TECHNICAL MEMORANDUM 1 CH2MHILL

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What is the purpose of this technical memorandum?

The City of Issaquah routinely updates its concurrency system to ensure consistency with real-world data. The City completed such an update in 2005, and through that update postponed policy decisions that could significantly alter the existing concurrency system. The policy changes were postponed so that the Council, the Policy and Planning Commission (PPC), and City Staff could consider a broader, more comprehensive study of concurrency. The City has initiated that study, for which this technical memorandum serves as the first step to document, in one place, past efforts and studies related to concurrency policy options.

What is concurrency and why do we need it?

The State Growth Management Act (GMA) requires jurisdictions to establish level of service (LOS) standards for their transportation systems and to prohibit development if it will cause the transportation LOS to decline below the adopted standard. Alternatively, transportation improvements and/or strategies can be implemented *concurrently* (i.e. at the same time) with the new development to maintain the adopted transportation standard. The system to ensure adopted LOS standards are met concurrently with new development is called concurrency.

State law leaves the implementation of concurrency and the adoption of LOS standards to local discretion. The state provides little prescriptive guidance for how concurrency is implemented, how the LOS should be measured, or what the LOS should be, resulting in differing systems from jurisdiction to jurisdiction. The City Council established Issaquah's transportation LOS and transportation concurrency system in 1998 with the adoption of Ordinance 2184.

How is concurrency measured in Issaquah?

The City currently measures concurrency through a two-step process. The first step uses a transportation-forecasting model, known as VISUM, that estimates traffic volumes at 80 specific directional locations during the p.m. peak hour. These locations are known as screenpoints. The traffic model includes existing development and newly approved development that may not be built yet in Issaquah and portions of Sammamish and King County. The transportation system in the model includes the existing road network and committed improvements in Issaquah, Sammamish and King County.

The second step uses a spreadsheet to compare the forecast p.m. peak hour traffic volume (V) at each roadway screenpoint to the *planned capacity* (PC) of the roadway at that location, known as the volume-to-planned capacity (V/PC) ratio.

Planned capacity, a policy concept adopted in the City of Issaquah, is different than engineering capacity. Engineering capacity measures the maximum number of vehicles that can move on each lane of road in one hour. Planned capacity begins with the engineering capacity of the roadway and subtracts capacity if sidewalks, bicycle lanes, roadway shoulders and certain other improvements are not provided. Using planned capacity allows the installation of alternative transportation facilities to achieve concurrency.

Unless the road is built to City standards, the planned capacity of a roadway for concurrency purposes is less than its engineering capacity (the maximum number of cars a road can carry in the peak hour). Engineering capacity and planned capacity will be the same for roads built to city standards.

The planned capacity in the spreadsheet is based on, and varies by, the functional classification of the roadway and the direction of traffic flow (i.e. in the peak or non-peak direction). The V/PC standard ranges from 1.0 for regional and principal arterials in the peak direction to 0.50 for collector streets in the non-peak direction. The City's goal for varying the planned capacity was a higher level of service (less congestion) on minor and collector streets and in the non-peak direction. The tradeoff is that some roadway capacity will need to remain unused during the p.m. peak hour in order to achieve the adopted level of service and meet concurrency.

Why are we considering policy changes to concurrency?

Until recently, and except for brief periods in 1998 and again in 2000, Issaquah has not been able to achieve its adopted LOS. As a result, the amount of new development in the City (outside the Urban Villages) has been limited since 1998. This inability to achieve the adopted LOS has always been the primary reason the City has considered policy changes to concurrency.

However, on December 5, 2005, the City Council adopted the latest update of the concurrency system, which successfully resulted in compliance with the City's adopted LOS standard.

Although the concurrency system has been operating in compliance since December 2005, and approximately 15 new developments have been approved since then, there are other reasons the City should consider policy changes to the system. They include, but are not limited to:

- Planned capacity has always been difficult for the general public and development community to understand, particularly, when a shoulder or sidewalk is all that is needed to fix a "failing" screenpoint.
- The current system does not provide a measure of capacity or operations at intersections, which are almost always the true capacity constraints in the real world.
- The current system does not allow for improvements to be made at locations other than the 80 screenpoints currently being measured.
- The current system does little to address the effects of regional traffic on city streets
- Although the current system attempts to account for the a.m. peak hour, it is not directly measured.

