



Report on King County 2006 and 2007 Concurrency Modeling Review

**For
King County Auditor's Office
King County Council**

**Prepared by
Mirai Transportation Planning & Engineering**



May 2007

KING COUNTY

2006 AND 2007 CONCURRENCY MODELING REVIEWS

Introduction

Following 2004 amendments to the King County concurrency ordinance which changed the Level of Service Standards for the transportation concurrency program, Councilmembers had questions concerning the impact that the 2004 changes would have on future development patterns and the county's ability to evaluate the need for transportation improvements. In 2005, the Auditor's Office contracted with Mirai Transportation Planning and Engineering (Mirai) to conduct a study to answer these questions. Mirai was asked to assess the impact of the 2004 concurrency level of service changes on future development patterns and the county's ability to evaluate the need for transportation improvements in the unincorporated areas of King County. Mirai was also asked to review the Road Services Division practices to see if they had followed standard transportation planning and engineering practices in their transportation modeling for the concurrency program. In June 2006, an audit report (2006 report) was issued summarizing the findings and recommendations regarding these questions asked by the King County Council.

The key issues evaluated in the 2006 report were:

1. Whether or not the Road Services Division follows standard industry traffic modeling practices for the roadway concurrency program.
2. The impact of the adopted changes on future development patterns and the need for improvements to the road network.

The 2006 audit report's review of the county's 2004 transportation concurrency program found that:

- The concurrency management program was overly complex and used questionable modeling practices;
- Modeling practices lacked transparency and quality control;
- The council's 2004 changes to level of service standards would allow additional development in general, but not in all areas of the county; and
- Technical changes to the modeling practices used to develop the 2004 residential map had a greater impact than policy changes to standards and methods.

Based on these findings, the 2006 report included 11 recommendations, which were intended to reduce complexity, to improve modeling practices, and to increase quality control. The report emphasized that King County must ensure that approval of land use developments are based on sufficient transportation facilities (including

funded improvements to be completed within six years) being in place at the time of development approval, as required by the Growth Management Act (GMA).

The 2006 report concluded that:

- To meet the GMA requirements, a technically sound concurrency model is needed.
- King County's concurrency modeling practice was overly complex and not transparent.
- The 2004 concurrency modeling practices and assumptions were questionable.
- Identifying the most cost-effective transportation solutions with the modeling tools being used was difficult.
- King County's concurrency program treated different types of development differently (residential vs. non-residential developments).
- Concurrency program lacked sufficient quality control.

The executive concurred with 5 of the 11 recommendations, partially concurred with 3 recommendations, and did not concur with 3 recommendations.

As a follow-up to the 2006 audit report, in 2007 the auditor's office contracted with Mirai to review the 2006 and 2007 concurrency modeling, focusing on quality control and the technical accuracy of the concurrency modeling.

Proposed Concurrency Ordinance Amendments

On September 27, 2006, and February 15, 2007, King County Executive Ron Sims transmitted to the Metropolitan King County Council status reports on the transportation concurrency. With each transmittal, he asked the council to adopt a revised concurrency ordinance that included a revised Residential Transportation Concurrency map. The council did not take action on the proposed ordinance in 2006 and is reviewing the 2007 ordinance amendments at this time. As a result, the 2004 Residential Transportation Concurrency map remains in effect. The 2007 amendments include a revised Residential Concurrency Map and a revised list of the monitored corridors where the travel time level of service standards are applied for the transportation concurrency purposes.

Mirai reviewed both ordinance amendment proposals and the documents prepared by the Road Services Division, Department of Transportation. This report summarizes those findings and outlines the consultant recommendations.

Conclusion on Adequacy of Transportation Facilities

The concept of transportation concurrency as defined by the state Growth Management Act is to assure that adequate transportation facilities are provided concurrently when development permits are issued by local jurisdictions, including counties. It should be noted that the focus of concurrency requirements is to ensure that the transportation facilities are provided adequately, preventing development is not the prime focus. If adequate transportation facilities are not provided, then development applications that would cause the level of service on a locally owned

transportation facility to decline below the level of service standards adopted in the comprehensive plan are to be denied. In order to deny development applications, the jurisdictions must explain the relationship between the inadequate facilities and the traffic impacts created by the development. The concurrency model that King County Road Services Division has developed attempts to clarify this relationship in advance of accepting the residential development applications.

The proposed 2007 concurrency ordinance amendment includes the Residential Concurrency Map, dated October 30, 2006, that shows the concurrency zones with red and green shading. No housing development would be allowed in any of the red zones regardless of whether they were located in the urban or rural areas, except for short plat residential development in the urban area and single residential units on existing legal lots in the urban and rural areas.

The proposed Residential Concurrency Map (dated October 2006) attached to the 2007 ordinance amendments shows that among 638 concurrency zones within unincorporated King County, 363 zones are designated green and 275 zones are red. Of these red zones 224 are in Rural areas and 51 are in the Urban areas of King County. The red zones comprise 43.1 percent of the total number of zones, but a much smaller percentage of total county population. The last concurrency map, adopted in 2004, showed that 40.1 percent of the total zones were designated red. Of these red zones in 2004, 209 were Rural and 48 were Urban. The total number of the red zones has increased from 2004 to 2007.

