Methodology for Spokane Impact Fee Rate Calculation

Introduction

This memorandum describes the updated methodology for determining the transportation impact rate for the City of Spokane and the basis for the fees. Transportation impact fees are charges to new development to pay for transportation facility improvements needed to sustain new growth. More specifically, the Revised Code of Washington (RCW) Section 82.02.050 defines transportation impact fees should be spent on “transportation system improvements”, which can include physical or operational changes to the existing transportation system and new connections that benefit the function of the transportation system. The RCW Section 82.02.050 defines the intent impact fees as:

- 1(a): To ensure that adequate facilities are available to serve new growth and development;
- 1(b): To promote orderly growth and development by establishing standards by which counties, cities, and towns may require, by ordinance, that new growth and development pay a proportionate share of the cost of new facilities needed to serve new growth and development;
- 1(c): To ensure that impact fees are imposed through established procedures and criteria so that specific developments do not pay arbitrary fees or duplicative fees for the same impact.

The RCW Section 82.02.050 goes on to state that impact fees:

- 4(a): Shall only be imposed for system improvements that are reasonably related to the new development;
- 4(b): Shall not exceed a proportionate share of the costs of system improvements that are reasonably related to the new development;
- 4(c): Shall be used for system improvements that will reasonably benefit the new development.

The Growth Management Act (GMA) of Washington State defines transportation impact fees as a financing mechanism. State law defines limitations on impact fees collected such that they are related to the developments actual impacts and not used for unrelated purposes. Transportation impact fees collected must only be expended on system improvements that are:

- Identified in the comprehensive plan, capital improvement program, or other policy documents as needed for growth;
- Reasonably related to the impacts of the new development from which fees are collected.

Transportation impact fees can only be used to address future capacity improvements in defined areas and cannot be utilized to fund or address existing deficiencies. If an existing deficiency is noted and required to be addressed, it must be addressed solely and entirely from public sector funds and resources. New development cannot be responsible for fixing existing deficiencies.
Defining Existing Deficiencies

Existing deficiencies of city-owned arterial intersections were based on the City of Spokane level of service (LOS) standards outlined in Chapter 4 of the City’s Comprehensive Plan which was updated in 2017. A City owned stop-controlled or signalized intersection that operates worse than a LOS E is considered deficient per the City standards. LOS F is also allowed in some parts of the City.

If a transportation facility is determined to be deficient, the agency is responsible for bringing the facility up to current standards. This may include restriping an intersection to create turn lanes, adding stop signs to make the intersection an all-way stop, installing a turn lane as warranted or needed, or adding a traffic signal to achieve acceptable levels of service.

Once the improvement is defined, it becomes the baseline for development of impact fees. The new capacity is defined and impacts to the new configuration are assessed.

Example: 29th Avenue & Freya Street

29th Avenue and Freya Street currently operates with a LOS E, and therefore meets acceptable LOS per City criteria (there is no existing deficiency).

Existing Capacity of Intersection and Roadway Facilities

The capacity of transportation facilities was determined for each intersection and segment of roadway identified in the CIP project list. The existing capacity of each facility was determined based on the following assumptions:

- All-way stop intersection
  - One-lane approach → 425 vehicles per hour (vph)
  - Two-lane approach → 525 vph
- Signalized intersection
  - Through lane → 600 vph
  - Shared through-right turn lane → 600 vph
  - Shared left-through-right turn lane (single approach lane) → 750 vph
  - Left turn lane (permitted-protected or permitted phasing) → 300 vph
  - Left turn lane (protected only phasing) → 150 vph
  - Right turn lane → 300 vph
- Roundabout
  - Single lane approach → 625 vph
  - Right turn slip lane → 300 vph
- Roadway segments
  - New 3-lane collector → 2,400 vph
  - Thorpe tunnels (limited width and height) → 850 vph (per VISSIM analysis by City staff)
  - Single lane of traffic (no turns) → 1,200 vph
Example: 29th Avenue & Freya Street

29th Avenue and Freya Street is an existing all-way stop intersection with four (4) single lane approaches. The existing capacity of this intersection is calculated at four (4) single lane approaches, each at 425 vph, resulting in a total capacity of 1,700 vph.

