

REFERENCE STANDARDS AND PROCEDURAL GUIDANCE APPLICABLE TO ODOT A&E AND RELATED SERVICES PROJECTS

- **Attachment 1 (Standards, Manuals, Guides and Forms)** to this document provides links to ODOT Internet sites with various standards, manuals, forms, samples, and other guidance applicable to A&E and Related services provided to ODOT.
- **Attachment 2 (Standards Applicable to Preliminary Engineering, Design and Construction)** to this document provides a detailed list of reference standards applicable to A&E and Related Services provided to ODOT.

The standards, manuals, directives and other procedural guidance listed on Attachment 2 and also available through the various links on Attachment 1 are not exhaustive and may not include all applicable standards for a given project. Consultants shall be responsible for determining all applicable practices and standards to be used in performing A&E and Related Services.

Unless otherwise specified in a Contract or Work Order, the most current version of applicable standards, manuals, directives and other procedural guidance shall apply. Unless otherwise specified, the system of measurement and language used in all deliverables will be English.

Consultants shall complete Construction Engineering, Inspection and Construction Contract Administration (CEI/CA) services in accordance with ODOT's Construction Manual, the Manual of Field Test Procedures and the ODOT Inspectors Manual. All Inspection work must be performed by Agency-certified Inspectors as required by the Agency's Inspection Quality Assurance Program (IQAP).

**Attachment 1
Standards, Manuals, Guides and Forms
Available on ODOT Internet Sites**

Access Management Manual and Technical Guidance

<http://www.oregon.gov/ODOT/HWY/ACCESSMGT/accessmanagementmanual.shtml>

Bridge Standards & Manuals

http://www.oregon.gov/ODOT/HWY/BRIDGE/standards_manuals.shtml

ODOT Construction Publications

<http://egov.oregon.gov/ODOT/HWY/CONSTRUCTION/publications1.shtml>

ODOT Contract Administration Services Publications

<http://egov.oregon.gov/ODOT/HWY/CONSTRUCTION/CAIndex.shtml>

Geo-Environmental Standards, Manuals, Forms , Templates & Policies

Manuals, Procedures & Practices	Standard SOW's	Standard Specifications	Policy & Memos
Sample Documents	Training Modules	Forms & Templates	

Right-of-Way Manual, Forms & Publications

<http://www.oregon.gov/ODOT/HWY/ROW/publications.shtml>

Railroad and Utility Relocation Program Resources

http://www.oregon.gov/ODOT/HWY/ROW/rail_utility.shtml

Geometric Manuals and Documents

<http://www.oregon.gov/ODOT/HWY/GEOMETRONICS/documents.shtml>

Traffic Engineering Manuals, Publications and Forms

http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/publications_traffic.shtml

Roadway Engineering Manuals, Guides, Forms and Publications

http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/publications_roadway.shtml

Specifications Manuals, Guides, Forms and Publications

http://www.oregon.gov/ODOT/HWY/SPECS/manuals_forms_etc.shtml

Estimating Manuals, Guides, Forms and Publications

http://www.oregon.gov/ODOT/HWY/ESTIMATING/manuals_forms_etc.shtml

Consultant Web Portal (for A&E and Related Services Consultants)

<http://www.odot.state.or.us/ffp/hwy/opd/consultant.html>

[Directives](#)

[Highway Mobility Operations Manual](#) (Traffic Mobility)

[Operational Notices](#)

[Operational Policies](#)

[Project Delivery Guidebook](#)

[STIP Information Booklet](#)

[Technical Guidance](#) - (Directives, Bulletins and Advisories)

[Technical Manuals](#) - (Commonly sought standards and manuals)

[The Project Delivery System](#)

Attachment 2
Standards Applicable to Preliminary Engineering, Design and Construction
ODOT Projects

