**INSTRUCTIONS (delete this section before printing)**

**ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES**

**CENTRAL REGION**

**DSR TEMPLATE**

**BASED ON:**

**Alaska Highway Preconstruction Manual,**

**Alaska Department of Transportation & Public Facilities, 2023 (as amended)**

The Design Study Report (DSR) is a formal report that documents the selection of a preferred design alternative and design decisions made throughout project development. To help you develop your DSR, the DOT&PF Central Region has created this DSR template, designed to guide you through the DSR development process and ensure your DSR includes all the necessary sections stated in the Alaska Highway Preconstruction Manual (HPCM), section 450.5. A digital version of the HPCM can be found at

 <http://www.dot.state.ak.us/stwddes/dcsprecon/preconmanual.shtml>.

This template covers procedures and sections required by the HPCM.

**Using the DSR Template**

Each section includes “instructions” and space for “project information.” You should read the instructions to aid you with completing the document. Some sections may require only a brief description while others may require several pages of explanation.

Instruction text is shown as:

Instruction Text: To be deleted as sections are filled in.

Instructions contain examples of how you might fill in a section. Example language is provided **however,** **you must customize this template to reflect project specific information.**

If a section (1.0, 2.0, 3.0, etc.) is not used in the DSR, do not renumber the section. Table 1 explains which sections have been considered/included in the report. Items marked as “NO” in table will not be included in the main body. This is generally limited to Highway Safety Improvement Program (HSIP) projects which have program-approved defined scopes.

Deleting “Template” watermark: To delete the “Template” watermark, go to the Design tab, click on Watermark dropdown menu, and select remove Watermark.

**Revision History:**

April 2014

* Original Version

February 2015

* Added revision history & comment contact info
* Modified Section 2.0 Design Standards and Guidelines to include an option of breaking standards and guidelines apart.
* Added language about considering single lane roundabouts where new traffic signals are being considered in Section 11 Traffic Analysis
* Modified Section 16.3 example language
* Modified Section 18 Cost Estimate table and instructions

June 2016

* Reworded instructions for Section 16.2 Public Information Plan
* Added language to Section 12.0 Safety Improvements about new CR Highway Lighting Guidance
* Added required company information to signature page
* General cleanup of existing designer notes

November 2017

* Fixed some formatting issues and fixed navigation bar
* Updated Section 2.0 Design Standards and Guidelines to reflect current standards
* Updated various hyperlinks
* Modified various sections example language
* Added additional instructions on ARRC Checklist to Section 15 Utility Relocation and Coordination
* Modified instructions for DSR distribution and revision methodology

May 2019

* Fixed some formatting and navigation bar issues
* Updated to match DOT&PF Branding Guidelines
* Removed ADA Transition Memo Appendix
* Added commonly used acronyms to Acronym List
* Minor edits to instruction text throughout

August 2022

* Added disclaimer language for HSIP to certification sheet & tweaked language for Traffic Analysis appendix
* Updated Section 8.1 MS4 link to new MS4 permit
* Updated and fixed various instructions and links throughout

August 2024

* Changed font to Palatino Linotype
* Updated design standards - included guidance on using PROWAG
* Updated Section 16.0 for updated HPCM Chapter 14 and added TMP appendix
* Updated instructions, including hyperlinks, in various sections

December 2024

* Updated instructions including Appendix C & D
* Updated Section 10.0 including text and comments for needing FHWA approval on modifying/adding driveways on Interstate
* Updated Section 16.0 including updating TMP references, removing TMP Appendix and including it as a reference document

Comments, Questions, Frustrations:

This is a dynamic document and your comments are welcome. Please send comments or questions to:

Central Region Program Development and Standards Manager:

Chris Post, P.E. 907.269.7885 or chris.post@alaska.gov

Include the full project name. If the project has federal funding include the federal number and DOT&PF program number.

EXAMPLE: 0A3135 / CFHWY00100.

Project Name

Project No.: Federal / State

**DESIGN STUDY REPORT**

ALASKA

DEPARTMENT OF TRANSPORTATION

AND PUBLIC FACILITIES

 PREPARED BY: Company Name

 Address

 Address

Consultants should use their company name and address. In-house staff use:

DOT&PF Central Region – Design and Construction

4111 Aviation Avenue

Anchorage, AK 99502.

Month, Year

 ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

 DESIGN AND ENGINEERING SERVICES – CENTRAL REGION

DESIGN STUDY REPORT

For

Project Name

Project No.: Federal/State

Written by: Insert Name

Prepared by:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Engineer Name Date

Project Engineer

Company Name

Physical Address

Physical Address

Phone Number

Cert. of Auth. Number

 Concur by:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Manager Name Date

Project Manager

Concur by:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Section Chief Name Date

 Chief Title

Approved:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Luke S. Bowland, P.E. Date

Preconstruction Engineer

NOTICE TO USERS

This report reflects the thinking and design decisions at the time of publication. Changes frequently occur during the evolution of the design process, so persons who may rely on information contained in this document should check with the Alaska Department of Transportation and Public Facilities for the most current design. Contact the Design Project Manager, Project Manager Name, at 907-269-#### for this information.

PLANNING CONSISTENCY

This document has been prepared by the Alaska Department of Transportation and Public Facilities according to currently acceptable design standards and Federal regulations, and with the input offered by the local government and public. The department's Planning Section has reviewed and approved this report as being consistent with present community planning.

