Del Norte Regional Guardrail Upgrades Project Planning Study

01-DN-Local Roads-
Various Post Miles
September 2026







In Del Norte County, along various County Roads, Del Norte County, California

I have reviewed the information contained in this Study and find the data to be complete, current and accurate:

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9/15/2026
Date

This Del Norte Regional Upgrades Project Planning Study has been prepared under the direction of the following Registered Engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.



REGISTERED CIVIL ENGINEER

9/10/2026

DATE

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1. EXECUTIVE SUMMARY

Project Description:

The Del Norte Regional Guardrail Upgrades Project Planning Study (DNRGUPPS) proposes to improve safety and address damaged existing guardrails in Del Norte County. The study includes repair and replacement alternatives to the existing guardrails along County maintained roads.

Project Limits (Dist., Co., Rte., PM)	01-DN-Multiple Roads-Various Post Miles
Project #:	PRJ2047, HSIPL-5901(071)
Number of Alternatives:	Seven Roads, 16 segments of guardrails
Programmed Construction Costs	HSIP & RSTP - $895,400
Programmed Right of Way Costs:	HSIP & RSTP - $10,000
Programmed Preliminary Engineering Costs:	HSIP & RSTP – $205,700
Programmed Planning Costs:	RPA – $89,000
Funding Source:	HSIP, RSTP, RPA
Type of Facility (conventional, expressway, freeway):	Conventional
Number of Structures:	0
Anticipated Environmental Determination/Document	CEQA Categorical Exemption / NEPA Categorical Exclusion
Legal Description	In Del Norte County, along various County Roads, Del Norte County, California.

Existing guardrails

Del Norte County has sixteen (16) roads with existing roadside guardrail, for a total length of 24,856.25 linear feet (LF) of guardrail, see Table 1 below.

Table 1:Existing Roadside Guardrail

Number of Roads with Roadside Guardrail	Total Length of Roadside Guardrail (LF)
16	24,856.25

Seven (7) of those roads have a total of sixteen (16) damaged segments of guardrail (see Table 2 below).

Table 2: Damaged existing guardrail by road

List of Road Segments with Damaged Roadside Guardrail
PARKWAY DR3
Segment 1 - east side
Segment 2 - west side
SOUTH FORK RD
Segment 1 - 0.9 miles from 199, river side
Segment 2 - 3.5 miles from 199, river side
Segment 4 - 5.48 miles from 199, river side
Segment 9 - 10.13 miles from 199, river side
KLAMATH BEACH RD
Segment 1 - east end, closest to 101
Segment 5 - Mountain side, within segment 4 limits
Segment 6 - Mountain side, Coastal Drive westward
KLAMATH BLVD
Segment 1 - north, separating Klamath Blvd from 101
Segment 2 - SW bridge approach
Segment 3 - NE Bridge Approach
TAN OAK DR
Segment 1 - east side
PEBBLE BEACH DR1
Segment 4 - NTS09
Segment 11 - NTS16
PEBBLE BEACH DR2
Segment 3 - NTS03

NTS## - North to South, Segment Number

Detailed discussion for each damaged guardrail segment can be found in Section 6 – Alternatives, and Attachment A – Project Location Map has labeled the existing guardrail locations.

County wide there are sixty-two (62) existing guardrail segments. Sixty-one (61) of the existing guardrail segments are not to current guardrail standards, with Lauff Avenue the only location/segment that meets current standards. The Oregon Mountain Road guardrail location is not warranted for hazard shielding or access control, and can be removed by the County.

Existing guardrails used for access control only

The existing guardrail installed along Pebble Beach Drive near the intersection of Pebble Beach Drive/Dale Rupert Road/Washington Boulevard and continuing out to the parking lot at Point Saint George was a project of the Del Norte County Administrative Office that was funded by the California State Coastal Conservancy (SCC). The primary purpose of the guardrail is access control resulting in resource protection. Although the guardrail may have been initially installed by the Del Norte

County Road Division circa 2008 at the request of the Del Norte County Administrative Office, it was not a roadway safety project and is not the responsibility of the Road Fund to maintain.

The guardrail installed at the intersection of Madison Avenue and Arlington Drive was a project of the Del Norte County Road Division. The primary purpose of the guardrail is access control to eliminate a public nuisance, as flood control easements and associated improvements, including drainage ditches, were being used as an unauthorized motorized trail system.

Recommendations

Based on the assessed condition, hazard shielding, traffic volumes, collision history (number, injured, type) and given the current funding secured by the County to advance a guardrail upgrades project to construction, the listing below of thirteen (13) locations to be repaired or replaced is the recommended strategy to utilize the current funding.

Table 3: Prioritized Recommendations

Prioritized Summary Table of Repair/Replacement of existing damaged Guardrail						
List of Road Segments with Damaged Roadside Guardrail	**Length of Repair/Replace Guardrail (LF)**	**Replace/ Repair Ranking (Low=High Priority)**	**Repair/ Replace**	**Replacement Terminal Systems (EA)**	**Notes**	**Cost ($) *****
PARKWAY DR3	**587.5**	**1**	**-**	**3**	**Elements and End Treatments damaged, 2 segments**	**$ 403,286.40**
Segment 1 - east side	262.5	1 ('27) RR	Replace	2	Replacement of the entire guardrail segment	$ 187,017.60
Segment 2 - west side	325.0	1 ('27) RR	Replace	1	Replacement of the entire guardrail segment	$ 216,268.80
SOUTH FORK RD	**387.5**	**2**	**-**	**2**	**4 segments of guardrail to repair**	**$ 286,915.20**
Segment 1 - 0.9 miles from 199, river side	12.5	2 ('27)	Repair	1	1 element and 1 terminal system to be repaired	$ 18,268.80
Segment 2 - 3.5 miles from 199, river side	37.5	2 ('27)	Repair	0	3 elements to be repaired	$ 23,760.00
Segment 4 - 5.48 miles from 199, river side	37.5	2 ('27)	Repair	1	3 elements and 1 terminal system to be repaired	$ 34,108.80

Segment 9 - 10.13 miles from 199, river side	300.0	2 ('27) RR	Replace	2	Full replacement	$ 210,777.60
KLAMATH BEACH RD	**100.0**	**3**	**-**	**5**	**3 segments to repair**	**$ 115,104.00**
Segment 1 - east end, closest to 101	62.5	3 ('27)	Repair	2	5 elements and 2 terminal systems to be repaired	$ 60,297.60
Segment 5 - Mountain side, within segment 4 limits	12.5	3 ('27)	Repair	2	1 element and 2 terminal systems to be repaired	$ 28,617.60
Segment 6 - Mountain side, Coastal Drive westward	25.0	3 ('27)	Repair	1	2 elements and 1 terminal system to be repaired	$ 26,188.80
KLAMATH BLVD	**50.0**	**4**	**-**	**4**	**Element damage, 3 segments**	**$ 62,726.40**
Segment 1 - north, separating Klamath Blvd from 101	25.0	4 ('27)	Repair	2	2 elements and 1 terminal system to be repaired	$ 26,188.80
Segment 2 - SW bridge approach	12.5	4 ('27)	Repair	1	1 element and 1 terminal system to be repaired	$ 18,268.80
Segment 3 - NE Bridge Approach	12.5	4 ('27)	Repair	1	1 element and 1 terminal system to be repaired	$ 18,268.80
TAN OAK DR	**12.5**	**5**	**-**	**2**	**1 segment to repair**	**$ 28,617.60**
Segment 1 - east side	12.5	5 ('27)	Repair	2	1 element and 2 terminal systems to be repaired	$ 28,617.60
2027 Funded Replacement/Repair Project Total (a)						**$ 896,649.60**
To repair elements for the remaining three (3) existing damaged guardrail locations not part of the above list, based on the January 2026 assessment, the project cost is approximately $ 39,600.						
PEBBLE BEACH DR1	***25.0***	***6***	***-***	***0***	***Minor dents, non-standard terminal ends, 2 segments***	***$ 15,840.00***
Segment 4 - NTS09	*12.5*	*6 (Future)*	*Repair*	*0*	*1 element*	*$ 7,920.00*
Segment 11 - NTS16	*12.5*	*6 (Future)*	*Repair*	*0*	*1 element*	*$ 7,920.00*
PEBBLE BEACH DR2	***37.5***	***7***	***-***	***0***	***Access Control Function, Minor dents, non-***	***$ 23,760.00***

					standard terminal ends	
Segment 3 - NTS03	*37.5*	*7 (Future)*	*Repair*	*0*	*3 elements*	*$ 23,760.00*
Future Funding Repair Project Total (b)						***$ 39,600.00***

Notes

1 ('27) - Priority #1, 2027 planned year for construction

1 ('27) RR) - Priority #1, 2027 construction, Remove and Replace existing guardrail segment, constructing to current standards

6 (future) - Priority #6, need future funding secured to construct

7 (future) - Priority #7, need future funding secured to construct

(a) - County has secured funding to replace/repair existing guardrail damage in the calendar year 2027

(b) - County will need to secure funding to replace/repair existing guardrail damage

* - Cost to maintain existing infrastructure through repair

** - Cost to meet current design standards through replacement

*** - Project Cost, including PA&ED, PS&E, ROW, CE, Bid Item Work

To replace all sixteen (16) of the existing damaged guardrail locations with new Midwest Guardrail System (MGS) and Manual for Assessing Safety Hardware (MASH) approved Terminal systems, instead of selectively repairing/replacing elements based on the January 2026 assessment, that project cost is approximately $ 3,800,756 (5,525 linear feet).

The Oregon Mountain Road existing guardrail location identified in the assessment is of a type that has not been in use for over 50 years. Given that the Oregon Mountain Road is no longer a State Route (SR 199 realigned the roadway and abandoned this segment to the County), the amount of vehicles on the roadway is low, no collision data for this location, and the hazard shielding/access control is not warranted; it is suggested that this specific location be removed.

The Lauff Avenue location of existing guardrail was assessed to be in good condition and to acceptable standards. This location does not have any damage, has terminal systems to acceptable standards, has post and elements to acceptable standards, and does not have any collision data. The Lauff Avenue location does not need repair or replacement at this time, and is not included in the repair/replacement cost estimates.

To replace the remaining fifty-six (56) existing guardrail locations with MGS and MASH terminal systems, the project cost is approximately $ 12,962,242 (19,118.75 linear feet).

2. BACKGROUND

Del Norte Regional Guardrail Upgrades Project encompasses the entire County maintained road system, approximately 300 miles. This Planning Study was performed to locate, quantify, assess and identify needed repairs and replacements for the existing guardrail along County maintained roadways, and support the development of a capital improvement plan for the existing guardrail. Del Norte County roadways cover a diverse range of environments from coastal areas to mountains.



Figure 1 County Map

3. PURPOSE AND NEED STATEMENT

Need:

Existing guardrails along County roads that provide roadside safety functions have received damage from vehicle impacts, trees, rocks and general deterioration from exposure to the weather. Due to the age and time period of initial installation, the existing guardrails are not to current standards for end treatments, post placements and rail element heights.

Purpose:

The purpose of the Del Norte Regional Guardrail Upgrades Project Planning Study is to provide a comprehensive location and condition assessment of existing guardrail, identify needed repairs, identify alternatives, and develop project cost estimates for repair and replacement. The repair and/or replacement of the guardrail will improve safety for all users (motorists, bicyclists, and pedestrians) along the segments of County roads that have damaged and non-standard guardrails.

Other Goals and Objectives

- Prioritize the repairs and upgrades to the County's guardrails.
- Identify geotechnical constraints at the existing guardrail locations.
- Identify existing environmental constraints at the existing guardrail locations.
- Identify existing Right of Way constraints at the existing guardrail locations.

4. DEFICIENCIES

The existing guardrails along the County maintained roadways have the following deficiencies:

- Terminal Systems on the approach and departure ends are not to current standards and current MASH Crash Testing Ratings (TL-2 and TL-3).

- Several of the existing ends of guardrail are constructed with end anchors and bullnose caps, which do not meet current standards for guardrail terminal ends.
- Most guardrails are of the Metal Beam Guardrail (MBGR) standard type (posts at rail element joints), which is not the current Midwest Guardrail System (MGS) standard of post placement at the middle of the rail element.
- The height to top of rail element is lower than the standard height of 29 to 31 inches above roadway surface.
- Damaged rail elements (bent, torn), damaged/displaced posts, rotted/damaged spacer blocks, damaged/missing hardware and damaged end treatments (bent/displaced) were found at several locations.

5. EXISTING GUARDRAIL ASSESSMENT COMPARISON MATRIX

A field assessment was performed in January of 2026 for each County road that has existing roadside guardrail installed. The condition of the rail elements, number of damaged rail elements, post condition, rail height, and terminal system condition were documented. A scale of 0 (low) to 10 (high) was given each of the eight assessment categories. A value of 0 signifies severely damaged/not standard condition; a value of 10 signifies a standard/good condition. Table 4 below is a summary of the sixteen (16) County roads with existing roadside guardrail, the total length of guardrail, the average assessment score for the entire road (out of 80 maximum), the assessment ranking order (low score represents needed repair/replacement), needed repairs, and repair ranking (1-7 with 1 being the highest priority), and notes about the guardrail conditions.

Table 4: Existing Guardrail Assessment

Alphabetical List of Road Segments with Roadside Guardrail	Total Length Of Roadside Guardrail (LF)	Assessment Score (80 max, Low=High Priority)	Assessment Ranking by Road (Low=Worst High=Best)	Needed Repairs	Repair Ranking (Low= High Priority)	Assessment Notes
ARLINGTON DR	68.75	34	2	NO	-	Non-standard posts, used as access control
HUMBOLDT RD	75.00	69	11	NO	-	No damage, not to current standards
KLAMATH BEACH RD	2,225.00	53	5	**YES**	3	3 Guardrail segments have element damage.
KLAMATH BLVD	450.00	59	7	**YES**	4	3 Guardrail segments have element damage
LAUFF AVE	162.50	78	14	NO	-	No Damage, Acceptable standards, 6.75' post spacing due to hazard protection

MADISON AVE	162.50	36	3	NO	-	Non-standard posts, used as access control
MYNOT CREEK RD	175.00	76	13	NO	-	2 Guardrail segment, no damage
OREGON MOUNTAIN RD	50.00	29	1	NO	-	Remove from County Maintained System, hazard shielding not needed
PARKWAY DR1	200.00	67	10	NO	-	2 Guardrail segment, no damage
PARKWAY DR3	587.50	42	4	**YES**	1	2 segments with Elements and End Treatments damaged
PEBBLE BEACH DR1	6,687.50	58	6	**YES**	6	Minor dents on 2 segments of guardrail, non-standard terminal ends
PEBBLE BEACH DR2	5,387.50	65	9	**YES**	7	Access Control Function, Minor dents on 1 guardrail segment, non-standard terminal ends
PJ MURPHY MEMORIAL DR	375.00	78	14	NO	-	1 Guardrail segment, no damage
SOUTH FORK RD	7,800.00	64	8	**YES**	1	Damage to 4 segments of guardrail, repair 3, replace 1
TAN OAK DR	250.00	75	12	**YES**	5	2 segments, repair element in 1 segment
WONDER STUMP RD	200.00	78	14	NO	-	No Damage, 2 segments

Additional information can be found in Attachment B: Assessment Tables.

