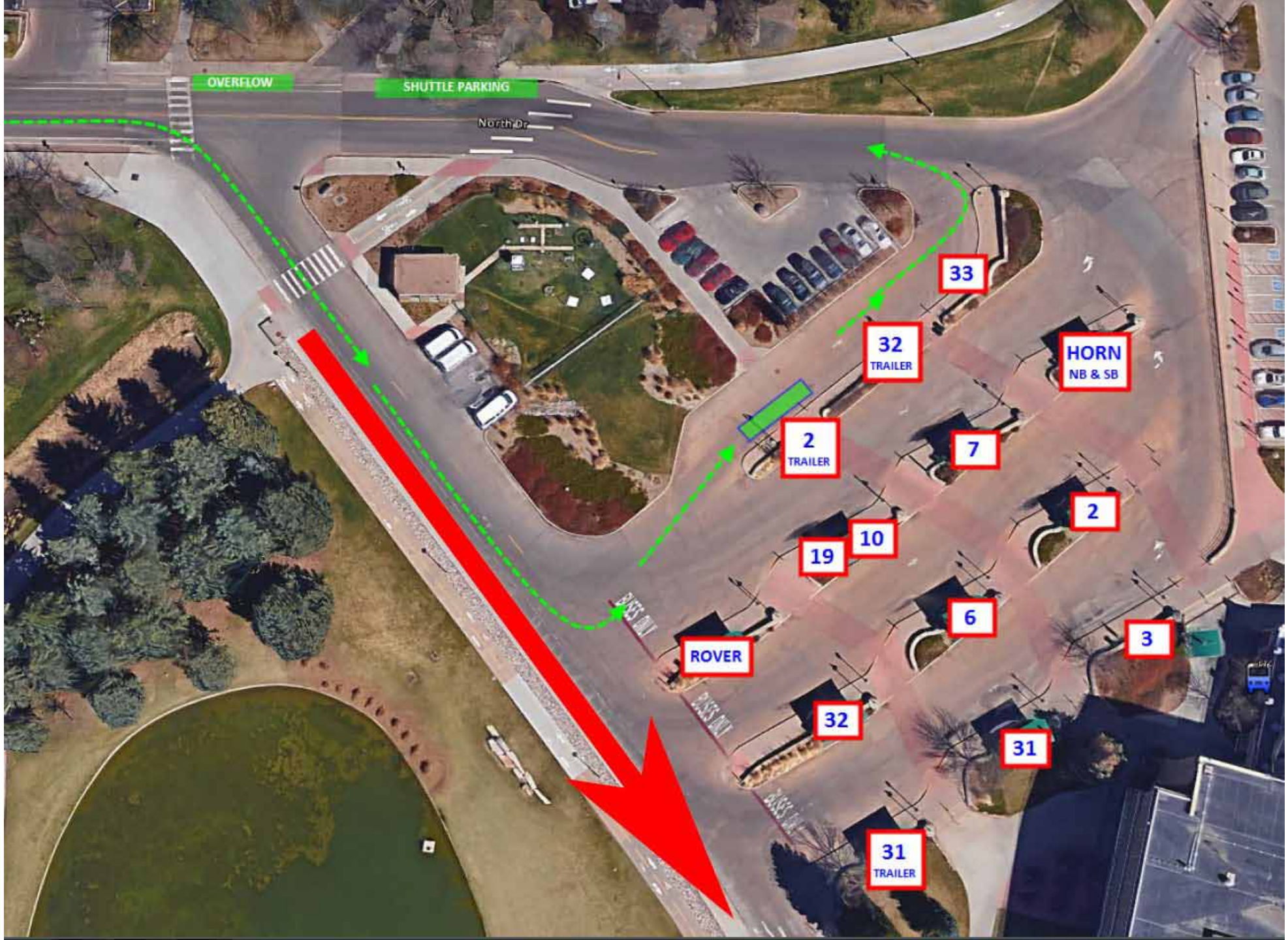
OVERFLOW
SHUTTLE PARKING
North Dr
33
32
TRAILER
HORN
NB & SB
2
TRAILER
7
2
19
10
6
3
ROVER
32
31
31
TRAILER

DEFACTO BAY

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PRIVATE SHUTTLES

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AIRPORT SHUTTLE

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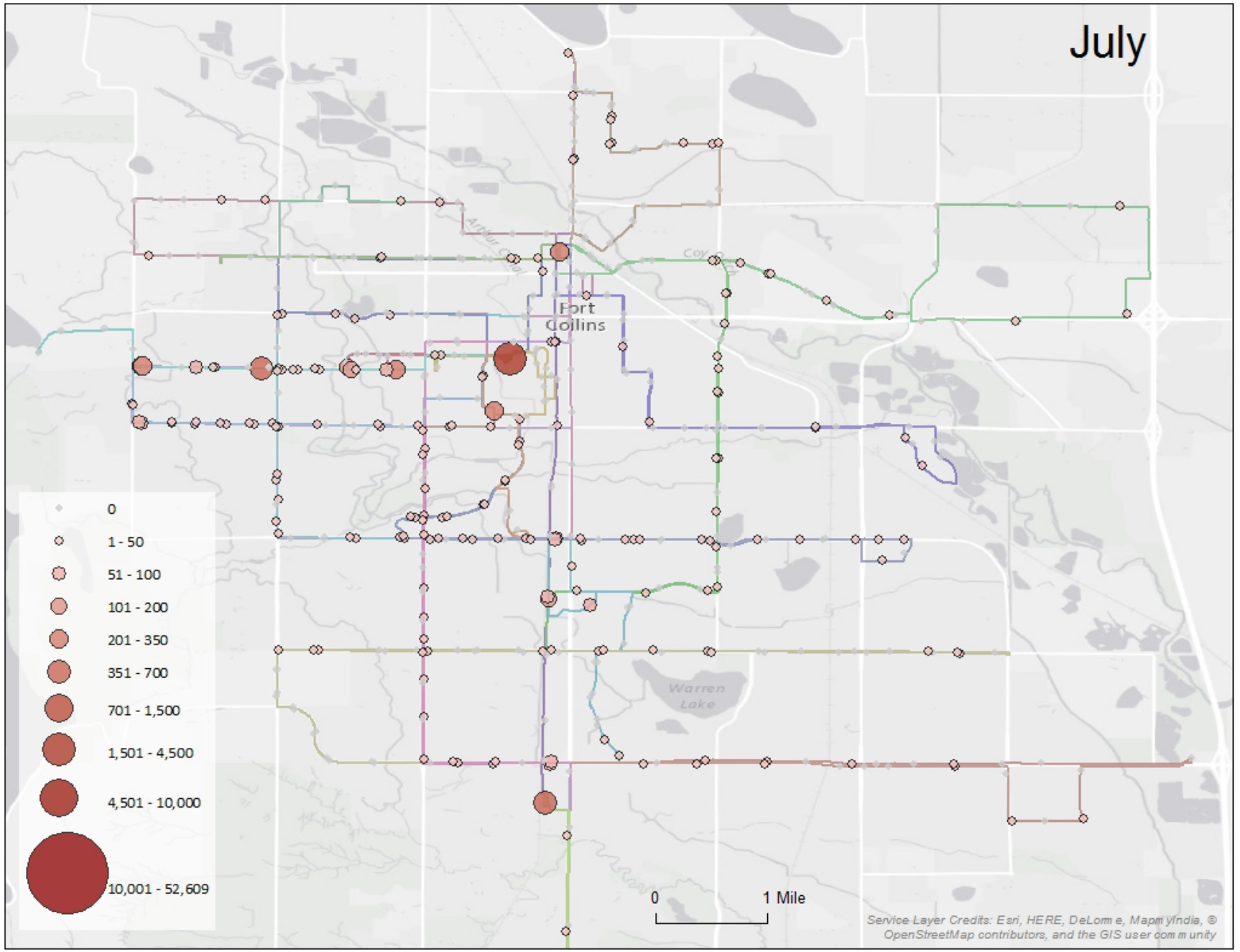
AROUND THE HORN

