



**HIGHWAY FACTORS GROUP CHAIRMAN'S
FACTUAL REPORT**

Highway Attachment – ITD Work Zone Safety and Mobility Program Guide

Boise, Idaho

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(32 pages)



Idaho Transportation Department

Work Zone Safety and Mobility program

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PREFACE

In September 2004, the Federal Highway Administration (FHWA) published updates to the work zone regulations at 23 CFR 630 Subpart J. This updated Rule, referred to as the Work Zone Safety and Mobility Rule, applies to all State and local governments on projects that receive Federal-aid highway funding. Transportation agencies were required to comply with the provisions of the Rule by October 12, 2007. The changes made to the regulations broaden the former Rule to better address the work zone issues of today and the future. On December 5, 2007 the FHWA added a new Subpart K to 23 CFR 630 to supplement the other regulations that govern work zone safety and mobility. The effective date of this regulation was December 4, 2008.

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WORK ZONE SAFETY AND MOBILITY PROGRAM

I. Policy Statement:

The Idaho Transportation Department's policy is to plan, design, construct, maintain, and operate safe and efficient Temporary Traffic Control (TTC) zones. The needs and the control of all road users (as defined by MUTCD Section 1A.13) through a TTC zone is an essential part of highway construction, utility work, maintenance operations, right-of-way use permits, and the management of traffic incidents.

Two principles guide the planning and implementation of the Work Zone Safety and Mobility (WZSM) program:

- A. The safety of motorists, pedestrians, bicyclists, individuals with disabilities, and workers is the top priority and must be an integral part of every project.
- B. Mobility of all forms of traffic shall be considered on every project. The movement of all forms of traffic through a TTC zones should be inhibited as little as possible. Traffic is inhibited by reduced speeds. Speed reduction zones should be limited to TTC zones and time periods that specifically justify their use.

II. Goals And Objectives:

- A. Provide a safer environment for highway workers and the traveling public
- B. Work "Toward Zero Deaths" in work zones.
- C. Maintain a crash rate that is equal to or less than the crash rate that existed prior to implementation of the work zone.
- D. Maintain or reduce project maximum travel delays stated in the construction contract.
- E. Utilize appropriate Intelligent Transportation Systems (ITS) technologies that reduce delays and improve safety.
- F. Implement training programs for those involved in planning, designing, constructing, maintaining, and providing Law Enforcement in work zones and managing incidents.
- G. Maintain a Work Zone Safety and Mobility Review Team.

III. Definitions:

Federal-aid Highway Project:

A Federal-aid Highway Project means highway construction, maintenance, and utility projects funded in whole or in part with Federal-aid funds.

Highway:

According to Idaho State Code 40-109 (5), Definition "H", "Highways" mean roads, streets, alleys and bridges laid out or established for the public or dedicated or abandoned to the public. Highways shall include necessary culverts, sluices, drains, ditches, waterways, embankments, retaining walls, bridges, tunnels, grade separation structures, roadside improvements, adjacent lands or interests lawfully acquired, pedestrian facilities, and any other structures, works or fixtures incidental to the preservation or improvement of the highways. Roads laid out and recorded as highways, by order of a board of commissioners, and all roads used as such for a period of five (5) years, provided they shall have been worked and kept up at the expense of the public, or located and recorded by order of a board of commissioners, are highways.

Highway Worker:

A highway worker includes, but is not limited to, personnel of the contractor, subcontractor, Idaho Transportation Department, utility, and law enforcement, performing work within the right-of-way of a transportation facility.

Positive Protection Device:

Positive Protection Device means devices that contain and/or redirect vehicles and meet the crashworthiness evaluation criteria contained in the AASHTO Manual for Assessing Safety Hardware (MASH), and/or the National Cooperative Highway Research Program (NCHRP) Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features, 1993, Transportation Research Board, National Research Council.

Professional Engineer:

A Professional Engineer is an engineer licensed in the State of Idaho as a Professional Engineer.

Public Information:

The Public Information (PI) component shall include communications strategies that seek to inform affected road users, the general public, area residence and businesses, and appropriate public entities about the project, the expected work zone impacts, and the changing conditions on the project. Public information may include information on the project characteristics, expected impacts, closure details, and commuter alternatives.

State Highway System

The State Highway System includes all Interstate Highways, US Highways, and State Highways. According to Idaho State Code 40-120 (5) Definitions "S", the State highway system means the principal highway arteries in the state, including connecting arteries and extensions through cities, and includes roads to every county seat in the state.

Significant Project:

A Significant Project is one that, alone or in combination with other concurrent projects nearby is anticipated to cause sustained work zone impacts that are greater than what is considered tolerable based on ITD policy and/or engineering judgment.

All Interstate system projects within the boundaries of a designated Transportation Management Area (TMA) that occupy a location for more than three days with either intermittent or continuous lane closures shall be considered as Significant Projects.

A project that is expected to be a Significant Project shall be identified by ITD in the State Transportation Improvement Program (STIP). Significant Projects should be identified at the time the project is initially included in the STIP.

ITD may request an exception from FHWA for the Transportation Operations (TO) component and the Public Information (PI) component for Significant Projects when, based on the judgment of the State, projects do not cause sustained work zone impacts. FHWA may grant the exception based on the ITD's ability to show that the specific Interstate system project or categories of Interstate projects do not have sustained work zone impacts.

Temporary Traffic Control Plan:

A Temporary Traffic Control (TTC) plan describes measures used for facilitating road users through a work zone or incident area. A TTC plan shall be consistent with the provisions under Part 6 of the MUTCD as adopted by the State, and work zone hardware recommendations in Chapter 9 of the American Association of State Highway and Transportation Officials (AASHTO) Roadside Design Guide. The TTC plan shall either be a reference to specific TTC elements in the MUTCD, approved standard TTC plans, or be designed specifically for the project.

