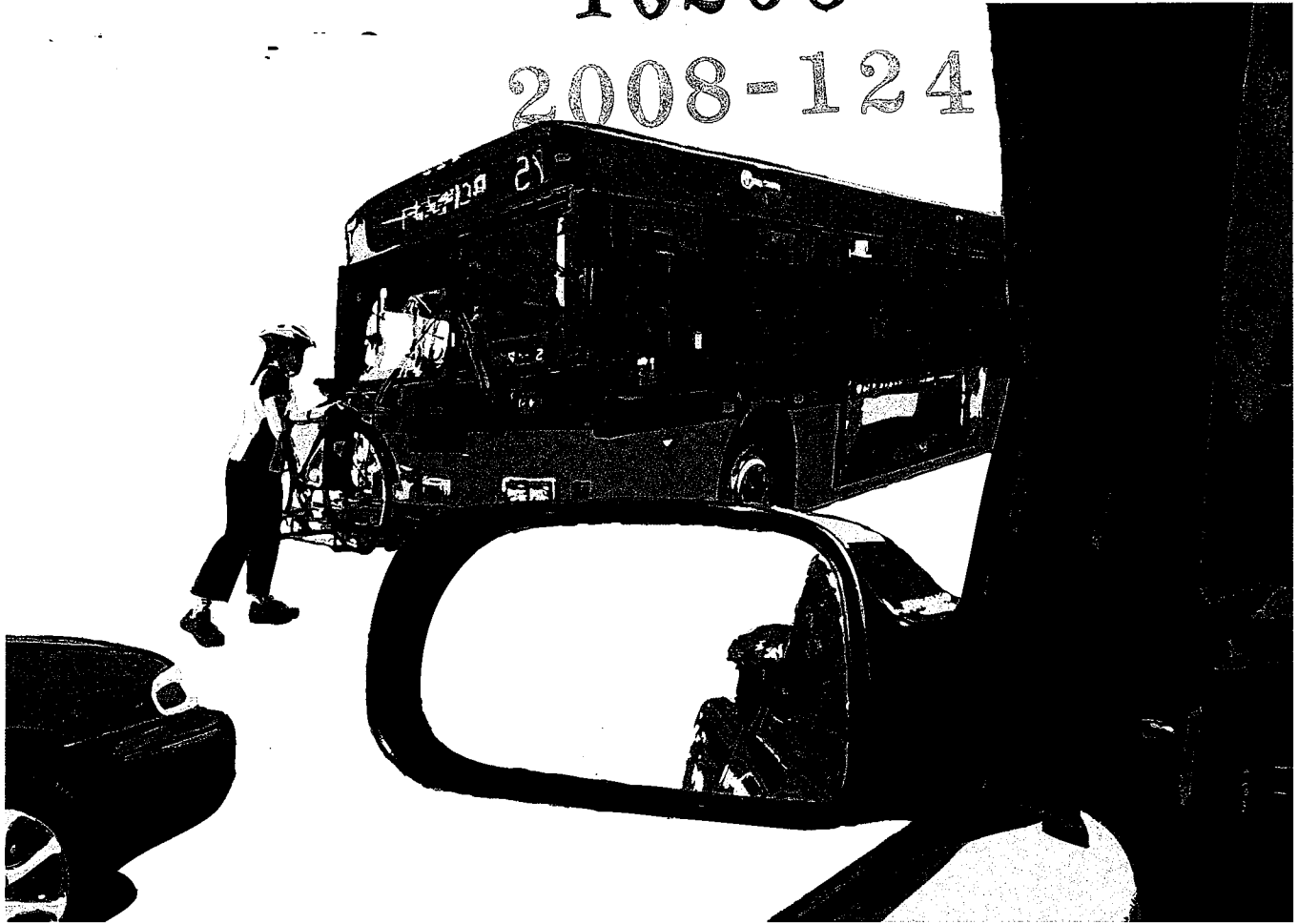


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Attachment E

2008-124



# Transportation Needs Report 2008

A Component of the Transportation Element of  
the King County Comprehensive Plan