Traffic Data

Available County traffic data for the seven roads identified as priorities was compiled from available County information and summarized in Table 5.

Table 5: Traffic Data

LOCATION	AVERAGE DAILY TRAFFIC (ADT)
Priority 1 – Parkway Drive 3	
Segment 1	533
Segment 2	533
Priority 2 – South Fork Road	
Segment 1	630
Segment 2	630
Segment 4	630
segment 9	120
Priority 3 – Klamath Beach Road	
Segment 1	690
Segment 5	690

Segment 6	490
Priority 4 – Klamath Boulevard	
Location 1	720
Location 2	720
Location 3	720
Priority 5 – Tan Oaks Drive	
Segment 1	250
Priority 6 – Pebble Beach Drive 1	
Segment 4	1268
Segment 11	1268
Priority 7 – Pebble Beach Drive 2	
Segment 3	1268

Collison Data

Historical crash data for the top seven priority County Roads between 1/1/2014-12/31/2025 was gathered using the State Wide Integrated Records System (SWITRS), from TIMS, UC Berkeley. Table 6 below summarizes collision data by County Road.

Table 6: Collision Data

SWITRS Data 1/1/2014 through 12/31/2025 (source: TIMS UC Berkeley)				
Priority Road Segments	**# of Collisions**	**# of Injured**	**Types of Collisions**	**Collision Rate (#/100MVT)***
PARKWAY DR3	5	8	Hit Object, Overturned	63.1
SOUTH FORK RD	5	5	Hit Object, Overturned	14.2
KLAMATH BEACH RD	0	0	-	-
KLAMATH BLVD	1	1	Hit Object	29.6
TAN OAK DR	0	0	-	-
PEBBLE BEACH DR1	6	9	Hit Object, Other, Vehicle/Pedestrian, Head-On	65.5
PEBBLE BEACH DR2	7	8	Hit Object	123.8

* - Collisions per 100 million vehicle-miles of travel.

More details about each recorded collision can be found in Attachment C.

Reviewing the recorded collision details indicate that the Parkway Drive 3 segments of guardrail are where the collisions are located that include "Hit Object". This is also supported by the damage to the guardrail observed in the field. This also holds true for South Fork Road and Klamath Boulevard collision data and damaged guardrail locations. For Pebble Beach Drive locations, the types of collisions and the primary collision factors range from speeding to driving under the influence, with a lower correlation of collision location and damaged guardrail.

6. ALTERNATIVES

Alternatives have been developed for each guardrail segment that was identified as a priority due to damage. First alternative is to repair the damaged rail elements, and upgrade the terminal systems to current standards. Second alternative is to replace the entire segment of guardrail with new standard Midwest Guardrail System (MGS) elements and current standard terminal systems. The prioritized order was determined based on several factors, including severity of the hazard being shielded by guardrail, collision rates, volume of traffic, and geographical locations, by the development team.

Prioritized Roads and Guardrail Segments:

- Priority 1 – Parkway Drive 3, 2 segments
- Priority 2 – South Fork Road, 4 segments
- Priority 3 – Klamath Beach Road, 3 segments
- Priority 4 – Klamath Boulevard, 3 segments
- Priority 5 – Tan Oaks Drive, 1 segment
- Priority 6 – Pebble Beach Drive 1, 2 segments
- Priority 7 – Pebble Beach Drive 2, 1 segment

Repair and replacement alternatives have been developed for each priority road and each segment of damaged existing guardrail. Table 7 below summarizes the costs associated for each County road for the two alternatives, Repair or Replacement of the damaged guardrail segment.

Table 7: Repair/Replacement Costs

ROAD NAME	REPAIR COST	REPLACEMENT COST
PARKWAY DR. 3	$102,326.40	$403,286.40
SOUTH FORK RD.	$176,035.20	$898,550.40
KLAMATH BEACH RD.	$115,104.00	$751,132.80
KLAMATH BLVD.	$62,726.40	$326,515.20
TAN OAK DR.	$28,617.60	$99,897.60
PEBBLE BEACH DR. 1	$15,840.00	$445,315.20
PEBBLE BEACH DR. 2	$23,760.00	$876,057.60
TOTAL ($)	$524,409.60	$3,800,577.20

The costs above include the construction items and costs for the future project development phases (PA&ED, PS&E, ROW, CM, CE).

Detailed cost estimates can be found in Attachment D.

Additional information regarding individual locations per roadway can be found in Attachment D.

The following section is a detailed narrative for each prioritized road and damaged guardrail segment.

PRIORITY 1 – PARKWAY DRIVE 3

Segment 1 – East Side:

This segment of guardrail is located on the east side of Parkway Drive 3, between McNamara Road and Grace Lane.

Damage:

Two bent elements due to impacts as shown in Figures 2 and 3.



Figure 2: Parkway Drive 3, Segment 1



Figure 3: Parkway Drive 3, Segment 1

Repair Cost:

Repair damaged elements and install new terminal systems.

Total:	$36,537.60

Replacement Cost:

Replace 262.5 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$187,017.60	Preferred alternative, part of 2027 plan

Environmental Considerations:

Given the existing built environment, and both the repair and replacement footprints remain in that disturbed area, environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder has enough width and shows no signs of slippage or movement.

Right of Way Considerations:

Location is contained all within deeded right of way, as shown in Book 165 of Official Records, pages 696-697.

Segment 2 – West Side:

This segment of guardrail is located on the west side of Parkway Drive 3, between McNamara Road and Grace Lane.

Damage:

Bent top flange on an element and damaged bullnose on the approach end as shown in Figures 4 and 5.



Figure 4: Parkway Dr 3, Segment 2



Figure 5: Parkway Dr 3, Segment 2

Repair Cost:

Repair damaged element and install new terminal system to repair the bullnose.

Total:	$65,788.80

Replacement Cost:

Replace 325 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$216,268.80	Preferred alternative, part of 2027 plan

Environmental Considerations:

Given the existing built environment, and both the repair and replacement footprints remain in that disturbed area, environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1,

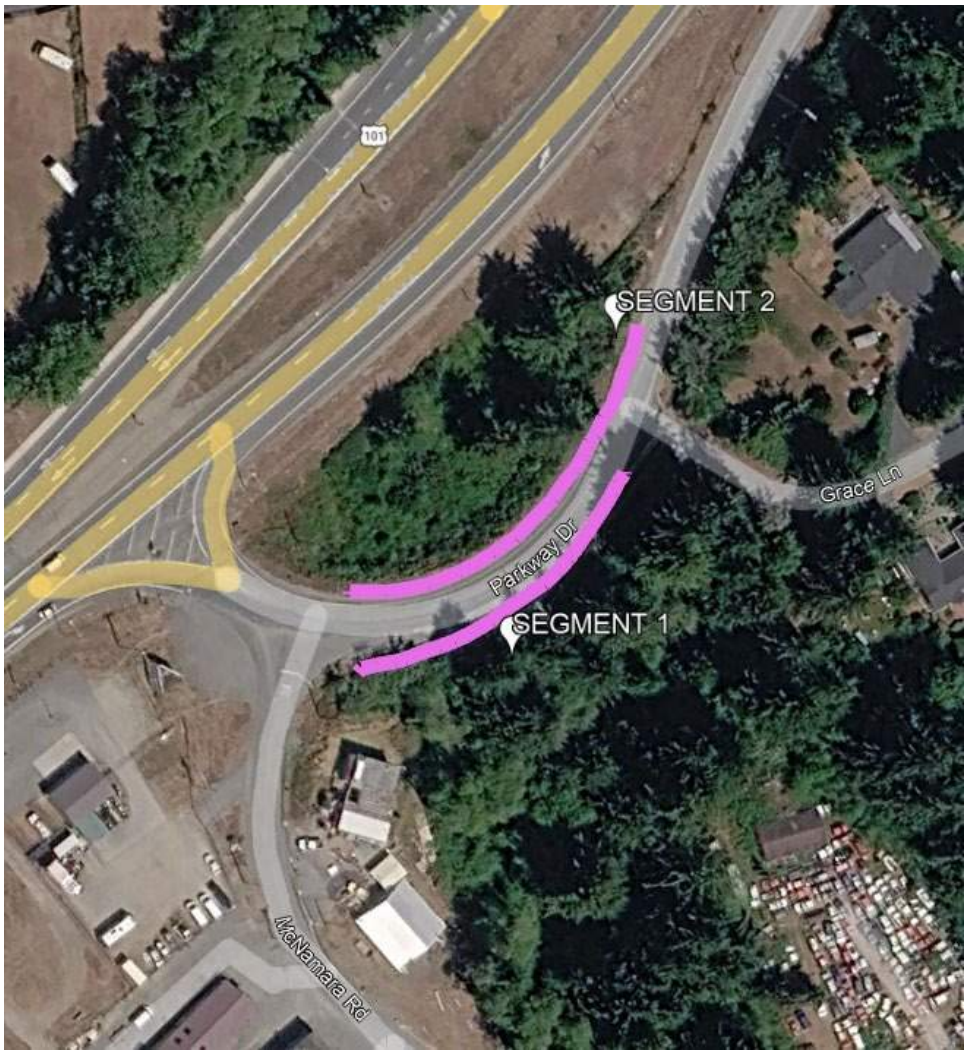
and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder has enough width and shows no signs of slippage or movement.

Right of Way Considerations:

Location is contained all within deeded right of way, as shown in Book 165 of Official Records, pages 696-697.



PRIORITY 2 – SOUTH FORK ROAD

Segment 1 – 0.9 miles from 199, river side:

This segment of guardrail is located on the river side of South Fork Road, 0.9 miles from the SR-199 intersection and has a sign for Earl Brown "Tinker" installed behind the guardrail.



Figure 6: South Fork Road, Segment 1

Damage:

Bent top flange on an element and damaged bullnose on the approach end as shown in Figure 6.

Repair Cost:

Repair damaged element and install new terminal system to repair the bullnose.

Total:	$18,268.80	Preferred alternative, part of 2027 plan

Replacement Cost:

Replace 187.5 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$139,497.60

Environmental Considerations:

Given the existing built environment, and both the repair and replacement footprints remain in that disturbed area, environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder on the river side has shown signs of slippage and settlement. The existing guardrail posts have addressed the lack of "hinge distance" behind the posts by having longer posts, metal posts, and a ground anchorage system on some posts at the worst slippage areas. Replacement posts will need to have increased depth (more than standard 6 foot), have an earth retaining system installed, or other ground anchor system to support the replacement posts.

Right of Way Considerations:

Location is contained all within APN 124-020-024. Per Document #20102557, Del Norte County Official Records, the existing South Fork Road has a 200-foot wide highway easement granted to the County from the United Staes of America acting through the Federal Highway Administration.

Segment 2 – 3.5 miles from 199, river side:

This segment of guardrail is located on the river side of South Fork Road, 3.5 miles from the SR-199 intersection.

Damage:

Impact damage to flange on an element and displaced/bent element from impact, shown in Figures 7 and 8.



Figure 8: South Fork Road, Segment 2



Figure 7: South Fork Road, Segment 2

Repair Cost:

Repair 3 damaged elements.

Total:	$23,760.00	Preferred alternative, part of 2027 plan

Replacement Cost:

Replace 150 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$115,737.60

Environmental Considerations:

Given the existing built environment, and both the repair and replacement footprints remain in that disturbed area, environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder on the river side does not provide the required "hinge distance" behind the posts. Replacement posts will need to have increased depth (more than standard 6 foot) to support the replacement posts.

Right of Way Considerations:

Location is contained all within APN 124-020-027. Per Document #20102557, Del Norte County Official Records, the existing South Fork Road has a 200-foot wide highway easement granted to the County from the United Staes of America acting through the Federal Highway Administration.

Segment 4 – 5.48 miles from 199, river side:

This segment of guardrail is located on the river side of South Fork Road, 5.48 miles from the SR-199 intersection. Placement is along the top of a retaining wall and spans a box culvert under the roadway.

Damage:

Damaged approach end terminal system and three bent elements as shown in Figures 9 and 10.



Figure 9: South Fork Road, Segment 4



Figure 10: South Fork Road, Segment 4

Repair Cost:

Repair three damaged elements and install new terminal system.

Total:	$34,108.80	Preferred alternative, part of 2027 plan

Replacement Cost:

Replace 650 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$432,537.60

Environmental Considerations:

Given the existing built environment, and both the repair and replacement footprints remain in that disturbed area, environmental considerations are minimal. The South Fork Smith River is directly adjacent to the guardrails, which is considered a federally listed "wild and scenic river," and implementation of best management practices

and avoidance and minimization measures to prevent accidental discharge of materials into the river are recommended.

Geotechnical Considerations:

The existing location is on the top of a retaining wall. Repaired or replacement posts will need to be placed to avoid impacting the existing retained wall tie back anchors and structure.

Right of Way Considerations:

Location is contained all within APN 124-060-024. Per Document #20102557, Del Norte County Official Records, the existing South Fork Road has a 200-foot wide highway easement granted to the County from the United Staes of America acting through the Federal Highway Administration.

Segment 9 – 10.13 miles from 199, river side:

This segment of guardrail is located on the river side of South Fork Road, 10.13 miles from the SR-199 intersection. A unique feature of this location is that concrete K-Rail has been placed along the edge of roadway to shield a length of guardrail that has slipped down the embankment.

Damage:

Bent top flange on an element and damaged bullnose on the approach end as shown in Figures 11 and 12.



Figure 12: South Fork Road, Segment 9



Figure 11: South Fork Road, Segment 9

Repair Cost:

Repair ten damaged elements and install new terminal system.

Total:	$99,897.60

Replacement Cost:

Replace 300 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$210,777.60	Preferred alternative, part of 2027 plan

Environmental Considerations:

Given the existing built environment, and both the repair and replacement footprints remain in that disturbed area, environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder on the river side has shown signs of slippage and settlement. The existing guardrail posts have slipped down the hill and temporary k-rail has been placed to span the displaced guardrail. Repairing or replacing the guardrail in the segment will require embankment stabilization efforts to address the slipping shoulder of the roadway.

Right of Way Considerations:

Location is contained all within APN 126-140-004. Per Document #20102557, Del Norte County Official Records, the existing South Fork Road has a 200-foot wide highway easement granted to the County from the United Staes of America acting through the Federal Highway Administration.



PRIORITY 3 – KLAMATH BEACH ROAD

Segment 1 – east end closest to 101:

This segment of guardrail is located on the river side of Klamath Beach Road, west of the Hwy 101 intersection approximately 0.6 miles.

Damage:

Bent top flanges on five elements as shown in Figures 13 and 14.



Figure 13: Klamath Beach Rd, Segment 1



Figure 14: Klamath Beach Rd, Segment 1

Repair Cost:

Repair damaged elements and install new terminal systems to repair the bullnoses.

Total:	$60,297.60	Preferred alternative, part of 2027 plan

Replacement Cost:

Replace 612.5 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$408,777.60

Environmental Considerations:

Given the existing built environmental and both the repair and replacement footprints remain in that disturbed area environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder on the riverside has not shown signs of recent slippage and settlement. The existing guardrail posts lack standard "hinge distance" behind the posts. Replacement posts will need to have increased depth (more than standard 6 foot) to support the replacement posts.

