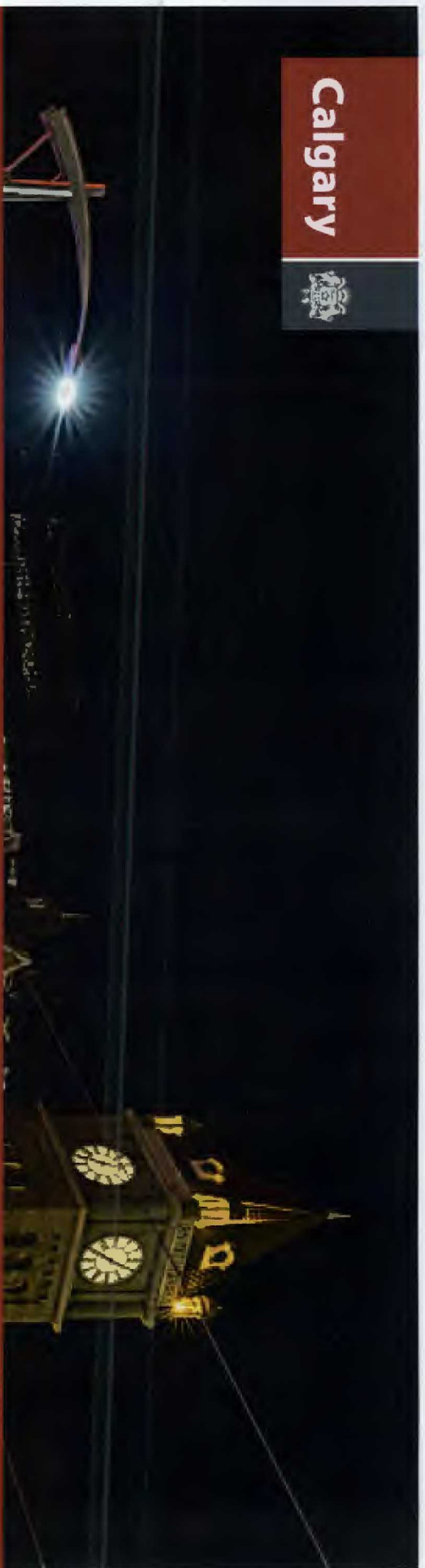


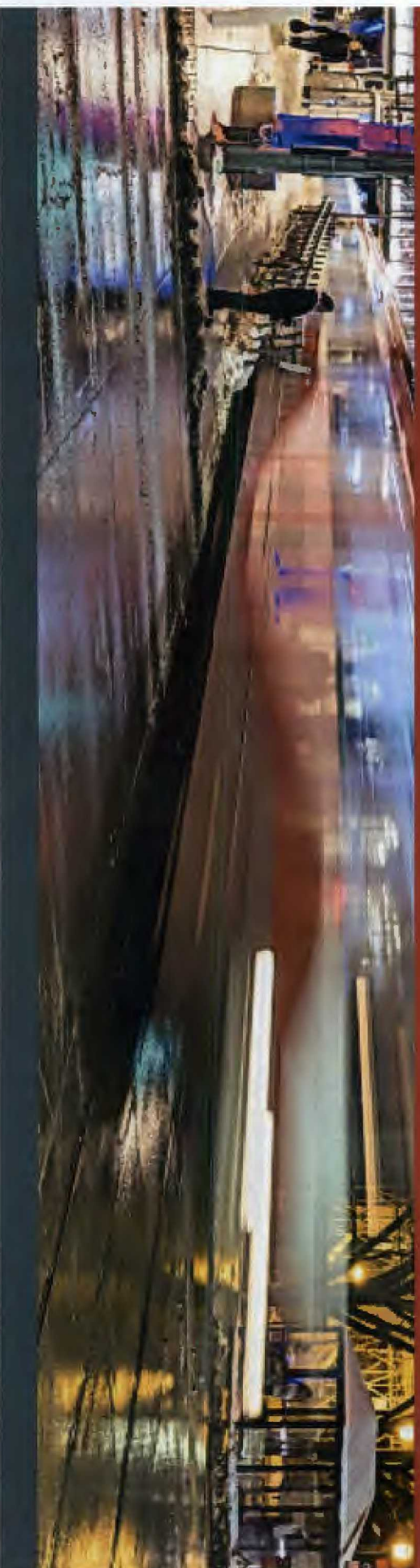
Calgary



Financial Tools and Financial Flows

C2015-0780

CITY OF CALGARY
RECEIVED
IN COUNCIL CHAMBER
SEP 21 2015
ITEM: C2015-0780
City Clerk's Department





During Budget deliberations, Administration committed to better explain to Council the capital funding that came from operating revenues, and the reason for some transfers between reserves.

The purpose of this presentation is to provide Council with a better understanding of:

- Financial Tools/Terminology
- Flow of funds from operating to capital
- Flow of funds between reserves



General Investment Theory (Financial Tools)

1. Time value of money
 - a. Inflation & interest
 - b. Present value
2. Investment decisions
 - a. Decision criteria
 - b. NPV
 - c. Discount rate
3. Financing Decisions
 - a. Private sector
 - b. City Financing

City Funding Flows

4. Budget Summary
5. Funding Flows



Why is a dollar today not the same as a dollar tomorrow?

The two I's

- Inflation
 - price/cost increases
- Interest
 - Price paid to lender to give up the use of their funds for a period of time
 - Comprises compensation for:
 - Not having use of the funds
 - Inflation
 - Risk



The Present Value formula

- What a dollar can buy today will (almost) always be worth more than what it can buy in the future
- Higher inflation means faster erosion of purchasing power
 - Higher FV to equate to today's value

$$PV = \frac{FV}{(1 + i)^n}$$



What is the PV of a limited cash flow?

e.g. Total Green Line funding (\$154M/yr for 30 years) has PV = \$3.0B (**not** \$4.6B)

$$PV_{t(0)annuity} = \frac{PMT_{t+1}}{i} \left[1 - \frac{1}{(1+i)^n} \right]$$

$$PV_{greenlinefunding} = \frac{\$154M}{0.03} \left[1 - \frac{1}{(1+0.03)^{30}} \right] = \$3.0B$$



How do we decide whether to make an investment?

1. Payback period
2. Discounted payback period
3. Accounting rate of return
4. Internal rate of return
- 5. Net Present Value**



- Value = benefit - investment, or, taking time value of money into account:
- $NPV = PV(\text{benefit}) - PV(\text{investment/cost})$
- Rule: accept any project which has an NPV greater than or equal to zero
- *Private Sector benefits = future cash flows*
- ***Public Sector benefit = social benefits + environmental benefits + external economic benefits (+future cash flows)***



- Really a measure of risk
- Think of it as the “opportunity cost of capital” -- what the money could be earning if not invested in this project



But what is the opportunity cost of capital?

