

Synchro File: Indian Trail Existing AM.syn from Bill White				Synchro File: Indian Trail Existing PM.syn from Bill White				
	Synchro Results		SimTraffic Results*		Synchro Results		SimTraffic Results*	
	Intersection Report	HCM 2010 Control Delay	Intersection Report	HCM 2010 Control Delay	Intersection Report	HCM 2010 Control Delay	Intersection Report	HCM 2010 Control Delay
Shawnee/Indian Trail	13.6	13.2	15.5	13.2	12.3	12.3	13.8	
Barnes/Indian Trail	21.4	18.3	18.5	18.3	18.7	14.6	15.5	
Strong/Indian Trail	10.3	9.5	8.5	9.5	12.0	15.9	23.2	
Indian Trail/Francis	15.0	12.3	14.8	12.3	10.7	7.9	14.8	


*Average of five 60-minute runs.

Follow up. Completed on Monday, May 02, 2016.
 You replied to this message on 4/28/2016 11:55 AM.

Download pictures


From: Bill White <bwwhite@imn.net>
 To: Bjordahl, Mike
 Cc:
 Subject: FW: Windhaven Synchro Files
 Message: Indian Trail Existing_AM.syn (305 KB) Indian Trail Existing_PM.syn (308 KB) Indian Trail FutureProject_AM.syn (305 KB) Indian Trail FutureProject_PM.syn (305 KB)

Here you go. Please let me know if there is anything else you need.

Bill White

 Direct | 509 315 8366

From: Bill White
 Sent: Tuesday, April 26, 2016 9:56 AM
 To: 'Noke, Inga'
 Subject: RE: Windhaven Synchro Files

Here you go.

Bill White

 Direct | 509 315 8366

From: Noke, Inga [mailto:inoket@spokaneconnectiv.org]
 Sent: Tuesday, April 26, 2016 9:40 AM
 To: Bill White
 Subject: RE: Windhaven Synchro Files

Bill,

Black, Tirrell

From: Figg, Greg <FiggG@wsdot.wa.gov>
Sent: Monday, July 11, 2016 4:06 PM
To: Black, Tirrell
Subject: FW: Request for Additional Information Needed for SEPA Threshold Determination
Attachments: Windhaven AM Synchro-SimTraffic Results Comparison.pdf

Tirrell,

These are the comments that WSDOT submitted Friday on the Windhaven proposal. Please let me know if you have any questions.

Thanks,

Greg Figg
WSDOT Eastern Region
Development Services Manager
figgg@wsdot.wa.gov
Phone (509) 324-6199

From: Figg, Greg
Sent: Friday, July 08, 2016 11:52 AM
To: Bill White (bwhite@m-m.net); Note, Inga (inote@spokanecity.org)
Cc: Kay, Charlene; Frostad, Larry; Bjordahl, Mike
Subject: RE: Request for Additional Information Needed for SEPA Threshold Determination

Bill and Inga,

The following response is offered in regard to the email below:

1. It is a recognized practice to use simulation software results instead of HCM results under certain circumstances ("The Secrets to HCM Consistency Using Simulation Models," TMIP Connection, Summer 2007). The HCM 2010 identifies situations when alternative tools should be considered:
 - HCM 2010 quotes that are applicable to the Alberta, Ash, and Maple intersections:
 - i. HCM 2010 p. 6-9: "**Using alternative tools to supplement HCM capacity and quality-of-service procedures should be considered when one or more of these conditions apply:** . . . The HCM procedures predict oversaturated conditions that last throughout a substantial part of a peak period or queues that overflow the available storage space or both."
 - ii. HCM 2010 p. 18-28: "**Scope of the Methodology** - . . . This subsection identifies the conditions for which each methodology applies. . . Steady flow conditions. The three methodologies are based on the analysis of steady traffic condition and, as such, are **not well suited to the evaluation of unsteady conditions (e.g., congestion, queue spillback, signal preemption).**"
 - iii. HCM 2010 p. 18-29: "**Limitations of the Methodology**. . . Automobile Mode - The automobile methodology does not explicitly account for the effect of the following conditions on intersection operation: **Turn bay overflow;** . . . **Demand starvation due to a closely spaced upstream intersection; Queue spillback into the subject intersection from a downstream intersection; Queue spillback from the subject intersection into an upstream intersection;**"

2. To see the difference between Synchro HCM 2010 and SimTraffic signalized intersection results, the AM and PM Synchro models were run (models as received from Bill White on 4/28/2016) and the results are attached. The only intersections reported were the relatively uncongested ones since the congested ones, i.e., Alberta, Maple, and Ash, produce unreliable results due to signal timing coding errors and O/D weighting that needs corrected at Maple/Ash/Francis.
3. Another option for verifying delay is by doing a field measurement at the congested intersections to measure what the delay is.

