WELCOME

CSU Master Plan (MPC)
Committee Meeting

November 13, 2019
Today’s Agenda

Safety, Access, and Mobility Infrastructure Planning: Part 3 (People, Programs, Policies, Projects) – *Informational* (Fred Haberecht, Aaron Fodge, Devan Durand)
Rams on the Move:
Safe travel benefits everyone
and is the responsibility of all
The Problem

Existing conflicts between all modes of transportation requires both infrastructure and behavioral intervention.
I. Status of the Transportation & Mobility Safety Taskforce
Taskforce Focus

People
• Enforcement

Programs
• Education and outreach
• Social media campaign to influence culture

Policy
• Creating comprehensive policy addressing enforcement and traffic control systems

Projects
• Infrastructure – Prioritized location improvements (workplan)
  o Short term
  o Long term
Early Actions (Safety Audits)

• In house inspection of all intersections and bike and pedestrian ways for visibility, sight lines, and visual obstructions. *Completed*

• Consultant physical analysis of intersections for compliance with traffic control devices (signs, striping, and sight distance) *Completed*

• Updated Cordon Study of key intersections both volumes and movements of all modes and compliance of users to traffic control devices. *Report due November*
II. Transportation and Mobility
Data and Criteria
Intersection Traffic Counts

Hughes Way/Meridian
Pitkin/Meridian
Lake/Center
Lake/Whitcomb

shaded in blue to call attention to the CSU specific intersections counted by third party consultant (Kimley-Horn)

Data represents a 3-hour snapshot across a single day (morning, midday and evening), completed FY 2018
Reported Crashes on Campus

10% of all CSU reported crashes involve an injury, 3% requiring treatment
Reported Crashes on Campus

>90% of reported injury crashes occurred at intersections, roadways and bike paths
CSU Reported Crashes (Injury Related)

Vehicle and Bike involved crashes account for >75% CSU injury related crashes

Number of injury crashes reported in this chart are higher than total injury crashes due to double count of bike vs car involved crashes (reported in both car and bike related columns)
CSU Reported Crashes (Injury Related)

Pitkin, Hughes, Lake and University account for 70% of roadways reported in crashes
CSU Vehicle Reported Injury Crashes 2018 FY to Current
(excludes bike vs car data accounted for in bike related data on slide 5)

90% of reported vehicle injury crashes occur at intersections and roadways.
50% of vehicle related injury crashes are occurring on Lake Street and Pitkin Street
CSU Bike Reported Injury Crashes 2018 FY to Current

Reported Bike Related Crash Locations 2018 FY to Current

- Bike Path: 21%
- Intersection: 26%
- Parking Lot: 47%
- Roadway: 5%

USDOT reported July 2017 that 55% of pedestrian related crashes go unreported with even a higher % for bicyclist.

http://www.pedbikeinfo.org/factsfigures/facts_safety.cfm

18 of the 19 reported bike injury crashes occur at intersections, roadways and bike paths.
50% of bike related injury crashes are occurring on Pitkin Street and University Avenue
# CSU Bike Trail Traffic Counts by Mode

Traffic intersecting University Avenue corridor

Identifying trails with high traffic and mixed transportation modes

<table>
<thead>
<tr>
<th>Trail Number</th>
<th>Mode Types</th>
<th>Pathways and Trails</th>
<th>Bike</th>
<th>Peds</th>
<th>Vehicle</th>
<th>Other Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lory Bike Trail at Plum &amp; Meridian</td>
<td></td>
<td>153</td>
<td>148</td>
<td>274</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Pitkin Bike Trails north of Stadium</td>
<td></td>
<td>107</td>
<td>159</td>
<td>146</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Green Bike Trail at South side Anderson Academic Bldg</td>
<td></td>
<td>117</td>
<td>108</td>
<td>23</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Green Bike Trail at South side Intramural Gym</td>
<td></td>
<td>120</td>
<td>101</td>
<td>11</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Green Bike Trail at Meridian &amp; University Av</td>
<td></td>
<td>179</td>
<td>130</td>
<td>18</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Author’s Ditch Bike Trail and University Intersection</td>
<td></td>
<td>118</td>
<td>178</td>
<td>0</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>University Intersection between LSC and Library</td>
<td></td>
<td>206</td>
<td>551</td>
<td>0</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Mountain Side Bike Trail at Southwest corner Library</td>
<td></td>
<td>208</td>
<td>161</td>
<td>0</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Mountain Side Bike Trail west of Education Bldg</td>
<td></td>
<td>150</td>
<td>301</td>
<td>0</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>

Data represents a 40 min snapshot across a single day (morning and midday), completed by Ram Ambassadors Oct 2019
## CSU Bike Trail Condition Report

Identifying trails with potential surface condition concerns that may impact safety

