STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES **Policy and Procedure**		POLICY AND PROCEDURE NUMBER **05.05.015**	PAGE 1 of 9
		EFFECTIVE DATE November 18, 2008	
SUBJECT **Highway Work Zone Safety and Mobility**		SUPERSEDES 05.05.015	DATED October 8, 2007
CHAPTER **Design and Construction**	SECTION **Highways**	APPROVED BY	

PURPOSE

This formalizes the policy and procedure (P&P) of the department on promoting safety and mobility in highway work zones in conformance with Code of Federal Regulations Title 23, Part 630, Subparts J and K.

POLICY

In highway work zones, it is the policy of the department to:

1. Provide a high level of safety for road users and workers.
2. Minimize congestion and community impacts by holding road user delays as close as practicable to pre-construction levels.
3. Provide the contractor adequate access to the roadway to complete the work efficiently while meeting the quality requirements of the contract.

Regions shall systematically consider and manage work zone impacts at each stage of highway project development. This includes early impact assessment, impact management, and crash and delay data collection and analysis. Regions shall analyze the projected effect of highway work on traffic flow and take the steps necessary to prevent traffic delays, to the extent possible. Regions shall give employees training appropriate to the job related decisions they are required to make. Regions shall evaluate the effectiveness of work zone safety and mobility measures and use the results of that evaluation to improve future efforts.

All parties working on state highways, and on other highways when work is funded by federal funds, shall comply with this policy. Departmental employees charged with administering third party agreements for highway work requiring work zone traffic control shall incorporate this policy, with the exception of the "Planning Phase Impact Assessment" and "Process Review" sections, by reference in those agreements.

This policy is targeted at construction projects that go through the typical Planning/Design/Construction project development cycle. Work done by departmental Maintenance and Operation (M&O) personnel typically does not. For guidance on those projects, see the "Abbreviated Process for Maintenance and Operations Projects" topic in the Procedure section.

PROCEDURE

Definitions

Project: Any work in highway right of way that may have an impact on traffic.

Significant Projects:

1. Projects that occupy a location for more than three days with either intermittent or continuous lane closures on Interstate Highways within Transportation Management Areas.
2. Projects that occupy a location for more than three days with either intermittent or continuous lane closures on arterials, expressway, or freeways with Average Annual Daily Traffic (AADT's) of 30,000 or more.
3. Any project that fully closes an arterial for which there is no practical alternate route for more than one hour at a time.
4. Any other project that, alone or in combination with other concurrent projects nearby, is anticipated to require greater than normal attention to traffic control to eliminate sustained work zone impacts greater than what would be considered acceptable.

When projects are judged to be "significant", all three Transportation Management Plan components, the Traffic Control Plan, Public Information Plan, and Transportation Operations Plan, shall be completed.

Transportation Management Area (TMA): 1) Each urbanized area with a population of over 200,000 and 2) any urbanized area for which TMA designation has been requested by both a state governor and the area's metropolitan planning organization, and has been granted by the Secretary of the United States Department of Transportation (USDOT). As of 2007, there is one TMA in Alaska, in Anchorage. Its boundary coincides with the Anchorage Metropolitan Area Transportation System boundary.

Transportation Management Plan (TMP): Plan to manage work zone impacts of a highway project, which includes a Traffic Control Plan and may include Transportation Operations and Public Information Plans (all three plans are required on "significant" projects). Neither the TMP nor its three component plans are standalone documents. Plan provisions are included in either project plans, specifications, or agreements with other parties. Scale each component plan as appropriate for individual projects.

Traffic Control Plan (TCP): Referred to as Temporary Traffic Control Plans in the Final Rule, TCPs identify traffic control devices to be used and how they should be located and operated to facilitate safe and timely road user transit through a work zone or incident area. TCPs shall be consistent with the provisions of the Alaska Traffic Manual and the work zone hardware recommendations in Chapter 9 of the Roadside Design Guide (AASHTO). Either the TCP shall be a reference to specific traffic control

elements in the Alaska Traffic Manual, approved standard traffic control plans, or plans and specifications designed specifically for the project. TCPs also include phased staging and traffic routing plans, where needed.

