

# REPORT TO COUNCIL



**Date:** September 10, 2012  
**File:** 1100-01  
**To:** City Manager  
**From:** Manager, Capital Assets and Investment  
**Subject:** Asset Management Update

**Recommendation:**

THAT Council receives, for information, the report from the Capital Assets and Investment Manager dated September 10, 2012, with respect to the City’s infrastructure Asset Management Plan;

**Purpose:**

Key municipal investments in services and infrastructure and effective re-investments in existing infrastructure are viewed by Council as necessary catalysts for sustained employment generation and prosperity in Kelowna. This report provides Council with an update on the system-wide performance of Municipal infrastructure and details next steps for advancement of the Corporate Asset Management Plan.

**Background:**

Public infrastructure is the framework of our communities, underpinning competitive advantage for business and the quality of life for residents. Municipal infrastructure enables residents to move about the community safely, have access to clean water and waste disposal, and provides facilities and amenities that families, business and industry rely on. The reliability and affordability of this infrastructure is one of the primary keys to a healthy, sustainable and prosperous community. As most of us have grown up with relatively new and functional public infrastructure we tend to take it for granted, and forget that it is expensive to maintain and renew, and it does age and fail when neglected.

Jurisdiction	Replacement Value	Estimated Deficit
NFD and Labrador	\$ 13,140,225,000	\$ 2,102,436,000
PEI	\$ 3,550,925,000	\$ 568,148,000
Nova Scotia	\$ 24,153,500,000	\$ 3,864,560,000
New Brunswick	\$ 19,201,775,000	\$ 3,072,284,000
Quebec	\$ 196,513,700,000	\$ 31,442,192,000
Ontario	\$ 326,131,475,000	\$ 52,181,036,000
Manitoba	\$ 30,488,000,000	\$ 4,878,080,000
Saskatchewan	\$ 24,930,043,000	\$ 3,988,807,000
Alberta	\$ 88,098,475,000	\$ 14,095,756,000
BC	\$ 109,272,700,000	\$ 17,483,632,000
Yukon	\$ 831,725,000	\$ 133,076,000
NTW	\$ 1,112,400,000	\$ 177,984,000
Nunavut	\$ 793,100,000	\$ 126,896,000
	<b>\$ 838,218,043,000</b>	<b>\$ 134,114,887,000</b>

Source : Strategic Infrastructure Management Inc. estimate - 2012

Communities across British Columbia and the rest of Canada are struggling with aging infrastructure and have collectively amassed an infrastructure deficit (infrastructure that has exceeded its service life) of approximately \$134 billion. This represents an average deficit to

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replacement value of 16 percent. This deficit challenge is compounded annually as additional aging infrastructure comes up for renewal.

The City of Kelowna recognizes the challenges with achieving sustainable asset management practices and has embarked a comprehensive Asset Management Plan with the goal of maintaining community approved levels of service at an affordable cost that will keep our community safe, vibrant and competitive. The City's comprehensive Asset Management Plan is in its early stages of development and it expected that the accuracy and completeness of the plan will improve with time. The current plan provides a "high level" look at the City's infrastructure and points to challenges that will need to be addressed in the future.

The City of Kelowna is in better position than many older communities as its infrastructure is newer and the City has already taken steps to meet the challenges of sustainable asset management. The City's corporate structure has enabled a holistic analysis of its infrastructure that looks at the broader goals and objectives of the infrastructure systems and the services they provide. This comprehensive approach to asset management allows for effective re-investment based on community and corporate priorities.

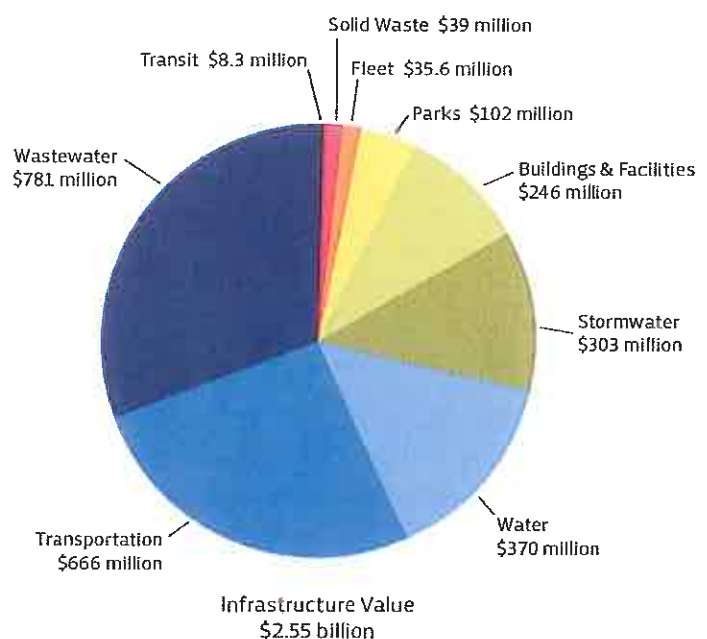
The City has developed an Asset Management policy and has formed a cross-functional asset management team with representation from all areas of the corporation to collaborate and guide the development of the Asset Management Plan. Recently, the City has advanced its Asset Management Plan by undertaking an asset by asset assessment of its future infrastructure renewal investment requirements, and its ability to accurately and efficiently locate, cost, and schedule these investments in a timely manner. To accomplish this, the City is developing a long term (integrated) asset management investment plan. This includes an assessment of the City's data inventory capabilities and current infrastructure ownership support tool functionality. This report provides an overview of the methodology, findings, interpretations and recommended next steps.

#### Asset Management Investment Plan:

The Asset Management Investment Plan (AMIP) created this year presents a credible investment scenario for the City's linear and non-linear infrastructure assets over a 20 year period. The AMIP is both functional (can be used immediately as an early win), and transitional as it forms the foundation for further development of the Asset Management Plan. It provides infrastructure information to guide future master and strategic plans, and presents complex infrastructure investment information.

A series of Report Cards for each infrastructure system were developed to summarize the information from the AMIP. The report cards are attached to this report and summarized below:

#### Replacement Value of Infrastructure System



The full replacement value of the City's linear and non-linear infrastructure assets is approximately \$2.55 billion (not including Airport or Electrical assets). The City's infrastructure has an infrastructure deficit (backlog) of approximately \$153 million. While no community likes to have a deficit, the \$153 million represents only a 6 percent deficit to replacement value which is significantly lower than the estimated Canadian average of 16 percent.

