



# **520 Tolling Implementation Committee Initial Scenario Evaluation**

**King County Council Committee of the Whole  
Monday, September 15, 2008**

**Bob Drewel**

**Tolling Implementation Committee Member  
Executive Director, PSRC**

**David Hopkins, WSDOT**

**Staff to the Tolling Implementation Committee**

## Committee members



**Bob Drewel, Chair**

Puget Sound  
Regional Council



**Paula Hammond**

Washington State  
Department of  
Transportation  
Secretary



**Dick Ford**

Washington State  
Transportation  
Commission

## Committee charge

- Evaluate
  - Traffic diversion from 520 to other routes, including 522, and recommend mitigation
  - Advanced tolling technology
  - New applications of emerging technology to better manage traffic
- Explore opportunities to partner with the business community to reduce congestion and contribute financially
- Confer with mayors and city councils
- Conduct public work sessions and open houses to solicit citizen views on tolling the existing 520 bridge, tolling both 90 and 520, providing incentives for transit and carpooling, implementing variable tolling
- Provide a report to the governor and legislature in January 2009

## Committee charge - engagement

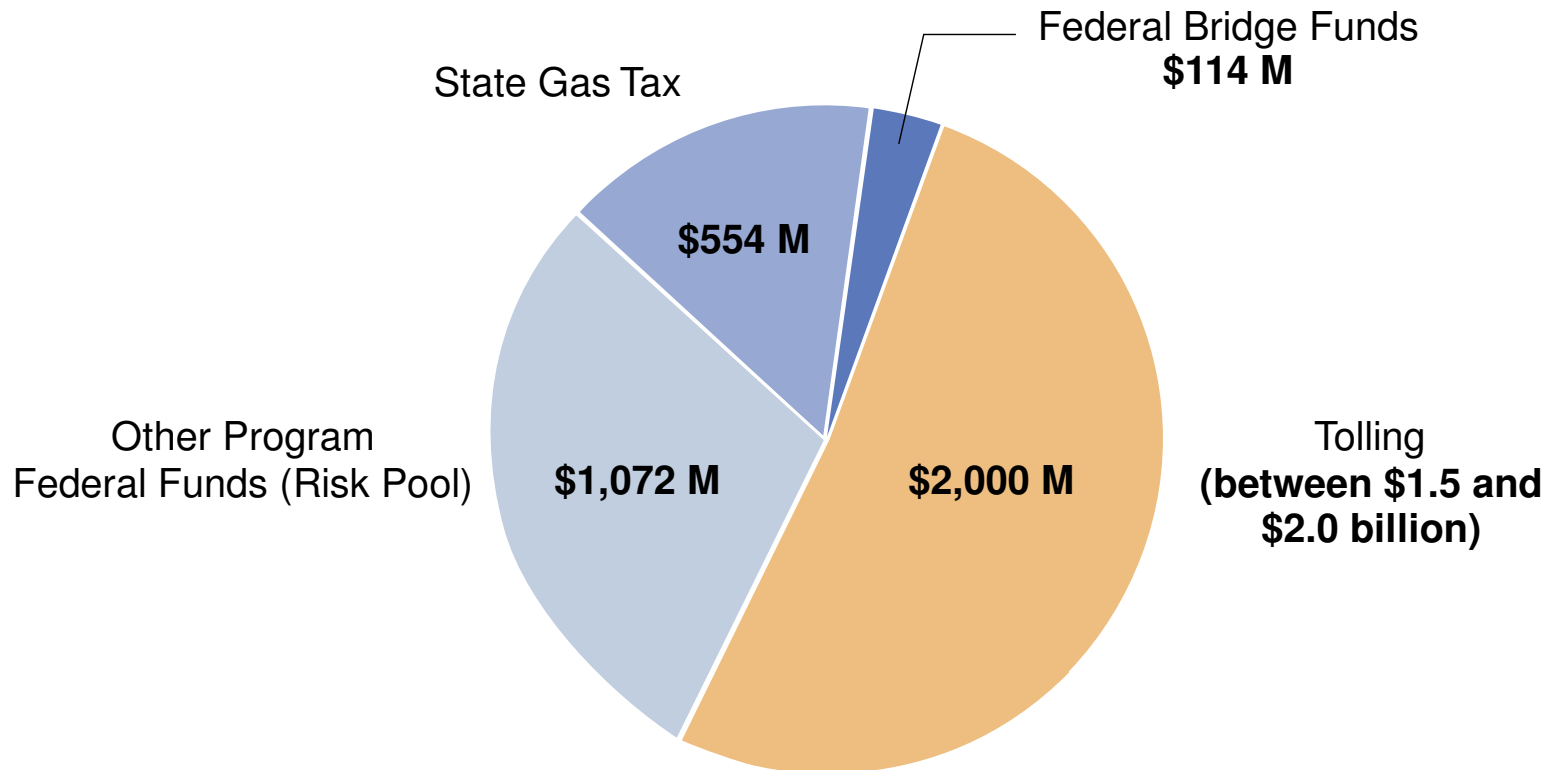
Engage citizens on the following topics:

