

Blue Sage Pilot Project

From Tule Lake Drive to Sumac Lane



Overview

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Background

- Summer of 2019 - Residents and the Bow Mar South HOA reached out to the City of Littleton with concerns about speeding in Bow Mar South.
- The City of Littleton began speed and volume studies on Blue Sage Dr in:
 - May 2019
 - September 2019
 - March 2020
- In addition to the studies on Blue Sage, the City has conducted 6 other speed and volume studies in the Bow Mar South Neighborhood—9 in total.
 - Blue Sage (3), Bellflower (1), Sumac (1), Tule Lake (4)



Background

Blue Sage Dr Speed/Volume Study Summary

Study Date	NB 85p (mph)	SB 85p (mph)	NB Average Speed (mph)	SB Average Speed (mph)	ADT
May 2019	31	25	23	22	720
Sep 2019	30	25	23	21	547
Mar 2020	31	25	24	22	527

25 MPH is the posted speed limit

NB – Northbound

SB – Southbound

85p – 85th percentile speed, common metric to evaluate speeding patterns and measures the speed people feel comfortable driving

Average Speed – the average (mean) of all the vehicle speeds recorded for the data collection period

ADT – Average Daily Traffic, or the average numbers of cars per day at the place of measuring



Background

Other Bow Mar South Speed/Volume Study Summaries:

Study Date	Study Location	NB/EB	SB/WB	NB/EB Average	SB/WB Average	Average Daily Traffic
		85p	85p	Speed	Speed	
		(mph)	(mph)	(mph)	(mph)	
Nov-19	Bellflower Dr N/O Bowles	23	28	20	23	435
Mar-20	Tule Lake W/O Shasta Cir	28	28	24	24	231
Mar-20	Tule Lake Crosswalk	28	28	24	24	231
May-20	Sumac Ln & Marigold Ln	27	25	21	21	169
Oct-19	Tule Lake Crosswalk	27	29	23	24	390
Oct-19	Tule Lake W/O Bellflower Dr	26	28	22	23	478

25 MPH is the posted speed limit

NB – Northbound

SB – Southbound

85p – 85th percentile speed, common metric to evaluate speeding patterns and measures the speed people feel comfortable driving

Average Speed – the average (mean) of all the vehicle speeds recorded for the data collection period

ADT – Annual Average Daily Traffic, or the average numbers of cars per day at the place of measuring

N/O & W/O – means “north of” and “west of”



Background

What the speed studies tell us:

- Speeds are in line with what we expect for a residential street like Blue Sage Drive with a 25 mph posted speed limit
- People tend to travel faster NB than they do SB
 - This could be a result of curvature of the roadway and restricted sight distance for the SB direction
- During our time in the field we did notice a high volume of people walking and biking on the street due to the lack of sidewalks



Background

What the City considers in evaluating a roadway to determine if there is a speeding problem :

- 85p speed in comparison to the posted speed limit
- Average speed in comparison to the posted limit
- Percentage of vehicles speeding 5 mph over the posted limit
- Pedestrian volume and safety of pedestrian facilities
- Cyclist volumes and safety of cyclist facilities
- Accident history in the last 5 years
- Special Circumstances: Video or staff observation of “near misses” or other safety concerns



Background

Traffic Safety Policies & Practices

- Littleton follow's FHWA's Manual on Uniform Traffic Control Devices (MUTCD) which has guidance and specific thresholds for traffic devices.
- Littleton has a Traffic Safety Committee (TSC) and evaluates traffic safety concerns with a multi-disciplinary team of experts.
- The TSC promotes the 4 E's (education, enforcement, engineering, evaluation) in addressing traffic safety concerns.
- Often times residents call the City and request speed humps, but unlike stop signs or traffic lights, speed humps do not have warrants in the MUTCD.
- The City is revamping its policies on neighborhood traffic safety issues including its policy on speed humps, but does not have a current speed hump policy.



Speed Humps

Other Jurisdiction's Policies

Littleton (Previous Speed Hump Policy)

- Between 500 and 3,000 ADT
- 30% of traffic must be speeding by 5 mph or more

Adams County

- 85p speed of 10+ mph over the speed limit
- No more than one per block

Aurora

- Still installs speed humps
- Must meet speed, volume, crash thresholds (specifics not available online)

Boulder

- Still installs speed humps
- Criteria not available online

Jefferson County

- Still installs speed humps
- 33% of vehicles speeding by 5+ mph
- 800 vehicle ADT or more

Larimer County

- Local streets only
- Less than 30 mph posted speed limit
- Ultimately an Engineering decision

Mesa County

- Still uses speed bumps, but...
- “Actual tests of experimental designs have demonstrated the physical inability of a speed bump to control all types of lightweight and heavyweight vehicles successfully...”