An age rating was given for each infrastructure system. The overall age of the City's infrastructure is considered fair with an average remaining life of 64%. Overall, the Stormwater, Transit and Solid Waste systems have the greatest expected remaining life. Fleet, Parks, Buildings & Facilities and Transportation are below 60% remaining service life.

The graph on the following page illustrates the 20 year capital renewal needs for the City. It is important to note that these estimates are based on existing information with assumed "theoretical" service lives. The theoretical service life of an asset provides a good indication of what to expect, on average, however requires further in-field inspections to confirm the condition of each individual asset and its associated replacement timing. It is anticipated that these estimates are conservative and will reduce with a more detailed infrastructure condition assessment over the next few years.

## Infrastructure System Score Card

Asset Component	Expected Remaining Life	Age Rating
Transit	75%	Good
Solid Waste	81%	Good
Fleet	43%	Fair
Parks	56%	Fair
Buildings & Facilities	59%	Fair
Stormwater	76%	Good
Water	63%	Fair
Transportation	57%	Fair
Wastewater	68%	Good
<b>Total Infrastructure</b>	<b>63%</b>	<b>Fair</b>

### Rating Scale

Good 100-65%	Fair 64-35%	Poor 34-0%
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The Average Annual Life Cycle Investment (AALCI) is the annual depreciation of the future replacement value of an asset, and represents the ideal amount of money that should be allocated for infrastructure renewal each year.

When there is a surplus of AALCI funds in any given year, that amount should ideally be saved in a dedicated reserve. This will eliminate or reduce the need to borrow and save debt financing costs. The City would need to allocate an AALCI of approximately \$58 million per year to address infrastructure renewal requirements. For comparison, the total capital budget in 2012 was \$77 million of which 44% or \$34 million was spent on asset renewal.

## 20-Year Funding Needs

millions



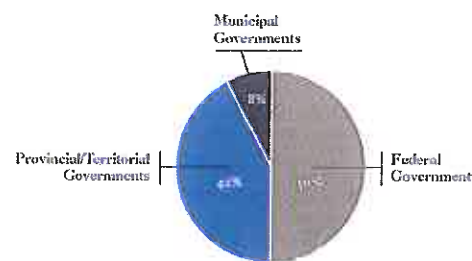
\* Note: Investment timing is based on theoretical design service life. Actual investment timing may vary depending on actual condition of infrastructure.

The large infrastructure gap will need to be bridged to sustain the City's infrastructure and the services it provides. The \$58 million AALCI is considered a conservative estimate and a stretch goal. As the City's Asset Management Plan becomes more robust opportunities to reduce infrastructure renewal costs should be realized through better project planning, integration and increased design service life through preventative maintenance. For example, if the average service life of the City's infrastructure was extended by 5% this would reduce the AALCI by \$3 million annually. A further example of cost reductions is through project integration. The AMIP assumes each infrastructure system is renewed independently and that the infrastructure renewal is not integrated. Typically the City integrates renewal of multiple infrastructure systems (i.e. sewer, water, roads, etc) at the same time and there are significant cost savings.

Good asset management may not be enough to bridge the infrastructure gap and senior levels of government will need to help. The Federation of Canadian Municipalities estimates that municipalities receive less than 10 percent of all tax revenue but are responsible for more than 52 percent of Canada's public infrastructure. Senior levels of government will need to assist municipalities with funding that targets infrastructure renewal.

Senior levels of government are aware of the challenges facing municipalities and have suggested that future grants may be conditional on the Municipality having a sound asset management plan.

Municipal Government Share of All Tax Revenues



Municipal governments receive less than 10 per cent of existing revenues.

Source: FCM, 2006

### **Assessment of Asset Management Data and Support Tools:**

A strategic look at the condition and capability of the City's asset management data and support tools was completed this year. This is a critical piece as the data availability and quality are the foundation for a good asset management plan. The City currently has over 30,000 items in its asset inventory. While the City does have a lot of good information, it is spread over a myriad of databases with different degrees of accuracy and completeness. This is not uncommon among communities that are developing their asset management business practice, however it is very important that these data sources be refined to include the correct data, in a format available for corporate use, with a reasonable level of accuracy and timeliness, and with a robust system that has the ability to collate diverse data streams so that City decision-makers can make more effective value for money decisions.

Currently the City lacks a system that can host and collate its many data streams. This presents an opportunity for the City to integrate, over the long term, an asset management decision support tool to manage, share, update and protect its valuable data sources. Having such a system would guide and encourage each department to start collecting and managing their data more efficiently. It would also provide a tool to leverage this information and coordinate cross-departmental infrastructure replacement decisions including:

- Identification of which infrastructure should get priority investment to maintain the integrity of essential services;
- the structure and magnitude of investment reserves to smooth the demand for investment funds over time;
- the identification of minor and tolerable changes in levels of service that come with high reductions in re-investment cost, etc.

Depending on resources, these steps would take approximately two years to be developed, implemented and consolidated into the long term capital plan and financing strategy.

### **Next Steps:**

The City has an opportunity to get ahead of the looming infrastructure investment requirements with sound asset management and financial strategy. This will require investment in asset management software and the resources to support it.

To advance the City's Asset Management Plan the next steps are:

1. Implement an Asset Management decision support software system that can be used to manage, share, and update asset data. The system will provide decision making functionality for financial and capital planning, condition assessment and risk evaluation, and interface with existing maintenance management systems already in use for each infrastructure type;
2. Centralize data inventory and improve data quality so that it is collected and maintained in an efficient, accurate, consistent and reliable manner that is accessible by all departments;
3. Define "levels of service" for each infrastructure type that meet regulatory requirements, establishes equity of service and are sensitive to the rate payer's willingness to pay.

### **Summary:**

Through the ongoing development of the Asset Management Plan the City is developing the tools it needs to meet the challenge faced with respect to long-term infrastructure renewal. Financing must reflect the long term nature of infrastructure investments, which will require a long-term investment plan with agreed-upon priorities. This plan must bring long-term

certainty to infrastructure funding (maintenance and capital), which will promote new efficiencies, technologies and best practices in infrastructure ownership. The City of Kelowna is better positioned than many Canadian municipalities and is taking necessary steps to sustain its infrastructure so that it can be enjoyed by future generations.

