

# Separated Bicycle Lanes

Council Special Work Session  
May 23, 2023

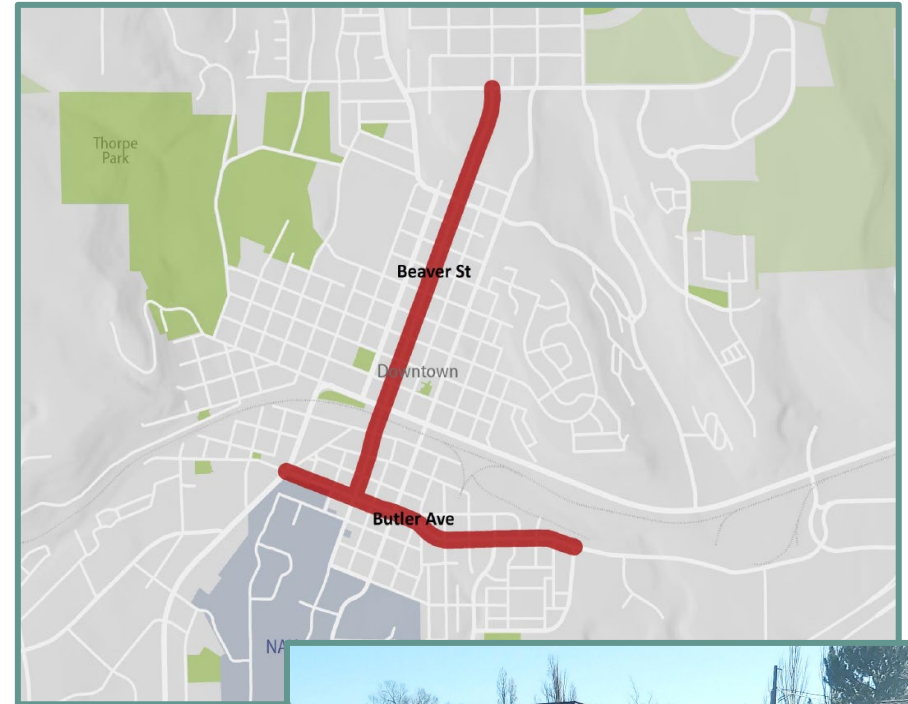
Butler & Beaver Pilot Projects





# Background

- Council recommended the separated bike lanes as a pilot project in July 2021 after the concept was proposed by a citizen petition
- The separated bike lanes were completed in November 2021
- Design includes candlesticks and concrete barriers
- Beaver St - Forest to Butler
- Butler Ave - Milton to Sawmill





# The Pilot Plan



- Start with these two phases (Butler & Beaver)
- Study
  - Collect speed & volume data before & after install
  - Collect feedback from interested parties & citizens
  - Determine maintenance in general & during snowstorms
  - Review crashes
- Determine other possible phases or next steps



# First Evaluation June 2022

- Staff reported on the performance of the pilot project to the Transportation Commission, Bicycle Advisory Committee, and Council in June 2022. Staff reported on the following items:
  - **Interested party input:** General concerns for winter maintenance and narrow lanes
  - **Bicycle usage:** Remained constant or had a slight decrease
  - **Vehicle speeds and volumes:** Remained constant
  - **Crashes:** No serious or fatal crashes reported at the time
  - **Community survey:** Generally negative for drivers, split for bicyclists, and winter maintenance a big concern



# June 2022 Recommendations

- **Transportation Commission/Staff**
  - Remove curb & delineators from Butler and stripe a buffer
    - Collect ridership and maintenance cost data
  - Keep Beaver the way it is
- **Bicycle Advisory Committee**
  - Recommended keeping Butler and Beaver for at least one full year for further data collection and review
  - Small modifications to curb placement is recommended

# Results of June 2022 Evaluation

- Snow operations were a big concern
- Overall negative experiences for interested parties
- Bicyclist volumes either stayed the same or decreased



- Council felt there had been insufficient time to decide to remove the pilot project, for the pilot project had only been in effect for 6 months and had not experienced a harsh winter
- Council directed staff to keep both the Beaver and Butler separated lanes for further data collection



# Today – Second Evaluation

- The next slides will provide updates on the following items since the last evaluation:
  - Interested Party input
  - Bicycle volumes
  - Crash data

# Key Take-a-ways

- Road narrowing and the loss of travel lanes.
- The infrastructure had massive failures.
- Commercial and Residential sidewalks plowed back into bike lanes, sometimes days after the snow event
- Dangerously narrow roads led to unsafe conditions for all commuters including snowplow operations





# Winter Snow Operations



Struggles with snow plowing operations along the pilot.

- Narrow lanes led to multiple “near miss”
- We experienced icier road conditions requiring additional Ice cinders.
- Staffing of and all snowplow equipment continues be a struggle.
- Operators had to hand remove dozens of broken curbs by hand.
  - Significantly more destroyed curbs on Beaver St than Butler Ave.
- Reduction in service to the west side neighborhoods and the downtown corridor.