** A new ODOT load rating manual is now being written that will include Load & Resistance Factor Rating methods.
1997 Uniform Fire Code
2003 International Fire Code
23 CFR Parts 450, 620, 625, 635, 640, 645, 650, 660, 712, 713, 750, 751,752,771, 772, 777, 790, and 49 USC 101, 109, 303, 138, 5301, 5312, 5324, 49 USC 55. Subchapter 11
23 CFR Parts 635, 640, 645 (Utilities), 646 (Railroads), 650, 712, 771, 790, and 49 CFR 622
48 CFR 31
49 CFR 26
AASHTO "An Information Guide for Roadway Illumination"
AASHTO "A Policy on Design Standards – Interstate System" (1999)
AASHTO "A Policy on Geometric Design of Streets and Highways"
AASHTO Design Guide Specification for Bridge Temporary Works, 1995
AASHTO Hazardous Waste Guide for Project Development
AASHTO LRFD Bridge Design Specifications, 4th Edition
AASHTO Manual on Subsurface Investigations
AASHTO Roadside Design Guide
AASHTO Roadway Lighting Design Guide
AASHTO Standard Specifications for Highway Bridges, 17th Edition
AASHTO Standard Specifications for Transportation Materials and Methods of Sampling and Testing (latest edition)
AASHTO Uniform Audit and Accounting Guide
AASHTO, "Standard Specifications for Structural Support for Highway Signs, Luminaries, and Traffic Signals
ACI Manual of Concrete Practice (latest edition)
ANSI/IES "Standard Practice for Tunnel Lighting" (RP-22-96)
Archaeological Resources Protection Act (ARPA)
Asbestos Regulations: 40 CFR 763; 29 CFR 1910, 1001, , and 1926.1101; ORS 468A.700 entire sequence; OAR 340-33 and OAR 340-248
ASCE Manuals and Reports of Engineering Practice No. 77 and WEF Manual of Practice FD-20, Design and Construction of Urban Stormwater Management Systems,
ASTM 1368 Practice for Visual Inspection of Asbestos Abatement Projects
ASTM 1527-00 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process
ASTM 1903-97 Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process
ASTM E 1528-00 Standard Practice for Environmental Site Assessments: Transaction Screen Process
ASTM E1739-95 Standard Guide for Risk-based corrective action applied at petroleum release sites
ASTM Specifications & Testing Procedures (latest edition)
Audits of Federal Government Contractors
Clean Water Act, Section 401 and Section 404
Clean Water Services, Design and Construction Standards for Sanitary Sewer and Surface Water Management, Cleanup Program Quality Assurance (2001)
Coastal Zone Management Act: 40 CFR 122 through 133, inclusive
Community Right-to-Know and Hazardous Substance Registration: 40 CFR 370; 40 CFR 372; OAR 837-85; OAR 837-90
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): USC Title 42 Chapter 103; 40 CFR 302, 312, & 117; ORS 465.200; ORS 466.600, 468B; OAR 340-122; OAR 340-142.

