8TH STREET IMPROVEMENTS
STATE TO FRANKLIN
CONCEPT DESIGN

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TECHNICAL MEMORANDUM

Date:	December 19, 2022	Project #: 23898.5
To:	Zach Piepmeyer, Project Manager Capital City Development Corporation 121 N 9th St #501 Boise, ID 83702	
From:	Rebecca Hoffman, EIT, Nick Foster, AICP, RSP$_1$, Sam Mantsch, and Evan Reed, PE, PTOE	
Project:	8th Street Improvements, State to Franklin	
Subject:	Technical Memorandum #2: Alternative Concepts	

INTRODUCTION

This memorandum describes and evaluates alternative concepts for 8th Street from State Street to Franklin Street. These concepts meet the project's goal of developing a concept plan for a multimodal street that provides a low-stress biking experience, improved streetscapes, and undergrounding overhead utilities. The concepts presented in this memorandum have been selected from five initial concept designs by Capital City Development Corporation (CCDC) staff in collaboration with Ada County Highway District (ACHD) staff.

On November 9, 2022, the ACHD Commission approved Concept A.

CONCEPT DEVELOPMENT

The project team developed draft concepts based on the overall project objectives, feedback received from adjacent property owners, the constructed improvements to 8th Street from Bannock Street to State Street, and the physical condition of 8th Street. The project team considered the following objectives in developing concepts:

- Provide for the needs of all 8th Street users, including pedestrians, cyclists, drivers, and bus riders.
- Extend a low-stress bicycle connection from Downtown Boise to the Boise North End, and to the future Franklin Street bikeway.
- Improve safety for all users.

- Improve streetscape adjacent to redeveloping properties and preserve streetscape along all other properties.
- Underground overhead electrical utilities between State Street and Washington Street.
- Coordinate concepts with the ACHD project evaluating Franklin Street to Union Street.

PRELIMINARY ALTERNATIVES & INITIAL EVALUATION

The project team developed five initial preliminary concepts in October 2021. The project team worked with CCDC and ACHD staff to refine these concepts and determine which would move forward for further, more detailed evaluation presented in this memorandum. Table 1 summarizes the preliminary concepts and the results of the initial screening. *Attachment 'A' contains the five initial cross-sectional designs*.

TABLE 1. PRELIMINARY CONCEPTS AND INITIAL SCREENING

Alternative	Description	Initial Evaluation Result
1	Two northbound travel lanes, protected bike lanes, on-street parallel parking on the east side of 8th Street.	Removed due to tree, curb, and parking impacts.
2	One northbound travel lane, raised bike lanes, on-street parallel parking on the east side of 8th Street.	Moved forward for further evaluation.
3	One northbound travel lane, one raised southbound bike lane, one northbound painted bike lane, on-street parallel parking.	Moved forward for further evaluation.
4	Two northbound travel lanes, raised bike lanes, on-street parallel parking on the east side of 8th Street.	Removed due to tree and curb impacts.
5	One northbound travel lane, one raised southbound bike lane, one northbound painted bike lane, back-in angled parking.	Moved forward for further evaluation.

REFINED CONCEPT EVALUATION

After initial evaluation project team completed more detailed evaluation of the concept designs moved forward according to these criteria:

- Bicycle Level of Traffic Stress (BLTS)
- Pedestrian Level of Traffic Stress (PLTS)
- Motor Vehicle Operations
- Motor Vehicle On-Street Parking
- Safety
- Streetscape Impacts

Figure 1 includes cross-sectional designs by block of each concept. *Please note that the concepts were re-named following the initial evaluation*. *Attachment 'B' includes plan-view conceptual drawings of the study corridor*. The concepts shown include:

- Concept A – one travel lane with eastside on-street parking and raised bike lanes.
- Concept B – one travel lane with dual on-street parking, an at-grade northbound bike lane, and a raised southbound bike lane.
- Concept C – one travel lane with east-side reverse back-in parking, an at-grade northbound bike lane, and a raised southbound bike lane.

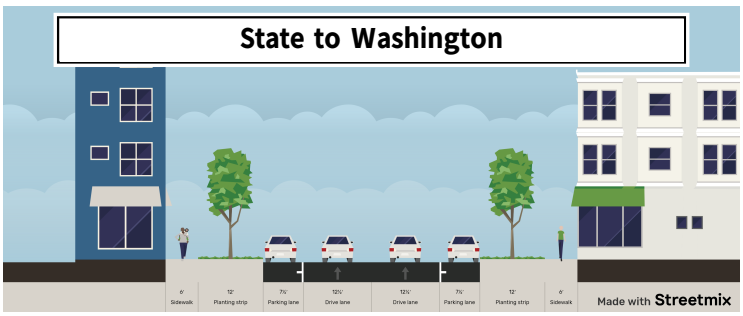
Bicycle Level of Traffic Stress (BLTS)

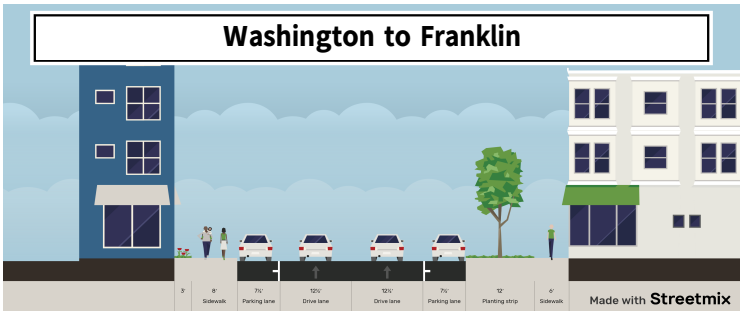
Bicycle Level of Traffic Stress was calculated for the two roadway segments and at the three intersections along 8th Street from State Street to Franklin Street. Figure 2 includes a side-by-side comparison of the BLTS results for existing conditions and each concept design.

The addition of raised bike lanes or six-feet wide painted bike lanes improves the BLTS of both roadway segments in all three concept designs to 1 (High Comfort for All). While the BLTS is the same for all three concepts, Concept A is likely the most comfortable for people biking northbound. It provides a raised bike lane buffered from motor vehicle traffic by parked cars, while the other two concepts provide a painted bike lane that people will need to drive across going to/from the adjacent parking spaces. Adding a raised northbound bike lane to Concept B would result in needing to provide a 16-feet wide motor vehicle travel lane to meet emergency access requirements, which would impact existing trees. Adding a raised bike lane to Concept C would also result in further streetscape impacts.

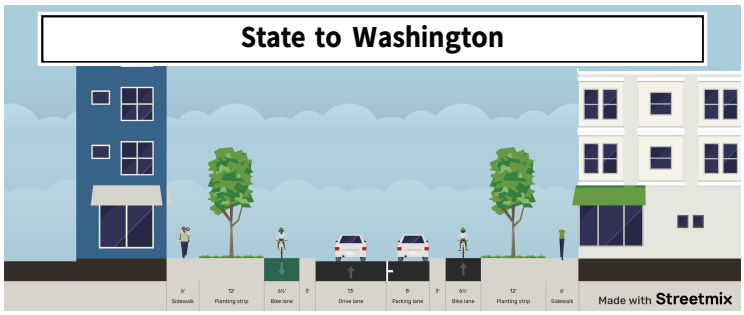
The BLTS at the study intersections remains unchanged from existing conditions. The two unsignalized intersections are rated as BLTS 1. The State Street intersection is rated at BLTS 3 based on the State Street approaches. The 8th Street approaches are either BLTS 1 (southbound) or 2 (northbound) based on the approaching segment BLTS. The approaching segment BLTS is used for these approaches because there is either not a bike lane (northbound), or there is no right-turning volume across the bike lane (southbound). This approach is consistent with the original BLTS methodology (Reference 1) and was confirmed by ACHD staff.

