

Tree Canopy Assessment

Sustainability & Environment

Sub-Cabinet

April 9, 2009



Seattle reLeaf
keep the emerald city green

Tree Canopy Assessment Goals

- Prioritize City investments to those actions that will create the greatest tree canopy gain
 - Current canopy cover and recent trends in canopy gain and loss
 - Impacts of development
 - Planting potential
 - Baseline to monitor our progress against the 30% canopy cover goal

Assessment Approach

- High resolution satellite data (2' foot)
- Two-dimensional, infrared
- Advanced data extraction & analysis techniques
- Similar to assessments done in other cities
- Summer 2003 (w/hazy areas replaced with 2002 data) & summer 2007 data
- Collaborative effort across multiple City departments

Previous Assessment

- Data source: readily available, free regional remote sensing data (LIDAR)
- Three dimensional - volume
- Images not generated for this type of use
- Collected in winter
- Higher margin of error

Tree Canopy Analysis Parameters

- Citywide
- Land Use Categories – single-family, multi-family, manufacturing/industrial, downtown, developed parks, parks natural areas, commercial/mixed use, institutional
 - ROW and Private Property
- Community Reporting Areas (CRAs)
- Urban Villages

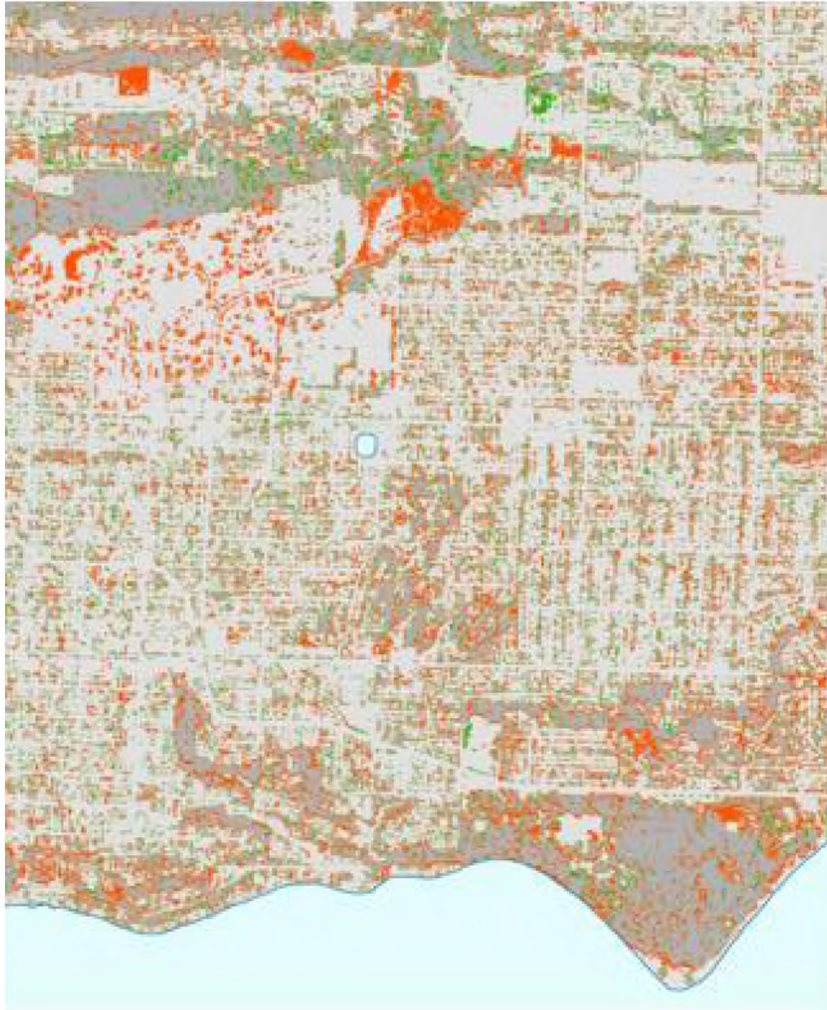
Preliminary Results

- Citywide tree canopy cover in 2007 was about 23%
- Canopy cover citywide is relatively stable with gains balancing losses and a slight gain overall
- ROW tree cover is increasing more quickly than non-ROW property
- Significant canopy loss occurs during redevelopment
- We need to double the acres of canopy increase each year to meet the 30% goal by 2037