Include for HSIP Projects:

The information in this report is compiled for highway safety planning purposes. Federal law prohibits its discovery or admissibility in litigation against state, tribal or local government that involves a location or locations mentioned in the collision data. 23 U.S.C. § 407; 23 U.S.C. § 148(h); Walden v. DOT, 27 P.3d 297, 304-305 (Alaska 2001).

CERTIFICATION

For Federally-funded projects, include paragraph below and delete second paragraph:

The Alaska Department of Transportation and Public Facilities hereby certify that this document was prepared in accordance with Section 520.4.1 of the current edition of the department's Highway Preconstruction Manual and CFR Title 23, Highway Section 771.111(h).

For State-funded Only projects, include paragraph below and delete paragraph above:

The Alaska Department of Transportation and Public Facilities hereby certify that this document was prepared in accordance with Section 520.4.2 of the current edition of the department's Highway Preconstruction Manual.

Always include the following paragraph.

The department has considered the project's social and economic effects upon the community, its impacts on the environment and its consistency with planning goals and objectives as approved by the local community. All records are on file with Central Region - Design and Engineering Services Division, Highway Design Section, 4111 Aviation Avenue, Anchorage, AK 99502.

Luke S. Bowland, P.E. Date Ben White Date

Preconstruction Engineer Chief, Planning

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To update the table of contents, right-click inside the shaded area and choose “Update Field”. You can choose to “Update page numbers only” or “Update entire table” if you want to update the page numbers and the text.

This is an automatic format-based table. If additional sections are desired below, you must apply heading styles (i.e. Heading 1 or Heading 2) to the text that you want to include in the table of contents. This can be done by copying the format of another section or by selecting the text of the heading, click the “Home” tab and select the appropriate heading style in the “Styles” ribbon.

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Figures and Appendices to the DSR should include the following items if completed or available. (Other appendices might include HSIP Candidate Description and Cost Estimate Summary, Material Report, As-built Drawings, MOAs, UCRs, etc.). Edit as needed.

# LIST OF FIGURES

Figure 1 Location & Vicinity Map

The list of acronyms below is only an example. Edit as needed.

# LIST OF ACRONYMS

1R Resurfacing (projects)

2R Resurfacing and Minor Restoration (projects)

3R Resurfacing, Restoration, and Rehabilitation (projects)

4R Reconstruction (projects)

AADT Annual Average Daily Traffic

AASHTO American Association of State Highway and Transportation Officials

ADA Americans with Disabilities Act

AHDM Alaska Highway Drainage Manual

AMATS Anchorage Metropolitan Area Transportation Solutions

ANSI American National Standards Institute

APDES Alaska Pollutant Discharge Elimination System

ARRC Alaska Railroad Corporation

ATM Alaska Traffic Manual

ATMS Alaska Traffic Manual Supplement

BMP Best Management Practice

CFR Code of Federal Regulations

CGP Alaska Construction General Permit

DEC Alaska Department of Environmental Conservation

DOT U.S. Department of Transportation

DOT&PF Alaska Department of Transportation and Public Facilities

DOJ U.S. Department of Justice

EPA Environmental Protection Agency

ESCP Erosion and Sediment Control Plan

FHWA Federal Highway Administration

HMA Hot Mix Asphalt

HMCP Hazardous Material Control Plan

HPCM Alaska Highway Preconstruction Manual

HSIP Highway Safety Improvement Program

IES Illuminating Engineering Society

KPB Kenai Peninsula Borough

LOS Level of Service

MADT Monthly Average Daily Traffic

MOA Municipality of Anchorage

MP Milepost

MPH Miles per Hour

MPO Metropolitan Planning Organization

MS4 Municipal Separate Storm Sewer Systems

MSB Matanuska-Susitna Borough

MUTCD Manual on Uniform Traffic Control Devices

MVP Matsu Valley Planning for Transportation

NPDES National Pollutant Discharge Elimination System

PGDHS A Policy on Geometric Design of Highways and Streets

PIOP Public Information & Outreach Plan

PM Preventive Maintenance

PROWAG Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way

RDG Roadside Design Guide

ROW Right-of-Way

SWMM Storm Water Management Model

SWPPP Storm Water Pollution Prevention Plan

TMP Transportation Management Plan

TOP Transportation Operations Plan

TRB Transportation Research Board

TTCP Temporary Traffic Control Plan

USGS United States Geological Survey

# PROJECT REFERENCES

(Documents completed under a separate cover and located in the project files)

Transportation Management Plan, Seward Meridian Parkway Road Improvements Phase II, State of Alaska, DOT&PF, June 2023.

Preliminary Engineering Report, Seward Meridian Parkway Road Improvements, draft version, CH2MHill, December 2005.

Environmental Assessment, Seward Meridian Parkway Road Improvements, State of Alaska, DOT&PF, June 2006.

Traffic Capacity and Safety Analysis, Seward Meridian Road Improvements, DOWL Engineers, August 2005.

Traffic and Safety Analysis Report, Seward Meridian Parkway Improvements Phase II, DOWL, June 2016.

Value Engineering Study, Seward Meridian Parkway Road Improvements, Solutions Engineering & Facilitating, Inc., July 2010.

