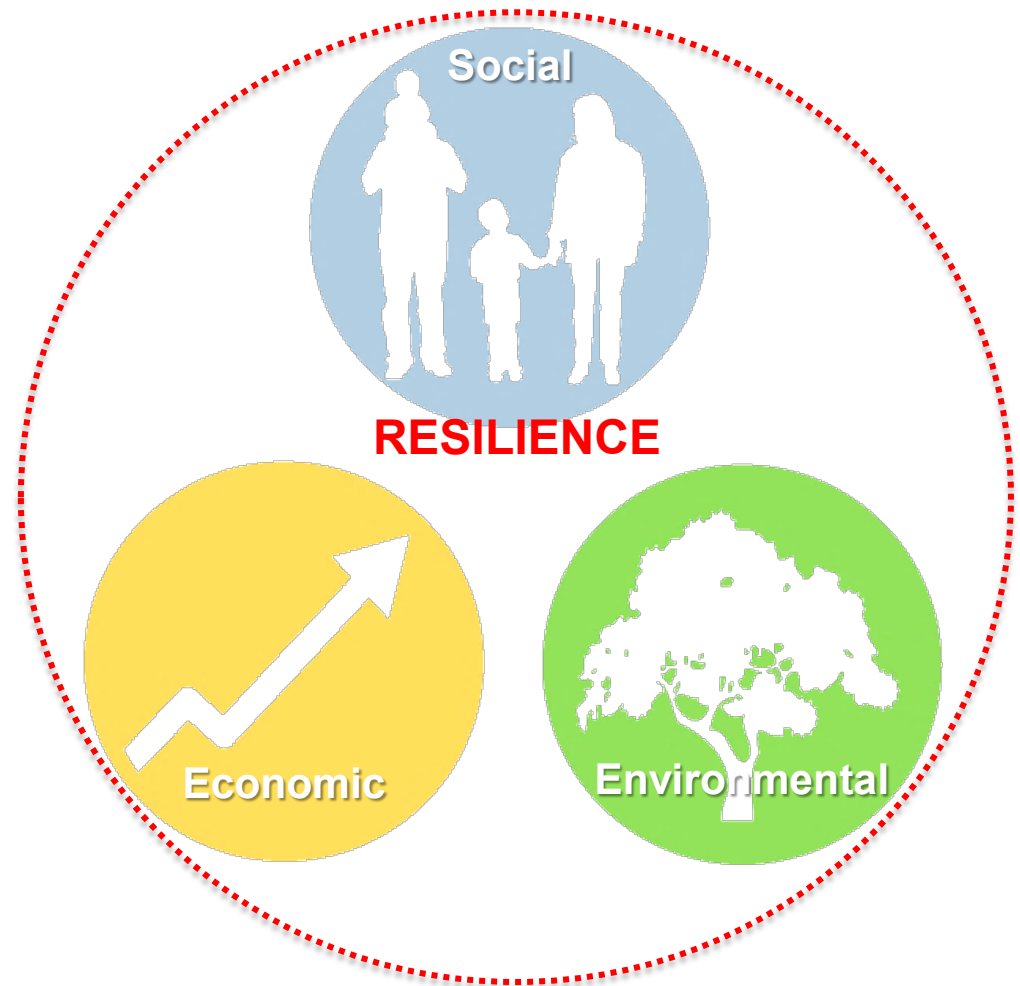


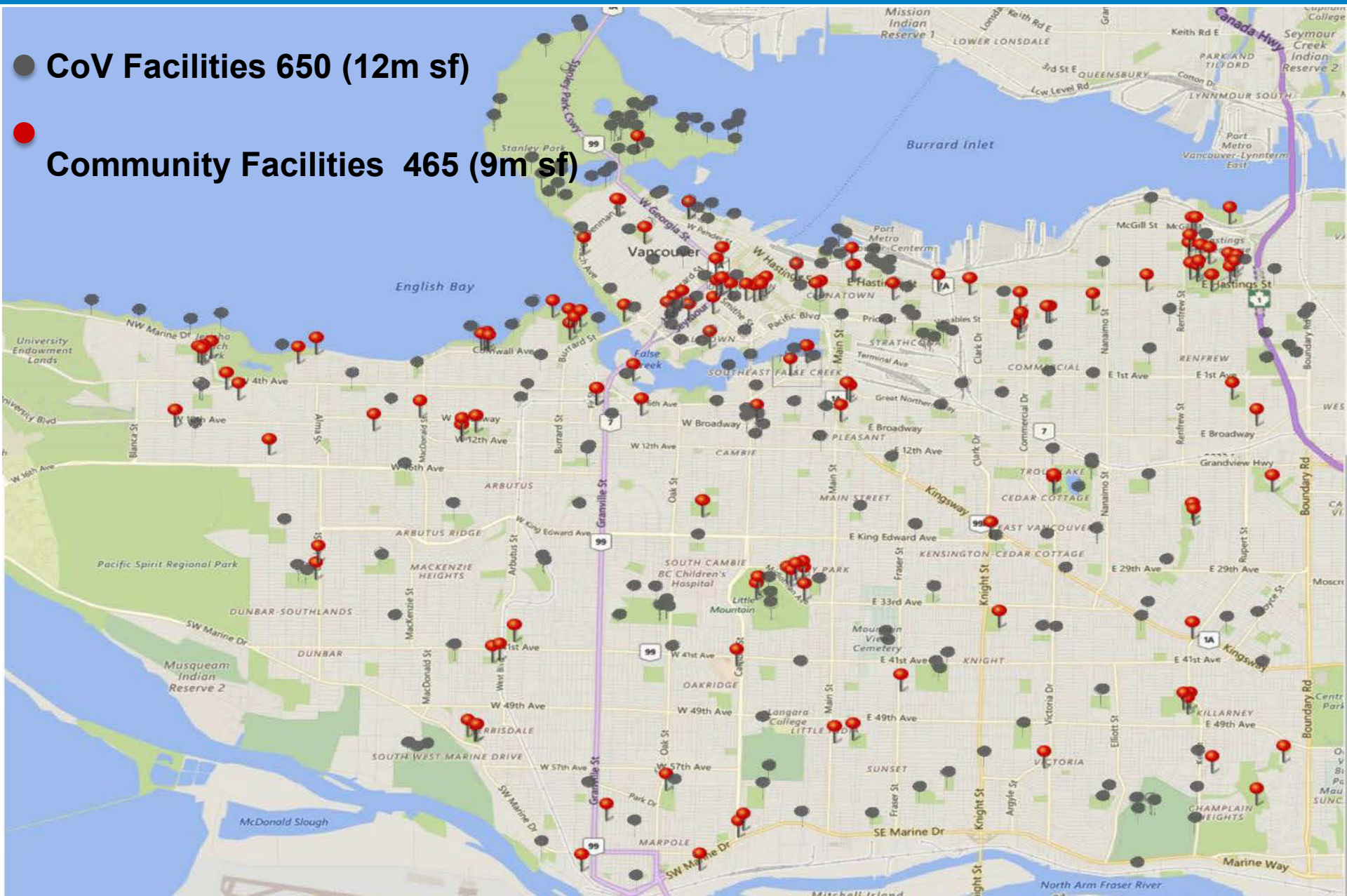
Facilities Planning & Development

CoV/ VPB responsibility as a Government:

- Duty to public
- Lead by example
- Hold ourselves to higher standards
- Test the codes/regulations before implementation
- Long-term building owners = full building life-cycle
- **Economic + Environmental + Social resilience**