# Winter Snow Operations

With 2 snow seasons (1-very mild, 1-heavy) of data Streets has concluded

- Snow operations require two (2) tool cat at once to effectively snowplow.
- Significant curb damage every winter, roughly 75 this winter
- Timing of snowplow operations with PROSE has been critical.
- Significant impacts from private snowplows
- Massive increase in travel complaints from cyclists and motorists.
- Increase in accidents





# Spring General Maintenance

- Sweeping along the pilot have been productive but has its struggle
- Limited accessibility with current equipment.
- Keeping up with the replacement of markers is impossible with current workload and staffing
  - This is reflected citywide not just this pilot.
- The signs and marking crew has done well adapting to this pilot however, maintenance needs far exceed their capacity.





# Police Department Input



- Harder for citizens to yield for emergency vehicles
- Narrowing of lanes due to snow and ice
- Vehicles with trailers taking out barriers during turns
- Drivers running over or into barriers



# Fire Department Input



- Delayed emergency response times
  - Nowhere for vehicles to go during emergency responses
  - Difficulty navigating narrow driveway openings for the large fire trucks



# Costs



Item	Singular	Jun-22	Apr-23
Butler Avenue Installation	\$513,000	NA	NA
Beaver Street Installation	\$269,382	NA	NA
Summer 2022 Final Pavement Markings	\$69,756	NA	NA
Toolcat Purchases With Accessories	\$131,000	NA	NA
Install New Delineators	\$41,974	NA	NA
Parks Department Median Restoration	\$6,000	NA	NA
Maintenance of Curbs and Delineators	NA	\$11,719.00	\$19,566.16
Snow Operations	NA	\$21,373.00	\$53,956.00
Sweeping Operations	NA	\$6,905.00	\$5,227.92
Public Works Administrative	NA	\$11,138.00	\$10,569.07
Winter Equipment Damage Repair	NA	NA	\$20,000.00
<b>Total</b>	<b>\$1,031,112</b>	<b>\$51,135.00</b>	<b>\$109,319.15</b>
<b>Grand Total</b>		<b>\$1,191,566</b>	



# Costs



- This previous winter resulted in maintenance costs rising from \$51,135.00 to \$109,319.15, an increase of \$58,184.15
- It will cost an additional estimated \$200,000 to bring the infrastructure back to original conditions

