



plan ^{FOR}
200K

Engineering Utilities Master Plans (Stage 4)

Executive Committee
June 11, 2018



AGENDA

- Overview
- Progress
- Engagement
- City Utilities Master Plans:
 - Drainage
 - City Sewer
 - City Water
- Questions/Comments?

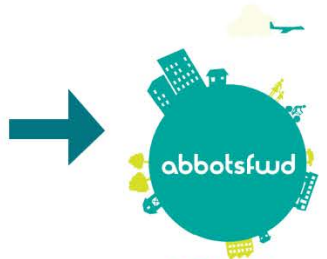


Organization Alignment

Vision and framework for growth to a population of 200,000



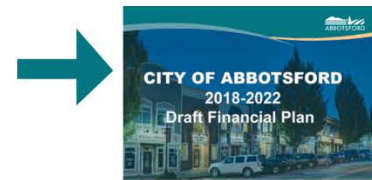
**COUNCIL
STRATEGIC PLAN**



**OFFICIAL
COMMUNITY
PLAN**



**PLAN 200K
MASTER PLANS
& STUDIES**



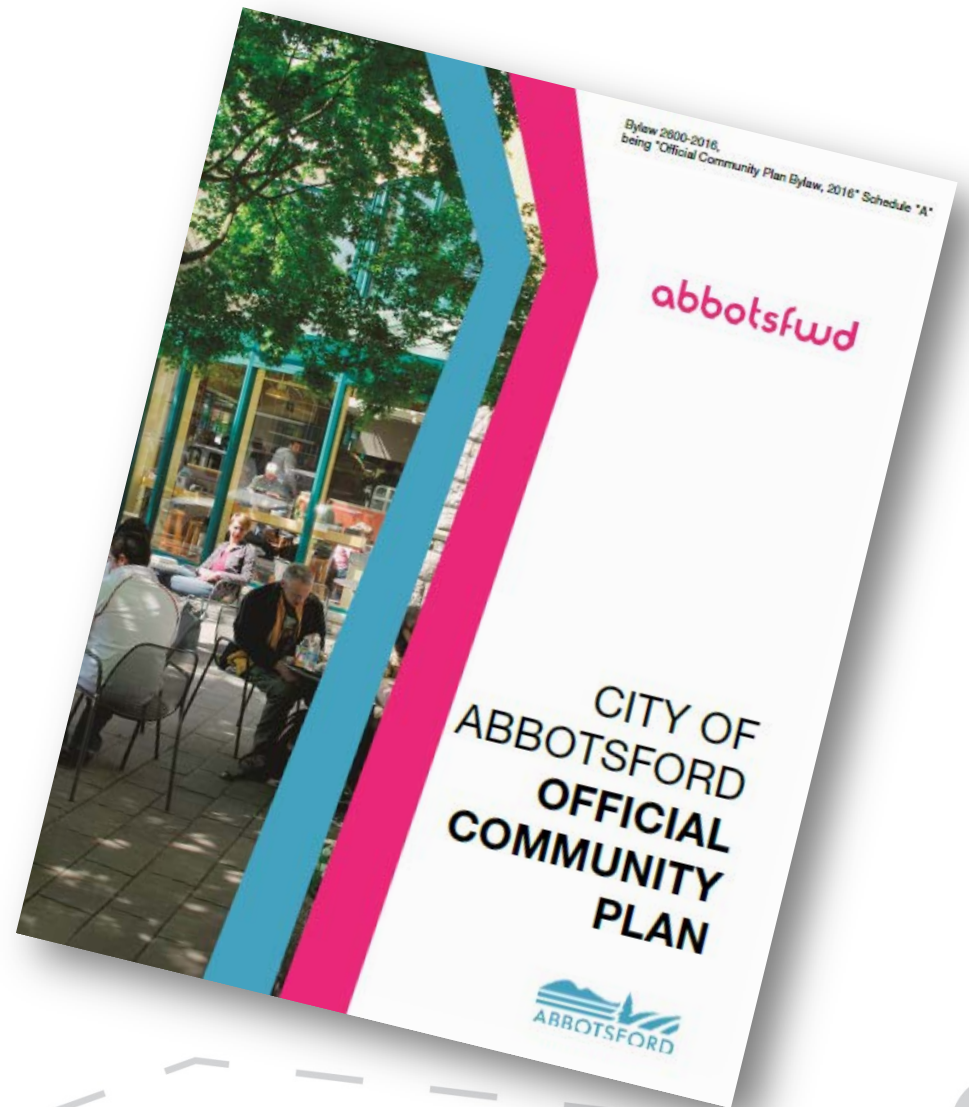
FINANCIAL PLANS

**DEVELOPMENT
COST CHARGES**

OCP

OCP adopted
June 2016

~ 140,000
to
~ 200,000



Plan 200K

 DRAINAGE

 CITY WATER

 CITY WASTEWATER

 JOINT WASTEWATER

 FIRE

 TRANSPORTATION

 JOINT WATER

 PARKS, RECREATION & CULTURE

 TRANSIT

9
MASTER
PLANS

 U DISTRICT

 HISTORIC DOWNTOWN

 MCKEE

 CITY CENTRE

4
NEIGHBOURHOOD
PLANS

 INDUSTRIAL LAND SUPPLY

 AGREFRESH

 ZONING BYLAW

 WATER SOURCE SUPPLY