Private Sector:

- This is actually a complex question for many firms
- Should use the WACC (weighted average cost of capital)
- Should vary by project
- Many firms use a constant “hurdle rate”

Public Sector:

- Without an equity component, WACC = cost of debt



Private Sector:

- Two forms of financing:
 - Debt
 - Equity
- Value of the firm = value of the debt + value of the equity

• Public Sector:

- Debt
- “Equity”
 - Reserves
 - PAYGo



Capital revenues(funding) and financing

REVENUES/FUNDING

The ultimate source of payment / where the money comes from

Property Tax

Sales of Goods & Services (e.g. User fees)

Government Grants

Acreage assessment

Donation

Third part contribution

FINANCING

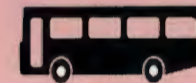
The means by which the initial payment is made

Debt

Reserves

Pay-As-You-Go / Cash

To acquire, upgrade, and maintain capital assets





Overview of types of capital financing

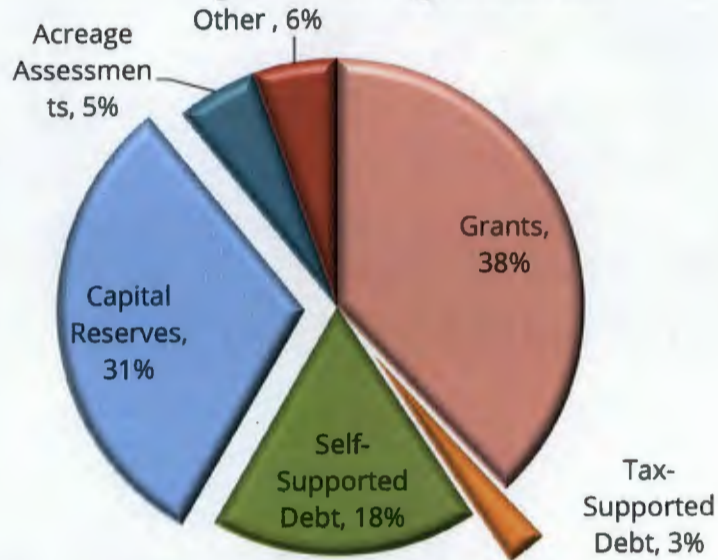
	What it is	Appropriate uses
Debt	<ul style="list-style-type: none"> • Any borrowing of funds • Build now and pay later 	<ul style="list-style-type: none"> • Build before sufficient revenues received • Smooth payments for large projects
Reserves	<ul style="list-style-type: none"> • The funds received until infrastructure needed • Pay now and build later 	<ul style="list-style-type: none"> • Authorized by City Council set aside funding • Specific purpose or more general Corporate purposes.
Pay-As-You-Go (Cash)	<ul style="list-style-type: none"> • Current dollars for capital in year they are generated • Build now and pay now 	<ul style="list-style-type: none"> • Lifecycle maintenance projects • New capital projects with short useful life in tax-supported business units



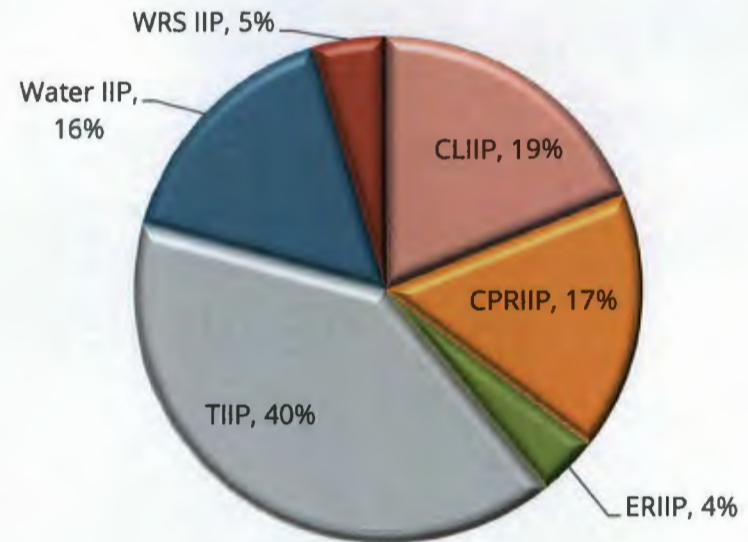
Budget Summary - Capital

- **Buy/build** assets (infrastructure, systems, etc.) **to be used** to provide services
- One-time projects with identified funding

By funding source



By IIPs

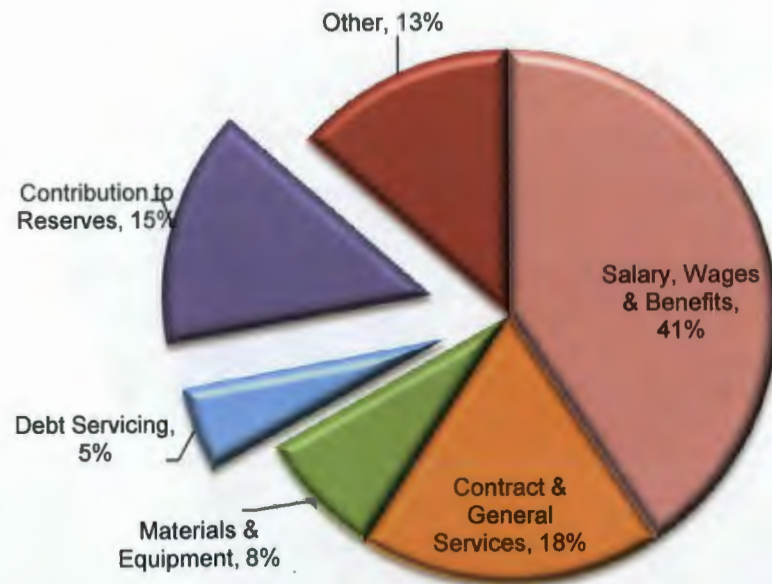




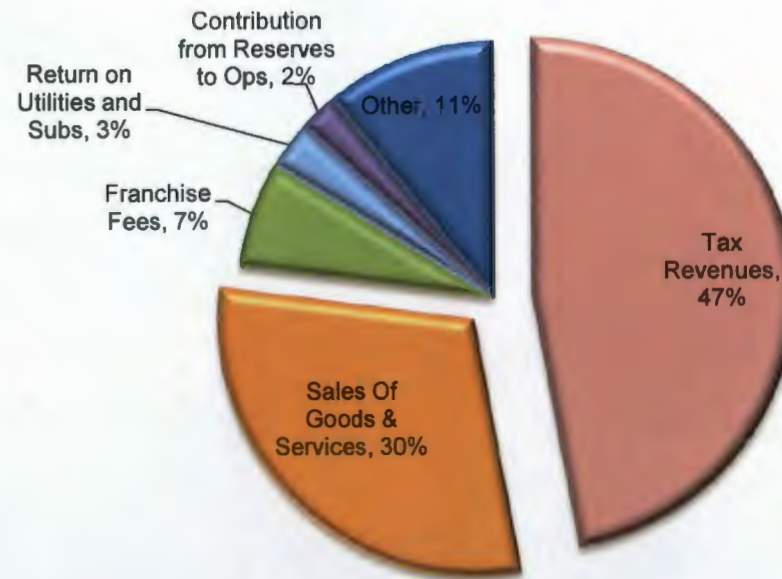
Budget Summary - Operating

- **Use** City assets (infrastructure, systems, etc.) to provide services to citizens
- On-going costs & revenues

