

Regular Meeting
Tuesday, January 25, 2022
6:00 p.m.



Unalaska City Hall
Council Chambers
43 Raven Way

Council Members
Thomas D. Bell
Darin Nicholson
Daneen Looby

Council Members
Dennis M. Robinson
Alejandro R. Tungul
Shari Coleman

*To Provide a Sustainable Quality of Life
Through Excellent Stewardship of Government*

UNALASKA CITY COUNCIL

P. O. Box 610 • Unalaska, Alaska 99685
Tel (907) 581-1251 • Fax (907) 581-1417 • www.ci.unalaska.ak.us

Mayor: Vincent M. Tutiakoff Sr. **City Manager:** Erin Reinders
City Clerk: Marjie Veeder, mveeder@ci.unalaska.ak.us

COUNCIL MEETING ATTENDANCE

The community is encouraged to attend meetings of the City Council:

- In person at City Hall
- Online via ZOOM (link, meeting ID & password below)
- By telephone (toll and toll free numbers, meeting ID & password below)
- Listen on KUCB TV Channel 8 or Radio Station 89.7

PUBLIC COMMENT

The Mayor and City Council value and encourage community input at meetings of the City Council. There is a time limit of 3 minutes per person, per topic. Options for public comment:

- In person
- By telephone or ZOOM - notify the City Clerk if you'd like to provide comment using ZOOM features (chat message or raise your hand); or *9 by telephone to raise your hand; or you may notify the City Clerk during regular business hours in advance of the meeting
- Written comment is accepted up to one hour before the meeting begins by email, regular mail, fax or hand delivery to the City Clerk, and will be read during the meeting; include your name

ZOOM MEETING LINK: <https://us02web.zoom.us/j/85203975430>

Meeting ID: 852 0397 5430 / **Passcode:** 977526

TELEPHONE: Meeting ID: 852 0397 5430 / **Passcode:** 977526

Toll Free numbers: (833) 548-0276; or (833) 548-0282; or (877) 853-5247; or (888) 788-0099

Non Toll Free numbers: (253) 215-8782; or (346) 248-7799; or (669) 900-9128

AGENDA

1. **Call to order**
2. **Roll call**
3. **Pledge of Allegiance**
4. **Recognition of Visitors**
5. **Adoption of Agenda**
6. **Approve Minutes of Previous Meeting:** [January 11, 2022](#)
7. **City Manager Report:** [January 25, 2022](#)
8. **Community Input & Announcements** *Members of the public may provide information to council; and make announcements of interest to the community. Three-minute time limit per person.*

9. **Public Comment on Agenda Items** *Time for members of the public to provide information to Council regarding items on the agenda. Members of the public may also speak when the issue comes up on the regular agenda by signing up with the City Clerk. Three-minute time limit per person.*
10. **Public Hearing** *Members of the public may testify about any item set for public hearing. Three-minute time limit per person.*
- a. [Ordinance 2022-01: Creating Budget Amendment #3 to the Fiscal Year 2022 Budget, accepting an ARPA Easy Grant for Libraries award in the amount of \\$6,000 from the Alaska State Library; increasing the Electric Utility Fund budget in the amount of \\$3,000,000 due to increased diesel fuel costs; and returning a portion of project costs to the original funding sources for selected capital projects](#)
11. **Work Session** *Work sessions are for planning purposes, or studying and discussing issues before the Council.*
- a. [Funding Request for the Memorial to the Fishermen of Unalaska, Mr. Karel Machalek](#)
 - b. [Review draft Cost-Benefit Analysis, Captains Bay Road Paving & Utility Extension, HDR](#)
12. **Consent Agenda** *Approval of non-controversial and routine items, accomplished without debate and with a single motion and vote. Council members may request an item be moved to the regular agenda for discussion purposes.*
- a. [Ordinance 2022-01: 2nd Reading - Creating Budget Amendment #3 to the Fiscal Year 2022 Budget, accepting an ARPA Easy Grant for Libraries award in the amount of \\$6,000 from the Alaska State Library; increasing the Electric Utility Fund budget in the amount of \\$3,000,000 due to increased diesel fuel costs; and returning a portion of project costs to the original funding sources for selected capital projects](#)
13. **Regular Agenda** *Persons wishing to speak on regular agenda items must sign up with the City Clerk. Three-minute time limit per person.*
- a. [Ordinance 2022-02: Amending Chapter 6.40 of the Unalaska Code of Ordinances to provide a limited exemption from sales tax to federally recognized tribes](#)
 - b. Approve Travel for Mayor and Council:
 - i. [AML Winter Legislative Conference, February 16-18, 2022, Juneau;](#)
 - ii. [City Lobbying Trip, February 28-March 2, 2022, Juneau; and](#)
 - iii. [SWAMC Economic Summit and Membership Meeting, March 3-4, 2022, Anchorage.](#)
14. **Council Directives to City Manager**
15. **Community Input & Announcements** *Members of the public may provide information to council; and make announcements of interest to the community. Three-minute time limit per person.*
16. **Adjournment**

Regular Meeting
Tuesday, January 11, 2022
6:00 p.m.



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MINUTES

1. **Call to order.** Vice Mayor Dennis Robinson called the regular meeting of the Unalaska City Council to order at 6:00 p.m.
2. **Roll call.** The City Clerk called the roll. All Council Members present; Mayor Tutiakoff absent (excused). Vice Mayor announced a quorum established.

Vice Mayor read the City's Mission Statement: To provide a sustainable quality of life through excellent stewardship of government.
3. **Pledge of Allegiance.** Vice Mayor led the Pledge of Allegiance.
4. **Recognition of Visitors.** Vice Mayor recognized Will Rogers, Interim CEO of IFHS Clinic.
5. **Adoption of Agenda.** Coleman moved to adopt the Agenda; Looby seconded. There being no objection, agenda adopted by consensus.
6. **Approve Minutes of Previous Meeting.** Coleman moved to approve the proposed minutes of the December 28, 2021 meeting; Tungul seconded. There being no objection, the minutes were adopted by consensus.
7. **Reports**
 - a. Financials, November 2021. Interim Finance Director Jim Sharpe presented financial reports for November 2021, noting favorable revenue; and provided a response to Council Member Looby's question regarding the PCR expenses from the October report.
 - b. City Manager presented her report; stated that she will meet with Ravn Air soon about the backlog of passengers in Anchorage; discussed change in city Juneau lobby trip dates; provided an update about COVID in the community and that Fire/EMS is helping at the Clinic; Will Rogers (IFHS Interim CEO) reported about testing for COVID (at home and at clinic), vaccination rates, clinic staff update and responded to Council questions.
8. **Community Input & Announcements:** Vice Mayor provided an opportunity for community input and announcements. Acting PCR Director Nick Cron made announcements regarding Seussical the Musical and Fitness on Demand.
9. **Public Comment on Agenda Items:** Vice Mayor provided an opportunity for public comment on agenda items. None.
10. **Work Session:** Nicholson made a motion to move into Work Session; Tungul seconded. There being no objection, motion adopted by consensus.

6:22 p.m. – Entered into Work Session

- a. Review Draft FY23-FY32 Capital & Major Maintenance Plan (CMMP). Acting Planning Director Cameron Dean presented the CMMP. City Manager and Mr. Dean responded to Council inquiries.

Looby moved to return to Regular Session; second by Nicholson; no objections.

6:58 p.m. – Reconvened to Regular Session

11. **Consent Agenda:** Coleman moved to adopt the Consent Agenda; second by Tungul. Roll call vote: all council members voted in the affirmative. Motion passed unanimously 6-0 adopting the following items:

- a. Resolution 2022-01: Establishing taxicab rates for calendar year 2022
- b. Resolution 2022-02: Consenting to the Assignment of a Category C Outfall Lease from Icycle Seafoods, Inc., to Westward Seafoods, Inc.

12. Regular Agenda

- a. Ordinance 2022-01: 1st reading, Creating Budget Amendment #3 to the Fiscal Year 2022 Budget, accepting an ARPA Easy Grant for Libraries award in the amount of \$6,000 from the Alaska State Library; increasing the Electric Utility Fund budget in the amount of \$3,000,000 due to increased diesel fuel costs; and returning a portion of project costs to the original funding sources for selected capital projects

Tungul moved to introduce Ordinance 2022-01 and schedule it for public hearing and second reading on January 25, 2022; second by Nicholson.

The City Manager provided an overview. No council questions. No public comment.

Roll call vote: all Council members voted in the affirmative; motion passed unanimously 6-0.

13. **Council Directives to City Manager:** None.

14. **Community Input & Announcements:** Vice Mayor provided a final opportunity for community input and announcements. Vice Mayor announced a Special Council Meeting on Monday, January 24, 2022 to discuss revenue projections and budget goals for FY23; and stated he would like to attend the AML Legislative Conference upcoming in Juneau.

15. **Executive Session:** Tungul moved to go into Executive Session to discuss Unalaska Tidelands Survey 103, Tracts B & C, the immediate public discussion of which may adversely affect the legal positions of the City of Unalaska. Present in the Executive Session: Council Members, City Attorney Charles Cacciola via telephone, City Manager, Planning Director Bil Homka and Cameron Dean of the Planning Department. Second by Looby; no objection; adopted by consensus.

Entered into Executive Session at 7:05 p.m.

- a. Unalaska Tidelands Survey 103, Tracts B & C

Returned to regular session at 8:29 p.m.

Vice Mayor announced that no action was taken during Executive Session other than to provide direction to the City Attorney.

16. **Adjournment:** Having completed all items on the agenda, Vice Mayor adjourned the meeting at 8:30 p.m.

These minutes were approved by the Unalaska City Council on January 25, 2022.

Marjie Veeder, CMC
City Clerk

DRAFT

MEMORANDUM TO COUNCIL

To: Mayor and City Council Members
From: Erin Reinders, City Manager
Date: January 25, 2022
Re: City Manager Report

Upcoming Deadlines: The following City deadlines are upcoming.

- March 1, 2022: Business Personal Property Tax Return Deadline
- March 1, 2022: Senior Citizen, Disabled Veteran and Fire/EMS Volunteer Real Property Tax Exemption Application Deadline
- March 31, 2022: Senior Citizen Sales Tax Refund Application Deadline

COVID-19 Update: As of the drafting of this memo on Wednesday, January 19, of we have 354 known active COVID-19 cases in Unalaska (245 categorized as Industry-Quarantined and 109 categorized as Community). Wastewater samples are positive for COVID-19, the most recent sample from January 19 was 37.1 RNA Copies/ml. This information is found on the City's COVID-19 Data Hub at <https://covid19-response-unalaska.hub.arcgis.com/>. According to the State of Alaska, 74% of Aleutian West Census Area residents age 5 and up have received their first dose, 64% are fully vaccinated, and 17% have received their booster. Some of these figures are found on the City's COVID-19 Data Hub, but are pulled from the Alaska Department of Health and Social Services Coronavirus Response Hub at <https://alaska-coronavirus-vaccine-outreach-alaska-dhss.hub.arcgis.com/>. This site has a wealth of information.

Organizationally, we are working to keep our employees healthy so that we are able to continue supporting each other and serving the community. We have implemented policies that are consistent with CDC and local health official guidance. Like other organizations on this island and worldwide, our employees are being impacted by the spread of COVID-19 in our community and we are responding accordingly.

OCCP: The City met with OCCP on January 14 to discuss the request to amend both the PPA and the MOA to provide more time to secure funding as identified in the PPA and to delay their contribution schedule to the City outlined in the MOA. Basically, OCCP continues to look for project funding support but has yet to secure such funding from interested parties. OCCP has been told by interested parties that they need to develop and prove the well field, which will take an estimated \$25 million, in order for them to accept the construction risk. City Council action is required for any amendment to the PPA or any related MOA. I requested, and have been provided with the amendments of both the PPA and MOA that OCCP requested for Council to consider. We will bring the formal request and the proposed amendments to discuss with Council in Executive Session on February 8, 2022. No formal action will be requested that evening, but Council can provide direction to the City Attorney and City Manager on how to proceed with the requests and related negotiations.

Emergency Rule Petition: Six tribal groups have petitioned the Secretary of Commerce, requesting the Department adopt an emergency regulation prohibiting Chinook salmon bycatch during the 2022 season of the Pollock trawl fishery in the Bering Sea/Aleutian Islands and to establish a cap for Chum salmon bycatch. This would basically shut the season down. Additionally, they are asking to reduce the salmon bycatch after the 2022 season to further address a decline in salmon runs. I worked with our Interim Finance Director, Natural Resource Consultant and the Federal Lobbyists on this topic to craft and distribute a letter of opposition on behalf of the City of Unalaska. Aleutians East Brought has also submitted a letter of opposition.

Fiscal Sustainability: City Council had an in depth discussion with APCM and City Staff on October 26 regarding a permanent fund. Key direction provided by Council included a \$40 million starting amount, moderate growth allocation, and a plan to begin distribution at the three year point (starting in July of 2024). Staff met again with APCM on Monday, November 8, 2021 to discuss our next steps. Since that time we have received sample ordinances and resolutions from APCM. Our City Attorney has drafted documents for City Council's use specifically. Jim Sharpe and I met with APCM to touch base and review the documents briefly on January 12. We plan to meet back up in early February to discuss next steps for both the Permanent Fund and Emergency Operations.

Directives to the City Manager: There are two outstanding directives, both progressing as outlined below.

- *Cost Benefit Analysis for Captains Bay Road Project (March 30, 2021). Progressing.* The directive reads, "Implement a cost-benefit analysis for the proposed road improvements and utility expansion for Captains Bay Road." We will use this report to not only objectively define the benefit, but also define the project phases and scope for those phases. A draft Cost-Benefit Analysis Report was submitted to the City on January 19, 2022, and is included in your packet for presentation during Council's Work Session on January 25, 2022.
- *Haystack Communications Site (July 27, 2021). Progressing.* The directive reads, "Start the process to terminate leases on Haystack for communications and work to upgrade and allow equal access to facilities for communications on Haystack with new leases." This directive was issued after public comment by OptimERA representatives at the City Council meeting. Available space (that is not already leased or has an easement across it) is limited on Haystack, and OptimERA had previously requested a lease agreement in a place that was leased to another entity. The Planning Department has reached out to some of the telecom companies to discuss future leasing and update information between the City and lease holders. OptimERA has applied for a new lease atop Haystack to lease the site on which they already have an antenna located. The lease was reviewed by the City attorney and has been forwarded to OptimERA for their consideration. OptimERA has provided additional comments that are currently being reviewed. The Planning Director has returned to the island and will continue discussions with TelAlaska regarding their existing lease on Haystack.

CITY OF UNALASKA
UNALASKA, ALASKA

ORDINANCE 2022-01

CREATING BUDGET AMENDMENT #3 TO THE FISCAL YEAR 2022 BUDGET, ACCEPTING AN ARPA EASY GRANT FOR LIBRARIES AWARD IN THE AMOUNT OF \$6,000 FROM THE ALASKA STATE LIBRARY; INCREASING THE ELECTRIC UTILITY FUND BUDGET IN THE AMOUNT OF \$3,000,000 DUE TO INCREASED DIESEL FUEL COSTS; AND RETURNING A PORTION OF PROJECT COSTS TO ORIGINAL FUNDING SOURCES FOR SELECTED CAPITAL PROJECTS

BE IT ENACTED BY THE UNALASKA CITY COUNCIL:

- Section 1. Classification: This is a non-code ordinance.
 Section 2. Effective Date: This Ordinance becomes effective upon adoption.
 Section 3. Content: The City of Unalaska FY22 Budget is amended as follows:

- A. That the following sums of money are hereby accepted and the following sums of money are hereby authorized for expenditure.
 B. The following are the changes by account line item:

Amendment #3 to Ordinance #2021-07

	Current	Requested	Revised
I. OPERATING BUDGETS			
A. General Fund			
<i>Library Operating</i>			
Sources:			
Other Grants - Library	\$ -	\$ 6,000	\$ 6,000
Uses:			
Grant Expenditures	\$ 119,560	\$ 6,000	\$ 125,560
<i>Return of Capital Project Funds</i>			
Sources:			
Transfers to GF Capital Projects	\$ 1,896,013	\$ (47,077)	\$ 1,848,936
Uses:			
Appropriated Fund Balance	\$ 5,892,342	\$ (47,077)	\$ 5,845,265
B. Proprietary Funds			
<i>Electric</i>			
Sources:			
Use of Unrestricted Net Position	\$ 4,577,717	\$ 3,000,000	\$ 7,577,717
Uses:			
Generator Fuel	\$ 6,000,000	\$ 3,000,000	\$ 9,000,000
<i>Ports</i>			
Sources:			
Transfers to Ports Capital Projects	\$ 6,045,000	\$ (1,421,782)	\$ 4,623,218
Uses:			
Use of Unrestricted Net Position	\$ 7,402,629	\$ (1,421,782)	\$ 5,980,847

II. CAPITAL BUDGETS

A. General Fund Capital Project Budgets

Town Park Improvements

Sources:				
Remaining Project Funds	\$	340,000	\$ (24,276)	\$ 315,724

Uses:				
Transfer From General Fund	\$	340,000	\$ (24,276)	\$ 315,724

Police Records Management System

Sources:				
Remaining Project Funds	\$	500,000	\$ (22,801)	\$ 477,199

Uses:				
Transfer From General Fund	\$	500,000	\$ (22,801)	\$ 477,199

B. Ports Capital Project Budgets

UMC Expansion Construction Project

Sources:				
Remaining Project Funds	\$	9,889,640	\$ (1,421,782)	\$ 8,467,858

Uses:				
Transfer From Ports Proprietary Fund	\$	9,889,640	\$ (1,421,782)	\$ 8,467,858

PASSED AND ADOPTED by a duly constituted quorum of the Unalaska City Council on January 25, 2022.

Vincent M. Tutiakoff, Sr.
Mayor

ATTEST:

Marjie Veeder, CMC
City Clerk

City of Unalaska
Summary of Budget Amendment and Schedule of Proposed Accounts
Budget Amendment 3 to the FY22 Budget

- 1) General Fund
 - Add \$6,000 to grant revenue for the library to record ARPA grant
 - Add a total of \$6,000 to grant expenditures for the library

 - Reduce transfers to GF projects by \$47,077 to record return of unused project funds for Town Park Improvements and Police Records Management System
 - Reduce appropriated fund balance by \$47,077

- 2) Electric Proprietary Fund
 - Add \$3,000,000 to generator fuel expense
 - Add \$3,000,000 to use of unrestricted net position

- 3) Port Proprietary Fund
 - Reduce transfers to port projects by \$1,421,782 to record return of unused project funds for UMC Expansion
 - Reduce use of unrestricted net position by \$1,421,782

- 4) General Fund Capital Projects
 - Town Park Improvements*
 - Reduce transfers from GF by \$24,276 to record return of unused project funds
 - Reduce budgeted project expenses by \$24,276 to reflect unspent funds

 - Police Records Management System*
 - Reduce transfers from GF by \$22,801 to record return of unused project funds
 - Reduce budgeted project expenses by \$22,801 to reflect unspent funds

- 5) Ports Fund Capital Projects
 - UMC Expansion Construction*
 - Reduce transfers from Ports fund by \$1,421,782 to record return of unused project funds
 - Reduce budgeted project expenses by \$1,421,782 to reflect unspent funds

	Org	Object	Project	Current	Requested	Revised
1) General Fund						
<i>Library</i>						
Sources:						
Other Grants - Library	01012041	42198		\$ -	\$ 6,000	\$ 6,000
Uses:						
Grants - Telecommunications	01023452	56451		\$ 106,560	\$ 3,500	\$ 110,060
Grants - Circulating Materials	01023452	56452		\$ 13,000	\$ 2,500	\$ 15,500
<i>Return of Capital Project Funds</i>						
Sources:						
Transfers to GF Capital Projects	01029854	59920		\$ 1,896,013	\$ (47,077)	\$ 1,848,936
Uses:						
Appropriated Fund Balance	01010049	49900		\$ 5,892,342	\$ (47,077)	\$ 5,845,265
2) Electric Fund						
Sources:						
Budgeted Use of Unrestricted Net Position	50015049	49910		\$ 4,577,717	\$ 3,000,000	\$ 7,577,717
Uses:						
Generator Fuel - Diesel	50024152	56500		\$ 6,000,000	\$ 3,000,000	\$ 9,000,000
3) Ports Fund						
Sources:						
Transfers to Ports Capital Projects	54029854	59940		\$ 6,045,000	\$ (1,421,782)	\$ 4,623,218
Uses:						
Budgeted Use of Unrestricted Net Position	54017049	49910		\$ 7,402,629	\$ (1,421,782)	\$ 5,980,847
4) General Fund Capital Projects						
<i>Town Park Improvements</i>						
Sources:						
Engineering and Architecture	31022053	53240	PR19A	\$ 17,595	\$ (208)	\$ 17,387
Telephone/Fax/TV	31022053	55310	PR19A	\$ 150	\$ (73)	\$ 77
Contingency	31022053	55912	PR19A	\$ 23,995	\$ (23,995)	\$ -
Uses:						
Transfers From General Fund	31019848	49100	PR19A	\$ 340,000	\$ (24,276)	\$ 315,724

Police Records Management System

Sources:

Advertising	31021053	55901	PS18B	\$ 350	\$ (350)	\$ -
Travel & Related Costs	31021053	55903	PS18B	\$ 6,650	\$ (198)	\$ 6,452
General Supplies	31021053	56100	PS18B	\$ 10,000	\$ (10,000)	\$ -
Computer Hardware/Software	31021053	56150	PS18B	\$ 195,496	\$ (12,253)	\$ 183,243

Uses:

Transfers From General Fund	31019848	49100	PS18B	\$ 500,000	\$ (22,801)	\$ 477,199
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5) Port Fund Capital Projects

UMC Expansion Construction

Sources:

Legal	54127053	53230	PH17D	\$ 120	\$ (8)	\$ 113
Engineering and Architectural	54127053	53240	PH17D	\$ 2,215,000	\$ (36,529)	\$ 2,178,471
Construction Services	54127053	54500	PH17D	\$ 35,243,340	\$ 8,663	\$ 35,252,003
Telephone/Fax/TV	54127053	55310	PH17D	\$ 1,000	\$ (118)	\$ 882
Contingency	54127053	55912	PH17D	\$ 1,393,065	\$ (1,393,065)	\$ -
General Supplies	54127053	56100	PH17D	\$ 6,500	\$ (715)	\$ 5,785
Computer Hardware/Software	54127053	56150	PH17D	\$ 3,125	\$ (11)	\$ 3,114

Uses:

Transfers From Port Proprietary Fund	54119848	49130	PH17D	\$ 9,889,640	\$ (1,421,782)	\$ 8,467,858
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MEMORANDUM TO COUNCIL

To: Mayor and City Council Members
From: Jim Sharpe, Interim Finance Director
Through: Erin Reinders, City Manager
Date: January 11, 2022
Re: Ordinance 2022-01, Creating Budget Amendment #3 to the Fiscal Year 2022 Budget, accepting an ARPA Easy Grant for Libraries award in the amount of \$6,000 from the Alaska State Library; increasing the Electric Utility Fund budget in the amount of \$3,000,000 due to increased diesel fuel costs; and returning a portion of project costs to the original funding sources for selected capital projects

SUMMARY: This budget amendment will appropriate an additional \$6,000 for the library, funded through an ARPA library grant; appropriate \$3,000,000 from the Electric Utility Fund's Net Position due to increased fuel costs; and return unspent monies for 3 projects to their original funding sources. This is the third amendment to the fiscal year 2022 budget. Staff recommends approval.