Executive Recommended  
March 2008

# TRANSPORTATION NEEDS REPORT 2008

## An Element of the King County Comprehensive Plan

Executive  
Recommended  
Draft

March 2008



**King County**

Department of Transportation  
**Road Services Division**



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Development and

Summary

Of the

TNR

# Transportation Needs Report 2008

Executive Recommended Draft  
March 2008

## Introduction

The Transportation Needs Report (TNR) is a long-term, comprehensive list of recommended improvements to serve unincorporated King County's transportation needs. It includes transportation needs in unincorporated King County and significant projects in cities, adjacent counties, and on state highways. The transportation needs are those currently known (existing) as well as those that are forecast due to regionally-adopted targets for growth and development.

The TNR is a functional plan of the King County Comprehensive Plan. Together with the Roads Six-Year CIP and the Roads annual budget, it fulfills the requirement of growth management legislation (RCW 36.70A.070) for a transportation capital facilities plan element of the King County comprehensive plan. The TNR was prepared consistent with all requirements of growth management legislation including:

1. It is based on the land use element of the comprehensive plan.
2. Its list of transportation needs and recommended improvements was developed using travel demand forecasts that are based on the regionally-adopted growth targets.
3. It includes a financial analysis that reflects the most recent land use changes, project amendments, costs, and financial revenue assumptions.

The TNR horizon year is 2022, which is consistent with regionally-adopted targets for population and employment growth.

The schedule for updating the TNR has been changed to coordinate with major updates to the Comprehensive Plan. Starting with TNR 2004, the update cycle will coincide with the four-year, comprehensive plan major amendment cycles. Beginning with this document, the TNR will be transmitted to Council for adoption with the comprehensive plan amendments instead of following later as has been the custom. If circumstances warrant, interim updates will be developed and transmitted with the annual comprehensive plan technical amendments.

## **PURPOSE**

The TNR serves the following purposes:

**Relationship to King County Comprehensive Plan 2004:** A primary purpose of the TNR is to fulfill certain requirements of state growth management legislation for comprehensive planning. These requirements as outlined in state legislation (RCW 36.70A.070 (6)) are:

1. Specific actions and requirements for bringing into compliance locally-owned transportation facilities or services that are below an established level of service standard;
2. Forecasts of traffic for at least ten years based on the adopted growth targets and land use plan to provide information on the location, timing, and capacity needs of future growth;

3. Identification of state and local system needs to meet current and future demands;
4. An analysis of funding capability to judge needs against probable funding resources;
5. A multiyear financing plan based on the needs identified;

The TNR needs list and financial analysis fulfill these requirements. The needs list was developed using forecasts of traffic for the 2022 horizon year based on regionally-adopted growth targets and the land use element of the King County Comprehensive Plan 2004.

**Transportation Planning and Funding:** The TNR helps King County make decisions on planning and funding of transportation improvements. It provides guidance based on policies, strategies, and actions set forth in the comprehensive plan and the Roads Strategic Plan. It follows established processes linking land use planning with transportation needs.

The TNR plays a significant role in evaluating the difference between identified transportation needs and future expected revenues for King County. This analysis assesses the County's ability to keep pace with the demands of growth and assists in developing financial strategies to deal with unmet needs.

**Coordination:** The TNR helps to coordinate transportation improvements connecting King County with other jurisdictions including the Washington State Department of Transportation (WSDOT), adjacent cities, and counties. It also helps coordination between different divisions of the King County Department of Transportation. By clearly showing the location and scope of intended transportation improvements as well as the priority of these improvements, the TNR provides other jurisdictions with information to use in appropriately coordinating project implementation. Additionally, the private sector development community can use the TNR to identify areas where future growth could be accommodated by improved facilities.