Additionally, it is our understanding that mitigation is being proposed for the Francis Ave. corridor. We would welcome the opportunity to discuss these comments and mitigations in greater detail with the City in the next couple of weeks. Thank you,

Greg Figg
WSDOT Eastern Region
Development Services Manager
figgg@wsdot.wa.gov
Phone (509) 324-6199

From: Bill White [<mailto:bwhite@m-m.net>]
Sent: Tuesday, June 21, 2016 11:03 AM
To: Key, Lisa; jbonnett1@jrbonnett.com
Cc: del@harleycdouglass.com; Figg, Greg; Note, Inga; Black, Tirrell; Richman, James; Mallahan, Jonathan; Greg FIGG (greg.f@msn.com)
Subject: RE: Request for Additional Information Needed for SEPA Threshold Determination

Lisa,

Thank you for your 6/20/2016 letter regarding "outstanding information" as it regards the TIA for Windhaven. A section of your letter highlights comments from WSDOT officials, submitted to the City on 6/8/16, as it regards the "*Windhaven Apartments, Summary Micro-simulation/SimTraffic Analysis*". The WSDOT email seems to infer correlations between Highway Capacity Manual control delay thresholds and methodologies, and total delay calculations and methodologies derived through SimTraffic (a software program with methodologies created by Trafficware). The comments that infer the correlation as follows:

1. *This analysis reports on page 2 the intersection delay in terms of seconds of delay for the existing conditions, future without project, and future with project. The delay reported in the future conditions is commiserate with LOS "F" at the intersections of Francis/Alberta and Francis/Maple. The analysis does not address this issue.*
2. *The SimTraffic results need to replace the previous Synchro delay results as they project a more accurate depiction of traffic conditions. We had asked for LOS to be defined using SimTraffic results.*
3. *A discussion on mitigation is needed for the Francis/Alberta and Francis/Maple intersections. As these two intersections currently are or will be operating below the adopted LOS standards.*

We are uncomfortable with the WSDOT request and comparison because the two delay methodologies are not analogous and comparable. The use of SimTraffic could yield misleading results.

Methodology Comparisons. As you may be aware, the Highway Capacity Manual 2010 (HCM 2010) measures levels-of-service (LOS) based on intersection control delay thresholds. The HCM 2010 indicates *“Control delay includes delay associated with vehicles slowing in advance of an intersection, the time spent stopped on an intersection approach, the time spent as vehicles move up in the queue, and the time needed for vehicles to accelerate to their desired speed.”* (HCM 2010, Page 4-15)

In comparison, SimTraffic intersection total delay calculations reflect control delay plus queue delay and speed delay. (User Manual, Pages 10-18 & 26-5) As you can see, SimTraffic addresses steps beyond and in addition to HCM 2010 control delay. Calculations reflect impediment factors such as turn bay overflow, demand starvation (due to closely spaced intersections), queue spillbacks, and the impact of additional or reduced through lanes upstream/downstream of an intersection.

At the very least, the two methodologies are incompatible and therefore it is not accurate to deduce LOS equivalencies for SimTraffic based on HCM 2010 methodologies. However, because of the additional impediments, SimTraffic total delay nearly always exceeds HCM 2010 control delay. Thus, using HCM 2010 LOS control thresholds for SimTraffic total delay calculations, as WSDOT staff suggests, results in an approach which is much more restrictive and is therefore inconsistent with current City Concurrency/LOS policy.

Concurrency/SEPA Impact. Section 5.2.1.3 of City Concurrency Level of Service Standards indicates LOS E as the threshold for “signalized arterial intersections along Principal or Minor arterials identified on Comprehensive Plan Map TR3.” LOS E equates to a maximum 80 seconds of average control delay per vehicle in accordance with HCM 2010 methodologies. Thus, intersections operating with greater than 80 seconds of average control delay represent “unacceptable conditions” within the City, not meeting Concurrency, and are potentially subject to system improvement and/or demand management strategy. This LOS threshold makes SEPA consideration more restrictive as well, per City LOS policy.