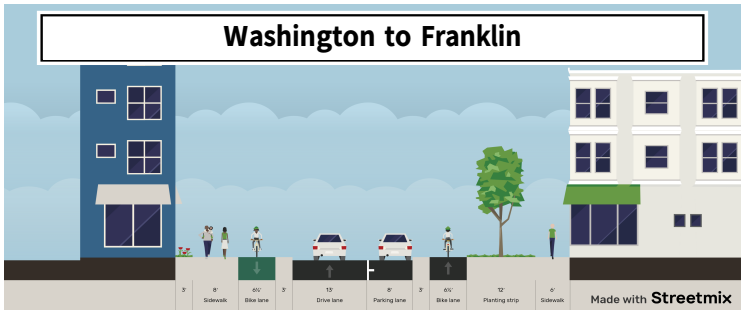
Existing Conditions



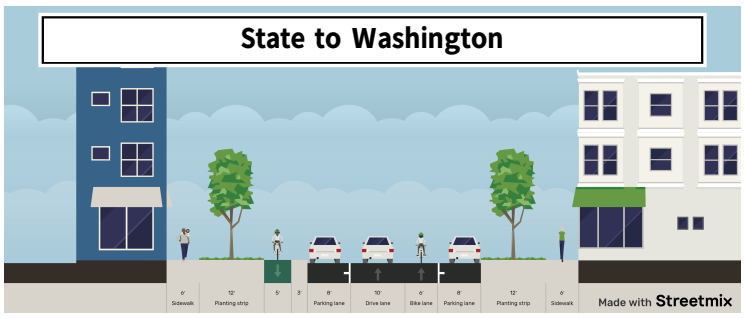


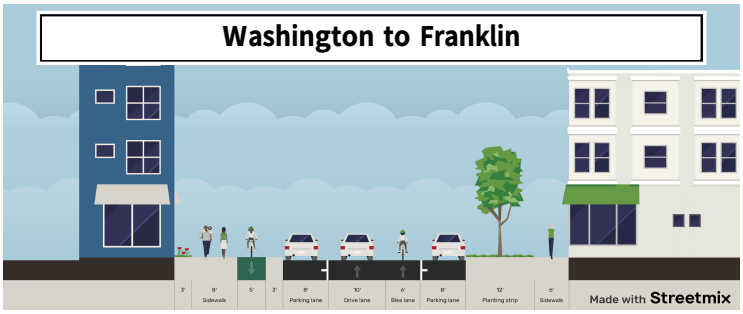
Concept A



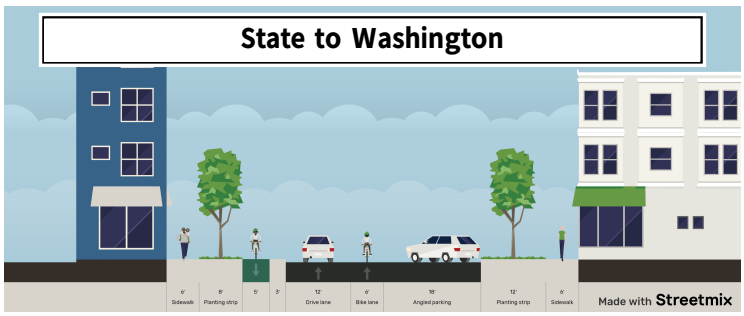


Concept B





Concept C



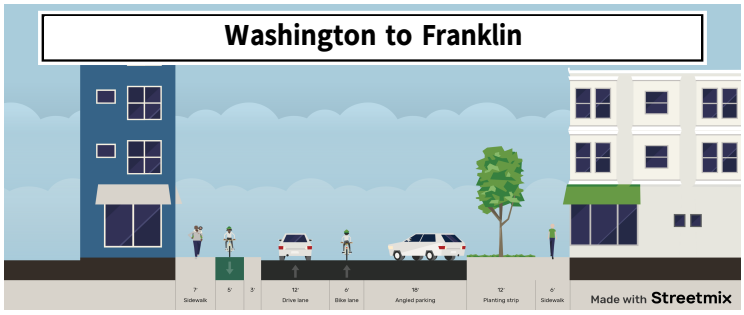


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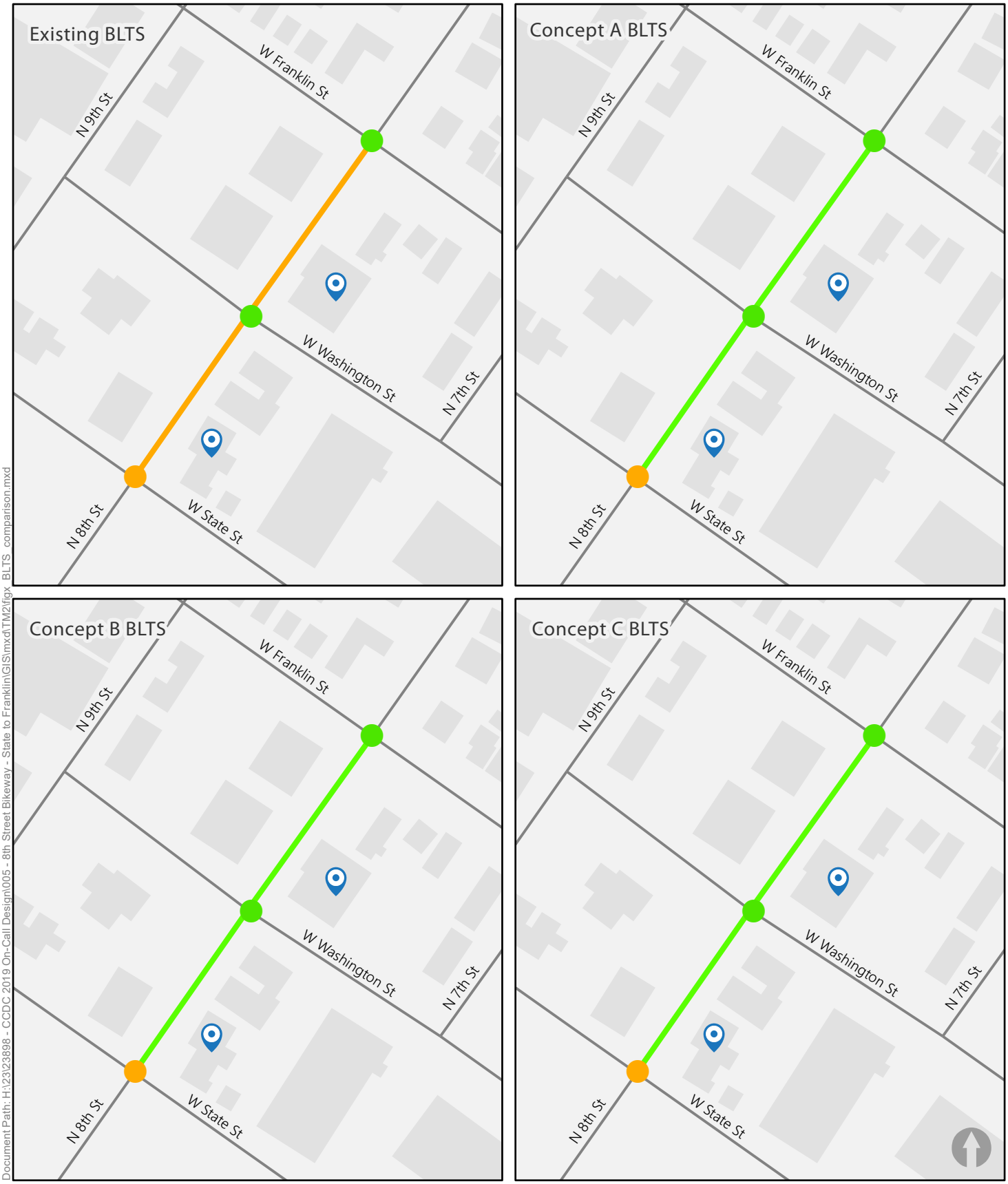
Figure 1: Conceptual Cross-sections



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8TH STREET IMPROVEMENTS
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- Level of Traffic Stress 1
- Level of Traffic Stress 2
- Level of Traffic Stress 3
- Level of Traffic Stress 4

Figure 2: Bicycle Level of Traffic Stress Concept Comparison

Pedestrian Level of Traffic Stress (PLTS)

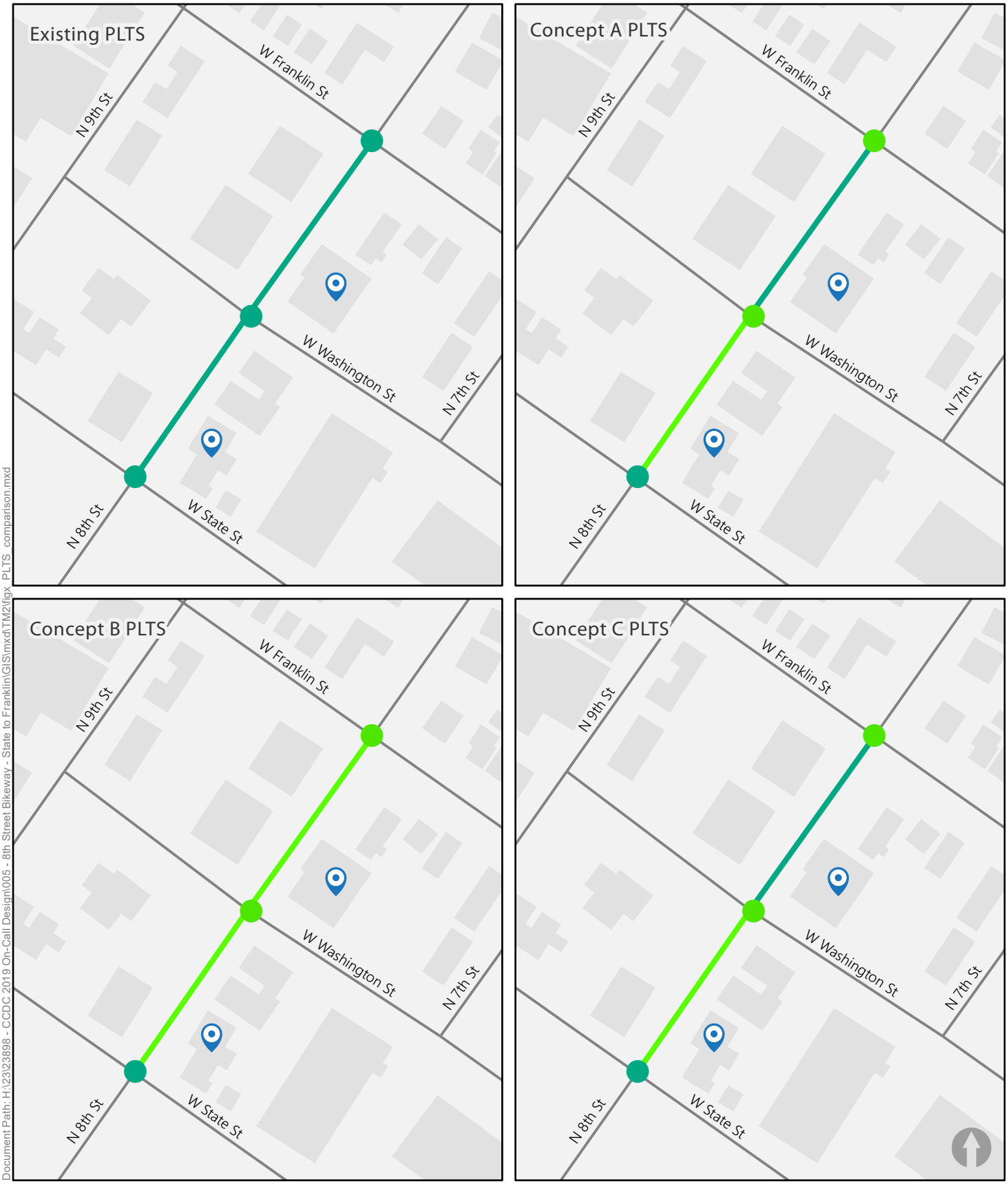
Pedestrian Level of Traffic Stress was calculated for the two roadway segments and at the three intersections along 8th Street from State Street to Franklin Street. Figure 3 includes a side-by-side comparison of the PLTS results for existing conditions and each concept design.

The three concepts increase the buffer between the sidewalk and the motor vehicle travel lane in some locations. This results in the PLTS along the roadway improving to 1 (High Comfort for All) south of Washington Street. Concept B also adds additional buffer space north of Washington Street, which also improves the PLTS 1.

The project anticipates upgrading all curb ramps at the Franklin Street and Washington Street intersections. This will improve their PLTS to 1. The PLTS at State Street remains 2 due to the number of lanes that must be crossed.

On-Street Parking

Figure 4 includes a side-by-side comparison of the parking capacity results for existing conditions and each concept. Concept A has the greatest impacts to on-street parking, resulting in 18 stalls removed. Concepts B and C have relatively minor impacts, resulting in losses of 0 and 3 stalls, respectively.



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Level of Traffic Stress 1

Level of Traffic Stress 2

Level of Traffic Stress 3

Level of Traffic Stress 4

8TH STREET IMPROVEMENTS
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Figure 3: Pedestrian Level of Traffic Stress Concept Comparison

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Figure 4: Parking Capacity Concept Comparison

Motor Vehicle Operations

All concepts remove one motor vehicle travel lane. This configuration was analyzed in *Technical Memorandum #1 Existing Conditions Analysis*. Under this configuration, the critical movement at the Washington Street and Franklin Street intersections is forecast to operate at LOS B with volume-to- capacity (v/c) ratios for all movements less than 0.25 during the AM and PM peak hours. Additionally, the peak hour volumes on 8th Street are within ACHD's level of service planning thresholds (i.e., Table 2 in Section 7100 of the ACHD Policy Manual) for a one-lane collector. Given these operational results both intersections will experience minimal impacts with implementation of one northbound travel lane, consistent with all three concepts.

