

PLANNING COMMISSION

AGENDA ITEM: 4. Sand Moratorium Study: Traffic Impacts and Road Wear

PREPARED BY: Carlos Espinosa

DATE: September 24, 2012

Summary

At the last meeting, Commissioners directed staff to create draft ordinance amendments pertaining to traffic impacts and road wear. See Attachment A for draft amendments. The amendments are largely based on a recently adopted ordinance from Olmsted County (Attachment B) and background research on similar ordinances from other jurisdictions in Minnesota (e.g. Rochester – Attachment C).

After the meeting, staff received a number of questions about the agenda item. Two significant questions are the following:

1. Would an addition to an existing business trigger an impact analysis?
2. What is the appropriate scope of the impact analysis and road use agreement?

The attached ordinance does not address the first question. It is staff's intent (based on Commission input at the last meeting) that any development which generates 200 or more truck trips would be subject to a traffic impact analysis. However, the definition of "development" needs to be more closely examined. Staff proposes that language to define "development" be brought to the October 8th Planning Commission meeting.

In response to question number two, the attached ordinance proposes an analysis address a haul route from a development site to City limits unless waived by the City Engineer or appropriate road authority (County Highway Engineer for county roads, and Mn/DOT District 6 District Engineer for state roads). In application, it is likely that the City Engineer or appropriate road authority would waive requirements for a traffic impact analysis and road use agreement once trucks reach a designated truck route. Therefore, in many cases, the scope of the analysis and agreement would only pertain to the stretch of road between a development and a truck route (see Attachment D). As such, it may be appropriate to narrow the scope of the draft ordinance to only the road segments used to reach a truck route. Staff is seeking the Commission's input on this topic.

Next Steps

Based on Planning Commission input, it is proposed that staff return the draft amendments to the October 8th meeting for further discussion.

Attachments:

- A) Draft Ordinance Amendments
- B) Olmsted County Ordinance
- C) City of Rochester Ordinance
- D) Example Scope of Traffic Analysis

AN ORDINANCE TO AMEND
THE CODE OF THE CITY OF
WINONA, MINNESOTA
1979

The City of Winona does ordain:

Section 1. That Section 43.01 of Chapter 43 of the City Code of Winona, Minnesota, 1979, which Section sets forth “Definitions” of the Zoning Chapter, be amended as follows:

43.01 DEFINITIONS. For the purposes of this chapter, the following words and phrases shall have the meanings respectively ascribed to them by this section:

Haul Route: The set of public roads used for transporting materials in heavy commercial vehicles, extending from the site access to City limits.

Heavy Commercial Vehicle: Any vehicle with a gross vehicle weight rating over 26,000 pounds.

Road Use Agreement: An agreement between a developer or property owner and a road authority identifying the road improvements, road impacts, and impact mitigation and remediation measures necessary to preserve the condition of road infrastructure and to make such improvements as may be necessary to handle the volume, weight, size, turning radius, and other attributes of the truck traffic generated by a land use.

Section 2. That Chapter 43 of said Code, which Chapter is entitled “Zoning”, be amended by adding thereto the following Article:

ARTICLE XVIII. TRANSPORTATION IMPACT ANALYSES AND ROAD USE
AGREEMENTS

43.88 PURPOSE.

- (a) Purpose and Intent: The intent of this article is to provide the information necessary to allow decision-makers to assess the transportation implications of traffic associated with a proposed development in relation to safety, the existing and proposed capacity and condition of the street system, congestion, and the quality of life of neighboring residents. This article establishes requirements for the analysis and evaluation of

transportation impacts associated with proposed developments. Traffic studies should identify what improvements, if any, are needed to:

- (1) insure safe ingress to and egress from a site;
- (2) maintain adequate street capacity on public streets serving the development;
- (3) ensure safe and reasonable traffic operating conditions on streets and at intersections;
- (4) avoid creation of or mitigate existing hazardous traffic conditions;
- (5) minimize the impact of non-residential traffic on residential uses in the vicinity; and
- (6) protect the public investment in the existing street system.

43.89 GENERAL PROVISIONS

- (a) When Required: A Transportation Impact Analysis and Road Use Agreement shall be required for any development after 1/1/2013 which will generate 200 or more heavy vehicle trips per day at maximum daily operating capacity.
- (b) Jurisdiction: The City Engineer shall have the final authority for determining the need and adequacy of Transportation Impact Analyses and Road Use Agreements. The City Engineer or other Road Authority Representative (County Highway Engineer and/or District Engineer of Mn/DOT District 6) may waive the requirement for a Transportation Impact Analysis and/or Road Use Agreement.
- (c) Applicability: A Transportation Impact Analysis shall apply to haul routes used for transporting materials in heavy commercial vehicles, extending from the site access to City limits unless waived by the appropriate Road Authority Representative.
- (d) Application: No development application subject to a Transportation Impact Analysis or Road Use Agreement shall be considered complete unless accompanied by an appropriate traffic study except if a waiver has been granted.
- (e) Findings: A Transportation Impact Analysis shall find the following:
 - (1) The traffic generated by the proposed use can be safely accommodated on proposed haul routes and will not need to be upgraded or improved in order to handle the additional traffic generated by the use; or
 - (2) A Road Use Agreement is recommended specifying responsibility for improving and maintaining the roads of affected jurisdictions

including remediation of damaged roads and specification of designated haul routes to limit truck traffic to structurally adequate corridors.