PARKING AND TRANSPORTATION SERVICES

COLORADO STATE UNIVERSITY



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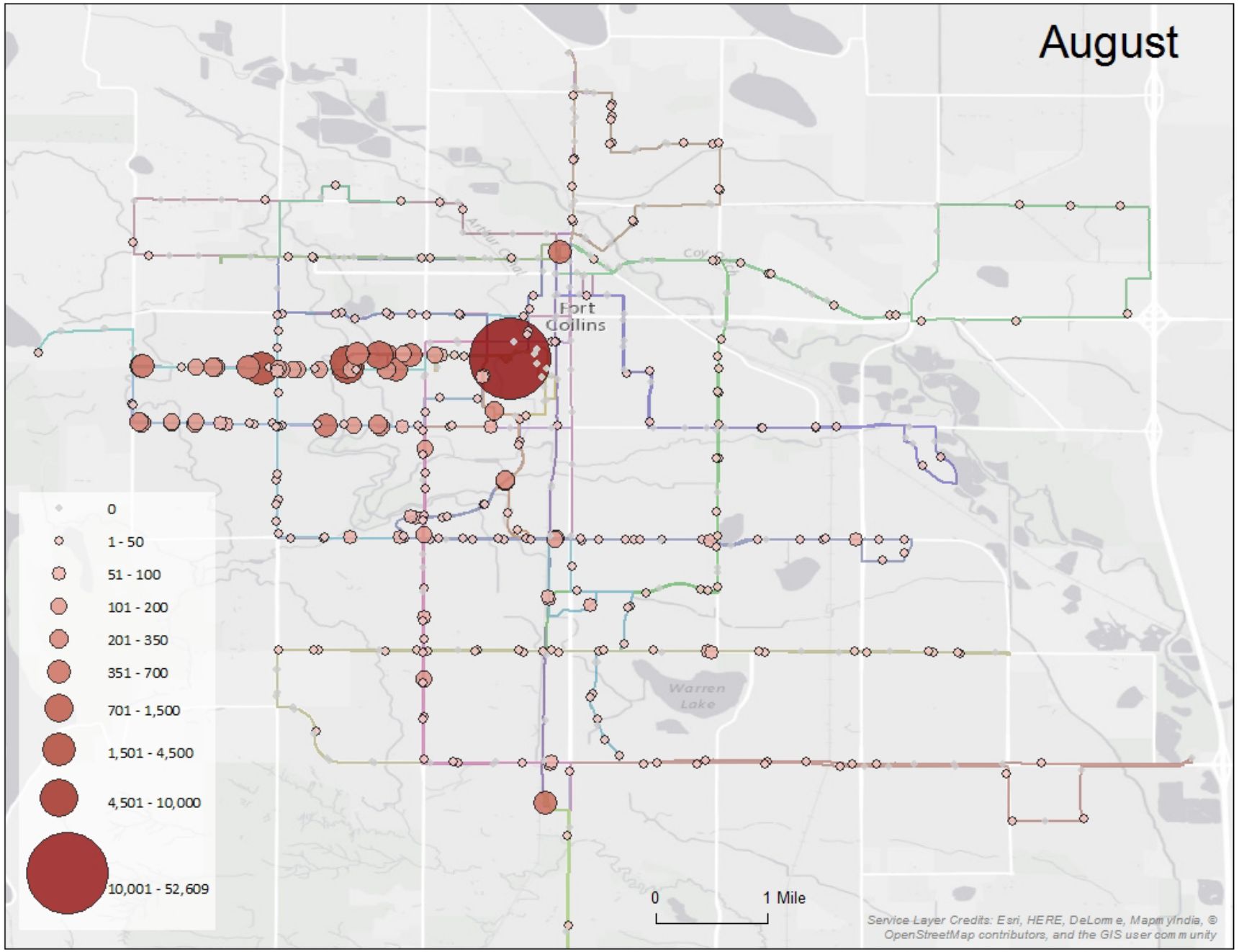
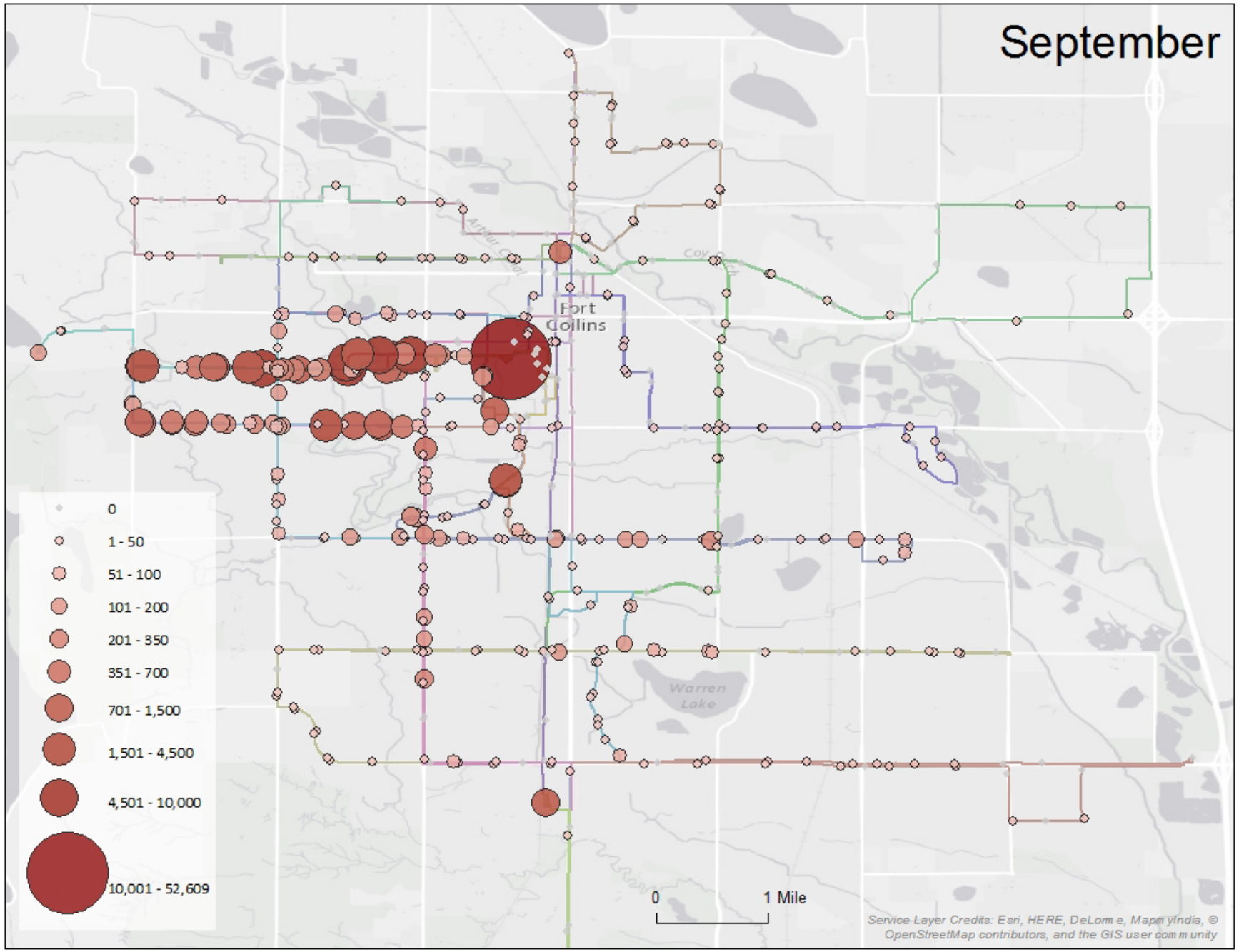
COLORADO STATE UNIVERSITY



PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY



PARKING AND TRANSPORTATION SERVICES
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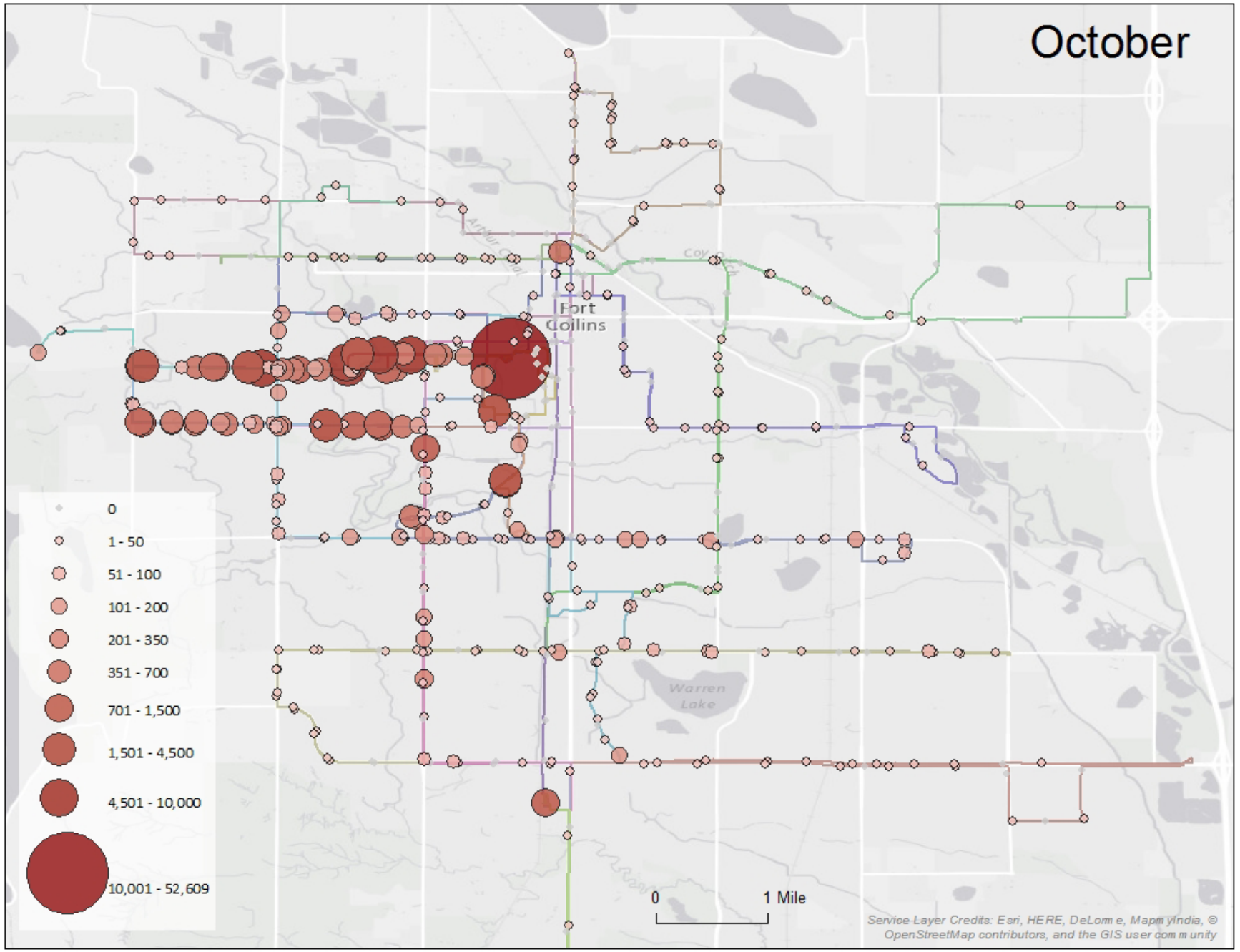


PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

BICYCLE – WHAT ARE WE TRYING TO ACCOMPLISH?

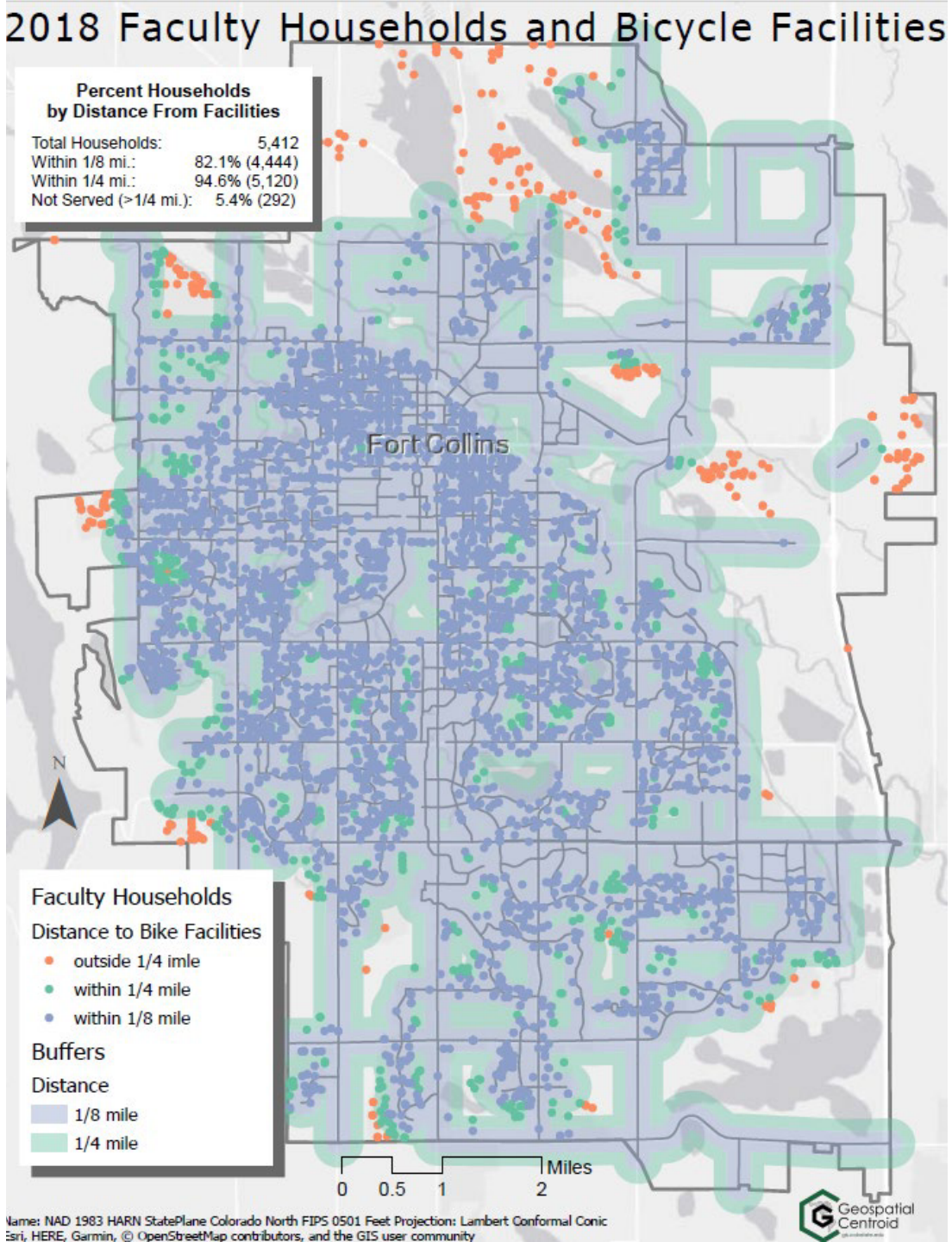
PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

