



King County Wastewater

Strategic Planning for:

- Biosolids
 - Recycled Water
 - Energy
 - Technology
- Assessment and
Innovation

May 4, 2017

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 - Biosolids Program
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Overview of Strategic Plans

Where
we are
now?

Existing
Biosolids,
Recycled
Water,
Energy, and
Technology
Programs

Where
do we
want to
be?

Vision and
Mission

How will
we get
there?

Program
Strategies

WTD Vision: An innovative and resilient clean water enterprise revolutionizing the recovery of valuable resources for sustainable communities.

Mission: We protect public health and enhance the environment by collecting and treating wastewater while recycling valuable resources for the Puget Sound region.

Purpose: Improve the ability of WTD to better meet current and future challenges and achieve its long term business objectives.

Objective: Complete four strategic plans to set direction for each program area: biosolids, recycled water, energy and technology assessment and innovation.

Planning horizon: 20 year planning horizon with 5 year action plan

Strategic Plans Objective and Purpose





Loop® Biosolids



Recycled Water



Energy

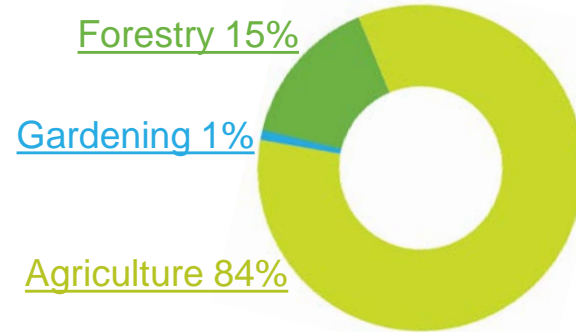


Technology Assessment and Innovation

Four Program Areas

- 120,000 wet tons per year
 - 10-15 trucks per day
- Used as a fertilizer (beneficial use) since 1973
- 100% beneficial use since 1983
- Revenue received from Loop customers

Average annual Loop distribution



Agriculture



Forestry



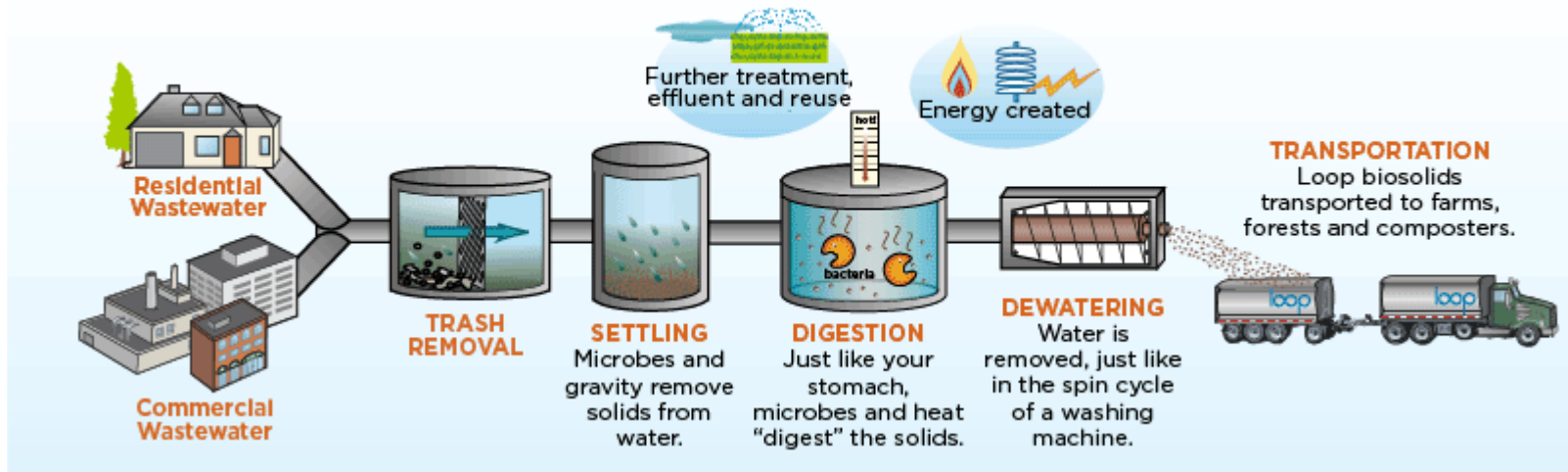
Land
Reclamation



Urban
Gardening

Overview of Biosolids Program

WASTEWATER TREATMENT PROCESS - HOW BIOSOLIDS ARE MADE



- Logistical burdens
- Limited capacity for distribution
- Limited number of customers
- Regulatory challenges

