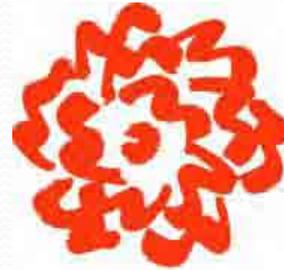


# Transitioning to Sustainable Landscapes



# My Illustrious Career



School of  
VISUAL ARTS®



SEATTLE  
PUBLIC  
SCHOOLS



LAKE WASHINGTON  
TECHNICAL COLLEGE



SWEDISH

# Transitioning from Traditional Maintenance to Sustainable Practices

1. Evaluate and prioritize existing landscapes.
2. Determine pesticide toxicity and adopt an Integrated Pest Management (IPM) policy.
3. Upgrade and purchase new equipment.
4. Track water usage.
5. Address staffing issues /contracting services.
6. Implement immediate projects and plan for long-term ones.



# 1. EVALUATE AND PRIORITIZE EXISTING LANDSCAPES

- Establish priority areas
  - Main entrances to buildings and driveways
  - Seating areas
  - View from the street
- Determine what areas can be re-landscaped immediately within the existing budget, and develop a 5-year plan for other projects.
- Mulch bare soil areas in all landscapes that will not be immediately renovated.



# Elements of Successful Landscape Renovation

- Improve soil quality
- Design beds to fill in and shade out weeds
- Select plants based upon drought tolerance and year round seasonal interest
- Use organic fertilizers
- Upgrade/ install irrigation systems/ water access
- Think outside the box to lessen costs- sharing supplies, receiving plant donations



# How to Prevent/ Suppress/ Kill Weeds

- Improve soil, design & mulch
- Prevent weeds from going to seed
- Hand weed with appropriate tools
- Use a flamer
- Use pesticides as needed, if needed...



# Elements of Weed-Thwarting Landscape Design

- Use deciduous and evergreen plants in combination
- Drought tolerant doesn't have to mean native
- Re-think pavers
- Plant for the present with the future in mind







## Timing...for weed control

- Hand weeding- throughout the year (ALWAYS)
- Spring, Fall/ Winter- Planting
- Summer- alternative, 25(b) pesticide products
- Fall- mulching with leaves
- Weed flaming- during wet months



# Mulch, mulch, mulch...

- Arborist wood chips
- Free
- Beneficial fungi
- Beauty bark can create a water barrier, and give slivers
- Ask for “clean” loads- no ivy/blackberry
- Sharp blades



# South Garage Exit- Cherry St.



# Broadway Entrance Pots



# Broadway Entrance Sculpture Bed



## 2. PESTICIDE TOXICITY & IPM POLICIES

- Evaluate toxicity of existing products: Thurston County tables; King County Grow Smart Grow Safe
- Ensure proper storage of pesticides and PPE for staff
- Organize MSDS sheets and pesticide records
- Dispose of unwanted pesticides with the WSDA- it's free!
- Replace conventional pesticides with 25(b) products
- Remove the pesticides and THEN tell the crew



NAME OF PRODUCT	MANUFACTURER	ACTIVE INGREDIENT(S)	City of Seattle Tier Tables	Possible Carcinogen	Thurston County ranking	Human Toxicity
Casoron	OHP	Dichlobenil	1	X	Fail	High
Glyphosate Plus Herbicide	Quali-Pro	Glyphosate, N-glycine	2		Passed	Low
Super Concentrate Kill.zall II	Hi- Yield	Glyphosate, N-glycine	2		Passed	Low
Moss Out for Lawns	Lilly Miller	Ferric sulfate, anhydrous	1		Passed	Low
Weed B Gone Max	Ortho	Dicamba, 2,4-D, MCP	1	X	Failed	High
Bug B Gon Max	Ortho	Bifenthrin	1	X	Failed	High
Glyphosate T & O	Quali-Pro	Glyphosate, N-glycine	2		Passed	Low
			King Cty- Grow Smart, Grow Safe			
Moss-Kill	Lilly Miller	Zinc	Long Term Health Hazard	Moderate toxicity and environmental hazard		
<b>Sources</b>						
Tier Tables		<a href="http://www.seattle.gov/environment/pesticides">http://www.seattle.gov/environment/pesticides.</a>		Tiers 1-4; 1 is highest toxicity		
Thurston County Tables	<a href="http://www.co.thurston.wa.us/health/ehipm/ipm_homeownr.html">http://www.co.thurston.wa.us/health/ehipm/ipm_homeownr.html</a>					
King County Table	<a href="http://www.lhwmp.org/home/ChemToxPesticides/growsmartgrowsafe.aspx">http://www.lhwmp.org/home/ChemToxPesticides/growsmartgrowsafe.aspx</a>					

