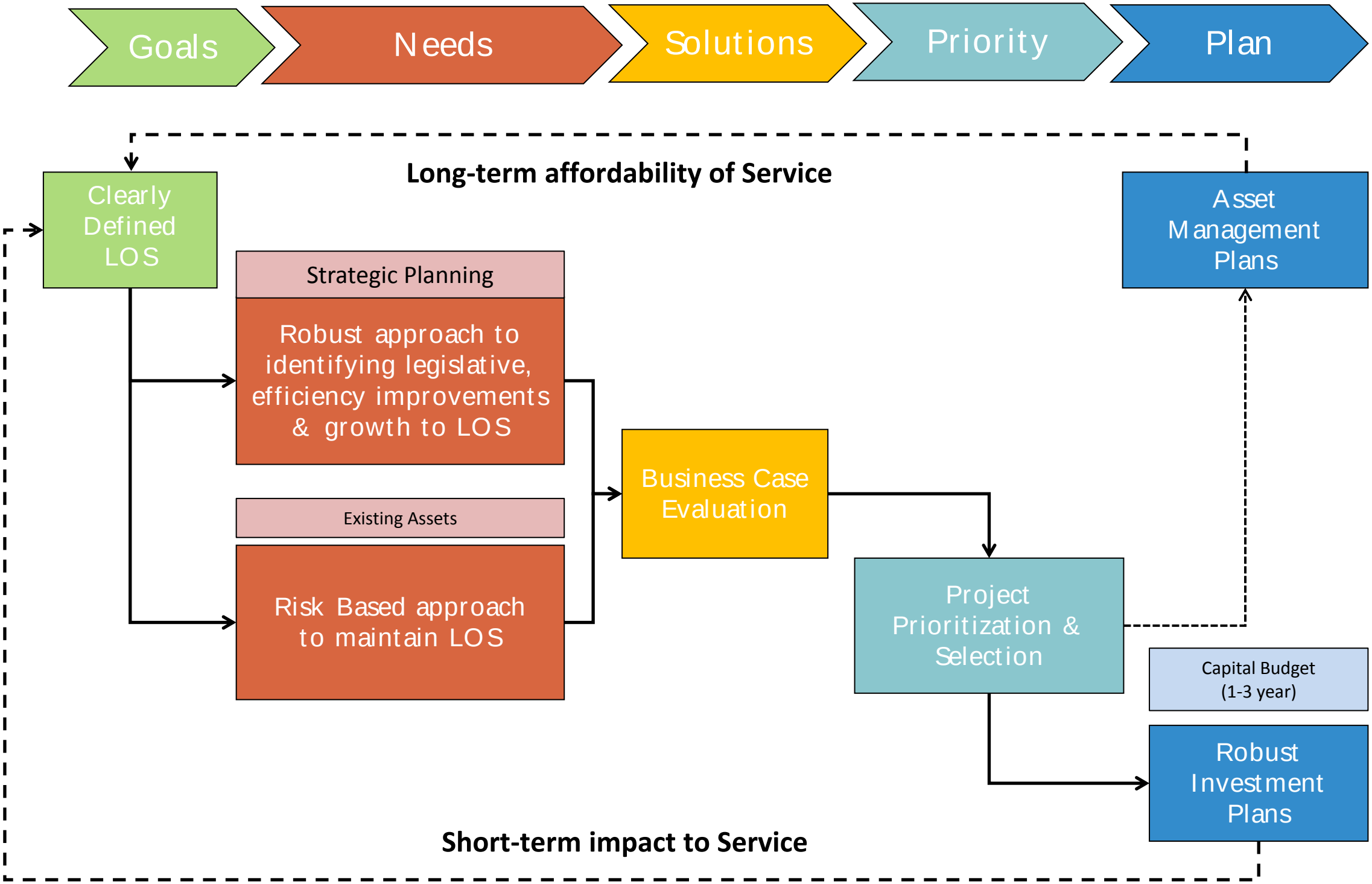
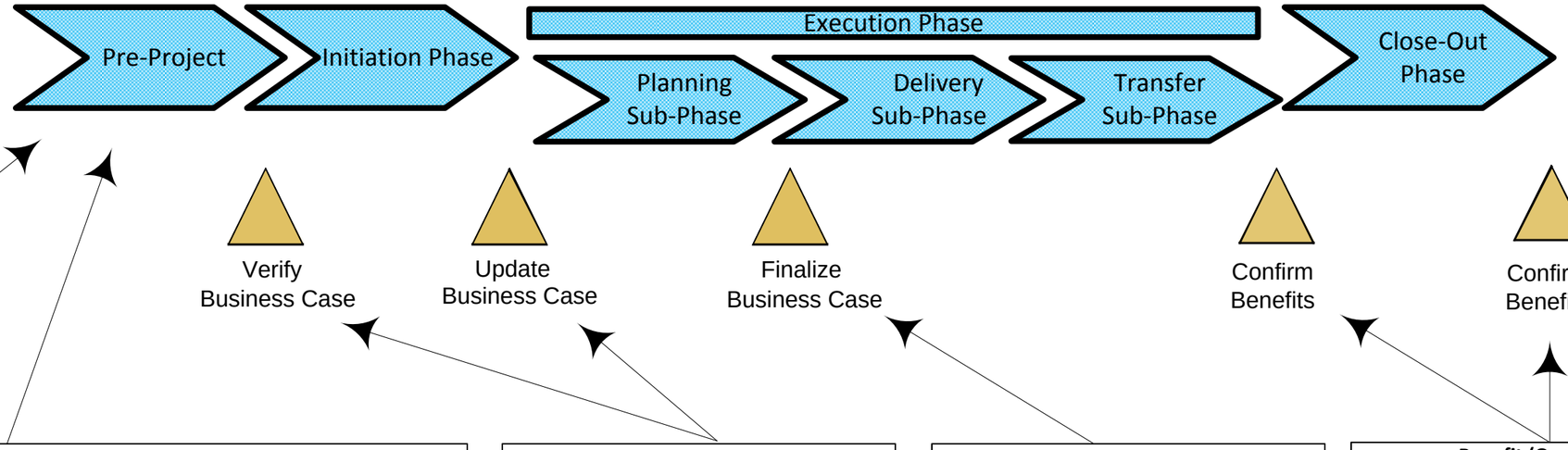
Investment Planning Framework