Transportation Management Plan:

A Transportation Management Plan (TMP) consists of strategies to manage work zone impacts. A TMP includes a Temporary Traffic Control (TTC) plan and addresses both Transportation Operations (TO) and Public Information (PI) components. The TO and PI component requirements are removed for Non-Significant Projects and Significant Projects that have been granted an exception by the FHWA.

Transportation Operations:

The Transportation Operations (TO) component shall include the identification of strategies that will be used to mitigate the impacts of the work zone on the operation and management of the transportation system within the work zone impact area.

Work Zone:

The Work Zone is an area of a highway with construction, maintenance or utility work activities. A work zone is typically marked by signs, channelizing devices, barriers, pavement markings, and/or work vehicles. It extends from the first warning sign or high-intensity rotating, flashing, oscillating, or strobe lights on a vehicle to the "END ROAD WORK" sign or the last temporary traffic control device.

Work Zone Crash:

The Work Zone Crash means a traffic crash in which the first harmful event occurs within the boundaries of a work zone or on an approach to or exit from a work zone, resulting from an activity, behavior, or control related to the movement of the traffic units through the work zone. This includes crashes occurring on approach to, exiting from or adjacent to work zones that are related to the work zone.

Work Zone Impacts:

Work Zone Impacts refer to work zone-induced deviations from the normal range of transportation system safety and mobility. The extent of the work zone impacts may vary based on factors such as, road classification, area type (urban, suburban, and rural), traffic and travel characteristics, type of work being performed, time of day/night, and complexity of the project. These impacts may extend beyond the physical location of the work zone itself, and may occur on the roadway on which the work is being performed, as well as other highway corridors, other modes of transportation, and/or the regional transportation network.

IV. Work Zone Safety And Mobility (WZSM) program:

ITD will systematically consider and manage work zone impacts, and will develop, implement, and maintain work zone assessment and management procedures. Consideration and management of work zone impacts begins at project inception, continues through all phases of design, includes construction activities, and concludes with a Work Zone Safety and Mobility Process Review (see Chapter 4) to enhance efforts to address

safety and mobility on current and future projects. Each phase of work zone assessment and management should include implementation of improvements in work zone processes and procedures, data and information resources, and training programs.

This WZSM program shall be implemented on all Federal-aid funded, and State funded projects listed in the Idaho Transportation Department's Capital Investment Program (CIP). All State/Local Agreements for projects in the CIP shall include a requirement that the WZSM policy be followed. Utilities shall be required to follow the WZSM policy for all utility work done as a part of a federal aid project, regardless of whether the work is at project expense or solely at the utility company's expense.

A. Maintenance of Traffic Control Devices

To increase motorist conformance and confidence in the Department's TTC zone traffic control, all traffic control devices should be installed, maintained and removed to reflect the actual field conditions. Temporary traffic control is required only while highway users need guidance to make the desired response. When devices are not required to make a desired response, the devices should be removed. Removal should begin as quickly as practical.

Removal of work zone traffic control signing not required for the current operations should consist of device removal from the clear zone or laid completely flat no less than 10 feet from the nearest edge of the traveled way. Signs mounted on posts and traffic control devices that are difficult or time consuming to remove, should be promptly, consistently, and completely covered when not required. Turning sign faces away from traffic or laying signs down while still attached to a portable support that has not been collapsed are not approved methods for removal or covering. All temporary traffic control devices shall be maintained in no less than marginal condition based on the American Traffic Safety Services Association's (ATSSA) Quality Guidelines for Work Zone Traffic Control Development.

B. Speed Zone Design

In all situations, maintaining the highest speeds possible, up to the existing speed limit, is the Department's standard. Speed limit reduction zones shall be kept as short as possible in length and in duration. Each work zone traffic control plan should indicate the maximum lengths, locations, and circumstances where speed limit reductions may be allowed. To be considered for approval, any Contractor proposed changes to the TTC plans, such as to accommodate construction operations, must comply with the specified lengths, locations, and circumstances where speed limit reductions may be allowed and shall not be implemented before it is approved by the State.

C. Law Enforcement

In situations where uniformed law enforcement assistance may be useful to enforce traffic laws, affect driver behavior, help maintain appropriate speeds, improve driver alertness and help address other safety and mobility issues, funding and plans to support their participation should be identified and developed early in the planning process. Costs associated with non-routine work of uniformed law enforcement personnel to help protect workers and road users, and to maintain safe and efficient travel through highway work zones are eligible for Federal-aid participation. Payment for law enforcement services may be included in a construction contract or by direct interagency payment.

An interagency agreement between ITD and the law enforcement agency (ies) must be approved in advance of the start of law enforcement involvement for reimbursable work zone activities. The District will prepare an agreement with the respective law enforcement agency. Agreements should:

1. Address work zone enforcement needs,
2. Address interaction between ITD and law enforcement during project planning and development,
3. Address conditions where law enforcement involvement in work zone traffic control may be needed or beneficial, and criteria to determine the project specific need,
4. Describe the general nature of services to be provided and procedures to determine the project specific services,
5. Require and define appropriate work zone safety and mobility training for officers,
6. Describe procedures for communications between ITD and law enforcement, and
7. Include agreements on how reimbursement will be accomplished.