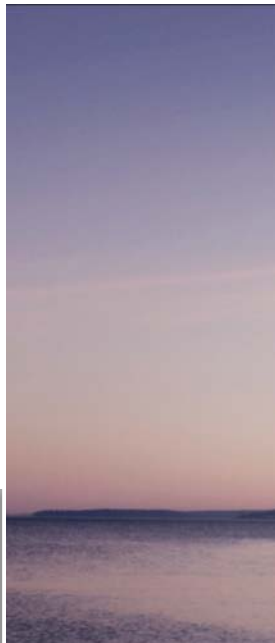
Why a Biosolids Strategic Plan?

- Began in 1998, delivering irrigation water to Starfire Sports Complex
- 711 million gallons per year used on-site at treatment plants
- 83 million gallons per year distributed off-site



In stream flow benefits – keeps water in rivers and streams

Overview of Recycled Water Program



**Reduced
discharge**



**Process
water**



Irrigation

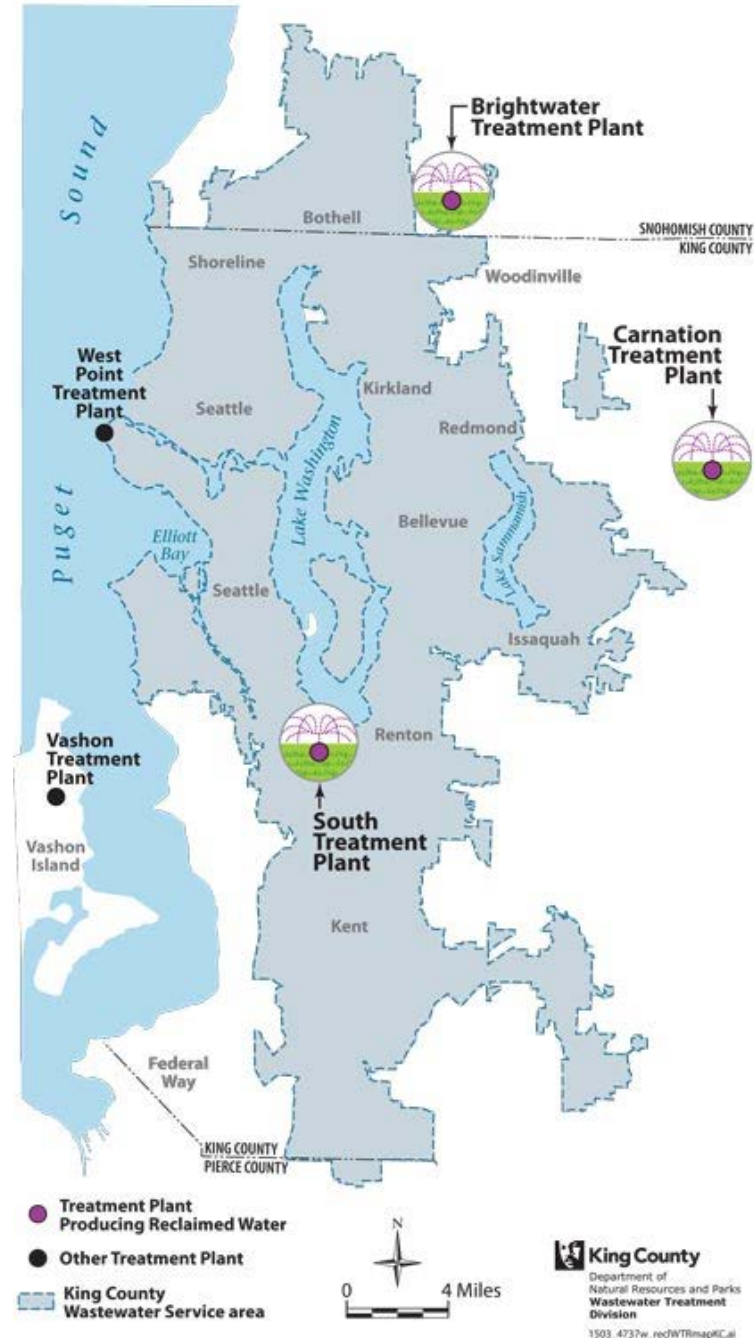
**GREEN BUILDING
FEATURE**

**Toilet
flushing**

- Climate change
- Plan for ongoing reduction in reliance on Puget Sound discharge
- Guidance on scale of growth
- Challenges to connecting customers in a timely manner
- Operational reliability

Why a Recycled Water Strategic Plan?

