

**DESIGN EXCEPTION**

DESIGN EXCEPTION NUMBER

PROJECT NAME		PROJECT NO.
REQUESTED BY (NAME AND TITLE):		INITIALS OF REQUESTOR
		REQUEST DATE
Design Exceptions		
<input type="checkbox"/> Design Speed <input type="checkbox"/> Lane Width <input type="checkbox"/> Shoulder Width/Shy Distance <input type="checkbox"/> Bridge Width <input type="checkbox"/> Bridge Rail <input type="checkbox"/> Vertical Clearance <input type="checkbox"/> Structural Capacity <input type="checkbox"/> Grade <input type="checkbox"/> Horizontal Alignment <input type="checkbox"/> Vertical Alignment	<input type="checkbox"/> Stopping Sight Distance <input type="checkbox"/> Clear Zone <input type="checkbox"/> Pavement Cross Slope <input type="checkbox"/> Pavement Design Width <input type="checkbox"/> Bike Lane Width <input type="checkbox"/> Bike/Multi-Use Path Width <input type="checkbox"/> ADA Standards <input type="checkbox"/> Bi-Directional Curb Ramp <input type="checkbox"/> Crosswalk Closure <input type="checkbox"/> Marked Crosswalk	<input type="checkbox"/> Detectable Tactile Color <input type="checkbox"/> Sidewalk Width <input type="checkbox"/> Parking Width <input type="checkbox"/> Diagonal Parking <input type="checkbox"/> Driveway Width <input type="checkbox"/> Street Lighting <input type="checkbox"/> Traffic Signal Warrant <input type="checkbox"/> (Other)
DESIGN EXCEPTION DESCRIPTION (CITE THE STANDARD, GUIDELINE, OR POLICY THAT WILL NOT BE MET):		
PROJECT DESCRIPTION:		
LOCATION OF DESIGN FEATURE (STREET, STATIONING AND OFFSET)		
REASON(S) FOR DESIGN EXCEPTION (ATTACH BACKGROUND DOCUMENTS SUCH AS DRAWINGS IF NECESSARY):		
MITIGATION OPTIONS		

COMPATIBILITY WITH ADJACENT STREET SECTIONS

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PROBABLE TIME BEFORE RECONSTRUCTION OF STREET

RECOMMENDATION

Supporting documentation (include the appropriate plan sections, cross sections, alignment sheets & details)

PREPARED BY (Check all boxes that apply):

<input type="checkbox"/> PROJECT MANAGER	ADDRESS street city, state, zip code
<input type="checkbox"/> ENGINEER OF RECORD	
COMPANY NAME	

CONCURRENCE:

<input type="checkbox"/> Subject Matter Expert support memo (email) attached, if not provide explanation:

SECTION MANAGER, INSERT NAME _____ DATE _____

DIVISION MANAGER, INSERT NAME _____ DATE _____

APPROVALS:

<input type="checkbox"/> YES <input type="checkbox"/> NO	_____ DEV. & CAP. GROUP MANAGER, GREG JONES	_____ DATE
<input type="checkbox"/> YES <input type="checkbox"/> NO	_____ CITY TRAFFIC ENGINEER, ROB BURCHFIELD	_____ DATE
<input type="checkbox"/> YES <input type="checkbox"/> NO	_____ CITY ENGINEER, STEVE TOWNSEN	_____ DATE

REASON FOR NOT APPROVING

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Quality Control Plan

For FHWA Funded Transportation Projects

The purpose of this Quality Control Plan is to ensure that the City of Portland (City) successfully completes federal-aid projects in compliance with federal laws and regulations, and the requirements of the current Local Agency Certification (LAC) Program Agreement with the Oregon Department of Transportation (ODOT).

The following summarizes the components of the City of Portland's quality control plan for Federal Highway Administration (FHWA) funded transportation projects.

- City of Portland's Federal-Aid Certification Program Construction Guidelines for Capital Improvements
- Design Phase
- Advertise, Bid & Award Phase
- Construction Contract Administration Phase
- Oversight by the Portland Bureau of Transportation (PBOT)
- ODOT and FHWA Guidelines & Regulations

City of Portland's Federal-Aid Certification Program Construction Guidelines for Capital Improvements

This document outlines the process by which the City agrees to assemble, advertise, award, and execute construction contracts under the Federal Certification Acceptance program. These guidelines include descriptions of City organization and management as well as project supervision, inspection, and authority.