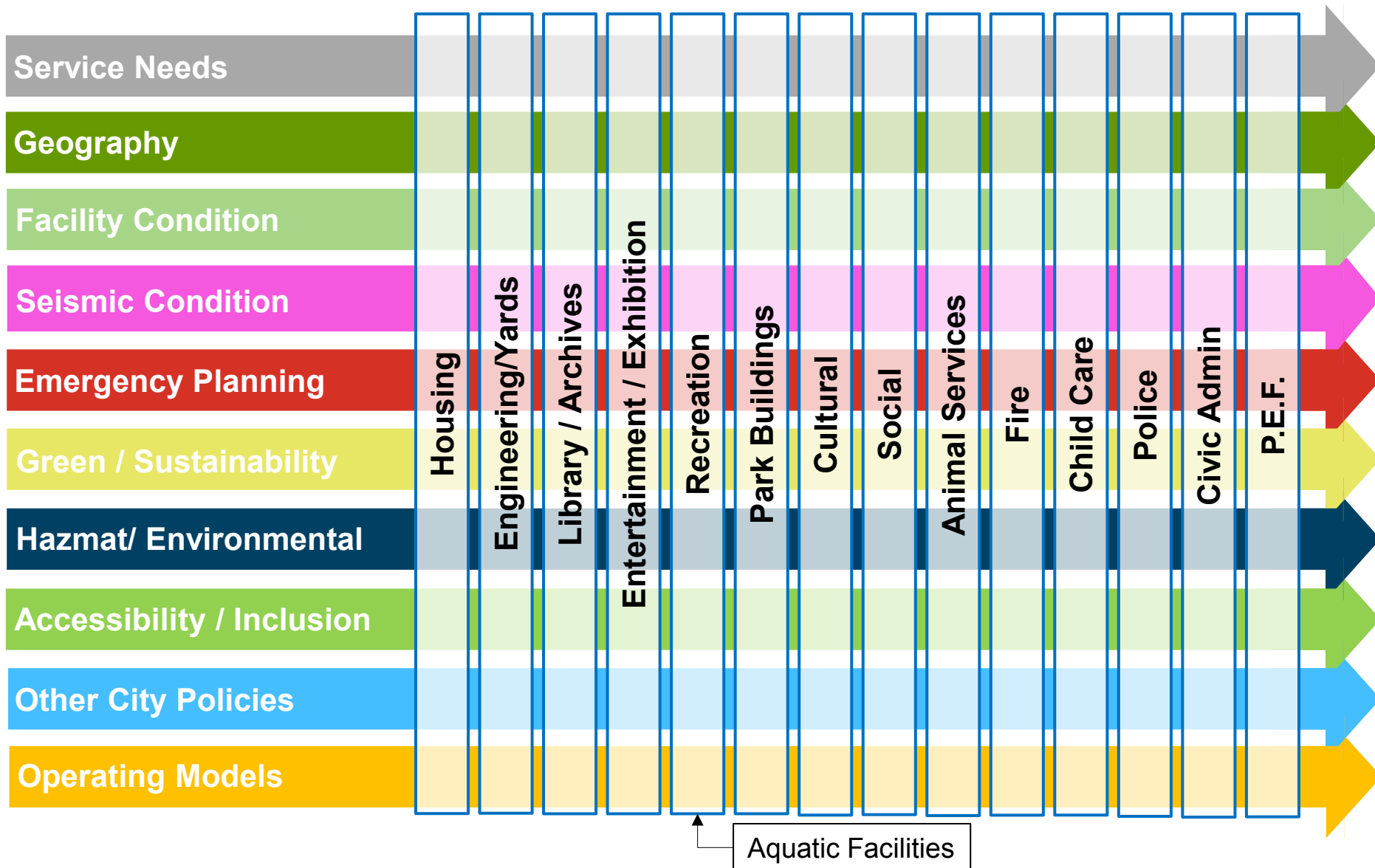


City of Vancouver Facilities Portfolio – Asset Planner



CoV Facilities Planning Framework

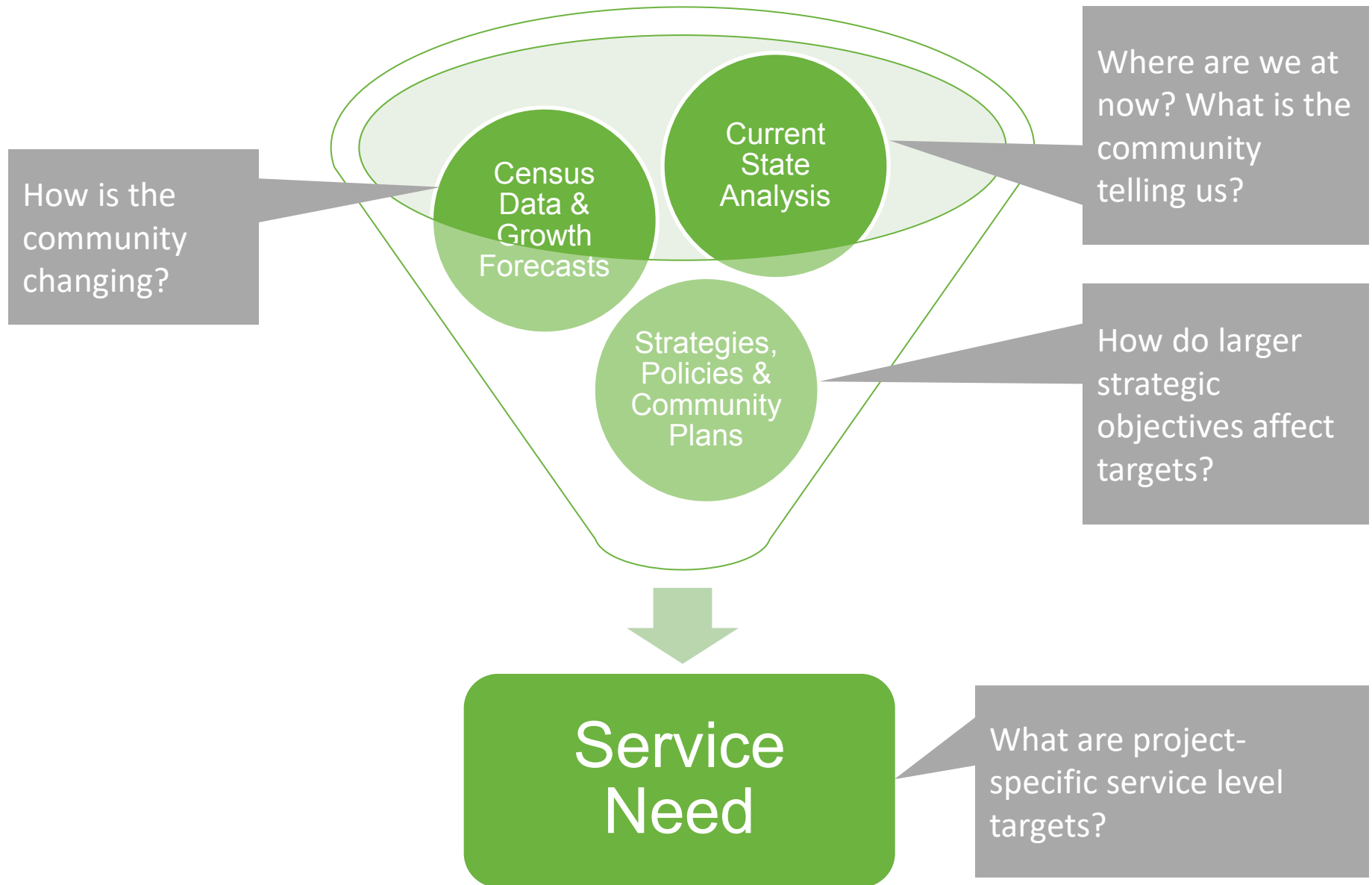
SERVICE GROUPS



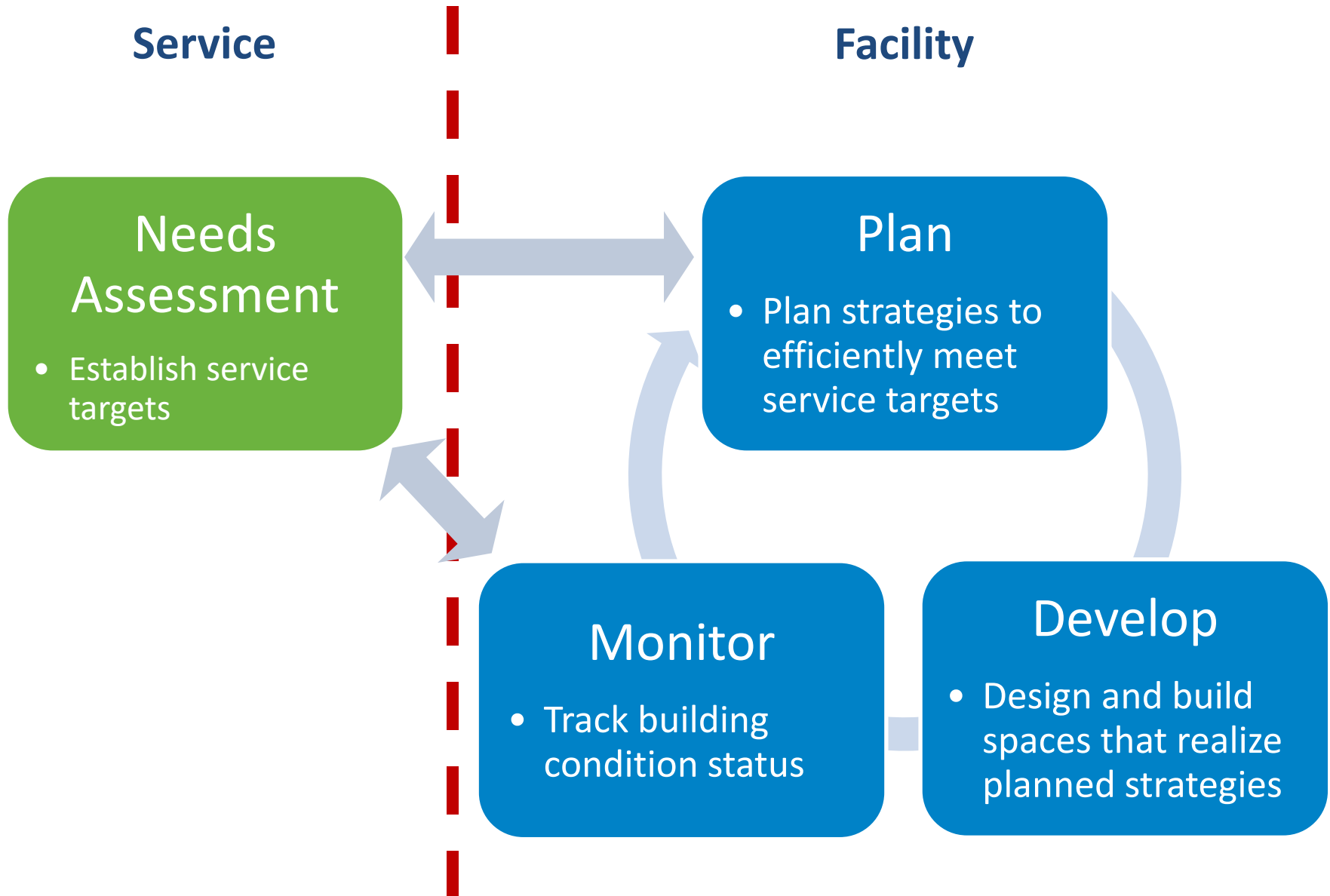
Definition – Needs

- A **Need** can be defined as the gap between a current and desired performance.
- A **Service Need** describes the gap between current and desired service levels.
- A **Needs Assessment** is a systematic process to define, measure, and prioritize needs in order to make decisions.

Needs Assessment (Led by Service Group)



Facility Planning & Development: Project Planning

