

Internal Audit Risk Assessment Program Public Works – Engineering Risk Identification

October 29, 2010



Whatcom County Auditor's Office

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Internal Audit Division

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About the Risk Assessment

Objective

The objective of the risk assessment is to identify significant areas of risk to County operations within the Public Works - Engineering Services Division for later comparison to other County-wide risks for the purpose of considering where to best use audit resources.

Scope

The assessment will cover all major operations of the Public Works - Engineering Services Division and significant inherent risks to those operations.

This should not be construed to be a comprehensive assessment since Internal Audit Division resources are limited. This assessment does not evaluate established management controls used to mitigate these inherent risks.

Methodology

This assessment was performed as follows:

- By meeting with management in a series of short interviews to discuss the operations and perceived inherent risks.
- Reviewing the Public Works - Engineering Services Division's website.
- Reviewing applicable sections of the Whatcom County 2009-2010 Final Budget report.

Results of the Assessment

Engineering Administration

- County Road Infrastructure Management
- Road Right-of-Way Management

County Road Infrastructure Management

Engineering Administration is charged with the responsibility of overall management of the County road infrastructure. This includes the long-term integrity of the infrastructure, safe use conditions, and planning for adequate throughput. This is accomplished through means of multiple information systems, maintenance of records, recommendations regarding changes and improvements, coordination of other related services and participation with other management and political constituents.

Engineering Administration prepares, and annually updates a Six Year Transportation Improvement Program, an Annual Construction Program, and a Fourteen Year Ferry Capital Program. These long-term plans are used to direct current operations and communicate long-term infrastructure plans.

Areas of risks to this program may include, but are not limited to the following:

- Reliance on multiple information systems
- Legal compliance issues

Road Right-of-Way Management

Road right-of-way is land-rights owned by the County and used or reserved for the purposes related to the County road system. The County Engineer maintains records and makes determinations regarding County ownership of said rights, recommends for or against vacating rights when a request has been initiated, and recommends purchasing of rights for the purpose of future road infrastructure expansions.

Areas of risks to this program may include, but are not limited to the following:

- Accuracy and reliability of information
- Prior inconsistency may negatively impact current decisions
- Potential for discrepancies between paper and electronic records
- Personnel's undocumented historical knowledgebase

Design and Construction

- Road Construction
- Technical Engineering & Survey

Road Construction

The County Engineering Division oversees construction projects for the County road infrastructure, bridges and ferry system. This can include project planning, purchasing right-of-way, permitting, project design, contracting and administration.

Areas of risks to this program may include, but are not limited to the following:

- General project management risks
- Timeliness of communications
- Grants compliance
- Long-term project timelines may exceed funding timelines
- Reliance on intra- department and division support

Technical Engineering & Survey Services

The County Engineering Division shares expertise and knowledge resources with other County Departments and Divisions such as Maintenance & Operations, River and Flood, and Planning and Development, coordinating efforts where appropriate.

Areas of risks to this program may include, but are not limited to the following:

- Intra-department and division communications

Bridge and Hydraulic

- Technical Engineering & Design
- Inspection Compliance Program

Technical Engineering & Design

The purpose of technical engineering services is to design and manage the construction, repair, rehabilitation, or replacement of bridges and hydraulic structures. The intended outcome is to contribute to the long-term integrity of the structure and safe driving conditions.

- General project management risks
- Timeliness of communications
- Long-term project timelines may exceed funding timelines
- Reliance on intra- department and division support

Inspection Compliance Program

The purpose of the Inspection Compliance Program is to provide information regarding the condition of bridges and hydraulic structures. This information is the basis for identifying any need for maintenance, repair, rehabilitation, or replacement of the structures being inspected. The intended outcomes are the long-term integrity of the structures and safe driving conditions.

This is accomplished by performing routine inspections using specialized knowledge and standardized methodology and reporting to oversight agencies to ensure the quality of the inspections.

The Engineering Division inspects each structure every two years. The County owns and inspects approximately 160 bridges. Through an interlocal agreement, they also inspect seventy-nine additional bridges owned by the local cities.

Bridge and structures inspections are performed in accordance with standards established by Washington State and the Federal Highway Administration. The inspections and related data is maintained in a state-based database application.

Areas of risks to this program may include, but are not limited to the following:

- Limited specialty knowledge base

Traffic

- Encroachment Permits
- Pavement Management
- Road Closures and Restrictions
- Traffic and Transportation Analysis

Encroachment Permits

The Traffic group assists in monitoring impacts to the County road infrastructure by requiring permits allowing private citizens and commercial contractors to perform certain work in the County right-of-way. This is a way to ensure certain standards are followed in order to maintain the long-term integrity of the County roads. This work may include, but is not limited to, driveway installations and improvements, irrigation and ditch installations or modifications and utility installations, and sidewalks, curbs and retaining walls.

