

Memo

To: Prineville City Council
From: Scott Edelman, Senior Planner
Date: January 6, 2010
Re: Additional Information Requested Related to Ordinance 1167

Ordinance 1167 would amend the City's Transportation Systems Plan to require developers to evaluate their impacts on intersections beyond the 1000 foot limit currently in the TSP. During the first reading of this ordinance at the December 8 Council meeting, Councilor Uffelman requested additional information about potential costs to developers. In my initial response, I indicated that the additional cost would be minimal because City staff already requires study of intersections beyond the 1000 foot limit based on language that allows discretion by the City Engineer. I stated that this ordinance would formalize expanded intersection studies into a standard requirement. However, I also indicated that I would check with a private traffic engineer to see if he had a different perspective and to obtain an estimate of the cost impact on a Traffic Impact Analysis (TIA). I received the following response from Joe Bessman of Kittelson & Associates who have completed several TIAs for developments in Prineville:

You're exactly right- the requirement is currently already in place to study well beyond the 1000 feet requirement. What the policy will do is standardize what is currently required under the City engineer's discretion, to provide a more consistent study scoping. What does this mean for costs?

20-unit subdivision: Generates 20 PM trips, will likely require no additional assessment (will not meet a 25 trip minimum study requirement). Their assessment would be a general letter that should address basic items like sight distance, access operations, and access management requirements. For this you're probably looking at a traffic letter (versus a report) in the \$1,000 to \$2,500 range.

1000-lot subdivision: A subdivision of this size would be required to analyze all intersections along 3rd Street due to existing ODOT requirements, which would be the vast majority of the costs. The addition of City collector/arterial intersections would be a relatively minor cost addition (unsignalized intersections are much easier to assess). For a study of this magnitude you would be looking at a cost range of between \$15,000 and \$30,000. Because the City has already required analysis of their major intersections it's hard to really say what the incremental cost difference would be, but it would be relatively minor.

Key points/issues:

- Provides scoping consistency to all developers/Avoids favoritism
- Provides more certainty regarding study scope and cost
- The 25 trip threshold is lower than ODOT. This could require assessment of ODOT intersections where it would not otherwise be required.
- No other jurisdiction uses a 1,000 foot study range. This existing requirement is far below typical requirements in other jurisdictions.
 - Bend: 15 trips per lane group (Bend Development Code 4.7)
 - Redmond: 25 total entering vehicles

- ODOT: 50 total entering vehicles
 - Deschutes County: 25 total entering vehicles (Deschutes County Code 17.16.115)
 - Washington County uses a 10% segment impact to intersections identified on the Safety priority system
 - Vancouver uses 10-15 total entering vehicles for non-concurrency corridor intersections (City maintains its own models and conducts its own assessment of key corridors)
- Provides a better assessment of the actual impacts of development on the surrounding roadway network to show that significant unmitigated impacts are not occurring.

City of Prineville Minor TSP Amendment

Proposed Amendment to the Transportation Systems Plan (TSP)

Departments: Planning & Public Works

Staff: Scott Edelman

Overview:

The City of Prineville updated its Transportation Systems Plan (TSP) in 2006. An important aspect of reviewing any development in the city is the impact it would have on the city's transportation system. A critical tool for reviewing the traffic impact is a traffic impact analysis (TIA) provided by the applicant. The 2006 TSP only allows the city to require a TIA that evaluates intersections within 1000 feet of a development, regardless of the impact on intersections beyond this distance. This is a significant concern to the city as this is less than a fifth of a mile and any major development will have impacts on the transportation system well beyond, many could potentially impact intersections citywide. Without the tool to require review and, if necessary, improvement of all impacted intersections, city taxpayers will eventually have to pay for these development impacts.

City staff proposes to eliminate the 1000 foot limitation and require a TIA to include any intersection that meets one of the following thresholds: an increase of 20 peak hour trips, an increase of 200 average daily trips, or a 10% overall increase in trips at that intersection. This proposal is consistent with ODOT policies as well as policies of other cities in Central Oregon, although the thresholds are different:

- ODOT requires review of any intersection that adds 50 peak hour trips, 300 average daily trips or a 25% total increase in trips on an intersection.
- Redmond requires review of any intersection that adds 25 peak hour trips
- Bend requires review of any intersection that adds 15 peak hour trips per lane

The proposed policy is slightly stricter than Redmond's policy but slightly more lenient than in Bend. It is expected that the city's policy would be stricter than ODOT's as all of the city's intersections are urban intersections while ODOT's highways include both urban and rural intersections.

