



## Median Construction Crossover Design

*Prepared for*  
**Bureau of Project Development**

*Prepared by*  
**CTC & Associates LLC**  
**WisDOT Research & Library Unit**  
**July 23, 2009**

*Transportation Synthesis Reports are brief summaries of currently available information on topics of interest to WisDOT staff throughout the department. Online and print sources for TSRs include NCHRP and other TRB programs, AASHTO, the research and practices of other transportation agencies, and related academic and industry research. Internet hyperlinks in TSRs are active at the time of publication, but changes on the host server can make them obsolete. To request a TSR, e-mail [research@dot.wi.gov](mailto:research@dot.wi.gov) or call (608) 267-6977.*

### **Request for Report**

During the construction or reconstruction of divided highways, temporary construction crossovers are typically placed in the median to allow for work on one set of lanes while counter-directional traffic moves in the other set of lanes. The Bureau of Project Development is interested in learning about practices in other states for the design and implementation of these crossovers.

### **Summary**

We distributed a survey to members of the AASHTO Research Advisory Committee for completion by appropriate staff at their agencies. The survey consisted of the following questions:

1. Does your agency have guidance on the design and location of construction crossovers? Please provide a link to your guidance.
2. Does your agency have a standard drawing for the construction and reconstruction of crossovers? Please provide a link to this drawing.
3. Does your agency allow crossovers to remain in place after construction, for use by future projects?
  - a. If so, is there guidance available for designers to make the determination that a crossover is to remain in place?
  - b. Does your agency have a policy on delineation of crossovers to prevent the improper use of crossovers?
  - c. Does your agency have a policy on installation of a barrier system to prevent the improper use of crossovers? Please specify what types of barrier systems are typically used.
    - i. If so, does your agency have standard drawings for the delineation or installation of barriers? Please provide a link to these drawings.

Nine agencies responded to this survey. See **Survey Results** beginning on page 2 of this report for the full text of these survey responses.

Key findings from the survey follow. Percentages are based on the number of respondents to each question.

- Two-thirds of respondents (67 percent) have guidance on the design and location of construction crossovers.
- Almost half (44 percent) have a standard drawing for the construction and reconstruction of crossovers.
- Most (78 percent) allow crossovers to remain in place after construction for use by future projects. Of these seven states:
  - Almost half (43 percent) have guidance available for designers to make the determination that a crossover is to remain in place.
  - All have a policy on delineation of crossovers to prevent the improper use of crossovers.
  - More than two-thirds (71 percent) have a policy on installation of a barrier system to prevent the improper use of crossovers.
    - Of these, all have standard drawings for the delineation or installation of barriers.

## **Survey Results**

The full text of each survey response is provided below. For reference, we have included an abbreviated version of each question before the response; for the full question text, please see the Summary on page 1 of this report.

### **Arkansas**

Mike Fugett, Arkansas Highway and Transportation Department, [Mike.Fugett@arkansashighways.com](mailto:Mike.Fugett@arkansashighways.com).

1. **Construction crossover design guidance?** No.
2. **Standard drawing?** No.
3. **Allow crossovers to remain in place?** No.
  - a. **Design guidance?** N/A.
  - b. **Policy on delineation?** N/A.
  - c. **Policy on barrier system?** N/A.
    - i. **Standard drawing?** N/A.

### **Colorado**

Contact: Rich Sarchet, Colorado DOT Research Branch, [richard.sarchet@dot.state.co.us](mailto:richard.sarchet@dot.state.co.us).

1. **Construction crossover design guidance?** No.
2. **Standard drawing?** No.
3. **Allow crossovers to remain in place?** No.
  - a. **Design guidance?** N/A.
  - b. **Policy on delineation?** N/A.
  - c. **Policy on barrier system?** N/A.
    - i. **Standard drawing?** N/A.

### **Illinois**

Contact: Dennis Huckaba, Illinois Department of Transportation, [Dennis.Huckaba@Illinois.gov](mailto:Dennis.Huckaba@Illinois.gov).

