

# Herbicide Use and Knotweed in the Cedar River Municipal Watershed

Briefing to Seattle City Council's Civil Rights, Utilities,  
Economic Development and Arts Committee

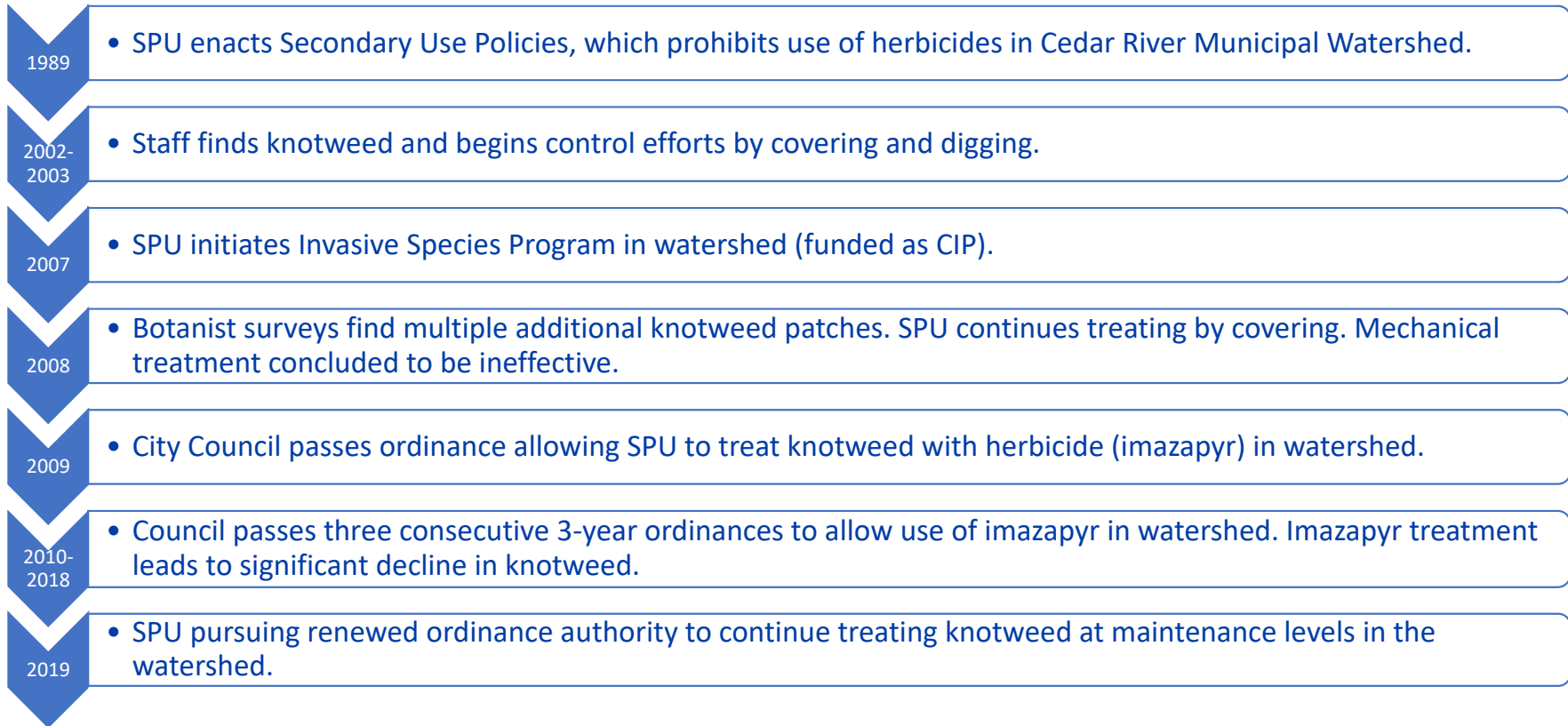
April 23, 2019

Seattle Public Utilities



City of Seattle

# History of Invasives Species Program and Knotweed



# Knotweed Program Success

- Knotweed coverage has declined by approximately 95 percent since 2011.
- Herbicide use has decreased annually from 2011 (678 oz.) to 2018 (10 oz.).
- SPU estimates annual use of 16 oz. imazapyr on 28 acres to continue control.



# Ecological Reasons to Control Knotweed



- Causes erosion.
- Impacts water quality.
- Limits species diversity.
- Reduces habitat complexity.
- Spreads rapidly.

