Illinois Department of Transportation

Memorandum

To:	Regional Engineers / Bureau Chiefs
From:	Milton R. Sees
Subject:	Work Zone Safety and Mobility Rule
Date:	October 12, 2007

The attached Safety Engineering Policy 3-07 complies with the updated Federal Highway Administration (FHWA) work zone regulations at 23 CFR 630 Subpart J. The policy intent is to address safety and mobility issues starting early in project development and continuing through project completion. The goals are focused both on reducing fatal and serious injury crashes in work zones, coupled with minimizing work zone delays for motorists. This policy was developed in coordination with FHWA, affected IDOT Bureaus and Districts, and local agency representatives. The policy is effective immediately, with the understanding that implementation in order to achieve the stated goals will be reviewed periodically and jointly by FHWA and the Department.

For questions regarding this policy, please contact Priscilla Tobias, State Safety Engineer, or Jim Allen, Safety Implementation Engineer at (217) 782-3568.

cc: Norm Stoner, FHWA Illinois Division

Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

Safety Engineering Policy Memorandum

SAFETY 3-07
Work Zone Safety and Mobility Rule
Effective October 12, 2007

POLICY

This policy supersedes Traffic Departmental Policy TRA-1, Traffic Control through Construction and Maintenance Work Zones, April 1, 1981.

The Federal Highway Administration (FHWA) has updated the work zone regulations at 23 CFR 630 Subpart J. The updated rule is referred to as the Work Zone Safety and Mobility Rule (Rule). The Rule applies to all state projects and federal aid funded local highway projects and requires compliance with these provisions 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.

During construction, maintenance, and all other activities including engineering contracts, railroad crossings, and utility projects on Illinois highways, it shall be the policy of the department to provide a high level of safety for workers and the public, to provide mobility, minimize congestion and adverse community impacts, and to provide greater public satisfaction. This policy outlines IDOT's activities necessary to implement the requirements and intent of the Rule.

PURPOSE

Work Zone Safety is an identified emphasis area of the Illinois Comprehensive Highway Safety Plan (ICHSP). Developing and implementing a work zone safety and mobility policy as required by the Rule provides an additional strategy to further the goals of the ICHSP.

VISION

The overall goal of this policy is to reduce and eliminate crashes and fatalities, and to mitigate congestion due to work zones.

GOALS

SAFETY

1. Zero worker fatalities for traffic-related work zone crashes.
2. Reduce the number of motorist fatalities in traffic-related work zone crashes by 10% each year with the eventual goal of eliminating all of these fatalities. Eliminate crashes and resulting fatalities and serious injuries caused by queuing.
3. Reduce the number of work zone crashes by 5% from each prior year.

MOBILITY

Mobility shall be defined as moving road users efficiently through or around a work zone area (site specific or regionally) with a minimum delay compared to baseline travel when no work zone is present while not compromising safety. The following goals are thresholds for traffic mobility on projects which impact traffic flow:

1) Delays caused by work zones should not exceed more than five (5) minutes per mile of project length with a maximum of thirty (30) minutes above the normal recurring traffic delay; and,
2) Queues caused by work zones should be no more than 1.5 miles beyond pre-existing queues.

GUIDELINES FOR IMPLEMENTATION

PROJECT GUIDELINES

To facilitate the implementation of this policy the following items have been developed:

1) Work Zone Safety and Mobility Process Flow Chart (Appendix A). This flow chart represents the process flow to determine the level of significance of a project and the necessary steps and requirements to implement the Rule.

2) Significant Route Location Maps (Appendix B). These statewide and district maps show those state routes where a lane closure on the roadway is expected to cause sustained work zone impacts that are not considered tolerable based on the goals and objectives of this policy or public opinion and, thus, are considered Significant Routes. Roadways marked in red are considered as Significant Routes. Roadways marked in yellow are approaching Significant Route designation and should be evaluated for potential impacts. These maps will be revised as additional information becomes available through process reviews and district feedback.

These two items should be used together to determine if a project is considered Non-Significant, Significant – Short Term (Less Than Three (3) Days), or Significant – Long Term.

NON-SIGNIFICANT PROJECTS

If the proposed project is on a roadway that is not considered a Significant Route, then it is a Non-Significant Project and work impacts the traveling public to a small degree. Traffic volumes are low; public interest is low; and, duration is short to moderate. For Non-Significant Projects**,** an Impact Analysis is not required. The final design may proceed with a Traffic Management Plan (TMP) that consists of only a Traffic Control Plan (TCP). However, appropriate Transportation Operations Plan (TOP) and Public Information Plan (PIP) strategies are encouraged to be considered as well. Further details of a full TMP are described under Significant Projects – Long Term.

SIGNIFICANT PROJECTS – SHORT TERM (LESS THAN THREE (3) DAYS): OPERATIONS, PERMIT, UTILITY WORK AND OTHER SHORT TERM WORK

Roadway segments identified on the Significant Route Location Maps involving work of three (3) days or less shall be considered as Significant Projects – Short Term. A Permitted Lane Closure Map/List (PLCM) shall be developed by the district, based on Appendix B and district knowledge and should be updated as traffic conditions warrant. The PLCM map will define the allowable times a lane(s) may be closed on Significant Routes within each district to assist in meeting the goals of this Policy. This is to allow minor short time work to be accomplished with as little impact to the motorist as possible. If the goals of this policy cannot be met, work shall be planned in advance minimizing the impacts and only emergency repairs or work would be allowed. The operations may proceed with a TMP that consists of only a TCP. However, appropriate TOP and PIP strategies are encouraged to be considered as well. Further details of a full TMP are described under Significant Projects – Long Term.

SIGNIFICANT PROJECTS – LONG TERM

Routes identified on the Significant Route Location Maps involving work greater than three (3) days shall be considered as Significant Projects – Long Term. Work zones for these projects have a much greater impact long term on motorists. Every reasonable effort to mitigate these impacts shall be considered. Significant Projects shall be identified as early as possible in the development process to help allocate resources more effectively to projects that are likely to have greater impacts. A Significant Project – Long Term requires an Impact Analysis be performed. This Impact Analysis will involve a process of understanding the safety and mobility impacts of a road

construction/maintenance project. The use of hourly volume maps, district knowledge and experience, site reviews, and/or computer simulation programs, such as QUEWZ, TSIS-CORSIM, Quick Zone or other modeling programs would be considered acceptable. Where queues are normally present even without lane closures, the analysis shall compare existing queues to expected queues based on the resulting mitigation and strategies used to reduce the impacts of lane closures, construction or other work would have on a project.

During the planning and design phase of a Significant Project, various TMP strategies and the resulting impacts to delays and queuing shall be considered and analyzed to determine which are acceptable or unacceptable based on the goals of this policy.

Developing a TMP is a process that involves identifying applicable strategies to manage the impacts of the work zone and budgeting costs to ensure that funding is available. A full TMP is required for Significant Projects – Long Term and lays out a set of coordinated transportation management strategies and describes how they will be used to manage the work zone impacts of a road project. As the project evolves, it is important to reassess the TMP including the management strategies to be sure the work zone impacts are mitigated and the necessary budget for the project is available. Incident management and emergency services shall be considered. Refer to BDE Manual Chapters 13 and 55.

A full TMP shall include the following three Plans:

1. **Traffic Control Plan (TCP).** A plan to safely guide traffic through a construction project through the use of traffic control devices and project coordination.

2. **Transportation Operations Plan (TOP).** A plan that consists of strategies which mitigate work zone impacts through the use of improved transportation operations and management of the transportation system.

3. **Public Information Plan (PIP).** A plan that consists of strategies to inform those affected road users including the surrounding community of the expected impact of a project, of changing conditions, and available travel options.

