Climate Resiliency and Sustainability in Vegetation Management Plan

November 6, 2025

Parks and Recreation Department

Redmond
WASHINGTON

CRSVM Panel

City of Redmond:

Loreen Hamilton, Director Parks and Recreation
David Tuchek, Deputy Director Parks and Recreation
Darcey Rayner Shepard, Park Operations Manager
Meg Angevine, Park Operations Supervisor
Ian McFeron, Lead Worker Parks - Horticulture

Herrera Environmental Consultants:

Rachel Johnson- Climate Planner / Project Manager
Christina Merten- Ecologist / Restoration Director

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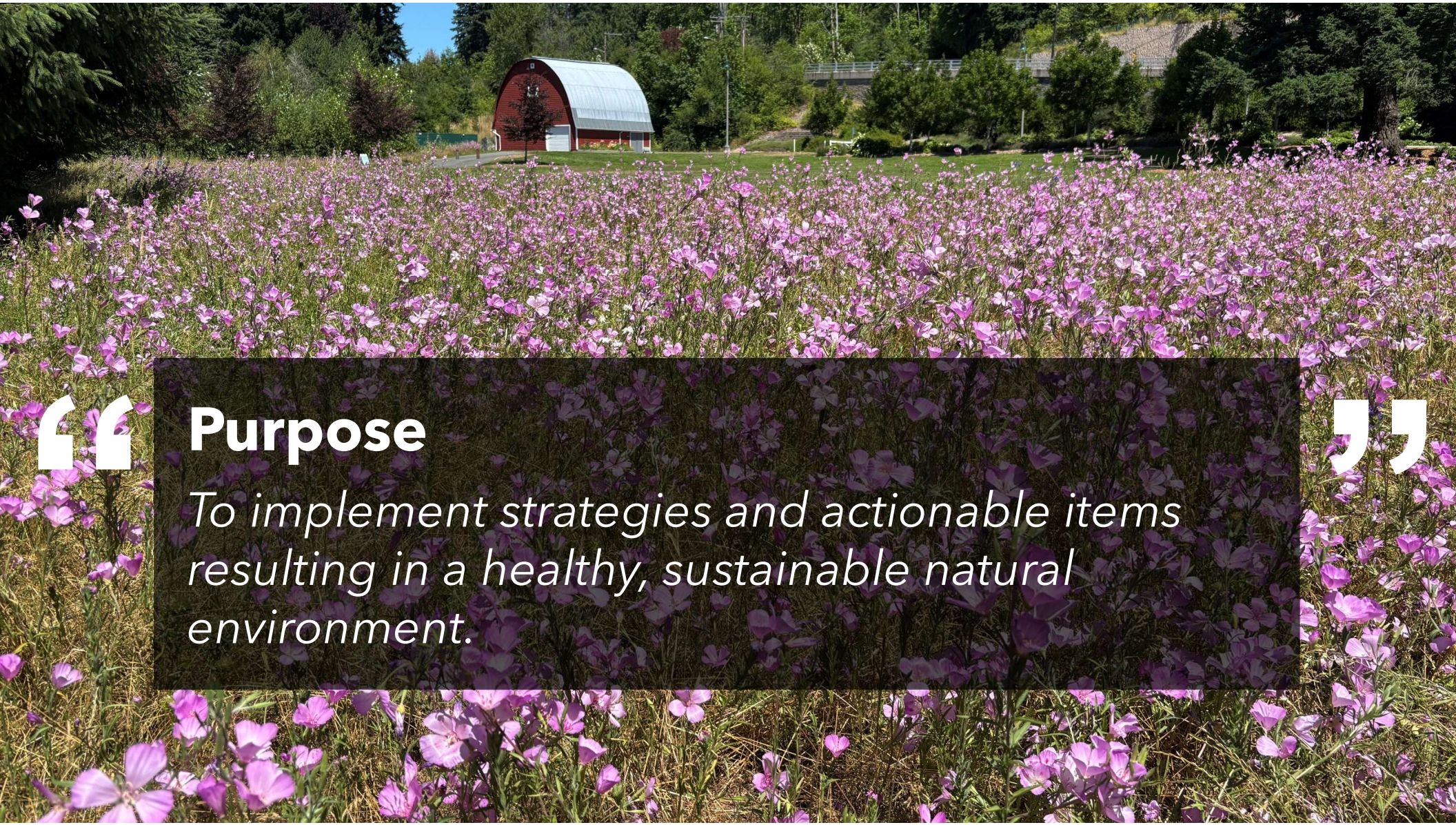


Purpose

To implement strategies and actionable items resulting in a healthy, sustainable natural environment.

Primary Goals

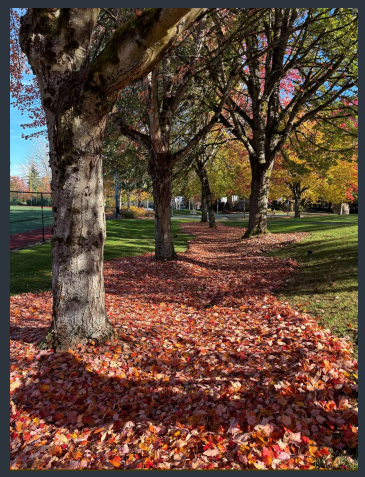
Goal 1- Strengthen interdepartmental communication, alignment, and coordination

