



Transportation Concurrency: A Policy Review and Evaluation

Prototype Development and Evaluation

Torsten Lienau, P.E.

Planning Policy Commission

September 28, 2006

Agenda



- Where did we leave off? 2 min.
- What is intersection LOS? 3 min.
- What are the results of the 3 alts.? 15 min.
- How do they evaluate against our criteria? 7 min.
- What are the next steps? 3 min.



Where did we leave off?

- Discussed concurrency
- Reviewed past concurrency policy decisions
- Developed evaluation criteria
- Recommended three options for evaluation
 - Existing system
 - Enhanced V/C
 - Travel Time

What is intersection LOS?



- “Grade” assignment from A to F
- Measure of congestion
- Congestion is measured by calculating delay

What is intersection LOS?



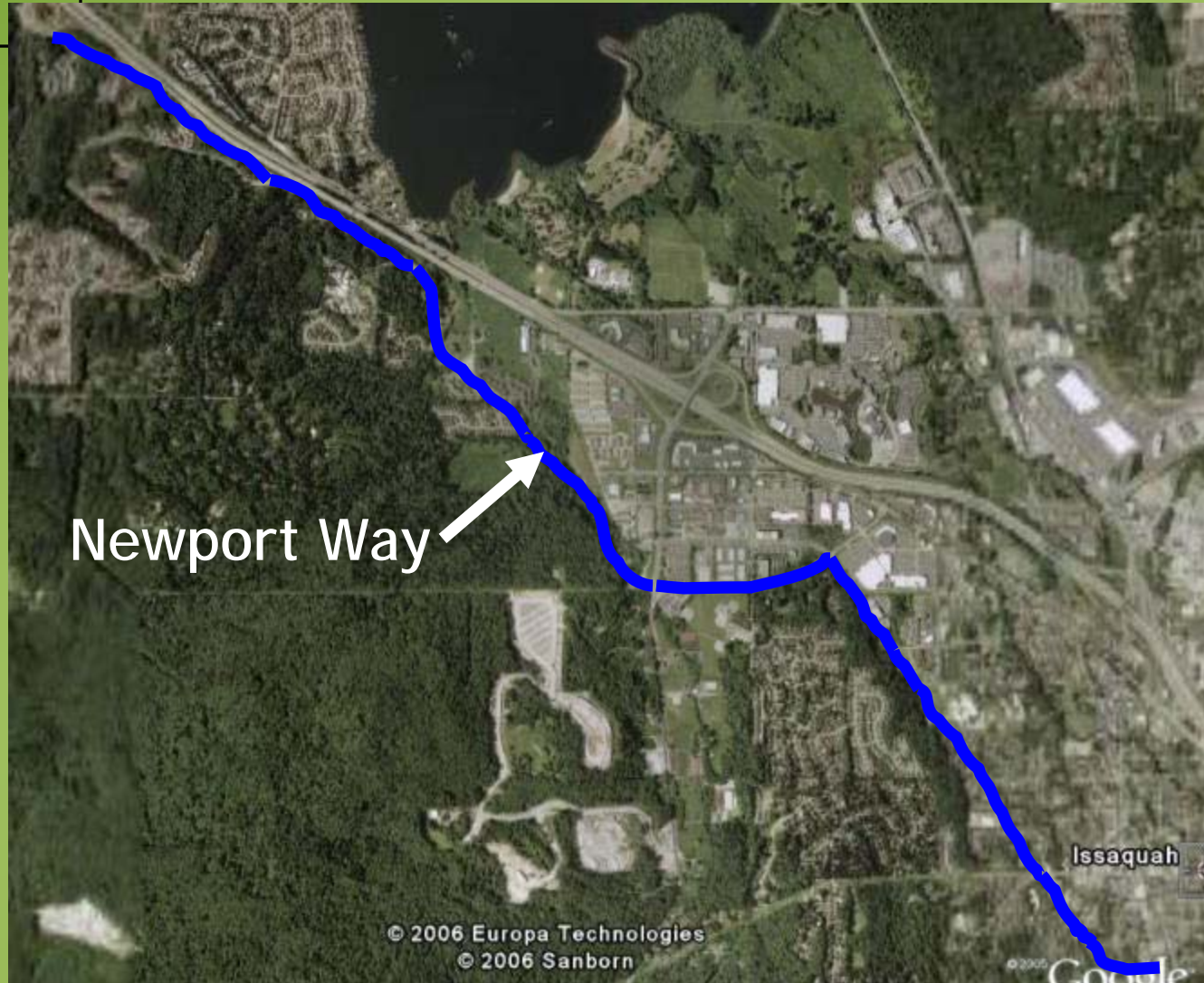
LOS	Control Delay (sec)	
	Signalized	Stop-Controlled
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

