

Category: Infrastructure

State: Washington

Department: Department of Enterprise Services

Lead category: Infrastructure

Category area: Facilities

Project Title: Washington State Department of Enterprise Services (DES) “Employee-Driven Eco-Friendly Landscape Management Project”

Project Associates: The following people, including their titles, all played a significant role in developing the DES Employee-Driven Eco-Friendly Landscape Management Project:

Kevin Battin, DES Grounds Lead; Nathan Bren, DES Groundskeeper; Chris Brownell, DES Irrigation Technician; Brent Chapman, DES Horticulturist; Ken Connally, DES Grounds Lead; Jim Erskine, DES Communications Manager; Mary Harrison, DES Grounds Lead; Tim Hildebrand, DES Grounds Mechanic; Scott Hobbs, DES Groundskeeper; Jeff Hogan, DES Groundskeeper; Marygrace Jennings, DES Cultural Resource Manager; Nathaniel Jones, DES Asset Manager; Dan Kirschner, DES Groundskeeper; Thomas Lambert, DES Groundskeeper; Kailee Moulton, DES Groundskeeper; Steve Pond, DES Groundskeeper; Laurie Pyne, President, Olympia Beekeepers Association; James Skinner, DES Groundskeeper; Ash Venable, DES Groundskeeper; Jeff Whitehead, DES Maintenance and Operations Manager

Project date: With the encouragement of their managers, our DES groundskeepers began pooling their collective brainpower, launching the “Employee-Driven Eco-Friendly Landscape Management Project” on the grounds of the state Capitol Campus in Olympia, Washington, in Mar

Executive summary: DES is responsible for the stewardship, preservation, operation and maintenance of the 486-acre state Capitol Campus which includes more than two dozen buildings, four parks and a 260-acre artificial lake. The Legislative Building and our capitol grounds are visited by hundreds of thousands of people annually and about 6,000 state employees work on the Campus.

There are 12 agency groundskeepers responsible for maintaining the Campus lawns, landscaped beds and trees. Because DES has adopted, nurtured and sustained a Lean culture where every leader is a coach and every employee a problem-solver, our grounds staff formed a team in March 2014 to investigate potential new landscape management practices. Their efforts received the full support of their managers. Too often, organizations waste the greatest resource of all: The human potential of their workers. But in this case, everyone involved was excited to tap into the brain power of all the staff, not just leaders.

Using Lean methodologies, our groundkeepers set an overarching goal to make the care of the capitol grounds a model of sustainability by using methods and materials that:

- Are safe for DES staff, other state employees and visitors.
- Are more environmentally friendly.
- Result in lower operating costs.

Since initiating the Employee-Driven Eco-Friendly Landscape Management Project, our groundskeepers

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have systematically been moving away from conventional practices centered on watering non-native turfgrass and using chemical herbicides to suppress weeds.

Our managers – and the public – are applauding the innovative, more environmentally-friendly landscaping management methods now being deployed throughout the Campus. The staff-driven project has significantly reduced the use of chemical herbicides, mowing and watering. It has also empowered our groundskeepers to refocus their work on:

- Continuously improving the ways in which they do their daily work.
- Putting the best sustainable landscaping practices in place.
- Conducting trials of new landscaping approaches.
- Engaging subject matter experts.

The DES Employee-Driven Eco-Friendly Landscape Management Project has also garnered regional and national media attention including coverage by the Olympian, the capital city's daily newspaper, the Seattle-based NBC affiliate, and Governing Magazine. DES is proud of our groundskeepers and the innovative, successful project they have put in place.

Project description: Starting in March 2014, DES grounds staff began implementing an array of innovative sustainable landscape management methods, including:

- Using cardboard to suppress weed growth in landscape beds.
- Using a flamer, a portable gas torch that produces intense heat, to kill weeds.
- Inoculating soils with recycled leaves from Campus trees and vegetation.
- Selecting more native plants to reduce water usage and attracting native pollinating insects.
- Reducing summer water irrigation to Campus lawns.
- Using wood chips left over from Campus tree removal and trimmings as mulch around other trees and shrubs to reduce costs and improve plant health.