**Internal Circulation:**

Director, Infrastructure Planning  
Manager, Information Services  
General Manager, Community Services  
Acting Corporate Sustainability General Manager  
General Manager, Community Sustainability

**Existing Policy:**

The Multiple Bottom Line framework pursuant to Council Policy 352: Sustainable Municipal Infrastructure requires that the net per capita value of public infrastructure is retained for future generations.

**Financial/Budgetary Considerations:**

Staff is developing a budget for an asset management system. It is expected that the system will save considerable tax-payer money by ensuring that investments are made at the best time to reduce the total cost of ownership (life-cycle cost).

**Considerations not applicable to this report:**

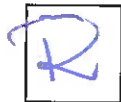
Legal/Statutory Authority:  
Legal/Statutory Procedural Requirements:  
External Agency/Public Comments:  
Communications Comments:  
Alternate Recommendation:

Submitted by:



J. Shaw, P.Eng., Manager, Capital Assets and Investments

Approved for inclusion:

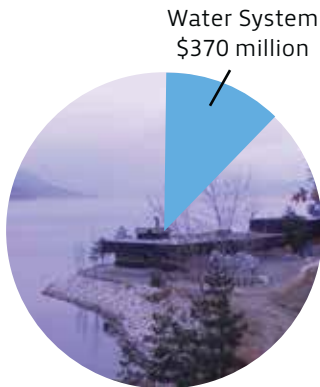


R. Cleveland MAIBC. Director, Infrastructure Planning

cc: Director, Financial Services  
Director, Infrastructure Planning  
Director, Real Estate and Building Services  
Director, Communications,  
Director, Operations  
Manager, Building Services  
Manager, Information Services

## Water System

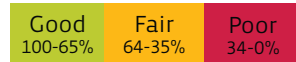
- ▶ Age of system is considered fair
- ▶ Water metres are nearing end of service life and are scheduled for replacement in 2017.



## Water System Score Card

Asset Component	Expected Remaining Life	Age Rating
Pipes (Mains)	61%	Good
Booster Stations & PRV's	65%	Good
Water Treatment	60%	Fair
Reservoirs/ Filling Stations	64%	Fair
Meters	35%	Fair
Appurtenances	61%	Fair

### Rating Scale



## Estimated Value

Asset Category	Estimated Value
Percent of City Infrastructure	15%
Average Remaining Life	61%
Replacement Value	\$370 million
Deficit (Backlog)	\$4.2 million
Deficit as Percentage of Replacement Value	1%
Average Design Life	64 years
Average Annual Life Cycle Investment*	\$5.8 million

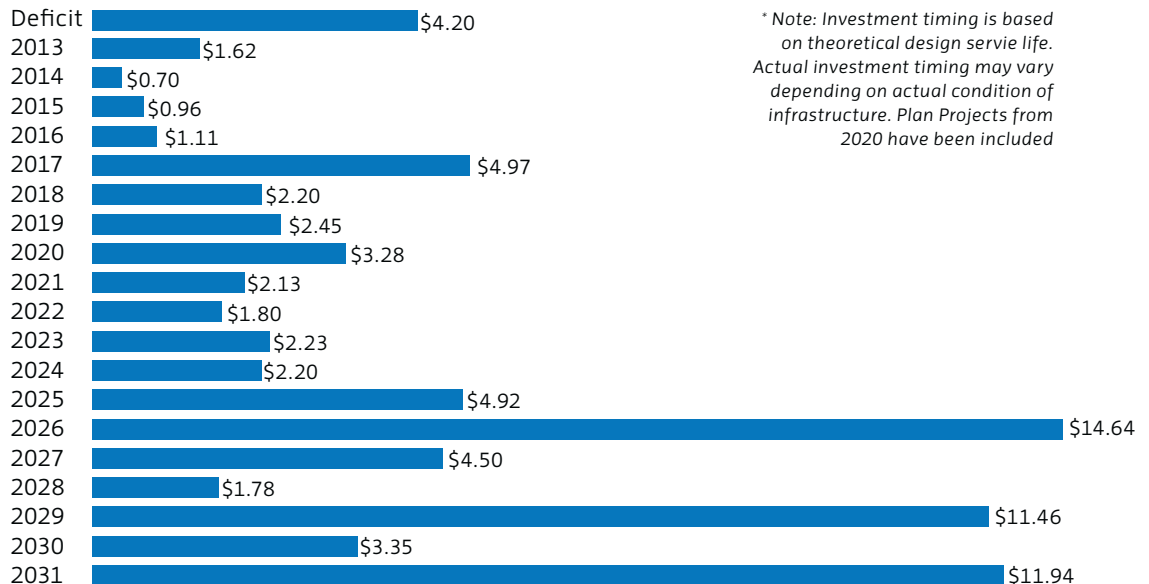
\*average amount to be invested annually for future replacement

## System Components

Asset Component	Quantity	Average Life	Life Remaining	Replacement Value
Pipes (Mains)	410 km	77 years	47 years	\$259 million
Booster Stations & PRV's	45 sites	50 years	32 years	\$17 million
Reservoirs	24 sites	42 years	25 years	\$40 million
Treatment	5 sites	60 years	38 years	\$30 million
Meters	—	17 years	6 years	\$6 million
Appurtenances	—	64 years	39 years	\$18 million

## 20-Year Funding Needs

millions



\* Note: Investment timing is based on theoretical design service life. Actual investment timing may vary depending on actual condition of infrastructure. Plan Projects from 2020 have been included

# Wastewater System

## Wastewater System

▶ Wastewater system is in good condition

## Wastewater System Score Card

Asset Component	Expected Remaining Life	Age Rating
Pipes (Mains)	75%	Good
Pump/Lift Stations	50%	Fair
Wastewater Treatment	62%	Fair
Equipment	62%	Fair
Appurtenances	70%	Good

### Rating Scale

Good 100-65%	Fair 64-35%	Poor 34-0%
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## Estimated Value

Asset Category	Estimated Value
Percent of City Infrastructure	31%
Average Remaining Life	70%
Replacement Value	\$781 million
Deficit (Backlog)	\$13 million
Deficit as Percentage of Replacement Value	2%
Average Design Life	70 years
Average Annual Life Cycle Investment*	\$11.2 million

