City of Shoreline Sustainability Strategy DRAFT Indicators
AHBL/O'Brien 11/14/07

Transportation

Transit

1)

Objective:	Increase use of modes of transportation other than single occupant vehicles
Target:	Upward trend (relative to increasing population), specific number TBD based on review of data
Indicator:	Public transit ridership or number of transit boardings per year in Shoreline (as compared to previous 4 years)
Discussion:	Obtain data from 3 transit agencies, could establish a specific target after baseline data collection. This indicator could also be combined with change in transit ridership compared with employment growth and/or park and ride usage (e.g. King County Benchmarks Program) when establishing a trend. Note: The City already conducts a statistically valid survey for "Strategic Objectives and we could get more directly at mode split by asking about it in the survey. Please see "potential future indicator" for additional suggestions.

2)

Objective:	Increase number of new households (density) near transit
Target:	Upward trend, specific number could be established through housing strategy or in future comprehensive plan update
Indicator:	Percentage of new residential units within 1/4 mile of transit stop with 30 minute minimum headway
Discussion:	Requires integrating permit data with GIS analysis, could establish a specific target after baseline data collection and policy discussion.

Non-motorized Facilities

3)

Objective:	Increase pedestrian facility network length on major streets to make walking to destinations easier and safer
Target:	Upward trend; specific target TBD
Indicator:	Percentage of the total major street length (principal arterials, minor and neighborhood collector) citywide that has separated pedestrian facilities (sidewalk or paved off street trail) on at least one side of the street
Discussion:	Target TBD by City based on analysis of GIS data, CIP and internal discussion. Future Transportation Plan update is an opportunity to set the target. May also want to consider establishing a target and indicator for trail improvements as well. Additional investigation of sidewalk connectivity measurements may also be needed - see Pedestrian LOS indicator.

4)	Objective:	Increase number of bicycle facilities throughout the city to encourage this mode and improve safety
	Target:	Upward trending number, specific target TBD
	Indicator:	Total miles of designated bicycle routes meeting minimum standard
	Discussion:	Bike lanes and interurban trail will be measured using GIS. City would need to define a minimum standard for other bike improvements that constitute a "bike route", map these and track year to year or change over 5 years.

Potential Future Indicator(s)

	Objective:	Reduce the number of single occupant vehicle commuters (SOV)
	Target:	TBD by City after collection and analysis of baseline data
	Indicator:	Percent of commute trips taken by a mode other than SOV
	Discussion:	More info needed to develop and apply this, but this is a more encompassing indicator than #1. The City collects Commute Trip Reduction (CTR) data from the City's largest employers and this data could be reported, however it would over estimate the number of workers who take alternative modes if extrapolated and it does not capture people who commute from Shoreline to jobs elsewhere. The City should consider using a statistically valid phone survey to get this data (e.g. expand the existing survey used to obtain the "strategic objectives" measurements). Census numbers can be compared with the phone survey every 10 years. Could also do this in conjunction with an expansion of the CTR program.

	Objective:	Measure and improve the overall pedestrian "level of service"
	Target:	TBD by City after collection of baseline data and refinement of the methodology to match local conditions and factors
	Indicator:	Pedestrian LOS - combination of measuring continuity and directness of pedestrian network
	Discussion:	More info needed to develop and apply this. Adapt Fort Collins Pedestrian LOS methodology, assigning a LOS of A,B,C,D,E, or F in terms of continuity, directness, street crossings, visual interest, and security. Concurrency requirements currently focus on cars and concurrency for other modes, especially pedestrians, is not currently measured in Shoreline. http://www.ci.fortcollins.co.us/transportationplanning/pdf/levelofservice.pdf

Natural Environment

Stormwater and Water Quality

5)

Objective:		Decrease stormwater impacts through use of natural drainage techniques
Target:		Upward trending number, specific target could be established
Indicator:		Area (square feet) of new natural drainage constructed (by both private applicants and through public CIP projects) and total system area meeting defined minimum standard.
Discussion:		Realistic goal can be set for public improvements following review of CIP. Target for private development will be harder to establish, should be modest at first, but should be attempted. Need to define a minimum standard, e.g. consistent with LID Manual and King County Surface Water Design Manual.