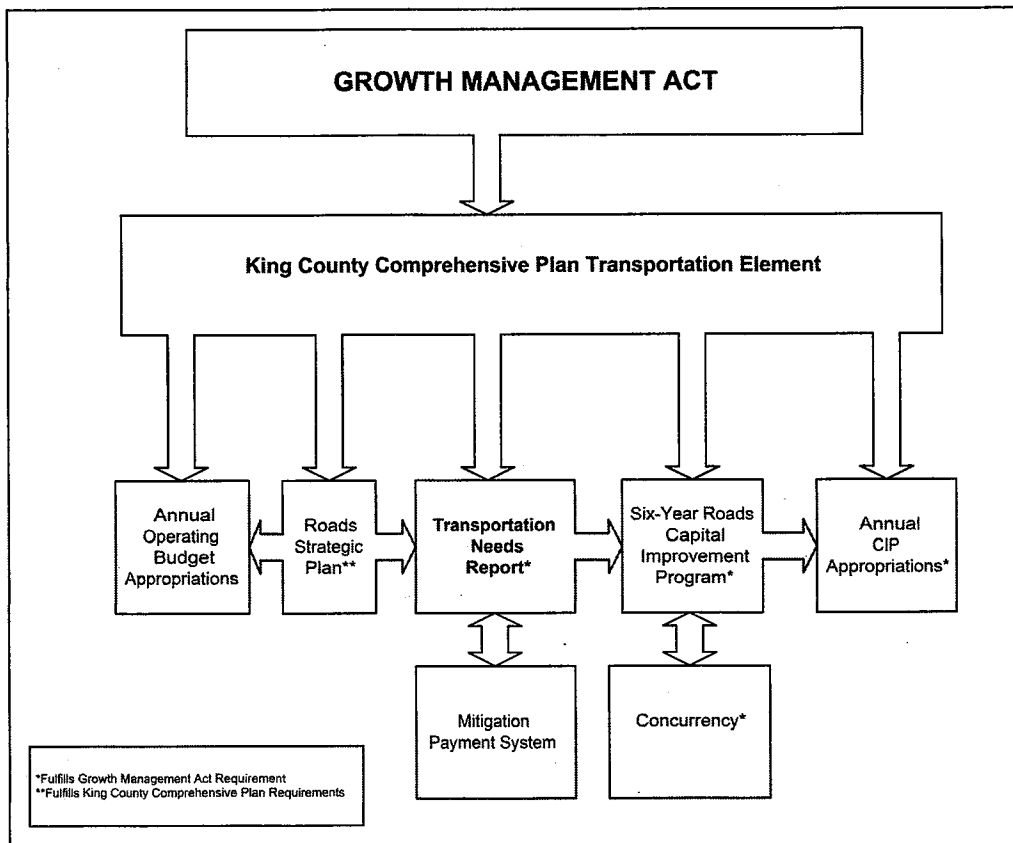
**Development Review:** The TNR serves as a major source of information in the review of proposed land developments and in determining appropriate mitigation measures required as a condition of new development approval. The County's Mitigation Payment System (MPS) uses the TNR to identify growth projects that will be part of the impact fee system.

**Road Vacation:** Property owners can petition King County to have portions of the County's unused road rights-of-way sold to them if the property is not needed for current or future transportation purposes. The TNR is used to indicate the location of future projects on the road system in this road vacation process.

## **PROCESS**

The development of the TNR is part of a comprehensive planning process that is guided by state growth management legislation. This process, as depicted in the flow diagram, links the guidance of the King County comprehensive plan and the Roads Strategic Plan with the development of the TNR, the six-year Roads capital improvement program, and the Roads annual budget. The mitigation payment system, which is authorized by growth management legislation and required by King County ordinance, is used to collect impact fees to help build road capacity projects needed to support growth. Projects receiving MPS funding are included in the TNR. The concurrency program, which is required by growth management legislation, tests proposed development to make sure road capacity needed to support future growth will be

available when needed. If a project needed to support the travel needs of a proposed development is included in the Roads six-year capital needs program and if other requirements are met, the proposed development may be granted a concurrency certificate to proceed with permit application.



**Development of the TNR 2008**

As the Comprehensive Plan undergoes a major update each four years, a major TNR effort will accompany this work. In the two year mid period, the TNR will be limited to technical updates.