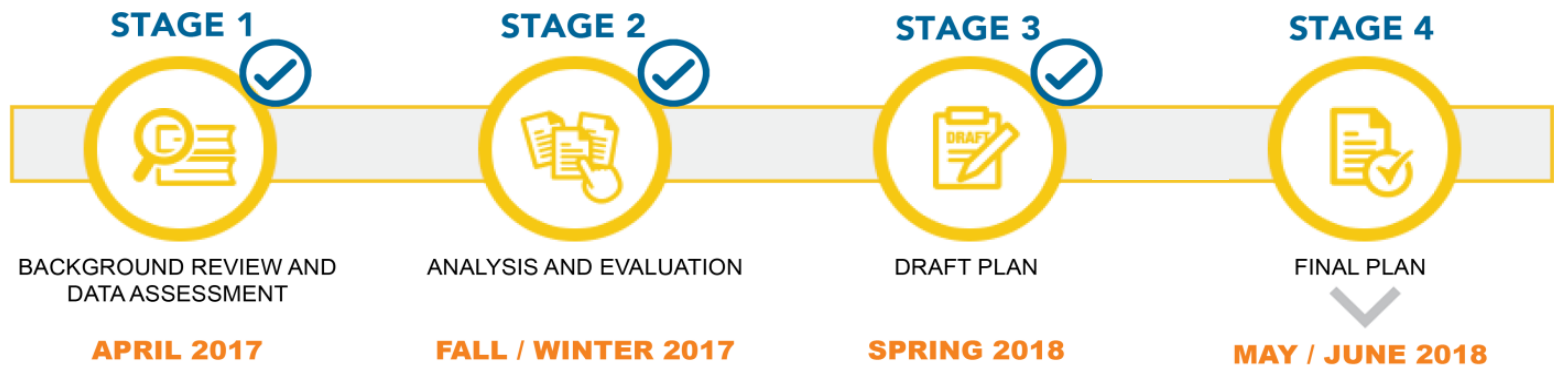
 HOUSING STRATEGY

 WILLBAND CREEK ISMP

7
PLANS & STUDIES

 FISHTRAP CREEK ISMP

Progress



Engagement

PUBLIC EVENTS

Council

(Executive Committee)

Stage 1 – Oct. 2, 2017

Stage 2 – Feb. 19, 2018

Stage 3 – May 7, 2018

STAGE 1

Taste of Abby

Canada Day

Berry Beat

Farmers Market

Seven Oaks Mall

Recreation Centres

Kalgidhar Park and Temple Visit

Chamber of Commerce

Urban Development Institute

STAGE 2

U-District meeting

MCA Open House

Clearbrook Library

High Street Mall

Seven Oaks Mall

Committees

Stage 1 – ADDIAC, DAC

Stage 2 – ADDIAC, DAC

Stage 3 – ADDIAC, DAC

STAGE 3

Earth Day

Clearbrook Library

Farmers Markets

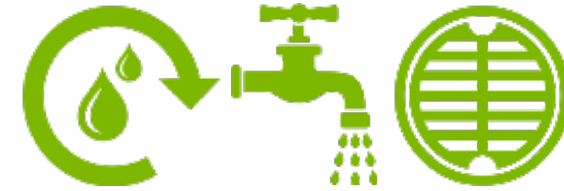
UFV

plan FOR
200K



Approximately
1,400 people
were engaged

Master Plans Purpose



- Set levels of service
- Define projects to address issues and opportunities
- Schedule projects and investments
- Provides recommendations to support growth