Will Not Install Speed Humps

- Arapahoe County
- Arvada
- Colorado Springs
- Douglas County
- Englewood



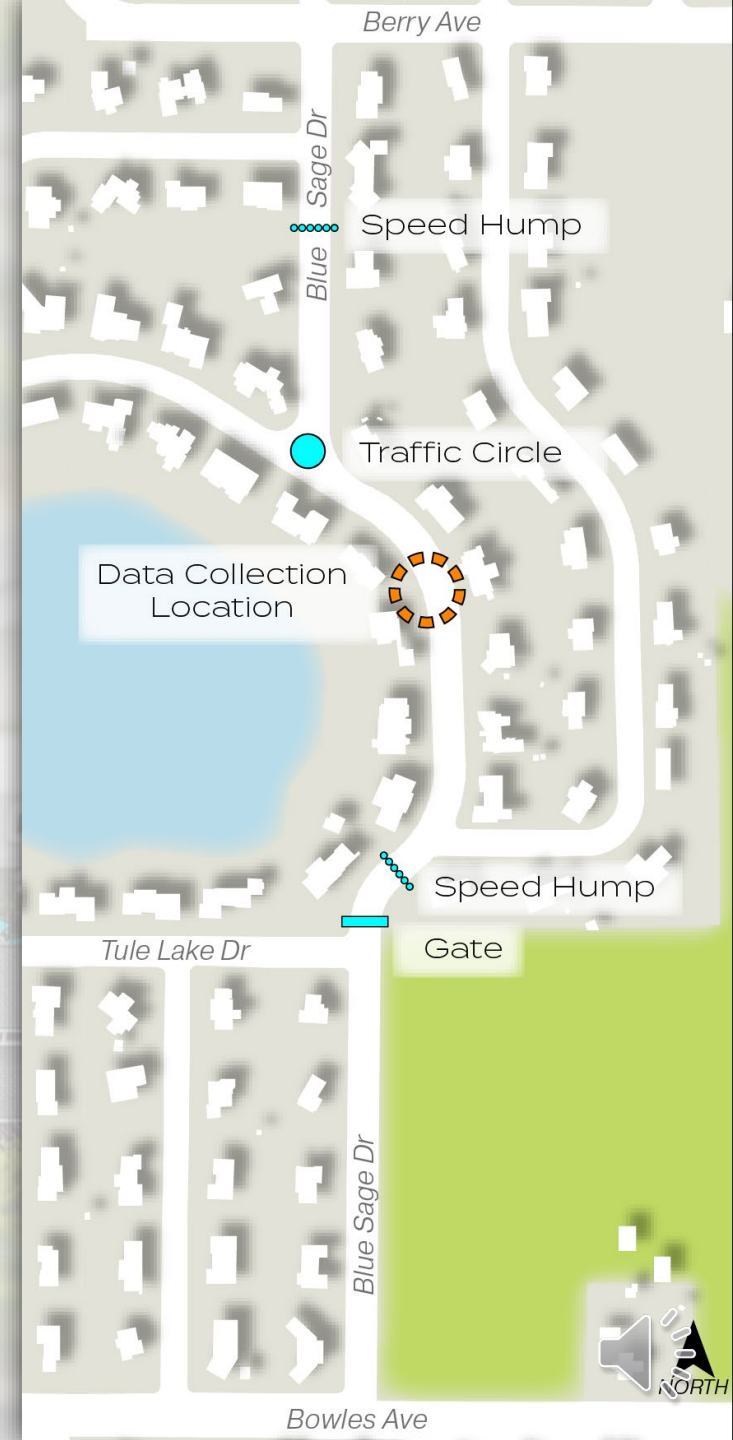
Speed Humps

There are several reasons the City doesn't install speed humps immediately upon request. Speed humps can be effective, but also have some negative impacts:

- Speed humps slow emergency response vehicles
- Speed humps create sound pollution for adjacent properties
- Speed humps cause issues with plowing and street maintenance
- Speed humps tend to encourage speeding between devices
- In areas with no sidewalks, speed humps impact the space were people bike and walk
- Tend to increase volume on nearby streets
- Not recognized by the State of Colorado as an official traffic control device

Blue Sage Dr already has a number of features intended to reduce speed:



- Speed hump 770 ft north of data collection point
- Speed hump 590 ft south of data collection point
- Traffic circle with a stop sign 275' north of the data collection point
- Automated gate that prevents peak-hour through traffic 750 ft south of data collection point





Speed Humps

Data collected on Bellflower was done at an existing speed hump:

- Speeds were lower for vehicles leaving the speed hump (1-3 mph)
- Speeds were essentially unphased for vehicles approaching the speed hump
- There were still a small number of vehicles traveling 15+ mph over the speed limit