For clarification, requiring a TIA on any given intersection does not necessarily require an applicant to make improvements to that intersection. Improvements would only be required if the TIA demonstrates that improvements are necessary to avoid the intersection failing (or failing to a greater extent) as a result of the development.

Planning Commission Recommendation:

The Prineville Planning Commission reviewed the proposed amendment to the TSP through a public hearing at their regular meeting on November 17. The hearing was advertised in accordance with the procedures set forth in the Prineville Code but there were not citizens present. The Planning Commission voted unanimously to recommend approval of this ordinance.

Current Text:

The following are three of the existing criteria in the Prineville TSP, Appendix A, section VII, City of Prineville Traffic Impact Analysis (TIA) – Development Requirements Policy:

2.1 Impact Analysis Study Area

The impact analysis study area shall include the frontage of the property and all access points. The area shall also include any intersection within 1000 feet of the site that would experience an increase of at least 200 vehicle trips per day.

2.6 Trip Distribution

Trips should be distributed based on current traffic turning movements and may be adjusted to reflect future, financially assured, transportation system connections. Trips should be distributed out one 1000 feet from the site, and down to 20 Peak Hour trips.

2.8 Traffic Impact Analysis Reports

Traffic Impact Analysis reports shall be prepared consistent with this policy, at the expense of the developer, meeting the requirements described herein. Trip generation letters may be provided in lieu of Traffic Impact Analysis reports for applications to demonstrate that they generate less than 200 trips per day, and verify that the site access driveways meets sight distance, operations and safety requirements.

Proposed Amended Text:

Proposed text amendment TSP 2009-01 would amend these criteria as follows (full amended text of Appendix A, Section VII attached):

2.1 Impact Analysis Study Area

The impact analysis study area shall include the frontage of the property and all access points. The area shall also include any intersection that meets any of the following thresholds: addition of 20 peak hour trips; addition of 200 average daily trips (ADT); or a 10 percent increase in total trips

2.6 Trip Distribution

Trips should be distributed based on current traffic turning movements and may be adjusted to reflect future, financially assured, transportation system connections. Trips should be distributed out to any intersection that meets any of the following thresholds: addition of 20 peak hour trips; addition of 200 average daily trips (ADT); or a 10 percent increase in total trips.

2.8 Traffic Impact Analysis Reports

Traffic Impact Analysis reports shall be prepared consistent with this policy, at the expense of the developer, meeting the requirements described herein. Trip generation letters may be provided in lieu of Traffic Impact Analysis reports for applications to demonstrate that they do not exceed any of the thresholds listed under 2.6 above, and verify that the site access driveways meets sight distance, operations and safety requirements.

Exhibits:

Exhibit A – Proposed ordinance amending the TSP

City of Prineville

ORDINANCE NO. 1167

AN ORDINANCE AMENDING APPENDIX A OF THE PRINEVILLE
TRANSPORTATION SYSTEMS PLAN

THE PEOPLE OF THE CITY OF PRINEVILLE ORDAIN AS FOLLOWS:

Appendix A, section VII of the Prineville Transportation Systems Plan is amended to read as follows:

VII. City of Prineville Traffic Impact Analysis (TIA) – Development Requirements Policy

The City of Prineville recently adopted and now administers requirements for traffic studies.

*City of Prineville
Traffic Impact Analysis (TIA) - Development Requirements Policy*

1. Purpose and Intent

The policy applies to new development, expansions to existing development and changes in use of existing development going through the City's land use approval process. The Traffic Impact Analysis (TIA) shall assist City staff in assessing the transportation system's ability to serve the development.

The transportation system, for purposes of this policy, is considered to be the system created by all individual elements that combine to move people and goods, including street rights of way, roadways, intersections, sidewalks, bike lanes, trails and transit system components within the City.

It shall be the responsibility of the developer to generate the TIA and submit it with the land use planning application. The TIA will be used by City staff to:

- *Evaluate site access and circulation,*
- *Evaluate the ability of the roadway system to support the proposed development,*
- *Determine specific on-site and off-site transportation system mitigation requirements,*
and
- *Determine the development's share of future roadway improvements.*

2. Guidelines

All Traffic Impact Analyses performed under this policy, within the City, shall be conducted under the direction of a registered professional engineer. The final report shall be stamped and signed by the registered Engineer responsible for the document. The Engineer's license shall be valid in the State of Oregon. Engineers performing each study shall discuss study requirements (trip generation, trip distribution, growth rates, e.g.) with the City to confirm each of these elements prior to completing the study.