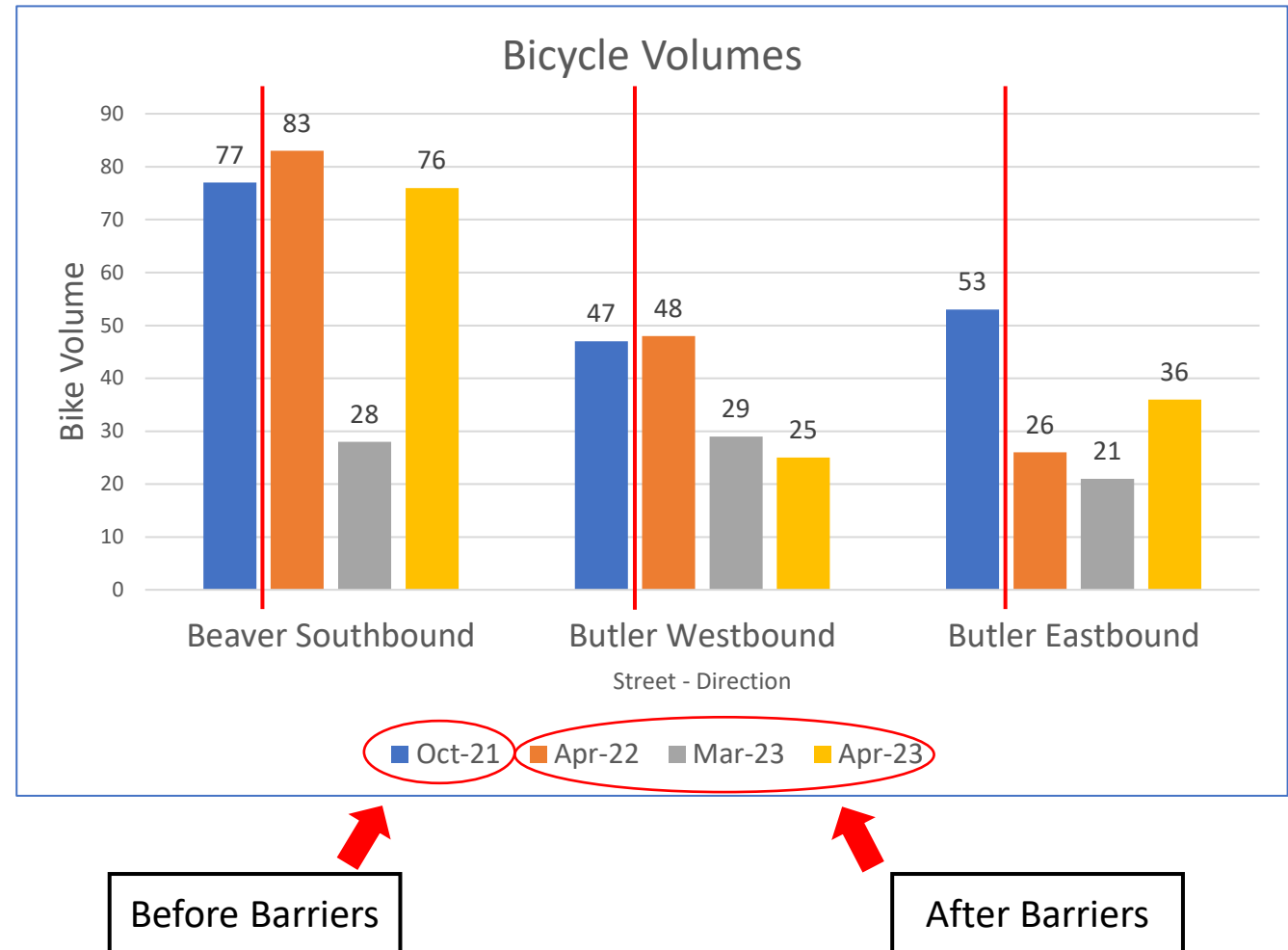




# Bicycle Volumes



- Bicycle volumes on Beaver St have generally stayed consistent since the barriers were installed
- Counts were low in the March 2023, but this could be attributed to weather
- Butler Ave bicycle volumes have seen a decrease since the barriers were installed, but this could be attributed to limited data collection





# Crash Data



Beaver St Crash Data					
Time Period	Total Crashes	Vehicle Serious and Fatal Crashes	Bike Total Crashes	Ped Total Crashes	Bike and Ped Serious and Fatal Crashes
December 2012-June 2013	8	0	2	0	0
December 2013-June 2014	11	0	0	0	0
December 2014-June 2015	5	0	0	0	0
December 2015-June 2016	8	0	0	0	0
December 2016-June 2017	5	0	0	0	0
December 2017-June 2018	9	0	0	0	0
December 2018-June 2019	6	1	0	0	0
December 2019-June 2020	3	0	0	0	0
December 2020-June 2021	4	0	0	0	0
December 2021-June 2022	7	0	0	0	0



After Barriers



# Crash Data



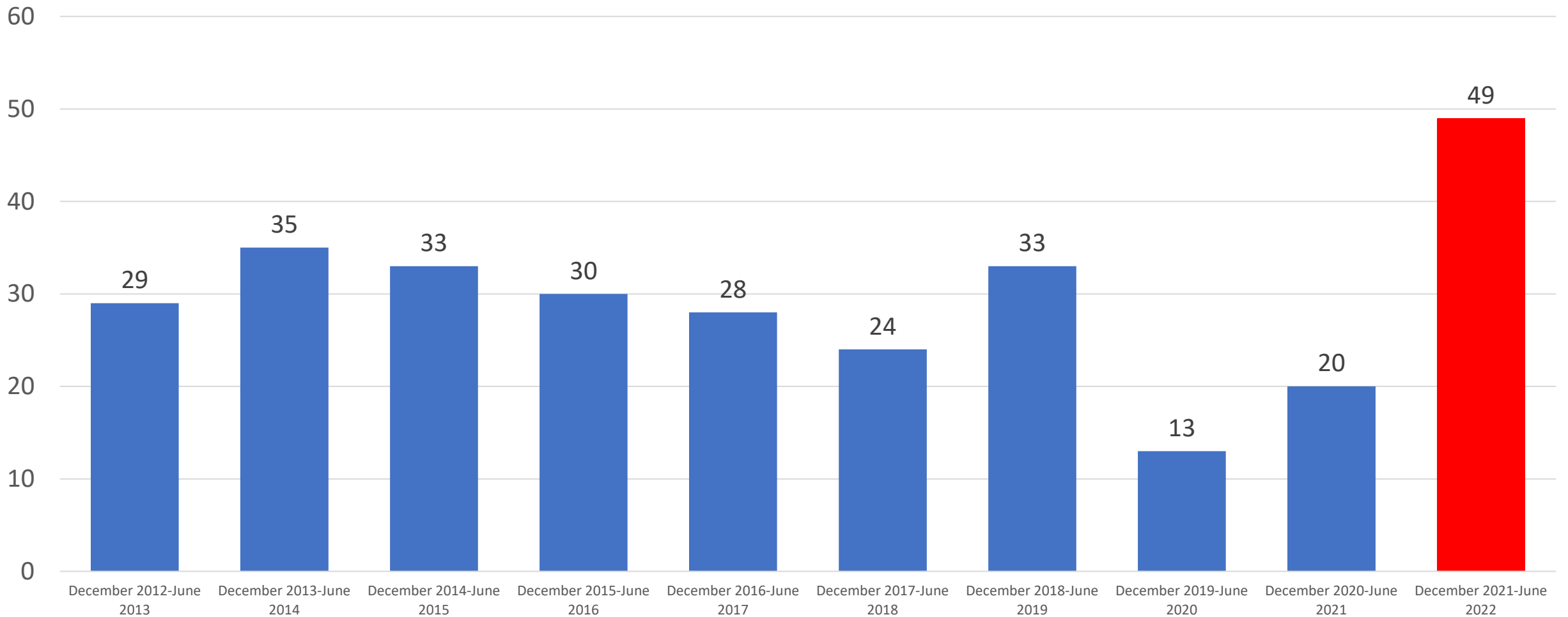
Butler Ave Crash Data					
Time Period	Total	Vehicle Serious and Fatal Crashes	Bike Total	Ped Total	Bike and Ped Serious and Fatal Crashes
December 2012-June 2013	29	0	1	0	0
December 2013-June 2014	35	0	1	1	0
December 2014-June 2015	33	1	1	1	1
December 2015-June 2016	30	1	1	0	0
December 2016-June 2017	28	1	0	1	0
December 2017-June 2018	24	1	1	0	0
December 2018-June 2019	33	0	1	0	0
December 2019-June 2020	13	0	0	1	0
December 2020-June 2021	20	1	2	0	1
December 2021-June 2022	<b>49</b>	1	0	1	0