After reviewing the proposed 2007 Residential Concurrency Map, the following conclusions can be made regarding the King County's concurrency program:

- The proposed 2007 Residential Concurrency Map shows that the existing transportation facilities in King County are inadequate to support significant development in the rural areas as well as some part of the urban areas in the unincorporated King County, which is indicated by the number of the red zones. This conclusion is based on the adopted standards and technical concurrency analysis methods used by the county.
- The transportation improvements adopted in the county's Capital Improvement Program (CIP) are not adequate to support the future development in many areas within the unincorporated King County.
- Based on the 2007 Residential Concurrency Map, most of the red-colored concurrency zones are in the rural areas. However, the fact that a rural zone is designated red does not necessarily mean that the existing transportation facilities within that red zone or within the rural area near that zone are inadequate. Rather, the more stringent rural Level of Service Standard (LOS B) is applied to trips originating in the Rural Area even after those trips continue into the more congested Urban Area. Therefore, many rural concurrency zones may be colored red, and residential development in those zones denied, not due to congestion in the Rural Area, but due to congestion in the Urban Area *using the more stringent rural level of service standard*. Under the current level of service standards adopted by the County Council, it appears that King County is applying two concurrency standards (a rural standard and an urban

standard) to the same transportation facilities. This situation is confusing, and it may be advisable to reconsider this policy in future planned changes to the concurrency system. (This issue is explained more fully in the section below regarding the affected links.)

- The number of red zones has increased since the 2004 concurrency update, indicating that growth is out-pacing the existing and programmed capacity of the transportation facilities.

Road Services Division staff have indicated that they are exploring options to make significant changes to the concurrency program and the policy issues raised in the 2006 audit report would be appropriately considered and incorporated into the new concurrency system. Such changes would likely require the council to make significant policy choices regarding rural and urban development issues, transportation concurrency and related GMA issues. The following is a list of the policy recommendations forwarded by Mirai in the 2006 audit report:

- Use single level of service standard.
- Eliminate the use of Transportation Adequacy Measures (TAM).
- Use a single process for all types of development.
- Establish an expert review panel.
- Review the monitored corridors outside unincorporated King County and decide whether the TAM score should be calculated with the network links outside unincorporated King County.
- Assess the impact of the travel time standard to the unmet need of road improvements.
- Examine the implications of the LOS B standard to the unmet need for capacity-related improvements in the rural area segments of the monitored corridors.

Recommendation #1: Revisit the policy issues identified in the 2006 audit report that have yet to be implemented.

Documentation and Quality Control

When Mirai reviewed King County's 2003 and 2004 concurrency modeling in 2006, serious quality control problems were found and documentation for the concurrency modeling was lacking. The 2006 report stated that several changes to the model were not documented and that the actions the concurrency modeling staff took to prepare for the 2004 residential concurrency map could not be adequately explained.

Mirai recommended that the concurrency management staff prepare an annual report to explain the technical assumptions, land use changes, network changes, and other parameters used to update the concurrency model.

For the 2006 and 2007 concurrency ordinance amendment reviews, the concurrency management staff provided Mirai with three binders containing several documents related to the concurrency modeling: one contained the network changes made since the last modeling, another the land use data used as input to the model, and the third included the result of the level of service analyses. In addition, the staff

included an annual report entitled *Transportation Concurrency Management Program 2007 Concurrency Model Update/Revision (February 2007)* that was attached to the executive’s transmittal to the King County Council. The document was prepared as a response to one of the 2006 audit recommendations.

The concurrency management staff of the Road Services Division made considerable efforts to document how the concurrency model was prepared for the 2006 and 2007 ordinance amendments. These technical reports explain how the updates to the model were made from one year to the next.

Road Services Division staff indicated that the model was calibrated in 2000 and further validated in 2003. One short-coming was the apparent lack of documentation for the base year model calibration and validation analyses and results. Showing incremental changes from the previous year is not adequate. (Road Services Division staff has recently provided a full set of documentation for the base year model calibration and validation analyses and results.)

Recommendation #2: Maintain and complete documentation to explain the base year model calibration and validation.

Definition of Transportation Adequacy Measure (TAM)¹

The King County concurrency ordinance defines the transportation adequacy measure (TAM) as follows:

“TAM means the average weighted volume-to-capacity ratio for all traffic in the afternoon peak hour for a concurrency zone or nonresidential development.”

This definition does not explain exactly how TAM scores are calculated with the concurrency model. There is a discrepancy between the definition in which the ordinance specifies the TAM and the practice of the concurrency modeling to calculate the TAM scores. The actual TAM is more complex measurement than the ordinance definition implies. Policy makers might not understand the complexity of the TAM unless it is clearly defined based on the concurrency modeling practices that have been used.

The ordinance should define that a TAM score is the averaged volume-to-capacity (V/C) ratio of **all links in the network for those links determined to be affected by the trips generated by the concurrency zone**. TAM is an averaged and weighted V/C ratio of the specific links affected by the trips generated by the growth in the concurrency zone. It is important to understand the relationship between the trips generated by the growth in the zone and their impacts on the network links. The ordinance should define how this relationship should be established and evaluated.