How did we evaluate the three alternatives?

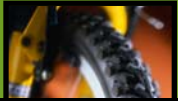


- Developed “concurrency results” for a sample roadway in Issaquah
- Sample roadway had to have elements of all modes
 - Vehicles
 - Transit
 - Non-motorized
- Results presented with and without a hypothetical development

What roadway was evaluated?

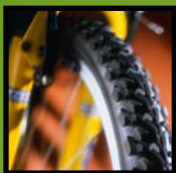


What is the character of Newport Way?



Segment	From	To	Dir.	Inventory							
				No. of Lanes	Sidewalks	Shoulders	Speed	Bike Lane	Transit	Segment Length	Signal
Newport Way	I-90 EB On-Ramp	Village Park Drive	EB	1	0%		40	no	yes	0.7	no
			WB	1	0%		40	no	yes	0.7	yes
Newport Way	Village Park Drive	SE 54th Street	EB	1	0%	8.2	40	no	yes	0.4	no
			WB	1	0%	9.3	40	no	yes	0.4	no
Newport Way	SE 54th Street	Oakcrest Drive	EB	1	0%		40	no	yes	0.5	no
			WB	1	0%		40	no	yes	0.5	no
Newport Way	Oakcrest Drive	SR 900	EB	1	0%	4.1	40	no	yes	0.6	yes
			WB	1	0%	3	40	no	yes	0.6	no
Newport Way	SR 900	12th Avenue NW	EB	1	88%	10	30	yes	yes	0.3	yes
			WB	1	100%	0	30	yes	yes	0.3	yes
Newport Way	12th Avenue NW	Maple Street	EB	1	10%		30	yes	yes	0.2	yes
			WB	1	0%		30	yes	yes	0.2	yes
Newport Way	Maple Street	Juniper Street	EB	1	0%		30	no	yes	0.3	no
			WB	1	100%		30	yes	yes	0.3	yes
Newport Way	Juniper Street	Holly Street	EB	1	100%	8.5	30	no	yes	0.1	no
			WB	1	100%	3.9	30	yes	yes	0.1	no
Newport Way	Holly Street	Sunset Way	EB	1	100%		25	no	yes	0.6	yes
			WB	1	100%		25	yes	yes	0.6	no
Newport Way	Sunset Way	Wildwood Blvd.	EB	1.5	100%		25	no	yes	0.2	yes
			WB	1.5	100%		25	no	yes	0.2	yes
Newport Way	Wildwood Blvd.	Front Street	EB	2	100%	0	25	no	yes	0.2	yes
			WB	2	100%	0	25	no	yes	0.2	yes

What are the current screenpoints?