Geotechnical Reconnaissance Report, Seward Meridian Road Improvements, DOWL Engineers, January 2005.

Geotechnical Report, Seward Meridian Road: Phase II Palmer-Wasilla Highway to Seldon Road, State of Alaska, DOT&PF, Central Region Materials, November 2012.

Include this table and language for HSIP projects if warranted.

The Alaska Department of Transportation and Public Facilities (DOT&PF) Highway Preconstruction Manual (HPCM) Section 450 outlines the topics to be discussed in the Design Study Report (DSR). This project has a defined scope approved through the Highway Safety Improvement Program (HSIP) and several DSR sections do not apply. The table below denotes those sections marked as “YES” have been included in this document. Items marked as “NO” have been considered and found not to be relevant and/or pertinent to the design of this project and will not be discussed further.

# TABLE 1 MODIFIED DSR REQUIREMENTS FOR HSIP PROJECTS

|  |  |  |
| --- | --- | --- |
| **DSR****Section** | **Section Title** | **Consider/Study** |
| **YES** | **NO** |
| 1 | Project location, existing facilities, and purpose and need for project | **** |  |
| 2 | Design standards  | **** |  |
| 3 | Alternatives analysis  | **** |  |
| 4 | Discussion of preferred alternative | **** |  |
| 5 | Typical sections | **** |  |
| 6 | General horizontal and vertical alignment  | **** |  |
| 7 | Erosion and sediment control | **** |  |
| 8 | Drainage | **** |  |
| 9 | Soil conditions | **** |  |
| 10 | Access control features | **** |  |
| 11 | Traffic analysis | **** |  |
| 12 | Safety improvements. | **** |  |
| 13 | Right-of-Way requirements | **** |  |
| 14 | Pedestrian and bike accommodations  | **** |  |
| 15 | Utility relocation and coordination | **** |  |
| 16 | Preliminary work zone traffic control  | **** |  |
| 17 | Pavement design  | **** |  |
| 18 | Cost estimate  | **** |  |
| 19 | Environmental commitments and mitigation | **** |  |
| 20 | Preliminary bridge layout  | **** |  |
| 21 | Exceptions to design standards  | **** |  |
| 22 | Maintenance considerations  | **** |  |
| 23 | ITS features1 | **** |  |
|  |  |  |
| **TABLE 1 MODIFIED DSR REQUIREMENTS FOR HSIP PROJECTS (CONT’D)** |
| Appdx | Approved design designation and design criteria | **** |  |
| Appdx | Typical sections | **** |  |
| Appdx | 3R analysis | Not required |
| Appdx | Traffic analysis  | **** |  |
| Appdx | HSIP nomination package | **** |  |
| Appdx | Material recommendations | **** |  |
| Appdx | VE consideration | Not required2 |
| Appdx | Approved environmental document | **** |  |
| Appdx | Approved design exceptions and design waivers | **** |  |
| Appdx | Traffic analyses (signal warrants, capacity analysis, roundabout analysis, etc.) and speed studies | Not required |
| Appdx | ITS systems engineering analysis | Not required3 |
| Appdx | Design memos | **** |  |

Designers should modify the table as necessary to document their designs. The intent is not to provide a ‘quick out’ to avoid including a section. Consult with your PM before excluding a section.

Delete the superscripts in the table before printing.

1. If a project is federally funded and contains any of the elements listed in HPCM Table 485-1, it must be developed as an ITS project. If this is the case, include within this section whether it is a significant or non-significant ITS project. See HPCM Section 485.4 for more information.
2. Typical HSIP projects do not usually meet the dollar amount thresholds; however, if your project does approach the thresholds, consult with your PM for guidance. See HPCM Section 450.16.
3. ITS Systems Engineering Analysis is not required, unless ITS elements are included and is determined to be a significant ITS project.

If you add appendices, include in the table.

Below is an example of a Location and Vicinity Map. Note: Mileposts or mile points are preferred over project stationing as project stationing may change during design.

****

**Figure 1 Location and Vicinity Map**

# PROJECT DESCRIPTION

Description of project location, existing facilities, and purpose and need for proposed project are all subsections of Project Description.

## Project Location and Description

Describe the project limits using mileposts or streets. Also identify the project location using Section data, USGS Topo maps, and Latitude/Longitude values.

Possible ways to obtain location information:

Section data (turn on the Township & Section layer): <https://www.arcgis.com/apps/webappviewer/index.html?id=e84f3526f6ab4299a229bedad0626550&extent=-20004640.4804%2C7462403.0538%2C-12568846.3688%2C11708632.8491%2C102100>

USGS Topographical Map data (turn on Map Indices layer): <https://apps.nationalmap.gov/viewer/>

Latitude/Longitude (WGS84 Datum): DOT&PF Atlas Map 49 site <https://gis.dot.soa.alaska.gov/portal/apps/webappviewer/index.html?id=8d216541ef1b4ba191a3ba960c9aa4b1> – click on the ‘Get Coordinate’ button next to the latitude/longitude values and select the mid-point of your project. You can also use the BLM or USGS sites listed above. Another tool is Google Earth.

Use decimal format when citing Lat/Long values as this will be used to geo-reference the document in eDocs.