The concurrency modeling staff have made a practice of using uniform and hypothetical 201 trips for each zone to determine the paths on the model’s roadway network that would be affected by traffic from each zone. The hypothetical value of

¹ See the Auditor’s Office’s original study of the concurrency program (Report 2006-03) for more information on technical aspects of the concurrency program that are discussed in this report including TAM scores, Yellow Zones, and Monitored Corridors.

201 trips is used regardless of the actual type or intensity of residential or other land use development in each zone. The 201 trips are assigned to the model network to identify roadways affected by traffic from each zone. It is an artificial number which does not represent the actual trips from each zone but is intended to identify affected network links. Any network link that receives 0.0001 trips from the zone is determined to have a traffic impact from that zone. The V/C ratios on the affected links are weighted based on the distance of the links and are then averaged to calculate the TAM score for a specific zone.

The ordinance should also define the affected links. The outcome of each TAM score is greatly influenced by the definition of the affected links.

Recommendation #3: In the concurrency ordinance, revise the definition of TAM to reflect the V/C calculation ratio method applied in the concurrency modeling and add the definition of the affected links.

Definition of Travel Time Measure

The proposed ordinance also fails to define how the affected links are defined with regard to the travel time measures in the concurrency ordinance.

As was done for the TAM, the concurrency model sends 201 trips for the concurrency zone and checks how many trips from the zone use each link on each monitored corridor. If more than 30 percent of the hypothetical 201 trips from any zone use a link on the model's road network representing a monitored corridor, the model identifies that link as a zone impact to a monitored corridor. The travel time of each affected link is checked against the travel time level of service standard for the link. Again, 201 trips do not represent the actual traffic volumes to a zone, but are used to map the routes selected by the model for trips from any one zone. The council should re-evaluate its previous policy determination to use this 30-percent standard to identify "affected" links on monitored corridors to decide if the 30-percent factor is a reasonable way to identify links affected by future increases in trips (to and from the zone) on the links in the monitored corridors. The ordinance should define the affected links related to the travel time standard for the monitored corridors.

Recommendation #4: Revise the definition of travel time measure to reflect the actual method that is used in the concurrency modeling and add the definition of the affected links in the concurrency ordinance.

Elimination of Yellow Zones

The 2006 auditor's report commented that the method used to calculate the remaining trip capacity in the yellow zones was overly complex and difficult to understand. Furthermore, there was little value to having the yellow zone, and it should be treated as a green zone. Therefore, it was recommended that the use of the yellow zone concept be eliminated. The 2007 ordinance amendments propose to eliminate the yellow zone concept.

Changes to Monitored Corridors

The proposed 2007 concurrency ordinance amendments include significant changes to the designation of the monitored corridors. The previous ordinance included a list of 34 monitored corridors throughout King County, many of which extended beyond the limits of the unincorporated areas. The proposed ordinance amendments include a list of monitored corridors with new limits. Because the proposed amendments define the monitored corridors as those segments located only within the unincorporated areas of the county, the new limits will have an impact on the results of the travel time level of service measure for monitored corridors. For example, in the current ordinance the Novelty Hill Road monitored corridor was defined to include the segment from Avondale Road NE to the West Snoqualmie Valley Road. The proposed amendments define the corridor to be from the Redmond City limits to West Snoqualmie Valley Road, without that section of Avondale Road NE within the City of Redmond.

At issue is the inconsistency between the TAM, in which the impacts of the growth in the unincorporated areas are assessed on the facilities located throughout the region as demonstrated below, and the travel time measures for the monitored corridors where it is proposed to evaluate the segments of the monitored corridors located in the unincorporated King County.

Recommendation #5: Discuss the policy issue of whether or not the concurrency program should evaluate transportation facilities outside the limits of the unincorporated area.

Affected Links

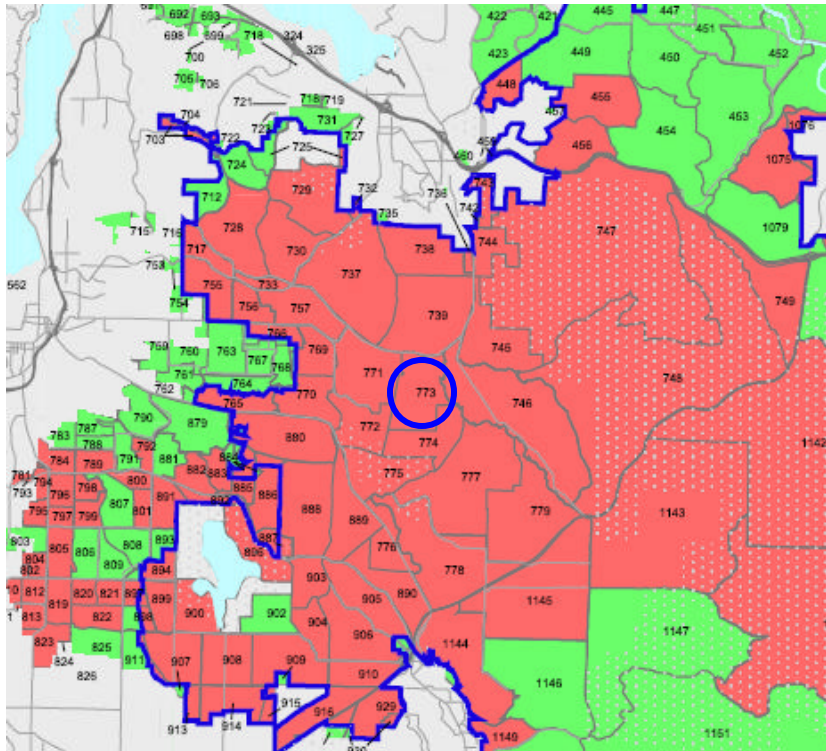
Transportation concurrency determinations for proposed residential development in each concurrency zone are made based on a pre-drawn concurrency status map. One factor in determining whether any zone on this pre-drawn map will be green or red is the TAM score, which is determined by assigning a hypothetical 201 trips from each zone to the network to determine which links would be affected. To calculate a TAM score, the affected links are defined as those having trips from the zone with more than 0.0001 trips. Once the affected links are identified, the volume-to-capacity ratios of the affected links for the zone are weighted, summed and averaged.