Safety

Technical Memorandum #1 describes the project team's review of crash data for the most recent ten-year period for which data was available, 2011-2020.The data shows most crashes reported (i.e., 54%) resulted in property damage only, while the remaining 46% of crashes resulted in an injury. Most crashes occurred at the State Street (20 crashes) or Washington Street (13 crashes) intersections. The concept designs include the following features, which may reduce crash potential and/or severity:

- Reducing the number of motor vehicle travel lanes from two lanes to one lane.
    - This could provide a traffic calming effect, which could lower the potential severity of crashes.
    - It also reduces the number of lanes being crossed on 8th Street for people biking, driving, and walking, which could reduce the potential for angle or other crossing crashes.
        - Curb bulb-outs are also an option that will be explored in the final design of the preferred concept. These bulb-outs would reduce the crossing distance for people walking across 8th Street and could improve their visibility to people driving while they wait to cross.
- Enhancing crossings at Washington Street and Franklin Street with rectangular rapid flashing beacons (RRFBs).
- Reallocating roadway space to provide for bike lanes has been shown to reduce crashes by recent Federal Highway Administration (FHWA) research (Reference 2).

Streetscape Impacts

One objective of the concept designs is minimizing impacts to established trees. The project team reviewed existing trees and potential impacts moving the curbs could have to them with the City of Boise Community Forestry department. Figure 5 includes a side-by-side comparison of potential tree impacts by concept.

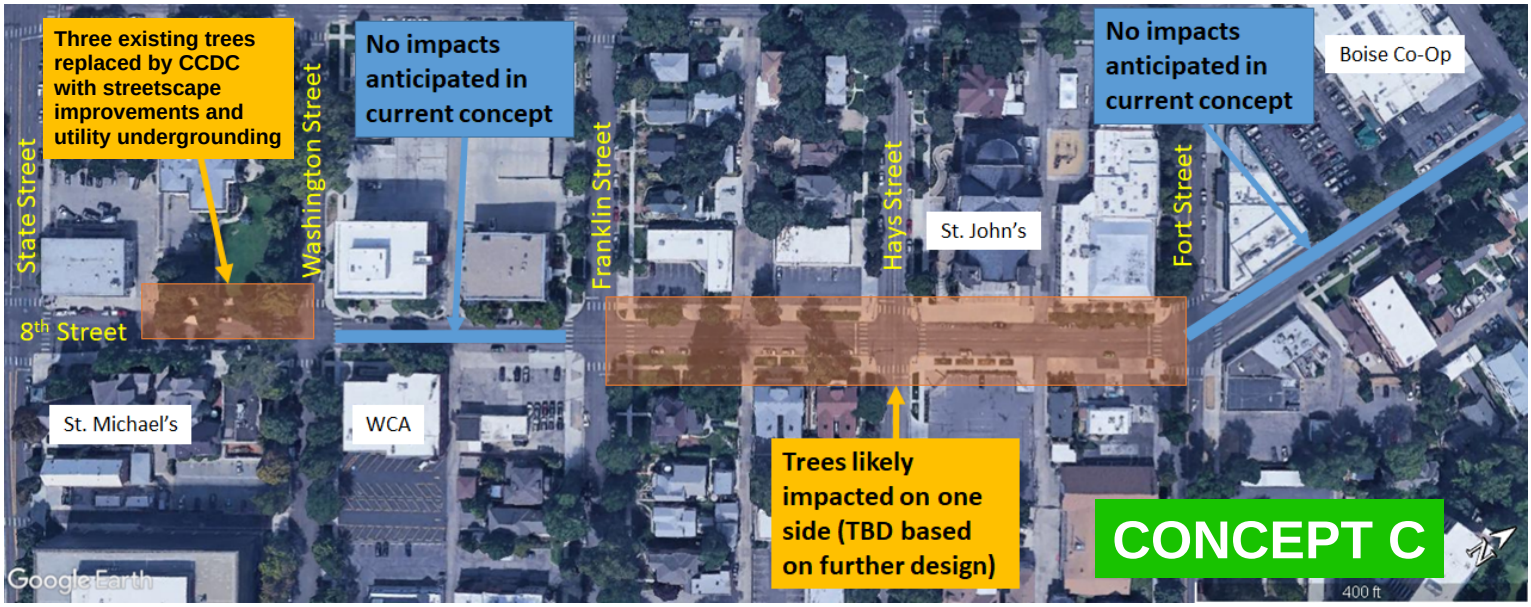

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Figure 5: Streetscape and Tree Impacts Concept Comparison

None of the concepts is expected to impact existing trees from State Street to Franklin Street, except those which will be replaced as part of the streetscape improvements and utility undergrounding process. These trees have been aggressively pruned, limiting their growth potential. Removing the overhead utilities will allow the new trees to grow without needing this same treatment. Concept C avoids tree impacts north of Washington Street by reducing the sidewalk width on the west side of 8th Street for half a block before the road alignment jogs east and reduces the sidewalk buffer space on the east side, where there are currently no trees.

North of CCDC's project limits, Concept A is not expected to affect existing trees. Concept B may have limited effects on the existing curbs, which could affect certain trees. These effects could be mitigated by reducing the bike lane buffer space. These trade-offs should be further evaluated during the design phase if Concept B is advanced. Concept C will likely result in the removal of some, or all, trees from one side of 8th Street from Franklin Street to Fort Street. None of the concepts are expected to affect trees north of Fort Street.

COST ESTIMATES

Table 2 presents planning-level cost estimates for the concept designs. These estimates are preliminary and subject to change as the preferred concept is advanced through final design. *Attachment 'C' contains more detailed cost-estimate sheets*.

TABLE 2. COST ESTIMATES SUMMARY

	Concept A	Concept B	Concept C
Bikeway Materials / Construction	$440,000	$330,000	$490,000
Streetscape Materials / Construction	$410,000	$400,000	$420,000
Utility Undergrounding	$200,000	$200,000	$200,000
Contingency (20%)	$230,000	$200,000	$240,000
Design Engineering & Construction Management	$260,000	$230,000	$280,000
Total	**$1,540,000**	**$1,360,000**	**$1,630,000**

EMERGENCY ACCESS CONSIDERATIONS

The project team met with City of Boise Fire Department staff in November 2021 to review the draft concepts. This resulted in the following findings for each concept:

- Concept A – The southbound raised bike lane on the west side of 8th Street will need to be mountable by emergency vehicles.
- Concept B – The current cross-sections should be adequate for access.
- Concept C – The southbound raised bike lane may need to be mountable by emergency vehicles.

EVALUATION SUMMARY

Key findings from these concept evaluations include:

- All concept designs provide a lower-stress biking experience.
  - Concept A likely provides the most comfortable experience as it eliminates conflicts between people biking and people parking.
- All concept designs improve the walking experience along 8th Street and reduce the number of lanes to be crossed on 8th Street from two to one.
  - Concept B provides the greatest amount of buffer space on both sides of the road.
  - Curb bulb-outs could also reduce the crossing distance for people walking across 8th Street and improve their visibility to people driving while they wait to cross.
- Concepts B and C are expected to have minimal on-street parking impacts, while Concept A would remove over half of the existing on-street parking from State Street to Union Street.
  - Concept A is expected to remove on-street parking from one side of 8th Street from State Street to Franklin Street.
- All concepts reduce 8th Street to one motor vehicle lane. This is not expected to have notable impacts to motor vehicle delay or cause any movements to not meet ACHD guidelines.
  - Lane reduction would also maintain consistency with the previous CCDC improvements on the 8th Street corridor from Bannock Street to State Street.
- Concepts A and B are generally not expected to impact existing trees beyond those that will be affected by streetscape upgrades and utility undergrounding, or their potential impacts could be mitigated by design changes.
  - Within the study area, Concept C is not expected to affect additional trees, but it will have impacts north of Franklin Street.
- Concepts A and C are expected to be similarily priced, and more expensive than Concept B due to more significant streetscape impacts.
  - Concept B's bikeway materials and construction are expected to cost slightly less than those of Concepts A and C.

PREFERRED CONCEPT

CCDC, ACHD, and City of Boise staff coordinated and selected Concept A as the preferred design for 8th Street from State Street to Franklin Street.This selection was made at the third Interagency Advisory Team (IAT) meeting on February 9, 2022. Concept A was selected as the preferred concept for the following reasons:

- Public preference – 49% of respondents to the January-February survey chose Concept A as their preferred concept and 78% of respondents indicated they would support building the concept (another 7% said they were "unsure).
- It provides the most comfortable biking experience, with no conflicts with parking motor vehicles.

- It is consistent with the City of Boise's Transportation Action Plan, ACHD's Roadways to Bikeways Plan, and the North Boise Neighborhood Bicycle and Pedestrian Plan.

While this concept does have the greatest impacts to on-street parking, Technical Memorandum #1 showed that the on-street parking on these two blocks of 8th Street is generally 50% or lower, except during St. Michael's second service on Sunday mornings.

Concept A has been modified slightly since it was presented for public review in the spring of 2022. Based on feedback from the public and adjacent property owners, the following modifications were made (all are shown in Attachment 'B'):

- Two accessible stalls are proposed north of State Street in front of St. Michael's church, where there is currently one stall, and one new van-accessible stall is proposed for the north side of State Street in front of St. Michael's
- The raised bike lane is physically separated from adjacent sidewalks in front of St. Michael's church along the proposed accessible parking stalls, with a dedicated crossing provided to better channelize people crossing and minimize the number of potential conflict points between people biking and walking

Overall, the concept will:

- Improve levels of comfort and safety for people walking and biking by providing:
    - Dedicated space for people biking in both directions on 8th Street
    - Additional buffer space for people walking on the east side of 8th Street
    - Simplified crossing of 8th Street by reducing the number of motor vehicle lanes and by potentially including curb bulb-outs
- Improve safety performance for all people by slowing motor vehicle speeds
- Maintain existing street trees and other landscaping

The final design process will need to consider the following items as it progresses:

- Coordinate with Boise Fire in regards to the mountability of raised bike lane curbs
- Coordinate with VRT in regards to bus stop design and functionality
- Coordinate utlity undergrounding with the three properties redeveloping along 8th Street
- Evaluate curb bulb-outs into 8th Street at all intersections
- Determine approriate treatments for driveway and alley interactions with the raised bike lanes
- Evaluate whether additional parking needs to be restricted near alleys and driveways to provide adequate sight distance
- Evaluate a leading pedestrian interval at the 8th Street/State Street intersection
- Connections to/from the future Franklin Street Bikeway
- Bike lane surface (i.e., asphalt vs. concrete)
- Roadway grading to provide for adequate drainage and traversible cross-slopes

- Location and design of accessible parking stalls (the current concept drawings include two accessible stalls)
- Coordinating with St. Michael's on the physical buffers to be used on either side of the bike lane adjacent to the accessible parking stalls

Finally, the final design will need to be coordinated with ACHD and its planned project on 8th Street from Franklin Street to Union Street. The ACHD project currently envisions the same cross-section north of Franklin Street, to at least Hays Street.

The ACHD Commission approved the preferred concept November 9, 2022.

