



Technical Memorandum

To: Joel Pfundt/Catherine Okamura, Project Managers
From: Mark Cole, PE
Copies: File
Date: April 27, 2021
Subject: Multi-Modal Corridor Safety Study — NE 131st Way / 90th Avenue NE
Project No.: Otak 33136F

Attachments

- A. Near-Term Solutions and Long-Term Planning Concept Improvement Plans
- B. Project Cost Estimates for Near-Term and Long-Term Improvement Concepts
- C. Preliminary Findings and Improvement Considerations Memorandum, dated November 10, 2020
- D. Comments from community outreach and City's Transportation Commission

Background and Purpose

Following the Finn Hill area annexation, the City undertook a planning process with the community to develop the first Finn Hill neighborhood plan, adopted by Council in 2018. This plan identified further study of the NE 131st Way / 90th Avenue NE corridor (Goodwill Hill). NE 131st Way / 90th Avenue NE is a 2-lane minor arterial corridor which links 100th Avenue NE, a principal arterial in the Juanita neighborhood, to collector streets in the Finn Hill neighborhood. It is one of the primary routes for residents of Finn Hill to access their community.

The purpose of the study is to develop recommendations for improving safety and comfortability for people walking and biking this corridor. Recommendations are intended to consider complications such as the steep incline on both sides of the road, the bend in the road, and erosion and stormwater drainage requirements. The intended study would develop concepts for improvements focusing on:

1. **Near-Term Solutions:** Improvements meeting the objectives that can be constructed within the existing roadway footprint and right-of-way, allowing the City to move forward with implementing safer pedestrian and bicycle facilities; *and*
2. **Long-Term Planning:** Additional and more comprehensive improvements to further enhance this corridor to the Finn Hill neighborhood that, given the topography challenges, would require greater complexity and extensive roadway reconstruction, possibly involving property acquisitions.

Scope of Improvement Study

The study corridor is an existing 2-lane road beginning as 90th Avenue NE that then winds and extends down a hill as NE 131st Way and continues easterly to become NE 132nd Street. The limits of the study corridor are from

k:\project\33100\33136f\projectdocs\reports\multi-modal safety study_131way90ave_2021_03_31.docx

the NE 134th Street / 90th Avenue NE intersection down to the west side of Juanita Elementary School on NE 132nd Street, a total approximate length of 0.7 miles. The scope of this study consists of:

- Review City-provided existing data-base mapping and other available documentation.
- Conduct a site visit to photograph, field-measure existing pavement widths, and to understand field conditions and site challenges along the corridor.
- Prepare a memorandum summarizing significant findings from existing documentation review and site field visit and establish approach to identify improvements (Preliminary Findings and Improvement Considerations memorandum, included as Attachment C).
- Develop preliminary cross section elements for near-term solutions and long-term planning improvement options and alternative and submit for City review/comment.
- Assist City staff to conduct a virtual community meeting to review corridor conditions, present improvement options, and obtain input on concerns and considerations for improving the corridor.
- Prepare draft conceptual improvement plans and probable project cost estimates for City discussion.
- Prepare a technical memorandum summarizing the study and presenting near-term solutions and long-term planning conceptual improvement plan exhibits and probable project cost estimates.

Note: The scope of this study did not include any topographic surveying or right-of-way research, or perform any analysis of traffic, illumination, drainage, pavement condition, or geotechnical investigation.

Existing Conditions

A site evaluation and discussion of existing conditions along the corridor are summarized in Preliminary Findings and Improvement Considerations Technical Memorandum in Attachment C. North of the project corridor, existing 90th Avenue NE is a 2-lane paved roadway with shoulder and no curb, gutter, or sidewalks. The existing roadway within the study corridor consists of two travel lanes with asphalt shoulders and no formal sidewalks or bicycle lanes. From 134th Street to 94th Avenue NE, the roadway is a steep winding downhill grade (-8% +/-) with a sharp horizontal curve to the left approaching the 94th Avenue NE intersection. Beyond this point, the roadway transitions to a milder grade and longer horizontal curve as it extends to become NE 132nd Street, an improved street section containing curb, gutter, and sidewalks.

For most of the study corridor there is no formal roadway crown, and extruded curbs (broken in many locations) are installed at shoulders. In several locations on the west side, surface water escapes through the broken curb where runoff flows over the steep roadway embankments. The extruded curb near the fog line of the uphill travel lane directs the cross-road runoff to curb-cuts where it sheet-flows over the roadway shoulder (pedestrian path) to catch basins connected to the underground storm system. This extruded curb is what creates the separation for the current asphalt pathway used by pedestrians and bicyclists. This pathway varies between six to eight feet.

Including the intersections at each end of the study corridor (NE 134th Street and 97th Avenue NE), there are two public street intersections within the study area. These include:

1. Existing 92nd Avenue NE: A “Tee” street intersection on the uphill travel lane side of the corridor. This street connects to a loop road providing the only ingress/egress to the several existing homes, and is at a very steep uphill grade (20%+).
2. Existing 94th Avenue NE: Street extends from the south and forms a “Tee” intersection (downhill travel lane side of the corridor). The 94th Avenue NE leg of the intersection is at an extreme angle in the corridor’s eastbound travel direction similar to a merger, although it is a stop condition and signed “no left turn” onto the corridor.

Existing storm drainage principally consists of catch basin structures and underground conveyance pipes within the uphill travel lane shoulder, although some systems exist along the other side. This system intercepts roadway runoff and drainage from the hillside where it is periodically conveyed beneath the roadway to discharge the untreated runoff west and south beyond the right-of-way in existing pipe systems tributary to Juanita Creek.

There is no street or pedestrian illumination along the corridor, nor at either the 92nd Avenue NE or 94th Avenue NE intersections. The only overhead power/communication lines within the corridor are along the frontage of the Bridlewood Apartments on NE 132nd Street at the east end of the study area. Along the north side of the road, this power transmission line extends westerly, leaving the roadway corridor and crossing several residential properties where it then intersects the corridor again, crossing at approximately Sta 17+00 as it continues westerly.

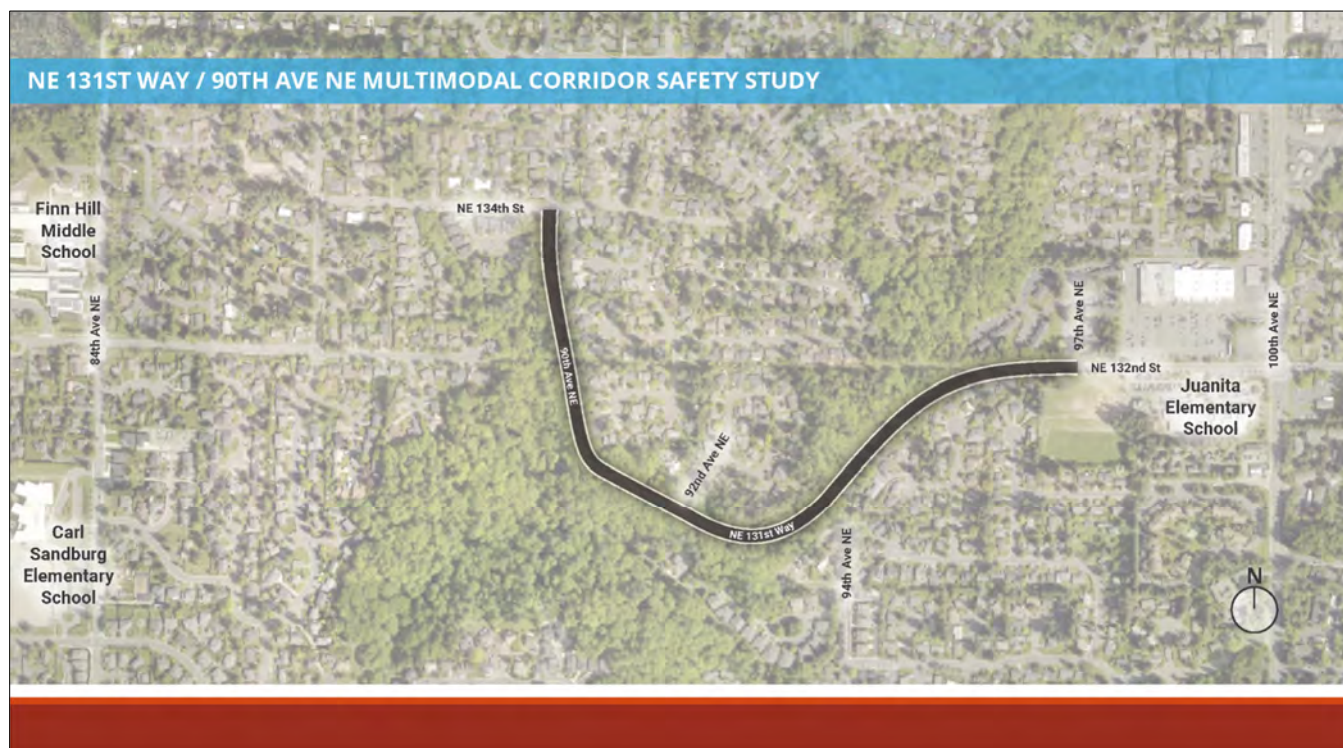


Figure 1 – Project Vicinity Map

Improvement Alternatives and Considerations

Near-term solutions improvement alternatives

Improvements centered around maintaining the existing shared-use path concept along the uphill travel lane side. Key considerations focused on economically reconstructing a safer facility by maintaining an appropriate overall roadway section that does not further encroach on the critical slopes along the downhill travel lane shoulder. Excluding areas of roadway spot repairs, required excavation depths would be anticipated to be within 18-inches of the existing surface. Improvement considerations included:

- A wider asphalt shared-use path including a buffer zone separation from travel lane, supplemented with safety barrier in curve area and other areas, as may be appropriate.
- Channelization modification and providing for a “sharrow” pavement marking designation of the downhill travel lane side indicating the roadway lane is used by cyclists.

- Removal and replacement of asphalt curb with concrete curb and gutter in certain sections along the downhill travel lane side from 134th Street to 94th Avenue NE.
- Spot removal and replacement of damaged posts/guardrails along the downhill travel lane side.
- Storm drainage system replacements principally focused on the uphill travel lane side to effectively collect/convey roadway surface runoff and eliminate sheet-flowing across the shared-use path.
- Illumination limited to extending power and providing illumination at street intersections only.
- Spot location pavement repair and full roadway asphalt overlay.

Long-term planning improvement alternatives

Focused on identifying ultimate section width requirements and roadway, pedestrian, and bicycle facility improvement alternatives. Excluding areas of roadway shoulder and pavement widening, required excavation depths would be anticipated to be within 18-inches of the existing surface. Improvement considerations included:

- Bicycle alternatives considered “sharrow” lane verses a separate bike lane on each side of roadway.
- Pedestrian alternatives considered sidewalks and, given the existing site topographic challenges, alternative for sidewalk on only one side.
- Roadway pavement widening where required, and new curbs, gutters, and guardrail (downhill travel lane side) between NE 134th Street and 94th Avenue NE.
- Curb, gutter, and sidewalk (downhill travel lane side) between 94th Avenue NE and 97th Avenue NE.
- Supplemental storm drainage catch basin and pipe replacements to further control street runoff (focused along the downhill travel lane side).
- Full illumination extending the length of the study corridor.
- Pedestrian-activated crossing at 94th Avenue NE, as identified in the City’s Safe Routes to School Action Plan (SRTS Plan).

Roadway alignment considerations

Alignment for near-term solutions improvements based on maximizing use of the existing asphalt pavement while maintaining adequate roadway channelization and current edge of paved shoulder of the downhill travel lane. Alignment for long-term planning improvements based on seeking to maintain the outer edge of the proposed shared-use path (near-term solution) and accommodating the ultimate improvements by shifting the roadway centerline and widening, where necessary, in the downhill travel lane direction.

Proposed Improvements

Determination on concept alternatives

Alternatives, options, and considerations regarding near-term solutions and long-term planning improvements were presented and reviewed with City staff. Subsequently, the City conducted a virtual open house on December 3, 2020, which resulted in the City receiving written input and comments from the community (Refer to Attachment D). Based on the results of the community open house, together with the City’s review considerations, the City determined that further focus of improvement concepts and cost estimating should be on the following:

- **Near-term solutions improvement concept:** Shared-use facility on the uphill travel lane side. Because the schedule for any long-term planning improvements is undetermined, the width of the facility should provide for safe two-way bicycle traffic and an adjacent pedestrian path, along with planned buffer/barriers separation from vehicle traffic. Additionally, the downhill travel lane would include “sharrow” pavement markings indicating the roadway lane is used by cyclists.