KING COUNTY TREATMENT PLANTS PRODUCING RECYCLED WATER



- Long-term energy-reduction, energy-recovery, and renewable energy use
- Reduce WTD's reliance on externally generated power and fossil fuels
- Biogas recovery began in 1966
- In 2015, South Plant sold 1.8 million therms of scrubbed gas which generated an annual revenue of more than \$700,000

Overview of Energy Program



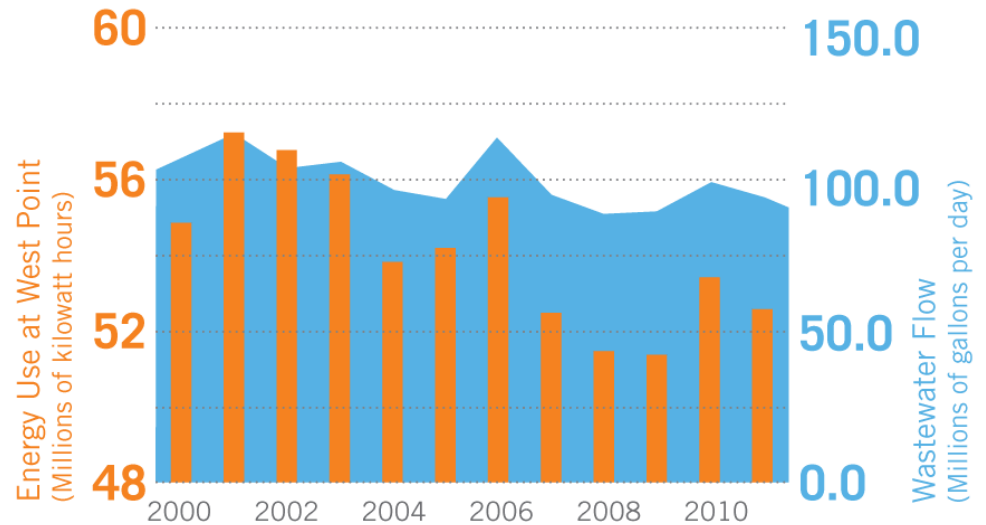
Energy reduction

Biogas

Heat
recovery

Renewable energy
generation

- Optimize cost-effective and sustainable energy
- Evaluate ability to meet King County Strategic Climate Action Plan goals, measures, targets
- Inform analysis and decision making on WTD capital and operations projects



Why an energy strategic plan?