Thanks to their innovative approaches using Lean methodologies, the state capitol grounds have become a place for ecological experimentation. In March 2016, DES grounds staff began an “ecolawn” pilot project involving eight plots in four different areas of the Campus. There are several types of ecolawns but the term generally refers to the use of slow-growing grasses, clover and low-growing perennials. Generally, the species of grasses grown in an ecolawn are different than those used in a conventional lawn. An ecolawn requires less mowing and irrigation and uses fewer fertilizers and pesticides than a typical lawn.

At some sites, DES grounds staff have allowed existing grasses to grow out. In other areas, groundskeepers removed existing vegetation, replanting the area with fescue grasses, white clover and a variety of annual and perennial flowers. DES is collecting public feedback about the trial through an online survey posted on the department's website. When the trial period ends in December 2016, DES staff will evaluate the results and feedback to help determine whether to continue the use of ecolawn on campus, extend its use to other areas of the campus, modify the approach, or try a different method next season.

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By not having to regularly mow the ecolawn areas, DES groundskeepers have saved about 100 hours annually. This has allowed them to redirect their labors to other high-priority landscape work, including landscape bed weeding and hand-watering new plantings.

Beginning in April 2016, DES groundkeepers started another innovative landscaping practice by installing honeybee hives and mason bee condominiums. The bees help pollinate vegetables being grown in garden plots on the Campus which are planted and maintained by the local Kiwanis club who donate the produce to the local food bank. The bees also pollinate other plants on the capitol grounds and in nearby neighborhoods.

Why initiated: DES groundkeepers initiated the Employee-Driven Eco-Friendly Landscape Management Project to test the hypotheses that large-scale, public landscapes could be maintained in a manner that:

- Reduces environmental impacts.
- Saves labor and material resources.
- Creates a safe and attractive work place.
- Benefits pollinating insects such as bees and butterflies.

Results achieved: Beginning in 2014, DES groundskeepers conducted various small-scale trials on the Campus including using cardboard and wood chips to suppress weed growth for two years and suspending the broadcast application of herbicides to turf areas during the past four years. As a result, DES grounds staff have reduced synthetic herbicide use by 75 percent, saved state taxpayers \$1,700 and significantly reduced potential pollutant runoff from the Campus grounds to local surface and underground water sources.

In addition:

- Ecolawn trial areas will have reduced DES mowing hours by about 100 hours in 2016, allowing groundkeepers to reallocate their time to higher priority tasks such as landscape bed weeding and hand-watering new plantings.
- Ecolawn trial areas have reduced water used in these areas by 80 percent.
- The number and diversity of insect pollinators observed on Campus has increased since native plants were used in new plantings, ecolawn trial areas were established and honeybee hives and mason bee condominiums were installed.
- State employees and the public have increasingly asked DES how they can replicate sustainable landscape practices in their personal lawns and gardens.

Project timeline: The Employee-Driven Capitol Grounds Eco-Friendly Landscape Management Project started in March 2014 and has continued through June 30, 2016.

Significance to the improvement of the operation of government: This project would not have happened without the innovation and determination of our DES groundskeepers and the support of their managers. The genesis of the project began in 2013, when several grounds staff started maintaining a section of the Campus as a pesticide free zone. Using Lean methodologies, they tried different non-chemical methods for controlling weeds, insect pests and plant diseases. While there

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were successes and failures, DES grounds staff continued learning along the way.

Thanks to our agency's Lean culture, DES groundskeepers were encouraged and supported by their managers. Our line staff are not afraid to experiment and work with innovative practices, even when the approaches don't always yield the results initially expected. Our groundskeepers have created new learning opportunities for themselves by harnessing their collective brain power. The waste of underutilizing their knowledge, imagination and experience is rapidly disappearing. DES grounds staff are continuously gathering knowledge and improving on their daily work as well as the next innovative project. Now, the state capitol grounds in Olympia have become a public living laboratory for trying new sustainable landscape management methods that work in harmony with the environment.

Benefits realized by citizens and/or state government: The DES Employee-Driven Eco-Friendly Landscape Management Project has resulted in an array of public benefits including:

- Demonstrating that state employees can be innovative in solving problems and saving money.
- Reducing the use of water, synthetic pesticides and fertilizers.
- Reallocating DES groundskeepers' time to higher priority tasks.
- Increasing the population and diversity of pollinating insect species on the Capitol Campus.
- Improving prepared surface soil, organically suppressing weeds and improving overall plant health.
- Developing demonstration areas on the Capitol Campus for best practices of how to manage large-scale public landscapes in an environmentally-friendly, sustainable manner.