

# PLANNING FOR INCREASED PERSONAL MOBILITY

## SUN VALLEY NEIGHBORHOOD DENVER, CO

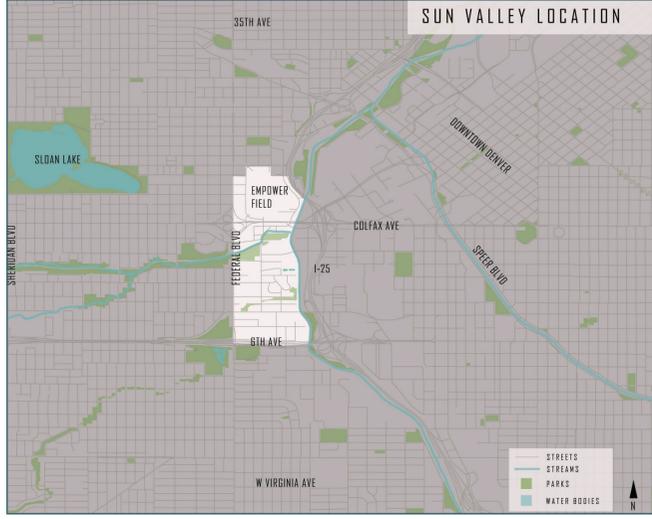
### PROBLEM STATEMENT AND PROJECT GOALS

#### PROBLEM STATEMENT

Sun Valley is a historically poor neighborhood in Denver, Colorado and residents have limited access to alternative modes of transportation, such as e-bikes and e-scooters, to get them to frequented destinations. Additionally, gaps within the bike facility network in and around Sun Valley hinder safe access to frequented destinations and do not encourage the use of ultra-light duty electric vehicles (ULDEVs) or other personal modes of transportation.

#### PROJECT GOALS

- Work towards improving air quality through promoting a larger array of clean transportation options such as ULDEVs
- Work towards increasing equity through improving publicly available transportation systems
- Increase Sun Valley residents' access to frequented destinations
- Study how ULDEVs can help improve transportation options



Dockless e-scooter parked at the RTD Decatur-Federal Station



Lakewood Dry Gulch Trail

### ULDEVs: A NEW MODE OF TRANSPORTATION

#### BACKGROUND

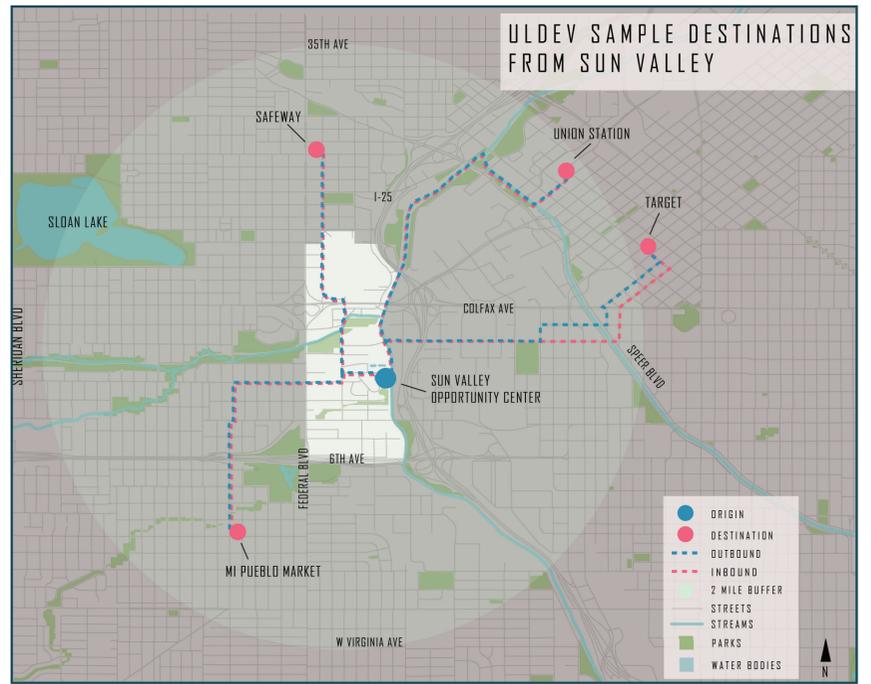
ULDEVs are commonly offered for per-minute rentals by private fleet operators in larger cities throughout the United States. While traditional bike share systems have been a model for shared mobility by using "docks" throughout a coverage area as fixed starting and ending points for trips, most companies in the ULDEV space operate "dockless" fleets. These fleets are composed of vehicles that are typically unlocked via smartphone app and that can be left within the public right-of-way by users at the end of trips.