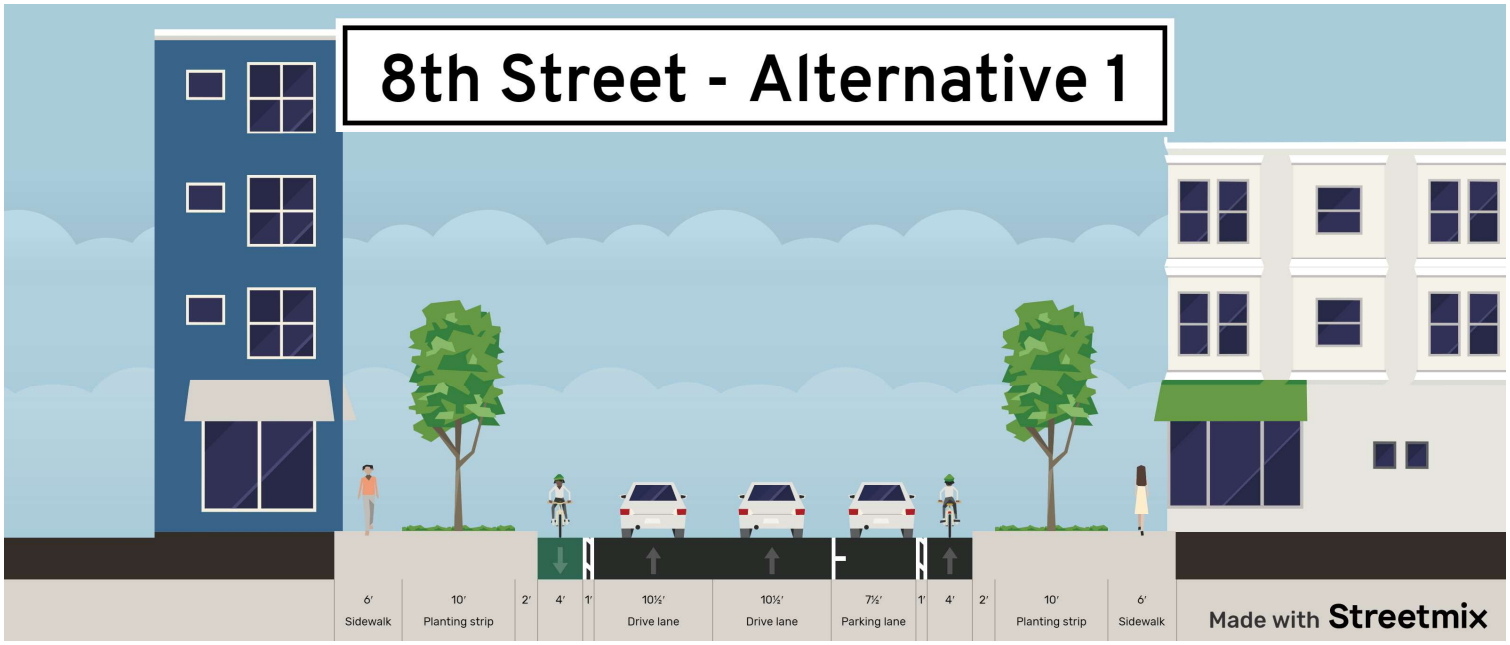
REFERENCES

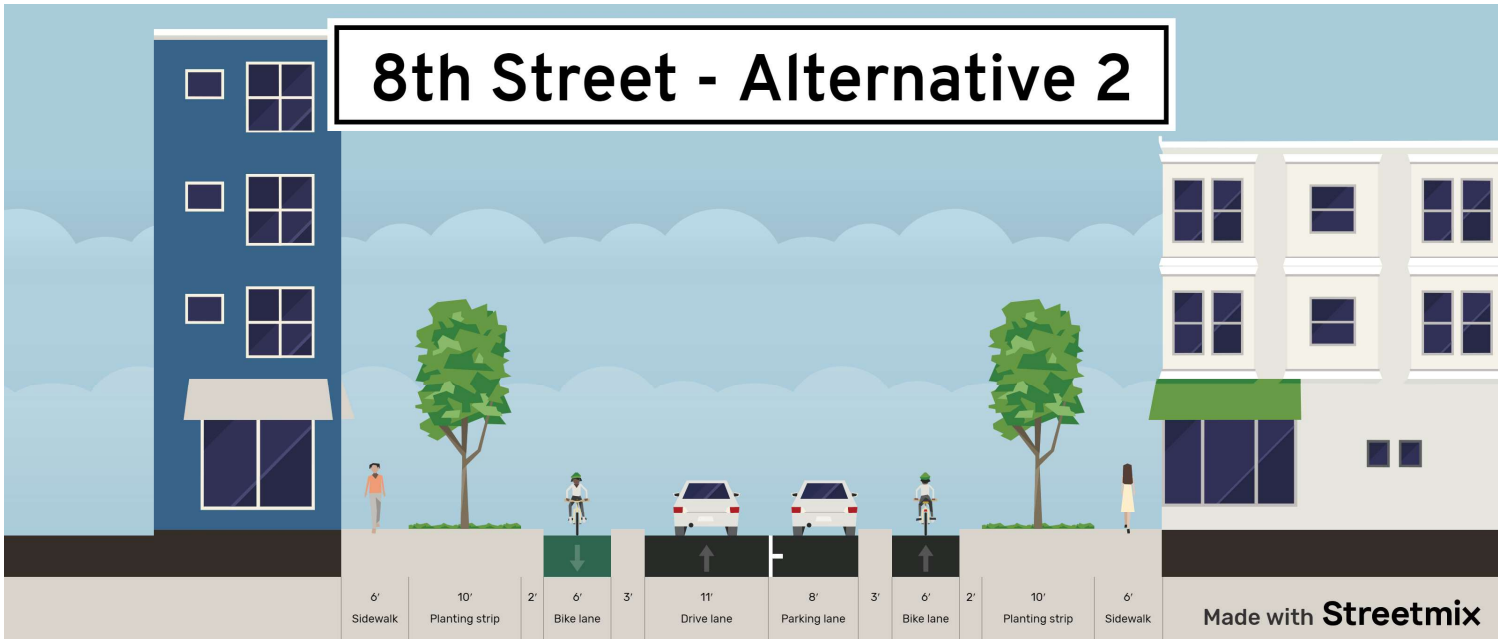
1. Mekuria, et al. *Low-Stress Bicycling and Network Connectivity*. Mineta Transportation Institute. 2012.
2. Avelar et al. *Development of Crash Modification Factors for Bicycle Lane Additions While Reducing Lane and Shoulder Widths*. FHWA, 2021.