To assist in the development of a full TMP, a TMP Components Checklist (Appendix C) has been included in this policy. Federal guidelines have been developed and should be utilized when developing the TMP. These include:

- Implementing the Rule on Work Zone Safety and Mobility
- Developing and Implementing Transportation Management Plans for Work Zones
- Work Zone Impacts Assessment: An Approach to Assess and Manage Work Zone Safety and Mobility Impacts of Road Projects

- Work Zone Public Information and Outreach Strategies

Electronic copies of these resources can be found at the following link: <http://www.ops.fhwa.dot.gov/wz/resources/final_rule.htm>. Hard copies of these publications will be provided with this policy to the IDOT District Offices and Central Highways Bureaus as a Tool Box. These are attached as Appendix E.

Once the impacts have been analyzed and a preliminary full TMP has been prepared, it should be determined if the goals of this policy have been met. If they have not, additional TMP strategies should be further analyzed and considered.

IMPACTS MEET GOALS

Once it is determined that the prepared TMP would meet the goals of this policy it should be presented for approval at the bi-monthly coordination meeting. Once the TMP is approved, it shall be included in the Phase I Report and incorporated into plan development.

IMPACTS DO NOT MEET GOALS

Once all reasonable and cost-effective TMP strategies have been evaluated and incorporated into the project and the goals of this policy still cannot be met, then the District shall request an exception to this policy. The District shall submit an "Exception to Compliance Request" which shall include all strategies considered as well as the ones included in the full TMP for the project. This request shall include an explanation why it is not feasible to meet the goals of this policy. This shall be submitted to the Bureau of Safety Engineering and then to the appropriate bureau for approval (i.e., Bureau of Design and Environment, Bureau of Local Roads, Bureau of Operations), and FHWA for approval. Upon approval, final development of the TMP would proceed, be included in the Phase I Report, and be incorporated into plan development.

SIGNIFICANT PROJECTS NEAR PLANS, SPECIFICATIONS AND ESTIMATES (PS&E) DATE

Significant Projects that are in the later stages of development or near implementation of this policy may be considered for an "Exception to Compliance Request." This would apply if it is determined that the completion of the PS&E would be significantly impacted as a result of the provisions in this Policy.

Items to be included in the exception request include:

- Project location and description;
- Status of project letting date; and,
- Justification for why the project's PS&E would be affected and why the exception is requested.

The "Exception to Compliance Request" shall be submitted to the Bureau of Safety Engineering and routed to the bureaus for approval, i.e., Bureau of Design and Environment, Bureau of Local Roads or Bureau of Operations, and FHWA for approval. FHWA has final approval in these cases.

PROCESS GUIDELINES

TRAFFIC CONTROL SUPERVISOR

A technical position referred to as the District Traffic Control Supervisor shall be maintained in each District Bureau of Operations/Traffic with the primary function of traffic control planning and inspection.

TRAINING

Personnel involved in the development, design, implementation, operation, inspection, and enforcement of work zone related transportation management and traffic control are to be trained appropriate to the job decisions each individual is required to make. Existing training classes that are available are shown on Exhibit D. To ensure the maximum attainable degree of safety and mobility, a program of training, including updating of classes and providing new classes to keep up with current practices will continue.

IMPLEMENTATION OF THE TCP

A TCP shall be developed for all projects and be included in the contract plans and specifications. The plans and any revisions to these plans, for all construction, maintenance, or permit work let to contract shall be reviewed and signed by the District Traffic Operations Engineer to indicate concurrence of the proposed TCP.

For all State-awarded construction contracts, the TCP shall be reviewed at a conference preceding the start of any work on the project. Conference participants should include, as appropriate, representatives of the Contractor, utility company, local government agency, and District bureaus directly involved. Prior to any field activity covered by this policy, Form OPER 725,

Traffic Control Authorization Request, shall be submitted to and approved by the District Traffic Operations Engineer.

For highways under State jurisdiction, the District Traffic Control Supervisor or other designated District personnel shall notify the Department Communications Center (Station One) at least ten (10) days in advance of action as per current Departmental Policy when any of the following conditions apply. If any of these conditions involve major activities, a public notice shall be provided:

- Route closures lasting more than one day;
- Rerouting of traffic over a detour or temporary road if it limits oversize or overweight permit moves, 21 days prior;
- Other restrictions limiting or prohibiting oversize or overweight permit moves, 21 days prior;
- Rerouting of traffic over a new or temporary bridge;
- Reopening of sites previously restricted;
- Opening to traffic of new sections or new bridges;
- Introduction of new or revised vertical clearance restrictions, such as those created by erection of the first beam of a new overpass, a new overhead signal, or resurfacing under a structure;
- Emergency conditions requiring a route closure or restriction; and/or,
- Interstate, freeway and multilane state highway lane closures.

For projects that will affect traffic for more than five (5) days, an initial inspection of the traffic control installation and any subsequent major changes during construction should be conducted as soon as practicable but no later than five (5) days after the time it is put into effect. Follow-up inspections should be made approximately once per week thereafter, either day or night, as appropriate. The follow-up inspections may be increased or decreased to give priority attention to projects that are subject to congestion, are complex, have a more serious impact on traffic or have been found to have numerous and/or significant deficiencies. If the District Traffic Control Supervisor determines the traffic control for a full closure of a local road with an ADT of less than 400 is adequate, follow-up inspections will not be required.

Inspections of State-awarded construction contracts on highways under State jurisdiction shall be conducted by the District Traffic Control Supervisor utilizing Form OPER 726 Traffic Control Inspection Report. In Districts 2 through 9, this will include both the initial and follow-up inspections. In District 1, the follow-up inspections may be made by the FAUS Engineers in the District Bureau of Construction. The District Traffic Control Supervisor shall also conduct inspections of the following types of work zones as workload permits:

- State-awarded construction contracts on local agency streets and highways;
- Utility work on State highways being done under permit;

- Railroad crossing work on State highways being done under agreement;
- Maintenance work on State highways;
- Traffic work on State highways; and,
- Consultant work done on state highways.

The Regional Deputy Director may assign these types of inspections to other District personnel. Such assigned responsibilities must be clearly defined. The TCP for each contract shall indicate that both the responsible person at the project level and the person assigned to make the inspections will be designated at the preconstruction conference. Unusual problems encountered during routine inspections shall be referred to the District Traffic Control Supervisor.

Form OPER 726 Traffic Control Inspection Report shall be utilized to record the Traffic Control Supervisor's inspections. The records should be adequate to indicate date and time of inspection, general condition of traffic control devices, and whether or not traffic operations are satisfactory.

If the Traffic Control Supervisor reveals minor variations from acceptable standards, equipment, or procedures, these variations should be called to the attention of the responsible person for the project. If in the judgment of the District Traffic Control Supervisor, the traffic control in place does not provide adequate protection for the motorists, pedestrians and workers, s/he shall discuss the necessary corrections with the person responsible for the project. The Traffic Control Supervisor shall request the necessary revisions be initiated before s/he leaves the jobsite and also complete Form OPER 726, which shall include the action taken. One copy of the completed form shall be retained in the files of the District Bureau of Operations/Traffic. One copy shall be provided to the individual primarily responsible for traffic control at the project site. Whenever two consecutive inspections at the same site indicate adequate protection is not being provided; additional copies of the report shall be forwarded to the Regional Deputy Director and the appropriate Bureau Chief.

All technical personnel of the Central Bureaus of Safety Engineering, Operations, and Construction shall give particular attention to these traffic control measures during their routine travels throughout the State. Major deviations from proper traffic control practices shall be brought to the attention of the appropriate District Traffic Operations Engineer/Bureau Chief of Traffic.