In what ways has the City explored policy changes to concurrency in the recent past?

There are three specific instances in the recent past in which the City initiated a policy review of the current concurrency system. They are:

- Through the City's recent update of the Transportation Element, the PPC had completed some preliminary investigation of alternate concurrency systems and made some recommendations on an alternate conceptual concurrency system.
- The City participated in a four-city (Bellevue, Redmond, Issaquah, and Kirkland) concurrency study, funded by the State, known as the Eastside Transportation Concurrency Project.
- During the bi-annual update of the City's concurrency system, several policy options to implement under the current system were offered for consideration in the event the system continued to be out of compliance after the technical update was complete.

What were the preliminary findings of the PPC in 2002 regarding concurrency?

The PPC were briefed on concurrency systems being used by other agencies in the Puget Sound, and participated in a questionnaire to determine preferences. Concurrency systems from the following agencies were investigated.

- Issaquah
- Bellevue
- Bothell
- King County
- Redmond
- Renton
- Seattle
- Snohomish County

Topics reviewed for each agency included:

- Is the concurrency system engineering-based or policy-based?
- What the modes of transportation that are monitored through concurrency?
- Are any models used or required to implement concurrency?

- What unit of transportation is measured and monitored?
- What is the concurrency methodology?
- What is the measurement period?
- How is concurrency implemented? Is there a threshold?
- Have there been any impacts to growth in the agency directly related to concurrency?
- What the issues, impacts, advantages, disadvantages, etc. of this concurrency system?

Six out of the eight agencies investigated used engineering capacity to measure concurrency, and measured vehicle capacity only (i.e. other modes of travel were not directly accounted for). Five out of the eight agencies use a model to predict traffic volumes. All of the agencies analyze the p.m. peak, but some analyze more than just a peak hour, and about half also analyze the a.m. peak. Two agencies measure concurrency between intersections only, three agencies measure intersections only, and three agencies measure both. A more detailed summary of the findings is presented in **Appendix A**.

After a detailed review of what other agencies were doing, and a good understanding of how concurrency is measured in Issaquah, the PPC were polled to determine preferences on an ideal concurrency system. **Table 1** summarizes the preferences of the PPC in 2002.

TABLE 1
Concurrency Methodology Preferences Summary

Concurrency Methodology Issue	PPC Preference
How should concurrency be measured?	The PPC voted strongly in favor of a methodology that is based primarily on engineering capacity, as opposed to capacity defined by policy.
What modes of travel should be measured through concurrency?	All modes should be measured somehow, and individually, if possible. Specifically the PPC wanted vehicles, transit, pedestrian, and bicycle travel measured.
How should forecasting be accomplished?	The PPC was in favor of continued use of the forecasting model, as opposed to a manual tracking of new development trips.
How should operations be analyzed?	Of the three options posed to the PPC, there was not a strong consensus. Traffic operational software, database (as is used currently in Issaquah), and field-observations were all considered.
What locations should be measured?	PPC recommended abandoning the current screenpoint only method, and instead measure intersections and/or corridors (both screenpoints and intersections).
Should the City be organized into "zones" for area-averaging or differing policies by zone, or treated the same city-wide?	PPC was not interested in creating zones within the city where either 1) measures of effectiveness could be averaged within the zones, or 2) each zone could have different standards and policies governing development within those zones. Instead, the PPC preferred that each location being measured should be held to an individual standard.
What measures of effectiveness should be used?	Delay and volume-to-capacity were most preferred.

What were the policy changes the City considered to the existing concurrency system in the past?

During the bi-annual update of the City's concurrency system, several policy options to implement under the current system were offered for consideration in the event the system continued to be out of compliance after the technical update was complete. These options were summarized in a Briefing Paper on May 19, 2004. None of the options have been implemented at this time, primarily because the system returned to compliance after the 2004 update. With the exception of Option B5 described below, none of the options would likely be considered for implementation under the existing concurrency system, unless it was to fall out of compliance again. For this reason, all of the options, except Option B5, are included in **Appendix B**.