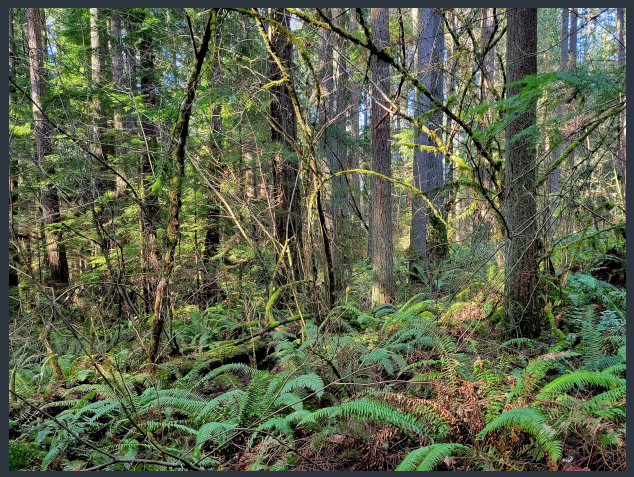
Goal 2- Identify and prioritize available land for future tree planting and rewilding

Goal 3- Perform community outreach regarding climate resiliency and sustainability

PLAN: Climate Resiliency & Sustainability in Vegetation Management | Redmond, WA

Main Categories of Strategies and Actions





- Education and Outreach
- Rewilding
  - Naturalized Meadows
  - Roadside Meadows
  - Pollinator Gardens
  - Wetlands
  - Understory
  - Climate Resilient Plants
- Tree canopy expansion
  - Public and Private lands
- Maintenance Practices
  - Integrated Pest Management
  - Leaf and woody debris utilization
  - Maintenance equipment electrification

Creating the Plan

Why, How, and What

Why Now?

- Climate impacts + development impacts
- Community support
- Leadership support
- Momentum from previous work

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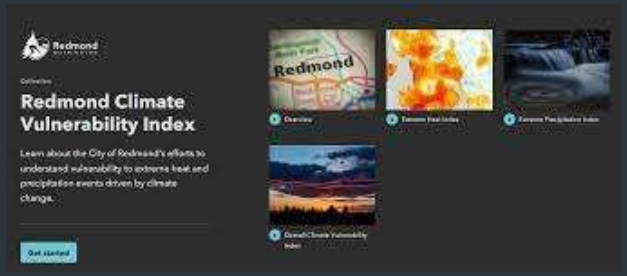

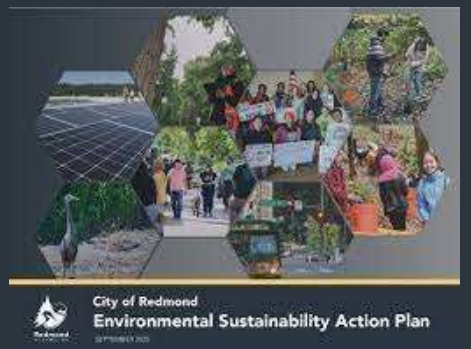

Why Now?

- Climate impacts + development impacts
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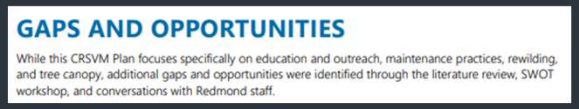
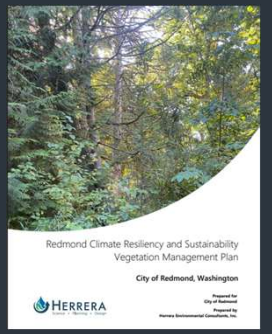
Plan Development

Kick Off
September
2023

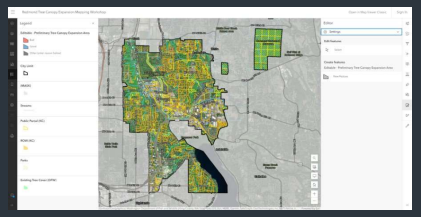
Data and Gaps Analysis
November



Final Plan
February



SWOT Workshop
October



Tree Canopy and Rewilding Workshops
December

Key Elements

- Outreach plan
- Factsheets
- Maintenance recommendations
- Mapped priority areas
- Climate-adapted plant palettes and species lists

Education & Outreach

Conduct public outreach and engagement regarding upcoming actions in the CRSVM Plan.

Maintenance Practices

Adjust maintenance practices to reduce emissions, pesticides, and staff time.

Rewilding

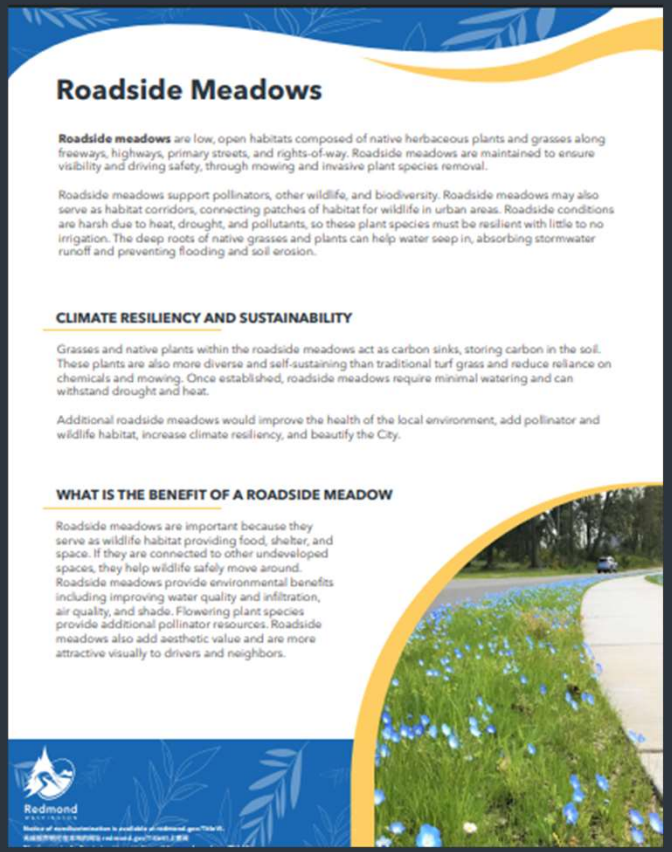
Rewild available city-owned and managed lands, restoring and transitioning landscapes to more diverse and native ecosystems.

