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SECTION 100 - GENERAL INFORMATION

110.00 MANUAL PURPOSE

The Roadway Design Manual has been developed to reflect policy, provide uniformity of procedures, and communicate information for projects in the Idaho Transportation Investment Program (ITIP). The manual provides guidance for the development of projects through the ITD and FHWA approved development process.

It is intended for use by the District Project Development (Design) sections. Any reference to "the district" may be replaced with "consultant," etc., depending on what entity is responsible for the development and delivery of the project.

120.00 ELECTRONIC FORMS

Most of the referenced forms are available in electronic .doc or .xls format. To complete these forms electronically, click on the word document or excel worksheet version button. This will allow the documents to be saved for future use. Most forms in this manual are listed in Appendix D and available on the internet on the online manuals site.

<http://itd.idaho.gov/manuals/manualsonline.htm>.

For ITD employees forms are also available on the Intranet in the form finder. The forms are listed by ITD number or other identifying notation. For further assistance to change a form, or make suggestions, contact Headquarters Design in Design/Materials/Construction (DMC).

130.00 MANUAL ORGANIZATION

The Manual is organized in the following Sections.

Quick References

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Section 400 Final Design

Section 500 Design Guidelines and Standards

Section 600 Hydraulics

Section 700 Local Public Agency Projects

Section 800 Plans

Section 900 Plans, Specifications, and Estimates

Section 1000 Structures

Appendix A Design Criteria for Specific Projects

Appendix B Hydraulics

Appendix C Plans

Appendix D Roadway Design Forms

Appendix E Roadside Design

140.00 MANUAL CHANGES

The Roadway Design Manual is generally revised and updated bi-annually to reflect changing processes, procedures, regulations, policies and organization. Feedback from users is encouraged to improve the manual. Use the [ITD 0063](#), Request to Change Manual, for any recommended changes. Complete the form and send it to Headquarters Design in the Design/Materials/Construction section. Approved changes will be incorporated in the next manual update.

150.00 HEADQUARTERS PROJECT DEVELOPMENT RESOURCES

Headquarters Project Development resources reside in several sections. Highway Program Oversight, Resource Centers, Transportation Systems, Bridge Design, Highway Operations, and Planning/Program Management.

Headquarters Project Development resources reside in the following sections:

Highway Program Oversight (HPO) Section Manager

- DMC Engineer
 - Design Engineer
 - Materials Engineer
 - Area Coordinators
 - Contract Advertising and Award
- Consultant Administration
- Standards
- Laboratories

The function of this section is to set policy, establish procedures, provide training, and to monitor compliance as well as advertise and award highway projects.

Resource Centers Section Manager

- Environmental
- Right-of-Way
- Subject Matter Experts (SME's)
 - Geometrics Engineer
 - Pavement Engineer
 - Geotechnical Engineer

- Hydraulics Engineer
- Utilities Coordinator
- Railroad Coordinator
- Research
- Concrete Structures
- Qualified Products List Administrator
- Aerial Mapping

Transportation Systems Manager

- GIS
- TAMS
- PONTIS
- Pavement Analysis
- CADDs
- Roadway Data

Highway Operations Manager

- Traffic Services
- Mobility Services
- Office of Highway safety

Bridge Design

Planning/Program Management Manager

- Scheduling
- Planning

160.00 – APPROVAL RESPONSIBILITY

District Engineers approve charters, concepts, design exceptions, design reviews, final designs, design study reports, materials reports, official ROW plans, and other internal engineering documents relating to project development that require a professional engineer's license.

Responsible Engineers shall place their Professional Engineer's Seal on all original documents in such a manner that such seal, signature and date are reproduced when the original document is copied. The application of the licensee's seal and signature and the date shall constitute certification that the work thereon was done by the responsible engineer or under the engineer's responsible charge. Each plan or drawing sheet shall be sealed and signed and dated by the licensee or licensees responsible for each sheet (See IC 54-1215).

District Engineers shall sign the title sheet of the plans and other documents approved by the District Engineer for ITD. LHTAC Project milestone and plan approvals will be done in ITD Headquarters.

A copy of the approved charters and or concepts shall be distributed or posted and made available to the District Environmental Planner.

Copies of all Approval Documents for all milestones shall be posted and made accessible to DMC with the PS&E Submittal. If milestone dates have not been logged into Project Tracking as they are completed, then a list of approval dates shall be submitted.

DMC will review district-approved PS&E packages for compliance with bidding requirements and program adherence only.

Full Oversight projects will require additional headquarters and FHWA involvement.