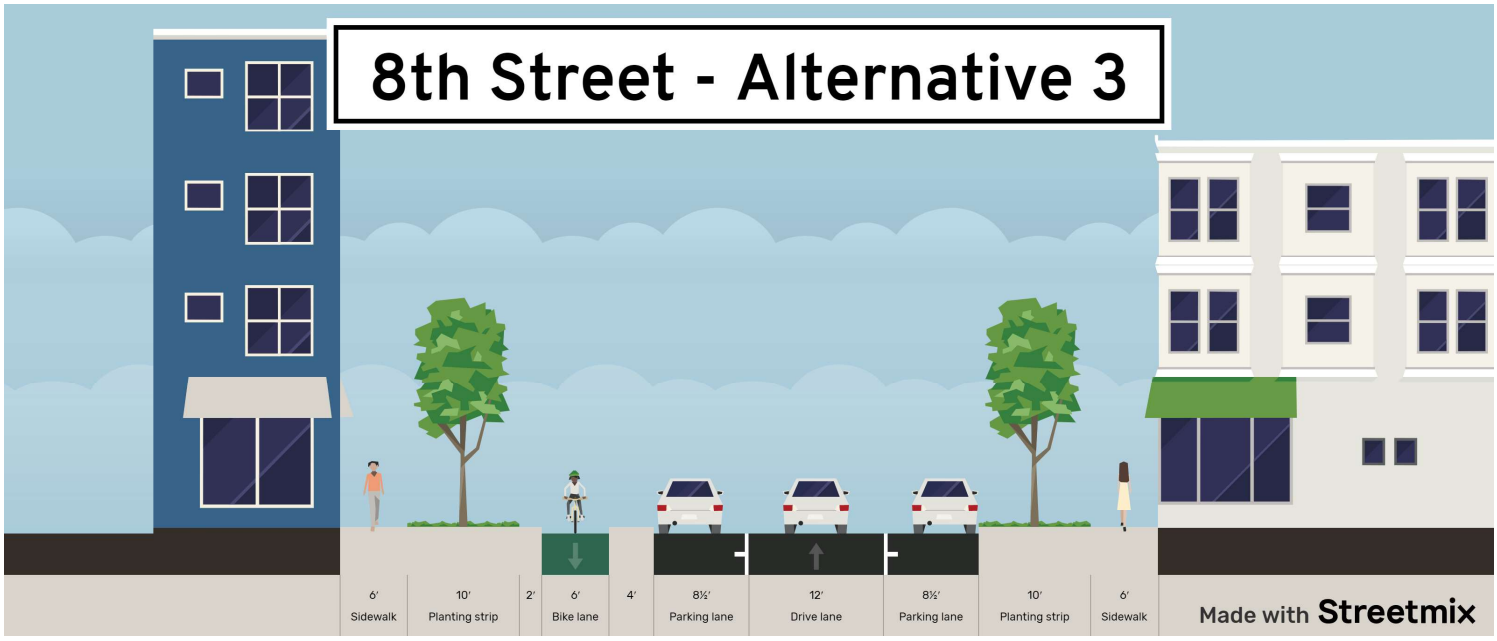
ATTACHMENTS

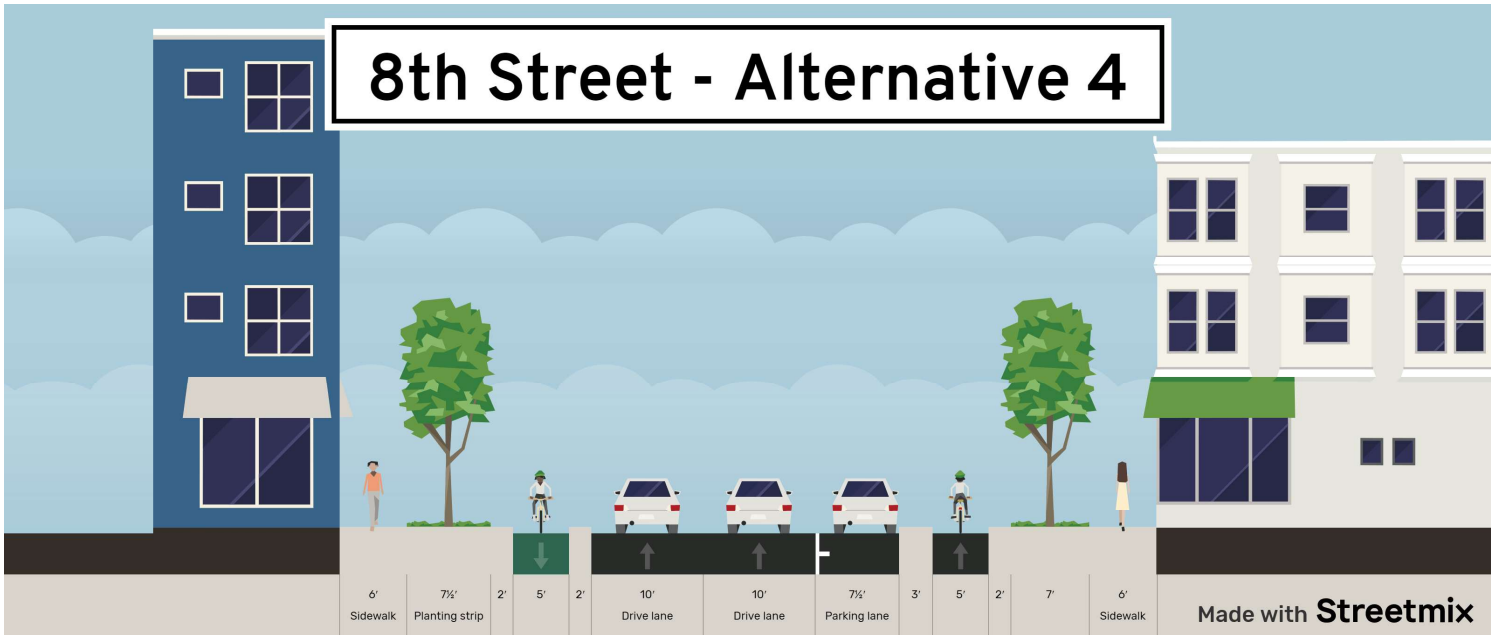
A. Initial Cross-Section Designs
B. Plan-View Conceptual Drawings
C. Cost-Estimates
D. Public Involvement Summary

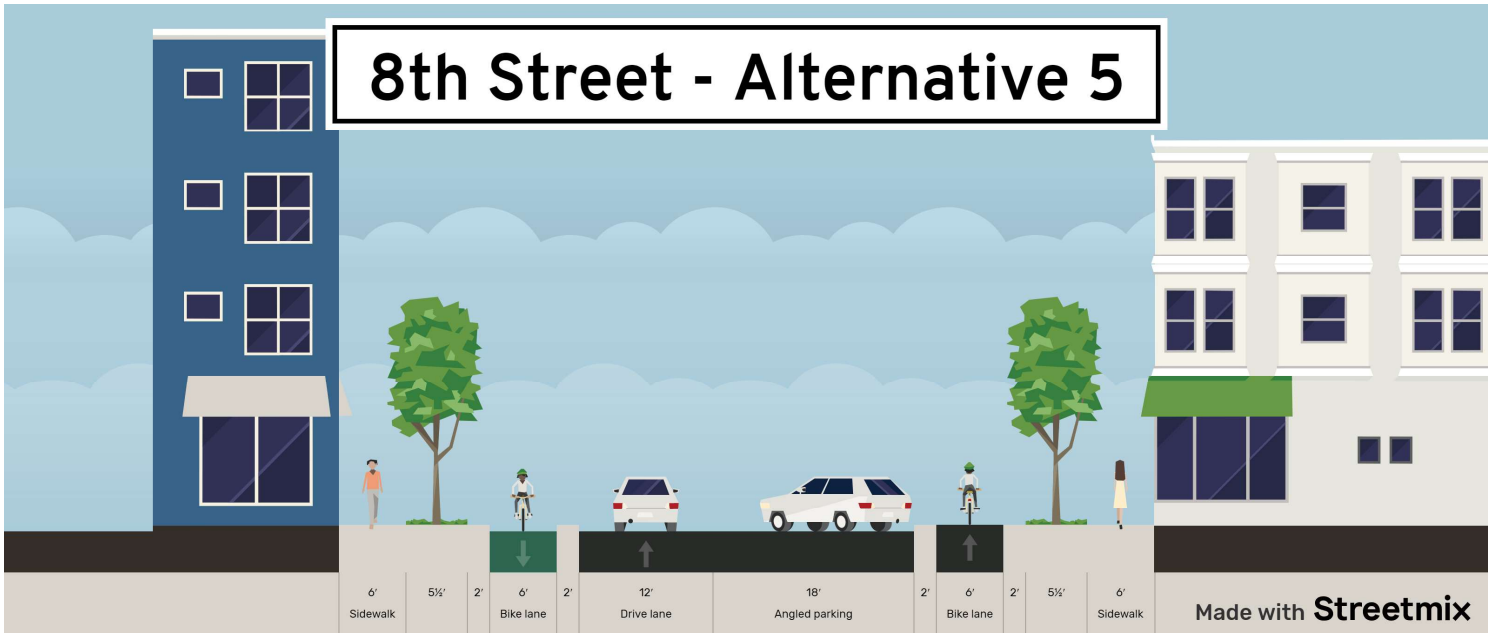
Attachment A Initial Cross-Section Designs


8th Street - Alternative 1
6′ Sidewalk
10′ Planting strip
2′
4′
1′
10½′ Drive lane
10½′ Drive lane
7½′ Parking lane
1′
4′
2′
10′ Planting strip
6′ Sidewalk
Made with Streetmix


8th Street - Alternative 2
6′ Sidewalk
10′ Planting strip
2′
6′ Bike lane
3′
11′ Drive lane
8′ Parking lane
3′
6′ Bike lane
2′
10′ Planting strip
6′ Sidewalk
Made with Streetmix


8th Street - Alternative 3
6′ Sidewalk
10′ Planting strip
2′
6′ Bike lane
4′
8½′ Parking lane
12′ Drive lane
8½′ Parking lane
10′ Planting strip
6′ Sidewalk
Made with Streetmix

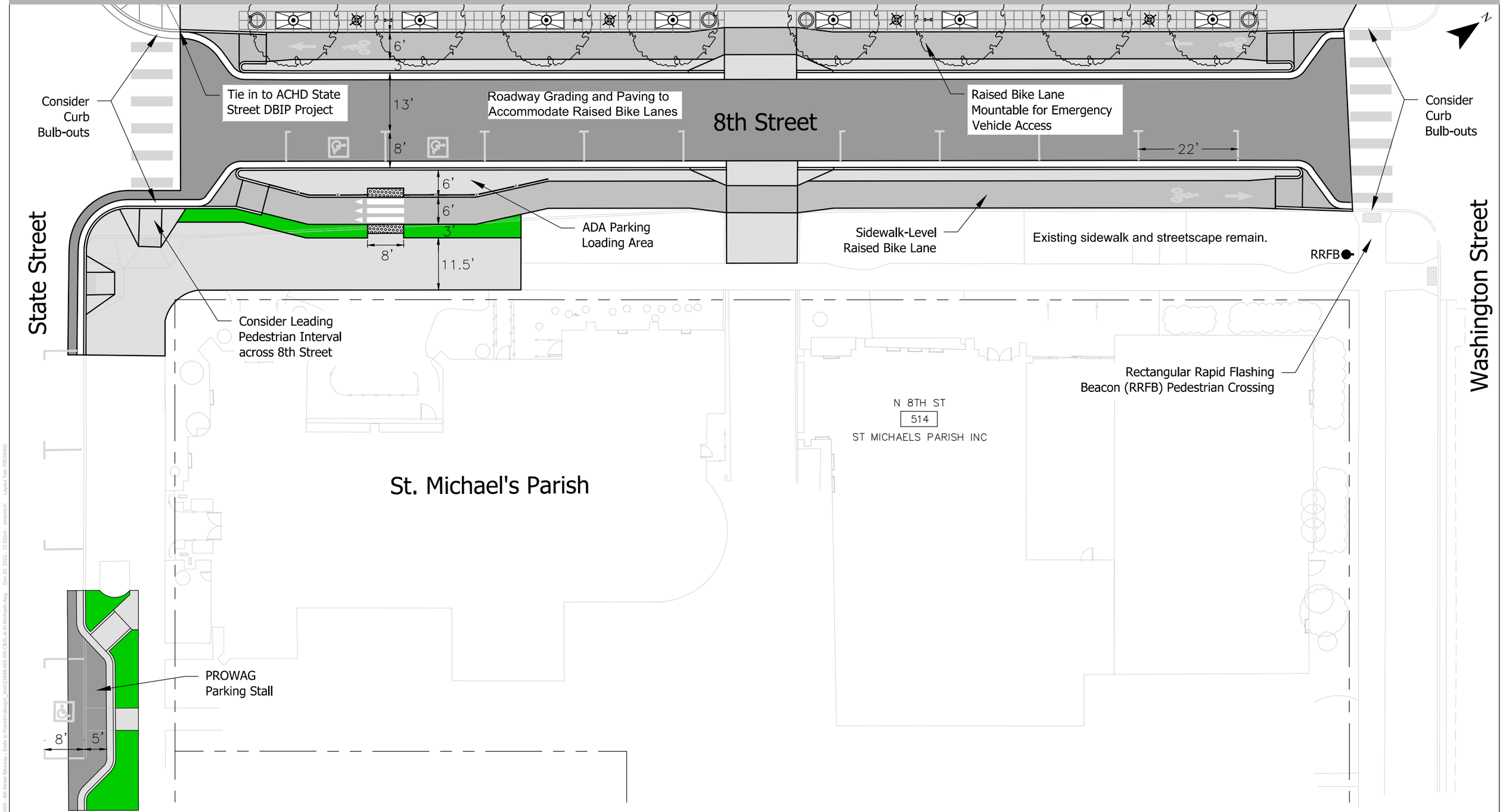

8th Street - Alternative 4
6′ Sidewalk
7½′ Planting strip
2′
5′
2′
10′ Drive lane
10′ Drive lane
7½′ Parking lane
3′
5′
2′
7′
6′ Sidewalk
Made with Streetmix


8th Street - Alternative 5
6′ Sidewalk
5½′
2′
6′ Bike lane
2′
12′ Drive lane
18′ Angled parking
2′
6′ Bike lane
2′
5½′
6′ Sidewalk
Made with Streetmix