- Leverage Municipal Bicycle Infrastructure
  - Bicycle Platinum City
  - Eliminate Conflict on Perimeter of Campus
  - Low-Stress Bikeways Through Campus
- Separate Bikes from Roadway / Intersections
  - Attractive Trail Network
  - 3 Underpasses and Multiple Flashing Beacons
  - Buffered Bike Lanes Precursor to Protected Lanes
- Separate Bikes from Pedestrians
  - Landscaped Separations
  - Transition Closed Streets to Separated Trails
- Reduce Demand for Land Dedicated to Parking Cars

BICYCLING AT CSU

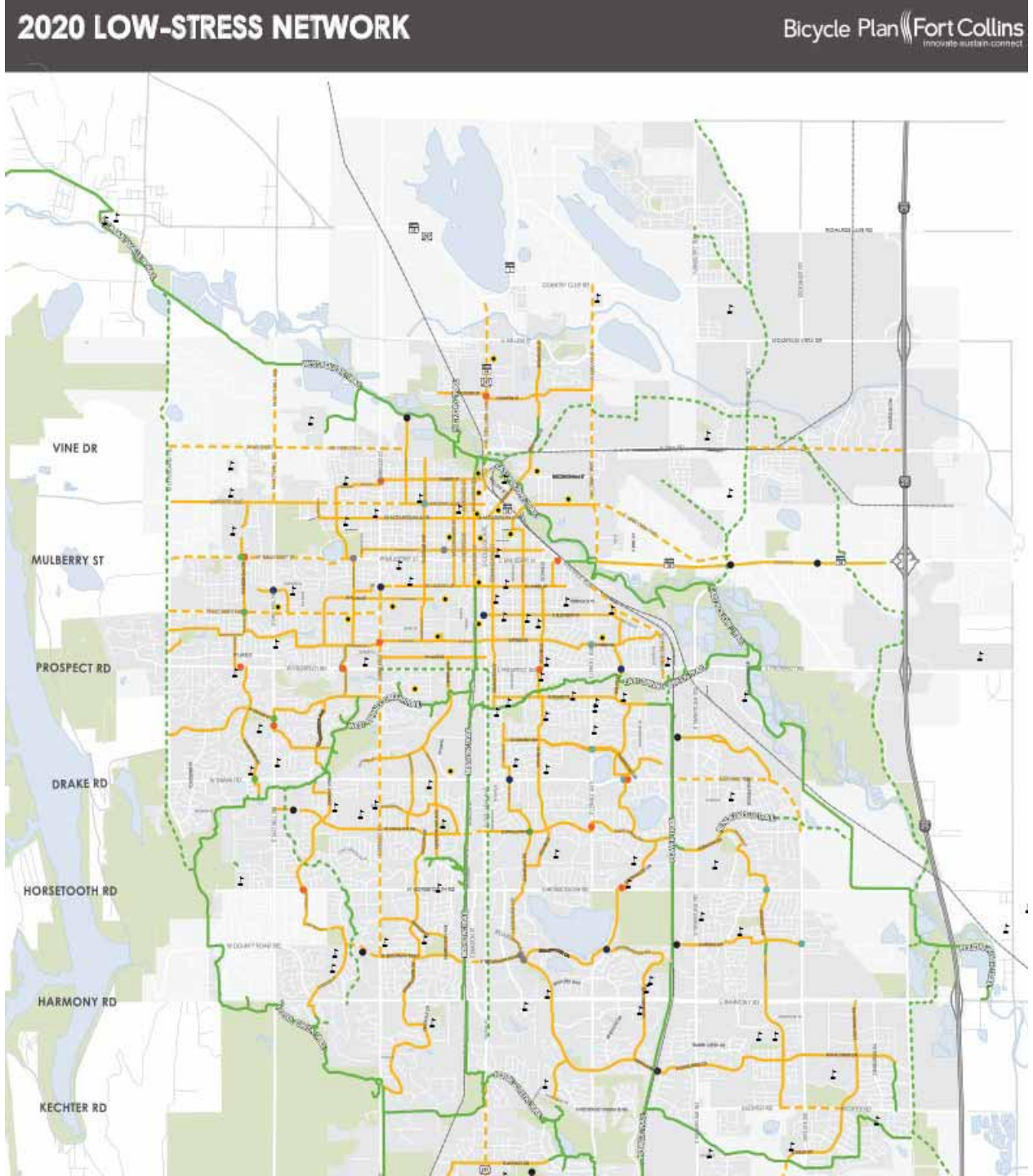
PARKING AND TRANSPORTATION SERVICES
COLORADO STATE UNIVERSITY

2018 Faculty Households and Bicycle Facilities



PARKING AND TRANSPORTATION SERVICES

COLORADO STATE UNIVERSITY

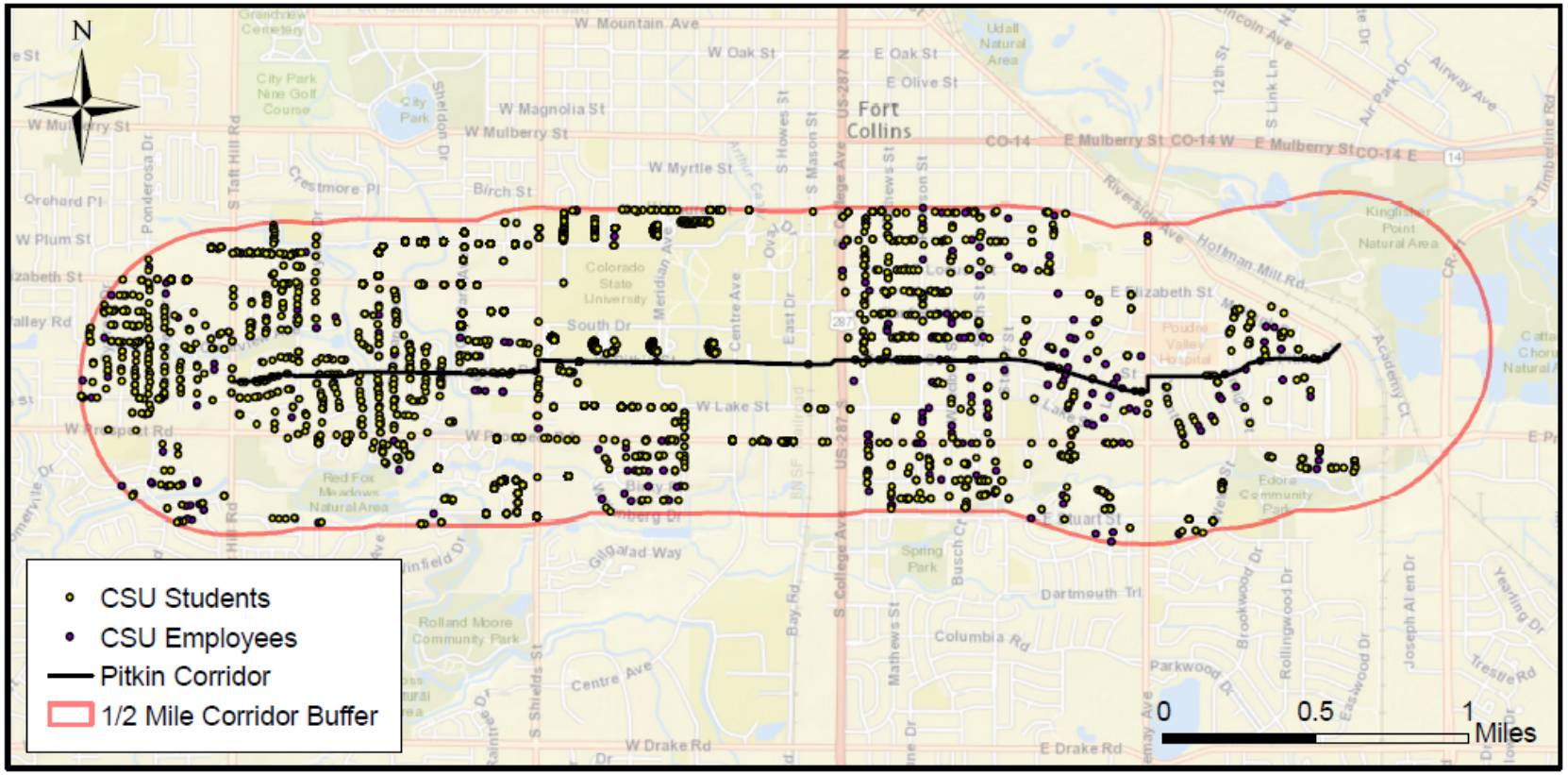


BIKEWAYS TO SAFETY

PARKING AND TRANSPORTATION SERVICES

COLORADO STATE UNIVERSITY

Pitkin Low Stress Bicycle Corridor



CSU Students within Buffer	6,582
CSU Employees within Buffer	1,219

REINVENTING THE WHEEL
Parking and Transportation Services
Your Guide to Navigating Campus