Existing Intersection and Roadway Capacity Utilized

The capacity of transportation facilities being utilized by the existing volumes, prior to any new development, was determined for each intersection using the Intersection Capacity Utilization (ICU) report from Synchro software. The ICU calculation determines the capacity utilized by comparing the volume-to-capacity of each intersection, using current traffic counts and the existing stop controls. The ICU percentage was then applied to the intersection capacity calculations to determine the existing capacity, in volume per hour, that is utilized.

Example: 29th Avenue & Freya Street

The Synchro ICU report indicates that the existing volumes passing through the intersection during the PM peak hour utilize 73% of the total intersection capacity. That is, the capacity utilized by the existing traffic volumes (prior to new development) is 1,241 vph.

Intersection and Roadway Improvements – Remaining Capacity for New Trips

The CIP defines the list of intersection and roadway projects the City anticipates are needed to facilitate the growth and operation of the City. Each intersection or roadway improvement includes a change in facility capacity, which is determined using the rates as previously described. The capacity of each intersection or roadway, with improvements, is calculated and the result is subtracted from the existing capacity utilized, which is defined as the ‘change in capacity’.

Example: 29th Avenue & Freya Street

The proposed improvement is to add a left-turn lane to the eastbound approach and a southbound right turn lane at the intersection. The proposed capacity of this intersection is calculated at two (2) two-lane approaches, each at 525 vph, and two (2) single-lane approaches, east at 425 vph, resulting in a total proposed capacity of 1,900 vph.

The existing capacity utilized at this intersection is 1,241 vph. The ‘remaining capacity for new trips’ of the proposed improvement to the existing capacity utilized is 659 vph.

Developer Share – Intersection and Roadway Percent Eligible for Impact Fees

As defined by RCW 82.02.050, developments can only be made responsible for a proportionate share of transportation system improvements through the implementation of impact fees. The proportionate share of the intersection and roadway improvements is defined as the remaining capacity for new trips divided by the total capacity of the improved intersection. In using this method, the new development is being assessed on the unused and new capacity being added by infrastructure improvements and is not being assessed on the utilization of the existing volumes on the facilities.
**Example: 29th Avenue & Freya Street**

The percent of intersection improvements eligible for impact fees is the change in capacity, previously calculated at 659 vph, divided by the total proposed capacity for the intersection, previously calculated at 1,900 vph. The result is the new development is responsible for 35% of the intersection improvements, and thereby the project costs.

Using this methodology, the project names, descriptions, capacity calculations, and percent eligible for impact fee calculations are provided in the Appendix.

**System Factor**

A system factor of 90% was applied to the eligible costs per RCW 82.02.050. This overall reduces the cost of eligible fees by 10% and can be attributed to rerouted regional and local traffic generated by each improvement and the application of local and/or regional funds being applied.

**Trip Ends**

Trip End data is sourced from the Spokane Regional Transportation Council (SRTC) Travel Demand Model by Transportation Analysis Zone (TAZ). We can estimate where new traffic and growth is expected to occur within the City by comparing the growth in trips between the 2019 base model and the 2045 forecast model. The trip end growth is assigned to the appropriate Transportation Impact Fee Service Area and used in the rate calculation discussed in the following section.

**Rate Formula**

The formula below is used to calculate the base PM Trip Fee:

\[
PM \text{ Trip Fee} = \frac{\text{Eligible Project Costs} \times \text{Developer Share} \times \text{System Factor}}{\text{Trip Ends}}
\]

- **Eligible Project Costs:** Eligible cost of all projects in the service area less cost to correct existing deficiencies
- **Developer Share:** Share of the project assigned to development based on available capacity.
- **System Factor:** Adjustment to ensure cost is not solely reliant on developers.
- **Trip Ends:** Growth in PM peak hour trips from 2019 to 2045 from the SRTC travel demand model.
APPENDIX: PROJECT LIST AND CAPACITY CALCULATIONS
<table>
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<tr>
<th>Project Description</th>
<th>Capacity Improvements</th>
<th>Improvement Capacity Gained</th>
<th>Change Calculation</th>
<th>Eligible Impact Fees (change in capacity / new capacity)</th>
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