\*average amount to be invested annually for future replacement

Wastewater System  
\$781 million



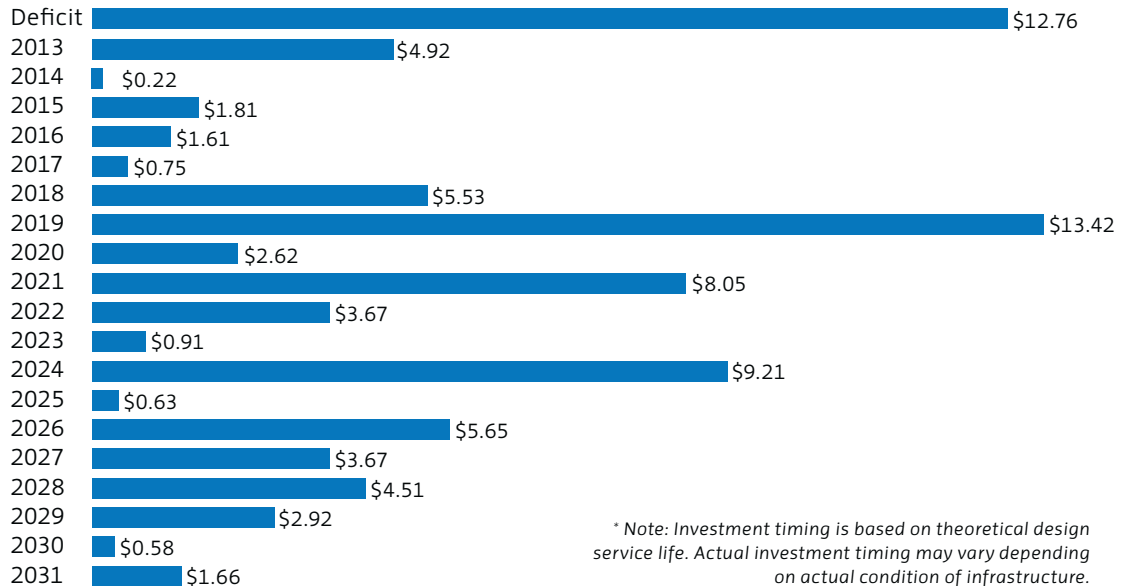
Infrastructure Value  
\$2.55 billion

## System Components

Asset Component	Quantity	Average Life	Life Remaining	Replacement Value
Pipes (Mains)	588 km	91 years	68 years	\$547 million
Pump/Lift Stations	42 sites	41 years	20 years	\$40 million
Treatment	2 sites	44 years	27 years	\$155 million
Equipment	—	10 years	6 years	\$2 million
Appurtenances	—	70 years	49 years	\$37 million

## 20-Year Funding Needs

millions



\* Note: Investment timing is based on theoretical design service life. Actual investment timing may vary depending on actual condition of infrastructure.



# Stormwater System

## Stormwater System

- ▶ Stormwater system is in good condition
- ▶ Relatively little deficit for system size.



## Stormwater System Score Card

Asset Component	Expected Remaining Life	Age Rating
Pipes (Mains)	78%	Good
Pump/Lift Stations	74%	Good
Stormwater Treatment	53%	Fair
Appurtenances	76%	Good

### Rating Scale



## Estimated Value

Asset Category	Estimated Value
Percent of City Infrastructure	12%
Average Remaining Life	76%
Replacement Value	\$303 million
Deficit (Backlog)	\$416,000
Deficit as Percentage of Replacement Value	0%
Average Design Life	78 years
Average Annual Life Cycle Investment*	\$3.9 million

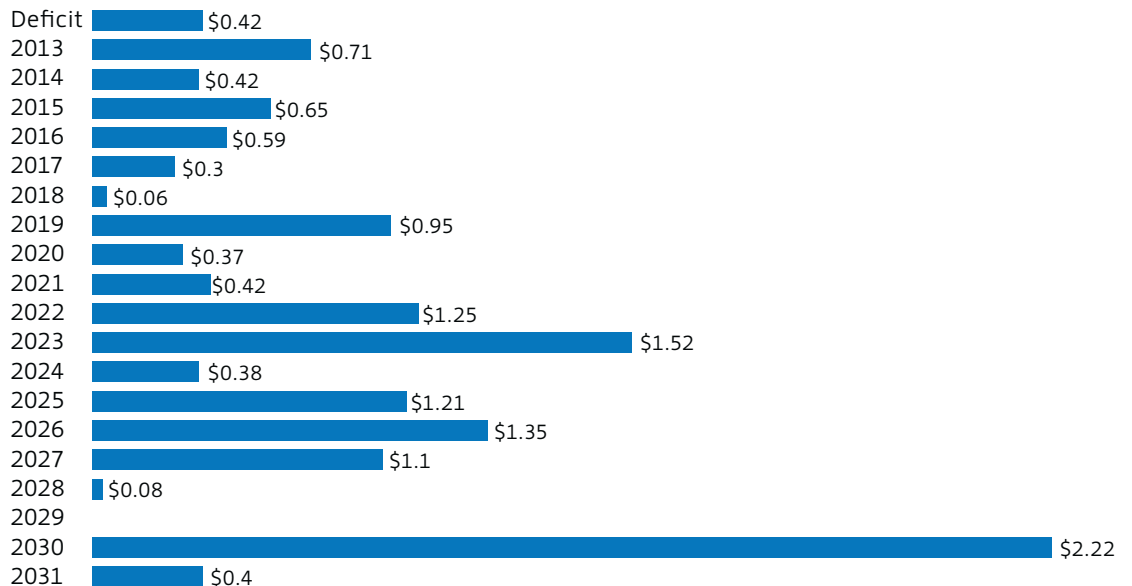
*\*average amount to be invested annually for future replacement*

## System Components

Asset Component	Quantity	Average Life	Life Remaining	Replacement Value
Pipes (Mains)	383 km	90 years	70 years	\$274 million
Pump/Lift Stations	5 sites	50 years	37 years	\$2 million
Treatment	83 sites	22 years	12 years	\$13 million
Appurtenances	—	78 years	60 years	\$14 million

## 20-Year Funding Needs

millions



*\* Note: Investment timing is based on theoretical design service life. Actual investment timing may vary depending on actual condition of infrastructure.*

# INFRASTRUCTURE REPORT CARD

## Transportation System

### Transportation System

- ▶ Transportation system is in fair condition
- ▶ Deficit is predominantly in collector and local road surface



### Transportation System Score Card

Asset Component	Expected Remaining Life	Age Rating
Roads	59%	Fair
Sidewalks	48%	Fair
Curb & Gutter	42%	Fair
Bridges	58%	Fair
Stairways/Retaining Walls/Handrails/Bike Paths	44%	Fair
Traffic Control	42%	Fair
Appurtenances	59%	Fair

