

North Dakota Department of Transportation

Guidelines for New Development Adjacent to the ND State Highway System

June 2012

This document is intended to provide direction to stakeholders (such as developers, planning and zoning commissions and NDDOT District Engineers) on the traffic impacts of proposed developments.

To obtain NDDOT support for proposed developments having either direct or indirect access to the ND State Highway System, developers should submit the expected number of trips per day to the NDDOT District Engineer¹ (in writing). This submission should include a short discussion on how this number was estimated (usually based on expected number of employees, customers and/or deliveries, residents etc). If the new traffic generated by the development is proposed to use an existing access point, the current access point volume and build volumes should be submitted. The District Engineer may choose to pass on this information to the Central office for additional support/direction/review.

If the District Engineer decides that a traffic engineering analysis is necessary, the developer is responsible for providing a study completed by a professional engineer registered in the state of North Dakota. This decision is typically based on the anticipated number of trips generated by a development.

A “study intersection” is defined as an existing or proposed intersection that will introduce new turning traffic—resulting from the development—off of the ND State Highway system. An existing intersection, for example, would be a state highway and a county road where the proposed development would have access onto the county road. A proposed intersection would be a new access point or an existing access point that served as a field drive or private drive that would need to be modified to serve as a new access for the development directly onto the state highway system.

A trip is defined as a one-direction vehicle movement with either the origin or the destination (exiting or entering) inside the site. Over time, changes in land use within property may create additional trips which may necessitate revisions to the accesses—NDDOT reserves the right to request the developer provide further information about proposed modifications to their property.

Less than 100 trips per day and less than 30% trucks

A traffic engineering study is typically not necessary (except where the district engineer requests one based on issues such as terrain, sight distance or other engineering judgment), turn lanes or other traffic control modifications are typically not necessary. The developer should provide in writing:

- Size of property in acres and a description of how the property will be used
- The number of proposed buildings with square footages
- Number of employees/residents expected when the property is fully developed
- The expected number of trips per day (including number of truck trips)
- What hour of the day will generate the highest number of trips and how many trips are expected during that time period.

¹ Contact information at: <http://www.dot.nd.gov/travel/districtinfo.htm>

100 to 1,000 trips per day or truck percentage greater than 30%

A written traffic engineering study should include the items above and also provide the following:

- Verify the expected number of trips per day generated by the development²
- Discussion and/or diagrams showing site circulation (site plan)
- Sight distance evaluation at study intersections
- Study intersection design
 - Include a recommendation on the need for right and/or left turn lanes. This recommendation should follow NDDOT's "Guidelines for the Installation of Turn Lanes along State Highways".
 - If turn lanes are recommended, the study should use NDDOT design practices to indicate the length of the proposed turn lanes including tapers, etc.

1,000 to 5,000 trips per day

In addition to items listed above, the written traffic study should provide:

- Capacity analysis at study intersections
- Crash data analysis at existing study intersections (NDDOT will provide the crash data per the developer's request)
- Trip distribution (evaluate number, location, and spacing of access points). Provide expected directional distribution of trips (for example, 30% from the west, 70% from the east) and indicate if the truck directional distribution varies from the vehicle directional distribution.

Greater than 5,000 trips per day

In addition to items listed above, the written traffic study should provide:

- Background traffic growth and evaluation of future traffic
- Traffic signal warrant analysis – with a recommendation for signalization³, roundabout or other traffic control devices
- Lighting analysis at study intersections
- Evaluate adjacent intersections that may be impacted by the development (capacity analysis, crash history, etc). The study shall take into consideration any applicable transportation plans in the area.

² Typically this is done using the "Trip Generation" Manual from ITE.

³ Where a signal is recommended, the study shall provide further recommendations on the proposed signal timing and phasing, left turn phase type (protected, permissive), and coordination with other traffic signals.