Tree Canopy

Increase tree canopy on city-owned and managed lands by planting diverse and well-adapted trees, especially where there is low tree canopy cover.

Education & Outreach

- 5 factsheets
- Visual examples and key points on each strategy



Roadside Meadows

Roadside meadows are low, open habitats composed of native herbaceous plants and grasses along freeways, highways, primary streets, and rights-of-way. Roadside meadows are maintained to ensure visibility and driving safety, through mowing and invasive plant species removal.

Roadside meadows support pollinators, other wildlife, and biodiversity. Roadside meadows may also serve as habitat corridors, connecting patches of habitat for wildlife in urban areas. Roadside conditions are harsh due to heat, drought, and pollutants, so these plant species must be resilient with little to no irrigation. The deep roots of native grasses and plants can help water seep in, absorbing stormwater runoff and preventing flooding and soil erosion.

CLIMATE RESILIENCY AND SUSTAINABILITY

Grasses and native plants within the roadside meadows act as carbon sinks, storing carbon in the soil. These plants are also more diverse and self-sustaining than traditional turf grass and reduce reliance on chemicals and mowing. Once established, roadside meadows require minimal watering and can withstand drought and heat.

Additional roadside meadows would improve the health of the local environment, add pollinator and wildlife habitat, increase climate resiliency, and beautify the City.

WHAT IS THE BENEFIT OF A ROADSIDE MEADOW

Roadside meadows are important because they serve as wildlife habitat providing food, shelter, and space. If they are connected to other undeveloped spaces, they help wildlife safely move around. Roadside meadows provide environmental benefits including improving water quality and infiltration, air quality, and shade. Flowering plant species provide additional pollinator resources. Roadside meadows also add aesthetic value and are more attractive visually to drivers and neighbors.

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WHAT DO THEY LOOK LIKE?

Roadside meadows can improve roadside aesthetics while introducing diverse native flowers and grasses that support important pollinators and wildlife. At times, roadside meadows may appear wilder because they are mowed to a longer length and less frequently than turf grass, but mowing less frequently helps reduce greenhouse gas emissions and improve habitat.

See below for an example of what a roadside garden looks like!

England roadside before

England roadside after

MAINTENANCE IMPACTS & PRACTICES

Roadside meadows can also reduce maintenance and watering requirements compared to traditional turf grass. Turf grasses require mowing 6 to 20 times per year (depending on the weather and desired appearance), but typical roadside meadows only need one mowing per year. Meadow plant species are adapted to our local environmental conditions, so they also require less watering and replanting. Roadside spaces are often underutilized and can be converted from turf grass to low maintenance plants that still support traffic visibility and safety.

Non-native and invasive plant species removal are needed periodically and if with chemical methods, using limited herbicides and in a responsible manner. Roadside meadows may look more wild than turf grass, but they are adding more biodiversity, habitat, and carbon sequestration.

WHAT CAN YOU DO AT HOME

Add native meadow plants and grasses in patches, strips, or clusters adjacent to your street, alley, and driveway. These plants use less water and no pesticides.

Reduce mowing and leave grasses unmowed through the winter to avoid disturbing insects and other wildlife as they nest or hibernate.

LEARN MORE

Email us at gisservices@redmond.gov

Visit our webpage by scanning the QR code

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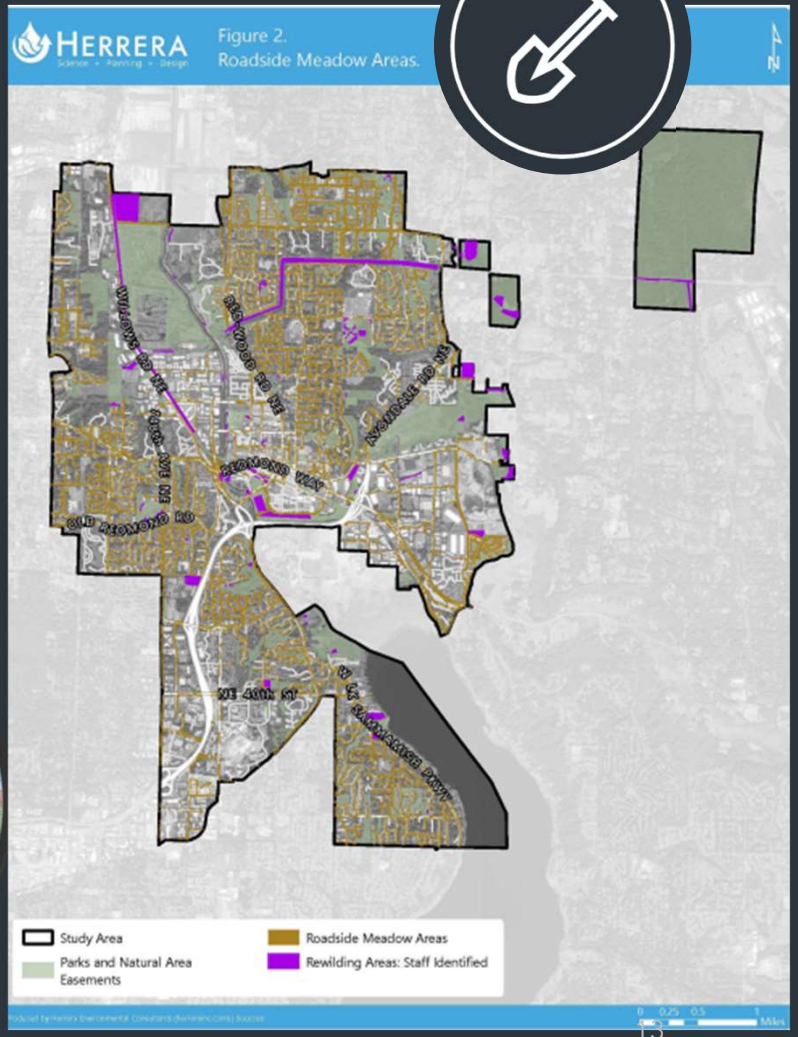
Rewilding