PREVIOUS COUNCIL ACTION:

On May 24, 2016, City Council adopted the Fiscal Year 2017 Operating and Capital budget through Ordinance 2016-12; UMC Expansion Construction project was included in the budget (Project PH17D)

On May 24, 2017, City Council adopted the Fiscal Year 2018 Operating and Capital budget through Ordinance 2017-07; Records Management System project was included in the budget (PS18B); additional funding for PH17D was also included in the budget

On May 22, 2018, City Council adopted the Fiscal Year 2019 Operating and Capital budget through Ordinance 2017-04; Town Park Improvements project was included in the budget (PR19A)

On May 25, 2021, City Council adopted the Fiscal Year 2022 Operating and Capital budget through Ordinance 2021-07; this is the third amendment.

BACKGROUND:

ARPA Easy Grant for Libraries. On March 11, 2021, Congress passed the federal act known as the American Rescue Plan Act of 2021 (Rescue Act). The Act is a \$1.9 trillion coronavirus rescue package designed to facilitate the United States' recovery from the devastating economic and health effects of the COVID-19 pandemic. A portion of the package (\$350,000,000,000) is to be distributed to cities, states tribal governments and U.S. Territories. In a letter dated November 2, 2021, the Unalaska Public Library received an ARPA Grant Notification from the Alaska State Library in the amount of \$6,000. The grant will provide \$3,500 for the library's public internet costs and \$2,500 for eBooks for Unalaska Library patrons.

Electric Fund. Rising fuel costs and a 19% increase in power demand compared to the first half of FY21 require additional funding to avoid a budget shortfall. Each budgeting cycle, staff estimates both power sales revenue and fuel expenses. Diesel fuel pricing was quite volatile due to world-wide fluctuating demand brought on by the pandemic. On February 2, 2021, the price of diesel was \$1.83 per gallon, up substantially from \$1.12 in May of 2020. Based on oil pricing projections from the Energy Information Administration (EIA), staff estimated an average diesel price of \$2.25 per gallon for FY22, and power sales of 40 million kWh.

Reduce project budgets. During a recent capital projects update meeting it was determined that, while certain projects are not yet completed, they are sufficiently complete that remaining anticipated costs will be significantly below the remaining budget amount to complete the project. Therefore, it makes fiscal sense to move the unneeded portion of each project back to its respective funding source.

DISCUSSION:

ARPA Easy Grant for Libraries. This grant will allow the Library to offer additional resources to patrons, through free internet and additional eBook options.

- \$3,500 – Public Internet Costs: This funding will help the library to continue providing free internet access for any visitor to the library building or parking lot via both our wireless internet connection and our library’s public computers.
- \$2,500 – eBooks and audiobook downloads: Once purchased, these materials will be available for any Unalaska Public Library cardholder to borrow for free on their phone, tablet, or ereader via the OverDrive or Libby app. They are available any time of day, from any location with an internet connection.

Electric Fund. Halfway through the fiscal year, staff now estimates an average diesel price of \$2.85 per gallon, and power sales of 45 - 46 million kWh. The Cost of Power Adjustment (COPA) charge on customer utility bills recoups most of the generator fuel expense. This budget amendment will increase the Generator Fuel – Diesel line item and alleviate budgetary shortfall concerns in other areas of the Powerhouse Operating Budget.

Reduce project budgets (*PR19A Town Park Improvements, PH17D UMC Expansion Construction & PS18B Records Management and Computer Aided Dispatch System (RMS/CAD)*).

- *PR19A Town Park Improvements* – This project is complete, certified, and has been in use since June 2019. We were notified by the State of Alaska Department of Labor (AKDOL) that they had not received certified payroll reports from Westside Flooring, one of the subcontractors on the job. The general contractor did not pay prevailing Title 36 wage rates and failed to pay at least two subcontractors in full. The AKDOL informed the City that they do not expect this case to be resolved any time soon. Staff recommends closing this project out and returning the remaining monies to the General Fund. When, and if, this case ever gets settled and we receive notification from the AKDOL, we will determine what and to whom we will need to pay. At that undetermined time in the future, staff will propose a Budget Amendment with monies coming from the General Fund. Amount returned to General Fund with this budget amendment - \$24,275.91.
- *PH17D UMC Expansion Construction* – This project is complete and has been in use since 2019. There were a few items determined to be incomplete and the City received a credit from the general contractor with the understanding that the City would complete those items at a later date. Remaining work includes five crane tie down pocket drains and re-

grouting the edges of some sections of trench drain. This work is expected to be completed in early summer 2022 when weather permits. An amount of \$200,000 will be sufficient to cover all remaining work and includes contingency. Amount returned to Ports and Harbors Proprietary Fund with this budget amendment - \$1,421,782.48.

- *PS18B Records Management and Computer Aided Dispatch System (RMS/CAD)* – In 2017, the City entered into an agreement to purchase a RMS/CAD system for Public Safety; however, shortly after the commitment, the vendor was purchased and the new company indicated they would no longer support the product purchased by the City, instead recommending that the City purchase an entirely new RMS/CAD system from the acquiring company. The project was halted at that point. The current request is to return unencumbered amounts to the General Fund while the City determines the proper course of action related to this situation. Amount returned to General Fund with this budget amendment - \$22,801.17.

ALTERNATIVES: As always, Council can approve the budget amendment as presented, alter it, or decide not to approve it. However, the powerhouse Operating Budget must be able to purchase fuel; staff sees no other acceptable alternative to this Budget Amendment request. The increased fuel expenses will be recovered through COPA, offsetting the additional cost. Lack of approval could delay expenditures related to the Electric Utility Fund and the Library.

FINANCIAL IMPLICATIONS:

ARPA Easy Grant for Libraries. As outlined above, this \$6,000 grant and Budget Amendment amends will provide \$3,500 for the library's public internet costs and \$2,500 for eBooks for Unalaska Library patrons.

Electric Fund. This Budget Amendment will appropriate \$3,000,000 of Electric Proprietary Fund Net Position into the Operating Budget of the Power Production Division.

Reduce project budgets. As outlined above, \$47,077.08 will be returned to the General Fund and \$1,421,782.48 will be returned to the Ports and Harbors Proprietary Fund.

LEGAL: None

STAFF RECOMMENDATION: Staff recommends approval.

PROPOSED MOTION: I move to introduce Ordinance 2022-01 and schedule it for public hearing and second reading on January 25, 2022.

CITY MANAGER COMMENTS: I support Staff's recommendation.

MEMORANDUM TO COUNCIL

To: Mayor and City Council Members
From: Marjie Veeder, City Clerk
Through: Erin Reinders, City Manager
Date: January 25, 2022
Re: Funding Request for Memorial to Fishermen of Unalaska

SUMMARY: Mr. Karel Machalek has proposed a memorial to the fishermen of Unalaska, in the form of a life-size public art piece which he has designed and will construct. Mr. Machalek is requesting city-owned land on which to place the memorial as well as a financial contribution from the City of Unalaska.

PREVIOUS COUNCIL ACTION: Council has taken no action on this request. On September 14, 2021, Council heard a presentation from Mr. Machalek about the proposed memorial. Mr. Machalek also left a model of the memorial at City Hall for several months for perusal by Council and the public.

DISCUSSION: Mr. Machalek provided an updated brochure about the project as well as a report on the status of the memorial, copies of which are included with this memo. Mr. Machalek is available this evening to respond to Council questions.

Council may consider inquiring about the following questions:

- Itemization of total cost of the memorial (\$500,000).
- What funding amounts have been committed by other contributors?
- Installation: Is the assistance of the City to install the memorial anticipated? What ground work and preparation will be needed?
- Electrical: Will lighting be installed to illuminate the memorial, or to power the lights built into the memorial?
- Maintenance: The documents provided indicate maintenance will include hosing and brushing of the memorial. Is the assumption that the City will provide this maintenance if placed on city property? What about repairs due to vandalism?
- Ownership/Insurance: Will the City of Unalaska own the memorial if placed on City land? Should it be insured?
- Who will be trustee of the trust account for the memorial?

ALTERNATIVES: Council must decide whether to support the memorial, both in providing a location on city-owned property and/or any financial support. Consideration must be given to the fiscal year to include any funding, as well as what sort of ongoing support might be needed and provided. Council might consider matching other financial contributions to the project up to a certain level. Finally, The Rusting Man Foundation is reportedly a 501(c)(3) nonprofit organization, so funding under the Community Support Grant program may be a desirable alternative.

If Council decides to proceed, a written agreement with the artist should be considered.

FINANCIAL IMPLICATIONS: The proposal indicates a full cost of \$500,000, which has increased \$50,000 since September 2021, along with a request to the City for \$350,000 (70% of the total).

Council’s remaining budget for the present fiscal year is itemized as follows:

ORG	OBJ	DESCRIPTION	BUDGETED	YTD EXPENDED ENCUMBERED	AVAILABLE	% USED
01020152	53260	Training Services	\$ 6,000	\$ 1,200	\$ 4,800	20.00
01020152	53300	Other Professional Svs	\$ 150,000	\$ 147,000	\$ 3,000	98.00
01020152	55310	Telephone / Fax/ TV	\$ 2,400	\$ 1,537	\$ 863	64.02
01020152	55902	Printing and Binding	\$ 1,300	\$ 1,214	\$ 87	93.30
01020152	55903	Travel and Related Costs	\$ 87,200	\$ 21,531	\$ 65,669	24.69
01020152	55906	Membership Dues	\$ 10,750	\$ 10,103	\$ 647	94.00
01020152	55999	Other	\$ 2,250	\$ 297	\$ 1,953	13.20
01020152	56100	General Supplies	\$ 70,048	\$ 41,183	\$ 28,865	58.79
01020152	56120	Office Supplies	\$ 500	\$ -	\$ 500	0.00
01020152	56310	Food/Bev/Related for Programs	\$ 500	\$ -	\$ 500	0.00
01020152	56320	Business Meals	\$ 19,000	\$ -	\$ 19,000	0.00
01020152	56330	Food/Bev/Related Emp Apprctn	\$ 1,000	\$ 172	\$ 828	17.20
01020152	56400	Books and Periodicals	\$ 500	\$ -	\$ 500	0.00
01020152	58498	Council Sponsorships Contngncy	\$ 20,000	\$ 6,550	\$ 13,450	32.75
01020152	58499	Council Sponsorships - Planned	\$ 50,500	\$ 17,084	\$ 33,416	33.80
			\$ 421,948	\$ 247,871	\$ 174,077	59%

LEGAL: Not needed at this point, but the city attorney’s review of any proposed agreement will be in order.

STAFF RECOMMENDATION: Staff makes no recommendation.

PROPOSED MOTION: None. We look for direction from Council on how they wish to proceed.

CITY MANAGER COMMENTS: Ultimately, it is Council’s decision to grant this request or not. This memo outlines several other questions that also need to be addressed and should be formalized in an agreement that is approved by Council.

ATTACHMENTS: Mr. Machalek’s report on the progress of the project and funding request, along with a brochure about the memorial.

Karel Machalek
P.O. Box 920605
Dutch Harbor, AK 99692
907-581-4107 / 907-359-7785

January 19, 2022

Mayor and City Council
City of Unalaska
54 Raven Way
Unalaska, AK 99685

RE: Memorial to the Fishermen of Unalaska - Art Installation Proposal

Dear Mr. Mayor and City Council Members:

As a follow-up to our last discussion regarding the life-sized Memorial to the Fishermen of Unalaska that I'm proposing to construct, I want to update you on progress to date.

Tax-Exempt Status

The Rusting Man Foundation was formed and incorporated as a 501(C)3 non-profit organization on October 14, 2021 with ID# 10177784. Contributions are tax-deductible.

Fund Raising

Funds are being raised from a wide variety of organizations, businesses, and individuals to help reach the \$500,000 goal (all-inclusive of materials, labor, shipping, and installation). To date, the following entities have expressed strong support and financial commitment in various amounts:

- Unalaska Fisherman's Association (UNFA)
- UniSea
- Westward Seafoods
- Alyeska Seafoods
- Trident Seafoods
- B & N Fisheries
- Off Shore Systems, Inc (OSI)
- BKR Construction
- Ounalashka Corporation (OC)
- Aleutian Chiropractic
- Rasmusen Foundation
- Lynden Transport
- Original Productions / Deadliest Catch

Key Bank is the agent who will hold funds for this project in a Trust Account. All monies donated will be held in trust for the sole purpose of seeing this project to completion. The assigned Trustee will ensure transparency by providing quarterly Trust Account Statements.

Land Designation Request

As a tangible and permanent way to commemorate the lives of so many fishermen no longer with us and to honor their contribution to our community, I am proposing to construct a life-sized memorial to be erected on public property in Unalaska. Would the City be willing to designate a 50' x 50' area at Carl E. Moses Boat Harbor for this purpose?

Financial Support Request

Your support for this project will demonstrate the City of Unalaska's recognition of fishermen's key role in building and sustaining our community. Would the City be willing to contribute \$350,000?

Thank you for considering this request to place the memorial on city property and the request for a financial contribution in the form of a match to other contributions to make this Memorial to the Fishermen of Unalaska become a reality

Regards,



Karel Machalek

PROPOSAL by Karel Machalek

Fishermen Memorial

for the Port of Dutch Harbor

*To honor the Bering Sea
fishermen lost to the sea*





This is a proposal to construct a life-sized Fishermen Memorial to be erected within the City of Unalaska. This piece will honor the lives lost harvesting the bounty of the Bering Sea.

Gone but never forgotten, our fishermen live on in legends as well as in the hearts and minds of family and friends still among us. Unlike many fishing communities, Unalaska does not have a memorial to our fishermen. This memorial will provide a tangible and permanent way to commemorate the lives of so many fishermen no longer with us and honor their contributions to our community.



A LIFE-SIZED INSTALLATION

The exterior piece represents a long-liner fisherman, a crab fisherman, and a cod fisherman. The base will be 5' high, octagon shaped, constructed of a stainless steel frame adorned with stainless steel sea life figures. The three fishermen will be cast in bronze. The deck will be made of cedar planks simulating the slightly tilted deck of a ship. The detailed cabling, nets, gaff hook, crab pot, and clothing lend authenticity to the piece. The mast will have lights and an antenna to complete the feel of a ship at work.

LOCATION

The proposed location is yet to be determined but some have suggested Memorial Park or Carl E. Moses Boat Harbor would provide an appropriate setting.



Prototype of proposed Fishermen Memorial

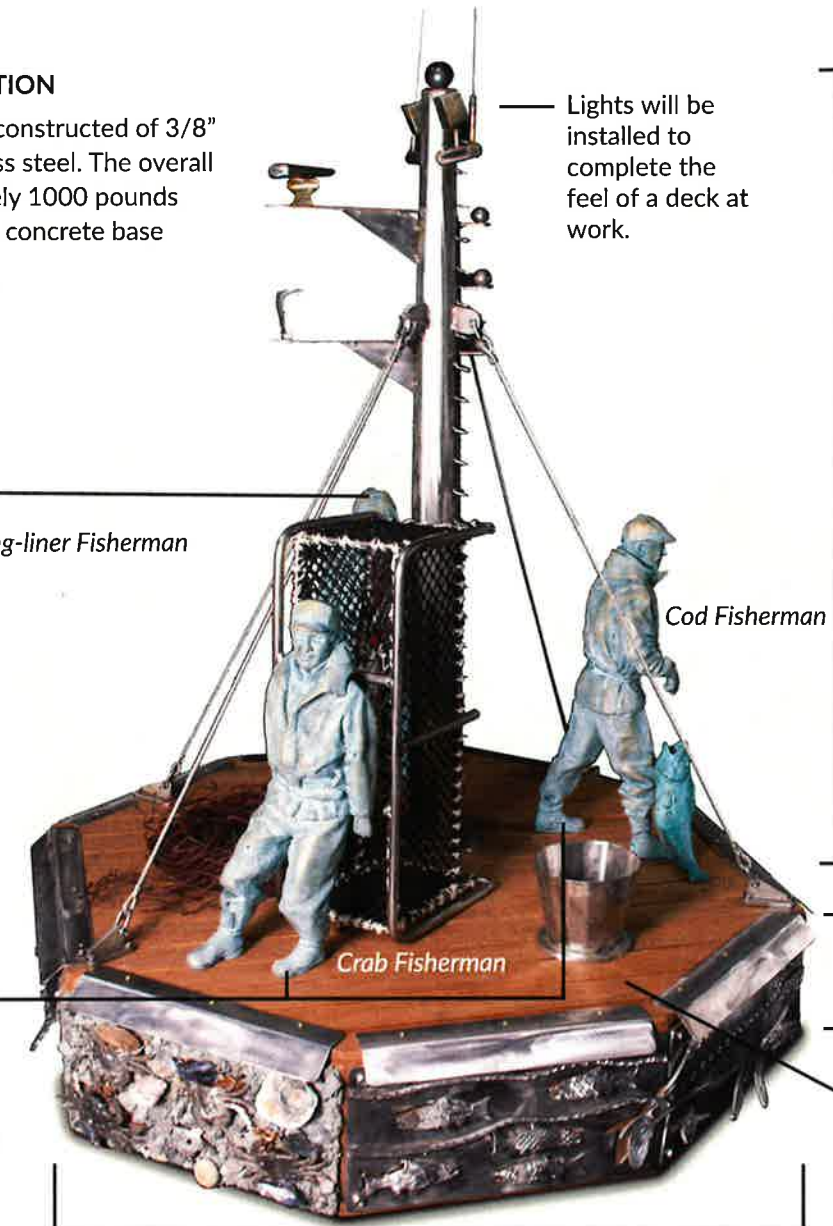
This is a miniature sized model as an example.

METHODS OF INSTALLATION

This exterior piece will be constructed of 3/8" mild steel and 1/8" stainless steel. The overall weight will be approximately 1000 pounds and securely anchored in a concrete base flush to the ground.



Long-liner Fisherman



Lights will be installed to complete the feel of a deck at work.

HEIGHT
25 feet high

BASE
5 feet high

DECK
The deck will be made of Apitong planks simulating the slightly tilted deck of a ship.

BRONZE CAST
The three fishermen will be cast in bronze. Typically bronze oxidizes only superficially; once a copper oxide layer is formed, the underlying metal is protected from further corrosion.

WIDTH 20 feet diameter



BASE
The octagon shaped base will be constructed of concrete, and wrapped with stainless steel sea life figures.

CARE & MAINTENANCE

No maintenance is required. The mild steel will naturally oxidize to maintain its brownish hue while the stainless steel requires no maintenance and will retain its light colored appearance. Should storm events cause debris to remain on the installation, simple hosing with water or lightly brushing will easily restore the piece.



MATERIALS AND TRADES

This life-sized installation will require a variety of materials and talent to construct. Mold making, bronze casting, stainless steel fabrication, wood working, and site work are all specialty fields. This is truly a collaborative effort. Detailed work takes hours and hours to accurately coordinate the precise scale of each component to blend seamlessly into a single piece of artwork. We anticipate some trades people's time will be provided as in-kind donations while most other time will be a project expense.

Materials will be carefully selected and procured on island to the largest extent possible.

Welding and fabrication will take place in Unalaska.

Wood will be hand selected for optimum grain and durability.

Stainless steel sea creatures will appear to be swimming around the memorial and visible on all sides.

The fishermen will be cast in bronze off-island and shipped to Unalaska.

While the bronze is being cast, work on the mast, lights, cabling, crab pot, and finishes will be performed. After the above mentioned work is complete, site work will take place followed by installation of the memorial.



FUNDRAISING

BUSINESSES: Efforts have already begun to contact local businesses and organizations to garner financial support. Trade unions, fish processors, industry support businesses and fishing fleets are on the contact list.

INDIVIDUALS: Participation by residents and non-residents is being sought out.

TRUST ACCOUNT: Key Bank is the agent holding funds for this project. All monies donated will be held in trust for the sole purpose of seeing this project to completion.

TIME LINE



MEMORIAL: Names of vessels/lives lost will be displayed on the memorial using plaques and other creative ways.

DONORS: Names will be displayed on the memorial. Contact us for more information on how to contribute.



Karel Machalek was born and raised in former Czechoslovakia (now the Czech Republic), where he learned to weld and built his expertise working as a tradesman. In 1979, Karel immigrated to the United States, initially landing in Los Angeles, CA. Karel found his way to Unalaska, AK in 1985, where he took a welding position with Magone Marine, Inc. until establishing his own welding company, Alpha Welding, Inc., in 1990.

Karel's lifelong interest in shape and form have led him to experiment with a variety of artistic projects and collaborations throughout the years. His body of work is diverse, spanning from a series of mixed-media art pieces with local Unalaska artist Mike Rasmussen in 1993, to the composition of four music albums released between 2009-2015. As a welder, his natural interest and talent with metal work eventually led to a year-long metal art exhibition at the Museum of the Aleutians in 2005.

Karel Machalek currently spends his days at his metal art studio in Unalaska, AK, dreaming up new creations and means of highlighting the intrigue and wonder in the world around him.



Karel and his brother Petr erected a large 7,500 lb "Cube Meteor" installation in front of the Norwegian Rat Saloon in 2015. This location also displayed three of Karel's metal sculptures inside the building from 2016-2019.

In 2018 Karel installed a 6' metal sculpture entitled "Starving Halibut" in the lobby of the Grand Aleutian Hotel.