2015 Total City Operating Budget Expenditures



2015 Total City Operating Budget Revenues





Budget Context



- * Capital funding contribution
- Tax-supported funds \$304 M
 - Self-supported funds \$322 M

- * Capital Budget
- Tax-supported \$1.5 B
 - Self-supported \$0.5 B

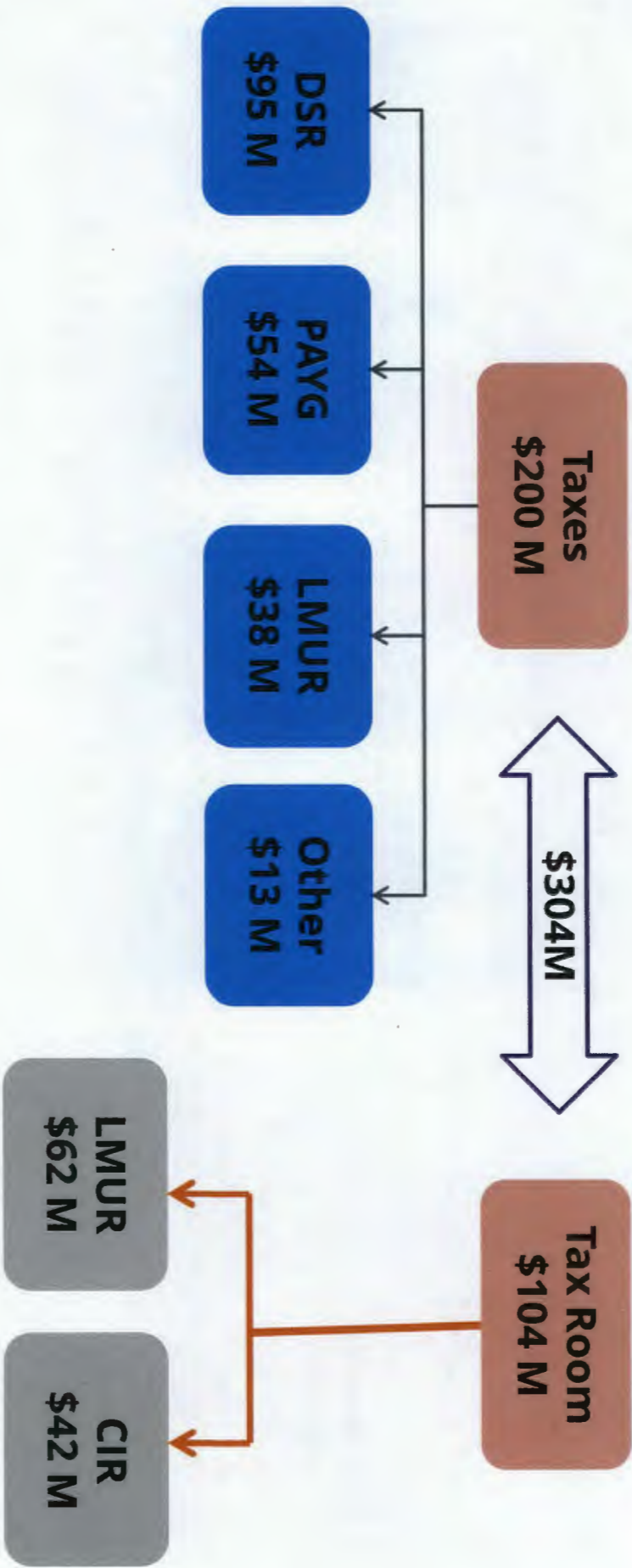
Capital Plan & Budget by IIPs

CLIIP	CPRIIP	ERIIP	TIIP	WIIP	WRIIP
Corporate Level Infrastructure Investment Plan	Culture Parks Recreation Infrastructure Investment Plan	Emergency Response Infrastructure Investment Plan	Transportation Infrastructure Investment Plan	Water Infrastructure Investment Plan	Waste & Recycling Infrastructure Investment Plan
CPB, CSC, HR, IT, IIS, OLSH, Law, CWPI, LAPI, CFOD, ESM, Fleet, CAO, CHC, CC	Parks, Recreation, Culture, CNS, Civic Partners	Fire, Animal Bylaw, Public Safety Communications	Roads, Transit, Transportation Infrastructure, Transportation Planning, CPA	Water Resources & Water Services	Waste & Recycling Services
2014 Capital Budget \$2.3B					
\$547M	\$432M	\$152M *	\$631M	\$494M	\$70M
2015-2019+ Capital Plan \$7.6B					
\$1,027M	\$879M	\$296M*	\$2,685M	\$2,292M	\$382M

*Calgary Police Services is included in capital plan but is reviewed separately from the IIPs process.