- Funding a portion of the 520 replacement project with tolls on the existing bridge
- Funding the 520 replacement project and improvements on the 90 Bridge with a toll paid by drivers on both bridges
- Providing incentives and choices for transit and carpooling
- Implementing variable tolling as a way to reduce congestion

# How will we pay for a new bridge?

## Funding sources identified by legislature in ESHB 3096

Project estimate: \$3.7 - 3.9 billion\*



\* Low end of range reflects \$180 million in sales tax deferral

# Congestion benefits of electronic tolls that vary by time of day



- **Electronic tolling** eliminates:
  - congestion caused by toll booths;
  - toll booth related accidents;
  - need for additional costly right of way in this congested corridor; and
  - costly cash collection.
- **Variable tolling** reduces congestion by:
  - encouraging people who can to switch to off-peak times; and
  - encouraging as many people as possible to remain on the bridge during the off peak to minimize diversion to other routes
- **Paying Tolls:**
  - Majority of transactions will be *Good To Go!* account holders using transponders.
  - Vehicles without transponders have license plates photographed and can prepay or be invoiced for the toll, which will include an additional surcharge.

## What evaluation criteria are being considered?

- The “reasonableness” of the tolls
- How much bridge funding is generated
- The diversion effects of tolls – people can choose to:
  - Stay on 520 but switch to carpool or transit
  - Stay on 520 but switch to different times
  - Travel on different routes
  - Choose a different destination – don’t have to cross the lake
- The performance of the bridge (potential congestion relief)
- The impacts tolls may have on low income bridge users

## Which initial scenarios were examined?

- 1 Start tolling the new 520 bridge in 2016**

Only 520 is tolled • Tolling begins in 2016 when the 520 corridor is complete • Includes bridge and segment tolls • Highest toll rate for analysis purposes
- 2 Start tolling the 520 bridge in 2010**

Only 520 is tolled • Tolling the existing bridge begins in 2010 • No segment tolls • Lowest toll rate for analysis purposes
- 3 Start tolling the new 520 bridge and 90 bridge in 2016**

520 and I-90 are tolled • Tolling begins in 2016 when the 520 corridor is complete • Includes segment tolls beginning in 2016 on 520 and 90 • Moderate toll rate for analysis purposes
- 4 Start tolling the 520 bridge in 2010, and 90 bridge in 2016**

SR 520 and I-90 are tolled • Tolling the existing SR 520 bridge begins in 2010 • Includes segment tolls beginning in 2016 on 520 (when the corridor is complete) and 90 • Moderate toll rate for analysis purposes



## How were the preliminary estimates developed?

### **Traffic**

- The PSRC travel model estimates how traffic changes when tolls are in place. Fundamental assumptions used in the model include:
  - Population and employment
  - Travel costs (auto operating costs, parking costs, transit fares, etc.)
  - Land use
  - Travel behavior (public surveys, validated by observed travel data)
  - Characteristics of the transportation system (current and future road and transit services)

### **Revenue**

- Sample toll rates + Projected travel used to estimate revenue

### **Financing/Funding**

- Tolls revenues + Bonding assumptions + Cash flow needs + Sound financial practices = Financing estimates (supported by analysis from the Office of State Treasurer)

## The big picture – what did we learn?

- Tolling 520 leads to changes in how people travel. The higher the toll rate, the more people change how they travel.
  - Some people change to carpools and transit
  - Traffic on alternate routes increases
  - Largest change is seen in people choosing not to cross the lake
- When 520 is tolled and more transit service is added, travel speeds on 520 increase, but there is little or no change on alternate routes.
- If 90 is also tolled, more drivers choose to stay on 520, but more traffic is seen on alternate routes.
- Of the four initial scenarios, none produce funding from tolls within the legislature's target of \$1.5 to \$2.0 billion. Two raise less and two raise more.
- Public input will be necessary to identify next steps.

## 520 Tolling Implementation Committee Evaluation Results for Initial Scenarios

July 23, 2008

The 520 Tolling Implementation Committee is charged by the legislature and governor (ESHB 3096) with evaluating issues related to tolling options on 520, and reporting back its findings to the 2009 legislature. A key part of the committee's work is developing data and describing the implications of tolling 520 so that the options can be evaluated, and the public can provide informed comments. The information below represents preliminary estimates of toll rates, funding, performance, and travel changes for four initial scenarios identified by the committee. These estimates are based on a series of assumptions; changes in assumptions will affect the estimates below. Public input is needed to identify next steps, including other tolling scenarios to evaluate.