**PHASEABLE, AFFORDABLE, RESILIENT, SUSTAINABLE,
INCREMENTAL, FLEXIBLE AND GRANTABLE**



DRAINAGE MASTER PLAN

Issues and Opportunities



Localized
Flooding

1



Erosion &
Sediment
Deposition

2



System
Capacity &
Pump
Stations

3



Runoff
Volume &
Quality
Control

4



Low Dyke
Level

5



Climate
Change/
Resiliency

6



Bylaws &
Policy
Updates

7




Stormwater
Fees
&
Charges

8

Themes




BUILDING CAPACITY



Localized Flooding

1




System Capacity/
Pump Stations

3



ENHANCE ENVIRONMENT



Erosion/
Sediment Deposition

2



Runoff Volume/
Quality Control

4




SUSTAINABLE COMMUNITY



Bylaws/
Policy Updates

7




Stormwater Fees/
Charges

8



RESILIENT SYSTEM



Low Dyke Level

5



Climate Change/
Resiliency

6





Building Capacity



- Improve conveyance capacity
 - reduce the chances of flooding
- Upgrade storm sewer system
 - meet existing and future demands
- Upgrade Barrowtown Pump Station
 - Increase pumping capacity
 - future cost benefit study
- Undertake studies
 - ISMPs of Willband Creek & Fishtrap Creek, etc.



Enhance Environment



- Promote infiltration to control runoff volume and slow down erosion process
- Reduce peak flow via onsite and community detention opportunities
- Stabilize banks
- Manage sediment to reduce sediment aggradation
- Recommend stormwater quality control measures





Sustainable Community



- Develop Stormwater Source Controls Bylaw
 - City-wide and enforceable

- Update Development Bylaw, 2011 (Bylaw No. 2070-2011)
 - Climate change adaptation strategy
 - Fish friendly infrastructure requirements

- Inform other Bylaws from drainage perspective, e.g.:
 - Erosion & Sediment Control Bylaw
 - Streamside Protection Bylaw
 - Tree Protection Bylaw