170.00 FHWA OVERSIGHT

The Federal Highway Administration (FHWA) and the Idaho Transportation Department (ITD) have developed a Stewardship and Oversight (S &O) Agreement which can be found at:.

<http://itd.idaho.gov/NewsandInfo/publications.htm>

This agreement defines FHWA's and ITD's responsibilities for jointly administering the Federal-Aid Highway Program (FAHP) under Title 23 and other associated laws

The S &O Agreement defines the responsibilities delegated to ITD and FHWA oversight and approval requirements on each phase of project development and construction and is shown in [Figure 1-1](#). For full oversight projects, the following project development documents are to be sent to FHWA:

Project Charter/Concept for concurrence

Preliminary Plans for review

Design Study Report for approval

Final Plans for review

Professional Services Agreements and Amendments for approval

Bidding/Contract Award Documents for concurrence

PS&E Package for approval

SEP-14 Experimental Features Work Plan for approval (all projects)

Buy America Waivers for approval (all projects)

Bid Tabulations

Proprietary Products / Sole Source requests for approval

Warranties for approval (all NHS projects)

Experimental Features for approval

Interstate Median Crossovers for approval (all projects)

Interstate Access Modifications for approval (all projects)

Interstate Interchange Modifications (all projects)

Design Exceptions (all Full Oversight NHS projects)

180.00 VALUE ENGINEERING

Section 1503(a)(3) of MAP-21 codifies in title 23 U.S.C. 106(e) which provides: “The State shall provide a value engineering analysis or other cost-reduction analysis for—

(A) each project on the Federal-aid system with an estimated total cost of \$50,000,000 or more;

(B) a bridge project with an estimated total cost of \$40,000,000 or more; and

(C) any other project the Secretary determines to be appropriate.”

The FHWA will assure that a VE study is preformed on all Federal-aid funded NHS projects as required above. In addition, FHWA will strongly encourage State Departments of Transportation to use VE throughout highway project development, design, and construction.

Value Engineering is defined as the systematic application of recognized techniques by a multi-disciplined team to identify the function of a product or service, establish a worth for that function, generate alternatives through the use of creative thinking, and provide the needed functions to accomplish the original purpose of the project, reliably, and the lowest life-cycle cost without sacrificing safety, necessary quality, and environmental attributes of the project.

A project is defined as a portion of a highway or roadway that is proposed to be constructed, reconstructed, or improved as described in the charter or concept, or applicable environmental document. A project may consist of several contracts or phases over several years.

ITD has developed a [Value Engineering Guidelines](#) to assist in determining the need for and provide guidance through a value engineering study.

190.00 ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
AERO	Bureau of Aeronautics
AHERA	Air Hazard Emergency Response Act
BA	Biological Analysis
BLM	Department of Interior, Bureau of Land Management
BMP	Best Management Practices
CADD	Computer Aided Drafting and Design
CAPA	Critical Aquifer Protection Area
CE	Categorical Exclusion
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COE	Corps of Engineers
CRSI	Concrete Reinforcement Steel Institute
DBA	Decibels
DEQ	Division of Environmental Quality
DHV	Design Hourly Volume
DHW	Department of Health and Welfare
DOI	Department of Interior
DOL	Department of Lands
DWR	Department of Water Resources
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
F.A.	Federal-Aid
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration

FONSI	Finding of No Significant Impact
FTA	Federal Transit Authority
FWCA	Fish and Wildlife Coordination Act
FWPCA	Federal Water Pollution Control Act
FWS	Fish and Wildlife Service
GLO	Government Land Office
GREEN BOOK	A Policy on Geometric Design of Highways and Streets
HUD	Housing and Urban Development
IC	Idaho Code
ITD	Idaho Transportation Department
ITIP	Idaho Transportation Investment Program
LOS	Level of Service
LPA	Local Public Agency
LPC	Local Projects Coordinator
MAP	Mean Annual Precipitation
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MUTCD	Manual of Uniform Traffic Control Devices
NAD27	North American Datum of 1927
NAD83	Idaho Coordinate System Datum
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGS	National Geodetic Survey
NMFS	National Marine Fisheries Services
NOAA	National Oceanic and Atmosphere Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NWP	Nationwide Permit
PLS	Pure Live Seed
PM-2.5	Particulate Matter (2.5 microns or smaller)
PM-10	Particulate Matter (10 microns or smaller)
POE	Port of Entry