After Barriers



# Crash Data

## Butler Crashes Dec - Jun





# Crash Data



<b>Butler Collision Types</b>			
Collision Type	Past Nine Winters Average	After Install 2021-2022 Winter	Change
Unknown	0	0	0
Rear To Side	0	0	0
Sideswipe Opposite Direction	0	0	0
Head On	0	0	0
Other	1	1	0
U Turn	0	1	+1
Angle (Front To Side)(Other Than Left Turn)	4	5	+1
Left Turn	4	6	+2
Sideswipe Same Direction	4	10	+6
Single Vehicle	4	10	+6
Rear End	12	16	+4
<b>Total</b>	<b>29</b>	<b>49*</b>	<b>+20</b>

\*Does not include this past winter

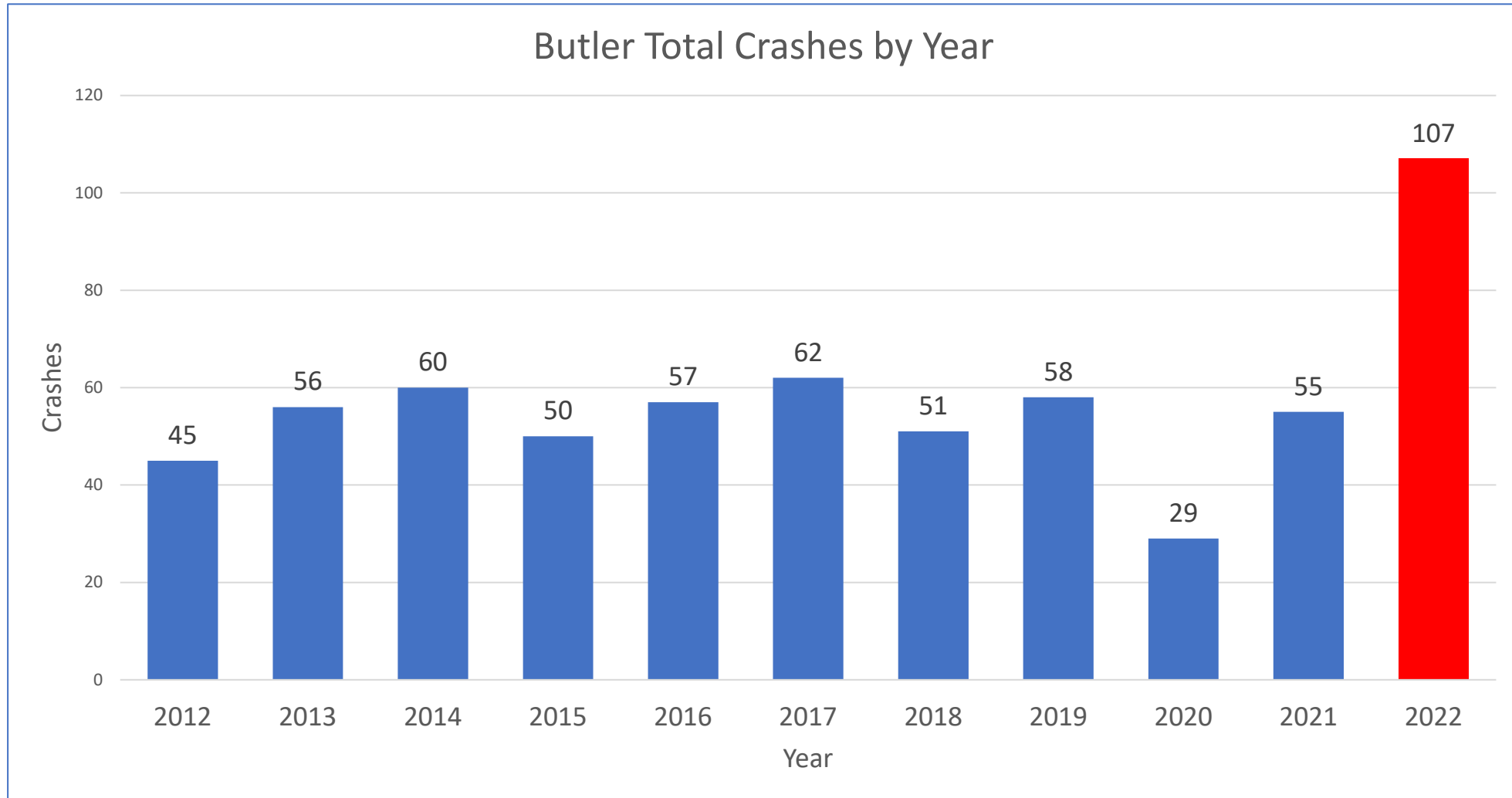


# Crash Data

Butler Crashes by Year					
Time Period	Total Crashes	Bike Crashes	Ped Crashes	Serious Injury	Fatal
2012	45	4	1	1	0
2013	56	3	1	0	0
2014	60	4	3	0	0
2015	50	1	1	2	0
2016	57	1	2	3	0
2017	62	1	3	1	0
2018	51	1	0	1	0
2019	58	3	0	1	0
2020	29	0	1	1	0
2021	55	3	1	2	1
2022	107	3	3	1	0



# Crash Data





# Commission Recommendations

- **Bicycle Advisory Committee**
  - Does not recommend removing the barriers unless there is a funded alternative to replace them
  - Recommended investigating reducing the speed limit and exploring education campaigns for safe streets
- **Transportation Commission**
  - Support replacing the barriers with a painted buffer on Butler
  - Support keeping and maintaining the barriers on Beaver