1. **Construction crossover design guidance?** Yes:  
<http://www.dot.il.gov/desenv/BDE%20Manual/BDE/pdf/chap55.pdf>
2. **Standard drawing?** No.
3. **Allow crossovers to remain in place?** Yes.
  - a. **Design guidance?** Yes: <http://www.dot.il.gov/desenv/BDE%20Manual/BDE/pdf/chap55.pdf>
  - b. **Policy on delineation?** Yes.

- c. **Policy on barrier system?** Yes. Channelization Devices. Traffic Control Standards 701416 (see [http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-701416-06\\_LnClosureFrwayExpway+Crossover&Barrier.pdf](http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-701416-06_LnClosureFrwayExpway+Crossover&Barrier.pdf)) and 701431 (see [http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-701431-05\\_LnClosureMultiLnUndivided+Crossover45-55MPH.pdf](http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-701431-05_LnClosureMultiLnUndivided+Crossover45-55MPH.pdf)) present the general criteria for the placement of channelization devices within and between crossovers. Temporary concrete barriers (TCB), barricades, or drums may be used to channel traffic within the crossovers. Between crossovers, TCB is used to separate traffic between the crossovers except as discussed below. Signs, centerline striping, -See previous links on crossovers for more information.
  - i. **Standard drawing?** Yes: <http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/> See standard drawings 701402, 701416, 701423 and 704001.  
 701402: [http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-701402-07\\_LnClosureFrwayExpway+Barrier.pdf](http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-701402-07_LnClosureFrwayExpway+Barrier.pdf)  
 701416: [http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-701416-06\\_LnClosureFrwayExpway+Crossover&Barrier.pdf](http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-701416-06_LnClosureFrwayExpway+Crossover&Barrier.pdf)  
 701423: [http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-701423-03\\_LnClosureMultiLn+Barrier45-55MPH.pdf](http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-701423-03_LnClosureMultiLn+Barrier45-55MPH.pdf)  
 704001: [http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-704001-05\\_TempConcBarrier.pdf](http://www.dot.il.gov/desenv/hwystds/rev210/Web%20PDFs/210-704001-05_TempConcBarrier.pdf)

## Indiana

Contact: Richard Van Cleave, Indiana Department of Transportation, [rvancleave@indot.in.gov](mailto:rvancleave@indot.in.gov).

1. **Construction crossover design guidance?** Yes:  
<http://www.in.gov/dot/div/contracts/standards/dm/english/Part8/ECh82/ch82.htm> (See Sect. 82-6.02).
2. **Standard drawing?** Yes: <http://www.in.gov/dot/div/contracts/standards/drawings/sep09/e/800e/E801-TCCO-02.pdf>
3. **Allow crossovers to remain in place?** Yes.
  - a. **Design guidance?** No.
  - b. **Policy on delineation?** Yes.
  - c. **Policy on barrier system?** Yes. The only “barrier system” used is to place drums across the crossover along the median centerline or to cover the crossover with earth to limit or deny use.
    - i. **Standard drawing?** Yes:  
<http://www.in.gov/dot/div/contracts/standards/drawings/sep09/e/800e/E801-TCCO-05.pdf>  
 See also:  
<http://www.in.gov/dot/div/contracts/standards/drawings/sep09/e/800e/E801-TCCO-06.pdf>  
<http://www.in.gov/dot/div/contracts/standards/drawings/sep09/e/800e/E801-TCCO-07.pdf>

## Iowa

Contact: Chris Poole, Iowa DOT, [chris.poole@dot.iowa.gov](mailto:chris.poole@dot.iowa.gov).

1. **Construction crossover design guidance?** Yes: <http://www.iowadot.gov/design/dmanual/03e-03.pdf>
2. **Standard drawing?** Yes: <http://www.iowadot.gov/design/SRP/IndividualStandards/erv12a.pdf>  
 See also:  
<http://www.iowadot.gov/design/SRP/IndividualStandards/erv12b.pdf>  
<http://www.iowadot.gov/design/SRP/IndividualStandards/erv12c.pdf>  
<http://www.iowadot.gov/design/SRP/IndividualStandards/erv13a.pdf>  
<http://www.iowadot.gov/design/SRP/IndividualStandards/erv13b.pdf>  
<http://www.iowadot.gov/design/SRP/IndividualStandards/erv13c.pdf>  
<http://www.iowadot.gov/design/SRP/IndividualStandards/erv14a.pdf>