Tax-supported Funding Flow

2015 Contribution from Operating to Capital

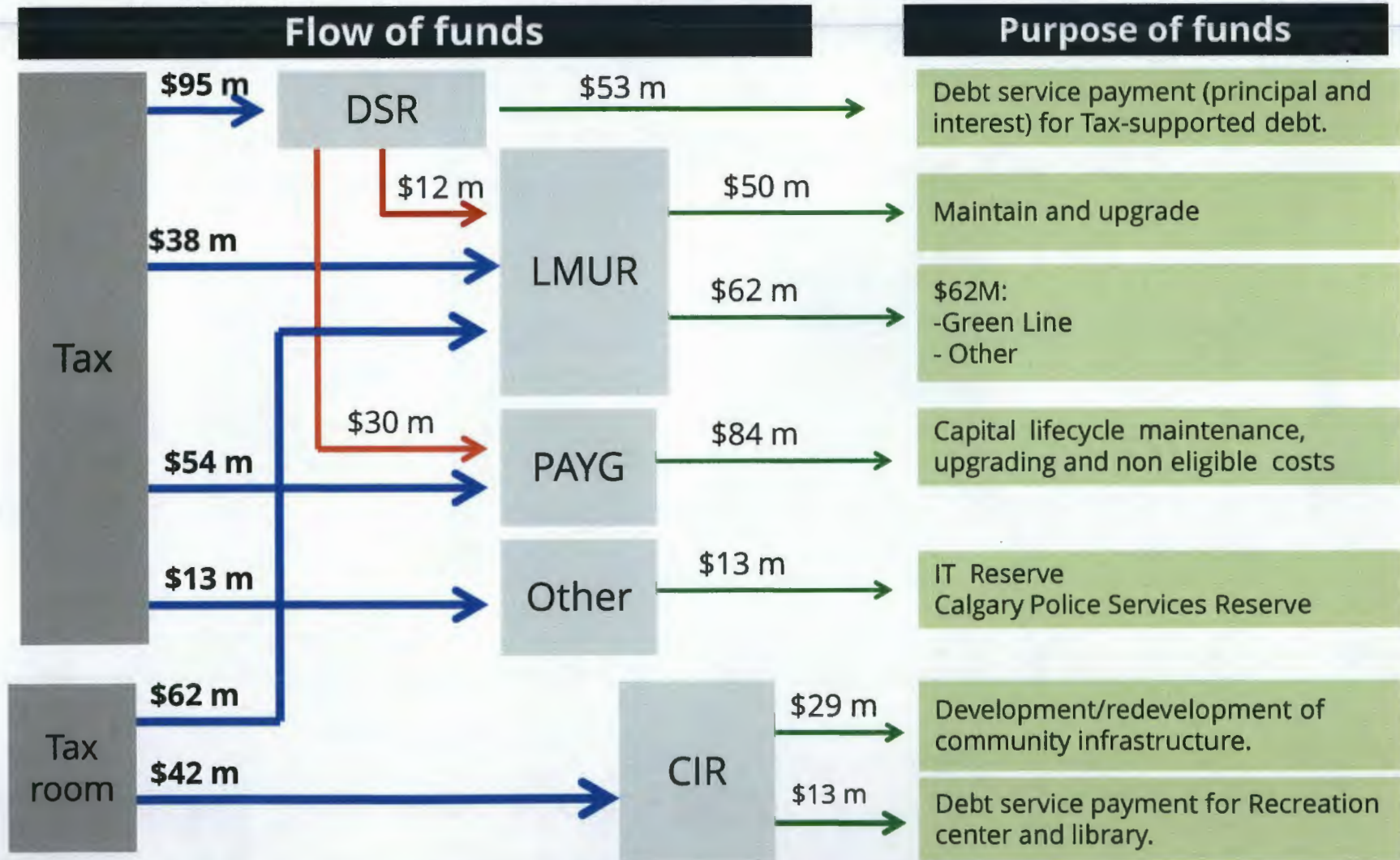




Summary Flows of funds

Blue line
Red line
Green line

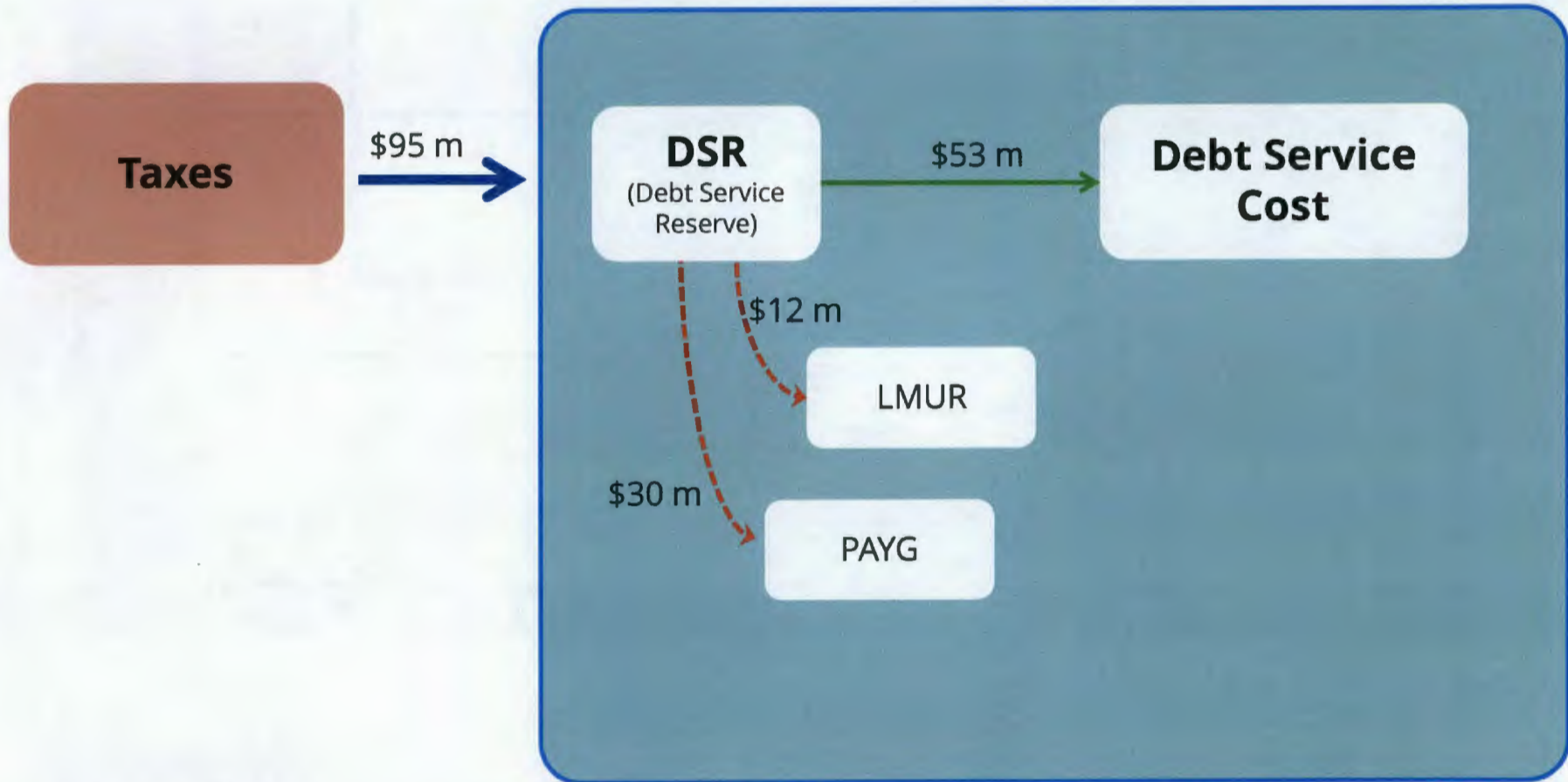
➔ : From source to reserve
➔ : From reserve, and to other reserve
➔ : To purpose(s)