Using the HCM 2010 threshold of 80 seconds of control delay for SimTraffic total delay, in effect, brings about revised Concurrency policy and LOS (and transportation SEPA) policy that significantly impacts the City:

- 1) This policy becomes more restrictive to private development approval.
- 2) This policy would dictate private and public roadway infrastructure improvement projects that provide capacity in excess of current standard.
- 3) This policy would highlight a number of existing City intersections operating below the current standard, which therefore would require capacity improvement in order to meet new SimTraffic standard.

SimTraffic Analysis. We recognize SimTraffic as an appropriate tool for reviewing the cumulative impacts of traffic within the context of a corridor or network. To this end, we provided the *Windhaven Apartments, Summary Micro-simulation/SimTraffic Analysis* to help WSDOT officials understand the implications of project development on Francis Avenue. The analysis concluded on page 4 that:

“marginal changes between the future without and with project conditions. Drivers are forecast to potentially experience an average delay increase of between 2 and 5 additional seconds per intersection by year 2021, along Francis Avenue, which is a moderate change. The difference in block time and queue penalties was not summarized as the differences were negligible (although they are attached for review, as needed). Thus, the SimTraffic analysis also confirms the project proposal will have a minimal impact upon cumulative traffic operations for intersections located along Francis Avenue.”

Definite conclusions were provided within the context of what is appropriate for SimTraffic, as used as a supplemental tool, outside of City Concurrency and LOS Policy. This should be sufficient; especially

given the implications described above. *Understanding this new information, would you and your technical staff please confirm the use of SimTraffic for Concurrency and SEPA determination, as WSDOT requested?*

Alternative. Your letter suggests a meeting to discuss potential mitigation options for the development, in-lieu of what the TIA currently recommends. This seems a reasonable approach and we would like to expand the scope of this meeting to discuss alternative analyses that would satisfy WSDOT officials without having to impact current City Concurrency and LOS policy. We respectfully suggest SimTraffic is not the correct tool to use for intersection delay analyses, given the difference in delay methodologies, and hope City officials would agree with this assessment. *Can we expand the scope of this meeting to discuss this issue?*

Request. However, if SimTraffic is ultimately required, we would request that staff please provide SimTraffic total delay thresholds to differentiate "acceptable" versus "unacceptable" traffic conditions within the City.

Because there is discontinuity between methodologies and because SimTraffic total delay is more conservative than HCM 2010 control delay, the question then becomes "what is the threshold for acceptable traffic conditions within the City to verify transportation concurrency using SimTraffic?" As indicated, the current 80 seconds of HCM 2010 control delay becomes an extremely restrictive standard methodologically if paired with SimTraffic delay results. Do City officials wish to enact such restrictive standards? Thus, would staff please provide alternative Concurrency delay standard based upon SimTraffic total delay. This would allow consultants and City engineers to make relevancy transportation concurrency determinations in the future. This would allow us to derive appropriate conclusions for Windhaven.

Please note consultants cannot be the ones to make an interpretation of what is "acceptable" versus "unacceptable" within the City of Spokane, as it regards delay-based concurrency standards. State policy instructs GMA jurisdictions to "balance the desired community character, funding capacity, and traveler expectation" (WAC 365-196-840.02.e) when developing Concurrency mechanisms for facilities. Concurrency policy should therefore be set by the local agency as they are best tooled to make such determinations, based on the factors described above, with threshold less subject to challenge by outside organizations.

Thank you for hanging in there on this lengthy email. I appreciate your consideration of this topic and look forward to your feedback and willingness to meet and discuss options! Have a good day.

Bill White



Direct | 509.315.8366

From: Key, Lisa [<mailto:lkey@spokanecity.org>]

Sent: Monday, June 20, 2016 12:35 PM

To: jbonnett1@jrbonnett.com

Cc: del@harleycdouglass.com; Bill White; figgg@wsdot.wa.gov; Note, Inga; Black, Tirrell; Richman, James; Mallahan, Jonathan

Subject: Request for Additional Information Needed for SEPA Threshold Determination

Hi Jay-

Attached, please find the letter detailing the additional information that is needed in order for the City to make a threshold determination under SEPA. A hard copy is in the mail to you.

We would be happy to schedule a meeting with you, the applicant, and your traffic engineer. Looking at City staff's combined calendars, our team appears to be available to meet on Thursday 8 am-9am, or from 10:30 to noon. Due to multiple vacations, the next available date would be the afternoon of July 5th.

Please let me know if you have any questions, or if you would like to schedule one of these times to meet.



Lisa D. Key | Planning Services Director | Planning & Development
509.625.6187 | lkey@spokanecity.org | www.spokanecity.org

