

Evaluation as (Upstream) Decision Support –

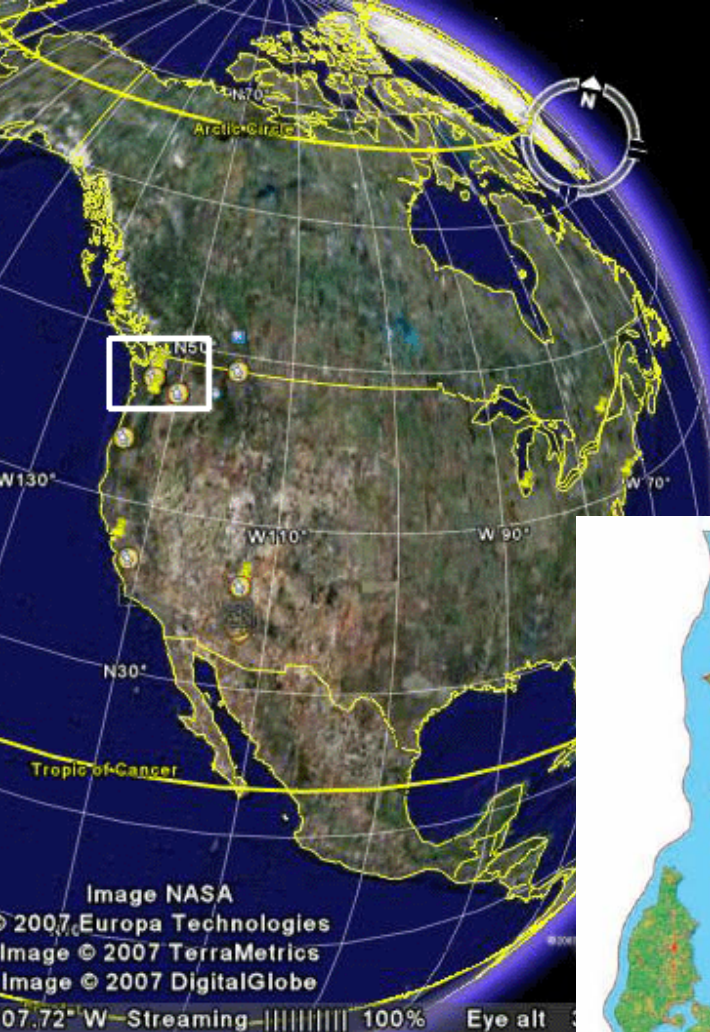
Using Environmental Intelligence Throughout the Adaptive and Performance Management Cycle

Richard Gelb, Performance Management Lead

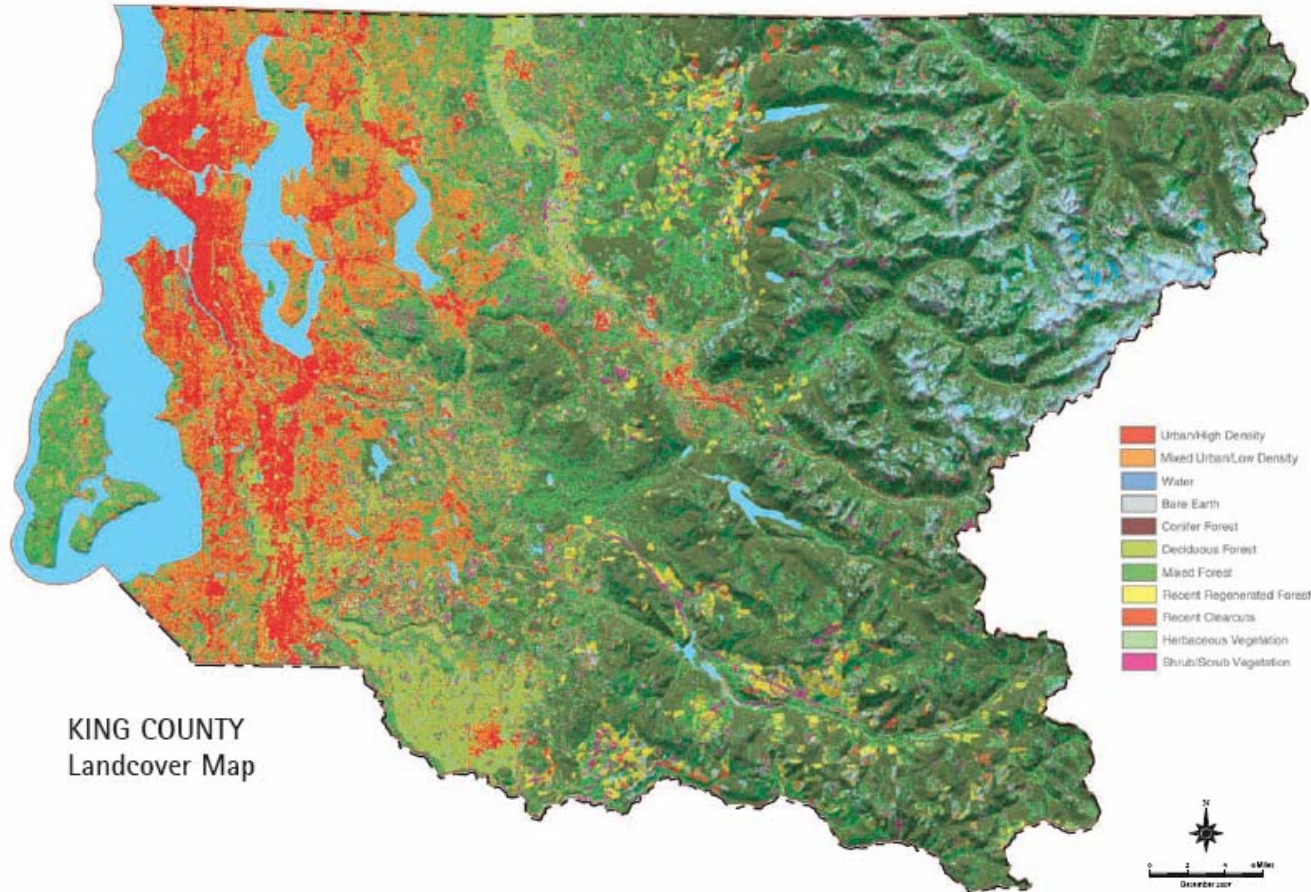
King County

Department of Natural Resources and Parks

richard.gelb@kingcounty.gov



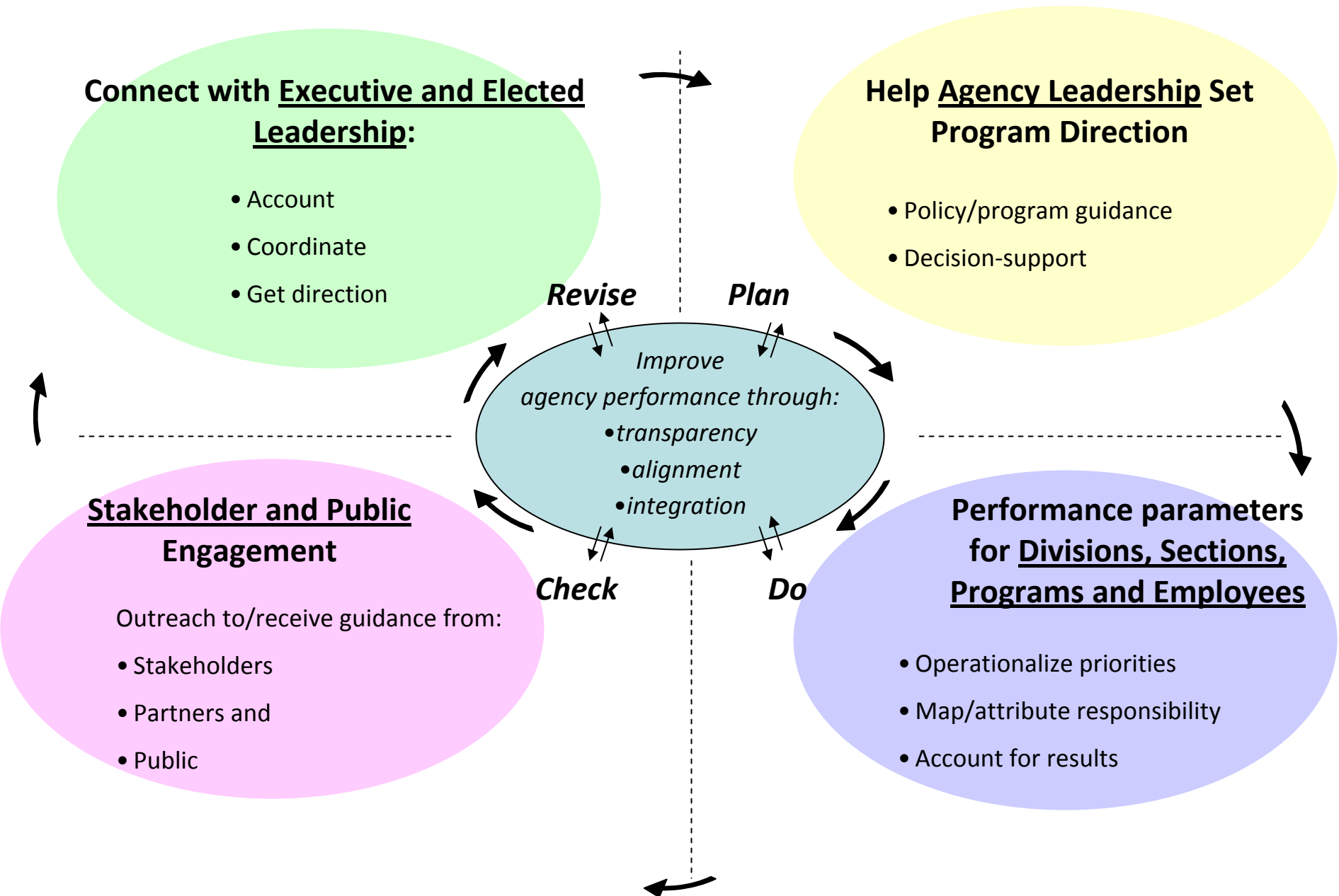
King County, Washington -- Seattle and 38 other cities, 1.8 million residents, Cascade Mountains, glaciers, forest, farmland, rural lands, urban coastline, rivers, lakes, Puget Sound