Public Information Plan (PIP): A communications plan to inform affected road users, the general public, area residences and businesses, and appropriate public entities of project scope, expected work zone impacts, closure details, and recommended action (if any) for drivers to avoid impacts and changing conditions during construction.

Transportation Operations Plan (TOP): A plan to minimize project impacts through activities not covered under PIPs or TCPs. In general, these activities consist of coordination with external agencies, events, projects, and systems, and may include:

1. Plans for on-project enforcement and other activities by external agencies.
2. Coordination with other projects to minimize cumulative impact.
3. Coordination with agencies that manage signal operations.
4. Plans to maintain access for emergency vehicles, school buses, transit, etc.
5. Plans to minimize impacts to major traffic-generating events.

Agreements made under the TOP that are not incorporated in project plans or specifications shall be retained in project files. Where appropriate, include them as referenced appendices in construction contracts.

Positive Protection Devices: Traffic barriers that contain and/or redirect vehicles and meet the crashworthiness evaluation criteria contained in National Cooperative Highway Research Program (NCHRP) Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features, 1993.

Abbreviated Process for Maintenance and Operations Projects

Implement this policy on projects performed by Maintenance and Operations using the following abbreviated process:

1. Determine whether the project is “significant” as defined herein. If so, comply with this policy in its entirety.
2. If not, comply with all the following:
   a. Coordinate with departmental construction personnel and municipal personnel to minimize work zone impacts from multiple construction projects occurring in the same area.
   b. Maintain work zone traffic control in accordance with the Alaska Traffic Manual.
   c. Ensure personnel are trained in accordance with the Training section of this policy.

Work Zone Impact Assessment and Management

See the Alaska Department of Transportation & Public Facilities (ADOT&PF) Preconstruction Manual, Construction Manual, Alaska Traffic Manual, Standard Specifications for Highway Construction, and/or Standard Specifications for Airport Construction for more-specific guidance than given in this policy.

Unless otherwise noted, the administrator responsible for each project development phase (Planning, Design, Construction, and Maintenance) is responsible for the tasks listed in this document.

Design Phase Impact Assessment

1. Determine whether a project is “significant” Document this determination in the project Design Study Report.
2. If a project is “significant” as defined in part 1 of the definition of “Significant Projects” but anticipated traffic impacts do not warrant the extra attention to traffic control that accompanies that designation, request an exemption from the Federal Highway Administration (FHWA) in accordance with 23 CFR 630.1010(d).
   a. Project-specific exemptions may be granted if:
      i. lane-closures occur only at night, or
      ii. lane-closures occur only during off-peak and weekend hours, or
      iii. roadway capacity under construction conditions substantially exceeds traffic volumes.
3. Involve stakeholders as appropriate.
4. For the Anchorage and Fairbanks urban areas (and elsewhere when appropriate) the DOT&PF Regional Traffic and Safety Engineers are responsible for creating and maintaining two maps of “significant” projects and other major projects (including projects being developed by the Fairbanks and Anchorage Metropolitan Area Transportation Systems) for:
   a. The current (or upcoming) season (year 1)
   b. The construction season after that (year 2)
5. For all projects, “significant” or not, consider:
   a. Whether road capacity under anticipated construction conditions needs to be evaluated.
   b. Whether there are particular safety concerns that need to be addressed.
6. Provide information on potential construction impacts to traffic mobility during project public hearings and meetings.

Design Phase Impact Management

1. For non-exempted “significant” projects, prepare a full Traffic Management Plan, including Traffic Operations, Public Information, and Traffic Control Plans.