OPTION B5 – CONVERT PLANNING CAPACITY TO ENGINEERING CAPACITY: The City's transportation concurrency system uses planned capacity so that other transportation improvements (such as sidewalks and bike-lanes), in addition to new road lanes, can be used to achieve concurrency. The tradeoff is that, on average, planned capacity is 33 percent less than base capacity (which is itself less than engineering capacity). Using engineering capacity for concurrency would more accurately reflect the "real" capacity of city streets.

This would be a significant change to the existing concurrency system and would require changes in the Comprehensive Plan, Concurrency Ordinance and concurrency spreadsheet.

What were the findings of the Eastside Transportation Concurrency Project?

The Eastside Transportation Concurrency Project reviewed the concurrency systems in the Cities of Bellevue, Redmond, Issaquah, and Kirkland. On the basis of each City's existing methodology, issues, and successes, the study set out to develop, evaluate, and recommend alternative approaches to concurrency that were multi-modal in nature.

The study recommended three alternative methodologies, one of which was a regional system that would require the participation and agreement of many agencies, and require changes to state law. While arguably an ideal system, the regional alternative is not one the City of Issaquah should undertake itself, and therefore won't be described in any detail here. The other two systems, "Enhanced V/C Ratio" and "Travel Time", will be described briefly below.

The Enhanced V/C Ratio methodology is somewhat similar to the City's existing system, which also uses the concept of comparing the volume of a roadway to its capacity. The Enhanced V/C Ratio methodology, by policy, allows for the LOS standard to be raised where other modes of travel are provided that might reduce the dependence on single-occupant vehicles. In this way, other modes are accounted for in the system. It is important to note, the premise of this methodology is that actual capacity of the roadway does not change just because transit is provided, or a sidewalk and bicycle lane are provided. Rather, in locations where these other modes are provided and where the LOS is set higher, the agency is willing to accept vehicle congestion on these corridors, which will hopefully force drivers to make the other mode choice, thereby reducing the vehicle volume on the roadway.

The Enhanced V/C Ratio methodology differs from Issaquah's existing concurrency system in that it can be implemented at intersections, or screenpoints, or both. Also, Issaquah's current system accounts for other modes by artificially reducing capacity where alternative modes are not provided. This system does not reduce the capacity (thereby sticking to an engineering calculation), rather increases the LOS standard, which is a policy decision permitted by the GMA. In addition, the "enhanced" LOS Standard could only be applied to roadways/intersections where the agency feels there is the best potential for other modes to be selected over the single occupant vehicle, rather than applying the enhanced standard city-wide, to locations where potentially the enhanced standard will have no effect. Finally, this approach also creates a mechanism for the developer to choose the higher standard, and thereby contribute funds towards identified multimodal improvements along the corridor, such as transit shelters, expanded transit service, sidewalks, bicycle lanes, etc.

TABLE 3.
Criteria and Ranking for Evaluating Alternative Approaches to Concurrency

Criteria	Enhanced V/C Ratio	Travel Time
1. Is the alternative multi-modal?	3-5	1-4
2. Does the alternative enhance the link between land use and transportation?	3-5	4
3. Does the alternative address regional traffic and inter-jurisdictional transportation issues?	1	1
4. Is the alternative less resource-intensive than current practice?	3	2
5. Is the alternative easy to understand and credible?	2-3	4
6. Can the alternative adapt to land use and transportation changes?	2-3	3
7. Are the concurrency results of the alternative predictable for developers?	2-4	2-4
8. Will concurrency violations be the exception, not rule, if this approach is adopted?	n/a	n/a
9. Does the alternative provide ways to fund non-roadway transportation improvements?	4	2-3
10. Can the alternative be adapted to support the widely varying goals of the four cities?	3	3

Notes:

Rated 1 to 5, where 1 = very poor and 5 = very good.

Criteria 4 was changed by CH2M HILL to reflect comparison to Issaquah's concurrency system, only.