Standardized Strategic/Business Plan Format

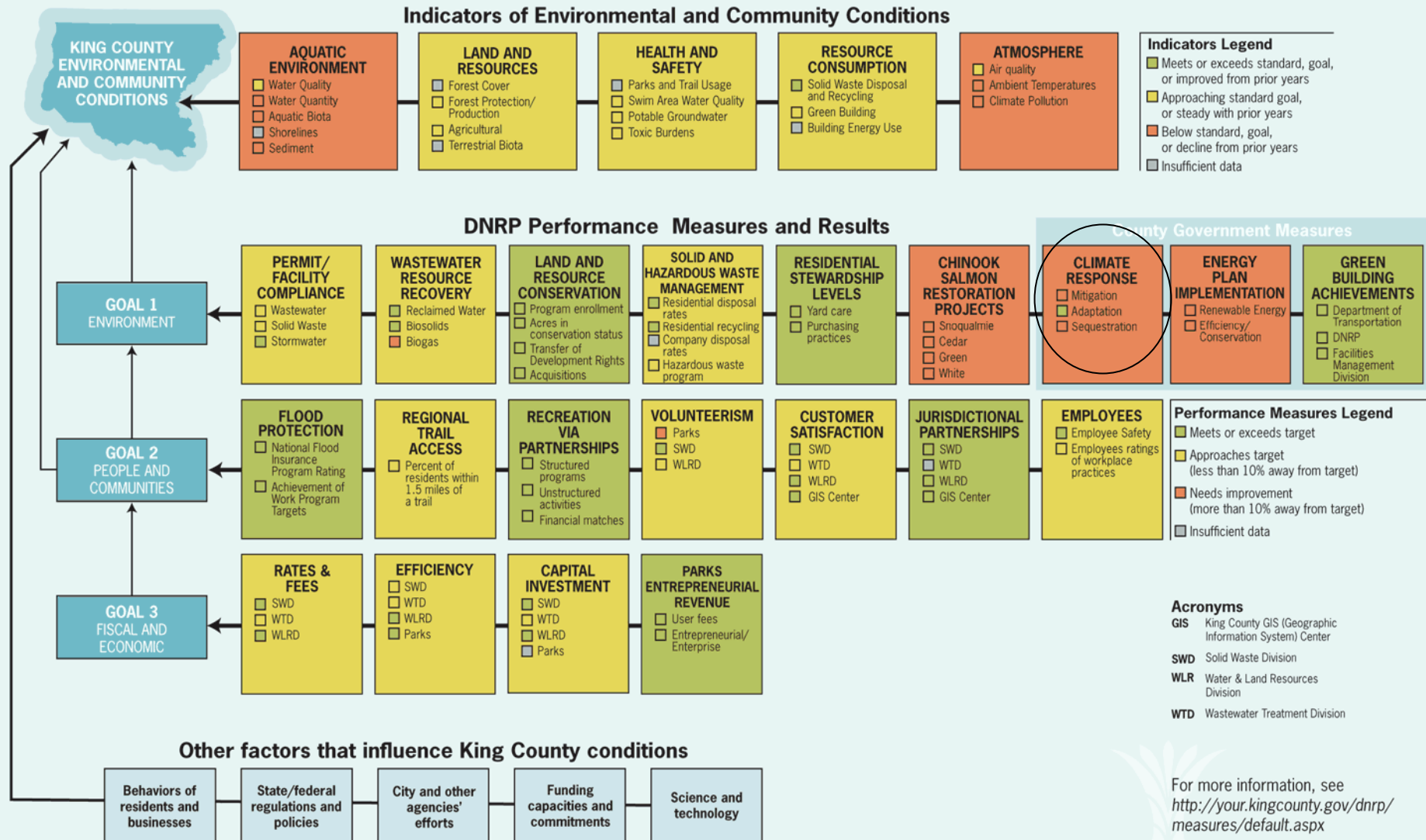


Primary Audiences for (Local Gov't) Environmental Evaluation and Performance Information



HOW ARE WE DOING?

2008 King County Environmental Conditions and DNRP Performance Results by Goal Areas

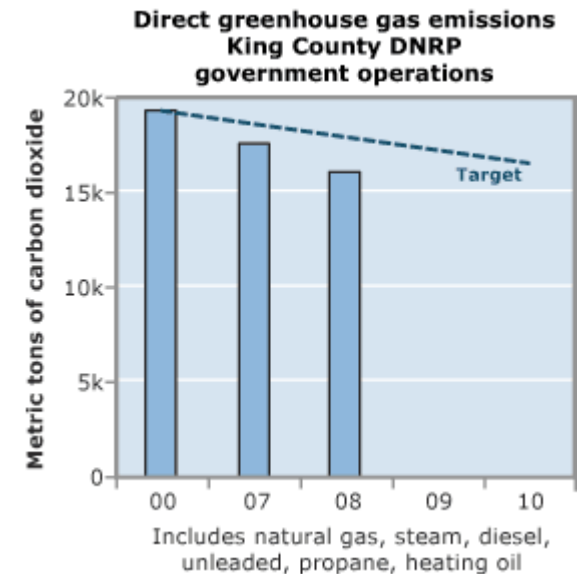
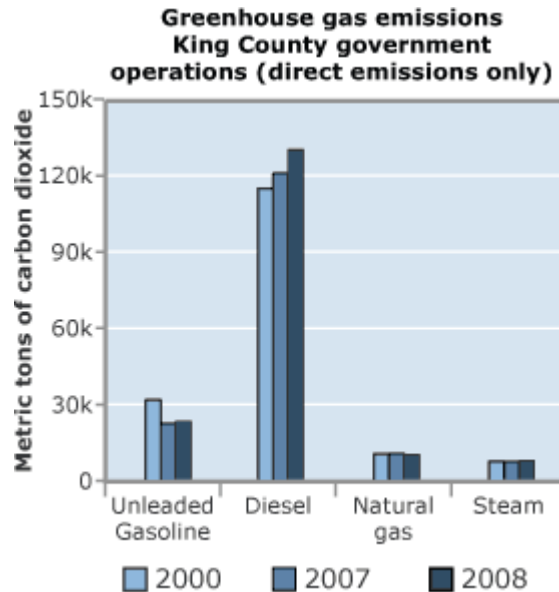
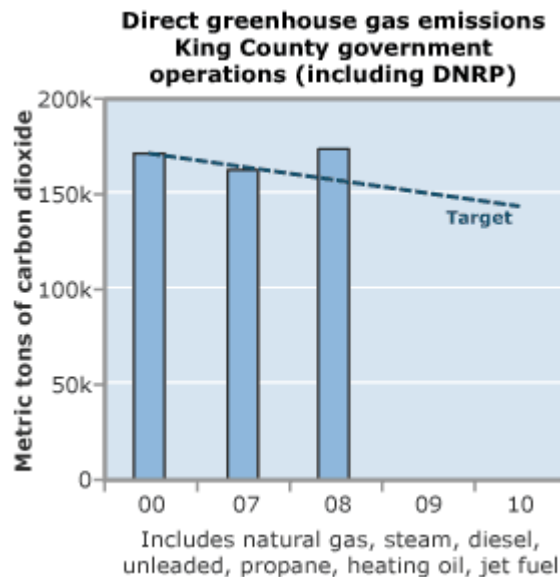


Climate Pollution Reduction Targets

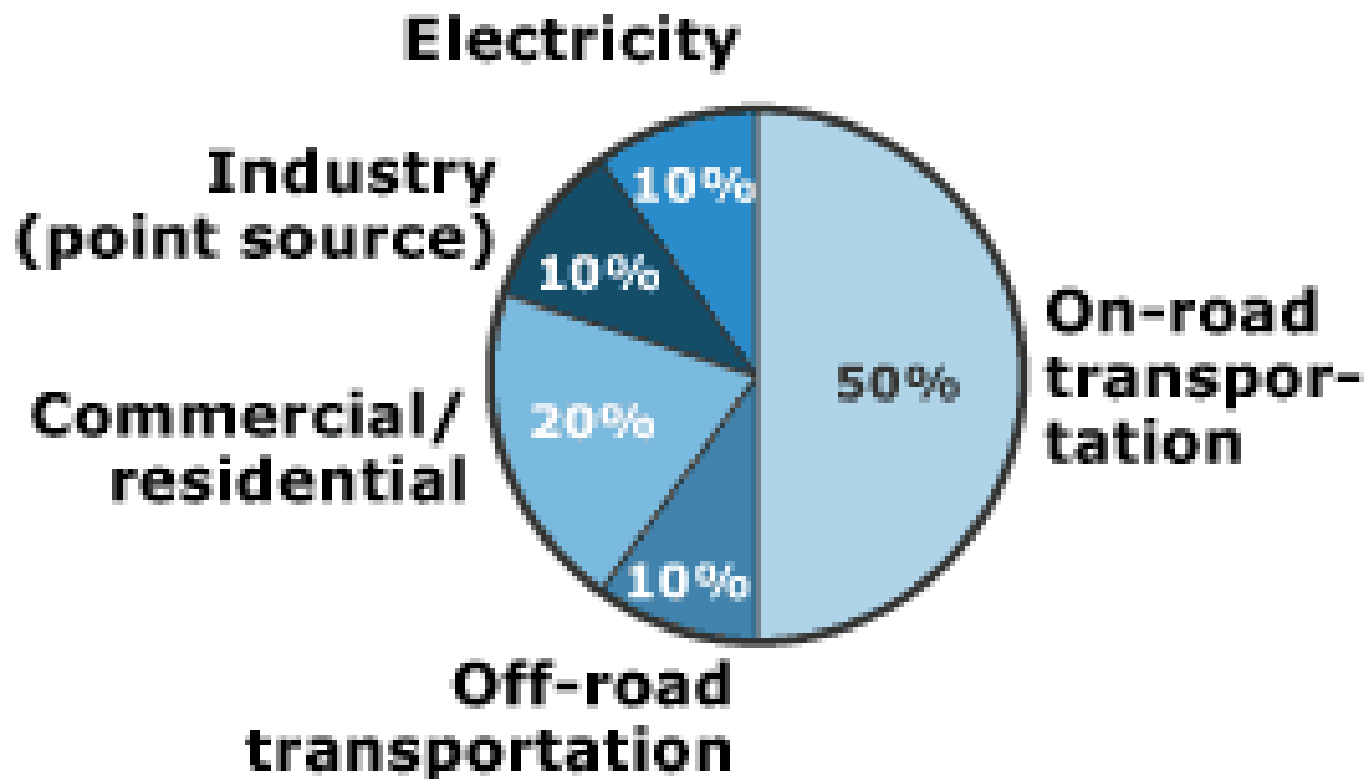


- Reduce annual GHG emissions from government operations to 6% below 2000 levels by 2010
- In collaboration with other local governments, reduce annual GHG emissions regionally to 80% below 2007 levels by 2050