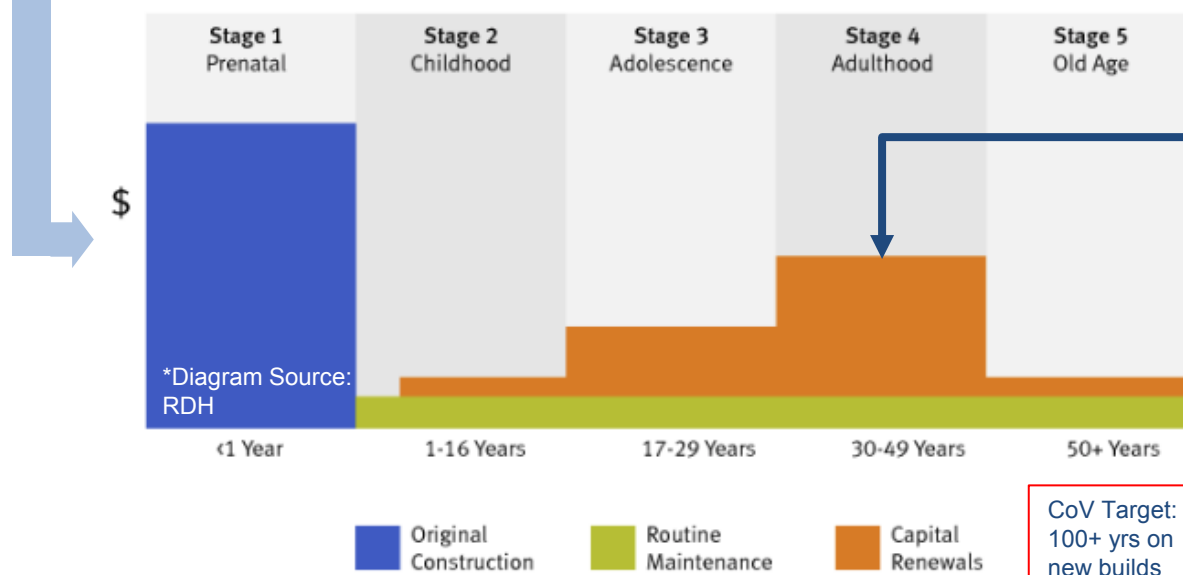
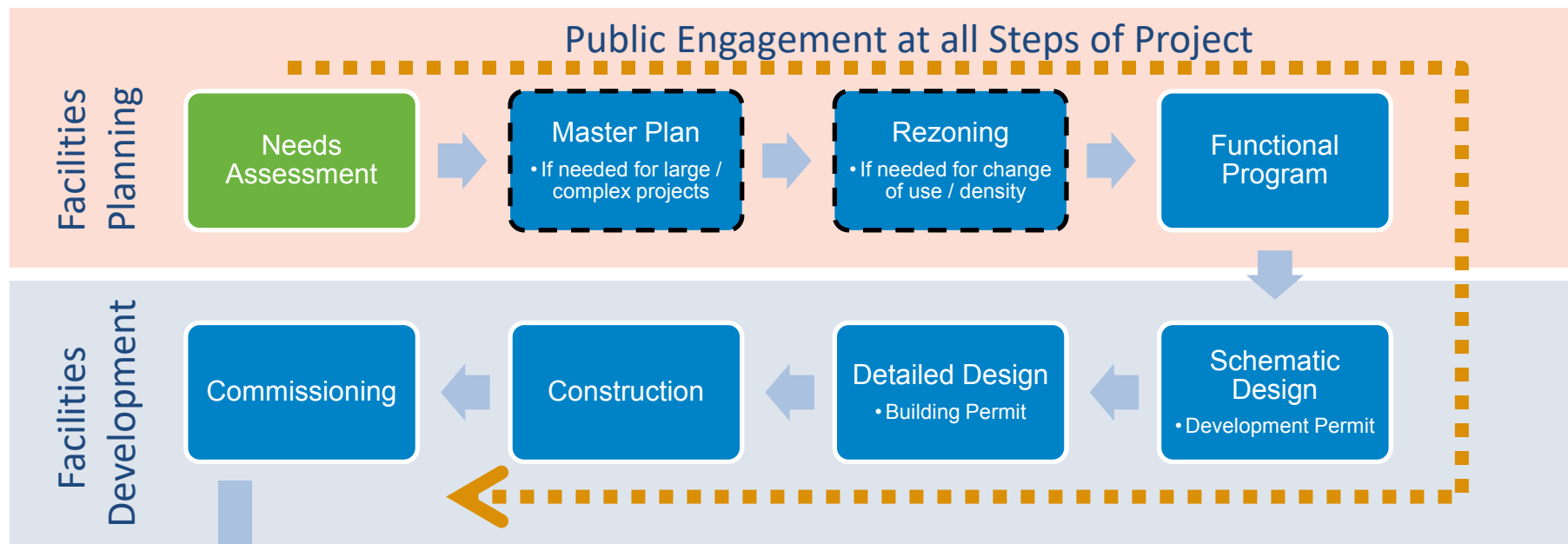


Definitions – Facilities Development

Term	Definition	Change to Service Level	Location of Improvement
Renewal	Demolish and replace whole facility (or take “down to studs”)	None* or Increase	Existing or New Site
Renovation	Alter existing facility to accommodate a change of service need	None*	Existing Site
Addition	Add a new space to an existing facility	Increase	Existing Site
New	Add a new facility	Increase	Existing or New Site

*Some portion of renovations or renewal may be considered as growth where service levels are increased within existing floor areas.