The second methodology, known as Travel Time, would measure the amount of time it takes to travel from point A to point B within the agency, and compare that to a standard adopted by policy. Multiple locations could be selected for travel time calculations, and differing standards could be adopted for each corridor. In addition, at least in theory, the travel times could be monitored for all modes of travel (vehicle, transit, walking, and cycling). There are readily

available tools to predict vehicle and transit travel times; however, walking and cycling future travel time estimates would be more difficult and less reliable to predict.

A benefit to the Travel Time methodology is that it is easily understood by the general public. In addition, this methodology could be applied in such a way that, over whatever review period the agency deems is reasonable (one or two years), it could be calculated how many trips could be added to a system before the travel time thresholds are exceeded. In this way, the concurrency approval process becomes a simple first-come, first-served system whereby each development's trips are subtracted from the total until there are no trips remaining. Alternatively, each development's impact on travel time could be measured individually and reported. The first approach requires an intensive study upfront, funded only by the agency, but very inexpensive to maintain over the review period, whereas the second approach would still require some upfront investment by the agency, but the incremental development tests would be funded by the developments.

The study rated both methodologies based on a series of criteria identified by the project's Steering Committee and Technical Advisory Committee. The results of the ranking process are summarized in **Table 3**.

What are the Administration's recommended options for further study based on past efforts?

Based on past efforts, the Administration has assembled a set of values and/or goals that have become evident either through PPC recommendations or through current and past Comprehensive Plan goals regarding transportation concurrency. These values and goals are summarized in **Table 4** below. The Administration recommends further development and evaluation of variations of the Enhanced V/C Ratio and the Travel Time system identified in the Eastside Transportation Concurrency Project based on an initial assessment of both systems contained in **Table 4**. The current system will also be carried through the evaluation process. Other policy considerations recommended by the Administration are listed in **Table 5**.

What are the next steps?

The following bullet list summarizes the proposed next steps on the project.

- Council and PPC preliminary review and suggested changes to the administration's recommended alternatives for further study (PPC Meeting on July 13, and Council Meeting on July 25)
- Policy framework development for the options by consultant.
- Evaluation and testing of alternatives
- Administration's recommendation of the preferred alternative
- PPC recommendation to Council of the preferred alternative
- Council Action on the preferred alternative
- Policy adoption and implementation (currently unfunded, but expected in 2007)

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TABLE 4.
Prelminary Assessment of the Administration's Recommended Alternatives for Further Study

Value or Goal[1]	Alternative		
	Current System	Enhanced V/C	Travel Time
The LOS measure is documented and validated by professional transportation organizations.	The City's "planning capacity" concept is unique, and not been validated by other professional organizations. However, the V/C concept is well-respected.	This system would be based on the traditional V/C concept, which is well-respected.	This system would likely be based on calculations of travel time, rather than real-life data. Travel time calculations are less documented than V/C ratios.
The LOS measure is easy to administer and understand.	The current system involves a fairly complicated spreadsheet, not necessarily difficult to administer, but quite difficult to understand.	This system would likely be somewhat more difficult to administer than the current system, but has the potential to be better understood.	This system would likely be somewhat more difficult to administer than the current system, but has the potential to be better understood.
The LOS measure has been tested and is legally defensible.	The City has been operating this system since 1998, and has not had any legal issues.	This system would likely be more defendable than the current system.	This system is being used by several other agencies in the State of Washington, and has been legally defensible to date.
The system should be based mostly on engineering principles, applying policy decisions when setting the LOS measures.	The current system applies policy decisions at both the LOS measures level and the capacity calculation level, which is less desirable.	This system could easily be compliant with the value/goal.	This system could easily be compliant with the value/goal.
The system should be multimodal, specifically addressing vehicle, non-motorized, and transit travel.	The current system addresses vehicle and non-motorized travel.	This system could easily be compliant with the value/goal.	This system could comply with the value/goal, but would be more difficult to set travel time standards for non-motorized travel.
The system should monitor both intersections and corridors (similar to screenpoints).	The current system monitors screenpoints, which is not really a "corridor". It's a select point along a corrdior.	This system could easily be compliant with the value/goal.	This system could easily be compliant with the value/goal.
The system should make use of the existing travel demand model.	This system is compliant with the value/goal.	This system could easily be compliant with the value/goal.	This system could easily be compliant with the value/goal.
The system should be able to readily incorporate newly annexed areas, such as Providence Point and Greenwood Point South Cove.	The current system allows for newly annexed areas to be incorporated, but because a forecasting model is used, it takes considerable time and resource to implement.	The current system allows for newly annexed areas to be incorporated, but because a forecasting model may be used, it takes considerable time and resource to implement.	The current system allows for newly annexed areas to be incorporated, but because a forecasting model may be used, it takes considerable time and resource to implement.
The system should address the disproportionate use of City streets for regional (pass-through) traffic.	The current system attempts to address this issue by assigning more capacity to "regional" arterials.	This system would basically address the regional problem much like the current system, except the adjustment would be made to the standard, not to the capacity calc.	This system would basically address the regional problem much like the current system, except the adjustment would be made to the standard, not to the capacity calc.