In 2013 Karel Machalek was commissioned to create 16 sculptural covers for bollards (vertical pipe embedded in the ground to protect electrical transformers) at the Carl E. Moses Boat Harbor. Like much of Karel's work, these bollard covers merge form with function, paying homage to the primary industry that supports Dutch Harbor by depicting some of the iconic sea life familiar to all who call the island home.



karelmachalekart.com

To donate, or be a part of this project, please contact:

Marie Machalek: 907.359.5049
 Karel Machalek: 907.359.7785
 Landline: 907.581.4107

mariemach2005@gmail.com



Unalaska Captains Bay Road Paving and Utility Extension Review Draft Cost-Benefit Analysis

City of Unalaska

January 19, 2022

Prepared by:
HDR
2525 C Street, Suite 500
Anchorage, Alaska 99503

Executive Summary

Unalaska, Alaska, the home of Dutch Harbor, holds state, national, and international economic importance as the largest fishing port in the United States by volume caught. Much of the seafood arriving in Unalaska is transported along Captains Bay Road, a 2.6-mile-long, heavily trafficked industrial gravel road. Captains Bay Road experiences 1,000 vehicles per day on average, 75 percent of which are semi-trucks and other industrial vehicles. During peak seafood seasons, industrial traffic on Captains Bay Road operates throughout the day, supporting the seafood industry's 24-hour-per-day, 7-day-per-week operations.

Captains Bay Road is narrow and unpaved, with limited shoulders, adjacent vertical rock cliffs with occasional rockfall, no lighting, and no pedestrian safety considerations. Its poor surface conditions, combined with several sharp curves as it follows the coastline, limit speeds to 30 miles per hour (mph). Heavy industrial traffic creates ruts and potholes in the road, significantly slowing traffic. In winter, the road is slippery due to wet-ice conditions. These road conditions are dangerous, leading to frequent accidents and trucks and vehicles sliding off the road. The road is also dusty on dry, windy days. The City of Unalaska (City) grades the road twice per week to control rutting and potholes. The rough condition of the road, and the maintenance necessary to fix it, slows industrial traffic, adding to operational costs of the City and industrial users. The rough road condition causes high vehicle maintenance costs due to excessive wear and tear. The lack of pedestrian safety considerations is also a concern expressed by many in the community.

City of Unalaska/Port of Dutch Harbor:

Unalaska is the anchor for commercial fishing activity in the Bering Sea and the Aleutian Islands. According to National Oceanic and Atmospheric Administration's report *Fisheries of the United States 2019*¹, Unalaska's Port of Dutch Harbor led the nation with the greatest quantity of fish landed, a distinction held for more than 23 years; during those same years, the port was rated either first or second in value of the catch. During 2019, commercial fisherman delivered 763 million pounds of seafood at the port, valued at \$190 million dollars, ranking the Port of Dutch Harbor second in the nation for value of the catch. Approximately 400 vessels fish the Aleutian Islands and Bering Sea for various ground fish, halibut, salmon, herring, and crab species. The fleet utilizes approximately 12,000 feet of city dock space, with an additional 10,000 feet of commercial dock space available within the community.

City utilities do not extend beyond Westward Seafoods, requiring commercial operations beyond that point to provide their own power, water, and sewer utilities. Given the need to improve the roadway's functionality and safety as well as to provide improved access to City-owned utilities, the City is advancing a long-contemplated project to design and construct a project that will improve Captains Bay Road and extend utilities.

The City contracted HDR Engineering, Inc. (HDR) to conduct a Cost-Benefit Analysis (CBA) of the roadway and utility improvements to Captains Bay Road based on 65% Design and Cost Estimates prepared by HDL Engineering Consultants, LLC (HDL)². HDL's design includes

¹ National Marine Fisheries Service, *Fisheries of the United States 2019*, <https://media.fisheries.noaa.gov/2021-05/FUS2019-FINAL-webready-2.3.pdf?null=>

² HDL Engineering Consultants, LLC, *Captains Bay Road Paving and Utility Extension – 65% Review Submittal*, November 2020.

roadway realignment; water, sewer, and electrical utility extensions; separated pedestrian facilities; and curbs, gutters, and storm drains. It also addresses rock fall issues in the Dead Man's Curve area. A CBA prepared for this full buildout project resulted in a benefit-cost ratio (BCR) of less than one, indicating that the benefits do not exceed costs over the life of the project. Projects with positive BCRs compete better for U.S. Department of Transportation (USDOT) Discretionary Grant Funds.

Recognizing the highly competitive nature of state and federal capital funding programs and within the context of achieving a positive BCR, the City contracted with HDR to use the HDL report and cost estimates prepared for the 65% roadway and utilities design³ to evaluate reduced scope scenarios for road and utility improvements that optimize benefits compared to costs. The goal is to provide the City with optional project scenarios to pursue USDOT Discretionary Grant Funds that can be allocated directly to the City. To this end, HDR developed six road project scenarios and evaluated CBAs, ranging from HDL's full build out to a minimal roadway improvement project with no utilities. HDR conducted the CBAs in conformance with federal guidance regarding evaluation methods and monetization values recommended by the USDOT in its *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*⁴.

Table ES-1 summarizes the six project scenarios that were evaluated through the CBA. Separated pedestrian pathways and drainage improvements are common to all project scenarios. To maximize flexibility, each project scenario consists of three segments for scoping and evaluation purposes. Segment A represents Captains Bay Road from its intersection with Airport Road to Westward Seafoods. Segment B extends from Westward Seafoods to North Pacific Fuel. Segment C Extends from North Pacific Seafoods to the end of the route at Offshore Systems Inc. All project costs represent 2020 dollars.

The period of analysis used in the estimation of benefits and costs corresponds to 33 years, including 3 years of design, engineering, and construction as well as 30 full years of operation. As multiple scenarios were considered for the analysis, the total costs range from \$13.0 million to \$40.5 million in capital expenditures, in 2020 dollars. The capital expenditures considered in the analysis are presented in Table ES-2, by year and scenario. Table ES-3 and Table ES-4 highlight the total undiscounted and discounted benefits by scenario, respectively.

³ HDL Engineering Consultants, LLC, *Captains Bay Road Paving and Utility Extension – 65% Review Submittal*, November 2020.

⁴ USDOT, *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, February 2021, <https://www.transportation.gov/office-policy/transportation-policy/benefit-cost-analysis-guidance-discretionary-grant-programs-0>



Table ES-1: Captains Bay Road Paving and Utility Extension Project Scenarios, 2020 Dollars

Scenario	Scope: Assuming 3-year Construction Program	Segment A Costs	Segment B Costs	Segment C Costs	Total
1. Base Case HDL Full Design	Realignment, utilities extension, separated pedestrian facilities, roadway lighting, Dead Man's Curve rock cut, design speed 45 mph	\$20.2 M	\$15.7 M	\$4.6 M	\$40.5 M
2. HDL Baseline with Reduced Utilities	Same as Scenario 1, except no sewer to Segments B and C and no water to Segment C	\$19.9 M	\$14.4 M	\$3.7 M	\$38.0 M
3. Existing Alignment with Reduced Utilities	Maintains current alignment and 30 mph design speed; same utility reductions as in Scenario 2; no rock cuts; separated pathway and roadway lighting included	\$11.0 M	\$8.0 M	\$2.2M	\$21.2 M
4. Existing Alignment with Slope Work	Similar to Scenario 3, with the addition of selective bluff sloping between Dead Man's Curve and Pyramid Creek	\$11.0 M	\$11.0 M	\$2.2 M	\$24.2 M
5. Combination of Scenarios 2 and 3	Segment A, Scenario 3; Segments B and C, Scenario 2	\$11.0 M	\$14.4 M	\$3.7 M	\$29.1 M
6. Roadway Paving and Selective Slope Work	Scenario 4, with all utility improvements eliminated; pedestrian pathway and storm drains included	\$6.9 M	\$4.7 M	\$1.4 M	\$13.0 M

Note: M = million

Table ES-2: Summary of Capital Expenditures, 2020 Dollars

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
2023	\$20.2 M	\$19.9 M	\$11.0 M	\$11.0 M	\$11.0 M	\$6.9 M
2024	\$15.7 M	\$14.4 M	\$8.0 M	\$11.1 M	\$14.4 M	\$4.7 M
2025	\$4.6 M	\$3.7 M	\$2.2 M	\$2.2 M	\$3.7 M	\$1.4 M
Total^a	\$40.5 M	\$38.0 M	\$21.2 M	\$24.3 M	\$29.1 M	\$13.0 M

^a Due to rounding, some totals may not correspond with the sum of the separate figures.

Table ES-3: Summary Benefits (Undiscounted), 2020 Dollars

Benefit Category	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Reduced Road Maintenance Costs	\$6.9 M	\$6.9 M	\$6.9 M	\$6.9 M	\$6.9 M	\$6.9 M
Reduced Vehicle Maintenance Costs	\$16.1 M	\$16.1 M	\$16.1 M	\$16.1 M	\$16.1 M	\$16.1 M
Improved Safety	\$7.6 M	\$7.6 M	\$7.6 M	\$7.6 M	\$7.6 M	\$7.6 M
Travel Time Savings	\$26.9 M	\$26.9 M	\$19.1 M	\$19.1 M	\$19.1 M	\$19.1 M
Reduced GHG Emissions	\$0.1 M	\$0.1 M	\$0.1 M	\$0.1 M	\$0.1 M	\$0.1 M
Reduced CAC Emissions	\$0.1 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M
Residual Value of Assets	-	-	-	-	-	-
Reduced Utility Maintenance Costs	\$2.3 M	\$2.3 M	\$2.3 M	\$2.3 M	\$2.3 M	-
Avoided Water Leakage	\$4.8 M	\$4.8 M	\$4.8 M	\$4.8 M	\$4.8 M	-
Total Benefits^a	\$64.8 M	\$64.8 M	\$57.0 M	\$57.0 M	\$57.0 M	\$49.9 M

Notes: CAC = critical air contaminants; GHG = greenhouse gas

^a Due to rounding, some totals may not correspond with the sum of the separate figures.



Table ES-4: Summary Benefits (Discounted), 2020 Dollars

Benefit Category	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Reduced Road Maintenance Costs	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M
Reduced Vehicle Maintenance Costs	\$6.1 M	\$6.1 M	\$6.1 M	\$6.1 M	\$6.1 M	\$6.1 M
Improved Safety	\$2.8 M	\$2.8 M	\$2.8 M	\$2.8 M	\$2.8 M	\$2.8 M
Travel Time Savings	\$10.1 M	\$10.1 M	\$7.2 M	\$7.2 M	\$7.2 M	\$7.2 M
Reduced GHG Emissions	\$0.1 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M
Reduced CAC Emissions	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M
Residual Value of Assets	-	-	-	-	-	-
Reduced Utility Maintenance Costs	\$0.9 M	\$0.9 M	\$0.9 M	\$0.9 M	\$0.9 M	-
Avoided Water Leakage	\$1.7 M	\$1.7 M	\$1.7 M	\$1.7 M	\$1.7 M	-
Total Benefits^a	\$24.4 M	\$24.4 M	\$21.4 M	\$21.4 M	\$21.4 M	\$18.8 M

^a Due to rounding, some totals may not correspond with the sum of the separate figures.

Based on the CBA conducted (see Table ES-5), the project is expected to generate discount benefits ranging from \$18.8 million to \$24.4 million, based on a 3 percent real discount rate for carbon dioxide-related impacts and a 7 percent real discount rate for all other impacts per the USDOT CBA guidance⁵. The analysis indicates that the discounted net present value is expected to range from -\$14.5 million to \$6.3 million and the BCR is expected to range from 0.6 to 1.5. Additional detailed breakdowns of the analysis, including the various assumptions and methodologies, are presented in the body of this document. This document also describes various qualitative benefits that are not monetized in the CBA. These unquantified benefits are relevant when considering the merits of the various proposed project improvements.

Table ES-5: Overall Results of the Cost-Benefit Analysis (Discounted), 2020 Dollars

Evaluation Metrics	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Total Benefits	\$24.4 M	\$24.4 M	\$21.4 M	\$21.4 M	\$21.4 M	\$18.8 M
Total Costs	\$38.9 M	\$36.6 M	\$20.4 M	\$23.2 M	\$27.6 M	\$12.5 M
Net Present Value	-\$14.5 M	-\$12.2 M	\$1.0 M	-\$1.8 M	-\$6.2 M	\$6.3 M
Return on Investment	-37%	-33%	5%	-8%	-22%	50%
Benefit-Cost Ratio	0.6	0.7	1.1	0.9	0.8	1.5
Payback Period (years)	N/A	N/A	28.8	N/A	N/A	15.1
Internal Rate of Return	3.1%	3.6%	7.5%	6.3%	4.7%	11.4%

Note: N/A = not applicable

⁵ USDOT, *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, February 2021, <https://www.transportation.gov/office-policy/transportation-policy/benefit-cost-analysis-guidance-discretionary-grant-programs-0>



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Appendices

Appendix A: Emission Factors



Acronyms

AADT	average annual daily traffic
AML	Alaska Marine Lines
BCR	benefit-cost ratio
CAC	critical air contaminants
CBA	Cost-Benefit Analysis
City	City of Unalaska
CMF	crash modification factor
CO ₂	carbon dioxide
DOT&PF	Alaska Department of Transportation and Public Facilities
FY	fiscal year
GHG	greenhouse gas
HDL	HDL Engineering Consultants, LLC
HDR	HDR Engineering, Inc.
ILJA	Infrastructure Investment and Jobs Act
INFRA	Infrastructure for Rebuilding America
mph	mile per hour
NHS	National Highway System
NOFO	Notice of Funding Opportunity
NO _x	nitrogen oxide
NPV	net present value
OSI	Offshore Systems, Inc.
PDO	property damage only
PM	particulate matter
project	Captains Bay Road Paving and Utility Extension Project
PROTECT	Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation
RAISE	Rebuilding American Infrastructure with Sustainability and Equity
ROI	Return on Investment
SO ₂	sulfur dioxide
STIP	Statewide Transportation Improvement Program
TIFIA	Transportation Infrastructure Finance and Innovation Act
USDOT	U.S. Department of Transportation
VOC	volatile organic compounds
WST	water storage tank



Glossary of Economic Terms

Term	Definition
Benefit-Cost Ratio (BCR)	Reflects the lifecycle benefits relative to the lifecycle costs of a project. A project with a BCR greater than 1 has a positive economic value.
Discount Rate	The rate at which future benefits and costs are discounted.
Discounting	Adjusting for the time value of money. The principle is that benefits and costs that occur sooner in time are more highly valued than those that occur in the distant future. Moreover, it considers the costs associated with diverting the resources needed for an investment from other productive uses in the future.
Lifecycle Benefits	The sum of the present value of benefits for the project.
Lifecycle Costs	Present value of all net project costs, including initial and subsequent costs in real constant dollars.
Net Present Value (NPV)	The difference between the lifecycle benefits and the lifecycle costs. The value of benefits exceeds the value of costs for a project with a positive net present value.
Payback Period	The number of years it takes for the net benefits (lifecycle benefits minus lifecycle costs) to equal the initial construction costs. For a project with a payback period longer than the lifecycle of the project, initial construction costs are not recovered. The payback period varies inversely with the BCR. A shorter payback period yields a higher BCR.
Rate of Return on Investment (ROI)	The discount rate at which benefits and costs are equal. For a project with a rate of return greater than the discount rate, the benefits are greater than the costs, and the project has positive economic value. The user can use rate of return to compare projects with different costs and different benefit flows over different time periods.

1 Introduction

Unalaska, Alaska, the home of Dutch Harbor, is the largest fishing port in the nation by volume caught, and the 2.6-mile-long, gravel Captains Bay Road is a vital transportation link in Unalaska's economy (Figure 1 and Figure 2). Captains Bay Road needs improvements to address its potholed and rutted gravel surface, hazardous driving conditions, pedestrian safety issues, and limited utilities. The City of Unalaska (City) is advancing a long-contemplated project to design and construct a project to pave and improve Captains Bay Road and extend utilities along it. The City contracted HDR Engineering, Inc. (HDR) to conduct a Cost-Benefit Analysis (CBA) of the Captains Bay Road Paving and Utility Extension Project (project) for use in discretionary competitive grant funding programs. This document provides detailed technical information on the economic analyses conducted. The remainder of the document is presented as follows:

- **Section 2 – Methodological Framework:** Introduces the conceptual framework used in the CBA.
- **Section 3 – Project Overview:** Provides an overview of the project, including a brief description of existing conditions and proposed alternatives; a summary of cost estimates and schedule; and a description of the types of effects that the project is expected to generate.
- **Section 4 – General Assumptions:** Discusses the general assumptions used in the estimation of project costs and benefits.
- **Section 5 – Demand Projections:** Provides estimates of travel demand and traffic volumes.
- **Section 6 – Benefits Measurement, Data, and Assumptions:** Details the specific data elements and assumptions used to address the goals of the project.
- **Section 7 – Summary of Findings and Cost-Benefit Analysis Outcomes:** Provides estimates of the net present value (NPV), its benefit-cost ratio (BCR), and other evaluation metrics.
- **Section 8 – Cost-Benefit Analysis Sensitivity:** Provides the outcome of the sensitivity analysis that evaluates the different assumptions made in the analysis, and the impact that the variability of those assumptions may have on the overall results.
- **Section 9 – Project Funding:** Identifies several potential project funding sources, including U.S. Department of Transportation (USDOT) Discretionary Grant Programs, Denali Commission funds, Alaska Department of Transportation and Public Facilities (DOT&PF) Federal Program funding, State General Funds, and Local Improvement District funds.



Figure 1: Vicinity Map Showing Unalaska's Location Relative to the Rest of Alaska

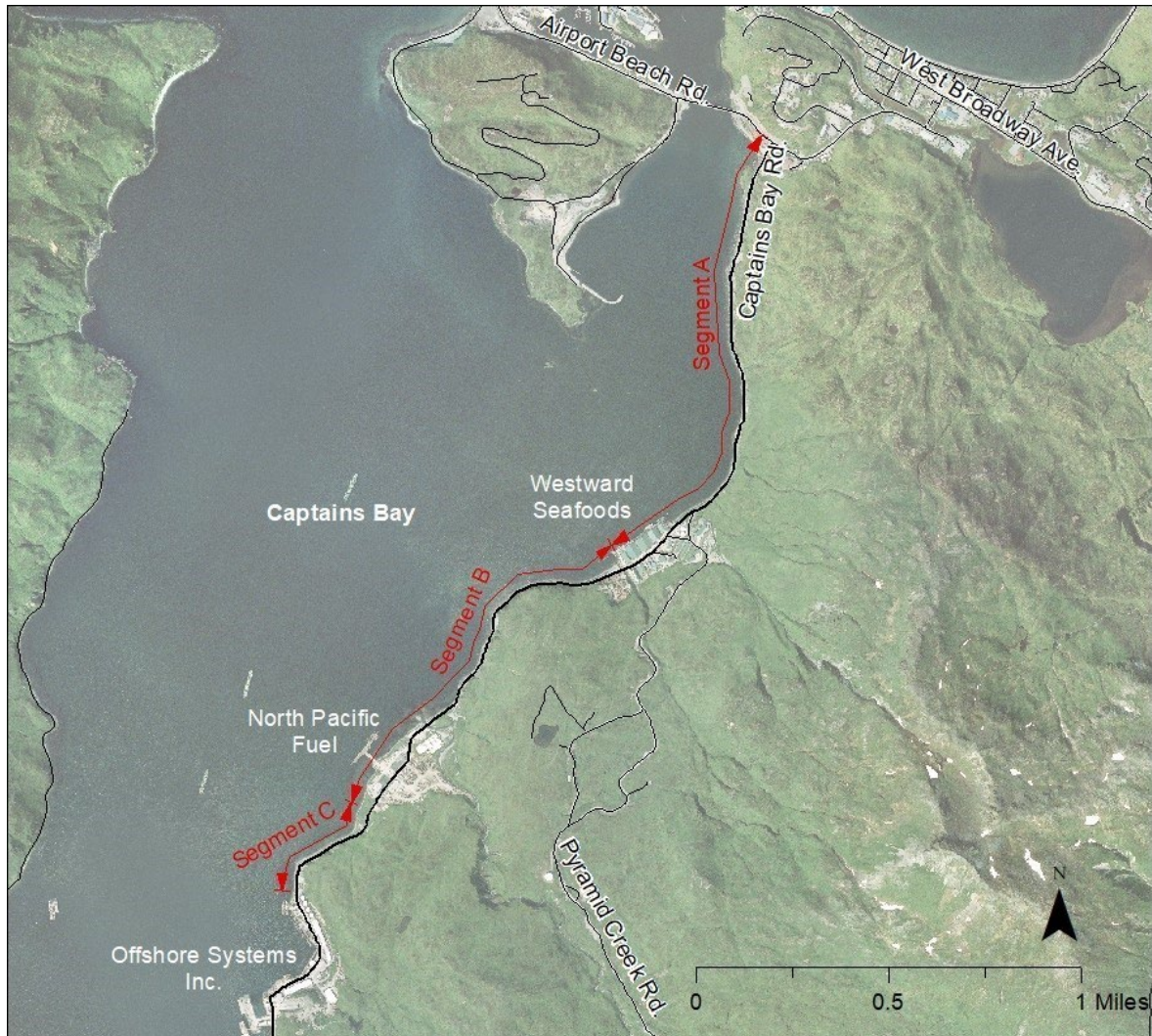


Figure 2: Project Location and Segments

2 Methodological Framework

The CBA conducted for this project includes monetized benefits and costs measured using USDOT guidance⁶, as well as the quantitative and qualitative merits of the project. A CBA provides estimates of the benefits that are expected to accrue over a specified period and compares them to the anticipated costs. Costs include both the resources required to develop the project and the costs of maintaining the new or improved facility over time. Estimated benefits are based on the projected impacts of the project on both users and non-users of the facility, valued in monetary terms.

While CBA is just one of many tools that can be used in making decisions about infrastructure investments, USDOT believes that CBA provides a useful benchmark from which to evaluate and compare potential transportation investments.

The specific methodology employed for this application was developed using USDOT's CBA guidance⁷, which involves:

- Establishing existing and future conditions under the no-build and various build scenarios;
- Using USDOT guidance for the valuation of safety benefits and reductions in air emissions, while relying on industry best practices for the valuation of other effects;
- Discounting future benefits and costs with the real discount rates recommended by USDOT; and
- Conducting a sensitivity analysis to assess the impacts of changes in key assumptions.