Focus Areas

- Roadside meadows
- Pollinator gardens
- Understory plantings
- Wetland plantings



Rewilding

Climate Resilient Plant Palettes

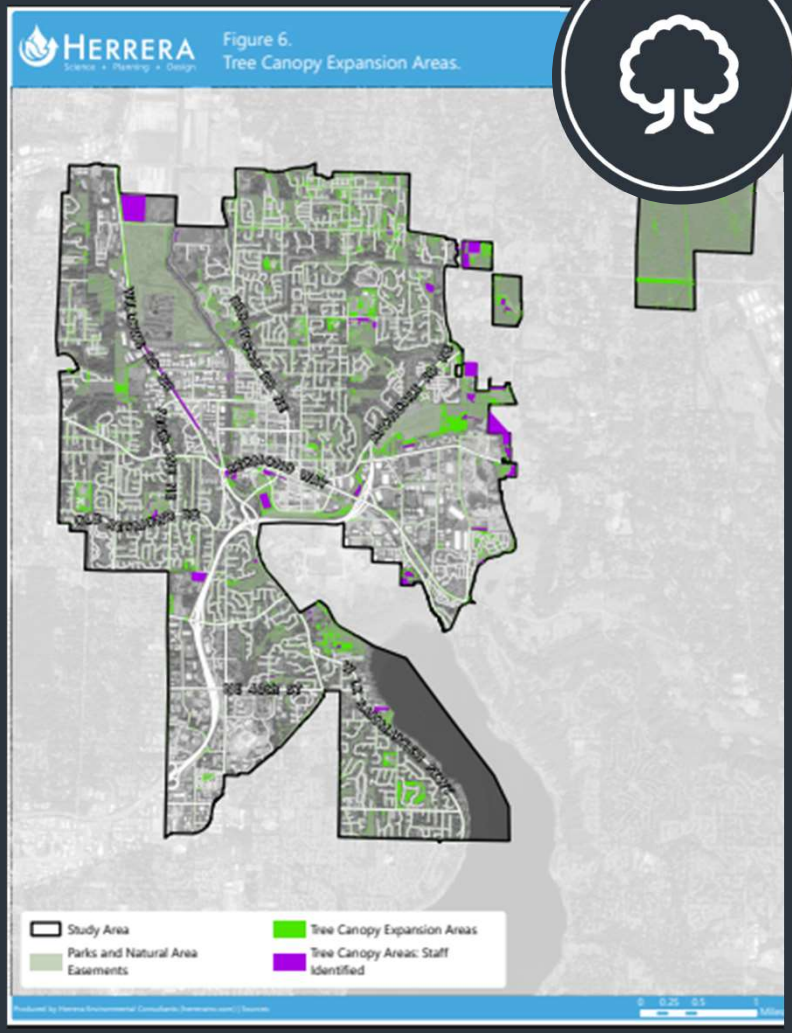
- Characteristics
- Bloom chart
- Planting and maintenance