Evaluation Criteria	2010 No Tolls	2016 No Tolls	Scenario 1	Scenario 2		Scenario 3		Scenario 4		
			Toll new 520 bridge in 2016	Toll current 520 bridge starting 2010		Toll new 520 bridge and 90 bridge starting 2016		Toll 520 bridge starting 2010, and 90 bridge in 2016		
			2016	2010	2016	2016 – 520	2016 – 90	2010	2016 – 520	2016 – 90
<b>"Reasonableness" of Toll Rates* (Toll Rates are shown in 2007 dollars)</b>										
Morning (5 – 9 AM)	N/A	N/A	\$3.05	\$2.15		\$2.60		\$2.60	\$2.60	
Mid-day (9 AM – 3 PM)	N/A	N/A	\$2.10	\$1.05		\$2.10		\$2.10	\$2.10	
Afternoon (3 – 7 PM)	N/A	N/A	\$3.80	\$2.95		\$3.25		\$3.25	\$3.25	
Evenings (7 – 10 PM)	N/A	N/A	\$1.95	\$1.30		\$1.95		\$1.95	\$1.95	
Nights (10 PM – 5 AM)	N/A	N/A	\$0.90	\$0.75 (after 2016)		\$0.90		No charge	\$0.90	
Weekends	N/A	N/A	Varies from \$.75 to \$1.50	Varies from \$0.75 to \$1.50		Varies from \$0.75 to \$1.50		Varies from \$0.75 - \$1.50	Varies from \$0.75 - \$1.50	
Segment	N/A	N/A	Varies from \$0.40 to \$0.80	N/A		Varies from \$0.40 to \$0.75		N/A	Varies from \$0.40 - \$0.75	
<b>Estimated Bridge Performance – Travel Speeds in the Afternoon Commute (3-7PM)</b>										
520	26 mph	25 mph	44 mph	40 mph	36 mph	34 mph		41 mph	34 mph	
90	35 mph	33 mph	29 mph	35 mph	28 mph	40 mph		33 mph	40 mph	
522	19 mph	17 mph	16 mph	18 mph	16 mph	16 mph		19 mph	16 mph	
<b>Estimated Daily Travel Changes</b>										
Choose HOV and transit	N/A	N/A	2.7%	3.2%	1.8%	2.6%	2.0%	3.6%	2.6%	2.0%
Choose a different time	N/A	N/A	1.1%	2.0%	1.7%	0.5%	1.1%	1.6%	0.5%	1.1%
Choose a different route	N/A	N/A	5.8%	7.2%	6.1%	4.6%		7.5%	3.9%	
90 (mid-span)	168,700	155,200	162,100	175,300	162,200	136,200		174,000	136,200	
522 (Kenmore at NE 61 <sup>st</sup> )	50,000	52,000	52,800	51,400	52,900	54,700		51,600	54,700	
5 (Downtown Seattle)	313,800	316,500	318,300	318,100	317,700	316,400		319,300	316,400	
405 (Downtown Bellevue)	247,600	261,100	261,200	249,900	261,500	259,400		249,400	259,400	
Choose a different destination (no lake crossing)	N/A	N/A	15.5%	1.7%	8.3%	22.3%		19.6%	22.3%	
<b>Estimated Bridge Funding**</b>										
			~\$835 million	~\$900 million		~\$2.3 billion		~\$2.5 billion		

\*These are example toll rates for planning purposes. Actual toll rates will depend on a final finance plan and determined by the State Transportation Commission with approval by the State Legislature.

\*\*Financing assumptions include: Term: 30-year, general obligation/motor vehicle fuel tax bonds. Minimum Debt Service: Annual revenue 1.25 times debt service. Interest Rate: 5.9% for current interest bonds, 6.4% for capital appreciation bonds.

## How much funding for a new 520 might come from tolls?

### Preliminary results – more work needed

	Total Contribution from Tolls
Scenario 1. Start tolling 520 in 2016	~\$835 million
Scenario 2. Start tolling 520 in 2010	~\$900 million
Scenario 3. Start tolling the new 520 and 90 in 2016	~\$2,300 million
Scenario 4. Start tolling 520 in 2010, and 90 in 2016	~\$2,500 million

#### Financing assumptions:

Term: 30-year, general obligation/motor vehicle fuel tax bonds

Minimum Debt Service: Annual revenue 1.25 times debt service

Interest Rate: 5.9% for current interest bonds, 6.4% for capital appreciation bonds

# Public Open Houses

**July 29 – UW Bothell North Creek Events Center**

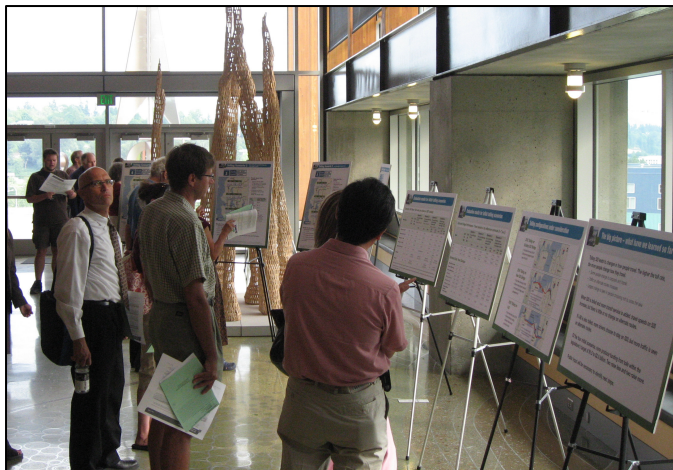
**July 31 – Spirit of Washington Events Center (Renton)**