Right of Way Considerations:

Location is contained all within APN 140-130-028. Road appears to be in an easement (prescriptive or recorded), and is not in a deeded right of way.

Segment 5 – Mountain side 2:

This segment of guardrail is located on the mountain side of Klamath Beach Road, west of the Hwy 101 intersection approximately 1.1 miles.

Damage:

Bent top flange on an element and damaged bullnose on the departing end as shown in Figures 15 and 16.



Figure 15: Klamath Beach Rd, Segment 5



Figure 16: Klamath Beach Rd, Segment 5

Repair Cost:

Repair damaged element and install new terminal systems to repair the bullnose.

Total:	$28,617.60	Preferred alternative, part of 2027 plan

Replacement Cost:

Replace 212.5 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$155,337.60

Environmental Considerations:

Given the existing built environmental and both the repair and replacement footprints remain in that disturbed area environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder on the mountain side has not shown signs of recent slippage and settlement. The existing guardrail posts are on roadway embankment with 2:1 slopes. Replacement posts will need to have increased depth (more than standard 6 foot) only in areas where existing embankment slopes are steeper than 2:1.

Right of Way Considerations:

Location is contained within County right of way, as shown in Book 3 of Maps, page 20.

Segment 6 – Mountain side, Coastal Drive westward intersection:

This segment of guardrail is located on the mountain side of Klamath Beach Road, west of the Hwy 101 intersection approximately 1.4 miles, next to Coastal Drive intersection.

Damage:

Bent/displaced elements and damaged bullnose on the approach end as shown in Figures 17 and 18.



Figure 18: Klamath Beach Rd, Segment 6



Figure 17: Klamath Beach Rd, Segment 6

Repair Cost:

Repair damaged elements and install new terminal system to repair the bullnose.

Total:	$26,188.80	Preferred alternative, part of 2027 plan

Replacement Cost:

Replace 262.5 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$187,017.60

Environmental Considerations:

Given the existing built environmental and both the repair and replacement footprints remain in that disturbed area environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder on the mountain side has not shown signs of recent slippage and settlement. The existing guardrail posts are on roadway embankment with 2:1 slope. Replacement posts will need to have increased depth (more than standard 6 foot) only in areas where existing embankment slopes are steeper than 2:1.

Right of Way Considerations:

Location is contained within Book 119 of Official Records, Page 162 as County right of way.



PRIORITY 4 – KLAMATH BOULEVARD

Segment 1:

This segment of guardrail is located on the Hwy 101 side of Klamath Blvd, north of the Highway 169 intersection.

Damage:

Bent top flange, displaced elements damaged bullnose on the approach end as shown in Figures 19 and 20.



Figure 19: Klamath Blvd., Segment 1



Figure 20: Klamath Blvd., Segment 1

Repair Cost:

Repair damaged elements and install new terminal system to repair the approach bullnose.

Total:	$26,188.80	Preferred alternative, part of 2027 plan

Replacement Cost:

Replace 350 linear feet of guardrail with current MGS. Install one new terminal systems (approaching).

Total:	$242,457.60

Environmental Considerations:

Given the existing built environmental and both the repair and replacement footprints remain in that disturbed area environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder has no signs of slippage and settlement. The existing guardrail posts have enough hinge distance behind the posts. Replacement posts can be the standard 6’ depth.

Right of Way Considerations:

Location is contained partially within APN 140-060-010, with the remaining portion in dedicated road area. Further investigation into the APN 140-060-010 will be needed to determine if roadway is deeded or easement.

Segment 2 - Southwest:

This segment of guardrail is located in the southwest approach to an existing bridge, at the Klamath Blvd and Highway 169 intersection. This segment of guardrail is not attached to the existing bridge and is considered a roadside guardrail due to that lack of connection to the structure.

Damage:

Damaged and displaced elements as shown in Figures 21 and 22.



Figure 21: Klamath Blvd., Segment 2



Figure 22: Klamath Blvd., Segment 2

Repair Cost:

Repair damaged elements and install new terminal system.

Total:	$18,268.80	Preferred alternative, part of 2027 plan

Replacement Cost:

Replace 50 linear feet of guardrail with current MGS. Install one new terminal systems (approaching).

Total:	$42,028.80

Environmental Considerations:

Given the existing built environmental and both the repair and replacement footprints remain in that disturbed area environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to

September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder has no signs of slippage and settlement. The existing guardrail posts have enough hinge distance behind the posts. Replacement posts can be the standard 6' depth.

Right of Way Considerations:

Location is contained within Book 139 of Official Records, Page 206 as County right of way.

Segment 3 - Northeast:

This segment of guardrail is located in the northeast approach to an existing bridge, at the Klamath Blvd and Highway 169 intersection. This segment of guardrail is not attached to the existing bridge and is considered a roadside guardrail due to that lack of connection to the structure.

Damage:

Damaged departing bullnose and approach bullnose is not proper height or attached to posts completely, as shown in Figures 23 and 24.



Figure 23: Klamath Blvd., Segment 3



Figure 24: Klamath Blvd., Segment 3

Repair Cost:

Repair departing bullnose and install new terminal system to repair the approaching bullnose.

Total:	$18,268.80	Preferred alternative, part of 2027 plan

Replacement Cost:

Replace 50 linear feet of guardrail with current MGS. Install one new terminal systems (approaching).

Total:	$42,028.80

Environmental Considerations:

Given the existing built environmental and both the repair and replacement footprints remain in that disturbed area environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder has no signs of slippage and settlement. The existing guardrail posts have enough hinge distance behind the posts. Replacement posts can be the standard 6’ depth.

Right of Way Considerations:

Location is contained within Book 139 of Official Records, Page 206 as County right of way.



PRIORITY 5 – TAN OAK DRIVE

Segment 1 – east side:

This segment of guardrail is located on the upstream side of the creek crossing, east side.

Damage:

Displaced element on the departing end as shown in Figures 25 and 26.



Figure 25: Tan Oaks Dr., Segment 1



Figure 26: Tan Oaks Dr., Segment 1

Repair Cost:

Repair damaged element and install new terminal system to repair the bullnose.

Total:	$28,617.60	Preferred alternative, part of 2027 plan

Replacement Cost:

Replace 125 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$99,897.60

Environmental Considerations:

Given the existing built environmental and both the repair and replacement footprints remain in that disturbed area environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder has no signs of slippage and settlement. The existing guardrail posts have enough hinge distance behind the posts. Replacement posts can be the standard 6’ depth.

Right of Way Considerations:

Location is contained all within APN 122-040-062. Road appears to be in a State of California owned parcel per Book 152 of Official Records, Page 203.



PRIORITY 6 – PEBBLE BEACH DRIVE 1

Segment 4:

This segment of guardrail is located on the ocean side of Pebble Beach Drive, approximately 740 feet (4 guardrail segments) south of the Pebble Beach Drive and Washington Boulevard intersection.

Damage:

Bent flange on an element and damaged bullnose on the approach end as shown in Figures 27 and 28.



Figure 27: Pebble Beach Dr. 1, Segment 4

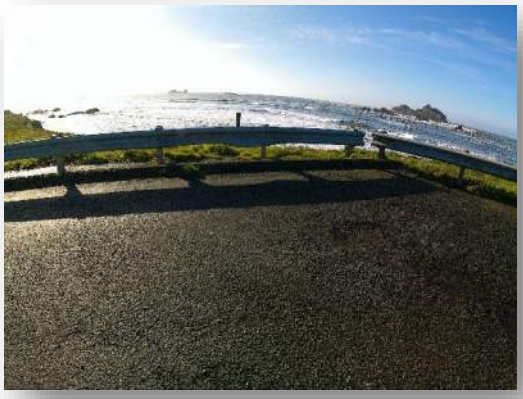


Figure 28: Pebble Beach Dr. 1, Segment 4

Repair Cost:

Repair damaged element.

Total:	$7,920.00	Preferred alternative, future funding required

Replacement Cost:

Replace 37.5 linear feet of guardrail with current MGS.

Total:	$44,457.60

Environmental Considerations:

Given the existing built environmental and both the repair and replacement footprints remain in that disturbed area environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder has no signs of slippage and settlement. The existing guardrail posts have enough hinge distance behind the posts. Replacement posts can be the standard 6’ depth.

Right of Way Considerations:

Location is contained all within APN 120-020-022, County owned parcel, per Document #20025936.

Segment 11:

This segment of guardrail is located on the ocean side of the roadway, approximately 1 mile (11 segments) south of the Pebble Beach Drive and Washington Boulevard intersection.

Damage:

Bent flanges on an element as shown in Figures 29 and 30.



Figure 29: Pebble Beach Dr. 1, Segment 11



Figure 30: Pebble Beach Dr. 1, Segment 11

Repair Cost:

Repair damaged element.

Total:	$7,920.00	Preferred alternative, future funding required

Replacement Cost:

Replace 600 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$400,857.60

Environmental Considerations:

Given the existing built environmental and both the repair and replacement footprints remain in that disturbed area environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder has no signs of slippage and settlement. The existing guardrail posts have enough hinge distance behind the posts. Replacement posts can be the standard 6’ depth.

Right of Way Considerations:

Location is contained within APN 120-020-015, as shown on Book 2 of Maps, Page 43, a County owned parcel.



PRIORITY 7 – PEBBLE BEACH DRIVE 2

Segment 3:

This segment of guardrail is located on the ocean side of Pebble Beach Drive 2, approximately 3,450 feet south of the Point St. George parking lot.

Damage:

Bent flanges on elements as shown in Figures 31 and 32.



Figure 31: Pebble Beach Dr. 2, Segment 3



Figure 32: Pebble Beach Dr. 2, Segment 3

Repair Cost:

Repair damaged elements.

Total:	$23,760.00	Preferred alternative, future funding required

Replacement Cost:

Replace 1350 linear feet of guardrail with current MGS. Install two new terminal systems (approaching and departing).

Total:	$876,057.60

Environmental Considerations:

Given the existing built environmental and both the repair and replacement footprints remain in that disturbed area environmental considerations are minimal. There are adjacent trees that could contain nesting birds from February 15 to September 1, and construction would be recommended outside of this window, unless cleared by a biologist.

Geotechnical Considerations:

The existing roadway shoulder has no signs of slippage and settlement. The existing guardrail posts have enough hinge distance behind the posts. Replacement posts can be the standard 6’ depth.

Right of Way Considerations:

Location is contained all within APN 110-010-019, a County owned parcel.



7. ENVIRONMENTAL DETERMINATION/DOCUMENT

An Environmental Consideration was completed for each of the priority locations identified as part of the Del Norte Regional Guardrail Upgrades Project Planning Study. Limited potential environmental constraints exist along each guardrail repair location, primarily proximity to jurisdictional waters and proximity to trees and other natural habitat that provide potential special status wildlife species habitat. Additionally, due to the proximity to waters for some guardrail locations, there is potential cultural resource sensitivity, and collaboration with the local tribes may potentially be necessary to comply with federal regulations.

The County has previously cleared the Project under the California Environmental Quality Act (CEQA) in August 2025; however, depending on the selected repair and replacement locations, the County can prepare and file an updated Notice of Exemption with the County Clerk to comply with CEQA requirements. The

appropriate level of CEQA documentation continues to be a Categorical Exemption (CEQA CE) for Class 1(c) Existing Facilities

Additionally, due to the use of federal funds, the Project will require approval under National Environmental Policy Act (NEPA). The California Department of Transportation (Caltrans) will act as the NEPA lead agency on behalf of the Federal Highway Administration. To initiate the NEPA process, a Preliminary Environmental Study (PES) Form will be prepared and submitted to Caltrans District 1 Local Assistance. Based on the limited potential for environmental impacts, technical studies supporting the environmental document are anticipated to include a brief Biological No Effects Memorandum, an Initial Site Assessment Memorandum for Hazardous Waste, and cultural documentation to support a Screened Undertaking. The cultural documentation is anticipated to include a cultural record search result for the various guardrail improvement locations, along with potential informal tribal coordination under Section 106 of the National Historic Preservation Act (NHPA). It is anticipated that the appropriate level of NEPA documentation is a Categorical Exclusion under 23 CFR 771.117(c):activity (c)(27) Highway safety or traffic operations improvement projects, which would be prepared and issued by Caltrans District 1 once all technical documentation identified in the PES is approved.

8. FUNDING

The County of Del Norte has secured the following funding as of the date of this study.

Phase	Funding	Amount
Planning	RPA	$89,000
Preliminary Engineering	HSIP	$205,700
Right-of-Way	HSIP	$10,000
Construction	HSIP	$895,400
Total	...	$1,200,100

9. SCHEDULE

Milestones	**Delivery Date (Month, Day, Year)**
Planning Study approval	9/15/2026
Preliminary Engineering	2/16/2027
Right of Way	3/9/2027
Construction	9/1/2027-12/31/2027

Advancement of alternatives is dependent on future funding as it becomes available.

10. DEVELOPMENT TEAM

Name	Title	Telephone
Jon Olson	County Engineer, Del Norte County	707-464-7229
Rosanna Bower	Assist. County Engineer, Del Norte County	707-464-7229
Brian Stephenson	Project Engineer, Dokken Engr.	530-768-2420
Zach Liptak	Enviro. Coordinator, Dokken Engr.	916-858-0642

ATTACHMENTS:

A Project Location Map

B Assessment Tables

C Collision Data

D Alternative Cost Estimates

Attachment A: Project Location Map

DEL NORTE REGIONAL GUARDRAIL UPGRADES PROJECT

COUNTY OF DEL NORTE EST 1857

LEGEND

- ROAD NOT INSPECTED
- ROAD INSPECTED
- GUARDRAIL/REPAIR
- BRIDGE
- PARCEL LINES

FIELD WORK: JANUARY 2026
ASSESSMENT SEPTEMBER 2026
DOKKEN ENGINEERING

HOLIDAY RD
LOW DIVIDE RD
Segement 1, L=50
OREGON MOUNTAIN RD
PATRICK CREEK RD
OLD GASQUET TOLL RD
OLD GASQUET TOLL RD
7-1
PEBBLE BEACH DR 2
S#01, L=2062.5
S#02, L=625
Segment 2, L=100
Segement 1, L=100
WONDER STUMP RD
Segment 2, L=125
Segment 1, L=125
5-1
TAN OAK DR
01C0046
Segment 1, L=187.5
ADT-630
2-1
SOUTH FORK ROAD
PARKWAY DR 1
Segment 2, L=100
Segment 1, L=100
MADISON AVE
S#01, L=162.5
ARLINGTON DR
S#01, L=68.75
S#03, L=1350
S#04, L=125
S#05, L=1225
PARKWAY DR 3
Segment 2, L=325
Segement 1, L=262.5
1-2
1-1
Segment 2, L=150
ADT-630
2-2
Segment 3, L=800
FRENCH HILL ROAD
S#01, L=25
S#02, L=12.5
S#03, L=100
S#04, L=37.5
S#05, L=812.5
S#06, L=850
S#07, L=150
S#08, L=437.5
S#09. L=137.5
S#10, L=337.5
S#11, L=600
S#12, L=75
S#13, L=1212.5
S#14, L=512.5
S#15, L=212.5
S#16, L=550
S#17, L=125
S#18, L=500
Segment 2, L=37.5
Segment 1, L=37.5
HUMBOLDT RD
Segment 1, L=162.5
LAUFF AVE
Segment 4, L=650
ADT-630
2-3
Segment 5, L=150
01C0037
01C0038
SOUTH FORK ROAD
01C0041
Segment 7, L=187.5
Segment 8, L=325
Segment 9, L=300
ADT-120
2-4
Segment 6, L=975
CORRECT END ASSEMBLY
01C0042
Segment 10, L=2650
BIG FLAT RD
CORRECT END ASSEMBLIES
Segment 11, L=475
01C0043
SOUTH FORK RD
Segment 12, L=950
CORRECT END ASSEMBLY
01C0044
PEBBLE BEACH DR 1
6-1 6-2
MYNOT CREEK RD
Segment 2, L=87.5
Segment 1, L=87.5
PJ MURPHY MEMORIAL DR
Segment 1, L=375
KLAMATH BLVD
Segment 1, L=350
KLAMATH BLVD
Segment 3, L=50
Segment 2, L=50
4-1
4-2
4-3
KLAMATH BEACH ROAD
3-3
Segment 6, L=262.5
Segment 7, L=512.5
3-2
Segment 5, L=212.5
Segment 4, L=400
Segment 3, L=75
Segment 2, L=150
3-1
Segment 1, L=612.5
KLAMATH BEACH ROAD