SPECIES		CHARACTERISTICS								BLOOM CHART						PLANTING AND MAINTENANCE			
BOTANICAL NAME	COMMON NAME	NATIVE/ NON-NATIVE	MATURE HEIGHT	MATURE WIDTH	WETLAND INDICATOR STATUS	SOIL/ MOISTURE	EXPOSURE	ANNUAL/ PERENNIAL EVERGREEN/ DECIDUOUS	POLLINATORS/ WILDLIFE	WINTER INTEREST	EARLY SPRING	LATE SPRING	SUMMER	EARLY FALL	LATE FALL	MAINTENANCE	CLIMATE RESILIENCE	DISEASE/PESTS	NOTES
GROUNDCOVERS																			
Achillea millefolium	Western yarrow	N	2' - 3'	2' - 3'	FACU	Moist to dry	Full sun	P / E	Butterflies and bees				White-yellow flowers			Moderate	Deer resistant. Stem rot, powdery mildew and rust are occasional disease problems	Tolerant of drought and air pollution	
Agastache urticifolia	Nettle-leaf horsemint	NN	0.3-5'	1'	FACU	Moist to dry	Full sun	P / D	Attracts many insect pollinators				Pink flowers			Low	Drought/heat resistant, reduce erosion	Herbivory	
Asclepias speciosa	Showy milkweed	N	1' - 3'	1' - 1.5'	FAC	Moist to dry	Full sun	P / D	Hummingbirds and butterflies			Pink flowers				Low	Deer resistant	Drought tolerant	
Camassia quamash	Common camas	N	2'	2'	FACW	Moist to wet	Full sun to part shade	P / D	Insects		Purple-blue flowers (white)					Low	Tolerates clay soil, dry soil, wet soil, and black walnut		Self-seeding
Eschscholzia californica	California poppy	N	1' - 2'	1' - 1.5'	NOT LISTED	Moist to dry	Full sun	P / D	Attracts many insect pollinators		Orange flowers					Low		Drought/heat resistant, reduce erosion	
Geum macrophyllum	Largeleaf avens	N	1.5'	6"	FAC	Moist, well-drained soil	Full to part sun	P / D	Insect pollinators				Yellow flowers			Low			
Helianthus nuttallii	Nuttall's sunflower	NN	1.6-13.1'	1'	FACW	Moist	Full sun	A / P	Attracts many insect pollinators				Yellow flowers			Low	Drought/heat resistant, reduce erosion	Herbivory	
Lupinus albicaulis	Sickle keeled lupine	N	3' 4'	3'	FAC	Moist to wet	Full sun	P / D	Attracts many insect pollinators		White flowers					Low	Drought/heat resistant, reduce erosion	Herbivory	Plant low quantities due to rapid spread
Monardella odoratissima	Coyote mint	NN	4-11.8'	1'	FACU	Moist	Full sun	P / D	Attracts many insect pollinators				Purple flowers			Low	Drought/heat resistant, reduce erosion	Herbivory	
Penstemon speciosus	Royal penstemon	N	2-2.5'	2'	NOT LISTED	Dry	Full sun	P / D	Attracts many insect pollinators				Blue flowers			Low	Drought/heat resistant, reduce erosion		
Phacelia tanacetifolia	Lacy phacelia	N	2-4'	1.5'	NOT LISTED	Dry	Full sun	A	Attracts many insect pollinators		Purple flowers					Low	Drought/heat resistant, reduce erosion	Herbivory	
Prunella vulgaris ssp. vulgaris	Self-heal	N	1'	6"	FACW	Moist, well-drained soil	Full sun to part shade	P / D	Host plant for butterfly species, nectar/pollen source for beneficial insects			Purple flowers				Low			
Ranunculus occidentalis	Western buttercup	N	6" - 18"	6" - 1'	FACW	Moist to wet, can tolerate clay/poor soils	Full sun to full shade	P / D	Attracts butterflies, host plant for moth larvae		Yellow flowers					Low			
Sidalcea malviflora	Rose checkermallow	N	2'	2'	FACW	Moist to wet	Full sun	P / D	Attract bees and butterflies, host plants for caterpillars of a few native butterfly species			Pink flowers				Low	Drought tolerant	Susceptible to leaf spot or rust if conditions are too wet	
Solidago canadensis	Canada goldenrod	N	5'	1'	FACU	Dry	Full sun	P / D	Attracts many insect pollinators					Yellow flowers		Low	Drought/heat resistant, reduce erosion	Herbivory	
Symphyotrichum subspicatum	Douglas aster	N	2'	2'	FACW	Moist, well-drained soil	Full sun to part shade	P / D	Attract bees, butterflies, and pollinating flies/wasps				Blue-purple flowers			Low			