#### Rating Scale



### System Components

Asset Component	Quantity	Average Life	Life Remaining	Replacement Value
Roads	810 km	34 years	20 years	\$486 million
Sidewalks	98 km	50 years	24 years	\$18 million
Curb & Gutter	230 km	48 years	20 years	\$39 million
Bridges	63 sites	57 years	33 years	\$44 million
Stairways/Retaining Walls/Handrails/Bike Paths	—	22 years	10 years	\$19 million
Traffic Control	—	13 years	6 years	\$26 million
Appurtenances	—	32 years	19 years	\$32 million

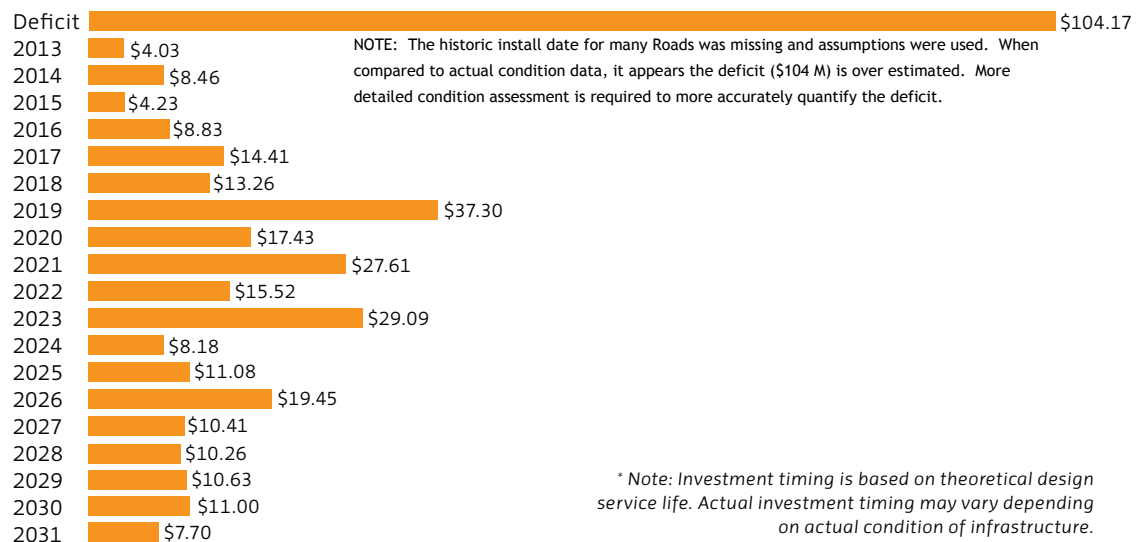
### Estimated Value

Asset Category	Estimated Value
Percent of City Infrastructure	26%
Average Remaining Life	57%
Replacement Value	\$666 million
Deficit (Backlog)	\$104 million
Deficit as Percentage of Replacement Value	16%
Average Design Life	33 years
Average Annual Life Cycle Investment*	\$20 million

\*average amount to be invested annually for future replacement

### 20-Year Funding Needs

millions



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\* Note: Investment timing is based on theoretical design service life. Actual investment timing may vary depending on actual condition of infrastructure.

# Fleet System

## Fleet System

- ▶ Age of fleet is considered fair
- ▶ Light cars and trucks are on average 6 years old

## Fleet System Score Card

Asset Component	Expected Remaining Life	Age Rating
Cars & Light Trucks	36%	Fair
Heavy Trucks/ Tractors	45%	Fair
Light Equipment	36%	Fair

### Rating Scale

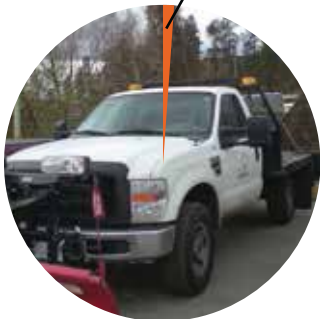
Good 100-65%	Fair 64-35%	Poor 34-0%
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## Estimated Value

Asset Category	Estimated Value
Percent of City Infrastructure	1%
Average Remaining Life	43%
Replacement Value	\$35.6 million
Deficit (Backlog)	\$6.4 million
Deficit as Percentage of Replacement Value	18%
Average Design Life	10 years
Average Annual Life Cycle Investment*	\$3.5 million

\*average amount to be invested annually for future replacement

Fleet System  
\$35.6 million



Infrastructure Value  
\$2.55 billion

## System Components

Asset Component	Quantity	Average Life	Life Remaining	Replacement Value
Cars & Light Trucks	195	10 years	4 years	\$6.9 million
Heavy Trucks/Tractors	99	10 years	5 years	\$25 million
Light Equipment	141	11 years	4 years	\$3.4 million

## 20-Year Funding Needs

millions

Deficit	\$6.39
2013	\$2.69
2014	\$1.55
2015	\$3.12
2016	\$4.25
2017	\$4.69
2018	\$2.71
2019	\$4.8
2020	\$3.02
2021	\$2.0
2022	\$4.77
2023	\$2.78
2024	\$1.7
2025	\$4.4
2026	\$4.68
2027	\$4.97
2028	\$3.2
2029	\$4.36
2030	\$2.52
2031	\$1.99

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\* Note: Investment timing is based on theoretical design service life. Actual investment timing may vary depending on actual condition of infrastructure.

## Building & Facilities

- ▶ Buildings are considered in fair condition
- ▶ Several buildings nearing the end of their design service life
- ▶ Annual re-investment in building renewal is forecast to be stable



Infrastructure Value  
\$2.55 billion

## Buildings & Facilities Score Card

Asset Component	Expected Remaining Life	Age Rating
Civic/Protective Services	39%	Fair
Parks & Recreation	74%	Good
Community & Cultural	40%	Fair
Transportation/Public Works	66%	Good
Land Improvements	45%	Fair

