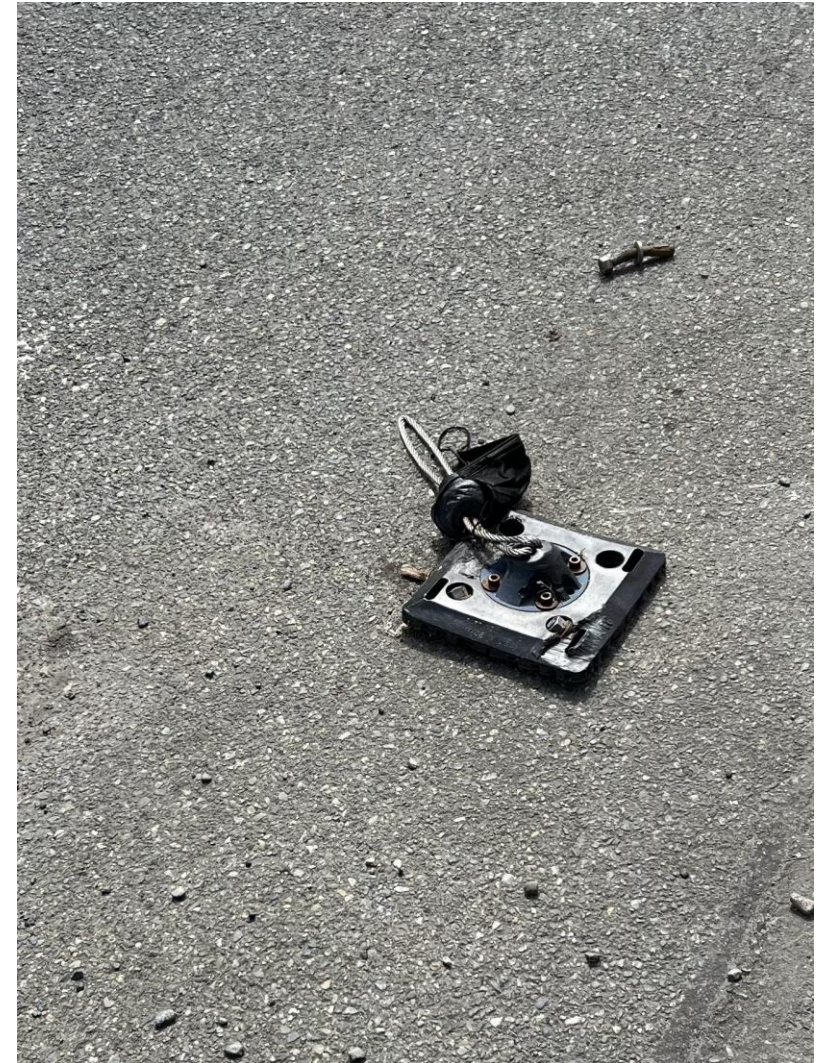




Better Bike Lane Barriers

Background

- Cities across the country looking to upgrade early PBLs
- Most PBLs built using flexible delineators
 - Not durable
 - Several maintenance challenges
 - Not great for protection
- Some facilities in Seattle are being upgraded with concrete barriers



Developing a Pilot

- SDOT is researching material options
- Market has responded with custom products
- SDOT has met with NYC and Toronto officials recently
- SDOT will evaluate some of these new materials
 - “Upgrade” at least two bike lane locations that have only paint as a separation
 - “Replace” at least two bike lane locations that have paint and flexible delineators as a separation with more durable materials (ex: concrete barrier)

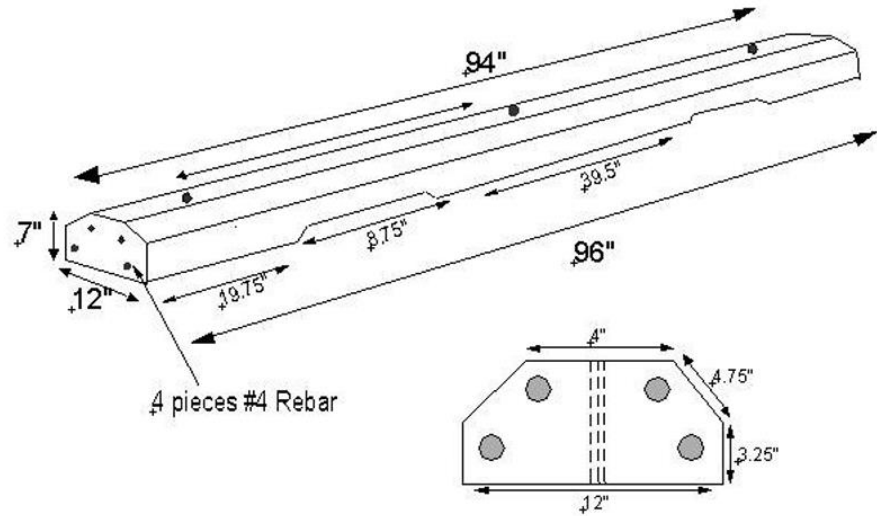
Preferred Materials

- Concrete
 - 1x Precast Barrier
 - 1x Precast Parking Stop
 - 1x Extruded Curb
- Manufactured Polymer barriers
 - 1x Plastic Delineator Alternative