WORK ZONE REVIEWS

Work Zone Safety and Mobility Policy Process Review

This process review shall be performed by the Central Office every other year to assess the effectiveness of IDOT's work zone standards, specifications, policies, procedures, TCPs, PIPs, TOPs, TMPs, Significant Projects, and the

level of mobility and safety afforded the traveling public. All types of projects shall be reviewed. These shall include day work and night work, all types of traffic characteristics, and the various management strategies that are being utilized. The process review team should consist of personnel who represent the project development stages and the different offices of IDOT who participate in project development and implementation. Bureau of Safety Engineering shall be the lead agency, and the FHWA Office shall be invited.

Work Zone Traffic Control Project Review

These project reviews shall be performed by the Central Office every two (2) years, on the opposite years of the Work Zone Safety and Mobility Policy Process Review. This review will consist of a drive-through to inspect the traffic control of construction projects. A random selection of projects will be selected for review. The project review team should consist of personnel who represent the project development stages and the different offices of IDOT who participate in project development and implementation. Bureau of Safety Engineering shall be the lead agency and the FHWA Office shall be invited. The findings of these reviews shall be documented and presented to the District in a closeout meeting.

TMP PERFORMANCE ASSESSMENT

Safety

If a fatal crash occurs within the project limits, the Resident Engineer or person in charge of any project/ encroachment on state highway shall submit a Work Zone Crash Summary Report within ten (10) days to the Bureau of Safety Engineering. This Work Zone Crash Summary Report shall provide the following information:

- Summary of the type of construction;
- Description of the traffic control in place at the time of the crash;
- Description of the traffic conditions at the time of the crash;
- Description of the Contractor's operations at the time of the crash;
- Description of the weather conditions, pavement conditions, and time of day;
- Description of changes made to the traffic control as a result of the crash;
- Recommendations for change to IDOT's Standards, Specifications, policies, or procedures that should be considered as a result of the crash; and,
- Photos of the traffic control throughout the project before (if available) and after the crash.

Mobility

Upon completion of the construction contract on Significant Projects – Long Term, the Resident Engineer shall develop and submit a Work Zone TMP Summary Report to the Bureau of Safety Engineering within thirty (30) days after the essential completion of the project. The Work Zone TMP Summary Report shall provide the following information:

- Project description, staging, and traffic control utilized;
- Summary of TMP strategies utilized including successes or failures;
- Description of the traffic operations due to work zone, such as were there backups, duration of the delays, length of queues, etc.;
- Description of changes made to the TMP;
- Description of changes made to the traffic control due to crashes occurring within the project limits; and,
- Recommendations for change to IDOT's Standards, Specifications, policies, or procedures that should be considered.

These reports are to be prepared in accordance with the Illinois Vehicle Code at 625 ILCS 5/11-408(c), and these reports shall be for the privileged use of the Department and held confidential, and shall not be used in any trial, civil or criminal.

The Bureau of Safety Engineering shall review all Work Zone Crash Summary Reports and Work Zone TMP Summary Reports and evaluate all recommended changes. Changes shall be made to Standards, Specifications, policies, and procedures as deemed appropriate to resolve issues resulting from these reports.

RESPONSIBILITIES

The Bureau of Safety Engineering is responsible for preparing and maintaining this policy. All Districts and Central Bureaus are responsible for implementing the portions of this policy that affect their operations. The District Traffic Control Supervisor or other designated District personnel shall have the traffic control inspection responsibilities. The Resident Engineer/Technician for a construction project, the construction supervisor for a day labor project, the Operations Field Engineer for either a maintenance or traffic project, or a company representative for a consulting firm or a utility project shall have the primary responsibility for ensuring that the traffic control is established in accordance with the approved plan, adequately maintained and revised, if necessary.

The Regional Deputy Director has the primary responsibility to ensure that this policy is carried out within his/her jurisdiction.

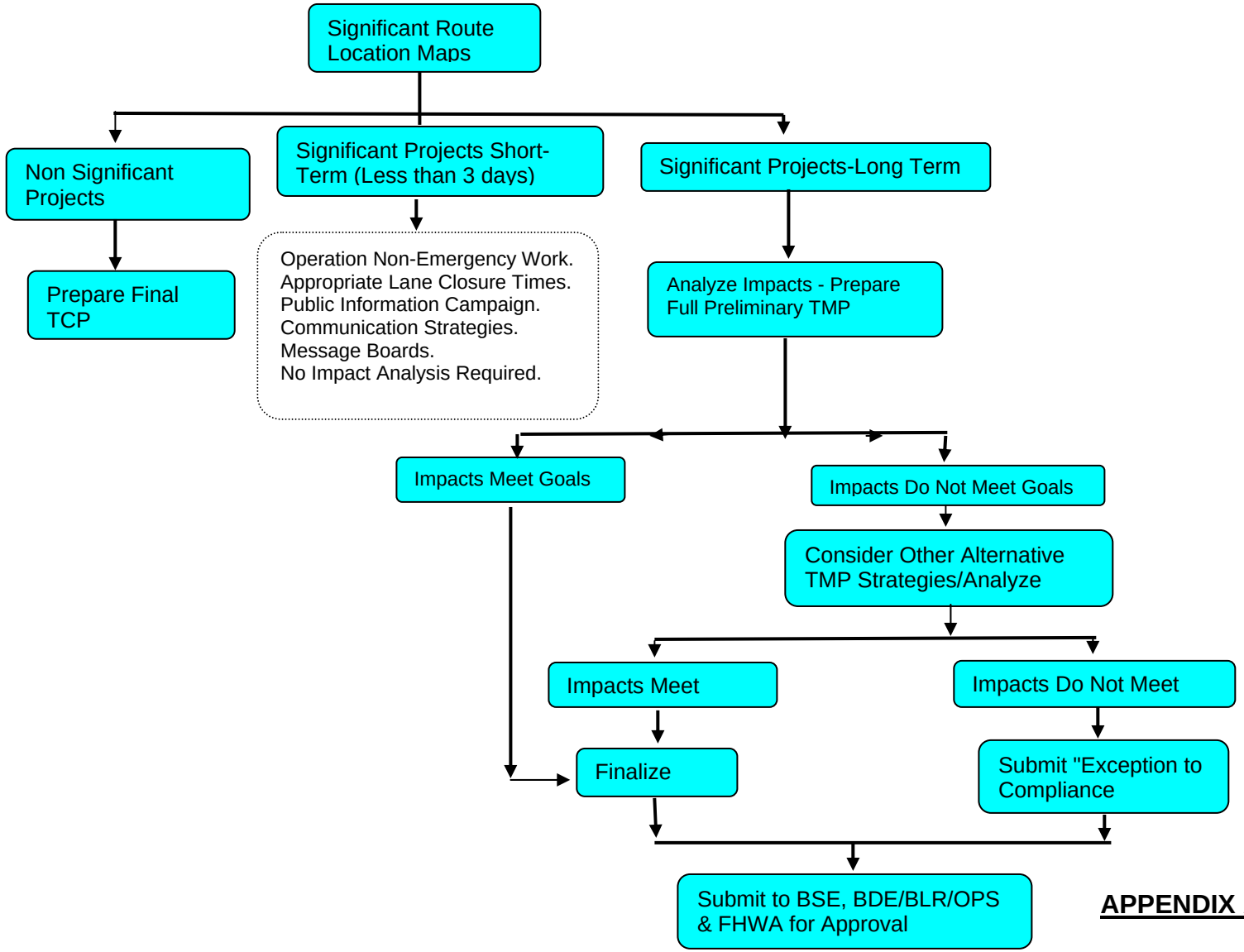
ACCESSIBILITY

Copies of this Policy may be obtained either from the department's website or from the Bureau of Safety Engineering in the Harry R. Hanley Building. This Policy may be examined in the Hanley Building library and in each of the nine Division of Highways' district offices.