- Review stormwater fees and charges
 - - A future feasibility study





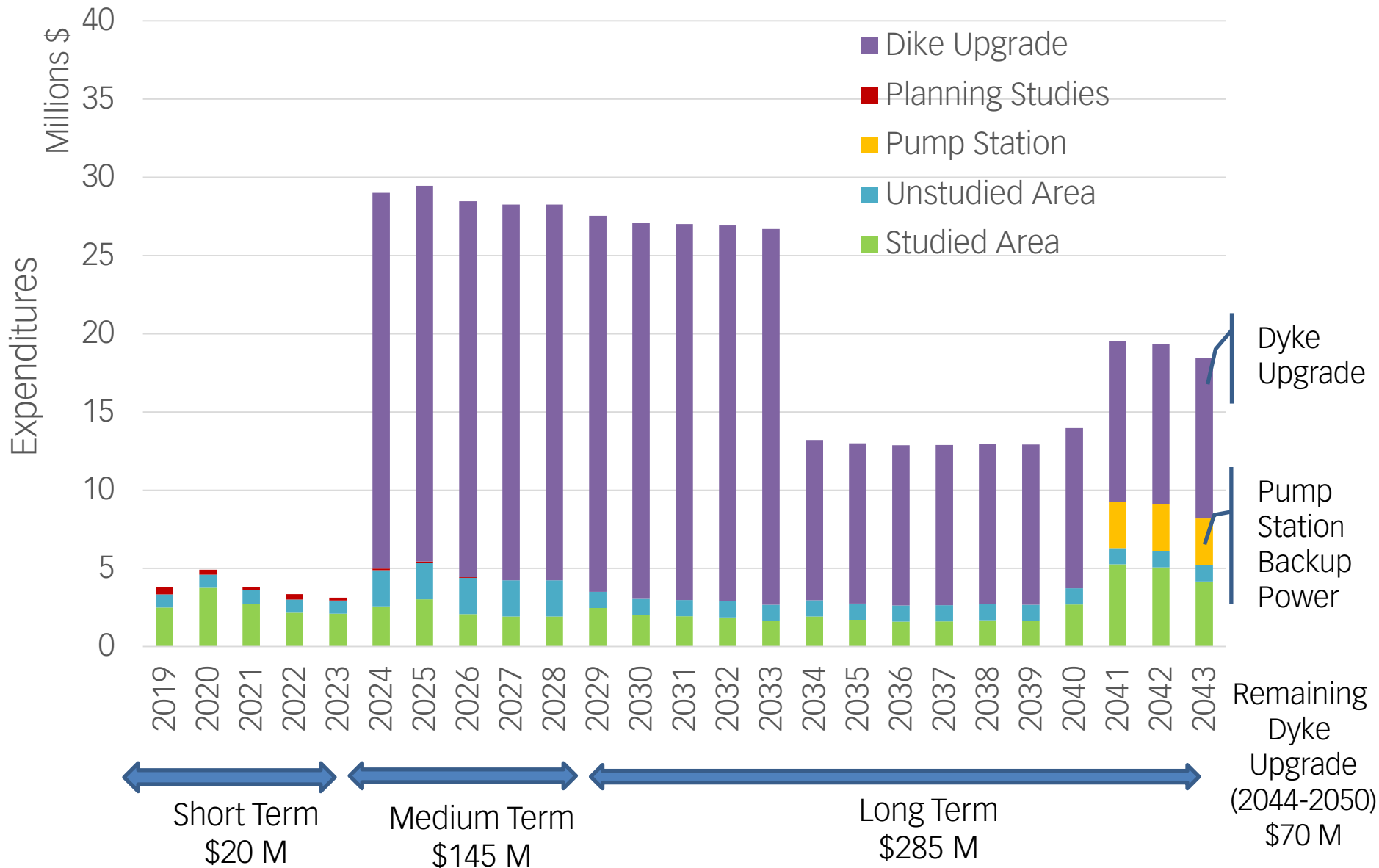
Resilient System



- Raise Dyke to meet the latest requirements of
 - Climate change
 - Sea level rise
 - Seismic standards
- Provide backup power for all drainage pump stations
 - maintain operations in the event of a utility power failure



Proposed Capital Expenditures





Highlights

- Modified timing of dyke upgrades to 2050
- Long term affordable plan
- Costs are distributed over time
- Major projects to proceed with significant grants (e.g. 100% dyke improvements funding from senior levels of governments)

Funding Sources

	DRAINAGE
GRANTS	<input checked="" type="checkbox"/>
COMMUNITY WORKS FUND	<input checked="" type="checkbox"/>
DCC	<input checked="" type="checkbox"/>
RESERVES	<input checked="" type="checkbox"/>
DEBT *	<input checked="" type="checkbox"/>

* Only if required



CITY SEWER MASTER PLAN

Issues and Opportunities



Dry vs Wet industry

1



Infrastructure Upgrades

2



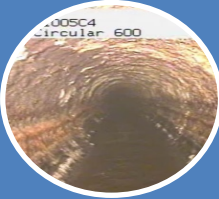
Optimize sewer capacity & mitigate risks

3



Sewer Odour

4



Corrosion of pipes and manholes

5



Upgrades or relocation of sewers in Right of Ways

6



Climate change & Sewer overflows

7



Resiliency (Severe Storms/ Seismic)

8

Themes



BUILDING CAPACITY



Dry vs Wet industry

1



Infrastructure Upgrades

2



Optimize sewer capacity

3

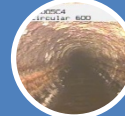


ASSET RENEWAL



Sewer Odour

4



Corrosion of pipes and manholes

5



Sewers in Right of Ways

6



EMERGING ISSUES



Climate change

7



Resiliency

8



RESILIENT SYSTEM





Building Capacity



- Support residential and ICI growth
- Identify upgrades and timing
- Optimize use of existing infrastructure
- Accommodate climate change