0 1" 2" 3" 4" 5" 6"

SCALE: 1" = 6000'

Attachment B: Assessment Tables

List of Road Segments with Roadside Guardrail	Length of Roadside Guardrail (LF)	Assessment Score (80 max)	Assessment Ranking by Road (Low to High)	Needed Repairs	Repair Ranking	Notes
ARLINGTON DR	69	34	2	NO	-	Due to non-standard posts
HUMBOLDT RD	75	69	11	NO	-	No damage, not to current standards
KLAMATH BEACH RD	2,013	53	5	**YES**	3	3 segments to repair
KLAMATH BLVD	350	59	7	**YES**	4	Element damage, 3 segments
LAUFF AVE	163	78	14	NO	-	No Damage, Acceptable standards
MADISON AVE	163	36	3	NO	-	Due to non-standard posts
MYNOT CREEK RD	175	76	13	NO	-	No Damage
OREGON MOUNTAIN RD	50	29	1	NO	-	Non-standard posts Remove from County Maintained System
PARKWAY DR1	200	67	10	NO	-	No Damage
PARKWAY DR3	588	42	4	**YES**	2	Elements and End Treatments damaged, 2 segments
PEBBLE BEACH DR1	6,677	58	6	**YES**	7	Minor dents, non-standard terminal ends, 2 segments
PEBBLE BEACH DR2	5,398	65	9	**YES**	6	Minor dents, non-standard terminal ends, 1 segment
PJ MURPHY MEMORIAL DR	375	78	14	NO	-	No Damage
SOUTH FORK RD	7,807	64	8	**YES**	1	4 segments of guardrail to repair
TAN OAK DR	250	75	12	**YES**	5	1 segment to repair
WONDER STUMP RD	200	78	14	NO	-	No Damage
Total	**24,551**					

Table of all County guardrail locations, assessment data, cost data, and ranking data for all locations (repair, replace and future upgrades).

Del Norte Regional Guardrail Upgrades Planning Study

Project #: PRJ2047, HSIPL-5901(071)

County of Del Norte Community Development Department

By: Dokken Engineering

9/10/2026

Alphabetical List of Road Segments with Roadside Guardrail	Length of Roadside Guardrail (LF)	Assessment Score (80 max, Low=High Priority)	Assessment Ranking by Segment (Low to High, out of 62)	Needed Repairs	Replace/ Repair Ranking (Low=High Priority)	Notes	Repair Cost ($) *	Repair Length (LF)	Replacement Cost ($) **	Replacement Length (LF)	Replacement Terminal Systems (EA)
ARLINGTON DR	**68.75**			**NO**	**-**	**Not ranked, low exposure, no collision data**	**$ -**	**0.0**	**$ 53,908.80**	**68.75**	**1**
Segment 1 - Westside	68.75	34	3	NO	28 (b)	No Damage, non-standard posts, access control function	$ -	0.0	$ 53,908.80	68.75	1
HUMBOLDT RD	**75.00**			**NO**	**-**	**No damage, Not ranked, good condition**	**$ -**	**0.0**	**$ 88,915.20**	**75.00**	**4**
Segment 1 - @ Roy Avenue Intersection	37.50	76	52	NO	23 (b)	No damage, not to current standards	$ -	0.0	$ 44,457.60	37.50	2
Segment 2 - @ Hodge Avenue intersection	37.50	62	22	NO	14 (b)	No damage, not to current standards	$ -	0.0	$ 44,457.60	37.50	2
KLAMATH BEACH RD	**2225.00**			**YES**	**3**	**3 segments to repair**	**$ 115,104.00**	**100.0**	**$ 1,554,643.20**	**2,225.00**	**14**
Segment 1 - east end, closest to 101	612.50	43	6	Repair Needed	3 ('27)	5 elements and 2 terminal systems to be repaired	$ 60,297.60	62.5	$ 408,777.60	612.50	2
Segment 2 - Klamath River RV Park	150.00	53	12	NO	10 (b)	No damage, not to current standards	$ -	0.0	$ 115,737.60	150.00	2
Segment 3 - River side, 1 mile west of 101, SPGA Wall	75.00	76	52	NO	24 (b)	No damage, not to current standards	$ -	0.0	$ 68,217.60	75.00	2
Segment 4 - River side, just west of SPGA wall	400.00	46	7	NO	8 (b)	No damage, not to current standards	$ -	0.0	$ 274,137.60	400.00	2
Segment 5 - Mountain side, within segment 4 limits	212.50	46	7	Repair Needed	3 ('27)	1 element and 2 terminal systems to be repaired	$ 28,617.60	12.5	$ 155,337.60	212.50	2
Segment 6 - Mountain side, Coastal Drive westward	262.50	54	13	Repair Needed	3 ('27)	2 elements and 1 terminal system to be repaired	$ 26,188.80	25.0	$ 187,017.60	262.50	2
Segment 7 - River side at Coastal Drive	512.50	52	11	NO	9 (b)	No damage, not to current standards	$ -	0.0	$ 345,417.60	512.50	2
KLAMATH BLVD	**450.00**			**YES**	**4**	**Element damage, 3 segments**	**$ 62,726.40**	**50.0**	**$ 326,515.20**	**450.00**	**4**
Segment 1 - north, separating Klamath Blvd from 101	350.00	71	48	Repair Needed	4 ('27)	2 elements and 1 terminal systems to be repaired	$ 26,188.80	25.0	$ 242,457.60	350.00	2
Segment 2 - SW bridge approach	50.00	57	16	Repair Needed	4 ('27)	1 element and 1 terminal systems to be repaired	$ 18,268.80	12.5	$ 42,028.80	50.00	1
Segment 3 - NE Bridge Approach	50.00	49	10	Repair Needed	4 ('27)	1 elements and 1 terminal system to be repaired	$ 18,268.80	12.5	$ 42,028.80	50.00	1
LAUFF AVE	**162.50**			**NO**	**-**	**No Damage, Acceptable standards, 6.75' post spacing due to hazard protection**	**$ -**	**0.0**	**$ -**	**0.00**	**0**
Segment 1 - East/North side	162.50	78	57	NO	33 (b)	No Damage, Acceptable standards, 6.75' post spacing due to hazard protection	$ -	0			
MADISON AVE	**162.50**			**NO**	**-**	**Not ranked, low exposure, no collision data**	**$ -**	**0.0**	**$ 113,308.80**	**162.50**	**1**
Segment 1 - North side	162.50	36	4	NO	29 (b)	No Damage, non-standard posts, access control function	$ -	0.0	$ 113,308.80	162.50	1
MYNOT CREEK RD	**175.00**			**NO**	**-**	**No Damage, Not ranked, no collision data**	**$ -**	**0.0**	**$ 152,275.20**	**175.00**	**4**
Segment 1 - south side	87.50	76	52	NO	21 (b)	No damage, not to current standards	$ -	0.0	$ 76,137.60	87.50	2
Segment 2 - north side	87.50	76	52	NO	22 (b)	No damage, not to current standards	$ -	0.0	$ 76,137.60	87.50	2
OREGON MOUNTAIN RD	**50.00**			**NO**	**-**	**Non-compliant, Shielding not needed Remove from County Maintained System**	**$ -**	**0.0**	**$ -**	**0.00**	**0**
Segment 1 - North side	50.00	29	1	YES	-	REMOVAL OF EXISTING GUARDRAIL	$ -	0.0	$ -	0.00	0
PARKWAY DR1	**200.00**			**NO**	**-**	**No Damage, Not ranked, Good condition**	**$ -**	**0.0**	**$ 168,115.20**	**200.00**	**4**
Segment 1 - east side @ Jordan Creek	100.00	68	43	NO	13 (b)	No damage, not to current standards	$ -	0.0	$ 84,057.60	100.00	2
Segment 2 - west side @ Jordan Creek	100.00	65	40	NO	12 (b)	No damage, not to current standards	$ -	0.0	$ 84,057.60	100.00	2
PARKWAY DR3	**587.50**			**YES**	**1 ('27) RR**	**Elements and End Treatments damaged, 2 segments**	**$ 102,326.40**	**112.5**	**$ 403,286.40**	**587.50**	**3**
Segment 1 - east side	262.50	38	5	Repair Needed	1 ('27) RR	Replacement of the entire guardrail segment	$ 36,537.60	25.0	$ 187,017.60	262.50	2
Segment 2 - west side	325.00	46	7	Repair Needed	1 ('27) RR	Replacement of the entire guardrail segment	$ 65,788.80	87.5	$ 216,268.80	325.00	1
PEBBLE BEACH DR1	**6687.50**			**YES**	**6**	**Minor dents, non-standard terminal ends, 2 segments**	**$ 15,840.00**	**25.0**	**$ 4,568,361.60**	**6,687.50**	**32**
Segment 1 - NTS06	25.00	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 15,840.00	25.00	0
Segment 2 - NTS07	12.50	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 7,920.00	12.50	0
Segment 3 - NTS08	100.00	60	19	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 84,057.60	100.00	2
Segment 4 - NTS09	37.50	59	17	Repair Needed	6 (Future)	1 element	$ 7,920.00	12.5	$ 44,457.60	37.50	2
Segment 5 - NTS10	812.50	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 535,497.60	812.50	2
Segment 6 - NTS11	850.00	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 559,257.60	850.00	2
Segment 7 - NTS12	150.00	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 115,737.60	150.00	2
Segment 8 - NTS13	437.50	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 297,897.60	437.50	2
Segment 9 - NTS14	137.50	61	20	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 107,817.60	137.50	2
Segment 10 - NTS15	337.50	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 234,537.60	337.50	2
Segment 11 - NTS16	600.00	61	20	Repair Needed	6 (Future)	1 element	$ 7,920.00	12.5	$ 400,857.60	600.00	2
Segment 12 - NTS17	75.00	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 68,217.60	75.00	2
Segment 13 - NTS18	1212.50	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 788,937.60	1,212.50	2
Segment 14 - NTS19	512.50	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 345,417.60	512.50	2
Segment 15 - NTS20	212.50	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 155,337.60	212.50	2
Segment 16 - NTS21	550.00	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 369,177.60	550.00	2
Segment 17 - NTS22	125.00	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 99,897.60	125.00	2
Segment 18 - NTS23	500.00	62	22	NO	35 (b)	No damage, not to current standards	$ -	0.0	$ 337,497.60	500.00	2
PEBBLE BEACH DR2	**5387.50**			**YES**	**7**	**Access Control Function, Minor dents, non-standard terminal ends**	**$ 23,760.00**	**37.5**	**$ 3,517,008.00**	**5,387.50**	**10**
Segment 1 - NTS01	2062.50	70	45	NO	36 (b)	No damage, not to current standards	$ -	0	$ 1,327,497.60	2,062.50	2
Segment 2 - NTS02	625.00	62	22	NO	36 (b)	No damage, not to current standards	$ -	0	$ 416,697.60	625.00	2
Segment 3 - NTS03	1350.00	59	17	Repair Needed	7 (Future)	3 elements	$ 23,760.00	37.5	$ 876,057.60	1,350.00	2
Segment 4 - NTS04	125.00	62	22	NO	36 (b)	No damage, not to current standards	$ -	0	$ 99,897.60	125.00	2
Segment 5 - NTS05	1225.00	70	45	NO	36 (b)	No damage, not to current standards	$ -	0	$ 796,857.60	1,225.00	2
PJ MURPHY MEMORIAL DR	**375.00**			**NO**	**-**	**No Damage, Not ranked, good condition**	**$ -**	**0.0**	**$ 258,297.60**	**375.00**	**2**
Segment 1 - south side	375.00	78	57	NO	30 (b)		$ -	0.0	$ 258,297.60	375.00	2

Del Norte Regional Guardrail Upgrades Planning Study

Project #: PRJ2047, HSIPL-5901(071)

County of Del Norte Community Development Department

By: Dokken Engineering

9/10/2026

SOUTH FORK RD	**7800.00**			**YES**	**2**	**4 segments of guardrail to repair**	**$ 176,035.20**	**212.5**	**$ 5,190,451.20**	**7,800.00**	**24**
Segment 1 - 0.9 miles from 199, river side	187.5	64	39	Repair Needed	2 ('27)	1 element and 1 terminal system to be repaired	$ 18,268.80	12.5	$ 139,497.60	187.50	2
Segment 2 - 3.5 miles from 199, river side	150	66	41	Repair Needed	2 ('27)	3 elements to be repaired	$ 23,760.00	37.5	$ 115,737.60	150.00	2
Segment 3 - 3.7 miles from 199, river side	800	56	15	NO	11 (b)	No damage, not to current standards	$ -	0.0	$ 527,577.60	800.00	2
Segment 4 - 5.48 miles from 199, river side	650	55	14	Repair Needed	2 ('27)	3 elements and 1 terminal system to be repaired	$ 34,108.80	37.5	$ 432,537.60	650.00	2
Segment 5 - 5.51 miles from 199, mountain side	150	67	42	NO	15 (b)	No damage, not to current standards	$ -	0.0	$ 115,737.60	150.00	2
Segment 6 - 8.26 miles from 199, river side	975	74	50	NO	18 (b)	No damage, not to current standards	$ -	0.0	$ 638,457.60	975.00	2
Segment 7 - 8.26 miles from 199, river side	187.5	70	45	NO	17 (b)	No damage, not to current standards	$ -	0.0	$ 139,497.60	187.50	2
Segment 8 - 9.76 miles from 199, river side	325	68	43	NO	16 (b)	No damage, not to current standards	$ -	0.0	$ 226,617.60	325.00	2
Segment 9 - 10.13 miles from 199, river side	300	33	2	Repair Needed	2 ('27) RR	Full replacement	$ 99,897.60	125.0	$ 210,777.60	300.00	2
Segment 10 - 10.4 miles from 199, river side	2650	78	57	NO	25 (b)	No damage, not to current standards	$ -	0.0	$ 1,699,737.60	2,650.00	2
Segment 11 - 10.4 miles from 199, river side	475	74	50	NO	19 (b)	No damage, not to current standards	$ -	0.0	$ 321,657.60	475.00	2
Segment 12 - 13.17 miles from 199, river side	950	78	57	NO	26 (b)	No damage, not to current standards	$ -	0.0	$ 622,617.60	950.00	2
TAN OAK DR	**250.00**			**YES**	**5**	**1 segment to repair**	**$ 28,617.60**	**12.5**	**$ 199,795.20**	**250.00**	**4**
Segment 1 - east side	125.00	73	49	Repair Needed	5 ('27)	1 element and 2 terminal systems to be repaired	$ 28,617.60	12.5	$ 99,897.60	125.00	2
Segment 2 - west side	125.00	76	52	NO	20 (b)	No damage, not to current standards	$ -	0.0	$ 99,897.60	125.00	2
WONDER STUMP RD	**200.00**			**NO**	**-**	**No Damage, Not ranked, good condition**	**$ -**	**0.0**	**$ 168,115.20**	**200.00**	**4**
Segment 1 - west side	100.00	78	57	NO	31 (b)	No damage, not to current standards	$ -	0.0	$ 84,057.60	100.00	2
Segment 2 - east side	100.00	78	57	NO	32 (b)	No damage, not to current standards	$ -	0.0	$ 84,057.60	100.00	2
Total number of Guardrail segments		**62**	**Total number of Roads with damaged Guardrail**		**7**	**Totals**	**$ 524,409.60**	**550.0**	**$ 16,762,996.80**	**24,643.75**	**111**