1. Values/Goals have been assembled from a variety of sources, including the City's Comprehensive Plan (past and present), Planning Policy Commission, and the Administration.

TABLE 5.
Other Policy Considerations for Concurrency

Other Policy Considerations	Current System	Enhanced V/C Ratio	Travel Time
Assess the need, value, and additional cost for inclusion of the a.m. peak hour into the concurrency system.	To be assessed in the future.	To be assessed in the future.	To be assessed in the future.
When evaluating a “corridor”, should the measure of effectiveness (v/c, speed, delay, travel time, etc.) be averaged along the corridor, or should each individual segment be measured?	To be assessed in the future.	To be assessed in the future.	To be assessed in the future.
Should the City reconsider concurrency “zones”, within which different policies and LOS Standards can be applied?	To be assessed in the future.	To be assessed in the future.	To be assessed in the future.

Appendix A
Review of Other Agency Concurrency Systems

	Issaquah	Bellevue	Bothell	King County	Redmond	Renton	Seattle	Snohomish County
Is the concurrency system engineering-based or policy-based?	Policy. The system uses theoretical measures, which are applied to a planning-level engineering tool, in order to implement policies.	Engineering. The system uses operational-level intersection analysis tools.	Engineering. The system uses operatonal-level intersection analysis tools.	Engineering. The system uses both planning-level and operational-level tools.	Engineering. The system uses planning-level intersection analysis tools.	Policy. The system uses planning tools to implement the policies.	Engineering. The system uses planning-level analysis tools.	Engineering. The system uses both planning-level and operational-level analysis tools.
What are the modes of transportation that are monitored through concurrency?	Automobiles, non-motorized, HOV	Automobiles. Other modes are addressed through traditional development review. However the BKR Model does have a transit component that allows for mode shifts.	Automobiles. Other modes are addressed through traditional development review.	Automobiles. Other modes are addressed through traditional development review.	Automobiles. Other modes are addressed through traditional development review.	Automobiles. Other modes are addressed through traditional development review.	Automobiles and Transit. Other modes are addressed through traditional development review.	Automobiles. Other modes are addressed through traditional development review.
Are any models used or required to implement concurrency?	TModel/2 must be used for each concurrency test. Project must be coded in model.	EMME/2 model used for forecasts. Planning-level model (UFOSNET) is used for intersection analysis.	No model is used to maintain forecasts. Forecasts, or pipeline development, is maintained via spreadsheet. Traffic operations model is used for intersection analysis.	EMME/2 model used for forecasts.	City has a forecasting model, but it is not used for concurrency. Forecasts, or pipeline development, is maintained via spreadsheet.	Concurrency system is maintained using a forecasting model.	A model is used to determine trip distribution for new development. Annual counts are conducted and maintained in a spreadsheet for concurrency calculations.	Forecasts (pipeline data) are maintained via spreadsheet. Operational analysis is accomplished using traffic software.
What "unit" of transportation is measured and monitored?	Screenpoints	Intersections	Intersections	Critical Links for concurrency, and intersections for development review.	Intersections	Corridors	Screenlines	Corridors (arterial units)
What is the concurrency methodology?	Volume-to-"Planning"-Capacity is measured on select screenpoints throughout the city. Volumes obtained from TModel/2 and capacity calculated based on policy values that incorporate non-motorized and HOV modes. 5 screenpoints are permitted to fail by no more than 0.30 above the standard. Screenpoints above the threshold must be mitigated.	A 2-hour average delay at identified intersections is calculated throughout the City. The City is subdivided into Mobility Management Areas (MMA). The delay at intersections within a MMA is averaged. If the MMA average delay exceeds thresholds, mitigation must be proposed at any of the intersections in the MMA.	A 1-hour average delay at identified intersections is calculated throughout the City. Any intersection exceeding the City's LOS D standard must be mitigated. There are 6 intersections that are permitted to operate at LOS F for no more than 1.5 hours, after which the LOS must return to LOS D.	Critical links have been identified throughout the County. The County has been subdivided into zones. The Critical link v/c ratio cannot exceed the standard for that zone, and no development can send more than 30% of its trips to any one critical link without mitigation. Concurrency is supplemented by an intersection analysis, using operational-level tools.	Intersection volume-to-capacity (v/c) ratio is calculated at identified intersections throughout the City. The City is subdivided into Transportation Management Districts (TMDs). The v/c ratios in each TMD are averaged. If the average v/c exceeds the standard for that TMD, then mitigation is required. Mitigation must come from the City's list of approved projects.	Travel distance and travel time calculations are estimated on corridors using the planning model. Based on these calculations, a bank of available vehicle trips is determined. The trips available for new development are monitored as new developments are approved. Trips cannot exceed the bank of available trips. The bank of trips is recalculated annually.	The volume of existing traffic plus new development traffic is compared to the capacity (v/c) of the roadway at screenline locations. Up to 4 screenlines are monitored per development. Mitigation must be proposed if the calculated v/c exceeds the standard for the screenline. If development supports transit ridership, the volume is adjusted accordingly.	The system is two-tiered. On a first level, a planning analysis of volume-to-capacity (v/c) is measured on arterial units throughout the County. When these exceed a specified threshold, they are monitored as critical arterial units. A detailed operational analysis is then conducted on critical arterial units, in which travel speed is measured.