For the monitored corridors, the affected links are defined as those having 30 percent or more of the 201 trips from the zone. The travel times of the affected links are checked against the travel time standards. This process of identifying affected links on monitored corridors does not consider the actual land use type or intensity. Instead, a fixed 201 trips are assigned from each zone to determine the affected links.

To understand more about this concept, we chose Zone 773, which is located in the rural area of the Soos Creek community as shown in **Figure 1**. Zone 773 is designated as a red zone because the 2007 TAM score was 0.841 where the standard is 0.69. The 2006 TAM score was 0.730, which indicates that the concurrency model has identified roadways on the network that do not meet adopted level of service standards for traffic to and from this zone. We assigned 201 trips from this zone and

identified the links in the model having greater than 0.0001 trips. The **red colored links** in the computer generated network map (**Figure 2**) show the affected links by trips from Zone 773.

Figure 1. Location of Zone 773

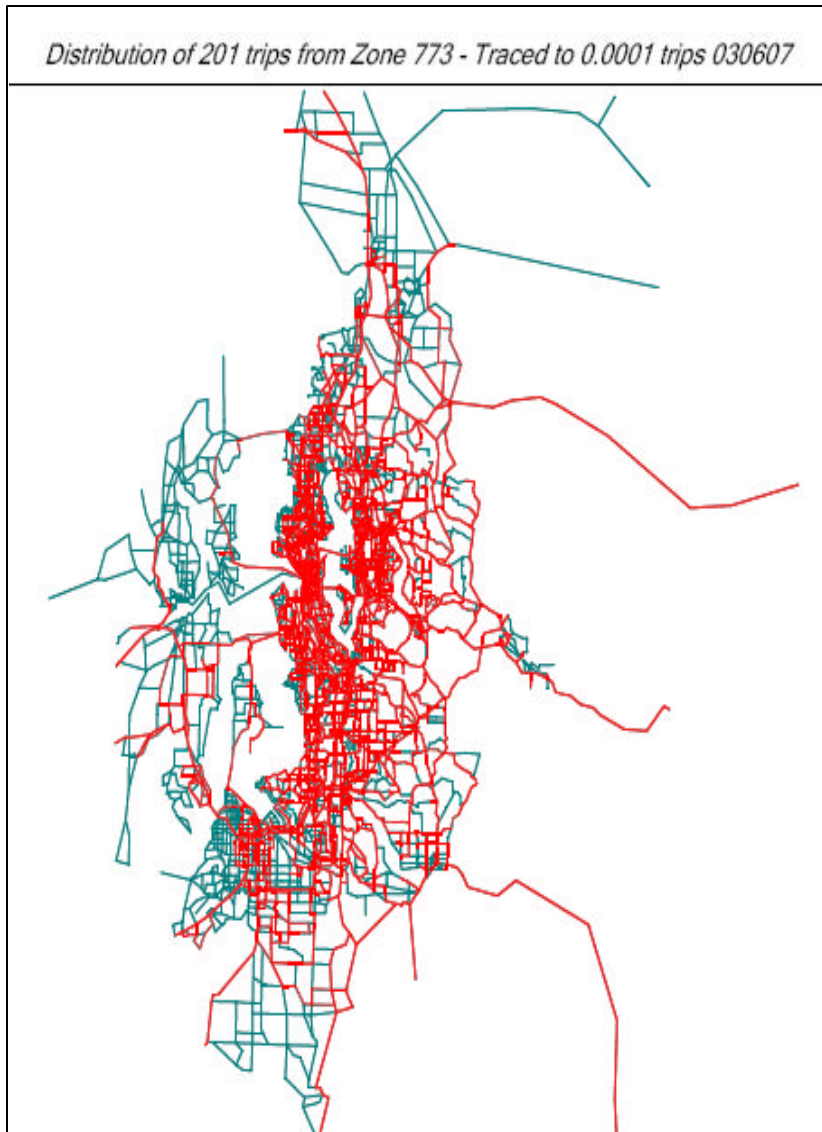


The affected links map for Zone 773 shows that trips generated from Zone 773 affect almost the entire arterial network links in King County, many links in Pierce and Snohomish Counties and some links in Kitsap County. The great majority of the affected links from Zone 773 are located within the urban area.

