

20 Year Servicing Plan – Utilities Update

Infrastructure Engineering Department | August 10,2020



Wastewater Servicing



Area Based Water Management

- Focus on
 Okanagan Lake
- Strategic Planning and Policy initiatives.





Components - Wastewater





Current Level of Service

City of Kelowna Wastewater Utility

Current

- Capacity to at least 2030
 - Collection for 90% Population
 - Septic 10%
 - Transmission
- Modern Treatment
 - Effluent Disposal to OK Lake
- Biosolids Management
 - Class "A" Compost

<u>Goals</u>

Efficient and cost-effective service. Meets regulatory needs with some flexibility Aligns to the needs of a growing community. Responsible discharge to the Environment

2040 Growth Scenario





2040 OCP Level of Service

City of Kelowna Wastewater Utility

<u>2040 LOS</u>

- Capacity to at least 2040
 - Collection for 95% Population
 - Septic 5%
 - Transmission
- Modern Treatment
 - Effluent Disposal to OK Lake
- Biosolids Management
 - Class "A" Compost
 - Class "A" Biosolids
 - FOG & Tradewaste Solids Removal



Additional Options

City of Kelowna Wastewater Utility

<u>2040 LOS</u>

- Capacity to at least 2040
 - Collection for 95% Population
 - Septic 5%
 - Transmission
- Modern Treatment
 - Effluent Disposal to OK Lake
- Biosolids Management
 - Class "A" Compost
 - Class "A" Biosolids
 - FOG & Tradewaste Solids Removal

<u>Goals</u>

Efficient and cost-effective service Exceeds regulatory needs with added flexibility Aligns to the needs of a growing community Holistic Approach - Source to Environment Net reduction in GHG Resiliency

Other Future Considerations?

- Regional Facility(?)
- Added Biosolids Side Streams
 - Nitrogen Removals
 - Phosphorus Removals
 - Metals Removals
 - Odour control facility
- Effluent Post-Treatment (WWTF)
 - Pharmaceuticals?
 - Dissolved metals?

Existing System

Sanitary Mains



Growth Projects

Vertical



Growth Projects

Mains





Water Servicing

Water – Kelowna Water Utility





Dual Disinfection UV and Chlorination

Current Level of Service - Water Servicing Kelowna Water Utility

Current

- Delivery and Mainlines
 - Capacity to at least 2030
 - 75,000 Population
- Suppliers
 - Kelowna Water Utility
 - Small Utilities and Private Systems
 - District of Lake Country
- Agriculture and Irrigation
 - Capacity to 2030
- Regulatory Compliant and forward looking

Customer Service Level Statement

Efficient and sustainable delivery of high quality, safe, sufficient and reliable water to all customers in the Kelowna Water Utility.











2040 Level of Service – Water Utility

Future

- Emphasis on Protection on Okanagan Lake water quality
- Delivery
 - Capacity to at least 2040
 - Interconnectivity with other suppliers
- Suppliers
 - Kelowna Water Utility
 - Improvement Districts
 - District of Lake Country
- Agriculture and Irrigation
 - Capacity to 2040
- Added Resiliency and movement of water
- Regulatory Compliant and forward looking

Water 🦳		Current Program to 2040		Increase Funding by 20%		Accelerated		
	Category	Funding	Service Level	Funding Increase	Service Level	Funding Increase	Service Level	
istructure an	Distribution	BAU		Moderate	1	High	1	
2040 Infra Pl	Treatment	BAU	↔ \	Moderate	1	High	1	
	Growth Cost*		\$73 million		\$90 million		\$112 million	
* Estimates only based on preliminary analysis.								

KWIP Projects

Possible Interconnections

Work to Progress



Growth Projects

Kelowna Utility Only



Growth Projects

Kelowna Utility Only





Stormwater Servicing



Area Based Water Management

- Focus on
 Okanagan Lake
- Strategic Planning and Policy initiatives.







Stormwater Assets

- Minor System
- Major System
- Natural System



Minor Systems

- Ditches,
- Manholes
- Catchbasins
- Buried pipe
- Infiltration

New construction

- Roads
- Development



Major Systems

- Transmission Mains
- Lake/Creek outlets
- Roads
- Channels
- Culverts
- Dykes
- Channelized creeks



Natural Systems

- Okanagan Lake
- Creeks
- Ponds
- Riparian Areas
- Woods



Current Practices

- Minor Systems
 - Some renewal
 - Some adjustments to flow directions
 - Maintenance
- Major Systems
 - Some Renewal
- Natural Systems

Watercourses



Existing Infrastructure

Storm



Creeks



Mill Creek

Floodplain 200 Yr Event



Existing Works



Mill Creek Flood Protection Project

Draft



Suggested Level of Service

Stormwater 🔔		Current Prog	ram to 2040	Increase	Increase Funding		Accelerated	
Category		Funding	Servic <i>e</i> Leve	Funding Increase	Service Level	Funding Increase	Service Level	
2040 Infrastructure Plan	Major Systems	0	-	Moderate	t	High	1	
	Flood Mitigation	0	•	Any	•	High	1	
Growth Cost		\$o million		\$50 million		\$50 Million		

Minor System

Renewal / use of Green Infrastructure Focus on Stormwater Quality

• Major Systems

Focus on Stormwater Quality Adapted to Climate Change Adapt to lake fluctuations / Downtown

Natural Systems

Work with Parks

Flood Protection of Mill and Brandt's Creek

Questions?

For more information, visit **kelowna.ca**.