Preliminary Results Con't

- Small gains overall in most land uses
- Parks natural area declined which we expected - Green Seattle Partnership
- Developed parks show some declines, we are evaluating
- ROW increased 1%
 - ROW is 27% of the city and 61% of canopy cover gain

Land Use Category	2002 Canopy Cover	2007 Canopy Cover	Goal Canopy Cover
Commercial/ Mixed Use	8.4%	9.7%	15%
Developed Park or Boulevard	25.9%	25.5%	25%
Downtown	4.2%	4.7%	12%
Major Institution	18.4%	19.4%	20%
Manufacturing/ Industrial	3.8%	4.3%	10%
Multi-Family	16.6%	17.1%	20%
Parks Natural Area	82.5%	80.4%	80%
Single Family	25.2%	25.7%	31%
Total	22.5%	22.9%	30%



Tree Canopy Change 2002-2007

-  No Change (non-canopy in 02 & 07)
-  Negative Change (canopy lost between 02 & 07)
-  Positive Change (new canopy since 2002)
-  No Change (canopy in both 02 & 07)

Tree Canopy in Specific Geographic Areas

	Percent of City in the Geography	2002 Canopy Cover	2007 Canopy Cover	Percent Change
CRAs/Citywide	100%	22.5%	22.9%	0.4%
Urban Villages	28%	8.4%	9.4%	1.0%
Redeveloped Parcels	1.78%	13.2%	9.4%	- 3.8%
ROW	28%	16.4%	17.4%	1.0%
Non-ROW	72%	24.8%	25%	0.2%

Redeveloped Parcels

- 2,262 parcels totaling 947 acres or 1.78% of the city
- Resulted in the loss of 35 acres of tree cover on redeveloped parcels
- 80% of loss was on single and multi-family residential which was 25% of redeveloped area
- 29% of existing trees were removed on redeveloped parcels
 - 40% of existing trees on SF
 - 70% of existing trees on MF

Redeveloped Parcel Canopy Cover Change

Land Use Category	Total Redeveloped Parcel Area (Acre)	Tree Cover Change 02 - 07 (Acre)	Parcel Tree Cover Change 02 - 07	Existing Tree Cover Decline
Commercial/ Mixed Use	224.9	-4.9	-2.2%	-33.8%
Downtown	30.4	-0.8	-2.7%	-60.6%
Major Institutions	157.5	-1.0	-0.7%	-3.0%
Manufacturing/ Industrial	265.4	0.2	0.1%	2.1%
Multi-Family	74.9	-9.1	-12.2%	-69.2%
Single Family	160.4	-19.5	-12.1%	-40.4%
Total	913.5	-35.2	-3.9%	-29%