Additionally, PBOT has established a Local Agency Certification Manager, who is responsible for oversight of Local Agency FHWA/ODOT certified projects managed by the City of Portland. This position is responsible for coordination with ODOT, with other Bureaus, and within PBOT, to provide quality control of FHWA funded projects managed by City staff under the certification agreement between City and ODOT. Currently, this responsibility lies with the PBOT CIP Project Controls Manager.

Design Phase

Plans, specifications, and estimates (PS&E) are prepared by engineering consultants or the PBOT Civil Design Section team. The design team may include:

Project Designer
Consultant Designer

Project Drafter
Project Manager (PM)
Civil Engineer of Record (EOR)
Traffic Engineer
Signal & Lighting Engineer

General oversight of PS&E preparation is provided by PBOT's project manager, the Engineer of Record, and the Supervising Engineer of the Civil Design Section. A PS&E Checklist is used to document each project's compliance with ODOT/FHWA requirements.

Periodic reviews occur at 30/60/90 percent during the development of plans, specifications, and estimates.

For City (in-house) designed projects:

- 30/60 Percent – The Engineer of Record and the project manager review development of design documents.
- 90 Percent – At the 90 percent level, PBOT conducts a peer and constructability review by the PBOT's design and construction sections. This 90 percent review includes red-lining the drawings and subsequent corrections.
- 95 Percent – After the plans are at a final status (advance plans – 95 percent), the Engineer of Record and the City Engineer complete an independent review and sign the plans and specifications.

For consultant-designed projects, PBOT reviews formal submittals from the consultant at 30/60/90 percent design completion levels. PBOT's consultant contract documents also require the consultant to maintain their own quality control documents.

Design exceptions come in two forms, minor and Design Deviations. Those that rise to the level of "Design Deviations" are addressed through ODOT's Design Deviation Request Form per ODOT's *Local Agency Guidelines (LAG) manual, as currently described in Section C, Certified Local Agencies, Chapter 9, G*. Those that are considered minor are addressed via the City's internal Design Exception process.

The City's internal design exception process is comprehensive with a desire for the design team to explore all options and to learn from the process. Context appropriate design tends to result in better projects. PBOT standards include guidelines that have flexibility and ranges integrated into them. PBOT values public input on all projects and the neighborhood's goals for a particular situation may be a better fit than a standard. Safety, maintainability, use, and context-appropriate design are significant factors for PBOT. Public input and urban design issues are also important. These may include adjacent land use and development, a neighborhood concept plan, historic landmarks, significant trees, and existing terrain.

Attached is a copy of PBOT's internal Design Exception request form and instructions (Exhibit A). The form provides for written documentation and explanation of what existing design standard, guideline or policy would not be met, alternatives, justification, mitigation and recommendation(s) for proceeding. This request is reviewed by the City Engineer and Development & Capital Group Manager, and where appropriate, the City Traffic Engineer, as well as subject matter expert(s) (SME). The design exception is granted only with the joint agreement of the required approvers, at a minimum the City Engineer and the Development & Capital Group Manager.

Construction cost estimates are prepared by PBOT design staff members and consultants. PBOT's engineer of record prepares the final cost estimate document and the City Engineer completes a separate independent review of the overall estimate.

The City's Project Manager is responsible for completing and updating the Plans, Specifications and Estimate (PS&E) Checklist with input from the project team. The Engineer of Record and the Local Agency Certification Manager are responsible for oversight of the checklist.

Advertise, Bid & Award Phase

The City of Portland's Federal-Aid Certification Program Construction Guidelines for Capital Improvements outlines the process by which the City assembles, advertises, awards, and executes construction contracts under the Federal Certification Acceptance program.

The Project Team works closely with Procurement Services (formerly Purchasing) to develop a complete project bid book, including the bid proposal, required contract provisions, specifications and special provisions, and plans. Please note:

- the Engineer's Estimate is considered to be confidential up to the point of formal project award
- the advertisement will include a dollar range rather than a target amount required for prequalification
- City Council must authorize the Chief Procurement Officer (formerly Purchasing Agent) to execute a contract on all Federal Aid projects.

Construction Contract Administration Phase

The City of Portland's Federal-Aid Certification Program Construction Guidelines for Capital Improvements outlines the process by which the City manages and administers construction contracts under the Federal Certification Acceptance program.