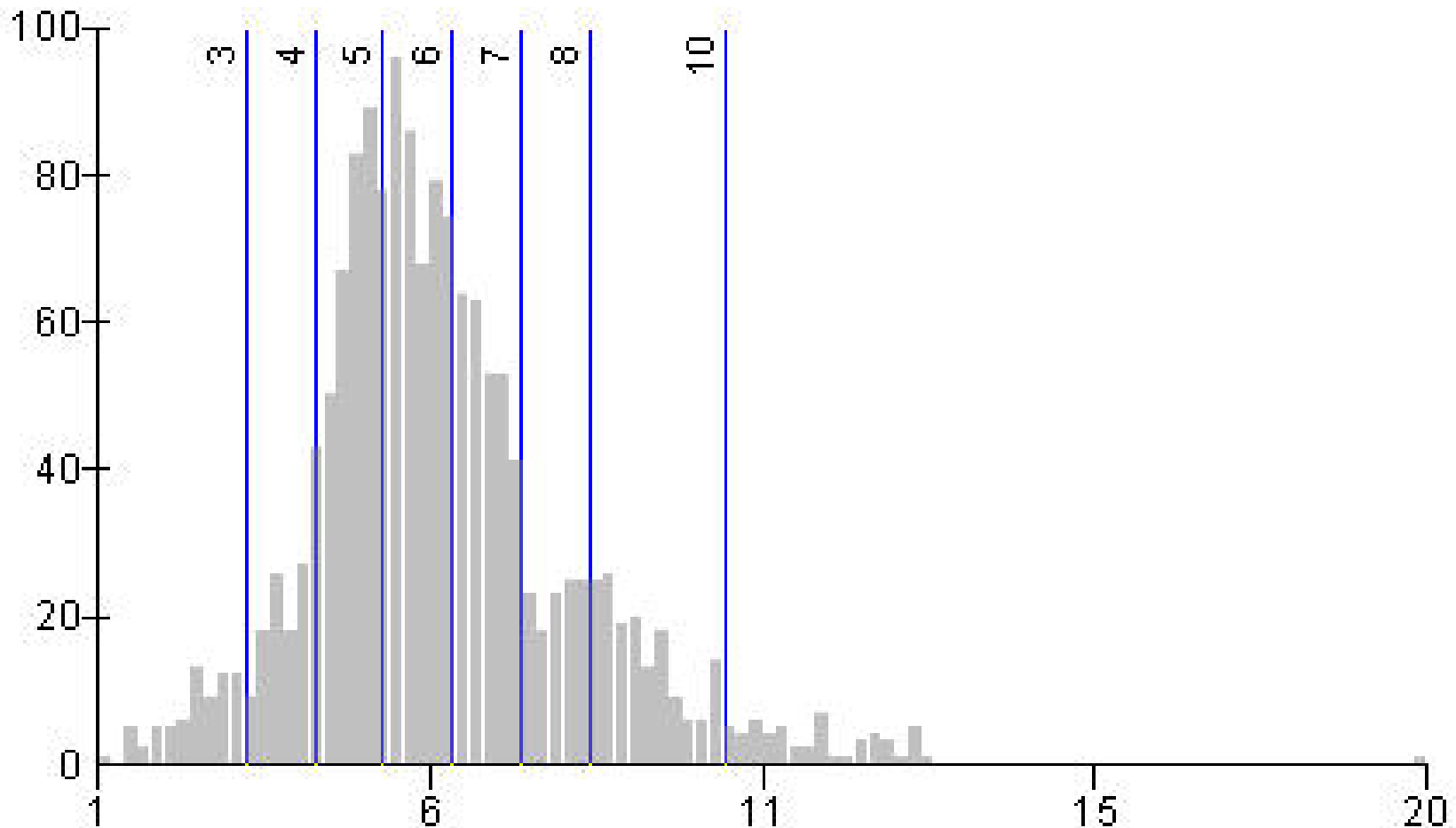
King County Operational GHG emissions

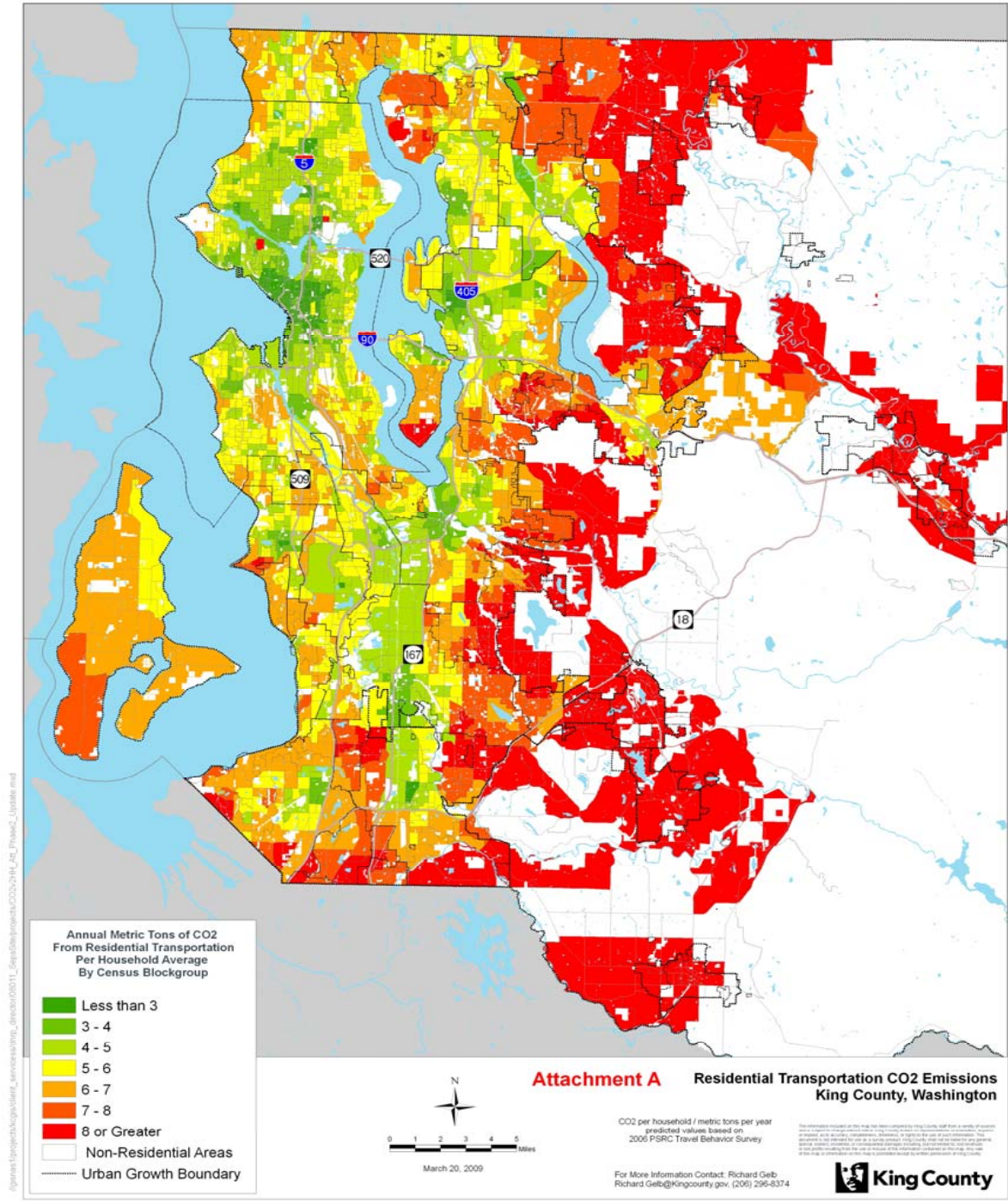


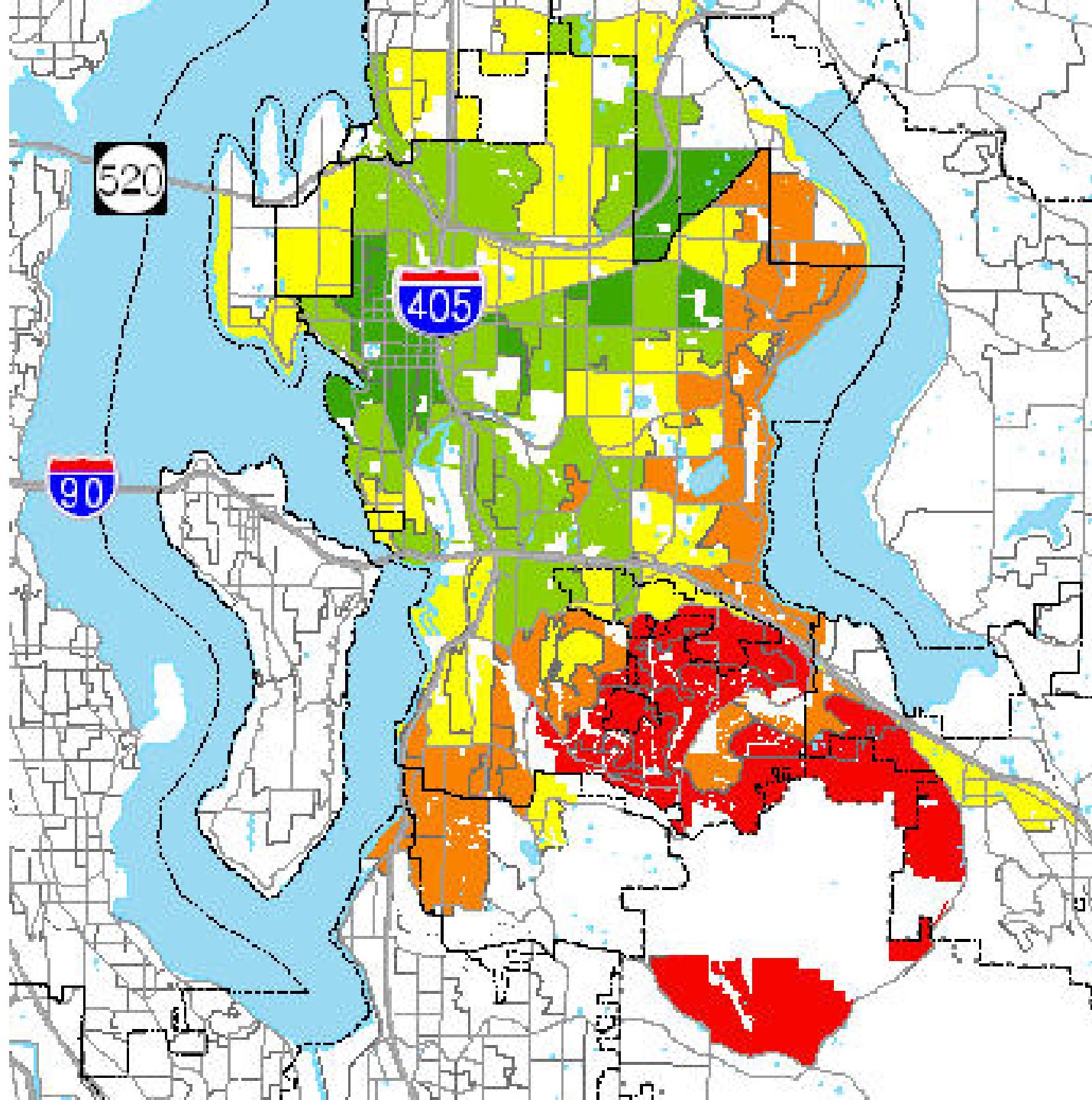
**King County Community
Greenhouse Gas Emissions**
23,000,000 MTCO₂e



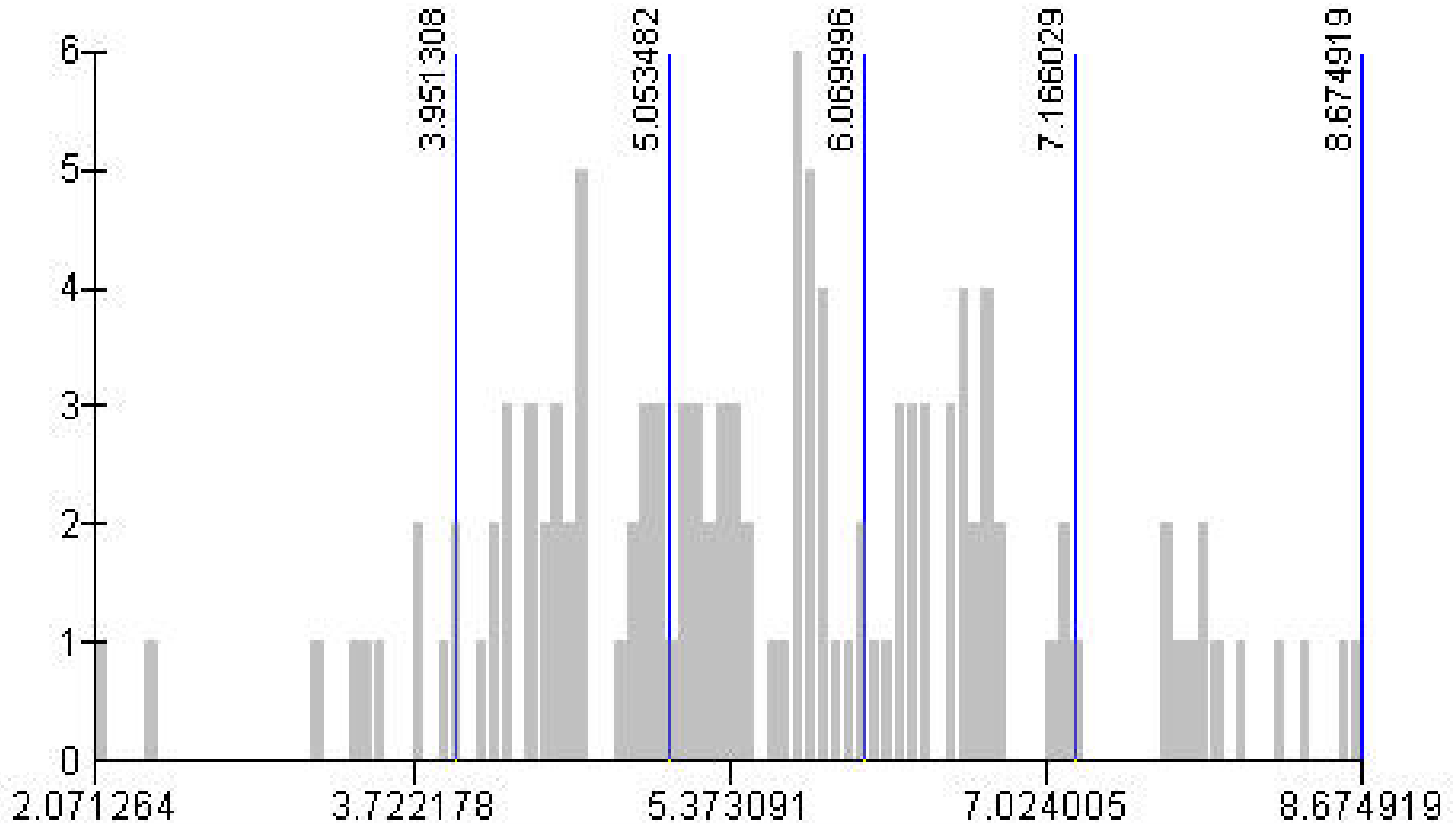
Countywide residential transportation emissions Annual metric tons per household: 2006 findings