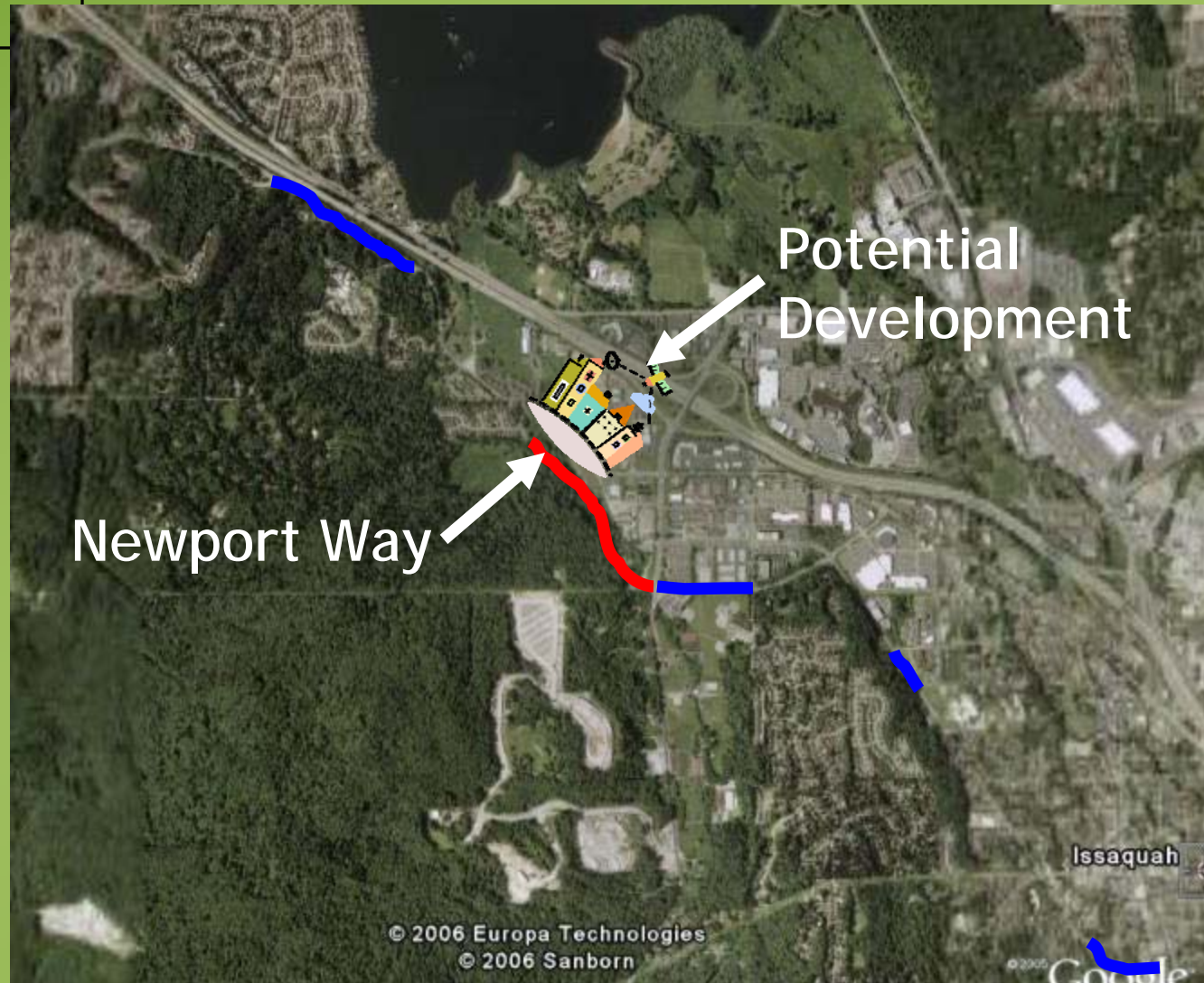
Existing Concurrency

Which screenpoints currently fail?



Existing Concurrency

Which screenpoints fail after development?



Existing Concurrency

What improvements are needed for concurrency?