Tax-supported Funding Flow - DSR

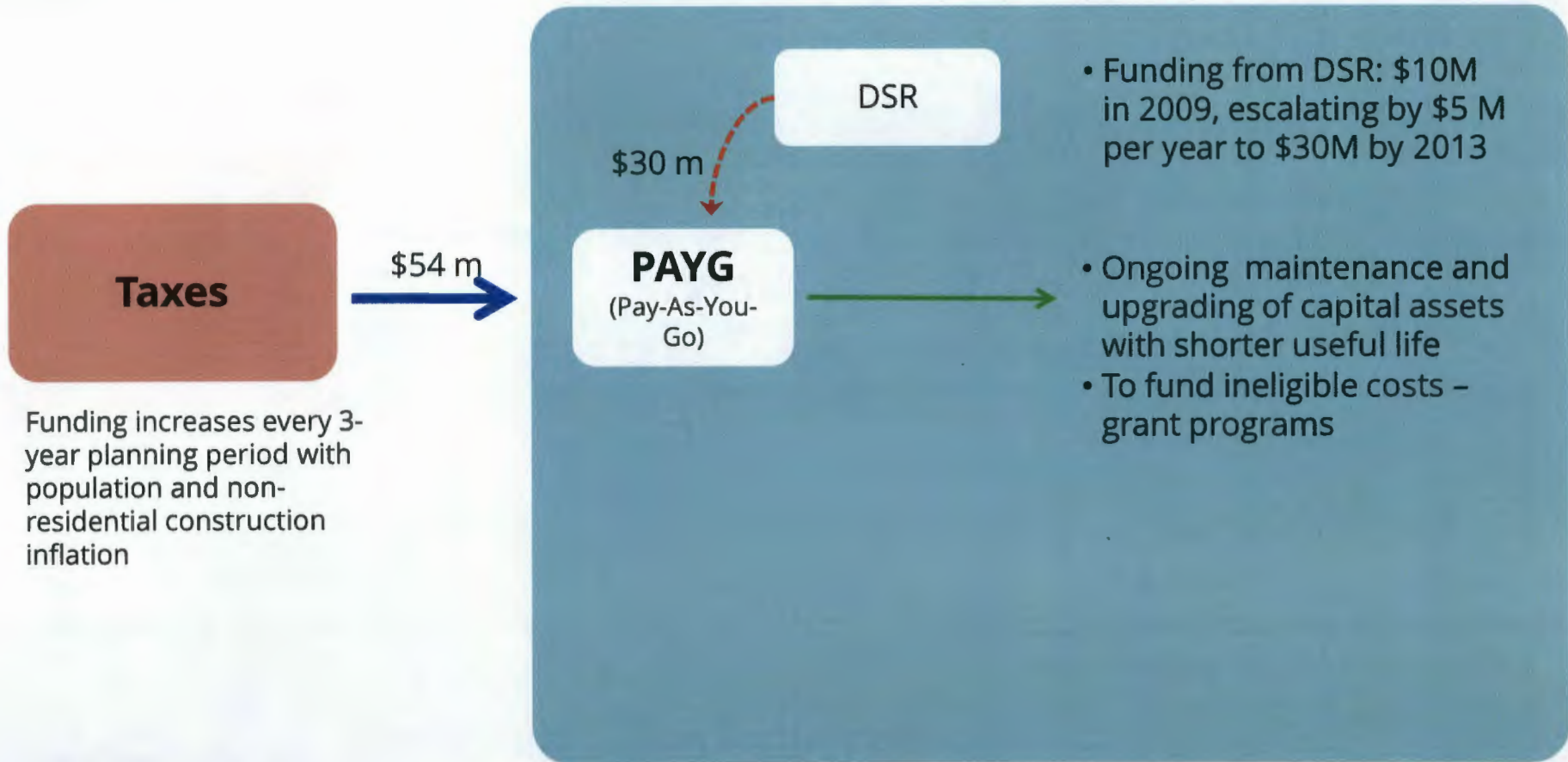
- Flow from revenue source to reserve
- - - → Flow from reserve to reserve (internal flow)
- Outflow





Tax-supported Funding Flow - PAYG

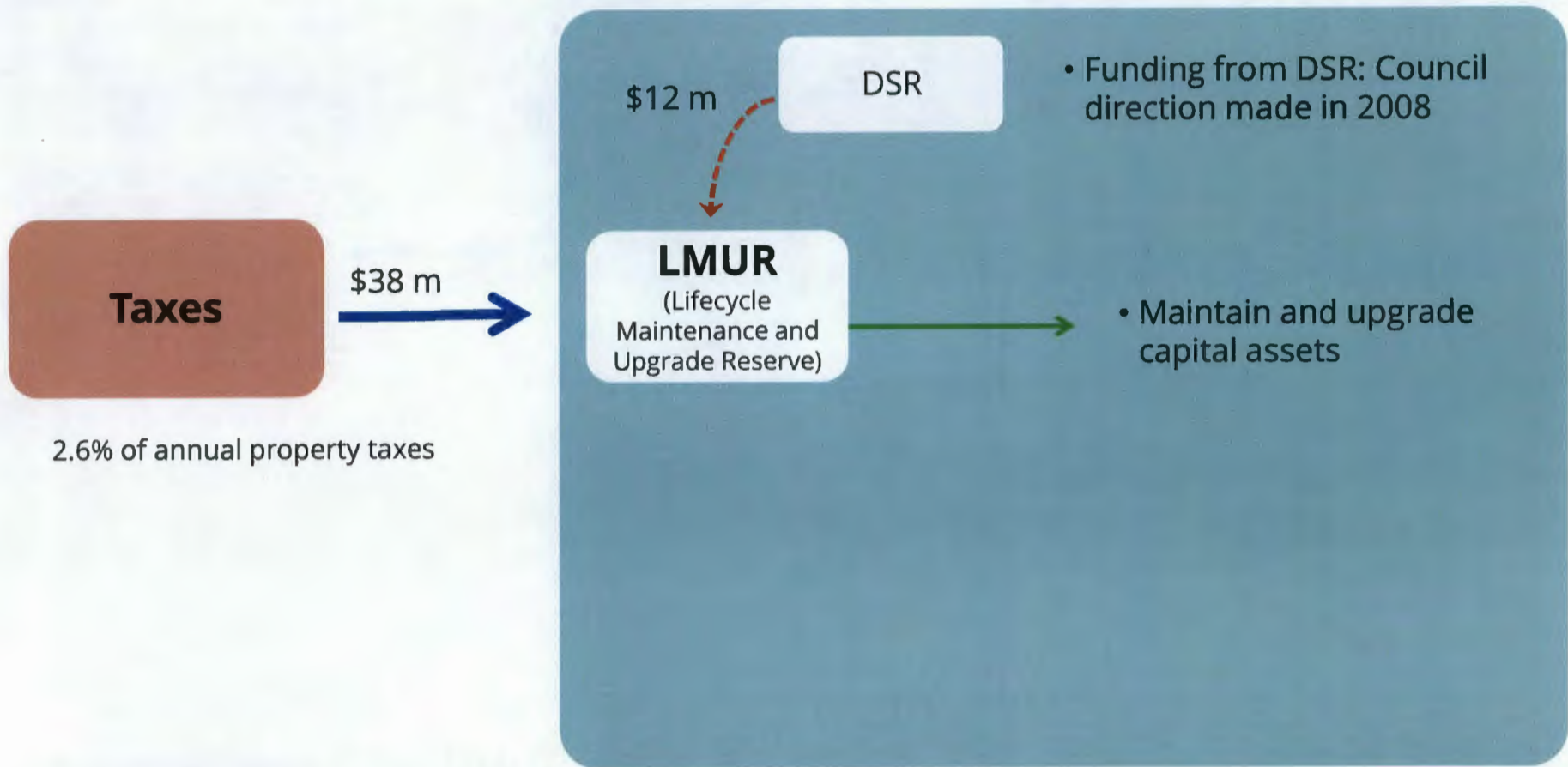
- Flow from revenue source to reserve
- Flow from reserve to reserve (internal flow)
- Outflow