**IDAHO TRANSPORTATION DEPARTMENT
GUIDANCE ON WORKZONE SAFETY AND MOBILITY**

CHAPTER 1

WORK ZONE ASSESSMENT AND IMPACT MANAGEMENT

I. Requirements of the Work Zone Safety and Mobility program

- A. All operations (highway construction projects, utility work, maintenance operations, right-of-way use permits, management of traffic incidents) that impact travelers should include a Temporary Traffic Control (TTC) plan.
- B. The District shall identify upcoming projects that are expected to be Significant Projects in accordance with Section III. DEFINITIONS.
- C. For a Significant Project, ITD shall develop a Transportation Management Plan (TMP) that includes a TTC plan and addresses both Transportation Operations (TO) and Public Information (PI) components, according to Section III. DEFINITIONS.
- D. The TTC plan shall:
 - 1. Be consistent with the provisions under Part 6 of the MUTCD as adopted by the State
 - 2. Be consistent with the work zone hardware recommendations in Chapter 9 of the American Association of State Highway and Transportation Officials (AASHTO) Roadside Design Guide
 - 3. Be a reference to either specific TTC elements in the MUTCD, to approved standard TTC plans, to ITD Department Manuals, or be designed specifically for the project.
 - 4. Consider longitudinal traffic barriers or other Positive Protection Devices in work zone situations that place workers at increased risk from motorized traffic, and where positive protection devices offer the highest potential for increased safety for workers and road users, such as:
 - a) Work zones that provide workers no escape from motorized traffic (tunnels, bridges, etc),
 - b) Work zones with durations of 2 weeks or longer,
 - c) Operating speeds of 45 mph or greater,
 - d) Work operations that place workers close to travel lanes open to traffic,
 - e) Work zones with roadside hazards, such as drop-offs or unfinished bridge decks, that will remain in place overnight or longer.The need for longitudinal traffic barriers or other Positive Protection Devices shall be based on an engineering study.

In developing and implementing the TTC plan, pre-existing roadside safety hardware shall be maintained at an equivalent or better level than existed prior to project implementation.

Approved traffic control devices should all be in place in accordance with the approved traffic control plan before other work activities within the work zone commence.

- E. When the TO component is required, it shall include the identification of strategies that will be used to mitigate impacts of the work zone on the operation and management of the transportation system within the work zone impact area.
- F. When the PI component is required, it shall include communication strategies that seek to inform affected road users, the general public, area residences and businesses, and appropriate public entities about the project, the expected work zone impacts, and the changing conditions on the project.

- G. The Plans, Specifications, and Estimates (PS&E) package shall include either a TMP or provisions for contractors to develop a TMP at the most appropriate project phase. A contractor developed TMP shall be subject to the approval of ITD and shall not be implemented before it is approved by ITD.
- H. The PS&E package shall include appropriate pay item provisions for implementing the TMP, which may only include the TTC plan, either through method or performance based specifications.
 - 1. For method-based specifications individual pay items, lump sum payment, or a combination thereof may be used.
 - 2. For performance based specifications, applicable performance criteria and standards may be used (e.g., safety performance criteria such as number of crashes within the work zone; mobility performance criteria such as travel time through the work zone, delay, queue length, traffic volume; incident response and clearance criteria; work duration criteria).
 - 3. Major categories of traffic control devices, safety features, and work zone safety activities funded through the project, including but not limited to Positive Protection Devices, and uniformed law enforcement activities shall each have separate pay items.
- I. The Contractor and ITD shall each designate a trained person at the project level who has primary responsibility and sufficient authority for implementing the TMP and other safety and mobility aspects of the project.
 - 1. An inspector trained in traffic control should be assigned to monitor the approved traffic control plan and recommend changes.
 - 2. Traffic control setups and the maintenance of the traffic control devices should be reviewed regularly. Assistance in reviews should be requested from the District Traffic Engineer's office as appropriate.
- J. Personnel involved in the development, design, implementation, operation, inspection, and enforcement of work zone related transportation management and traffic control shall be trained, appropriate to the job decisions each individual is required to make.
 - 1. Training shall be updated periodically. Updates shall reflect changing industry practices and ITD processes and procedures. When new training or training updates are identified in accordance with **TRAINING, III. ITD Implementation**, the Office of Highways Operations shall incorporate this information into the Work Zone Safety and Mobility program.
- K. ITD shall work in partnership with the FHWA in the implementation of ITD's policies and procedures to improve work zone safety and mobility. At a minimum, this shall involve an FHWA review of conformance of ITD's policies and procedures with 23 CFR 630 Subpart J-Work Zone Safety and Mobility, Subpart K-Temporary Traffic Control Devices, and reassessment of the implementation of ITD's procedures at appropriate intervals. Implementation of this regulation may be addressed in the Stewardship and Oversight Agreement with the FHWA.

II. Guidance for Implementation

- A. Work Zone Assessment and Impact Management:** Work Zone Assessment and Impact Management procedures can provide a framework within existing project development and construction processes to help the Idaho Transportation Department:
1. Identify and understand the work zone safety and mobility implications of alternative project options and design strategies.
 2. Identify significant projects and better allocate work zone management resources to those projects likely to have greater work zone impacts.
 3. Identify transportation management strategies to manage the expected work zone impacts of a project.
 4. Estimate costs and allocate appropriate resources for the implementation of the work zone management strategies.
 5. Implement the strategies, and monitor and manage work zone impacts during construction, maintenance, or utility work, and adjust the Transportation Management Plan (TMP) if needed.
 6. Conduct post-construction work zone performance assessment for assessing the performance of work zones and to improve work zone policies, practices, and procedures.

- B. Work Zone Crash and Delay Data:** Work Zone Crash and Delay Data are useful to make an informed assessment of the success of efforts to manage work zones and their impacts. Work zone field data also enables ITD to assess how well planning and design estimates of anticipated impacts match what actually happens in the field. Work zone data supports performance assessments at the project level, district level, and statewide level. Available data and information can provide the basis for assessing performance and taking appropriate actions to improve performance on individual projects as well as district wide and statewide processes and procedures.

1. **Crash data:** A crash analysis can be done to determine the pre-work zone crash rate within the project limits. Districts shall monitor work zone crashes and should perform a work zone crash assessment during construction. If the crash rate during construction exceeds the pre-existing rate, consideration should be given to making modifications to the TMP and adding the use of law enforcement.