43.90 TRANSPORTATION IMPACT ANALYSES

(a) Contents: A Transportation Impact Analysis shall contain the following information:

- (1) An analysis of existing traffic on road segments and intersections along the haul route.
- (2) Traffic forecasts for road segments and intersections along the haul route. Such forecasts shall be based on the maximum trips per day.
- (3) An analysis of the impact of the proposed development on residential streets in the vicinity of the site to identify any potential adverse effects of the proposed development and mitigation measures to address any impacts. Examples of possible effects include, but are not limited to, non-residential traffic impacts on residential neighborhoods, schools, pedestrian and bicyclist safety hazards (especially at points where haul routes intersect with facilities having high levels of pedestrian or bicycle traffic), traffic noise, or turning movement conflicts with other driveways or local access roads.
- (4) An analysis of level of service for intersections on the haul route.
- (5) An analysis of intersection sight distances.
- (6) An analysis of the haul route's structural ability to handle trucks. Such analysis shall include an analysis of existing and projected cumulative equivalent single axle loads (ESALs) using the Minnesota Local Road Research Board (LRRB) Pavement Impacts of Large Traffic Generators methodology. A structural analysis shall also be completed for any bridge or culvert along a public road used for a haul or access route if identified as at risk for structural failure due to increased ESAL loadings from the proposed use.
- (7) A finding that traffic impacts can either be handled by the haul route or:
 - i. A list of infrastructure improvements needed to bring the route up to commonly accepted engineering design standards and access management criteria, and/or

- ii. A list of roadbed, ride surface, or drainage improvements that are needed to increase the structural stability of roads and any substructure, superstructure or deck improvements needed to increase the structural stability of bridges and culverts.

43.91 ROAD USE AGREEMENTS

- (a) A Road Use Agreement shall be prepared for developments subject to a Transportation Impact Analysis at the discretion of the City Engineer. Such agreement shall be developed in response to finding of a the Transportation Impact Analysis and shall address the following:
 - (1) Responsibility for upgrading
 - a. Pavement sections, bridges, and culverts structural condition
 - b. Geometric design, including entrances, intersections, railroad and pedestrian/bicycle facility crossings, geometric design of bridges and culverts, and typical road cross-sections;
 - (2) Responsibility for exceptional maintenance attributable to the use, estimated based on Minnesota Local Road Research Board (LRRB) Pavement Impacts of Large Traffic Generators methodology;
 - (3) Responsibility for clean-up of spillage and public road dust control along haul routes;
 - (4) Establishment of financial accounts to address costs associated with upgrading and exceptional maintenance costs;
 - (5) Delineation of haul routes;
 - (6) Schedules of operation and hauling, including construction operations;
 - (7) Methods to verify and report type, number, and weight of truck loads;
 - (8) Emergency conditions creating a need for immediate road repairs or road closing;
 - (9) Required insurance; and
 - (10) Remedies and enforcement measures.

Section 3. That this ordinance shall take effect upon its publication.

Dated this _____ day of _____, 2012.

Mayor

Attested By:

City Clerk

DRAFT

Add to 2.02 Definitions

Haul Route: The set of public roads used for transporting materials in heavy commercial vehicles, extending from the access onto the first abutting public road of the property from which the heavy vehicle traffic originates, to the final destination, or to a state highway constructed to a ten-ton standard that leads to the final destination.

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Road Use Agreement: An agreement between a developer or property owner and a road authority identifying the road improvements, road impacts, and impact mitigation and remediation measures necessary to preserve the condition of road infrastructure and to make such improvements as may be necessary to handle the volume, weight, size, turning radius, and other attributes of the truck traffic generated by a land use. The Agreement may address, but is not limited to, any of the following road infrastructure matters:

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1. Responsibility for upgrading
 - a. Pavement sections, bridges, and culverts structural condition
 - b. Geometric design, including entrances, intersections, railroad and pedestrian/bicycle facility crossings, geometric design of bridges and culverts, and typical road cross-sections;
2. Responsibility for exceptional maintenance attributable to the use, estimated based on Minnesota Local Road Research Board (LRRB) Pavement Impacts of Large Traffic Generators methodology;
3. Responsibility for clean-up of spillage and public road dust control along haul routes;
4. Establishment of financial accounts to address costs associated with upgrading and exceptional maintenance costs;
5. Delineation of haul routes;
6. Schedules of operation and hauling, including construction operations;
7. Methods to verify and report type, number, and weight of truck loads;
8. Emergency conditions creating a need for immediate road repairs or road closing;
9. Required insurance; and
10. Remedies and enforcement measures.

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Section 4.02

A. Criteria for Granting Conditional Uses: In granting a conditional use, the Planning Advisory Commission shall consider the effect of the proposed use on the Comprehensive Plan and upon the health, safety and general welfare of occupants of surrounding lands. Among other things, the Commission shall consider the following:

1. The proposed use will not be injurious to the use and enjoyment of other property in the neighborhood and will not significantly diminish or impair the values of such property.
2. The proposed use will not impede the normal and orderly development and improvements of the surrounding property.
3. Adequate utilities, parking, drainage and other necessary facilities will be provided.