Key to the development of this CBA and its alternative scenarios, revised estimates, and identification and confirmation of project benefits was robust stakeholder outreach to City public works, public safety, and finance staff as well as the many commercial users of Captains Bay Road who transport their product and supplies along this important route. Stakeholder outreach included in-person and telephone interviews. HDL Engineering Consultants, LLC (HDL), the City's design engineering firm, provided significant insight to the project needs and costs through their 65% design efforts⁸ to improve Captains Bay Road. HDL estimates were used to cost out the various scope reductions of the alternative scenarios. The HDR team found that all persons contacted recognized the importance of improving Captains Bay Road and willingly provided the requested information in a timely and complete manner. This cooperation facilitated the development of this CBA and is greatly appreciated.

⁶ USDOT, *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, February 2021, <https://www.transportation.gov/office-policy/transportation-policy/benefit-cost-analysis-guidance-discretionary-grant-programs-0>

⁷ USDOT, *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, February 2021, <https://www.transportation.gov/office-policy/transportation-policy/benefit-cost-analysis-guidance-discretionary-grant-programs-0>

⁸ HDL Engineering Consultants, LLC, *Captains Bay Road Paving and Utility Extension – 65% Review Submittal*, November 2020.

3 Project Overview

3.1 Project Background

Captains Bay Road is located on the southwestern side of Unalaska Island, across Captains Bay from the Carl E. Moses Boat Harbor and accessed by Airport Beach Road. Much of the seafood arriving in Unalaska is transported along Captains Bay Road, which is a 2.6-mile-long, heavily trafficked, industrial gravel road. Industries along the road include seafood processors Westward Seafoods and Trident Seafoods in addition to other marine-related industries, including North Pacific Fuel, Alaska Chadux Corporation, Offshore Systems, Inc. (OSI), and Alaska Marine Lines (AML). Trucking companies such as Matson, CMA-CGM, AML, and Pacific Stevedoring use Captains Bay Road to transport processed seafood to other docks, vessels, and cold storage facilities for shipping internationally. One private residence is located on the road in addition to the bunkhouses at Westward Seafoods, Trident Seafoods, and other businesses. Traffic on Captains Bay Road is predominantly industrial, with an average annual daily traffic (AADT) of 976 vehicles per day⁹. During peak seafood seasons, industrial traffic on Captains Bay Road operates day and night to offload processed seafood in 40-foot containers, return empty containers, and supply the industries and vessels.

Between Airport Beach Road and OSI, Captains Bay Road is unpaved with limited shoulders. Roughly 75 percent of the vehicle traffic consists of semi-trucks and other industrial traffic, whose heavy use combined with poor surface conditions create ruts and potholes in the road, significantly slowing traffic. While the speed limit is 30 miles per hour (mph), driving the design speed only occurs after the City has graded the road, which occurs roughly twice per week to control potholes and rutting. The trucking companies indicate that their drivers require twice the time to complete a round trip from their Captains Bay Road facilities to the container docks for transshipment to Lower 48 and international destinations due to unpaved roadway conditions. In winter, the road's condition is compounded due to ice and snow build up. These road conditions are hazardous and lead to frequent accidents, including semi-trucks, pickups, and personnel vehicles sliding off the road. The road is also dusty on dry, windy days. The rough condition of the road, and the maintenance necessary to fix it, slows industrial traffic, adding to operational costs of industrial users. Rock fall may close one or both lanes of the roadway, affecting traffic until road crews can clear the debris. Rock fall is also a hazard to vehicles and pedestrians when they occur.

Additionally, trucking companies indicate that the rough road conditions contribute to higher-than-normal wear on their vehicles, requiring more frequent maintenance, repair, and replacement. There is a high volume of pedestrian traffic due to seafood processing workers and other employees walking in the roadway, often in less than ideal and low-visibility conditions.

⁹ HDL, *Captains Bay Road Paving and Utility Extension Project – Preliminary Roadway Design*, September 7, 2018.

The lack of pedestrian facilities causes vehicle/pedestrian conflicts, resulting in safety issues and requiring lower speeds, especially at night.

3.2 No-Build Scenario

The no-build scenario for the project defines the case in which the project does not proceed and conditions remain as they are today. Specifically, Captains Bay Road remains a gravel road that requires grading two times per week. As the majority of the traffic on Captains Bay Road consists of semi-trucks and other industrial traffic, the roadway is expected to continue to have ruts and potholes, limiting the speed at which vehicles can travel. The poor road conditions not only affect the speed at which vehicles can travel, but also results in vehicles requiring more frequent maintenance due to excessive wear and tear (see Figure 3).



Figure 3: Pacific Stevedoring Truck with Chassis Failure due to Excessive Wear from Poor Conditions along Captains Bay Road, Fall 2021 (photo courtesy of Darin Nicholson)

3.3 Build Scenario

The proposed improvements to Captains Bay Road include paving two 13-foot-wide travel lanes, each with a 2-foot shoulder. A separated pedestrian pathway and street lighting would extend along the road from Airport Beach Road to OSI. The rock bluffs between Deadman's Curve and North Pacific Fuel would be laid back to provide a wider road prism and reduce the likelihood of rockfall affecting traffic or causing injuries.

The 2.6 miles of Captains Bay Road between Airport Beach Road and OSI was broken into three segments for the purpose of this CBA (see Figure 2):

- **Segment A:** Airport Beach Road to Westward Seafoods (1.3 miles);
- **Segment B:** Westward Seafoods to North Pacific Fuel (1 mile); and
- **Segment C:** North Pacific Fuel to OSI (0.3 mile).

In 2020, HDL prepared a preliminary design and associated cost estimate for each segment's roadway and utility improvements¹⁰. Cost estimates prepared by HDL were used for the purposes of this CBA without checking or validation. The projected cost of \$40.5 million, in 2020 dollars (assuming a 3-year construction project), for all project improvements raised concerns about the feasibility of funding the entire project in a timely manner. The City requested project scope reductions be considered as a part of the CBA. Discussions were held with City and HDR staff regarding potential scope reductions and associated cost impacts. The following modifications were identified through this process:

1. Eliminating the extension of sanitary sewer service in Segments B and C;
2. Eliminating the extension of water service in Segment C;
3. Retaining the existing road alignment and the current design speed of 30 mph, and eliminating all laying back of the rock bluffs;
4. Retaining the separated pathway in Segment A, but transitioning to a wider shoulder with rumble strips to accommodate pedestrians in Segments B and C;
5. Retaining the existing road alignment in combination with selective bluff sloping between Deadman's Curve and Pyramid Creek Bridge in Segment B; and
6. Combinations of the various project modifications.

3.4 Project Costs and Schedule

3.4.1 Background

The Scenario 1 (Base Case) design reflects the preliminary cost estimates associated with HDL's 65% Captains Bay Road Paving and Utility Extension design drawings¹¹. The Scenario 1 (Base Case) served as the benchmark, with alternative scenarios created by modifying or removing features as requested by the City to facilitate a range of CBA.

The six scenarios, summarized in Table 1, were derived in consultation with City staff and stakeholders, with each being evaluated within the context of the CBA.

¹⁰ HDL Engineering Consultants, LLC, *Captains Bay Road Paving and Utility Extension – 65% Review Submittal*, November 2020.

¹¹ HDL Engineering Consultants, LLC, *Captains Bay Road Paving and Utility Extension – 65% Review Submittal*, November 2020.



Table 1: Captains Bay Road Paving and Utility Extension Project Scenarios, 2020 Dollars

Scenario	Scope: Assuming 3-year Construction Program	Segment A Costs	Segment B Costs	Segment C Costs	Total
1. Base Case HDL Full Design	Realignment, utilities extension, separated pedestrian facilities, roadway lighting, Dead Man’s Curve rock cut, design speed 40 mph	\$20.2 M	\$15.7 M	\$4.6 M	\$40.5 M
2. HDL Baseline with Reduced Utilities	Same as Scenario 1, except no sewer to Segments B and C and no water to Segment C	\$19.9 M	\$14.4 M	\$3.7 M	\$38.0 M
3. Existing Alignment with Reduced Utilities	Maintains current alignment and 30 mph design speed; same utility reductions as in Scenario 2; no rock cuts; separated pathway and roadway lighting included	\$11.0 M	\$8.0 M	\$2.2M	\$21.2 M
4. Existing Alignment with Slope Work	Similar to Scenario 3, with the addition of selective bluff sloping between Dead Man’s Curve and Pyramid Creek	\$11.0 M	\$11.0 M	\$2.2 M	\$24.2 M
5. Combination of Scenarios 2 and 3	Segment A, Scenario 3; Segments B and C, Scenario 2	\$11.0 M	\$14.4 M	\$3.7 M	\$29.1 M
6. Roadway Paving and Selective Slope Work	Scenario 4, with all utility improvements eliminated; pedestrian pathway and storm drains included	\$6.9 M	\$4.7 M	\$1.4 M	\$13.0 M

Note: M = million

Evaluating the costs on a segment basis allows for the combination of different project components for each segment. For example, Scenario 4 represents minimal improvements of Scenario 3 for Segment A and could be combined with the Scenario 2 design conditions for Segments B and C. This combination would retain the current alignment of Captains Bay Road in Segment A and use the proposed realignment in Segments B and C, which, in combination with cutting the bluff back, would address the tighter curves on the road.

Phasing the Captains Bay Road improvements by segments also improves the constructability options while controlling traffic impacts. Interviews with industries on Captains Bay Road identified a 5 to 6-week low-activity window between peak fishing and processing Seasons A (January to mid-April) and B (June to September). Street lighting, the pedestrian pathway, and other work outside of the travel lanes could be accomplished during Season B with minimal impacts to traffic.

For Segments B and C, replacing the separated pedestrian path with a wider shoulder and rumble strips was also evaluated. The wider shoulder eliminates the curb and gutter requirements, but widening the roadway requires a thicker structural section than the path to accommodate vehicular traffic. The cost savings projected due to this design modification is around \$354,000 for Segment B and \$71,000 for Segment C. The cost savings would be applicable to each of the project scenarios.

3.4.2 Cost-Benefit Analysis Approach

The previous section provides details on the development of the project costs. Scenario 1’s cost estimate of \$40.5 million reflects the full design with all of the desired project elements included. However, preliminary CBAs indicated that Scenario 1 would not produce a desirable CBR, and



the City directed the development of Scenarios 2 through 6, eliminating some of the Scenario 1 project elements, in order to lower the project costs and still provide desirable benefits. Additional alternative combinations could be considered for any future analyses of the project.

Table 2 provides the possible annual expenditures for the project by scenario for CBA evaluation purposes. These are construction costs and exclude right-of-way acquisition and permitting costs.

Table 2: Possible Expenditure Profile, 2020 Dollars

Year	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
2023	\$20.2 M	\$19.9 M	\$11.0 M	\$11.0 M	\$11.0 M	\$6.9 M
2024	\$15.7 M	\$14.4 M	\$8.0 M	\$11.1 M	\$14.4 M	\$4.7 M
2025	\$4.6 M	\$3.7 M	\$2.2 M	\$2.2 M	\$3.7 M	\$1.4 M
Total^a	\$40.5 M	\$38.0 M	\$21.2 M	\$24.2 M	\$29.0 M	\$13.0 M

^a Due to rounding, some totals may not correspond with the sum of the separate figures.

4 General Assumptions

The CBA measures benefits against costs throughout a period of analysis, beginning at the start of construction and including 30 full years of operations.

The monetized benefits and costs are estimated in 2020 dollars, with future impacts discounted in compliance with USDOT guidance¹².

The methodology makes several important assumptions and seeks to avoid overestimation of benefits and underestimation of costs. Specifically:

- Cost estimates for the reduced scope scenarios were based on the elemental estimates contained within HDL's 65% design¹³. For example, estimates for reduced-scope scenarios resulted from removing utility costs for certain segments from the full build out design.
- Input prices are expressed in 2020 dollars.
- The period of analysis begins in 2023 and ends in 2055. It includes project development and construction years (2023–2025) and 30 full years of operations (2026–2055).
- A constant 3 percent real discount rate for carbon dioxide (CO₂)-related benefits and 7 percent real discount rate for all other benefits are assumed throughout the period of analysis per USDOT guidance¹⁴.
- Roadway and equipment maintenance and operation costs were provided by the City.
- Commercial vehicle maintenance and operational costs were provided by commercial operators.

¹² USDOT, *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, February 2021, <https://www.transportation.gov/office-policy/transportation-policy/benefit-cost-analysis-guidance-discretionary-grant-programs-0>

¹³ HDL Engineering Consultants, LLC, *Captains Bay Road Paving and Utility Extension – 65% Review Submittal*, November 2020.

¹⁴ USDOT, *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, February 2021, <https://www.transportation.gov/office-policy/transportation-policy/benefit-cost-analysis-guidance-discretionary-grant-programs-0>



5 Demand Projections

Accurate demand projections are important to ensure reasonable CBA results. The magnitude of the long-term transportation benefits accruing over the project study period are a function of vehicle demand over Captains Bay Road by vehicle type.

5.1 Methodology

Estimates of existing and future daily vehicle volume over Captains Bay Road were obtained from HDL’s 2018 technical memorandum¹⁵, provided by the City, and were subsequently confirmed with the City. Specifically, this data was used to estimate annual volumes through the study period (2023–2055). Additionally, the vehicle volumes are disaggregated by segment, based on interviews with businesses along Captains Bay Road; and by vehicle type, estimated from historical percentage shares of truck and passenger vehicles.

5.2 Assumptions

Table 3 provides all assumptions used in the estimation of demand inputs for the project.

Table 3: Assumptions Used in the Estimation of Demand

Variable	Units	Value	Source
AADT – 2017	vehicles/day	976	HDL, 2018, <i>Technical Memorandum 2 – Captains Bay Road Paving and Utility Extension Project – Preliminary Roadway Design</i>
AADT – 2044	vehicles/day	1,117	
Growth of AADT	percentage	0.5%	
Percentage of Trucks	percentage	78.0%	Traffic counts from DOT&PF, July 2016
Percentage of Autos	percentage	22.0%	
Share of Volume by Segment			
Segment A (Fraction of Total)	percentage	100.0%	Interviews with business owners on Captains Bay Road
Segment B (Fraction of Total)	percentage	95.5%	
Segment C (Fraction of Total)	percentage	61.9%	

5.3 Demand Projections

The resulting projections for the vehicle volumes by segment are presented in Table 4.

Table 4: Demand Projections

Category	Units	2026	2035	2045	2055
Segment A	vehicles/year	372,629	389,773	409,748	430,746
Segment B	vehicles/year	355,987	372,365	391,448	411,508
Segment C	vehicles/year	230,681	241,294	253,659	266,659

¹⁵ HDL Engineering Consultants LLC. *Technical Memorandum 2 – Captains Bay Road Paving and Utility Extension Project – Preliminary Roadway Design*. Prepared for City of Unalaska. September 7, 2018.



6 Benefits Measurement, Data, and Assumptions

This section describes the measurement approach used for each benefit or impact category. It also provides an overview of the associated methodology, assumptions, and estimates.

6.1 Roadway Improvement Benefits

6.1.1 Reduced Road Maintenance Costs

The City currently incurs significant costs to maintain Captains Bay Road. Specifically, the road is graded two times per week, given its rough condition. Additionally, the City resurfaces the road once or twice per year to replace the gravel either removed from grading operations or shifted into the ditches. The City also performs dust control during dry conditions. All these costs can be eliminated once the road is paved, resulting in reduced road maintenance costs.

6.1.1.1 METHODOLOGY

Annual road maintenance costs between 2016 and 2019 for Captains Bay Road and Ballyhoo Road is shown in Table 5. These annual costs were provided by the City and inflated to 2020 dollars. Costs for Ballyhoo Road were selected as a proxy for the maintenance costs for a paved road under the build scenario, given that Ballyhoo Road experiences similar industrial traffic, is approximately the same length, and is paved.

Table 5: Historical Total Annual Maintenance Costs for Captain Bay Road and Ballyhoo Road

Year	Ballyhoo Road	Captains Bay Road
2016	\$68,265	\$394,269
2017	\$99,642	\$281,257
2018	\$132,176	\$423,566
2019	\$55,778	\$115,101

Road maintenance costs on a per mile basis under the no-build and build scenarios, multiplied by the road length under each segment, represent the total annual maintenance costs. The difference in total maintenance costs between the no-build and build scenarios determines the reduced road maintenance costs.

6.1.1.2 ASSUMPTIONS

The assumptions used in the estimation of reduced road maintenance costs, based on the annual road maintenance costs shown in Table 5, are summarized in Table 6. The annual costs were used to derive a roadway maintenance cost per mile estimate.



Table 6: Assumptions used in the Estimation of Reduced Road Maintenance Costs 2020 Dollars

Variable	Units	Value	Source
Length of Segment A	miles	1.3	HDR Phasing Analysis
Length of Segment B	miles	0.9	
Length of Segment C	miles	0.3	
Existing Roadway Maintenance Cost	2020\$/mile	\$119,038	Based on 2016 to 2021 fiscal year costs for Captains Bay Road; data from the City; inflated to 2020 dollars
Estimated Roadway Maintenance Cost After Paving	2020\$/mile	\$32,828	Based on 2016 to 2021 fiscal year costs for Ballyhoo Road; data from the City; inflated to 2020 dollars

6.1.2 Reduced Vehicle Maintenance Cost

Trucks travelling on Captains Bay Road incur significant vehicle maintenance costs. Dust from the gravel road requires frequent changes to truck air filters and leaf springs. This combined with the rough road conditions cause significant wear and tear to trucks’ parts. Local businesses incur high maintenance costs to keep vehicles functioning. These costs can be mitigated substantially with paving.

6.1.2.1 METHODOLOGY

Vehicle maintenance cost savings as a result of paving Captains Bay Road were obtained based on discussions with local businesses, as show in Table 7 below. Total vehicle maintenance cost savings were distributed to each segment based on the respective percent share of traffic volumes.

Table 7: Vehicle Maintenance Cost Savings, 2020 Dollars

Business	Units	Savings	Assumptions
Pacific Stevedoring	\$/year	\$50,000	Pacific Stevedoring has 4 wing trucks and 3 semi-trucks, with approximately \$7,000 savings per vehicle per year
Chadux	\$/year	\$10,000	Chadux estimated \$10,000 in vehicle savings due to paving
Matson	\$/year	\$176,000	Matson has 22 trucks, with an annual savings of \$8,000 per vehicle
APL	\$/year	\$120,000	APL has 15 trucks, with an annual savings of \$8,000 per vehicle
AML	\$/year	\$160,000	Assuming 20 trucks, with an annual savings of \$8,000 per vehicle
Total	\$/year	\$516,000	

6.1.2.2 ASSUMPTIONS

The assumptions used in the estimation of reduced vehicle maintenance costs are summarized in Table 8.

Table 8: Assumptions Used in the Estimation of Reduced Vehicle Maintenance Costs

Variable	Units	Value	Source
Annual Commercial Vehicle Maintenance Cost Savings	2020\$/year	\$516,000	Based on information obtained from interviews with the various businesses along Captains Bay Road (see Table 7); data includes the average savings and the number of trucks



6.1.3 Improved Roadway Safety

Accident costs and impacts on life, limb, and property are a significant component of road user costs. Road safety is a key economic factor in the planning of roads, as well as an important indicator of transportation efficiency. While outside of the economic context, highway safety is often the subject of public concern.

Frequent accidents are observed on Captains Bay Road due to rough road condition. Less tire traction with the reduced gravel on the road over time has caused semi-truck rollovers and vehicles driving off the road. The project proposes to change the road surface from gravel to asphalt, which will improve the road condition for drivers, reducing vehicle accidents on Captains Bay Road.

6.1.3.1 METHODOLOGY

Safety benefits were estimated by monetizing the avoided fatalities, injuries, and property damage only (PDO) incidents from the improved road conditions due to paving Captains Bay Road. Total fatalities, injuries, and PDOs occurring on Captains Bay Road from 2004 through 2021 were obtained from the City to calculate average accidents per year, as shown in Table 9. It was assumed accidents will grow at the same rate as the traffic on Captains Bay Road. Accidents were allocated to each segment proportionally based on the volume of traffic travelling on each segment of the road.

Table 9: Historical Fatalities, Injuries, and PDOs on Captains Bay Road

Year	Overall			Relevant		
	Fatalities	Injuries	PDO Accidents	Fatalities	Injuries	PDO Accidents
2004	-	-	2	-	-	1
2005	-	1	4	-	-	3
2006	-	-	7	-	-	4
2007	-	3	6	-	1	2
2008	-	4	4	-	-	4
2009	-	1	5	-	1	4
2010	-	2	2	-	1	1
2011	-	1	2	-	-	-
2012	-	-	3	-	-	1
2013	-	-	5	-	-	3
2014	-	-	5	-	-	-
2015	-	-	4	-	-	2
2016	-	-	2	-	-	-
2017	-	-	6	-	-	2
2018	-	-	3	-	-	-
2019	-	-	4	-	-	1
2020	-	-	1	-	-	-
2021	-	1	3	-	-	2
Total	-	13	68	-	3	30

Paving Captains Bay Road will improve the road condition for drivers and reduce accidents occurring on the road. As such, a crash modification factor (CMF) has been applied to calculate accidents under the build scenario. In particular, the analysis used the CMF for changing



roadway surface of a rural roadway from gravel or dirt to asphalt (CMF ID: 2978), obtained from CMF Clearinghouse¹⁶. The reduction of accidents was estimated based on the CMF function:

$$CMF = e^{0.1123 - 0.0003V}$$

Where *V* reflects the average daily traffic volumes.

In order to estimate the reduced accident costs associated with paving the road, accidents under the no-build and build scenarios were monetized based on the statistical value of life and other accident costs per the USDOT guidance¹⁷. The difference in total accident costs between the no-build and build scenarios determined the improved safety and reduced accident costs.

6.1.3.2 ASSUMPTIONS

The assumptions used in the estimation of improved roadway safety are summarized in Table 10.