**August 5 – Naval Reserve at South Lake Union (Seattle)**

**August 6 – Bellevue City Hall**

**August 7 – Kirkland Performance Center**

**August 13 – Mercer Island Community Center**



# Summary of Public Comments

## Comment Sources

- Open Houses – 200 comments
- Web site, email, letters – 600 comments
- Sierra Club – Over 800 comments
- Mercer Island petition – Over 800 comments

# Summary of Public Comments

## Evaluation Criteria - Major Themes

### Funding and revenue generation

- General trend to generating funding sooner rather than later
- General support for 2010 versus 2016
- People want to minimize cost for drivers
- Mercer Islanders generally oppose tolling I-90

### Reasonableness of toll

- Few direct comments on the rates
- Those who oppose tolls, do so for varying reasons

# Summary of Public Comments

## Evaluation Criteria - Major Themes

### **Diversion**

- Concerns north and south
- Concerns that segment tolls will divert traffic to local streets
- Mercer Island concern about diversion to I-90

### **Bridge Performance**

- Need to replace bridge was mentioned more than bridge performance
- Interest in variable tolling to improve traffic/congestion

### **Low-income Bridge Users**

- Concern for low income users
- Some suggest exemptions
- Some suggest improved transit options



## Summary of Public Comments

### Major Themes – open-ended questions

- General comments (excluding postcards and petitions)
  - Generally favor tolling (31%)
  - Concern with diversion and traffic (22%)
  - Support increasing transit service (20%)
  - Favor tolling both bridges (20%)
  - Comments on process and decision-making (19%)
  - Timing - 2010 v 2016 (19%)
  - Variable tolling (18%)
  - Exemptions for Mercer Island residents (14%)
  - Generally oppose tolling (14%)
  - Taxes and cost issues (14%)

## Summary of Public Comments

### Major Themes – open-ended questions

- General comments (includes all comments)
  - Concern with diversion and traffic (74%)
  - Generally favor tolling (44%)
  - Favor tolling both bridges (41%)
  - Variable tolling (40%)
  - Environmental impact and climate change (38%)
  - Taxes and cost issues (38%)
  - Oppose tolling I-90 (37%)
  - Concern about social justice/fairness (37%)
  - Concern about geographic equity/fairness (36%)
  - Oppose tolling I-90 to pay for 520 (35%)

## Proposed Additional Scenarios

- Start tolling 520 in 2016 with a flat rate toll
- Start tolling 520 in 2010 at a rate that attempts to fill the project funding gap
- Start tolling 520 in 2010 at a lower toll rate and increase the rate upon bridge completion in 2016
- Start tolling both 520 and I-90 in 2016 with a higher rate on 520 than on I-90
- Start tolling both 520 and I-90 in 2010
- Direct staff to develop a HOT lane scenario for I-90

## What happens next?

- Select new scenarios
- Analyze scenarios
  - travel modeling, revenue analysis, financial capacity
- Report back to public on results
- Conduct web and telephone surveys
- Develop mitigation recommendations for traffic diversion
- Compile summary of comments
- Develop report for governor and legislature

## Comments?

### **Send comments:**

**Web:** [www.build520.org](http://www.build520.org)

**Email:** [info@build520.org](mailto:info@build520.org)

### **Postal Mail:**

520 Tolling Implementation Committee  
c/o Puget Sound Regional Council  
1011 Western Avenue, Suite 500  
Seattle, Washington 98104 -1035