Leaving Speed Hump	Study Location	NB/EB 85p (mph)	Study Location	NB/EB Average Speed (mph)
	Blue Sage Dr S/O Sumac Ln	31	Tule Lake W/O Shasta Cir	24
	Blue Sage Dr S/O Sumac Ln	31	Tule Lake Crosswalk	24
	Blue Sage Dr S/O Sumac Ln	30	Blue Sage Dr S/O Sumac Ln	24
	Tule Lake W/O Shasta Cir	28	Tule Lake Crosswalk	23
	Tule Lake Crosswalk	28	Blue Sage Dr S/O Sumac Ln	23
	Tule Lake Crosswalk	27	Blue Sage Dr S/O Sumac Ln	23
	Sumac Ln & Marigold Ln	27	Tule Lake W/O Bellflower Dr	22
	Tule Lake W/O Bellflower Dr	26	Sumac Ln & Marigold Ln	21
	 Bellflower Dr N/O Bowles	23	 Bellflower Dr N/O Bowles	20

Approaching Speed Hump	Study Location	SB/WB 85p (mph)	Study Location	SB/WB Average Speed (mph)
	Tule Lake Crosswalk	29	Tule Lake W/O Shasta Cir	24
	 Bellflower Dr N/O Bowles	28	Tule Lake Crosswalk	24
	Tule Lake Crosswalk	28	Tule Lake Crosswalk	24
	Tule Lake W/O Bellflower Dr	28	Tule Lake W/O Bellflower Dr	23
	Tule Lake W/O Shasta Cir	28	 Bellflower Dr N/O Bowles	23
	Blue Sage Dr S/O Sumac Ln	25	Blue Sage Dr S/O Sumac Ln	22
	Blue Sage Dr S/O Sumac Ln	25	Blue Sage Dr S/O Sumac Ln	22
	Blue Sage Dr S/O Sumac Ln	25	Blue Sage Dr S/O Sumac Ln	21
	Sumac Ln & Marigold Ln	25	Sumac Ln & Marigold Ln	21

Tables to the right show average and 85p speeds for all studies conducted in Bow Mar South. The studies are ranked by speeds from fastest to slowest.



Actions to Date

Since the City has been contacted by Bow Mar South residents, the following steps have been taken:

- 9 speed and volume studies in Bow Mar South (3 on Blue Sage Dr)
- Several in-the-field meetings and operations observations
- In street crosswalk sign on Tule Lake (resident request)
- Placed new speed limit signs on Tule Lake (resident request)
- Have asked several residents to trim vegetation for sight distance and sign visibility
- Repaired the gate north of Tule Lake
- Ongoing discussions among City staff on the best way to address neighborhood concerns



Pilot Project - Reasoning

- Though the data does not suggest to staff there is a speeding problem, there are always safety concerns when cars share the same space as pedestrians and cyclists—there are several neighborhoods like this in Littleton.
- In these neighborhoods, the City is interested in working with residents to create low cost solutions to accommodate pedestrians and cyclists until sidewalk is installed.
- Similar projects across the country have demonstrated the added benefit of calming traffic and reducing speeds.
- This project is the first of its kind in Littleton, but the City will use the process and information gathered as a learning experience to build on if the effort is successful.



Pilot Project - Timeline

Before COVID...

- Neighborhood meeting in April 2020
- Implementation in May/June 2020
- In place for 60 - 90 days
- Evaluate data, discuss next steps

Now...

- Virtual public engagement in August 2020
- Implementation in September 2020
- In place for at least 30 days (ideally) before snow, would like to extend into fall
- Evaluate data, discuss next steps with community



Pilot Project – Treatments

1. **Temporary Curb** – Half ellipse shaped traffic separator that diverts vehicles back toward travel lanes. Typically installed with flex posts.
2. **Flex Posts** – typically used with temporary curb, flex posts provide a clear visual signal to drivers that a space is not meant for moving vehicles.
3. **Short-Term Striping** – Low-cost paint that fades in about 9 – 12 months.
4. **Markers** – Small plastic pieces that are adhered to the street and highlight lane lines using highly reflective surfaces.
5. **Bots' Dots** – Low profile circle or square shaped bumps that are adhered to the street and rumble tires when driven on.