Tax-supported Funding Flow - LMUR

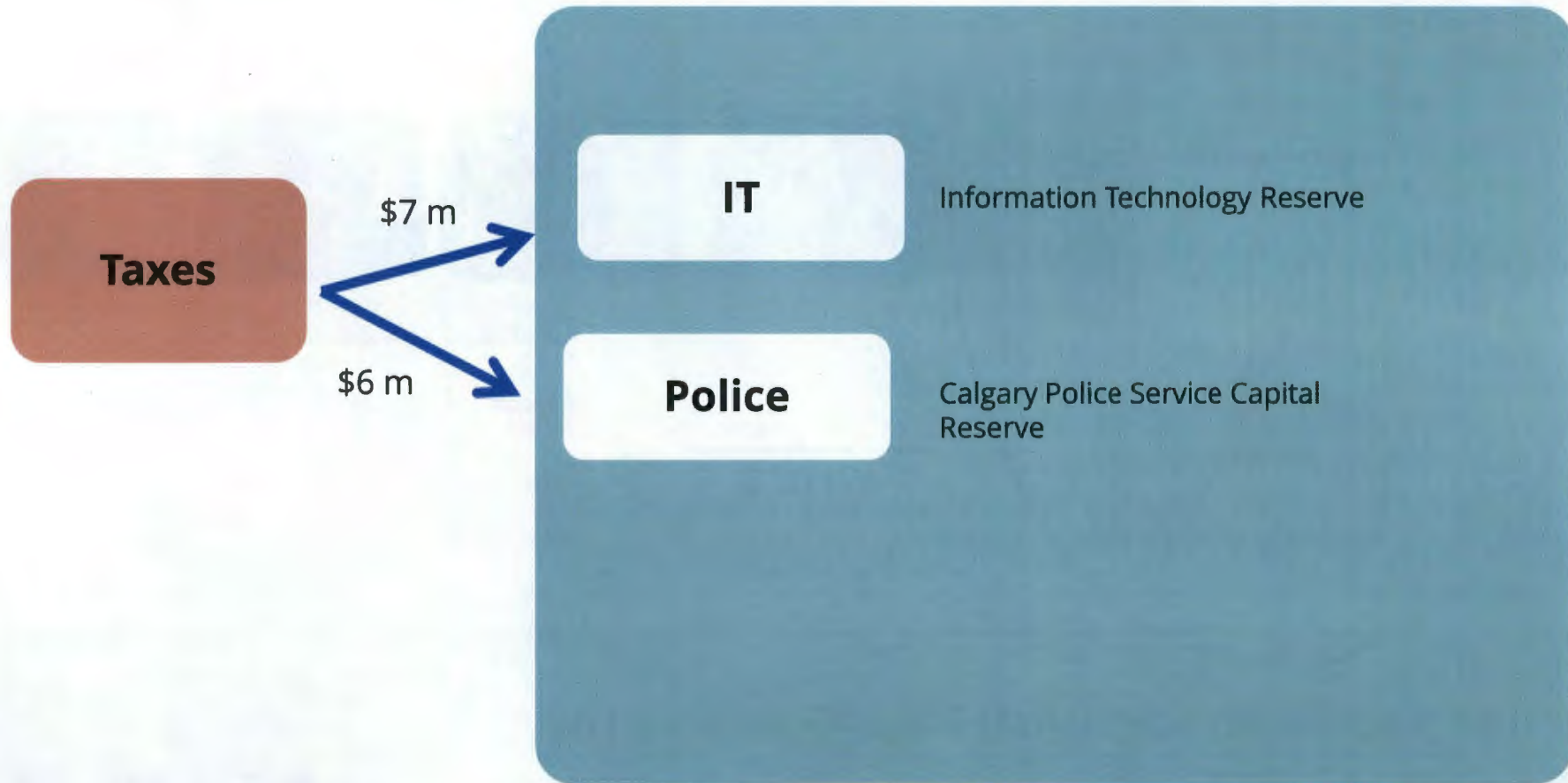
- Flow from revenue source to reserve
- - - → Flow from reserve to reserve (internal flow)
- Outflow