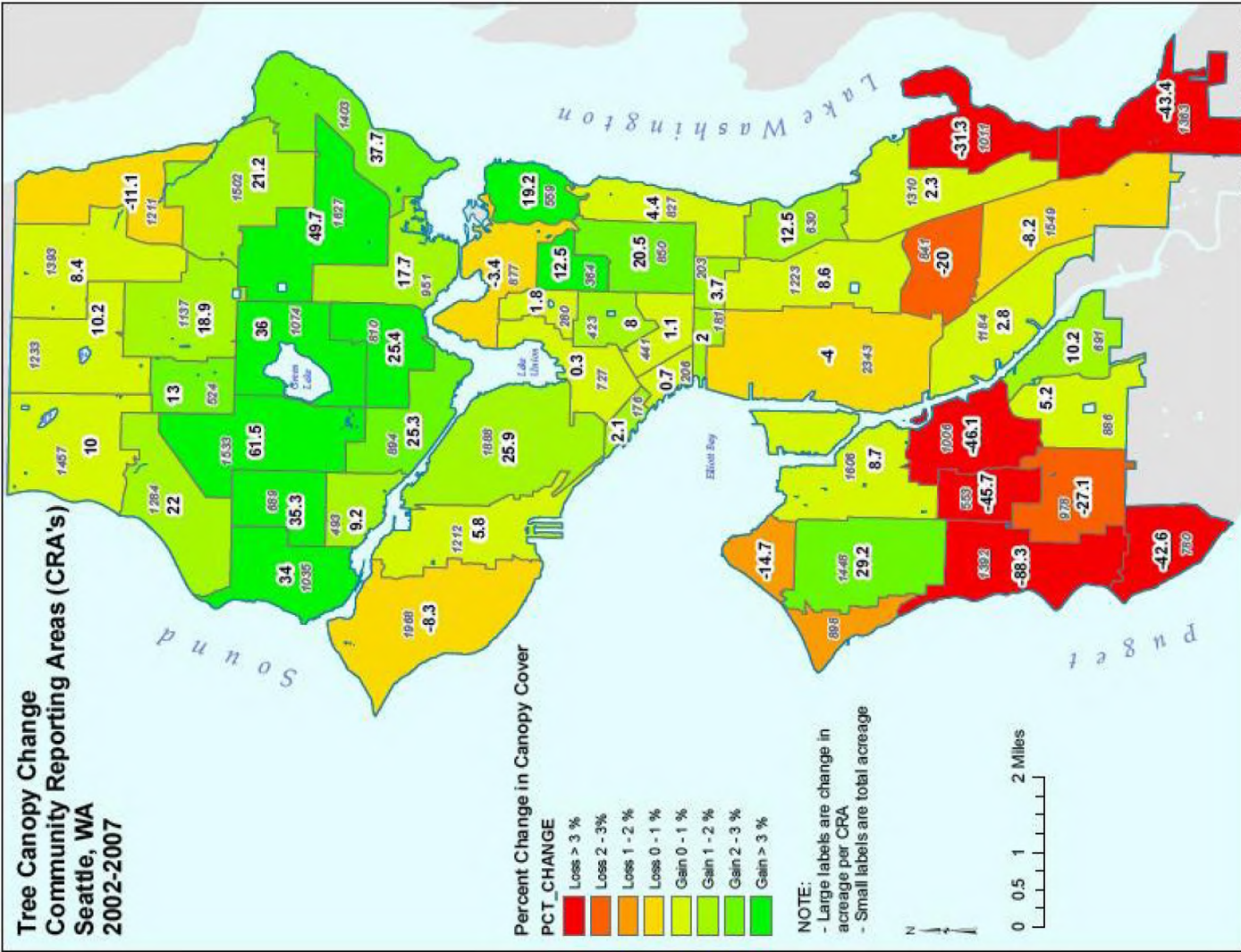
Community Reporting Areas (53 CRAs)

- Canopy in less developed areas tended to decrease
 - 6 CRAs had a 3% or greater decline and all of these were south of downtown
 - Significant areas of remaining forest land in SF zones were redeveloped in these areas
- Canopy in fully developed areas tended to increase
 - 8 CRA's had a 3% or greater increase and all of these were north of downtown