- **Long-term planning improvement concept:** Maintain the two-way bike path and adjacent separate pedestrian path concept on the uphill travel lane side. Curbs, gutters, and paving materials consistent with being a final facility integrated into other roadway improvements. Maintain provisions for buffer/barriers separation from vehicle traffic. No “sharrow” lane designations. No sidewalk on the downhill travel lane side, although identify pavement and other roadway improvements and requirements. Provide curb, gutter, and sidewalk on the downhill travel lane side between 94th Avenue NE and 97th Avenue along with pedestrian-activated crossing of the corridor at 94th Avenue, as indicated in the SRTS Plan.

Key considerations and study recommendations

Shared-use Pedestrian/Bicycle Facility: Due to topography constraints and steep roadway grade, it's recommended for user safety to delineate separate use-portions of the facility. The entire pedestrian/bicycle facility for near-term solution improvements would be a continuous width of asphalt and separation delineated with a pavement-marking strip (along with additional pavement markings denoting Pedestrian and Bicycle (two-way) uses). At grade with the roadway, the pedestrian portion would be minimum 4-foot wide and bicycle portion would be minimum 8-foot wide. Additionally, in further consideration of the steep grade and the sharp horizontal curve just south of 92nd Avenue NE, recommend a configuration that places the bike path on the outside of the pedestrian path. This configuration also provides the most beneficial “leave-in-place” re-use of incorporating near-term solutions improvements into long-term planning improvements.

For long-term planning improvements, the pedestrian portion of the path would be replaced with a concrete sidewalk. A 10-foot wide portion of the asphalt path constructed under the near term improvements would remain in place and a 5-foot wide concrete sidewalk constructed, which could also include a more textural treatment of the edge adjacent to the asphalt bike path.

- **Buffer-Zone:** For safety and user comfort, recommend a buffer zone between the uphill travel lane fog line and edge of the pedestrian/bicycle path. For near-term solutions, buffer zone to be a minimum 3-foot wide asphalt with a lower maintenance “profile-type” fog line to alert drivers, like a wide line in conjunction with rumble strip, low profile lane separator, or embossed pavement marking. For additional safety, recommend installing a continuous formal raised traffic barrier between the buffer zone and pedestrian path along the location of the sharp horizontal curve just south of 92nd Avenue NE. The exact type, location and limits of the raised barrier would be determined during preliminary design and could be extended the length of the corridor if funding was available. For long-term planning improvements, recommend minimum 2-foot wide paved buffer zone. (in conjunction with and behind the proposed raised curb and gutter).
- **Vehicle Travel Lanes:** Recommend maintaining a minimum travel lane width of 11-feet and minimum 2-foot shoulder on the downhill travel lane side, particularly with the near-term solutions improvement concepts, due to existing roadway geometrics, grades, and corridor being one of the principal routes for trucks and traffic in and out of Finn Hill.

Summary Table: Widths of Proposed Facility Improvements (in Feet)

Concept	Bicycle Path	Pedestrian Path	Buffer-Zone	Vehicle Travel Lanes	Roadway Shoulder (Right-Side)
Near-Term Solutions Improvements	8'	4'	3'	11' – (uphill) 12' – (downhill)	2'
Long-Term Planning Improvements	10'	5'	2'*	2 – 11' lanes	2'***

* Assumes provided behind a formal raised curb and gutter.

** Between 94th Avenue NE and 97th Avenue NE shoulder replaced with curb, gutter, and 5-foot sidewalk.

Concept improvement plans

Conceptual improvement plan exhibits have been prepared to reflect the approximate layout and cross section detail for both the proposed near-term solutions improvements and proposed long-term planning improvements. Plan exhibits are included as Attachment A.

Additional considerations and recommendations

- **Existing 92nd Avenue NE:** This street is at a very steep uphill grade (20%+). This grade starts near the shoulder, presenting difficulty widening in this direction. A minimum 6-feet of additional pavement width is required to accommodate the future long-term planning pavement section and it's recommended that all widening be to the west in this location to avoid making the street grade more severe. This challenge is presented with near-term solutions improvements as well, and to keep the limits within the existing paved footprint and avoid the significant costs of widening (involving large retaining walls), it is recommended to provide a reduced width shared-use path across the intersection. The total width would be reduced by 4-feet, providing an 8-foot shared-use path. To accommodate this, a transition approach section leading to an 8-foot wide delineated walk across the intersection is proposed on each side. (Refer to Plan Exhibits, Attachment A).
- **Existing Right-of-Way:** Most of the corridor has adequate right-of-way for constructing the near-term solutions improvements. However, the existing right-of-way on the uphill travel lane side of NE 131st Way (Sta. 37+50 to Sta. 43+00) is narrower than in other sections of the corridor. Keeping the near-term solutions improvements within the right-of-way and avoiding acquisitions in this location may require a slight shift of the overall pavement. This shift would require that a short fill-wall be constructed on the other side of the road for a portion of this length. It is recommended that the actual amount of shift needed, if any, be verified during preliminary design following survey and base mapping. However, should this retaining wall be necessary for the near-term solutions improvements, the retaining wall could be located to accommodate the future sidewalk, as would be required for the long-term planning improvements in the location.
- **Bridlewood Apartments Frontage:** The east end of the study corridor approaching Juanita Elementary School becomes NE 132nd Street. A portion, approximately 400LF, is an improved 3-lane street (no bike lanes) having curbs, gutters, and sidewalks that extend to the existing pedestrian-activated signalized crosswalk. Street frontage on the north is Bridlewood Apartments and 97th Avenue NE ("Tee" intersection and street entrance). Within the right-of-way, the frontage area is largely grass, containing only the overhead power transmission line/poles which are located just off the edge of the concrete sidewalk that lies adjacent to the street curb and gutter. Because of the existing transmission line, it is recommended that consideration be given to utilizing the existing sidewalk in this area and constructing a parallel two-way bicycle path having a grass-strip separation to accommodate the existing transmission line poles. This bike path could be constructed with the near-term solutions improvements, but as a permanent facility meeting the long-term

planning two-way bicycle path objectives. Additionally, the existing signalized crosswalk at the end of the study corridor is currently planned to be reconstructed with a new fire station proposed on the adjacent parcel east of Bridlewood Apartments. It's further recommended that during preliminary design, the sidewalk and bicycle path alignment configuration and connection with the final fire station frontage improvements and crosswalk be evaluated.

- **Storm Drainage Improvements:** For most of the corridor the pavement cross slope is towards the current pedestrian/bicycle path and most of the catch basins lie with this paved shoulder area. However, there are spot locations on the other side of the road where runoff travels along the extruded curb, that is broken in several places allowing the runoff to flow out over the steep roadway embankment. Near-term solution improvements recommend install new catch basins and storm sewer pipes within the proposed buffer zone between the travel lane and proposed share-use path. In addition, installation of new concrete curb and gutter in spot locations on the other side of the road (locations and limits to be defined during preliminary design based on the topographic survey). Longer-term planning improvements recommend installing additional catch basins along the downhill travel lane side, where appropriate, and replacement of the crossroad drainage pipes.

Excluding the longer-term planning roadway-shoulder pavement widening and locations of new drainage catch basins/pipes, excavations for both near-term and longer-term improvements are anticipated to be within 18-inches of the existing surface. Both near-term and longer-term improvement projects anticipate having over 5,000 SF of new and/or replaced pavement 51,000 SF and 35,000 SF, respectively. In consultation with City staff, it was concluded that the total amount of new and/or replaced impervious would be below 50% of what would be considered the target surface (the corridor) for both projects and therefore not trigger water quality and flow control requirements. Although, since stormwater discharge from the corridor is tributary to Juanita Creek, the City may consider voluntarily providing water quality treatment in certain discharge locations.

- **Proposed Sidewalk – 94th Avenue NE to 97th Avenue NE:** Long-term planning improvements propose a curb, gutter, and adjacent 5-foot concrete sidewalk be installed on the south side of the corridor between 94th Avenue NE to 97th Avenue NE. For most of this length, the roadway/shoulder grades allow for relatively easy construction up until approximately 400 feet before connecting to these existing improvements on NE 132 Street. In this location it is anticipated that a shorter fill-retaining wall will likely be necessary. Additionally, near the east end of the proposed retaining wall is an existing driveway. This driveway is at a steep downslope grade, and widening to install the sidewalk is anticipated to make this driveway even more steep.
- **Alignment and Adjacent Steep Topography:** Much of the corridor has steep uphill slopes on the east and north, and steep downhill slopes on the west and south with slope breaks that start near the edge of the roadway. The orientation of the conceptual improvements is based on best fit of the existing edges of pavement, and road alignment as taken from available aerial photography, GIS data, and LiDAR topography. It's recommended that this alignment be evaluated during preliminary design, using actual ground survey, and adjusted based on field located pavement limits and slopes. Based on this, it should be anticipated that the extent and/or longitudinal limits for conceptual improvements along the roadway's footprint edges will likely change from those shown.
- **Required Right-of-Way and Temporary Construction Easement:** To construct near-term solutions improvements, temporary construction easement may be necessary for those parcels on the north side of the corridor between Sta 37+50 and Sta 43+00. For long-term planning improvements, temporary construction easement together with permanent slope easements may be required for widening/retaining wall construction on parcels adjacent to the downhill travel lane side of the corridor between Sta 22+50 and Sta 31+00.

- **Existing 94th Avenue NE:** This roadway extends from the south and intersects the corridor at an extreme angle in the eastbound travel lane direction. Evaluating potential re-configuration options to make this “Tee” intersection safer and more efficient is beyond the scope of this study. However, it is recommended that during preliminary design, this intersection configuration be evaluated to assess costs versus benefits of any reconfiguration. Note: Future long-term planning pedestrian improvements identify a planned pedestrian activated marked crossing of the corridor at this intersection.

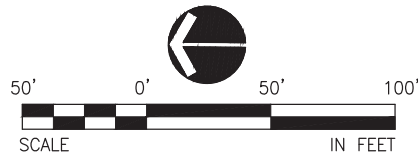
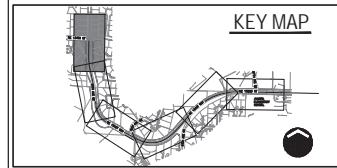
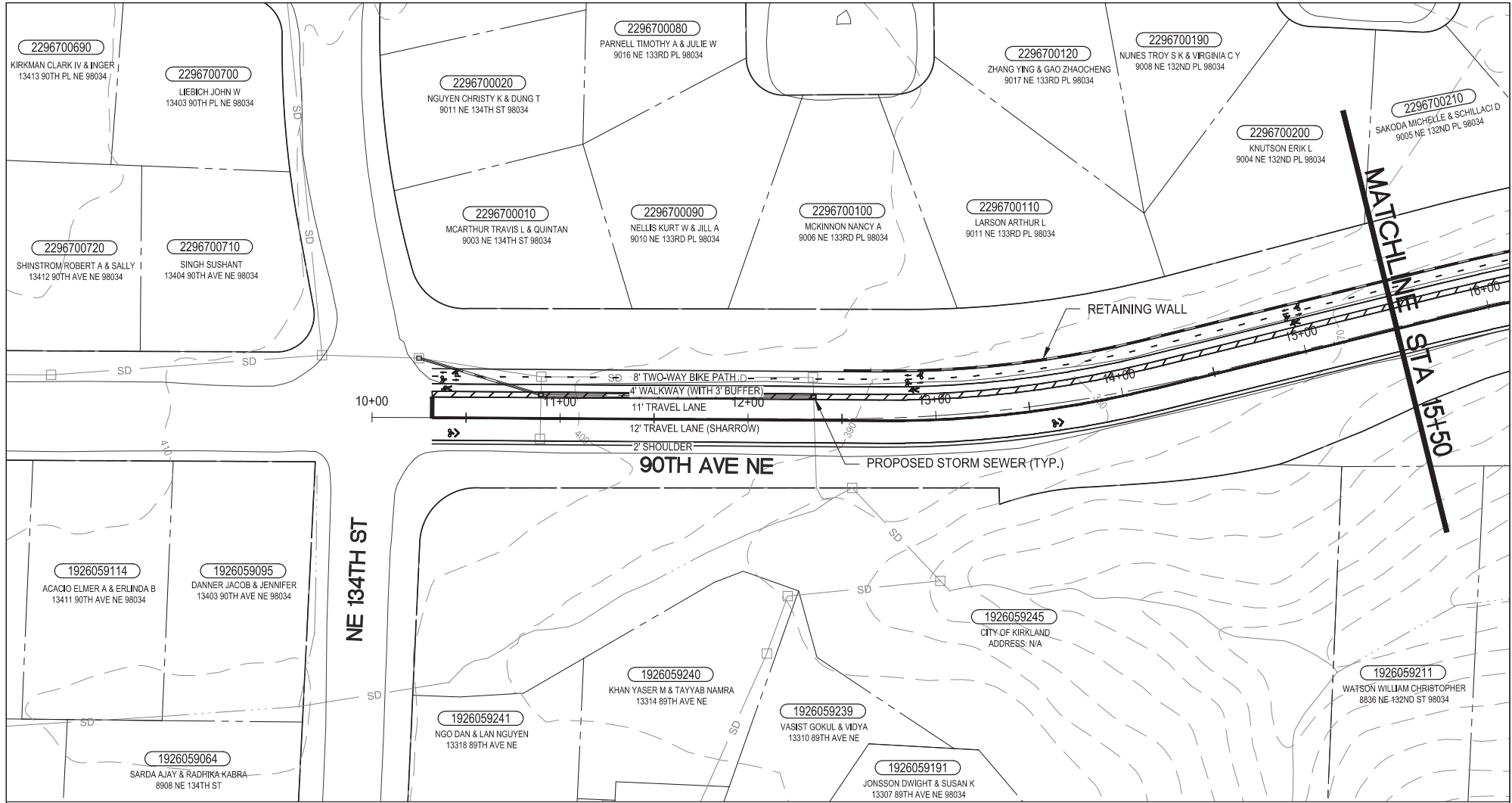
Opinions of Probable Project Costs of Improvements

Estimated planning-level project costs have been developed for both near-term solutions and long-term planning improvements concepts. Project costs include estimated probable capital cost of construction and estimated soft cost, i.e., design, construction management, agency administration, and acquisitions, if any (right-of-way and/or construction easements). Construction cost estimates are presented for various items of construction for typical public works projects. Approximate quantities have been estimated from the CADD improvement plan exhibits based on City basemap data. Unit costs reflect prices from bid data on similar recent public works projects factored for an item's quantity along with engineering judgement.