Documentation associated with the pre-work zone crash assessment should be maintained and presented in the concept report.

2. **Delay Data:** An analysis can be done to compare the existing Level of Service (LOS) and existing traffic delays with the expected LOS and expected traffic delays for the proposed TTC plan. If the project meets the project goals for LOS and expected traffic delays, the initial TMP is acceptable. If not, changes to the design, construction staging, or allowable work hours need to be considered.

A work zone mobility assessment should be conducted during construction. The assessment can consist of a drive through of the work zone and/or detour routes to measure what the TTC delays are. If the delay is longer than intended, consideration should be given to making modifications to the TMP, and may include the addition of law enforcement.

Documentation associated with the work zone assessment should be maintained and become part of the construction project records.

III. Significant Projects.

Identify upcoming projects that are expected to be Significant in the Capital Investment Program as early as possible in the project development process. A TMP for a Significant Project should lay out a set of coordinated transportation management strategies and describe how they will be used to manage the work zone impacts of a road project.

A Significant Project TMP shall include a Temporary Traffic Control (TTC) plan, as well as a Transportation Operation (TO) component and Public Information (PI) component. The TMP should be an ongoing process from the scoping process through project development, and continue through the design and construction phase of a project. The TMP scope, content, and level of detail may vary based on the anticipated work zone impacts of the project.

Only TMPs that best serve the safety and mobility needs of the traveling public, highway workers, businesses, and community should be implemented.

Significant Project TMP strategies may consist of strategies shown in Table 1.1 for Temporary Traffic Control, Table 1.2 for Transportation Operations, and Table 2 for ITD Public Information Strategies.

IV. Non – Significant Projects

Non-Significant Project TMPs may consist of a TTC plan only, but consideration should be given to including a TO component and a PI component.

TABLE 1.1: Work Zone Assessment and Impact Management Strategies

Temporary Traffic Control (TTC)		
Control Strategies	Traffic Control Devices *	Project Coordination, Contracting and Innovative Construction Strategies
<ul style="list-style-type: none"> • Construction phasing/ • Full roadway closures • Lane shifts or closures <ul style="list-style-type: none"> - Lane width reductions (constriction) - Lane closure - Reduced shoulder width - Shoulder closure - Lane shift to shoulder/median • One-lane, two-way operation • Two-way traffic on one side divided facility (crossover) • Reversible lanes • Ramp closures/relocation • Freeway-to-freeway interchange closures • Night work • Weekend work • Work hour restrictions for peak travel • Pedestrian/bicycle access improvements • Business access improvements • Off-site detours 	<ul style="list-style-type: none"> • Temporary signs <ul style="list-style-type: none"> - Warning - Regulatory - Guide/ information • Channelizing devices • Longitudinal traffic barriers • Positive Protection Devices <ul style="list-style-type: none"> - attenuators • Temporary pavement markings • Arrow panels • Changeable Message Signs (CMS) • Flaggers and uniformed traffic control officers • Temporary traffic signals • Lighting devices • Other safety devices 	<ul style="list-style-type: none"> • Project coordination <ul style="list-style-type: none"> - Coordination with other projects - Utilities coordination - Right-of-way coordination - Coordination with other transportation infrastructure • Contracting strategies <ul style="list-style-type: none"> - Design build - A+B bidding - Incentive/ disincentive clauses - Lane rental • Innovative construction techniques (precast members, rapid cure materials)

* This is intended to be a partial list. A wide range of safety devices are described in part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and are widely used to enhance safety and mobility in highway work zones.

TABLE 1.2: Work Zone Assessment and Impact Management Strategies

Transportation Operations (TO)			
Demand Management Strategies	Corridor/Network Management Strategies	Work Zone Safety Management Strategies	Incident Management and Enforcement Strategies
<ul style="list-style-type: none"> • Transit service improvements • Transit incentives • Park-and-ride promotion • Shuttle services • Parking supply management • Variable work hours • Telecommuting 	<ul style="list-style-type: none"> • Signal timing/coordination improvements • Temporary signals • Street/intersection improvements • Turn restrictions • Parking restrictions • Separate truck lanes • Truck/heavy vehicle restrictions • Ramp closures • Bus turnouts • Reversible lanes • Dynamic lane closure system • Railroad crossings controls • Speed limit reduction/variable speed limits • Coordination with adjacent projects 	<ul style="list-style-type: none"> • Changeable Message Signs (CMS) • Temporary traffic signals • Temporary traffic barrier • Crash-cushions • Temporary rumble strips • Intrusion alarms • Warning lights • Construction safety supervisor/inspectors • Project task force/committee • Team meetings • TMP monitor/inspection team • Windshield surveys • Project on-site safety training • Safety awards/incentives • Speed Radar Trailers • Traffic Control Review Team as Established by the Districts 	<ul style="list-style-type: none"> • ITS for traffic monitoring/management • Surveillance (Closed-Circuit Television (CCTV), loop detectors, lasers, probe vehicles) • Traffic Screens • Total station units • Photogrammetry • Changeable Message Signs (CMS) • Highway Advisory Radio (HAR) • Media briefings • CARS 511 information dissemination • Local detour routes • Transportation Management Center (TMC) • Contract support • Incident/emergency management coordinator • Incident/emergency response plan • Dedicated (paid) police enforcement • Cooperative police enforcement • Increased penalties for work zone violations

**IDAHO TRANSPORTATION DEPARTMENT
GUIDANCE ON WORKZONE SAFETY AND MOBILITY PROGRAM**

CHAPTER 2

PUBLIC INFORMATION

I. Requirements of the Work Zone Safety and Mobility program.

The WZSM program requires that the Public Information (PI) component of the TMP shall include communications strategies that seek to inform affected road users, the general public, area residences and businesses, and appropriate public entities about the project, the expected work zone impacts, and the changing conditions on the project. The scope of the PI component should be determined by the project characteristics and the public information and outreach strategies identified by the Idaho Transportation Department, local agencies, and/or utilities. Public information should be provided through methods best suited for the project, and may include, but not be limited to, information on the project characteristics, expected impacts, closure details, and commuter alternatives.