2.1. Impact Analysis Study Area

The impact analysis study area shall include the frontage of the property and all access points. The area shall also include any intersection that meets any of the following thresholds: addition

of 20 peak hour trips; addition of 200 average daily trips (ADT); or a 10 percent increase in total trips.

2.1.1. Supplemental study issues may be identified by other affected jurisdictions (e.g., ODOT and Crook County) and will need to be addressed.

2.1.2. Projects that distribute trips to a residential local street and are projected to increase volumes on that street by 25% or more should propose traffic calming device designs and techniques that meet City approval. This traffic calming may be required through the land use decision and may take the form of cash payment for future installation of devices.

2.2. Study Time of Day/Day of Week

Analyses should be performed for the PM Peak hour of the transportation system. However, certain applications may also be required to study the peak hour of the proposed generator or the peak hour of a nearby major trip generator (school, e.g.) at the discretion of the City.

2.3. Study Time Frames

The analysis shall include the following study time frames:

- Existing Traffic,
- Existing traffic plus project traffic at buildout, and at the end of each completed phase. Five-year forecast after development of all phases of project. (Results of analyses performed for the 5-year projections are to be used by the City in development of the City's Capital Improvements Program.)

If a zone change that requires an amendment to the City's Comprehensive Plan/City's General Plan is an element of the land use proposal, then, an analysis shall be performed in keeping with Oregon's Transportation Planning Rule, Division 12.

Existing Traffic is a field count which reflects existing transportation system conditions and has been conducted within six (6) months of the land use planning application date. If major transportation system conditions have changed since the count, then a new field count should be performed. Field counts are to be a minimum of a 2-hour turning movement count (between 4:00 and 6:00 PM). Additional hour counts may be needed to justify traffic signal warrants or all-way stop warrants. Additional counts may also be required if hours other than the PM Peak are required to be analyzed. Counts may need to be seasonally adjusted.

Background Traffic is the calculated total of a field count (Existing Traffic) plus 100 percent of the traffic from other approved, but not as yet constructed developments, plus growth related trips. Growth related trips are to be calculated by the most accurate of the following methods and approved by the City:

- based on historic counts for the area, or a minimum of three (5) percent per year.
- an interpolation between the Existing Traffic and either the City's 20 Year TSP projections or other longer term studies.
- ODOT's Transportation Planning Analysis Unit (TPAU) traffic projections for the roadway in question.

2.4. Transportation System Conditions

For analysis purposes, engineers should consider existing transportation system conditions (control type and roadway geometry) to be field conditions. However, engineers may also consider committed transportation facilities as those which include a guaranteed financing mechanism:

- City's one year Capital Improvement Program (CIP)
- County's one year Capital Improvement Program (CIP)

- ODOT's Statewide Transportation Improvement Program (STIP) (two years are committed)
- Private projects.

Examples of private projects with guaranteed financing mechanisms include those for which a construction bond has been provided or for which a local improvement district has been fully formed by the City Council. The City shall make the final determination as to whether a private project may be considered as a "committed facility" for purposes of traffic impact analysis.

2.5. Trip Generation

Trip generation should coincide with the specific site use. If a specific site use is not identified and applied for at the time of the analysis, then the worse case trip generation for outright permitted uses within the zone shall be used.

Trip generation calculations are to be based on studies conducted by the Institute of Transportation Engineers (ITE) and summarized in the Trip Generation Manual, 6th Edition (or subsequent document updates). If trip rates other than those found in the Trip Generation Manual are desired to be used, the procedures in the ITE Trip Generation Handbook shall be followed and the results approved by the City.

2.6. Trip Distribution

Trips should be distributed based on current traffic turning movements and may be adjusted to reflect future, financially assured, transportation system connections. Trips should be distributed out to any intersection that meets any of the following thresholds: addition of 20 peak hour trips; addition of 200 average daily trips (ADT); or a 10 percent increase in total trips.

2.7. Safety/Crash Histories

Crash histories, when required, shall provide a three (3) year history of reported crashes. A reported crash is one with a report filed either with the Department of Motor Vehicles, Oregon State Police, Crook County Sheriff's Office, or the City Police Department. These shall be reported for all impacted intersections or at those locations requested by the City.