Cartographic Services Provided By:

Erick Kelly
Intern - Geospatial Centroid at CSU

Geospatial Centroid @CSU

Date: October 6, 2014

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BIKE RACKS AS INTERCEPT TOOL

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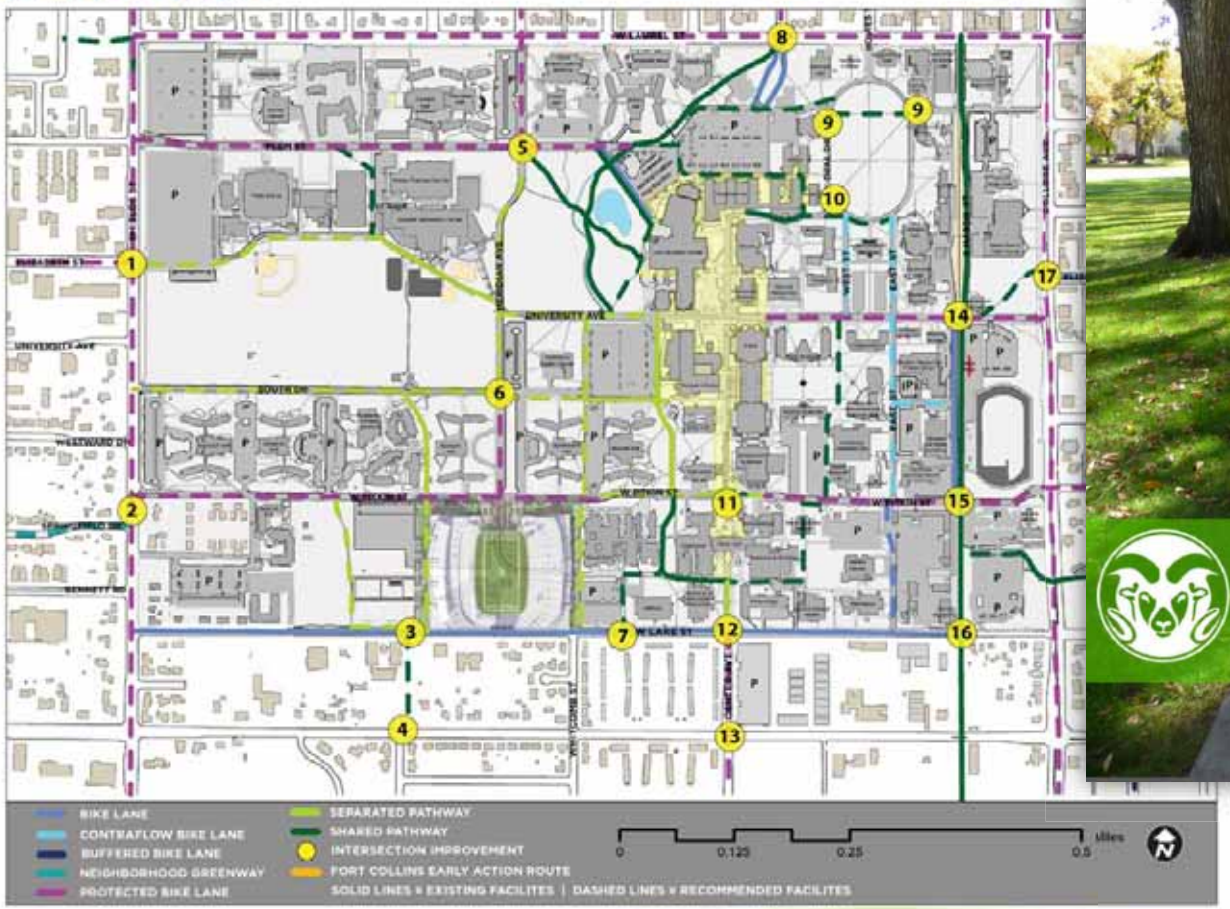
CSU Draft Bicycle Network

The draft bicycle network consists of linear improvemments, such as separated pathways and protected bike lanes, and spot improvements which are detailed below.

1. Protected bike lane intersection
2. Median crossing
3. Raised crosswalk
4. Pedestrian/bicycle signal
5. Raised intersection
6. Protected bike lane intersection with mini circle
7. New crosswalk
8. Protected bike lane intersection
9. New crosswalks
10. Raised crosswalk
11. Open dismount zone
12. (Still under study)
13. Planned underpass
14. Ped/bike yield with swing arm for MAX
15. Ped/bike yield with swing arm for MAX
16. Ped/bike yield with swing arm for MAX
17. Additional crosswalk + curb cut OR two-way cycle track on north side of Elizabeth

Protected bike lane intersection in Rotterdam, Netherlands



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BUFFERED BIKE LANES

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SEPARATED TRAILS (BLVD.)

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NATIVE LANDSCAPING

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TRANSITIONING STREETS

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PROTECTED BIKE LANES/TRACKS

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ROUNDABOUT

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DAILY NEXUS
Tuesday , October 8 , 2019 UNIVERSITY OF CALIFORNIA, SANTA BARBARA

New Bicycle Roundabout Implemented in an Effort To Reduce Accidents

August 27, 2015 at 5:00 am by Devon Dieling

Christina DeMarzo/Daily Nexus

The Associated Students Bike Committee completed renovations of the new bicycle roundabout between Campbell Hall, the Recreation Center and the bus loop in July of this summer.

Construction of the roundabout occurred after years of students complaining about accidents near the Student Affairs and Administrative Services Building (SAASB) intersection. The new roundabout was constructed on top of the existing high-traffic T-intersection, paid in full by the university which will be reimbursed through A.S. Bike Committee student fees.