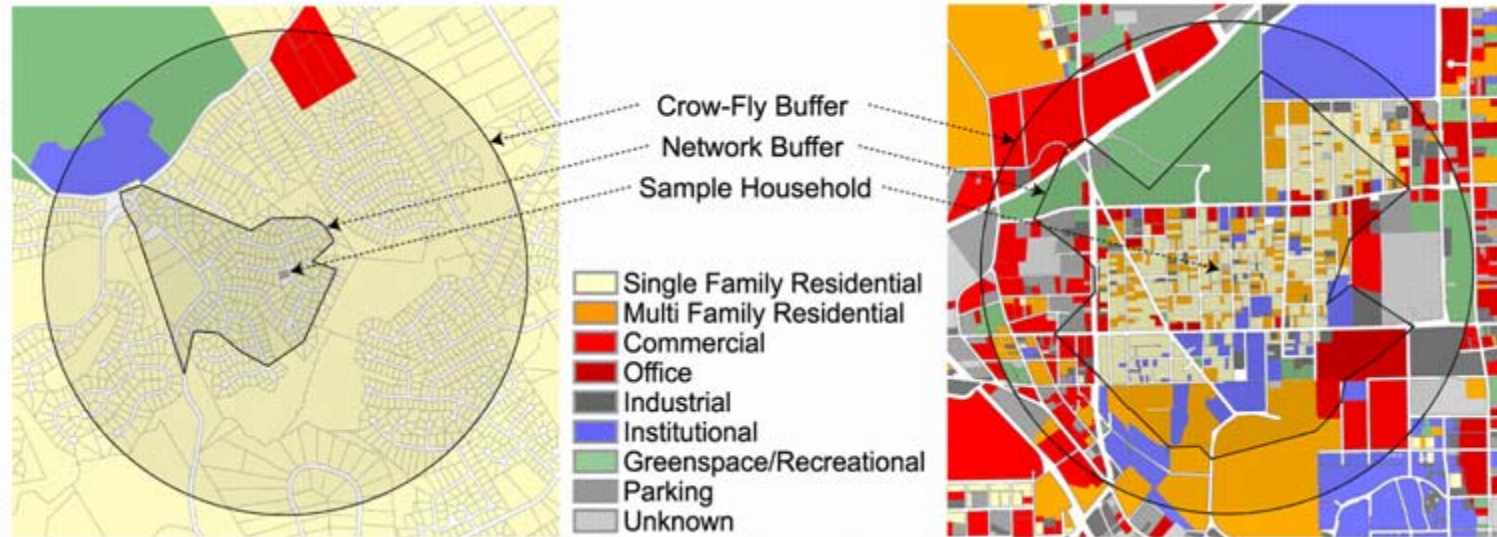




Bellevue block group value distribution



Urban Form Variable Generation



Step 1 – Set 1 km network buffer around each household location

Step 2 – Using the network buffer, aggregate/calculate the following measures:

- **Intersection Density** – Number of 3 or 4 way intersections within 1 km buffer
- **Residential Density** – Number of housing units (both multi and single family) divided by residential acreage within 1 km buffer
- **Mixed Use Index** – 0 – 1 index where “0” indicates absolute consistency and “1” indicates completely balanced mixture of land use categories (5 land use categories: residential, institutional, retail, entertainment , & office)
- **Retail FAR** – The FAR for all retail floor space within the 1 km network buffer








Residential Energy Use by Block Group, 12 Month Average, 2007

This map depicts the total energy consumption, electricity and natural gas, for single family homes by Census Block Group. A threshold of 100 homes was necessary for data to be included in this study. Data was prepared by Puget Sound Energy staff in participation with staff from the Department of Natural Resources and Parks.

Legend

MMBTU per Housing Unit

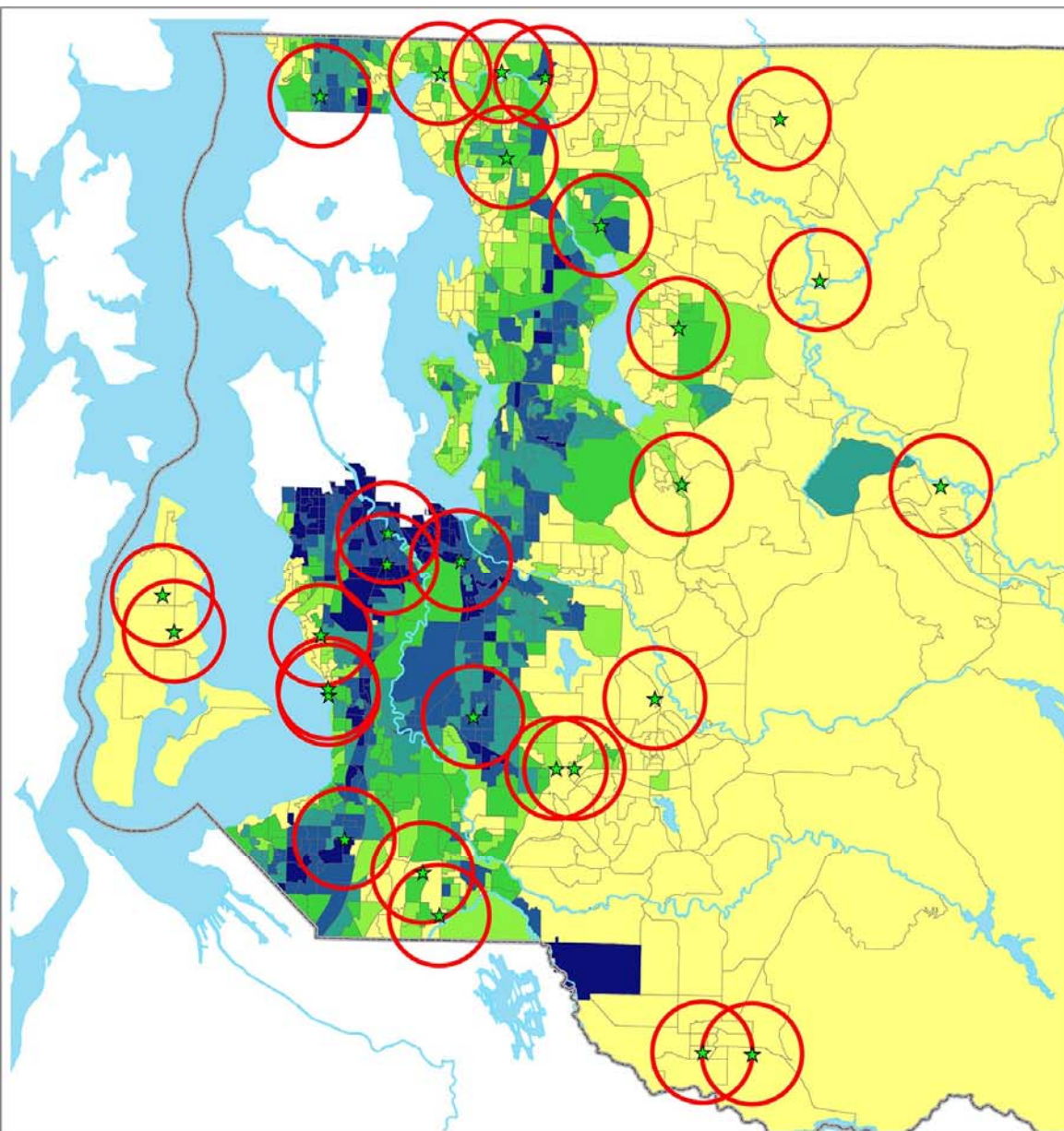
-  5.87 - 54.54
-  54.55 - 79.09
-  79.10 - 105.98
-  105.99 - 143.01
-  143.02 - 328.84
-  Block Groups Not Reported

Source: Puget Sound Energy, 2007

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0 2 4 8
Miles



Minority Demographics and 2 Mile Buffer from Wastemobile Stops (Feb. 06 - Oct. 07)

Category	Minority Pct Range	Ct BlkGrps (without Seattle)	Total Population	Population within 2 mile buffer	Minority Population	Minority population within 2 mile buffer	% Total Population	% Minority population within 2 mile buffer
A	0.0 - 11.9%	309	319782	130894	25661	11027	27.26	9.44
B	12.0 - 15.9%	133	158001	82872	22031	11731	13.47	10.04
C	16.0 - 21.4%	159	184074	73566	33947	13563	15.69	11.61
D	21.5 - 27.9%	164	187565	80214	45650	19373	15.99	16.59
E	28.0 - 39.9%	164	213932	101013	71474	34164	18.24	29.25
F	40.0 - 100%	82	109728	54789	53984	26942	9.35	23.07

★ Wastemobile Location

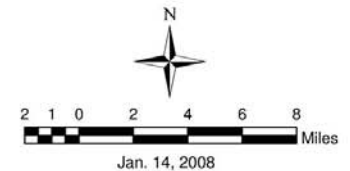
2 Mile Buffer from Wastemobile

King County

Census 2000 Block Groups Pct. Minority

A	0.0 - 11.9%
B	12.0 - 15.9%
C	16.0 - 21.4%
D	21.5 - 27.9%
E	28.0 - 39.9%
F	40.0 - 100%

This map portrays the population which is non-white plus the approx. 50% of Hispanic / Latino persons who identified their race as white



King County
GIS Center

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Income Demographics and King County Wastewater Facility Locations

Category	Per Capita Income (\$)	# of Wastewater Facilities	Ct BlkGrps within Service Area	Ct BlkGrps within 1/2 mile buffer	Total Population within Service Area	Population within 1/2 mile buffer	% Population within Service Area	% Population within 1/2 mile buffer
A	0 - 39,999	21	255	65	309096	78385	21.39%	21.87%
B	40,000 - 47,999	16	187	49	223268	59616	15.45%	16.63%
C	48,000 - 54,999	10	173	29	174768	32102	12.09%	8.95%
D	55,000 - 62,999	10	179	48	188374	51153	13.04%	14.27%
E	63,000 - 72,999	11	200	48	211374	52020	14.63%	14.51%
F	73,000 - 200,000	22	324	91	338113	85195	23.40%	23.77%