***QUESTIONS?***

# Tolling Segments Under Consideration

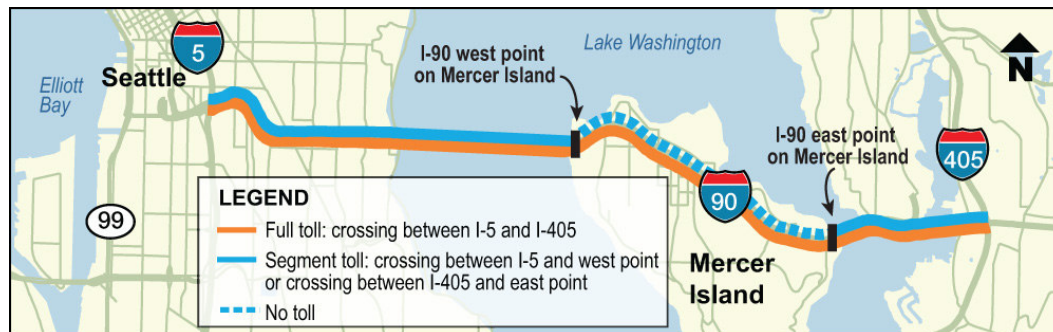
**2010 Tolling on Existing 520 Bridge**



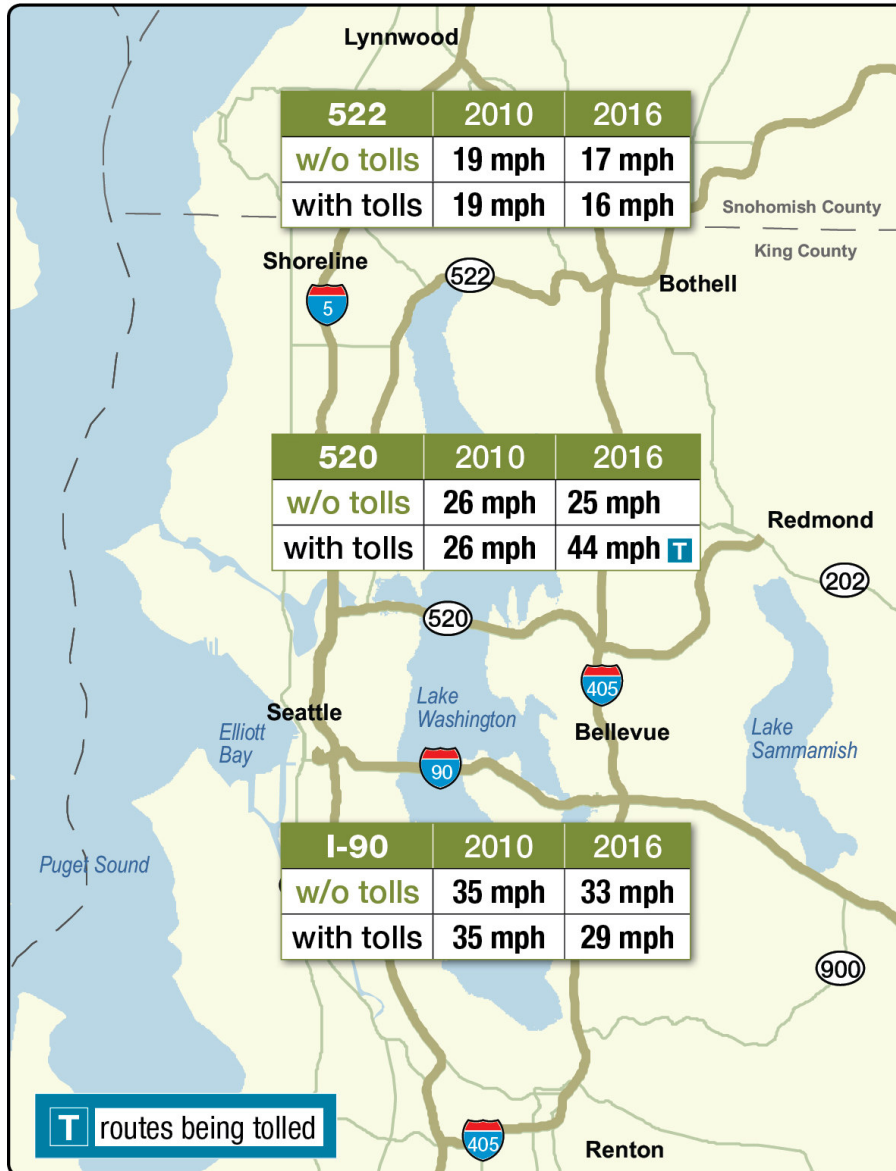
**2016 Tolling on New 520 Bridge**



**2016 Tolling on I-90**



# Scenario 1. Start tolls on new 520 in 2016



Time of day	Toll you'd pay (each direction) 2007\$*
Morning (5–9 AM)	\$3.05
Mid-day (9 AM–3 PM)	\$2.10
Afternoon (3–7 PM)	\$3.80
Evenings (7–10 PM)	\$1.95
Nights (10 PM–5 AM)	\$0.90
Weekends	Varies from \$.75 to \$1.50
Segment	Varies from \$0.40 to \$0.80
<b>Estimated funding</b>	<b>~\$835 million</b>