What is the measurement period?	p.m. peak hour model. However, the standards are lower in non-peak directions in an effort to take into account the a.m.	2-hour p.m. peak period.	most impacting peak hour - a.m. or p.m.	p.m. peak hour for concurrency, both peaks for intersection analysis.	p.m. peak hour	p.m. peak hour	a.m. and p.m. peak hours	a.m. and p.m. peak hours
How is concurrency implemented? Is there a threshold?	Developments that generate more than 10 p.m. peak hour trips must test for concurrency.	Intersections that receive 30 or more vehicle trips from the proposed development must be analyzed for concurrency.	Intersections that receive 10 or more vehicle trips from the proposed development must be analyzed for concurrency.	Intersections that receive 30 or more vehicle trips and 20% of total project trips from the proposed development must be analyzed.	Developments generating 30 or more vehicle trips must be analyzed.	All new developments must be tested through concurrency.	All new development is assessed by the City, and the City determines whether it is significant enough to test through concurrency.	All critical arterial units receiving 3 or more vehicle trips from new development must be analyzed.
Have there been any impacts to growth in the agency directly related to Concurrency?	Yes. Most development has halted due to the number of existing failures in the system.	Yes. One to two of the MMA's have approached or exceeded the v/c thresholds, but the City as identified capacity improvements to address the situation.	None, directly. However, some developers may have decided to go to other jurisdictions where mitigation may be less.	Yes. Some development has been denied and the alternatives did not make the development feasible.	Yes. Some TMDs are at the v/c threshold, and there are no projects identified to mitigate the constraint.	No.	No.	Unknown.
What are the issues, impacts, advantages, disadvantages, etc. of this concurrency system?	Multi-modal system. Closely implements policies. Maintenance is complicated. Concept is difficult for public to understand. Not based on engineering tools. Developer must fix all failures, except 5, whether or not the development directly impacts the failing screenpoint.	System has allowed growth to continue (2-hour analysis, averaging). Traditional methodologies used. Concept is what public is used to. Relatively easy to maintain. System allows some intersections to continue to exceed capacity with no plans for improvement. The MMA methodology allows some growth to continue in parts of the agency, and slows growth in others.	System allows for some failures at intersections that are difficult to mitigate. Traditional methodology used. Concept is what public is used to. Easy to maintain and mostly at developer's expense. Except for 6 intersections, all others must operate well - so congestion is minimal. Lack of model causes subjective approach to trip distribution	Systems continues to allow some locations to fail without improvement. Two-tiered system identifies problem areas with simple planning tools, and then requires additional analysis using more sophisticated operational tools if there is a problem. Traditional methodology. Easy to maintain and mostly at developer's expense. Pipeline information is not readily available and cumbersome to use. Analysis by zones allows growth to continue in some parts of County, while not in others.	System allows some failures to persist, without improvements planned. Traditional methodology. Easy to maintain. The TMD methodology allows for some development to continue in the City even if some TMDs are at capacity, and each TMD has a different standard that is characteristic of the land uses within the TMD.	System is not based on traditional engineering tools. It is difficult for public to understand. It requires an extensive update annually, but is relatively easy to maintain throughout the year. Allows growth throughout the City. Some areas may exceed capacity, while others are well under capacity. Trips are available on a first-come, first-served basis. When the trips are gone, development is halted. Does not address specific traffic congestion areas, rather looks at the City as a whole.	System is based on traditional methods. Easy to maintain. Requires signficant investment in counts each year. Development may occur even if the development impacts a failing screenline but it is not one of the four selected by the City to mitigate. Allows development in some locations, even if other locations are failing.	Traditional methodology is used for first step. Although travel speed is not traditional, it is easily understood by general public. Pipeline database is somewhat cumbersome to maintain. All failing locations impacted by the development are mitigated, i.e. there are no exceptions.