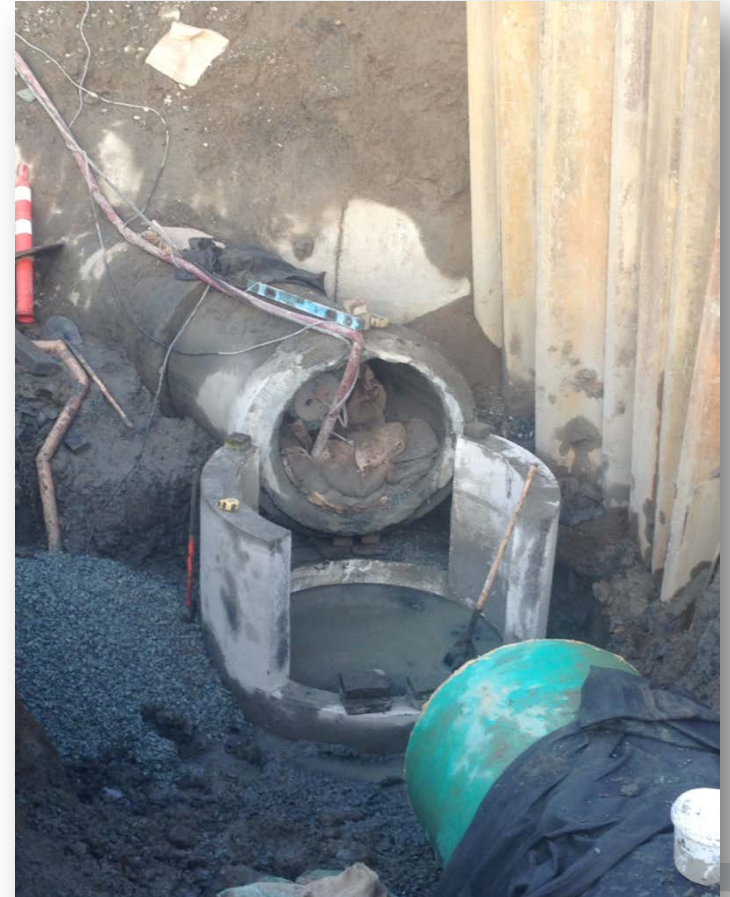




Asset Renewal



- Identify synergy between asset renewal and growth related upgrades
- Identify asset renewal due to:
 - Age
 - corrosion
 - safe work environment
 - operational capability; etc.





Emerging Issues



- Challenges
 - odour
 - corrosion
 - Sewers in Rights of Way
- Identify solutions for challenging issues
- Inform and update sewer bylaw