Consideration of the Internal Control Structure in a Financial Statement Audit
DEQ guidance documents for risk assessment and cleanup:
Deterministic Human Health Risk Assessments (2000)
Development Review Guidelines - Various federal, state, and local government
DOT Act of 1966 (Section 4(f)), (49 USC sec 303)
DOT Hazardous Materials Shipping Regulations 49 CFR 100 to 185.
DOT Order 5660.10 (Preservation of the Nation's Wetlands)
Endangered Species Act – Section 7 consultation Biological Opinion & Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation, Revised Standard Local Operating Procedures for Endangered Species (SLOPES II) for Certain Regulatory and Operations Activities Carried Out by the Department of the Army in Oregon and the North Shore of the Columbia River
EPA Technical Bulletin (EPA-430-99-74-001) Design Criteria For Mechanical, Electric, and fluid System and Component Reliability
Executive Order 11990 (Protection of Wetlands)
Executive Order 12898 and Title VI of the Civil Rights Act
FAA Obstruction Marking and Lighting
Federal Endangered Species Act and related regulations
FEMA Flood Insurance Studies
FEMA floodplain regulations
FHWA Contract #DTFH 61-01-C-00067, "Highway and Transit Tunnel Inspection and Maintenance Manual," March 2003
FHWA Culvert Inspection Manual (FHWA-IP-86-2)
FHWA Guide for Construction Contract Time Determination Procedures: (http://www.fhwa.dot.gov/legsregs/directives/techadvts/t508015.htm)
FHWA HDS 1: Hydraulics of Bridge Waterways
FHWA HDS 2: Highway Hydrology, Second Edition
FHWA HDS 4: Introduction to Highway Hydraulics
FHWA HDS 5: Hydraulic Design of Highway Culverts
FHWA HDS 6: River Engineering for Highway Encroachments
FHWA HEC 18: Evaluating Scour at Bridges, Fourth Edition
FHWA HEC 20: Stream Stability at Highway Structures Third Edition
FHWA HEC-11: Design of Riprap Revetment
FHWA HEC-14: Hydraulic Design of Energy Dissipaters for Culverts & Channels
FHWA HEC-15: Design of Roadside Channels with Flexible Linings
FHWA HEC-17: The Design of Encroachments on Flood Plains using Risk Analysis
FHWA HEC-21: Bridge Deck Drainage Systems
FHWA HEC-22: Urban Drainage Design Manual
FHWA HEC-9: Debris-Control Structures
FHWA Interim Guidance – Hazardous Waste Sites Affecting Highway Project Development (1998)
FHWA Manual on Uniform Traffic Control Devices
FHWA Policy Revision to Support the Brownfields Economic Redevelopment Initiative
FHWA Publication # FHWA-HI-99-007, "Rock Slopes: Design, Excavation, Stabilization" 1999.
FHWA Publication # FHWA-IF-02-034, Geotechnical Engineering Circular 4 "Ground Anchors and Anchored Systems" April 2002
FHWA Publication # FHWA-IF-02-054: "Geotechnical Engineering Circular No. 6, Shallow Foundations, September 2002
FHWA Publication # FHWA-IF-03-017, Geotechnical Engineering Circular 7 "Soil Nail Walls" March 2003
FHWA Publication # FHWA-IF-99-025, "Drilled Shafts: Construction Procedures and Design Methods", August 1999
FHWA Publication # FHWA-NHI-00-043, NHI Course No. 132042, "Mechanically Stabilized Earth Walls and Reinforced Slopes

FHWA Publication # FHWA-SA-97-076/077:: “Geotechnical Engineering Circular No. 3, Design Guidance: Geotechnical Earthquake Engineering for Highways, May 1997
FHWA Publication FHWA-HI-97-013, NHI Courses 13221 and 13222, “Design and Construction of Driven Pile Foundation Workshop Manual Volumes I and II”, November 1998
FHWA Publication FHWA-SA-97-070 "Micropile Design and Construction Guidelines Implementation Manual," June, 2000
FHWA Roadway Lighting Handbook
FHWA Standard Alphabets for Highway Signs
FHWA Supplemental Hazardous Waste Guidance (1997)
FHWA Technical Advisory 16640.8A
FHWA Value Engineering Handbook
Fish and Wildlife Coordination Act
Generally Accepted Accounting Procedures
Government Auditing Standards (Yellow Book)
Guidance for Ecological Assessment (1998)
Guidance for Use of Probabilistic Analysis in Human Health Risk Assessment (1998)
Guidelines for Writing Engineering Design and Pre-Design Reports, 1994
Guidelines for Writing Pump Station O&M Manuals
HazWoper 29 CFR 1910.120, 1910.132 to 138, 1910.1001 to 1096, 1910.1200, 29 CFR 1926 and OAR 437-02 and all other applicable health and safety regulations
HCD Stormwater online guidance, ESA Guidance for analyzing Stormwater affects
HWA Standard Highway Signs (English & Metric)
Hydraulic Design and Report Writing for Projects Designed by Consultants
Instrument Society of America (ISA): Standards and Recommended Practices for Instrumentation and Control
Land and Water Conservation Fund Act (16 USC 4601-4601-11)
Lane Regional Air Pollution Authority (LRAPA) Title 20 Indirect Sources (Air Quality)
Local government development codes and regulations
Manual for Railway Engineering of the American Railway Engineering and Maintenance-of-Way Association (AREMA, formerly AREA) as modified by the individual requirements of each railroad company
Manual of Uniform Traffic Control Devices (MUTCD)
Memorandum on Scope and Content of Facility Plans
Metropolitan Washington Council of Governments, Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMP’s
Migratory Bird Protection Treaty Act
National Cooperative Highway Research Program Report 350, “Traffic Control Device Testing and Crashworthiness”
National Electrical Code
National Electrical Code with Oregon Amendments
National Electrical Safety Code
National Fire Protection Association (NFPA) 820 Fire Protection in wastewater Treatment Plants
National Historic Preservation Act (16 USC 470f) Section 106
NEPA
NOAA Fish Passage Guidelines
OAR 340-045; NPDES and WPCF Permits
OAR 340-252-0010 through 0290 Transportation Conformity
ODFW Fish Passage Guidelines
ODOD Non-Field Tested Materials Acceptance Guide
ODOT Agency Confidence Point Specifications
ODOT Air Quality Manual
ODOT Basic Survey - Theory and Practice
ODOT Biological Assessment Template