4. Adequate ingress and egress will be provided to minimize traffic congestion in the public streets.
5. Based on a transportation impact analysis, if required under Section 10.48 of this Ordinance, or (if the requirement for a transportation impact analysis has been waived) considering the recommendation of the responsible road authority engineer as defined in that Section, either
 - the traffic generated by the proposed use can be safely accommodated on existing or planned street systems and the existing public roads providing access to the site will not need to be upgraded or improved by the Township or County or other affected jurisdictions in order to handle the additional traffic generated by the use; or
 - a road use agreement has been entered into specifying responsibility for improving and maintaining the roads of affected jurisdictions including remediation of damaged roads and specification of designated haul routes to limit truck traffic to structurally adequate corridors.
6. Adequate measures have been taken or proposed to prevent or control offensive odor, fumes, dust, noise, vibration, or lighting which would otherwise disturb the use of neighboring property.
7. The special criteria or requirements indicated in Article X, General Regulations, are complied with;
8. The water and sanitary systems are or would be adequate to prevent disease, contamination and unsanitary conditions; and
9. The proposed use will comply with other applicable county, township ordinances, state and federal permits.

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Section 10.48 TRANSPORTATION IMPACT REPORTS:

- A. **Purpose:** The intent of this section is to provide the information necessary to allow decision-makers to assess the transportation implications of traffic associated with a proposed development in relation to safety, the existing and proposed capacity and condition of the street system, congestion, and the quality of life of neighboring residents. This section establishes requirements for the analysis and evaluation of transportation impacts associated with proposed developments. Traffic studies should identify what improvements, if any, are needed to:
1. insure safe ingress to and egress from a site;
 2. maintain adequate street capacity on public streets serving the development;
 3. ensure safe and reasonable traffic operating conditions on streets and at intersections in the vicinity of a proposed development;
 4. avoid creation of or mitigate existing hazardous traffic conditions;
 5. minimize the impact of non-residential traffic on residential uses in the vicinity; and

6. protect the public investment in the existing street system.

- B. **When Required:** Except for temporary uses associated with road construction, a development application for a use with any of the following traffic or land use characteristics shall be accompanied by a transportation impact report prepared consistent with the provisions of this section unless the requirement is waived by the relevant road authority under the provisions of 10.48.C. No application shall be considered complete unless accompanied by such a report if required.

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1. Uses that generate more than 500 vehicle trips per day according to the Institute of Transportation Engineers most recent Trip Generation Manual or 30 heavy vehicle trips per day based on the best available data. Where the development proposed cannot be adequately described by ITE, trip generation should be estimated based on data collected from other developments of similar size and scope, with a minimum of three independent data samples provided.
2. Proposed land use plan amendments
 - i. from the Resource Protection designation to the Suburban Development, Potential Suburban, Suburban Mixed Use, or Rural Mixed Use designations; or
 - ii. from the Potential Suburban designation to the Suburban Development or Suburban Mixed Use designations; or
 - iii. from any designation to the Urban Service Area designation.

Transportation impact studies for land use plan amendments to the Urban Service Area designation shall identify the road system investments to the County and State road systems necessary to serve anticipated urban development in the Urban Service Area.

3. Zone change requests to zoning districts which include uses (other than conditional uses) whose trip generation exceeds 500 total vehicle trips per day according to the Institute of Transportation Engineers most recent Trip Generation Manual , or which may generate more than 30 heavy vehicle trips per day according to the best available truck trip generation information.
4. Residential General Development Plans with 25 or more dwellings whose primary access beyond the limits of the development will be a gravel surfaced road, or 50 or more dwellings where the primary access beyond the limits of the development will be a paved road.
5. Developments having direct access onto existing or planned Interstate, Interregional, Strategic Arterial or Major Arterial highway as designated by the adopted Functional Designation Map in the ROCOG Long Range Transportation Plan.

C. **Jurisdictional Responsibility:** The Engineer of the road authority for the access road shall have the final authority for determining the need and adequacy of the Transportation Impact Report, except that

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1. If a County road is part of any of the identified haul routes, the County Engineer shall have the final authority for determining the need for and adequacy of a Transportation Impact Report for that part of the haul route; and

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2. Any road authority having authority over a portion of a haul route may require a road use agreement covering that part of the haul route, whether or not that road authority has jurisdictional responsibility for determining the need for and adequacy of the Transportation Impact Report.

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D. **Waiver:** The requirement for a Transportation Impact Report may be waived by the Road Authority Representative with responsibility for the public access road, after consulting with Road Authority Representatives with roads comprising any designated haul routes (the County Highway Engineer for affected County roads in Olmsted County, the County Highway Engineer for affected County roads in adjacent counties, the City Engineer for an affected City, the District Engineer of Mn/DOT District 6 for State or Federal Highways, or the Town Board or its Designee for township roads), if it is determined

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1. that a Transportation Impact Report is not necessary to determine needed road improvements on access roads or the portions of haul routes under their jurisdiction, and that for access roads and the intersections along haul routes under their jurisdiction, no unsafe or hazardous conditions will be created by the development as proposed; or

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2. the applicant has provided performance bonds or other guarantees providing adequate assurance that anticipated damage to roads can be mitigated and/or that unsafe conditions can be mitigated or avoided; or

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3. the use is a seasonal use with peak daily trip generation that exceeds the thresholds in Section B, but whose annual average trip generation does not pose a risk to the road infrastructure or traffic safety of the facility and adjacent road network based on evaluation of the cumulative pavement impact expected and geometric design of the roadway.