<table>
<thead>
<tr>
<th>Pathways and Trails</th>
<th>Surface Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggie Bike Trail &amp; Hughes</td>
<td>6 - in the road there are some pretty big holes and cracks</td>
</tr>
<tr>
<td>Plum, West of Transit Center</td>
<td>6 - holes, cracks that could affect bikers or longboards</td>
</tr>
<tr>
<td>University &amp; Amy Van Dyken Way Intersection</td>
<td>6 - hectic pathway w/ a few bumps and holes</td>
</tr>
<tr>
<td>North Oval cut through</td>
<td>4 - no comments noted</td>
</tr>
<tr>
<td>West side Oval</td>
<td>3 - no comments noted</td>
</tr>
<tr>
<td>Green Bike Trail at South side Intramural Gym</td>
<td>3 - some cracks in the sidewalk and road</td>
</tr>
<tr>
<td>University Intersection between LSC and Library</td>
<td>3 - small cracks/bumps</td>
</tr>
<tr>
<td>Green Bike Trail at Meridian &amp; University Av</td>
<td>3 - minor bumps</td>
</tr>
</tbody>
</table>
Suggested Locations for Further Review

Areas identified utilizing traffic counts, mode conflict and CSU injury related crash data
What are the safety criteria for infrastructure projects?

- Speed
- Predictability
  - Clarity of movement for all modes
III. Highest Priority Infrastructure Areas
Infrastructure Study Map… a starting point
Identified Issues:
- Lack of stop compliance by bikes/boards
- Pedestrian flows without pause
- Diagonal crossing movement through intersection
- Heavy use transit corridor with more coming in the future
- ROW confusion
- Poor pavement surface condition of streets

Meridian Avenue/Plum Street

Nov. 2019

Legend:
- Pedestrians
- Bikes/Boards/
- Scooters Transit
- Vehicles
Identified Issues:

- Pedestrian flows without pause
- Lack of yield compliance by bikes/boards
- Separated trail to old street section converted to multi-modal use with paint only
- Designed for vehicles, which are not the primary user
- Heavy use transit corridor
- Poor pavement surface condition
- Service and private vehicles not complying with campus access policies
- Emergency access route
Identified Issues:

- Pedestrian flows without pause
- Lack of stop compliance by bikes/boards
- ROW confusion
- Old street section converted to multi-modal use with paint only
- Designed for vehicles, which are not the primary user
- Heavy use transit corridor
- Need for flex space for University events
- Forthcoming modification with Meridian Village development

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**LEGEND**

- Pedestrians
- Bikes/Boards/
- Scooters
- Vehicles
- Transit

Meridian Avenue/ Hughes Way

Nov. 2019
Identified Issues:
- Lack of yield compliance by Bikes/boards
- Multiple intersecting paths
- Bike/Pedestrian movements across University Ave. add confusion
- Service vehicles continue to access LSC and plaza using this infrastructure
- Old street section converted to multi-modal use with paint only
- Need for flex space for University events
- Emergency access route

LEGEND
- Pedestrians
- Bikes/Boards/Scooters
- Vehicles

University Avenue/Arthur’s Ditch Trail

Nov. 2019
Identified Issues:
• Lack of slow zone compliance by bikes/boards
• Pedestrian movements are not predictable crossing trail
• Confusion of how to safely enter/exit dismount zone
• Lack of dismount zone compliance
• Old street section converted to multi-modal use with paint only

LEGEND
- Pedestrians
- Bikes/Boards/Scooters
Identified Issues:

- Lack of slow zone compliance by Bikes/boards
- Lack of yield compliance by Bikes/boards
- Bike/Pedestrian movements across service parking area add confusion
- Service vehicle crossing point to service area
- Future intersection with higher user interface predicted with development of Hughes Way bikepath to the west

LEGEND

- Pedestrians
- Bikes/Boards/Scooters
- Vehicles

Morgan Trail/ Green Trail

Nov. 2019
Identified Issues:
- Lack of slow zone compliance by Bikes/boards
- Lack of yield compliance by Bikes/boards
- Multiple intersecting paths
- Pedestrian movements are often not predictable
- Confusion of how to safely enter/exit dismount zone
- Old street section converted to multi-modal use with paint only
- Service vehicles not complying with campus access policies

LEGEND
- Pedestrians
- Bikes/Boards/Scooters

Pitkin Street - GreenTrail

Colorado State University

Nov. 2019
Lake Street/ Center Avenue

Identified Issues:
- Pedestrian flows without pause
- Lack of stop compliance by bikes/boards
- ROW confusion
- City street section converted to multi-modal use with paint only
- Multiple intersecting paths
- Designed for vehicles, which are not the primary user
- 3-way vehicular intersection that functions like a 4-way intersection

Legend:
- Pedestrians
- Bikes/Boards
- Scooters
- Vehicle
- Transit
Potential Solutions

Street Modifications

Signalized Intersection for Bicycles and Pedestrians
Potential Solutions

Separation of Modes

Bike Round-Abouts
Potential Solutions

Protected bike lanes
IV. Next Steps
Next Steps

Final Report with recommended actions pertaining to:

People
• Enforcement

Programs
• Education and outreach
• Social media campaign to influence culture

Policy
• Creating comprehensive policy addressing enforcement and traffic control systems

Projects
• Infrastructure – Prioritized location improvements (workplan)
  o Short term
  o Long term