## Scenario 1. Start tolls on new 520 in 2016

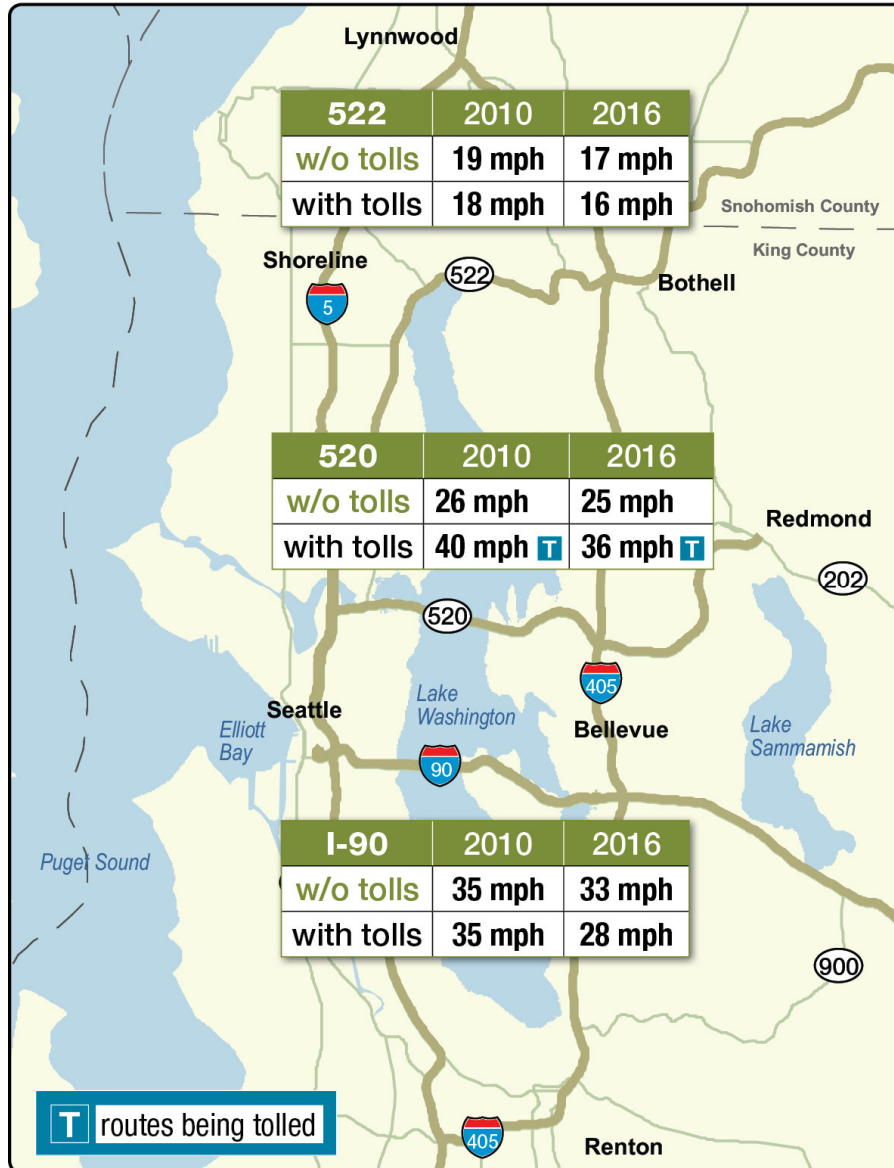
### Estimated change in weekday 520 travel

Daily percent change from predicted vehicle volumes with no tolls	
Choose carpool and transit on 520	2.7%
Choose a different time on 520	1.1%
Choose a different route	5.8%
Choose a different destination (no lake crossing)	15.5%

### Estimated change in weekday vehicle traffic on 90, 522, 5 and 405

	2016 without toll	2016 with toll
90 (Mid-span)	155,200	162,100
522 (Kenmore at NE 61 <sup>st</sup> )	52,000	52,800
I-5 (Downtown Seattle)	316,500	318,300
405 (Downtown Bellevue)	261,100	261,200

# Scenario 2. Start tolling 520 bridge in 2010



Time of day	Toll you'd pay (each direction) 2007\$*
Morning (5–9 AM)	\$2.15
Mid-day (9 AM–3 PM)	\$1.05
Afternoon (3–7 PM)	\$2.95
Evenings (7–10 PM)	\$1.30
Nights (10 PM–5 AM)	\$0.75 (no charge until 2016)
Weekends	Varies from \$0.75 to \$1.50
Segment	No charge
<i>Estimated funding</i>	<i>~\$900 Million</i>