Life of a Facility

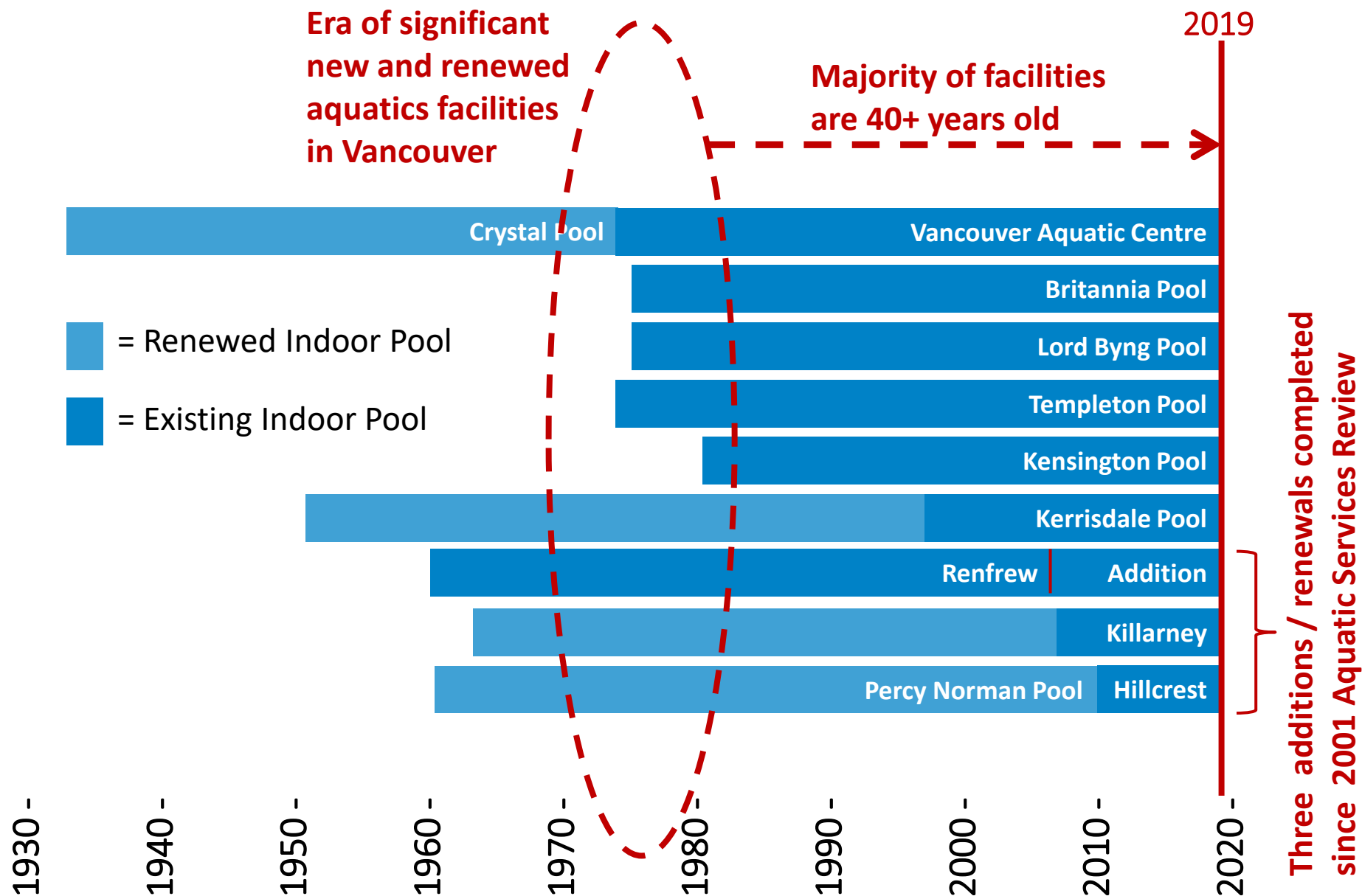


CoV Target:
100+ yrs on
new builds

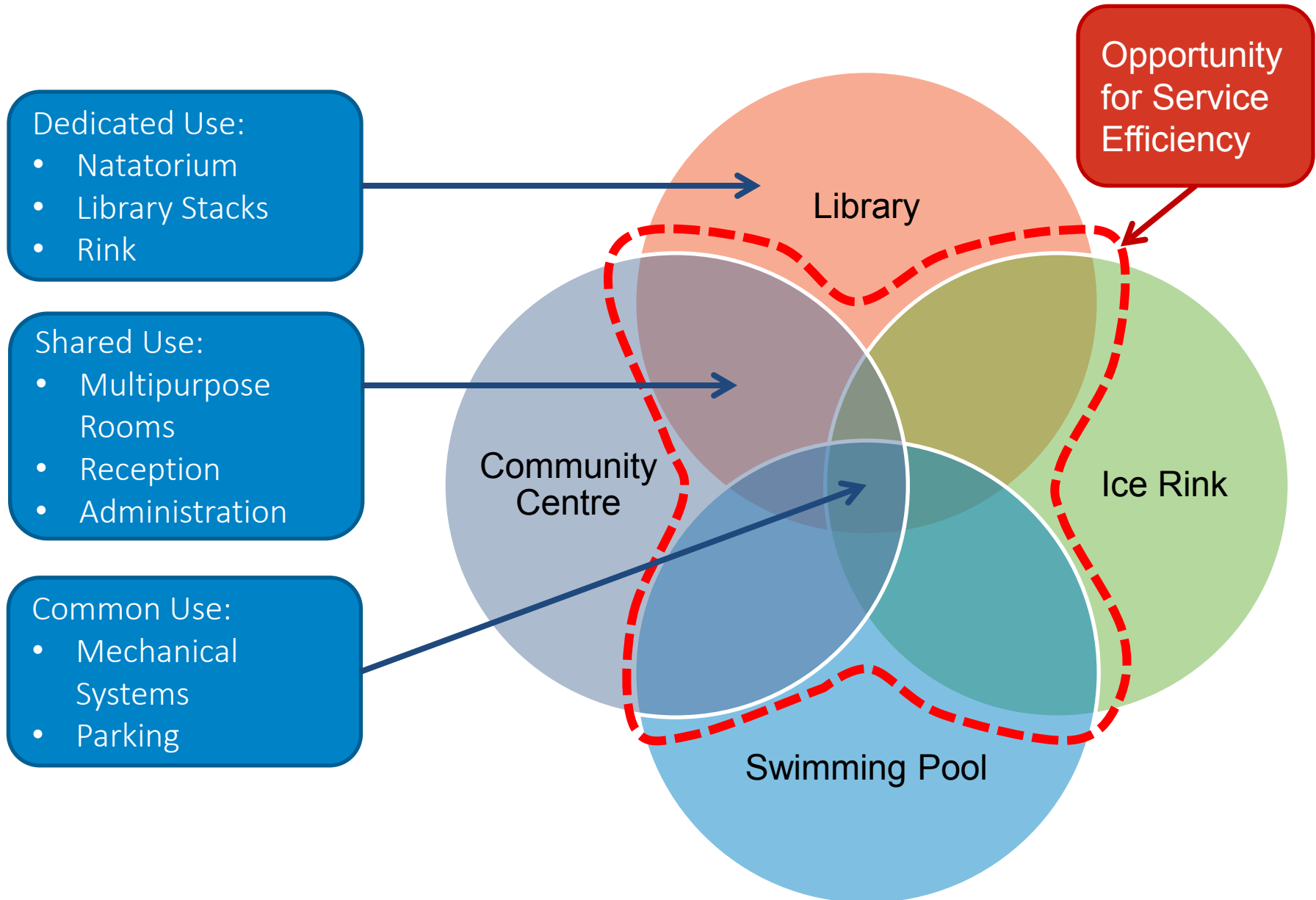
Decision Point:
Renew or
Reinvest?