Some questions can be raised:

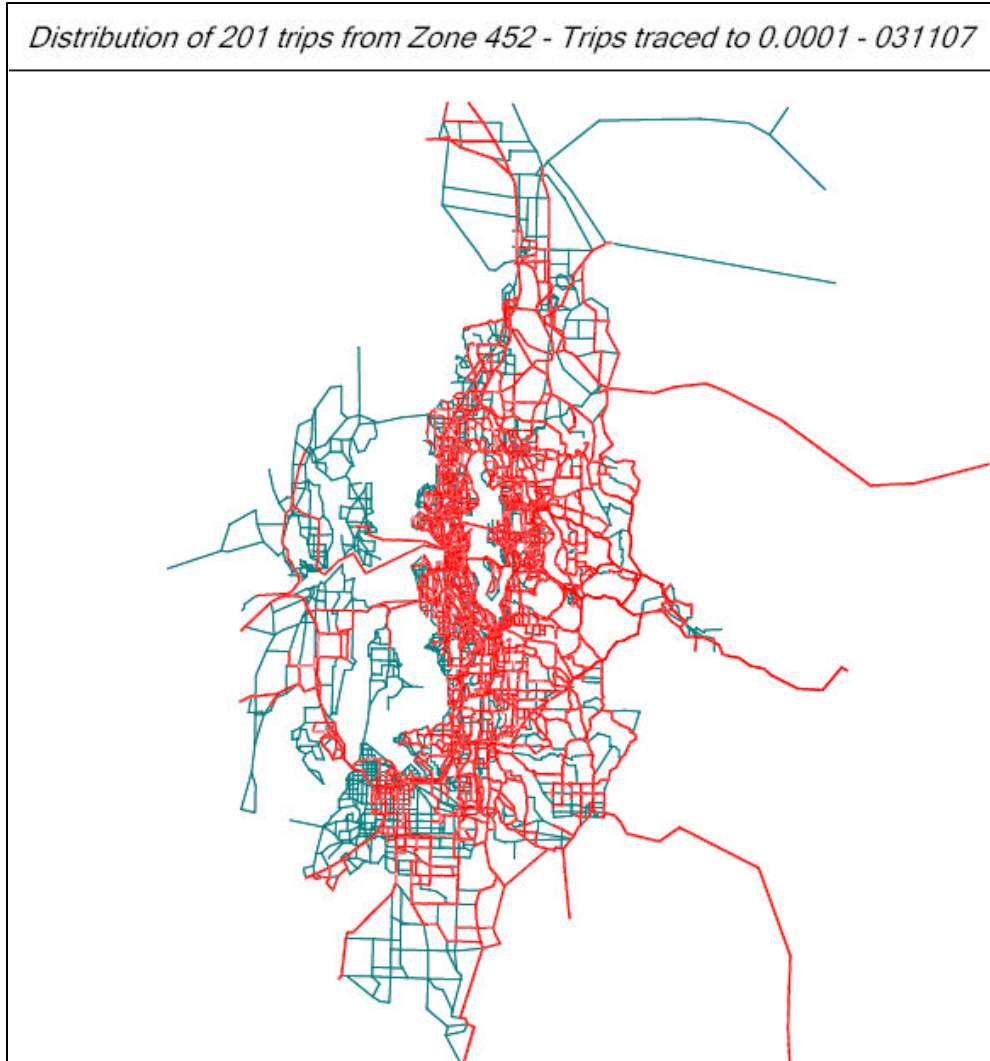
- Are the affected links as identified by the concurrency model reasonable (i.e., should there be that many)?
- If the great majority of the affected links by rural Zone 773 are located in the urban area, should a rural level of service TAM standard be applied for these links just because the zone is a rural zone?

Figure 2. Affected Links by Trips from Zone 773



To understand why some zones in the rural area are designated red and others green, we chose Zone 452, which is located in the rural area north of I-90 as shown in **Figure 3**. This zone is designated as a green zone on the proposed 2007 Residential Concurrency Map, with a TAM score of 0.663. The previous TAM score based on the 2004 Residential Concurrency Map was 0.604; this zone experienced degradation of the level of service but it is still within the standard of 0.69. **Figure 4** shows the result of this exercise.

Figure 4. Affected Links by Trips from Zone 452



The following observations were made:

- Looking at this map, the affected links from Zone 452 appear to be virtually identical to the affected links from Zone 773; therefore, it is not clear why one is red and the other green.
- The affected links can be located quite far away from the zone which is being tested. Therefore, a concurrency zone in the rural area of King County could be colored red due to traffic congestion in the urban area of King County, or even in the urban areas of other counties including Snohomish, Pierce, and Kitsap Counties.
- Given that the concurrency model applies a rural TAM standard of LOS **B** to each of the hypothetical trips from the rural zone, even on links within the urban area (where the LOS is **E** for trips originating in the urban area),

residential development could be denied in the rural zone because of congestion in the urban area, even though it is possible that the level of congestion in the urban area does not exceed the urban standard.