## Scenario 2. Start tolling 520 bridge in 2010

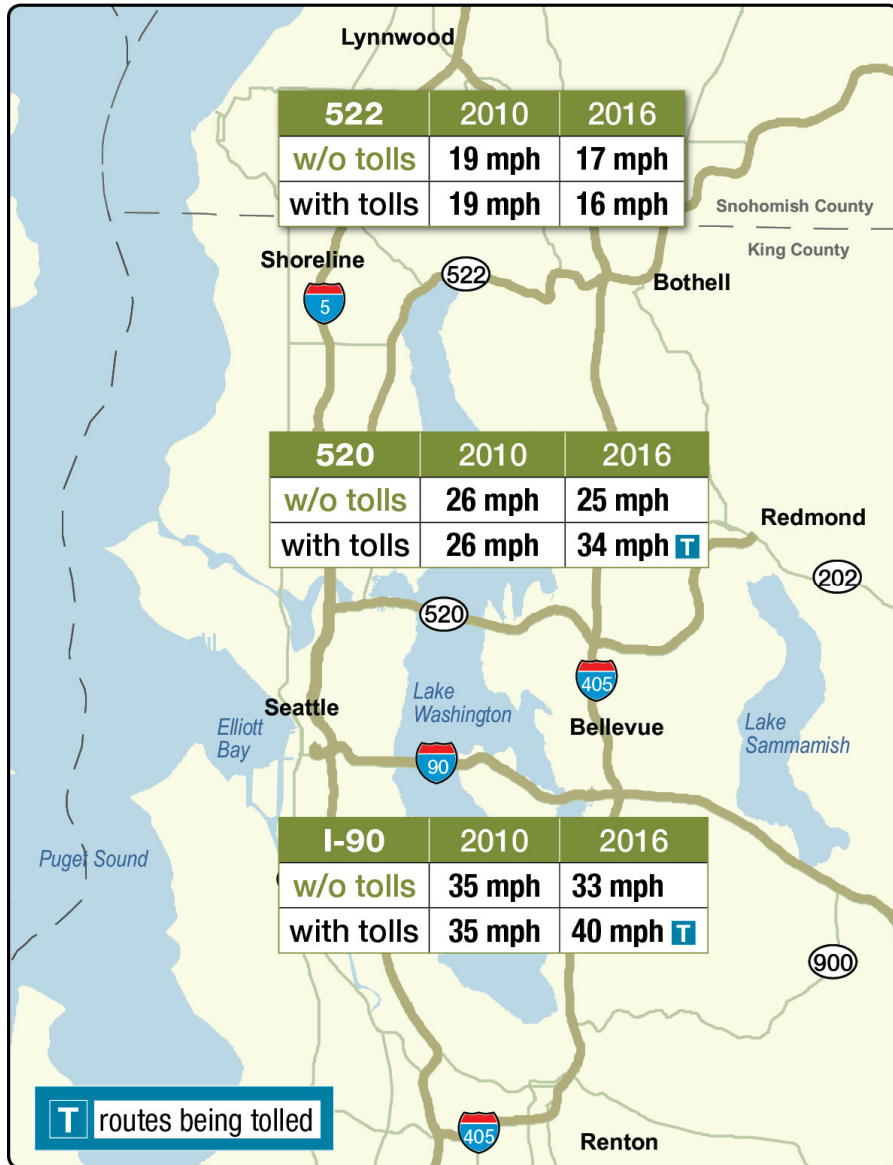
### Estimated change in weekday 520 travel

Daily percent change from predicted vehicle volumes with no tolls	2010	2016
Choose carpool and transit on 520	3.2%	1.8%
Choose a different time on 520	2.0%	1.7%
Choose different route	7.2%	6.1%
Choose a different destination (no lake crossing)	1.7%	8.3%

### Estimated change in weekday vehicle traffic on 90, 522, 5 and 405

	2010 with no tolls	2010 with tolls	2016 with no tolls	2016 with tolls
90 (Mid-span)	168,700	175,300	155,200	162,200
522 (Kenmore at NE 61 <sup>st</sup> )	50,000	51,400	52,000	52,900
I-5 (Downtown Seattle)	313,800	318,100	316,500	317,700
405 (Downtown Bellevue)	247,600	249,900	261,100	261,500

# Scenario 3. Start tolling the new 520 bridge and 90 bridge in 2016



Time of day	Toll you'd pay (each direction) 2007\$*
Morning (5–9 AM)	\$2.60
Mid-day (9 AM–3 PM)	\$2.10
Afternoon (3–7 PM)	\$3.25
Evenings (7–10 PM)	\$1.95
Nights (10 PM–5 AM)	\$0.90
Weekends	Varies from \$0.75 to \$1.50
Segment	Varies from \$0.40 to \$0.75
<b>Estimated funding</b>	<b>~\$2.3 Billion</b>

