INDIANA DEPARTMENT OF TRANSPORTATION

INTERSTATE HIGHWAYS CONGESTION POLICY

2014

I. POLICY STATEMENT:

It is the Policy of the Indiana Department of Transportation (INDOT) to limit operations which restrict lanes or otherwise cause congestion to occur on an Interstate Route. Such operations may not be conducted except as described below.

II. PURPOSE:

This policy has been developed pursuant to Federal requirements as outlined in 23 CFR 630 Subpart J and Subpart K to reduce congestion caused by temporary operations on Interstate routes through thoughtful selection of work hours and strategy. Such operations include, but are not limited to; construction, maintenance, utility work, data gathering, and facilitating special events.

III. ADMINISTERED BY:

This policy shall be administered and maintained by INDOT's Traffic Management Division

IV. TERMS, DEFINITIONS AND ACRONYMS USED:

1) Congestion is considered to exist when the traffic flow rate exceeds the work zone capacity and vehicle queues begin to form.
2) Queue is defined as the length of the pavement occupied by a line or lines of vehicles travelling below the posted speed limit and is measured from the point of the restriction towards oncoming traffic.
3) Ramps, intersecting roadways, and paved shoulders:
    a) A ramp includes any lanes that enter or exit an Interstate Highway and includes ramps between interstates.
    b) A ramp lane begins at the beginning of the gore area for exiting ramps and ends at the end of the gore area for entering ramps.
    c) An intersecting roadway includes all intersecting roadways and turn lanes (with taper) inside the interchange area or that are part of ramp touchdown intersections.
4) The following acronyms are used throughout this policy:
    a) Deputy Commissioner of Operations (DCO)
    b) Director of Construction Management (DCM)
    c) Director of Maintenance Management (DMM)
    d) Director, Project Management (DPM)
    e) District Deputy Commissioner (DDC)
    f) District Public Information Officer (DPIO)
    g) Federal Highway Administration (FHWA)
    h) General Instructions to Field Employees (GIFE)
    i) Indiana Department of Transportation (INDOT)

j) Interstate Highway Congestion Policy (IHCP)

k) Passenger Car Equivalent (PCE) (Note: *A PCE is equivalent to the sum of the vehicles functionally classified in categories 1 through 3 plus two times the sum of the vehicles functionally classified in categories 4 through 15.)*

l) Project Engineer/Supervisor (PE/S)

m) Temporary Traffic Control Plan (TTCP)

n) Traffic Management Center (TMC)

o) Traffic Management Director (TMD)

p) Traffic Support Section (TSS)

q) Transportation Management Plan (TMP)

r) Truck Mounted Attenuator (TMA)

V. APPLICATION OF THE POLICY:

This policy shall be followed for any activity that causes congestion on an Indiana Interstate highway.

1) This policy applies to all entities involved in research, planning, designing, and performing work on Indiana's interstate highways, ramps, and intersecting roadways, including, but not limited to: State and Local governments, Consultants, Utilities, and Contractors.

2) Incident Management scenes, snow removal, and snow and ice related pavement treatment operations are exempt from this Policy.

3) Emergency and Urgent Closures, as described in Appendix A, are exempt from:

   a) Pre-approved schedules described in Appendix B, and

   b) Policy exception requirements described in Appendix C.

4) Any provision in this policy may be excepted as described in Appendix C.

5) Pre-approved times for single lane closures are described in Appendix B. *(Note: Multiple lanes may be closed in sections designated as "Minimum 3 Lanes per Direction")*

6) Additional lane closures may be permitted at times by approved Policy Exceptions as described in Appendix C.

7) Interstate to interstate ramps with more than one lane shall be under the same preapproved times (as described in Appendix B) and policy exception requirements (as described in Appendix C) as the interstate from which they originate.

8) A construction, maintenance, or other operation on a ramp, intersecting roadway, or paved shoulder which causes queue in excess of one-half (1/2) mile on the interstate will be removed until the queue dissipates unless a policy exception has been approved.

9) Rolling slowdowns as described in Appendix D shall be used (unless a policy exception to use an alternate method has been approved) for any activity that requires all main line lanes in one or both direction of an interstate to be clear of traffic for up to 20 minutes, except for emergencies and incident management scenes.

10) Queue length and delay measurements shall be made as described in Appendix E on interstate projects when lane, shoulder or ramp restrictions will be in place in at least 1 direction for a total of at least 10 days.

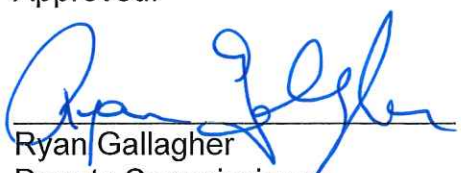
VI. Pre-reporting Requirements:

Any planned activity that will take place on, store materials on, and/or park equipment/vehicles on currently open paved surfaces (including shoulders) of Interstate Highways, ramps from Interstate highways, or on intersecting roadways of an interstate highway shall be reported to the Traffic Management Center (TMC) of jurisdiction three business days prior to the start of the activity. A primary contact and back-up contact(s) shall be designated for each restriction and their contact information, including name and telephone number(s), and electronic mail address (optional), shall be included in the report. The primary contact and/or their back-up(s) shall be available and responsive during the entire duration of the restriction. If the reduction of capacity will extend longer than 12 hours, the contact information shall indicate the time period(s) for which the contact(s) is/are responsible.

VII. Policy Approval:

Transmitted, herewith, is the Interstate Highway Congestion Policy for the Indiana Department of Transportation. This policy replaces all previous Interstate Lane Closure Policies except as noted herein and shall be incorporated into daily operations and maintenance activities immediately. All existing policy exceptions to a prior version of the ILCP remain valid. All active projects/contracts which have a Ready for Contract (RFC) date less than 60 days after the approval date of this policy shall be governed by the Interstate Highways Congestion Policy dated 1/31/13.

Approved:



Ryan Gallagher
Deputy Commissioner
Operations and District Support

5/29/14.
Date

Appendix A:

EMERGENCY REPAIRS:

The District Deputy Commissioner (DDC) may declare that a condition is an emergency and requires immediate closure of one or more lanes. Such conditions may include, but are not limited to, pavement or bridge deck failures, bridge structure impact damage, damaged roadside appurtenances and slope stability. All such emergency declarations do not require a policy exception, as described in Appendix D. The Traffic Management Center (TMC) of jurisdiction shall be contacted as soon as the repair is determined to be an emergency and shall be kept informed of the times the work is being conducted. The restrictions shall be entered in the Condition Acquisition Reporting System (CARS) by the entity restricting the Interstate Highway. The TMC can with this if necessary. The information entered into CARS system shall provide the emergency primary and secondary contact names and phones numbers where they can be reached in the "My Group Comment" section of the CARS report. A completion time or duration time in addition to the other information shall be entered. In the case of an emergency lane closure or restriction, a memo shall be sent by the District to the Deputy Commissioner of Operations (DCO) and the Traffic Support Section (TSS) within 2 working days that:

1) Explains the emergency situation,
2) Gives the details of the closure, including;
    a) Which lane was(lanes were) closed or restricted,
    b) The hours of the day for the closure/restriction, and
    c) The length and time(s) of day of any queue(s) that developed.
3) For construction projects, provide;
    a) Contract Number
    b) Project Engineer's name
    c) Area Engineer's name
    d) Project Manager's name
4) For Maintenance Operations, provide the name of the District Work Unit

URGENT REPAIRS:

The District Deputy Commissioner (DDC) may determine that a repair is urgent and requires that repairs be initiated within 24 hours of the determination or over a weekend when it is not possible to secure a policy exception. All repairs determined to be urgent and which occur outside of the preapproved times described in Appendix B, the times permitted by the project policy exception, or the times permitted by the current approved District Annual Policy Exception require a limited analysis by the District before proceeding.

An urgent repair is one that does not require the roadway to be shut down immediately but does require attention within the next 24 hours (longer if the need becomes apparent on a

weekend). Such repairs may include: replacement of worn temporary pavement markings, correction of a drainage or slope issue in a temporary crossover, filling potholes, or other repairs that will close or restrict a lane or lanes which are otherwise required to remain open and unrestricted to traffic under this policy.

If the DDC determines a repair is urgent, then the best time for the closure or restriction shall be selected by reviewing the traffic count data for the segment needing repairs (this data is available on the Management Information Portal (MIP) interactive map or in the current District Annual Policy Exception). The closure or restriction should be done during the lowest traffic volume period possible. If a queue over one mile in length develops, the repairs shall be suspended, if it is possible and safe to do so, until the queue dissipates. The Traffic Management Center (TMC) of jurisdiction shall be contacted as soon as the repair is determined to be urgent and shall be kept informed of the times planned for the work to occur. The restrictions shall be entered into the Condition Acquisition Reporting System (CARS) by the entity restricting the Interstate Highway. The information entered into CARS system shall provide the emergency primary and secondary contact names and phones numbers where they can be reached in the "My Group Comment" section of the CARS report. A completion time or duration time in addition to the other information shall be entered. The appropriate District (DPIO), Indiana State Police (ISP) Post, and local emergency services should also be notified.