- The TAM is a measure of the overall weighted average of level of service on all links affected by trips generated within a concurrency zone. The measure of the overall weighted average encompasses a very broad geographic area. When the test is carried out for a zone in the rural area, the rural LOS standard applies throughout that very broad area.
- The modeling process to determine the roadway links affected by the traffic from any one zone is one of the most critical elements of the concurrency modeling. Yet, this element, as demonstrated above, is not very transparent.

Our 2006 auditor's report expressed concerns about the technical process used to define the affected links for the TAM score and the monitored corridors. After reviewing this technical process in more detail for the proposed 2006 and 2007 ordinance amendments, this issue has remained unresolved.

Recommendation #6: The Roads Services Division should use the actual trips generated by land use in each zone and distribute them in the road network to determine the affected links. Stop the distribution of the trips to the links when it reaches a reasonable number such as 5 trips. Conduct research to find a reasonable number of the trips to define the affected links.

Growth Outside King County

Regarding the modeling of land use growth in the neighboring jurisdictions, the 2006 audit report commented that some of the data used by the model are incomplete or dated. For example, the land use growth in surrounding counties and the road improvements committed by other jurisdictions are not reflected in the model.

The report recommended that the concurrency model reflect the land use growth in neighboring counties and include all the transportation improvements that have a financial commitment by another jurisdiction.

The 2007 proposed concurrency ordinance, which incorporates the modeling that was done last year, added an estimate for the growth in trips due to the growth from 2000 to 2005 in Snohomish and Pierce Counties. This may be one of reasons that the red zones have increased since last modeled for 2004.

Employment Data

The first step in the travel demand model used by the King County concurrency model calculates the trips generated by households and employment. King County applied the King County Assessor's data to obtain the land use information. The assessor's files included housing units and commercial square footage. To obtain a count of the employees located in all zones, the Road Services Division converted building floor areas to employment by applying employment density factors. However, the most accurate way to obtain employment figures is to use the data

generated by the State Employment Security Department. This is the data that has been used for regional modeling by the Puget Sound Regional Council (PSRC).

It may be reasonable to use King County Assessor's data and convert floor area data to obtain employment for a short period, possibly one year. Any errors that might occur in the conversion process from floor area to employment would likely be compounded if King County keeps adding growth from the assessor's data over several years.

Recommendation #7: Use employment data from the State Employment Security Department through the Puget Sound Regional Council and supplement it with the assessor's data only when the Employment Security data is not available.

Commercial Space Vacancy Rates

As we have witnessed over the last several years, office and commercial space vacancies fluctuate depending on the economic conditions. The concurrency model assumed that there were no vacancies in King County. As the office vacancy rate has fluctuated in the range of 5 to 15 percent during the last several years, depending on locations, it appears that the concurrency model overstated the levels of employment in the region, thus showing more travel demand than there was in 2004. The vacancy rates can be obtained by reviewing reports issued by major leasing agencies in the region.

Recommendation #8: Include realistic vacancy rates in the concurrency model for existing and pipeline commercial spaces.

Mode Share

In order to estimate the vehicle travel demand from each zone, it is necessary to allocate the "person" trips generated by the land use types to each of the travel modes: single occupant driving (SOVs), high occupancy vehicles (HOVs), and transit. As the King County concurrency model does not have the ability to do this allocation, the county adopted the mode share factors from the PSRC's 2000 model. While this application may be reasonable, it should be noted that the use of transit has been increasing because the cost of gasoline has increased since the year 2000. Therefore, the concurrency map attached to the 2007 ordinance may have overstated the degree of traffic congestion in the network.

Recommendation #9: Provide better description of the mode share assumptions used in the concurrency model.

Traffic Assignment

Once the total number of trips is established, the model creates an origin and destination matrix called a trip table. The next effort is to determine which routes are taken by the origin and destination trip pairs in the trip table. This modeling step is called the traffic assignment. In the 2004 concurrency modeling, King County used a method called the "all-or-nothing" assignment. The 2006 auditor's report commented that this method does not reflect actual driver behavior and is not

consistent with standard planning practices. The technique resulted in the model assuming higher levels of traffic congestion on the major freeways and arterials than would be actually present.

For the 2007 ordinance amendments, the Road Services Division staff did not use the all-or-nothing assignment technique and, instead applied the equilibrium assignment technique as recommended in the 2006 auditor's report. The model assignment was set to run 30 iterations or to a gap of 0.05 whichever was reached sooner. (For the 2007 concurrency modeling, 30 iterations reached sooner and the gap was much larger than 5 percent.) Modeling professionals generally assume that to complete the traffic assignment, the difference in traffic volumes between previous and new assignments should be less than 2 percent.

Recommendation #10: Set traffic assignment modeling to stop when the difference in the previous assigned volumes and newly assigned volumes becomes less than 2 percent.