Notes

1 ('27) - Priority #1, 2027 planned year for construction

1 ('27) RR) - Priority #1, 2027 construction, Remove and Replace existing guardrail segment, constructing to current standards

6 (future) - Priority #6, need future funding secured to construct

7 (future) - Priority #7, need future funding secured to construct

(a) - County has secured funding to replace/repair existing guardrail damage in the calendar year 2029

(b) - County will need to secure funding to replace/repair existing guardrail damage

* - Cost to maintain existing infrastructure through repair

** - Cost to meet current design standards through replacement

*** - Project Cost, including PA&ED, PS&E, ROW, CE, Bid Item Work

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Arlington Dr	552	9	WEST JEFFERSON AVE	MADISON AVE	68.75
# of segments	1		Primary Function	Access Control	
Average Assessment Score	**34** out of 80 maximum			Needs repairs?	NO

Segment 1 - Westside

Segment Assessment:	34	Score	Segment Length	68.75
Element Condition	Fair (slight rust/no damage)	8	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Fair (weathered/no damage)	8	Notes:	Telephone poles as posts
Standard Posts (Yes/No)	No	0	Notes:	Telephone poles as posts
Standard Installation (Yes/No)	No	0	Notes:	Behind walk, used for access control
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, no cap	0	Notes:	Not an impact hazard, shielded by nearby features
Second End Treatment	None, no cap	0	Notes:	Not an impact hazard, shielded by nearby features

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Humboldt Rd	107	88	HOWLAND HILL RD	URL .01S/ROY AVE	75
# of segments	2		Primary Function	Obstruction Shielding	
Average Assessment Score	69 out of 80 maximum			Needs repairs?	NO

Segment 1 - @ Roy Avenue Intersection

Segment Assessment:	76	Score	Segment Legnth	37.5
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	28	6	Notes:	
First End Treatment	Flared End, Good condition	10	Notes:	Should be the trailing end treatment
Second End Treatment	Inline, Good condition	10	Notes:	SKT that should be the leading end treatment

Segment 2 - @ Hodge Avenue intersection

Segment Assessment:	62	Score	Segment Length	37.5
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Fair (weathered/no damage)	8	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	28	6	Notes:	
First End Treatment	SFT anchor, with Bullnose	7	Notes:	Bullnose is bent back, anchor cable loose
Second End Treatment	None, Damaged Bullnose	1	Notes:	Bullnose on last element, bent back

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Klamath Beach Rd	511	102	N8078	US HWY 101	2225
# of segments	7		Primary Function	Hazard Protection	
Average Assessment Score	**53** out of 80 maximum			Needs repairs?	YES

Segment 1 - east end, closest to 101

Segment Assessment:	43	Score	Repair Needed	Segment Length	612.5
Element Condition	Moderate (rusty/no damage)	5	Notes:		
# damaged elements	5	5	Notes:		
Post Condition	Moderate (spacer blocks loose)	5	Notes:		
Standard Posts (Yes/No)	Yes	10	Notes:		
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	27	4	Notes:		
First End Treatment	None, Bullnose	2	Notes:	Bullnose on MBGR element, offset from EP	
Second End Treatment	None, Bullnose	2	Notes:	Bullnose on MBGR element, inline with EP	

Segment 2 - Klamath River RV Park

Segment Assessment:	53	Score		Segment Length	150
Element Condition	Good (no rust/no damage)	10	Notes:		
# damaged elements	0	10	Notes:		
Post Condition	Moderate (spacer blocks loose)	5	Notes:		
Standard Posts (Yes/No)	Yes	10	Notes:		
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	27	4	Notes:		
First End Treatment	None, Bullnose	2	Notes:	Bullnose on MBGR element, wrapped onto DWY	
Second End Treatment	None, Bullnose	2	Notes:	Bullnose on MBGR element, inline with EP	

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Klamath Beach Rd	511	102	N8078	US HWY 101	2225
# of segments	7		Primary Function	Hazard Protection	
Average Assessment Score	**53** out of 80 maximum			Needs repairs?	YES

Segment 3 - River side, 1 mile west of 101, SPGA Wall					
Segment Assessment:	76	Score		Segment Length	75
Element Condition	Good (no rust/no damage)	10	**Notes:**		
# damaged elements	0	10	**Notes:**		
Post Condition	Good (no rot/no damage)	10	**Notes:**		
Standard Posts (Yes/No)	Yes	10	**Notes:**		
Standard Installation (Yes/No)	Yes	10	**Notes:**		
Top of Rail Height (inches)	28	6	**Notes:**		
First End Treatment	Flared End, Good condition	10	**Notes:**		
Second End Treatment	Flared End, Good condition	10	**Notes:**		

Segment 4 - River side, just west of SPGA wall					
Segment Assessment:	46	Score		Segment Length	400
Element Condition	Moderate (rusty/no damage)	5	**Notes:**		
# damaged elements	0	10	**Notes:**	slight damage, scrubbed/deformed.	
Post Condition	Low (rot/block damage)	3	**Notes:**		
Standard Posts (Yes/No)	Yes	10	**Notes:**		
Standard Installation (Yes/No)	Yes	10	**Notes:**		
Top of Rail Height (inches)	28	6	**Notes:**		
First End Treatment	None, Damaged Bullnose	1	**Notes:**	Bullnose on first MGBR element, flared from EP, slightly bent	
Second End Treatment	None, Damaged Bullnose	1	**Notes:**	Bullnose on last MGBR element, inline with EP, slightly bent	

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Klamath Beach Rd	511	102	N8078	US HWY 101	2225
# of segments	7		Primary Function	Hazard Protection	
Average Assessment Score	**53** out of 80 maximum			Needs repairs?	YES

Segment 5 - Mountain side, within segment 4 limits						
Segment Assessment:	46	Score	Repair Needed		Segment Length	212.5
Element Condition	Moderate (rusty/no damage)	5	Notes:			
# damaged elements	1	9	Notes:	top flare bent down		
Post Condition	Moderate (spacer blocks loose)	5	Notes:			
Standard Posts (Yes/No)	Yes	10	Notes:			
Standard Installation (Yes/No)	Yes	10	Notes:			
Top of Rail Height (inches)	27	4	Notes:			
First End Treatment	None, Bullnose	2	Notes:	Bullnose on first MGBR element, flared from EP		
Second End Treatment	None, Damaged Bullnose	1	Notes:	Bullnose on last MGBR element, inline with EP, slightly bent		

Segment 6 - Mountain side, Coastal Drive westward						
Segment Assessment:	54	Score	Repair Needed		Segment Length	262.5
Element Condition	Moderate (rusty/no damage)	5	Notes:			
# damaged elements	2	8	Notes:	vehicle impact, 3 posts damaged		
Post Condition	Moderate (spacer blocks loose)	5	Notes:			
Standard Posts (Yes/No)	Yes	10	Notes:			
Standard Installation (Yes/No)	Yes	10	Notes:			
Top of Rail Height (inches)	27	4	Notes:			
First End Treatment	None, Bullnose	2	Notes:	Bullnose on first MGBR element, flared from EP		
Second End Treatment	Inline, Good condition	10	Notes:	SKT that should be the leading end treatment		

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Klamath Beach Rd	511	102	N8078	US HWY 101	2225
# of segments	7		Primary Function	Hazard Protection	
Average Assessment Score	**53** out of 80 maximum			Needs repairs?	YES

Segment 7 - River side at Coastal Drive

Segment Assessment:	52	Score	Segment Length	512.5
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Moderate (spacer blocks loose)	5	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	27	4	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose on first MGBR element, flared from EP
Second End Treatment	None, Damaged Bullnose	1	Notes:	Bullnose on first MGBR element, inline with EP, bent

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Klamath Blvd	530	103	KLAMATH MILL RD	END	450
# of segments	3		Primary Function	Hazard Protection	
Average Assessment Score	**59.0** out of 80 maximum			Needs repairs?	YES

Segment 1 - north, separating Klamath Blvd from 101						
Segment Assessment:	71	Score	Repair Needed	Segment Length	350	
Element Condition	Good (no rust/no damage)	10	Notes:			
# damaged elements	2	8	Notes:	impacted, more than 6" deflection		
Post Condition	Good (no rot/no damage)	10	Notes:			
Standard Posts (Yes/No)	Yes	10	Notes:			
Standard Installation (Yes/No)	Yes	10	Notes:			
Top of Rail Height (inches)	28	6	Notes:			
First End Treatment	SFT anchor, with Bullnose	7	Notes:	Damaged Bullnose end treatment needs upgrade to SKT		
Second End Treatment	Inline, Good condition	10	Notes:	Bullnose, SFT good condition		

Segment 2 - SW bridge approach						
Segment Assessment:	57	Score	Repair Needed	Segment Length	50	
Element Condition	Good (no rust/no damage)	10	Notes:			
# damaged elements	1	9	Notes:			
Post Condition	Good (no rot/no damage)	10	Notes:			
Standard Posts (Yes/No)	Yes	10	Notes:			
Standard Installation (Yes/No)	Yes	10	Notes:			
Top of Rail Height (inches)	27	4	Notes:			
First End Treatment	None, Bullnose	2	Notes:	Bullnose, with OBJ markings on bullnose		
Second End Treatment	None, Bullnose	2	Notes:	Bullnose on last MBGR element and Steel Post on concrete		

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Klamath Blvd	530	103	KLAMATH MILL RD	END	450
# of segments	3		Primary Function	Hazard Protection	
Average Assessment Score	**59.0** out of 80 maximum			Needs repairs?	YES

Segment 3 - NE Bridge Approach						
	Segment Assessment:	49	Score	Repair Needed	Segment Length	50
	Element Condition	Fair (slight rust/no damage)	8	Notes:		
	# damaged elements	1	9	Notes:	element closest to bridge damaged	
	Post Condition	Moderate (spacer blocks loose)	5	Notes:		
	Standard Posts (Yes/No)	Yes	10	Notes:		
	Standard Installation (Yes/No)	Yes	10	Notes:		
	Top of Rail Height (inches)	27	4	Notes:		
	First End Treatment	None, Damaged Bullnose	1	Notes:	Bullnose damaged	
	Second End Treatment	None, Bullnose	2	Notes:	Bullnose on last MBGR element and Steel Post on concrete	

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Lauff Ave	207AM	109	K ST	KERN ST	162.5
# of segments	1		Primary Function	Hazard Protection	
Average Assessment Score	**78** out of 80 maximum			Needs repairs?	NO

Segment 1 - East/North side					
Segment Assessment:	78	Score		Segment Length	162.5
Element Condition	Good (no rust/no damage)	10	**Notes:**		
# damaged elements	0	10	**Notes:**		
Post Condition	Good (no rot/no damage)	10	**Notes:**		
Standard Posts (Yes/No)	Yes	10	**Notes:**		
Standard Installation (Yes/No)	Yes	10	**Notes:**		
Top of Rail Height (inches)	29	8	**Notes:**		
First End Treatment	Flared End, Good condition	10	**Notes:**	Bullnose SFT	
Second End Treatment	Flared End, Good condition	10	**Notes:**	Bullnose SFT	

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Madison Ave	208	119	WILDWOOD LN	ARLINGTON DR	162.5
# of segments	1		Primary Function	Access Control	
Average Assessment Score	**36** out of 80 maximum			Needs repairs?	NO

Segment 1 - North side

Segment Assessment:	36	Score	Segment Length	162.5
Element Condition	Fair (slight rust/no damage)	8	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Fair (weathered/no damage)	8	Notes:	telephone poles, no blocks
Standard Posts (Yes/No)	No	0	Notes:	telephone poles, no blocks
Standard Installation (Yes/No)	No	0	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose on approach end
Second End Treatment	None, no cap	0	Notes:	no end treatment

2	Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
	Mynot Creek Rd	506	140	US HWY 101	END	175
	# of segments	2		Primary Function	Hazard Protection	
	Average Assessment Score	**76** out of 80 maximum			Needs repairs?	NO

Segment 1 - south side	Segment Assessment:	76	Score	Segment Length	87.5
	Element Condition	Good (no rust/no damage)	10	Notes:	
	# damaged elements	0	10	Notes:	
	Post Condition	Good (no rot/no damage)	10	Notes:	
	Standard Posts (Yes/No)	Yes	10	Notes:	
	Standard Installation (Yes/No)	Yes	10	Notes:	
	Top of Rail Height (inches)	28	6	Notes:	
	First End Treatment	Flared End, Good condition	10	Notes:	Bullnose, with marker panel
	Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose, with marker panel

Segment 2 - north side	Segment Assessment:	76	Score	Segment Length	87.5
	Element Condition	Good (no rust/no damage)	10	Notes:	
	# damaged elements	0	10	Notes:	
	Post Condition	Good (no rot/no damage)	10	Notes:	
	Standard Posts (Yes/No)	Yes	10	Notes:	
	Standard Installation (Yes/No)	Yes	10	Notes:	
	Top of Rail Height (inches)	28	6	Notes:	
	First End Treatment	Flared End, Good condition	10	Notes:	Bullnose, with marker panel
	Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose, with marker panel

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Oregon Mountain Rd	324	150	US HWY 199	US HWY 199	50
# of segments	1		Primary Function	Access Control	
Average Assessment Score	**29** out of 80 maximum			Needs repairs?	NO

Segment 1 - North side					
Segment Assessment:	29	Score		Segment Length	50
Element Condition	Moderate (rusty/no damage)	5	Notes:	Old type of round MBGR (1930s vintage)	
# damaged elements	0	10	Notes:		
Post Condition	Fair (weathered/no damage)	8	Notes:		
Standard Posts (Yes/No)	No	0	Notes:	Old type of attachment (1930s vintage)	
Standard Installation (Yes/No)	No	0	Notes:		
Top of Rail Height (inches)	26	2	Notes:		
First End Treatment	None, Bullnose	2	Notes:	Old bullnose	
Second End Treatment	None, Bullnose	2	Notes:	Old bullnose	