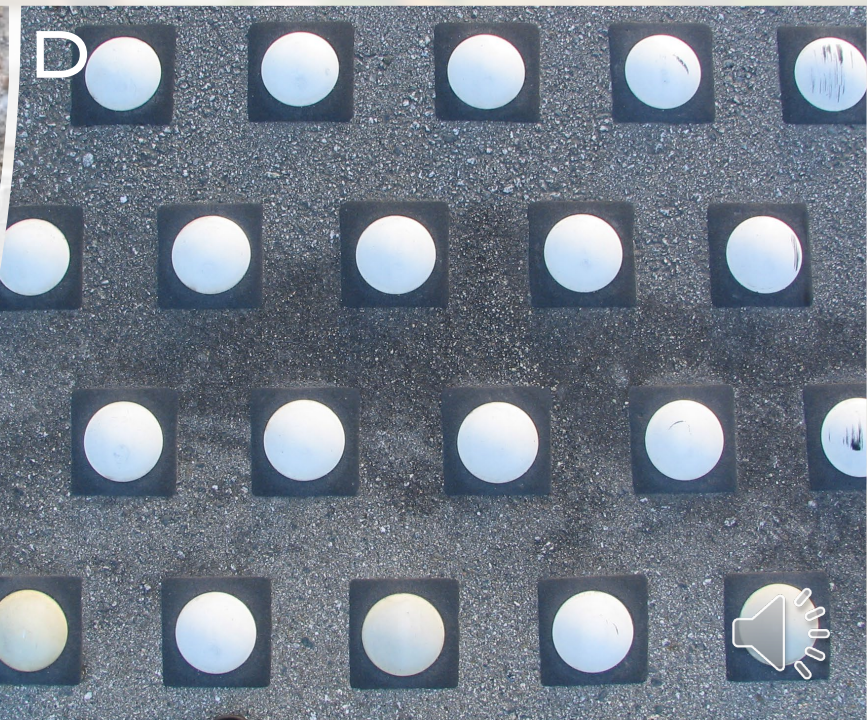
Pilot Project – Roadway Treatments

Temporary Curb & Flex
Posts (A)

Short-Term Striping (B)

Pavement Marker (C)

Bots' Dots (D)