Tree Canopy

Focus Areas

- Urban and street trees
- Natural areas trees



Tree Canopy

Climate Resilient Plant Palettes

- Characteristics
- Planting and maintenance

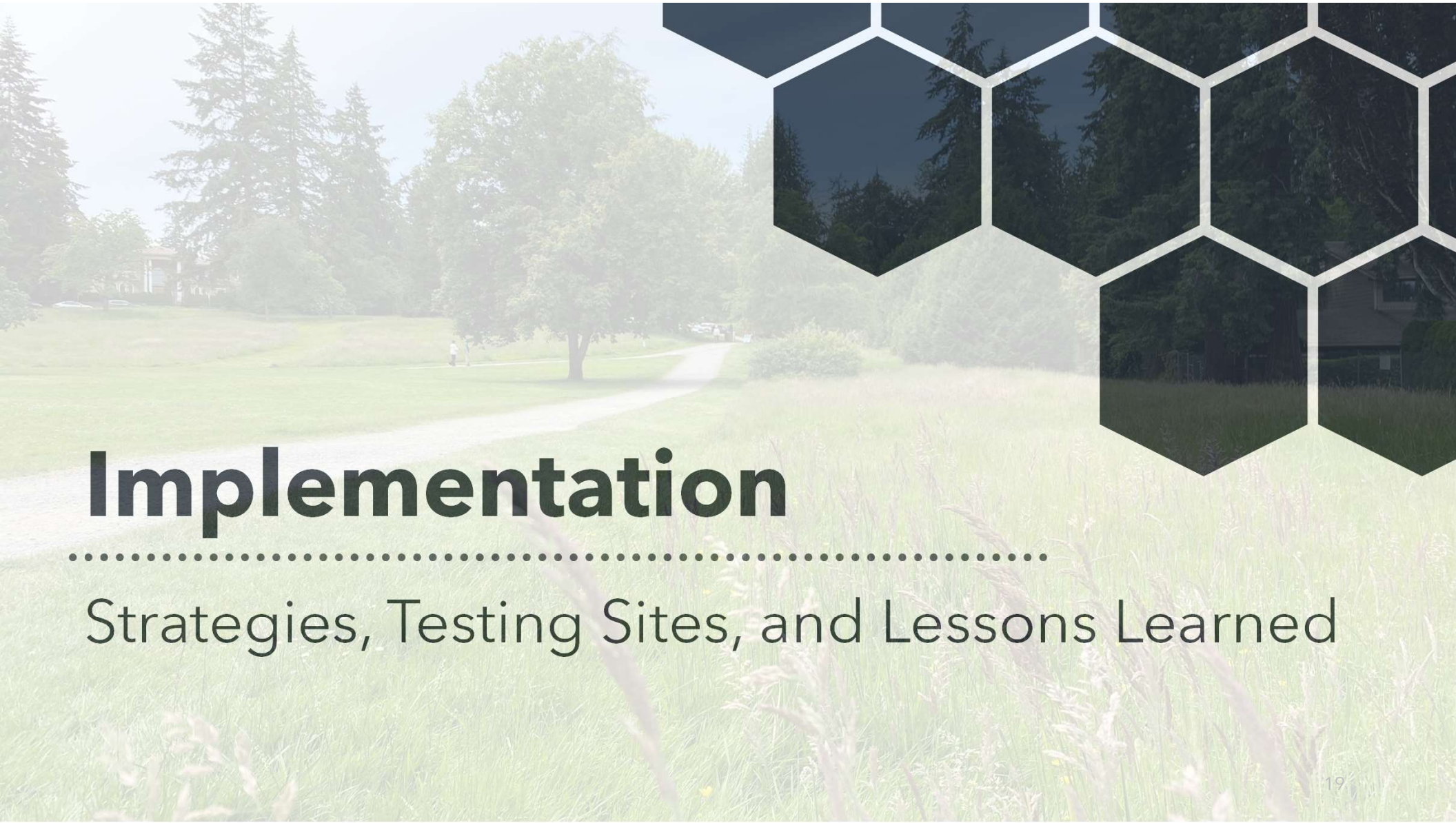
SPECIES		CHARACTERISTICS												PLANTING AND MAINTENANCE						
BOTANICAL NAME	COMMON NAME	RECOMMENDED CULTIVARS	FAMILY	NATIVE / NON-NATIVE	MATURE HEIGHT	MATURE WIDTH	SOIL/ MOISTURE	EXPOSURE	EVERGREEN/ DECIDUOUS	FORM/ SHAPE	POLLINATORS/ WILDLIFE	AUTUMN COLOR	UNIQUE CHARACTERISTICS	SUSTAINABILITY/ EASE OF MAINTENANCE	CLIMATE RESILIENCE	DISEASE AND PEST PROBLEMS	PLANTING UNDER WIRES?	STREET TREE?	PLANTING STRIP WIDTH (FEET)	NOTES
VERY LARGE TREES																				
Abies grandis	Grand fir	N/A	Pinaceae	N	70'-100'+	20'-35'	Rich, well-drained, acidic, consistently moist, adaptable once established.	Full sun - light shade	E	Conical, dense when young	Bees, birds and small mammals	N/A	Does well in lower elevation, fragrant needles, needs ample room to grow.	Moderate	Most resilient native true fir.	Balsam wooly adelgid	N	N	8.5'+	Large size make this better suited for landscape areas than street trees. Can work in large planting strip.
Castonea sativa	Spanish chestnut	N/A	Fagaceae	NN	70'-100'	30'-50'	Dry to moist soil, tolerates drought and maritime exposure. Tolerates a range of soils.	Full sun - light shade	D	Dense, oval	Birds, pollinators, small mammals	Brown-Yellow	Sharply dentate, shiny leaves, edible chestnut fruit in spike seed pods. Dense crown. White flowers in spring.	Low	Drought tolerant.	Leaf spot, powdery mildew	N	N	6'+	Better for larger landscape areas where chestnuts can fall without causing issues to the public.
Juglans nigra	Black walnut	N/A	Juglandaceae	NN	50'-75'	50'-75'	Deep, fertile, and moist soil. Tolerates wet soil, but not drought.	Full sun - light shade	D	Densely branched, oval	Birds, pollinators, small mammals	Yellow	Large compound leaves, dramatic branching and crown. Allelopathic, may suppress the growth of other plants nearby. Edible walnuts.	Moderate	Moderate drought tolerance, requires little maintenance	Susceptible to anthracnose and tent caterpillars.	N	N	8.5'+	Better suited to large landscape areas than within a ROW. May create dense shade and difficult planting areas underneath.
Pinus ponderosa var. benthamiana	Willamette Valley ponderosa pine	N/A	Pinaceae	N	70'-150'	25'-35'	Well-drained, deep, somewhat moist soil. Adaptable to a variety of soil and humidity and can tolerate dry conditions and poor soils.	Sun	E	Narrow form, pyramidal	Birds, small mammals	N/A	Long needles, thick furrowed bark, tall form.	Moderate	Drought tolerant.	Western pine beetle, sawfly, tip blight, needle blight, canker, engraver beetle, pine wilt	Y	Y	6'+	Good tree for large ROW planting spaces, still allows for line of site with traffic
Pseudotsuga menziesii	Douglas fir	N/A	Pinaceae	N	90'-200'	40'-45'	Prefers moist, well-drained soil. It can tolerate seasonally dry conditions. Grows in a variety of soils.	Sun - part shade	E	Upright	Butterflies, moths, small mammals, large mammals	N/A	Densely branched evergreen, distinct cones, furrowed bark. Very tall tree.	Moderate	Urban tolerant, pollution tolerant, drought tolerant and tolerant of wet feet.	Pine pitch canker, root rot, armillaria, Douglas fir beetle, needlecast.	N	Y	8.5'+	Young trees branched to the ground. Review sight triangle.
Sequoia sempervirens	Coast redwood	N/A	Cupressaceae	NN	60'-200'+	45'-50'	Acidic, well-drained, moist soil. Adaptable to other soil conditions once established.	Sun - part shade	E	Upright, narrow form	Birds, small mammals	N/A	Fern-like evergreen foliage. Red, fibrous bark. Can get very tall and wide.	Low - Moderate	Not drought tolerant.	Pest and disease resistant	N	N	8.5'+	
Sequoiadendron giganteum	Giant sequoia	N/A	Sequoioideae	NN	100'-250'	40'-60'	Does best in deep, well-drained sandy loams. Doesn't tolerate wet feet. Requires	Sun - part shade	E	Upright, pyramidal when young	Birds, bats, small mammals	N/A	Gets very tall and wide. Evergreen, threadlike scales, thick furrowed bark.	Moderate	Drought tolerant once established.	Sequoia bark beetle, canker, blight	N	N	8.5'+	