Project costs for proposed near-term solutions improvements and proposed long-term planning improvements are included as Attachment B.

ATTACHMENT A

Near-Term Solutions and Long-Term Planning
Concept Improvement Plans



LEGEND

— GUARDRAIL

— RETAINING WALL

Otak

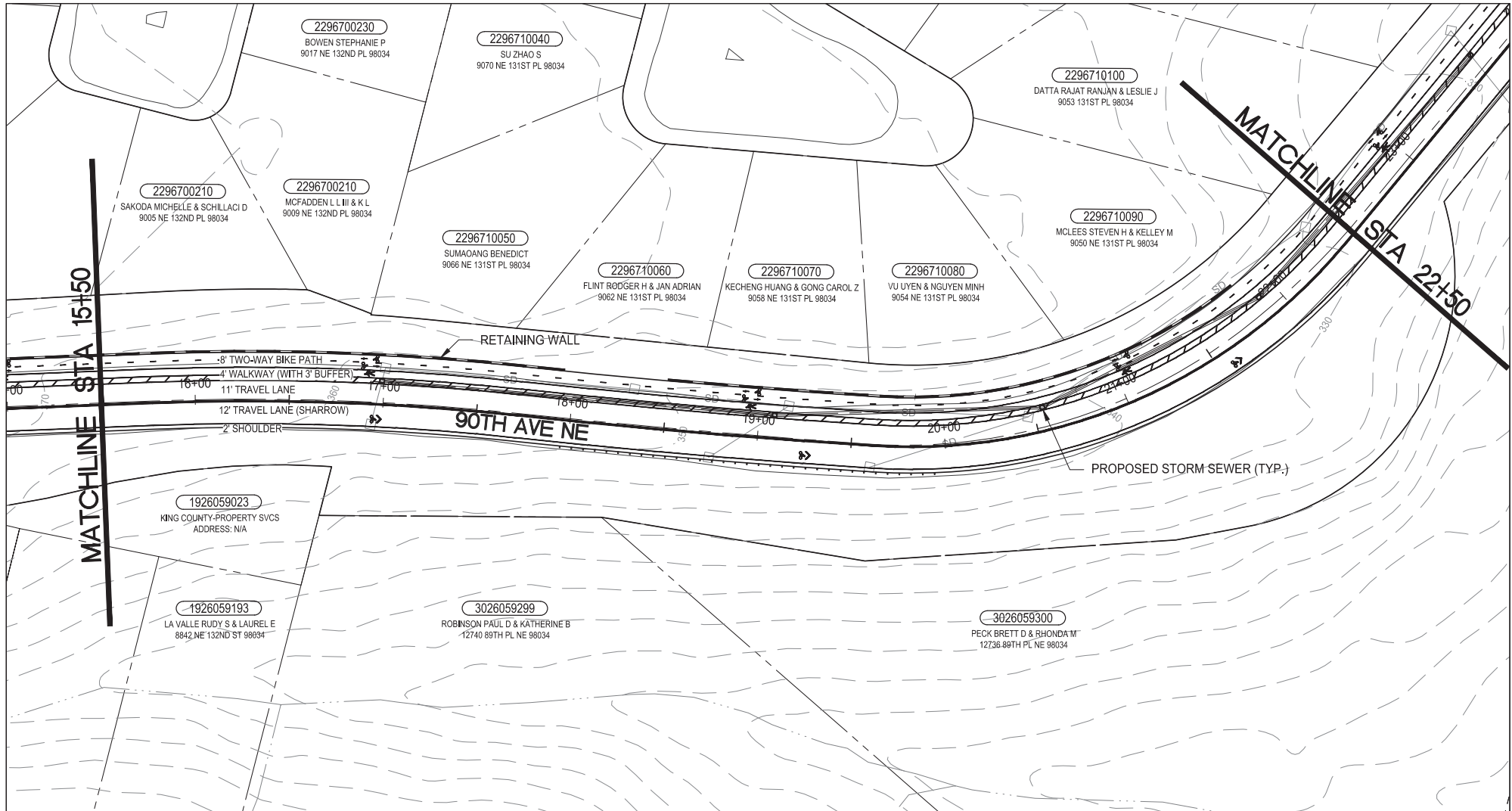
11241 Willows Road NE, Suite 200
Redmond, WA 98052
425.822.4446
www.otak.com