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This waiver shall not preempt the authority of the Minnesota Department of Transportation to require a traffic study under the requirements of the State Access Management Guidelines on any state or federal highway nor the authority of an affected jurisdiction to require a traffic study under an applicable access management ordinance.

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E. **Complete Application:** No application for a development identified as requiring a Transportation Impact Report will be determined to be complete unless it is accompanied by an appropriate traffic study except if a waiver has been granted by the road authority Engineer after consultation with affected Road Authority Representatives.

F. Contents: All roads and intersections serving a proposed use must be determined to be capable of handling the estimated share of projected traffic generated by the use. A Transportation Impact Report shall include the following:

1. An analysis of traffic operations and intersection improvement needs at all site access points under projected traffic loads. This operational evaluation shall include on-site circulation as it may affect access, on-site and off-site turning and acceleration/deceleration lanes and required vehicle storage, the potential need for signalization, medians, streetlights, pavement striping, or other traffic control, review of sight distance, turning radii, and other intersection safety aspects; and review of shoulder width and condition. The proposed access plan should be consistent with the standards of the Olmsted County Access Management Ordinance for Olmsted County roads or with other Access Management regulations that may apply for other roads whether within Olmsted County under the authority of other jurisdictions, or outside Olmsted County.
2. An analysis of the impact of site-generated traffic on the level of service of affected intersections and public streets in the vicinity of the site. Affected intersections are any road segment or intersection where the additional traffic volume created by the proposed development is at least 250 vehicles per day and greater than 10 percent of the current traffic volume (for road segments) or the current entering volume (for intersections). The Road Authority representative may choose to waive study of certain intersections.
3. For developments expected to generate more than 30 truck trips per day, the applicant must identify any routes to be used by trucks entering or leaving the site in as much detail as possible. For each segment of a haul route or public road used for access, the applicant must prepare
 - i. A geometrics and traffic analysis of the intersections and road segments these trucks would use to reach the year-round ten ton route system from the site, addressing structural capacity, impacts of slow moving vehicles on roadway safety, adequacy of sight distance at intersections and railroad crossings, and the need for intersection operation improvements to accommodate truck traffic; and
 - ii. To determine structural adequacy, the applicant must prepare an analysis of existing and projected cumulative equivalent single axle loads (ESALs) using the Minnesota Local Road Research Board (LRRB) Pavement Impacts of Large Traffic Generators methodology; and
 - iii. To determine adequacy of bridges and culverts, a structural analysis shall be completed for any bridge or culvert along a public road used for a haul or access route if identified as at risk for structural failure due to increased ESAL loadings from the proposed use.
 - iv. For any public road used for access or haul routes identified as part of the application, if the ratio of projected equivalent single axle loads with the development to the projected ESALs without the development of 1.2 or greater over the projected life of the development, the

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applicant must prepare a mitigation plan addressing measures to mitigate or prevent road damage.

- v. Analyses of structural adequacy must be conducted for any public road used as a haul route regardless of road authority or of location within Olmsted County or in an adjacent county, unless waived by the relevant road authority.

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- 4. An analysis of the impact of the proposed development on residential streets in the vicinity of the site to identify any potential adverse effects of the proposed development and mitigation measures to address any impacts. Examples of possible effects include, but are not limited to, non-residential traffic impacts on residential neighborhoods, pedestrian and bicyclist safety hazards (especially at points where haul routes intersect with facilities having high levels of pedestrian or bicycle traffic), traffic noise, or turning movement conflicts with other driveways or local access roads.

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- 5. A detailed list of the transportation infrastructure improvements needed to meet access management standards of the applicable road authority (or those of the Olmsted County Access Management Ordinance, if a road authority has not adopted an Access Management Ordinance) and to mitigate the impact of the development and estimated costs of these improvements.

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- 6. A list of roadbed, ride surface, or drainage improvements that are needed to increase the structural stability of roads and any substructure, superstructure or deck improvements needed to increase the structural stability of bridges and culverts.

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- G. **Preparation:** The applicant may choose to have a transportation study prepared by a Traffic or Transportation Engineer, or other qualified professional with experience in the preparation of such analysis, or may choose to have the Zoning Administrator prepare a report once the development application is submitted. At his or her discretion, the Zoning Administrator may decline to prepare the study. When the applicant chooses to have the Zoning Administrator prepare the study, and the Zoning Administrator agrees to prepare the study, the application triggering the need for a TIR shall be considered incomplete until 45 days after the request is made to the Zoning Administrator to complete the TIR, in order to provide time to prepare the study. The applicant shall be responsible for the costs of preparation of the transportation study incurred by the Zoning Administrator, as identified in the Fee Schedule.

Comment [p1]: Impact of 15.99 is now addressed in the opening paragraph (qv).