Following an urgent repair, a memo shall be sent to the DCO and the TSS within 2 working days that:

1) Explains the Urgent situation,
2) Includes the traffic counts used for setting the time for the closure,
3) Gives the details of the closure, including;
    a) Which lane was (lanes were) closed,
    b) The beginning and ending time of the closure,
    c) The length of any queue(s) that developed, and
    d) Steps that can or will be taken to prevent recurrence of the need to conduct this, or similar, repair(s) under the Urgent Repair provisions on this project or this segment of interstate.
4) For construction projects, provide;
    a) Contract Number
    b) Project Engineer's/Supervisor's name
    c) Area Engineer's name, and
    d) Project Manager's name
5) For Maintenance Operations, provide the name of the District Work Unit.

If the same urgent repairs are required on a project more than one time or the need is anticipated to recur during the remainder of the project, then the District shall initiate a formal IHCP policy exception process for these potential and/or anticipated closures.

Appendix B:

PRE-APPROVED INTERSTATE CLOSURE AND RESTRICTION TIMES:

1) Maps & Table: To better convey the details of the restrictions in the policy, color coded maps and a set of tables have been attached. Both convey the same data; however, some segments are short enough that they cannot be distinguished at the given map scale. In such cases, the tables should be consulted. In all cases, the tables will take precedence over the maps. The first map (Figure B-1) illustrates when and at what times restrictions can be present along the rural segments of Indiana's Interstate System. The second map (Figure B-2) illustrates the times restrictions can be present on the Interstate System in four urbanized areas (Calumet, Fort Wayne, Indianapolis, and Falls City areas). Deviations from the schedule are only permitted if a project specific policy exception or Annual Policy Exception is approved.
2) Time Descriptions:
   a) Anytime: Single lane closures or single lane restrictions any time of day or night in each direction.
   b) Weekend or Night-time Only: Single lane closure or single lane restrictions per direction between Friday 9:00 p.m. through Monday 6:00 a.m. and weekdays 9:00 p.m. to 6:00 a.m. Typically, along routes with significant commuter traffic.
   c) Weekday or Night-time Only: Single lane closure or single lane restriction per direction from Sunday 9:00 p.m. to Friday 6:00 a.m. Nightly lane closures allowed on Friday and Saturday from 10:00 p.m. to 6:00 a.m. Pertains to routes which experience significant increases in traffic during the weekends.
   d) Night-time: Single lane closure or single lane restriction per direction any day of the week from 9:00 p.m. to 6:00 a.m. Generally along routes with heavy traffic where queues > 1.0 mile can be expected during the daylight hours.
   e) Executive Approval: Along the most heavily traveled routes such as high volume segments in heavily populated urban areas and rural four lane segments with an Average Annual Daily Traffic (AADT) > 50,000 vehicles/day. Except for conditions designated as an "Emergency", a policy exception approved by the appropriate authority (DPM, DCM, DMM, or TMD) is required before any lane closure or lane restriction takes place in these segments.
   f) Minimum 3 lanes / Direction: Along urban routes with eight lanes or greater. A minimum of three lanes per direction shall be open and unrestricted at all times.

3) IHCP 2014 Tables:

I-64

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
Illinois State Line to SR 135	0	105	Anytime	105
SR 135 to SR 64	105	118	Weekend or Nighttime only	13
SR 64 to KY State Line	118	124	Executive Approval	6

I-65

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
KY State Line to SR 62	0	1	Executive Approval	1
Old SR 62 to I-265	1	6	Minimum 3 Lanes All Times	5
I-265 to US 31 (S Jct)	6	36	Executive Approval	30
US 31 (S Jct) to County Line Rd	36	101	Night-time Only	65
County Line Rd to I-465 (S Jct)	101	106	Executive Approval	5
I-465 (S Jct) to I-70 (North split)	106	112	Weekend or Night-time Only	6
I-70 (North split) to 21st St	112	115	Night-time Only	3
21st St to I-465 (N Jct)	115	123	Weekend or Night-time Only	8
I-465 (N Jct) to I-865	123	129	Night-time Only	6
I-865 to SR 32	129	140	Executive Approval	11
SR 32 to US 231	140	247	Night-time Only	107
US 231 to Toll Road	247	262	Executive Approval	15
Toll Rd to US 12/20	262	263	Anytime	1

I-69

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
I 465 to 116th St	200	205	Nighttime Only	5
116th St to SR 38	205	219	Executive Approval	14
SR 38 to SR 18	219	264	Nighttime Only	45
SR 18 to US 224	264	286	Weekday or Nighttime Only	22
US 224 to US 24	286	302	Nighttime Only	16
US 24 to SR 1	302	316	Anytime	14
SR 1 to SR4	316	340	Nighttime Only	24
SR 4 to the Michigan State Line	340	358	Anytime	18

I-70

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
Illinois State Line to Darwin Rd.	0	3	Weekday or Nighttime	3
Darwin Rd. to Six Points Road	3	69	Nighttime Only	66
Six Points Rd. to I-465 (W Jct)	69	73	Anytime	4
I 465 (W Jct) to Holt Rd.	73	77	Weekend or Nighttime Only	4
Holt Rd. to West St.	77	79	Executive Approval	2
West St. to Keystone Ave	79	85	Weekend or Nighttime Only	6
Keystone Ave. to Ohio State Line	85	157	Nighttime Only	72

I-74

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
Illinois State Line to SR 267	0	66	Anytime	66
SR 267 to I-465 (West side)	66	73	Weekend or Nighttime Only	7
I-465 (East Side) to Pleasant View Rd.	94	101	Weekend or Nighttime Only	7
Pleasant View Rd. to London Rd.	101	103	Nighttime Only	2
London Rd to SR 44	103	116	Weekend or Nighttime Only	13
SR 44 to US 421	116	132	Anytime	16
US 421 to SR 1	132	164	Weekend or Nighttime Only	32
SR 1 to the Ohio State Line	164	172	Nighttime Only	8

I-80/94 & I-94

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
I-80/94				
Illinois State Line to I-80/90	0	15	Executive Approval	15
I-94				
I-80/90 to US 20/US 35	15	40	Executive Approval	25
US 20/US 35 to Michigan State Line	40	43	ANYTIME	3

I-164

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
US 41 to Lynch Road	0	10	Weekend or Nighttime only	10
Lynch Rd. to I-64	10	29	Anytime	19

I-265

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
I-64 to I-65	0	7	Nighttime Only	7
I-65 to SR 62 (Technically not currently an Interstate, but it will be when Kentucky finishes their section)	7	10	Executive Approval	3

I-275

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
The Kentucky State Line to the Ohio State Line	15	18	Nighttime Only	3

I-465

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
I-65 (S Jct) to SR 37	53	4	Nighttime Only	4
SR 37 to I-70 (W Jct)	4	9	Weekend or Nighttime Only	5
I-70 (W Jct) to 56th St.	9	19	Nighttime Only	10
56th St. to US 421	19	27	Weekend or Nighttime Only	8
US 421 to I-69	27	37	Nighttime Only	10
I-69 to US 40 (E Jct)	37	46	Weekend or Nighttime Only	9
US 40 (E Jct) to I-65 (S Jct)	46	53	Nighttime Only	7

I-469

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
I-69 to US 30	0	19	Anytime	19
US 30 to I-69	19	31	Weekend or Nighttime only.	12

I-865

Section	Start Exit	End Exit	2014 Schedule	Length (mi)
I-465 to I-65 ramps	0	5	Nighttime only	5

Figure B-1, Statewide Pre-approved Single Lane Restriction Map:

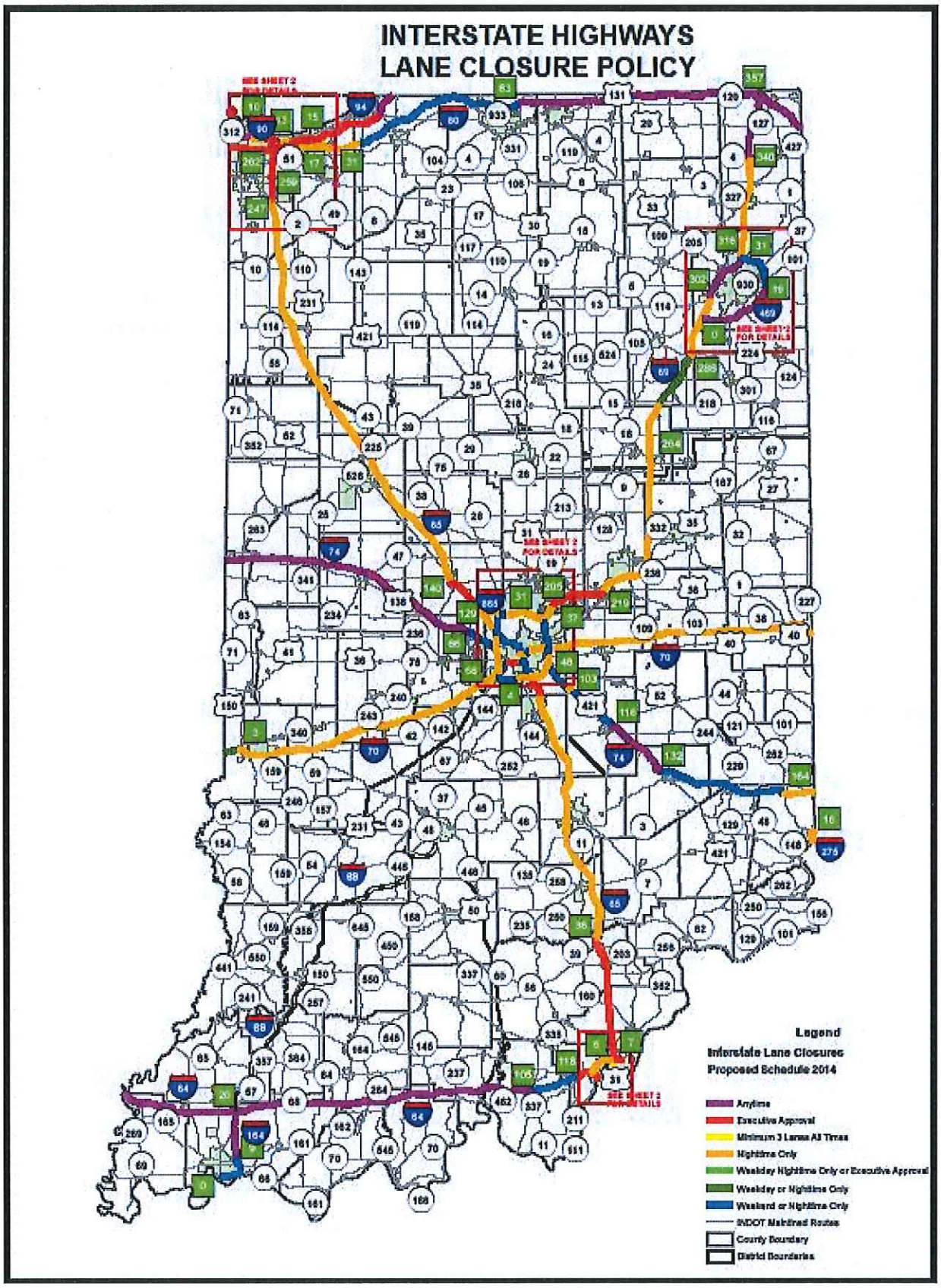
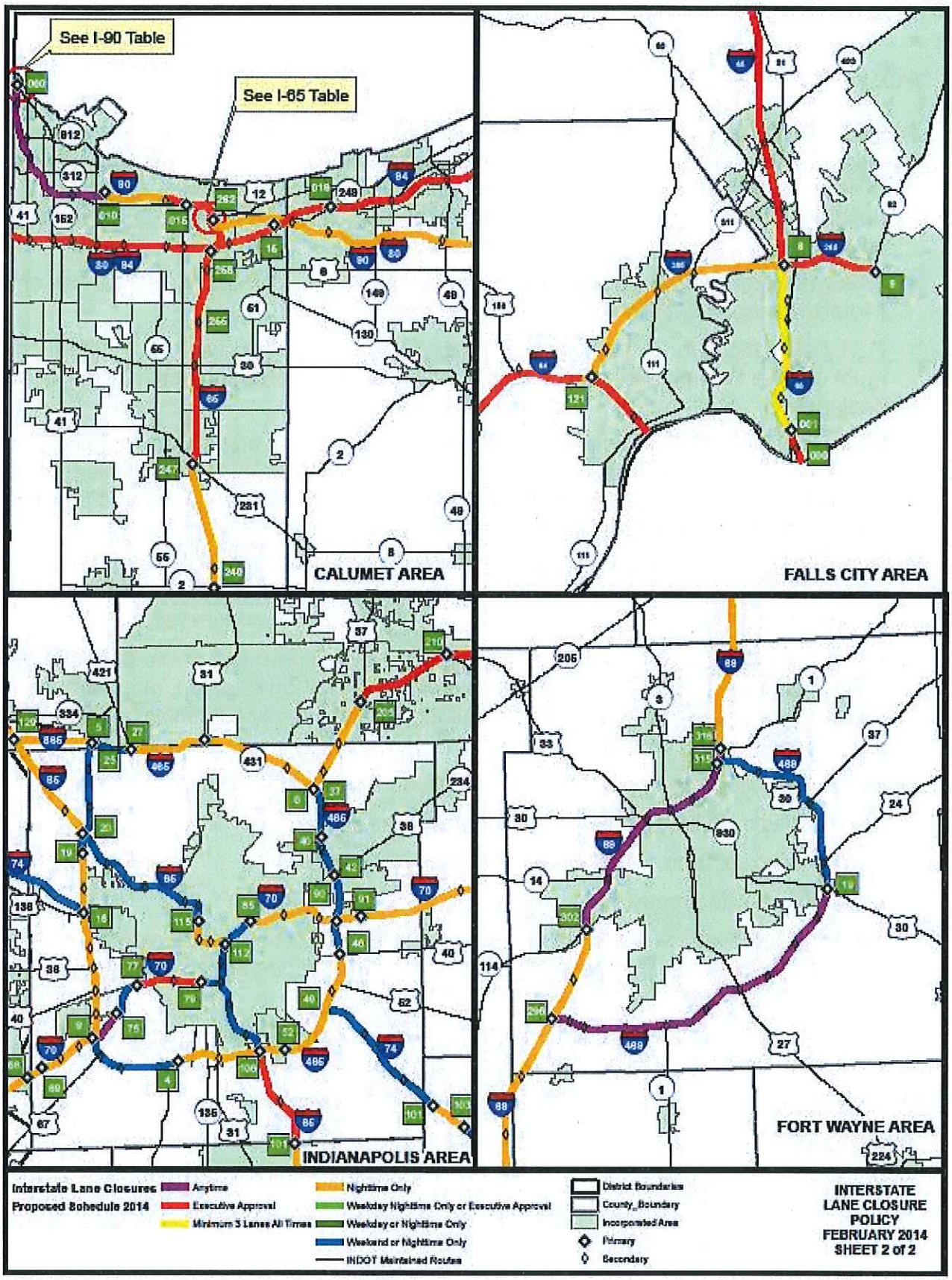


Figure B-2, Pre-approved Single Lane Restriction Map for Four Urban Areas:



Appendix C:

POLICY EXCEPTIONS:

1) Work which requires a policy exception may not proceed until the required policy exception documents are approved, unless approval to proceed with a planned activity is given verbally or by electronic mail, in which case all required policy exception documents will be signed as soon as circumstances permit after such approval is given.
2) Policy exceptions developed during the design phase must receive the approval of the Project Management Director (DPM) or his designee.
3) Policy exceptions for contract work in progress, including utility work for the contract, must receive the approval of the Director of Construction Management (DCM.) or his designee.
4) Policy exceptions for non-contract work must receive the approval of the Director of Maintenance Management (DMM) or his designee. Non-contract work includes, but is not limited to, testing, inspection, work done under an INDOT issued permit (including utility work not related to a contract), and work by State or municipal forces.
5) Policy exceptions for maintenance work by the Traffic Management Division or Permit work must receive the approval of the Traffic Management Director (TMD) or his designee.
6) Policy exceptions for contract work in progress which makes use of the District Annual Waiver for work activities of a maintenance nature (of short duration, maintenance type activity, etc.) must receive the approval of the District Deputy Commissioner (DDC) or his designee.
7) The person planning or proposing a restriction, lane/road closure, or operation on:
   a) any interstate lane, including paved shoulders,
   b) any ramp to, from, or between interstate highways, or
   c) an intersecting roadway

   will be responsible for determining if the proposed restriction(s) / closure(s) fall(s) within the policy guidelines. If it does not, then a policy exception must be prepared by that person and sent for approval as described herein.
8) Unless the work is declared to be an "Emergency" or "Urgent" as described in Appendix A, an approved Policy Exception will be required prior to proceeding with:
   a) a closure or restriction outside the pre-approved times as described in Appendix B,
   b) a Rolling Slowdown as described in Appendix D if;
      i) the speed for the Pilot Vehicles will be less than 20 MPH, and/or
      ii) the traffic count exceeds 800 Passenger Car Equivalents (PCE) during any hour of the work,

c) an alternative to a Rolling Slowdown,

d) any stationary reduction or restriction of available lanes on an Interstate route, including taper, that exceeds a length of 5 miles in a single direction,

e) restriction of lane to less than 10 feet in width,

f) a closure or restriction on a ramp, shoulder, or intersecting roadway which is expected to cause queue in excess of one-half (1/2) mile on an interstate highway,

g) any closure or restriction of lanes on an interstate highway that occurs over a major holiday, as defined in the INDOT Standard Specifications which is current when the contract is let or, for non-contracted work, when the work occurs, or

h) any closure of lane(s) on an interstate highway which is designated as a detour/alternate route for another interstate highway.