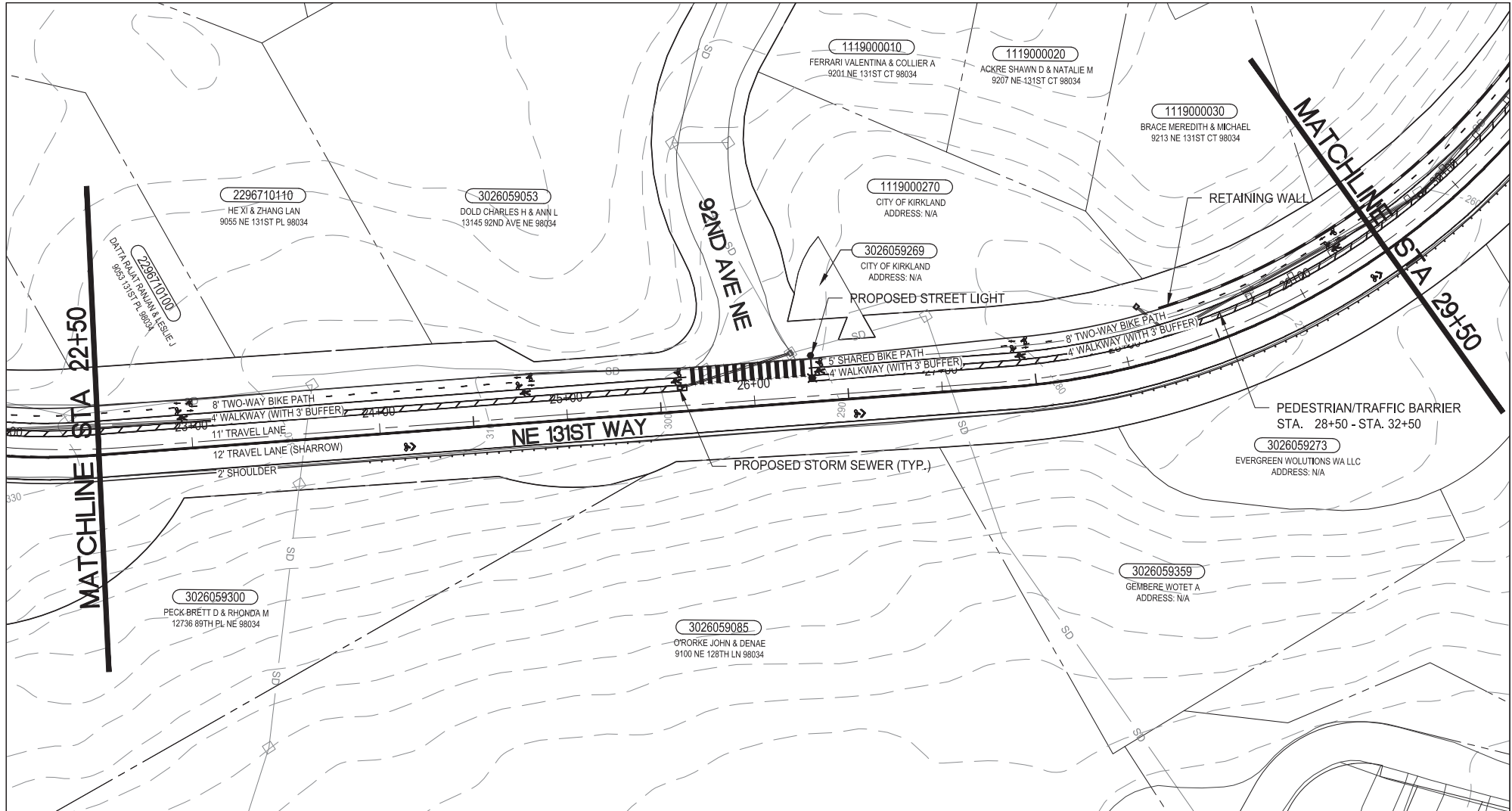
MULTI-MODAL CORRIDOR SAFETY STUDY
— NE 131ST WAY/90TH AVENUE NE

NEAR-TERM SOLUTION CONCEPT PLAN

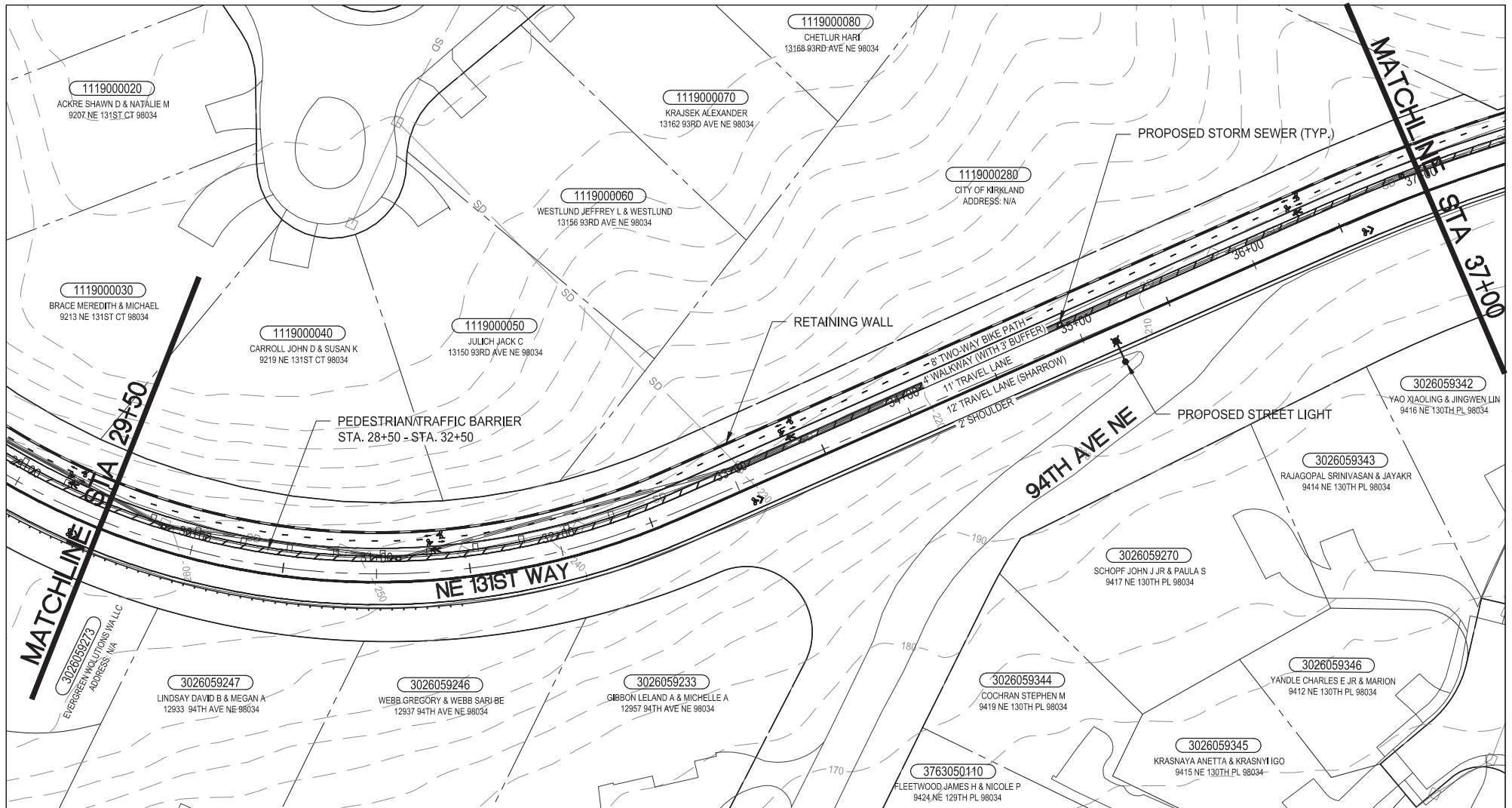
SHEET
1
OF
14



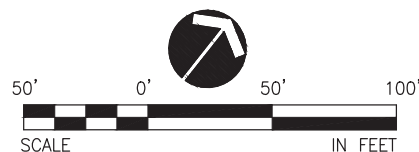
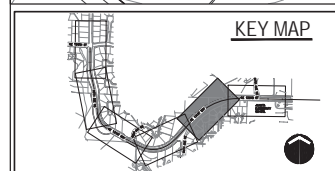
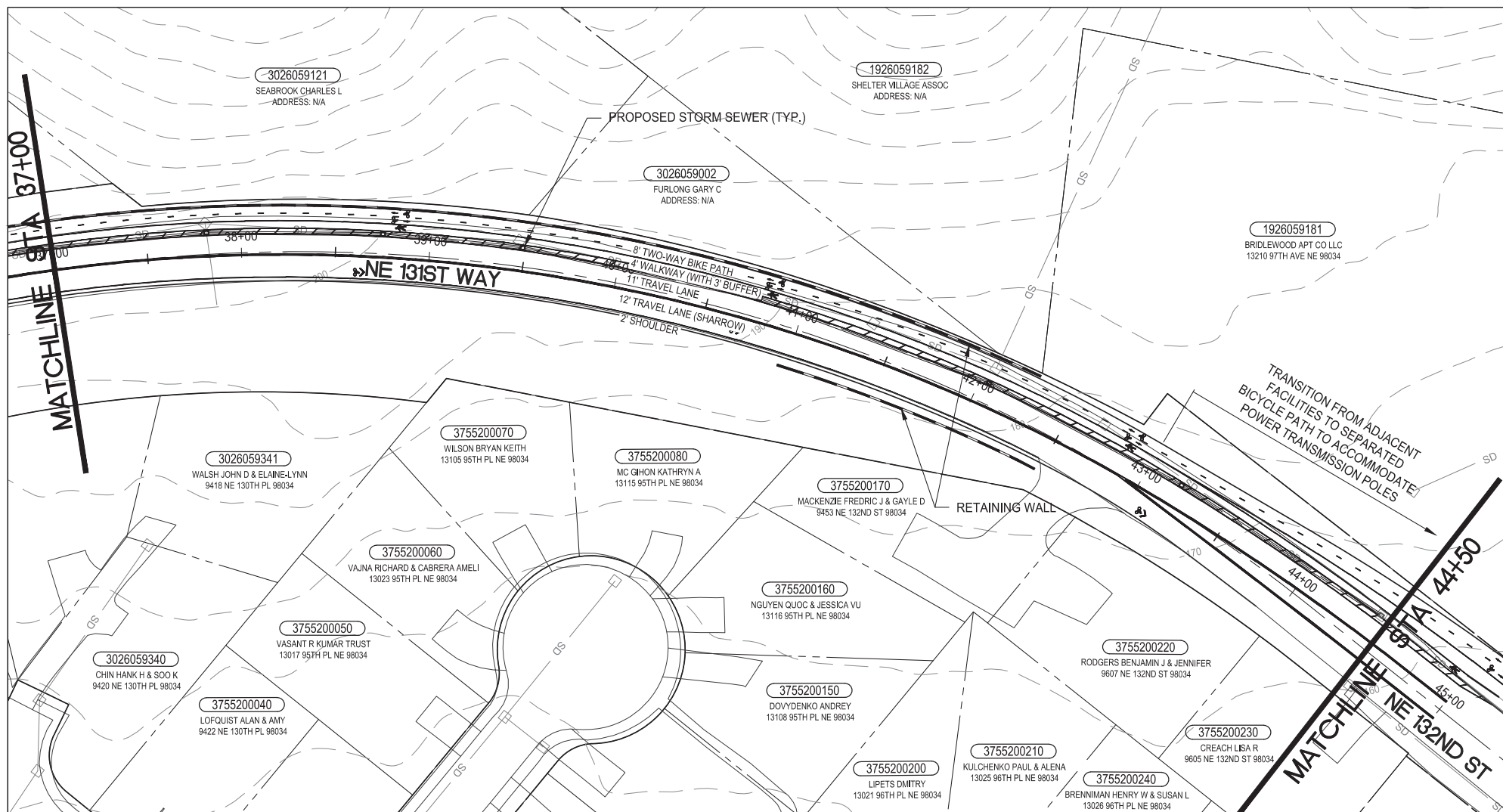
<p>KEY MAP</p>		<p>LEGEND</p> <p>—+—+—+— GUARDRAIL</p> <p>—+—+—+— RETAINING WALL</p>	<p>11241 Willows Road NE, Suite 200 Redmond, WA 98052 425.822.4446 www.otak.com</p>		<p>MULTI-MODAL CORRIDOR SAFETY STUDY – NE 131ST WAY/90TH AVENUE NE</p>		<p>SHEET</p> <p>2</p>
					<p>NEAR-TERM SOLUTION CONCEPT PLAN</p>		<p>OF</p> <p>14</p>



<p>KEY MAP</p>	<p>SCALE</p> <p>50' 0' 50' 100'</p> <p>IN FEET</p>	<p>LEGEND</p> <p>— GUARDRAIL</p> <p>— RETAINING WALL</p>	<p>Otak</p> <p>11241 Willows Road NE, Suite 200 Redmond, WA 98052 425.822.4446 www.otak.com</p>	<p>CITY OF KIRKLAND WASHINGTON</p>	<p>MULTI-MODAL CORRIDOR SAFETY STUDY – NE 131ST WAY/90TH AVENUE NE</p> <p>NEAR-TERM SOLUTION CONCEPT PLAN</p>	<p>SHEET 3</p> <p>OF 14</p>
-----------------------	---	---	--	---	--	---



<p>KEY MAP</p>	<p>50' 0' 50' 100'</p> <p>SCALE IN FEET</p>	<p>LEGEND</p> <ul style="list-style-type: none"> GUARDRAIL RETAINING WALL 	<p>11241 Willows Road NE, Suite 200 Redmond, WA 98052 425.822.4446 www.otak.com</p>		<p>MULTI-MODAL CORRIDOR SAFETY STUDY - NE 131ST WAY/90TH AVENUE NE</p>	<p>SHEET 4</p>
					<p>NEAR-TERM SOLUTION CONCEPT PLAN</p>	<p>OF 14</p>



LEGEND

— GUARDRAIL

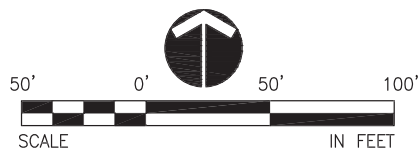
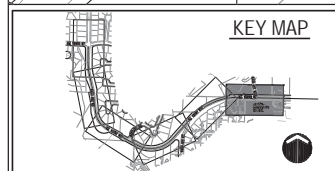
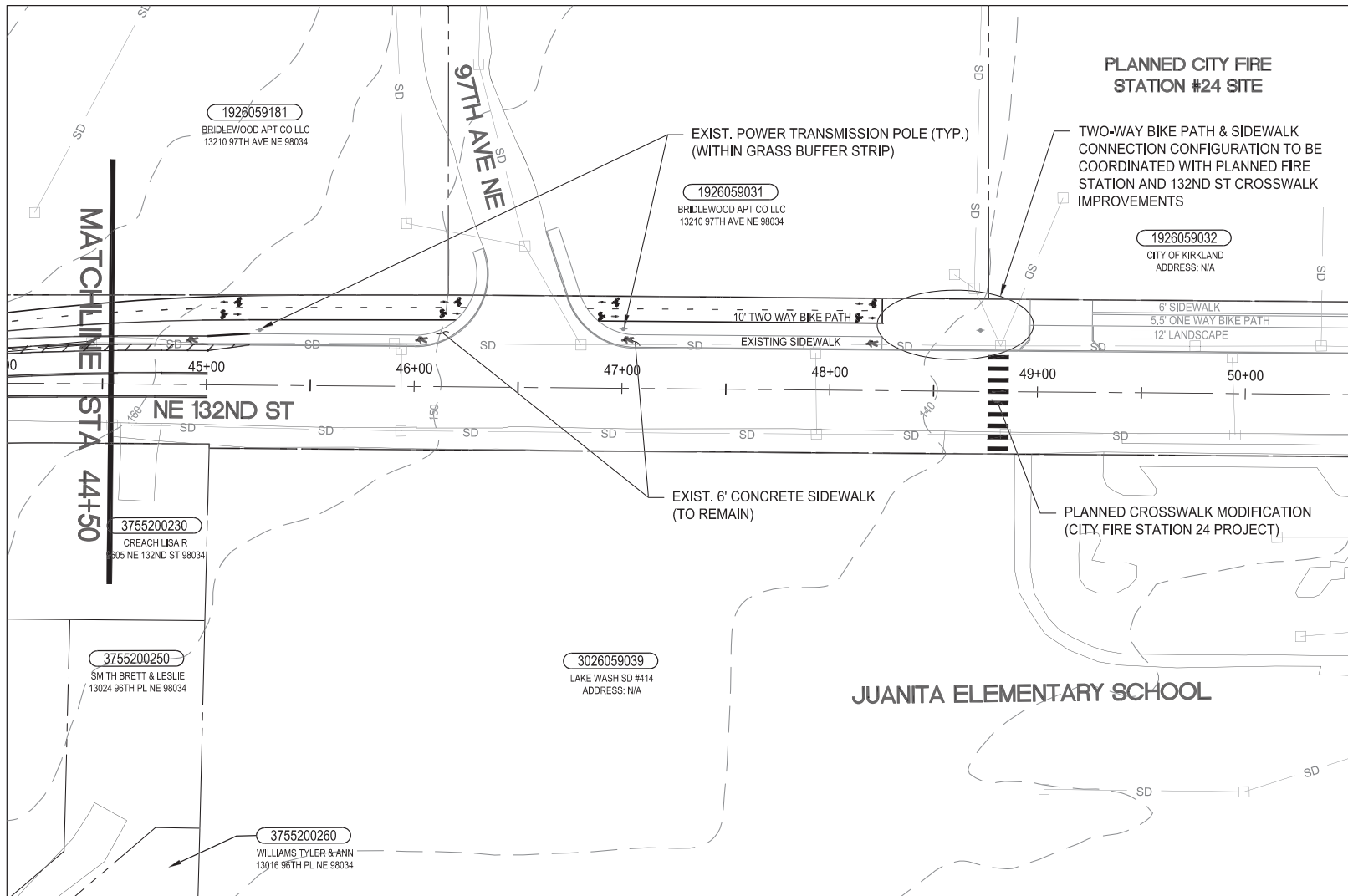
— RETAINING WALL



**MULTI-MODAL CORRIDOR SAFETY STUDY
— NE 131ST WAY/90TH AVENUE NE**

NEAR-TERM SOLUTION CONCEPT PLAN

SHEET
5
OF
14



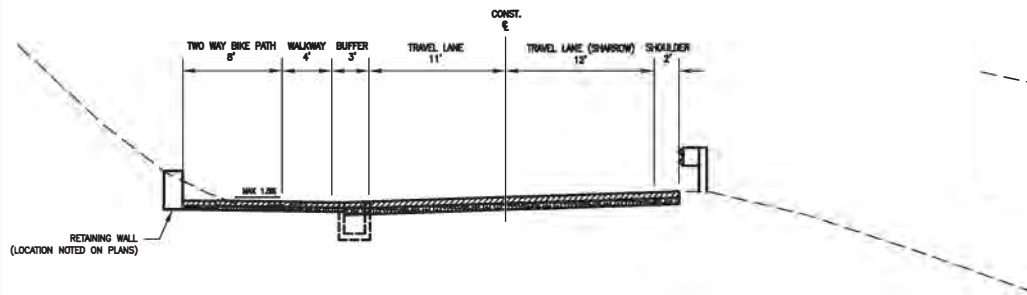
LEGEND	
	GUARDRAIL
	RETAINING WALL



**MULTI-MODAL CORRIDOR SAFETY STUDY
- NE 131ST WAY/90TH AVENUE NE**

NEAR-TERM SOLUTION CONCEPT PLAN

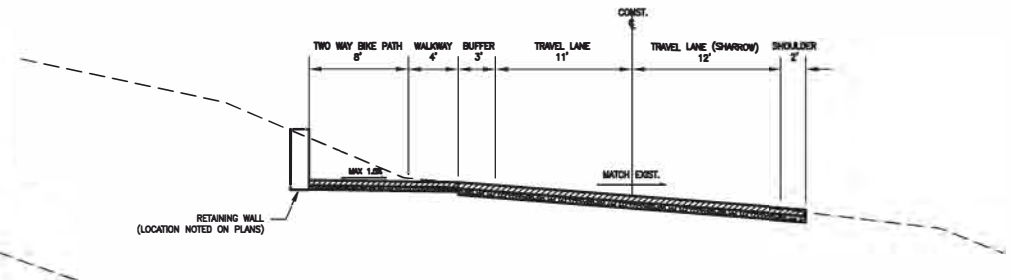
SHEET
6
OF
14



TYPICAL ROADWAY SECTION (NE 134TH ST - 94TH AVE NE)