- H. **Traffic Service Standards:** The standards for traffic service that shall be used to evaluate the findings of traffic impact reports are:

- 1. Capacity: The following table shall be used to assess the impact of the proposed development on the capacity of the roadway system. Development traffic when combined with projected 20 year background traffic growth shall not cause the volume to capacity (V/C) ratio to be exceeded. The listed ADT (Average Daily Traffic) capacity should be used

as a first test to determine whether V/C limits might be approached; if so, a more detailed analysis of V/C should be completed using methods in the Highway Capacity Manual or similar techniques.

Land Use Area ⁽¹⁾	V/C Ratio	Roadway Type	Road Character	ADT Capacity
Rural	0.55	2 Lane Highway	Level with shoulders	4800
			Rolling or Level with limited or no shoulders	2900
Urban Influence	0.60	2 Lane Highway	Level	6500
			Rolling or Level with limited or no shoulders	5000
Developing Area	0.70	2 Lane Highway	Level	8700
			Rolling or Level with limited or no shoulders	7100
All Areas	NA	Local Collector Road	All	1200
All Areas	NA	Local Residential Road	All	800

(1) Land Use Areas are defined in Chapter 4A of the ROCOG Long Range Transportation Plan

2. Level of Service: The Level of Service Standard for all highway corridor operations (including freeway mainline, merging areas and ramp junctions, and arterial and collector intersections or corridors) should meet the Level of Service standards listed in the table below. Level of Service should be calculated using the Highway Capacity manual or equivalent techniques. Where the existing Level of Service is below these standards, a transportation impact report shall identify those improvements needed to maintain the existing level of service, and what additional improvements would be needed to raise the level of service to the standards indicated.

Level of Service

Land Use "Zone" (ROCOG LRTP)	Land Use "Area"	Level of Service
Developing Areas	Small cities	Mid C
	Rochester	C/D Midpoint
Urban Influence Area	Rochester	B/C Midpoint
Rural Area	All	B/C Midpoint

3. Number of Access Points: The number of access points shall be the minimum needed to provide adequate access capacity for the site. The spacing of access points shall be consistent with the road authority's access management ordinance. If the road authority has not adopted an access management ordinance, then there shall be 500 feet, or the maximum available distance if less than 500 feet, between access points and the nearest adjoining intersection or driveway on adjacent parcels and 200 feet between driveways on the same parcel.

4. Residential Street Impact: Non-residential development shall contribute no more than 20% of the traffic on any local street for which residentially zoned property makes up more than 50% of the street frontage.
5. Vehicle Storage: The capacity of storage bays and auxiliary lanes for turning traffic shall be adequate to insure turning traffic will not interfere with through traffic flows on any public street.
6. Internal Circulation: On-site vehicle circulation and parking patterns shall be designed so as not to interfere with the flow of traffic on any public street and shall accommodate all anticipated types of site traffic.
7. Safety: Access points shall be located and designed to provide for adequate intersection and stopping sight distance and appropriate facilities to accommodate acceleration and deceleration of site traffic. The geometric design of access points shall meet the standards of the Olmsted County Access Management Ordinance, or the Access Management Ordinance adopted by the Road Authority, if applicable.

CHAPTER 61 - LOT AND SITE DEVELOPMENT APPROVAL PROCEDURES

61.520 TRAFFIC IMPACT STUDIES:

The intent of this section is to provide the information necessary to allow decision-makers to assess the transportation implications of site-generated traffic associated with a proposed development. The goal is to address the transportation-related issues associated with development proposals that may be of concern to neighboring residents, business owners and property owners, and to provide a basis for negotiation regarding improvements and funding participation in conjunction with an application for development. The isolated and cumulative impact of proposed development needs to be understood in relation to the existing and proposed capacity of the street system, to ensure that traffic congestion will be maintained at reasonable levels so as not to hinder the passage of public safety vehicles, degrade the quality of life, or contribute to hazardous traffic conditions. This section establishes requirements for the analysis and evaluation of transportation impacts associated with proposed developments.

61.521

Purpose: The purpose of the Traffic Impact Study is to identify the impacts on capacity, level of service and safety which are likely to be created by a proposed development. Traffic studies should identify what improvements, if any, are needed to:

1. ensure safe ingress to and egress from a site;
2. maintain adequate street capacity on public streets serving the development;
3. ensure safe and reasonable traffic operating conditions on streets and at intersections in the vicinity of a proposed development;
4. avoid creation of or mitigate existing hazardous traffic conditions;
5. minimize the impact of non-residential traffic on residential neighborhoods in the community; and
6. protect the substantial public investment in the existing street system.

61.522

Types of Studies: Traffic Impact Studies may be required at several stages in the development process. No application for development will be accepted without an appropriate traffic study unless a waiver has been obtained from the City Engineer. The types of traffic studies required under the ordinance are:

1. A Rezoning Traffic Analysis will be required for certain Rezoning and Land Use Plan amendment requests. The purpose of these studies will be to evaluate whether adequate transportation capacity exists or will be available within a reasonable time period to safely and conveniently accommodate proposed uses permitted under the requested land use or zoning classification. For purposes of this subsection, the Analysis shall address those standards listed at Section 61.526 (1), (3) and (4), assuming the area is fully developed.
2. A Traffic Impact Report will be required for certain permitted and Conditional Uses, Land Subdivisions and General Development Plans exceeding specific trip generation thresholds. The purpose of a Traffic Impact Report will be to supplement the rezoning traffic analysis as necessary to:
 - a. evaluate traffic operations and impacts at site access points under projected traffic loads;
 - b. evaluate the impact of site-generated traffic on affected intersections in the vicinity of the development site;
 - c. evaluate the impact of site-generated traffic on the quality of traffic flow on public streets located in the vicinity of the site;
 - d. evaluate the impact of the proposed development on residential streets in the vicinity of the site;
 - e. ensure that site access and other improvements needed to mitigate the traffic impact of the development meet commonly accepted engineering design standards and access management criteria;
 - f. ensure that adequate facilities for pedestrians, transit users and bicyclists have been provided;
 - g. identify transportation infrastructure needs and related costs created by the development.
3. All Land Subdivisions and General Development Plans which do not require a Traffic Impact Report will be required to complete a Traffic Design Analysis. The purpose of a Traffic Design Analysis will be to:
 - a. ensure that the proposed street layout is consistent with the Public Roadway Design Standards of Section 64.220;
 - b. ensure the proper design and spacing of site access points and identify where limitations on access should be established;
 - c. ensure that potential safety problems have been properly evaluated and addressed;
 - d. ensure that internal circulation patterns will not interfere with traffic flow on existing public streets;
 - e. ensure that appropriate facilities for pedestrians, transit users and bicyclists have been provided in plans for the development; and
 - f. identify the transportation infrastructure needs and related costs created by the development.

61.523

Applicability: Subdivision 1. Traffic Impact Studies shall be required for any Land Use Plan Amendment, amendment to the Zoning Map, Land Subdivision Permit, Conditional Use Permit, Zoning Certificate, General Development Plan or Site Planning Permit under the conditions described in this section:

Subd. 2. A Rezoning Traffic Analysis shall be required for:

- A. A proposed rezoning that could generate 100 or more directional trips during the peak hour or at least 1000 more trips per day than the most intensive use that could be developed under existing zoning; or
- B. A proposed rezoning on a site located along, or which has the potential to take access within 500 feet of a corridor identified as a freeway or expressway on the Thoroughfare Plan; or
- C. A proposed amendment to the Land Use Plan involving more than one acre which would permit uses generating higher traffic than the existing Land Use Plan designation; or
- D. Proposed development for a 3.5-acre or larger site that is zoned B-4, M-1 or M-2.
- E. A proposed rezoning to the M-3 zoning district consisting of seven or more acres.

Subd. 3. Where a Rezoning Traffic Analysis is required, the time deadline provision of Minn. Stat. Section 15.99 begins after the Zoning Administrator determines the Analysis is complete and satisfies the requirements of this ordinance. If the Zoning Administrator determines the Analysis is not complete or does not satisfy the requirements of this ordinance, notice of such determination and the reasons supporting it must be provided to the applicant within ten business days of the receipt of the analysis.

Subd. 4. A Traffic Impact Report shall be required when a proposed conditional use, subdivision, general development plan, or site development plan is:

- A. Of a land use type which has an average trip generation rate of 125 trips per acre per day or greater, according to most current versions of the ITE Trip Generation Informational Report or comparable research data published by a public agency or institution, and which will generate, based on the size of the development, a 750 or more average daily trips; or
- B. Designed so as to concentrate 1,500 or more average daily trips through a single access point; or
- C. Designed so that it utilizes an at-grade access opening onto an existing or proposed freeway or expressway as indicated on the adopted Thoroughfare Plan.
- D. For property zoned B-4, M-1, or M-2 consisting of 3.6 acres or more.
- E. For property zoned M-3 consisting of seven or more acres.

Subd. 5. Traffic Design Analysis shall be required for any Land Subdivision or General Development Plan for which a Traffic Impact Report is not required. Studies completed at an early stage of development may need to be updated to include more detail as development plans become more specific or approval actions result in the reformulation of plans. As part of the review for determining whether a development application is complete, proposals for which an earlier traffic analysis study has been completed will be reviewed to insure consistency with previous approvals or to identify the need for revision or refinement of previously completed studies.

61.524

Waiver: The requirements of these Sections 61.520 through 61.529 for a Traffic Impact Study shall be waived by the City Engineer when it is the City Engineer determines that such report is not necessary to determine needed road improvements or that no unsafe or hazardous conditions will be created by the development as proposed. Developments in the Central Development Core District which are not required to provide on-site off-street parking are exempt from the requirements of these sections 61.520 through 61.529.

61.525

Preparation: The applicant may choose to have a traffic study prepared by a qualified professional with experience in the preparation of such analysis, or may choose to have the Zoning Administrator prepare a report once the development application is submitted. Where the applicant chooses to have the Zoning Administrator prepare the study, the time frame for the Zoning Administrator to render a decision in the Type I or Type II Review Procedure, or to prepare a report for the designated hearing body in the Type III Review Procedure, shall be extended by 45 days to permit time to prepare the study. The applicant shall be responsible for the costs of preparation of the traffic study incurred by the Zoning Administrator, as identified in Section 60.175.