- Shoulder widening for only the screenpoint section of Newport Way

Existing Concurrency

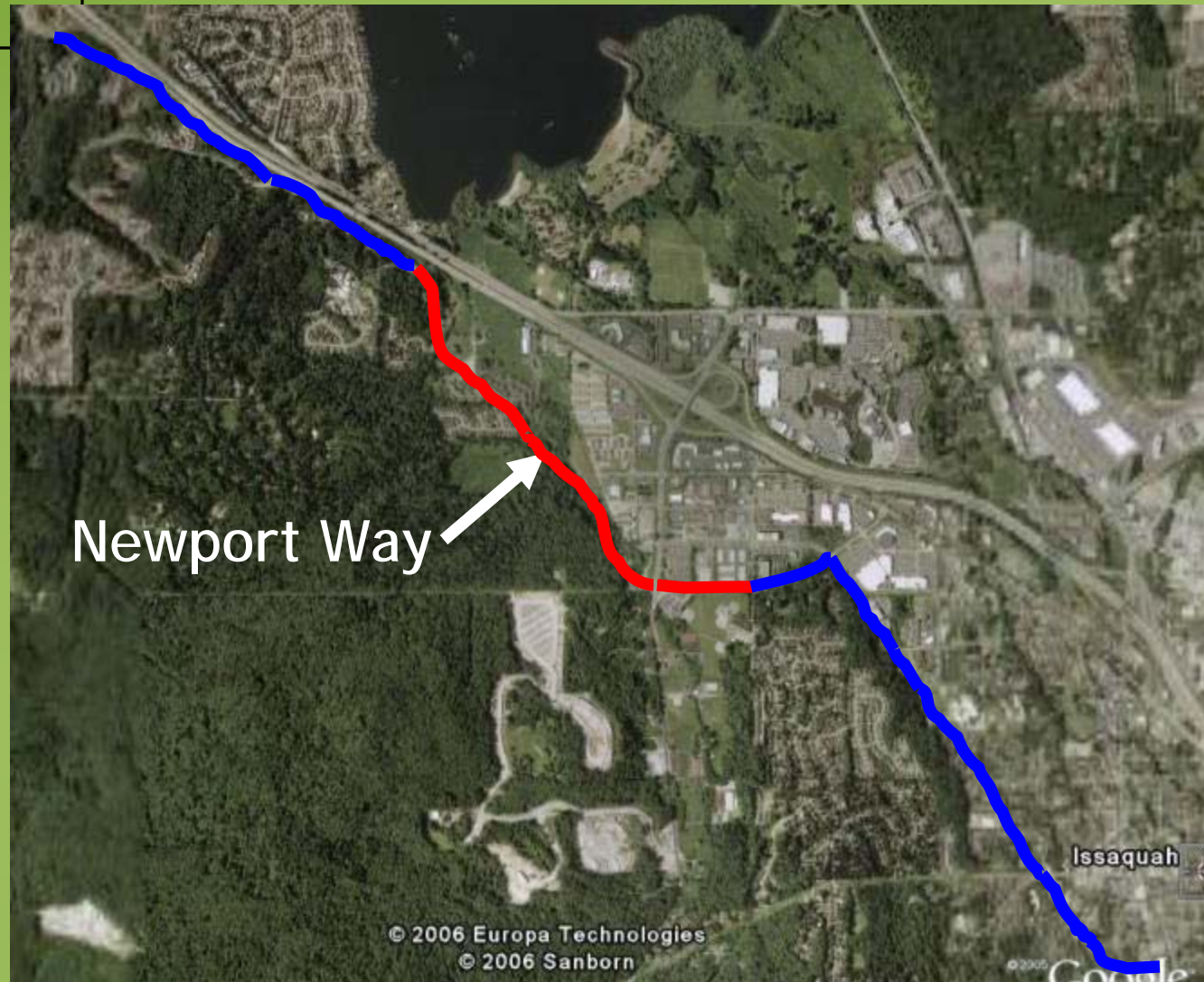
What are the specific results?