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BIKE ROUNDABOUT

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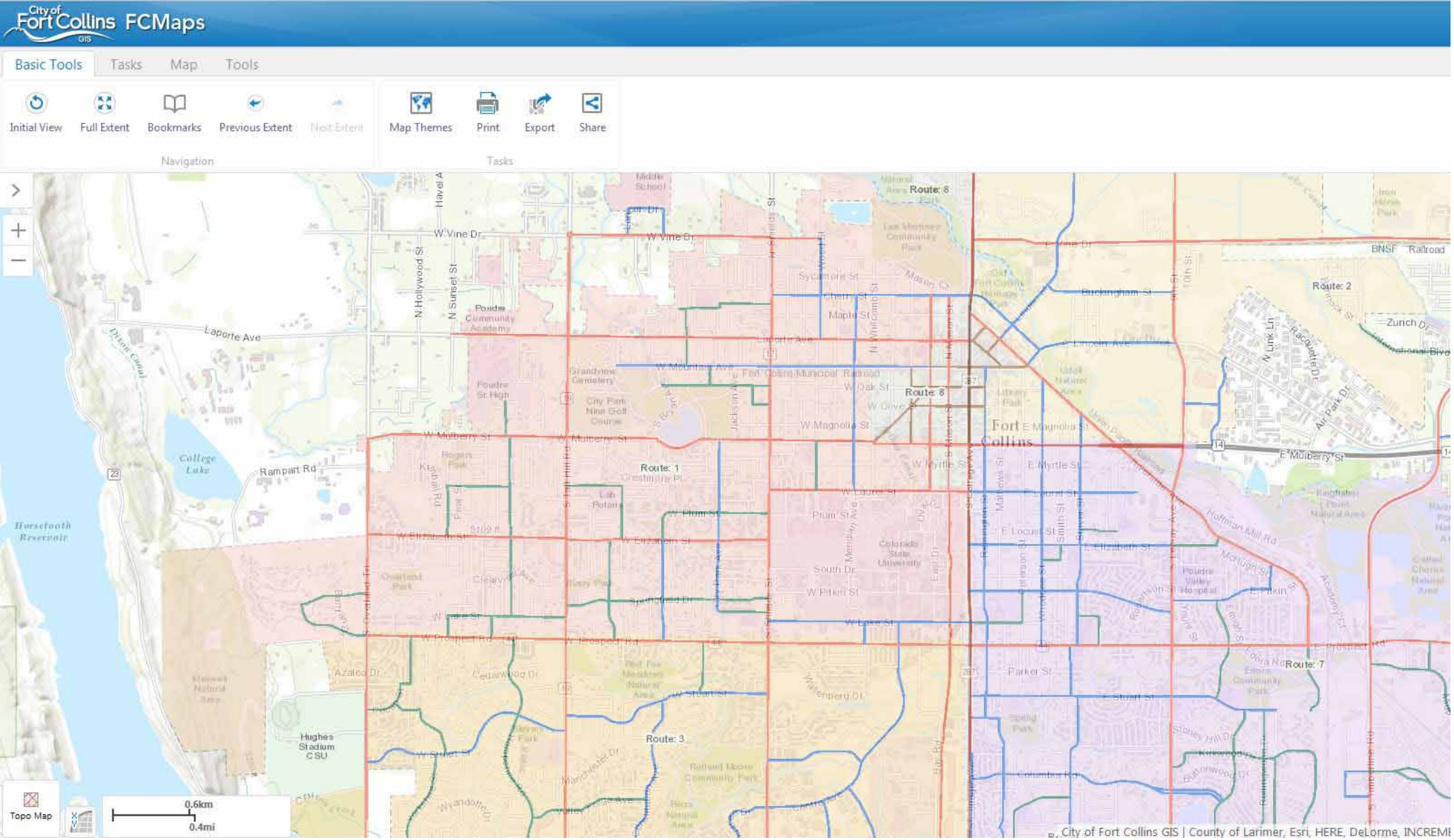

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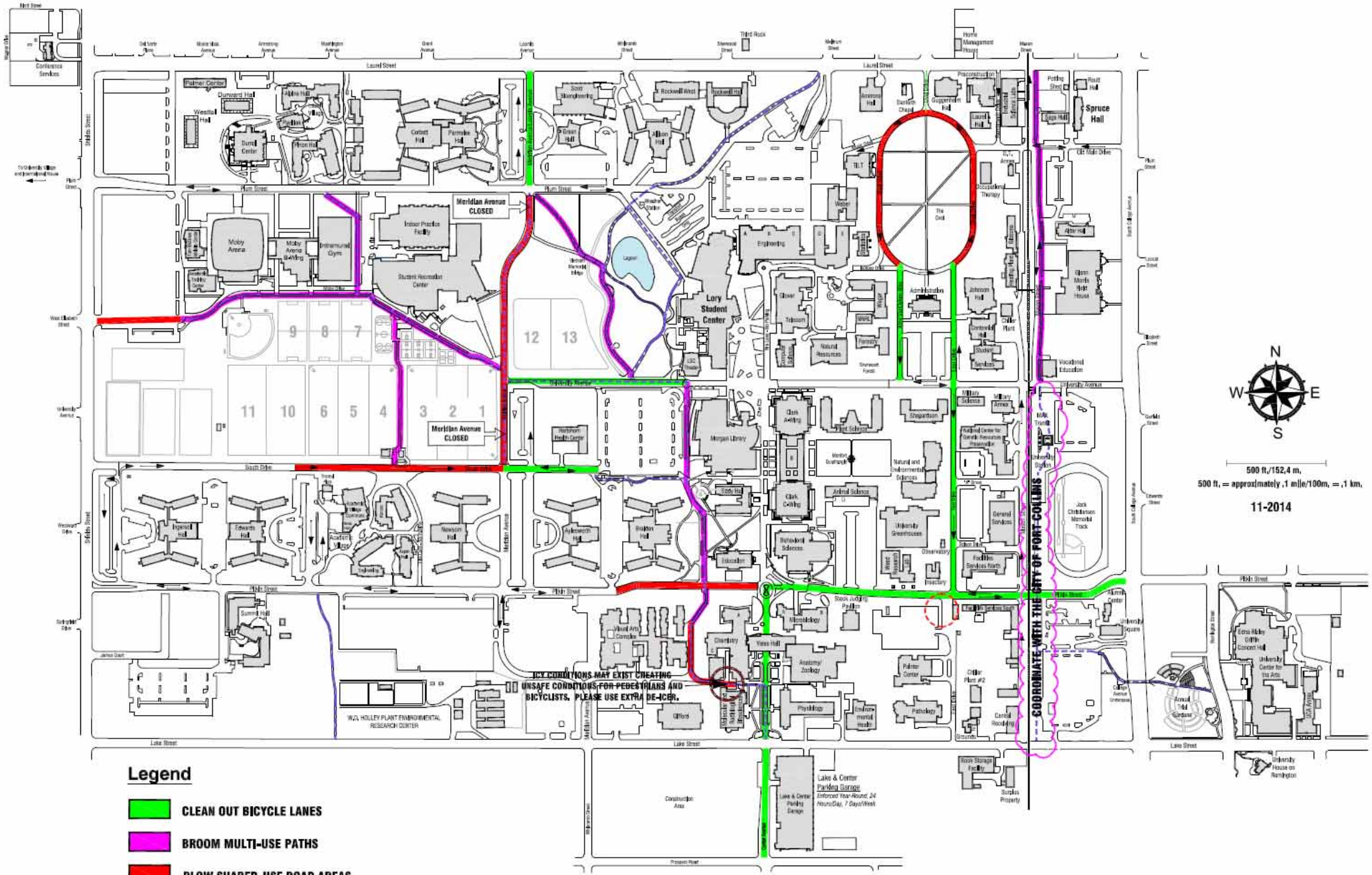
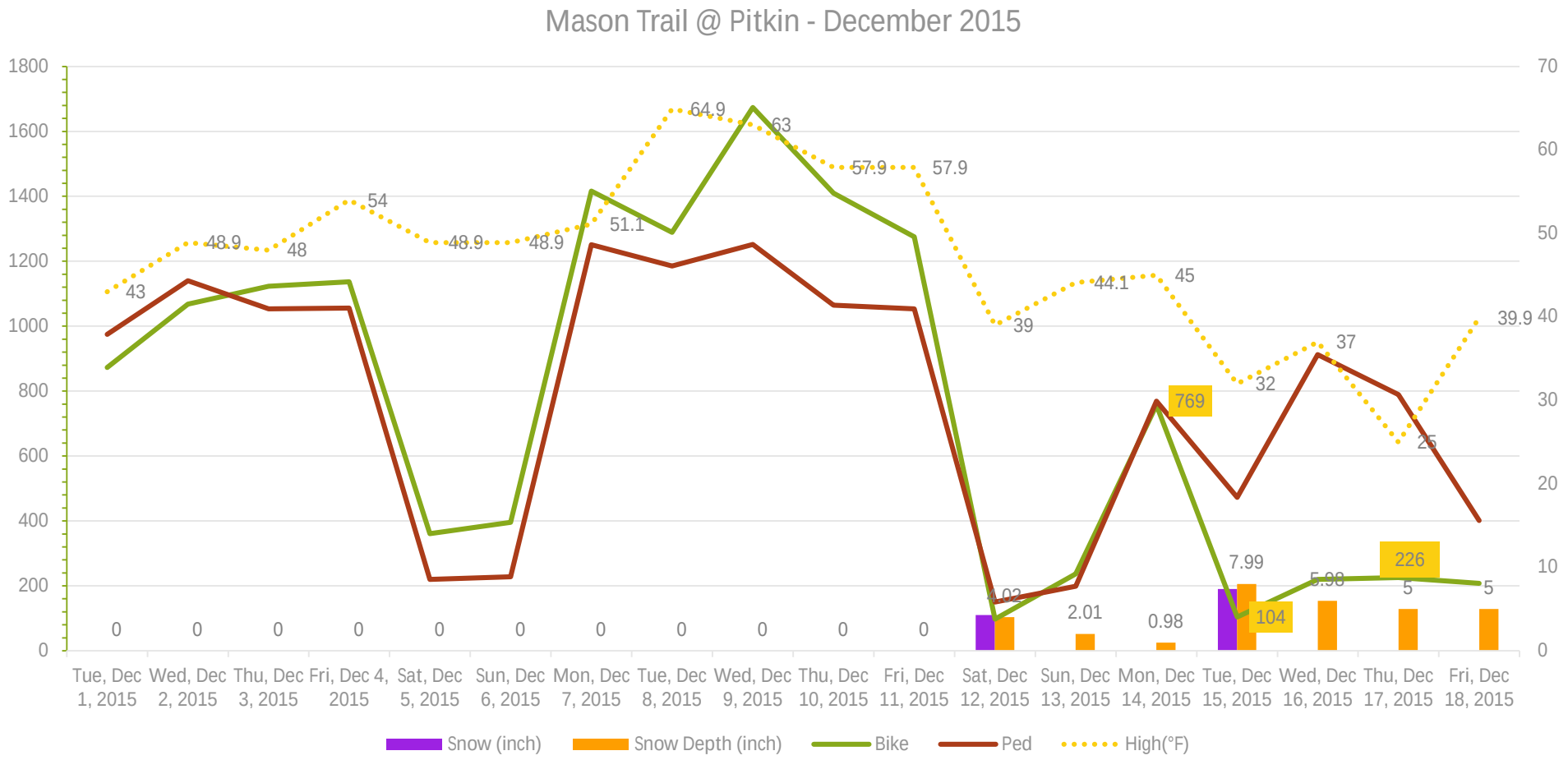
Priority Snow Removal Routes for Bicycle Access