Priscilla A. Tobias, PE
State Safety Engineer

Appendix A, Work Zone Mobility and Safety Process Flow Chart
Appendix B, Significant Route Locations Maps
Appendix C, TMP Components Checklist
Appendix D, Current Training Classes
Appendix E, Federal Guideline Publications (Districts and Central Office Only)

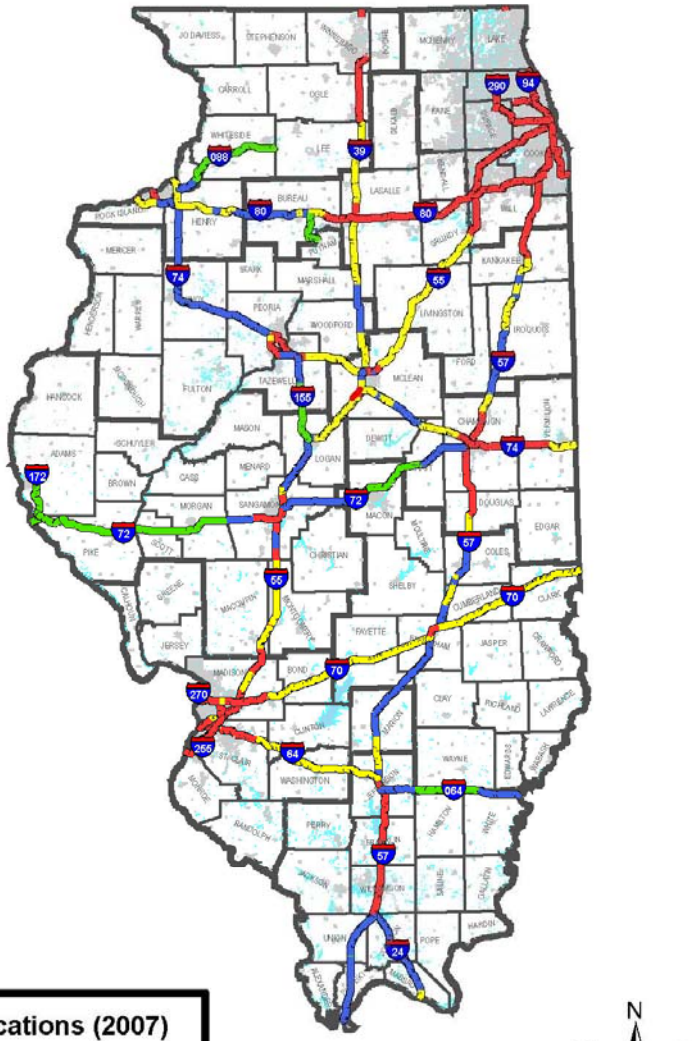
Work Zone Safety and Mobility Process-Flow Chart



APPENDIX A

ILLINOIS INTERSTATES

SIGNIFICANT ROUTE LOCATIONS



Significant Locations (2007)

- Free Flow under Most Conditions.
- Normal Free Flow with Limited Congestion.
- Approaching Significant Route Designation.
- Consider as a Significate Route.

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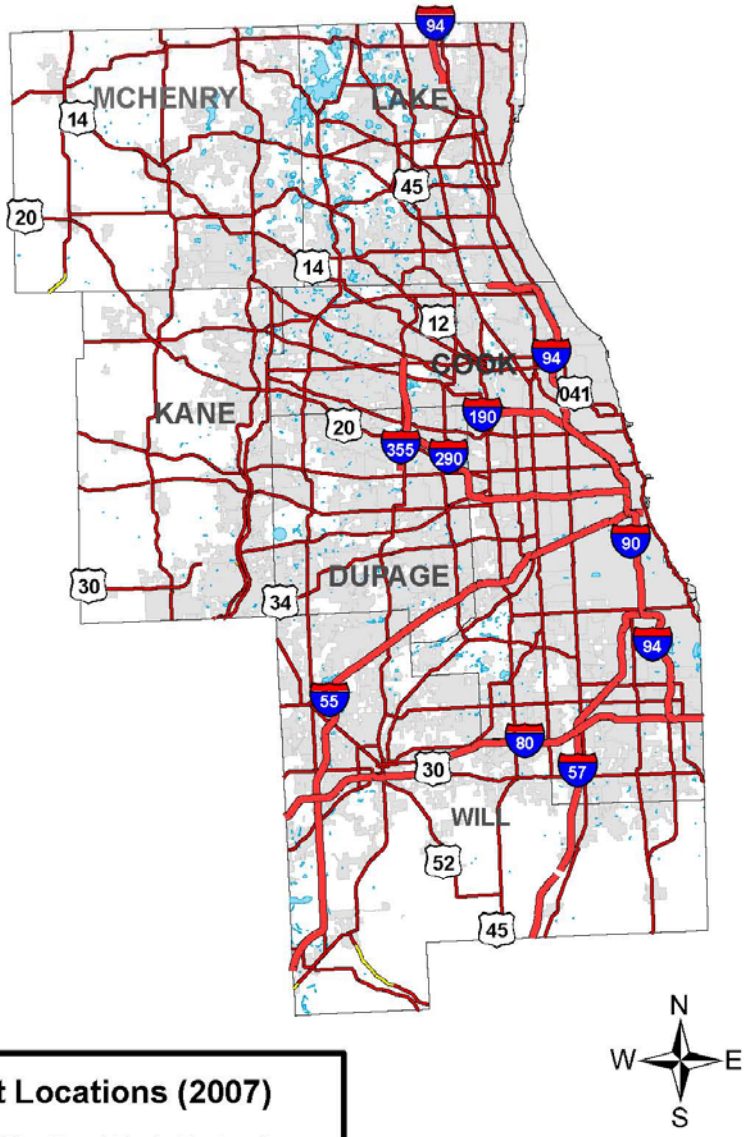
9/6/2007

IDOT DISTRICT 1

SIGNIFICANT ROUTE LOCATIONS



Significant Locations (2007)

Approaching Significant Route Designation.

Consider as a Significant Route.

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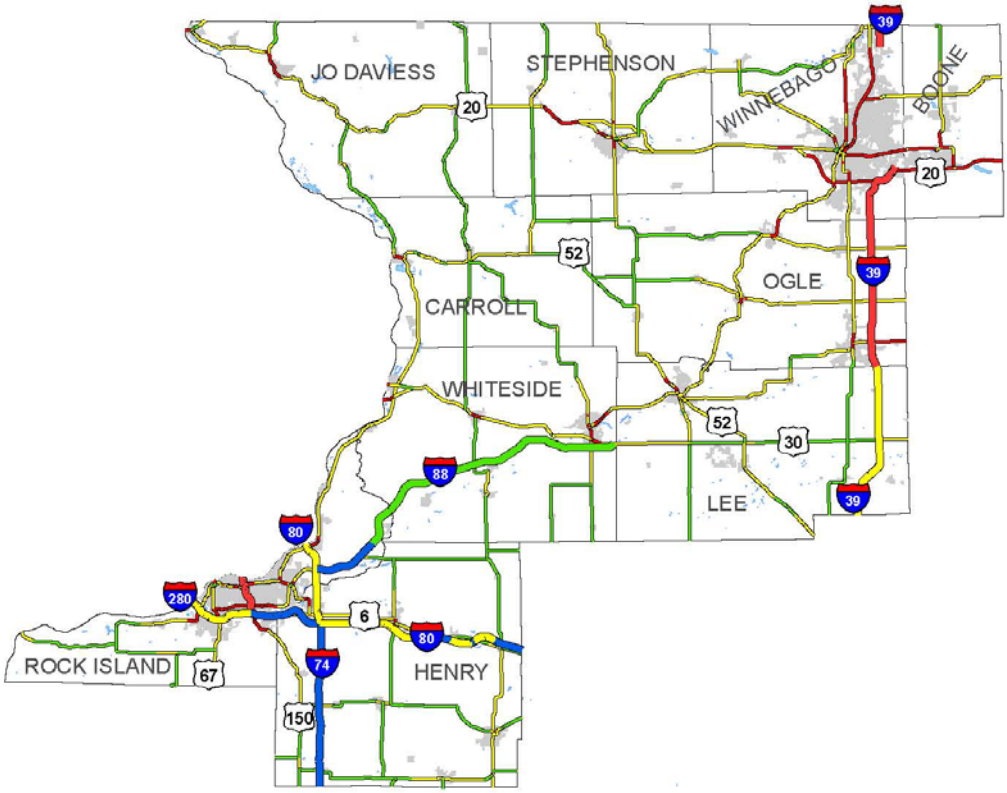
IDOT DISTRICT 2

SIGNIFICANT ROUTE LOCATIONS



Significant Locations (2007)

- Free Flow under Most Conditions.
- Normal Free Flow with Limited Congestion.
- Approaching Significant Route Designation.
- Consider as a Significant Route.