ODOT Bridge Design and Drafting Manual
ODOT Bridge Engineering Section Office Practice Manual
ODOT Construction Manual
ODOT Contract Plans Development Guide
ODOT Contractor Services Guide (when doing ROW work for ODOT)
ODOT Standard Drawings Manual (most recent version)
ODOT Environmental Baseline Report Guidelines, including appendices A&B
ODOT Field Inspectors Manual for Signal Construction
ODOT Field Note Standards
ODOT Foundation Design and Report Writing For Consultants
ODOT Geotechnical Manual
ODOT Guidelines for Variable Message Signs on State Highways
ODOT Hazardous Materials Program Guide - available at ftp://ftp.odot.state.or.us/techserv/Geo-Environmental/Environmental/ProceduralManuals/
ODOT History of State Highways in Oregon
ODOT Highway Design Manual
ODOT Highway Division Directives and Transportation Operation Directives
ODOT Hydraulics Manual
ODOT Inspector's Manual
ODOT Lighting Policy and Guidelines
ODOT Manual of Field Test Procedures
ODOT Material Source Checklist
ODOT Material Source Use Criteria
ODOT Memos to Designers
ODOT Monumentation Policy
ODOT Noise Manual
ODOT Pavement Design Guide
ODOT PDLT Notices (Project Delivery Leadership Team Operational Notices)
ODOT PDLT Notice 05: Water Quality Mitigation
ODOT Policy DES 05-02 : Document Stamping Requirements for Registered Engineers, Land Surveyors, Geologists, and Landscape Architects
ODOT Policy ENV 16-01: Hazardous Materials and Waste Policy
ODOT Policy ENV 16-02: Hazardous Materials Procedure for Transportation Projects
ODOT Policy Statement for Cooperative Traffic Control Projects
ODOT Pollution Control Plan Contractor Packet

ODOT Project Delivery Guidebook
ODOT Project Scoping The Project Scoping Guidebook
ODOT Qualified Products List (QPL)
ODOT Red-light-running camera Guidelines
ODOT Retaining Structures Manual
ODOT Railroad and Utility Manual
ODOT Right of Way Manual
ODOT Right of Way Engineering Manual
ODOT Route Surveying Procedures for Location, Design and Monumentation
ODOT Highway Safety Program Guide
ODOT Scour Guidelines
ODOT Sign Design Manual
ODOT Sign Policy
ODOT Signal Design Manual
ODOT Soil and Rock Classification Manual