### Rating Scale

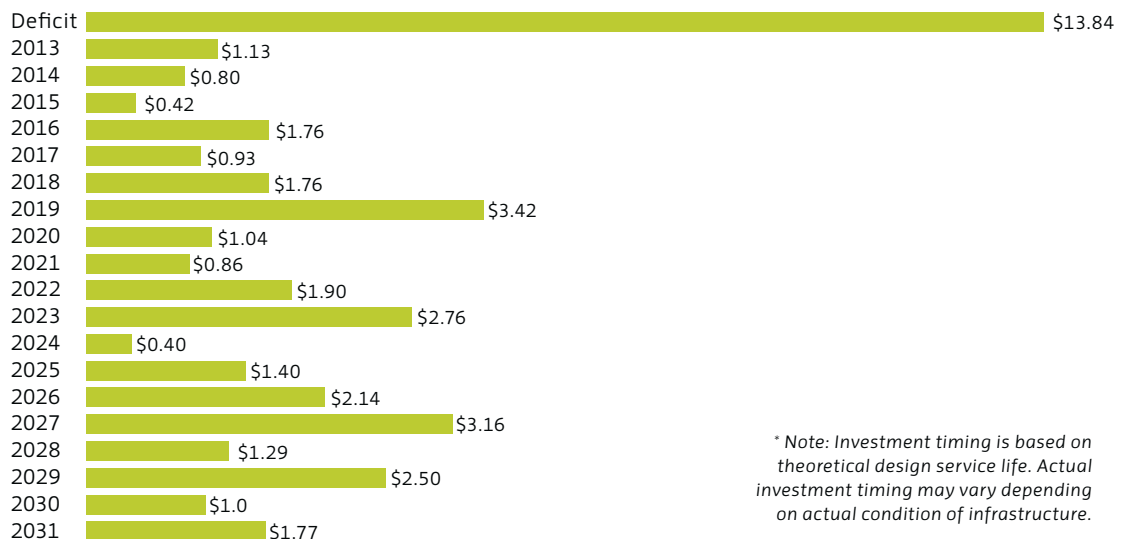


## System Components

Asset Component	Quantity	Average Life	Life Remaining	Replacement Value
Civic/Protective Services	52	30 years	12 years	\$46 million
Parks & Recreation	95	27 years	20 years	\$111 million
Community & Cultural	31	34 years	14 years	\$53 million
Transportation/Public Works	42	42 years	28 years	\$29 million
Land Improvements	—	30 years	14 years	\$6.6 million

## 20-Year Funding Needs

millions



\* Note: Investment timing is based on theoretical design service life. Actual investment timing may vary depending on actual condition of infrastructure.

# Parks

## Parks

- ▶ Parks system is in fair condition
- ▶ Deficit in irrigation systems and park facility improvements needs to be risk managed
- ▶ Renewal spikes in 2020 and 2024 are related to facility parking lot re-paving
- ▶ Deficit is high relative to replacement value



## Parks Score Card

Asset Component	Expected Remaining Life	Age Rating
Irrigation Systems	*50%	Fair
Tennis Courts	55%	Fair
Land Improvements	54%	Fair

\*Irrigation install dates not recorded. 50% assumed.

### Rating Scale



## Estimated Value

Asset Category	Estimated Value
Percent of City Infrastructure	4%
Average Remaining Life	56%
Replacement Value	\$102 million
Deficit (Backlog)	\$11 million
Deficit as Percentage of Replacement Value	11%
Average Design Life	25 years
Average Annual Life Cycle Investment*	\$4.1 million

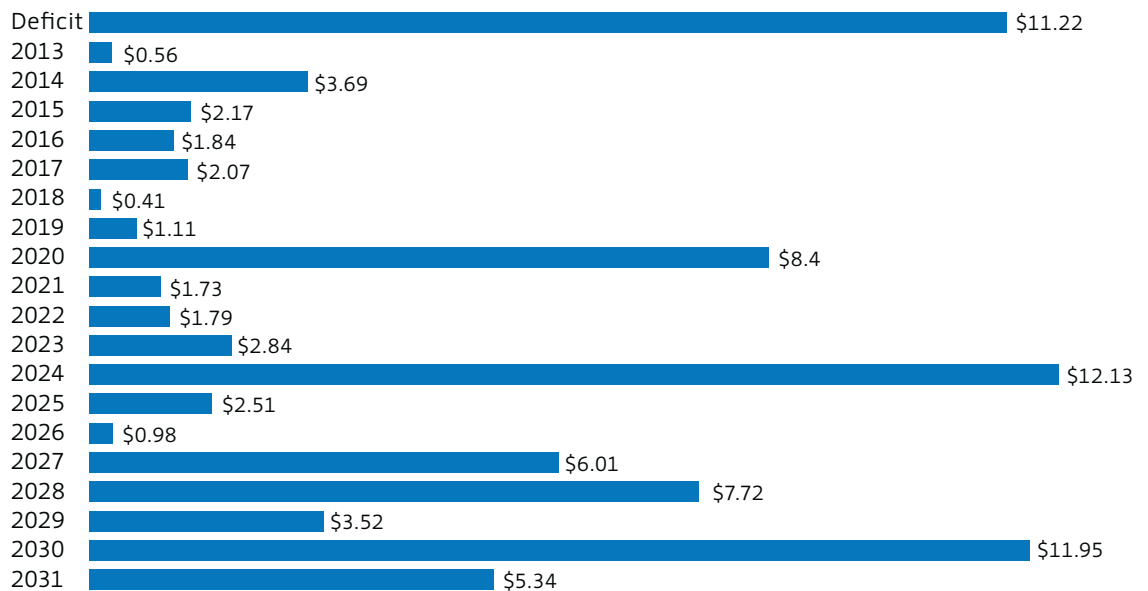
\*average amount to be invested annually for future replacement

## System Components

Asset Component	Quantity	Average Life	Life Remaining	Replacement Value
Irrigation Systems	3,400 zones	40 years	20 years	\$4.5 million
Tennis Courts	17 sites	25 years	14 years	\$2.6 million
Land Improvements	—	25 years	13 years	\$94.8 million

## 20-Year Funding Needs

millions



\* Note: Investment timing is based on theoretical design service life. Actual investment timing may vary depending on actual condition of infrastructure.