# Civic Reasons to Control Knotweed

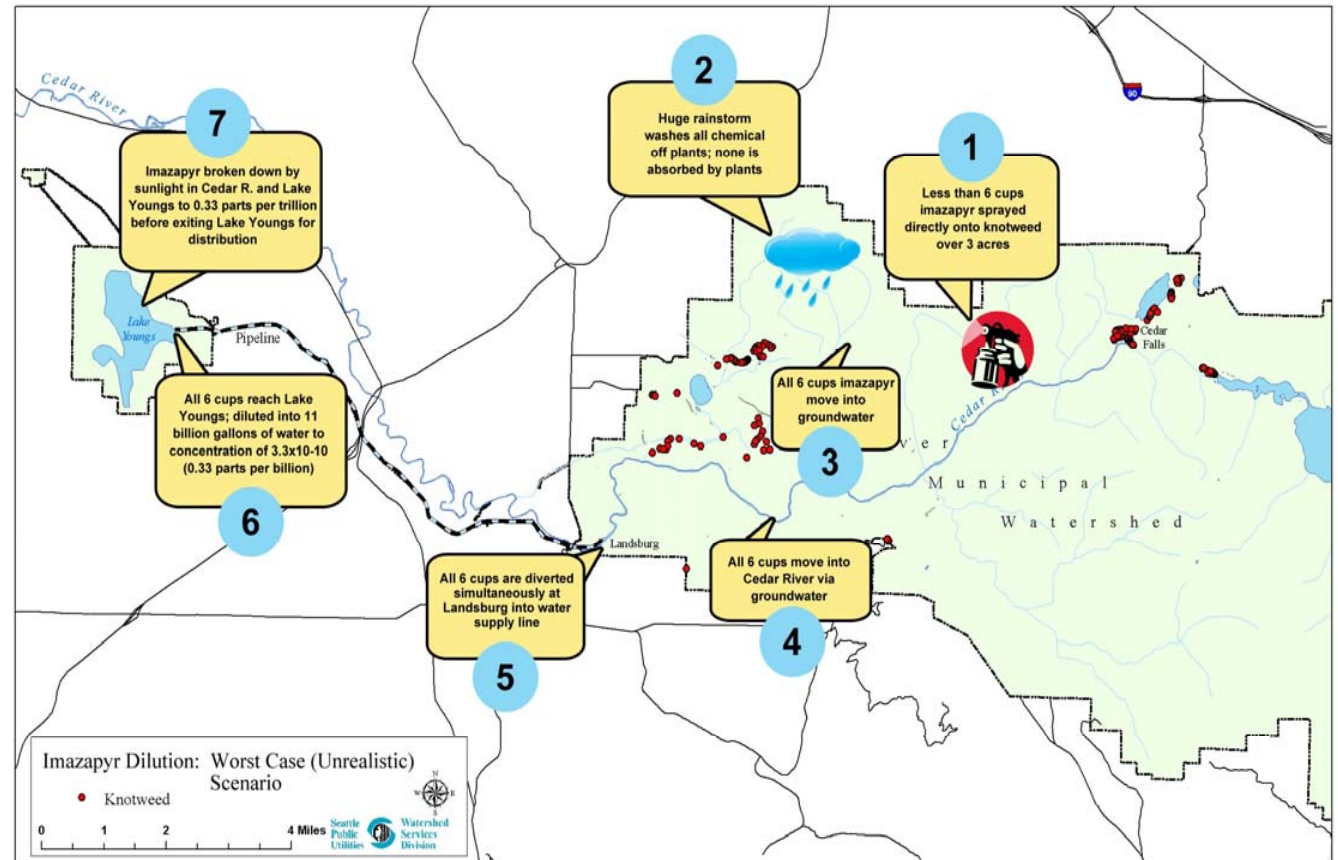


- King County legally requires control of knotweed on Cedar River and tributaries.
- Downstream partners rely on knotweed being treated in municipal watershed.
- Knotweed necessitates systematic removal.

# Imazapyr and Human Health

- Imazapyr inhibits enzymes found only in plants, so it has very low animal toxicity.
- WSU toxicologist prepared a worst-case scenario for herbicide application in the watershed.
- The toxicologist found the worst-case scenario concentration was 60,000,000 (0.33 ppb) times lower than the NOAEL\* for a human child.

\* No observable adverse effect level



# Imazapyr and Pollinators

- SPU avoids spraying if pollinators are present on a plant.
- SPU uses methods consistent with the King County Noxious Weed Control Program.
- SPU currently treats plants that are primarily small regrowth and have no flowers.



# Imazapyr vs. Glyphosate

- Glyphosate is being elevated to Tier I pesticide by City of Seattle.
- Imazapyr is already Tier I, as are most herbicides used by the City; Tier I precautions are already in place.
- Animals are more sensitive to glyphosate than imazapyr.
- Imazapyr provides more effective treatment over time, leading to less herbicide usage.



SPU applicators follow appropriate Tier I protocol by using personal protective equipment (PPE) and applying herbicides in a targeted manner.



# Environmental Protection

- SPU collects water quality samples before and after applications and found limited imazapyr detections since 2011.
- SPU developed new water quality protocol in 2018, took more samples with no detections.
- SPU protects pollinators by avoiding spraying during flowering periods.
- SPU protects applicators by following proper Tier I herbicide protocol.



Water sample collection in 2018.

# Persistence is Key to Success

- There are still areas of knotweed in the watershed needing continued maintenance.
- An estimated 16 ounces of imazapyr per year will be needed to maintain control of the population.
- The goal is eradication of knotweed from the Cedar River Watershed.