9) Work outside pre-approved schedules as described in Appendix B:

a) Contracted Activities:

i) If an operation will result in lane closures or lane restrictions outside of the allowable times given in the maps and tables, the designer/or project manager shall initiate a request for a policy exception as described in either (1) or (2) below;

(1) The requestor (Design Consultant, Central Office Capital Management, District Capital Management, District Technical Services, etc) shall complete a quantitative analysis, as described in 7) (a) ii), of the impact on the motoring public of any proposed lane closure or lane restriction and a Transportation Management Plan (TMP).

(2) If proposed closures or restrictions will be completed within the times noted in the Annual Policy Exception the requestor may cite the relevant Annual Policy Exception for the district, note the affected highway segment in their policy exception request, describe the activity and traffic control plan, and omit the rest of the TMP.

ii) Analysis:

(1) For contract work, the analysis should occur during the planning or design process after the pavement recommendation has been formulated and/or required bridge work has been determined. In all cases, analysis for contract projects should occur before the final design begins.

(2) The analysis should include:

(a) Temporary Traffic Control Plan (TTCP) options;

(i) Plan and cross-section views of the proposed lane configuration(s),

(ii) If requested, a benefit/cost analysis of the TTCP options, and

(b) A queue analysis.

(c) Analysis of permit or force account work zone impacts shall occur prior to the implementation of any lane restrictions

iii) Transportation Management Plan (TMP):

(1) If required, a TMP for the strategy selected shall be completed as directed in the Indiana Design Manual.

(2) For Design-Build projects the TMP should be completed, approved, and reflected in the scope of services.

(3) A contractor may submit an alternate TMP for consideration prior to the start of work.

(a) If an alternate TTCP is proposed by the contractor, then the District will determine if the times proposed fall within the times permitted by the policy or an existing policy exception. If they do not, then the District will initiate a request for a policy exception or a revision to an existing policy exception as appropriate.

(b) Construction changes shall not be implemented until the alternate TMP is approved by the District and any required policy exceptions or revisions to policy exceptions are approved by the DCM.

(4) Implementation of the TMP on all construction contracts will include the following monitoring and reporting functions:

(a) Work zone setup shall be verified by the Project Engineer or Supervisor (PE/S) for conformance with the contract documents, INDOT standards and the Indiana Manual on Uniform Traffic Control Devices.

(b) Work zone queues and delay shall be monitored and reported to the District and to the TSS as described in Appendix E and the General Instructions to Field Employees (GIFE)

(c) If the TTCP generates queues which exceed the expected queue length the District and the TSS shall be informed of the situation and of proposed corrective action by the PE/S.

b) Non-Contracted Work:

i) Annual Policy Exception: The District may apply for an Annual Policy Exception based on roadway segments and associated work time and lane restrictions. Any such request will include the traffic counts they are based upon. No queue analysis is required if adjusted volumes do not exceed:

(1) 1400 PCE for one open lane,

(2) 3200 PCE for two open lanes,

(3) 5000 PCE for three open lanes,

(4) 6800 PCE for four open lanes,

(5) Add 1800 PCE per lane for more than four open lanes.

ii) Individual project or operation policy exception:

(1) If a project or operation will result in lane closures or lane restrictions outside of the policy allowable times or an approved Annual Policy Exception, the

District shall complete a traffic impact analysis, including queue analysis, and submit a TMP with a request for a policy exception.

(2) The TMP should incorporate the following elements as applicable:

(a) The Temporary Traffic Control Plan (TTCP) selected

(b) A Public Information Plan,

(c) Identification of alternate routes, and

(d) Incident management strategies.

c) Policy exceptions for Rolling Slowdowns for contracted or non-contracted activities;

i) a policy exception for a rolling slowdown must be submitted to the Work Zone Safety Section at least 7 calendar days prior to the proposed start of the rolling slowdown(s),

ii) policy exception requests for rolling slowdowns shall include a traffic impact (queuing) analysis and a TMP.

10) Process for all Policy Exception Requests:

a) Policy exception requests will be:

i) Submitted to the Traffic Management Division's Traffic Support Section (TSS),

ii) Reviewed by the TSS to ensure that the request is fully documented and the analyses are correct, and

iii) Forwarded along with the TSS's comments to the DPM, DCM, DMM, TMD or DDC.

b) The review will be performed considering all applicable INDOT policies including;

i) Construction Standards and Specifications,

ii) The Indiana Design Manual,

iii) The Work Zone Traffic Control Handbook.

c) The request will include:

i) A cover memo from the submitter

ii) An approval memo from the Senior Engineer, Work Zone Safety Section to the DPM, DCM, DMM, TMD or DDC (see examples for suggested formats). The transmittal memo will include the following information as applicable;

(1) Contract/ Des/ Project/ Permit No (as applicable)

(2) Location (route, R.P. and/or limits)

(3) Duration and type of work activity

(4) Closure/restriction schedule

(5) Day(s) of the week/time of day that the policy exception is needed

iii) A discussion of alternative TTCP's including the impact on TMP and overall costs. Cost of alternate strategies.

iv) A summary of the TMP, identifying the TTCP, Traffic Operations Plan, and Public Information Plan. The TTCP summary should indicate the width of the open lane(s) and shy distance to barrier walls, channelizing devices, work areas and equipment (as applicable and known).

v) The directional, hourly traffic volumes for each day of the week requested (weekday, Friday, Saturday, and/or Sunday). Indicate the source for the counts and how the counts were adjusted.

vi) A summary of the expected impact of the requested schedule and queuing analysis. On construction contracts, a queue analysis is not required for short duration, maintenance work type activities which may be done according to the schedules approved under the current district Annual Policy Exception.

vii) Queue analysis model parameters should be summarized as should the reasoning behind variations from standard capacity values.

(1) Tables C-1 and C-2 contain recommended model parameters.

(2) When Quickzone is used, the file produced will be submitted electronically via email.

(3) When QUEWZ98 is used, the input and output files will be submitted electronically via email.

10) Queue Analysis:

a) The criteria used to determine the impact of proposed work zones shall be queue length. QuickZone, QUEWZ98 or other similar software pre-approved by the TSS may be used to model the expected queues that will be generated.

b) Multiple stages of construction shall be analyzed separately for each of the maintenance of traffic phases.

c) The speed limit used in the computer models should be the posted legal construction zone speed limit.

d) Volume data for input into the models:

i) Counts may be found at: http://dotmaps.indot.in.gov/apps/trafficcounts/

ii) Counts from other sources may be used and should:

(1) Be the most recent available and adjusted to construction year levels through the use of appropriate growth factors per the INDOT adjustment factors current at the time of the analysis. This can be found at: http://www.in.gov/indot/3000.htm.

(2) Account for seasonal traffic surges that may occur during construction, and

(3) Reflect current regional traffic patterns.

iii) The source of any counts should be referenced.

iv) If the count is from a source other than the INDOT site noted above, the original count shall be included in the analysis along with information on when and how it was collected and how it was adjusted for the analysis.

v) Volume data for use in QuickZone or QueWZ98 should be converted to Passenger Car Equivalents (PCE) prior to being input. A PCE is the sum of functional classifications 1 through 3 plus two times the sum of functional classifications 4 through 15.

e) In heavily travelled areas where congestion occurs under normal unrestricted conditions, the queue length shall be considered from the end of the unrestricted backup.

f) The following guidelines shall be used to evaluate the viability of continuous or multiple day closures:

i) No queues of any length should be permitted to exceed 6 continuous hours duration or 12 hours in any calendar day.

ii) Queues greater than 0.5 miles in length should not be permitted to exceed 4 continuous hours.

iii) Queues greater than 1.0 mile in length should not be permitted to exceed two continuous hours.

iv) Queues greater than 1.5 miles in length should not be permitted.

g) For projects with daily, non-continuous lane closures the following additional guidance should also be followed:

i) If queue can be eliminated by adjusting the hours worked while still completing the project in a reasonable time frame, then the adjustment should be made.

ii) Whenever possible, the closure should not begin during an hour which will generate a queue.

iii) If the last hour planned for work is the first one in which queue will be generated, then the schedule should be adjusted away from closing during that hour.

viii) Where queues are expected, additional advanced work zone warning signage should be specified for placement at the distances noted in the IMUTCD ahead of the anticipated queue.