Attachment B Plan-View Conceptual Designs

Concept A - State Street to Washington Street

Concept Design
Date: December 2022



KITTELSON & ASSOCIATES
PHONE: 208-472-9812 CONTACT: Nick Foster

CAPITAL CITY DEVELOPMENT CORP

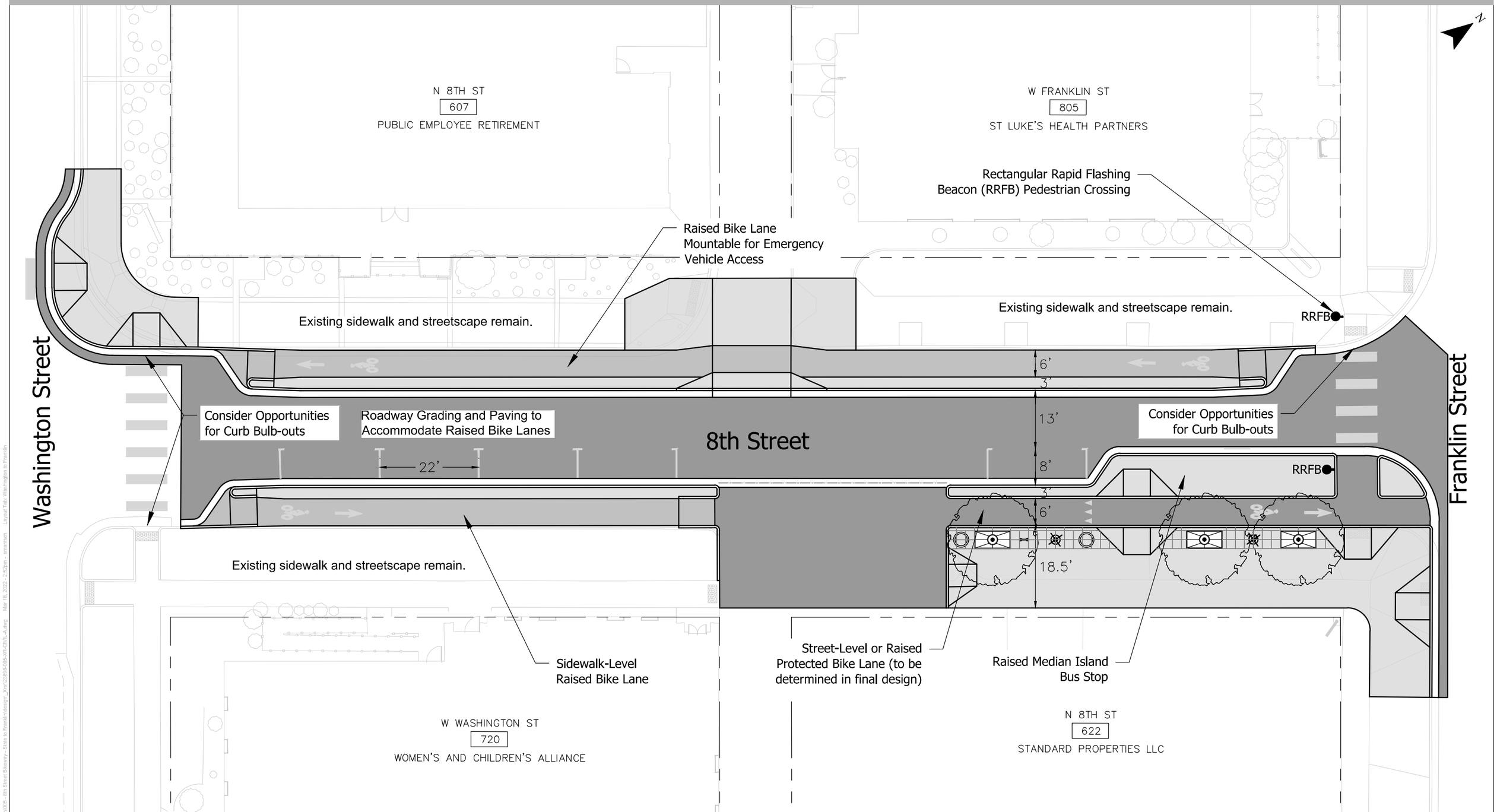
Scale: 1" = 20'

20 10 0 20

8th Street Bikeway

Concept A - Washington Street to Franklin Street

Concept Design
Date: March 2022



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PHONE: 208-472-9812 CONTACT: Nick Foster

CCDC CAPITAL CITY DEVELOPMENT CORP

Scale: 1" = 20'

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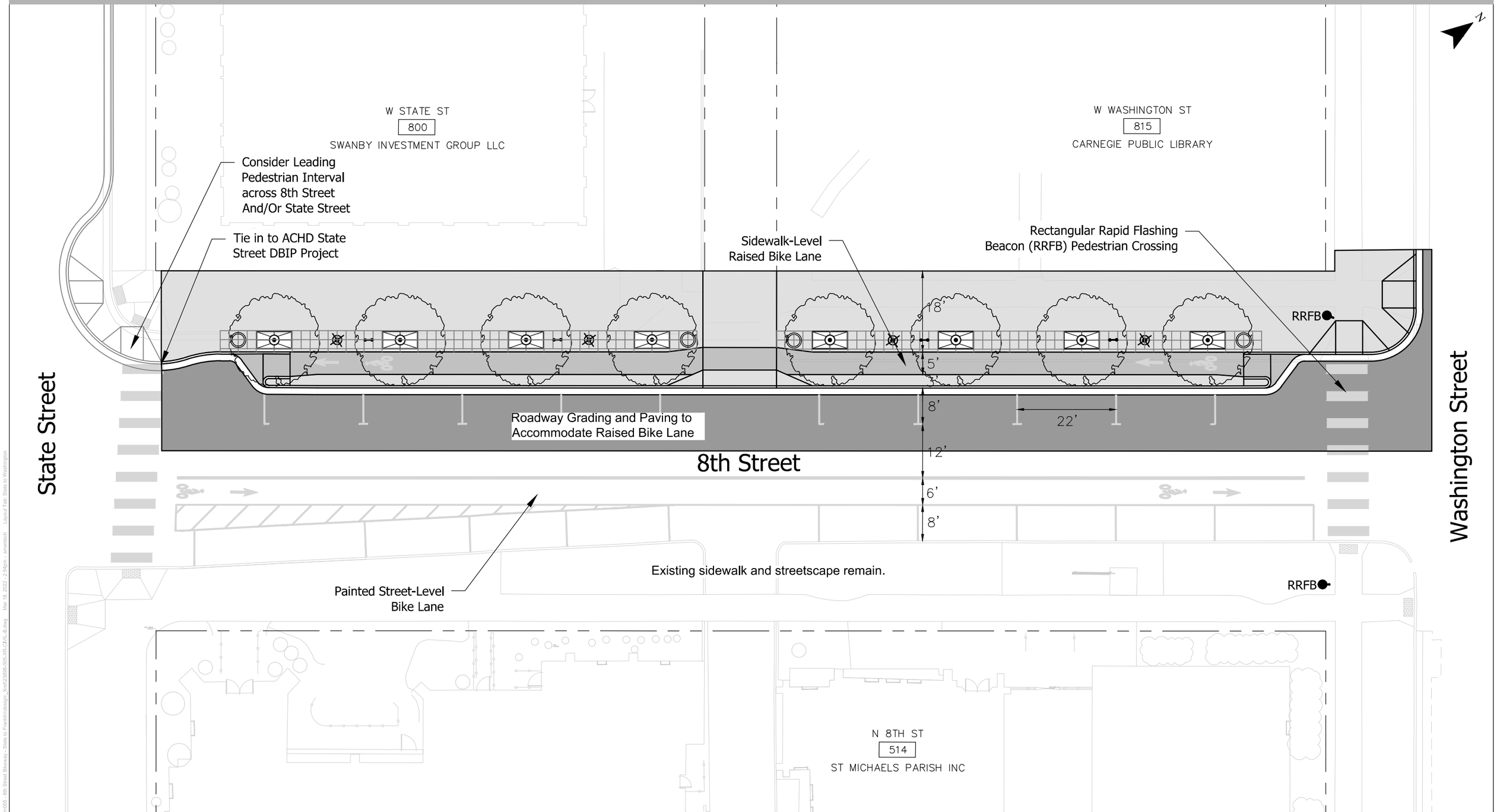
8th Street Bikeway

Concept B - State Street to Washington Street

Concept Design
Date: March 2022



KITTELSON & ASSOCIATES
PHONE: 208-472-9812 CONTACT: Nick Foster

CCDC CAPITAL CITY DEVELOPMENT CORP

Scale: 1" = 20'

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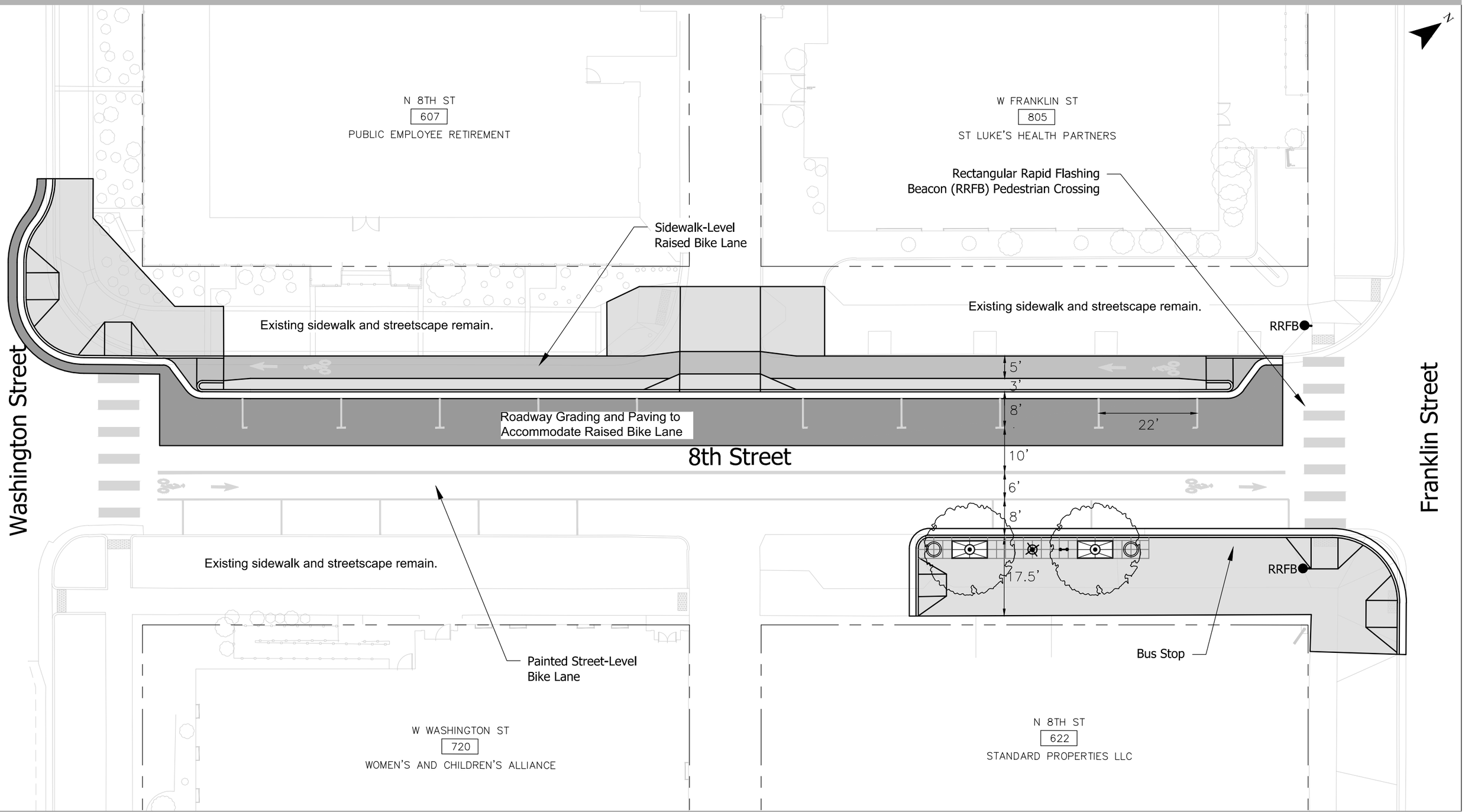
8th Street Bikeway
Boise, Idaho