# Staff Recommendations

Remove the barriers on both Beaver and Butler and replace them with a painted buffer. Staff makes this recommendation for the following reasons:

## 1. Safety

- Vehicle crashes have increased along Butler since the barriers were installed
- Winter conditions led to narrow lanes and dangerous driving behaviors as observed by Public Works and the Police Department
- Emergency response times have increased along both roads due to vehicles being unable to make way
- Tourism traffic struggled with adapting to this infrastructure



# Staff Recommendations

## 2. **Bicycle Ridership:**

- Bicycle volumes have either decreased or been maintained since the barriers were installed

## 3. **Maintenance:**

- The level of winter maintenance required for this infrastructure is beyond the current staffing and funding levels of the Streets Section. Maintaining the barriers has pulled resources from other parts of the City and led to reduced service to the westside communities and the downtown corridor in the previous winter



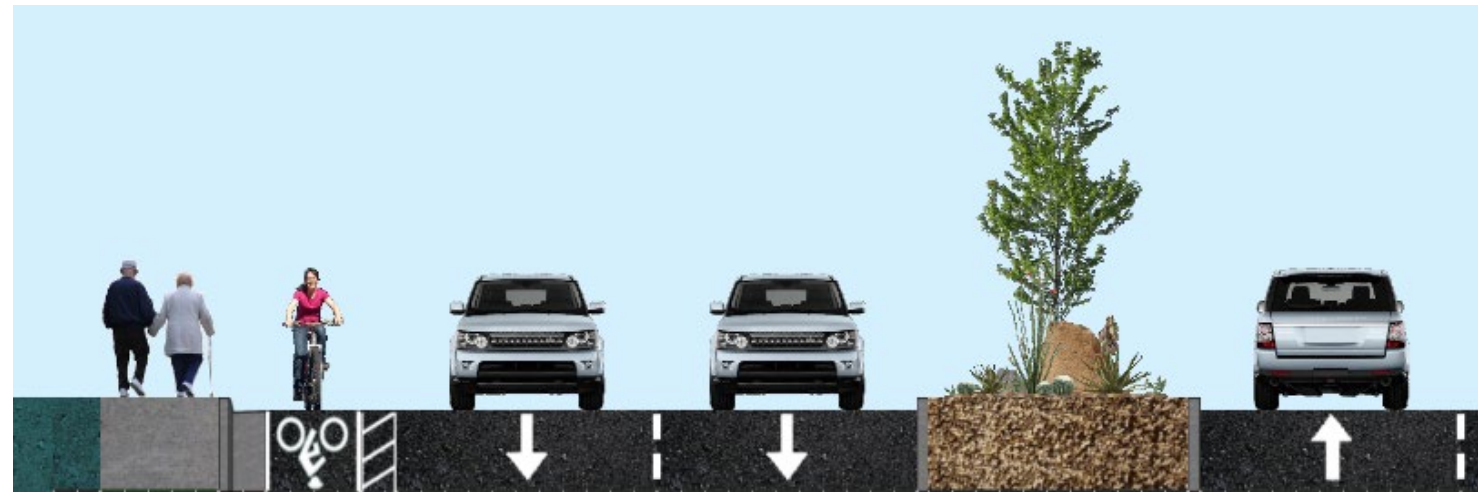
# Staff Recommendations

## 4. Costs

- The previous winter of 2022-2023 more than doubled the maintenance costs of the barriers, with costs rising from \$51,135.00 to \$109,319.15, an increase of \$58,184.15

