Using Infrastructure Plans to Pursue Funding

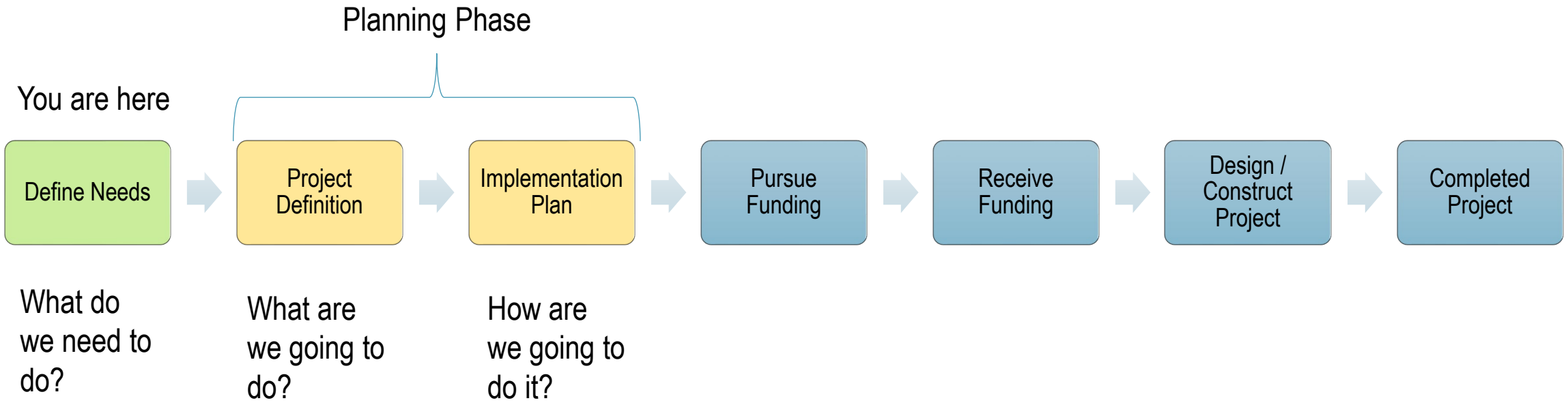
1/19/2022

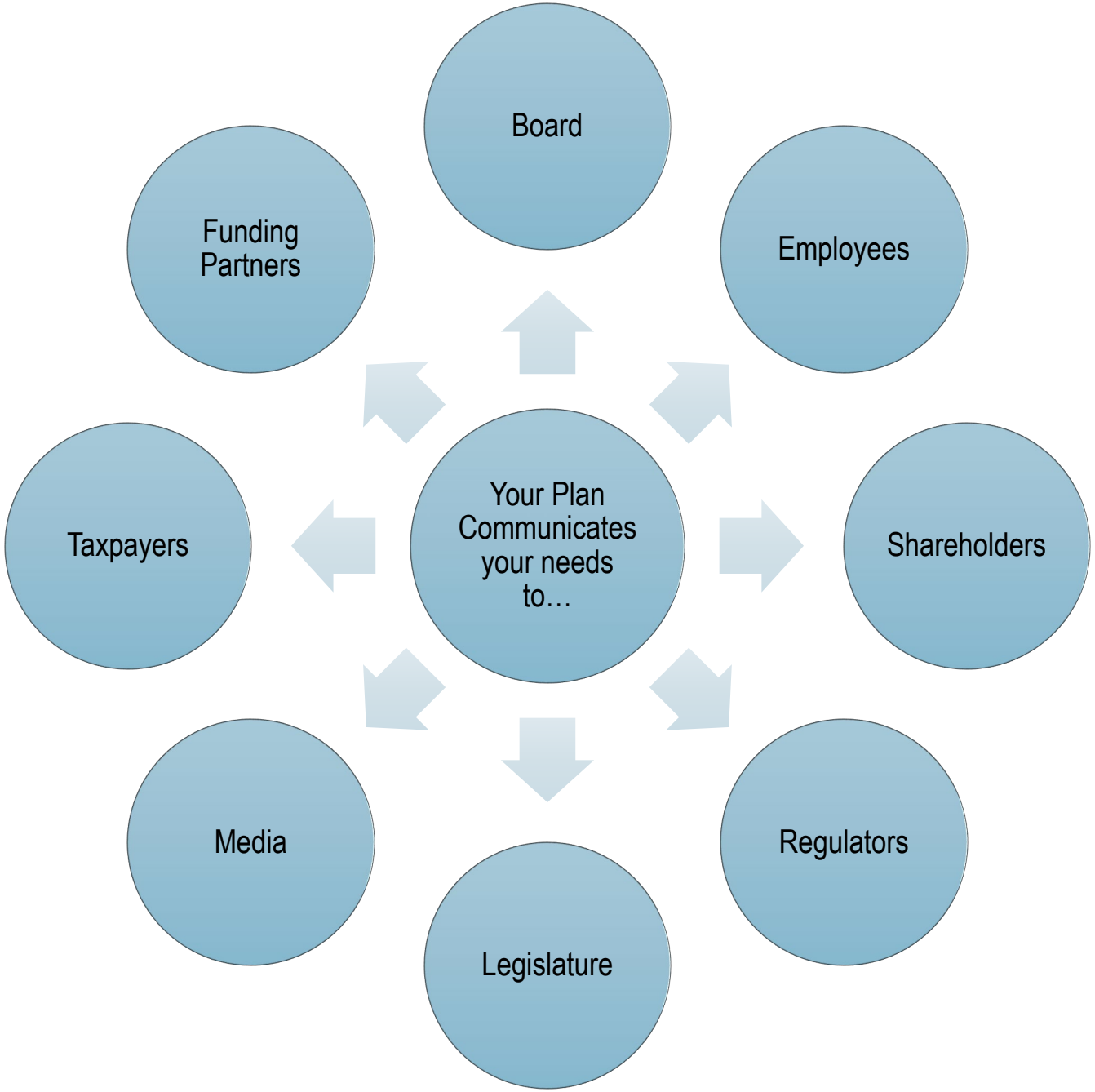
What is a plan?

Where do you want to invest?

What is a plan?

- Simple, concise document
- Identifies needs
  - Improvements
  - Replacements
  - New Facilities
- Outlines how to implement changes
  - Process
  - Budget
  - Schedule


Planning Phase
You are here
Define Needs
Project Definition
Implementation Plan
Pursue Funding
Receive Funding
Design / Construct Project
Completed Project
What do we need to do?
What are we going to do?
How are we going to do it?


Board
Employees
Shareholders
Regulators
Legislature
Media
Taxpayers
Funding Partners
Your Plan Communicates your needs to…

Traits of a Useful Plan

- **Fact-Based**
  - Cites real conditions, risks, costs, and rates
  - Removes opinions
- **Clear and Concise**
  - Identifies how decisions are made
  - Effective communication
- **Collaborative**
  - Agreement on decisions
  - Key stakeholders
- **Designed to Update**
  - Planning horizon
  - Timeline to revisit

COMPONENTS

The following list outlines the elements of an application. However, it is not an exhaustive list of the items that may be required of the applicant. Additional items may be requested on a case-by-case basis. The application contains the following components:

1. **Key Applicant and Loan Information:** The applicant provides basic information such as its legal name, project name, estimated total projects costs, requested WIFIA loan amount, anticipated closing date, and contact information. The applicant also provides information about jobs, savings, Dun and Bradstreet Data Universal Number System (DUNS) number, and employer/taxpayer identification number.
2. **Applicant Background:** Materials submitted under this section detail the applicant's legal authority to apply for a WIFIA loan and to undertake the project and disclose any current, threatened, or pending litigation. The applicant provides customer concentration analysis, water and sewer rate information, capital improvement planning process information, any accounts receivable outstanding information, the latest condition assessment report or a master plan
3. **Financing Plan:** The applicant submits a comprehensive plan describing how the project will be financed and how financing will be repaid over the tenor of the requested WIFIA credit assistance. This includes a detailed financial model covering all periods through final maturity of the WIFIA credit assistance, the sources and seniority of other financing, a description of the dedicated sources of repayment, rate covenants, and security for the requested WIFIA credit assistance. The applicant also submits a preliminary rating letter from a NRSRO indicating the potential of the project's senior obligations obtaining an investment-grade rating. This rating on the senior debt should include an analysis of the proposed WIFIA loan and the rating letter should specify the default risk of the WIFIA instrument as well. The applicant also provides its proposed terms and conditions for the WIFIA credit assistance.
4. **Federal Requirements Compliance**: The applicant describes the status of the environmental review and the status of the State Revolving Funds (SRF) environmental review, if applicable. The applicant also identifies any cross-cutter consultations that have been undertaken and any major permits or approvals required.

You may need a plan

Grants often require some level of planning

- Financing
- Alternatives Analysis
- Project Benefits
- Cost/Benefit Analysis

Make the plan

NMID Capital Projects

Nampa & Meridian Irrigation District Capital Project Needs

Headworks of the Ridenbaugh Canal System

About the Capital Assets:

The headworks consist of a 220' diversion check structure that spans the river, 550' debris control structure, weed rack, flow control gates, and head structure for the canal. The diversion check structure dams the flow of the river and creates the pool that feeds water to the canal system. The debris control structure and weed rack limit debris, vegetation, and sediment entering the canal. The masonry-construction canal head structure and radial flow control gates regulate the amount of water diverted to the Ridenbaugh Canal and protect the downstream cities from flooding during times of high river flows.

Figure 1 – Ridenbaugh Canal Headworks

Age of the Capital Assets:

The headworks of the Ridenbaugh Canal System were originally constructed in the 1870's, with additions through the 1930's. Replacement radial gates were installed approximately 25 years ago, but most of the operating assets are still original.

Capital Project Need:

The headworks require capital reinvestment to maintain their levels of service. The diversion check structure requires replacement with modern technology, as NMID employees are currently required to enter the river to add or remove check boards. Future upgrades would automate the height of the structure (using, for example, a bladder dam) to better maintain river flows and diversion to the canal. While well cared for, the masonry and concrete of the head structure are subject to the river's erosive forces and require replacement and reinforcement

Project Drivers:

- Aging infrastructure
- Flood protection
- Environmental and wildlife protection
- Safety of public and NMID employees

Project Benefits:

- Maintain irrigation water delivery to service area (Boise, Meridian, Nampa, Caldwell, Kuna, Unincorporated Ada County, Unincorporated Canyon County)
- Flood risk reduction
- Improved operation of canal system provides benefit to river health
- Decreases safety and property risks to public and NMID employees

Ridenbaugh Canal Flume Over Indian Creek

About the Capital Assets:

The Ridenbaugh Canal flume over Indian Creek is 425' long and carries approximately 120 cubic feet per second (cfs) of water. (For context, this is equivalent to approximately half the winter flow of the Boise River.) The flume delivers water to more than 14,000 acres of production agricultural land and residential and commercial customers. Failure of the flume would flood Indian Creek with the Ridenbaugh Canal flows.