Segment	From	To	Dir.	Existing After Devel.		
				Condition	Conc.	Run
				LOS Standard	V/PC	V/PC
Newport Way	I-90 EB On-Ramp	Village Park Drive	EB	n/a	n/a	n/a
			WB	n/a	n/a	n/a
Newport Way	Village Park Drive	SE 54th Street	EB	0.85	0.44	0.49
			WB	0.65	0.31	0.35
Newport Way	SE 54th Street	Oakcrest Drive	EB	n/a	n/a	n/a
			WB	n/a	n/a	n/a
Newport Way	Oakcrest Drive	SR 900	EB	1.00	1.00	1.52
			WB	0.85	0.71	1.24
Newport Way	SR 900	12th Avenue NW	EB	0.85	0.44	0.51
			WB	1.00	0.48	0.58
Newport Way	12th Avenue NW	Maple Street	EB	n/a	n/a	n/a
			WB	n/a	n/a	n/a
Newport Way	Maple Street	Juniper Street	EB	n/a	n/a	n/a
			WB	n/a	n/a	n/a
Newport Way	Juniper Street	Holly Street	EB	0.85	0.65	0.65
			WB	0.65	0.27	0.28
Newport Way	Holly Street	Sunset Way	EB	n/a	n/a	n/a
			WB	n/a	n/a	n/a
Newport Way	Sunset Way	Wildwood Blvd.	EB	n/a	n/a	n/a
			WB	n/a	n/a	n/a
Newport Way	Wildwood Blvd.	Front Street	EB	0.85	0.32	0.32
			WB	0.65	0.21	0.21

Existing Concurrency

Which locations would fail?



Enhanced Delay

Which locations would fail after development?



Enhanced Delay

What improvements are needed for concurrency?



- To Be Determined

Enhanced Delay

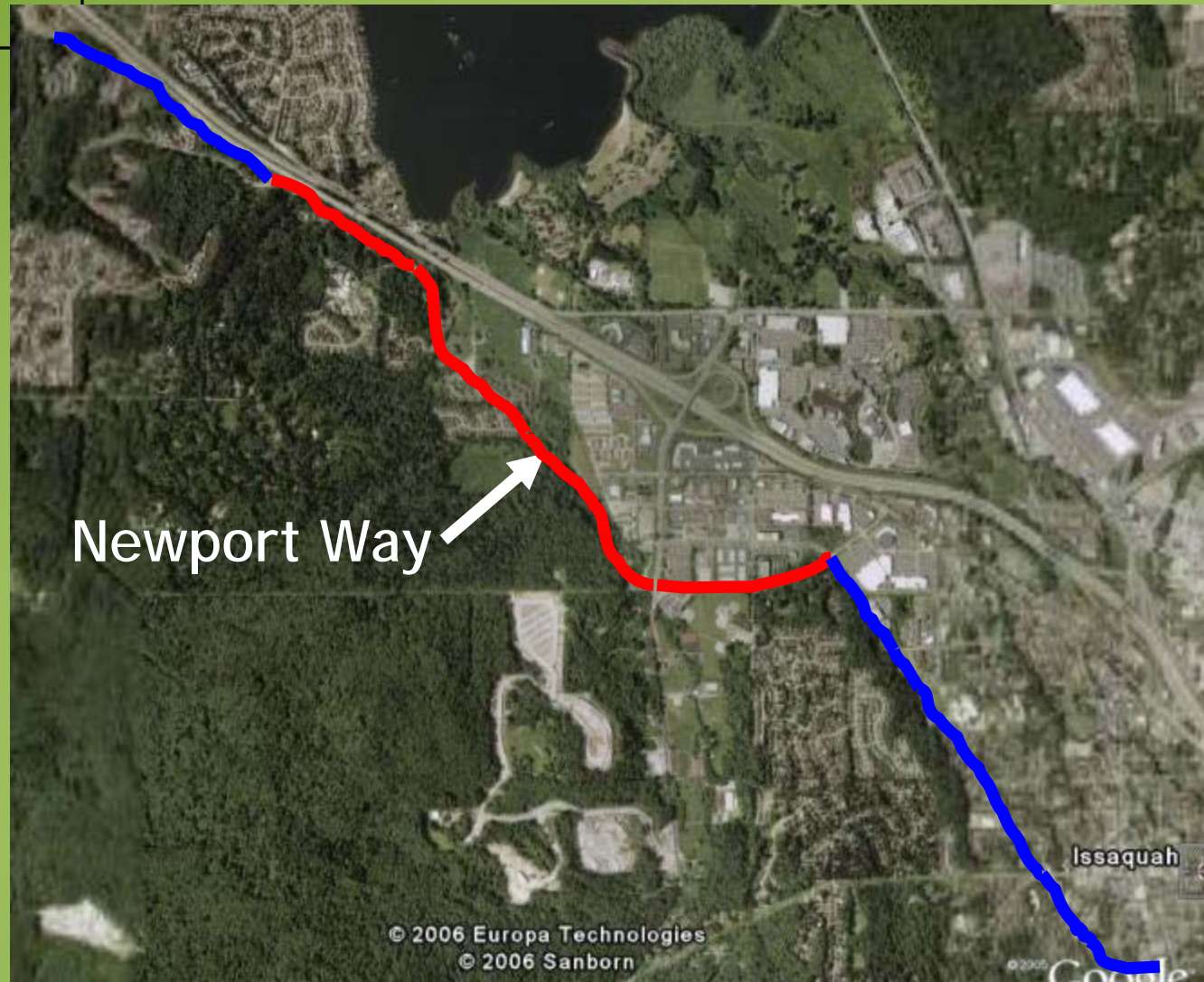
What are the specific results?