Tax-supported Funding Flow - Other

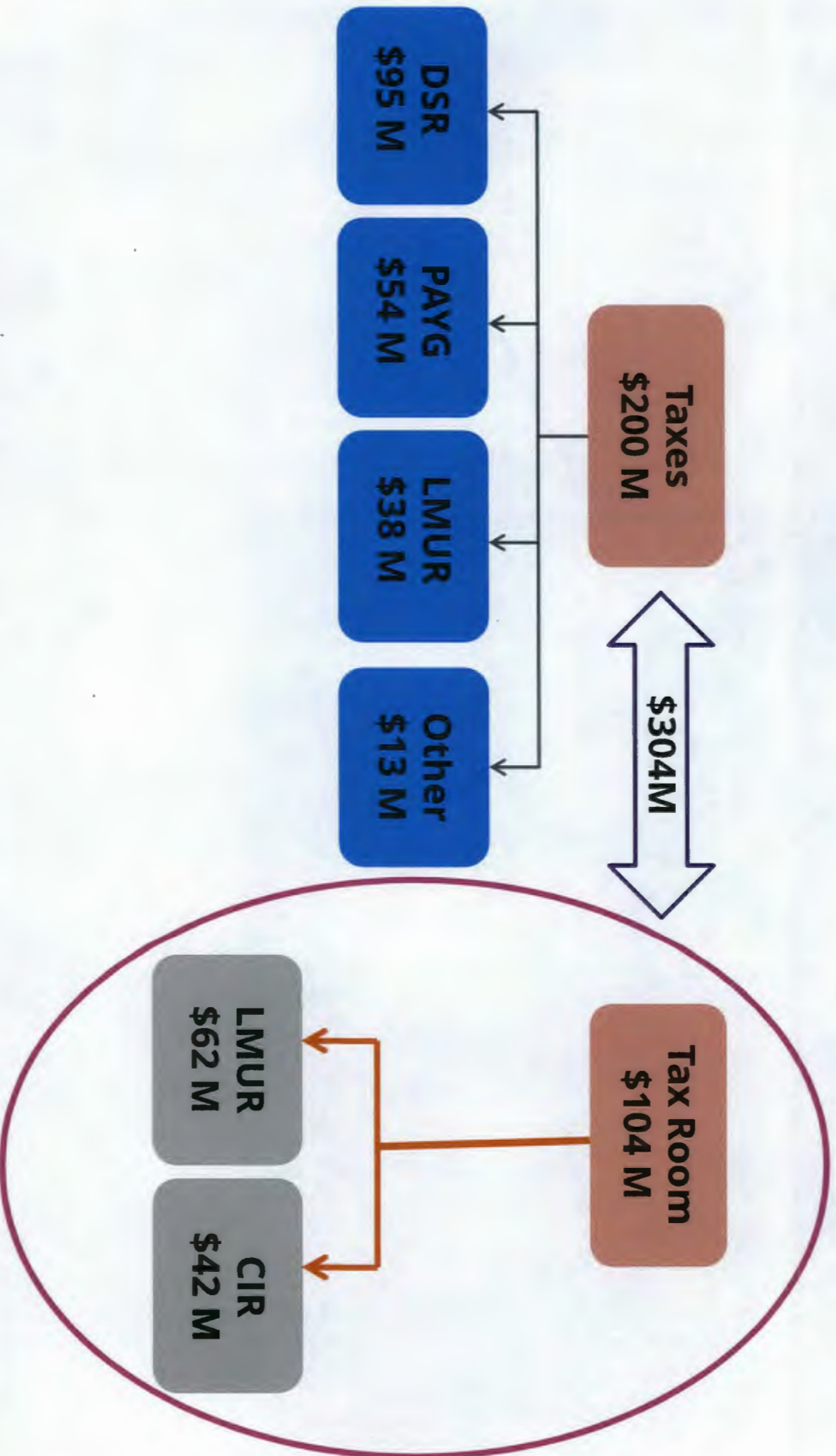
→ Flow from revenue source to reserve





Tax-supported Funding Flow

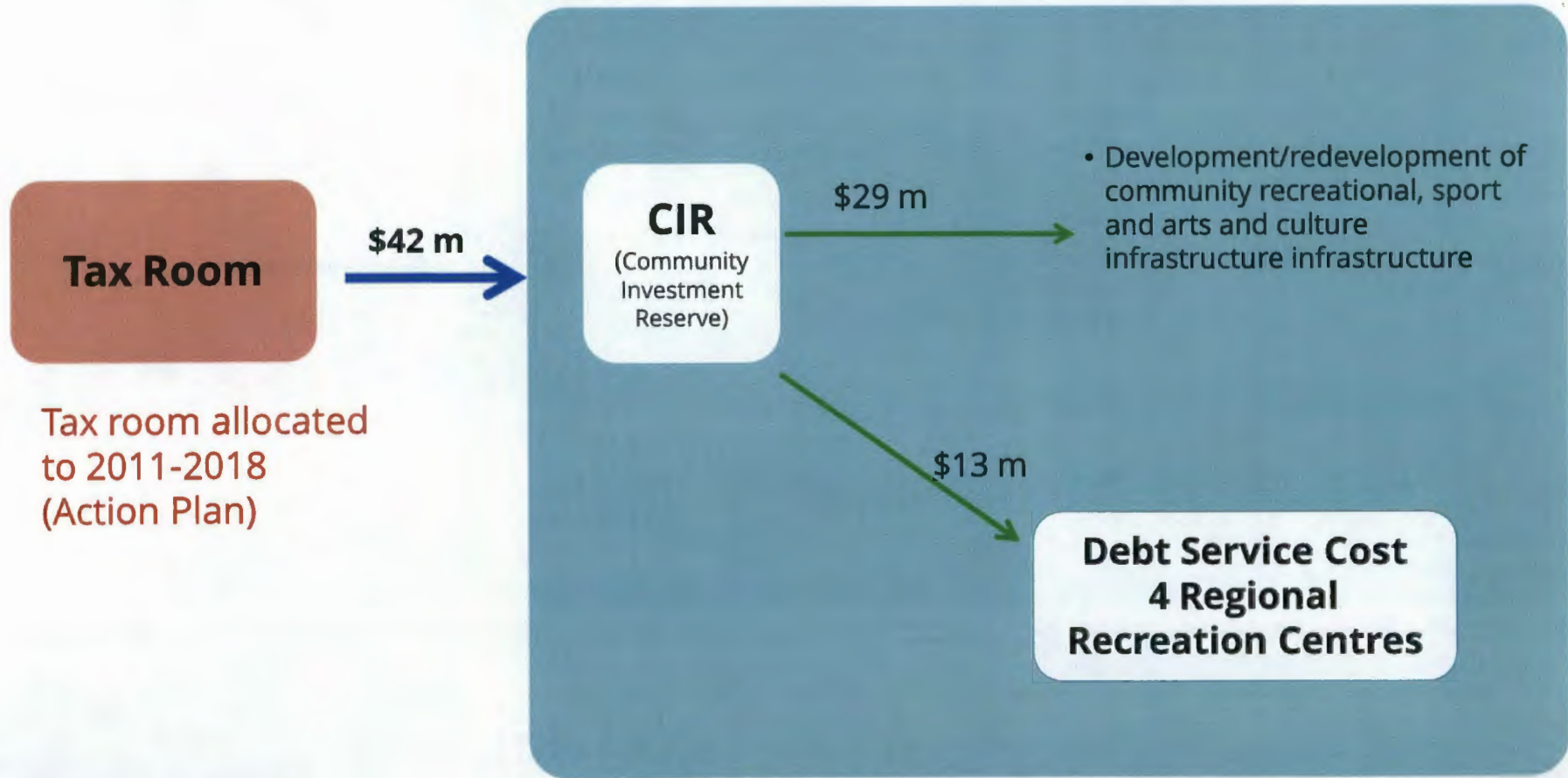
2015 Contribution from Operating to Capital