Figure 2 – Ridenbaugh Canal Flume

Example from NMID

- Narrative that describes the needed projects
- Easy to read, easy to understand
- Document stands alone (doesn't require additional documents to use it)

Nampa & Meridian Irrigation District Capital Project Needs

Headworks of the Ridenbaugh Canal System

About the Capital Assets:

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Planning Process

1. Define Needs
2. Define Projects
3. Implement Plan

Planning Process

1. Define Needs
   - Aging assets
   - Needs to meet changing demands
   - Opportunities
   - Risks

Planning Process

1. Define Needs
2. Define Projects
   - Alternatives
   - Partners and stakeholders
   - Funding Needs

Planning Process

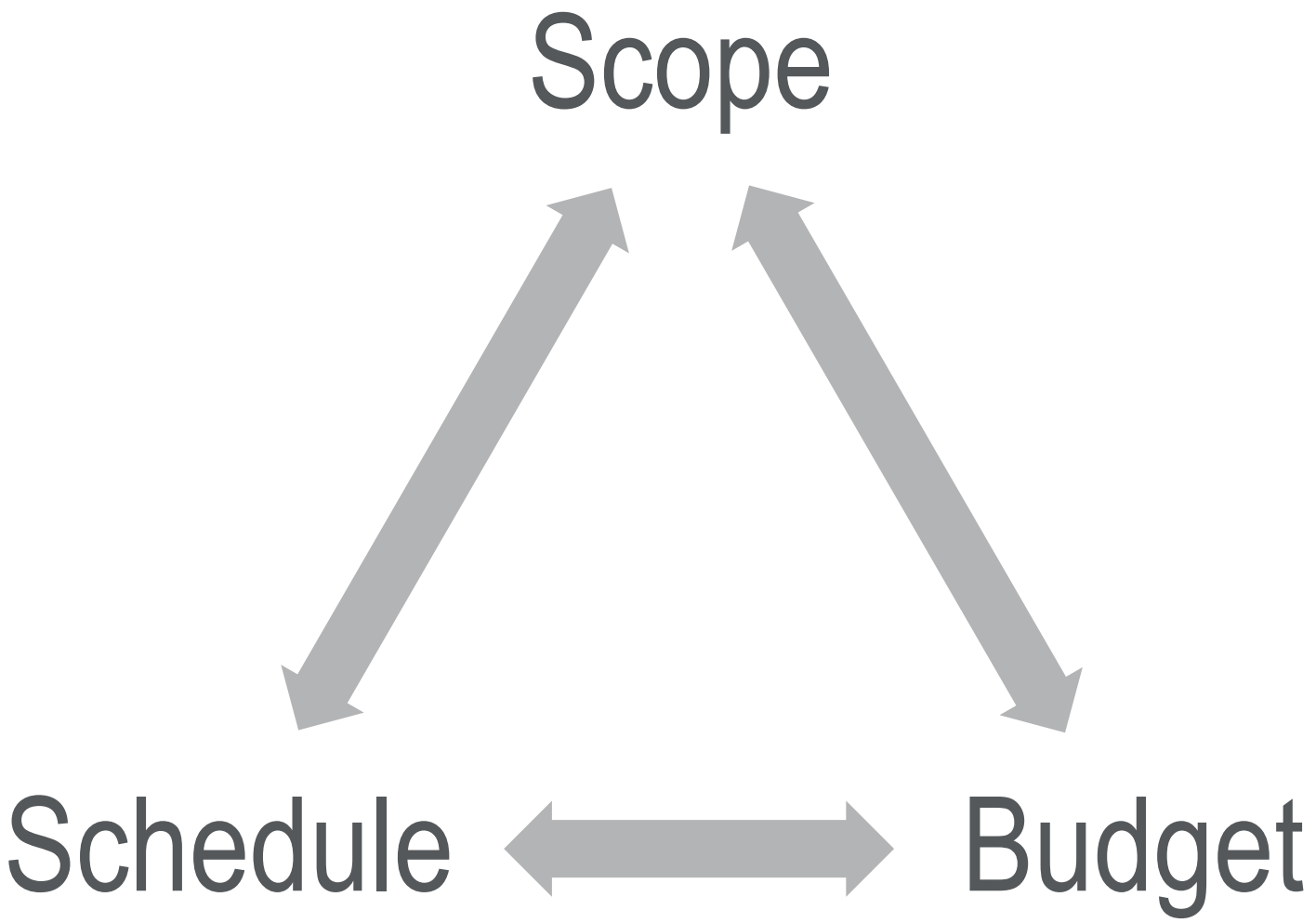
1. Define Needs
2. Define Projects
3. Implement Plan
   - Project Priorities
   - Secure Funding
   - Schedule