All Significant Projects are required to include Public Information components. These components may be added to Non-Significant Projects.

II. Guidance for Implementation

A work zone PI campaign involves communicating with road users, the general public, area residences and businesses, and appropriate public entities about a road construction project and its implications for safety and mobility. Developing and implementing this PI campaign should begin in the planning phase of project development, continue through design, construction, and may include post-construction activities. Ongoing monitoring throughout the life of the project will be needed. Planning and implementing a campaign involves a set of key steps that ideally will be coordinated and outlined in a PI plan. Strategies for Public Information are shown in Table 2.

III. Significant Projects

The project development team and the construction/maintenance/utility forces, using input from project stake holders and the affected traveling public, should determine which PI strategies are to be implemented on the project. Typically, the following strategies may be implemented on Significant Projects:

- A. Brochures, flyers, fact sheets, and newsletters,
- B. Public meetings, task forces, workshops, and project related events,
- C. Paid newspaper advertising,
- D. Paid TV advertising,
- E. Radio traffic news,
- F. Emergency and information booklet,
- G. Continuously updated information on Idaho's 511 system.

IV. Non – Significant Projects

It may be determined that a public information component is warranted for a Non-Significant project. This determination may be made during project development or later during construction. In such cases, the types of strategies to be implemented may be determined by the project development team, construction, maintenance, utilities, and by using input from project stakeholders.

Table 2: ITD Public Information Strategies

Strategy	Who	Primary Target Audience	Benefit	Issues	Implementation Phase	Relative Cost to Project
Website	- Public Affairs/ Hired Public Information Coordinator	- Pre-trip travelers - Most other audiences	- Access to real-time information. - Ability to access all project related materials in one place. - May be easy to update	- Target audience must be aware of the web site. - May not reach all of the target audience (excludes people without an Internet connection. - Information must be current and active. - Cost will vary dependent on complexity of web site. - Site should be updated daily.	- Pre-construction - Construction - Post-Construction	Low/ Medium
Web-connected traffic cameras	- Public Affairs/ Hired Public Information Coordinator	- Pre-trip travelers - Most other audiences	- Allows users to view real-time traffic conditions. - Users find information credible because they can actually see the traffic conditions on the road	- May exclude users with a dial-up connection. - Cameras can be costly.	- Construction	Medium
Brochures / fliers Fact sheets / newsletters	- Public Affairs/ Hired Public Information Coordinator - Designers/District	- Local travelers - Commuters - Commercial drivers - Residents	- Low cost - Easy to distribute	- Information can become stale quickly. - Often targets local motorists only. - Must be designed in a manner that makes drivers want to read the information.	- Construction - Post-Construction	Low/ Medium
Public meetings/ task forces / workshops / events	- Designer (preconstruction) - District (during construction)	- Local travelers - Major trip generators - Residents - Businesses - Public officials - Major employers - Local agencies	- Good exposure to the public. - Give agency a chance to raise credibility with the public. - Gives public a chance to voice their concerns.	- Need to make sure the right audience is at the events. - Need to be wary of making "empty" promises.	- Pre-construction - Construction	Low

Table 2: ITD Public Information Strategies

Strategy	Who	Primary Target Audience	Benefit	Issues	Implementation Phase	Relative Cost to Project
Paid newspaper advertising	- Public Affairs/ Hired Public Information Coordinator	- Local travelers (pre-trip) - Commercial drivers (pre-trip) - Major trip generators - Residents and small businesses	- Can reach many people at one time. - The same ad can be used in many different newspapers. - Agency controls the content and timing of the message.	- May not target local motorists. - Newspaper readers may skip over ads. - Requires targeted audience to receive the paper.	- Pre-construction - Construction - Post-Construction	Medium/ High
Paid TV advertising	- Public Affairs / Hired Public Information Coordinator	- Pre-trip travelers - Local travelers	- Can reach many people at one time. - Agency controls the content and timing of the message.	- May not target local motorists. - Time of broadcast	- Pre-construction - Construction - Post-Construction	High
Radio traffic news	- Public Affairs / Hired Public Information Coordinator/ District	- Pre-trip travelers - Local travelers	- Can reach many people at one time. - Little or no cost. - Target people who are likely to use the information.	- May only target local motorists. - Coverage more likely for major projects. - Don't have as much control of the message	- Construction	Low
Project hotline / 511 System	- District Maintenance and Engineering	- Pre-trip travelers - Drivers en route	- Information can be accessed whenever it is needed. - Can allow motorists to provide feedback via recorded message. - May be easy to update.	- Information must be current. - Audience needs to be aware of the hotline number.	- Construction	Low/ Medium
Dynamic message signs (DMS)	- Districts/ Contractor	- Drivers en route	- Provides information directly to motorists affected by the project. - Can provide detour information.	- Message must be easy to read. - Signs must be placed appropriately. - Information should be useful and accurate.	- Construction	Low/ Medium/ High
Emergency and Information Booklet	- Districts	- Construction Staff - Contractors - Emergency Services	- Make information easily available. - Possible faster response time	- Requires contacts to be made by district personnel. - Information needs to be accurate	- Construction	Low

Table 2: ITD Public Information Strategies

Strategy	Who	Primary Target Audience	Benefit	Issues	Implementation Phase	Relative Cost to Project
Web Base Construction Map	- District	- All travelers	<ul style="list-style-type: none"> - Low cost - Timely Information - Can provide detour information 	<ul style="list-style-type: none"> - Target audience must be aware of the web site. - May not reach all of the target audience (excludes people without any Internet connection. - Information must be current and active. - Cost will vary dependent on complexity of web site. - Site should be updated daily. 	- Construction	Low

IDAHO TRANSPORTATION DEPARTMENT
GUIDANCE ON WORKZONE SAFETY AND MOBILITY PROGRAM

CHAPTER 3

TRAINING

I. Requirements of the Work Zone Safety and Mobility program.

The WZSM program requires personnel involved in the development, design, implementation, operation, inspection, and enforcement of work zone related transportation management and traffic control be trained appropriate to the job decisions each individual is required to make. Periodic training updates that reflect changing industry practices and ITD processes and procedures are also required for these personnel.