Lessons Learned for Success

- Cross-departmental
- Collaborative process
- Staff champions involved from the start
- Learning from internal expertise

Lessons Learned for Success

- Plan as living documents
- Early view to implementation
- Phased and adaptive approach



Implementation

Strategies, Testing Sites, and Lessons Learned

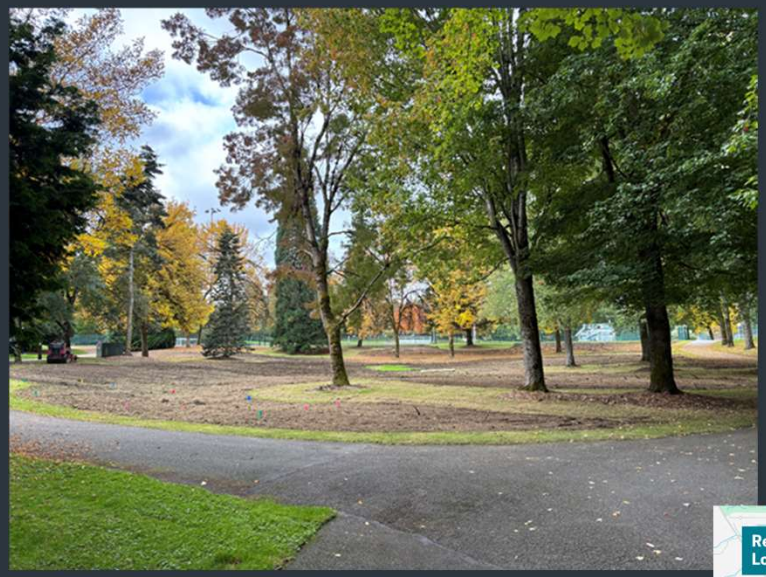
Naturalized Meadows

Naturalized Meadows-Low & No Mow Test Sites

- Lo Mow- Cut back 1-2 times per year
- No Now- Zero mowing
- Ongoing invasives checks for both types
- Defined borders
- Irrigation reductions
- Public education campaign

Wildflower Cultivation

Three Test Sites



Considerations:

- Cultivator tool/available resources
- Bare soil/seed contact
- Varied site conditions
- Varied seed mix, site specific

Recognize:

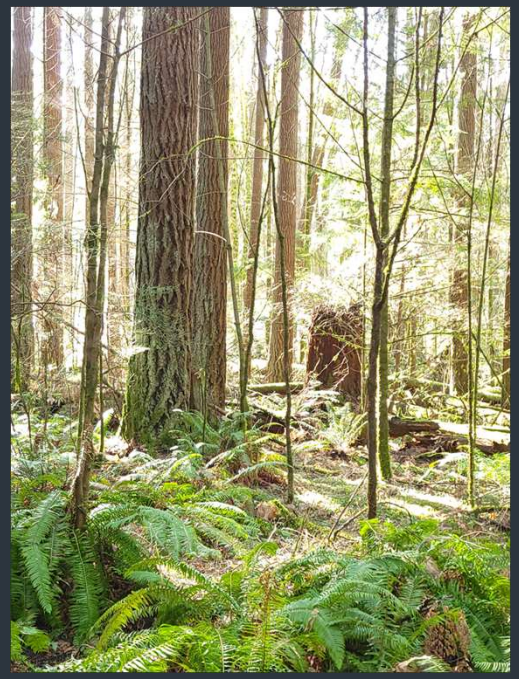
- Long range plans
- Short term wins
- Challenges
- Communications

Wildflower Cultivation

Pollinator & Community Gardens

Tree Canopy & Understory Expansion

- Green Redmond Partnership
- Tree Health Risk Assessment & Mitigation Work
- Tree Code Update
- Green Redmond Partnership
- Tree City USA (25 yrs)
- Tree Canopy Strategic Plan
- Environmental Sustainability Action Plan
- Redmond 2050
- PARCC Plan
- 20-Year Forest Management Plan
- Tree Giveaway
- Arbor Day Events