- Meeting Service Needs?
- Seismic?
- Accessible?
- Sustainable?

Aquatics Portfolio – Indoor Pools



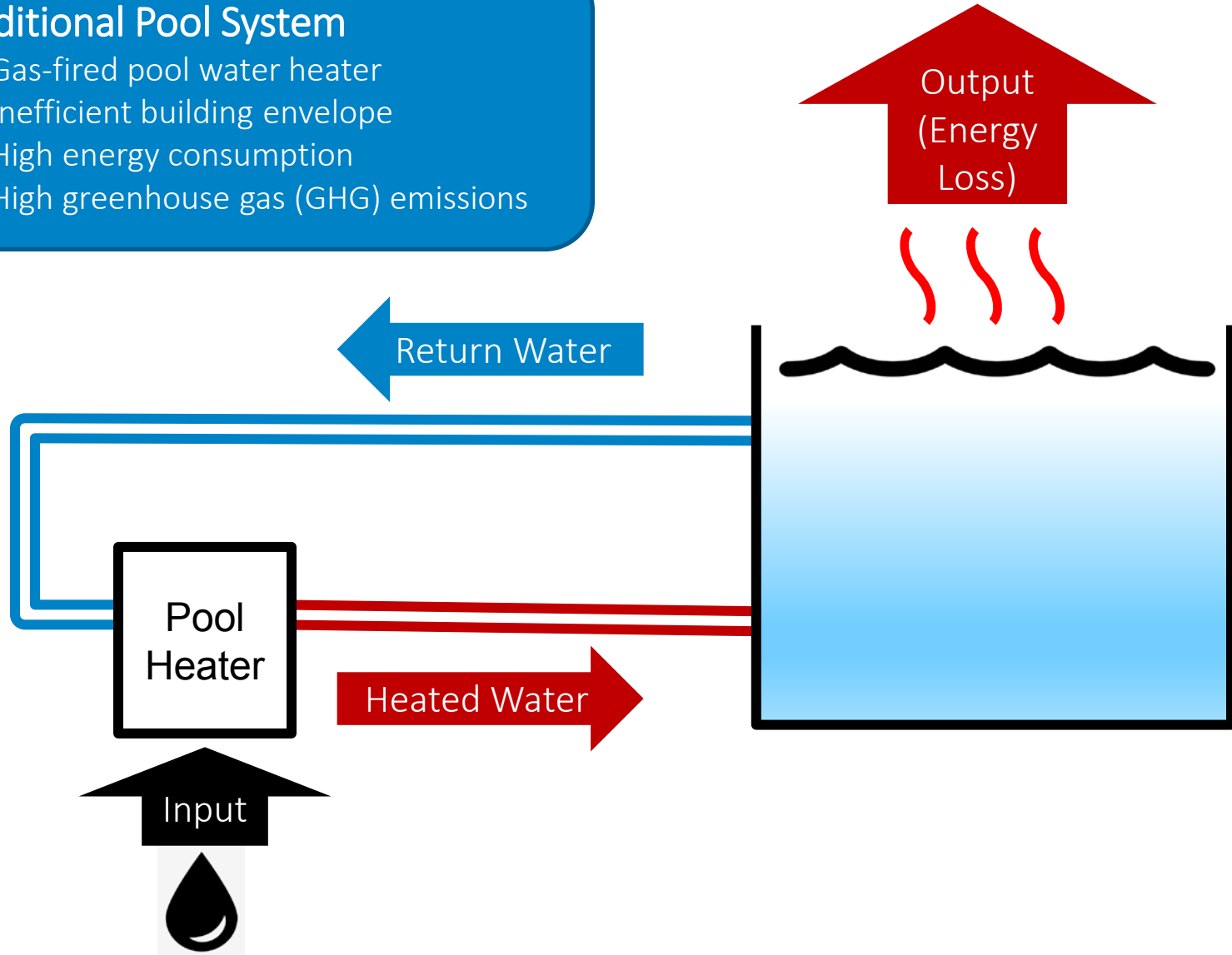
Efficiency: Co-location (Service Efficiency)



Efficiency: Co-location (Heat Recovery / GHG Emissions)

Traditional Pool System

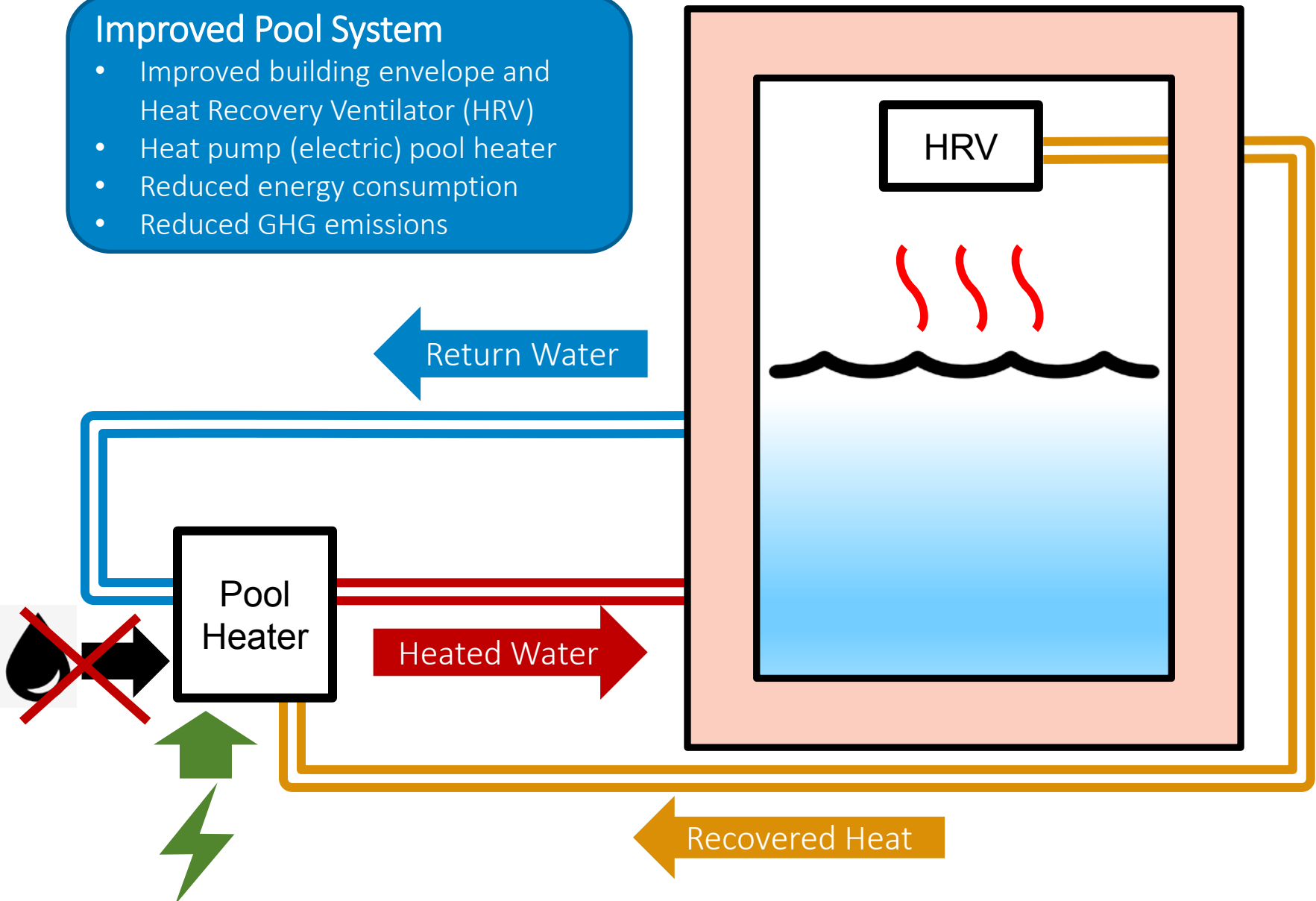
- Gas-fired pool water heater
- Inefficient building envelope
- High energy consumption
- High greenhouse gas (GHG) emissions