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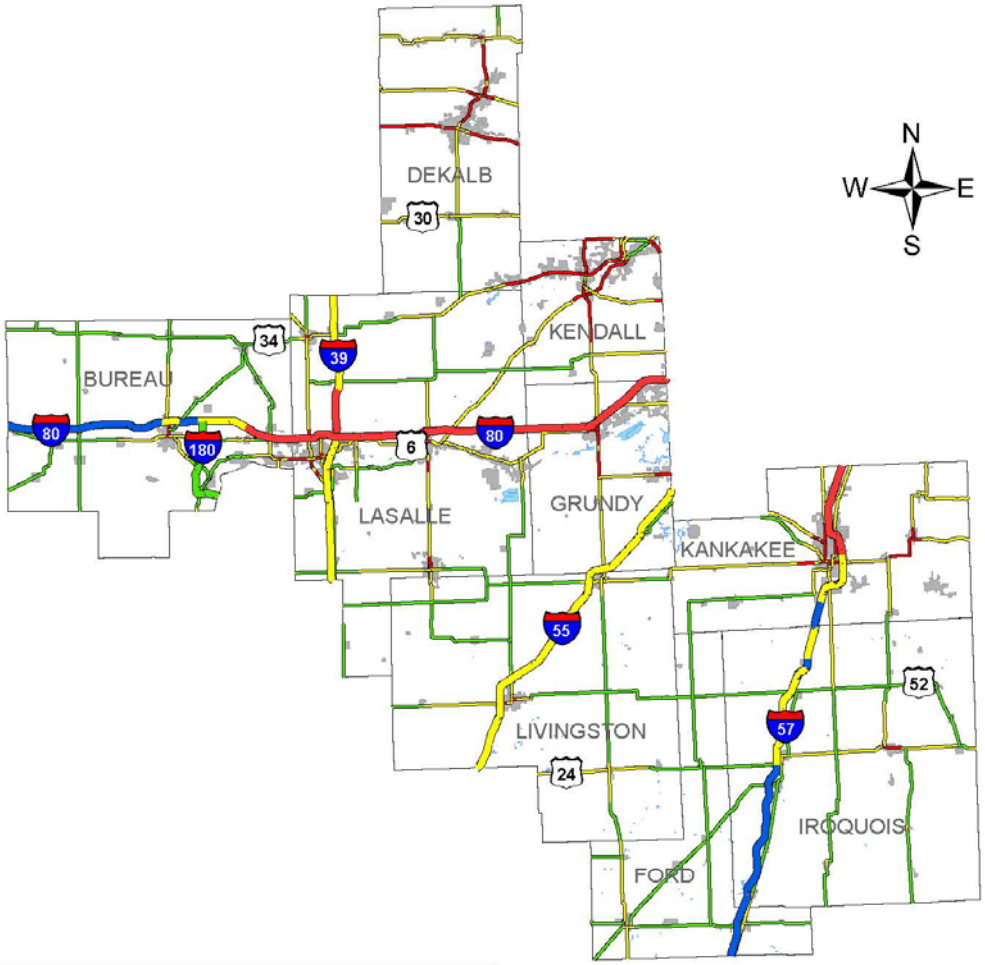
IDOT DISTRICT 3

SIGNIFICANT ROUTE LOCATIONS



Significant Locations (2007)

- Free Flow under Most Conditions.
- Normal Free Flow with Limited Congestion.
- Approaching Significant Route Designation.
- Consider as a Significant Route.

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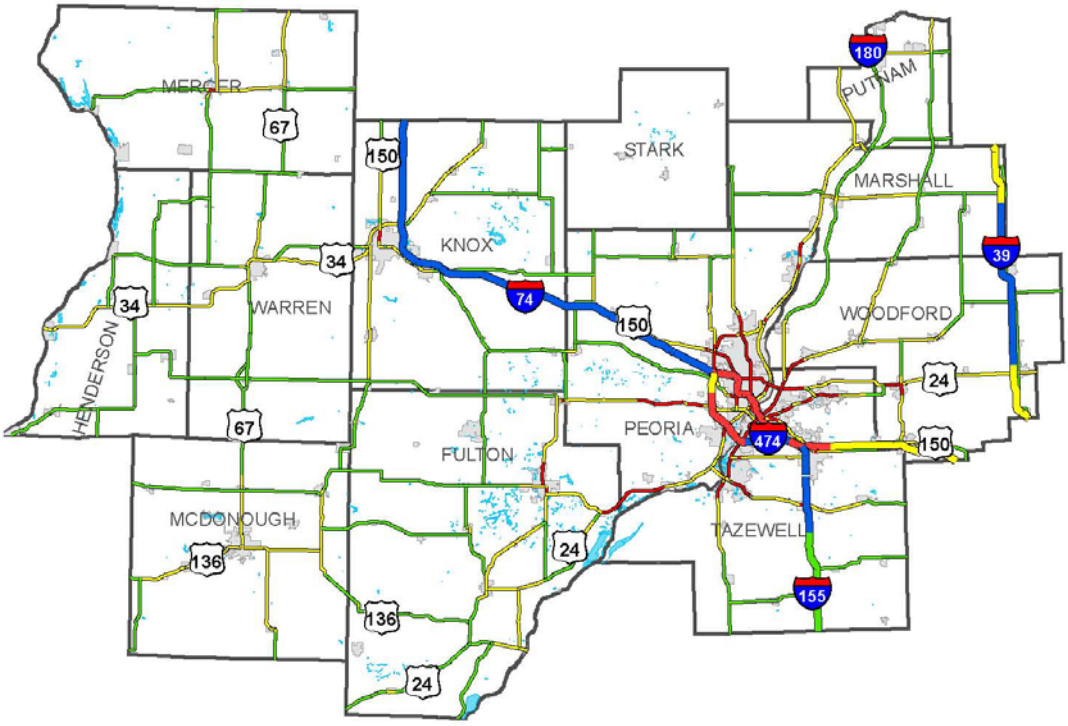
IDOT DISTRICT 4

SIGNIFICANT ROUTE LOCATIONS



Significant Locations (2007)

- Free Flow under Most Conditions.
- Normal Free Flow with Limited Congestion.
- Approaching Significant Route Designation.
- Consider as a Significant Route.