Business Case Development – Investment Evaluation Guidance



Target Service Level

The objective is to define the performance target that the service delivers to the customer and/or the asset performance requirement that the asset is expected to provide the customer

- What service is being provided from the customers perceptive. i.e. realizable drinking water, recreation sport fields, transportation or working accommodations
- What service does the asset provide from the Asset Managers perspective. I.e. not without water longer than X hours, soccer field that meets Class 4 (CSA international standard, Regional street that meets class 4 criteria.
- What is the performance gap (s) either from the customer or asset managers perspective. Watermains have a Leak Frequency >5, Sport field condition index is rated a 3 (see condition report), Roadway have a condition index of 8 (see condition report)

Strategic Planning

The Need Assessment should consider what new services or assets are required to maintain or enhanced service to existing or new customers:

- How the Service is delivered to current and future customers. I.e. what new assets are needed to address service growth or enhanced needs. I.E. Service Strategic plans – Transportation Master plan & Library master plan.
- Strategic Risk – Financial, Environmental and Social events that impact service. I.e. Climate adaption (climate change), business/service delivery risk assessments
- New regulation – Impact to service based on existing or proposed regulations
- Business Innovation – IT solutions or ways of doing the business. I.e. Asset Management, AMMS IT master plan.

- **Existing Assets**
- Needs Assessments should consider:
- Asset WLC analysis
- The objective is to determine when repairs on an asset should be done in order to obtain the lowest WLC of ownership. This involves assessing when maintenance works should be completed during an asset's lifecycle or if the asset should be run to failure (see PowerPoint graphic). I.e. For Roads – Do you do repairs in x years or when reaches a specific condition or nothing until failure? Pumps, Fitness equipment and vehicle can follow the same thought process.

Criticality and Risk Assessments, 2 components:

- Assess through a risk assessment what systems and supporting assets are critical to providing a service to the customer. I.e. are Electrical system more critical than the building envelope (roof), Are interceptors and trunk sewers more critical to deliver service than local sewermains.
- Assess the condition of each asset to determine the consequence and likelihood of failure to provide the service expected. I.e. based on an inspection of the electrical panels or wiring what is the consequence and likelihood of that asset failing?

Investment - Option analysis

Typically at this phase of the investment, you are answering the question – Should we make the Investment and/or What type of Investment should we make?

Business Case - Option Analysis, generally 2 types of assessment:

A) New process or way to do business

- A NPV assessment is done to compare the cost over 30 years to investment in the new process vs. doing business the same way. I.e. implementing an IT solution, installing new assets to reduce operating effort/resources

B) Replace an entire system vs. doing multiple investments on a single asset

- A NPV assessment is performed to assess the lifecycle cost of both options I.e. Replacing an entire building (system) vs. doing repairs on multiple assets.

Note;

- the need to repair those assets was completed in the Pre-project phase.
- The assessment in this phase is done with high level costs in order to obtained funds to do a more details analysis in the next phase.

Investment – Product analysis

Typically at this phase, you are answering the question – What product give the best whole-life cost solution

Comparing product A vs. product B

- A NPV assessment is done to compare the cost over 30 years of product A vs. Product B. Each will have different Capex and Opex costs and associated benefits. I.e. Plastic pipe vs. concrete, IT solution A to IT solution B, Building configuration A vs. configuration B, Roadway route configuration A vs. B, Exercise Bike A vs. Bike B, Building envelope material A vs. B, Chiller A vs. Chiller B, comparing construction methods for Open-cut vs. Lining, etc.

Benefit (Quantified)

Quantified (Tangible) Benefits – where the dollar or performance values are measurable.

Intangible benefits: where the dollar or performance value are not able measureable. These can be noted but the objective is to identify tangible.

The objective is to identify benefits that can be measured. These are initially defined in the Target Service level or more likely the "Need" section of the BC where a gap in Service or Asset performance was identified (note: performance is part of the LOS model). Therefore with this investment, that performance gap should be addressed and be measurable.

Quantifiable benefits include:

- Asset condition rating improved
- A tracked "performance measurement" improvement
- Customer survey before and after
- 311 performance improvements
- Insurance claim reductions
- less effort or resources, typically measured in $
- A reduction of Risk: number of asset moving from serve risk category to acceptable.

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