DRAFT

- KC-WTD Facility
- - - County Boundary
- 1/2 Mile Buffer of KC-WTD Facilities
- KC-WTD Service Area

Census 2000 Block Groups Per Median Household Income (Age 15 years old and above)

- A** Under \$40,000
- B** \$40,000 - \$47,999
- C** \$48,000 - \$54,999
- D** \$55,000 - \$62,999
- E** \$63,000 - \$72,999
- F** Over \$73,000



0 1.25 2.5 5 7.5 10
Miles

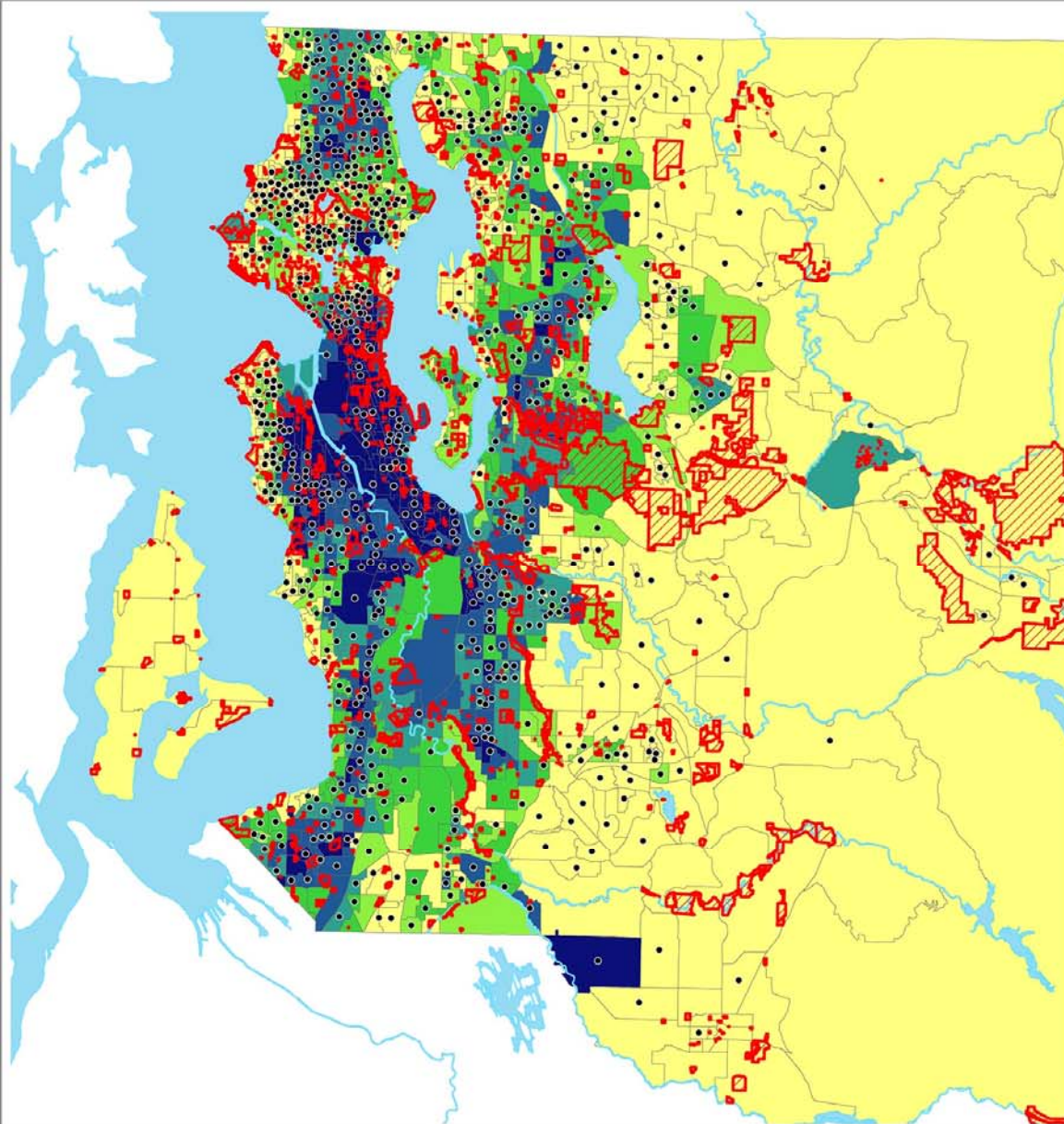


King County
Department of
Natural Resources and Parks
**Wastewater Treatment
Division**

January 2008

Z:\egradient_services\dirp_director\KS2007_Geob_equality\WTDIncome2.mxd - Shari Cross

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Minority Demographics and distance to Developed Parks in King County

Category	Minority Pct Range	Ct BlkGrps	Total Population	Minority Population	Minority Pct Overall	Median Distance to Developed Parks (mile)
A	0.0 - 11.9%	474	465204	39334	8.46	0.00
B	12.0 - 15.9%	225	245375	34164	13.92	0.00
C	16.0 - 21.4%	226	250239	46096	18.42	0.14
D	21.5 - 27.9%	212	241993	58912	24.34	0.15
E	28.0 - 39.9%	229	281031	93695	33.34	0.06
F	40.0 - 100%	214	253192	149326	58.98	0.15

Note: Information may not be completed for non-King County owned or operated parks or open spaces. Analysis is done for the best data available in our database.

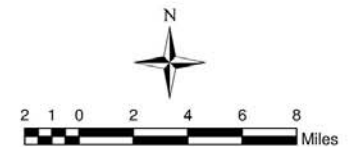
• Block group exceeding median distance

 Developed Parks in King County

Census 2000 Block Groups Pct. Minority

A	0.0 - 11.9%
B	12.0 - 15.9%
C	16.0 - 21.4%
D	21.5 - 27.9%
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F	40.0 - 100%

This map portrays the population which is non-white plus the approx. 50% of Hispanic / Latino persons who identified their race as white



Jan. 10, 2008



King County

GIS Center

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Minority Demographics and distance to King County Owned Parks and Open Space

Category	Minority Pct Range	Ct BlkGrps	Total Population	Minority Population	Minority Pct Overall	Median Distance to King County Parks & Open Space (mile)
A	0.0 - 11.9%	153	164580	12020	7.30	0.00
B	12.0 - 15.9%	26	32814	4655	14.19	0.24
C	16.0 - 21.4%	33	41253	7507	18.20	0.29
D	21.5 - 27.9%	36	42633	10393	24.38	0.32
E	28.0 - 39.9%	32	35280	11686	33.12	0.30
F	40.0 - 100%	32	32731	17541	53.59	0.17

Note: Census block group polygons may not match to city boundaries. Analysis is done only those block groups with majority of their areas are in unincorporated area.

- Block group exceeding median distance

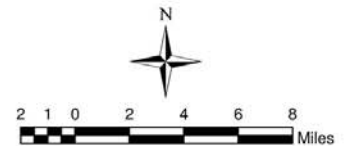
 King County Owned Parks and Open Space

 City

Census 2000 Block Groups Pct. Minority

A	0.0 - 11.9%
B	12.0 - 15.9%
C	16.0 - 21.4%
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Jan. 10, 2008

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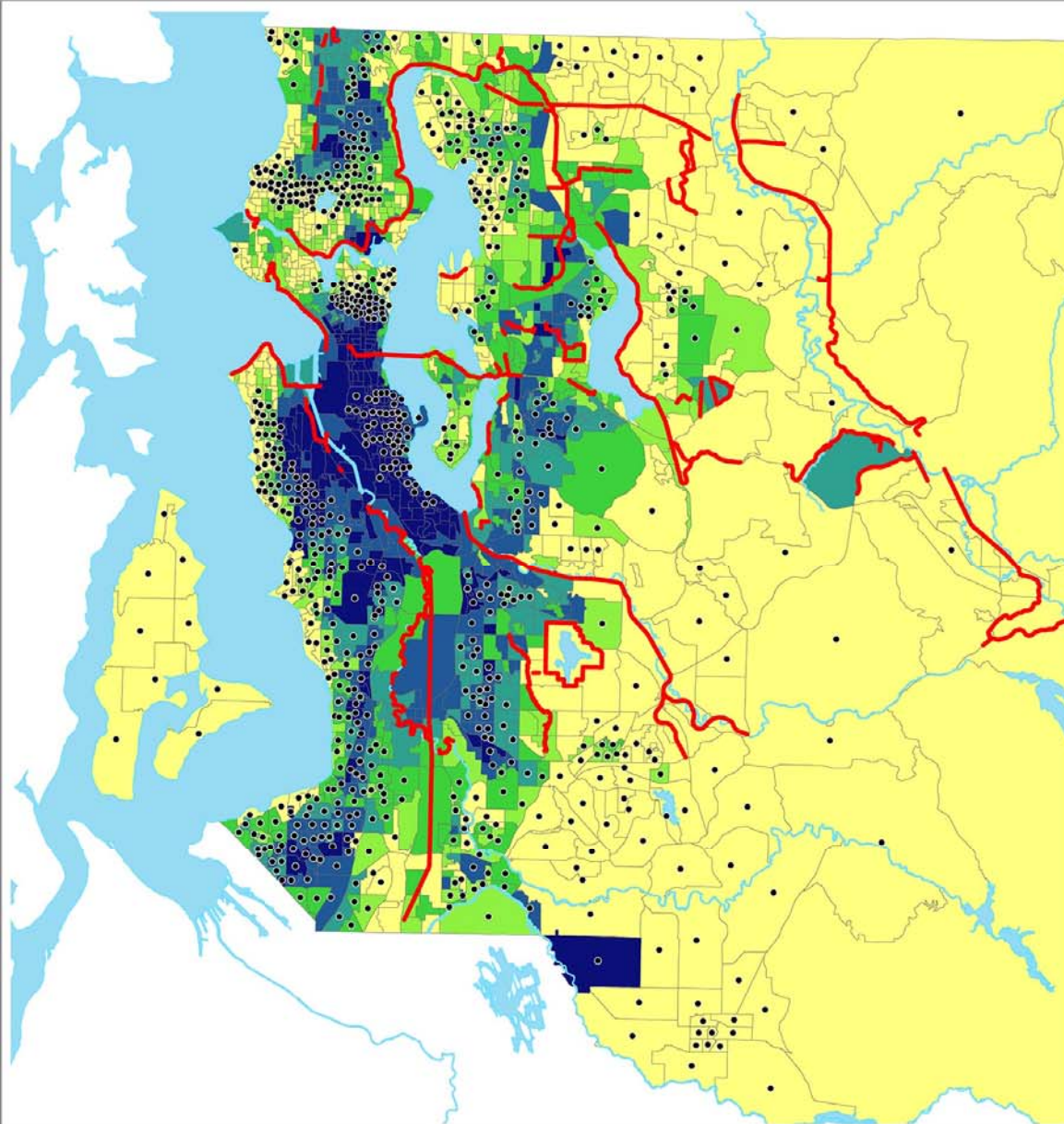
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Unincorporated racial demographics (by Block Group) and proximity to King County Parks

Category	Minority Pct Range	Ct BlkGrps	Total Population	Minority Population	Minority Pct Overall	Median Distance to King County Parks & Open Space (mile)
A	0.0 - 11.9%	153	164580	12020	7.30	0.00
B	12.0 -15.9%	26	32814	4655	14.19	0.24
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E	28.0 - 39.9%	32	35280	11686	33.12	0.30
F	40.0 - 100%	32	32731	17541	53.59	0.17

Countywide Racial Demographics (by Block Group) and Proximity to All Parks in King County