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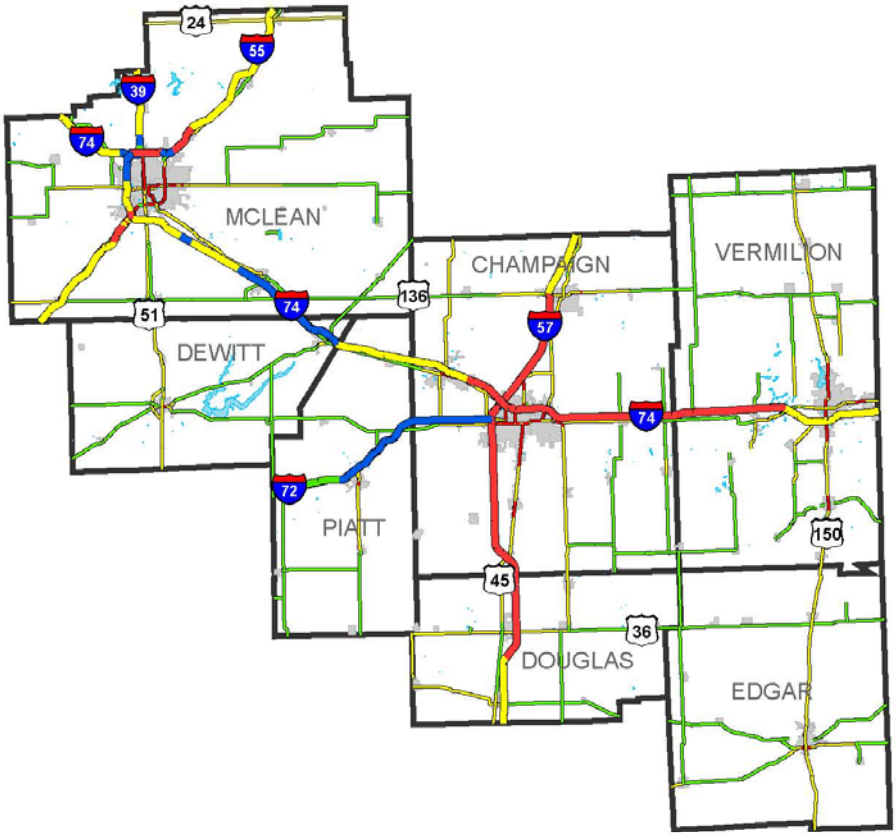
IDOT DISTRICT 5

SIGNIFICANT ROUTE LOCATIONS



Significant Locations (2007)

- Free Flow under Most Conditions.
- Normal Free Flow with Limited Congestion.
- Approaching Significant Route Designation.
- Consider as a Significant Route.

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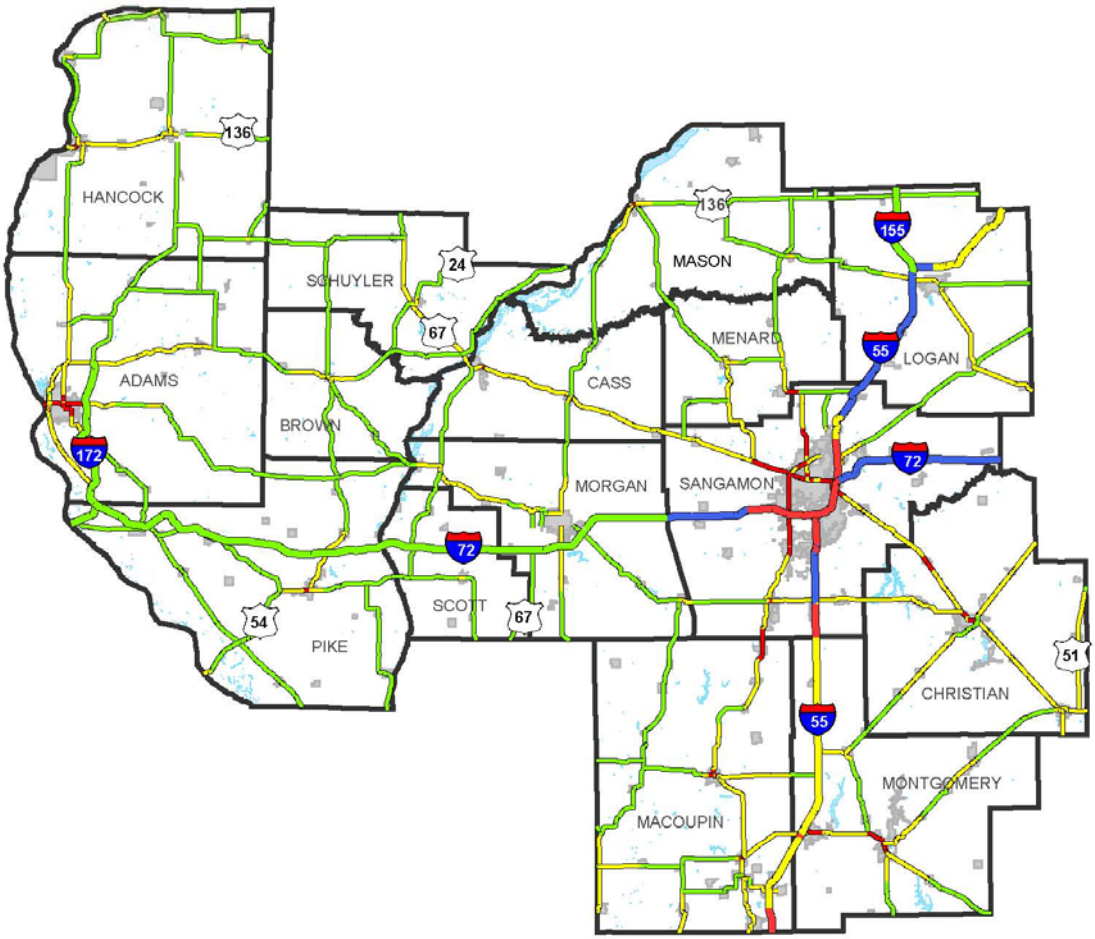
IDOT DISTRICT 6

SIGNIFICANT ROUTE LOCATIONS



SIGNIFICANT ROUTES (2007)

- Free Flow under Most Conditions.
- Normal Free Flow with Limited Congestion.
- Approaching Significant Route Designation.
- Consider as a Significant Route.

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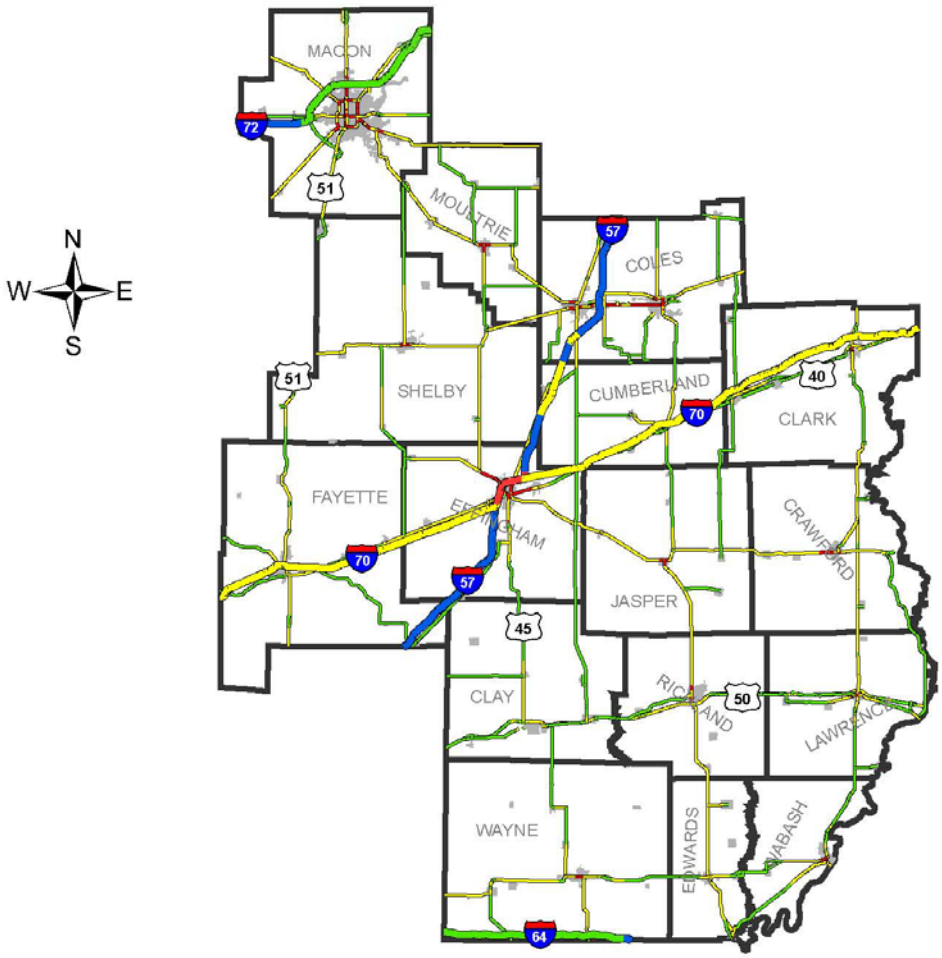
9/6/2007