Table 10: Assumptions Used in the Estimation of Improved Roadway Safety

Variable	Units	Value	Source
Value of a Statistical Life	2020\$/fatality	\$11,739,869	USDOT, <i>Benefit-Cost Analysis Guidance for Discretionary Grant Programs</i> , Table A-1, "Value of Reduced Fatalities and Injuries" (February 2021); inflated to 2020 dollars using the GDP Deflator
Cost of Injury	2020\$/injury	\$199,983	USDOT, <i>Benefit-Cost Analysis Guidance for Discretionary Grant Programs</i> , Table A-1, "Value of Reduced Fatalities and Injuries" (February 2021); inflated to 2020 dollars using the GDP Deflator
Cost of PDO	2020\$/PDO accident	\$4,554	USDOT, <i>Benefit-Cost Analysis Guidance for Discretionary Grant Programs</i> , Table A-2, "Property Damage Only (PDO) Crashes" (February 2021); inflated to 2020 dollars using the GDP Deflator
Accident Rate Adjustment	factor	10	Assumed measurement error based on City's estimate that 9 of 10 accidents are unreported based on stakeholder interviews
Segment A Accidents			
Fatality	fatalities/year	0.00	Based on data obtained from the City and adjusted for the accident types that could be impacted by the project, the accident rate adjustments, and the percentage volumes on Segment A
Injury	injuries/year	0.69	
PDO	PDOs/year	6.85	
Segment B Accidents			
Fatality	fatalities/year	0.00	Based on data obtained from the City and adjusted for the accident types that could be impacted by the project, the accident rate adjustments, and the percentage volumes on Segment B
Injury	injuries/year	0.65	
PDO	PDOs/year	6.55	
Segment C Accidents			
Fatality	fatalities/year	0.00	Based on data obtained from the City and adjusted for the accident types that could be impacted by the project, the accident rate adjustments, and the percentage volumes on Segment C
Injury	injuries/year	0.42	
PDO	PDOs/year	4.24	

Note: GDP = Gross Domestic Product

¹⁶ <http://www.cmfclearinghouse.org/>

¹⁷ USDOT, *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, February 2021, <https://www.transportation.gov/office-policy/transportation-policy/benefit-cost-analysis-guidance-discretionary-grant-programs-0>



6.1.4 Travel Time Savings

The current speed limit for the unpaved Captains Bay Road is 30 mph. However, given the rough road conditions, drivers are unable to drive at the designed speed limit, and sometimes driving speed drops to as low as 10 mph prior to grading. Paving Captains Bay Road will improve road conditions and allow drivers to travel at the speed limit.

6.1.4.1 METHODOLOGY

Total vehicle miles travelled under each segment were divided by the respective driving speed under no-build and build scenarios to estimate total vehicle travel time. Vehicle travel time was then multiplied by the average vehicle occupancy rate to estimate person-hours of travel time, which was monetized based on the value of time assumptions summarized in Table 11 in the following section. The difference in total travel time savings between the no-build and build scenarios determines the total travel time savings.

6.1.4.2 ASSUMPTIONS

The assumptions used in the estimation of travel time savings are summarized in Table 11.

Table 11: Assumptions used in the Estimation of Travel Time Savings

Variable	Units	Value	Source
Speed – Unpaved	miles/hour	19	Assumed 3 of 7 days at 10 mph, 2 of 7 days at 20 mph, and 2 of 7 days at 30 mph
Speed – Paved (Scenarios 1 and 2)	miles/hour	40	HDL 2018, <i>Technical Memorandum 2 – Captains Bay Road Paving and Utility Extension Project –Preliminary Roadway Design</i>
Speed – Paved (Other Scenarios)	miles/hour	30	
Vehicle Occupancy – Trucks	persons/vehicle	1.00	USDOT, <i>Benefit-Cost Analysis Guidance for Discretionary Grant Programs</i> , Section 4.1, "Value of Travel Time Savings" (February 2021)
Vehicle Occupancy – Automobiles	persons/vehicle	1.67	USDOT, <i>Benefit-Cost Analysis Guidance for Discretionary Grant Programs</i> , Table A-4, "Average Vehicle Occupancy Rates for Highway Passenger Vehicles" (February 2021)
Value of Travel Time Savings – Trucks	2020\$/hour	\$31.17	USDOT, <i>Benefit-Cost Analysis Guidance for Discretionary Grant Programs</i> , Table A-3, "Value of Travel Time Savings" (February 2021); inflated to 2020 dollars using the GDP Deflator
Value of Travel Time Savings – Automobiles	2020\$/hour	\$18.12	USDOT, <i>Benefit-Cost Analysis Guidance for Discretionary Grant Programs</i> , Table A-3, "Value of Travel Time Savings" (February 2021); inflated to 2020 dollars using the GDP Deflator

6.1.5 Reduced Emissions

Environmental costs are increasingly considered an important component in the evaluation of transportation projects. The primary environmental impact of vehicle use is exhaust emissions, which impose wide-ranging social costs on people, materials, and vegetation. The negative effects of pollution depend not only on the quantity of pollution produced, but also on the types of pollutants emitted as well as the local environmental conditions into which the pollution is being released.



The improved road conditions allow drivers to travel under a higher speed limit, which will reduce associated greenhouse gas (GHG) and critical air contaminant (CAC) emissions.

6.1.5.1 METHODOLOGY

Vehicle miles travelled under each segment were multiplied by the appropriate emission factors under the no-build and build scenarios to estimate total emissions released for nitrogen oxides (NO_x), particulate matter (PM), sulfur dioxide (SO₂), CO₂ and volatile organic compounds (VOC) per year. Each pollutant, measured in tons, was then multiplied by its monetary value (Table 12) to get the total emission costs. The change in total emission costs between no-build and build scenarios indicates the total reduced emission costs as a result of the project.

Table 12: Assumptions Used in the Estimation of Reduced Emissions – Emission Values

Social Cost of Emissions (2020\$/metric ton)						
Year	CO ₂	NO _x	PM	SO ₂	VOC	Source/Comment
2021	\$52.63	\$16,092	\$751,250	\$41,798	\$0	CO ₂ values are based on the <i>Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866</i> (August 2016) https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf .
2022	\$53.64	\$16,294	\$764,610	\$42,608	\$0	
2023	\$54.65	\$16,598	\$778,272	\$43,518	\$0	
2024	\$55.66	\$16,800	\$792,138	\$44,429	\$0	
2025	\$56.68	\$17,003	\$806,205	\$45,441	\$0	
2026	\$57.69	\$17,205	\$817,237	\$46,049	\$0	
2027	\$58.70	\$17,509	\$828,470	\$46,757	\$0	
2028	\$59.71	\$17,711	\$839,805	\$47,466	\$0	
2029	\$60.72	\$17,913	\$851,343	\$48,174	\$0	
2030	\$61.74	\$18,217	\$862,982	\$48,781	\$0	
2031	\$62.75	\$18,217	\$862,982	\$48,781	\$0	Values are inflated from 2007 dollars to 2020 dollars using the GDP Deflator. Per USDOT's <i>Benefit Cost Analysis Guidance for Discretionary Grant Programs</i> (February 2021), CO ₂ emissions values will be discounted using a 3% discount rate, while all other benefit streams will be discounted by 7%.
2032	\$63.76	\$18,217	\$862,982	\$48,781	\$0	
2033	\$64.77	\$18,217	\$862,982	\$48,781	\$0	
2034	\$66.80	\$18,217	\$862,982	\$48,781	\$0	
2035	\$67.81	\$18,217	\$862,982	\$48,781	\$0	
2036	\$68.82	\$18,217	\$862,982	\$48,781	\$0	
2037	\$69.83	\$18,217	\$862,982	\$48,781	\$0	
2038	\$70.84	\$18,217	\$862,982	\$48,781	\$0	
2039	\$71.86	\$18,217	\$862,982	\$48,781	\$0	
2040	\$72.87	\$18,217	\$862,982	\$48,781	\$0	
2041	\$73.88	\$18,217	\$862,982	\$48,781	\$0	Other values are from the <i>Safer Affordable Fuel-Efficient Vehicles Rule for MY2021–MY2026 Passenger Cars and Light Trucks Preliminary Regulatory Impact Analysis</i> (March 2020), https://nhtsa.gov/sites/nhtsa.dot.gov/files/documents/final_safe_fria_web_version_200701.pdf . Values are inflated from 2016 dollars to 2020 dollars using the GDP Deflator.
2042	\$75.90	\$18,217	\$862,982	\$48,781	\$0	
2043	\$76.92	\$18,217	\$862,982	\$48,781	\$0	
2044	\$77.93	\$18,217	\$862,982	\$48,781	\$0	
2045	\$78.94	\$18,217	\$862,982	\$48,781	\$0	
2046	\$79.95	\$18,217	\$862,982	\$48,781	\$0	
2047	\$80.96	\$18,217	\$862,982	\$48,781	\$0	
2048	\$81.98	\$18,217	\$862,982	\$48,781	\$0	
2049	\$84.00	\$18,217	\$862,982	\$48,781	\$0	
2050+	\$85.01	\$18,217	\$862,982	\$48,781	\$0	

6.1.5.2 ASSUMPTIONS

The assumptions used in the estimation the reduced emissions are summarized in Appendix A.



6.1.6 Residual Value of Assets

6.1.6.1 METHODOLOGY

The residual value of capital assets is calculated in line with USDOT guidance¹⁸, based on an estimated useful life of 30 years for the new roadway structures.

6.1.6.2 ASSUMPTIONS

The assumptions used in the estimation of the residual value are summarized in Table 13.

Table 13: Assumptions Used in the Estimation of Residual Value of Assets

Variable	Units	Value	Source
Useful Life of Road	years	30	City of Unalaska

6.1.7 Roadway Improvement Benefits Not Monetized

The project provides additional benefits that have not been monetized for inclusion in the CBA. While not monetized, consideration of these benefits is appropriate when assessing the worthiness of investments in transportation projects. As stated in the USDOT guidance¹⁹, “when an applicant is unable to either quantify or monetize such benefits, the project sponsor should discuss them qualitatively, taking care to describe how the project is expected to lead to those outcomes.” A summary of the project benefits that have not been monetized is provided below.

6.1.7.1 REDUCED WATER TURBIDITY

Currently, Captains Bay Road is unpaved, with a gravel surface. As shown in Figure 4, gravel and sediment runoff into adjacent water bodies is inevitable, which increases water turbidity and could impact aquatic habitat, including that of salmonids. Paving the road will reduce water turbidity from runoff and consequently improve aquatic habitat.

¹⁸ USDOT, *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, February 2021, <https://www.transportation.gov/office-policy/transportation-policy/benefit-cost-analysis-guidance-discretionary-grant-programs-0>

¹⁹ USDOT, *Benefit-Cost Analysis Guidance for Discretionary Grant Programs*, February 2021, <https://www.transportation.gov/office-policy/transportation-policy/benefit-cost-analysis-guidance-discretionary-grant-programs-0>



Figure 4: Turbidity in Captains Bay along Segment B Caused by Sediment in Runoff from Captains Bay Road

6.1.7.2 TRAVEL TIME SAVINGS FROM AVOIDED ROAD GRADING

Currently, grading occurs twice per week on Captains Bay Road to address potholes and smooth the road, during which time vehicles must follow behind graders at a much lower speed and consequently incur longer travel times. Paving the road will eliminate the grading work, except for snow removal activities, which will result in vehicle travel time savings. However, given the uncertainty around the specific time of day the grading occurs and corresponding traffic volumes would be impacted, the travel time savings from avoided road grading is captured as a qualitative benefit.

6.1.7.3 IMPROVED PEDESTRIAN SAFETY

Currently, there is no pedestrian pathway along Captains Bay Road and the edge of the road is often muddy or has deep snow, causing pedestrians and bicyclists to travel in the roadway instead (see Figure 5). An increased potential of pedestrian/bicyclist-vehicle collisions occur when pedestrians or bicyclists travel down the road to avoid snow and mud on the shoulders. The project will foster pedestrian and bicyclist safety by extending a separated pedestrian pathway and street lighting along the road from Airport Beach Road to OSI. One alternative under consideration includes a separated pedestrian pathway from Airport Beach Road through Segment A to Westward Seafoods, then transitioning to a wider paved shoulder with rumble strips to provide a pedestrian-friendly space in Segments B and C.



Figure 5: Bicyclists Traveling along Captains Bay Road

6.1.7.4 AVOIDED LANE CLOSURE AND INJURIES FROM ROCKFALL

Rockfalls have been observed once or twice per year along Captains Bay Road, which could cause a few hours of lane closure until the road is cleared. Rockfalls also pose significant safety concerns to vehicles, pedestrians, and bicyclists travelling on the road. Certain project scenarios would lay back the rock bluffs between Deadman’s Curve and North Pacific Fuel to provide a wider road prism and reduce the likelihood of rockfall affecting traffic or causing injuries.

6.1.8 Benefit Estimates

Table 14 and Table 15 provide the monetized benefit estimates of the Roadway Improvement Benefits by scenario. The estimated present value of discounted benefits over the projected 30-year benefit period ranges from \$18.8 to \$21.8 million.

Table 14: Estimates of Roadway Improvement Benefits (Undiscounted), 2020 dollars

Benefit Category	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Reduced Road Maintenance Costs	\$6.9 M	\$6.9 M	\$6.9 M	\$6.9 M	\$6.9 M	\$6.9 M
Reduced Vehicle Maintenance Costs	\$16.1 M	\$16.1 M	\$16.1 M	\$16.1 M	\$16.1 M	\$16.1 M
Improved Safety	\$7.6 M	\$7.6 M	\$7.6 M	\$7.6 M	\$7.6 M	\$7.6 M
Travel Time Savings	\$26.9 M	\$26.9 M	\$19.1 M	\$19.1 M	\$19.1 M	\$19.1 M
Reduced GHG Emissions	\$0.1 M	\$0.1 M	\$0.1 M	\$0.1 M	\$0.1 M	\$0.1 M
Reduced CAC Emissions	\$0.1 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M
Residual Value of Assets	-	-	-	-	-	-
Total Benefits^a	\$57.7 M	\$57.7 M	\$49.9 M	\$49.9 M	\$49.9 M	\$49.9 M

^a Due to rounding, some totals may not correspond with the sum of the separate figures.



Table 15: Estimates of Roadway Improvement Benefits (Discounted), 2020 dollars

Benefit Category	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Reduced Road Maintenance Costs	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M
Reduced Vehicle Maintenance Costs	\$6.1 M	\$6.1 M	\$6.1 M	\$6.1 M	\$6.1 M	\$6.1 M
Improved Safety	\$2.8 M	\$2.8 M	\$2.8 M	\$2.8 M	\$2.8 M	\$2.8 M
Travel Time Savings	\$10.1 M	\$10.1 M	\$7.2 M	\$7.2 M	\$7.2 M	\$7.2 M
Reduced GHG Emissions	\$0.1 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M
Reduced CAC Emissions	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M
Residual Value of Assets	-	-	-	-	-	-
Total Benefits	\$21.8 M	\$21.8 M	\$18.8 M	\$18.8 M	\$18.8 M	\$18.8 M

^a Due to rounding, some totals may not correspond with the sum of the separate figures.

6.2 Utility Upgrade Benefits

In terms of utility improvements, the project primarily involves extension of a City water main along Segment B of Captains Bay Road from Westward Seafoods to North Pacific Fuel. The project would also extend City electricity in conduits that would be buried in the road; however, the major facilities along Captains Bay Road already generate their own power and are not interested in purchasing electricity from the City at this time.

6.2.1 Avoided Water Leakage

The buildings in the North Pacific Fuel area are currently connected to the City’s water system through a World War II-era wood stave pipe that branches off the major transmission main along Pyramid Creek Road. This 80-year-old wood stave pipe leaks approximately 50 million gallons of water per year into the ground based on a 2018 analysis by water system operators of water meter readings. Extending a new water main along Captains Bay Road from Westward Seafoods to North Pacific Fuel would eliminate the need for the existing wood stave pipe and would eliminate the associated water leakage and costs.

6.2.1.1 METHODOLOGY

The annual water leakage multiplied by the price of water represents the cost of water leakage. Such cost can be fully eliminated once a new water pipeline is extended along Segment B of Captains Bay Road from Westward Seafoods to North Pacific Fuel. The value of water leaked in 2020 was approximately \$122,000.

6.2.1.2 ASSUMPTIONS

The assumptions used in the estimation of avoided water leakage are summarized in Table 16.

Table 16: Assumptions used in the Estimation of Avoided Water Leakage

Variable	Units	Value	Source
Leakage per Day (2018)	gallons/day	130,000	HDR, 2018, <i>City of Unalaska Water System Master Plan</i> , prepared for the City
Annual Increase in Leakage	percentage	1.2%	
Price of Water	2020\$/thousand gallons	\$2.51	Communication with the City’s Water Division (Jeremiah Kirchofer), January 5, 2022



6.2.2 Reduced Utility Maintenance Costs

The route of the wood stave water pipe to North Pacific Fuel and it tying into the large-diameter water transmission main along Pyramid Creek Road adds significant complexity to the operation and maintenance of the entire Unalaska water system.

6.2.2.1 METHODOLOGY

The approximate average number of hours per work day spent by water system operators dealing with the operation and maintenance issues related to the wood stave pipeline, times the average burdened hourly rate, times the number of work days per year results in the utility maintenance costs that could be avoided by extending a new water main along Segment B of Captains Bay Road from Westward Seafoods to North Pacific Fuel.

6.2.2.2 ASSUMPTIONS

The assumptions used in the estimation of avoided water leakage are summarized in Table 17.

Table 17: Assumptions used in the Estimation of Reduced Utility Maintenance Costs

Variable	Units	Value	Source
Savings per Year	2020\$/year	\$72,000	City of Unalaska

6.2.3 Other Qualitative Benefits

6.2.3.1 IMPROVED SYSTEM RELIABILITY

Certain local businesses (such as Westward Seafoods and OSI) along Captains Bay Road are currently self-sufficient, with their own electricity generation. The extended utility services along Captains Bay Road can act as a back-up if any business's private system goes out of service, at which time local businesses will be able to access the City's utility to avoid any service disruptions. As such, the extended utility ensures a robust and reliable system, with seamless utility services.

6.2.3.2 INCREASED WATER SUPPLY

The route of the wood stave water pipe to North Pacific Fuel, branching off the large-diameter water transmission main along Pyramid Creek Road, means the City must always keep the Pyramid 5-million-gallon water storage tank (WST) at least two-thirds full, or 3 million gallons, to comply with water disinfection regulations. This restriction limits the amount of water that can be supplied from the Pyramid water supply system. The project would replace the wood stave pipe and change how North Pacific Fuel is connected to the water system by extending a new water main along Segment B of Captains Bay Road from Westward Seafoods to North Pacific Fuel. Doing so would enable full functionality and increase the water supply capacity of the Pyramid water system. The additional water supply would allow the City to keep up with peak-season water demand and provides a buffer for water supply during emergencies or disaster events.

6.2.3.3 AVOIDED WATER TANK FAILURE

The Pyramid WST currently must always remain operational to provide water service to North Pacific Fuel. The Pyramid WST cannot be taken offline for maintenance without violating



drinking water regulations. The tank is currently in critical need of cleaning, inspection, and potentially maintenance. Not doing inspection and maintenance will eventually lead to tank failure. In the absence of the project, the City has contemplated constructing a second Pyramid WST and booster pump station to allow for routine inspection and maintenance of the existing Pyramid WST. Extending a new water main along Segment B of Captains Bay Road from Westward Seafoods to North Pacific Fuel would eliminate the need for the second WST and booster pump station, which would otherwise cost the City more than \$10 million dollars²⁰.

6.2.4 Benefit Estimates

Table 18 and Table 19 provide the monetized benefit estimates of the Utility Upgrade Benefits. The estimated present value of discounted benefits over the projected 30-year benefit period is \$2.6 million under Scenarios 1 through 5; and as anticipated, no Utility Upgrade Benefits occur under Scenario 6.

Table 18: Estimates of Utility Upgrade Benefits (Undiscounted), 2020 Dollars

Benefit Category	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Reduced Utility Maintenance Costs	\$2.3 M	\$2.3 M	\$2.3 M	\$2.3 M	\$2.3 M	-
Avoided Water Leakage	\$4.8 M	\$4.8 M	\$4.8 M	\$4.8 M	\$4.8 M	-
Total Benefits	\$7.1 M	\$7.1 M	\$7.1 M	\$7.1 M	\$7.1 M	-

^a Due to rounding, some totals may not correspond with the sum of the separate figures.

Table 19: Estimates of Utility Upgrade Benefits (Discounted), 2020 Dollars

Benefit Category	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Reduced Utility Maintenance Costs	\$0.9 M	\$0.9 M	\$0.9 M	\$0.9 M	\$0.9 M	-
Avoided Water Leakage	\$1.7 M	\$1.7 M	\$1.7 M	\$1.7 M	\$1.7 M	-
Total Benefits	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M	-

^a Due to rounding, some totals may not correspond with the sum of the separate figures.

²⁰ City of Unalaska, *Storage Tank 2 Preliminary Engineering Report*, June 2015. This report indicates \$9,825,000 capital cost for the second water tank and the booster station in 2015 dollars, which was inflated to 2020 dollars for this analysis.



7 Summary of Findings and Cost-Benefit Analysis Outcomes

Table 20 through Table 22 summarize the total benefits and CBA outcomes of the project under the various scenarios. Annual costs and benefits are estimated over the lifecycle of the project, consisting of 3 years of project development and construction to 2025 and 30 years of operation starting in 2026.

Table 20: Benefit Estimates by Category (Undiscounted), 2020 Dollars

Benefit Category	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Reduced Road Maintenance Costs	\$6.9 M	\$6.9 M	\$6.9 M	\$6.9 M	\$6.9 M	\$6.9 M
Reduced Vehicle Maintenance Costs	\$16.1 M	\$16.1 M	\$16.1 M	\$16.1 M	\$16.1 M	\$16.1 M
Improved Safety	\$7.6 M	\$7.6 M	\$7.6 M	\$7.6 M	\$7.6 M	\$7.6 M
Travel Time Savings	\$26.9 M	\$26.9 M	\$19.1 M	\$19.1 M	\$19.1 M	\$19.1 M
Reduced GHG Emissions	\$0.1 M	\$0.1 M	\$0.1 M	\$0.1 M	\$0.1 M	\$0.1 M
Reduced CAC Emissions	\$0.1 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M
Residual Value of Assets	-	-	-	-	-	-
Reduced Utility Maintenance Costs	\$2.3 M	\$2.3 M	\$2.3 M	\$2.3 M	\$2.3 M	-
Avoided Water Leakage	\$4.8 M	\$4.8 M	\$4.8 M	\$4.8 M	\$4.8 M	-
Total Benefits	\$64.8 M	\$64.8 M	\$57.0 M	\$57.0 M	\$57.0 M	\$49.9 M

^a Due to rounding, some totals may not correspond with the sum of the separate figures.