6)

Objective:		Reduce impervious surfaces in new development
Target:		Downward trending number or possibly the goal of no net increase over existing baseline is more realistic given increasing population and density
Indicator:		Median percentage of effective impervious surface in new projects (as compared to previous 4 years)
Discussion:		Could also establish a defined numeric target, calculations derived from permitting data that is not currently tracked or aggregated. Current calculations do not identify "effective" impervious or distinguish between pervious and impervious paving systems.

7)

Objective:		Improve surface water quality
Target:		Upward trend. Specific target could be established through trend analysis
Indicator:		Washington Department of Ecology (DOE) Water Quality Index (WQI)
Discussion:		The City has begun collecting data to use in the WQI and is determining whether or not it is appropriate as a reporting tool for the sustainability indicators. The WQI is intended as a tool to summarize and report Ecology's Freshwater Monitoring Unit's routine stream monitoring data. The WQI is a unit less number ranging from 1 to 100; a higher number is indicative of better water quality. Scores are determined for temperature, pH, fecal coliform bacteria, dissolved oxygen, total suspended sediment, turbidity, total phosphorus, and total nitrogen. Constituent scores are then combined and results aggregated over time to produce a single yearly score for each sample station.

Potential Future Indicator(s)

Objective:	Reduce impervious surfaces citywide
Target:	Downward trend or possibly the goal of no net increase from baseline is more realistic given increasing population and density. A specific goal could also be established.
Indicator:	Percentage of impervious surface citywide
Discussion:	LIDAR data can be interpreted to create an impervious data layer - research partnership, internship or thesis opportunity with UW. Given cost and rate of change considerations, data would be updated perhaps every 5 years.

Objective:	Improve surface water quality
Target:	Upward trending number for each stream reach and other surface water body as compared to previous 4 years or other study period, specifics TBD
Indicator:	Index of Benthic Invertebrate Diversity (IBID)
Discussion:	IBID was developed and used by UW - Derek Booth There is an opportunity to partner with the Homewaters project and schools like Evergreen and Meridian Park that have done IBI sampling over the years in Thornton creek.

Vegetation and Habitat

8)

Objective:	Improve/restore habitat areas
Target:	Upward trending number, specific goal TBD based on City input
Indicator:	Acres of stream, wetland and related buffers that are enhanced and/or restored (as compared to previous 4 years).
Discussion:	City does not currently track and aggregate this data. Data should be broken out by voluntary/public projects and those done as permit requirements and mitigation. Invasive species removal could be tracked as a subset.

9)

Objective:	Improve health of public forests
Target:	Upward trending number, specific acreage goal TBD based on City input
Indicator:	Acres (and percentage) of public forests enhanced that year through removal of invasive species, replacement of dead or dying, thinning and other forest health management practices (as compared to previous 4 years).
Discussion:	This is most actively occurring under Urban Forests Program and Ivy out efforts in parks. SF can be hard to track but should be measured. We will continue to study the Green Seattle program to look at ways to improve and refine this indicator.

10)	Objective:	Increase citywide tree canopy and natural vegetation through strategic use of the right of way
	Target:	Upward trending number, Specific target TBD following collection of baseline data and City review of existing, planned and possible CIP efforts.
	Indicator:	Number of street trees and square feet of landscaping planted in the right-of-way (ROW) per year by city services or programs (or private development in the ROW) as compared to previous 4 years
	Discussion:	Data from CIP projects, operations and DSG permit data related to right of way improvements would be combined. Might want to measure every 2 to 5 years to be more tangible and show change.

Potential Future Indicator(s)

Objective:	Increase and maintain citywide tree canopy
Target:	Target to be established following collection of baseline data. E.g. 40% or potentially break down further by broad zoning category using American Forest's goals
Indicator:	Percentage of tree canopy coverage citywide
Discussion:	Establish baseline in medium term and update every 5 to 10 years based on remote sensing imagery. Consider use of CityGreen software.