NTS

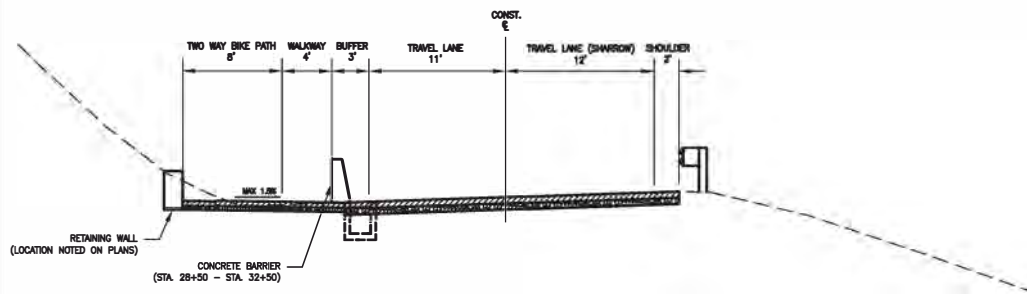
STA. 11+00 - STA. 28+50
STA. 32+50 - STA. 38+00



TYPICAL ROADWAY SECTION (94TH AVE NE - 97TH AVE NE)

NTS


STA. 38+00 - STA. 43+00



TYPICAL ROADWAY SECTION AT PROPOSED PEDESTRIAN/TRAFFIC BARRIER

NTS

LEGEND

-  GUARDRAIL
-  RETAINING WALL



11241 Willows Road NE, Suite 200
Redmond, WA 98052
425.822.4446
www.otak.com



MULTI-MODAL CORRIDOR SAFETY STUDY
- NE 131ST WAY/90TH AVENUE NE

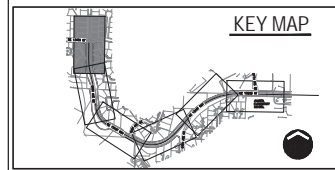
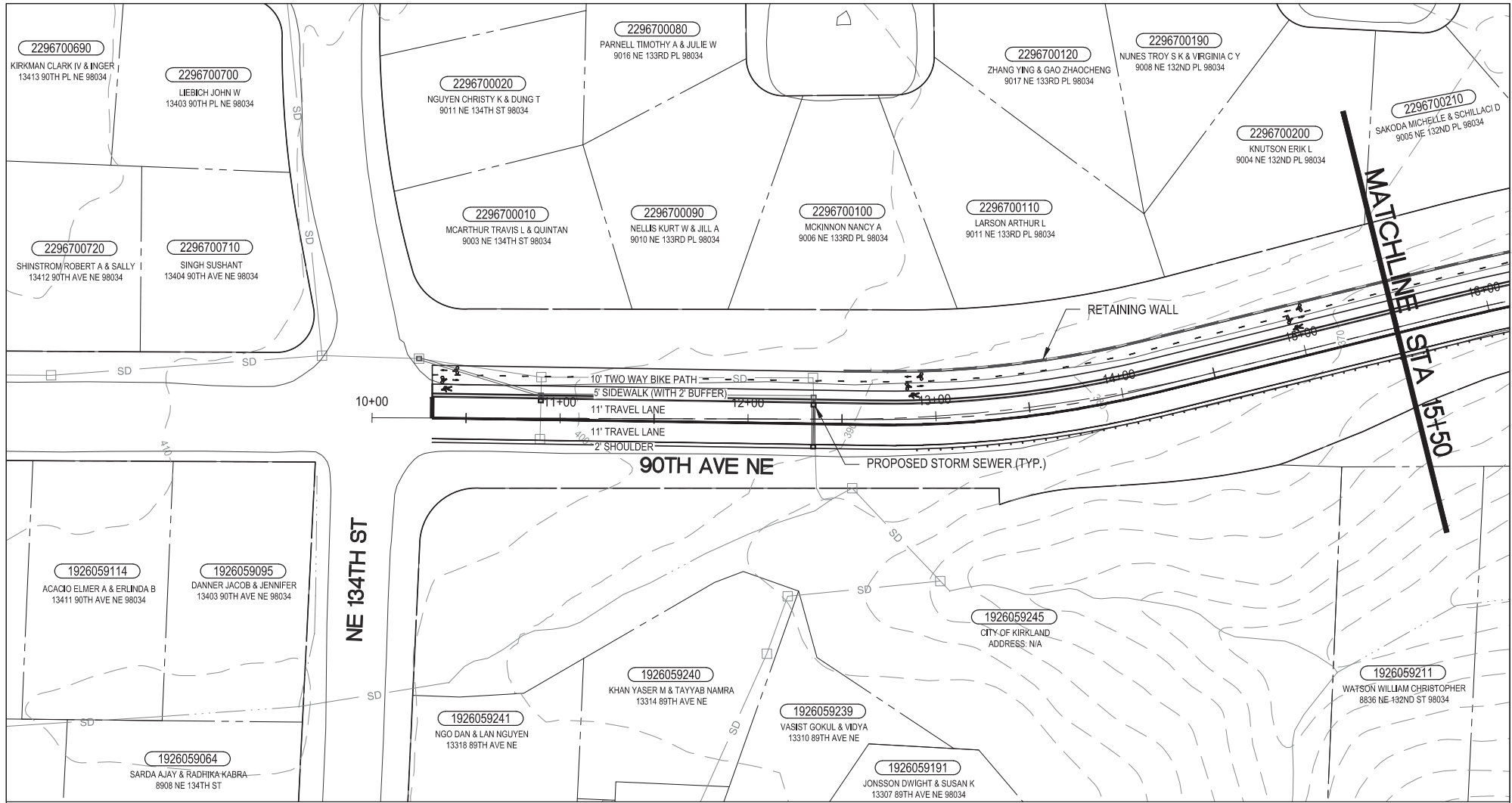
TYPICAL SECTIONS - NEAR-TERM CONCEPT