LOCATION EXAMPLE:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA), proposes to extend the northbound passing lane from the terminus of the current passing lane, near Milepost 99, to Milepost 100. The project is located in Sections 14 and 15 Township 10N, Range 1 W., Seward Meridian, USGS Topographical Map Seward D-7; Latitude 60.955014°N, Longitude 149.419264°W, within the Municipality of Anchorage (MOA) near the community of Bird, Alaska. See Figure 1 for Location & Vicinity Map.

DESCRIPTION EXAMPLE:

The proposed rehabilitation project includes: extending the 12-foot northbound passing lane with an 8-foot shoulder by widening on the north side approximately 1.1 miles; extending the pedestrian undercrossing; and realigning the pathway to accommodate the pedestrian undercrossing extension. Work also includes resurfacing the existing roadway, improving ditches and drainage, removing/replacing guardrail, improving drainage culverts, relocating and constructing utilities, replacing signage, striping, and re-vegetation of the disturbed area once construction is complete.

## Existing Facilities and Land Use

Provide some history of the project area. This will require as-built and prior DSR research. As-built plans and DSR’s can be found in the Central Files within the Highway Design section (4111 Aviation Ave. Anchorage, AK 99502) – electronic copies are now available for both as-built plans and DSRs internally ([\\dot.soa.alaska.gov\shared\AVI\LIB\Archive](file:///%5C%5Cdot.soa.alaska.gov%5Cshared%5CAVI%5CLIB%5CArchive)). ~~As-builts are also available at~~ [~~As-Built eDocs site~~](http://www.dot.state.ak.us/edocs_code/searches/combined_asbuilt_search.cfm) ~~or~~ [~~As-Built GIS site~~](https://akdot.maps.arcgis.com/home/item.html?id=16adb3d85671467b9063a04635dc46be)~~.~~

Describe the physical characteristics of the land and its primary uses.

## Purpose and Need

Provide a general purpose statement followed by the specific purpose and need for the proposed project. (This should closely resemble the Environmental Document’s purpose and need statement.)

EXAMPLE:

The purpose of a 3R (Resurface, Restoration, and Rehabilitation) project is to extend the service life and enhance both safety and capacity, as needed.

# DESIGN STANDARDS AND GUIDELINES

Design standards and guidelines that apply to this project are contained in the following publications:

Below are examples of design standards and guidelines. Modify lists as needed.

For additional manuals not shown, use the following format:

Name of Manual/Handbook, X Edition, Name of Author/Association, Year.

Standards:

* A Policy on Geometric Design of Highways and Streets (PGDHS), 7th Edition, AASHTO, 2018.
* Roadside Design Guide (RDG), 4th Edition, AASHTO, 2011.
* Alaska Highway Preconstruction Manual (HPCM), DOT&PF, 2023 as amended at the time of design approval.
* Alaska Highway Drainage Manual (AHDM), DOT&PF, 2006.
* The Alaska Traffic Manual (ATM), consisting of the Manual on Uniform Traffic Control Devices (MUTCD), 2009 as amended, U.S. DOT, FHWA) and the Alaska Traffic Manual Supplement (ATMS), DOT&PF, 2016.
* Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG), U.S. Access Board, 2023.
* ADA Standards for Transportation Facilities, DOT, 2006.
* ADA Standards for Accessible Design, DOJ, 2010.
* Guide for the Development of Bicycle Facilities, 4th Edition, AASHTO, 2012.
* Recommended Practice for Roadway Lighting (RP-8-14), ANSI / IES, 2014.
* Highway Capacity Manual (HCM), 5th Edition, TRB, 2010.
* Guidelines for Design of Low-Volume Roads, AASHTO, 2019.
* LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals AASHTO LRFD LTS–1–I3–OL, 2015 First Edition with interim revisions effective at time of design approval.
* Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals AASHTO LTS–6–I3, 2013 Sixth Edition with interim revisions effective at time of design approval.

Include the reference below when working on a MOA-owned facility and are following their standards.

* Design Criteria Manual (DCM), MOA, Project Management & Engineering Department, 2007 with 2018 revision.

Optional if you wish to include guidelines.

Guidelines:

* Guide for the Planning, Design, and Operation of Pedestrian Facilities,2nd Edition, AASHTO, 2014.

Use the current accepted design standards. If you are not using the current adopted design standard you must explain why and verify whether a Design Waiver/Exception is required.

 Appendix \_\_\_ contains the project Design Criteria and Design Designation.

# DISCUSSION OF ALTERNATIVES

Mention that design alternatives were analyzed as part of the Preliminary Engineering Report (PER)/Environmental Document.

Provide a description and comparative differences of the design alternatives.

## First Alternative

The first alternative is the No-Build alternative.

## Second Alternative

## Third Alternative

# PREFERRED ALTERNATIVE

Discuss the preferred alternative in more detail. Why was this alternative selected?

# TYPICAL SECTIONS

Discuss roadway, bridge, sidewalk, and pathway typical sections here. Number of lanes (each direction), lane and shoulder widths, embankment foreslopes and backslopes, ditch types and widths, rumble strips, etc.

The typical sections are provided in Appendix \_\_\_.

# HORIZONTAL AND VERTICAL ALIGNMENT

Discuss general horizontal and vertical alignment, including location of bridges and other structures.