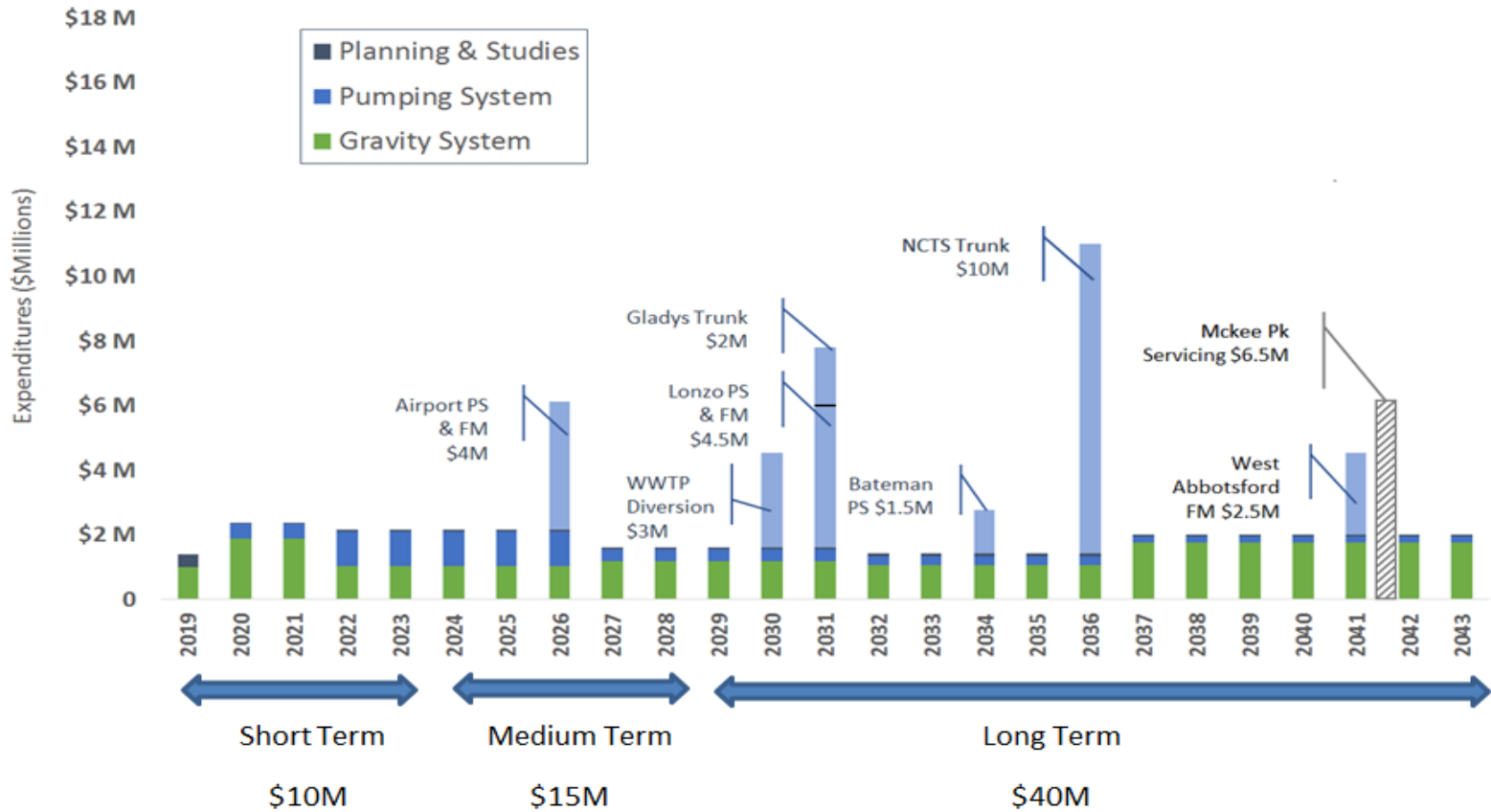
Resilient System



- Identify system upgrades for reliable infrastructure
- Identify solutions for resilient systems
- Accommodate climate change



Proposed Capital Expenditures



Highlights

- No significant changes from Stage 3
- Long term affordable plan
- Costs are distributed over time
- Major projects to proceed with significant grants



Funding Sources

	SEWER
GRANTS	<input checked="" type="checkbox"/>
COMMUNITY WORKS FUND	<input checked="" type="checkbox"/>
DCC	<input checked="" type="checkbox"/>
RESERVES	<input checked="" type="checkbox"/>
DEBT *	<input checked="" type="checkbox"/>

* Only if required



CITY WATER MASTER PLAN

Issues and Opportunities



Infrastructure Upgrades to Meet Future Demands

1



Asset Renewal Program

2



Agricultural Water use

3



Dry vs Wet industry

4



Fire protection

5



Optimizing existing system

6



Resiliency of the Water Distribution System

7

Themes



BUILDING CAPACITY

Infrastructure Upgrades

1

Asset Renewal

2

Agricultural Water use

3

Dry vs Wet industry

4

Fire protection

5



ASSET RENEWAL

Optimizing system

6



OPTIMIZE SERVICE DELIVERY

Resiliency

7



RESILIENT SYSTEM



✔ Building Capacity



- Support Residential, Industrial, Commercial, Institutional (ICI) and Agricultural growth
 - Ensure adequate domestic and fire flows are available now and in the future
 - Identify any system upgrades and the timing
 - Leverage asset renewal for capacity building





Asset Renewal



- Continued focus on water main asset renewal
- Develop an asset renewal program for Non-Linear Infrastructure (Pumps, PRV's, and Reservoirs)
- Identify funding levels for asset renewal