Table 21: Benefit Estimates by Category (Discounted), 2020 Dollars

Benefit Category	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Reduced Road Maintenance Costs	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M	\$2.6 M
Reduced Vehicle Maintenance Costs	\$6.1 M	\$6.1 M	\$6.1 M	\$6.1 M	\$6.1 M	\$6.1 M
Improved Safety	\$2.8 M	\$2.8 M	\$2.8 M	\$2.8 M	\$2.8 M	\$2.8 M
Travel Time Savings	\$10.1 M	\$10.1 M	\$7.2 M	\$7.2 M	\$7.2 M	\$7.2 M
Reduced GHG Emissions	\$0.1 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M
Reduced CAC Emissions	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M
Residual Value of Assets	-	-	-	-	-	-
Reduced Utility Maintenance Costs	\$0.9 M	\$0.9 M	\$0.9 M	\$0.9 M	\$0.9 M	-
Avoided Water Leakage	\$1.7 M	\$1.7 M	\$1.7 M	\$1.7 M	\$1.7 M	-
Total Benefits	\$24.4 M	\$24.4 M	\$21.4 M	\$21.4 M	\$21.4 M	\$18.8 M

^a Due to rounding, some totals may not correspond with the sum of the separate figures.

Table 22: Overall Results of the Cost-Benefit Analysis (Discounted), 2020 Dollars

Evaluation Metrics	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Total Benefits	\$24.4 M	\$24.4 M	\$21.4 M	\$21.4 M	\$21.4 M	\$18.8 M
Total Costs	\$38.9 M	\$36.6 M	\$20.4 M	\$23.2 M	\$27.6 M	\$12.5 M
Net Present Value	-\$14.5 M	-\$12.2 M	\$1.0 M	-\$1.8 M	-\$6.2 M	\$6.3 M
Return on Investment	-37%	-33%	5%	-8%	-22%	50%
Benefit-Cost Ratio	0.6	0.7	1.1	0.9	0.8	1.5
Payback Period (years)	N/A	N/A	28.8	N/A	N/A	15.1
Internal Rate of Return	3.1%	3.6%	7.5%	6.3%	4.7%	11.4%



Considering all the monetized benefits and costs, the estimated internal rate of return of the project ranges from 3.1 percent for Scenario 1 to 11.4 percent for Scenario 6 (Table 22).

The project is expected to have an NPV that ranges from -\$14.5 million for Scenario 1 to \$6.3 million for Scenario 6, as well as a BCR that ranges from 0.6 for Scenario 1 to 1.5 for Scenario 6 (Table 22).

Overall, the CBA analysis indicates that the monetized benefits for Scenario 1 (Base Case) are not sufficient to offset the project costs. However, by reducing the scope of the project to exclude some components such as the roadway realignment and utility upgrades (e.g., Scenario 6), the CBA outcomes are quite favorable; the project's monetized benefits do outweigh the project's costs. Figure 6 through Figure 11 show the CBA results for Scenarios 1 through 6.

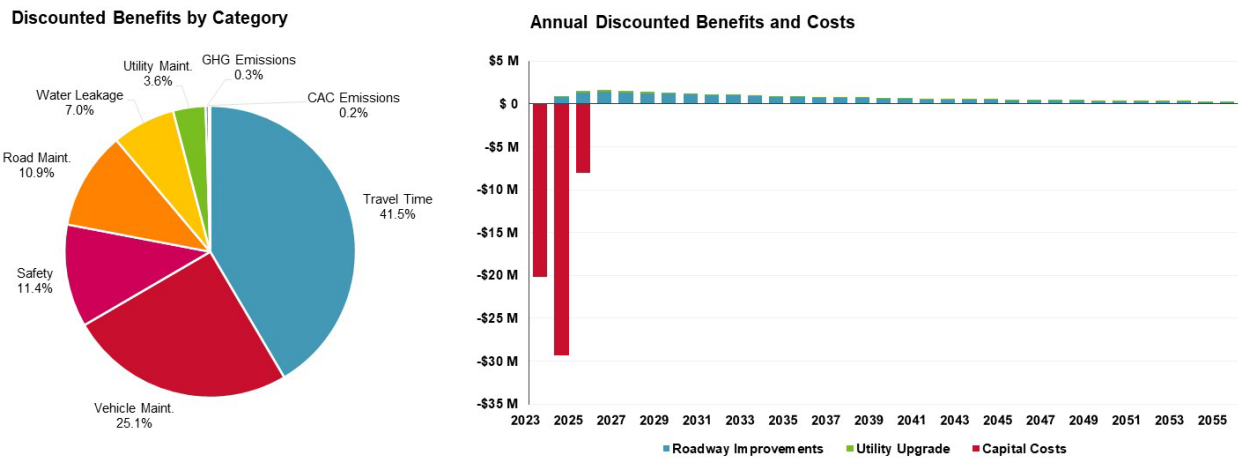


Figure 6: CBA Results – Scenario 1

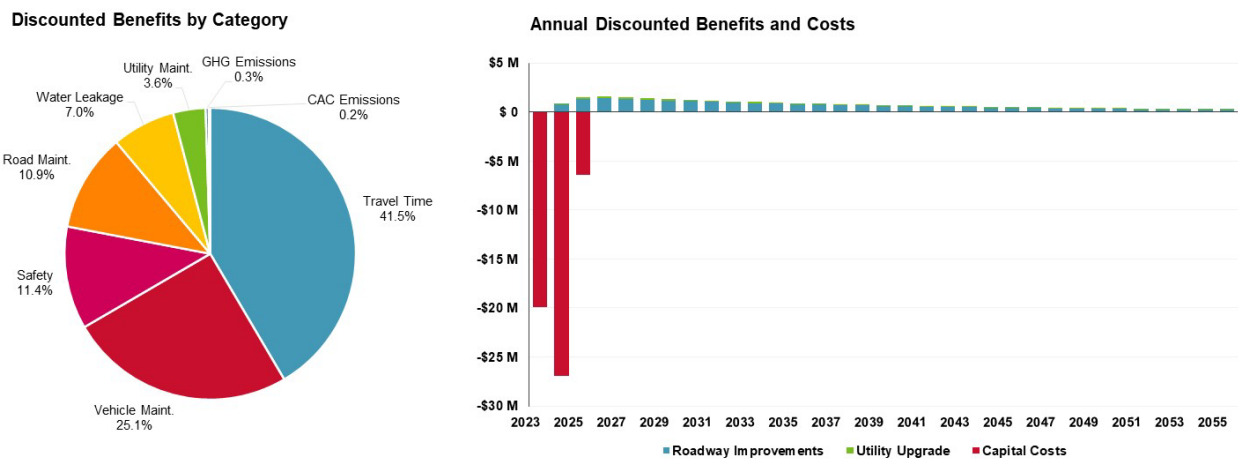


Figure 7: CBA Results – Scenario 2

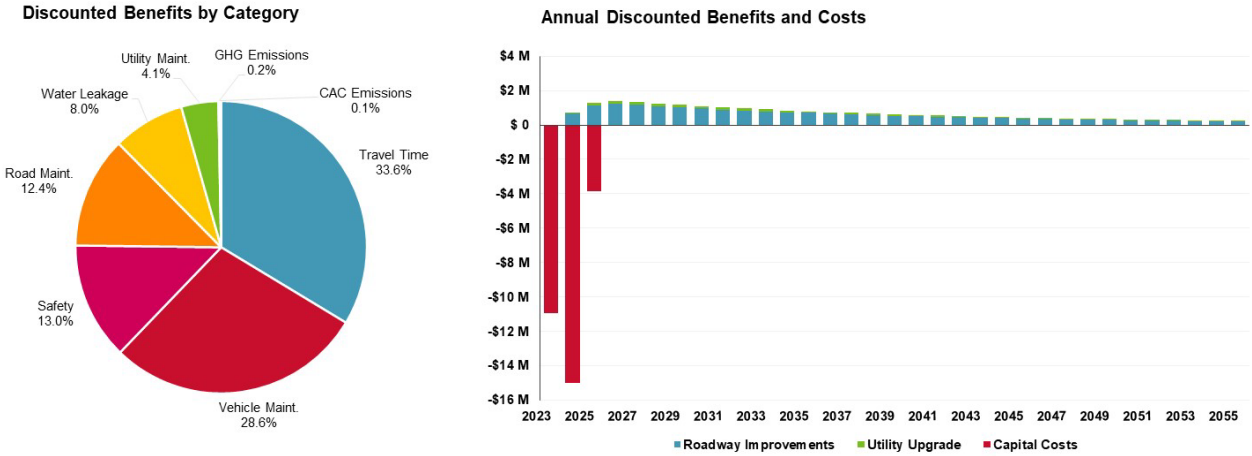


Figure 8: CBA Results – Scenario 3

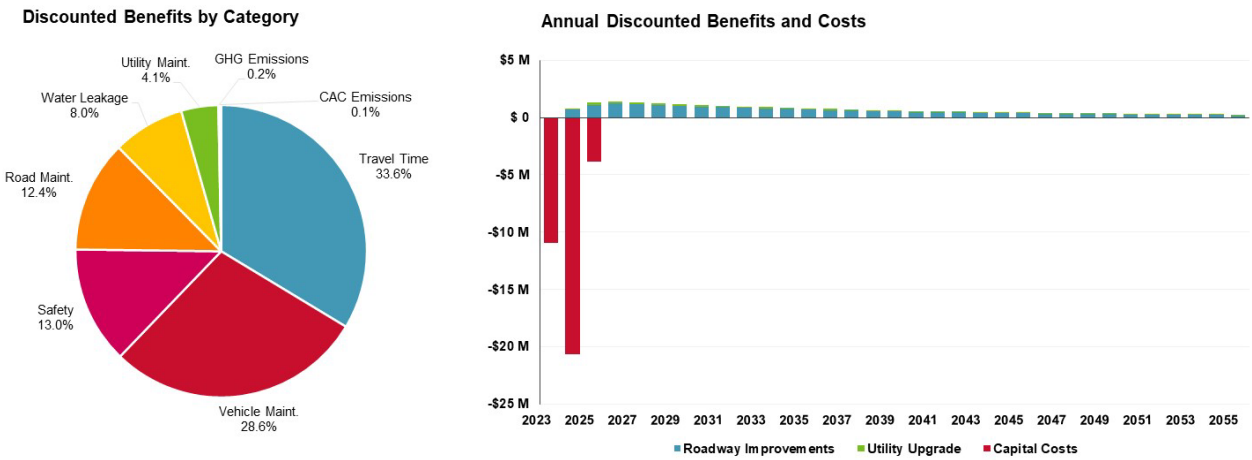


Figure 9: CBA Results – Scenario 4

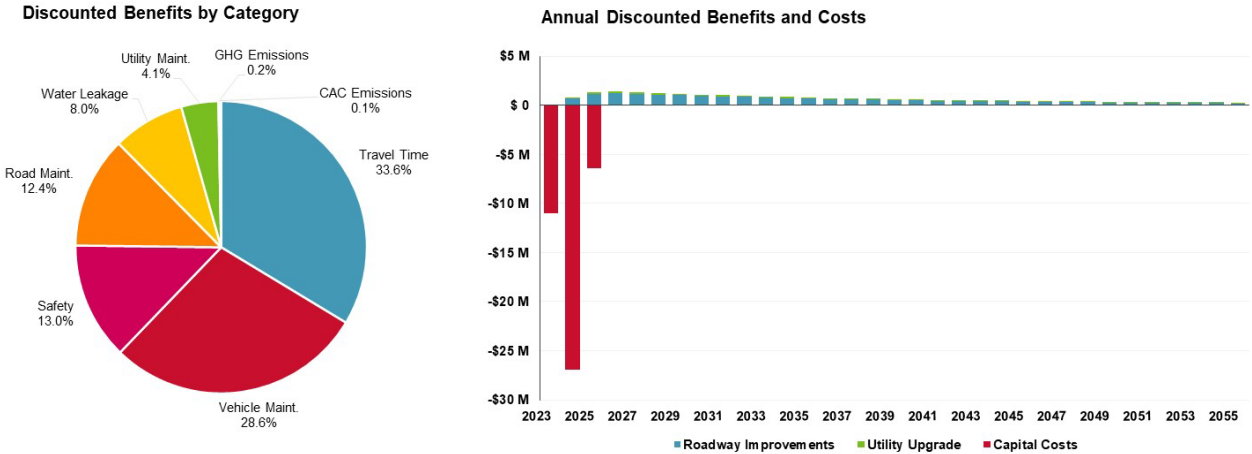


Figure 10: CBA Results – Scenario 5

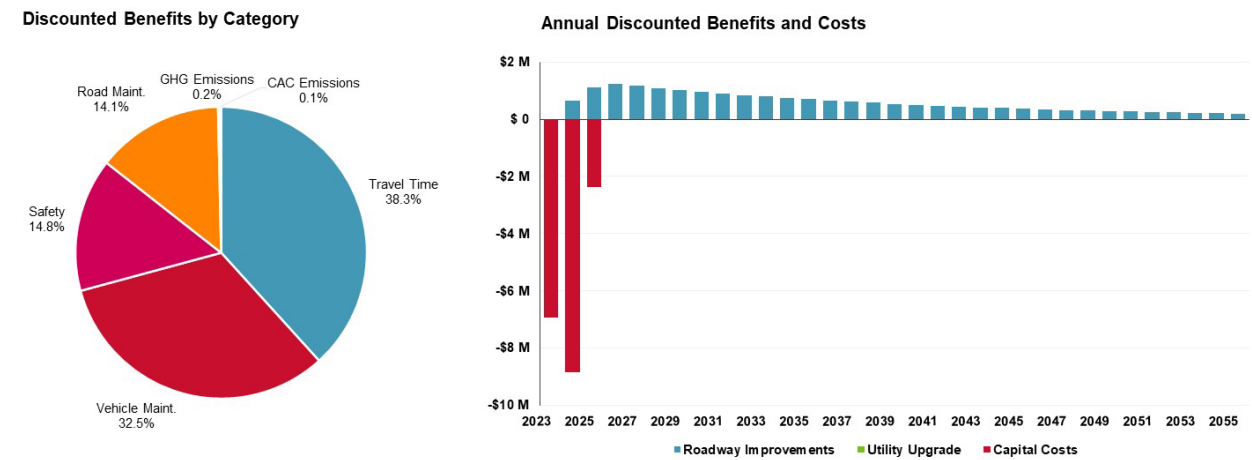


Figure 11: CBA Results – Scenario 6



8 Cost-Benefit Analysis Sensitivity

The CBA presented in the previous sections relies on many assumptions and long-term projections, all of which are subject to considerable uncertainty.

The primary purpose of the sensitivity analysis is to help identify the variables and model parameters whose variations have the greatest impact on the CBA outcomes: the “critical variables.”

The sensitivity analysis can also be used to:

- Evaluate the impact of changes in individual critical variables—how much the final results would vary with reasonable departures from the “preferred” or most likely value for the variable; and
- Assess the robustness of the CBA and evaluate them, particularly whether the conclusions reached under the “preferred” set of input values are significantly altered by reasonable departures from those values.

The sensitivity analysis considered assessing the impacts that variables such as capital costs, vehicle traffic, accident rates, and others have on the results for each scenario. Table 23 highlights the changes applied to each of those variables for the sensitivity analysis.

Table 23: Definition of Sensitivities Assessed

Parameter	Changes in the Parameter
Change in Capital Cost	Increase capital costs by 15%
	Decrease capital costs by 15%
Change in Vehicle Volume	Increase vehicle volume by 25%
	Decrease vehicle volume by 25%
Change in Accident Rates	Increase accident rates by 50%
	Decrease accident rates by 50%
Discount Rate	Consider a 3% discount rate for benefits and costs
Study Period	Assume a shorter study period with 20 years of operations

Figure 12 highlights the impacts a change to the capital cost, vehicle volume, and accident rates has on the BCR by scenario. Based on the chart, it is evident that changing the capital costs and vehicle volume is expected to have a notable impact on the BCR, while changes to the accident rate is expected to result in a relatively smaller impact.

For Scenarios 1, 2, and 5, despite reducing the capital cost by 15 percent or increasing the vehicle traffic by 25 percent, the BCR would remain below the BCR threshold of 1. This implies that for those scenarios, the benefits would not exceed the costs. Additionally, it indicates that capital costs would have to decrease in the future, additional vehicle traffic would be needed, or a combination of the two would be necessary to push the BCR beyond the threshold.

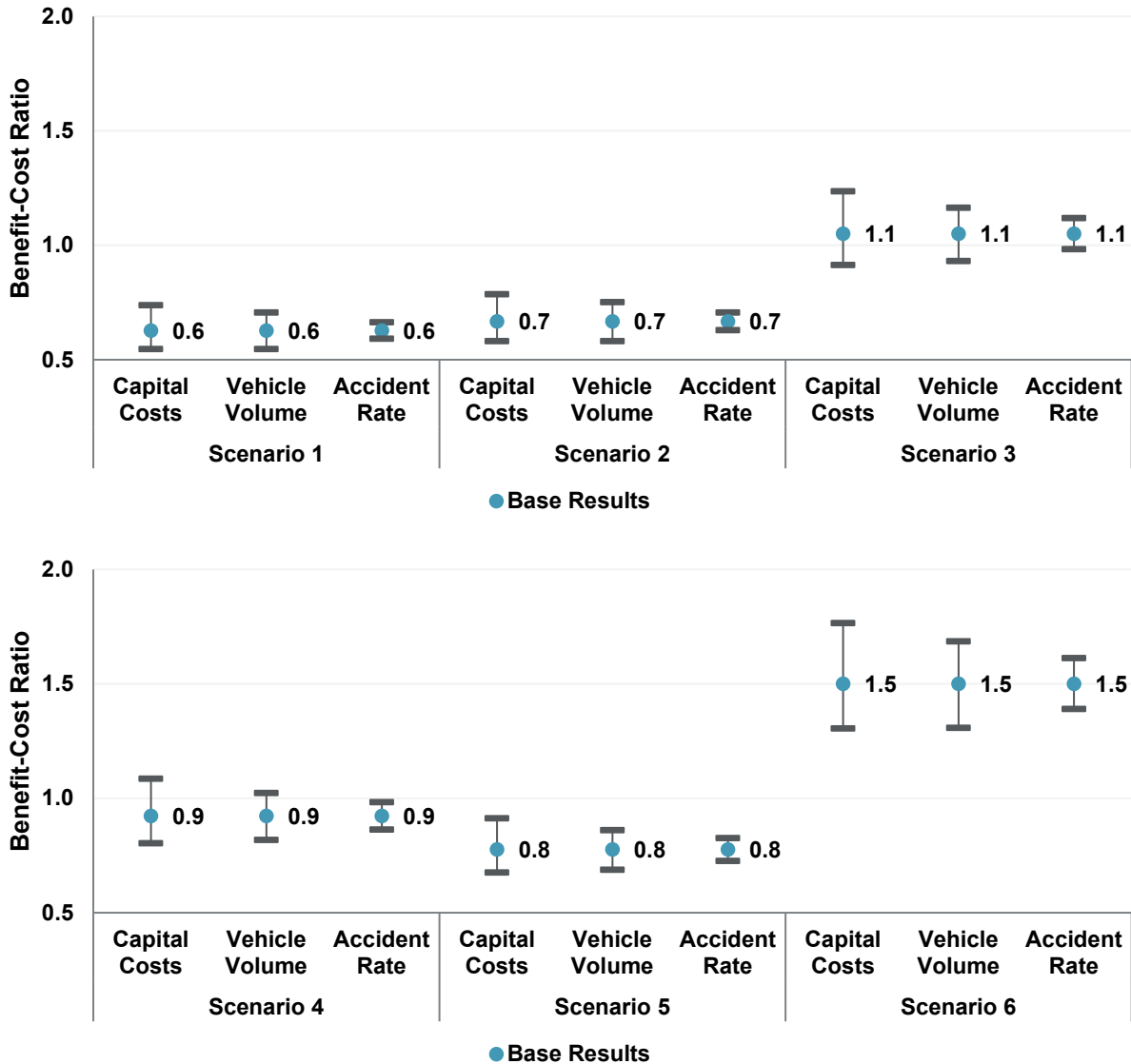


Figure 12: Sensitivity Analysis Results

For Scenario 3, while the base results indicate a BCR greater than 1, Figure 12 indicates a capital cost increase of 15 percent or a vehicle volume decrease of 25 percent would result in the BCR just below 1. Therefore, potential capital cost increase or a decline in vehicle volumes could result in the cost of the project exceeding its monetized socioeconomic benefits.

Meanwhile, for Scenario 4, if capital costs declined by 15 percent or vehicle volumes increased by 25 percent, the BCR could exceed the threshold of 1.

For Scenario 6, Figure 12 indicates the BCR for the scenario is robust and despite the impacts, the BCR remains above 1.



Table 24 highlights the results of the sensitivity analysis as a result of changing the discount rate and study period. As expected, by applying a lower discount rate of 3 percent to all impacts and not just CO₂-related impacts, all future impacts are expected to increase. It is also expected that the total benefits are expected at a larger magnitude relative to the total costs, therefore increasing the BCR in all scenarios. Meanwhile, reducing the years of benefits in the study period from 30 to 20 years is expected to result in a slight decline in the BCR due to a reduction of years in which benefits are monetized.

Table 24: Sensitivity Analysis Results

Sensitivity	Scenario	Original BCR	New BCR
Discount Rate	Scenario 1	0.6	1.6
	Scenario 2	0.7	1.7
	Scenario 3	1.1	2.7
	Scenario 4	0.9	2.4
	Scenario 5	0.8	2.0
	Scenario 6	1.5	3.8
Study Period	Scenario 1	0.6	0.6
	Scenario 2	0.7	0.7
	Scenario 3	1.1	1.0
	Scenario 4	0.9	0.9
	Scenario 5	0.8	0.7
	Scenario 6	1.5	1.4

9 Project Funding

9.1 Funding Sources – Identification and Evaluation

This section provides a summary overview of some of the potential external funding sources that could be used to support funding of the Captains Bay Road Paving and Utility Extension Project.

9.1.1 Federal Funding Sources (Transportation)

Federal funding sources discussed in this section include various grants awarded to projects on a competitive basis in periodic (typically annual) funding opportunities. Additionally, projects may be eligible for federal loans at reduced interest rates and fees compared to similar commercial loans.

9.1.1.1 REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND EQUITY GRANTS PROGRAM²¹

Overview and Key Features

The Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program is a successor of the Transportation Investment Generating Economic Recovery and Better Utilizing Investments to Leverage Development grants programs, which together have been providing funding opportunities since 2009 for construction or repair of transportation infrastructure projects of significant importance in the local or regional economies.

The Infrastructure Investment and Jobs Act (IIJA) of 2021 expanded this program by adding a new component to fund large projects (i.e., with assessed costs of more than \$100 million) in need of federal funding assistance. The modified program is now codified in federal statute under one program, the National Infrastructure Investments (23 U.S. Code 6701 and 6702 for large and smaller projects, respectively). The existing RAISE grants program is expected to continue as the Local and Regional Project Assistance.