Weather Data: http://www.usclimatedata.com/climate/fort-collins/colorado/united-states/usco0140

BEHAVIORAL SOLUTIONS
EDUCATION AND ENFORCEMENT

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EDUCATION AND ENFORCEMENT

- Will I have a lesser experience without a car at CSU?
  - Stuck on campus?
  - Can I get to Denver? Mountains?
- Educate Regarding Operating in a Roadway
  - First time bicyclists / longboarders / e-scooters
  - Postponing Driving (and Driver's Educations)
  - Reward good behavior
- Simplify Right-Of-Way at Intersections
- Enforcement Supports Education
  - Reinforces education / Word of Mouth
  - Less expensive solution than infrastructure
  - Dependent on CSUPD ability to enforce
- Reduce Demand for Land Dedicated to Parking Cars

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Dashboard

1 Counting Sites
2 Attributes
3 Period

Standard | A/B Comparison NEW

Start Date: 01/11/2016
End Date: 01/22/2016

-- Predefined Period --

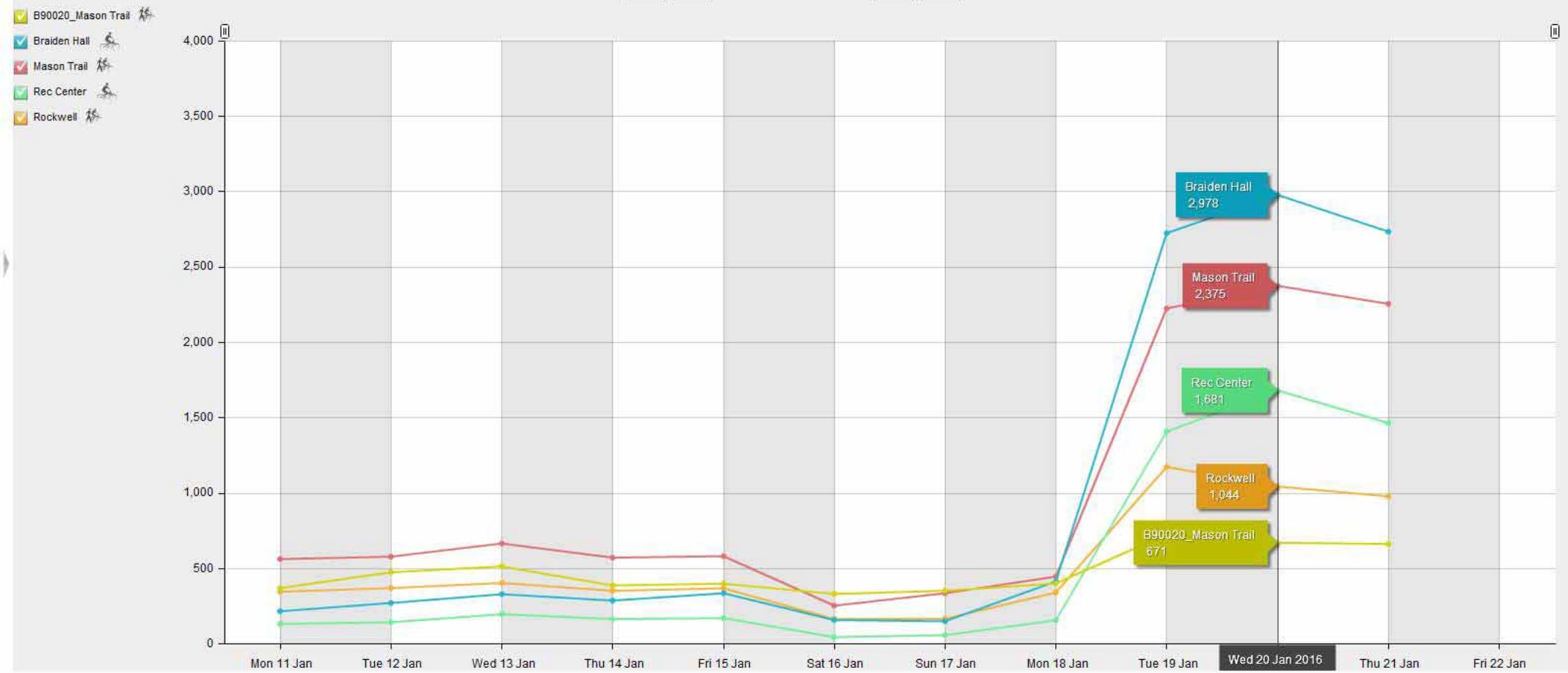
Interval: 15' | H | D | W | M | Q | Y

Exclusions

Exclusions Management

4 Analysis Formats

<< < 01/11/2016 - 01/22/2016 > >>



Dashboard

1 Counting Sites
2 Attributes
3 Period

Start Date 10/21/2015
End Date 10/21/2015

-- Predefined Period --

Interval

15' | H | D | W | M | Q | Y

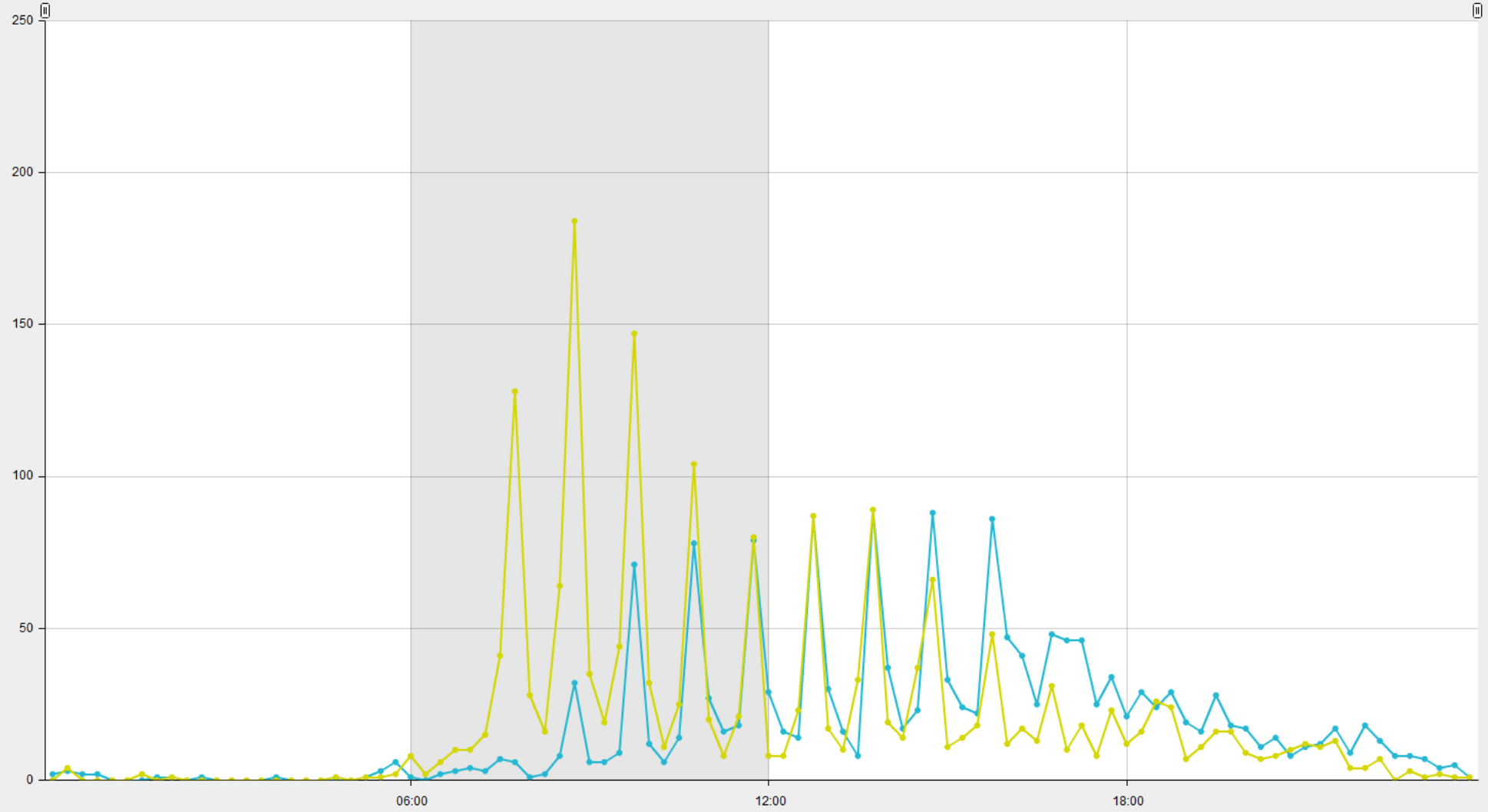
Exclusions

Exclusions Management

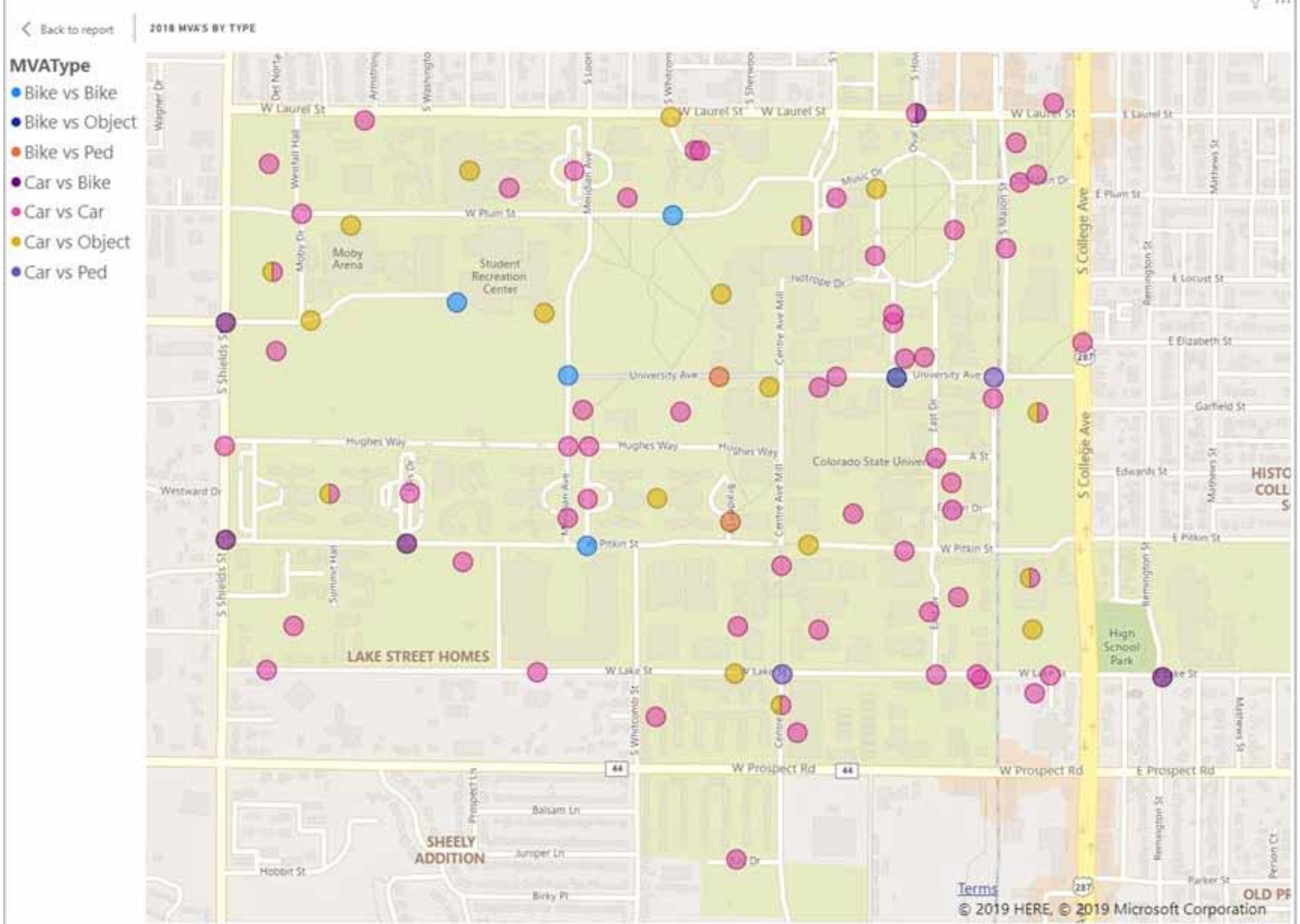
4 Analysis Formats

< 10/21/2015 - 10/21/2015 >

Braiden Hall - Cyclists South
Braiden Hall - Cyclists North



Back to report | 2018 MVA'S BY TYPE



VIDEO OF EDUCATION / ENFORCEMENT

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