## Solidwaste System

- ▶ Solid waste system is in good condition
- ▶ \$6.9 million in equipment renewal forecast for 2024
- ▶ Future land costs for landfill expansion are not included as current landfill capacity is approximately 70 years



## Solidwaste System Score Card

Asset Component	Expected Remaining Life	Age Rating
Equipment	76%	Good
Infrastructure	80%	Good
Land Improvements	86%	Good

### Rating Scale



## Estimated Value

Asset Category	Estimated Value
Percent of City Infrastructure	2%
Average Remaining Life	84%
Replacement Value	**\$39 million
Deficit (Backlog)	\$1.5 million
Deficit as Percentage of Replacement Value	4%
Average Design Life	30 years
Average Annual Life Cycle Investment*	\$1.3 million

\*average amount to be invested annually for future replacement

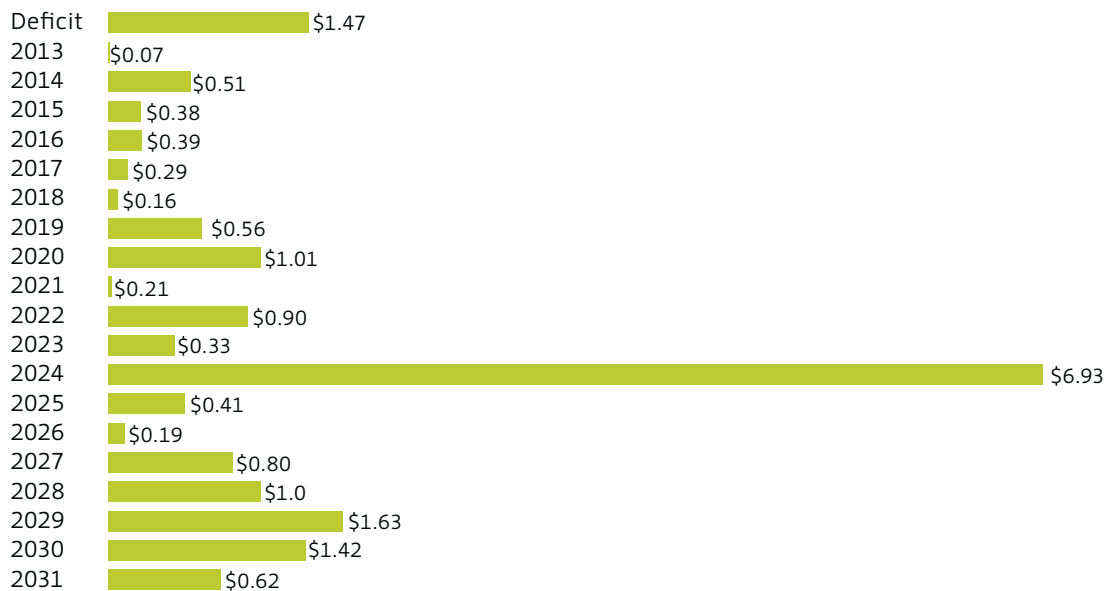
\*\*does not include land value

## System Components

Asset Component	Average Life	Life Remaining	Replacement Value
Equipment	15 years	11 years	\$7.6 million
Infrastructure	32 years	26 years	\$7 million
Land Improvements	37 years	32 years	\$9.6 million

## 20-Year Funding Needs

millions



# Transit System

## Transit System

- ▶ Transit facilities are in good condition
- ▶ No deficit associated with transit facilities
- ▶ Renewal of Queensway Transit Exchange in 2014



Transit System  
\$8.3 million

Infrastructure Value  
\$2.55 billion

## Transit System Score Card

Asset Component	Expected Remaining Life	Age Rating
Transit (Bus) Shelters	71%	Good
Transit Stop Benches	75%	Good
Transit Signage	67%	Good
Bike Lockers (Street & Custom)	52%	Fair

### Rating Scale



## Estimated Value

Asset Component	Quantity	Average Life	Life Remaining	Replacement Value
Transit (Bus) Shelters	79	21 years	16 years	\$8.1 million
Transit Stop Benches	178	10 years	8 years	\$133,000
Transit Signage	100	6 years	4 years	\$12,500
Bike Lockers (Street & Custom)	13	12.5 years	6.5 years	\$50,000

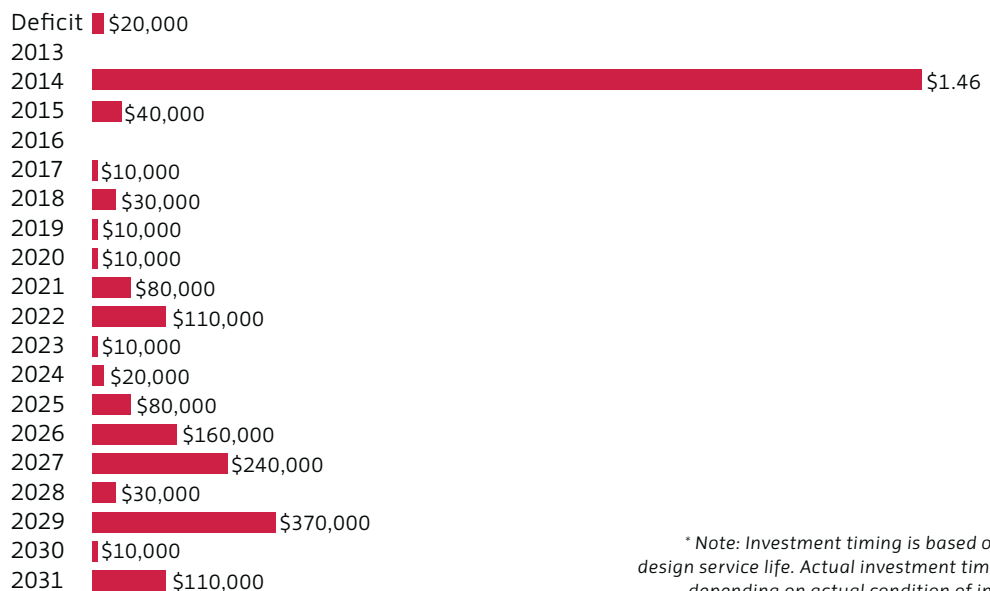
Asset Category	Estimated Value
Percent of City Infrastructure	<1%
Average Remaining Life	71%
Replacement Value	\$8.3 million
Deficit (Backlog)	\$18,000
Deficit as Percentage of Replacement Value	<1%
Average Design Life	21 years
Average Annual Life Cycle Investment*	\$396,000

\*average amount to be invested annually for future replacement

## System Components

## 20-Year Funding Needs

millions



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## Infrastructure System

- ▶ Overall, Infrastructure age is considered fair
- ▶ The average Canadian municipal deficit is 16 per cent. Kelowna is relatively low at 6 per cent.
- ▶ Kelowna is underfunding infrastructure replacement by approximately 42 per cent. This is consistent with other Western Canadian municipalities.
- ▶ Annual required re-investment in infrastructure replacement is forecast to increase with time
- ▶ Kelowna's infrastructure deficit is conservatively estimated at \$153 million and is growing at the rate of approximately \$24 million per year.