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Parkway Dr1	533	154	URL .006M S RAILROAD AVE	ELK VALLEY CROSS RD	200
# of segments	2		Primary Function	Hazard Protection	
Average Assessment Score	**66.5** out of 80 maximum			Needs repairs?	NO

Segment 1 - east side @ Jordan Creek					
Segment Assessment:	68	Score		Segment Length	100
Element Condition	Good (no rust/no damage)	10	**Notes:**		
# damaged elements	0	10	**Notes:**		
Post Condition	Fair (weathered/no damage)	8	**Notes:**	blocks twisted	
Standard Posts (Yes/No)	Yes	10	**Notes:**		
Standard Installation (Yes/No)	Yes	10	**Notes:**		
Top of Rail Height (inches)	26	2	**Notes:**		
First End Treatment	Flared End, Poor condition	8	**Notes:**	Bullnose, slightly bent back	
Second End Treatment	Inline, Good condition	10	**Notes:**	Bullnose	

Segment 2 - west side @ Jordan Creek					
Segment Assessment:	65	Score		Segment Length	100
Element Condition	Good (no rust/no damage)	10	**Notes:**		
# damaged elements	0	10	**Notes:**		
Post Condition	Moderate (spacer blocks loose)	5	**Notes:**		
Standard Posts (Yes/No)	Yes	10	**Notes:**		
Standard Installation (Yes/No)	Yes	10	**Notes:**		
Top of Rail Height (inches)	26	2	**Notes:**		
First End Treatment	Flared End, Poor condition	8	**Notes:**	Bullnose, slightly bent back	
Second End Treatment	Flared End, Good condition	10	**Notes:**	Bullnose	

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Parkway Dr3	533	367	URL .02M W MCNAMARA RD	URL .006M S/RAILROAD AVE	587.5
# of segments	2		Primary Function	Hazard Protection	
Average Assessment Score	**42** out of 80 maximum			Needs repairs?	YES

Segment 1 - east side						
Segment Assessment:	38	Score	**Repair Needed**	Segment Length	262.5	
Element Condition	Poor (rusty/damaged)	1	**Notes:**	displacements		
# damaged elements	2	8	**Notes:**	displaced more than 6"		
Post Condition	Low (rot/block damage)	3	**Notes:**	displaced posts where impacted		
Standard Posts (Yes/No)	Yes	10	**Notes:**			
Standard Installation (Yes/No)	Yes	10	**Notes:**			
Top of Rail Height (inches)	26	2	**Notes:**			
First End Treatment	None, Bullnose	2	**Notes:**	bullnose		
Second End Treatment	None, Bullnose	2	**Notes:**	Fishtail end cap		

Segment 2 - west side						
Segment Assessment:	46	Score	**Repair Needed**	Segment Length	325	
Element Condition	Poor (rusty/damaged)	1	**Notes:**	displacements		
# damaged elements	7	3	**Notes:**	displaced more than 6", torn		
Post Condition	Low (rot/block damage)	3	**Notes:**	displaced posts where impacted, missing blocks		
Standard Posts (Yes/No)	Yes	10	**Notes:**			
Standard Installation (Yes/No)	Yes	10	**Notes:**			
Top of Rail Height (inches)	26	2	**Notes:**			
First End Treatment	Flared End, Good condition	10	**Notes:**	Buried end anchor, good condition		
Second End Treatment	SFT anchor, with Bullnose	7	**Notes:**	bullnose, damaged		

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr1	201	246	106F S/DEL MONTE ST	WASHINGTON BLVD	6687.5
# of segments	18		Primary Function	Hazard Protection	
Average Assessment Score	**58** out of 80 maximum			Needs repairs?	YES

Segment 1 - NTS06

Segment Assessment:	62	Score	Segment Length	25
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	Metal Posts
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Segment 2 - NTS07

Segment Assessment:	62	Score	Segment Length	12.5
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	Metal posts
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	bullnose
Second End Treatment	None, Bullnose	2	Notes:	bullnose

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr1	201	246	106F S/DEL MONTE ST	WASHINGTON BLVD	6687.5
# of segments	18		Primary Function	Hazard Protection	
Average Assessment Score	**58** out of 80 maximum			Needs repairs?	YES

Segment 3 - NTS08					
Segment Assessment:	60	Score		Segment Length	100
Element Condition	Good (no rust/no damage)	10	Notes:	1 element	
# damaged elements	0	10	Notes:		
Post Condition	Good (no rot/no damage)	10	Notes:		
Standard Posts (Yes/No)	Yes	10	Notes:	Metal posts	
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	29	8	Notes:		
First End Treatment	None, Bullnose	2	Notes:	Bullnose	
Second End Treatment	None, no cap	0	Notes:	None	

Segment 4 - NTS09					
Segment Assessment:	59	Score	**Repair Needed**	Segment Length	37.5
Element Condition	Good (no rust/no damage)	10	Notes:		
# damaged elements	1	9	Notes:	Bent flange	
Post Condition	Good (no rot/no damage)	10	Notes:		
Standard Posts (Yes/No)	Yes	10	Notes:	Metal posts	
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	29	8	Notes:		
First End Treatment	None, no cap	0	Notes:	None	
Second End Treatment	None, Bullnose	2	Notes:	Bullnose	

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr1	201	246	106F S/DEL MONTE ST	WASHINGTON BLVD	6687.5
# of segments	18		Primary Function	Hazard Protection	
Average Assessment Score	**58** out of 80 maximum			Needs repairs?	YES

Segment 5 - NTS10

Segment Assessment:	62	Score	Segment Length	812.5
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	Metal Posts
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Segment 6 - NTS11

Segment Assessment:	62	Score	Segment Length	850
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	Wood Post
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr1	201	246	106F S/DEL MONTE ST	WASHINGTON BLVD	6687.5
# of segments	18		Primary Function	Hazard Protection	
Average Assessment Score	**58** out of 80 maximum			Needs repairs?	YES

Segment 7 - NTS12

Segment Assessment:	62	Score	Segment Length	150
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Segment 8 - NTS13

Segment Assessment:	62	Score	Segment Length	437.5
Element Condition	Good (no rust/no damage)	10	Notes:	half a stick in length
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	2 posts
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr1	201	246	106F S/DEL MONTE ST	WASHINGTON BLVD	6687.5
# of segments	18		Primary Function	Hazard Protection	
Average Assessment Score	**58** out of 80 maximum			Needs repairs?	YES

Segment 9 - NTS14

Segment Assessment:	61	Score	Segment Length	137.5
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Damaged Bullnose	1	Notes:	Bullnose, Bent
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Segment 10 - NTS15

Segment Assessment:	62	Score	Segment Length	337.5
Element Condition	Good (no rust/no damage)	10	Notes:	There is a 6.5' gap, protected by bullnoses mid run of the segment.
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr1	201	246	106F S/DEL MONTE ST	WASHINGTON BLVD	6687.5
# of segments	18		Primary Function	Hazard Protection	
Average Assessment Score	**58** out of 80 maximum			Needs repairs?	YES

Segment 11 - NTS16					
Segment Assessment:	61	Score	Repair Needed	Segment Length	600
Element Condition	Good (no rust/no damage)	10	Notes:		
# damaged elements	1	9	Notes:	Bent flange, less than 6"	
Post Condition	Good (no rot/no damage)	10	Notes:		
Standard Posts (Yes/No)	Yes	10	Notes:		
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	29	8	Notes:		
First End Treatment	None, Bullnose	2	Notes:	Bullnose	
Second End Treatment	None, Bullnose	2	Notes:	Bullnose	

Segment 12 - NTS17					
Segment Assessment:	62	Score		Segment Length	75
Element Condition	Good (no rust/no damage)	10	Notes:		
# damaged elements	0	10	Notes:		
Post Condition	Good (no rot/no damage)	10	Notes:		
Standard Posts (Yes/No)	Yes	10	Notes:		
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	29	8	Notes:		
First End Treatment	None, Bullnose	2	Notes:	Bullnose	
Second End Treatment	None, Bullnose	2	Notes:	Bullnose	

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr1	201	246	106F S/DEL MONTE ST	WASHINGTON BLVD	6687.5
# of segments	18		Primary Function	Hazard Protection	
Average Assessment Score	**58** out of 80 maximum			Needs repairs?	YES

Segment 13 - NTS18

Segment Assessment:	62	Score	Segment Length	1212.5
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Segment 14 - NTS19

Segment Assessment:	62	Score	Segment Length	512.5
Element Condition	Good (no rust/no damage)	10	Notes:	6.5' gap, with bullnose caps
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr1	201	246	106F S/DEL MONTE ST	WASHINGTON BLVD	6687.5
# of segments	18		Primary Function	Hazard Protection	
Average Assessment Score	**58** out of 80 maximum			Needs repairs?	YES

Segment 15 - NTS20

Segment Assessment:	62	Score	Segment Length	212.5
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	Metal posts
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Segment 16 - NTS21

Segment Assessment:	62	Score	Segment Length	550
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr1	201	246	106F S/DEL MONTE ST	WASHINGTON BLVD	6687.5
# of segments	18		Primary Function	Hazard Protection	
Average Assessment Score	**58** out of 80 maximum			Needs repairs?	YES

Segment 17 - NTS22

Segment Assessment:	62	Score	Segment Length	125
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	Wood posts
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Segment 18 - NTS23

Segment Assessment:	62	Score	Segment Length	500
Element Condition	Good (no rust/no damage)	10	Notes:	6.5' gap with bullnoses
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	Wood posts
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr2	201	247	DALE RUPERT RD	END OF RD	5387.5
# of segments	5		Primary Function	Access Control	
Average Assessment Score	**64.6** out of 80 maximum			Needs repairs?	YES

Segment 1 - NTS01

Segment Assessment:	70	Score	Segment Length	2062.5
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	Vegetation covering face of elements
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	Inline, Good condition	10	Notes:	SKT
Second End Treatment	None, Bullnose	2	Notes:	bullnose

Segment 2 - NTS02

Segment Assessment:	62	Score	Segment Length	625
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	None, Bullnose	2	Notes:	Bullnose

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr2	201	247	DALE RUPERT RD	END OF RD	5387.5
# of segments	5		Primary Function	Access Control	
Average Assessment Score	**64.6** out of 80 maximum			Needs repairs?	YES

Segment 3 - NTS03					
Segment Assessment:	59	Score	Repair Needed	Segment Length	1350
Element Condition	Good (no rust/no damage)	10	Notes:		
# damaged elements	3	7	Notes:	Slight element damage, bent flanges	
Post Condition	Good (no rot/no damage)	10	Notes:		
Standard Posts (Yes/No)	Yes	10	Notes:		
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	29	8	Notes:		
First End Treatment	None, Bullnose	2	Notes:	Bullnose	
Second End Treatment	None, Bullnose	2	Notes:	Bullnose	

Segment 4 - NTS04					
Segment Assessment:	62	Score		Segment Length	125
Element Condition	Good (no rust/no damage)	10	Notes:		
# damaged elements	0	10	Notes:		
Post Condition	Good (no rot/no damage)	10	Notes:		
Standard Posts (Yes/No)	Yes	10	Notes:		
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	29	8	Notes:		
First End Treatment	None, Bullnose	2	Notes:	Bullnose	
Second End Treatment	None, Bullnose	2	Notes:	Bullnose	

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Pebble Beach Dr2	201	247	DALE RUPERT RD	END OF RD	5387.5
# of segments	5		Primary Function	Access Control	
Average Assessment Score	**64.6** out of 80 maximum			Needs repairs?	YES

Segment 5 - NTS05

Segment Assessment:	70	Score	Segment Length	1225
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	None, Bullnose	2	Notes:	Bullnose
Second End Treatment	Inline, Good condition	10	Notes:	SKT

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
PJ Murphy Memorial Dr	510B	155	E BDRY REDWOOD NAT PARK	MOUTH/KLAMATH RD	375
# of segments	1		Primary Function	Hazard Protection	
Average Assessment Score	**78** out of 80 maximum			Needs repairs?	NO

Segment 1 - south side

Segment Assessment:	78	Score	Segment Length	375
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	Steel posts/block
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	Flared End, Good condition	10	Notes:	Bullnose
Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
South Fork Rd	427	188	US HWY 199	BIG FLAT RD	7800
# of segments	12		Primary Function	Hazard Protection	
Average Assessment Score	**64** out of 80 maximum			Needs repairs?	YES

Segment 1 - 0.9 miles from 199, river side						
Segment Assessment:	64	Score	Repair Needed	Segment Length	187.5	
Element Condition	Fair (slight rust/no damage)	8	Notes:			
# damaged elements	1	9	Notes:			
Post Condition	Good (no rot/no damage)	10	Notes:			
Standard Posts (Yes/No)	Yes	10	Notes:			
Standard Installation (Yes/No)	Yes	10	Notes:			
Top of Rail Height (inches)	28	6	Notes:			
First End Treatment	Flared End, Damaged	1	Notes:	Element part of terminal end damage on top flange, bullnose bent		
Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose		

Segment 2 - 3.5 miles from 199, river side						
Segment Assessment:	66	Score	Repair Needed	Segment Length	150	
Element Condition	Low (rusty/hardware damage)	3	Notes:			
# damaged elements	3	7	Notes:	Impacted element (>6"), bent/ripped top flange on element.		
Post Condition	Good (no rot/no damage)	10	Notes:	Wood post		
Standard Posts (Yes/No)	Yes	10	Notes:			
Standard Installation (Yes/No)	Yes	10	Notes:			
Top of Rail Height (inches)	28	6	Notes:			
First End Treatment	Flared End, Good condition	10	Notes:	Bullnose		
Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose		

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
South Fork Rd	427	188	US HWY 199	BIG FLAT RD	7800
# of segments	12		Primary Function	Hazard Protection	
Average Assessment Score	**64** out of 80 maximum			Needs repairs?	YES

Segment 3 - 3.7 miles from 199, river side						
Segment Assessment:	56	Score			Segment Length	800
Element Condition	Good (no rust/no damage)	10	**Notes:**			
# damaged elements	0	10	**Notes:**			
Post Condition	Good (no rot/no damage)	10	**Notes:**			
Standard Posts (Yes/No)	Yes	10	**Notes:**	Metal posts, wood post terminals		
Standard Installation (Yes/No)	Yes	10	**Notes:**			
Top of Rail Height (inches)	27	4	**Notes:**			
First End Treatment	Flared End, Damaged	1	**Notes:**	The impact head is not in the correct oreintation, will place element into lane.		
Second End Treatment	Flared End, Damaged	1	**Notes:**	The impact head is not in the correct oreintation, will place element into lane.		