Efficiency: Co-location (Heat Recovery / GHG Emissions)

Improved Pool System

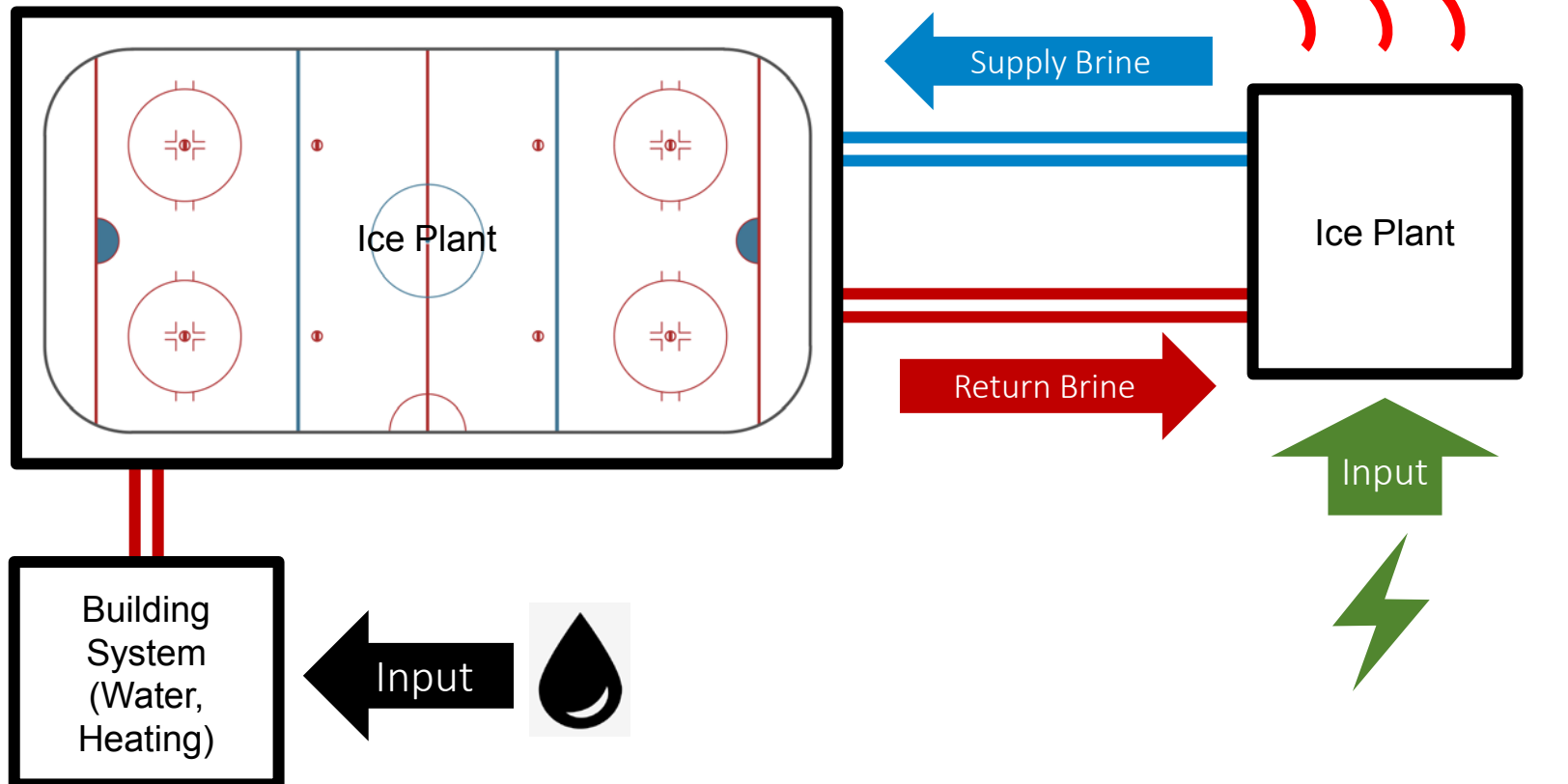
- Improved building envelope and Heat Recovery Ventilator (HRV)
- Heat pump (electric) pool heater
- Reduced energy consumption
- Reduced GHG emissions



Efficiency: Co-location (Heat Recovery / GHG Emissions)

Traditional Rink System

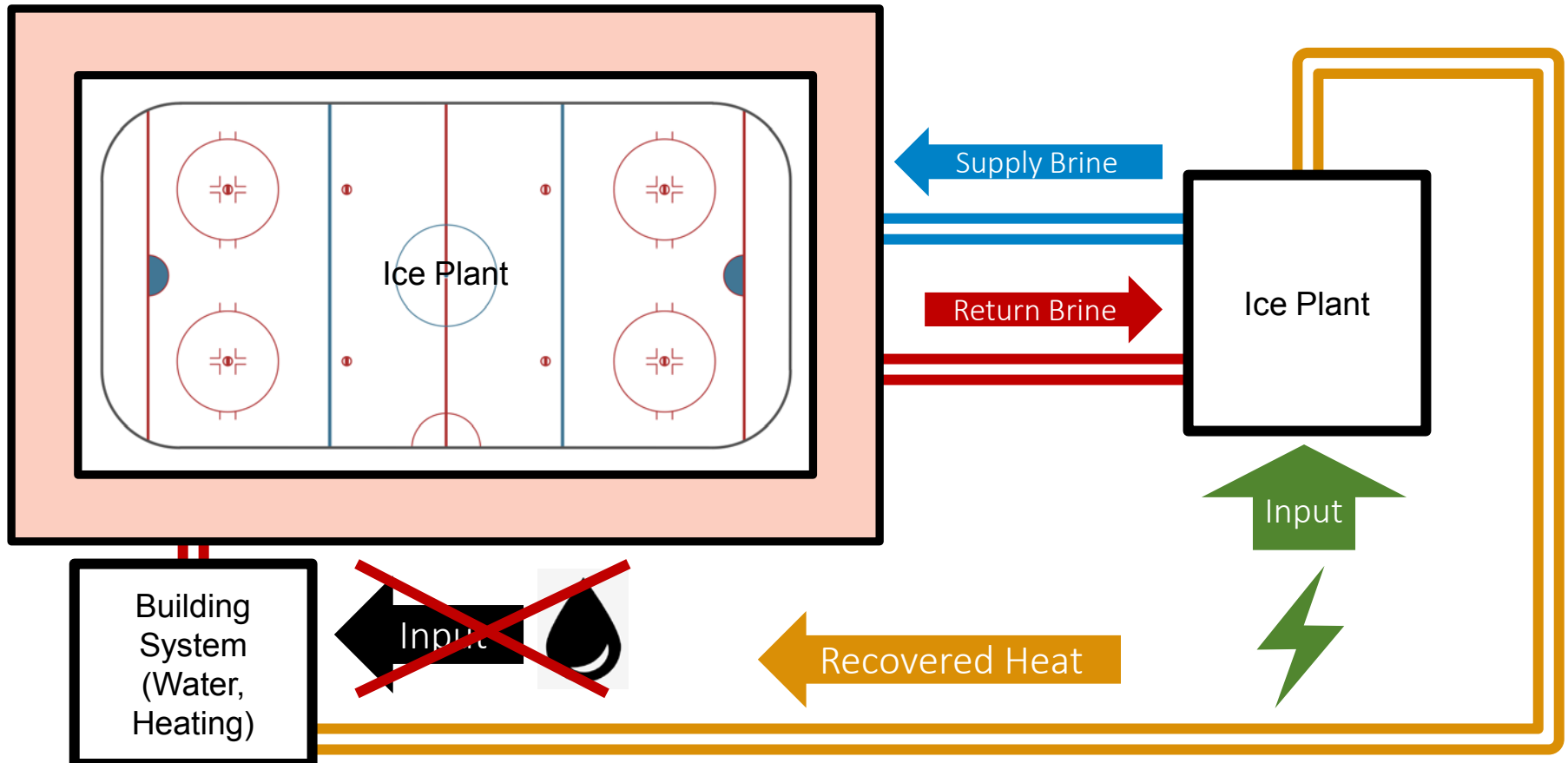
- Gas-fired building systems
- Electric ice plant compressor
- High energy consumption
- High GHG emissions