Objective:	Measure and reduce the rate of tree canopy loss due to permitted development
Target:	Target to be established following collection of baseline data and further discussion. No net loss at least in single family areas may not be realistic given increasing density.
Indicator:	Median tree retention percentage achieved (better to use canopy coverage) and replacement trees planted on lots reviewed under the tree code.
Discussion:	Data could be tracked, but is tedious and replacement trees may not survive. More input from City needed to establish an appropriate indicator for private development. Overall City canopy coverage is a better potential future indicator and may be sufficient.

Land-use and Development

Smart Growth

11)	Objective:	Concentrate new growth in proximity of services and transit
	Target:	Upward trending number, specific numeric goal TBD
	Indicator:	Number of new residential units and total units (or average density) within a designated commercial center (and perhaps a 1/8 mile or other distance from boundary)
	Discussion:	Would need to define boundaries of designated commercial centers, 1/8 mile may be appropriate to the size of the centers themselves

12)

Objective:	Improve pedestrian/bicyclist access to open space and parks	
Target:	Upward trending number, specific numeric goal TBD	
Indicator:	Percentage of households within a 1/4 mile of a neighborhood park or 1/2 mile of a community/regional park	
Discussion:	Similar to measure currently identified in Parks Plan. An alternative measure could also try to get at accessibility through the presence of sidewalks/bicycle facilities on major streets within 1/4 and 1/2 mile of park boundary.	

Green Building

13)

Objective:	Promote efficient energy and material use in buildings
Target:	Upward trending number, Potential goal might be 3 projects in 2008
Indicator:	Number of certified LEED and 3+ star BuiltGreen projects within the City (by public and private).
Discussion:	Seems like an easy measure, but current permit system does not appear to track this.

Energy Conservation and Carbon Reduction

Internal/Operations:

14)

Objective:	Reduce energy consumption in City facilities.
Target:	Reduce energy consumption in City facilities by 5% per year and 20% by 2012.
Indicator:	Percentage decrease in City electric and gas bills (measured in $/sf) -- obtainable from CSL and PSE.
Discussion:	2012 is both consistent with the US Mayors Climate Protection Agreement language and aligned with the City of Shoreline update to its Comprehensive Plan.

15)

Objective:	Increase reliance on Green Power in City facilities, in order to reduce carbon emissions from facilities, consistent with US Mayors Climate Protection Agreement and Kyoto Protocol target of 7% reduction from 1990 levels by 2012.
Target:	Increase Green Power consumption as a proportion of total electricity consumption in City facilities by 10% per year, and 50% by 2012.
Indicator:	Proportion of City Consumption supplied by alternative energy sources though Seattle City Light "Green Up" Program.
Discussion:	Could also offset carbon emissions from natural gas and other sources through various sources.

16)

Objective:	Reduce carbon emissions from fleet vehicles and equipment, consistent with US Mayors Climate Protection Agreement and Kyoto Protocol target of 7% reduction from 1990 levels by 2012.
Target:	Reduce carbon emissions from city fleet vehicles and equipment by increasing average miles/gallon of fleet 5% per year and 25% by 2012.
Indicator:	Average fleet miles per gallon

17)

Objective:	Increase use of alternative fuel vehicles in City fleet.
Target:	Reduce carbon emissions from city fleet vehicles and equipment by replacing 2% of petroleum-based-fuel vehicles per year with hybrid or alternative fuel vehicles.
Indicator:	Percentage of fleet that is hybrid or alternative fuel
Discussion:	This target is consistent with the existing vehicle purchase and replacement policy.

External/Public:

18)

Objective:	Reduce energy consumption
Target:	Reduce per capita/per household energy consumption by 10% in the first year and an additional 3% per year through 2012
Indicator:	Percentage decrease in consumption units from electric and gas bills (measured in % change per capita)
Discussion:	Further discussion with PSE and SCL needed, but appears feasible. Could also potentially get at this through statistically valid survey.

Solid Waste Management

Internal/Operations:

19)

Objective:	Reduce solid waste landfilled as a result of City operations
Target:	Downward (positive) trend. Specific target TBD. E.g. Reduce by 10% per year total volume directed to landfills from City operations
Indicator:	Volume of total waste generated (as compared to previous 4 years)
Discussion:	Internal discussion necessary to establish target, but this appears to be plausible at least in the short to medium term.