#### KEY FINDINGS & RECOMMENDATIONS

**ULDEVs allow for trips that are quicker, cheaper, and easier than both public transit and traditional bicycles.** During real-world round trips to potential destinations in Denver, authors recorded data showing dockless ULDEVs to be cost-competitive and quick when compared to public transit. Authors also noted that the motors in ULDEVs made climbing hills easier when compared to standard bicycles, potentially lowering real and perceived physical fitness barriers to using active modes.

**All-day availability of dockless ULDEVs in Sun Valley is an issue.** Permits issued as a part of Denver's Dockless Mobility Vehicle Pilot Program encourage dockless ULDEV fleet operators to keep a portion of their fleets in "opportunity areas" and require rebalancing at least once per day, but during trips to the Sun Valley neighborhood authors consistently failed to find more than one or two dockless ULDEVs available to rent.

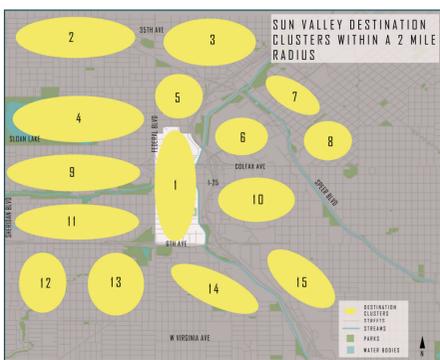
**As a condition to operate within the public right-of-way,** DOTI should require dockless ULDEV fleet operators to offer reduced-price programs to low-income persons, and to have systems in place that allow for cash payments and vehicle operation without smartphones. Consider seeking financial support from the City and County of Denver and/or non-profit organizations to subsidize these programs. Additionally, require dockless ULDEV fleet operators to rebalance fleets on an ongoing basis throughout the day to ensure vehicle availability in Sun Valley and other places like it.



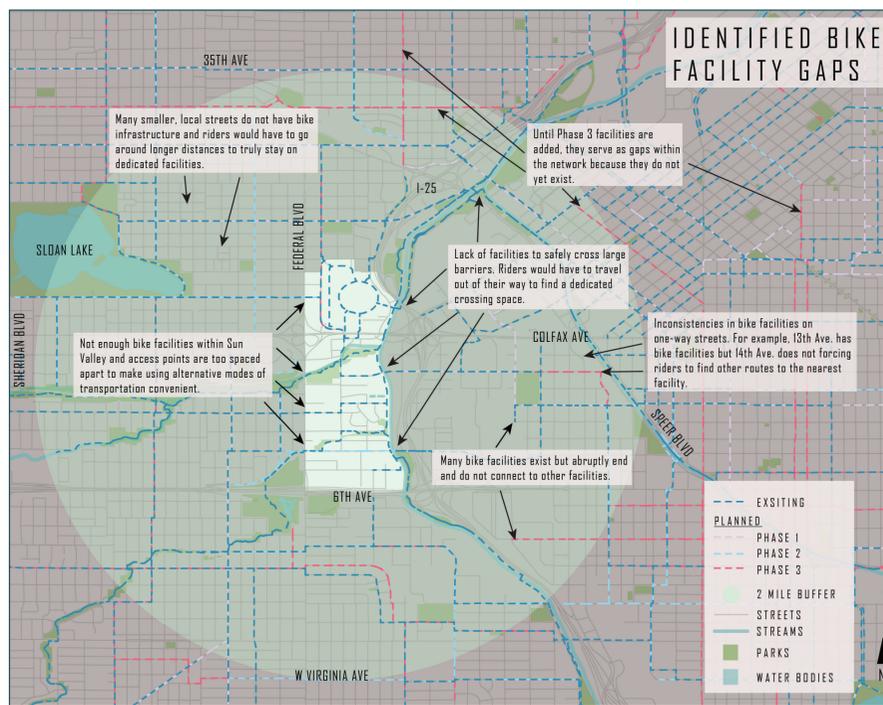
Map displaying routes authors took to and from selected destinations. Actual costs of each trip displayed in table below.