For this update to the TNR, the following changes were incorporated and itemized into the TNR 2008.

**Vulnerable Road Segments**

The Roads Services Division instituted the Vulnerable Roadway Segments (VRS) study in 2005 to identify and address specific roadway funding needs throughout the County. A vulnerable road segment was defined as a road segment that requires abnormally expensive and/or frequent repairs. This includes roads with failing retaining walls, seawalls, roads with chronic settlement problems, or roadways close to rivers with repetitive erosion problems. Most VRS projects were added to the TNR in 2006, but the last part of the analysis was completed after the TNR went to print. The TNR 2008 includes 18 additional VRS needs. The VRS priority description has also been changed since 2006 and is included in Appendix C.



### **Countywide Guardrail Program**

Following a technical analysis, several dozen guardrail corridors were eliminated from the TNR as no longer meeting guardrail warrants. Other guardrail locations were merged into existing corridors.

### **TNR Advanced Scoping**

The Division undertook a field review of unfunded projects which had previously only undergone planning-level environmental review. The objective was to verify environmental constraints and estimate project costs before projects became candidates for CIP funding. Road Division engineers visited each site and checked for required environmental permits, identified project scope elements and estimated construction costs for approximately three dozen planned projects. A number of projects had a higher calculated cost than had been shown previously, and these projects have been updated in this version.

### **Capital Project completions**

Several dozen projects were completed since the adoption of the Transportation Needs Report 2006, and these completed projects are deleted from the needs list.

### **Annexations**

Cities continue to annex portions of unincorporated King County and when the annexed properties include TNR project locations, they are removed from the County's Transportation Needs Report. The major annexations since 2006 were the Lea Hill and West Hill areas into the City of Auburn and the Benson Hill area into the City of Renton. Together, the projects in the annexed areas totaled 54 planned projects for an estimated cost of \$110 million.

### **Pavement Testing 2007**

In the spring of 2007, King County Roads contracted with a private consultant for the purpose of a structural evaluation study of King County pavement sections. Forty three miles of rural roads were sampled to determine what pavement structure should be built to provide 10-, 20-, and 30-year design lives. If pavement sections required more than a two-inch overlay, they were considered substandard and candidates for reconstruction or rehabilitation rather than overlay. From the test results, 24 locations were recommended for road reconstruction rather than overlay treatment. These 24 locations were added to the TNR.

### **School Pathways Program**

The Traffic Engineering Section's School Pathways Program works with the sixteen school districts in unincorporated King County and over 100 public schools benefit from this program. Each school district submits a prioritized list of projects to the Traffic Engineering Section annually. The program implements safe walkway routes for students by constructing pathways, eliminating missing links, and improving existing school walkway facilities along unincorporated county roadways. This TNR contains 20 new school walkway needs and 29 school walkway projects were deleted due to project completion, locations no longer recommended by their school districts or projects annexed to a city.

## **Financial Analysis and Shortfall**

A financial analysis was developed to balance projected needs with anticipated revenue. Revenues were projected to the horizon year for the Road Fund, Federal, State, and MPS revenues. Revenues were adjusted to take into account the recent annexations of Lea Hill and West Hill to Auburn and Benson Hill to Renton. Within the timeframe of the plan, to 2022, all urban annexations were assumed to have occurred.

Projected needs were expressed in constant 2008 dollars and were totaled for the TNR program through the year 2022.

Comparing projected revenues with projected needs reveals a shortfall of \$697 million. Summary cost and revenue estimates are included in Appendix D of this document.

The shortfall is calculated by subtracting the total projected needs by total projected revenues for the TNR time period. Recent Transportation Needs Reports show a trend of increasing growth of the financial shortfall:

<b>TNR</b>	<b>Amount of Shortfall</b>
1998	\$254 million
1999	\$227 million
2000	\$292 million
2001	\$388 million
2004	\$525 million
2006	\$572 million
2008	\$697 million

The financial shortfall is an indication of King County's ability (or lack of ability) to serve the unincorporated area. This shortfall must be addressed by delaying improvements or by finding new sources of revenue or by some combination of the two strategies.