20)

Objective:	Increase recycling in City operations
Target:	Upward trend. Specific target TBD. E.g. Increase by 10% the percentage of materials sorted and recycled from City operations waste stream.
Indicator:	Percentage of total waste recycled (as compared to previous 4 years)
Discussion:	Internal discussion necessary to establish target, but this appears to be plausible at least in the short to medium term.

External/Public:

21)

Objective:	Increase recycling rates in the community
Target:	Upward trend. Specific target TBD. E.g. Divert an additional 10% per year of total volume from landfills.
Indicator:	Percentage of total solid waste recycled by the Community (via CleanScapes)
Discussion:	City to determine if this can be measured or monitored through existing waste contract.

Water and Resource Conservation

Internal/Operations:

22)

Objective:	Increase purchasing of environmentally preferred products for City operations.	
Target:	Adopt a comprehensive Environmental Purchasing Policy (EPP) with specific targets in four key areas: Reduce consumption, reduce toxic materials, increase use of recycled-content materials, and increase use of recyclable materials.	
Indicator:	Percentage of purchases that meet top-tier EPP requirements.	
Discussion:	Shoreline can adapt policies already in place in Seattle, King County, and Washington State.	

23)

Objective:	Reduce potable water use in City outdoor operations
Target:	Downward (positive) trend. Specific target TBD. E.g. Reduce total potable water use for irrigation by 100% by 2012.
Indicator:	Consumption units per year for outdoor operations based on utility billing.
Discussion:	Data based on water bill. Potential strategies include stormwater storage and reuse, and Citywide moisture sensors, centrally controlled. Need to investigate how and if consumption units for irrigation are or can be separated.

24)

Objective:	Reduce potable water use in City indoor operations
Target:	Downward (positive) trend. Specific target TBD. E.g. Reduce water use in City office facilities by 50% by 2012.
Indicator:	Consumption units per year for indoor operations based on utility billing.
Discussion:	Baseline will be established to include new City Hall/Civic Center facility. Need to investigate how and if consumption units for indoor operation are or can be separated. Probably want to calibrate this by units/per square foot of space or per employee.

External/Public:

25)

Objective:	Reduce residential potable water consumption
Target:	Downward (positive) trend. Specific target TBD. E.g. Reduce water use in Shoreline households by 50% by 2012.
Indicator:	Consumption units per year per residential customer
Discussion:	Data would be gathered from water district billing data. Potential strategies include information outreach, changes to plumbing code interpretation, subsidization for the installation of low-flow and waterless fixtures, and greywater re-use for toilet flushing and irrigation. City will need to coordinate data collection with Shoreline Water District. Could broaden measure to include commercial customers, but size of business customers is more diverse. Could do measures of both units/per employee and units/per

26)	Objective:	Promote sustainability among Shoreline businesses
	Target:	Upward trend. Specific target TBD. E.g. Increase by 10% each year the number of participating green businesses for the next five years.
	Indicator:	Number of participating (or certified) green businesses (per year as compared to previous 4 years)
	Discussion:	Requires establishment of green business program. Sustainable Business Extension program (contracted to ECOSS by the City) does not currently have a CERTIFICATION component. Could track number of businesses that participate in program based on criteria that they offer an environmentally preferable product or service alternative (similar to Chinook book criteria) and implement recommended changes to ECOSS.

General

27)	Objective:	Increase volunteer hours devoted to sustainability projects
	Target:	Upward trending number, based on current City "strategic objectives" program, target is 3,800 for all volunteer programs in 2008
	Indicator:	Number of volunteer hours and distinct individuals devoted to sustainability projects per year (as compared to previous 4 years)
	Discussion:	The City already gathers and tracks volunteer hours through "strategic objectives" program and could track hours in future years devoted to sustainability projects, e.g. habitat, recycling, right-of-way landscaping and other similar projects with an sustainability benefit.

28)	Objective:	Increase staff training on sustainability issues
	Target:	Upward trending number for next 5 years, than stabilize at appropriate level based on FTE, specific number TBD, including targets for certain positions.
	Indicator:	Number of staff hours devoted to sustainability training per year per full time employee equivalent (as compared to previous 4 years)
	Discussion:	The City already gathers and tracks training hours and establishes a training budget by department and by employee for some departments. A specific amount could be devoted to sustainability.