Overview of Technology Assessment and Innovation Program

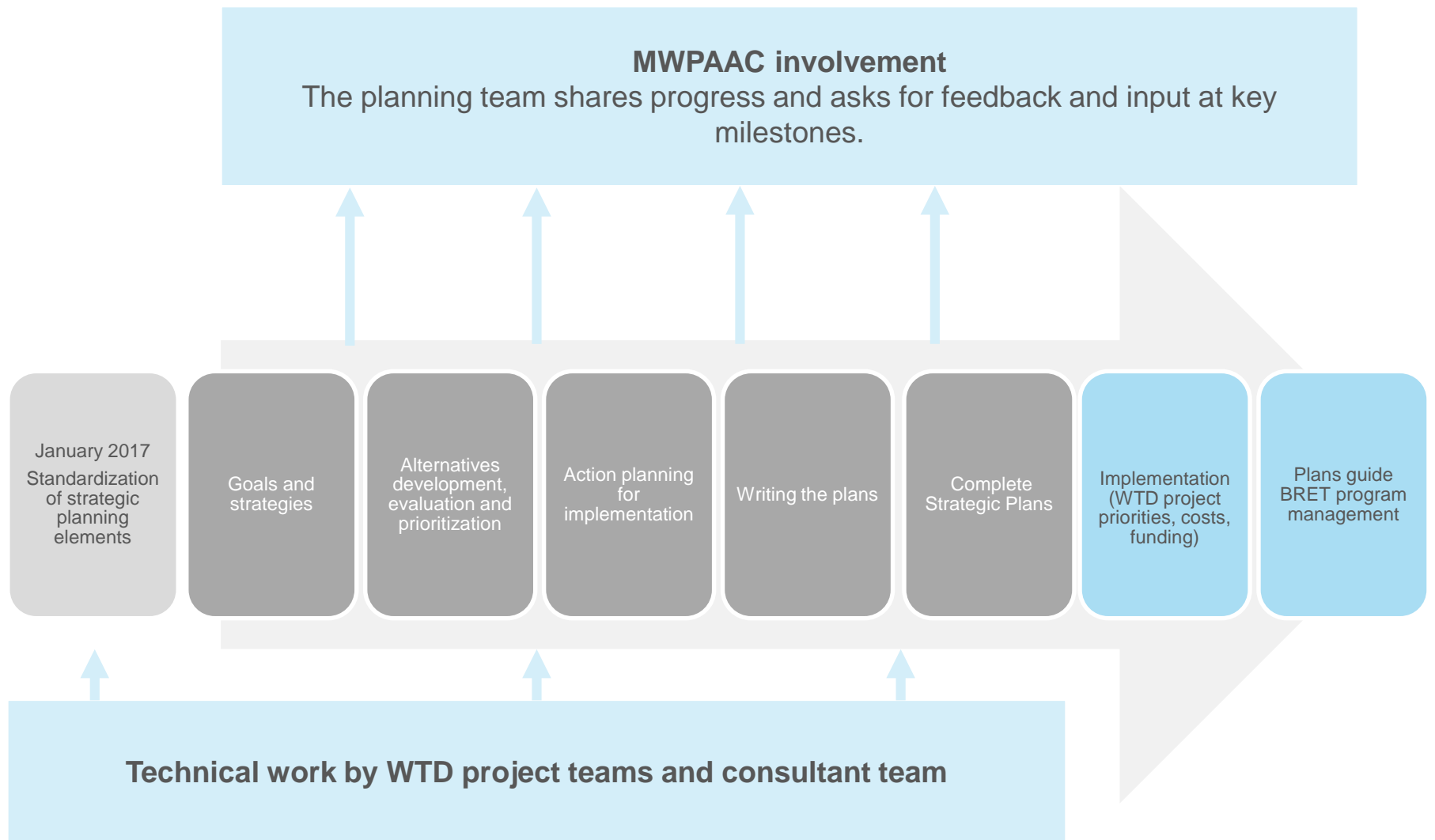
- Began in 1991 to do applied research related to West Point
- Provides technical services to:
 - maximize the cost-effectiveness of WTD services
 - stimulate innovation
 - build a sustainable and resilient future for WTD
 - advance sustainable resources
- State-of-the-art wastewater technology research with the University of Washington.



- Future regulations
- Assess current research
- Evaluate potential for partnerships
- Be prepared to support other WTD programs

Why a technology assessment strategic plan?





Proposed Process

Project teams

-WTD Plan Lead

-Staff from:

- Core Program
- Director's Office
- Environmental and Community Services
- Industrial Waste
- Operations and Maintenance
- Capital Planning and Delivery
- Finance
- Planning

-Consultant program managers and technical staff

Project teams



Convene teams



Goal development



Strategy development

BRET: Next Steps

Questions?

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King County

Department of
Natural Resources and Parks
Wastewater Treatment Division

Extra slides

King County Wastewater Treatment Division

Population served: 1.7 million residents

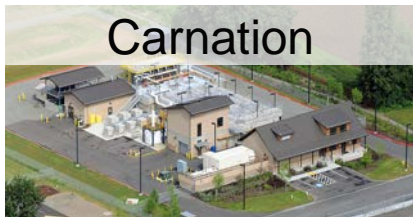
- 5 treatment plants serve 425 square miles
- 186 million gallons of wastewater treated daily



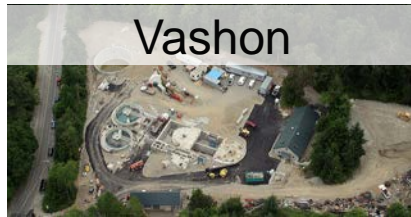
South Plant



West Point



Carnation



Vashon



Brightwater

Executive Summary

WTD Vision, Mission, and Goals

1.0 Introduction

2.0 Background

3.0 Goals

4.0 Recommended Strategies

5.0 Alternative Development, Evaluation, and Prioritization

6.0 Recommended Actions (5-year action plan)

7.0 Implementation

Appendix: Methodology

Strategic Plans Outline