<http://www.iowadot.gov/design/SRP/IndividualStandards/erv14b.pdf>

<http://www.iowadot.gov/design/SRP/IndividualStandards/erv14c.pdf>

3. **Allow crossovers to remain in place?** Yes.
  - a. **Design guidance?** No.
  - b. **Policy on delineation?** Yes.
  - c. **Policy on barrier system?** Yes. Unwritten policy, but standard drawing below is used if crossover is to stay in place.
    - i. **Standard drawing?** Yes:  
<http://www.iowadot.gov/design/tnt/PDFsandWebFiles/IndividualPDFs/e0540-13.pdf>

#### **Kentucky**

Contact: Kevin Martin, KYTC, [kevin.martin@ky.gov](mailto:kevin.martin@ky.gov).

1. **Construction crossover design guidance?** Yes. See Standard Drawing below.
2. **Standard drawing?** Yes: <http://www.kytc.state.ky.us/design/standard/pdf2008/TRAFFIC-SERIES2008.PDF#ttc140-01>
3. **Allow crossovers to remain in place?** Yes.
  - a. **Design guidance?** No.
  - b. **Policy on delineation?** Yes.
  - c. **Policy on barrier system?** Yes. Follow MUTCD guidance.
    - i. **Standard drawing?** Yes. Follow MUTCD guidance.

#### **Montana**

Contact: Lesly Tribelhorn, Montana Department of Transportation, [ltribelhorn@mt.gov](mailto:ltribelhorn@mt.gov).

1. **Construction crossover design guidance?** Yes:  
[http://www.mdt.mt.gov/other/roaddesign/external/montana\\_road\\_design\\_manual/15\\_MP\\_of\\_traffic\\_through\\_construction\\_zones.pdf](http://www.mdt.mt.gov/other/roaddesign/external/montana_road_design_manual/15_MP_of_traffic_through_construction_zones.pdf)
2. **Standard drawing?** Yes:  
[http://www.mdt.mt.gov/other/const/external/detailed\\_drawings/2009/english/618\\_TRAFFIC\\_CONTROL\\_2009\\_ENG.PDF](http://www.mdt.mt.gov/other/const/external/detailed_drawings/2009/english/618_TRAFFIC_CONTROL_2009_ENG.PDF)
3. **Allow crossovers to remain in place?** Yes.
  - a. **Design guidance?** Yes:  
[http://www.mdt.mt.gov/business/contracting/memos/design\\_memos.shtml](http://www.mdt.mt.gov/business/contracting/memos/design_memos.shtml)
  - b. **Policy on delineation?** Yes.
  - c. **Policy on barrier system?** Yes. Prestretched, high-tension cable rail with end treatments
    - i. **Standard drawing?** Yes:  
[http://www.mdt.mt.gov/other/const/external/detailed\\_drawings/2009/english/606\\_GUARDRAIL\\_BARRIER\\_RAIL\\_2009\\_ENG.PDF](http://www.mdt.mt.gov/other/const/external/detailed_drawings/2009/english/606_GUARDRAIL_BARRIER_RAIL_2009_ENG.PDF)

#### **Nebraska**

Contact: Matt Beran, Nebraska Department of Roads, [matt.beran@nebraska.gov](mailto:matt.beran@nebraska.gov).

1. **Construction crossover design guidance?** No.
2. **Standard drawing?** No.
3. **Allow crossovers to remain in place?** Yes.
  - a. **Design guidance?** No.
  - b. **Policy on delineation?** Yes.
  - c. **Policy on barrier system?** No response.
    - i. **Standard drawing?** No response.

**North Dakota**

Contact: Ranka Samardzic, NDDOT, [rsamardz@nd.gov](mailto:rsamardz@nd.gov).

1. **Construction crossover design guidance?** Yes. 2,000 ft radius reversed curves with a 150 ft tangent between.
2. **Standard drawing?** No.
3. **Allow crossovers to remain in place?** Yes.
  - a. **Design guidance?** Yes. Determined by future planned projects.
  - b. **Policy on delineation?** Yes.
  - c. **Policy on barrier system?** No.
    - i. **Standard drawing?** N/A.