Parts of a plan

- Scope
- Schedule
- Budget
- Project Drivers (Why)
- Project Narrative (The Project Story)

The Project Management Triangle

- Scope – the work or tasks required to meet the project's goals
- Schedule – the time it will take to complete the scope
- Budget – the resources necessary to complete the scope



Scope

2. Project Descriptions

Jacobs staff met with NMID staff on September 9, 2021 to define and discuss the nature and overall scope of the subject projects. Major features or elements needed for generating concept-level cost estimates were discussed, as summarized in the following sub-sections. Note that no alternatives analyses, condition assessments, or design services are included in this effort. As the projects are programmed and planned, additional details and definitions will be incorporated to further develop and refine designs.

2.1 Headworks of the Ridenbaugh Canal

The headworks of the Ridenbaugh Canal system is located on the Boise River near Barber Park (43° 33' 54" North 116° 07' 55" West) and consist of a 220-ft long diversion that spans the river, a 500-ft long sand and silt diverter wall, and a 50-ft long debris rack. The headworks were originally 1870's, with additions through the 1930s. The diversion structure is skewed approximately 45-degrees to the Boise River and has 10 openings, each 20-ft wide, in which check boards are installed to divert water into the Ridenbaugh Canal. The wooden check boards are installed manually, up to a maximum height of 5-ft. The silt diverter is simply an approximately 18-inches tall concrete wall that has historically helped keep sand, silt, and even small gravel out of the canal. The debris/weed rack has a walkway and is periodically cleared manually. A masonry-block canal head structure and relatively new radial flow control gates regulate the amount of water diverted to the Ridenbaugh Canal and protect the downstream cities from flooding during times of high river flows.

NMID desires to modernize and improve the headworks to include automated level control, trash/debris/weed control, redundancy, and resiliency to operational, safety, and cybersecurity risks. While not under any statutory obligation to screen for fish, NMID is also considering adding a fish barrier to keep pan-sized or larger trout out of the canal system. To accomplish a more automated operation, the existing check structure would be replaced with a series of Obermeyer-style water control gates along with a new catwalk and handrail above it fully spanning the river. The existing trash rack would be retrofit to provide a fish barrier and an Atlas Polar-style automated trash rack. No work is expected on the existing radial control gates, but some bank protection would be needed to reinforce areas up and downstream of the diversion and adjacent to the canal head structure.

Schedule

Table 3. Preliminary Project Phase Duration Estimates

Project	Administrative & Procurement	Surveying & Geotechnical Investigations	Engineering & Design	Permitting[1]	Bid Phase	Construction
Headworks of the Ridenbaugh Canal	6-12 months	6 months	12-15 months	12 months	3 months	6 months
Ridenbaugh Canal Flume over Indian Creek	6-12 months	3 months	6-12 months	12 months	3 months	6 months
Burke Canal Flume over Indian Creek	6-12 months	3 months	6-12 months	3 months	3 months	3 months
Concrete Canal Lining	6-12 months	N/A	6 months	N/A	3 months	3 months

[1]Assumes USACE Nationwide permit, no Section 106 Review, and no ESA Consultation. See Section 4.2 for additional discussion.