Overall Summary Findings

The 2004 audit on the concurrency modeling practices found that:

- The concurrency management program was overly complex and used questionable modeling practices.
- Modeling practices lacked transparency and quality control.
- The council's 2004 changes to the concurrency standards would allow additional development in general, but not in all areas of the county.
- Technical changes and errors to the modeling practices in 2004 had a greater impact on the measurement of concurrency than the policy changes to standards and methods.

The 2006 audit report included 11 recommendations intended to reduce complexity, improve modeling practices and quality control.

The 2007 follow-up was intended to assess the accuracy and transparency of the traffic modeling in support of the 2007 ordinance, and to assess the extent to which the 2006 recommendations have been implemented.

The 2007 audit found the following:

- Unlike the 2006 concurrency review, no technical modeling errors were found.
- Significant efforts have been made to improve quality control and transparency of modeling.
- Progress had been made in implementing several of the 2006 recommendations on the concurrency modeling practices.
- Considerable efforts have been made to prepare better documentation. This has also contributed to improvements in the transparency of the concurrency modeling.

This audit includes a new set of recommendations to further improve the accuracy of concurrency modeling.

It should be noted that some of the most significant policy recommendations have yet to be addressed. A list of the policy recommendations that have yet been addressed is included in the earlier section of this report, and a new policy recommendation regarding the issue of the affected links was presented in this report.

The Road Services Division staff are exploring options to make significant changes to the concurrency program and address the policy issues raised in the 2006 audit report and to respond to council provisos. We anticipate that this effort will also respond to the recommendations of this follow-up report.

[Blank Page]

Executive Response



King County

Ron Sims

King County Executive

701 Fifth Avenue, Suite 3210
Seattle, WA 98104

206-296-4040 Fax 206-296-0194

TTY Relay: 711

www.metrokc.gov

KING COUNTY AUDITOR

MAY 17 2007

RECEIVED

May 17, 2007

Cheryle A. Broom
King County Auditor
Room 1033
COURTHOUSE

Dear Ms. Broom:

Thank you for the opportunity to review the draft final "Report on King County 2006 and 2007 Concurrency Modeling Review" prepared by Mirai Transportation Planning & Engineering, dated April 2007. This report is a follow-up to Mirai's June 2006 "Report on King County Concurrency Modeling Review," prepared for the King County Auditor's Office, King County Council.

Staff in the Department of Transportation (DOT) have had an opportunity to review the Report and appreciate Mirai's overall findings that significant progress has been made in eliminating technical modeling errors, improving quality control and "transparency" of modeling, implementing 2006 audit recommendations, and preparing better documentation. DOT staff looks forward to working on the technical and policy issues raised in the 2007 report.

Since the transportation concurrency issues raised in the 2007 report arise from the concurrency and long-range transportation planning requirements in the Washington State Growth Management Act (GMA), it is important to provide additional information on transportation concurrency requirements of the GMA.

The GMA specifies certain mandatory elements that must be included in King County's comprehensive plan. The Transportation Element of the comprehensive plan must include a number of sub-elements, including long-range transportation planning and short-range concurrency assessment of transportation adequacy at the development level.

Long-range transportation planning under the GMA require that land use, level of service (LOS) standards, and financing information be prepared for and applied to a long-term planning horizon based on population projections for the same time period.

The purpose of transportation concurrency is to make a short-range determination of the adequacy of transportation facilities to accommodate traffic from proposed development using adopted LOS standards. The concurrency process compares traffic demand from existing and "pipeline" development to the traffic capacity provided by existing capital facilities plus facilities "committed" for construction within the adopted six-year Roads Capital Improvement Program (CIP).



*King County is an Equal Opportunity/Affirmative Action Employer
and complies with the Americans with Disabilities Act*



Executive Response (continued)

Cheryle Broom
May 17, 2007
Page 2

Mirai's 2007 report includes the following statement: "It should be noted that the focus of concurrency requirement is to ensure that the transportation facilities are provided adequately, preventing development is not the prime focus." This statement suggests that the concurrency requirements of GMA are intended to require King County to construct roadways to allow development in all areas of the county. While preventing development may not be "the prime focus," of GMA, there is no question that GMA includes strict and mandatory prohibitions on development when adequate facilities are not in place. RCW 36.70A.070(6)(b) provides:

After adoption of the comprehensive plan by jurisdictions required to plan or who choose to plan under RCW 36.70A.040, local jurisdictions must adopt and enforce ordinances which prohibit development approval if the development causes the level of service on a locally owned transportation facility to decline below the standards adopted in the transportation element of the comprehensive plan, unless transportation improvements or strategies to accommodate the impacts of development are made concurrent with the development. These strategies may include increased public transportation service, ride sharing programs, demand management, and other transportation systems management strategies. For the purposes of the subsection (6) "concurrent with the development" shall mean that improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years. (emphasis added)

Both the 2006 and the 2007 Mirai reports seem to suggest that the transportation concurrency model is the county's only means of identifying transportation needs in the county. In King County, the identification and prioritization of long-range transportation road facility needs (currently a horizon year of 2022) is accomplished through the Transportation Needs Report (TNR). The TNR is the long-range plan that serves as the basis for development of the six-year Roads CIP. The TNR is adopted and amended as part of the county's regular updates of the King County Comprehensive Plan. The CIP is the implementation of the plan.