Category	Minority Pct Range	Ct BlkGrps	Total Population	Minority Population	Minority Pct Overall	Median Distance to Parks / Open Space (mile)
A	0.0 - 11.9%	474	465204	39334	8.46	0.00
B	12.0 -15.9%	225	245375	34164	13.92	0.00
C	16.0 - 21.4%	226	250239	46096	18.42	0.13
D	21.5 - 27.9%	212	241993	58912	24.34	0.15
E	28.0 - 39.9%	229	281031	93695	33.34	0.00
F	40.0 - 100%	214	253192	149326	58.98	0.14



Minority Demographics and Distance to Regional Trails in King County

Category	Minority Pct Range	Ct BlkGrps	Total Population	Minority Population	Minority Pct Overall	Median Distance to Regional Trail (mile)
A	0.0 - 11.9%	474	465204	39334	8.46	1.08
B	12.0 - 15.9%	225	245375	34164	13.92	0.89
C	16.0 - 21.4%	226	250239	46096	18.42	0.92
D	21.5 - 27.9%	212	241993	58912	24.34	1.01
E	28.0 - 39.9%	229	281031	93695	33.34	1.01
F	40.0 - 100%	214	253192	149326	58.98	1.21

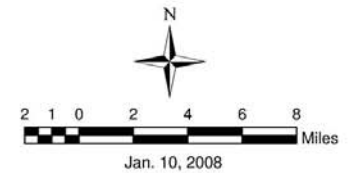
• Block group exceeding median distance

Regional Trails

Census 2000 Block Groups Pct. Minority

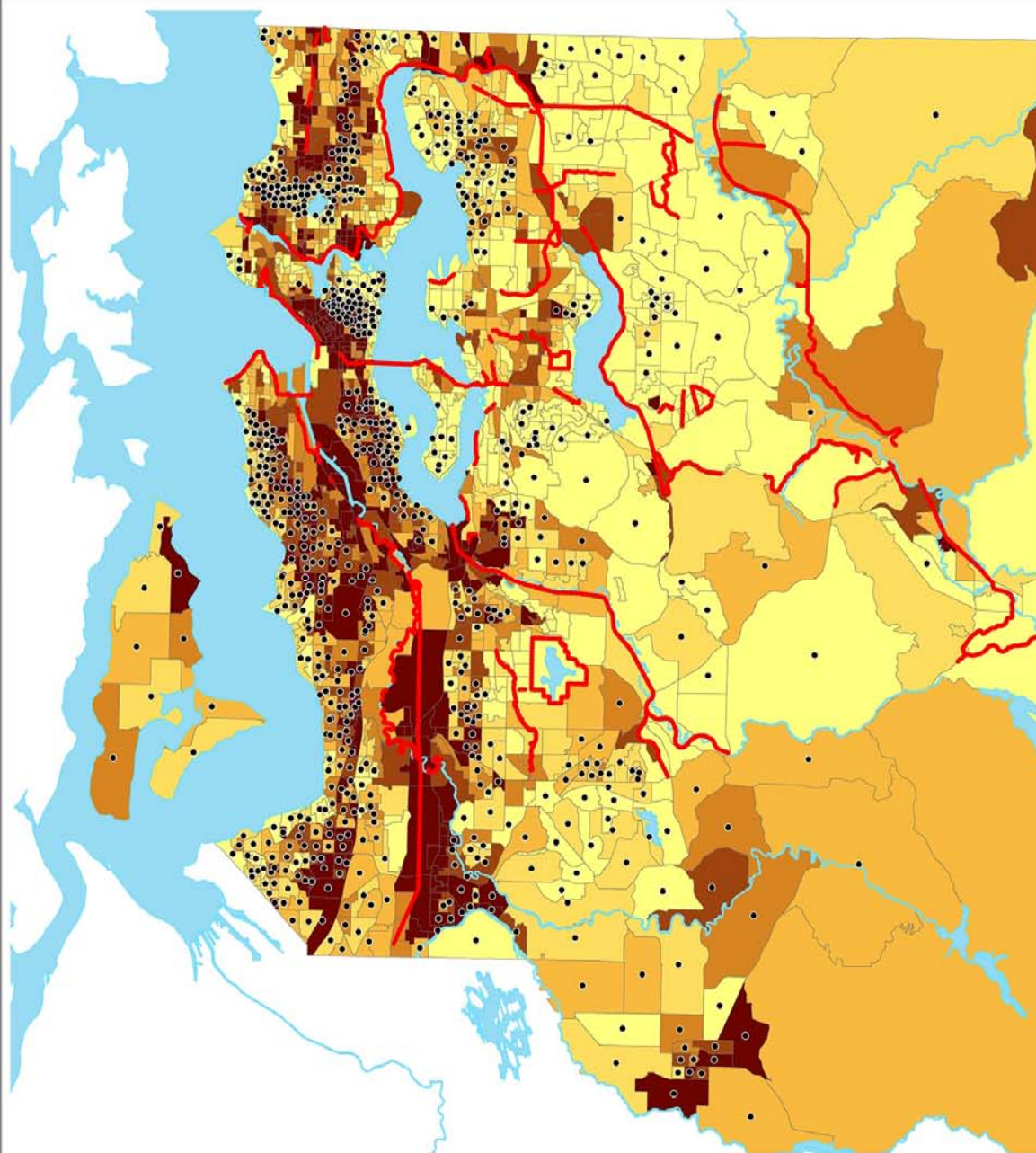
A	0.0 - 11.9%
B	12.0 - 15.9%
C	16.0 - 21.4%
D	21.5 - 27.9%
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Income Demographics and Distance to Regional Trails in King County

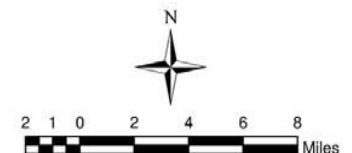
Category	Median Household Income (\$)	Ct BlkGrps	Total Population	Median Distance to Regional Trail (mile)
A	0 - 39999	305	367983	0.93
B	40000 - 47999	220	261113	1.08
C	48000 - 54999	207	210920	1.17
D	55000 - 62999	228	242973	1.13
E	63000 - 72999	242	255660	1.09
F	>= 73000	378	398385	0.92

• Block group exceeding median distance

 Regional Trails

Census 2000 Blk Grps Median Household Income in 1999

A	0 - 39999
B	40000 - 47999
C	48000 - 54999
D	55000 - 62999
E	63000 - 72999
F	>= 73000



Jan. 10, 2008



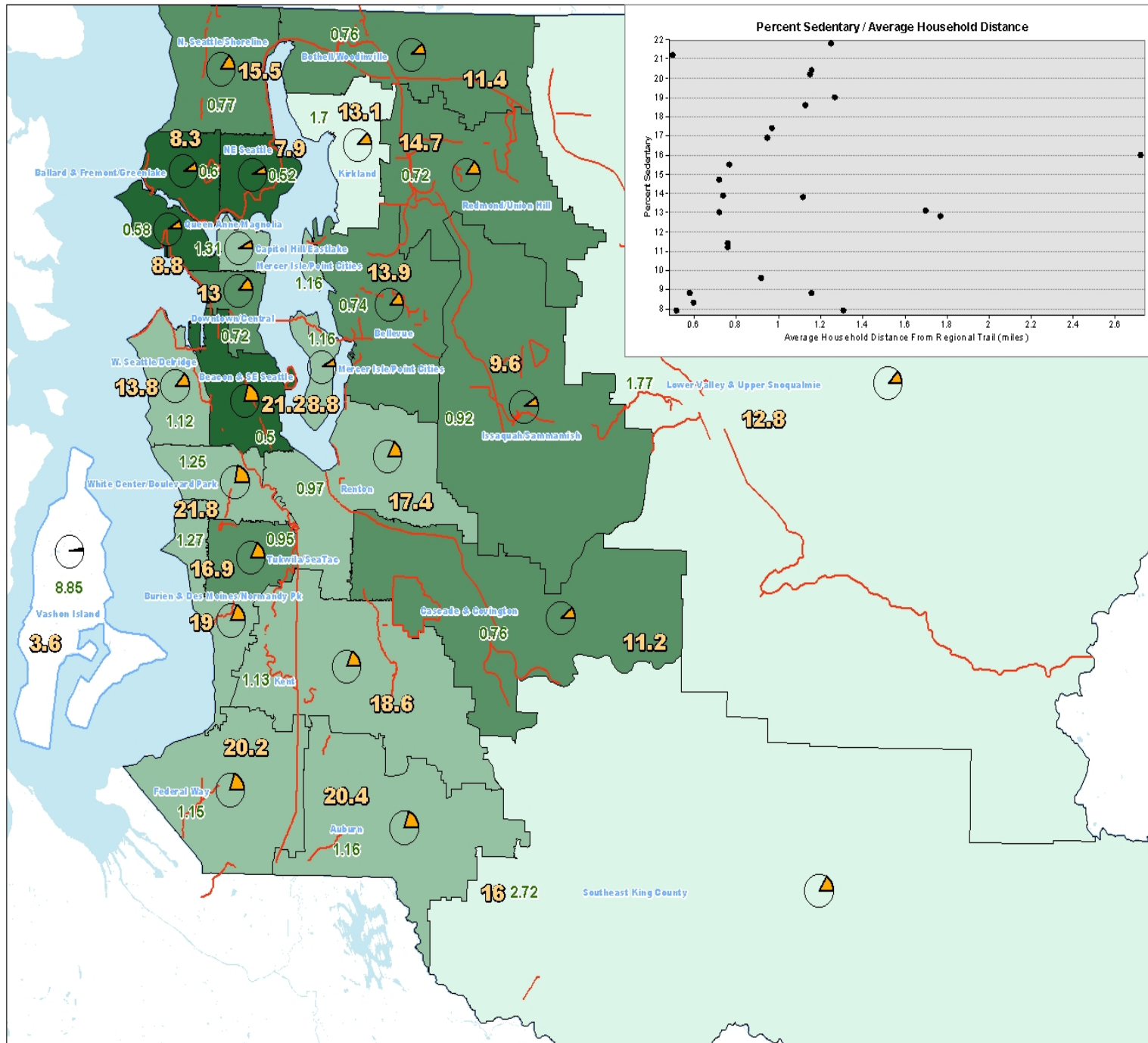
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2007 Household distance to regional trail system by income

Category	Median Household Income (\$)	Ct BlkGrps	Total Population	Median Distance to Regional Trail (mile)
A	0 - 39999	305	367983	0.93
B	40000 - 47999	220	261113	1.08
C	48000 - 54999	207	210920	1.17
D	55000 - 62999	228	242973	1.13
E	63000 - 72999	242	255660	1.09
F	>= 73000	378	398385	0.92



Average Household Distance to a Regional Trail Compared to Percent Sedentary

Average Household Distance:
Compiled from Census 2000 blockgroup centroids
within Health Planning Areas

Percent Sedentary - Source:
Public Health-Seattle & King County:
No Physical Activity by Health Planning Area,
5 year average 2001-2005.
Behavioral Risk Factor Surveillance System