There are several methods available to address this shortfall. Additional revenue sources could be pursued. Implementation of needed improvements could be phased or delayed. Future development could be delayed, phased, or scaled back to assure the timely availability of needed infrastructure. These and perhaps other strategies will be employed and incorporated into future TNRs, CIPs, and budgets to balance needs with available revenues.

TNR  
NEEDS  
LIST

# NEEDS LIST for the Transportation Needs Report 2008

Needs are divided into chapters based on sub-areas of King County, in the following order:

- 1) Bear Creek
- 2) East King County
- 3) East Sammamish
- 4) Enumclaw
- 5) Federal Way
- 6) North Highline / West Hill
- 7) Newcastle
- 8) Northshore
- 9) Snoqualmie Valley
- 10) Soos Creek
- 11) Tahoma/Raven Heights
- 12) Vashon Island

## LEGEND for Needs List

- Number - Unique identifier for project
- PAA - Potential Annexation Area (urban locations)
- Location - Where project is located
- Need - The primary purpose of the proposed project

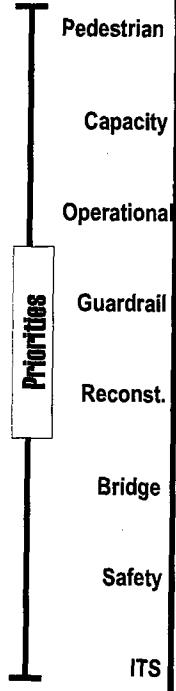
## PRIORITIES - determined by individual programs

- ITS - Intelligent Transportation Systems
- Safety - HAL, HARS Signal programs
- Bridge - Bridge and structure priorities
- Reconst. - Major roadway maintenance
- Guardrail - Guardrail installation and repair
- Oper. - Traffic-oriented operational improvements
- Capacity - Road Widening
- Pedestrian - Sidewalks and Walkways

## Other data fields -

- Equestrian - "X" indicates the location within the designated "Equestrian Communities" of Rural King County.
- Cost-000 - Future cost to King County Road Services Division to complete the proposed project (2008 dollars in thousands)
- Comments - Preliminary elements of the proposed project.

**TBD-** Priority To Be Determined as future work program item



**County SUBAREAS: Bear Creek**

**CORRIDOR: Avondale Rd**

Number	PAA	Location	Need	ITS	Bridge	Reconst.	Guardrail	Operational	Capacity	Pedestrian	Equestrian	Cost-000	Comments
ITS-3	Rural - N/O I-90	Avondale Road ITS Phase 2 From NE 132nd St to Woodinville-Duvall Road	ITS	High								\$5,691	Provide Intelligent Transportation System improvements which could include synchronized signals; cameras; vehicle detection; fiber connection
OP-INT-70	Rural - N/O I-90	Avondale Rd & Bear Creek Rd	Operations					Medium				\$1,197	Realign Intersection-- Improve Sight Distance
CP-13	Rural - N/O I-90	Avondale Road NE Ph II From NE 155th St to NE 168th St	Capacity Minor						Medium			\$5,382	Widen roadway to 3 lanes including 2 eight foot shoulders and a walkway.
100209	Rural - N/O I-90	Bear Creek Bridge #480A On NE 116th St Crossing Bear Creek	Bridge		High							\$714	Sec King County Capital Improvement Program (CIP) document or website for detailed project description including scope.
100408	Rural - N/O I-90	Avondale Road ITS Phase I From Novelty Hill Rd to NE 132nd St	ITS									\$1,643	Sec King County Capital Improvement Program (CIP) document or website for detailed project description including scope.
CP-16	Rural - N/O I-90	Woodinville-Duvall Rd & Avondale Rd NE	Capacity Major					TBD				\$7,141	Widen the intersection for additional turn lanes, signal improvements, illumination, curb, gutter, sidewalks, bike lanes
OP-RD-8	Rural - N/O I-90	Avondale Road Phase III From NE 133rd St To NE 155th St	Capacity Minor					High				\$14,420	Widen To Three Lanes-- Construct Bridge