Efficiency: Co-location (Heat Recovery / GHG Emissions)

Improved Rink System

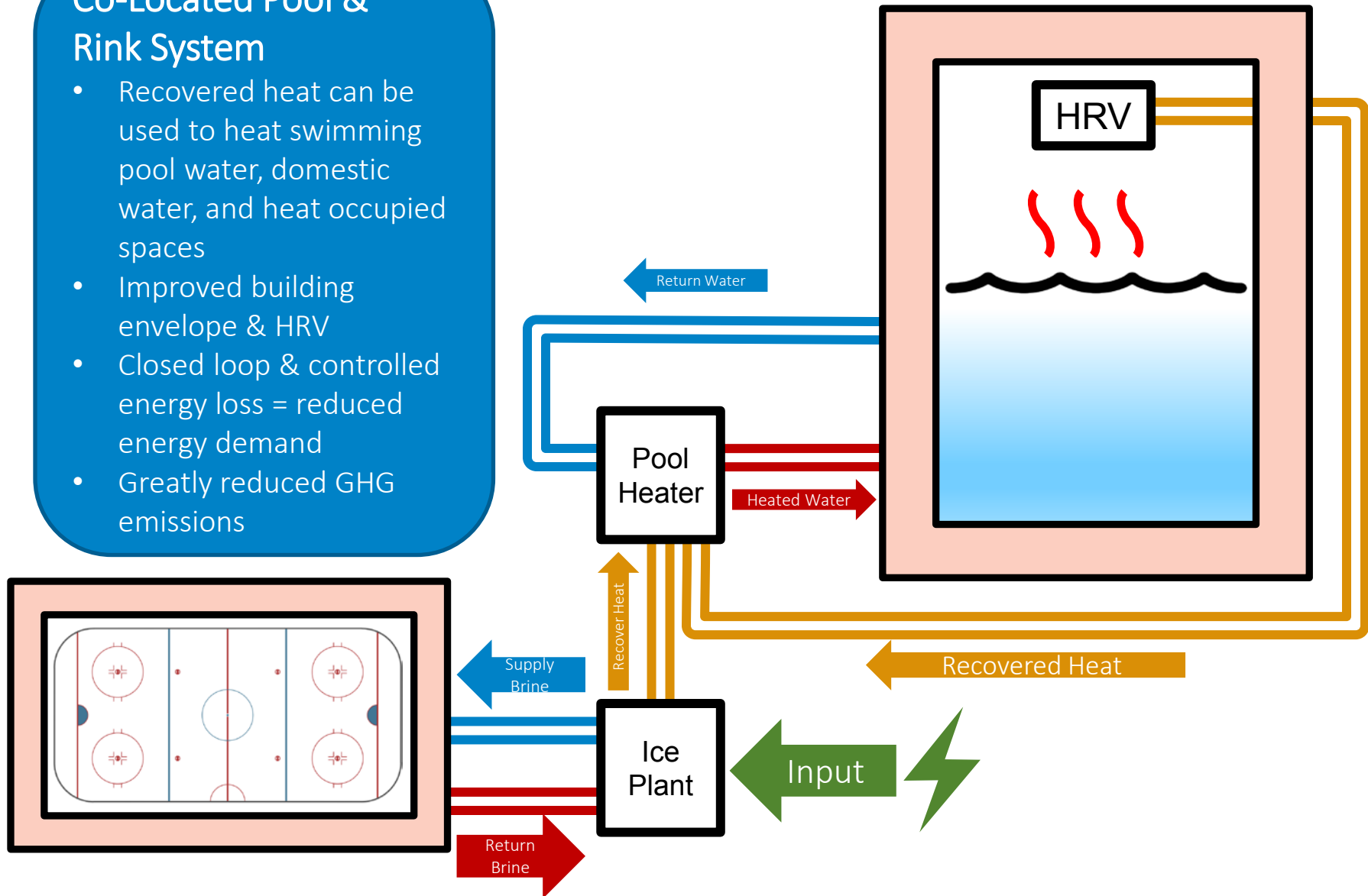
- Improved building envelope
- Electric ice plant compressor with heat recovery
- Building heating needs met with recovered heat
- Reduced energy consumption
- No gas appliances means little to no GHG emissions



Efficiency: Co-location (Heat Recovery / GHG Emissions)

Co-Located Pool & Rink System

- Recovered heat can be used to heat swimming pool water, domestic water, and heat occupied spaces
- Improved building envelope & HRV
- Closed loop & controlled energy loss = reduced energy demand
- Greatly reduced GHG emissions



Efficiency: Co-location (Heat Recovery / GHG Emissions)

Facility	Components	Energy Use Before Heat Recovery	Energy Use After Heat Recovery	GHG Emissions Before Heat Recovery	GHG Emissions After Heat Recovery
Hillcrest Community Centre	<ul style="list-style-type: none"> indoor & outdoor pool ice rink curling rink fitness centre gymnasium library MP rooms 	53,000 GJ/yr	38,000 GJ/yr	1,575 T/yr	930 T/yr (GHG savings of 645 T/yr = \$96,750 / yr savings for internal carbon pricing *)
Kitsilano Community Centre	<ul style="list-style-type: none"> ice rink fitness centre hot pool gymnasium MP rooms 	10,000 GJ/yr	4,000 GJ/yr	400 T/yr	50 T/yr (GHG savings of 350T/yr = \$52,500 / yr savings for internal carbon pricing *)

*Internal carbon pricing is a CoV planning tool to put a dollar value to carbon pollution in evaluating development options. The new carbon pricing policy values GHG emission impact at \$150 per tonne.