2.8. Traffic Impact Analysis Reports

Traffic Impact Analysis reports shall be prepared consistent with this policy, at the expense of the developer, meeting the requirements described herein. Trip generation letters may be provided in lieu of Traffic Impact Analysis reports for applications to demonstrate that they do not exceed any of the thresholds listed under 2.6 above, and verify that the site access driveways meets sight distance, operations and safety requirements.

3. Evaluation Measures & Intersection Operations

This section sets out and defines standards for intersection operations on the City's public road system. Operations should be assessed by the methods outlined in the Transportation Research Board's 2000 Highway Capacity Manual (or more current edition). In the case of roundabouts, the SIDRA model may also be used.

3.1. Operations Standards

The following standards define acceptable intersection operations. These standards shall apply for the entire peak hour.

3.1.1. Two-Way Stop Control (TWSC)

- Delay for individual lane groups less than or equal to 50 seconds, and

- Volume to capacity ratio for individual lane groups less than or equal to 1.0, and
- 95th percentile queuing less than or equal to storage length available.

3.1.2. All-Way Stop Control (AWSC)

- Delay for the intersection as a whole less than or equal to 80 seconds.

3.1.3. Roundabout

- Volume to capacity ratio for individual approaches less than or equal to 1.0.

3.1.4. Signalized Intersection

- Delay for the intersection as a whole less than or equal to 80 seconds, and
- Volume to capacity ratio for the intersection as a whole less than or equal to 1.0, and
- 95th percentile queuing less than or equal to storage length available.

3.2. Timing of Intersection Operations

As stated earlier, the transportation system should adequately serve the proposed additional trips as indicated by the above evaluation measures and operations criteria. This adequacy can be demonstrated by meeting the operations standards described above for the intersection at the time of final platting of the development or individual phases.

This concurrency requirement may be obtained by having any required mitigation constructed and in place or by creating a guaranteed funding mechanism for the mitigation to be constructed when it is shown to be physically needed in the field (Existing Traffic). This analysis may be performed on a semi-annual basis, at which time the intersection is shown to exceed the operations criteria, the improvements shall be constructed.

An intersection of higher order streets (arterials and collectors) shall be required to operate acceptably during the evaluation period. Intersections that are under the jurisdiction of the Oregon Department of Transportation shall also meet the applicable mobility standards from the Oregon Highway Plan. New development that will cause degradation below these levels shall be required to provide mitigating transportation system improvements that will restore the system, as is practical, as determined by the City.

For the operations of two-way stop controlled local streets, private streets or driveways (side streets) intersecting with a neighborhood, collector or arterial, the operations of the neighborhood, collector or arterial shall be given higher importance than the operations of the side street. If an intersection of a side street with a neighborhood, collector or arterial is shown to fall below the acceptable operations standards defined above, the evaluation should also provide a discussion of system operations from a corridor point of view, including alternate routes to controlled intersections, corridor control spacing, pedestrian crossing ability, control warrants, and safety history. Mitigations can include addition of turn lanes or turn restrictions to the side street, pedestrian crossing improvements or status quo if safety is determined to be adequate.

Nothing in this policy diminishes the obligation of an applicant to contribute a proportional share toward the costs of the Master Plan improvement that will eventually be needed to increase the capacity of the affected facility(ies) to handle traffic volumes anticipated at build-out.

3.3. Mitigation

Incremental improvements may be considered for mitigation as long as the safety of an intersection is not compromised. Consecutive incremental improvements should build upon themselves, contributing to the ultimate intersection geometrics and operations. That is,

improvements should be constructed from the centerline of the roadway out. Improvements must bring the intersection back into acceptable operations as defined above. Any incremental transportation improvement must also accommodate bike and pedestrian movements.

Improvements may include the following:

- *Left turn pockets*
- *Increased storage lengths*
- *Right turn lanes, slip lanes*
- *Conversion of Two Way Stop Control to All Way Stop Control if warrants are met*
- *Conversion of an All Way Stop Control to a roundabout or signal if warrants are met*
- *Improved signal progression (interconnect, master controller, retiming)*
- *Create phase overlaps*
- *Add through lanes.*

Any suggested changes to signal timing must evaluate the effects to the entire network of affected signals and not just the signalized intersection in question.

The Prineville policy should be updated to reflect more current documentation (ITE Trip Generation 7th edition (2003), and the TSP volume to capacity measures.

Passed by the City Council this _____ day of December, 2009

Signed by the Mayor this _____ day of December, 2009

Mike Wendel, Mayor

ATTEST:

Steve Forrester, City Manager/Recorder