Tax-supported Funding Flow - CIR

→ Flow from revenue source to reserve
→ Outflow

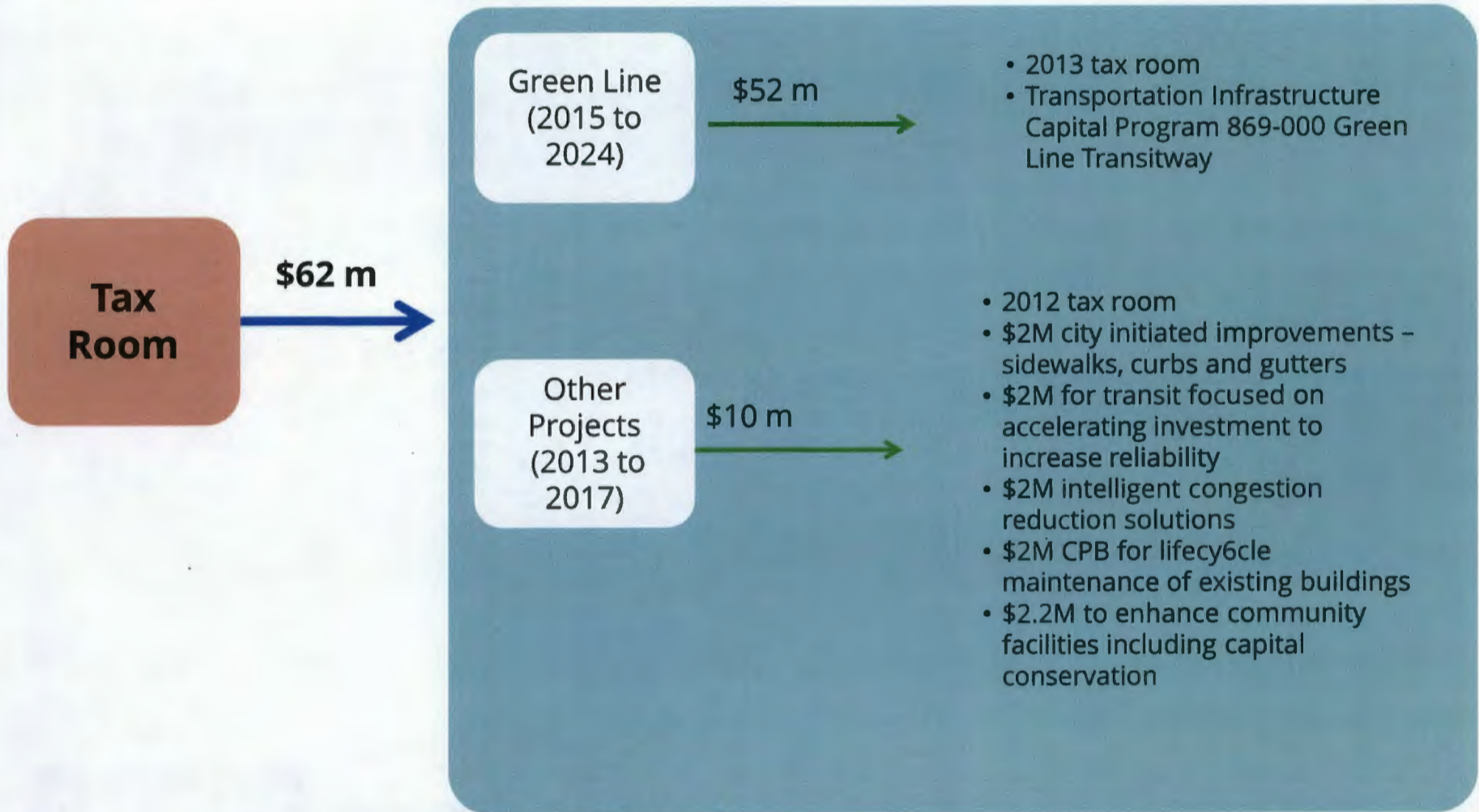


Tax room allocated to 2011-2018 (Action Plan)



Tax-supported – Tax Room Funding Flow

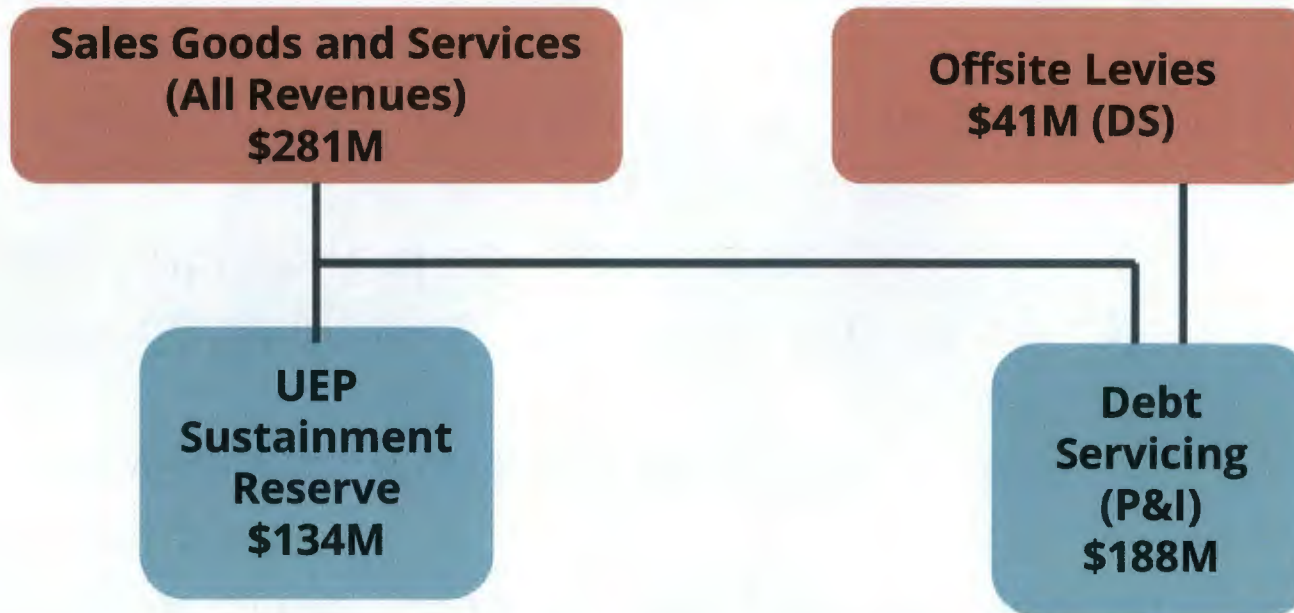
➡ Flow from revenue source to reserve
➡ Outflow





Self Supported - UEP Funding Flow

2015 Contribution from Operating to Capital





- Need to consider time value of money when considering investment decisions
 - Present value provides tool to do this
- Public sector decision is different than private sector
 - Similar, but different considerations
- Significant level of operating funding for capital
- Reserve flows reflect decisions over time as circumstances have changed



Recommendation

That Council receive this report for information.