For the next 5 fiscal years (FY 2022 to FY 2026), the IIJA authorizes this program at \$1.5 billion per year, subject to future appropriations, and provides advance appropriations of \$1.5 billion per year, resulting in potentially \$3 billion available annually for the program in the next 5 years.

The program also requires a 50-50 split between urban and rural projects and limits the share of funds going to any one state (currently set by the IIJA at 15 percent).

Based on the Notice of Funding Opportunity (NOFO) for FY 2021, the following are notable features and requirements of the RAISE program:

- Eligible applicants for RAISE grants include state and local governments as well as government agencies such as transit agencies, port authorities, and metropolitan

²¹ The full Notice of Funding Opportunity (NOFO) for the RAISE Grants Program will be issued on or before January 30, 2022. Applications must be submitted by 5:00 PM Eastern on April 14, 2022.

planning organizations. In general, it is expected that the eligible applicant submitting the application will administer and deliver the project.

- The federal share of project costs for which an expenditure is made under the RAISE grant program may not exceed 80 percent for a project located in an urban area. The Secretary may increase the federal share of costs above 80 percent for projects located in rural areas. Non-federal sources include state funds originating from programs funded by state revenue, local funds originating from state or local revenue-funded programs, or private funds.
- The application for funding must include prescribed forms, as well as a project narrative document and a CBA, with the model used to conduct this analysis and a report documenting this analysis and results, including the present value of the project's benefits and costs, and its BCR.
- The primary selection criteria include improvement in safety, environmental sustainability, quality of life, economic competitiveness (i.e., improvement in movement of goods and people that reduces costs of doing business and improves local freight connectivity), and state of good repair.
- Secondary selection criteria include partnership (i.e., extent of collaboration and commitment of parties involved in the project) and innovation (i.e., in project construction, delivery, or financing).

The FY 2021 competition awarded funding to 63 construction projects, including 31 rural and 32 urban projects, with funding ranging from \$1.6 to \$24 million. The cost of the submitted projects ranged from \$1.9 to \$110 million. The award as a share of total project costs typically ranged between approximately 25 and 60 percent of project costs; although in a few cases of small rural projects, the award share amounted to nearly 100 percent.

Evaluation and Comments

The Captains Bay Road Paving and Utility Extension Project may be a good candidate for the RAISE program based on the following:

- It is well aligned with the RAISE program's general scope and objectives: it is a rural project with local importance and with a value of less than \$100 million.
- It is well aligned with primary evaluation criteria used in previous competition rounds, particularly safety and economic competitiveness.
- The RAISE program is well funded for the next 5 years, potentially increasing the number of awards and therefore the chance of obtaining an award for any individual submission.

In addition:

- Applications for RAISE program grants require a CBA. Although a project positive net present value, or BCR greater than 1, is not a requirement, HDR's experience is that this increases the chance of an award.

- The amount of an award rarely amounts to the stated target of maximum of 80 percent of project costs; most awards are in the range of 25 to 60 percent and less than \$30 million. This implies the need for leveraging other sources of funding.
- Certain costs of the project may not be eligible for funding under the RAISE program. This includes costs not directly related to the future performance of the road such as utility installation and repairs.

9.1.1.2 INFRASTRUCTURE FOR REBUILDING AMERICA GRANTS

Overview and Key Features

The IJA renames the Nationally Significant Freight and Highway Projects program as the Nationally Significant Multimodal Freight and Highway Projects program. The current funding of the program amounts to \$8 billion over 5 years, and an additional \$6 billion is authorized for future appropriations.

The Infrastructure for Rebuilding America (INFRA) program is generally intended to fund large projects (generally with a cost of at least \$100 million) of national or regional economic importance. However, there is a set-aside for small projects with total costs of less than \$100 million. The IJA increased this set-aside from 10 to 15 percent.

Based on the NOFO for FY 2021, the following are notable features of the program:

- The eligible projects would be those located on the National Highway System (NHS), projects that add capacity on the Interstate System to improve mobility, or projects in a national scenic area.
- The requirements for large projects include generation of national or regional economic, mobility, or safety benefits; cost effectiveness; and contribution to INFRA program goals that include improving safety, reliability, and infrastructure condition as well as congestion reduction and environmental sustainability.
- The requirements for small projects are not stated explicitly. The NOFO only states that “For a small project to be selected, the Department must consider the cost-effectiveness of the proposed project and the effect of the proposed project on mobility in the State and region in which the project is carried out.”
- Merit criteria considered in project evaluation include: (1) support for national or regional economic vitality; (2) climate change and environmental justice impacts; (3) racial equity and barriers to opportunity; (4) leveraging of federal funding; (5) potential for innovation; and (6) performance and accountability.
- INFRA grants may be used for up to 60 percent of future eligible project costs. Other federal assistance may satisfy the non-federal share requirement for an INFRA grant, but total federal assistance for a project receiving an INFRA grant may not exceed 80 percent of future eligible project costs.



Evaluation and Comments

The Captains Bay Road Paving and Utility Extension Project may be less well suited for the INFRA program. Its eligibility based on project location (NHS, national scenic area) would have to be confirmed in future rounds of the program, particularly how they apply to small rural projects.

However, the project is well aligned with general INFRA program objectives, particularly as it relates to supporting local economic vitality and improving safety. As for the RAISE program, certain project costs (such as utility installation and repairs) may not be eligible for this funding.

9.1.1.3 RURAL SURFACE TRANSPORTATION PROGRAM (NEW)

Overview and Key Features

The IJA authorized funding for the Rural Surface Transportation program, totaling \$2 billion over the next 5 years. Funding for FY 2022 is set at \$300 million.

This program will provide competitive grants to improve and expand the surface transportation infrastructure in rural areas. The funded projects will support increased regional connectivity, improve safety and reliability of people and freight movement, generate regional economic growth, and improve quality of life. Notable eligible projects include:

- A highway safety improvements project, including a project to improve a high-risk rural road;
- A project on a publicly owned highway or bridge that provides or increases access to an agricultural, commercial, energy, or intermodal facility that supports the economy of a rural area; and
- A project to develop, establish, or maintain an integrated mobility management system, a transportation demand management system, or on-demand mobility services.

Evaluation and Comments

The Captains Bay Road Paving and Utility Extension Project may be a good candidate for this program as it is well aligned with program goals and the type of projects intended for funding.

Projects selected must be cost effective, implying that a CBA of the project will be required for the grant application submission. The future NOFO for this program will help determine the detailed project requirements and cost eligibility.

9.1.1.4 PROMOTING RESILIENT OPERATIONS FOR TRANSFORMATIVE, EFFICIENT, AND COST-SAVING TRANSPORTATION (NEW)

Overview and Key Features

The Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) program will provide grants for resilience improvements through formula funding and competitive grants to projects that protect surface transportation assets and make them more resilient.

The formula funding portion of the program is an apportionment for each state to carry out projects authorized under the PROTECT program, similar to other formula funded programs. Under this program, eligible projects include those that use natural infrastructure or the construction or modification of storm surge, flood protection, or aquatic ecosystem restoration elements that are functionally connected to a transportation improvement. This may include projects such as installation or upgrades of culverts designed to withstand 100-year flood events, or installation or upgrades of tide gates to protect highways.

The competitive grant portion of the PROTECT program encompasses three programs for capital improvement projects outlined below.

1. **Resilience Improvement Grants:** These grants are intended for projects that improve the ability of an existing surface transportation asset to withstand weather events or possible natural disasters and impacts of changing environmental conditions. The IIJA authorized funding totaling \$980 million over the next 5 fiscal years.
2. **Community Resilience and Evacuation Grants:** These program grants are intended for projects that strengthen and protect emergency evacuation routes in a community. The IIJA authorized funding totaling \$140 million over the next 5 fiscal years.
3. **At-Risk Coastal Infrastructure Grants:** These program grants are intended for projects that strengthen the resiliency of existing highways to protect them from weather events, natural disasters, or changing environmental conditions. The IIJA authorized funding totaling \$140 million over the next 5 fiscal years.

Evaluation and Comments

Given the scope and location of the Captains Bay Road Paving and Utility Extension Project, it can be expected to significantly improve the resiliency of the Captains Bay Road. Therefore, this project may be a good candidate for the Resilience Improvements program, both for the formula funding to be administered by the State of Alaska as well as the competitive grant program portion. In both instances, the objectives of the project may have to emphasize its aspects related to resiliency improvements in addition to promoting the local economic vitality.

The project is also well aligned with the At-Risk Coastal Infrastructure Grants. However, funding for this program as currently approved by the IIJA is relatively small at \$25 to \$30 million annually. The program could likely provide only small supplemental funding.

The future NOFO for the above programs will help determine the details of applicant eligibility, project cost eligibility, and other project requirements.

9.1.1.5 DENALI COMMISSION

The Denali Commission is an independent federal agency established in 1998 to provide critical utilities, infrastructure, and economic support throughout Alaska. With the creation of the Denali Commission, Congress acknowledged the need for increased inter-agency cooperation and focus on Alaska's remote communities.



Denali Commission Transportation Program

The Denali Commission's Transportation Program was originally created in 2005 as part of the Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users legislation and accompanying amendments to the Denali Commission Act of 1998. The program included two major components: rural roads and waterfront development.

The roads portion of the program targets basic road (including local board road) improvement projects that connect rural communities to one another and the state highway system as well as opportunities to enhance rural economic development. The waterfront portion of the program addresses port, harbor, barge landing, and other rural waterfront needs. The Denali Commission's Transportation Advisory Committee is the body that advises the Federal Co-Chair on transportation needs in rural Alaska and evaluates project applications.

The Denali Commission's Road Program has been unfunded for several years. However, it is receiving \$15.0 million for DOT&PF's COVID Response Funds to fund its program for 2022. A NOFO will be issued once the final agreement is reached with DOT&PF and the funding becomes available for grants to communities, Tribes, and other eligible applicants.

The Denali Commission is designated to receive \$75.0 million through the IIJA to fund rural transportation projects. The \$75.0 million will be allocated over the 5-year life of the IIJA. The Denali Commission is currently developing requirements for distributing the funds through grants to eligible applicants. A NOFO will be issued once the program requirements are finalized.

Evaluation and Comments

Unique to Denali Commission Transportation Program is that even though it is federally funded, Denali Commission funds can potentially be used to provide local match to leverage other federal funds. Given the relatively small size of the Denali Commission's Transportation Program and the high demand for rural transportation projects throughout rural Alaska, these funds may be best used to fund the project match requirements of a different federal discretionary grant program or to fund a specific, lower-cost project carved out of the Captains Bay Road Paving and Utility Extension Project, such as addressing the rock fall issues between Deadman's Curve and Pyramid Creek.

9.1.1.6 TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION ACT LOANS

Overview and Key Features

The Transportation Infrastructure Finance and Innovation Act (TIFIA) of 1998 established a federal credit program for eligible transportation projects of national or regional significance under which the USDOT may provide three forms of credit assistance: secured (direct) loans, loan guarantees, and standby lines of credit. The program's fundamental goal is to leverage federal funds by attracting substantial private and other non-federal co-investment. The program awards credit assistance to eligible applicants, which include state Departments of Transportation, transit operators, special authorities, local governments, and private entities.

The TIFIA Rural Project Initiative is aimed at helping improve transportation infrastructure in America's rural communities.²² Under this initiative, an eligible surface transportation project (which includes roads) in a qualified rural area, costing between \$10 and \$100 million, can obtain a loan offering significant savings over traditional TIFIA loans and other commercial financing products, including:

- Loans for up to 49 percent of the project's eligible costs (compared to 33 percent under traditional TIFIA);
- Fixed interest rates equal to one half of the U.S. Treasury rate of equivalent maturity of the loan at the time of closing (traditional TIFIA loans have interest rates equal to the U.S. Treasury rate at the time of closing); and
- If the cost of the eligible project is under \$75 million, all borrower fees may be waived.

Evaluation and Comments

The Captains Bay Road Paving and Utility Extension Project well matches the profile of projects intended for this program. However, it is noted that this program represents a financing mechanism. The TIFIA loan will have to be repaid; therefore, long-term funding sources would still have to be identified.

9.1.2 State Funding Sources

In Alaska, the vast majority of transportation capital programs are federally funded. State programs are funded as capital appropriations from general funds. In FY 2022, state-funded programs total approximately \$170 million out of the total capital program of more than \$1.1 billion.²³ Capital appropriations for federal program match amount to \$87 million. Other state-funded programs include overhaul of Alaska Marine Highway System vessels and state equipment fleet replacement.

The Statewide Transportation Improvement Program (STIP), with its Surface Transportation Program, is the largest state-administered capital program. However, its funding comes mostly from federal allocations.

9.1.2.1 ALASKA STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM

Overview and Key Features

Each state is required to develop a STIP covering a period of at least 4 years. The STIP is a staged, multi-year, statewide intermodal program of transportation projects proposed for federal funding under Title 23 U.S. Code or the Federal Transit Act. The Alaska STIP is a 4-year program for transportation system preservation and development.

Project selection is based on nomination, an open process in which the public is invited to participate. DOT&PF nominates projects on the NHS and the Alaska Highway System based on the need to upgrade sections that are below standards, accomplish initial hard surfacing or

²² <https://www.transportation.gov/buildamerica/financing/tifia/tifia-rural-project-initiative-rpi>

²³ DOT&PF, House Finance Committee Capital Program & FY2022 Request Overview, May 5, 2021, http://www.akleg.gov/basis/get_documents.asp?session=32&docid=26270

pavement rehabilitation, and provide safety improvements or capacity increases. DOT&PF does not use a scoring/competition system for these funds.²⁴

DOT&PF requests project nominations from the public for projects in the Community Transportation Program. A project qualifies under the Community Transportation Program if it is a local road or transit development, or uses technology to improve traffic flow or safety.

For FY 2022, the Alaska STIP/Surface Transportation Program approved funding amounting to \$680 million (as of May 2021). The IIJA authorizes new federal-aid highway formula funding that will provide roughly \$3.5 billion in highway funding for Alaska over 5 years to construct, rebuild, and maintain its roads and highways.²⁵

Evaluation and Comments

Given its profile, the Captains Bay Road Paving and Utility Extension Project, is suitable for inclusion in the Community Transportation Program and recommendation for STIP. HDR understands that the project has been proposed to the State of Alaska as a part of STIP funding.²⁶

9.1.3 Other Funding Sources

In addition to external funding sources, local funding such as Local Improvement District funding may be applicable.

Potential external funding sources are also available for the non-transportation elements of the project from sources such as the U.S. Department of Agriculture – Rural Development, U.S. Bureau of Reclamation, U.S. Department of Commerce, and Alaska Energy Authority.

²⁴ DOT&PF, Statewide Transportation Improvement Program, <https://dot.alaska.gov/stwdplng/cip/stip/projects/index.shtml>

²⁵ Press Release, Alaska to Receive Big Benefits from Infrastructure Package – Infrastructure Investment and Jobs Act Passes Senate, August 10, 2021, <https://www.murkowski.senate.gov/press/release/alaska-to-receive-big-benefits-from-infrastructure-package>

²⁶ City of Unalaska, *Capital Projects Update*, December 9, 2021, https://www.ci.unalaska.ak.us/sites/default/files/fileattachments/Public%20Works/page/7841/capital_projects_update_12-09-21_compressed.pdf



Appendix A: Emission Factors

This appendix presents the emission factors used in the estimation of reduced emissions as a result of the roadway improvements. The appendix presents the annual emission factors for select pollutants by vehicle type and average speeds.

Truck Emission Factors

Table A-1 through Table A-4 provide emission factors for trucks for the years 2021 through 2055.

Table A-1: Emission Factors for Trucks (15 mph)

Emissions per Gallon of Fuel Burned – Trucks (grams/miles)						Source/Comment
Year	NO _x	VOC	PM	SO ₂	CO ₂	
2021	0.615	0.077	0.015	0.001	356	Based on MOVES average annual emission factors for trucks in Unalaska; MOVES model run in November 2021
2022	0.592	0.072	0.014	0.001	353	
2023	0.568	0.066	0.013	0.001	349	
2024	0.544	0.061	0.011	0.001	346	
2025	0.520	0.055	0.010	0.001	342	
2026	0.496	0.050	0.009	0.001	338	
2027	0.473	0.044	0.008	0.001	335	
2028	0.449	0.039	0.006	0.001	331	
2029	0.425	0.034	0.005	0.001	328	
2030	0.401	0.028	0.004	0.001	324	
2031	0.398	0.028	0.003	0.001	322	
2032	0.395	0.027	0.003	0.001	320	
2033	0.392	0.026	0.003	0.001	319	
2034	0.388	0.025	0.003	0.001	317	
2035	0.385	0.025	0.003	0.001	315	
2036	0.382	0.024	0.003	0.001	313	
2037	0.379	0.023	0.003	0.001	311	
2038	0.376	0.023	0.002	0.001	309	
2039	0.372	0.022	0.002	0.001	307	
2040	0.369	0.021	0.002	0.001	305	
2041	0.369	0.021	0.002	0.001	305	
2042	0.369	0.021	0.002	0.001	304	
2043	0.369	0.021	0.002	0.001	304	
2044	0.369	0.021	0.002	0.001	304	
2045	0.369	0.021	0.002	0.001	304	
2046	0.369	0.021	0.002	0.001	303	
2047	0.368	0.021	0.002	0.001	303	
2048	0.368	0.021	0.002	0.001	303	
2049	0.368	0.021	0.002	0.001	302	
2050	0.368	0.021	0.002	0.001	302	
2051	0.368	0.021	0.002	0.001	302	
2052	0.368	0.021	0.002	0.001	302	
2053	0.368	0.021	0.002	0.001	302	
2054	0.368	0.021	0.002	0.001	302	
2055	0.368	0.021	0.002	0.001	302	

Note: CO₂ = carbon dioxide; MOVES = Motor Vehicle Emission Simulator; mph = mile per hour; NO_x = nitrogen oxide; PM = particulate matter; SO₂ = sulfur dioxide; VOC = volatile organic compounds



Table A-2: Emission Factors for Trucks (20 mph)

Emissions per Gallon of Fuel Burned – Trucks (grams/miles)						
Year	NO _x	VOC	PM	SO ₂	CO ₂	Source/Comment
2021	0.506	0.061	0.013	0.001	310	Based on MOVES average annual emission factors for trucks in Unalaska; MOVES model run in November 2021
2022	0.485	0.056	0.012	0.001	306	
2023	0.464	0.052	0.011	0.001	303	
2024	0.443	0.048	0.010	0.001	300	
2025	0.422	0.043	0.009	0.001	297	
2026	0.402	0.039	0.008	0.001	293	
2027	0.381	0.035	0.006	0.001	290	
2028	0.360	0.030	0.005	0.001	287	
2029	0.339	0.026	0.004	0.001	284	
2030	0.318	0.022	0.003	0.001	281	
2031	0.315	0.021	0.003	0.001	279	
2032	0.313	0.021	0.003	0.001	277	
2033	0.310	0.020	0.003	0.001	276	
2034	0.307	0.020	0.003	0.001	274	
2035	0.304	0.019	0.002	0.001	272	
2036	0.302	0.019	0.002	0.001	271	
2037	0.299	0.018	0.002	0.001	269	
2038	0.296	0.017	0.002	0.001	267	
2039	0.294	0.017	0.002	0.001	266	
2040	0.291	0.016	0.002	0.001	264	
2041	0.291	0.016	0.002	0.001	264	
2042	0.291	0.016	0.002	0.001	264	
2043	0.291	0.016	0.002	0.001	263	
2044	0.290	0.016	0.002	0.001	263	
2045	0.290	0.016	0.002	0.001	263	
2046	0.290	0.016	0.002	0.001	262	
2047	0.290	0.016	0.002	0.001	262	
2048	0.290	0.016	0.002	0.001	262	
2049	0.290	0.016	0.002	0.001	262	
2050	0.290	0.016	0.002	0.001	261	
2051	0.290	0.016	0.002	0.001	261	
2052	0.290	0.016	0.002	0.001	261	
2053	0.290	0.016	0.002	0.001	261	
2054	0.290	0.016	0.002	0.001	261	
2055	0.290	0.016	0.002	0.001	261	



Table A-3: Emission Factors for Trucks (30 mph)

Emissions per Gallon of Fuel Burned – Trucks (grams/miles)						
Year	NO _x	VOC	PM	SO ₂	CO ₂	Source/Comment
2021	0.391	0.043	0.011	0.001	266	Based on MOVES average annual emission factors for trucks in Unalaska; MOVES model run in November 2021
2022	0.372	0.040	0.010	0.001	263	
2023	0.354	0.037	0.009	0.001	260	
2024	0.335	0.034	0.008	0.001	257	
2025	0.316	0.030	0.008	0.001	254	
2026	0.298	0.027	0.007	0.001	251	
2027	0.279	0.024	0.006	0.001	248	
2028	0.261	0.021	0.005	0.001	245	
2029	0.242	0.018	0.004	0.001	242	
2030	0.224	0.015	0.003	0.001	239	
2031	0.221	0.015	0.003	0.001	238	
2032	0.219	0.014	0.002	0.001	236	
2033	0.217	0.014	0.002	0.001	235	
2034	0.214	0.013	0.002	0.001	233	
2035	0.212	0.013	0.002	0.001	232	
2036	0.210	0.013	0.002	0.001	230	
2037	0.207	0.012	0.002	0.001	229	
2038	0.205	0.012	0.002	0.001	227	
2039	0.203	0.012	0.002	0.001	226	
2040	0.200	0.011	0.002	0.001	224	
2041	0.200	0.011	0.002	0.001	224	
2042	0.200	0.011	0.002	0.001	224	
2043	0.200	0.011	0.002	0.001	224	
2044	0.200	0.011	0.002	0.001	224	
2045	0.200	0.011	0.002	0.001	223	
2046	0.200	0.011	0.002	0.001	223	
2047	0.200	0.011	0.002	0.001	223	
2048	0.200	0.011	0.002	0.001	223	
2049	0.200	0.011	0.002	0.001	223	
2050	0.200	0.011	0.002	0.001	222	
2051	0.200	0.011	0.002	0.001	222	
2052	0.200	0.011	0.002	0.001	222	
2053	0.200	0.011	0.002	0.001	222	
2054	0.199	0.011	0.002	0.001	222	
2055	0.199	0.011	0.002	0.001	222	



Table A-4: Emission Factors for Trucks (40 mph)

Emissions per Gallon of Fuel Burned - Trucks (grams/miles)						
Year	NO _x	VOC	PM	SO ₂	CO ₂	Source/Comment
2021	0.391	0.043	0.011	0.001	266	Based on MOVES average annual emission factors for trucks in Unalaska; MOVES model run in November 2021
2022	0.372	0.040	0.010	0.001	263	
2023	0.354	0.037	0.009	0.001	260	
2024	0.335	0.034	0.008	0.001	257	
2025	0.316	0.030	0.008	0.001	254	
2026	0.298	0.027	0.007	0.001	251	
2027	0.279	0.024	0.006	0.001	248	
2028	0.261	0.021	0.005	0.001	245	
2029	0.242	0.018	0.004	0.001	242	
2030	0.224	0.015	0.003	0.001	239	
2031	0.221	0.015	0.003	0.001	238	
2032	0.219	0.014	0.002	0.001	236	
2033	0.217	0.014	0.002	0.001	235	
2034	0.214	0.013	0.002	0.001	233	
2035	0.212	0.013	0.002	0.001	232	
2036	0.210	0.013	0.002	0.001	230	
2037	0.207	0.012	0.002	0.001	229	
2038	0.205	0.012	0.002	0.001	227	
2039	0.203	0.012	0.002	0.001	226	
2040	0.200	0.011	0.002	0.001	224	
2041	0.200	0.011	0.002	0.001	224	
2042	0.200	0.011	0.002	0.001	224	
2043	0.200	0.011	0.002	0.001	224	
2044	0.200	0.011	0.002	0.001	224	
2045	0.200	0.011	0.002	0.001	223	
2046	0.200	0.011	0.002	0.001	223	
2047	0.200	0.011	0.002	0.001	223	
2048	0.200	0.011	0.002	0.001	223	
2049	0.200	0.011	0.002	0.001	223	
2050	0.200	0.011	0.002	0.001	222	
2051	0.200	0.011	0.002	0.001	222	
2052	0.200	0.011	0.002	0.001	222	
2053	0.200	0.011	0.002	0.001	222	
2054	0.199	0.011	0.002	0.001	222	
2055	0.199	0.011	0.002	0.001	222	



Passenger Vehicle Emission Factors

Table A-5 through Table A-8 provide emission factors for trucks for the years 2021 through 2055.