If services are requested from other bureaus on a federal aid project, the other bureau's processes for quality control/quality assurance shall be reviewed at that time. All

submittals, cut sheets and other documentation shall be sent to PBOT to accompany the Quality files and be put into the semi-final at the end of the project.

The City's process for reviewing and approving Contract Change Orders (CCOs) is outlined in the City of Portland's Federal-Aid Certification Program Construction Guidelines, Part 3, Phase III, Section N. **Please note that certain change orders require ODOT approval.** A good reference document is the Approval Authority Matrix in the ODOT Local Agency Guidelines - see Phase VI Construction, items 2 through 2k. This Approval Authority Matrix can be found on-line at:

http://www.oregon.gov/ODOT/HWY/LGS/docs/LAG_Manual_11/LAG_Chapter2_Sec_A_Appendix.pdf

It is also important to note that **the City cannot exceed the project authorization amount**, shown in the Project Agreement Estimate (PAE), without following the State's process and obtaining approval for an Increase in Project Authorization.

Upon completion of punch list items, the City's Project Manager will notify the State Local Agency Liaison when the project is complete and attend a final inspection with ODOT.

The City is responsible for retaining all certifications and reports for at least six years after final acceptance of the project in order to meet ODOT requirements. Actual City retention schedules are for core project records longer, ranging from 10 years after substantial completion to permanent retention. For the full schedule, see:

<http://www.portlandonline.com/auditor/index.cfm?c=27207>

Oversight by PBOT

Development Phase – Prospectus City bureaus other than PBOT develop project proposals and grant applications for FHWA funds. Should an FHWA grant be awarded to another bureau, an electronic or hard copy of the prospectus submitted to ODOT will be provided to PBOT's Local Agency Certification Manager.

Development Phase – Staff Assignment Prior to execution of an intergovernmental funding agreement for FHWA dollars, the bureau receiving the grant award shall identify their project manager and she/he will meet with PBOT's Local Agency Certification Manager to review project staffing needs. Successful completion of federal aid projects may require more staffing than a bureau typically applies to a capital project.

A Memorandum of Understanding (MOU) shall be prepared and executed by the Bureau Directors, specifying anticipated staffing levels, particularly during the Construction Phase of the project. This MOU will also provide for reimbursement for the cost of PBOT staff who work directly with the bureau's project team, including QA/QC Specialists, Construction Technicians and Inspector(s).

Design Phase - Plans & Specifications Bureaus other than PBOT use consultant services to develop plans, specifications, and estimates. The consultant develops a quality control process for each project, pursuant to their contract. Development of plans specifications and estimates includes a submittal and design review process for involving key project engineers. PBOT will provide technical assistance to other bureau's, but will not act as their agent or sign their project documents and plans. PBOT will receive copies of plans at 30% and 60%, and will review plans at 90% for minimum FHWA requirements for PS&E, civil rights, and specifications such as "Buy America" and the 1273s.

Design Phase – Cost Estimates PBOT provides oversight in the process used by other bureaus in the development of cost estimates. The final PS&E cost estimate is submitted as part of the PS&E package in the ODOT Excel file format acceptable to FHWA. The final PA&E will be sent to ODOT through the Local Agency Certification Manager after construction contract award.

PBOT's oversight and quality control during the Design Phase is documented by the signature of the Local Agency Certification Manager on the PS&E Checklist.

Construction – Preconstruction Conference Both the Local Agency Certification Manager and a PBOT QC/QA Specialist or Engineering Technician will be invited to attend the Preconstruction Conference. The Specialist/Technician will talk about the Field Tested and Non-Field tested materials.

Construction – Quality Control The PBOT QC/QA Specialist/Technician will check the Contractor's Quality Control Plan as well as perform a periodic check on the Contractor's Quality Control and Quantity Assurance documents for compliance. All files and test summaries shall be set up ahead of breaking ground for construction and be reviewed by the Quality Assurance Specialist. Field tested materials shall be observed and checked by certified inspectors and the Materials Quality Compliance Specialist.

Construction – Close Out Upon completion of punch list items, the City's Project Manager will notify both PBOT's Local Agency Certification Manager and the State Local Agency Liaison when the project is complete and attend a final inspection with ODOT.