Areas of risks to this program may include, but are not limited to the following:

- Public awareness regarding requirements to have permits
- Enforcement
- Accuracy and reliability of information
- Shared database application with multiple departments

Pavement Management

The Traffic group maintains road logs regarding all county roads. They catalog information regarding road surface type length and width of roads and numerous other details used for road rating and long-term planning, as well as the basis for gas tax allocation. This information is standardized and recorded and maintained in a Washington State based information system.

Areas of risks to this program may include, but are not limited to the following:

- Efficiency in data acquisition
- Impacts gas tax funding

Road Closures and Restrictions

Road closures and restrictions may be required for several reasons including emergency conditions such as snow pack, water, debris, and shoulder erosion or it may be due to road maintenance or a construction project.

The Traffic group makes closure or restriction determinations and road crews blockade or setup signage to deter or detour traffic. Determinations are posted on the County website.

Areas of risks to this program may include, but are not limited to the following:

- Efficiency in data acquisitions - road closure sensors
- Economic or safety detriments to closing roads

Traffic and Transportation Analysis

Traffic personnel gather and analyze data and monitor road use throughout the County in order to ensure public safety. Based on their analysis they may make recommendations regarding changes or improvements to the road infrastructure. They perform traffic counts and maintain recorded logs on signing and road striping.

Areas of risks to this program may include, but are not limited to the following:

- Efficiency in data acquisition

Engineering Services (Development)

- Review and Mitigation
- Records Management
- Addressing and Road Naming

Review and Mitigation

Land development applications are reviewed and projects are inspected by Engineering Services to reduce or mitigate potential negative impacts to the integrity of the road infrastructure.

Federal, state and county development regulations have been established towards this goal and provide a basis in conjunction with their engineering expertise for these reviews and inspections.

Areas of risks to this program may include, but are not limited to the following:

- Accuracy and reliability of information
- Shared database application with multiple departments
- Coordination with other County services

Records Management

The purpose of Records Management is to maintain and provide access to legal records of all matters regarding the County road infrastructure. These documents may provide historical and legal information.

Areas of risks to this program may include, but are not limited to the following:

- Microfilmed documentation available to the public
- Hardcopy documentation safeguarded

Addressing and Road Naming

Engineering Services oversees the addressing and naming of roads to ensure consistency and accuracy of naming conventions, prevent duplications, and reduce confusion from having roads with like-sounding names. This benefits travelers, residents, delivery services and especially emergency response units such as fire, ambulance and police units.

Areas of risks to this program may include, but are not limited to the following:

- Accuracy and reliability of information

**WHATCOM COUNTY
PUBLIC WORKS DEPARTMENT**



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Frank M. Abart
Director

Memorandum

To: Fred Williams, Internal Auditor

Through: Frank M. Abart, Director *[Signature]* 11/2/2010

From: Joseph P. Rutan, P.E., Assistant Director/County Engineer *[Signature]*

Date: November 1, 2010

Re: Internal Audit Risk Assessment Review

I have reviewed the Internal Audit Risk Assessment report for Public Works prepared by your office. The report summarizes the major areas of risk for operations within my office. Thank you for preparing this document.

ABOUT WHATCOM COUNTY'S INTERNAL AUDIT SYSTEM



The internal audit system was established on July 1, 1994 by a 1993 Whatcom County charter amendment. The county auditor has the authority and responsibility for the management of the internal audit system. As an independently elected official, the county auditor has the organizational status and objectivity necessary to maintain the independence required to schedule, perform, and report audit activities.

The key purpose of the internal audit function is to promote accountability. As an independent appraisal function, internal auditing provides public officials, legislators and citizens with information regarding the operation and management of county government.

The internal audit system is chartered to perform operational and financial audits of all programs, services and accounts that come under the budget authority of the county. Our audits are designed to comply with applicable professional standards. Results of the audits are published in individual audit reports, and are made available to the public.

Comments or questions about the internal audit system can be directed to:

Shirley Forslof, County Auditor	(360) 676-6740 ext. 56744
Debbie Adelstein, Chief Deputy Auditor	(360) 676-6740 ext. 50065
Fred Williams, Internal Auditor	(360) 676-6740 ext. 50049

Copies of audit reports may be obtained in the following manner:

Request a copy in writing to:
Whatcom County Auditor's Office
311 Grand Avenue, Suite 103, Bellingham, WA 98225

Request a copy by telephone (360) 676-6740, or fax (360) 738-4556.