Pilot Project – Costs

(A) Temp. Curb* - \$120

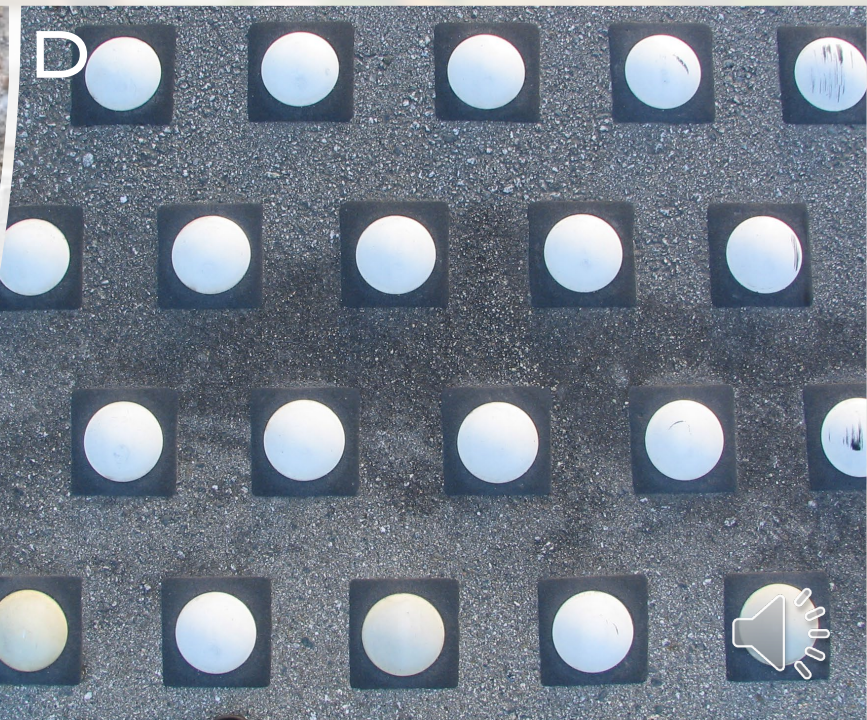
(A) Flex Post* - \$40

(B) Striping - \$0.03/LF

(C) Marker - \$1.64/ea

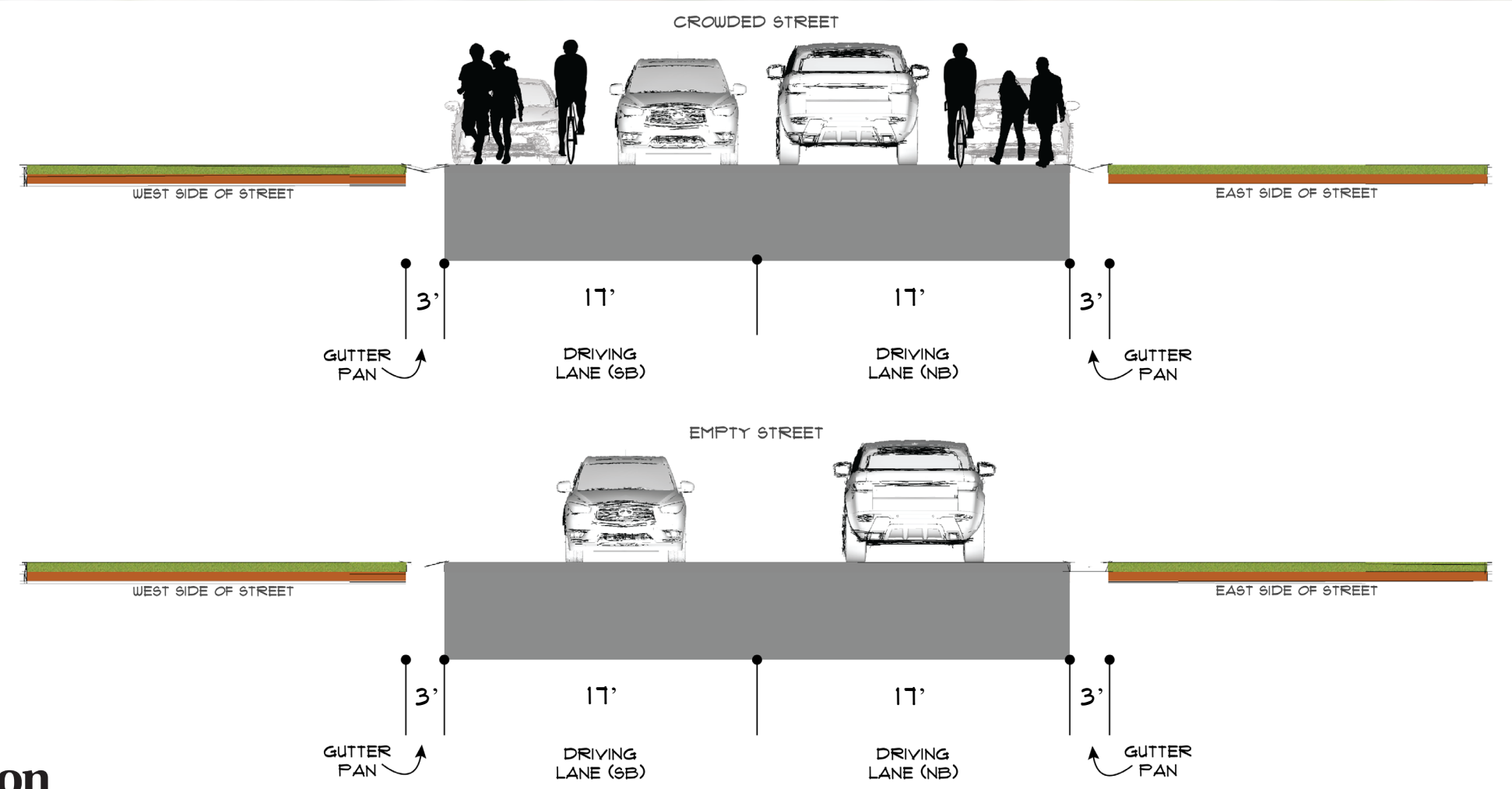
(D) Dot - \$2.85/ea

**Items are reusable and the City already has some supplies on hand.*



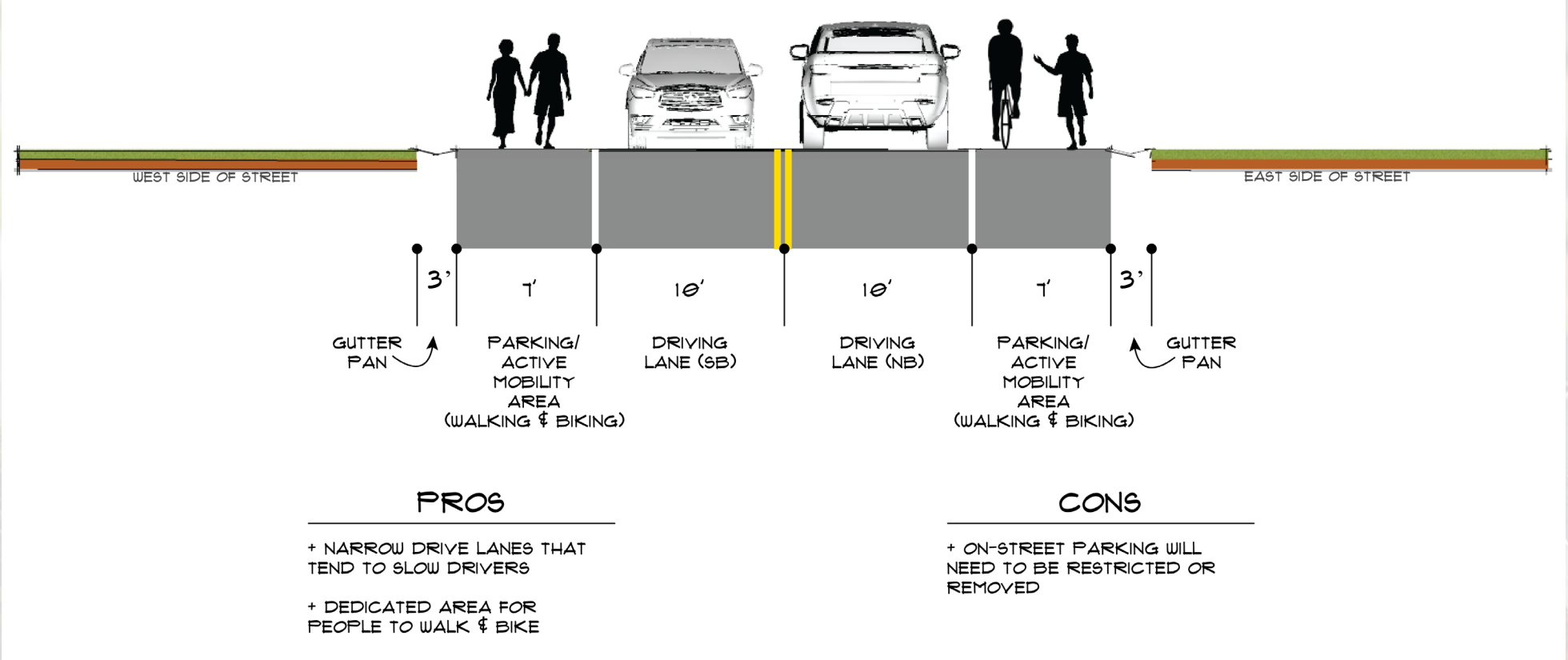
Pilot Project – Proposed Options

Blue Sage Dr – Existing Condition



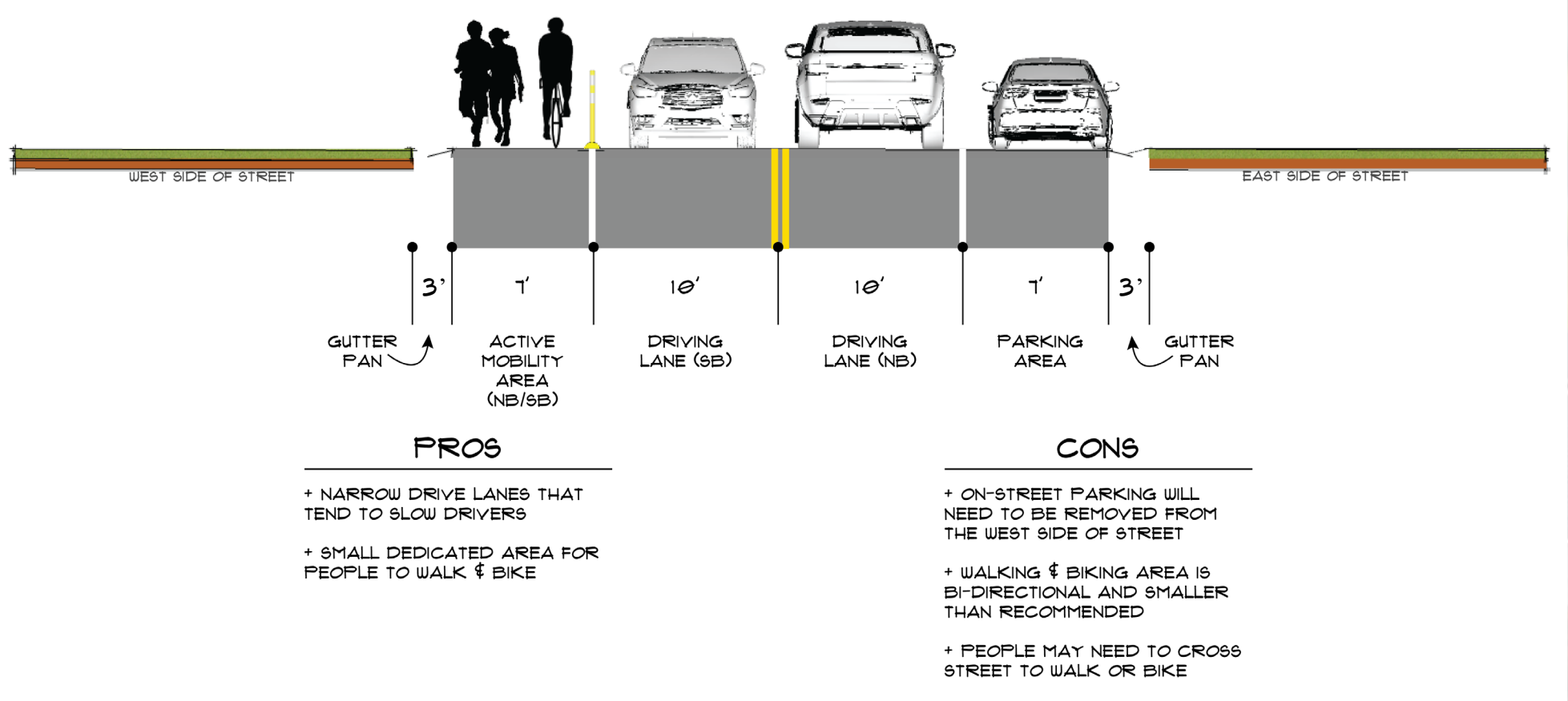
Pilot Project – Proposed Options

Blue Sage Dr – Option 1



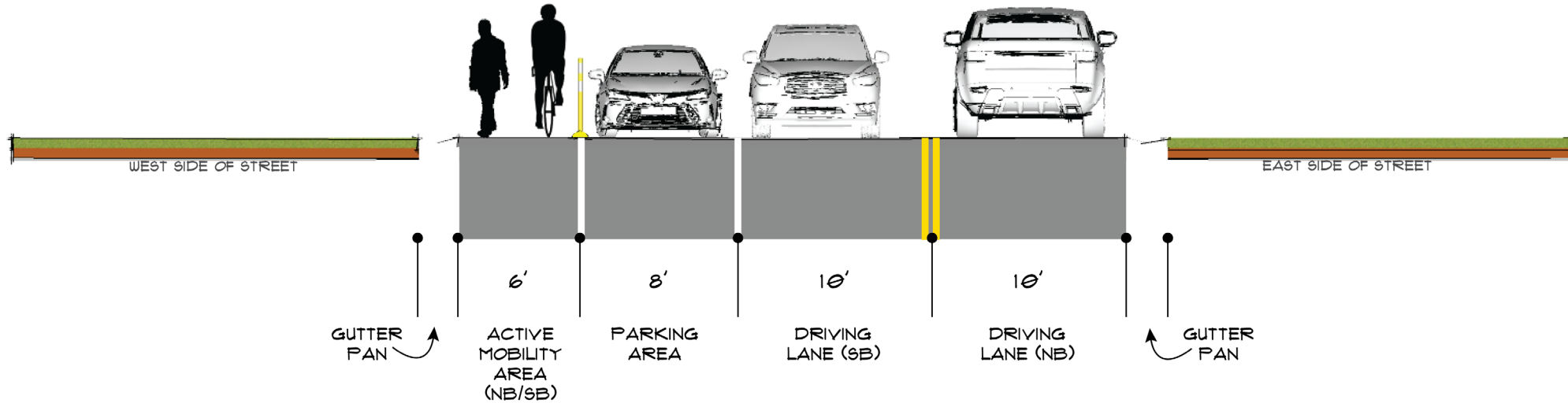
Pilot Project – Proposed Options

Blue Sage Dr – Option 2



Pilot Project – Proposed Options

Blue Sage Dr – Option 3



PROS

- + NARROW DRIVE LANES THAT TEND TO SLOW DRIVERS
- + SMALL DEDICATED AREA FOR PEOPLE TO WALK & BIKE

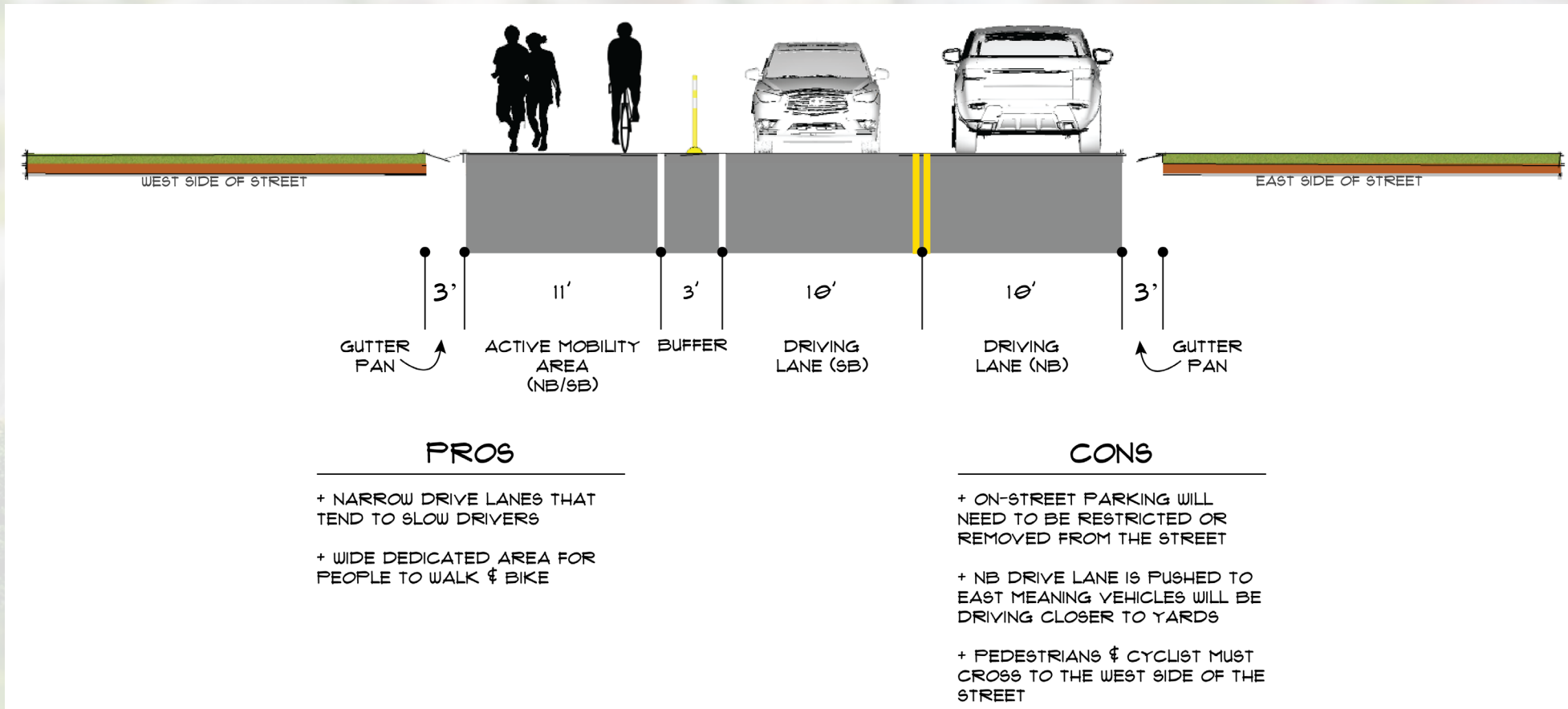
CONS