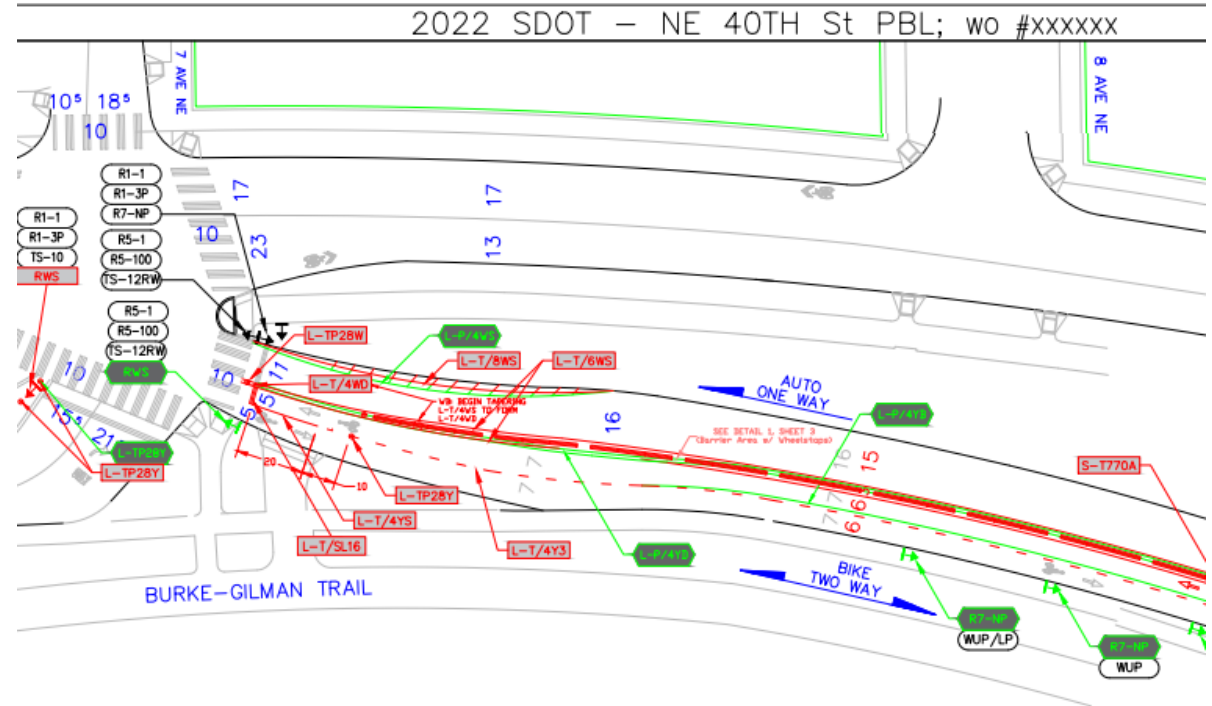


Industrial Curb

Industrial Curb 8 ft. PC8011



- Wheel stops
 - Already in Seattle use for low-cost walkways
 - Industrial wheel stops will be installed along NE 40th St
 - 12" wide and 7" tall
 - Commonly available, including different dimensions



Low Wall Concrete Barrier



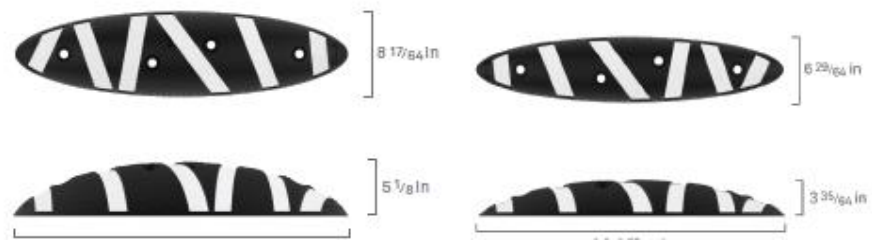
- Low Wall Concrete Barrier
 - Toronto has used this material to harden their PBL network since 2018, now spreading to other Canadian cities
 - Proprietary design, but very similar to Canadian standard plan.
 - Vendor in BC can produce a pilot-sized order for SDOT
 - Would seek a custom mold from a local manufacturer if this scales up
 - ~18 in wide (45 cm), ~18 in tall (45 cm)
 - Not pinned to road to improve vehicle crash dynamics, but interlocked
 - Installed with forklift

Extruded Concrete Curb



- Used for PBLs in Vancouver and other British Columbia cities
- Specialized equipment rapidly extrudes curbing
 - Can custom fit curves, bump outs etc.
 - Multiple options for shape and dimensions
 - Attached to pavement with epoxy and pins
- Caution for use on high volume/speed roadways