Table C-1: Suggested Model Parameters
from 2010 Highway Capacity Manual

Parameter	Free Flow Speed (MPH)					
	45	**55**	**60**	**65**	**70**	**75**
Speed at D/E Breakpoint (MPH) (a)	44	54	57	58	59	60
Speed at Capacity (MPH) (a)	42	50	51	52	53	53
Volume at D/E Breakpoint (PCE/HR) (b)	1550	1900	2010	2030	2080	2110
Volume at Capacity (PCE/HR) (b)	1900	2250	2300	2350	2400	2400

(a) Eqn. 11-4 (Speed = demand flow rate / density), Exh.11-5 (LOS Density), Exh.11-17 (LOS demand)
(b) Exhibit 14-17 (45 mph FFS), Exhibit 11-17 (55 mph to 75 mph FFS)

Table C-2: Suggested Working Hour Capacities
Passenger Car Equivalents per Hour per Lane (PCE/HR/Ln)

Work Zone Type	***Lane Width**** (e)		
	12'	**10.0' to 11.9'**	**9.0' to 9.9'**
Short Term (c)	1600	1455	1375
Long Term, 2 lanes reduced to 1 lane (d)	1400	1275	1200
Long Term, 3 lanes reduced to 2 lanes (d)	1450	1320	1250
Long Term, 3 lanes reduced to 1 lane (d)	1450	1320	1250
Long Term, 4 lanes reduced to 3 lane (d)	1500	1365	1290
Long Term, 4 lanes reduced to 2 lane (d)	1450	1320	1250
Long Term, 4 lanes reduced to 1 lane (d)	1350	1230	1160

(c) Short-Term Work Zones, page 10-26
(d) Exhibit 10-14
(e) Lane Width Consideration, page 10-28, f_{LW} factors

If restriction hour and work hour schedules are modeled differently the capacities listed may be increased by 10% for the restricted but non-working period (*Short-Term Work Zones*, item 1: Intensity of work, page 10-26).

Refer to pages 10-26 to 10-32, "Step 4: Adjust segment Capacities," of the 2010 HCM for additional adjustment factors.

11) Policy Exception Checklist:

Approval Memo:

Routing:

Addressed to one of the following as appropriate:

- ☐ Director, Project Management
- ☐ Director, Construction Management
- ☐ Director, Maintenance Management
- ☐ Director, Traffic Management

Thru the Manager of the Traffic Support Section

From the Supervisor of the Work Zone Safety Section

Project Information:

- ☐ Type of work
- ☐ Contract /Des/Project/Permit No (as applicable)
- ☐ Route and Location

Policy Exception requested:

- ☐ IHCP allowable schedule
- ☐ Requested schedule
- ☐ Closure duration
- ☐ Description of estimated queuing.
  (i.e. No queuing is expected, Modest queuing within policy acceptable limits is expected, Significant queuing within policy acceptable limits is expected, Significant queuing exceeding policy acceptable limits is expected, etc.)

Approval Section:

- ☐ Signature and Date lines

Distribution:

- ☐ Copies to the following offices (as appropriate):
  - ☐ District, including the Deputy Commissioner; the directors of Construction, Highway Maintenance, Technical Services, Public Information, and for contracted work only, Capital Management; and the Traffic Engineer
  - ☐ FHWA Division Administrator
  - ☐ Others as appropriate: (list below)
  - ☐ _____
    _____

Cover memo from the submitter:

- ☐ Contract /Des/Project/Permit No (if applicable)
- ☐ Route and Location
- ☐ Type of work
- ☐ Roadway configuration (lane width, shoulder width, barrier type)
- ☐ Items enclosed

Supporting Information:

- ☐ TMP Summary
- ☐ Summary of Maintenance of Traffic Alternatives considered
- ☐ Benefit/Cost analysis
- ☐ Queue Analysis with supporting data including traffic counts

12) Suggested Format of Cover Page for Policy Exception originating in Central Office and/or the District office :

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

Traffic Management Center
8620 East 21st Street
Indianapolis, Indiana 46219

PHONE: (317) 899-8610
FAX: (317) 898-0897

Michael R. Pence, Governor
Michael B. Cline, Commissioner

Date

TO: Louis Feagans, Director
District Project Management

THRU: Michael D. Bowman, Manager
Traffic Support Section

FROM: John McGregor, Supervisor
Work Zone Safety Section

SUBJECT: Interstate Highway Congestion Policy Exception Request
Project Description
I-?? in ?? direction(s) from ??? to ??? (MM ??? to MM ???) in ??? Count(y/ies)
Des. No.: ??????
Contract No: ??-?????

We have reviewed the attached policy exception request and concur with the analyses presented. The Interstate Highway Congestion Policy allows a single lane closure (at, by, during) ???????????.

Route & Location: I-?? in ?? direction(s) from ??? to ??? (MM ??? to MM ???)

ILCP Allowable Closure: ?????????

Requested Closures: I-?? in ?? direction(s), ? lane(s), (Closure schedule)

Minimum Open Lanes: ? lane(s) in ??? direction will remain open during the closure period(s).

Expected Duration of Closure: ?????.

Lane Width: ?????? , Shoulder Width:?????, Type of barrier used: ????? (drum, CMB, etc)

The analyses indicate that queue (within/outside/etc) policy limits is anticipated from this closure.

Policy Exception Approved:

_____ _____
Louis Feagans, Director Date
District Project Management

Enclosures: Policy exception request, Queue analysis
cc: ???, Deputy Commissioner, ??? District
???, Construction Division, ??? District
???, Director, Technical Services Division, ??? District
???, Director, Highway Maintenance Division, ??? District
???, Director, Capital Management Division, ??? District
???, Director, Public Information, ??? District
???, Manager, Traffic, Technical Services Division, ??? District
???, Project Manager, Capital Management Division; ??? District
???

13) Suggested Format of Cover Page for Construction Policy Exception for projects under contract and in progress:

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

Traffic Management Center
8620 East 21st Street
Indianapolis, Indiana 46219

PHONE: (317) 899-8610
FAX: (317) 898-0897

Michael R. Pence, Governor
Michael B. Cline, Commissioner

Date

TO: Mark Miller, Director
Division of Construction Management

THRU: Michael D. Bowman, Manager
Traffic Support Section

FROM: John McGregor, Supervisor
Work Zone Safety Section

SUBJECT: Interstate Highway Congestion Policy Exception Request
???Project Description???
I-?? in ?? direction(s) from ??? to ??? (MM ??? to MM ???) in ??? Count(y/ies)
Des. No.: ??????
Contract No: ??-?????

We have reviewed the attached policy exception request and concur with the analyses presented. The Interstate Highway Congestion Policy allows a single lane closure (at, by, during) ???????????.

Route & Location: I-?? in ?? direction(s) from ??? to ??? (MM ??? to MM ???)

ILCP Allowable Closure: ?????????

Requested Closures: I-?? in ?? direction(s), ? lane(s), (Closure schedule)

Minimum Open Lanes: ? lane(s) in ??? direction will remain open during the closure period(s).

Expected Duration of Closure: ?????.

Lane Width: ?????? , Shoulder Width:?????, Type of barrier used: ????? (drum CMB, etc)

The analyses indicate that queue (within/outside/etc) policy limits is anticipated from this closure.

Policy Exception Approved:

_____ _____
Mark Miller, Director Date
Division of Construction Management

Enclosures: Policy exception request, Queue analysis
cc: ???, Deputy Commissioner, ??? District
???, Construction Division, ??? District
???, Director, Technical Services Division, ??? District
???, Director, Highway Maintenance Division, ??? District
???, Director, Capital Management Division, ??? District
???, Director, Public Information, ??? District
???, Manager, Traffic, Technical Services Division, ??? District
???, Project Manager, Capital Management Division; ??? District
???

15) Suggested Format of Cover Page for Individual Maintenance Policy Exception:

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

Traffic Management Center
8620 East 21st Street
Indianapolis, Indiana 46219

PHONE: (317) 899-8610
FAX: (317) 898-0897

Michael R. Pence, Governor
Michael B. Cline, Commissioner

Date

TO: Jason Jones, Director
Division of Maintenance Management

THRU: Michael D. Bowman, Manager
Traffic Support Section

FROM: John McGregor, Supervisor
Work Zone Safety Section

SUBJECT: Interstate Highway Congestion Policy Exception Request
???Project Description???
I-?? in ?? direction(s) from ??? to ??? (MM ??? to MM ???) in ??? Count(y/ies)

We have reviewed the attached policy exception request and concur with the analyses presented. The Interstate Highway Congestion Policy allows a single lane closure (at, by, during) ???????????.