Segment	From	To	Dir.	LOS Standard			Existing Condition	After Devel. Conc. Run
				Vehicle	Non-Motor	Transit	Delay	Delay
Newport Way	I-90 EB On-Ramp	Village Park Drive	EB	35	50	35	12.4	36.9
			WB	55	80	80	16.9	13.6
Newport Way	Village Park Drive	SE 54th Street	EB	35	50	35	13.4	180.8
			WB	35	50	35	11.9	13.2
Newport Way	SE 54th Street	Oakcrest Drive	EB	35	50	35	43.1	305.6
			WB	35	50	35	10.9	28.3
Newport Way	Oakcrest Drive	SR 900	EB	55	80	80	203.5	216.8
			WB	35	50	35	5.9	10.8
Newport Way	SR 900	12th Avenue NW	EB	55	80	80	20.8	13.6
			WB	55	55	80	73.7	75.7
Newport Way	12th Avenue NW	Maple Street	EB	55	80	80	21.6	20.7
			WB	55	80	80	34.5	21.3
Newport Way	Maple Street	Juniper Street	EB	35	50	35	4.2	4.1
			WB	55	55	80	20.5	20.1
Newport Way	Juniper Street	Holly Street	EB	35	35	35	2.1	2.2
			WB	35	35	35	2.3	2.4
Newport Way	Holly Street	Sunset Way	EB	55	55	80	15.1	16.4
			WB	35	35	35	5.4	5.9
Newport Way	Sunset Way	Wildwood Blvd.	EB	55	55	80	3.8	3.3
			WB	55	55	80	5.9	5.8
Newport Way	Wildwood Blvd.	Front Street	EB	55	55	80	11.0	14.1
			WB	55	35	50	27.7	18.7

Enhanced Delay

Which locations would fail?



Travel Time

Which locations would fail after development?



Travel Time

What improvements are needed for concurrency?