ODOT and FHWA Guidelines & Regulations

Key resources for all project team members and the Local Agency Certification Manager are the Local Agency Guidelines, or LAG manual, provided on-line by the Oregon Department of Transportation, and the FHWA Contract Administration Core Curriculum Manual provided on-line by U.S. Department of Transportation. The current web addresses for these documents are:

http://www.oregon.gov/ODOT/HWY/LGS/lag_manual.shtml
<http://www.fhwa.dot.gov/programadmin/contracts>

To assist Local Agencies in identifying and meeting key requirements, ODOT has recently updated the Plans, Specifications, and Estimate (PS&E) Checklist, and is in the process of finalizing three additional checklists, one for Consultant Selection for A & E Services, one for Ad, Bid & Award, and another for Construction Contract Administration. The project manager shall retain one completed copy, executed by the City's Local Agency Certification Manager, of each checklist in the project file to document successful completion of each phase of project delivery.

PBOT Design Exception Process

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Design Exceptions are stand-alone documents. There should be enough information and description of the project, the Design Exception and the justifications so that the approving authority will have all the information necessary to approve it.

Project Overview

- Project Description (type, purpose, major work items)
- Street, truck, pedestrian, and bike classification

Existing Conditions

- Location
- Lane configuration
- Vertical alignment (vertical curve, profile grade)
- Posted speed and design speed
- Present and 20 year projected ADT
- Truck percent
- Design Districts
- Environmental issues
- Right of Way issues

Design Exception Description

- Design standard, Guideline, or Policy that will not be met
- Reference in the document that established the standard
- Street, stationing (or description from nearest intersection) of the design exception
- Previously approved Design Exceptions at same location

Alternatives

- Description
- Cost estimate
- B/C ratio
- Advantages/disadvantages

Justification

1. Give reasons why design standard, guideline, or policy will not be met.
2. Provide support to justify the proposed design. Below are some categories that your justifications may come from:
 - Accident history or potential
 - Benefit/Cost analysis
 - Cultural impacts
 - Engineering judgment
 - Environmental issues
 - Existing conditions
 - Geotechnical feasibility
 - Guidelines from AASHTO, MUTCD, FHWA publications and other recognized technical sources
 - Insufficient Right-of-Way
 - Relationship to future improvements
 - Corridor Continuity
 - Truck Turning Diagrams
3. Memo from Subject Matter Expert (Traffic, Stormwater, Materials, etc.) concurring with proposed design.

Mitigation (If applicable)

Summarize the Design Exception mitigation options used to mitigate the Design Exception to an improved condition but still not providing for Design Manual standards

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Recommendation

Summarize the Design Exception and list the justifications the recommendation are based on.

Subject Matter Expert Concurrence

Memo from a Subject Matter Expert (Traffic, Stormwater, Materials, etc.) concurring with proposed design. Memo may be in the form of an email.

Attachments

- Vicinity map
 - Plan sheets
 - Photos
 - Charts – use to compare options, design elements, costs, etc.
 - Design Manual Figure or Section that shows Design Standard
 - Design Exception requests should be submitted as early as possible in the design process.
- The approved Design Exception is to be included in the design documentation package.

Approval Matrix

Design Elements / Features	Required approval		
	Dev. & Capital Manager	City Traffic Engineer	City Engineer
Design Speed	✓	✓	✓
Lane Width	✓	✓	✓
Shoulder Width/Shy Distance	✓		✓
Bridge Width	✓		✓
Bridge Rail	✓		✓
Vertical Clearance	✓	✓	✓
Structural Capacity	✓		✓
Grade	✓		✓
Horizontal Alignment	✓		✓
Vertical Alignment	✓		✓
Stopping Sight Distance	✓		✓
Clear Zone	✓		✓
Pavement Cross Slope	✓		✓
Pavement Design Width	✓		✓
Bike Lane Width	✓	✓	✓
Bike/Multi-Use Path Width	✓	✓	✓
ADA Standards	✓		✓
Bi-Directional Curb Ramp	✓		✓
Crosswalk Closure	✓	✓	✓
Marked Crosswalk	✓	✓	✓
Detectable Tactile Color	✓		✓
Sidewalk Width	✓		✓
Parking Width	✓		✓
Diagonal Parking	✓	✓	✓
Driveway Width	✓		✓
Street Lighting	✓		✓
Traffic Signal Warrant	✓	✓	✓
(Other)	✓	✓	✓

Record Keeping

The approved Design Exception shall be delivered to The Development Review Manager. The Manager will assign the Design Exception number and will enter this data into the TRACS database.

10/19/2010