Appendix B
Issaquah Policies Previously Considered

OPTION B1 – INCREASE THE BASE CAPACITY FOR MINOR ARTERIALS AND MINOR (COMMERCIAL) COLLECTORS: Under the existing methodology, the base capacity used to calculate planning capacity is lower for minor arterials and collectors than it is for major arterials. Increasing the base capacity for minor arterials from 90% to 100% and for collectors from 65% to 100% would more accurately reflect the actual capacity of the street system, but would also suggest that, by policy, the City is willing t accept more traffic on lower classified roadways.

OPTION B2 – INCREASE THE V/PC FOR REGIONAL ARTERIALS: Currently, our concurrency system allows the planned capacity for regional arterials to be twenty percent higher than non-regional links. The intent was to recognize that: (1) regional arterials carry a significant portion of the 25 percent of the PM peak hour traffic passing through Issaquah; and, (2) there is little the City can do to control the amount or timing of development outside the City limits. There are currently 3 regional screenpoints failing.

This option would reduce the number of concurrency failures by allowing more congestion (reducing the level of service) on regional arterials. Implementing this option:

a. will reduce the impact of regional traffic on the timing of development within the City limits;

b. allow additional congestion and increase travel times on the regional arterials during the p.m. peak hour. This may reduce the rate of increase of regional trips passing through the City as drivers seek faster alternative routes; and

c. recognize that Issaquah does not have the financial resources to provide the capacity improvements necessary to accommodate regional traffic at the City's adopted Level of service.

OPTION B3 – INCREASE THE VOLUME-TO-PLANNED CAPACITY (V/PC) STANDARDS FOR ALL ARTERIALS AND COLLECTORS: Each of the 80 transportation concurrency screenpoints in the City has a V/PC standard. For roads built to City street standards, the V/PC standard is set by road type and direction as shown in **Table 2**.

The screenpoint passes concurrency if the traffic volume at the screenpoint during the PM peak hour is equal to or less than the adopted standard. For example, a standard of 1.00 means that the maximum traffic volume allowed during the PM peak hour (in order to pass concurrency) is equal to the *planned capacity* of the roadway. A standard of 0.85 means that the maximum traffic volume allowed (to pass concurrency) is 85% of the *planned capacity* of the roadway (i.e. – the goal is for 15% of *the planned capacity* of the roadway to remain unused during the PM peak hour.)