The Armadillo by Cyclehoop / Zebra by Zicla



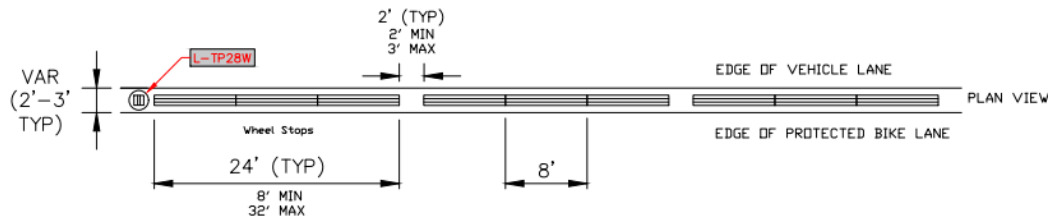
- Direct flex post replacement
- Extensive international use, but with US availability
- 8 or 14 lbs, no lift required
- $6 \frac{1}{2}$ or $8 \frac{1}{4}$ wide, $3 \frac{1}{2}$ " or $5 \frac{1}{2}$ " tall
- Shorter than flex posts, usually countered with more frequent spacing
- Built-in retroreflectivity

Example upgrade: NE 40th St beneath the University Bridge

- Separate existing unprotected bike lane
- Connector between major bike facilities
- Already approved for pre-cast parking stops
- Installation in Q3 2022, approx. 840 LF
- Tracked as part of the pilot

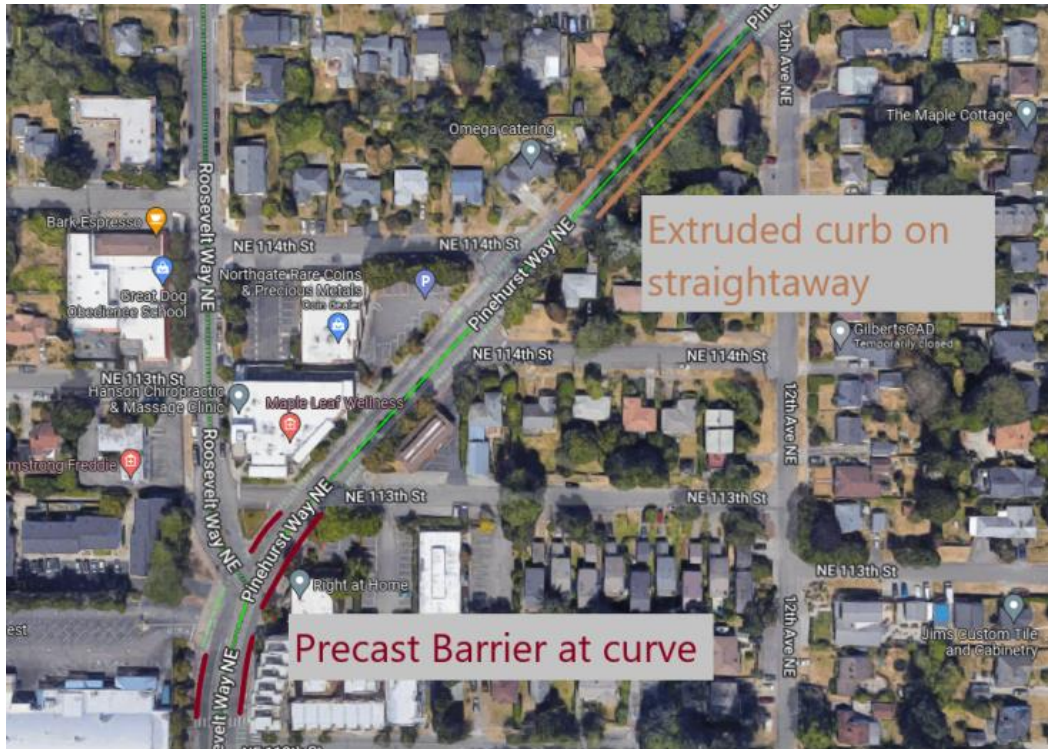


DETAIL 1: BARRIER AREA (NOT TO SCALE)



Example repair DRAFT: Pinehurst Way Curves

- Up to 1,000 lf
- Repair a protected bike lane installed in 2016
- Flex posts in 2' buffer now heavily damaged
- Longer stretch an opportunity to test extruded curb at length
- Curves require more durable treatment such as pre cast barrier
- Highest tier equity area



Next steps

- At least two locations funded with existing maintenance budget
- Funding secured from Bicycle Spot Improvement Program for at least two upgrade locations
- Evaluate Seattle's installations:
 - Record and compare labor and material costs
 - Monitor bike lane blocking during peak times
 - Monitor aging and wear and tear of materials
 - Track nearby collisions and communications from users
- Continue to track other cities

Questions for the Board

Are there short stretches of bike lane that you frequently see blocked?

Are there short stretches of protected bike lane that continually see damaged flex posts?

Sites under consideration:

- Northbound SW Admiral Way climb from the low bridge
- Northbound 9th Ave N south of S Mercer St
- Northbound S Columbian Way between 16th Ave S and S Snoqualmie St
- Spot improvements downtown.

Questions?

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