The county's transportation concurrency program is intended to identify areas of the county where development can be accommodated based on existing and "committed" improvements. The concurrency model is not intended to identify specific roadway improvements needed to meet level of service standards for each of the 638 concurrency zones in unincorporated King County. In fact, it has been a deliberate policy choice of King County, consistent with GMA, to encourage development in urban areas of the county and to protect rural areas from urban development. Using the results of concurrency modeling to treat all "red" zones as zones that must have additional roadway improvements would be inconsistent with the GMA requirement for a long-range comprehensive plan approach for coordinating land use, LOS standards and capital facilities. These three elements are to be evaluated and balanced through the GMA's long-range transportation planning process (described above) and not through transportation concurrency.


Attached is a summary of my responses to the report recommendations in the table format requested in your May 3, 2007 memorandum.

Executive Response (continued)

Cheryle A. Broom
May 17, 2007
Page 3

Thank you for the opportunity to review and provide a response to the report. If you have questions regarding these responses, please do not hesitate to contact me or Harold Taniguchi, Director, Department of Transportation, at 206-684-1481.

Sincerely,

A handwritten signature in black ink, appearing to read "Ron Sims". The signature is written in a cursive style with a large initial "R" and "S".

Ron Sims
King County Executive

Attachment

cc: Kurt Triplett, Chief of Staff, Office of the King County Executive
Dave Lawson, Internal Audit Manager, Executive Audit Services, Office of Management and Budget
Harold Taniguchi, Director, Department of Transportation (DOT)
Linda Dougherty, Division Director, Road Services Division (RSD), DOT
Jennifer Lindwall, CIP and Planning Section Manager, RSD, DOT

Executive Response (continued)

Executive response to “Report on King County 2006 and 2007 Concurrency Modeling Review”

Recommendation	Agency Position	Schedule for Implementation	Comments
<p>Recommendation #1: Revisit the policy issues identified in the 2006 audit report that have yet to be implemented.</p>	concur	The policy issues will be addressed as part of the Comprehensive Plan update scheduled to be transmitted to the Council in March 2008.	An update of the concurrency system and methodology is currently underway.
<p>Recommendation #2: Maintain and complete documentation to explain the base year calibration and validation.</p>	concur	Completed.	The documentation of the base model has been completed at the time the base model was updated. This documentation was provided to the Auditor’s consultant. It will be appended to the 2007 concurrency model documentation and maintained in the files.
<p>Recommendation #3: In the concurrency ordinance, revise the definition of TAM to reflect the V/C calculation ratio method applied in the concurrency modeling and add the definition of the affected links.</p>	concur	Revision of the definition of TAM in the concurrency ordinance will be done in the context of the next model update.	
<p>Recommendation #4: Revise the definition of travel time measure to reflect the actual method that is used in the concurrency modeling and add the definition of the affected links in the concurrency ordinance.</p>	concur	Revision of the definition of travel time in the concurrency ordinance will be done in the context of the next model update.	

Executive Response (continued)

<p>Recommendation #5: Discuss the policy issue of whether or not the concurrency program should evaluate transportation facilities outside the limits of the unincorporated area.</p>	<p>concur</p>	<p>The policy issues will be addressed as part of the Comprehensive Plan update scheduled to be transmitted to the Council in March 2008.</p>	<p>An update of the concurrency system and methodology is currently underway.</p>
<p>Recommendation #6: The Roads Services Division should use the actual trips generated by land use in each zone and distribute them in the road network to determine the affected links. Stop the distribution of the trips to the links when it reaches a reasonable number such as 5 trips. Conduct research to find a reasonable number of the trips to define the affected links.</p>	<p>concur</p>	<p>The use and distribution of actual trips generated by land use in each zone will be addressed as part of the Comprehensive Plan update scheduled to be transmitted to the Council in March 2008.</p>	<p>Implementing this recommendation will require significant rewriting of the computer routines to account for actual land use in each individual zone.</p>
<p>Recommendation #7: Use the employment data from the State Employment Security Department through the Puget Sound Regional Council and supplement it with the assessor's data only when the Employment Security data is not available.</p>	<p>concur</p>	<p>The use of the employment data from the State Employment Security Department through PSRC will be done in the context of the next model update.</p>	

Executive Response (continued)

<p>Recommendation #8: Include realistic vacancy rates in the concurrency model for existing and pipeline commercial spaces.</p>	<p>concur</p>	<p>The use of the vacancy rates for existing and pipeline commercial spaces will be done in the context of the next model update.</p>	
<p>Recommendation #9: Provide better description of the mode share assumptions used in the concurrency model.</p>	<p>concur</p>	<p>In progress.</p>	<p>When completed, the description and detail of the mode share assumptions will be appended to the 2007 concurrency model documentation and maintained in the files.</p>
<p>Recommendation #10: Set traffic assignment modeling to stop when the difference in the previous assigned volumes and newly assigned volumes becomes less than 2 percent.</p>	<p>concur</p>	<p>Setting the traffic assignment modeling to a gap of 2% will be done in the context of the next model update.</p>	