## Scenario 3. Start tolling the new 520 bridge and 90 bridge in 2016

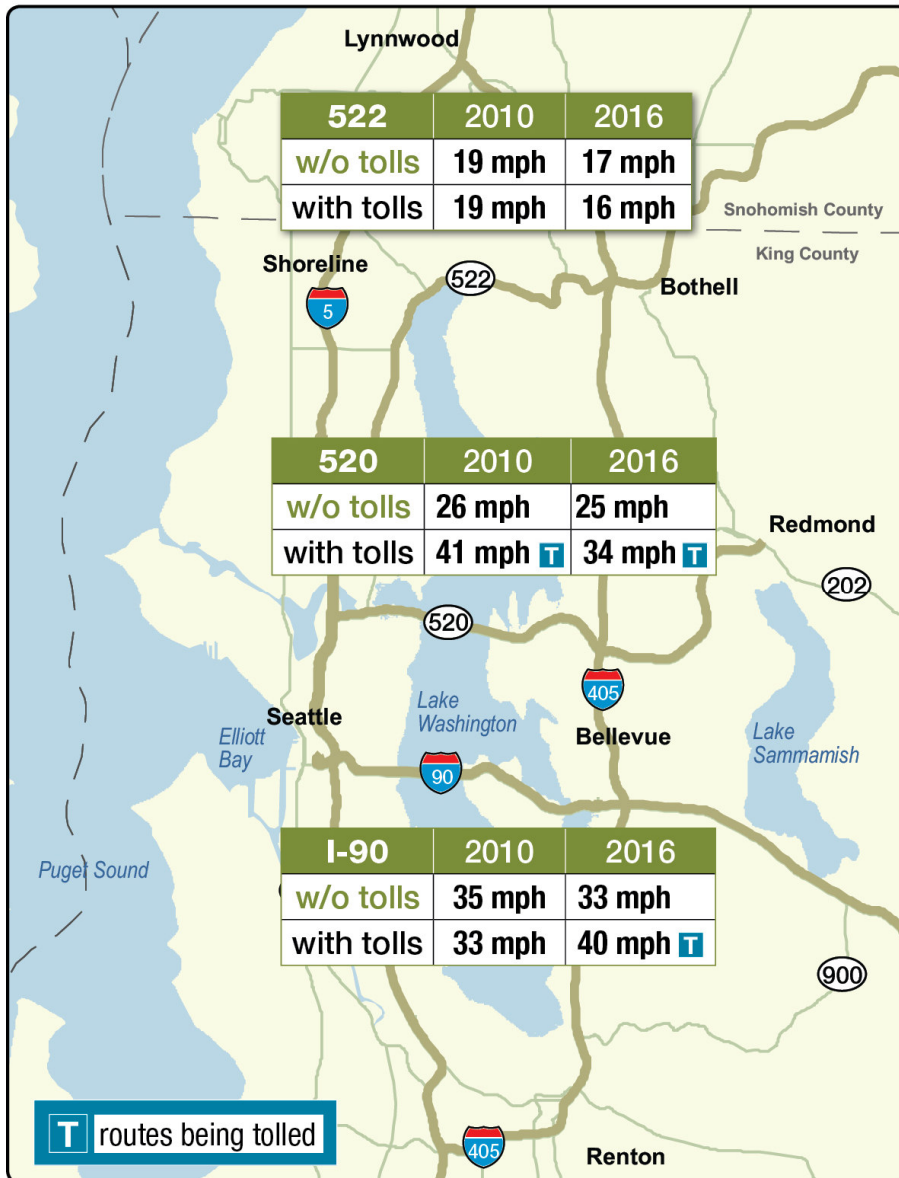
### Estimated change in weekday 520 travel

Daily percent change from predicted vehicle volumes with no tolls	2016 on 520	2016 on 90
Choose carpool and transit on 520	2.6%	2.0%
Choose a different time on 520	0.5%	1.1%
Choose different route from 520 and 90	4.6%	
Choose a different destination (no lake crossing)	22.3%	

### Estimated change in weekday vehicle traffic on 90, 522, 5 and 405

	2016 with no tolls	2016 with tolls
90 (Mid-span)	155,200	136,200
522 (Kenmore at NE 61 <sup>st</sup> )	52,000	54,700
I-5 (Downtown Seattle)	316,500	316,400
405 (Downtown Bellevue)	261,100	259,400

# Scenario 4. Start tolling the 520 bridge in 2010, and 90 bridge in 2016



Time of day	Toll you'd pay in 2010 on 520 (one-way) 2007\$*	Toll you'd pay in 2016 on 520 and 90 (each direction) 2007\$*
Morning (5–9 AM)	\$2.60	\$2.60
Mid-day (9 AM–3 PM)	\$2.10	\$2.10
Afternoon (3–7 PM)	\$3.25	\$3.25
Evenings (7–10 PM)	\$1.95	\$1.95
Nights (10 PM–5 AM)	No charge	\$0.90
Weekends	\$0.75 - \$1.50	\$0.75 - \$1.50
Segment	No charge	\$0.40 - \$0.75
<b>Estimated funding</b>	<b>~\$2.5 Billion</b>	

## Scenario 4. Start tolling the 520 bridge in 2010, and 90 bridge in 2016

### Estimated change in weekday 520 and 90 travel

Daily percent change from predicted vehicle volumes with no tolls	2010 on 520	2016 on 520	2016 on 90
Choose carpool and transit	3.6%	2.6%	2.0%
Choose a different time	1.6%	0.5%	1.1%
Choose different route	7.5%	3.9%	
Choose a different destination (no lake crossing)	19.6%	22.3%	

### Estimated change in weekday vehicle traffic on 90, 522, 5 and 405

	2010 with no tolls	2010 with tolls	2016 with no tolls	2016 with tolls
90 (Mid-span)	168,700	174,000	155,200	136,200
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