Table A-5: Emission Factors for Passenger Vehicles (15 mph)

Emissions per Gallon of Fuel Burned – Passenger Vehicles (grams/miles)						Source/Comment
Year	NO _x	VOC	PM	SO ₂	CO ₂	
2021	0.056	0.021	0.001	0.000	125	Based on MOVES average annual emission factors for vehicles in Unalaska; MOVES model run in November 2021
2022	0.051	0.019	0.001	0.000	123	
2023	0.046	0.017	0.001	0.000	120	
2024	0.041	0.015	0.001	0.000	118	
2025	0.036	0.013	0.001	0.000	115	
2026	0.031	0.011	0.001	0.000	112	
2027	0.026	0.009	0.001	0.000	110	
2028	0.020	0.008	0.001	0.000	107	
2029	0.015	0.006	0.000	0.000	105	
2030	0.010	0.004	0.000	0.000	102	
2031	0.009	0.004	0.000	0.000	101	
2032	0.008	0.004	0.000	0.000	100	
2033	0.008	0.003	0.000	0.000	99	
2034	0.007	0.003	0.000	0.000	98	
2035	0.006	0.003	0.000	0.000	97	
2036	0.005	0.003	0.000	0.000	96	
2037	0.004	0.003	0.000	0.000	95	
2038	0.003	0.002	0.000	0.000	94	
2039	0.003	0.002	0.000	0.000	93	
2040	0.002	0.002	0.000	0.000	92	
2041	0.002	0.002	0.000	0.000	92	
2042	0.002	0.002	0.000	0.000	92	
2043	0.001	0.002	0.000	0.000	92	
2044	0.001	0.002	0.000	0.000	92	
2045	0.001	0.002	0.000	0.000	91	
2046	0.001	0.002	0.000	0.000	91	
2047	0.001	0.002	0.000	0.000	91	
2048	0.001	0.002	0.000	0.000	91	
2049	0.001	0.002	0.000	0.000	90	
2050	0.001	0.002	0.000	0.000	90	
2051	0.001	0.002	0.000	0.000	90	
2052	0.001	0.002	0.000	0.000	90	
2053	0.001	0.002	0.000	0.000	90	
2054	0.001	0.002	0.000	0.000	90	
2055	0.001	0.002	0.000	0.000	90	



Table A-6: Emission Factors for Passenger Vehicles (20 mph)

Emissions per Gallon of Fuel Burned – Passenger Vehicles (grams/miles)						
Year	NO _x	VOC	PM	SO ₂	CO ₂	Source/Comment
2021	0.055	0.019	0.001	0.000	108	Based on MOVES average annual emission factors for vehicles in Unalaska; MOVES model run in November 2021
2022	0.050	0.017	0.001	0.000	106	
2023	0.045	0.015	0.001	0.000	104	
2024	0.040	0.014	0.001	0.000	101	
2025	0.035	0.012	0.001	0.000	99	
2026	0.030	0.010	0.001	0.000	97	
2027	0.025	0.009	0.001	0.000	95	
2028	0.020	0.007	0.000	0.000	93	
2029	0.015	0.005	0.000	0.000	91	
2030	0.010	0.004	0.000	0.000	88	
2031	0.009	0.003	0.000	0.000	87	
2032	0.008	0.003	0.000	0.000	87	
2033	0.007	0.003	0.000	0.000	86	
2034	0.007	0.003	0.000	0.000	85	
2035	0.006	0.003	0.000	0.000	84	
2036	0.005	0.003	0.000	0.000	83	
2037	0.004	0.002	0.000	0.000	82	
2038	0.003	0.002	0.000	0.000	82	
2039	0.003	0.002	0.000	0.000	81	
2040	0.002	0.002	0.000	0.000	80	
2041	0.002	0.002	0.000	0.000	80	
2042	0.002	0.002	0.000	0.000	79	
2043	0.001	0.002	0.000	0.000	79	
2044	0.001	0.002	0.000	0.000	79	
2045	0.001	0.002	0.000	0.000	79	
2046	0.001	0.002	0.000	0.000	79	
2047	0.001	0.002	0.000	0.000	78	
2048	0.001	0.002	0.000	0.000	78	
2049	0.001	0.002	0.000	0.000	78	
2050	0.001	0.002	0.000	0.000	78	
2051	0.001	0.002	0.000	0.000	78	
2052	0.001	0.002	0.000	0.000	78	
2053	0.001	0.002	0.000	0.000	78	
2054	0.001	0.002	0.000	0.000	78	
2055	0.001	0.002	0.000	0.000	78	



Table A-7: Emission Factors for Passenger Vehicles (30 mph)

Emissions per Gallon of Fuel Burned – Passenger Vehicles (grams/miles)						
Year	NO _x	VOC	PM	SO ₂	CO ₂	Source/Comment
2021	0.048	0.015	0.001	0.000	86	Based on MOVES average annual emission factors for vehicles in Unalaska; MOVES model run in November 2021
2022	0.044	0.014	0.001	0.000	85	
2023	0.039	0.012	0.001	0.000	83	
2024	0.035	0.011	0.000	0.000	81	
2025	0.031	0.010	0.000	0.000	79	
2026	0.026	0.008	0.000	0.000	78	
2027	0.022	0.007	0.000	0.000	76	
2028	0.017	0.006	0.000	0.000	74	
2029	0.013	0.004	0.000	0.000	72	
2030	0.009	0.003	0.000	0.000	71	
2031	0.008	0.003	0.000	0.000	70	
2032	0.007	0.003	0.000	0.000	69	
2033	0.007	0.002	0.000	0.000	69	
2034	0.006	0.002	0.000	0.000	68	
2035	0.005	0.002	0.000	0.000	67	
2036	0.004	0.002	0.000	0.000	67	
2037	0.004	0.002	0.000	0.000	66	
2038	0.003	0.002	0.000	0.000	65	
2039	0.002	0.002	0.000	0.000	64	
2040	0.001	0.001	0.000	0.000	64	
2041	0.001	0.001	0.000	0.000	64	
2042	0.001	0.001	0.000	0.000	63	
2043	0.001	0.001	0.000	0.000	63	
2044	0.001	0.001	0.000	0.000	63	
2045	0.001	0.001	0.000	0.000	63	
2046	0.001	0.001	0.000	0.000	63	
2047	0.001	0.001	0.000	0.000	63	
2048	0.001	0.001	0.000	0.000	63	
2049	0.001	0.001	0.000	0.000	62	
2050	0.001	0.001	0.000	0.000	62	
2051	0.001	0.001	0.000	0.000	62	
2052	0.001	0.001	0.000	0.000	62	
2053	0.001	0.001	0.000	0.000	62	
2054	0.001	0.001	0.000	0.000	62	
2055	0.001	0.001	0.000	0.000	62	



Table A-8: Emission Factors for Passenger Vehicles (40 mph)

Emissions per Gallon of Fuel Burned – Passenger Vehicles (grams/miles)						
Year	NO _x	VOC	PM	SO ₂	CO ₂	Source/Comment
2021	0.047	0.011	0.001	0.000	80	Based on MOVES average annual emission factors for vehicles in Unalaska; MOVES model run in November 2021
2022	0.043	0.010	0.001	0.000	78	
2023	0.039	0.009	0.000	0.000	76	
2024	0.034	0.008	0.000	0.000	75	
2025	0.030	0.007	0.000	0.000	73	
2026	0.026	0.006	0.000	0.000	72	
2027	0.022	0.005	0.000	0.000	70	
2028	0.017	0.004	0.000	0.000	68	
2029	0.013	0.003	0.000	0.000	67	
2030	0.009	0.002	0.000	0.000	65	
2031	0.008	0.002	0.000	0.000	65	
2032	0.007	0.002	0.000	0.000	64	
2033	0.007	0.002	0.000	0.000	63	
2034	0.006	0.002	0.000	0.000	63	
2035	0.005	0.002	0.000	0.000	62	
2036	0.004	0.002	0.000	0.000	61	
2037	0.004	0.001	0.000	0.000	61	
2038	0.003	0.001	0.000	0.000	60	
2039	0.002	0.001	0.000	0.000	60	
2040	0.001	0.001	0.000	0.000	59	
2041	0.001	0.001	0.000	0.000	59	
2042	0.001	0.001	0.000	0.000	59	
2043	0.001	0.001	0.000	0.000	58	
2044	0.001	0.001	0.000	0.000	58	
2045	0.001	0.001	0.000	0.000	58	
2046	0.001	0.001	0.000	0.000	58	
2047	0.001	0.001	0.000	0.000	58	
2048	0.001	0.001	0.000	0.000	58	
2049	0.001	0.001	0.000	0.000	58	
2050	0.001	0.001	0.000	0.000	57	
2051	0.001	0.001	0.000	0.000	57	
2052	0.001	0.001	0.000	0.000	57	
2053	0.001	0.001	0.000	0.000	57	
2054	0.001	0.001	0.000	0.000	57	
2055	0.001	0.001	0.000	0.000	57	

CITY OF UNALASKA
UNALASKA, ALASKA

ORDINANCE 2022-02

AN ORDINANCE OF THE UNALASKA CITY COUNCIL AMENDING TITLE 6.40 OF THE UNALASKA CODE OF ORDINANCES TO PROVIDE A LIMITED EXEMPTION FROM SALES TAX TO FEDERALLY RECOGNIZED TRIBES

WHEREAS, federally recognized tribes were previously eligible for sales tax exemptions as non-profit organizations; and

WHEREAS, federally recognized tribes provide government services.

BE IT ENACTED by the Unalaska City Council, as follows:

Section 1: Classification. This Ordinance is a Code Ordinance.

Section 2: Section 6.40.010, DEFINITIONS, of the Unalaska Code of Ordinances is hereby amended by adding a new subsection (HH) to read as follows:

(HH) "TRIBAL GOVERNMENTAL ACTIVITY" means governmental services provided by a federally recognized tribe for the benefit of the tribe's members, or members together with the general public, including those activities necessary for administration and management of such services. Tribal governmental activity does not include any commercial business undertaking, provided that charging a fee for service shall not render such governmental service a commercial or business undertaking if the fee does not exceed the tribe's reasonable cost of furnishing such service.

Section 3: Section 6.40.030, EXEMPTIONS, is hereby amended by adding a new subsection (BB) to read as follows:

(BB) *FEDERALLY RECOGNIZED TRIBES*. A sale made to a federally recognized tribe for a tribal governmental activity is exempt.

Section 4: Subsection 6.40.040(A), EXEMPTION PROCEDURES, is hereby amended to read as follows [~~striking through~~ the deleted words and underlining the new words]:

(A) *NON-PROFITS AND FEDERALLY RECOGNIZED TRIBES*. No seller may allow an exemption under § 6.40.030(Q) or § 6.40.030(BB) unless the consumer first obtains a certificate of exemption ~~for non-profit organizations~~ and presents it to the seller at the time of the sale.

Section 5: Subsection 6.40.040(F), EXEMPTION CERTIFICATES, is hereby amended to read as follows [~~striking through the deleted words and~~ underlining the new words]:

(1) An application for an exemption certificate shall be signed by the consumer where based on the consumer's tax exempt status. The application shall contain the information reasonably required by the City Clerk.

(2) Sellers, other than non-profits, exempt from collecting tax under § 6.40.030 are not required to obtain an exemption certificate in order to be exempt from the collection and remittance of sales tax on their qualifying sales so long as they maintain a current City of Unalaska business license or are a governmental entity exempt under § 6.40.030(L) or (Z).

(3) The seller shall indicate the certificate number of the consumer on the sales slip and shall account for these sales requiring a certificate of exemption on their sales tax return.

(4) The City Clerk may require such proof as the City Clerk deems reasonable, including an audit of books and records, to determine that a certificate issued for exemption under § 6.40.030 (BB) is used solely to obtain an exemption to which the certificate holder is entitled.

(5) The City Manager or designee may permanently revoke an exemption certificate if the consumer entitled to the exemption has been found to have used the exemption certificate to obtain an exemption to which the certificate holder is not entitled or has permitted another to use the exemption certificate to obtain an exemption to which the other person is not entitled.

Section 6: Effective Date. This ordinance shall take effect upon adoption.

PASSED AND ADOPTED by a duly constituted quorum of the Unalaska City Council on _____, 2022.

Vincent M. Tutiakoff, Sr.
Mayor

ATTEST:

Marjie Veeder, CMC
City Clerk

MEMORANDUM TO COUNCIL

To: Mayor and City Council Members
From: Marjie Veeder, City Clerk
Through: Erin Reinders, City Manager
Date: January 25, 2022
Re: Ordinance 2022-02: Amending Title 6.40 of the Unalaska Code of Ordinances to provide a limited exemption from sales tax to federally recognized tribes

SUMMARY: The Qawalangin Tribe of Unalaska (Q-Tribe) requested that City Code be amended to exempt federally recognized tribes from Unalaska's sales tax. Council provided direction to provide a limited sales tax exemption for governmental activities only, leaving commercial or business activities taxable. The City Attorney prepared proposed Ordinance 2022-02. The City Clerk recommends adoption.

PREVIOUS COUNCIL ACTION: On December 14, 2021, City Council discussed this topic during their work session, aided by memoranda supplied by the City Attorney and the City Clerk. At that time, Council provided direction to proceed with a limited exemption from sales tax for federally recognized tribes, exempting governmental activities only, but not commercial activities.

BACKGROUND: Tribal entities are not inherently exempt from municipal sales tax, either as a buyer or a seller. Tribal governments do not qualify for any of the present exemptions allowed in Unalaska's Code of Ordinances. The Q-Tribe requested that city code be amended to provide exemption from sales tax.

DISCUSSION: This topic was thoroughly reviewed and discussed at the December 14, 2021 City Council meeting and the proposed ordinance follows the direction provided by Council.

ALTERNATIVES: Council may

1. Adopt Ordinance 2022-02 as presented, which follows the direction received from Council to provide a limited exemption for governmental activities;
2. Amend the proposed ordinance;
3. Provide a full exemption from sales tax to federally recognized tribes to include commercial activities; or
4. Vote the ordinance down, essentially doing nothing, in which case tribes will receive no exemption from sales tax.

FINANCIAL IMPLICATIONS: The City Clerk anticipates no impact on city sales tax revenue as the tribe has been availing itself of an outdated 1992 sales tax exemption as a nonprofit organization.

LEGAL: City Attorney Charles Cacciola prepared the proposed ordinance and is available by telephone for questions this evening.

STAFF RECOMMENDATION: Because the proposed ordinance complies with the direction of Council received on December 14, 2021, the City Clerk recommends adoption.

PROPOSED MOTION: I move to introduce Ordinance 2022-02 and schedule it for public hearing and second reading on February 8, 2022.

CITY MANAGER COMMENTS: This ordinance is consistent with Council direction from December. I support Staff's recommendation.

MEMORANDUM TO COUNCIL

To: Mayor and City Council Members
From: Michelle Price, Administrative Coordinator
Through: Erin Reinders, City Manager
Date: January 25, 2022
Re: AML Winter Meeting

The Alaska Municipal League organizes its annual winter meeting in Juneau, which focuses on the legislative agenda. The draft agenda is attached. The 2022 Winter Legislative Conference will take place at Centennial Hall in downtown Juneau on February 16-18, 2022.

The goals of the meeting are to:

- Advance AML’s legislative priorities
- Learn more about specific topics relevant to municipal government
- Connect AML members with legislators and administration officials

As of January 10, 2022, the available funds in the Council travel budget are \$65,668.69. Estimated travel costs for one traveler are:

Air Fare	\$	1,212.00
Lodging in Juneau	\$	567.00
Lodging in Anchorage	\$	169.00
Registration	\$	200.00
Vehicle Rental	\$	-
Per Diem	\$	597.00
TOTAL	\$	2,745.00

The Travel Policy for the Mayor and Council indicates that no more than three Council Members are to travel to the same meeting or conference; that travel is conducted in the most direct and economic manner possible to accomplish City business; and that at least twenty-one days prior to an upcoming trip, the council will discuss the travel, identify the Council Members to travel, and approve the travel by motion.



AML Winter Meeting – Legislative Conference
February 16-18, 2022
(Subject to Change)

Wednesday, February 16, 2022

12:00pm	Welcome Lunch
2:30pm	Legislative Review
	Bills in Play Discussion
5:30 – 7:00 pm	AML Legislative Reception

Thursday, February 17, 2022

8:00am	Breakfast
8:30am	Plenary Session
9:30am	Breakout Session
11am	Plenary Session
Noon	Lunch - Guest Speaker
1:00pm	Deep Dive
6pm	Dinner (on your own)

Friday, February 18, 2022

8am	Breakfast
9am	Deep Dive
11:30am	Adjourn
1:30pm	AML Board meeting
5:00pm	AML Board dinner

MEMORANDUM TO COUNCIL

To: Mayor and City Council Members
From: Michelle Price, Administrative Coordinator
Through: Erin Reinders, City Manager
Date: January 25, 2022
Re: City's 32nd Annual Lobbying Trip

The City's annual lobbying trip will be on February 28 through March 2, 2022, in Juneau. This may include a small constituent dinner on Tuesday, March 1, as well as various meetings with legislators on all three days.

As of January 10, 2022, the available funds in the Council travel budget are \$65,668.69. Estimated travel costs for one traveler are:

Air Fare	\$ 1,212.00
Lodging in Anchorage	\$ 169.00
Lodging in Juneau	\$ 756.00
Vehicle Rental	\$ -
Per Diem	\$ 715.00
TOTAL	\$ 2,852.00

The SWAMC meetings begin on March 3 through March 4, 2022, in Anchorage at the Hotel Captain Cook. The cost-saving to the City would be at least \$848 per person (air fare between Unalaska and Anchorage) if an individual who travels on the Juneau Lobbying Trip also attends the SWAMC Meetings.

The Travel Policy for the Mayor and Council indicates that no more than three Council Members are to travel to the same meeting or conference; that travel is conducted in the most direct and economic manner possible to accomplish City business; and that at least twenty-one days prior to an upcoming trip, the council will discuss the travel, identify the Council Members to travel, and approve the travel by motion.

MEMORANDUM TO COUNCIL

To: Mayor and City Council Members
From: Michelle Price, Administrative Coordinator
Through: Erin Reinders, City Manager
Date: January 25, 2022
Re: SWAMC Economic Summit & Membership Meeting

The SWAMC Economic Summit and membership meetings will be on March 3 and 4, 2022, at the Hotel Captain Cook in Anchorage. Meeting information attached.

As of January 10, 2022, the available funds in the Council travel budget are \$65,668.69. Estimated travel costs for one traveler are:

Air Fare	\$	848.00
Lodging in Anchorage	\$	507.00
Registration Fees	\$	330.00
Vehicle Rental	\$	-
Per Diem	\$	500.00
TOTAL	\$	2,185.00

The Juneau Lobbying Trip begins on February 28 through March 2, 2022. The cost-saving to the City would be at least \$848 per person (air fare between Unalaska and Anchorage) if an individual who travels on the Juneau Lobbying Trip also attends the SWAMC Meetings.

The Travel Policy for the Mayor and Council indicates that no more than three Council Members are to travel to the same meeting or conference; that travel is conducted in the most direct and economic manner possible to accomplish City business; and that at least twenty-one days prior to an upcoming trip, the council will discuss the travel, identify the Council Members to travel, and approve the travel by motion.



2022 SWAMC ECONOMIC SUMMIT & MEMBERSHIP MEETING

March 3 & 4, 2022

The Hotel Captain Cook in Anchorage

*WATCH THIS PAGE FOR UPDATED INFORMATION AS WE CONFIRM OUR
AGENDA!*

We're excited to be back together for our 2022 conference, with COVID protocols in place. Our agenda is still being finalized, but we're working to bring you networking opportunities and presentations relevant and important to our Southwest communities. Topics will include:

- Broadband: Support and innovations in expanding broadband to rural communities and funding opportunities
- Presenting our newly completed Recovery and Resilience Plan for Southwest Alaska
- New job and investment opportunities in the maricultural industry
- Updates on fisheries research, policy, and international and domestic markets
- Presentation on challenges and opportunities in workforce development for our region
- Updates from state and local health officials
- Opportunities to hear from state and federal legislators and candidates running for governor

and more!

We'll also be hosting our Presidents Reception and silent auction on the evening of March 3.

Our message for this year's conference is "Emerging from the Storm" as we reflect on how we've weathered the last two years as a region and how we can move forward toward new opportunities, together. We can't wait to see you.