## Horizontal Alignment

## Vertical Alignment

# EROSION AND SEDIMENT CONTROL

Provide a description of the Erosion and Sediment Control on the project.

EXAMPLE:

The project includes temporary and permanent measures to control or prevent erosion and sedimentation during and post project construction. The contractor will prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to construction that conforms to the DOT&PF Best Management Practices (BMPs) for Erosion and Sediment Control in accordance with the DOT&PF contract specifications and follows the guidelines of the Erosion and Sediment Control Plan (ESCP) provided to the contractor. The contractor will submit the SWPPP for approval by the Construction Project Engineer. The contractor will conduct construction activities in accordance with the approved SWPPP. Appropriate erosion and siltation controls will be used and maintained in optimal condition during construction and all other exposed soils/fills will be permanently stabilized. Temporary BMP’s will remain in place until permanent erosion and sediment control measures are in place and soil is permanently stabilized.

# DRAINAGE

Add information about the general drainage of your project. The first paragraph or two should address project specific characteristics.

EXAMPLES:

3R Project – No widening or change in Vertical Grade, no significant change to current drainage patterns or discharge point

The project will reestablish the v-ditch running along the east side of the roadway. No storm drain pipes are present along the project corridor. Culverts will be placed to maintain existing storm water flow patterns. Some of the existing culverts will be upsized to improve current conditions. The storm water may flow into the South Fork of Campbell Creek (located approximately 0.40 mile to the north). Due to topographical constraints and spatial separation, there is no potential for storm water to flow beyond the roadside ditches and into the Class A wetland on Trappers Trail Road (located upslope of proposed construction activities).

3R Project – Widening to add passing lane, Widening ditches, Pathway realignment, Rock blasting, Culvert replacement and up-sizing, more impervious area, No significant changes to current drainage patterns or discharge point

The project will widen the roadway to accommodate the extension of the northbound passing lane. The additional lane will increase the width from 40 feet to 52 feet. The newly constructed flat bottom ditches running along the north side of the roadway will be wider than the existing ditches to improve accessibility for Maintenance and Operations, improve drainage, and alleviate rock falls from entering the roadway. A flat bottom ditch will be constructed along the north side of the pathway realignment to improve an identified drainage problem. Throughout the project, culverts will be replaced and riprap will be added to inlets and outlets, as needed. Within the project area, surface water moves via ditches into culverts, then passes beneath the Seward Highway and the ARRC tracks before entering the north shore of Turnagain Arm.

* 1. **Drainage within the Municipality of Anchorage (MOA) and MS4 Permit Compliance**

This section only applies to projects located within the Municipality of Anchorage that are covered by the MS4 permit area. Delete section if not applicable.

There are two guiding documents that need to be addressed in the DSR: the [Drainage Project Coordination Policy MOU](http://www.dot.state.ak.us/creg/design/highways/Design_Guidance/Drainage/20170317_DrainageProjectCoordPolicy.pdf) and the [MS4 permit](http://www.dot.state.ak.us/creg/design/highways/ESCP/MS4/aks052558-ms4-pmt-20200623%20final.pdf). It’s recommended that the Designer review both documents prior to writing this section.

Add information concerning compliance to the Drainage MOU and MS4 permit. As part of the Drainage MOU, update the language based on the scope of the project. All work should be discussed with the Environmental Analyst and should match the work covered in the Environmental Document and permits.

EXAMPLE:

The National Pollutant Discharge Elimination System permit program originated under section 402 of the Clean Water Act (CWA, 33 USC §1251), and requires that stormwater discharges to surface water be authorized by permit. In Alaska, the Alaska Department of Environmental Conservation (DEC) has primacy for issuing these permits via the Alaska Pollutant Discharge Elimination System (APDES). DEC has jointly authorized the Municipality of Anchorage (MOA) and the DOT&PF to discharge stormwater from municipal separate storm sewer systems (MS4) to surface water and wetlands within the MOA through an individual MS4 permit. This permit, *APDES Permit No. AKS052558*, is effective from August 1, 2020 to July 31, 2025.

To comply with the permit; the project will incorporate, at a minimum, the pollution control measures and Best Management Practices (BMPs) as required by the DEC-approved Storm Water Management Program (SWMP) developed by the MOA and amended by DOT&PF. Essential requirements include but are not necessarily limited to:

• The project follows the criteria set forth in the DOT&PF’s Alaska Highway Drainage Manual and the MOA’s Drainage Design Guidelines as modified by DOT&PF.

• The contractor will develop a SWPPP prior to construction that follows the guidelines of the ESCP provided to the contractor. The SWPPP will comply with the APDES permitting program and the Alaska Construction General Permit (CGP).

• The contractor will describe how to minimize and reduce erosion in the contractor’s SWPPP.

• The contractor will comply with all permit conditions with respect to installation and maintenance of control measures, inspections, monitoring (if necessary), corrective actions, reporting and recordkeeping.

• The contractor will address all discharge in the SWPPP. The contractor will prepare a Hazardous Material Control Plan (HMCP).

• The maintenance of the pipes, sewers, and other conveyances will remain the responsibility of the AGENCY.

• State of Alaska will maintain outreach and education through the State of Alaska website. Project specific information will be posted at the project site once construction activity begins.