Aquatics Now

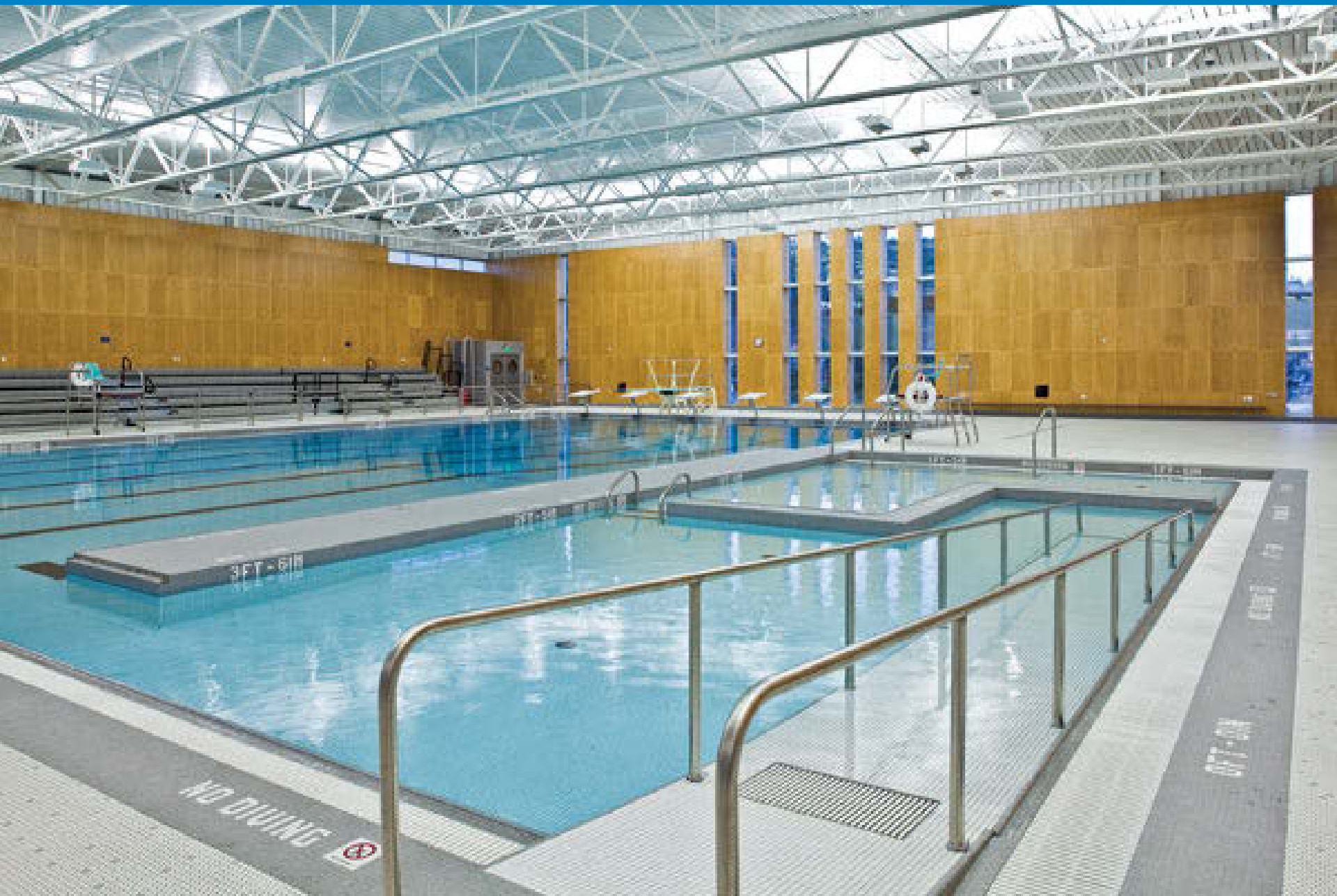
Over the past 40 years since the time when the majority of our facilities were built:

- The public's needs and expectations for aquatic services has changed significantly.
- Building codes have introduced significantly higher seismic performance requirements.
- Health Act and WorkSafe BC regulations have increased to better protect staff and public.
- Codes and policies regulating sustainable, accessible, and inclusive design have changed how we build spaces.

Aquatics Now – Universal Change Rooms



Aquatics Now - Accessibility



Aquatics Now – Natural light and views



Aquatics Now - Water Temperature Options



Aquatics Now - Viewing



Aquatics Now – Health and Wellness and Leisure Pools



Aquatics Now – Storage



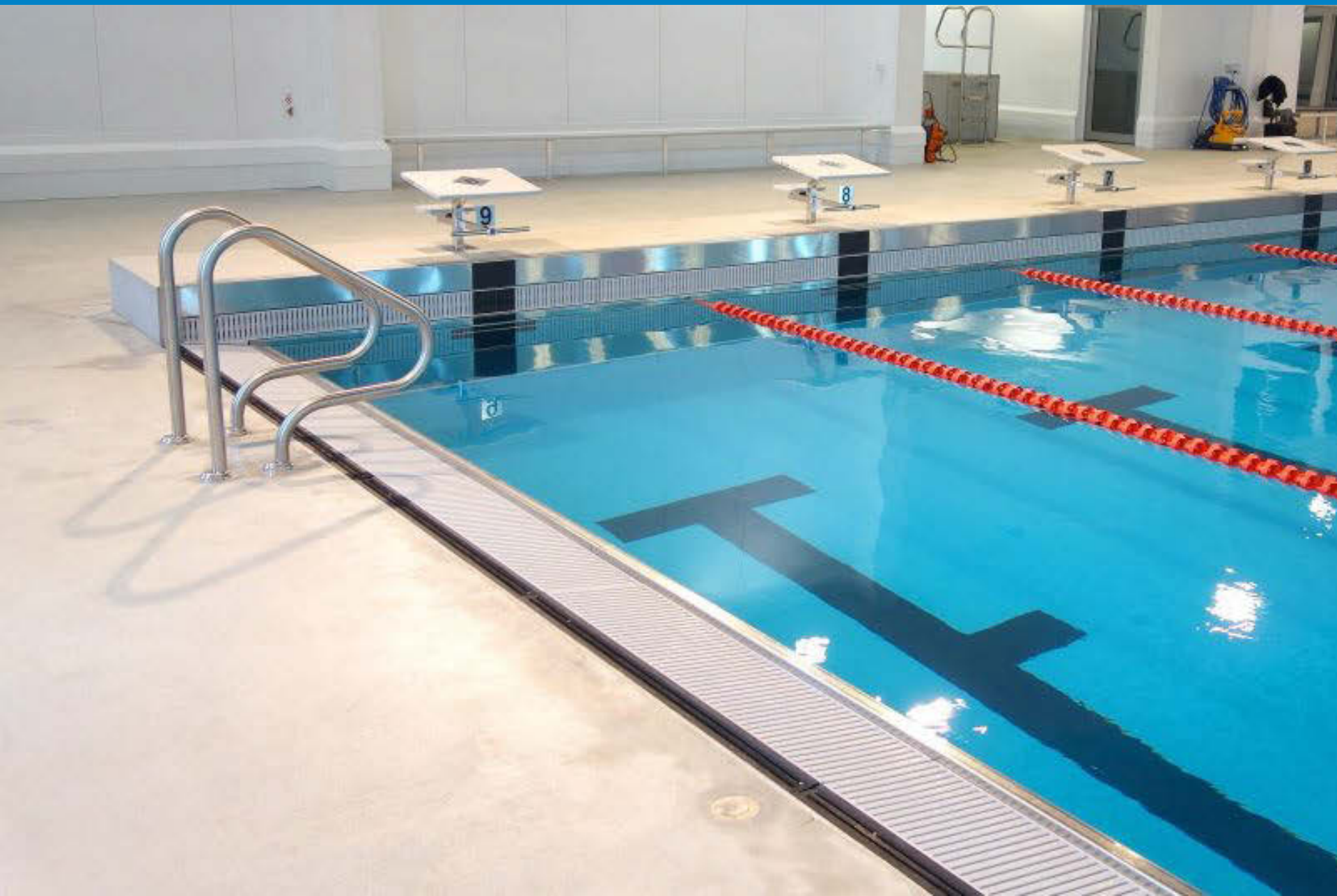
This will
put us on
the map!

Where are we
going to put this
thing after we
deflate it?

Aquatics Now – Multipurpose Rooms



Aquatics Now – Deck Edge



Aquatics Now – Movable Pool Bottoms and Bulkheads



Vancouver Recent Aquatics Renewals - Small



Renfrew – 2005 Addition

Vancouver Recent Aquatics Renewals - Medium



Killarney – 2006 Renewal

Vancouver Recent Aquatics Renewals - Large



Hillcrest – 2010 Renewal

Thank You!