2. For other projects, prepare a Traffic Control Plan and consider whether it is appropriate to include Traffic Operations and/or Public Information Plans or portions thereof.
3. For all projects:
   - Establish times and dates when lane and/or road closures are prohibited. This may include requirements for night and/or weekend work.
   - Provide specific guidance for mitigation of special safety concerns, when applicable.
   - Consider establishing allowable delay/queue standards.
   - Consider whether coordination with the entity that manages traffic signals will be necessary during construction of the project.
   - Where appropriate, include all TOP agreements that are not incorporated in project plans or specifications as referenced appendices in construction contracts.
   - Coordinate with local governments on all significant projects or other projects that may conflict with local projects.
   - To minimize worker exposure to traffic and exposure of road users to construction activities, consider including the following exposure control measures:
     - Road or ramp closures
     - Detours
     - Median crossovers
     - Night or off-peak work hours
     - Accelerated construction techniques.
   - Identify whether and under what conditions to install positive protection devices. In making this determination, consider the following factors:
     - Project scope and duration;
     - Anticipated traffic speeds through the work zone;
     - Anticipated traffic volume;
     - Vehicle mix;
     - Type of work (as related to worker exposure and crash risks);
     - Distance between traffic and workers, and degree of worker exposure;
     - Escape paths available for workers to avoid vehicle intrusion into the work space;
     - Time of day the work occurs (e.g., night work);
     - Work area restrictions (including impact on worker exposure);
     - Consequences from/to road users resulting from roadway departure;
     - Potential hazard to workers and road users presented by device itself and during device placement and removal;
     - Geometrics that may increase crash risks (e.g., poor sight distance, sharp curves);
     - Access to/from work space;
     - Roadway classification; and
     - Impacts on project cost and duration.

In particular, installation of positive protection devices should be considered for the following conditions:
  - Work zones that provide workers no means of escape from motorized traffic (e.g., tunnels, bridges, etc.);
  - Long duration work zones (e.g., two weeks or more) resulting in substantial worker exposure to motorized traffic;
  - Projects with high anticipated operating speeds (e.g., 45 mph or greater), especially when combined with high traffic volumes;
  - Work operations that place workers close to travel lanes open to traffic; and
  - Roadside hazards, such as drop-offs or unfinished bridge decks, that will remain in place overnight or longer
- Consider truck mounted attenuators for short duration or mobile work on high speed roads and in other areas as appropriate.
- Consider whether and when uniformed police officers should be present on construction projects and work with construction personnel to make necessary agreements to facilitate their presence. In determining whether officers are needed, consider the factors listed in 23 CFR 630.1108(d). Pre-arranged regional agreements with police departments, rather than agreements reached project by project, should reduce the amount of time project personnel need to spend making these arrangements.

Construction Phase Impact Assessment and Management

1. The department's project engineer is responsible for overseeing TMP components and other safety and mobility aspects of the project. The Project Engineer may delegate to a trained departmental employee who will be on the project and who has sufficient authority to oversee TMP implementation.
2. Require the contractor to assign the primary responsibility for implementing TMP components and other safety and mobility aspects of the project to a certified Work Zone Traffic Supervisor who will be responsible for maintaining traffic control on the project 24 hours per day, 7 days per week and who has sufficient authority to stop work.
3. Review/Approve/Disapprove Contractor's proposed changes to TMP components.
4. Manage project traffic control in accordance with the plans, specifications, and TOP agreements.
5. Consult with stakeholders as appropriate.
6. Report accidents within construction projects to the regional traffic and safety engineer within 10 calendar days of the accident.
7. Maintain pre-existing roadside safety hardware at an equivalent or better level than existed prior to project implementation until the progress of construction necessitates removing that hardware. From that time until permanent roadside safety hardware is installed, maintain roadside safety hardware as required in the plans and specifications.