ODOT Special Provision Boilerplates
ODOT Specifications Manual
ODOT Standard Construction Production Rates: (http://www.odot.state.or.us/tsestimates/rates.htm)
ODOT Standard Details
ODOT Standard Drawings
ODOT Standard Drawings ODOT Wetlands Guidebook
ODOT Survey Filing Map Drafting Standards
ODOT Traffic Control Plans Design Manual
ODOT Traffic Lighting Design Manual
ODOT Traffic Line Manual
ODOT Traffic Manual
ODOT Traffic Signal Policy and Guidelines
ODOT Traffic Signal Request Form
ODOT Traffic Structures Design Manual
ODOT Value Engineering Policy
ODOT, "A Guide to School Zone Area Safety"
ODOT, "Standards for Disabled Parking Spaces"
ODOT, "Striping Design Guidelines"
ODOT, Topographic Data Required for Bridge Backwater Analysis
ODOT Work Zone Traffic Analysis Manual
Oil Pollution Control Act, 40 CFR 112, OAR 340-141
Oregon Administrative Rules (OAR)
Oregon Bicycle and Pedestrian Plan
Oregon Department of Environmental Services Guidelines Related to Pump Stations:
Oregon Endangered Species Act
Oregon Highway Plan
Oregon Local Agency Project Manual
Oregon Plan for Salmon and Watersheds
Oregon Revised Statutes (ORS)
Oregon Standard Specifications for Construction (a joint publication with APWA since 2002)
Oregon Supplements to MUTCD
Oregon Temporary Traffic Control Handbook (the Orange book-OTTCH)
Oregon Transportation Plan
Oregon Transportation Safety Action Plan
OSHA Regulations
Permit requirements for Section 404 of the Clean Water Act and Oregon Removal and Fill Statutes (ORS 541.605 - 541.695), and the associated Administrative Rules
ODOT Policy for Presenting Subsurface Information in Geotechnical Reports and in Construction Contract Documents using Graphical Methods
Post-Tensioning Manual 5th ed.
Programmatic Consultation for Statewide Drilling, Surveying, and Hydraulic Engineering Activities in Oregon
Retention, Detention, and Overland Flow for Pollutant Removal from Highway Stormwater Runoff (FHWA-RD-96-096)
Risk-based Decision Making for the Remediation of Petroleum Contaminated Sites (2003)
Section 4(f) Evaluations (49 USC 303; see also 23 USC 138)
Stormwater Best Management Practices in an Ultra-Urban Setting: Selection and Monitoring (FHWA-EP-00-02)
Stormwater Management Manual, City of Portland Bureau of Environmental Services
Stormwater Treatment - Biological, Chemical and Engineering Principles, Gary R. Minton Ph.D. PE, Resource Planning Associates, U.S.A., 2002
Topographic Data Required for Bridge Backwater Analysis, ODOT

TRB Highway Capacity Manual ("TRB" stands for "Transportation Research Board")
Transportation Research Board Reports
Transportation Research Board Special Report No. 214 "Designing Safer Roads"
Underground Injection Control Systems (UIC Regulations): 40 CFR 144 to 149 and OAR 340-044
Underground Storage Tank regulations: 40 CFR 280; ORS 466.700 through 466.995 inclusive; OAR 340-150 through 177 inclusive
Uniform Building Code with Oregon Amendments
Uniform Federal Accessibility Standards
Uniform Fire Code with Oregon Amendments
Uniform Mechanical Code with Oregon Amendments
Uniform Plumbing Code with Oregon Amendments
US Army Corps of Engineers (23 CFR 323.2©) and Other Regulations
USDFW Fish Passage Guidelines
USEPA Guidelines for Modeling Carbon Monoxide at Roadway Intersections
Waste Regulations: Resource Conservation and Recovery Act (RCRA); 40 CFR 260 to 273, 279 and 761; ORS 459, 465, 466, 468.920 et seq., OAR 340-93 to -97, 340-100 to -113, 340-135 and 340-142
Water Quality regulations (OAR 340-41), The Clean Water Act, including Section 401, NPDES stormwater permit conditions, Coastal Zone Management Act, and local regulations.
Water Quality regulations: OAR 340-41 and 340-045