Route & Location: I-?? in ?? direction(s) from ??? to ??? (MM ??? to MM ???)

ILCP Allowable Closure: ?????????

Requested Closures: I-?? in ?? direction(s), ? lane(s), *(Closure schedule)*

Minimum Open Lanes: ? lane(s) in ??? direction will remain open during the closure period(s).

Expected Duration of Closure: ?????.

Lane Width: ?????? , Shoulder Width:?????, Type of barrier used: ????? (drum CMB, etc)

The analyses indicate that queue (within/outside/etc) policy limits is anticipated from this closure.

Policy Exception Approved:

_____ _____
Jason Jones, Director Date
Division of Maintenance Management

Enclosures: Policy exception request, Queue analysis
cc: ???, Deputy Commissioner, ??? District
???, Construction Division, ??? District
???, Director, Technical Services Division, ??? District
???, Director, Highway Maintenance Division, ??? District
???, Director, Capital Management Division, ??? District
???, Director, Public Information, ??? District
???, Manager, Traffic, Technical Services Division, ??? District
???, Project Manager, Capital Management Division; ??? District
???

16) Suggested Format of Cover Page for Policy Exception for activities of the Traffic Management Division:

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

Traffic Management Center
8620 East 21st Street
Indianapolis, Indiana 46219

PHONE: (317) 899-8610
FAX: (317) 898-0897

Michael R. Pence, Governor
Michael B. Cline, Commissioner

Date

TO: James R. Sturdevant, Director
Division of Traffic Management & District Support

THRU: Michael D. Bowman, Manager
Traffic Support Section

FROM: John McGregor, Supervisor
Work Zone Safety Section

SUBJECT: Interstate Highway Congestion Policy Exception Request
???Project Description???
I-?? in ?? direction(s) from ??? to ??? (MM ??? to MM ???) in ??? Count(y/ies)

We have reviewed the attached policy exception request and concur with the analyses presented. The Interstate Highway Congestion Policy allows a single lane closure (at, by, during) ???????????.

Route & Location: I-?? in ?? direction(s) from ??? to ??? (MM ??? to MM ???)

ILCP Allowable Closure: ?????????

Requested Closures: I-?? in ?? direction(s), ? lane(s), *(Closure schedule)*

Minimum Open Lanes: ? lane(s) in ??? direction will remain open during the closure period(s).

Expected Duration of Closure: ?????.

Lane Width: ?????? , Shoulder Width:?????, Type of barrier used: ????? (drum CMB, etc)

The analyses indicate that queue (within/outside/etc) policy limits is anticipated from this closure.

Policy Exception Approved:

_____ _____
James R. Sturdevant, Director Date
Division of Traffic Management & District Support

Enclosures: Policy exception request, Queue analysis
cc: ???, Deputy Commissioner, ??? District
???, Construction Division, ??? District
???, Director, Technical Services Division, ??? District
???, Director, Highway Maintenance Division, ??? District
???, Director, Capital Management Division, ??? District
???, Director, Public Information, ??? District
???, Manager, Traffic, Technical Services Division, ??? District
???, Project Manager, Capital Management Division; ??? District
???

17) Suggested Format of Cover Page for Construction Policy Exception for projects under contract and in progress for maintenance type activities approved by the DDC based upon the District Annual Waiver

INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

Traffic Management Center
8620 East 21st Street
Indianapolis, Indiana 46219

PHONE: (317) 899-8610
FAX: (317) 898-0897

Michael R. Pence, Governor
Michael B. Cline, Commissioner

Date

TO: John McGregor, Supervisor
Work Zone Safety Section

FROM: Brandye Hendrickson, District Deputy Commissioner
Greenfield District

SUBJECT: Interstate Highway Congestion Policy Exception
???Project Description???
I-?? in ?? direction(s) from ??? to ??? (MM ??? to MM ???) in ??? Count(y/ies)

I am forwarding you a copy of the approved policy exception for the project listed above for your records. The Interstate Highway Congestion Policy allows a single lane closure (at, by, during) ???????????.

Route & Location: I-?? in ?? direction(s) from ??? to ??? (MM ??? to MM ???)

ILCP Allowable Closure: ?????????

Requested Closures: I-?? in ?? direction(s), ? lane(s), *(Closure schedule)*

Minimum Open Lanes: ? lane(s) in ??? direction will remain open during the closure period(s).

Expected Duration of Closure: ?????.

Lane Width: ?????? , Shoulder Width:?????, Type of barrier used: ????? (drum CMB, etc)

The work falls within the pre-approved hours shown in the District Annual Waiver.

Enclosures: Approved Policy exception, Queue analysis
cc: ???, Deputy Commissioner, ??? District
???, Construction Division, ??? District
???, Director, Technical Services Division, ??? District
???, Director, Highway Maintenance Division, ??? District
???, Director, Capital Management Division, ??? District
???, Director, Public Information, ??? District
???, Manager, Traffic, Technical Services Division, ??? District
???, Project Manager, Capital Management Division; ??? District
???

18) Suggested Format for Individual Policy Exception Requests (should accompany one of the cover sheets noted above):

Your Document Header

Date

TO: John McGregor, Supervisor
Work Zone Safety Section

THRU: *Name, Title*
Section or division etc.

FROM: *Name, Title*
Section or division etc.

SUBJECT: Interstate Highway Congestion Policy Exception Request

Attached is a proposed policy exception for Contract *X-XXXXX*; *Work Type* or *Work Description (include permit number if applicable) Route, Location,* in *xxxxxxxxxxx* County for your consideration

……. description of proposed policy exception, TMP summary ……

Enclosures:, , *Special Provisions, Queue Analysis, B/C Analysis, Temporary Traffic Control Plans, etc.*

cc:

Appendix D:

ROLLING SLOWDOWNS:

1) A rolling slowdown provides up to 20 minutes to complete activities of a limited duration that require the entire roadway be clear of traffic prior to proceeding. Such activities may include, but are not limited to, placing overhead beams, erecting overhead signs, clearing debris, patching potholes with a bituminous patching material, removing disabled vehicles, and installing power lines.
2) A policy exception may be requested to permit an alternate method of providing up to 20 minutes of clear time and will include the following:
   a) Details of the procedure(s) and method(s) that will be used, and
   b) A costs-benefits analysis of the requested alternate(s).
3) Any proposed rolling slowdown (or approved alternate) shall be reported to the following entities at least 24 hours prior to proceeding:
   a) District Public Information Officer.
   b) TMC Dispatch Center of jurisdiction.
   c) Local ISP post.
   d) Toll Road (if applicable).
4) Procedures for a Rolling Slowdown shall be as follows:
   a) One pilot vehicle per open lane and a single chase vehicle shall be used.
      i) If either shoulder is $\geq$ 8' wide, a pilot vehicle (preferably a law enforcement vehicle) should be used on the shoulder.
      ii) Pilot vehicles (except for law enforcement vehicles) shall be equipped with:
         (1) High-intensity rotating, flashing, oscillating, or strobe warning lights with 360° visibility, and
         (2) Mounted on the rear of the pilot vehicle, either;
            (a) An arrow panel in caution mode and a sign with the legend, "PILOT CAR FOLLOW ME", or
            (b) A truck mounted changeable message sign with the messages "PILOT VEHICLE" for one phase and "FOLLOW ME" for the other phase.
      iii) Law Enforcement vehicles used for pilot or pre-warning vehicles should have standard red and blue lights placed as specified by the department supplying the vehicle.
   b) Standard temporary warning signs (black lettering with a retroreflective orange background) will be placed ahead of the beginning of the slowdown with the following messages;

i) "ROAD WORK (CONSTRUCTION) AHEAD" (if one is not already in place.) placed 1500 feet ahead of the sign in ii),

ii) "PILOT CARS AHEAD" placed 1000 feet ahead of the sign in iii),

iii) "WATCH FOR STOPPED TRAFFIC" placed a distance **A+2640 feet** (see Table D-1) ahead of the work area,

iv) an "OVERHEAD SIGN INSTALLATION" [XW104-1] may be added below the previous sign (the words "BEAM" or "WIRE" may be used in place of the word "SIGN" if appropriate.)

c) Portable changeable messages signs (PCMS) should be placed ahead of the upstream (preceding) exit to alert drivers about the slowdown at a point where the decision to detour can be made and the exit maneuver completed safely.

i) A typical message sequence would begin with "ROLLING SLOWDOWN AHEAD" for the first phase and display the times for the rolling slowdowns on the second phase.

ii) Start the sign displays when the pilot vehicles are ready to enter the road and continue until the traffic speeds are close to normal.