- To Be Determined

Travel Time

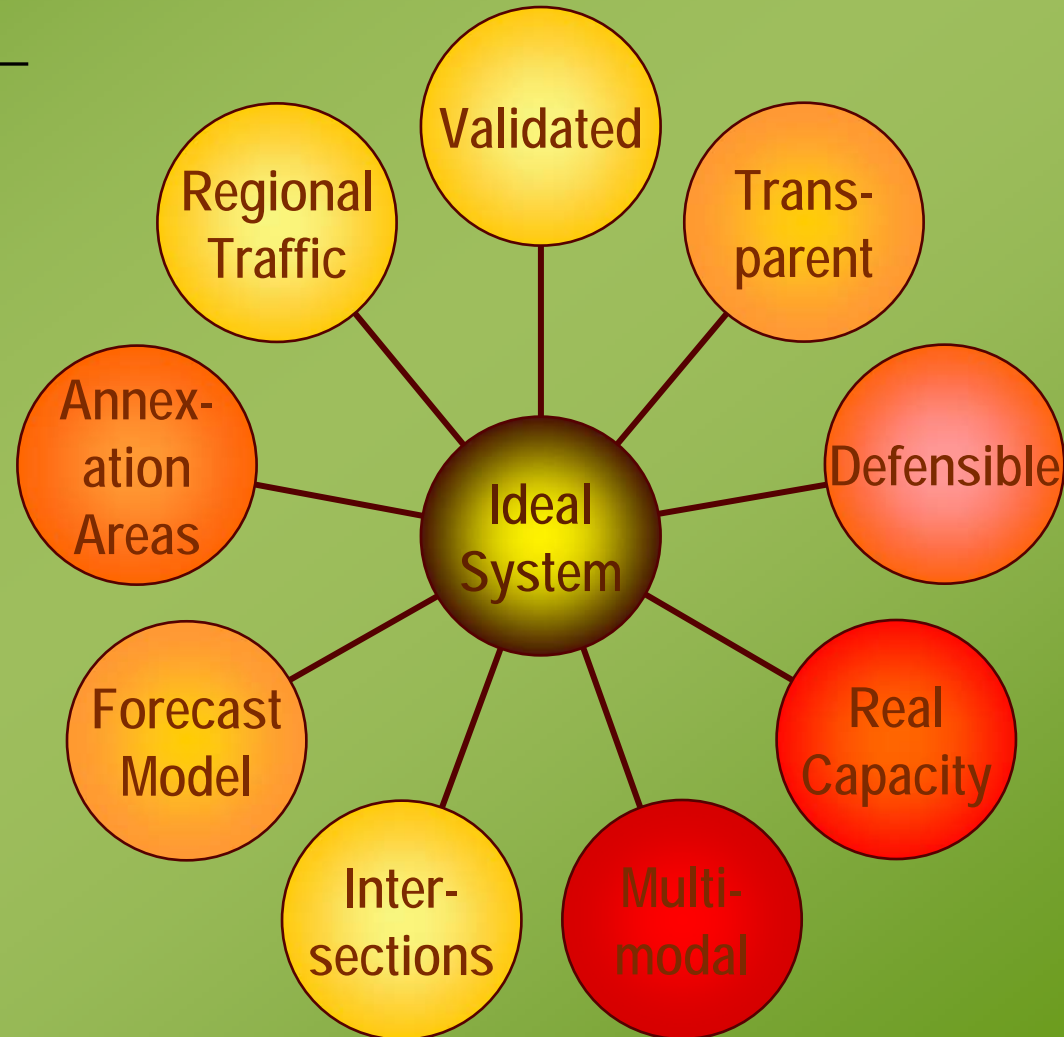
What are the specific results?