Company and Fee Structure	Travelling To				Travelling From			
	Union Station	Safeway	Target	Mi Pueblo Market	Union Station	Safeway	Target	Mi Pueblo Market
JUMP full-price	\$3.19	\$2.27	\$4.05	\$2.37	\$2.72	\$2.35	\$3.08	\$2.24
Lyft full-price	\$3.86	\$3.52	\$3.69	N/A	\$3.68	\$3.30	\$4.27	N/A
Spin full-price	\$3.86	\$3.52	\$3.69	N/A	\$3.68	\$3.30	\$4.27	N/A
Lime full-price	\$3.86	\$3.52	\$3.69	N/A	\$3.68	\$3.30	\$4.27	N/A
RTD full fare	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00
JUMP reduced-price	-	-	-	-	-	-	-	-
Lyft reduced-price	\$0.60	\$0.53	\$0.56	N/A	\$0.56	\$0.48	\$0.68	N/A
Spin reduced-price	\$1.33	\$1.24	\$1.28	N/A	\$1.28	\$1.17	\$1.45	N/A
Lime reduced-price	\$1.33	\$1.24	\$1.28	N/A	\$1.28	\$1.17	\$1.45	N/A
RTD LVE fare	\$1.80	\$1.80	\$1.80	\$1.80	\$1.80	\$1.80	\$1.80	\$1.80

### IDENTIFIED DESTINATION CLUSTERS AND BIKE FACILITY GAPS



CLUSTER	DESTINATION LIST
1. SUN VALLEY	- Employment center - Medical services - Elementary school - Social services - Recreation center - Parks - Transit station
2. WEST HIGHLAND	- Restaurants - Social services
3. HIGHLAND	- Restaurants - Social services - High school - Elementary school - Churches
4. SLOAN LAKE	- Park - Elementary school - Church - Restaurants - Social services
5. JEFFERSON PARK	- High school - Church - Grocery - Medical services - Parks - Attraction
6. AURARIA	- Higher education center - Attraction - Employment center - Transit station
7. LODD	- Parks - Grocery - Transit station - Restaurants - Attraction
8. CBE	- Employment center - Transit station - Medical services - Attraction - Churches - Social services - Parks - Shopping
9. WEST COLFAX	- Elementary school - Middle school - High school - Social services - Attraction - Medical services
10. LINCOLN PARK	- Social services - Employment center - Recreation center - Medical college - Elementary school - Grocery - Restaurants - Medical services - Attraction - Parks
11. VILLA PARK	- Grocery - Elementary school - Churches - Medical services - Parks
12. BARNUM WEST	- Elementary school - Churches - Grocery - Library
13. BARNUM	- Grocery - Library - Shopping - Parks - Base
14. VALVERDE	- High school - Grocery - Parks - Employment center
15. BAKER	- Employment center



### BIKE FACILITY RECOMMENDATIONS

- Encourage close working relationships between DOTI and the client to come up with solutions that truly fit Sun Valley's needs and wants. Provide opportunities for neighborhood organizations and residents to work with DOTI and the EPA to lay out specific goals and feasibility for the Sun Valley neighborhood and work collectively to determine implementation strategies.
- The EPA should continue working with DOTI on expanding the bicycle network and filling gaps to increase comfort and safety and decrease commute times by other modes of transportation.
- Begin another study on whether current and planned bicycle facilities have the infrastructural capacity to support ULDEVs, and potentially catalog facilities to be retrofitted beyond Sun Valley and its immediate boundaries.