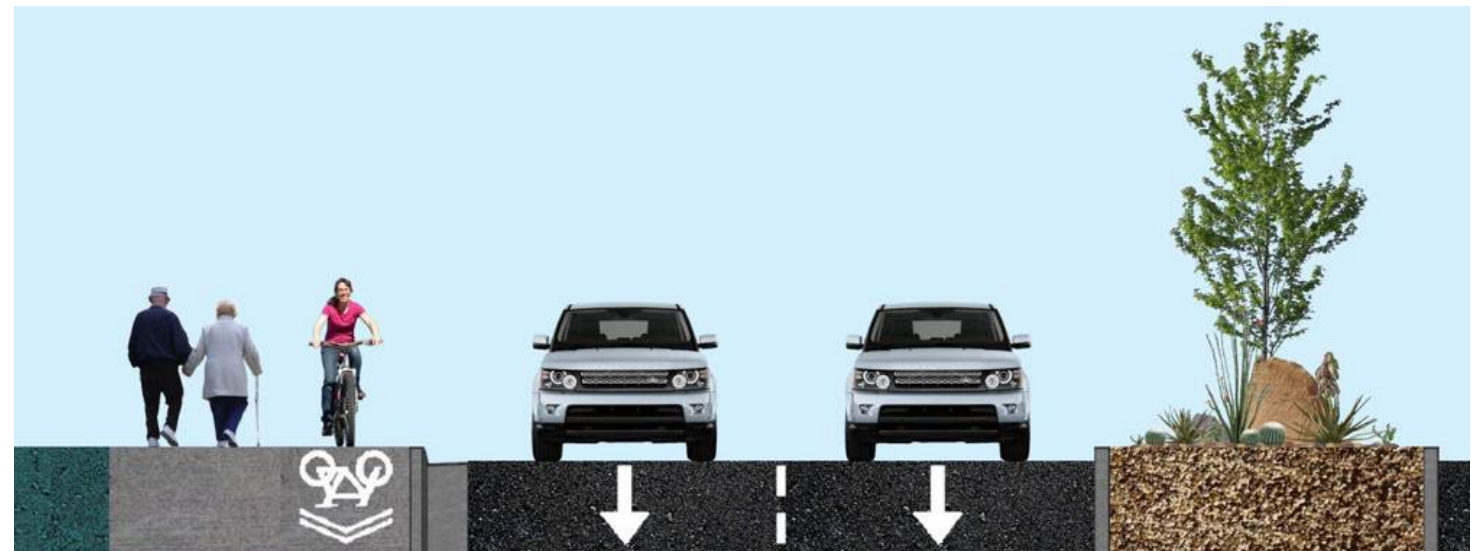
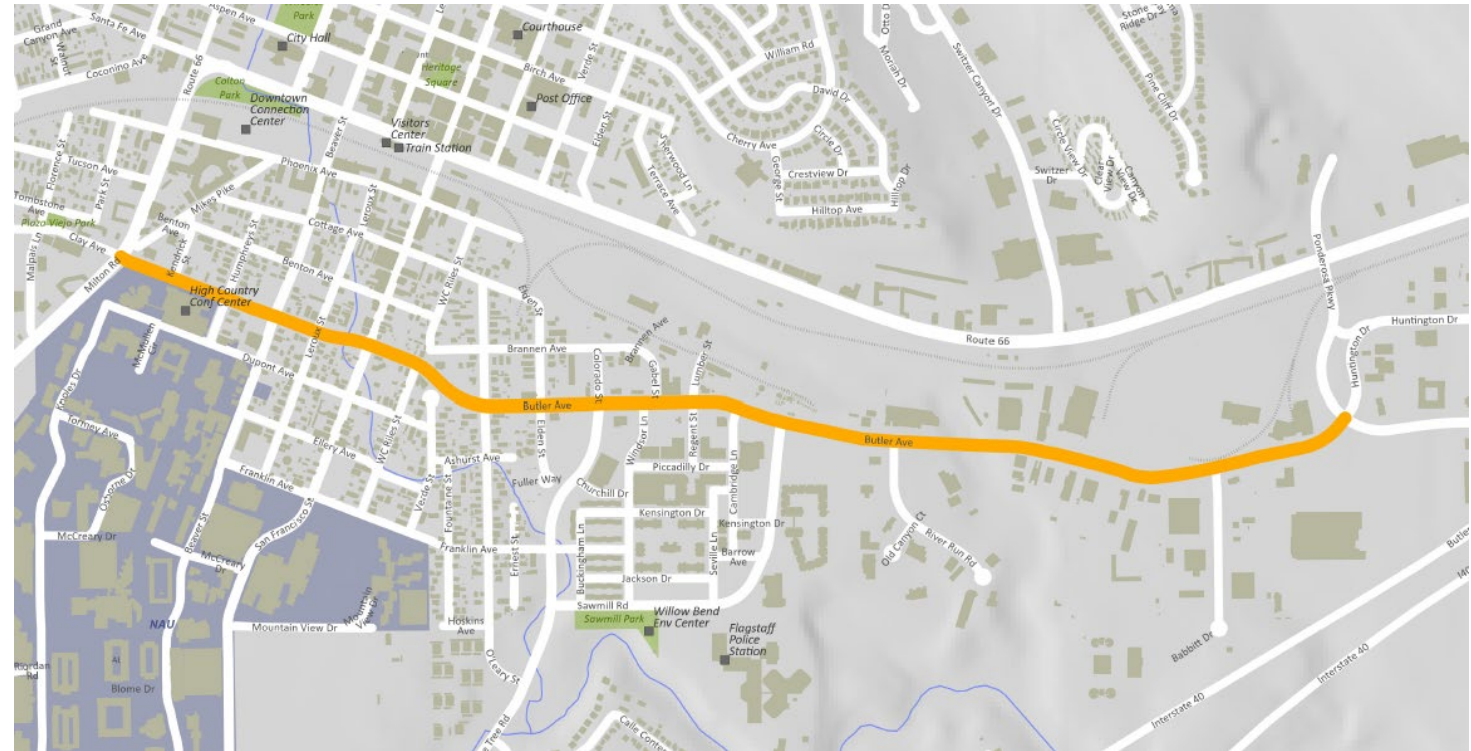
# Staff Recommendations

