INDOT DESIGN MANUAL
NEW MOT CHAPTER 503

MOT Chapter Updates
Designer Perspective

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Focus on Safety in Work Zones

**MOT DESIGN ISSUES & CHALLENGES**

- Work Zones are Dangerous Areas
- Tendency to Overlook Safety Issues
- Every Project is Different
- More Projects Under Construction
- Contractor/Inspector Fatigue
- Distracted and Aggressive Drivers
- Age, Fatigue, No Tolerance for Delays
- Conflict Between Maintaining Traffic Flow & Keeping Costs Down and Maximizing Safety
Focus on Safety in Work Zones

**MOT DESIGN GOALS**

- New Way of Looking at MOT
- Reduce or Eliminate Crashes in Work Zones
- Clear Guidance for Roadway Users
- Positive Protection of Workers
- Workers and Inspectors to be Able to Return Home at the End of the Day
- Traveling Public Able to Travel Through Work Zone Efficiently and Safely
- Avoid Lawsuits Due to Negligence
Traffic Control Strategy

- Traffic Control Strategy
  - Identify Traffic Control Strategy In Engineering Assessment Process
  - Developed to Degree to Facilitate Cost Estimation of Project
  - Complete Road Closure First Option to Be Considered
  - Phase Construction Provide Positive Protection
  - Confirm Strategy at each Stage Submittal and Field Checks

- Traffic Control Strategy Order of Precedence
  - #1 Complete Road Closure with Detour
  - #2 Runaround or Crossover
  - #3 Phase Construction with No Lane Reductions
  - #4 Phase Construction with Lane Reductions
Significant Work Zone – Traffic Management Plan (TMP)

- **Engineering Assessment Report**
  - Identify Whether Project is **Significant** or **Non-Significant**
  - All Projects Require a TMP

- **TMP Team**
  - Identify Team In Engineering Assessment Report
  - Carry Team Forward, Expand in Design Phase

- **TMP Document Contents**
  - Temporary Traffic Control Design and Plans
  - Transportation Operations Plan/ Incident Management Plan
  - Public Information Plan
    - Accommodate Property Owners, Businesses, Emergency Services, Schools, LPA’s, Etc.
MOT Design Resources

- INDOT Standards, Specifications, Special Provisions
- IDM Chapter 503, Design Memos
- INDOT Policies, Process and Procedures for Work Zone Safety
- INDOT WZ Traffic Control Guidelines
- MUTCD, FHWA, AASHTO Roadside Design Guide, OSHA Requirements
Taper and Buffer Areas

Taper Length Criteria for Work Zones

The five types of tapers used in work zone traffic control are:

1. **Merging Taper** – The number of lanes is reduced on a continuous road.
2. **Shifting Taper** – A lateral shift, but no reduction in the number of travel lanes.
3. **Shoulder Taper** – The shoulder is closed.
4. **Two-way Traffic Taper** – Opposite directions of traffic share our open lane.
5. **Downstream Taper** – The work area ends and traffic returns to normal driving lanes.

The spacing of channelizing devices (cones, drums, etc.) in a taper should be a distance in feet equal to the speed limit in mph.

Channelizing devices may also be spaced as follows:

<table>
<thead>
<tr>
<th>TABLE II: INDOT SKIPS BASED STANDARD TAPERS (12 Ft Closure)</th>
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<tbody>
<tr>
<td><strong>Speed (mph)</strong></td>
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Buffer Lengths and Flagger Stations

The buffer area is a recommended part of the work zone. It serves to separate traffic flow from the work area or a potentially hazardous area and provides recovery space for an errant vehicle. The buffer area should not include any work activity nor storage of equipment, vehicles or materials.

The flagger station should be located the same distance in advance of the work zone as the buffer length.

**Table III: Guidelines for Buffer Lengths and Distance of Flagger Station in Advance of the Workspace**

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>MUTCD Based Buffer Length (ft)</th>
<th>INDOT Skips Based Buffer Length (ft)</th>
<th>Number of Skips</th>
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For buffer widths less than 12 feet consult the MUTCD Section 6C-08, Table 6C-4.

A lateral buffer space may also be used to separate passing traffic from the work area. Its use and width is based on conditions at the work site.

**Supervisor’s Checklist**

1. Have a traffic control plan before going to the work site.
2. Ask yourself, "What is the driver’s view of the work site?" (at night, during peak hours, etc.) Whenever possible, after setting up, drive through the zone to see it from the motorist perspective.
3. Investigate crashes/incidents to identify if changes are needed in the traffic control plan.
4. For overhead work, traffic control is required for affected lanes.
5. If working on an interstate, check to see if a Interstate Lane Closure Waiver is needed and/or approved for the location.
MOT Phasing and Work Zone Best Practices

- Approach MOT Design with Same Focus/Intensity as Final Design
- Design Safe Work Zone for Construction Workers and Traveling Public
- Separate Traffic and Work Zone to the Greatest Extent Possible
- Allow Adequate Time and Visibility for Driver Decisions Approaching Work Zones
- Minimize # of Construction Phases and Traffic Switches
- Maintain Mobility (Inhibit Traffic as Little as Possible, Maximize Design Speeds)
- Provide Positive Guidance & Positive Protection
- Reduce Length of Construction Time. Less Time, Less Exposure
- Discuss MOT in Depth at Field Checks
DEVELOPMENTS IN MAINTENANCE OF TRAFFIC

QUESTIONS?