61.526

Traffic Service Standards: The standards for traffic service that shall be used to evaluate the findings of traffic impact studies are:

1. **Capacity:** A volume to capacity (V/C) ratio of 0.80 shall not be consistently exceeded on any freeway or expressway as designated on the Thoroughfare Plan and a V/C ratio of 0.90 shall not be consistently exceeded on any arterial or collector street as designated on the Thoroughfare Plan. Consistently means that the V/C ratios are exceeded based on average daily peak hour traffic counts, projections or estimates.
2. **Level of Service :** For corridors including mainline, merging areas and ramp junctions, a Level of Service C shall be maintained on any expressway, freeway or arterial and a Level of Service D on any other designated non-local street on

the Thoroughfare Plan. At all intersections, a Level of Service C shall be maintained on any arterial or higher order street and a Level of Service D on any other non-residential street. Individual movements within any intersection shall be maintained at or above a Level of Service E. Where the existing Level of Service is below these standards, a traffic impact study shall identify those improvements needed to maintain the existing level of service, and what additional improvements would be needed to raise the level of service to the standards indicated.

3. **Number of Access Points:** The number of access points provided shall be the minimum needed to provide adequate access capacity for the site. Evidence of Level of Service F operations for individual public street movements at access locations is a primary indication of the need for additional access points. However, the spacing and geometric design of all access points shall be consistent with the access management criteria of Section 64.140.
4. **Residential Street Impact:** Average Daily Traffic (ADT) on residential streets shall be within the ranges spelled out in the Thoroughfare Plan for the class of street involved. No non-residential development shall increase the traffic on a residential street with at least 300 average daily trips by more than 25%, and shall contribute no more than 20% of the traffic on any street segment providing residential access.
5. **Traffic Flow and Progression:** The location of new traffic signals or proposed changes to cycle lengths or timing patterns of existing signals to meet Level of Service standards shall not interfere with the goal of achieving adequate traffic progression on major public streets in the vicinity of the development;
6. **Vehicle Storage:** The capacity of storage bays and auxiliary lanes for turning traffic shall be adequate to insure turning traffic will not interfere with through traffic flows on any public street; and
7. **Internal Circulation:** On-site vehicle circulation and parking patterns shall be designed so as not to interfere with the flow of traffic on any public street and shall accommodate all anticipated types of site traffic.
8. **Safety:** Access points shall be designed to provide for adequate sight distance and appropriate facilities to accommodate acceleration and deceleration of site traffic. Where traffic from the proposed development will impact any location with an incidence of high accident frequency, defined as one of the 5 to 10 highest accident locations in the area, the accident history should be evaluated and a determination made that the proposed site access or additional site traffic will not further aggravate the situation. It is understood that the correction of an existing off-site safety deficiency is not typically the responsibility of the developer.

61.527

Contents: A Traffic Rezoning Analysis or Traffic Impact Report shall contain information addressing the factors listed below. For a Traffic Design Analysis, the City Engineer, the ROCOG Transportation planner and the traffic engineer(s) of the

applicable road authority shall be consulted to establish the scope of the study. In general, the Traffic Design Analysis should address the standards of Section 61.522(3).

1. **Site Description:** The report shall contain illustrations and narrative that describe the characteristics of the site and adjacent land uses as well as expected development in the vicinity which will influence future traffic conditions. For a Rezoning Traffic Analysis, a description of potential uses and traffic generation to be evaluated shall be provided. For a Traffic Impact Report, a description of the proposed development including access plans, staging plans and an indication of land use and intensity, shall be provided.
2. **Study Area:** The report shall identify the geographic area under study and identify the roadway segments, critical intersections and access points to be analyzed. The focus shall be on intersections and access points adjacent to the site. Roadways or intersections within ½ mile of the site, where at least 5 percent of the existing peak hour capacity will be composed of trips generated by the proposed development shall be included in the analysis.
3. **Existing Traffic Conditions:** The report shall contain a summary of the data utilized in the study and an analysis of existing traffic conditions, including:
 - a. traffic count and turning movement information, including the source of and date when traffic count information was collected;
 - b. correction factors that were used to convert collected traffic data into representative design hour traffic volumes;
 - c. roadway characteristics, including the design configuration of existing or proposed roadways, existing traffic control measures (speed limits, traffic signals, etc.) and existing driveways and turning movement conflicts in the vicinity of the site; and
 - d. identification of the existing Level of Service for roadways and intersections without project development traffic using methods documented in the Special Report 209: Highway Capacity Manual, published by the Transportation Research Board, or comparable accepted methods of evaluation. Level of Service should be calculated for the weekday peak hour and, in the case of uses generating high levels of weekend traffic, the Saturday peak hour.
4. **Horizon Year(s) and Background Traffic Growth:** The report shall identify the horizon year(s) that were analyzed in the study, the background traffic growth factors for each horizon year, and the method and assumptions used to develop the background traffic growth. Unless otherwise approved by the City Engineer, the impact of development shall be analyzed for the year after the development is completed and 10 years after the development is completed.
5. **Time Periods to be Analyzed:** For each defined horizon year, specific time periods are to be analyzed. For most land uses, this time period will be the weekday peak hours. However, certain uses, such as major retail centers, schools or recreational uses, will have characteristic peak hours different than

that found for adjacent streets, and these unique peak hours may need to be analyzed to determine factors such as proper site access and turn lane storage requirements. The City Engineer shall be consulted for determination of what peak hours are to be studied.