SHEET

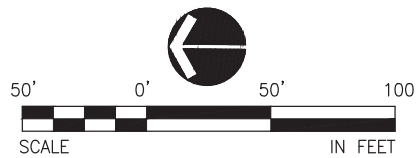
7

OF

14



KEY MAP



LEGEND

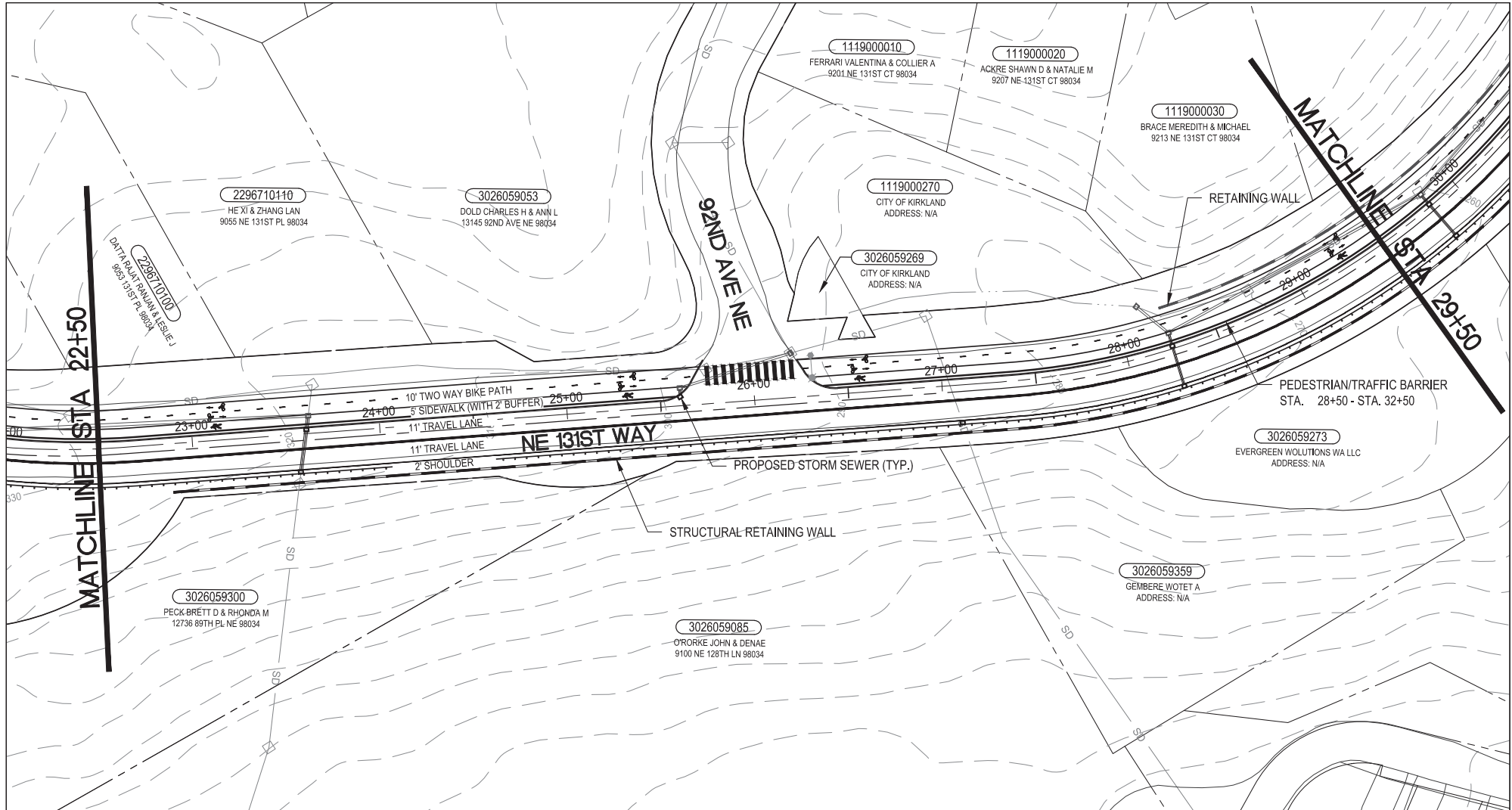
- GUARDRAIL
- RETAINING WALL



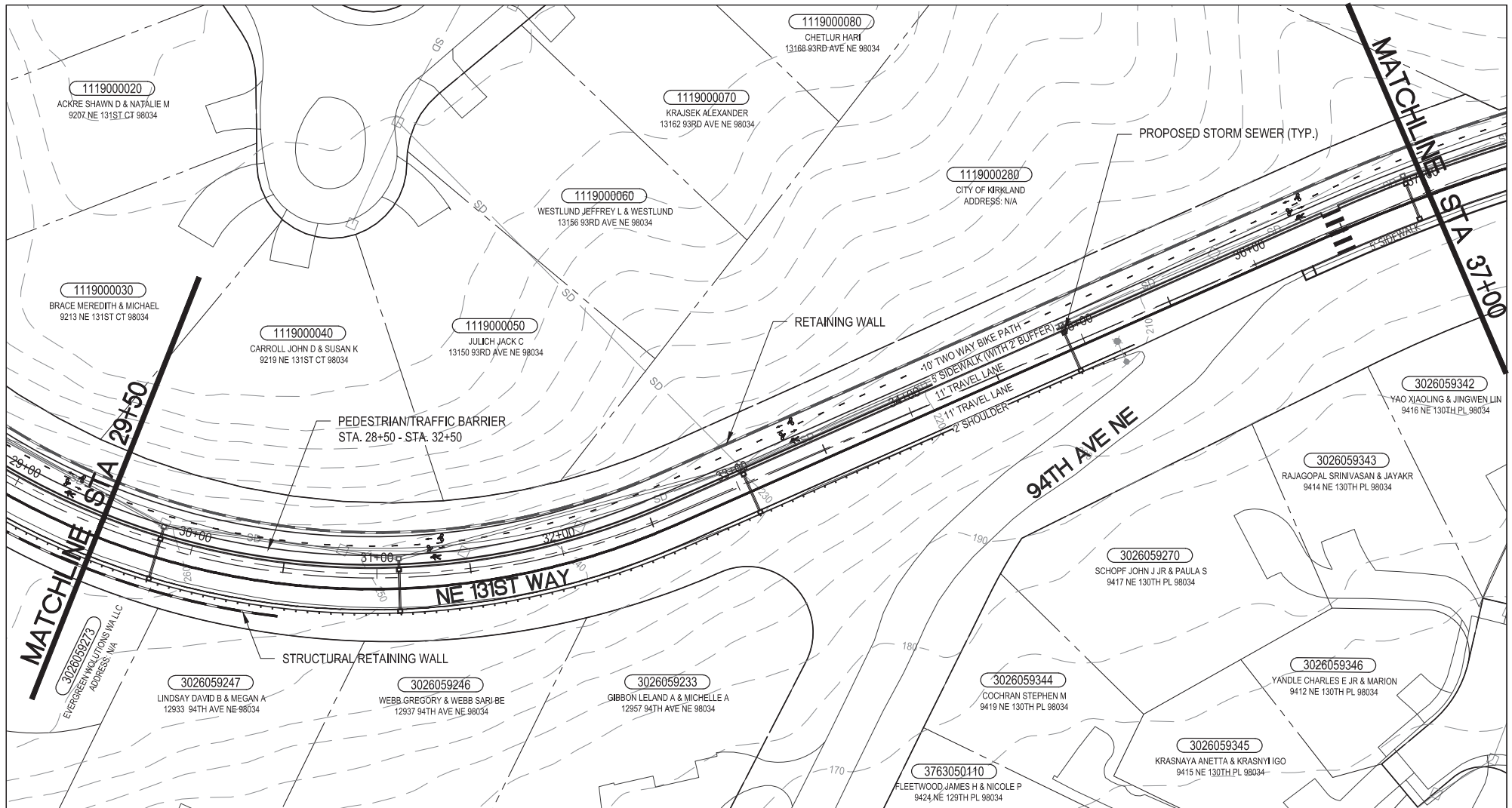
MULTI-MODAL CORRIDOR SAFETY STUDY
- NE 131ST WAY/90TH AVENUE NE

LONG TERM PLANNING CONCEPT PLAN

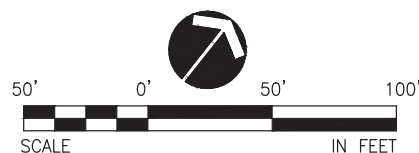
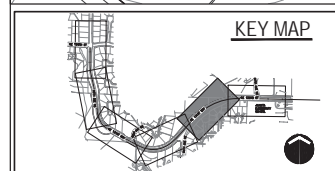
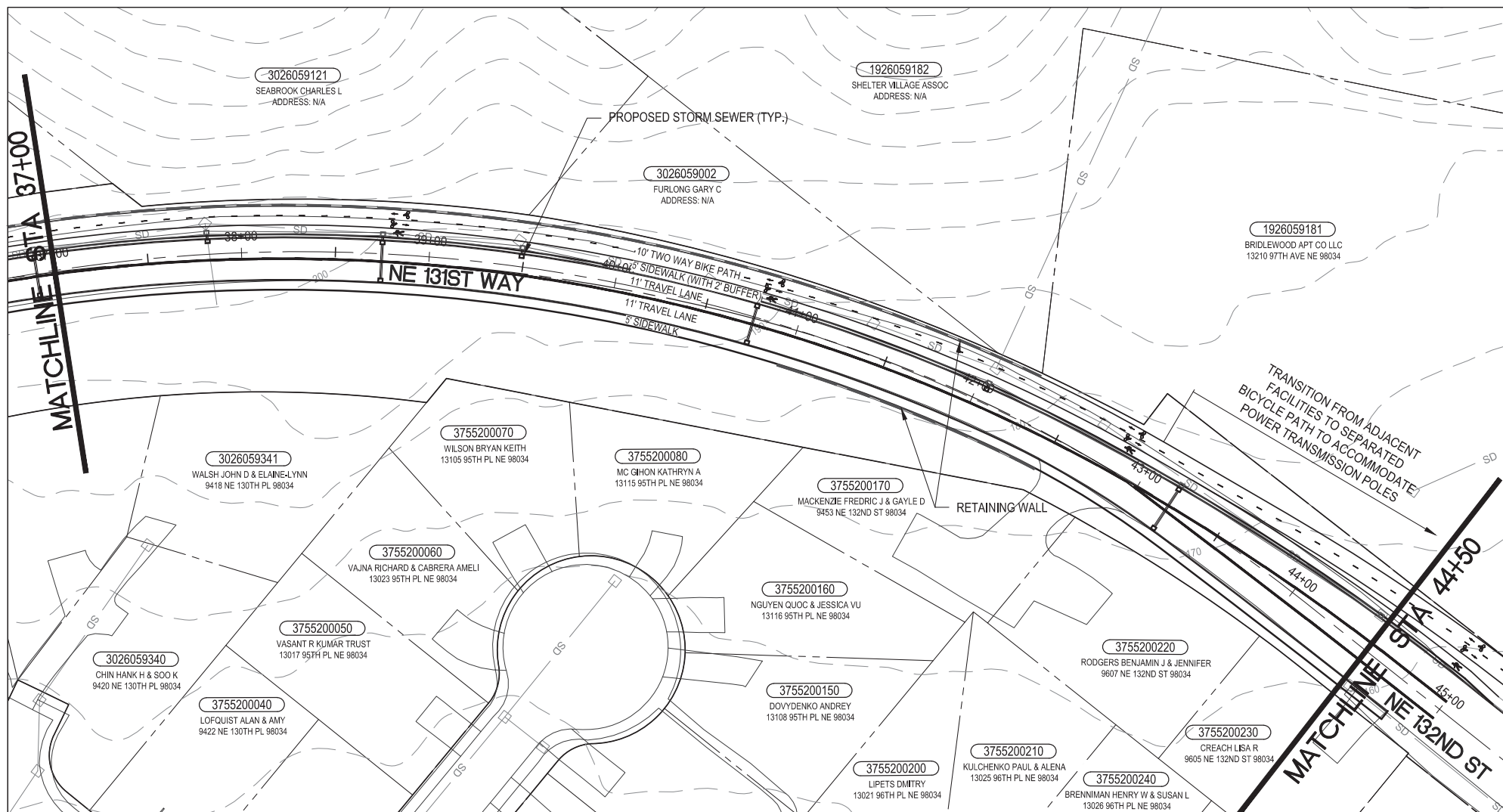
SHEET
8
OF
14



<p>KEY MAP</p>	<p>50' 0' 50' 100'</p> <p>SCALE IN FEET</p>	<p>LEGEND</p> <p>— GUARDRAIL</p> <p>— RETAINING WALL</p>	<p>11241 Willows Road NE, Suite 200 Redmond, WA 98052 425.822.4446 www.otak.com</p>		<p>MULTI-MODAL CORRIDOR SAFETY STUDY — NE 131ST WAY/90TH AVENUE NE</p>		<p>SHEET 10</p>
					<p>LONG TERM PLANNING CONCEPT PLAN</p>		<p>OF 14</p>



<p>KEY MAP</p>	<p>SCALE IN FEET</p>	<p>LEGEND</p> <ul style="list-style-type: none"> GUARDRAIL RETAINING WALL 	<p>11241 Willows Road NE, Suite 200 Redmond, WA 98052 425.822.4446 www.otak.com</p>		<p>MULTI-MODAL CORRIDOR SAFETY STUDY - NE 131ST WAY/90TH AVENUE NE</p>	<p>SHEET 11</p>
					<p>LONG TERM PLANNING CONCEPT PLAN</p>	<p>OF 14</p>



LEGEND

— GUARDRAIL

— RETAINING WALL



**MULTI-MODAL CORRIDOR SAFETY STUDY
– NE 131ST WAY/90TH AVENUE NE**

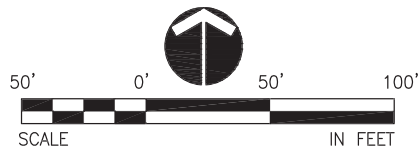
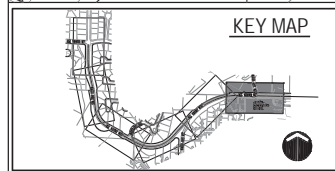
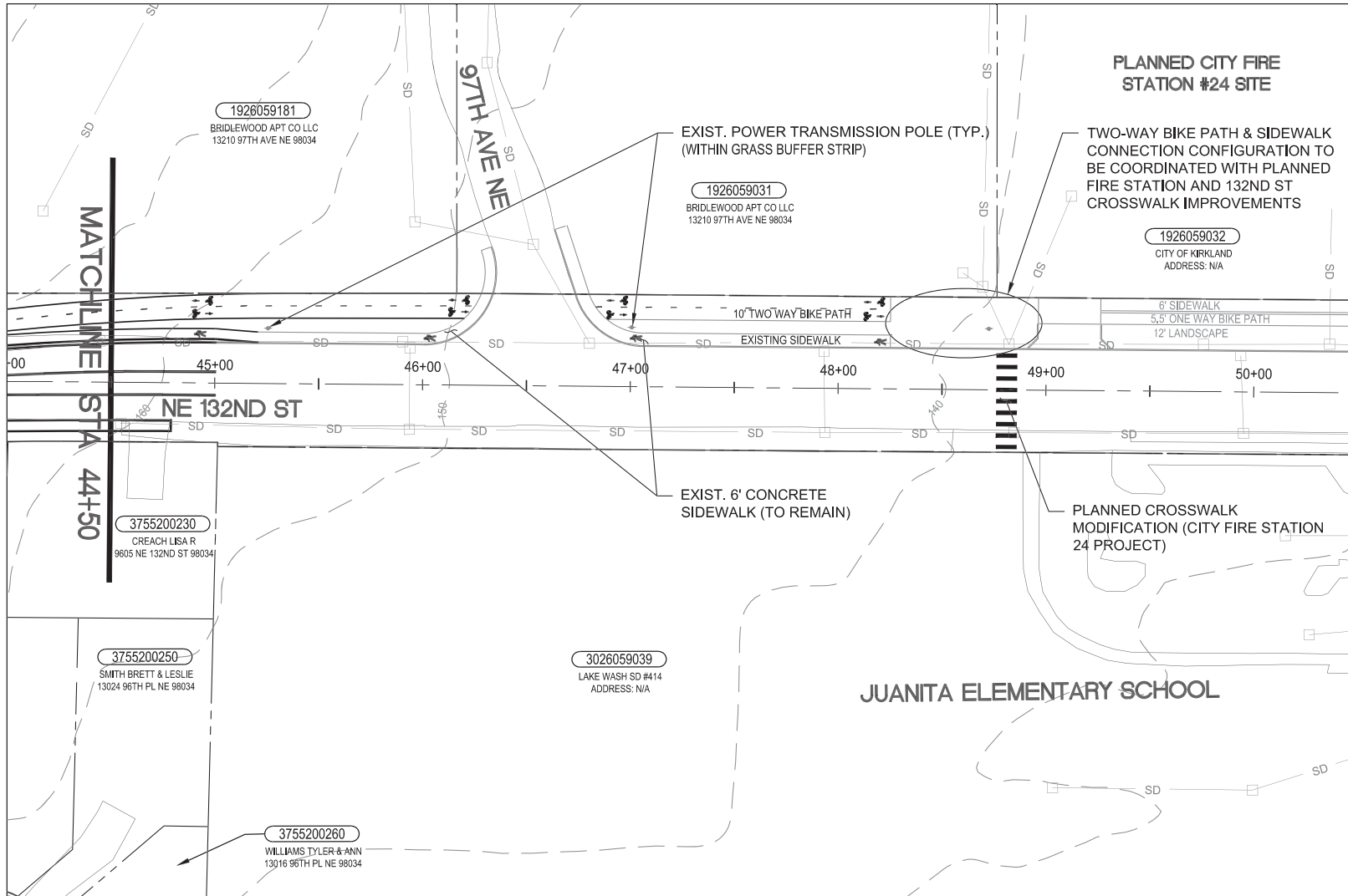
LONG TERM PLANNING CONCEPT PLAN