Concept B - Washington Street to Franklin Street

Concept Design
Date: March 2022



KITTELSON & ASSOCIATES
PHONE: 208-472-9812 CONTACT: Nick Foster

CAPITAL CITY DEVELOPMENT CORP

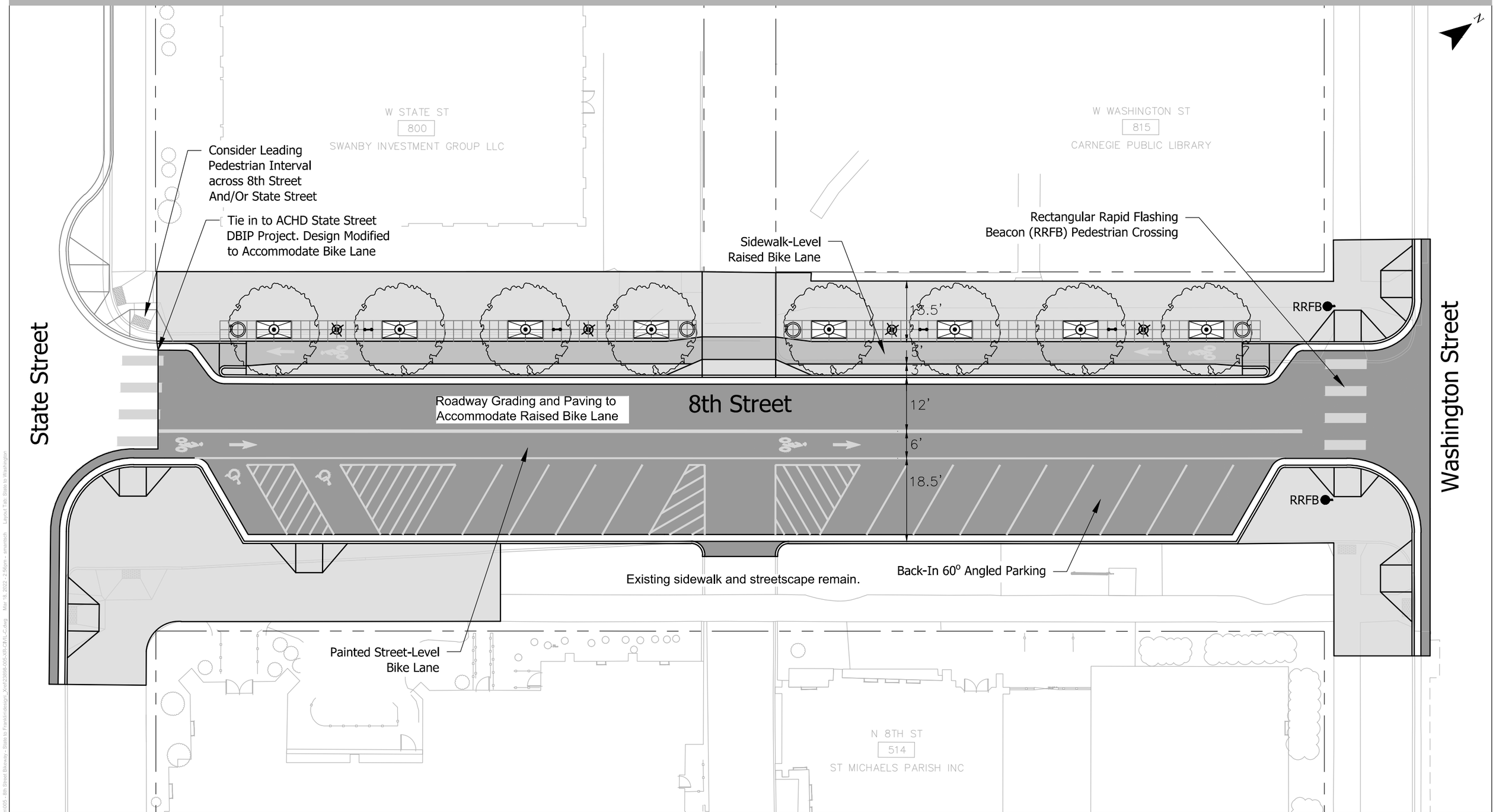
Scale: 1" = 20'

20 10 0 20

8th Street Bikeway
Boise, Idaho

Concept C - State Street to Washington Street

Concept Design
Date: March 2022



KITTELSON & ASSOCIATES
PHONE: 208-472-9812 CONTACT: Nick Foster

CAPITAL CITY DEVELOPMENT CORP

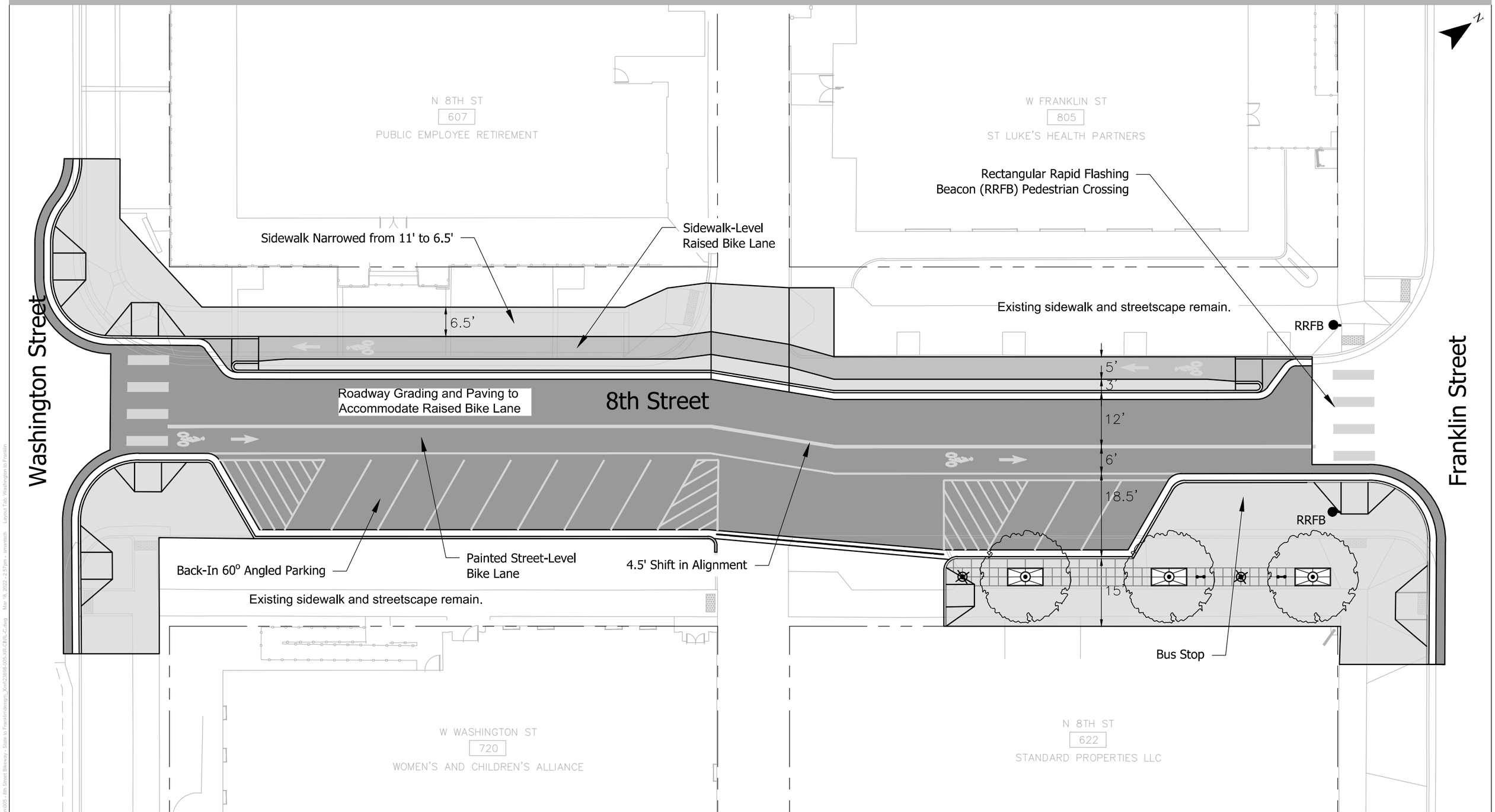
Scale: 1" = 20'

20 10 0 20

8th Street Bikeway
Boise, Idaho

Concept C - Washington Street to Franklin Street

Concept Design
Date: March 2022



KITTELSON & ASSOCIATES
PHONE: 208-472-9812 CONTACT: Nick Foster

CCDC CAPITAL CITY DEVELOPMENT CORP

Scale: 1" = 20'

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8th Street Bikeway
Boise, Idaho

Attachment C Cost Estimates

8th Street Bikeway

Concept A

State Street to Franklin Street

KITTELSON & ASSOCIATES

Engineer's Conceptual Estimate

Prepared By: SXM		*Date: March 18, 2022*		
Prepared By: JER				
This Estimate has a Rating of:		**Level 2B**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$ 85,000.00	$ 85,000.00
Traffic Control	LS	ALL	$ 10,000.00	$ 10,000.00
Removal of Structures and Obstructions	LS	ALL	$ 10,000.00	$ 10,000.00
General Earthworks (excavation & grading)	CY	1,261	$ 20.00	$ 25,212.00
3/4" Aggregate for Base (under new sidewalk and bike lane)	TN	401	$ 25.00	$ 10,027.50
Subbase - Sidewalk	TN	1,404	$ 20.00	$ 28,077.00
Asphalt Roadway - Full Depth	SY	1,385	$ 80.00	$ 110,800.00
Concrete Curbs - Standard Curb & Gutter	LF	1,125	$ 35.00	$ 39,375.00
Concrete Curbs - No Gutter	LF	250	$ 25.00	$ 6,250.00
Raised Asphalt Bikeway	SY	570	$ 45.00	$ 25,650.00
Pedestrian Ramps	EA	7	$ 1,400.00	$ 9,800.00
Concrete Sidewalks Walks / Buffer	SY	1,090	$ 45.00	$ 49,050.00
Bike Ramps	EA	8	$ 1,100.00	$ 8,800.00
Street Trees / Grates	EA	11	$ 4,500.00	$ 49,500.00
Irrigation Service	EA	2	$ 4,000.00	$ 8,000.00
Irrigation	EA	3	$ 3,000.00	$ 9,000.00
Historic Lights/Connection	EA	6	$ 6,000.00	$ 36,000.00
Bike Racks	EA	5	$ 800.00	$ 4,000.00
RRFB, System Complete	EA	2	$ 40,000.00	$ 80,000.00
Silva Cells	EA	1.5	$ 150,000.00	$ 225,000.00
Utility Adjustments	LS	1	$ 80,000.00	$ 80,000.00
Storm Water System & Water Quality Treatment, Complete	LS	ALL	$ 10,000.00	$ 10,000.00
Pavement Markings, Complete	LS	ALL	$ 5,000.00	$ 5,000.00
Signage, Complete	LS	ALL	$ 2,000.00	$ 2,000.00
Contingency (20%)	CA	ALL	$ 195,308.30	$ 195,308.30
			TOTAL CONSTRUCTION COST	**$ 1,121,850**
ENGINEERING & CONSTRUCITON SUPPORT				
Design Engineering & Construction Management	LS	ALL	$225,000.00	$225,000.00
			ENGINEERING SUPPORT SUBTOTAL	**$ 225,000**
			TOTAL PROJECT SUBTOTAL	**$ 1,346,850**