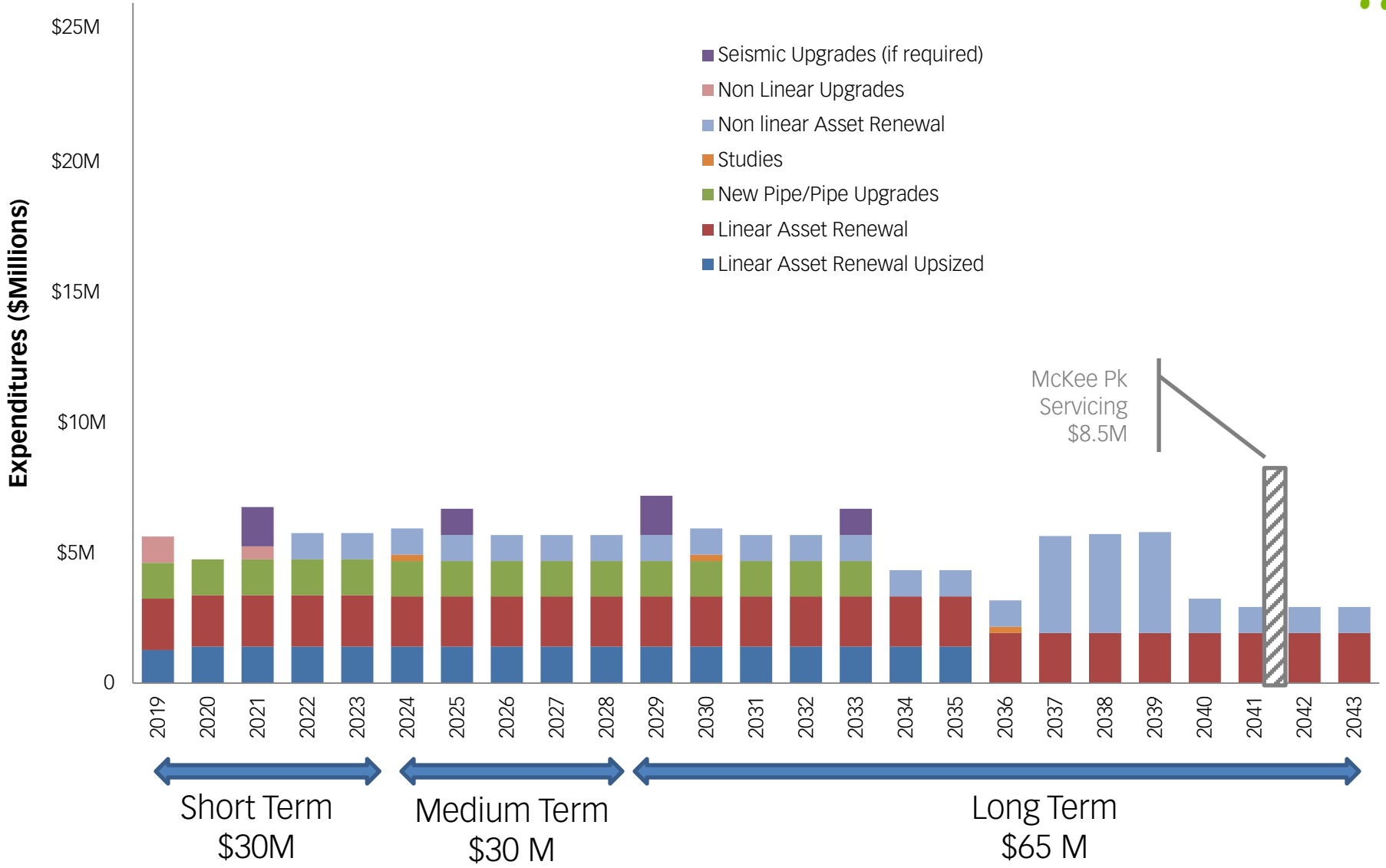
Resiliency



- Update to existing Water Life Line Study
 - Identify funding levels for resiliency upgrades
 - Ensure the water system will be operational in the severe storm or seismic event



Proposed Capital Expenditures



Highlights



- No significant changes from Stage 3
- Long term affordable plan
- Costs are distributed over time
- Major projects to proceed with significant grants

	WATER
GRANTS	<input checked="" type="checkbox"/>
COMMUNITY WORKS FUND	<input checked="" type="checkbox"/>
DCC	<input checked="" type="checkbox"/>
RESERVES	<input checked="" type="checkbox"/>
DEBT *	<input checked="" type="checkbox"/>

* Only if required



Recommendations



- THAT the Drainage Master Plan, City Sewer Master Plan, City Water Master Plan, be adopted; and
- THAT these plans be used to develop a long term financial plan.



Questions/Comments?