SHEET

12

OF

14



LEGEND

	GUARDRAIL
	RETAINING WALL

Otak

11241 Willows Road NE, Suite 200
Redmond, WA 98052
425.822.4446
www.otak.com

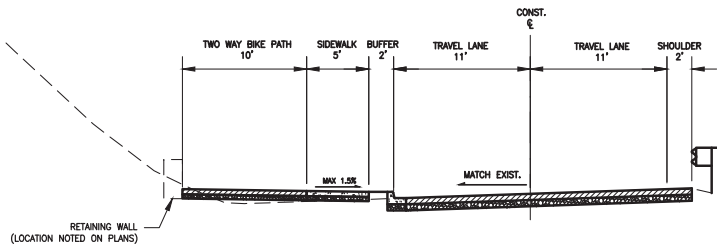


MULTI-MODAL CORRIDOR SAFETY STUDY
- NE 131ST WAY/90TH AVENUE NE

LONG TERM PLANNING CONCEPT PLAN

SHEET
13

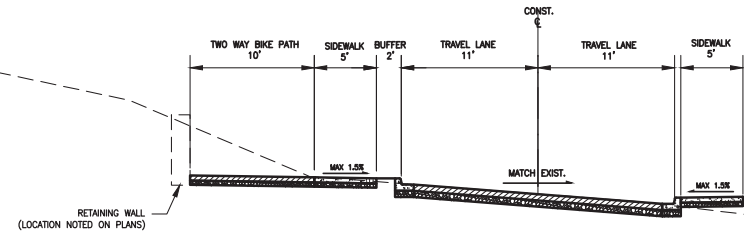
OF
14



TYPICAL ROADWAY SECTION (NE 134TH ST - 94TH AVE NE)

NTS

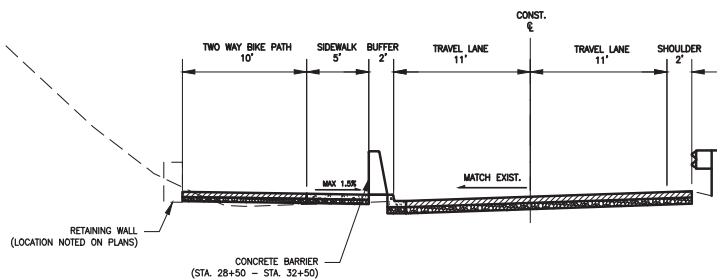
STA. 11+00 - STA. 28+50
STA. 32+50 - STA. 36+00



TYPICAL ROADWAY SECTION (94TH AVE NE - 97TH AVE NE)

NTS



STA. 36+00 - STA. 43+00



TYPICAL ROADWAY SECTION AT PROPOSED PEDESTRIAN/TRAFFIC BARRIER

NTS

LEGEND

-  GUARDRAIL
-  RETAINING WALL

Otak
11241 Willows Road NE, Suite 200
Redmond, WA 98052
425.822.4446
www.otak.com



**MULTI-MODAL CORRIDOR SAFETY STUDY
- NE 131ST WAY/90TH AVENUE NE**

TYPICAL SECTIONS - LONG TERM CONCEPT

SHEET
14
OF
14

ATTACHMENT B

Project Cost Estimates for Near-Term and
Long-Term Improvement Concepts

City of Kirkland

Project: Multi-Modal Corridor Safety Study (131stWay/90th Ave NE)

Planning Level Project Estimate:

Otak #33136F

Date: April 2021



***** Near-Term Solution Improvements *****

Project Limits: NE 134th Street to Existing Crosswalk on NE 132nd Street at Juanitia Elementary School

Project cost estimate developed from conceptual improvement plans included with technical memorandum identifying near-term solution and long-term planning improvements for the above referenced project.

Description	Quantity	Unit	Unit Price	Total
PROJECT PREPARATION				
Mobilization and Constr. Survey (10%)	1	LS	\$ 170,000.00	\$170,000
Temporary Erosion and Sediment Control (5%)	1	LS	\$ 90,000.00	\$90,000
Traffic Control (8%)	1	LS	\$ 140,000.00	\$140,000
EARTHWORK				
Roadway Excavation (incl saw-cut and pvmt removal)	1,500	CY	\$ 30.00	\$45,000
Removal of Structures and Obstructions (drainage structures/pipes)	1	LS	\$ 25,000.00	\$25,000
SURFACE TREATMENT AND PAVEMENTS				
HMA Pavement				
Pedestrian/Bicycle Path (2")	510	Ton	\$ 130.00	\$66,329
Street Shoulder/Buffer (6")	399	Ton	\$ 130.00	\$51,819
Exist Pavement Spot-Repair (6")	11	Ton	\$ 130.00	\$1,481
Full-width Overlay (2")	1,063	Ton	\$ 130.00	\$138,185
Crushed Surfacing Base Course (CSBC)				
Pedestrian/Bicycle Path (4")	950	Ton	\$ 45.00	\$42,735
Street Shoulder/Buffer/Pvmt Spot-Repair (8")	482	Ton	\$ 45.00	\$21,691
DRAINAGE STRUCTURES AND STORM SEWERS				
New Conveyance pipe - 12"	650	LF	\$ 85.00	\$55,250
New Conveyance pipe - 18"	1,450	LF	\$ 100.00	\$145,000
New Conveyance pipe - 24"	500	LF	\$ 140.00	\$70,000
Catch Basin - Type I	12	Ea	\$ 2,000.00	\$24,000
Catch Basin - Type II	8	Ea	\$ 4,000.00	\$32,000
MISCELLANEOUS CONSTRUCTION				
Curb Replacement w/Conc. Curb & Gutter (Dwnhill lane side)	2,400	LF	\$ 40.00	\$96,000
Spot location Guard Rail replacement (Dwnhill lane side)	700	LF	\$ 45.00	\$31,500
Retaining Wall (Cut-wall, uphill lane side, Avg 2-Ft High)	5,200	SF	\$ 40.00	\$208,000
Retaining Wall (Fill-wall, Dwnhill lane side, Max 4-Ft High)	450	SF	\$ 75.00	\$33,750
Street Light Pole w/Illuminare	2	Ea	\$ 32,000.00	\$64,000
Pavement Markings and Signing	1	LS	\$ 68,000.00	\$68,000
Pedestrian/Traffic Barrier (Curve south of 94th Ave)	400	LF	\$ 45.00	\$18,000
Conceptual Construction Cost =				\$1,637,740
Contingency (30%)=				\$491,322
Sub-Total =				\$2,129,062
Total Conceptual Construction =				\$2,129,062
OTHER COSTS				
Temporary Construction Easements (Allowance)				\$25,000
City Administration	12%			\$255,487
BaseMapping, Design, and Permitting	20%			\$425,812
Construction Management (CM)	18%			\$383,231
Sub-Total Other Costs =				\$1,089,531
Total Conceptual Project Cost Estimate =				\$3,218,594

Notes:

1. Project costs based on 2020 bid prices for similar public works projects and does not include a cost escalation factor.
2. Roadway excavation quantity based on 1-foot depth for shared-use path limits indicated on the conceptual plans.
3. HMA pavement quantities estimated from conceptual plan improvement limits for thickness indicated.
4. CSBC quantities estimated from conceptual plan improvement limits for thickness indicated.
5. HMA pavement spot repair quantities based on a total 300 square foot of full-depth replacement, including saw-cut.
6. Storm drainage pipe and structure costs based on installation of new pipe and structures as indicated on conceptual plans, including trenching, 100% import backfill, and temporary pavement patch.
7. Curb replacement (downhill travel lane) costs include sawcut and pavement/curb removal, excavation, CSBC, and concrete curb and gutter.
8. Guard rail replacement cost based on spot location limits indicated on conceptual plans and includes removals and
9. Retaining walls quantities estimated from conceptual plan improvement limits.
10. Street light pole/illumination cost reflect extending power to intersection and installing street light.
11. Pavement markings cost include shared use path striping/symbols, buffer-zone and crosswalk, and full roadway restriping.

City of Kirkland**Project: Multi-Modal Corridor Safety Study (131stWay/90th Ave NE)**

Planning Level Cost Estimate

Otak #33136F

Date: April 2021

***** Long-Term Planning Improvements *******Project Limits: NE 134th Street to Existing Crosswalk on NE 132nd Street at Juanita Elementary School**

Project cost estimate developed from conceptual improvement plans included with technical memorandum identifying near-term solution and long-term planning improvements for the above referenced project. Long-term planning improvements assume the near-term solution improvements have been previously constructed.

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
PROJECT PREPARATION				
Mobilization and Constr. Survey (10%)	1	LS	\$ 380,000.00	\$380,000
Temporary Erosion and Sediment Control (5%)	1	LS	\$ 190,000.00	\$190,000
Traffic Control (8%)	1	LS	\$ 300,000.00	\$300,000
EARTHWORK				
Roadway Excavation (incl ex. Pvmt Removal)	778	CY	\$ 30.00	\$23,333
Removal of Structures and Obstructions	1	LS	\$ 50,000.00	\$50,000
SURFACE TREATMENT AND PAVEMENTS				
HMA Pavement				
Pavement widening (6")	683	Ton	\$ 130.00	\$88,833
Full-width Overlay (2")	909	Ton	\$ 130.00	\$118,129
Crushed Surfacing Base Course (CSBC) (8")	500	Ton	\$ 45.00	\$22,500
DRAINAGE STRUCTURES AND STORM SEWERS				
New Conveyance pipe - 12"	450	LF	\$ 85.00	\$38,250
New Conveyance pipe - 18"	100	LF	\$ 100.00	\$10,000
Catch Basin - Type I	29	Ea	\$ 2,000.00	\$58,000
Catch Basin - Type II	2	Ea	\$ 4,000.00	\$8,000
MISCELLANEOUS CONSTRUCTION				
Conc. Curb & Gutter (both sides of corridor)	6,800	LF	\$ 35.00	\$238,000
Concrete Sidewalk (5-Ft wide)	2,389	SY	\$ 50.00	\$119,444
Sidewalk Curb Ramps	5	Ea	\$ 3,000.00	\$15,000
New Guard Rail	2,300	LF	\$ 45.00	\$103,500
Structural Retaining Wall (Dwnhill travel lane side, Max 8-Ft High)	5,600	SF	\$ 250.00	\$1,400,000
Street Light Pole w/Illuminare	20	Ea	\$ 22,000.00	\$440,000
Rapid Flashing Beacon Crosswalk (at 94th Ave)	1	Ea	\$ 30,000.00	\$30,000
Signing and Striping	1	LS	\$ 68,000.00	\$68,000
Conceptual Construction Cost =				\$3,700,990
Contingency (35%)=				\$1,295,346
Sub-Total =				\$4,996,336
Total Conceptual Construction =				\$4,996,336
OTHER COSTS				
R/W or Permanent Slope Easement Allowance				\$175,000
City Administration	12%			\$599,560
BaseMapping, Design, and Permitting	25%			\$1,249,084
Construction Management (CM)	18%			\$899,340
Sub-Total Other Costs =				\$2,922,985
Total Conceptual Project Cost Estimate =				\$7,919,321

Notes:

1. Project costs based on 2020 bid prices for similar public works projects and does not include a cost escalation factor.
2. Roadway excavation quantity based on 1-foot depth for roadway widening and sidewalk limits indicated on the conceptual plans.
3. HMA pavement quantities estimated from conceptual plan improvement limits for thickness indicated.
4. CSBC quantities estimated from conceptual plan improvement limits for thickness indicated.
5. Storm drainage pipe and structure costs based on installation of new pipe and structures as indicated on conceptual plans, including trenching, 100% import backfill, and temporary pavement patch.
6. Guard rail replacement cost based on removal and installation of new post and guardrail on downhill travel lane side between NE 134th St. and 94 Ave NE.
7. Retaining walls quantities estimated from conceptual plan improvement limits.
8. Street light pole/Illumination reflect installation of additional street pole/power conduits. Assumes the Short-Term Solution Improvements constructed - extending power and installing a street light at 92nd Ave. NE and 94th Ave. NE.
9. Pavement markings cost include bicycle path re-striping, buffer-zone and crosswalk, and full roadway restriping.
10. Estimate assumes that the Short-Term Solution asphalt shared-use path improvements have been previously constructed and the outside 10-foot wide portion remains in place and re-striped to use for the two-way bike path.

ATTACHMENT C

Preliminary Findings and Improvement Considerations Memorandum



Technical Memorandum

To: Blair Daly, Project Manager
From: Mark Cole/Eva Ho
Copies: File
Date: November 10, 2020
Subject: Preliminary Findings and Improvement Considerations
Multi-Modal Corridor Safety Study - "Goodwill Hill"
Project No.: Otak 33136F

Purpose

The purpose of this memorandum is to:

1. Report significant finding from review of existing documentation and the site condition field assessment
2. Establish cross sectional improvement concepts to be considered in evaluating alignments and estimating costs of the project improvement alternatives.
3. Preliminary geometric alignment considerations relative to near-term pedestrian and bicycle improvements for the uphill direction of travel.