# SOIL CONDITIONS

Discuss the soil conditions in the project area. Use resources including the Environmental Document, geotechnical reports or the pavement recommendations to develop this section.

EXAMPLE:

A geotechnical report is being developed for this project. Areas of rock excavation were determined by visual inspection during site visits and using Google Maps. Geotechnical information taken from the Seward Hwy MP 99-105 Preliminary Engineering Report and Seward Hwy MP 96-102 Design Study Report indicates the soil in this area to be relatively consistent. The soils consist of silty sand with gravel and silty gravels with sand and cobbles. The material is dense to very dense with varying amounts of non-plastic fines. Bedrock consists of dark gray, slightly weathered argillite and greywacke.

# ACCESS CONTROL FEATURES

Use the statement below if it applies to your project.

Is this project on an Interstate and will driveways be modified or added?

[ ]  Yes [ ]  No

New access to the highway will be managed through driveway permits and future project evaluation.

# TRAFFIC ANALYSIS

Discuss the traffic analyses done to support the need for specific project features such as:

 Addition of turn lanes,

 Widening of shoulders, and/or

 Installation of traffic signals.

Analyses can include:

 Signal warrants\*,

 Capacity analysis, and/or

 Roundabout analysis.

Discuss reported crashes as appropriate.

\*DOT&PF has a Roundabout First Policy that requires a single lane roundabout be considered at all locations where a new traffic signal is being considered. Justification for not installing a roundabout needs to be included in the DSR (Section 430.5.5).

# SAFETY IMPROVEMENTS

Discuss project specific safety improvement features included that will reduce known or potential safety deficiencies. If the project is an HSIP project, include the original project nomination in the appendix of this report.

Use the Moose-Vehicle Priority List 2006-2010 as a guide to areas of concern. If the proposed 3R, 4R or other major funding project is in one of the locations on the 95 percentile list discuss the ranking of the road and make sure the project considers benefit/cost of mitigation possibilities such as vegetation management, off-site habitat/corridors, lighting, fencing, etc.

Before including continuous highway lighting, refer to the Highway Lighting Guidance Memo at: <https://dot.alaska.gov/creg/design/highways/Design_Guidance/Lighting/20-05-19_CR_LIGHTING_SELECTION_BILLING_GUIDANCE.pdf>

# RIGHT-OF-WAY REQUIREMENTS

Will the proposed project require additional ROW? If so, describe where and how much. Where will the permanent work be constructed? Within the existing ROW? Easements? Permitted ARRC ROW?

If the proposed project requires additional ROW describe the type of acquisitions (full, partial, strip etc.) that may be needed, but do not exactly specify how many. If possible, use words like ‘approximately’.

EXAMPLE:

The Abbott Road Rehabilitation project will require additional ROW.

The first half of the project (from Lake Otis Parkway to Elmore Road) will have little need for additional rights of way (ROW). The preferred alternative shifts the alignment to the south of the existing centerline, minimizing ROW impacts.

The second half of the project (Elmore Road to Birch Road) passes through a narrower ROW corridor (averaging approximately 100-130 feet in total width), with rolling topography. ROW acquisitions in this section are largely strip acquisitions, predominately on the south side of Abbott Road.

Temporary Construction Easements and Permits will be required to construct the project.

# PEDESTRIAN AND BICYCLE FACILITIES

Discuss pedestrian and bicycle accommodations. This includes but is not limited to: shoulders, bike lanes, sidewalks, shared pathways, and pedestrian undercrossings.

# UTILITY RELOCATION AND COORDINATION

ARRC Crossing Coordination: For all projects, the project team must fill out the Railroad Crossing Engineer’s Checklist (found here: <http://www.dot.state.ak.us/creg/design/highways/Submittals/ARRC_Certification/>)

The design team should follow the flowchart (page 3) to determine which forms need to be included along with the checklist. At the time of draft DSR submittal, submit the entire ARRC Crossing Certification package for review.

Utility companies with facilities in the project limits include \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Utilities will require relocation and agreements will need to be developed, at select locations throughout the project, to address the following conflicts:

## Utility Company

## Utility Company

# PRELIMINARY WORK ZONE TRAFFIC CONTROL

This section follows the HPCM Chapter 14. All projects will develop a Transportation Management Plan including a Temporary Traffic Control Plan and may contain a Transportation Operations Plan and Public Information & Outreach Plan.

EXAMPLE (Significant Project):

The HPCM Section 1400.2 sets forth the criteria for determining if a project is ‘significant’ for purposes of determining the level of effort required in developing a Transportation Management Plan (TMP).  Significant Projects fall into either a Category 1 or Category 2 classification.

Category 1:

Project occupies a location for more than three consecutive days with either intermittent or continuous lane closures on Interstate Highways within a Transportation Management Area – **Criteria Met (or Criteria Not Met)**

Category 2:

Any project that, alone or in combination with other concurrent projects nearby, is anticipated to require greater than normal attention to traffic control to eliminate sustained work zone impacts greater than what would be considered acceptable – **Criteria Met (or Criteria Not Met)**

The project meets the criteria for a Category 2 Significant Project and a full TMP, including Temporary Traffic Control, Transportation Operations, and Public Information & Outreach Plans have been developed.

The Transportation Management Plan is included by reference and will be provided to Construction staff. The following sections summarize the major points of the plan.