II. Guidance for Implementation

Personnel that must be trained include transportation planners, designers, traffic and safety engineers, safety coordinators, temporary traffic control designers, program managers, construction managers, construction project staff, maintenance staff, law enforcement, contractors, and utility staff. This may also include executive-level decision-makers, policy makers, senior managers, information officers, and other incident responders.

The level of training shall be appropriate to an individual's job responsibilities and to the job decisions that each individual needs to make.

External training needs must be addressed. External personnel that need to be trained include those doing project development (design or engineering service consultants) and those doing construction activities (engineering service consultants), and utility work. The Idaho Transportation Department shall require that external partners are trained appropriate to each individual's job responsibilities and to the job decisions that each individual needs to make. These requirements shall be included in all Consultant Agreements (limited to projects on the STIP) and utility's Notice to Proceed.

III. ITD Implementation

The ITD should identify work zone related transportation management and traffic control training. When the training is identified, consideration should be given to include our partners (cities, counties, consultants and construction industry) in the training.

The Design/Maintenance/Construction Section and the Traffic Services Section, in cooperation with the Division of Human Resources Training Section and the Districts should identify training that addresses the training needs of designers, traffic engineers and technicians, and others that are involved in the design of work zone related transportation management and traffic control.

The Design/Maintenance/Construction Section and the Traffic Services Section, in cooperation with the Division of Human Resources Training Section and the Districts should identify training that addresses the training needs of construction project personnel involved in the implementation, operation, maintenance, inspection, and/or enforcement of work zone related transportation management and traffic control.

The Office of Highway Operations, in cooperation with the Division of Human Resources Training Section and the Districts, should identify training that addresses the training needs of maintenance personnel involved in the implementation, operation, maintenance, inspection, and/or enforcement of work zone related transportation management and traffic control.

The Emergency Programs Section and the Traffic Services Section, in cooperation with the Division of Human Resources Training Section and the Districts, should identify training that

addresses the training needs of maintenance personnel and Law Enforcement personnel involved in incident related transportation management and traffic control.

Training of contractors and utility workers for such activities as designing, implementing, setting up or maintaining work zone traffic control is required. The Idaho Transportation Department's Standard Specifications for Highway Construction requires training for Traffic Control Supervisors and Flaggers. Contractors, incident responders, and utility workers are responsible to acquire the required training and certifications.

The following is a list of Training courses for Planners and Designers, Construction and Maintenance, and Incident Management areas:

A. Planners and Designers

Suggested training courses for individuals responsible for developing project concepts, designing, or reviewing Traffic Control Plans (TCP) are listed below. Completion of two of the following courses and any associated valid certifications, or holding a valid license as a Professional Engineer shall satisfy this training requirement:

1. Introduction to ITD's Work Zone Safety & Mobility program and Overview of the Rule on Work Zone Safety and Mobility

This training is an introduction provided by the Office of Highway Operations on ITD's Work Zone Safety & Mobility program requirements and standards. Title 23 CFR 630 Subpart J - The Work Zone Safety and Mobility is the rule that has changed and clarified work zone procedures. The rule is the basis that ITD's Work Zone Safety and Mobility program is built on. The rule introduction is provided by the Office of Highway Operations as a companion with ITD's Work Zone Safety & Mobility program introduction.

Certification is not required for this course.

2. Traffic Control Technician (ATSSA and ITD)

All Department employees associated with traffic control in work zones involving construction, maintenance, or other operations requiring temporary traffic control, should have a basic knowledge of temporary traffic control that allows them to assist in monitoring and recognition of deficiencies of traffic control and shall be trained as a Traffic Control Technician (TCT).

Certifications are effective for a four year period from completion of a course and recertification is required every four years. Recertification may consist of a shorter refresher course.

3. Flagging (ITD, ATSSA and Evergreen)

This course provides instruction and training to individuals interested in flagging so they may perform their duties effectively and safely. Flaggers should possess and maintain intelligence and common sense, good physical condition (sight and hearing), mental alertness, a courteous but firm manner, a pleasing personality, neat appearance, sense of responsibility for the safety of the public and fellow workers and patience.

Only certified flaggers shall be allowed to work on Federally funded projects or on the state highway system. Certifications are effective for a three year period

from completion of a course and recertification is required every three years. Recertification may consist of a shorter refresher course.

4. Traffic Control Supervisor (ATSSA and Evergreen)

All projects from the simplest maintenance job to a multi-million dollar reconstruction project require traffic control expertise to make the project as safe as possible for the motorist and workers. The Project Manager or Project Engineer on the project needs to be trained in the latest standards, practices and procedures to accomplish this goal.

Only certified Traffic Control Supervisor shall be allowed to work on Federally funded projects or on the state highway system. Certifications are effective for a four year period from completion of a course and recertification is required every four years. Recertification may consist of a shorter refresher course.

5. QuickZone (FHWA- provides training, McTrans-vendor of software)

This training describes the use and application of QuickZone. This software compares the traffic impacts for work zone mitigation strategies and estimates the costs, traffic delays, and potential backups associated with these impacts.