Data Collection and Findings

Review of existing documentation

Existing documentation, obtained and/or provided by the City, reviewed in developing improvement considerations included:

- Finn Hill Neighborhood Plan (FHNP)
- Kirkland Comprehensive Plan
- Kirkland Safe Routes to School (SRTS) Action Plan
- Kirkland GIS and geodatabase information (GIS topography, pavements, storm drainage system, sensitive areas)
- Vehicle crash and AADT Count data (most recent 2019)
- Available storm sewer system as-built and maintenance records
- Available parcel ownership and assessor map data, King County

Site reconnaissance

A site visit was conducted with City staff on September 23rd to observe existing conditions and discuss initial approach considerations for developing improvement options. Prior to City's annexation, an extruded curb installed near the fog line of the uphill travel lane creates the asphalt pathway currently used by pedestrians and bicyclist. This curb, broken in several places, also directs the roadway surface water runoff and, via curb-cuts, sheet flows across the pathway to catch basins connected to the underground storm conveyance system. The

k:\project\33100\33136F\projectdocs\reports\preliminary finding memo\technical memo.docx

City desires to create a much safer condition for all multi-modal users. The approach discussed would focus on an improvement options to the current concept, viewed as possibly more temporary, but also consider a more permanent options that ultimately could work in with any future roadway improvements, particularly the corridor portion uphill of 94th Ave NE.

Following field discussions with City, the existing conditions along the entire corridor were photographed, existing pavement and travel lanes widths were measured, and other features assessed, i.e. guardrail and curbs. Existing Corridor photographs are included as Exhibit A and Existing Condition basemaps (from City of Kirkland's GIS database) are included as Exhibit B.

Significant Findings, Observations, and Conclusions

- Street classification of corridor: Minor Arterial
- Bike lanes were recommended for corridor, FHNP
- Sidewalk on both sides of NE 131st Way between 94th Ave NE and 97th Ave NE were identified as a high priority, SRTS Action Plan.
- Pedestrian walkway improvements on the uphill side along 90th Ave NE/131st Way/NE 132nd St (from 9600 Block to NE 134th St.) were identified as a high priority, (June 2020 Community online survey).
- Enhanced crossing of NE 131st Way at 94th Ave NE intersection identified, SRTS Action Plan
- Total width of existing asphalt pavement within the corridor varies between 34 and 36 feet.
 - Existing travel lane widths are 11-foot
 - Uphill travel lane paved shoulder width varies between 6 to 8 feet
 - Downhill travel lane paved shoulder width varies between 4 to 6 feet
- Existing Storm Drainage
 - The lack of a storm system and curbing on the downhill travel lane side of the corridor contributes to the broken curbs, erode guardrail posts, and potential additional erosion of the steep sideslopes extending beyond the roadway.
 - On the uphill travel lane side of the road structures aren't ideally located, either below grade or off in the dirt or tight up against the slope base.
- An asphalt pathway along the shoulder of the uphill travel lane side and formed by an extruded curb near the fog line, currently is the only route for pedestrian and bicycles. Curb broken in several places.
- Steep and sensitive downhill grade topography exist all along the back side of the guardrail on downhill travel-lane side between NE 134th St and 94th Ave NE. Steep uphill grade topography exists just off the edge of uphill travel lane shoulder for the majority of the study corridor.
- The total right-of-way total along the corridor varies between 75 and 95 feet, with portions having additional roadway right of way in areas having steep back slopes.
- Sections of existing guardrail posts are eroded, and extruded curb broken in some portions of the downhill travel lane side of roadway.
- There is no street illumination along most of the corridor, including none at the 92nd Ave NE and 94th Ave NE intersections.

- 92nd Ave forms a street intersection on the uphill travel lane side and is steep (20% uphill grade) making any corridor widening in this direction difficult.
- 94th Ave NE, extending from the south, intersects the corridor at an extreme angle in the eastbound travel lane direction. 94th Ave NE is a stop condition and signed with "no left turn" onto the corridor.
- The Annual Average Daily Traffic (AADT) is approximately 11,000 within the corridor (2019 data).

Approach Considerations to Improvement Recommendations

The improvement concepts will focus on near-term improvements within the existing roadway footprint and right-of-way as well as more extensive street and multi-modal improvement options for the City's longer-term consideration relative to this Finn Hill neighborhood access.

Approach to Pedestrian and Bicycle Improvement Options

Near-term focus improvement options (uphill travel-lane side). (Refer to Exhibit C)

- Shared-use Path: This option would maintain the existing concept but reconstruct and improve the pavement area, including a 2' buffer strip in curve areas and where space allows for safer shared-use facility. Additionally, effectively control/collect surface water runoff from the roadway. This option is viewed as an economical way of achieving a more safe and effective facility but would be considered temporary relative to City planning documents in defining desired facilities for this corridor.
- Sidewalk and Bike Lane: This option is considered safer than the pedestrian/bike shared path for this portion of roadway and more consistent with desired facilities for the future roadway. This is viewed as a higher cost option, likely including some construction of retaining walls, but considered as permanent. Constructed on an alignment that could remain in place as an "initial phase", compatible with any future improvement of the ultimate roadway.

Longer-term considerations:

- Focus of roadway section & total width requirement associated with the downhill travel lane side. Identify ultimate roadway section width requirements associated with future pedestrian and bicycle facility alternatives. Bicycle alternatives to consider "sharrow" lane verses separate bike lane and pedestrian alternatives to consider sidewalk or no sidewalk (given the existing site topographic challenges).

Intersection of 94th Ave NE and NE 131st Way:

- Consideration for implementing a controlled cross walk, as identified in SRTS Action Plan

Approach to Drainage Improvement Considerations

Near-term considerations for improvements:

- Focused on control and collection of surface water runoff from both sides of the roadway and necessary pipe modification associated with improvement options.
- Storm drainage conveyance pipe system replacement/upsizing proposed only in locations identified as needed in existing City records.

Longer-term considerations for improvements:

- New additional storm sewer collection and conveyance system supporting future roadway and multimodal improvements on the downhill travel lane side of the corridor.

Approach to Other General Safety Improvement Considerations

Near-term considerations for improvements:

- Removal of existing curb and replacement with curb & gutter, in current alignment where needed to adequately control drainage.
- Removal and replacement of guardrail/guardrail posts, in current alignment where needed to improve safety.
- Asphalt pavement spot repairs and half-street overlay.
- Street Illumination

Longer-term considerations for improvements:

- Improvements along the downhill travel lane side supporting the ultimate alignment and future roadway corridor section. Pavement spot repair and widening, curb and gutter, guardrail, and retaining walls.
- Additional street illumination.



South Bound along Corridor



West Bound along Corridor

EXHIBIT A – Photographs on Corridor

ATTACHMENT D

Comments from community outreach and
City's Transportation Commission

NE 131st Way/90th Avenue NE Multimodal Corridor Study Comment Summary

12/2/2020 Transportation Commission Meeting

12/3/2020 Community Meeting

Topics	Source	Detailed feedback or questions
Addressing storm water issues and solutions	TC and Community feedback	<p>Concern about drainage approach proposed in short term project</p> <p>How does the interim concept propose to stripe over the drainage basin for the buffer area?</p> <p>Addressing drains on the hill side of the shared use path so that pedestrians and bikes aren't dealing with water running off the hill and across the path</p> <p>Having drains on the uphill side of the shared path, so that peds and bikes aren't dealing with water sheeting off the hillside and across the path. Would it cost much more to put a drain there like what you see on pool decks, and then a pipe under the path into the catch basis, so that drainage is going under the path instead of across the surface?</p>
Graphic illustrations showing the retaining walls and other infrastructure	TC	
Include policy and plan support for the projects	TC	
Continue outreach and engagement	TC and Community feedback	<p>Make sure the Juanita neighborhood has a chance to be involved as process</p> <p>More outreach will be done on this project in the future</p> <p>More Q and A</p>
Lowering speed limit from 35 to be consistent with the entire road	TC and Community feedback	<p>Speed limit is 35 between NE 134th St and 94th Ave NE (a very short section), why not lower it to be consistent with all the surrounding streets</p> <p>Pedestrian safety as well as some type of traffic flow management such slowing cars down to stay within posted speed limits (which should be dropped to 30mph for the entire road.</p>
Narrower lanes downhill to lower speed limit	TC and Community feedback	Narrower lanes to help encourage lower speeds and allocate more width to the wide path and buffer
Not much interest in the downhill bike lane	TC and Community feedback	I would love to see the idea of combining two, cramped bike/ped lanes on arterials into ONE nice wide bi-directional protected bike/ped lane, take hold in more projects/planning. I have thought this type of street mapping would be ideal for some time and am really encourage to see it in play for this project.
Need some type of physical barrier in the buffer	TC and Community feedback	<p>a separated pedestrian lane protected by a 2-3 ft barrier wall or guard rail</p> <p>Buffer only paint? Looking at adding additional separation</p> <p>Uphill ped path, safety buffer like Juanita Drive? Candle stick or delineators as options</p> <p>Questions about the physical barrier, considering between shared use vehicle lanes</p>
Cost information is important	TC and Community feedback	<p>Clarify the study cost and implementation cost</p> <p>The overall cost, ensuring it's a sustainable and logical source of funds. Consideration for walkers, runners, cyclists, dog walkers, disabled individuals, as well as vehicles.</p> <p>Keep the study budget small. There are several items that are a "given" around safety and lights.</p>
Focus on the user groups	TC and Community feedback	<p>Considering the connection to schools on the corridor, addressing SRTS, creating facility that is comfortable for students and accessible for them</p> <p>Consider how bicycling would likely have a peak direction in AM and PM just like vehicles</p> <p>Cyclists riding on both directions on the wide path? How to make is accessible for as many as possible</p> <p>Segment from 94th to Juanita Elementary School such as sidewalk, is that considered? Yes, identified in SRTS action plan, consider fitting it in the short- and long-term approach.</p> <p>Improving use of roadway for bicyclsits</p>
Visibility at street crossings	TC and Community feedback	

Need for streetlighting	TC and Community feedback	Have you given any consideration to a streetlight at the bottom of 92nd Ave NE? Adding streetlight on the bottom of 92nd Ave NE, needed. Great safety improvement on short-term for intersections. The need for street lights/cost benefit because power does not already exist for much of this corridor, those worked require trenching to install power, etc.
Learn from experiences on Juanita Dr	TC and Community feedback	
Not walking or biking because it feels unsafe	Community feedback	Do cyclist really use that hill that much?(how to address this)
Clarifying timeline for short and long term solutions	Community feedback	
Clarifying how street sweeping works better in the proposed concepts	Community feedback	For the short term concept, Isn't the extruded curb being eliminated so couldn't street sweeping be done using the existing street sweepers? Or is the curb staying?
Do you frequently walk or bike on the corridor? %70 No and %30 Bike or walk	Community feedback	Emphasizing on cyclists and walking who want to use the corridor but don't feel safe now I will never be a pedestrian or bicyclist on this corridor, but in non-Covid times I do drive it at least a couple of times a month. It can be really scary for drivers to encounter bicyclists or pedestrians -- people will swerve around them, crossing the centerline. I would very much like for there to be more separation to eliminate these conflicts as much as possible and avoid car crashes.
Describing geotechnical issues on areas with steep slopes	Community feedback	Geotechnical issues on areas with steep slopes? Yes, sliding incidents, damaging uphill shoulder curb, drainage is critical.
Bike facilities on the study area, extending network to 100 and 132nd?	TC and Community feedback	Bike facilities on the study area, extending network to 100 and 132 nd ? Discussed at TC meeting as well, needed to look further, not part of this, but looking later for other connection opportunities
Safety concerns for ped and bike		Safe travel for both cars and walkers/bikers, lighting, etc. Creating safer uphill bike and ped paths. Usability for both pedestrians and bicyclists, especially in all seasons Safety of cyclist, walkers and drivers at a reasonable cost. The creation of a safe corridor for pedestrians and bicyclists to traverse this hill. Pedestrian safety, sufficient sight distance, lighting, set back distance from traffic
Range of improvements Vs. single plan		A single design for improvements. I would appreciate seeing a plan that is cost-effective and provides a link for people to walk and bike along this route while being safely buffered from vehicular traffic. A range of short and long term feasible projects The short term concept was well-defined but the long-term concept was not rendered which was confusing. I would have liked to see a clear vision for input. To me, I don't want to see an in-street downhill bike lane. I'd rather see width allocated to a true shared use path which I could use with my kids or could see my kids using to travel to and from Finn Hill Middle School in the future. The limits of the study seemed like they should have been considered more whether by the consultant or the City to connect to the surrounding network. The City has a lot of gaps and while this project could be great at filling a large gap, it will be much less effective if we leave unsafe connections between this segment and other portions of the network.
More topics to be considered		I wish the schedule was covered in more detail. Planning, design, and construction dates...and where this all fell into that schedule. What are the implications to traffic during construction and about how long might construction last for the short-term and long-term improvements? Environmental impacts. The need for a sidewalk on the downhill side in the long-term plan Alternate pedestrian routes that span 132nd and 136th. Usage of the open space and high voltage easement line in the area

Overall session feedback %27 Good, %73 Very good and Excellent		Longer meeting More Q&A More time for chat
---	--	--

30 attendees