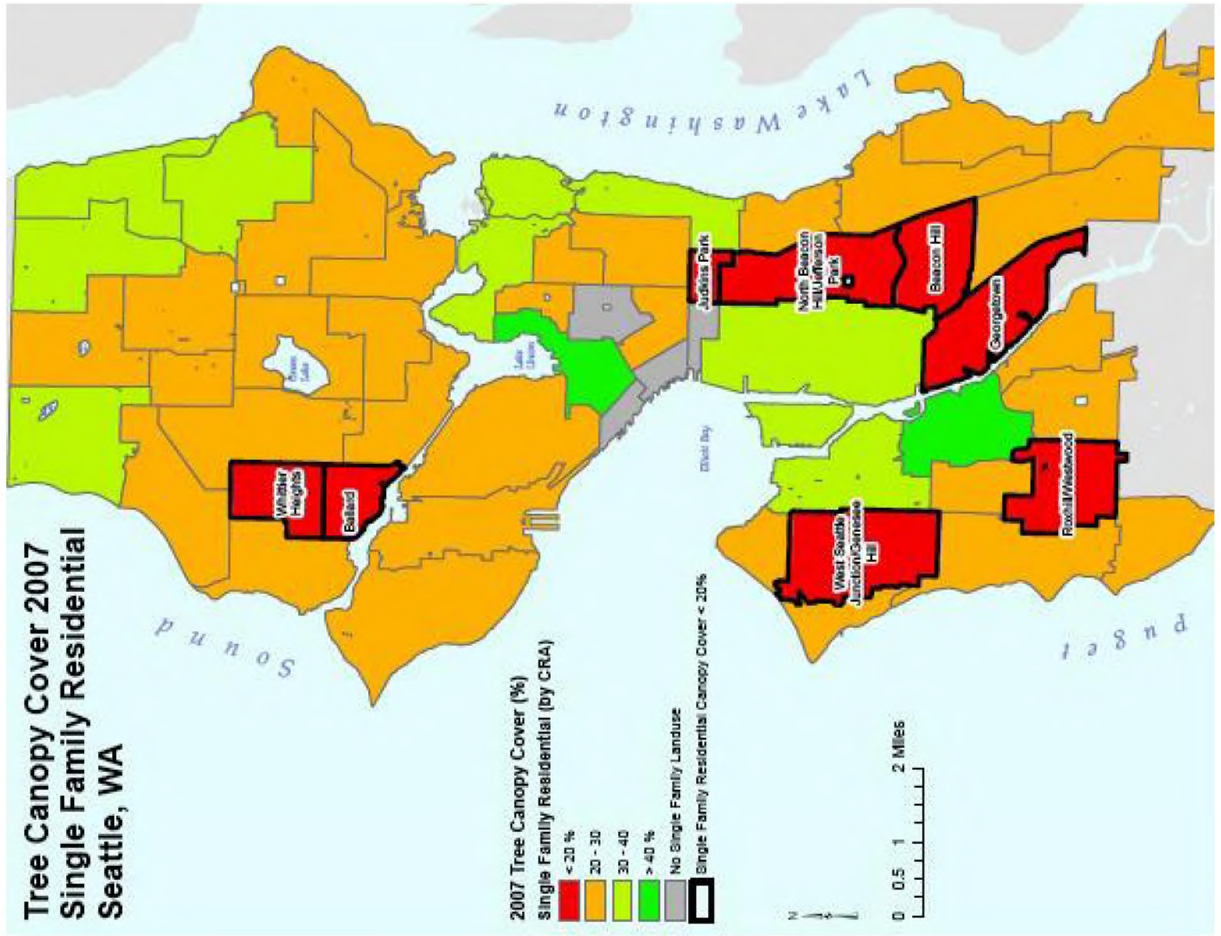
CRA's con't

- 8 CRAs had single family zones with canopy cover of <20%
 - Ballard, Beacon Hill, Georgetown, Judkins Park, N. Beacon Hill, Roxhill, W. Seattle Junction, Whittier Heights
- 12 CRAs have overall tree canopy <15%
 - Cluster in center of City: downtown, Belltown, Judkins, First Hill, Pioneer Sq, Capital Hill, Eastlake
 - South: Duwamish, South Park, Georgetown
 - North: Ballard, Interbay

**Tree Canopy Change
Community Reporting Areas (CRA's)
Seattle, WA
2002-2007**



Tree Canopy Cover 2007 Single Family Residential Seattle, WA



Urban Villages

- Average canopy cover - 9.4%
 - Range from 25% University Campus to 4% Greater Duwamish and Ballard Interbay
- Average gain of 1% canopy cover
- Urban Villages with gains over 3%
 - Madison Miller, Roosevelt, Wallingford
- Urban villages with canopy cover loss
 - Columbia City - .8%
 - MLK at Holly -1.2%
 - Morgan Junction -2.1%
 - Westwood -1.3%

Strategy Options

- **Regulations**
 - During development
 - Outside of development
 - Street tree regulations
- **Incentives & Outreach**
 - Expanded DON Tree Fund
 - Broader scale tree giveaways
 - Utility rate incentives
 - Expand Seattle reLeaf outreach

Community Outreach

- Reconvene peer group that reviewed the draft UFMP to review results and potential strategies
- Create a web-based presentation and survey tool
- Pursue earned media to raise community interest
- Host 2 public workshops – recruit community group participation

Roll Out

Phase I –end of April

- Press briefing 4/23 and Council briefing 4/28
 - Results summary- citywide, CRA, and urban village canopy cover by land use
 - Strategy options

Phase II – May/June

- Peer review and community workshops
 - Results summary plus planting potential
 - Strategy options and planning issues