Certification is not required for this course.

6. Traffic Control Design Specialist (ATSSA)

This training course addresses the entire process for designing, installing, maintaining, and the evaluation of temporary traffic control in work zones. This training is recommended for traffic engineers, engineering technicians, consultants and other individuals responsible for temporary traffic control design and for individuals that are responsible for designing traffic control plans for approval.

Certification is not required for this course.

7. Advanced Work Zone Management and Design (NHI)

This training course should provide planners, designers, construction managers, and other transportation professionals with additional skill and knowledge of both technical and non-technical aspects of work zone design and traffic management practices.

Certification is not required for this course.

Approval of alternate courses and materials is the responsibility of ITD's Traffic Control Oversight Committee (TCOC). The TCOC will also annually review the course materials of the courses listed above that do not have certification requirements. If, in the opinion of the TCOC, course updates are required to reflect changing industry practice and/or State processes and procedures, the TCOC will schedule refresher training for each of the appropriate courses within the next year and require that anyone who is depending on that course to meet these training requirements attend the refresher training.

B. Construction and Maintenance

Suggested training courses for individuals responsible for designing, inspecting, installing, or maintaining work zone traffic control, construction workers, project managers, project engineers, maintenance managers and workers, and non-routine Law Enforcement work are listed below. Completion of two of the following courses and any associated valid certifications, or holding a valid license as a Professional Engineer, or completion of the Police Officer Standards and Training (POST) Academy shall satisfy this training requirement:

1. Introduction to ITD's Work Zone Safety & Mobility program and Overview of the Rule on Work Zone Safety and Mobility

This training is an introduction provided by the Office of Highway Operations on ITD's Work Zone Safety & Mobility program requirements and standards. Title 23 CFR 630 Subpart J - The Work Zone Safety and Mobility is the rule that has changed and clarified work zone procedures. The rule is the basis that ITD's Work Zone Safety and Mobility program is built on. The rule introduction is provided by the Office of Highway Operations as a companion with ITD's Work Zone Safety & Mobility program introduction.

Certification is not required for this course.

2. Traffic Control Technician (ATSSA and ITD)

All Department employees associated with traffic control in work zones involving construction, maintenance, or other operations requiring temporary traffic control, should have a basic knowledge of temporary traffic control that allows them to assist in monitoring and recognition of deficiencies of traffic control and shall be trained as a Traffic Control Technician (TCT).

Certifications are effective for a four year period from completion of a course and recertification is required every four years. Recertification may consist of a shorter refresher course.

3. Flagging (ITD, ATSSA and Evergreen)

This course will provide instruction and training to individuals interested in flagging so they may perform their duties effectively and safely. Flaggers should possess and maintain intelligence and common sense, good physical condition (sight and hearing), mental alertness, a courteous but firm manner, a pleasing personality, neat appearance, sense of responsibility for the safety of the public and fellow workers and patience.

Only certified flaggers shall be allowed to work on Federally funded projects. Certifications are effective for a three year period from completion of a course and recertification is required every three years. Recertification may consist of a shorter refresher course.

4. Traffic Control Supervisor (ATSSA and Evergreen)

All projects from the simplest maintenance job to a multi-million dollar reconstruction project require traffic control expertise to make the project as safe as possible for the traveling public and for workers. Construction inspectors, project managers, project engineers, and maintenance workers on the project

need to be trained in the latest standards, practices and procedures to accomplish this goal.

Only certified Traffic Control Supervisor shall be allowed to work on Federally funded projects or on the state highway system. Certifications are effective for a four year period from completion of a course and recertification is required every four years. Recertification may consist of a shorter refresher course.

5. QuickZone (FHWA- provides training, McTrans-vendor of software)

This training describes the use and application of QuickZone. This software compares the traffic impacts for work zone mitigation strategies and estimates the costs, traffic delays, and potential backups associated with these impacts

Certification is not required for this course.

6. Advanced Work Zone Management and Design (NHI)

This training course should provide planners, designers, construction managers, and other transportation professionals with additional skill and knowledge of both technical and non-technical aspects of work zone design and traffic management practices.

Certification is not required for this course.

7. Comprehensive Inspection Training Course (ATSSA – Training CD)

The training consist of 14 modules geared towards specific topics; Inspection basics, nighttime traffic control, flagging operations, signs and supports, portable changeable message boards, arrow panels, channelizing devices, pavement markings, raised pavement markers and delineators, warning lights and floodlights, crash cushions, portable concrete barriers, truck mounted attenuators, and guardrail installation and inspection.

Certification is not required for this course.

Approval of alternate courses and materials is the responsibility of ITD's Traffic Control Oversight Committee (TCOC). The TCOC will also annually review the course materials of the courses listed above that do not have certification requirements. If, in the opinion of the TCOC, course updates are required to reflect changing industry practice and/or State processes and procedures, the TCOC will schedule refresher training for each of the appropriate courses within the next year and require that anyone who is depending on that course to meet these training requirements attend the refresher training.

C. Incident Management

Suggested training courses for those who may find themselves managing incidents on the roadway are listed below. Completion of two of the following courses and any associated valid certifications, or holding a valid license as a Professional Engineer, or completion of the Police Officer Standards and Training (POST) Academy shall satisfy this training requirement:

1. Introduction to ITD's Work Zone Safety & Mobility program and Overview of the Rule on Work Zone Safety and Mobility

This training is an introduction provided by the Office of Highway Operations on ITD's Work Zone Safety & Mobility program requirements and standards. Title 23 CFR 630 Subpart J - The Work Zone Safety and Mobility is the rule that has changed and clarified work zone procedures. The rule is the basis that ITD's Work Zone Safety and Mobility program is built on. The rule introduction is provided by the Office of Highway Operations as a companion with ITD's Work Zone Safety & Mobility program introduction.