6. **Trip Generation, Reduction and Distribution:** The report shall summarize the projected peak hour and average daily generation for the proposed development and illustrate the projected distribution of trips to and from the site and should identify the basis of the trip generation, reduction and distribution factors used in the study.
7. **Traffic Assignment:** The report shall identify projected design hour traffic volumes for roadway segments, intersections or driveways in the study area, with and without the proposed development, for the horizon year(s) of the study.
8. **Impact Analysis:** The report shall address the impact of projected horizon year(s) traffic volumes relative to each of the applicable traffic service standards listed in Section 61.526 and shall identify the methodology utilized to evaluate the impact. The weekday peak hour impact shall be evaluated as well as the Saturday peak hour for those uses exhibiting high levels of weekend traffic generation.
9. **Mitigation/Alternatives:** In situations where the traffic level of service standards are exceeded, the report shall evaluate each of the following alternatives for achieving the traffic service standards listed in Section 61.526:
 - a. identify where additional right of way is needed to implement mitigation strategies;
 - b. identify suggested phasing of improvements where needed to maintain compliance with traffic service standards; and
 - c. identify the anticipated cost of recommended improvements.

61.528

Process for the Review and Preparation of a Traffic Impact Study: This section provides an outline of the steps to be included in the preparation and review of a Traffic Impact Study:

1. The City Engineer and Zoning Administrator shall be consulted for assistance in determining whether a traffic impact study needs to be prepared for a proposed development application;
2. The City Engineer and Zoning Administrator shall meet with applicants to identify study issues, assumptions, horizon years and time periods to be analyzed, analysis procedures, available sources of data, past and related studies, report requirements and other topics relevant to study requirements;
3. Following initial completion of a traffic impact study report, it shall be submitted to the Zoning Administrator for distribution to the staff of all roadway jurisdictions involved in the construction and maintenance of public roadways serving the development;

4. Within ten working days, staff shall complete an initial review to determine the completeness of the study and shall provide a written summary to the applicant outlining the need for any supplemental study or analysis to adequately address the Traffic Service Standards of Section 61.526 and the purposes listed in Section 61.522. A meeting to discuss the contents and findings of the study and the need for additional study may be requested by the applicant;
5. Following a determination that the technical analysis is complete, staff shall prepare a report outlining recommendations that have been developed to address the findings and conclusions included in the study regarding the proposed development's access needs and impacts on the transportation system. Depending on the type of traffic study, presentation of recommendations to the Planning Commission and/or City Council may proceed as follows:
 - a. For a Traffic Rezoning Analysis, staff recommendations will be presented as part of staff report to the Planning Commission and City Council as part of the proceedings on a rezoning or land use plan application;
 - b. For a Traffic Impact Report, a separate report will be forwarded to the City Council for consideration of the recommendations;
 - c. For a Traffic Design Analysis, staff recommendations will be presented as part of the staff report to the Planning Commission or City Council for any Land Subdivision or General Development Plan.
6. Negotiations based on the conclusions and finding resulting from the traffic study shall be held with the City Council. A Development Agreement, detailing the applicant's responsibilities and the City's responsibilities for implementing identified mitigation measures, shall be prepared following the negotiations for action by both parties.

61.529 Report Findings:

1. If staff finds that the proposed development will not meet applicable service level standards, staff shall recommend one or more of the following actions by the public or the applicant:
 - a. Reduce the size, scale, scope or density of the development to reduce traffic generation;
 - b. Divide the project into phases and authorize only one phase at a time until traffic capacity is adequate for the next phase of development;
 - c. Dedicate right-of-way for street improvements;
 - d. Construct new streets;
 - e. Expand the capacity of existing streets;
 - f. Redesign ingress and egress to the project to reduce traffic conflicts;
 - g. Alter the use and type of development to reduce peak hour traffic;
 - h. Reduce background (existing) traffic;
 - i. Eliminate the potential for additional traffic generation from undeveloped properties in the vicinity of the proposed development;

- j. Integrate design components (e.g., pedestrian and bicycle paths or transit improvements) to reduce vehicular trip generation;
 - k. Implement traffic demand management strategies (e.g. car or van pool programs, flex time, staggered work hours, tele-commuting, etc.) to reduce vehicular trip generation;
 - l. Recommend denial of the application for development for which the traffic study is submitted.
2. The Planning Commission may recommend, and the City Council may adopt by 5/7ths vote, a statement of principle partially or fully exempting a project from meeting the Traffic Service Standards of Section 61.526, where it finds that the social and/or economic benefits of the project outweigh the adverse impacts of the project.
 3. The City Council may, by 5/7ths vote, temporarily exempt certain street locations from some or all of the Traffic Service Standards of 61.526, owing to special circumstances that make it undesirable or not feasible to provide further capacity improvements at these locations. These special circumstances may include a finding that there would be significant negative fiscal, economic, social or environmental impact from further construction, or that a significant portion of the traffic is generated by development outside the control of the city. However, where these conditions exist, the City will make every effort to design alternate improvements, and development projects affecting these areas may be required to implement traffic demand management programs and other measures to reduce the impact on these locations as much as possible.

City of Winona

September 2012

LEGEND

- Truck Routes
- Roads
- City Limits

H = HAUL ROUTE

LOCAL TRUCK ROUTE

LOCAL NON-TRUCK ROUTE

EXAMPLE LOCATION OF NEW DEVELOPMENT

STATE HIGHWAY