- Staff recommend removing the separated bike lanes on both roads and replacing them with a painted bike buffer, and pursuing a raised bike lane design instead
- Main Concerns
  - Safety
  - Snow operations
  - Costs



# Raised Bike Lanes

- Staff is working on a Safe Streets for All (SS4A) grant application for a complete streets conversion for Butler Ave
- Application is due July 10, 2023
- Notification anticipated ...





# SS4A grant - street conversion

- SS4A grant project would include raised bike lanes (Milton to Sawmill), buffered bike lanes (Sawmill to Ponderosa), protected intersections, crossings, pedestrian enhancements
- Cost \$7-10m (federal grant (80%, local match 20%))





# Looking Forward

- Protected Intersections
  - Two protected intersections planned along Butler at Beaver and San Francisco.
  - Funded as part of the capital improvements program
  - Construction within the next two years

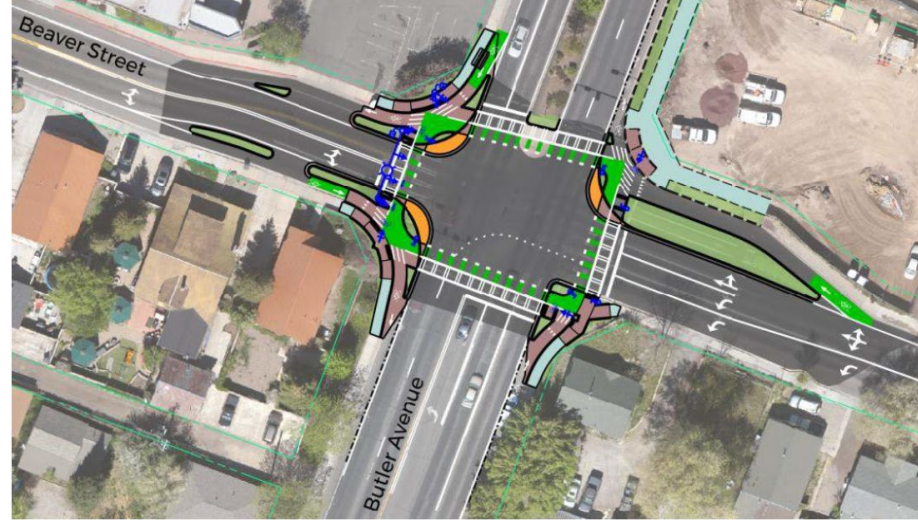
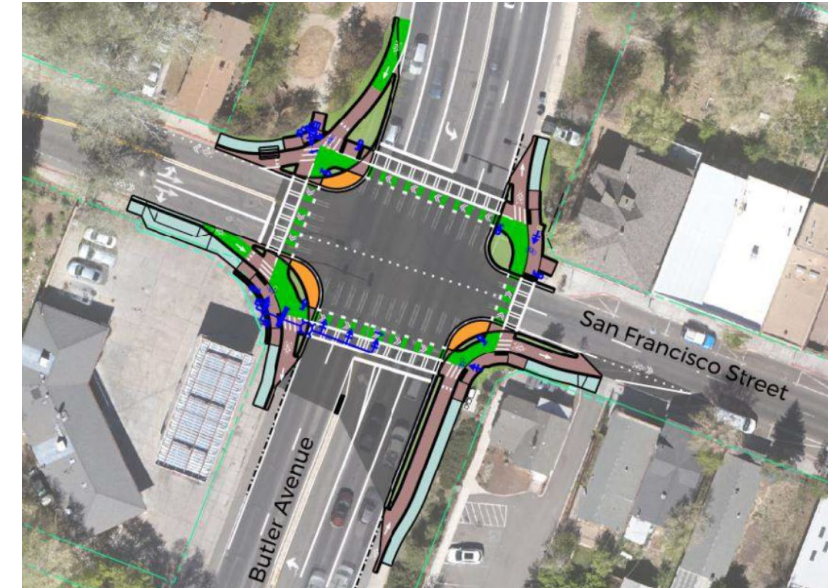