iii) If the signs are activated more than 24 hours before the start of rolling slowdowns they shall display the date the rolling slowdowns are scheduled in place of the word "AHEAD" on the first phase and the times they will occur in the second phase. The word "AHEAD" should be substituted for the date before the rolling slowdowns begin.

d) Other temporary traffic control devices may be needed due to field conditions such as intersecting interstate highways within the area affected by the rolling slowdown.

e) The slowdown will proceed as follows:

i) Starting at a point that will allow them to achieve the posted speed limit by the time they are distance **A** (see Table D-1) from the work area, the chase vehicle, followed by the pilot vehicles, pulls off the shoulder onto the first lane and accelerates to the posted or operating speed (whichever is lower.) All warning lights should be activated when the vehicles start moving if they are not already activated. Alternatively, the vehicles may enter the roadway from the preceding entrance ramp if they will be able to meet the required speed before they reach the point at distance **A** from the work area.

ii) Once they have reached the posted speed limit and are 1000 feet past the "WATCH FOR STOPPED TRAFFIC" sign, the pilot vehicle(s) shall;

(1) activate their PCMS (if so equipped), then

(2) move into their assigned lane, and then proceed to

(3) line up next to each other.

iii) At a point that is distance **A** ahead of the work area, the pilot vehicles begin to slowdown gradually, over a distance of up to 1 mile, to the designated speed of

20 MPH (lesser speeds of 10 and 15 MPH may not be used unless a policy exception to do so has been approved).

(1) Traffic should not be stopped unless unforeseeable delays prevent the completion of the work in the planned clear time.

(2) If the free moving traffic is travelling less than the posted speed limit, then;

(a) the operation should be suspended and reset after the reason for the slowed traffic has been resolved, or

(b) the Pilot Vehicles may be required to reduce their speed slightly to permit the desired clear time.

iv) The chase vehicle follows the last free moving vehicles.

v) work may commence after the chase vehicle passes the work site.

vi) Entering traffic shall be stopped at every entrance ramp until the pilot vehicles pass the end of the ramp.

vii) Any law enforcement vehicles used in conjunction with the pilot vehicles should remain on the shoulder of the roadway, stay behind the backup, or be used to close the entrance ramps. The law enforcement vehicle's flashing red and blue lights should be activated for the duration of the queuing (See Figure D-1).

f) If more than one rolling slowdown is required:

i) The next slowdown shall not begin until all of the traffic slowed down in the prior rolling slowdown has passed the beginning of the slowdown or twenty minutes, whichever is longer.

ii) All vehicles must be in their designated starting position prior to beginning the next slowdown.

g) Good communication is essential among all traffic control vehicles, flaggers, the chase vehicle and the job site. A competent person at the job site should be assigned to keep in contact with the TMC, law enforcement , chase vehicle, pilot vehicles, and the work crew(s) for adjustments.

h) The foreman of the crew performing the rolling slowdown will have a phone number for at least one 24 hour towing company prior to the start of the rolling slowdowns if towing is not included in the TMP for the project.

i) A Pre-Warning Vehicle may be used to further alert drivers to the slowed traffic ahead by positioning it approximately 1/2 mile behind the anticipated queue. A PCMS should be used on this vehicle. This vehicle should be repositioned or another Pre-Warning Vehicle placed further back if the queue reaches the expected length and continues to grow. This vehicle may also be a marked law enforcement vehicle with its lights activated.

Table D-1: Distance A

Minimum distance from work area where Pilot Vehicles begin to reduce speed to the designated speed for a given posted speed limit

(Pilot Vehicle speed shall be 20 MPH unless otherwise approved by policy exception)

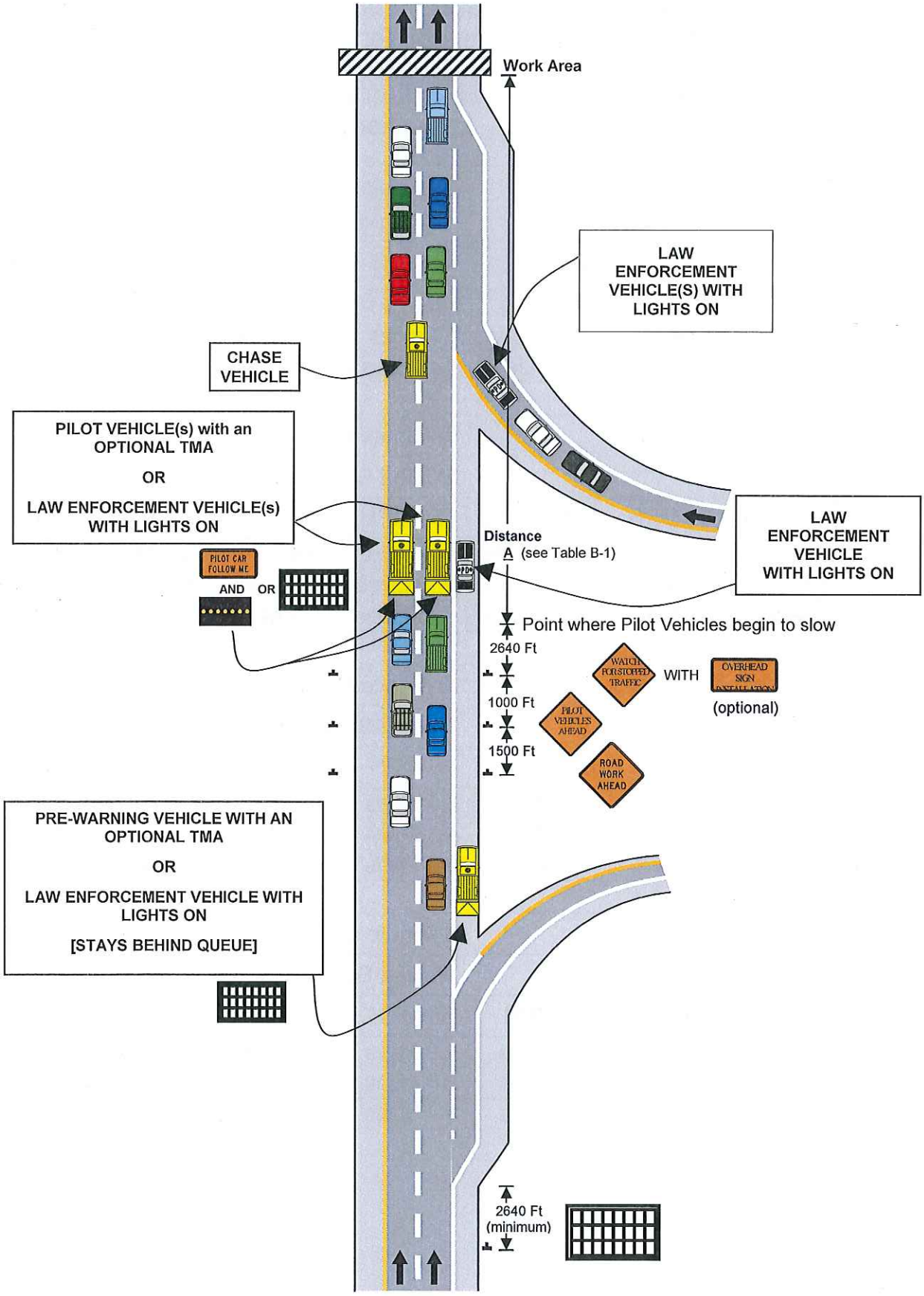
Speed of Pilot Vehicle↓	20 Minute Clear Time					
	Posted Speed Limit					
	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH
10 MPH	5.2 Miles	5.0 Miles	5.0 Miles	4.9 Miles	4.9 Miles	4.8 Miles
15 MPH	8.3 Miles	8.0 Miles	7.7 Miles	7.5 Miles	7.4 Miles	7.2 Miles
20 MPH	12.7 Miles	11.9 Miles	11.3 Miles	10.8 Miles	10.4 Miles	10.2 Miles

Speed of Pilot Vehicle↓	15 Minute Clear Time					
	Posted Speed Limit					
	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH
10 MPH	4.1 Miles	4.0 Miles	4.0 Miles	3.9 Miles	3.9 Miles	3.8 Miles
15 MPH	6.4 Miles	6.2 Miles	6.0 Miles	5.8 Miles	5.7 Miles	5.6 Miles
20 MPH	9.7 Miles	9.1 Miles	8.6 Miles	8.3 Miles	8.0 Miles	7.8 Miles

Speed of Pilot Vehicle↓	10 Minute Clear Time					
	Posted Speed Limit					
	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH
10 MPH	3.0 Miles	3.0 Miles	2.9 Miles	2.9 Miles	2.9 Miles	2.9 Miles
15 MPH	4.5 Miles	4.4 Miles	4.3 Miles	4.2 Miles	4.1 Miles	4.1 Miles
20 MPH	6.7 Miles	6.3 Miles	6.0 Miles	5.8 Miles	5.6 Miles	5.5 Miles