# Be Pest Specific- Avoid Combination Products & Pesticide Cocktails

- Weed & Feed
- “with weed control”
- Turf builder with moss control
- Roundup + Surflan



# PESTICIDE LEGALITIES

- For liability purposes, as well as for the knowledge and safety of grounds personnel, it's recommended that all pesticide applicators be licensed by the WSDA.
- If pesticides are not restricted use, a pesticide license is not required by the State if it is your own employee and your own land.
- For private hospitals- Private Applicator License.
- Licensing requires a one-time test and annual training credits.
- <http://agr.wa.gov/PestFert/LicensingEd/>

## Cost Savings from the Elimination of Pesticide Use

- Calendar spray program- consisted of dormant oil spray, 3 insect/disease control applications, and deep root feeding: \$13,250 per year  
First Hill- \$6,125; Cherry Hill- \$4,000; Ballard - \$3,125
- Pesticides for First Hill: \$473
- Issaquah landscape maintenance contract:
  - Current annual cost under the guidelines of IPM policy & sustainable landscape contract: \$18,600
  - Alternate bid under same guideline conditions by former maintenance contractor: \$39,276
  - Previous cost of annual maintenance contract under conventional specs: \$69,228

# IPM Policies and King County EnviroStar Program

- An IPM policy ensures that your Grounds Department management and staff are actively working to reduce hazardous risks and liability.
- Assists in adhering to requirements of pesticide operator licenses, trainings and record keeping
- The King County EnviroStar program can help you evaluate your current products, storage, and practices as well as offering a matching voucher for up to \$500 for the purchase of alternative products and equipment. Plus it's great PR...