IDOT DISTRICT 7

SIGNIFICANT ROUTE LOCATIONS



Significant Locations (2007)

- Free Flow under Most Conditions.
- Normal Free Flow with Limited Congestion.
- Approaching Significant Route Designation.
- Consider as a Significant Route.

Appendix B
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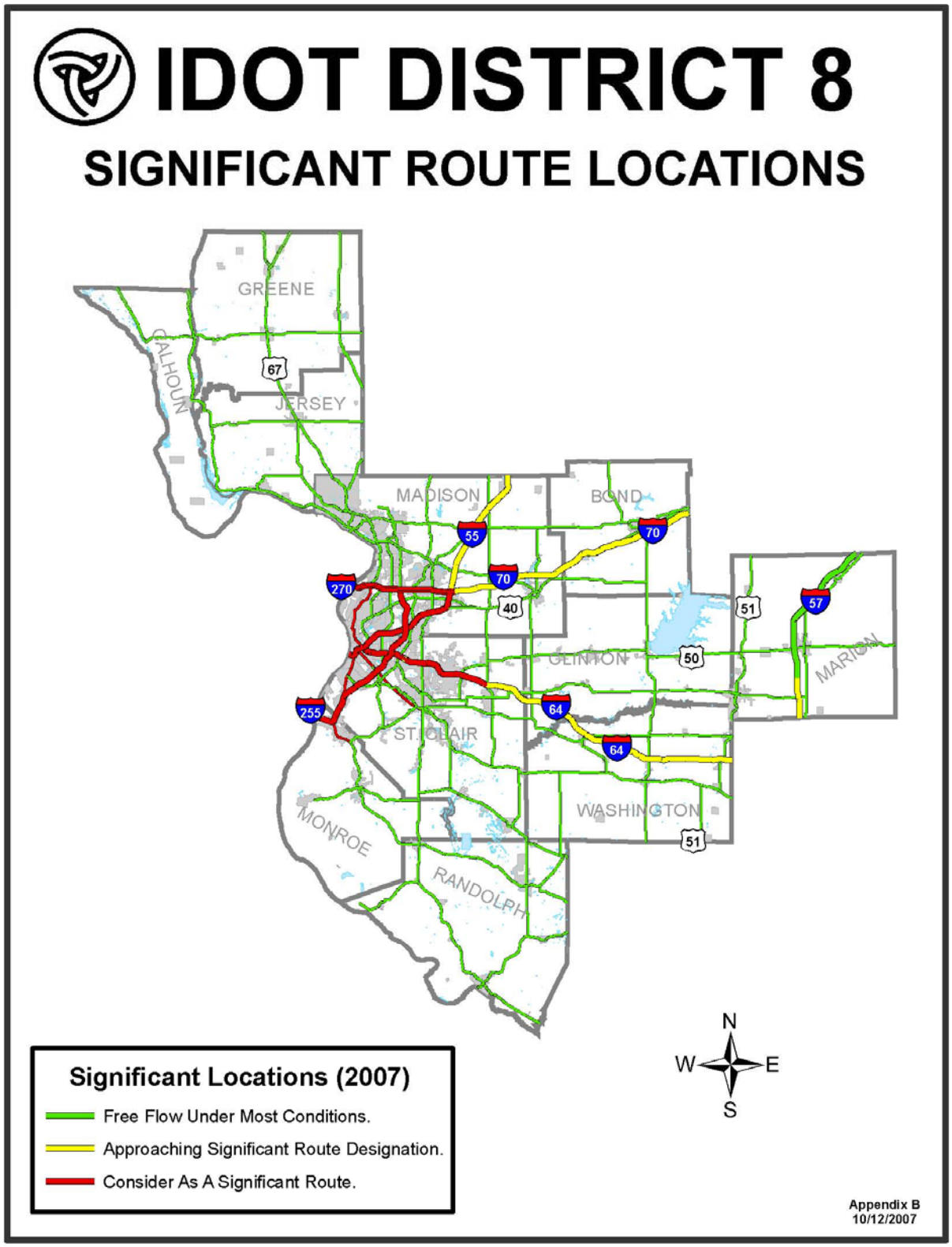
IDOT DISTRICT 8
SIGNIFICANT ROUTE LOCATIONS
GREENE
CALHOUN
JERSEY
MADISON
BOND
CLINTON
MARION
ST. CLAIR
WASHINGTON
MONROE
RANDOLPH
67
55
70
270
40
51
57
50
64
255
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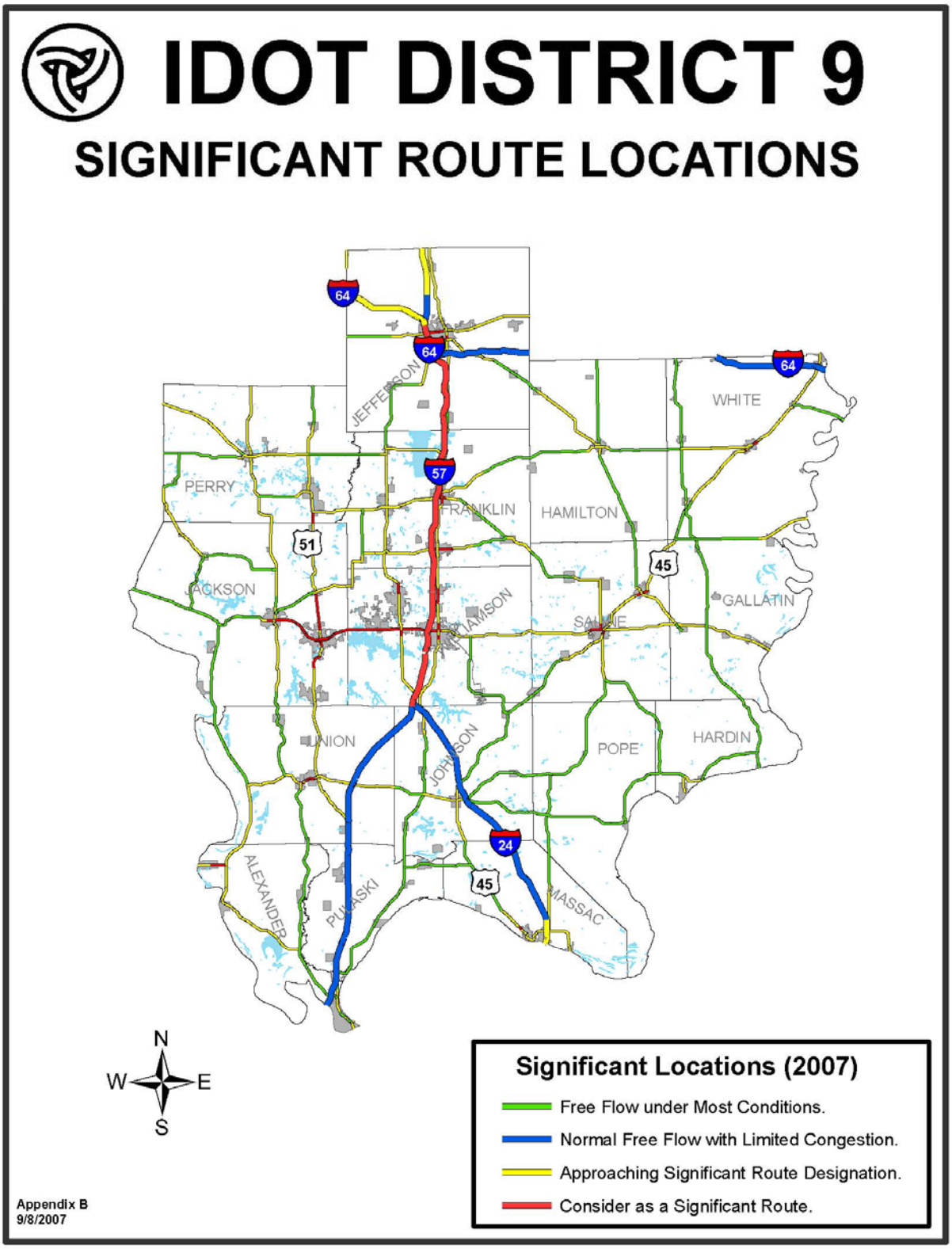
Significant Locations (2007)
Free Flow Under Most Conditions.
Approaching Significant Route Designation.
Consider As A Significant Route.
Appendix B
10/12/2007