Speed of Pilot Vehicle↓	5 Minute Clear Time					
	Posted Speed Limit					
	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH
10 MPH	1.9 Miles	1.9 Miles	1.9 Miles	1.9 Miles	1.9 Miles	1.9 Miles
15 MPH	2.7 Miles	2.6 Miles	2.6 Miles	2.5 Miles	2.5 Miles	2.5 Miles
20 MPH	3.7 Miles	3.5 Miles	3.4 Miles	3.3 Miles	3.2 Miles	3.2 Miles

Figure D-1, Rolling Slowdowns:



Appendix E:

Queue Measurement and Reporting:

1) **Requirements**

   a) Queue length and delay measurements are to be made on interstate projects when lane, shoulder or ramp restrictions will be in place in at least one (1) direction for a total of at least ten (10) days.

   b) For purposes of taking measurements, the ten (10) days of restriction do not need to be consecutive and any portion of a day is counted as a whole day. In order to allow traffic to settle in to a given traffic maintenance pattern, measurements generally should not be taken until three (3) to five (5) days after:

      i) An initial traffic maintenance setup,

      ii) a change in traffic maintenance phase,

      iii) a shift of traffic maintenance from one highway segment to another,

      iv) a change in traffic maintenance setup in response to excessive queue lengths, or

      v) a significant change in the traffic maintenance setup.

   c) Likewise, the PE/S generally should not wait more than seven (7) to ten (10) days after any of the above occurrences to take and record queue length and delay measurements.

   d) Measurements are required to be reported at least twice during the highest traffic volume period when restrictions are in place. If a restriction is in place for at least seven (7) consecutive days, at least one (1) measurement should be made during the highest volume period on a weekend day.

2) **Reports**

   a) A Work Zone Queue and Delay Report should be completed each time a set of measurements is taken.

   b) The original is to be submitted to the District Traffic Engineer,

   c) A copy is to be sent to the Work Zone Safety Section

   d) A copy is to be placed in the project file.

Figure E-1, Queue Measurement Diagram:

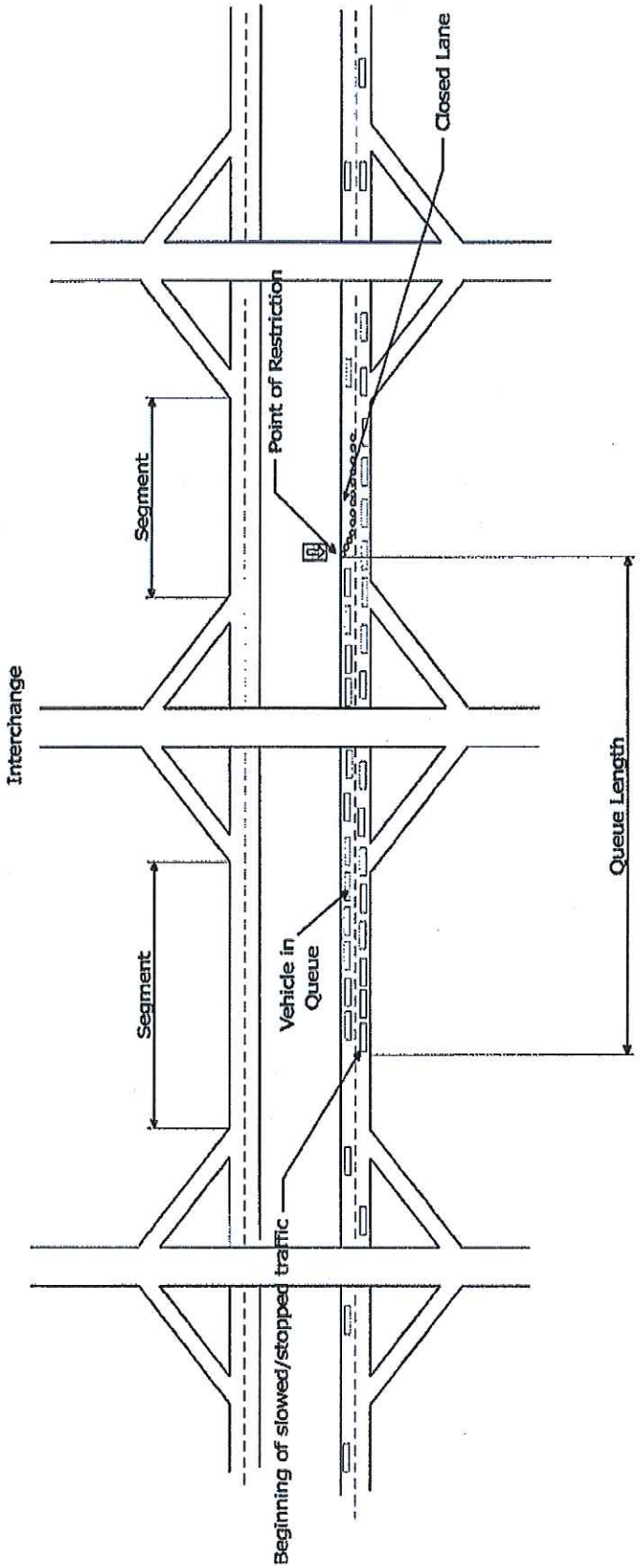


Figure E-2, Queue Measurement Report Form:

INDOT
WORK ZONE QUEUE & DELAY REPORT FORM

Contract No: _____

Route & Project Limits/Location: _____

County: _____ **District:** _____

Occasion: _____

(see note 1)

Date: ___/___/___

Measurement 1:

Direction of Travel: _____ **Time:** ___:___ **am/pm**

Location of Queue ***(see note 2):***

Queue Length: _____ **miles** **Delay:** _____ **minutes**

Measurement 2:

Direction of Travel: _____ **Time:** ___:___ **am/pm**

Location of Queue ***(see note 2):***

Queue Length: _____ **miles** **Delay:** _____ **minutes**

Comments: _____

_____

_____

Signed,

_____ _____

Project Engineer/Supervisor **Report Date**

NOTES:

1. Occasion refers to the event (e.g. start of construction, phase change, location change) that is prompting the measurements.

2. Location of Queue refers to the location that the queue begins, for instance "the left lane merge taper for the crossover at station 123+50"

cc: District Traffic Engineer
Supervisor Work Zone Safety Section, Indianapolis TMC (fax to 317-898-0897), or e-mail to jmcgregor@INDOT.IN.gov
Project File

Form Date *02/2012*

Modifications to 2013 Interstate Highways Congestion Policy

1. Cover — Changed 2013 to 2014
2. P 1 4d — Removed "District Project Manager"
3. P 3 Par 4 — Changed "Interstate Lane Closure Policy" and date to "Interstate Highways Congestion Policy" dated 1/31/13.
4. P 4 Par 1 — Added the following passage "The Traffic Management Center (TMC) of jurisdiction shall be contacted as soon as the repair is determined to be an emergency and shall be kept informed of the times the work is being conducted. The restrictions shall be entered in the Condition Acquisition Reporting System (CARS) by the entity restricting the Interstate Highway. The TMC can assist with this if necessary. The information entered into CARS system shall include the emergency primary and secondary contact names and phones numbers where they can be reached in the "My Group Comment" section of the CARS report. A completion time or duration time shall also be entered into CARS.
5. P5 Par 1 — Added the following passage ". The information entered into CARS system shall provide the emergency primary and secondary contact names and phones numbers where they can be reached in the "My Group Comment" section of the CARS report. A completion time or duration time in addition to the other information shall be entered into CARS."
6. PP 7 thru 12 — Up dated the table and graphs with the new traffic count information and a review of the roadways.
7. P 13 item 2 — Removed District Project Management Director
8. P 13 item 6 — Added DDC approval authority.
9. P 17 item 10a — Remove Vissim and Corsim
10. P 19 — Replaced table C-1 and C-2 with new values from the 2010 Highway Capacity Manual and removed old material from the 2000 HCM
11. P 20 various — Removed Director, District Project Management, replaced "Senior Engineer of the Work Zone Safety Section" with "Supervisor of the Work Zone Safety Section" and added "Roadway configuration (lane width, shoulder width, barrier type)
12. P 21 — Removed Item 12 / Page 21 as no longer relevant
13. PP 22 thru 26 — Updated titles of those on example documents and added "Lane width, Shoulder width and Barrier type used... (drum, CMD, etc)".
14. P 25 — Added new sample transmittal document for the District Deputy Commissioner
15. P 27 Item 2 — Underlined "an approved method" to call attention to the fact that an alternate method may be submitted.