**SUPPORT**  
environmentally  
responsible  
**BUSINESSES**



**ENVIROSTARS™**  
**CERTIFIED**



**Swedish Medical Center**  
**First Hill Grounds Department**  
**swedish.org**

**Certifying businesses for reducing hazardous waste and protecting the environment.**

*For a complete listing  
of businesses* **envirostars.org**



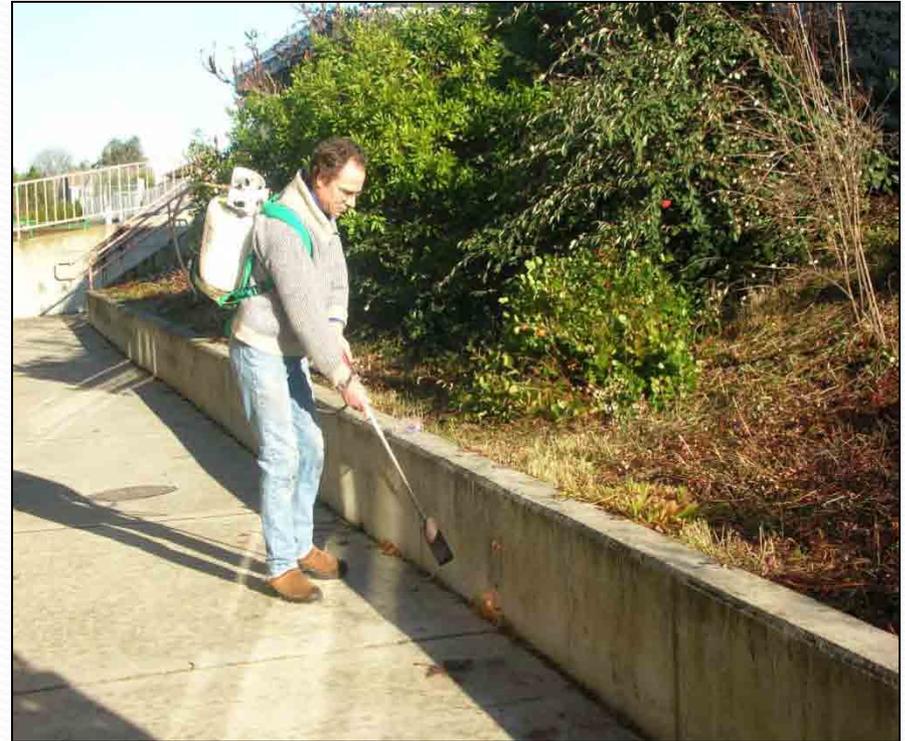
# 3. UPGRADE & PURCHASE NEW EQUIPMENT

- Hand weeding tools, wheelbarrows, flame weeder, and a new sprayer. Cost: \$1,063
- Upgrading power tools- chain saw, reciprocator, line trimmer, Stihl battery blower. Cost: \$2,763
- This is an initial cost of improving the hand and power tools used. After this, the majority of the budget goes for landscape renovations and includes soil, plants and irrigation upgrades.



# Weed Flaming 101

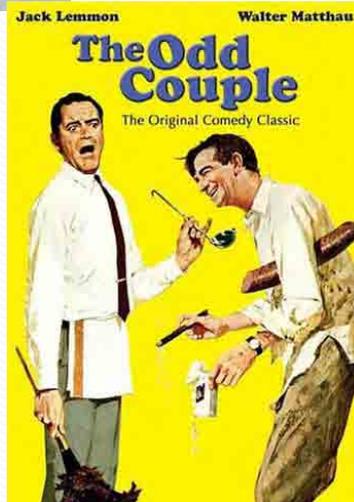
- Kills annuals
- Knocks back perennials
- Timing- get 'em early!
- Can encourage growth of grass
- Best to use when it's damp or raining
- Great for use in cracks, pathways and along non-wooden fence lines.
- [flameengineering.com/Backpack\\_Kits.html](http://flameengineering.com/Backpack_Kits.html)



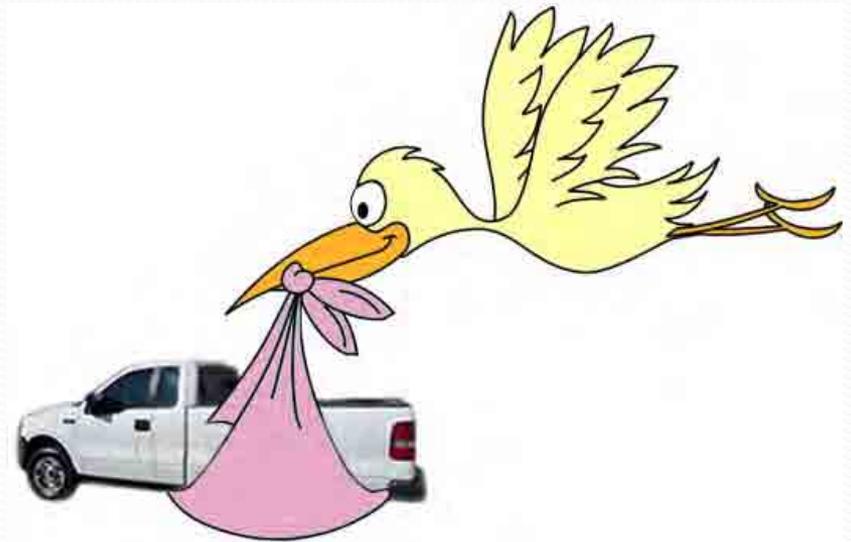
## Other uses.....