Segment 4 - 5.48 miles from 199, river side						
Segment Assessment:	55	Score	**Repair Needed**		Segment Length	650
Element Condition	Low (rusty/hardware damage)	3	**Notes:**			
# damaged elements	3	7	**Notes:**	impacted, displaced (>6")		
Post Condition	Fair (weathered/no damage)	8	**Notes:**			
Standard Posts (Yes/No)	Yes	10	**Notes:**	Wood posts, on top of soldier pile wall		
Standard Installation (Yes/No)	Yes	10	**Notes:**			
Top of Rail Height (inches)	28	6	**Notes:**			
First End Treatment	Flared End, Damaged	1	**Notes:**	Bullnose, element has damage		
Second End Treatment	Flared End, Good condition	10	**Notes:**	Bullnose		
Segment Assessment:	67	Score			Segment Length	150

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
South Fork Rd	427	188	US HWY 199	BIG FLAT RD	7800
# of segments	12		Primary Function	Hazard Protection	
Average Assessment Score	**64** out of 80 maximum			Needs repairs?	YES

Segment 5 - 5.51 miles from 199, mountain side	Element Condition	Moderate (rusty/no damage)	5	Notes:	
	# damaged elements	0	10	Notes:	
	Post Condition	Fair (weathered/no damage)	8	Notes:	
	Standard Posts (Yes/No)	Yes	10	Notes:	Wood posts, metal posts for box culvert crossing, side mount.
	Standard Installation (Yes/No)	Yes	10	Notes:	
	Top of Rail Height (inches)	27	4	Notes:	
	First End Treatment	Flared End, Good condition	10	Notes:	Bullnose
	Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose
Segment 6 - 8.26 miles from 199, river side	**Segment Assessment:**	74	Score	Segment Length	975
	Element Condition	Fair (slight rust/no damage)	8	Notes:	
	# damaged elements	0	10	Notes:	
	Post Condition	Good (no rot/no damage)	10	Notes:	
	Standard Posts (Yes/No)	Yes	10	Notes:	wood post
	Standard Installation (Yes/No)	Yes	10	Notes:	
	Top of Rail Height (inches)	28	6	Notes:	
	First End Treatment	Flared End, Good condition	10	Notes:	Bullnose
	Second End Treatment	Inline, Good condition	10	Notes:	Bullnose
	Segment Assessment:	70	Score	Segment Length	187.5

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
South Fork Rd	427	188	US HWY 199	BIG FLAT RD	7800
# of segments	12		Primary Function	Hazard Protection	
Average Assessment Score	**64** out of 80 maximum			Needs repairs?	YES

Segment 7 - 8.26 miles from 199, river side	Element Condition	Good (no rust/no damage)	10	Notes:	
	# damaged elements	0	10	Notes:	
	Post Condition	Good (no rot/no damage)	10	Notes:	
	Standard Posts (Yes/No)	Yes	10	Notes:	Wood post
	Standard Installation (Yes/No)	Yes	10	Notes:	
	Top of Rail Height (inches)	24	0	Notes:	
	First End Treatment	Flared End, Good condition	10	Notes:	Bullnose
	Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose
Segment 8 - 9.76 miles from 199, river side	**Segment Assessment:**	68	Score	Segment Length	325
	Element Condition	Good (no rust/no damage)	10	Notes:	
	# damaged elements	0	10	Notes:	
	Post Condition	Fair (weathered/no damage)	8	Notes:	
	Standard Posts (Yes/No)	Yes	10	Notes:	Wood post
	Standard Installation (Yes/No)	Yes	10	Notes:	
	Top of Rail Height (inches)	24	0	Notes:	
	First End Treatment	Flared End, Good condition	10	Notes:	Bullnose
	Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose
	Segment Assessment:	33	Score	**Repair Needed**	Segment Length 300

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
South Fork Rd	427	188	US HWY 199	BIG FLAT RD	7800
# of segments	12		Primary Function	Hazard Protection	
Average Assessment Score	**64** out of 80 maximum			Needs repairs?	YES

Segment 9 - 10.13 miles from 199, river side					
Element Condition	Moderate (rusty/no damage)	5	Notes:		
# damaged elements	10	0	Notes:	Elements lost downhill side slip	
Post Condition	Fair (weathered/no damage)	8	Notes:	Loss of fill behind posts,	
Standard Posts (Yes/No)	Yes	10	Notes:		
Standard Installation (Yes/No)	No	0	Notes:	Needs roadway stability work and MGS installation.	
Top of Rail Height (inches)	24	0	Notes:		
First End Treatment	None, no cap	0	Notes:	Missing terminal system, protected by k-rail	
Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose	
Segment Assessment:	78	Score		Segment Length	2650

Segment 10 - 10.4 miles from 199, river side					
Element Condition	Good (no rust/no damage)	10	Notes:		
# damaged elements	0	10	Notes:		
Post Condition	Good (no rot/no damage)	10	Notes:	Metal posts, wood terminals	
Standard Posts (Yes/No)	Yes	10	Notes:		
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	29	8	Notes:		
First End Treatment	Flared End, Good condition	10	Notes:	The impact head is not in the correct oreintation, will place element into lane.	
Second End Treatment	Flared End, Good condition	10	Notes:	The impact head is not in the correct oreintation, will place element into lane.	
Segment Assessment:	74	Score		Segment Length	475

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
South Fork Rd	427	188	US HWY 199	BIG FLAT RD	7800
# of segments	12		Primary Function	Hazard Protection	
Average Assessment Score	**64** out of 80 maximum			Needs repairs?	YES

Segment 11 - 10.4 miles from 199, river side	Element Condition	Fair (slight rust/no damage)	8	Notes:	
	# damaged elements	0	10	Notes:	
	Post Condition	Fair (weathered/no damage)	8	Notes:	
	Standard Posts (Yes/No)	Yes	10	Notes:	
	Standard Installation (Yes/No)	Yes	10	Notes:	
	Top of Rail Height (inches)	29	8	Notes:	
	First End Treatment	Flared End, Good condition	10	Notes:	Bullnose
	Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose
Segment 12 - 13.17 miles from 199, river side	**Segment Assessment:**	78	Score	Segment Length	950
	Element Condition	Good (no rust/no damage)	10	Notes:	
	# damaged elements	0	10	Notes:	
	Post Condition	Good (no rot/no damage)	10	Notes:	Metal post, wood terminal systems
	Standard Posts (Yes/No)	Yes	10	Notes:	
	Standard Installation (Yes/No)	Yes	10	Notes:	
	Top of Rail Height (inches)	29	8	Notes:	
	First End Treatment	Flared End, Good condition	10	Notes:	Bullnose
	Second End Treatment	Inline, Good condition	10	Notes:	Impact head in correct oreintation

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Tan Oak Dr	329	196	ST HWY 197	ST HWY 197	250
# of segments	2		Primary Function	Hazard Protection	
Average Assessment Score	**74.5** out of 80 maximum			Needs repairs?	YES

Segment 1 - east side

Segment Assessment:	73	Score	Repair Needed	Segment Length	125
Element Condition	Fair (slight rust/no damage)	8	Notes:		
# damaged elements	1	9	Notes:	impact, more than 6" of deflection, NE location	
Post Condition	Good (no rot/no damage)	10	Notes:		
Standard Posts (Yes/No)	Yes	10	Notes:		
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	28	6	Notes:		
First End Treatment	Flared End, Good condition	10	Notes:	Bullnose, marker panel	
Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose, marker panel	

Segment 2 - west side

Segment Assessment:	76	Score		Segment Length	125
Element Condition	Good (no rust/no damage)	10	Notes:		
# damaged elements	0	10	Notes:		
Post Condition	Good (no rot/no damage)	10	Notes:		
Standard Posts (Yes/No)	Yes	10	Notes:		
Standard Installation (Yes/No)	Yes	10	Notes:		
Top of Rail Height (inches)	28	6	Notes:		
First End Treatment	Flared End, Good condition	10	Notes:	Bullnose, marker panel	
Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose, marker panel	

Road Name	Road Number	Object ID	From	To	Guardrail Length (FT)
Wonder Stump Rd	430/430A	215	ELK VALLEY CROSS RD	KINGS VALLEY RD	200
# of segments	2		Primary Function	Hazard Protection	
Average Assessment Score	**78** out of 80 maximum			Needs repairs?	NO

Segment 1 - west side

Segment Assessment:	78	Score	Segment Length	100
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	Flared End, Good condition	10	Notes:	Bullnose, marker panel
Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose, marker panel

Segment 2 - east side

Segment Assessment:	78	Score	Segment Length	100
Element Condition	Good (no rust/no damage)	10	Notes:	
# damaged elements	0	10	Notes:	
Post Condition	Good (no rot/no damage)	10	Notes:	
Standard Posts (Yes/No)	Yes	10	Notes:	
Standard Installation (Yes/No)	Yes	10	Notes:	
Top of Rail Height (inches)	29	8	Notes:	
First End Treatment	Flared End, Good condition	10	Notes:	Bullnose, marker panel
Second End Treatment	Flared End, Good condition	10	Notes:	Bullnose, marker panel

Attachment C: Collision Data

SWITRS Data 1/1/2014 through 12/31/2025 (source: TIMS UC Berkeley)				SWITRS Data 1/1/2014 through 12/31/2025 (source: TIMS UC Berkeley)	
Priority Road Segments	**# of Collisions**	**# of Injuried**	**Types of Collisions**	**Involved with**	**Narrative**
SOUTH FORK RD	5	5	Hit Object, Overturned	Fixed Object, Other Object	Per records near but not at existing guardrail
PARKWAY DR3	5	8	Hit Object, Overturned	Fixed Object, Non-collision	Per records all within existing guardrail limits
KLAMATH BEACH RD	0	0	-	-	no records for time period
KLAMATH BLVD	1	1	Hit Object	Fixed Object	Per records within guardrail limits
TAN OAK DR	0	0	-	-	no records for time period
PEBBLE BEACH DR2	7	8	Hit Object	Fixed Object	2 collisions, 3 injured within guardrail limits remaining at intersection
PEBBLE BEACH DR1	6	9	Hit Object, Other, Vehicle/Pedestrian, Head-On	Fixed Object, Bicycle, Pedestrian, Other Motor Vehicle	Per records within guardrail limits

Attachment D: Alternative Cost Estimates

Del Norte Regional Guardrail Upgrades Planning Study

Project #: PRJ2047, HSIPL-5901(071)

County of Del Norte Community Development Department

By: Dokken Engineering

9/4/2026

Prioritized Summary Table of Repair/Replacement of existing damaged Guardrail

List of Road Segments with Damaged Roadside Guardrail	Length of Repair/Replace Guardrail (LF)	Replace/ Repair Ranking (Low=High Priority)	Repair/ Replace	Replacement Terminal Systems (EA)	Notes	Cost ($) ***
PARKWAY DR3	**587.5**	**1**	**-**	**3**	**Elements and End Treatments damaged, 2 segments**	**$ 403,286.40**
Segment 1 - east side	262.5	1 ('27) RR	Replace	2	Replacement of the entire guardrail segment	$ 187,017.60
Segment 2 - west side	325.0	1 ('27) RR	Replace	1	Replacement of the entire guardrail segment	$ 216,268.80
SOUTH FORK RD	**387.5**	**2**	**-**	**2**	**4 segments of guardrail to repair**	**$ 286,915.20**
Segment 1 - 0.9 miles from 199, river side	12.5	2 ('27)	Repair	1	1 element and 1 terminal system to be repaired	$ 18,268.80
Segment 2 - 3.5 miles from 199, river side	37.5	2 ('27)	Repair	0	3 elements to be repaired	$ 23,760.00
Segment 4 - 5.48 miles from 199, river side	37.5	2 ('27)	Repair	1	3 elements and 1 terminal system to be repaired	$ 34,108.80
Segment 9 - 10.13 miles from 199, river side	300.0	2 ('27) RR	Replace	2	Full replacement	$ 210,777.60
KLAMATH BEACH RD	**100.0**	**3**	**-**	**5**	**3 segments to repair**	**$ 115,104.00**
Segment 1 - east end, closest to 101	62.5	3 ('27)	Repair	2	5 elements and 2 terminal systems to be repaired	$ 60,297.60
Segment 5 - Mountain side, within segment 4 limits	12.5	3 ('27)	Repair	2	1 element and 2 terminal systems to be repaired	$ 28,617.60
Segment 6 - Mountain side, Coastal Drive westward	25.0	3 ('27)	Repair	1	2 elements and 1 terminal system to be repaired	$ 26,188.80
KLAMATH BLVD	**50.0**	**4**	**-**	**4**	**Element damage, 3 segments**	**$ 62,726.40**
Segment 1 - north, separating Klamath Blvd from 101	25.0	4 ('27)	Repair	2	2 elements and 1 terminal systems to be repaired	$ 26,188.80
Segment 2 - SW bridge approach	12.5	4 ('27)	Repair	1	1 element and 1 terminal systems to be repaired	$ 18,268.80
Segment 3 - NE Bridge Approach	12.5	4 ('27)	Repair	1	1 elements and 1 terminal system to be repaired	$ 18,268.80
TAN OAK DR	**12.5**	**5**	**-**	**2**	**1 segment to repair**	**$ 28,617.60**
Segment 1 - east side	12.5	5 ('27)	Repair	2	1 element and 2 terminal systems to be repaired	$ 28,617.60
PEBBLE BEACH DR1	***25.0***	***6***	***-***	***0***	***Minor dents, non-standard terminal ends, 2 segments***	***$ 15,840.00***
Segment 4 - NTS09	*12.5*	*6 (Future)*	*Repair*	*0*	*1 element*	*$ 7,920.00*
Segment 11 - NTS16	*12.5*	*6 (Future)*	*Repair*	*0*	*1 element*	*$ 7,920.00*
PEBBLE BEACH DR2	***37.5***	***7***	***-***	***0***	***Access Control Function, Minor dents, non-standard terminal ends***	***$ 23,760.00***
Segment 3 - NTS03	*37.5*	*7 (Future)*	*Repair*	*0*	*3 elements*	*$ 23,760.00*
2027 Funded Replacement/Repair Project Total (a)						**$ 896,649.60**
Future Funding Repair Project Total (b)						***$ 39,600.00***

Notes

1 ('27) - Priority #1, 2027 planned year for construction

1 ('27) RR) - Priority #1, 2027 construction, Remove and Replace existing guardrail segment, constructing to current standards

6 (future) - Priority #6, need future funding secured to construct

7 (future) - Priority #7, need future funding secured to construct

(a) - County has secured funding to replace/repair existing guardrail damage in the calendar year 2027

(b) - County will need to secure funding to replace/repair existing guardrail damage

* - Cost to maintain existing infrastructure through repair

** - Cost to meet current design standards through replacement

*** - Project Cost, including PA&ED, PS&E, ROW, CE, Bid Item Work

Del Norte Regional Guardrail Upgrades Planning Study
Project #: PRJ2047, HSIPL-5901(071)

County of Del Norte Community Development Department
By: Dokken Engineering
9/4/2026

Priority	Road Name	# of Guardrail Segments to repair	Length of Roadside Guardrail (LF) to repair	Number of new Terminal Systems	Length to Replace (ft)
1	PARKWAY DR3	2	112.5	3	587.5

Type	Segment #	Repair Length (ft)	Unit Cost (per LF)	Terminal System Costs ($4,900/each)	Repair Total	Existing Damage Notes	Length to Replace (ft)	Cost to replace ($)
Replace	Segment 1 - east side	25.0	$ 300.00	$ 9,800.00	$ 17,300.00	full replacement	262.5	$ 88,550.00
Replace	Segment 2 - west side	87.5	$ 300.00	$ 4,900.00	$ 31,150.00	full replacement	325	$ 107,300.00