- + ON-STREET PARKING WILL NEED TO BE REMOVED FROM THE EAST SIDE OF STREET
- + WALKING & BIKING AREA IS BI-DIRECTIONAL AND SMALLER THAN RECOMMENDED
- + NB DRIVE LANE IS PUSHED TO EAST MEANING VEHICLES WILL BE DRIVING CLOSER TO YARDS
- + PEDESTRIANS & CYCLIST MUST CROSS TO THE WEST SIDE OF THE STREET



Pilot Project – Proposed Options

Blue Sage Dr – Option 4



Pilot Project – Proposed Options

A modular approach:

- The proposed options can be mixed and matched with treatment options to better encourage drivers to slow down and avoid bike and pedestrian areas of the street.
 - For example, dots, temporary curb, and/or flex posts can be used to separate travel lanes from pedestrians.
- The City is open to discussing other temporary solutions that increase bike and pedestrian safety. Just like any proposed option from the City, any device would be compared to baseline data to evaluate the effectiveness.
- As a reminder, this is a temporary project aimed at guiding future decision making. Temporary traffic calming measures are not always aesthetically pleasing, but they provide data and can lead to permanent solutions that both slow cars and compliment the character of Bow Mar South.



Pilot Project – Example Applications



Pilot Project – Proposed Metrics

Throughout the pilot project, the City will be collecting data for the following metrics, and using them to evaluate the effectiveness of the pilot project:

- 85p Speeds – Does 85th percentile speed stay the same or decrease?
- 5+ MPH Speeders – Does the percentage of people going 5 mph over the speed limit (or more) stay the same or decrease?
- Pedestrians/Cyclist Volume – Does the number of people walking and biking on Blue Sage Dr stay the same or increase?
- Community Support – What percentage of the people adjacent to the project are in favor of the project? What percentage of people in Bow Mar South are in favor of the project?

In order to move forward with a longer-term project, the City would want 2/3 of households adjacent the project, and 1/2 of other households that respond in Bow Mar South, to be in favor of the project.



We Want to Hear from You:

The City has put together a brief survey (10 -15 minutes) asking for your feedback on how you feel about the pilot project options, how you travel through the neighborhood, and any other feedback you wish to provide.

Please follow the link below to access the survey:

<https://bit.ly/3hJtOsr>

If you have additional questions please contact the City of Littleton Public Works at 303 – 795 -3863.