# Capital funding: \$10,000 for a Grounds Department truck

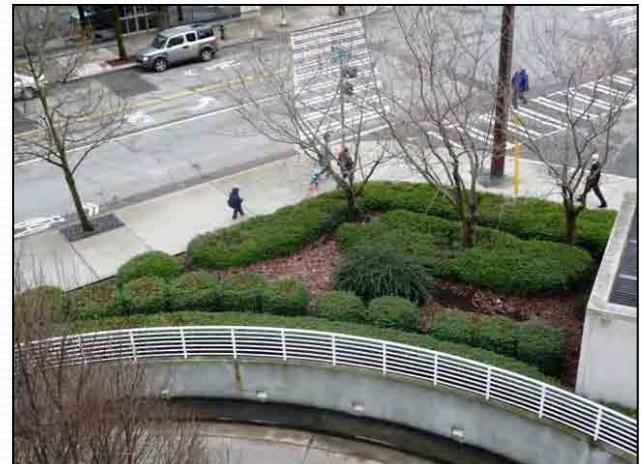


**IT'S A FORD!**



## 4. TRACK WATER USAGE

- Evaluate landscapes for actual water needs.
  - Most established landscapes were being severely overwatered.
- Cap heads/ reduce coverage in areas of zones where water was not needed- ivy beds, overlapping heads.
- Hand watered newly installed plant material, as need.
- Upgrade clocks and systems.
- Document clocks, shutoffs and schedules.



<b>Main Entrance beds</b>							
Shut off: Heath B FI, through door on left before garage, 2 key, in panel at far end							
Clock: In storage room off front driveway							
Type: Irritol Total Control							
<b>Zones</b>	Past times	Current times	M	T	W	Th	F
1) Broadway street trees	3x 20						
2) Tropical Garden	2x 70	30	x			x	
3) Heath driveway beds	3x 20	20	x			x	
4) Sidewalk yew bed	2x 70						
5) Middle driveway bed	2x 70	25	x			x	
6) Ivy beds, S garage entry/exit	2x 70						
7) Azaleas along East wall	2x 20						
8) Corner Cherry & B'way shrub bed	2x70						

Sum of NET_BILLED_CONSUMPTION_NBR	Column Labels												
Row Labels	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Grand Total
HER-00091680-1	1	0	1	10	41	131	262	386	342	160	51	0	1385
1069018	1	0	1	10	41	131	262	386	342	160	51	0	1385
SICD	1	0	1	10	41	131	262	386	342	160	51	0	1385
2004							55	55	25	3	9	0	147
2005	0	0	0	9	3	17	39	45	49	22	9	0	193
2006	1	0	1	0	4	21	29	33	43	25	25	0	182
2007	0	0	0	0	20	24	20	50	47	21	0	0	182
2008	0	0	0	0	0	44	47	72	27	28	3	0	221
2009	0	0	0	0	13	11	42	37	34	21	3	0	161
2010	0	0	0	0	0	14	21	49	63	22	2	0	171
2011	0	0	0	1	1	0	3	30	32	18	0	0	85
2012	0	0	0	0	0	0	6	15	22				43

# Irrigation numbers

- 748 gallons = 1 ccf
- 1 ccf = \$4.63
- Water usage savings from 2010-2011:
  - \$2,384
  - 515 ccf (385,220 gl)

## **Jenna Smith, Seattle Public Utilities**

*Water Efficient Irrigation Program & Rebates* – [www.savingwater.org](http://www.savingwater.org)

*Residential RainWise Program* – [www.rainwise.seattle.gov](http://www.rainwise.seattle.gov)

*Seattle area watering index:* [www.iwms.org](http://www.iwms.org)

Office: (206) 684-5955, Fax: (206) 684-8529

Hours: Monday, Tuesday, Wednesday, and Thursday, 9 AM to 5 PM

USPO: PO Box 34018, Seattle, WA 98124-4018

FedEx, UPS and office location: 700 5th Av., Ste. 4600, Seattle, WA 98104

## 5. Staffing/ Contracting Services

Benefits of in-house staff:

- pride and ownership in the work
- cost savings for landscape renovations and installations
- staff present on a day-to day basis
- When to contract out:
  - For large projects with increased equipment and labor needs
  - For irrigation upgrades
- Bring in Horticulture interns



# Expectations and Motivations

- Three ingredients to a well motivated crew:
  - Butter
  - Sugar
  - Chocolate
- Having clear expectations
- Offering trainings
- Being grateful
- Making it fun!