Item Total	$ 48,450.00	Item Total	$ 195,850.00
Mobilization (10%)	$ 4,845.00	Mobilization (10%)	$ 19,585.00
Contingency (20%)	$ 10,659.00	Contingency (20%)	$ 43,087.00
Project Subtotal	$ 63,954.00	**Project Subtotal**	$ 258,522.00
Enviro. Clearance (10%)	$ 6,395.40	Enviro. Clearance (10%)	$ 25,852.20
Prelim. Engineering (10%)	$ 6,395.40	Prelim. Engineering (10%)	$ 25,852.20
Right of Way (5%)	$ 3,197.70	Right of Way (5%)	$ 12,926.10
Final P,S & E (10%)	$ 6,395.40	Final P,S & E (10%)	$ 25,852.20
Construction Engineering (10%)	$ 6,395.40	Construction Engineering (10%)	$ 25,852.20
Construction Management (15%)	$ 9,593.10	Construction Management (15%)	$ 38,778.30
Project Total Cost	**$ 102,326.40**	**Project Total Cost**	**$ 413,635.20**

Del Norte Regional Guardrail Upgrades Planning Study
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County of Del Norte Community Development Department
By: Dokken Engineering
9/4/2026

Priority	Road Name	# of Guardrail Segments to repair	Length of Roadside Guardrail (LF) to repair	Number of new Terminal Systems	Length to Replace (ft)
2	**SOUTH FORK RD**	**4**	**87.5**	**3**	**300.0**

Type	Segment #	Repair Length (ft)	Unit Cost (per LF)	Terminal System Costs ($4,900/each)	Repair Total	Existing Damage Notes	Length to Replace (ft)	Cost to replace ($)
Repair	Segment 1 - 0.9 miles from 199, river side	12.5	$ 300.00	$ 4,900.00	$ 8,650.00	1 element and 1 terminal system to be repaired	0	$ -
Repair	Segment 2 - 3.5 miles from 199, river side	37.5	$ 300.00	$ -	$ 11,250.00	3 elements to be repaired	0	$ -
Repair	Segment 4 - 5.48 miles from 199, river side	37.5	$ 300.00	$ 4,900.00	$ 16,150.00	3 elements and 1 terminal system to be repaired	0	$ -
Replace	Segment 9 - 10.13 miles from 199, river side	0.0	$ 300.00	$ -	$ -	Full replacement	300	$ 99,800.00

Item Total	$ 36,050.00	Item Total	$ 99,800.00
Mobilization (10%)	$ 3,605.00	Mobilization (10%)	$ 9,980.00
Contingency (20%)	$ 7,931.00	Contingency (20%)	$ 21,956.00
Project Subtotal	$ 47,586.00	**Project Subtotal**	$ 131,736.00
Enviro. Clearance (10%)	$ 4,758.60	Enviro. Clearance (10%)	$ 13,173.60
Prelim. Engineering (10%)	$ 4,758.60	Prelim. Engineering (10%)	$ 13,173.60
Right of Way (5%)	$ 2,379.30	Right of Way (5%)	$ 6,586.80
Final P,S & E (10%)	$ 4,758.60	Final P,S & E (10%)	$ 13,173.60
Construction Engineering (10%)	$ 4,758.60	Construction Engineering (10%)	$ 13,173.60
Construction Management (15%)	$ 7,137.90	Construction Management (15%)	$ 19,760.40
Project Total Cost	**$ 76,137.60**	**Project Total Cost**	**$ 210,777.60**

Del Norte Regional Guardrail Upgrades Planning Study
Project #: PRJ2047, HSIPL-5901(071)

County of Del Norte Community Development Department
By: Dokken Engineering
9/4/2026

Priority	Road Name	# of Guardrail Segments to repair	Length of Roadside Guardrail (LF) to repair	Number of new Terminal Systems	Length to Replace (ft)
3	KLAMATH BEACH RD	3	100.0	5	-

Type	Segment #	Repair Length (ft)	Unit Cost (per LF)	Terminal System Costs ($4,900/each)	Repair Total	Existing Damage Notes	Length to Replace (ft)	Cost to replace ($)
Repair	Segment 1 - east end, closest to 101	62.5	$ 300.00	$ 9,800.00	$ 28,550.00	5 elements and 2 terminal systems to be repaired	0	$ -
Repair	Segment 5 - Mountain side, within segment 4 limits	12.5	$ 300.00	$ 9,800.00	$ 13,550.00	1 element and 2 terminal systems to be repaired	0	$ -
Repair	Segment 6 - Mountain side, Coastal Drive westward	25.0	$ 300.00	$ 4,900.00	$ 12,400.00	2 elements and 1 terminal system to be repaired	0	$ -

Item Total	$ 54,500.00	Item Total	$ -
Mobilization (10%)	$ 5,450.00	Mobilization (10%)	$ -
Contingency (20%)	$ 11,990.00	Contingency (20%)	$ -
Project Subtotal	$ 71,940.00	**Project Subtotal**	$ -
Enviro. Clearance (10%)	$ 7,194.00	Enviro. Clearance (10%)	$ -
Prelim. Engineering (10%)	$ 7,194.00	Prelim. Engineering (10%)	$ -
Right of Way (5%)	$ 3,597.00	Right of Way (5%)	$ -
Final P,S & E (10%)	$ 7,194.00	Final P,S & E (10%)	$ -
Construction Engineering (10%)	$ 7,194.00	Construction Engineering (10%)	$ -
Construction Management (15%)	$ 10,791.00	Construction Management (15%)	$ -
Project Total Cost	**$ 115,104.00**	**Project Total Cost**	**$ -**

Del Norte Regional Guardrail Upgrades Planning Study
Project #: PRJ2047, HSIPL-5901(071)

County of Del Norte Community Development Department
By: Dokken Engineering
9/4/2026

Priority	Road Name	# of Guardrail Segments to repair	Length of Roadside Guardrail (LF) to repair	Number of new Terminal Systems	Length to Replace (ft)
4	KLAMATH BLVD	3	50.0	4	-

Type	Segment #	Repair Length (ft)	Unit Cost (per LF)	Terminal System Costs ($4,900/each)	Repair Total	Existing Damage Notes	Length to Replace (ft)	Cost to replace ($)
Repair	Segment 1 - north, separating Klamath Blvd from 101	25.0	$ 300.00	$ 4,900.00	$ 12,400.00	2 elements and 1 terminal systems to be repaired	0	$ -
Repair	Segment 2 - SW bridge approach	12.5	$ 300.00	$ 4,900.00	$ 8,650.00	1 element and 1 terminal systems to be repaired	0	$ -
Repair	Segment 3 - NE Bridge Approach	12.5	$ 300.00	$ 4,900.00	$ 8,650.00	1 elements and 1 terminal system to be repaired	0	$ -

Item Total	$ 29,700.00	Item Total	$ -
Mobilization (10%)	$ 2,970.00	Mobilization (10%)	$ -
Contingency (20%)	$ 6,534.00	Contingency (20%)	$ -
Project Subtotal	$ 39,204.00	**Project Subtotal**	$ -
Enviro. Clearance (10%)	$ 3,920.40	Enviro. Clearance (10%)	$ -
Prelim. Engineering (10%)	$ 3,920.40	Prelim. Engineering (10%)	$ -
Right of Way (5%)	$ 1,960.20	Right of Way (5%)	$ -
Final P,S & E (10%)	$ 3,920.40	Final P,S & E (10%)	$ -
Construction Engineering (10%)	$ 3,920.40	Construction Engineering (10%)	$ -
Construction Management (15%)	$ 5,880.60	Construction Management (15%)	$ -
Project Total Cost	**$ 62,726.40**	**Project Total Cost**	**$ -**

Del Norte Regional Guardrail Upgrades Planning Study
Project #: PRJ2047, HSIPL-5901(071)

County of Del Norte Community Development Department
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9/4/2026

Priority	Road Name	# of Guardrail Segments to repair	Length of Roadside Guardrail (LF) to repair	Number of new Terminal Systems	Length to Replace (ft)
5	TAN OAK DR	1	12.5	2	-

Type	Segment #	Repair Length (ft)	Unit Cost (per LF)	Terminal System Costs ($4,900/each)	Repair Total	Existing Damage Notes	Length to Replace (ft)	Cost to replace ($)
Repair	Segment 1 - east side	12.5	$ 300.00	$ 9,800.00	$ 13,550.00	1 element and 2 terminal systems to be repaired	0	$ -

Item Total	$ 13,550.00	Item Total	$ -
Mobilization (10%)	$ 1,355.00	Mobilization (10%)	$ -
Contingency (20%)	$ 2,981.00	Contingency (20%)	$ -
Project Subtotal	$ 17,886.00	**Project Subtotal**	$ -
Enviro. Clearance (10%)	$ 1,788.60	Enviro. Clearance (10%)	$ -
Prelim. Engineering (10%)	$ 1,788.60	Prelim. Engineering (10%)	$ -
Right of Way (5%)	$ 894.30	Right of Way (5%)	$ -
Final P,S & E (10%)	$ 1,788.60	Final P,S & E (10%)	$ -
Construction Engineering (10%)	$ 1,788.60	Construction Engineering (10%)	$ -
Construction Management (15%)	$ 2,682.90	Construction Management (15%)	$ -
Project Total Cost	**$ 28,617.60**	**Project Total Cost**	**$ -**

Del Norte Regional Guardrail Upgrades Planning Study
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County of Del Norte Community Development Department
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9/4/2026

Priority	Road Name	# of Guardrail Segments to repair	Length of Roadside Guardrail (LF) to repair	Number of new Terminal Systems	Length to Replace (ft)
6	PEBBLE BEACH DR1	2	25.0	-	-

Type	Segment #	Repair Length (ft)	Unit Cost (per LF)	Terminal System Costs ($4,900/each)	Repair Total	Existing Damage Notes	Length to Replace (ft)	Cost to replace ($)
Repair	Segment 4 - NTS09	12.5	$ 300.00	$ -	$ 3,750.00	1 element	0	$ -
Repair	Segment 11 - NTS16	12.5	$ 300.00	$ -	$ 3,750.00	1 element	0	$ -

Item Total	$ 7,500.00	Item Total	$ -
Mobilization (10%)	$ 750.00	Mobilization (10%)	$ -
Contingency (20%)	$ 1,650.00	Contingency (20%)	$ -
Project Subtotal	$ 9,900.00	**Project Subtotal**	$ -
Enviro. Clearance (10%)	$ 990.00	Enviro. Clearance (10%)	$ -
Prelim. Engineering (10%)	$ 990.00	Prelim. Engineering (10%)	$ -
Right of Way (5%)	$ 495.00	Right of Way (5%)	$ -
Final P,S & E (10%)	$ 990.00	Final P,S & E (10%)	$ -
Construction Engineering (10%)	$ 990.00	Construction Engineering (10%)	$ -
Construction Management (15%)	$ 1,485.00	Construction Management (15%)	$ -
Project Total Cost	**$ 15,840.00**	**Project Total Cost**	**$ -**

Del Norte Regional Guardrail Upgrades Planning Study
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9/4/2026

Priority	Road Name	# of Guardrail Segments to repair	Length of Roadside Guardrail (LF) to repair	Number of new Terminal Systems	Length to Replace (ft)
7	PEBBLE BEACH DR2	1	37.5	-	-

Type	Segment #	Repair Length (ft)	Unit Cost (per LF)	Terminal System Costs ($4,900/each)	Repair Total	Existing Damage Notes	Length to Replace (ft)	Cost to replace ($)
Repair	Segment 3 - NTS03	37.5	$ 300.00	$ -	$ 11,250.00	3 elements	0	$ -

Item Total	$ 11,250.00	Item Total	$ -
Mobilization (10%)	$ 1,125.00	Mobilization (10%)	$ -
Contingency (20%)	$ 2,475.00	Contingency (20%)	$ -
Project Subtotal	$ 14,850.00	**Project Subtotal**	$ -
Enviro. Clearance (10%)	$ 1,485.00	Enviro. Clearance (10%)	$ -
Prelim. Engineering (10%)	$ 1,485.00	Prelim. Engineering (10%)	$ -
Right of Way (5%)	$ 742.50	Right of Way (5%)	$ -
Final P,S & E (10%)	$ 1,485.00	Final P,S & E (10%)	$ -
Construction Engineering (10%)	$ 1,485.00	Construction Engineering (10%)	$ -
Construction Management (15%)	$ 2,227.50	Construction Management (15%)	$ -
Project Total Cost	**$ 23,760.00**	**Project Total Cost**	**$ -**

BENEFIT COST RATIO

The Benefit Cost Ratio was calculated for the guardrail locations on the existing County Roads identified as having damage and needing repair or replacement.

Equation used:

$$BCR = \frac{PV_{\text{Benefits}}}{PV_{\text{Costs}}}$$

$$BCR = \frac{\sum_{t=1}^{N} \frac{\Delta C_{\text{crash},t}}{(1+r)^t}}{C_{\text{initial}} + \sum_{t=1}^{N} \frac{M_t}{(1+r)^t}}$$

Given Data:

Initial Cost ($C_{initial}$): $, based on each specific road

Annual Maintenance (M): $1,000 / year

Annual Safety Benefit (ΔC_{crash}): $60,000 / year

Lifespan (N): 20 years

Discount Rate (r): 4% (0.04)

Collision data was gathered from TIMS UC Berkeley (see Attachment D), and a 5 year timeframe was reviewed for each of the identified roads. The "Severity Cost" for this calculation was set at $60,000 per person per crash, based on reducing the "Injury Severity" one level. This approach was selected to reflect the improved guardrail and terminal systems absorbing the impact energy better compared to the existing condition.

Following are the individual road BCR inputs and results.

Parkway Drive 3, Location 1 (replacement)	7 injured	C-*Initial* $	$ 413,635.20
		PV *Costs*	$ 427,225.53
Parkway Drive 3, Location 2 (replacement)		PV *Benefits*	$ 1,141,587.41
		ΔC_{crash}	$ 84,000.00
		BCR	**2.7**
South Fork Road, Location 4 (replacement)	4 injured	C-*Initial* $	$ 374,035.20
		PV *Costs*	$ 387,625.53
South Fork Road, Location 1 (replacement)		PV *Benefits*	$ 652,335.66
		ΔC_{crash}	$ 48,000.00
South Fork Road, Location 2 (repair)		**BCR**	**1.7**
Klamath Beach Rd, Location 3 (repair)	1 (Based on Guardrail damage)	C-*Initial* $	$ 26,188.80
		PV *Costs*	$ 39,779.13
		PV *Benefits*	$ 163,083.92
		ΔC_{crash}	$ 12,000.00
		BCR	**4.1**
Klamath Boulevard, Location 1 (repair)	1 injured	C-*Initial* $	$ 62,726.40
		PV *Costs*	$ 76,316.73
Klamath Boulevard, Location 2 (repair)		PV *Benefits*	$ 163,083.92
		ΔC_{crash}	$ 12,000.00
Klamath Boulevard, Location 3 (repair)		**BCR**	**2.1**
TOTAL	13 injured	C-*Initial* $	$ 878,000.00
		PV *Costs*	$ 891,950.33
		PV *Benefits*	$ 1,957,006.99
		ΔC_{crash}	$ 144,000.00
		BCR	**2.19**