Segment	From	To	Dir.	Standard (minutes)	Existing Condition (minutes)		After Development Conc. Run (minutes)	
				All Modes	With Non-Motor. Fac.	W/O Non-Motor. Fac.	With Non-Motor. Fac.	W/O Non-Motor. Fac.
Newport Way	I-90 EB On-Ramp	Village Park Drive	EB	1.79	1.55	1.85	1.95	2.27
			WB	3.57	1.63	1.93	1.57	1.81
Newport Way	Village Park Drive	SE 54th Street	EB	1.02	1.18	1.41	3.92	4.17
			WB	1.02	1.15	1.37	1.18	1.43
Newport Way	SE 54th Street	Oakcrest Drive	EB	1.28	1.57	1.93	5.92	5.99
			WB	1.28	1.05	1.25	1.33	1.53
Newport Way	Oakcrest Drive	SR 900	EB	3.06	11.35	11.31	12.03	12.07
			WB	1.53	1.54	1.75	1.78	2.01
Newport Way	SR 900	12th Avenue NW	EB	2.04	1.19	1.28	0.95	1.05
			WB	2.04	2.95	2.88	3.02	3.24
Newport Way	12th Avenue NW	Maple Street	EB	1.36	1.21	1.42	1.18	1.37
			WB	1.36	1.64	1.71	1.2	1.44
Newport Way	Maple Street	Juniper Street	EB	1.02	0.72	0.83	0.72	0.81
			WB	2.04	1.27	1.39	1.25	1.34
Newport Way	Juniper Street	Holly Street	EB	0.34	0.19	0.22	0.19	0.22
			WB	0.34	0.19	0.23	0.2	0.22
Newport Way	Holly Street	Sunset Way	EB	4.90	1.90	2.40	1.94	2.29
			WB	2.45	1.46	1.75	1.47	1.70
Newport Way	Sunset Way	Wildwood Blvd.	EB	1.63	0.69	1.00	0.67	0.90
			WB	1.63	0.70	0.91	0.69	0.87
Newport Way	Wildwood Blvd.	Front Street	EB	1.63	0.44	0.53	0.49	0.58
			WB	1.63	0.72	0.67	0.57	0.61

Travel Time

What are the identified values/goals?



How does each option achieve our values?



Value or Goal ¹	Current System	Enhanced Delay	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.	1 This system would be based on the traditional delay concept, which is well-respected and documented in the Highway Capacity Manual.	5 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.	2 This system would likely be somewhat more difficult to administer than the current system, but has the potential to be better understood.	3 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.	3 This system would likely be the most defensible system because it uses the principles of the Highway Capacity Manual for all the engineering calculations.	4 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.	1 This system could easily be compliant with the value/goal.	4 This system would probably apply policy decisions for both the LOS standards and the travel time calculations.

How does each option achieve our values?



Value or Goal ¹	Current System		Enhanced Delay		Travel Time	
The system should be multimodal, specifically addressing vehicle, non-motorized, and transit travel.	The current system addresses vehicle and non-motorized travel.	3	This system could easily be compliant with the value/goal.	4	This system could comply with the value/goal, but would be more difficult to set travel time standards for non-motorized and transit travel.	3
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 corridor. It does a poor job of actually identifying real deficiencies in the system.	1	This system could easily be compliant with the value/goal.	5	This system could easily be compliant with the corridor approach, but less compliant with a traditional intersection analysis. For intersections, may need to resort to delay analysis.	3
The system should make use of the existing travel demand model.	This system is compliant with the value/goal.	5	This system could easily be compliant with the value/goal.	5	This system could easily be compliant with the value/goal.	5

How does each option achieve our values?



Value or Goal ¹	Current System	Enhanced Delay	Travel Time
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. The forecasting model takes considerable time and resource to update. Inventory of annexation network is required.	The current system allows for newly annexed areas to be incorporated. The forecasting model takes considerable time and resource to update. Inventory of annexation network is more intensive than the existing system.	The current system allows for newly annexed areas to be incorporated. The forecasting model takes considerable time and resource to update. Inventory of annexation network is more intensive than the existing and enhanced system.
	3	2	1
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	1	1
Total Score	20	33	24



What are the next steps?

- Council and PPC review and input
- Administration's recommended preferred alternative
- PPC recommendation to Council
- Council action on preferred alt.
- Policy adoption (Late 2006)
- Implementation (if needed, authorized, and funded 2007)