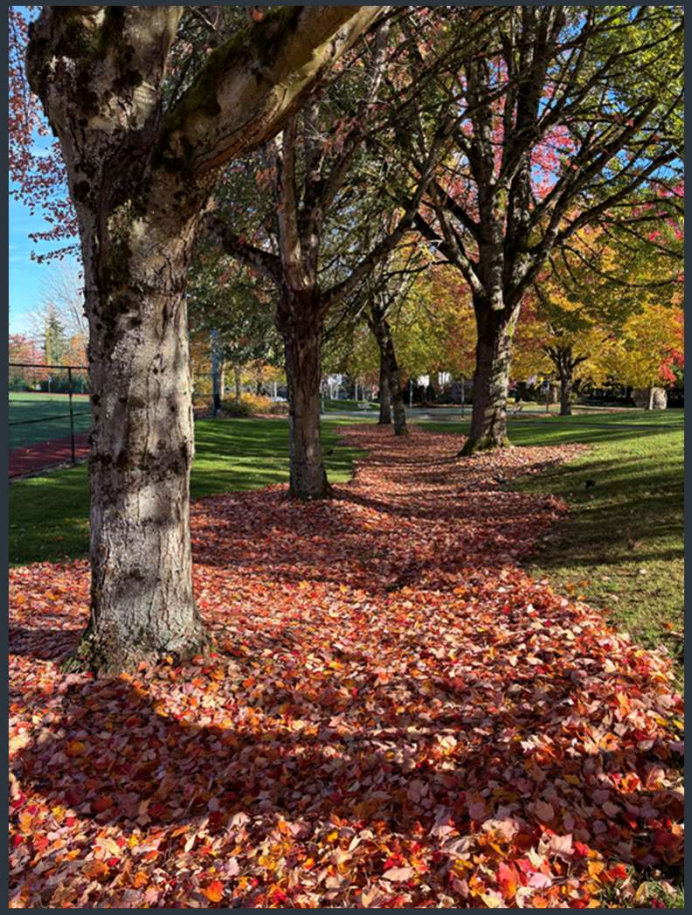
TREE CITY USA®

REDMOND CELEBRATES EARTH MONTH & ARBOR DAY

GREEN REDMOND PARTNERSHIP

Tree Canopy & Understory Expansion

Leaf Management



Updating best practices and increasing benefits:

- Retain more materials on site and reduce carbon emissions
- Reduce time blowing leaves
- Add nutrients back into soil
- Use/transport less mulch
- Retain more water and improve tree health
- Pollinator winter habitat

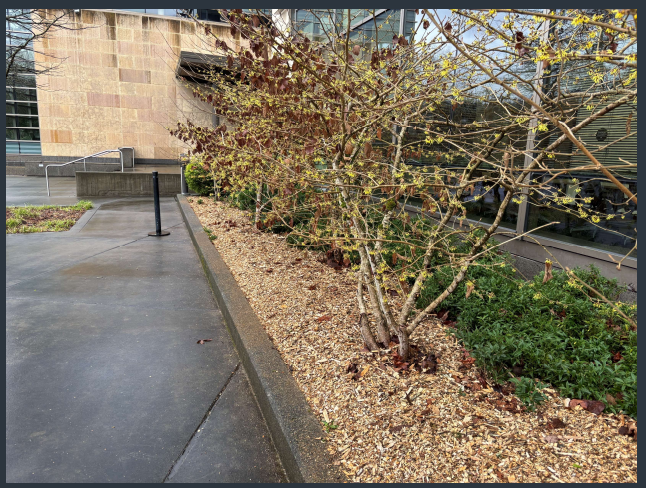
Leaf Management

BEFORE

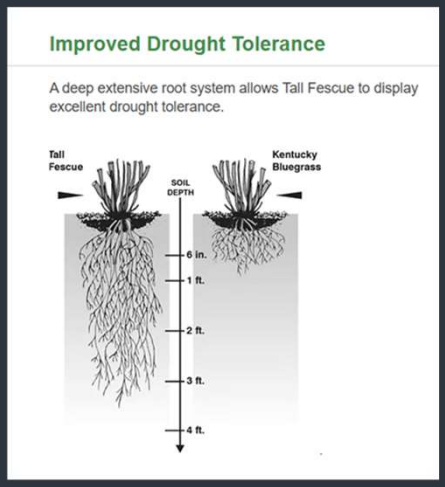


AFTER





Turf Renovations



Initial Test Site: Great Lawn- Municipal Campus

- Highly visible/education outreach opportunity
- Large events/heavy traffic areas

Turf Renovations

TEST AREA - Great Lawn

5 months after renovation
and after event season

10 Days POST Derby Days

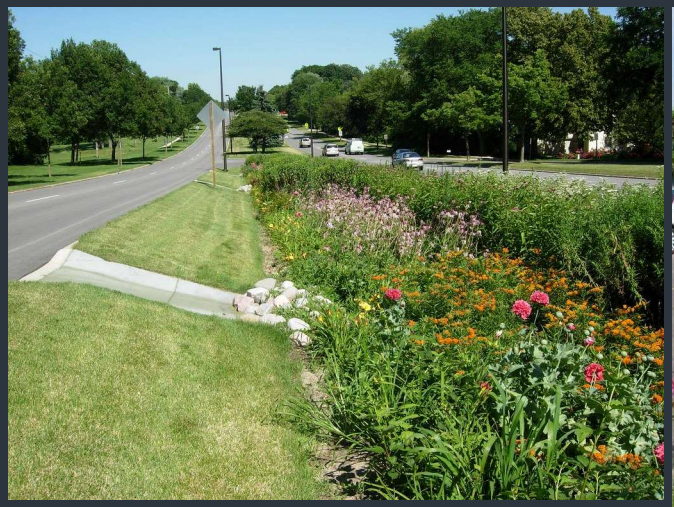
NEW Fescue "Great Lawn" POST Derby Days event

Traditional RYE area of "Common Green" POST Derby Days event

ROW Conversions

2026 Landscaped Rights of Way Phase 1 Projects will:

- Renovate select landscaped rights of way to drought tolerant, climate-resilient plant materials
- Reduce maintenance and irrigation costs
- Increase pollinator habitat
- Add more resilient and sustainable landscapes



CRSVM Tree & Plant Species Lists

"Right Tree, Right Place"
- Urban Landscape Trees
- Street Trees

Five Rewilding Species Palettes:
- Naturalized Meadows
- Roadside Meadows
- Pollinator Gardens
- Wetlands
- Understory

Electrification of Equipment

- Electric equipment added in 2024:
  - Three new electric riding mowers
  - Three new electric push mowers
  - New electric line trimmers, edgers, and chainsaws
  - Fleet conversions
- Blowers: new mid-size electric blowers (use larger gas-powered only during wet season)

Q & A

Resources

https://www.Redmond.gov/953/Climate-Resiliency-Sustainability-in-Veg

Contacts:

City of Redmond:

Darcey Rayner Shepard, Park Operations Manager

dlrayner-shepard@redmond.gov

Meg Angevine, Park Operations Supervisor

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Thank You
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