**Priorities**

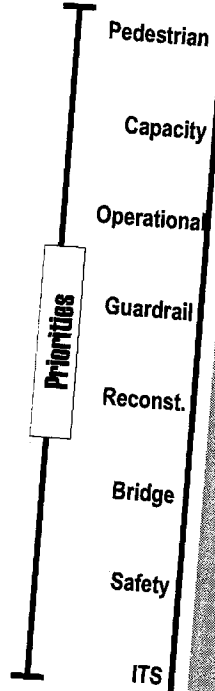
ITS  
Safety  
Bridge  
Reconst.  
Guardrail  
Operational  
Capacity  
Pedestrian  
Equestrian

Number  
PAA  
Location  
Need  
Cost-000  
Comments

HAL-11	Rural - N/O I-90	Avondale Road NE & NE 159th St	Safety	Medium						\$551	Preliminary suggested scope - Install signal. Add left-turn lane in NB/SB direction.
OP-INT-99	Rural - N/O I-90	Avondale Road & NE 165th St	Operations		Medium					\$686	Provide North and South bound Left Turn Lanes

**CORRIDOR: MISC**

OP-RD-45	Rural - N/O I-90	232nd Ave NE From NE 142 St To Old Woodinville-Duvall Rd	Capacity Minor		Low				X	\$3,466	Reconstruct Roadway
100508	Rural - N/O I-90	Mink Rd From Bear Creek Rd To Woodinville-Duvall Rd	Nonmotorized					TBD	X	\$482	See King County Capital Improvement Program (CIP) document or website for detailed project description including scope.
B-14	Rural - N/O I-90	Paradise Lake Rd From Woodinville-Duvall Rd To County Line	Nonmotorized					TBD	X	\$535	Provide Nonmotorized Facility
B-74	Rural - N/O I-90	Bear Creek Rd From Avondale Rd To Seidel Rd	Nonmotorized					TBD	X	\$615	Provide Nonmotorized Facility
OP-INT-71	Rural - N/O I-90	Bear Creek Rd & Mink Rd	Operations		Medium					\$1,628	Improve Sight Distance-- Realign Intersection
GR-60	Rural - N/O I-90	208th Ave NE From NE Union Hill Rd To Novelty Hill Rd	Safety						X	\$26	Construct Guardrail



Number	PAA	Location	Need	ITS	Safety	Bridge	Reconst.	Guardrail	Operational	Capacity	Pedestrian	Equestrian	Cost-000	Comments
<b>CORRIDOR: NE 124 - NE 128 - NE 132</b>														
OP-RD-51	Rural - N/O I-90	NE 133rd St From Bear Creek Rd to UPD W. Boundary	Capacity Minor										\$4,327	See King County Capital Improvement Program (CIP) document or website for detailed project description including scope.
ITS-16	Rural - N/O I-90	NE 124th St. ITS Ph II From SR 202 to Avondale Road NE	ITS	Medium										
N-89.10	Urban - Not in primary PAAs	172nd Ave NE From Redmond City Limits To NE 138 St	Safety										\$2,544	Provide Intelligent Transportation System improvements which could include cameras; fiber optic communications; vehicle detection; flood detection
BR-240A	Rural - N/O I-90	Cottage Lake Creek Bridge #240A On Bear Creek Rd Crossing Cottage Lake Creek	Bridge		High						TBD		\$389	Construct Neighborhood Pathway
OP-INT-82	Rural - N/O I-90	NE 124th St & 162 Pl NE	Operations										\$2,967	Replace Bridge
BR-333A	Rural - N/O I-90	Bear Creek Bridge #333A On NE 133rd St Crossing Bear Creek	Bridge		High			Medium					\$486	Turn Channels All Legs
OP-RD-52	Rural - N/O I-90	NE 132nd St / NE 128th St From 184 Ave NE to 196 Ave NE	Capacity Minor										\$3,696	Replace Bridge
				Medium									\$7,622	See King County Capital Improvement Program (CIP) document or website for detailed project description including scope.