Legend

— Regional Trails

**Average Household Distance
to nearest Regional Trail**

0.5 - 0.6

0.6 - 0.95

0.95 - 1.31

1.00	1.00
1.34	2.72

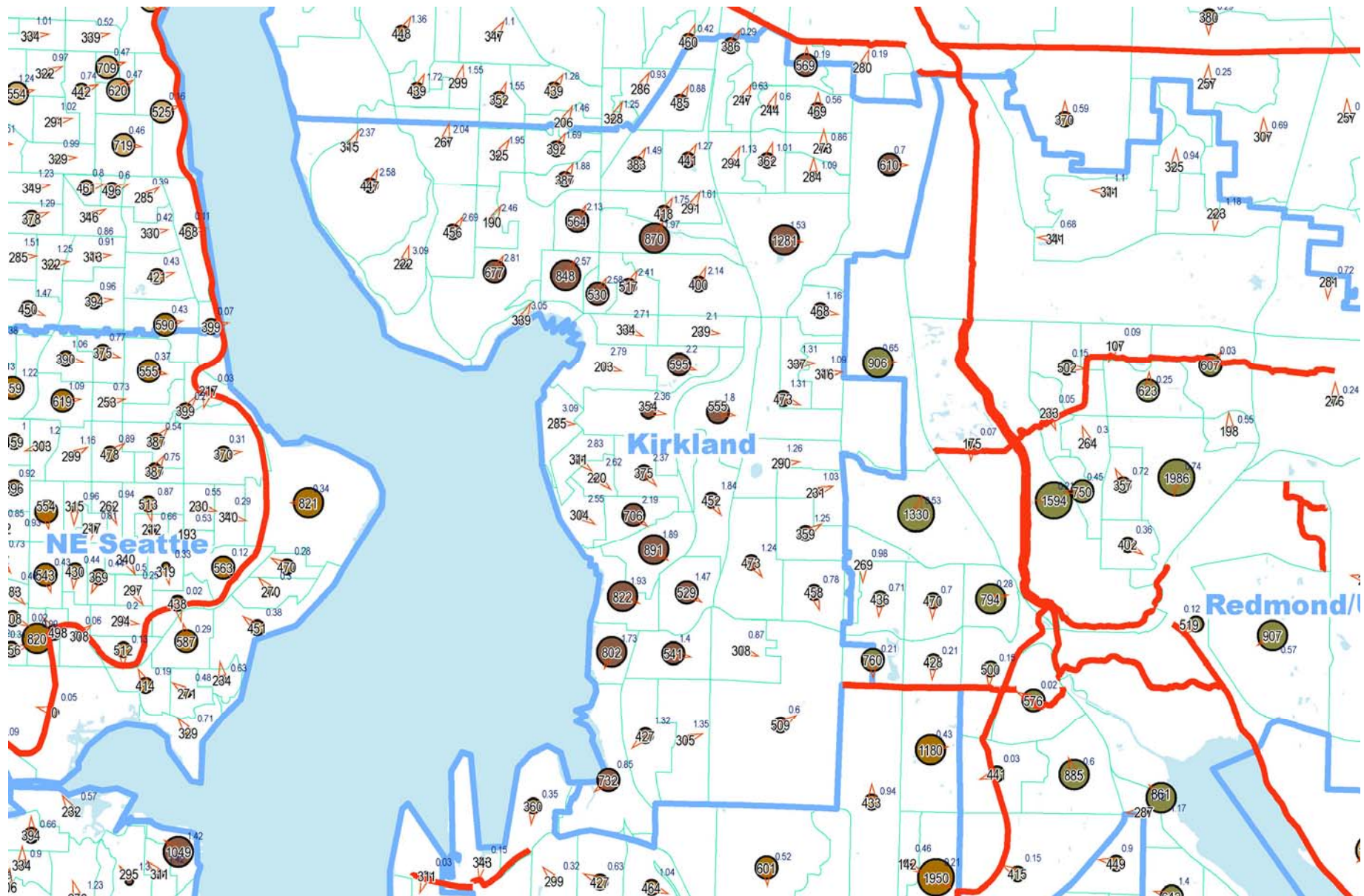
Percent Sedentary:



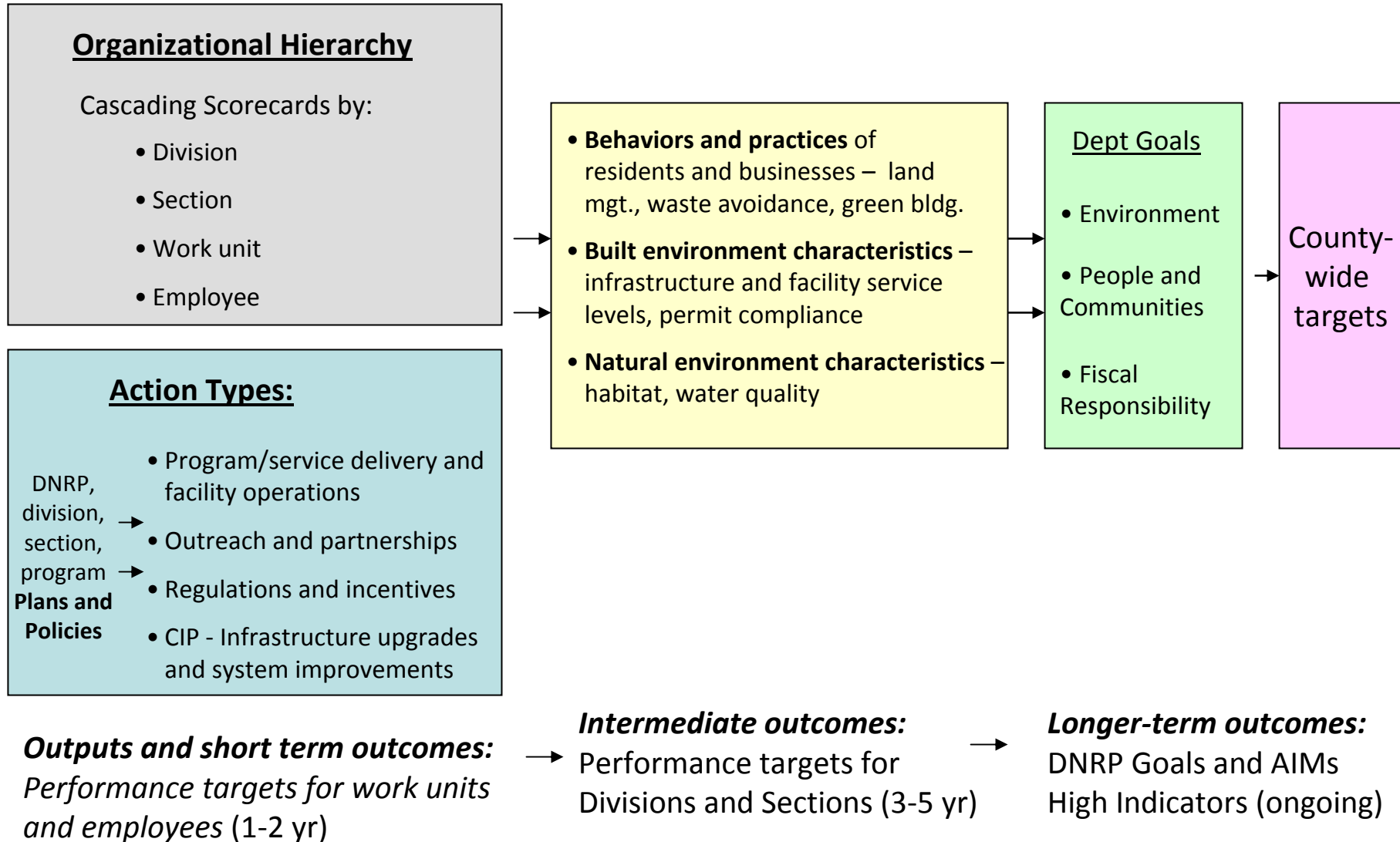
Percent Sedentary (No physical Activity)



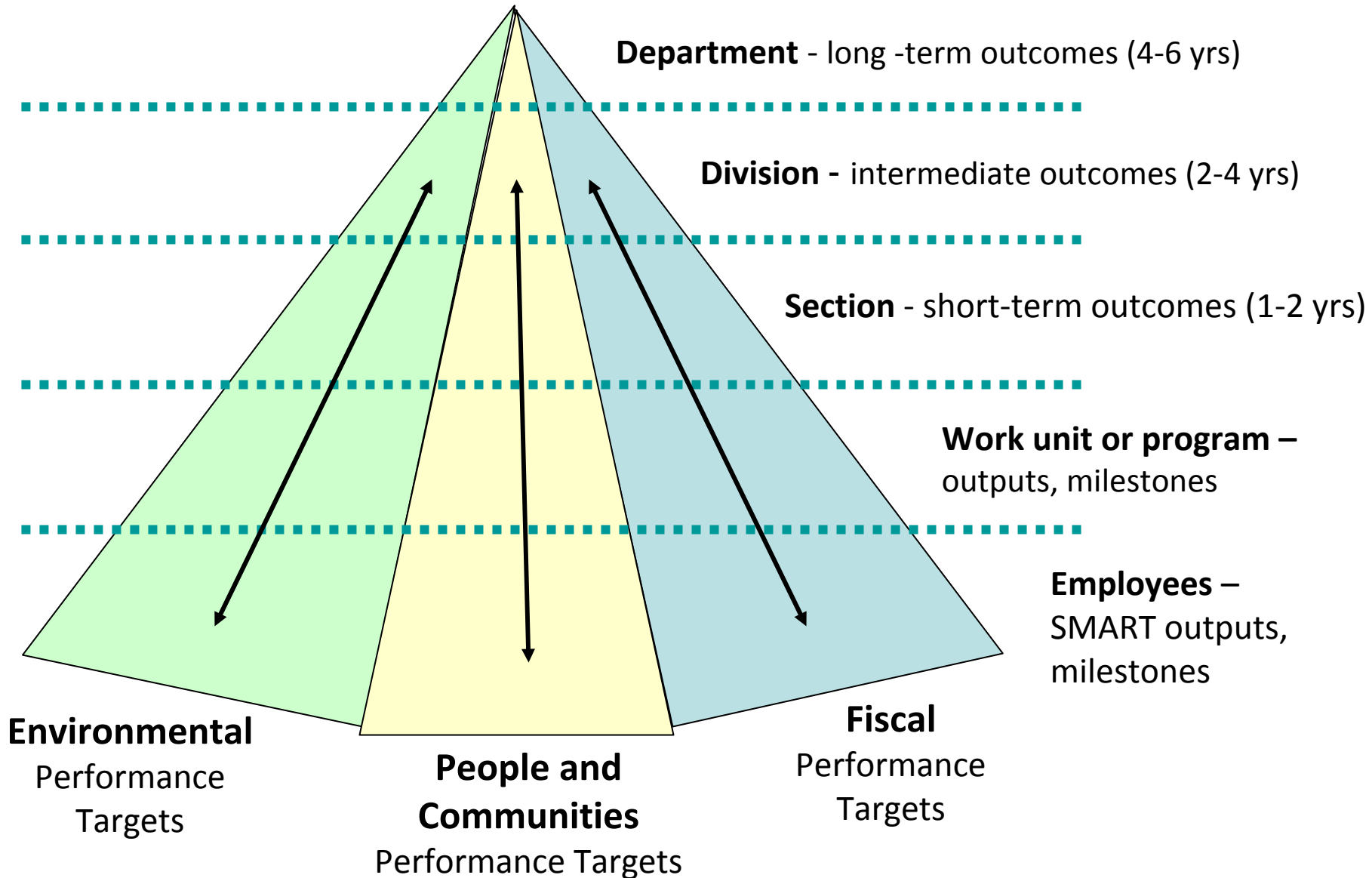
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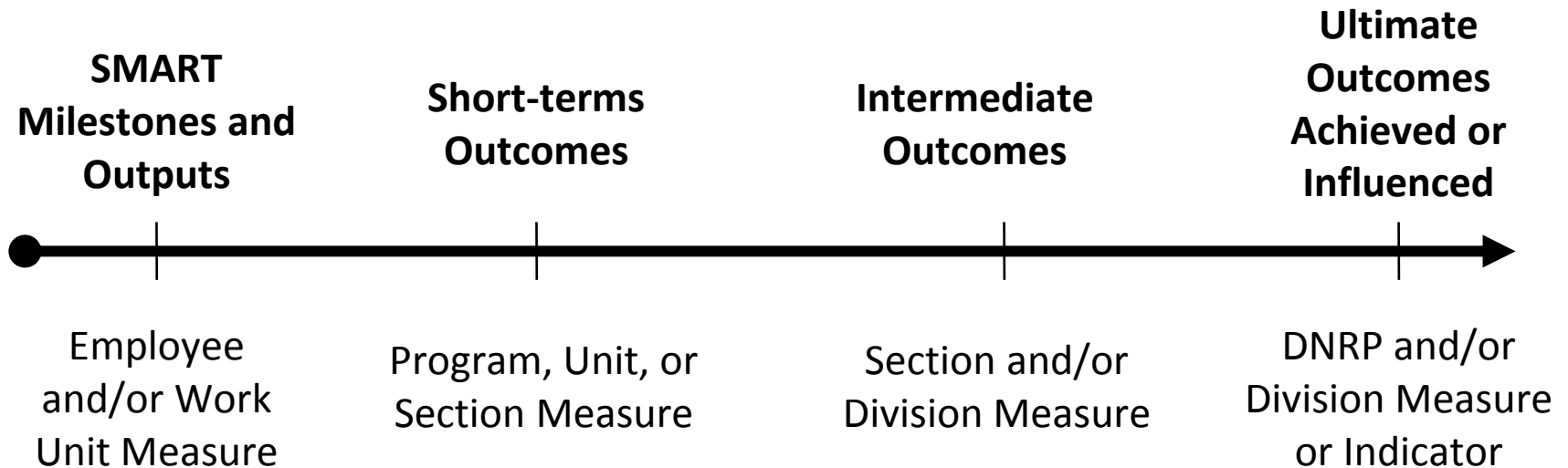
Performance measures along DNRP logic chain