IDOT DISTRICT 9
SIGNIFICANT ROUTE LOCATIONS
64
57
51
45
24
JEFFERSON
WHITE
PERRY
FRANKLIN
HAMILTON
JACKSON
WILLIAMSON
SALINE
GALLATIN
UNION
JOHNSON
POPE
HARDIN
ALEXANDER
PULASKI
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Significant Locations (2007)
Free Flow under Most Conditions.
Normal Free Flow with Limited Congestion.
Approaching Significant Route Designation.
Consider as a Significant Route.
Appendix B
9/8/2007

APPENDIX C: TRANSPORTATION MANAGEMENT PLAN COMPONENTS CHECKLIST

The following checklist represents the possible Transportation Management Plan (TMP) components described in Section 3.0 of the FHWA document "Developing and Implementing Transportation Management Plans for Work Zones." Districts may want to consider developing something like this to assist preparers and reviewers of TMPs.

TMP Component	**Done**
1. Introductory Material	
a. Cover Page	____
b. Licensed Engineer Stamp page (if necessary)	____
c. Table of contents	____
d. List of figures	____
e. List of tables	____
f. List of abbreviations and symbols	____
g. Terminology	____
2. **Executive Summary**	____
3. **TMP Roles and Responsibilities**	____
a. TMP manager	____
b. Stakeholders/review committee	____
c. Approval contact(s)	____
d. TMP implementation task leaders (e.g., public information liaison, incident management coordinator, etc.)	____
4. Project Description	
a. Project background	____
b. Project type	____
c. Project area / corridor	____
d. Project goals and constraints	____
e. Proposed construction phasing / staging	____
f. General schedule and timeline	____
g. Related projects	____
5. Existing and Future Conditions	
a. Data collection and modeling approach	____
b. Existing roadway characteristics (history, roadway classification, # lanes, geometrics, urban/suburban/rural)	____
c. Existing and historical traffic data (volumes, speed, capacity, volume to capacity ratio, % trucks, queue length, peak traffic hours)	____
d. Existing traffic operations (signal timing, traffic controls)	____
e. Incident and crash data	____
f. Local community & business concerns/issues	____
g. Traffic growth rates (for future construction dates)	____
h. Traffic predictions during construction (volume, delay, queue)	____

6. **Work Zone Impacts Assessment Report**
   a. Qualitative summary of anticipated work zone impacts _____
   b. Impacts assessment of alternative project design and management strategies. (in conjunction with each other) _____
      1. Construction approach/phasing/staging strategies _____
      2. Work zone impacts management strategies _____
   c. Traffic analysis results (if applicable) _____
      1. Traffic analysis strategies _____
      2. Measures of effectiveness _____
      3. Analysis tool selection methodology & justification _____
      4. Analysis results _____
         a. Traffic (volume, capacity, delay, queue, noise) _____
         b. Safety _____
         c. Adequacy of detour routes _____
         d. Business/community impact _____
         e. Seasonal impacts _____
         f. Cost effectiveness/evaluation of alternatives _____
   d. Selected alternative _____
      1. Construction approach/phasing/staging strategy _____
      2. Work zone impacts management strategies _____
7. **Selected Work Zone Impacts Management Strategies**
   a. Temporary Traffic Control strategies _____
      1. Control strategies _____
      2. Traffic control devices _____
      3. Project coordination, contracting, and innovation construction strategies _____
   b. Public information (PI) _____
      1. Public awareness strategies _____
      2. Motorist information strategies _____
   c. Transportation Operations (TO) _____
      1. Demand management strategies _____
      2. Corridor/network management strategies _____
      3. Work zone safety management strategies _____
      4. Traffic/incident management & enforcement strategies _____
8. **TMP Monitoring**
   a. Monitoring requirements _____
   b. Evaluation report of successes and failures of TMP _____
9. **Contingency Plans**
   a. Trigger points _____
   b. Decision tree _____
   c. Contractors contingency plan _____
   d. Standby equipment or personnel _____
10. **TMP implementation Costs**
    a. Itemized costs _____
    b. Cost responsibilities / sharing opportunities _____
    c. Funding sources(s) _____
11. **Special Considerations (As Needed)** _____
12. **Attachments (as Needed)**

APPENDIX D

CURRENT TRAINING CLASSES

Design (IDOT Provided Classes)

1. Staging and Traffic Control. This is a 2-day class for designers. IDOT and some consultants attend this class.
2. Staging and Traffic Control. This is a 1-day class for local agencies for designers. Some consultants for local agencies attend this class also.

Maintenance Workers (IDOT Provided Classes)

1. Safety and Traffic Control (Local Agencies). 4-hour class for traffic control for maintenance workers of local agencies.
2. Safety and Traffic Control (IDOT Maintainers). 3 to 4-hour class for IDOT maintainers covering the Worksite Protection Manual.
3. Safety and Traffic Control. 3 to 4-hour class for all IDOT personnel covering the Worksite Protection Manual for other than Operations personnel.

Construction (IDOT Provided Class)

1. Safety and Traffic Control – 6-hour class for IDOT RE's and Tech's on MUTCD, Standards and Specifications.

Flagger Training (IDOT Provided Classes)

1. Train the Trainer Flagger Class. For IDOT flagger instructors.
2. Flagger Course. Required training for all IDOT maintainers every two years, performed by the district.
3. Flagger Course. Training is performed by Local Roads for local agencies upon request.

Other Training

1. Flagger Certification. Required for all contractor flaggers. Training is done by Laborers, American Traffic Safety Services Association (ATSSA), and National Safety Council (NSC).
2. Traffic Control Supervisor Course. Training provided by Laborers, ATSSA, NSC, and others.
3. OSHA 10-hour and 30-hour course and other OSHA courses that are attended by IDOT and contractor personnel. IDOT's Bureau of Employee Services provides the OSHA 10-hour and 30-hour course to department staff at request.

APPENDIX E

FHWA Publications: IDOT Districts and Central Office Hard Copies Only.