EXAMPLE (Not Significant Project):

The HPCM Section 1400.2 sets forth the criteria for determining if a project is to be classified as a significant project for purposes of determining the level of effort required in developing a Transportation Management Plan.

Criteria 1 is not met as the roadway is not classified as an Interstate Highway within the Anchorage Transportation Management Area. Category 2 is not met as the anticipated work zone impacts, by the project or projects within the area, would not exceed what would be considered acceptable. Therefore, the project is not considered a significant project.

The Transportation Management Plan is included by reference and will be provided to Construction staff. The following sections summarize the major points of the plan.

## Transportation Management Plan

Document how the project addressed HPCM Section 1400.3.1 – this should be a summary of key points with more detailed information included in the TMP. Note the TMP is meant to be passed to Construction for their use.

From Section 1400.3.1:

1. Involve stakeholders as appropriate.

2. Provide information on potential construction impacts on traffic mobility during public hearings and meetings.

3. Identify existing road users, including vulnerable road users.

4. Consider whether road capacity under anticipated construction conditions needs to be analyzed.

5. Consider whether there are safety concerns that need to be addressed.

6. Consider whether it is appropriate to include a TOP and/or Public Information Plan (or portions thereof).

7. Consider access requirements for the contractor, inspectors, and other agency stakeholders to get in and out of: work zones; storage and stockpile areas; and the project office.

8. Consider whether any utilities hinder access to perform the work.

9. Coordinate with the Division of Measurement Standards and Commercial Vehicle Enforcement (MSCVE) to identify existing and pending oversize/overweight vehicle permits that will require accommodation on the project.

10. Consider whether there is adequate room and ROW to perform the work with the size and types of equipment expected.

11. Ensure anticipated temporary construction impacts are consistent with the relevant section in the Environmental Document.

## Temporary Traffic Control Plan

All projects will have a Temporary Traffic Control Plan.

EXAMPLE:

Design has created a Temporary Traffic Control Plan (TTCP) as part of the TMP which will be used along with the contractor’s specific TTCP. The TTCP was developed to safely guide and protect the traveling public in work zones, in accordance with the ATM, Chapter 9 of the AASHTO Roadside Design Guide and the project specifications. The contractor’s TTCP will be assessed and approved by the department.

## Public Information & Outreach Plan

EXAMPLE (Not Significant Project):

Design has conducted outreach to the public about construction impacts including local business, residents, and road travelers during development of the project. This included formal discussions at public meetings, Transportation Fairs, and direct discussion with individuals regarding the project’s impacts.

The contractor is responsible for providing advance notice to the public, including local businesses, residents, and road travelers, of construction activities that could cause delays, detours, or affect access to adjacent properties as required by the project specifications Section 643-3.03 Public Notice.

EXAMPLE:

A Public Information & Outreach Plan (PIOP) was developed as part of the TMP. It specifies the ways and means that the project will use to inform the public of upcoming activities impacting local stakeholders, the roadway users, and public entities. The PIOP contains measures to inform stakeholders of project scope, expected work zone impacts, closure details, and recommended action to avoid impacts and changing conditions during construction. Measures to disseminate information include:

\* Contractor’s Worksite Traffic Supervisor,

\* Department’s Construction section through the Department’s 511 system,

\* Television, radio, social media, and/or newspaper, and

\* Other location-specific communication tools.

The traveling public should not be caught unaware by any closures, detours, delays, night work, or any potentially disruptive activity.

## Transportation Operations Plan

EXAMPLE (Not Significant Project):

The department has/will coordinate with relevant public agencies, event organizers to incorporate means and methods for minimizing traffic impacts with the contractor not covered by the TTCP or the PIOP within the project plans.

# STRUCTURAL SECTION AND PAVEMENT DESIGN

EXAMPLE:

The existing pavement thickness on this portion of the Sterling Highway varies from two to four inches. The pavement surface contains ruts and displays longitudinal cracking, alligator cracking, potholing, and frost heaving.

The planned resurfacing improvements will include adding a ½” prelevel over the existing asphalt and overlaying with 2 inches of Hot Mix Asphalt (HMA), Type II; Class A.

In areas called out for structural section improvements, 40 inches of road embankment will be removed, geotextile placed, and reconstructed with 36 inches of Selected Material, Type A, 2 inches of Aggregate Base Course, Grading D-1 and capped with 4 inches of HMA. In three locations with frost-heaving, geo-grid will be placed in addition to geotextile.

Pavement recommendations are provided in Appendix \_\_.

Material sources for this project will be contractor supplied.

# COST ESTIMATE

Ask the Project Manager for these values. They should be taken from the Federally Obligated Status Report (FOSR) and should match the Phase 2, 3, 4, and 7 funds. They are only planning-level values and do not need to be exact. Do not include a detailed cost estimate in this document.

The project cost estimate is as follows:

|  |  |  |
| --- | --- | --- |
| Preliminary Engineering | $ | XXX,XXX |
| Right-of-Way  | $ | XXX,XXX |
| Utility Relocation  | $ | XXX,XXX |
| Construction | $ | X,XXX,XXX |
| Total | $ | X,XXX,XXX |

For projects that meet the VE dollar thresholds, include a short statement on when the VE was conducted and a reference to the appendix.