Certification is not required for this course.

2. Traffic Control Technician (ATSSA and ITD)

All Department employees associated with traffic control in work zones involving construction, maintenance, or other operations requiring temporary traffic control, should have a basic knowledge of temporary traffic control that allows them to assist in monitoring and recognition of deficiencies of traffic control and shall be trained as a Traffic Control Technician (TCT).

Certifications are effective for a four year period from completion of a course and recertification is required every four years. Recertification may consist of a shorter refresher course.

3. Flagging (ITD, ATSSA and Evergreen)

This course will provide instruction and training to individuals interested in flagging so they may perform their duties effectively and safely. Flaggers should possess and maintain intelligence and common sense, good physical condition (sight and hearing), mental alertness, a courteous but firm manner, a pleasing personality, neat appearance, sense of responsibility for the safety of the public and fellow workers and patience.

Only certified flaggers shall be allowed to work on Federally funded projects. Certifications are effective for a four year period from completion of a course and recertification is required every four years. Recertification may consist of a shorter refresher course.

4. Traffic Control Supervisor (ATSSA and Evergreen)

All projects from the simplest maintenance job to a multi-million dollar reconstruction project require traffic control expertise to make the project as safe as possible for the traveling public and for workers. Construction inspectors, project managers, project engineers, and maintenance workers on the project need to be trained in the latest standards, practices and procedures to accomplish this goal.

Only certified Traffic Control Supervisor shall be allowed to work on Federally funded projects or on the state highway system. Certifications are effective for a four year period from completion of a course and recertification is required every four years. Recertification may consist of a shorter refresher course.

5. Emergency Management (BDS)

This course will introduce participants to fundamental principles of emergency management in an integrated system. This course will help participants to

experience the perspective of the local community, officials and citizens within the context of multiple hazards and potential resources from various sources. All District and Headquarters emergency management coordinators and alternates should attend.

Certification is not required for this course.

6. Incident Traffic Control For Responders (ATSSA)

ATSSA's newest course Emergency Traffic Control for Emergency Responders is aimed at police and fire rescue personnel who get involved with traffic control, either responding to an incident or enforcing traffic control in work zones. It discusses major, intermediate and minor principles of incident management and considerations for traffic control enforcement in work zones. The 4-hour course covers principles and concepts of temporary traffic control presented in the Manual on Uniform Traffic Control Devices (MUTCD) Section 6 I, a Federal standard. Also discussed are principles of temporary traffic control and the requirements of the component parts of typical work zones, such as: taper lengths, flagging operations, typical applications, device requirements and others.

Certification is not required for this course.

Approval of alternate courses and materials is the responsibility of ITD's Traffic Control Oversight Committee (TCOC). The TCOC will also annually review the course materials of the courses listed above that do not have certification requirements. If, in the opinion of the TCOC, course updates are required to reflect changing industry practice and/or State processes and procedures, the TCOC will schedule refresher training for each of the appropriate courses within the next year and require that anyone who is depending on that course to meet these training requirements attend the refresher training.

IDAHO TRANSPORTATION DEPARTMENT
GUIDANCE ON WORKZONE SAFETY AND MOBILITY PROGRAM

CHAPTER 4

WORK ZONE SAFETY AND MOBILITY PROCESS REVIEW

I. Requirements of the Work Zone Safety and Mobility program.

The Department shall perform a process review at least every two years to assess the effectiveness of work zone safety and mobility procedures.

II. Guidance for Implementation

The ultimate objective of the process reviews is to enhance efforts to address safety and mobility on current and future projects. It does not require that the results of the review be forwarded to the FHWA for approval.

The work zone performance assessment addressed by the process review may involve a review of randomly selected projects and/or the evaluation of statewide work zone data. A post-project review that includes objective outcome reviews of what went right/wrong on projects may be performed to provide further feedback to continually improve work zone practices, policies, processes, and procedures.

A Work Zone Safety and Mobility Review Team should perform the process review, covering one-half of the state every year, and should be led by the Office of Highway Operations Section with a representative from Design/Materials/Construction, Employee Safety and Risk Management, the District Traffic Engineer, District Safety, District Construction, and the Federal Highway Administration. The Review may include interviews with Project Development, Planning, the District, and Local Government (if applicable).

The following are examples of questions that may be used when performing the process review:

- A. Are good decisions in planning, designing, and implementing our work zones being made?
- B. How are work zones performing with respect to safety and mobility?
- C. How do work zone performance, the effectiveness of strategies, or areas of improvement vary between day work and night work?
- D. Can areas for improvement be identified?
- E. What has both worked and not worked – which strategies have proven to be either more or less effective in improving the safety and mobility of work zones?
- F. Should policies or agency procedures be adjusted based on what has been observed or measured?
- G. How have areas for improvement that were identified in the past been addressed?
- H. Are customer expectations being met with respect to maintaining safety and mobility, and minimizing business and community impacts through, in, and around the work zone?
- I. What other strategies can be considered for implementation?
- J. Are there certain combinations of strategies that seem to work well?
- K. Can any work zone safety and mobility trends be identified, at the national level or local level? What can be done to advocate characteristics associated with good trends? What can be done to remedy the problems associated with bad trends?
- L. Can consistency be brought about in the identification of such trends, issues, and problems, and in the standardization of tools and guidelines for application at the agency, State, and/or national level?

Conducting process reviews should include the following action items:

- A. Develop review objectives.
- B. Determine review methods.
- C. Conduct review.

- D. Analyze and interpret results.
- E. Develop inferences, recommendations, and lessons learned.
- F. Prioritize recommendations and lessons learned.
- G. Identify performance objectives for next review.
- H. Report recommendations and lessons learned.