8. Maintain traffic control devices in accordance with the latest edition of the American Traffic Safety Services Association's *Quality Control Guidelines for Temporary Traffic Control Devices.*

Program Evaluation

Evaluation by Project Personnel

1. Require daily night and day inspections of traffic control measures and correction of deficiencies by the Contractor.
2. Have a departmental employee inspect TMP measures daily and require the Contractor to correct deficiencies.

Process Review

1. "Statewide Design and Engineering Services (D&ES) shall perform a "joint traffic control review" in one region each year. Joint reviews shall be rotated to occur in each region once every three years. Any project, regardless of scale or who is doing it, on state highways may be reviewed.
   a. The following personnel should be invited to participate in this review:
      i. FHWA Traffic and Safety Operations Engineer
      ii. DOT&PF Construction Standards Engineer
      iii. DOT&PF State Traffic and Safety Engineer or representative
      iv. DOT&PF Regional Work Zone Traffic Control Coordinators (from all three regions)
      v. DOT&PF Regional Traffic and Safety Engineer
      vi. DOTPF Regional Highway Construction Group Chief/Project Managers (from all three regions)
      vii. Project Engineers from projects visited
      viii. Designers of traffic control plans for the projects visited.
   b. The following aspects of work zone traffic control may be evaluated:
      i. Transportation Management Plans (including TCPs, PIPs, TOPs)
      ii. TCP Implementation: Traffic Control Device (TCD) appropriateness, location and condition
      iii. Project staging/traffic routing plans
      iv. Project impact on traffic delay
      v. Project impact on safety
      vi. Inter-project coordination
      vii. Quality of daily reviews by DOT&PF and Contractor personnel
      viii. Other project paperwork
      ix. Other aspects as appropriate.
   c. D&ES shall write a review summary memo and distribute it to the regions and to the FHWA within three weeks of the review.

2. Each region shall conduct an annual work zone traffic control review (except for the years the joint review is held in that region) and write a review summary memo to Chief, Design and Construction Standards within three weeks of the review.
3. Bring issues identified in both the statewide and regional summary memos to the attention of construction personnel at the spring construction meeting in each region.

Pay Items

Traffic control device contingent sum and unit prices should be reviewed every two years and updated when necessary to ensure they accurately reflect market conditions. Hourly rates for flagging should be updated annually. Provide separate pay items for Positive Protection Devices, when used. Do not make payment for work zone traffic control features and operations incidental to the contract or to other items of work not related to traffic control and safety.

Training

Personnel should be trained as follows:

Position	Training
Regional Traffic Control Coordinators:	Worksite Traffic Supervisor Worksite Traffic Technician Worksite Traffic Supervisor Trainer Worksite Traffic Technician Trainer Emergency Traffic Control Trainer Flagger Trainer
DOT&PF Construction Project TC Person:	Worksite Traffic Supervisor
DOT&PF Construction Project Manager:	Worksite Traffic Supervisor
DOT&PF Traffic Control Plan Designers	Worksite Traffic Control Design or Worksite Traffic Supervisor
DOT&PF Regional Traffic and Safety Engineers	Worksite Traffic Control Design or Worksite Traffic Supervisor
Contractor Worksite Traffic Supervisor:	Worksite Traffic Supervisor

Contractor Worksite Traffic Supervisors shall receive training at least every four years.

Data Collection

On-project crash and delay data on work zones may be gathered from sources including the following:

1. Work Zone logs and diaries
2. Information collected during work zone reviews

3. Information collected during project post-mortems
4. Police crash reports
5. Project work zone accident reports.

This data is to be used in program evaluation.

Each Regional Traffic and Safety Engineer shall submit an annual work zone accident report to the State Traffic and Safety Engineer by January 15 of the following year.

AUTHORITY

23 CFR 630.1006, Work Zone Safety and Mobility Policy

IMPLEMENTATION RESPONSIBILITY

Regional directors, regional planning chiefs, regional preconstruction engineers, regional construction engineers, regional M&O chiefs, regional utility engineers and regional traffic and safety engineers

DISTRIBUTION

All department employees via the DOT&PF website