PS&E	Plan Specification and Estimate
REMEL	Reference Energy Mean Emission Levels
ROD	Record of Decision
SDWA	Safe Drinking Water Act
SHPO	State Historical Preservation Office
ST	State Projects
STIP	Statewide Transportation Improvement Plan
STURAA	1987 Surface Transportation and Uniform Relocation Assistance Act
TIP	Transportation Improvement Plan
TLTWO	Two-Lane, Two-Way Operation
TCP	Traffic Control Plan
UMTA	Urban Mass Transit Administration
USBR	United States Bureau of Reclamation
USDOT	United States Department of Transportation
USFS	United States Forest Service
USGS	United States Geological Survey
UST	Underground Storage Tanks
WFLHD	Western Federal Lands Highway Division of Federal Highway Administration

200.00 SECTION and TITLE ACRONYMS

TITLE	ACRONYM
- A -	
Administrative License Suspension	ALS
Administration & Aero Business Manager	AABM
Aeronautics Administrator	AA
Aeronautics Division	AERO
- B -	
Bridge Design	BD
Bridge Engineer	BE
Bridge Asset Management	BAM
Bridge Asset Management Engineer	BAME
Budget & Program Management	BPM
Business and Support Management	B&SM
Business and Support Management Manager	BSMM
- C -	
CAU Project Manager	CAUPM
Chief Engineer	CE
Chief Administrative Officer	CAO
Chief Human Resources Officer	CHRO
Chief Operations Officer	COO
Chief Technology Office	CTO

Communications	COM
Consultant Administration Unit	CAU
Contract Compliance Officer	CCO
- D -	
Deputy Attorney General (Legal)	DAG
Deputy Director	DDIR
Design/Materials/Construction	DMC
Design/Materials/Construction Engineer	DMCE
Director	DIR
DBE Coordinator	DBEC
District 1	D1
District 2	D2
District 3	D3
District 4	D4
District 5	D5
District 6	D6
District 1 Trainer	D1T
District 2 Trainer	D2T
District 3 Trainer	D3T
District 4 Trainer	D4T
District 5 Trainer	D5T
District 6 Trainer	D6T
District Business Manager-District 1	DBM1

District Business Manager-District 2	DBM2
District Business Manager-District 3	DBM3
District Business Manager-District 4	DBM4
District Business Manager-District 5	DBM5
District Business Manager-District 6	DBM6
District Engineer-District 1	DE1
District Engineer-District 2	DE2
District Engineer-District 3	DE3
District Engineer-District 4	DE4
District Engineer-District 5	DE5
District Engineer-District 6	DE6
District Engineering Manager 1	DEM1
District Engineering Manager 2	DEM2
District Engineering Manager 3	DEM3
District Engineering Manager 4	DEM4
District Engineering Manager 5	DEM5
District Engineering Manager 6	DEM6
District Operations Manager 1	DOM1
District Operations Manager 2	DOM2
District Operations Manager 3	DOM3
District Operations Manager 4	DOM4
District Operations Manager 5	DOM5
District Operations Manager 6	DOM6
District Personnel Technician-District 1	DPT1

District Personnel Technician-District 3	DPT3
District Personnel Technician-District 4	DPT4
District Personnel Technician-District 5	DPT5
District Personnel Technician-District 6	DPT6
District Records Inspector-District 1	DRI1
District Records Inspector-District 2	DRI2
District Records Inspector-District 3	DRI3
District Records Inspector-District 4	DRI4
District Records Inspector-District 5	DRI5
District Records Inspector-District 6	DRI6
District Traffic Engineer-District 1	DTE1
District Traffic Engineer-District 2	DTE2
District Traffic Engineer-District 3	DTE3
District Traffic Engineer-District 4	DTE4
District Traffic Engineer-District 5	DTE5
District Traffic Engineer-District 6	DTE6
Division of Highways Training	DHT
Division of Motor Vehicles	DMV
Division Shop Superintendent	DSS
Driver Records Program Specialist	DRPS
Driver Services	DS
Driver Services Manager	DSM
Drivers License Supervisor (Program)	DLPS

- E -

Executive Assistant to the Board	EAB
Economics & Research Manager	ERM
EEO/Safety-District 1	ES1
EEO/Safety-District 2	ES2
EEO/Safety-District 3	ES3
EEO/Safety-District 4	ES4
EEO/Safety-District 5	ES5
EEO/Safety-District 6	ES6
Emergency Program Manager	EPM
Emergency Program Office	EPO
Employee Safety/Risk Manager	ESRM
Enterprise Technology Services	ETS
Environmental	ENV
Environmental Manager	ENVM
Equal Employment Opportunity Manager	EEOM
Equal Employment Opportunity Office	EEO
Equal Employment Opportunity Officer	EEOO
Executive Management	EM
- F -	
Facilities	FAC
Facilities Manager	FM
Federal Highway Administration	FHWA
Federal Transit Administration	FTA
Financial Services	FS