Assumptions:

Removal of obstructions includes all sidewalk, curb & gutter, and other hardscape removals to prepare the site

Ribbon Pavers to distingush bikelane from furnishing zone

Type 3: Urban Concrete Streescape Plan per streetscapes plan

Minor signal mods assumed for ADA/APS upgrades to poles

Assumes Existing drainage patterns can be maintained, with Silva Cell system connected

Rating Scale

Rating Scale Guide
Level 1: Project scope well understood and well defined.
Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.
Level 3: Project scope is a "vision" with limited detail.

8th Street Bikeway

Concept B

State State to Franklin Street

KITTELSON & ASSOCIATES

Engineer's Conceptual Estimate

Prepared By: SXM		*Date: March 18, 2022*		
Prepared By: JER				
This Estimate has a Rating of:		**Level 2B**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$ 73,000.00	$ 73,000.00
Traffic Control	LS	ALL	$ 10,000.00	$ 10,000.00
Removal of Structures and Obstructions	LS	ALL	$ 10,000.00	$ 10,000.00
General Earthworks (excavation & grading)	CY	1,022	$ 20.00	$ 20,445.33
3/4" Aggregate for Base (under new sidewalk and bike lane)	TN	325	$ 25.00	$ 8,131.67
Subbase (Pit Run - import for new sidwalk areas)	TN	1,138	$ 20.00	$ 22,768.67
Asphalt Roadway - Full Depth	SY	745	$ 80.00	$ 59,600.00
Concrete Curbs - Standard Curb & Gutter	LF	715	$ 35.00	$ 25,025.00
Raised Asphalt Bikeway	SY	265	$ 45.00	$ 11,925.00
Pedestrian Ramps	EA	5	$ 1,400.00	$ 7,000.00
Concrete Sidewalks Walks / Buffer	SY	1,125	$ 45.00	$ 50,625.00
Bike Ramps	EA	4	$ 1,100.00	$ 4,400.00
Street Trees / Grates	EA	10	$ 4,500.00	$ 45,000.00
Irrigation Service	EA	2	$ 4,000.00	$ 8,000.00
Irrigation	EA	3	$ 3,000.00	$ 9,000.00
Historic Lights/Connection	EA	5	$ 6,000.00	$ 30,000.00
Bike Racks	EA	5	$ 800.00	$ 4,000.00
RRFB, System Complete	EA	2	$ 40,000.00	$ 80,000.00
Silva Cells	EA	1.5	$ 150,000.00	$ 225,000.00
Utility Adjustments	LS	1	$ 80,000.00	$ 80,000.00
Storm Water System & Water Quality Treatment, Complete	LS	ALL	$ 10,000.00	$ 10,000.00
Pavement Markings, Complete	LS	ALL	$ 5,000.00	$ 5,000.00
Signage, Complete	LS	ALL	$ 2,000.00	$ 2,000.00
Contingency (20%)	CA	ALL	$ 165,361.91	$ 165,361.91
TOTAL CONSTRUCTION COST				**$ 966,283**
ENGINEERING & CONSTRUCITON SUPPORT				
Design Engineering & Construction Management	LS	ALL	$194,000.00	$194,000.00
ENGINEERING SUPPORT SUBTOTAL				**$ 194,000**
TOTAL PROJECT SUBTOTAL				**$ 1,160,283**

Assumptions:

Removal of obstructions includes all sidewalk, curb & gutter, and other hardscape removals to prepare the site

Ribbon Pavers to distingush bikelane from furnishing zone

Type 3: Urban Concrete Streescape Plan per streetscapes plan

Minor signal mods assumed for ADA/APS upgrades to poles

Assumes Existing drainage patterns can be maintained, with Silva Cell system connected

Rating Scale

Rating Scale Guide

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements, Unknown project conditions, limited knowledge of external impacts

Level 3: Project scope is a "vision" with limited detail.

8th Street Bikeway

Concept C

State State to Franklin Street

KITTELSON & ASSOCIATES

Engineer's Conceptual Estimate

Prepared By: SXM		*Date: March 18, 2022*		
Prepared By: JER				
This Estimate has a Rating of:		**Level 2B**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$ 90,000.00	$ 90,000.00
Traffic Control	LS	ALL	$ 10,000.00	$ 10,000.00
Removal of Structures and Obstructions	LS	ALL	$ 10,000.00	$ 10,000.00
General Earthworks (excavation & grading)	CY	1,233	$ 20.00	$ 24,669.33
3/4" Aggregate for Base (under new sidewalk and bike lane)	TN	392	$ 25.00	$ 9,811.67
Subbase (Pit Run - import for new sidwalk areas)	TN	1,374	$ 20.00	$ 27,472.67
Asphalt Roadway - Full Depth	SY	1,960	$ 80.00	$ 156,800.00
Concrete Curbs - Standard Curb & Gutter	LF	1,390	$ 35.00	$ 48,650.00
Concrete Curbs - No Gutter	LF	90	$ 30.00	$ 2,700.00
Raised Asphalt Bikeway	SY	270	$ 45.00	$ 12,150.00
Pedestrian Ramps	EA	13	$ 1,400.00	$ 18,200.00
Concrete Sidewalks Walks / Buffer	SY	1,290	$ 45.00	$ 58,050.00
Bike Ramps	EA	4	$ 1,100.00	$ 4,400.00
Street Trees / Grates	EA	11	$ 4,500.00	$ 49,500.00
Irrigation Service	EA	2	$ 4,000.00	$ 8,000.00
Irrigation	EA	3	$ 3,000.00	$ 9,000.00
Historic Lights/Connection	EA	6	$ 6,000.00	$ 36,000.00
Bike Racks	EA	5	$ 800.00	$ 4,000.00
RRFB, System Complete	EA	2	$ 40,000.00	$ 80,000.00
Silva Cells	EA	2	$ 150,000.00	$ 225,000.00
Utility Adjustments	LS	1	$ 80,000.00	$ 80,000.00
Storm Water System & Water Quality Treatment, Complete	LS	ALL	$ 10,000.00	$ 10,000.00
Pavement Markings, Complete	LS	ALL	$ 8,000.00	$ 8,000.00
Signage, Complete	LS	ALL	$ 2,000.00	$ 2,000.00
Contingency (20%)	CA	ALL	$ 208,458.51	$ 208,458.51
TOTAL CONSTRUCTION COST				**$ 1,192,862**
ENGINEERING & CONSTRUCITON SUPPORT				
Design Engineering & Construction Management	LS	ALL	$239,000.00	$239,000.00
ENGINEERING SUPPORT SUBTOTAL				**$ 239,000**
TOTAL PROJECT SUBTOTAL				**$ 1,431,862**

Assumptions:

Removal of obstructions includes all sidewalk, curb & gutter, and other hardscape removals to prepare the site

Ribbon Pavers to distingush bikelane from furnishing zone

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Minor signal mods assumed for ADA/APS upgrades to poles

Assumes Existing drainage patterns can be maintained, with Silva Cell system connected

Rating Scale

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Attachment D Public Involvement Summary

PUBLIC FEEDBACK SUMMARY

8TH STREET IMPROVEMENTS
STATE TO UNION
CONCEPT DESIGN

JANUARY 20, 2022 - FEBRUARY 6, 2022

In total, we received comments from

182 people

Public comments were collected through the following means:

- **2 Virtual Public Involvement Meetings (25 attendees)**
- **Online survey (149 responses with 72% of respondents living in the neighborhood)**
- **8th Street Property Owners (8 individual meetings)**
- **623 people visited the project webpage**

CONCEPT A

FEEDBACK

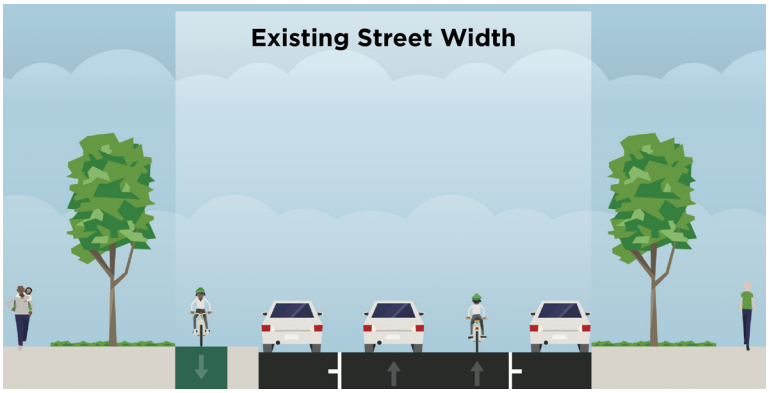
TOP LIKES

- Maintaining trees/landscape
- Raised bike lanes in both directions
- Reduced motor vehicle speeds

TOP CONCERNS

- Painted NB bike lane by Co-Op
- On-street parking impacts
- Motor vehicle lane loss

CONCEPT B



2nd Choice of 8th Street Property Owners

FEEDBACK

TOP LIKES

- Maintaining trees/landscape
- Reduced motor vehicle speeds
- Raised SB bike lane

TOP CONCERNS

- Conflicts w/ parking cars
- Painted NB bike lane
- Motor vehicle lane loss

CONCEPT C

1st Choice of 8th Street Property Owners

FEEDBACK

TOP LIKES

- Raised SB bike lane
- Reduced motor vehicle speeds
- Having to cross only one lane

TOP CONCERNS

- Conflicts w/ parking cars
- Landscaping/ trees impacts
- Painted NB bike lane

WHICH CONCEPT WOULD YOU PREFER TO SEE CONSTRUCTED?

Concept C | A combination of concepts | None of these concepts | Concept B | Concept A

ACHD Committed to Service

CAPITAL CITY DEVELOPMENT CORP

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