## 6. Immediate and Long-term Planning

- Immediate needs:
  - Get weedy areas under control through landscape renovation or mulching
  - Re-landscape small, high priority areas
  - Repair turf areas
  - Fix safety issues
- Long term projects:
  - High visibility/ well-used large areas that involve removing the existing landscaping and starting over.



# Lake WA Technical College

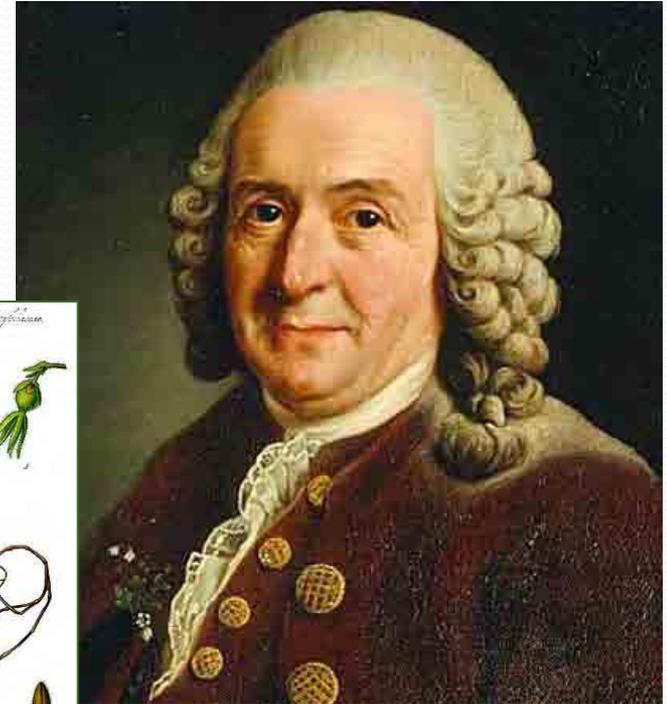
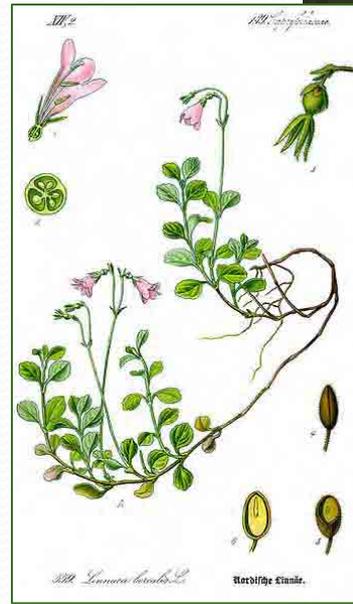








# Swedish future project: The Carl Linnaeus Tribute and Healing Garden



# CURRENT CHALLENGES

- Rooftop weeds
- Old habits of crew
- Old irrigation systems
- Juggling 3 campuses with less staff



# Myths v.s. Actual Savings of Going Green

- Myth-Increased labor
  - Actual: Decreased labor by .6FTE= \$27,156
  - (1.6 FTE- \$88,220)
- Myth- Aesthetics will decline
  - Actual: Improved appearance and positive public feedback
- Myth- Increased costs
  - Actual: Decreased costs: \$6,598 spray program at FH
  - \$40,628 for Issaquah landscape maintenance contract
  - FH water usage savings- \$2,384



# SAVINGS AT FIRST HILL CAMPUS

.6 FTE	\$27,156
Pesticides	\$6,598
Water	\$2,384
Total	\$36,138

New tools	\$3,826
Annual budget	\$22,000

Additional costs:

Truck \$10,000 (Capital)

Irrigation upgrades, soil & plants

Botanical trip to Sweden.....



The Sky's the Limit! Happy Gardening!