Financial Services Manager/Controller	FSM
Fuel Systems Coordinator	FSC
- G -	
GARVEE Program Engineer	GPE
GARVEE Program Manager	GPM
Geographic Information Systems	GIS
Governmental Affairs Program	GAP
Governmental Affairs Program Manager	GAPM
- H -	
Headquarters Design Engineer	HDE
Headquarters Materials Engineer	HME
Highway Division Business Manager	HDBM
Highway Equipment Analyst	HEA
Highway Operations Engineer	HOE
Highway Program Oversight Engineer	HPOE
Highway Safety	HS
Highway Safety Manager	HSM
Human Resource Development	HRD
Human Resource Services	HRS
- I -	
Intelligent Transportation Systems Engineer	ITSE
Internal Control, Fraud Prevention & Financial Unit	ICF
Internal Review	IR
Internal Review Manager	IRM

International Fuel Tax Agreement (Tax Comm Employee)	IFTA
International Registration Program	IRP
- L -	
Legal (Deputy Attorney General)	DAG
Local Highway Technical Assistance Council	LHTAC
- M -	
Maintenance Services Manager	MSM
Management Assistant to the Director	MADIR
Manager of Transportation Investments	MTI
Materials LAB	MTLSLAB
Materials-District 1	MTLS1
Materials-District 2	MTLS2
Materials-District 3	MTLS3
Materials-District 4	MTLS4
Materials-District 5	MTLS5
Materials-District 6	MTLS6
Mobility Services Engineer	MOSE
Motor Carrier Manager	MCM
Motor Carrier Services	MCS
Motor Vehicles Administrator	MVA
Motor Vehicles Automated Systems Manager	MVASM
Motor Vehicles Business Manager	MVBM
Motor Vehicles Investigator	MVI
Motor Vehicles Management Assistant	MVMA

- N -**- O -**

Office of Communications	COM
Office of Communications Manager	OCM
Office of Highway Operations and Safety	OHOS
Office of Transportation Investments	OTI

- P -

Planning/Program Management	2PM
Planning/Program Management Manager	2PMM
Policies and Procedures Coordinator	PPC
Ports of Entry	POE
Ports of Entry Manager	POEM
Project Development Engineer-District 1	PDE1
Project Development Engineer-District 2	PDE2
Project Development Engineer-District 3	PDE3
Project Development Engineer-District 4	PDE4
Project Development Engineer-District 5	PDE5
Project Development Engineer-District 6	PDE6
Public Involvement Coordinator	PIC

- Q -

Quality Assurance Engineer	QAE
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- R -

Rail Road in Resource Center	RRR
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Records Manager	RM
Research	RES
Resident Engineer-District 1	RE1
Resident Engineer-District 2	RE2
Resident Engineer-District 3	RE3
Resident Engineer-District 4	RE4
Resident Engineer-District 5	RE5
Resident Engineer-District 6	RE6
Resource Center	RC
Resource Center Engineer	RCE
Right of Way	RW
Right of Way Manager	RWM
Right of Way-District 1	RW1
Right of Way-District 2	RW2
Right of Way-District 3	RW3
Right of Way-District 4	RW4
Right of Way-District 5	RW5
Right of Way-District 6	RW6
Roadside Program Coordinator	RPC
Roadway Data Manager	RDM
- S -	
Safe Routes to School Coordinator	SRTS
Senior Budget Analyst	SBA
State Historic Preservation Office	SHPO

Strategic Funding Specialist	SFS
Supply Administrative Operations Supervisor	SAOS
Supply Operations Supervisor	SOS
Supply Operations Supervisor-District 1	SOS1
Supply Operations Supervisor-District 2	SOS2
Supply Operations Supervisor-District 3	SOS3
Supply Operations Supervisor-District 4	SOS4
Supply Operations Supervisor-District 5	SOS5
Supply Operations Supervisor-District 6	SOS6
Supply Services	SS
Supply Services-Traffic Supply	SSTS
Supply Services Manager	SSM
- T -	
Titles Operations Supervisor	TOS
Traffic Services Engineer	TSE
Traffic-Signals	TSL
Traffic-Signs	TS
Transportation Legislation & Policy Specialist	TLPS
Transportation Performance Administrator	TPA
Transportation Performance Division	TP
Transportation Performance Business Manager	TPBM
Transportation Systems Management	TSM
Transportation Systems Management Engineer	TSME

- U -

Utility Section in Right-of-Way

UTIL

- V -

Vehicle Services

VS

Vehicle Services Manager

VSM

Vehicle Size and Weight Specialist

VSWS

Volunteer Services Coordinator

VSC