EXAMPLE:

A Value Engineering Study was completed for this project in July 2022. The results of this study can be found in Appendix \_\_.

# ENVIRONMENTAL COMMITMENTS AND CONSIDERATIONS

Discuss environmental commitments and considerations with the Environmental Analyst and the Project Manager before completing the section. Add information specific to the project and verify the following standard language.

EXAMPLE:

The proposed project does not involve any unusual circumstances or significant environmental impacts; it meets the criteria for classification as a Categorical Exclusion per 23 CFR 771.117. A Categorical Exclusion for the project was approved on DATE. A copy of the document is included in Appendix \_\_\_.

The contractor will be required to prepare and implement a SWPPP in accordance with Section 7.

The contractor will be required to dispose of solid waste at a DEC approved landfill. The contractor will be responsible for obtaining all necessary permits and clearances for materials sites, disposal sites, and staging areas unless DOT&PF has already obtained all necessary permits.

# BRIDGES

Use the statement below if it applies to your project.

No bridges are within the project limits.

# EXCEPTIONS TO DESIGN STANDARDS

Use the statement below if it applies to your project.

There are no exceptions to design standards for this project.

# MAINTENANCE CONSIDERATIONS

Discuss who will be responsible for maintenance of the features within the project. This may include the roadway, pedestrian facilities, or drainage features. Also discuss additional maintenance that will be required as a part of the project. Expand upon provided text.

Maintenance will remain the responsibility of the State of Alaska and the local DOT&PF Maintenance and Operations Station located at \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The project will increase maintenance efforts by \_\_\_\_\_\_\_\_\_\_\_\_\_\_. Maintenance efforts will be reduced due to \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

# ITS FEATURES

Discuss ITS elements to be incorporated into the project.

For All Appendices:

The signing of the DSR acts as Design Approval and must be distributed at the time of the signing.

Follow the process below for distribution:

Initial signing of DSR:

Distribute a copy of the signed DSR using the Final DSR Transmittal Memo (to FHWA, staff, etc.). Bind the original document and place in Central Files. Provide a digital copy to the Program Development & Standards Manager.

Since DSR will now be provided at a later stage of project development, the process below should be used rarely.

After Bid Opening (Beginning of Design Closeout):

If significant design changes occur between the approval of this document and bid opening; the Project Engineer is responsible to complete a design memo (or memo to file) to supplement the Design Study Report. Use the DSR Revision Memo, <https://dot.alaska.gov/creg/design/highways/DSR/>, to obtain approval.  Retrieve the DSR from Central Files and insert memo(s) behind the cover sheet (treat it like an addendum). Have Graphics rebind the document and return the **original** DSR with revision memo to Central Files. Provide a digital copy of the revised DSR to the Program Development and Standards Manager.

Examples of items added after signing of DSR:

 \* Design Exceptions & Waivers

 \* Final Pavement Recommendations

APPENDIX A
Approved Design Criteria and Design Designation

APPENDIX B
Typical Sections

APPENDIX C
3R Analysis

Include text below in traffic studies that include collision data.

Disclaimer:

The information in this report is compiled for highway safety planning purposes.  Federal law prohibits its discovery or admissibility in litigation against state, tribal or local government that involves a location or locations mentioned in the collision data.  23 U.S.C. § 407; 23 U.S.C. § 148(g); *Walden v. DOT*, 27 P.3d 297, 304-305 (Alaska 2001).  This compilation is derived from reports maintained by DMV, and DOT can make no representation about their accuracy.

APPENDIX D
Traffic Analysis

Items that may be included in this section, if not covered in another Appendix: Signal Warrants, Capacity Analysis, Roundabout Analysis, etc.

Include text below in traffic studies that include collision data.

Disclaimer:

The information in this report is compiled for highway safety planning purposes.  Federal law prohibits its discovery or admissibility in litigation against state, tribal or local government that involves a location or locations mentioned in the collision data.  23 U.S.C. § 407; 23 U.S.C. § 148(g); *Walden v. DOT*, 27 P.3d 297, 304-305 (Alaska 2001).  This compilation is derived from reports maintained by DMV, and DOT can make no representation about their accuracy.

APPENDIX E
HSIP Nomination Package

APPENDIX F
Material Recommendations

APPENDIX G
VE Consideration

APPENDIX H
Approved Environmental Document

Do not include the Environmental Document’s appendices.

APPENDIX I
Approved Design Exceptions and Design Waivers

APPENDIX J
ITS Systems Engineering Analysis

APPENDIX K
Design Memos

Design Memos may include: Drainage Inspection Memos, Guardrail Inspection Memos, etc.

If no design memos have been created for the project at time of signing, insert the text below. This will serve as a placeholder in the case of any significant design changes after initial approval.

For DSR distribution:

The original, unbound DSR will be kept with the DOT&PF Project Manager until project bid opening. If no significant design changes occurred between approval of the DSR and project bid opening, the Project Manager will bind the original DSR and place it in Central Files. If significant design changes occur between the approval of the DSR and the bid opening resulting in Design Memos being produced, the Project Manager will bind the original DSR with Design Memos and file it in Central Files.

At this time, no significant design changes were made after the approval of this document. The final as-built plans for this project will be available in Central Files within the Highway Design Section (4111 Aviation Avenue, Anchorage, AK 99502).