Increasing the V/PC to 1.00 for minor arterials and collectors frees up between 15% and 50% of unused planned capacity.

TABLE 2
Volume-to-Planned Capacity Standards

Road Type	Peak Direction	Non-Peak Direction
Regional Arterial	1.00	0.85
Principal Arterial	1.00	0.85
Minor Arterial	0.85	0.65
Collector	0.75	0.50

OPTION B4 - CHANGE THE SCREENPOINT FAILURE THRESHOLD: New development passes concurrency when 5 or fewer of the 80 screenpoints exceed their volume-to-planned capacity (V/PC) Level of Service (LOS) standard and no (0) screenpoint V/PC ratios exceed the standard by more than 0.30.

This option would: (a) increase the screenpoint failures permitted above 5; and/or, (b) increase the second screenpoint standard above 0.

OPTION B6 – INCREASE THE MAXIMUM NUMBER OF BASE TRIPS FOR VACANT PROPERTY FROM 3 TO 10**:** Every parcel in the City is allowed a certain number of PM peak hour trips that are exempt from the transportation concurrency requirements. The number of PM peak hour trips allowed for *parcels with existing development* is the number of trips generated by the use at the time the Transportation Concurrency Ordinance was adopted plus up to 10 additional trips. *Vacant Parcels* are allowed up to 3 PM peak hour trips.

This option would increase the base number of PM peak hour trips for vacant parcels from 3 to up to 10. The actual number of trips for any particular parcel would depend on the zoning of the property. However, a maximum of ten new PM peak hour trips would be permitted unless:

a. Transportation concurrency was met; or,

b. The parcel was a designated receiving site and additional trips were purchased under the City's TDR program; or,

c. The parcel was a designated TDR sending site, in which case the base number of trips would depend on the zoning of the property and may exceed the limit of ten new trips.

New development generating more than 10 PM peak hour trips and not meeting concurrency or participating in the City's TDR program could not be approved.

These trips would be added in the transportation model as *approved* trips and considered when a new screenpoint failure threshold was established. This amendment would reduce the impact of concurrency on small property owners and make the number of *new* trips allowed on vacant and developed parcels consistent.

OPTION B7 - ESTABLISH AN ANNUAL "CAP" ON THE NUMBER OF TRIPS ADDED TO THE CITY'S TRANSPORTATION SYSTEM**:** Currently the number of trips by minor new development on vacant parcels (new development generating 3 or fewer p.m. peak hour trips) is capped at 125 p.m. peak hour trips, and the number of trips added by the change or expansion of existing uses is "capped" at 180 trips per year. Both

caps allow the City to manage the rate of increase in the number of trips generated by small projects. Since 1998, approximately 35 new trips a year have been added under the existing caps.

The proposed amendment would replace these limits with a single annual cap on number of trips added by minor new development (including the expansion of existing uses or changes in use) in the City in any given year without having to test for concurrency. This cap would not apply to trips generated by new development passing concurrency. Options for establishing this annual cap on the number of new p.m. peak hour trips include:

a. Allow a one percent increase in the number of trips using 2003 as the base year, or 420 trips.

b. Allow a one percent increase in the number of trips using 2003 as the base year and subtract regional trips (approximately 33%) from the base, or 275 trips.

c. Allow five percent (1/20) of the number of trips expected to be added to the transportation system over the next 20 years in any given year, or 500 trips.

d. Allow more or less than a one percent increase in the number of base trips.

OPTION B8 - INCLUDE THE ESTIMATED NUMBER OF PM PEAK HOUR TRIPS FROM PARCELS DESIGNATED BY THE CITY'S TDR PROGRAM AS SENDING SITES INTO THE TRANSPORTATION MODEL**:** Under this amendment, p.m. peak hour trips from designated TDR sending sites would be treated similar to "existing trips". TDR trips would be included in the transportation model and would not require further transportation concurrency review.