## Infrastructure System Score Card

Asset Component	Expected Remaining Life	Age Rating
Transit	71%	Good
Solid Waste	84%	Good
Fleet	43%	Fair
Parks	56%	Fair
Buildings & Facilities	59%	Fair
Stormwater	76%	Good
Water	61%	Fair
Transportation	57%	Fair
Wastewater	70%	Good
<b>Total Infrastructure</b>	<b>64%</b>	<b>Fair</b>

### Rating Scale

Good 100-65%	Fair 64-35%	Poor 34-0%
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## Estimated Value

Asset Category	Estimated Value
Average Remaining Life	64%
Replacement Value	\$2.55 billion
Deficit (Backlog)	\$153 million
Deficit as Percentage of Replacement Value	6%
Average Design Life	44 years
Average Annual Life Cycle Investment*	\$58 million

\*average amount to be invested annually for future replacement

## Infrastructure System Components

Asset Component	Average Life	Life Remaining	Replacement Value	Deficit Value
Transit	21 years	15 years	\$8.3 million	\$18,100
Solid Waste	30 years	25 years	\$39 million	\$1.5 million
Fleet	10 years	4 years	\$35.6 million	\$6.4 million
Parks	25 years	14 years	\$102 million	\$11 million
Buildings & Facilities	30 years	18 years	\$246 million	\$14 million
Stormwater	78 years	60 years	\$303 million	\$416,000
Water	64 years	39 years	\$370 million	\$4.2 million
Transportation	33 years	19 years	\$666 million	\$104 million
Wastewater	70 years	49 years	\$781 million	\$12.7 million
<b>Total Infrastructure</b>	<b>44 years</b>	<b>28 years</b>	<b>\$2.55 billion</b>	<b>\$153 million</b>

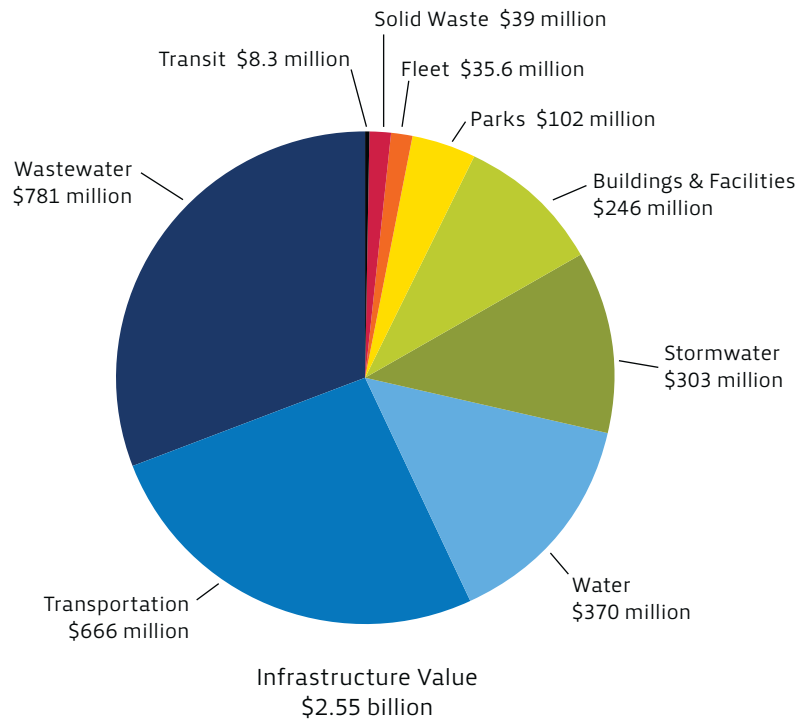
NOTE: The historic install date for many Transportation - Roads was missing and assumptions were used. When compared to actual condition data, it appears the deficit (\$104 M) is over estimated. More detailed condition assessment is required to more accurately quantify the deficit.

### Capital Assets & Investment Management

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Kelowna, BC V1Y 1J4  
TEL 250 469-8739  
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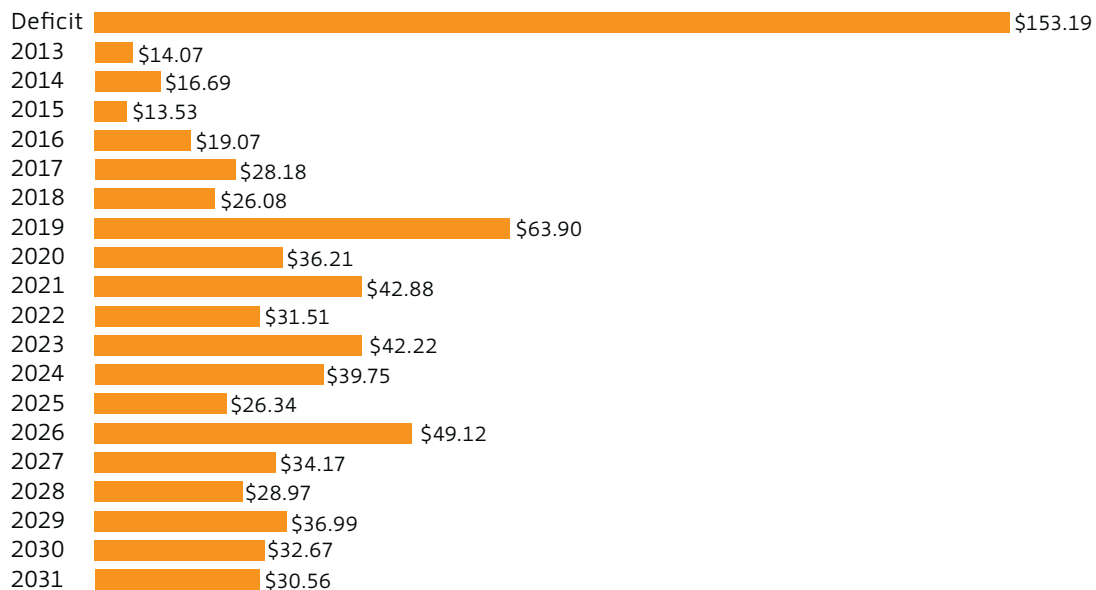


## Replacement Value of Infrastructure System



## 20-Year Funding Needs

millions



\* Note: Investment timing is based on theoretical design service life. Actual investment timing may vary depending on actual condition of infrastructure.