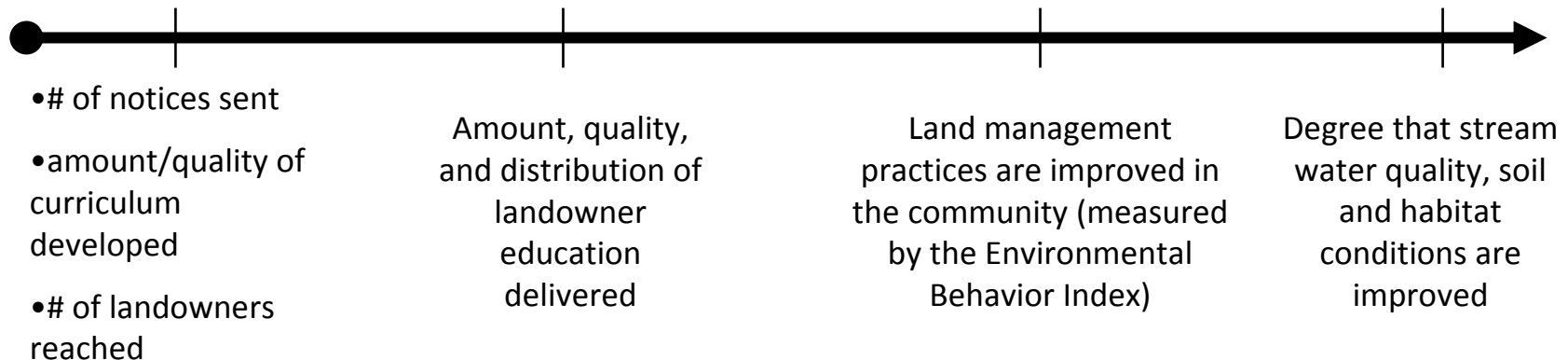
Aligned and cascading performance targets in 3 goal areas



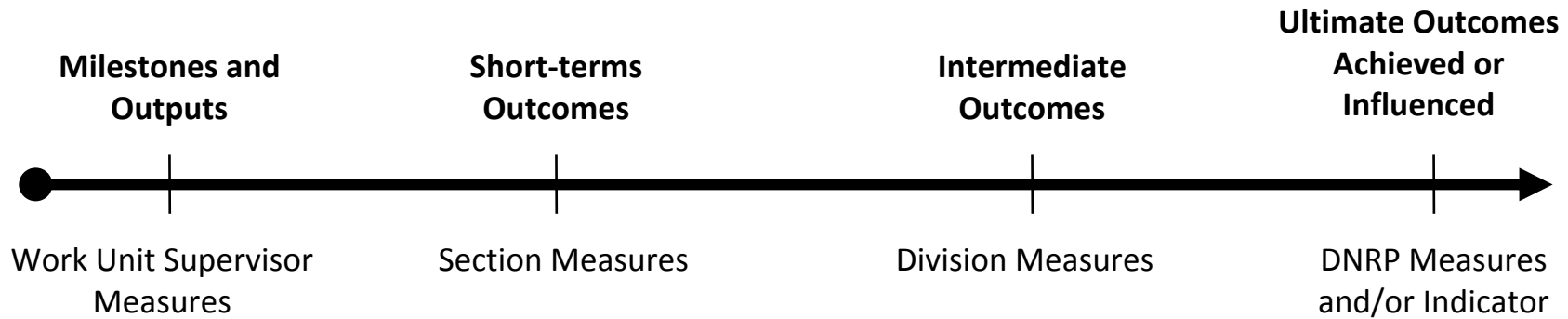
Simplified Logic Chain and Performance Targets/Evaluation Portals



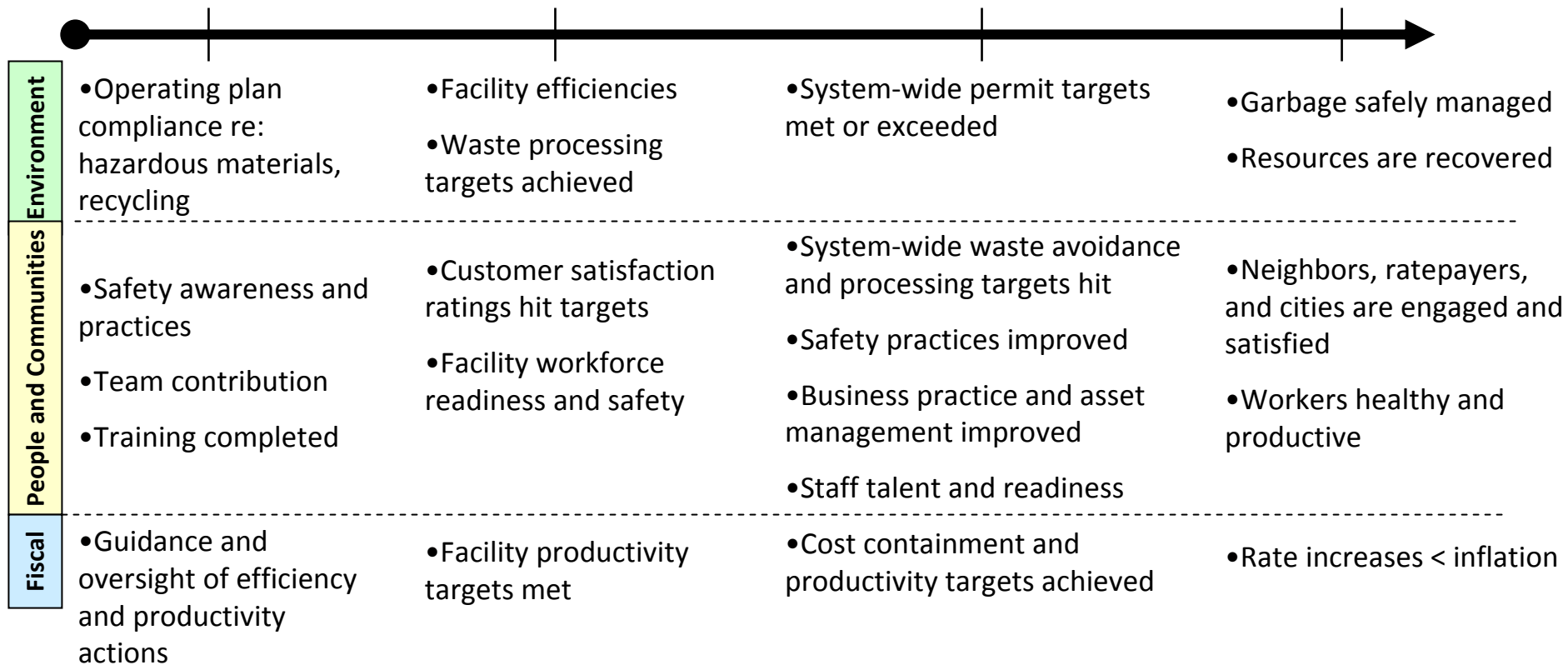
Landowner Outreach Example:



3 Goal Logic Chain: Solid Waste Transfer Station Operation



Transfer Station Operation Example



Four Audiences for Intermediate Outcomes in a Performance & Adaptive Mgt. Cycle

Connection to Overarching Governance Authorities:

- Account for results toward short, intermediate and ultimate outcomes
- Coordinate
- Get direction

Department Leadership Tools:

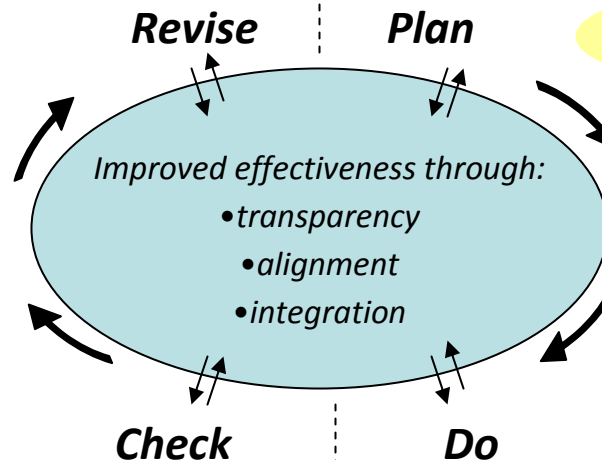
- Policy/program Guidance
- Decision support to illuminate highest value contributions for actors and sets of actors
- Map/attribute responsibility for short and intermediate outcomes
- Sign-off on commitments by all relevant actors and participants

Stakeholder and Public Engagement:

- Make sense of short, intermediate and ultimate outcomes findings
- Assess priorities, diagnosis capacity for action, learning about opportunities, and
- Present case statement, progress information, and asks to:
 - Public, Stakeholders, Partners

Implementation Phase: organized by Sector, Association, and Agency

- Carry out sector, organization, and/or agency-specific priorities
- Account for results of actions and intermediate outcome achievement
- Monitor 'indicators' of ultimate outcomes



Closing Thoughts on Intermediate Outcomes:



- Critical perspective for identifying actors and attribution of responsibility for complex topics
- Tightens diagnostics and feedback
- Strengthens response capacities
- Provides bridge between actions and ultimate outcomes – illuminates ‘theory of change’

Closing Thoughts on Performance Management and Sustainability:

-•
- TBL performance improvement need 3 domains of guidance: policy, goals, targets, measures, adaptive capacity
- Fiscal domain may have internal (fiscal responsibility, efficiency) and external (economic development) dimensions
- Environmental performance can be informed with robust measurement tools like LCA and likely has internal and external components (local/global)
- Social domain may be the most variable: labor/employees, exported risk, fairness, contribution to community wellness

Closing Thoughts: Decision-Support for Strategy Development and Performance Management



- Address complexity and the need for simplicity with roll-up and drill-down capacities
- Should be top-down, bottom-up, and side-to-side (cross-division, cross-agency, cross-sector) process
- Meaningful strategies, measures, and targets are developed as a social process
- Use findings about drivers, status and trends to inform strategy
- Head toward strategies that stretch and targets at the edge of our grasp