Figure 2 – Protected intersection typical features

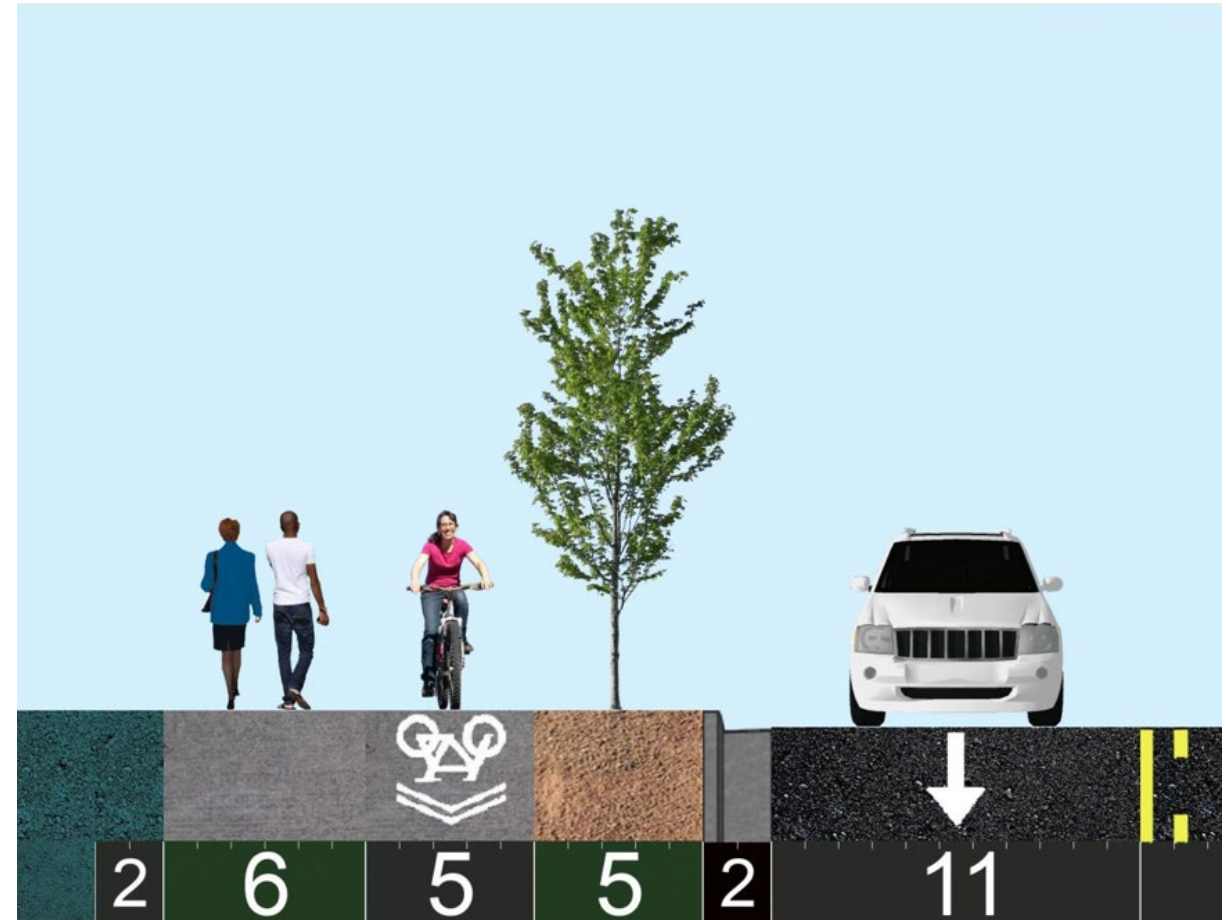




# Separated/protected bikeways

Separated bike lanes and protected intersections/roundabouts in other street projects:

- Lone Tree overpass
- Butler widening
- Beulah University roundabout
- Northern Arizona Healthcare
- J.W. Powell extension





# Upcoming Reorganization



The Transportation Section will be reorganized into two functions:

- Active transportation planning
- Engineering

To help achieve the goals of the Big Shift



# Thank you Questions?