Budget

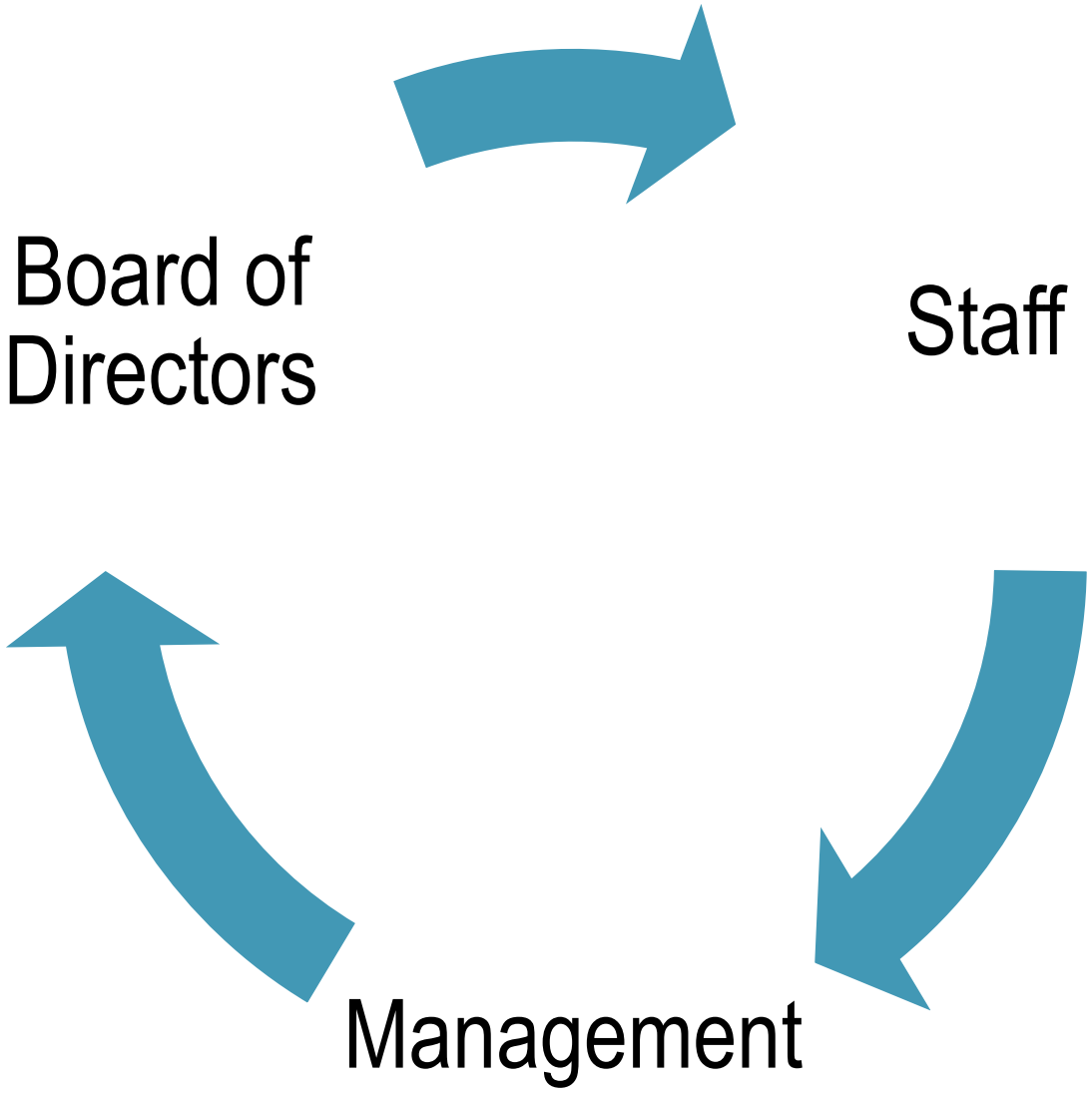
Table 4. Summary of Cost Estimates for Select Projects

Project	Total Construction Cost (Class 4/5 Estimate)	Low Range (-30%)	High Range (+50%)
Headworks of the Ridenbaugh Canal	$8,445,000	$5,900,000	$12,500,000
Ridenbaugh Canal Flume over Indian Creek	$1,319,500	$920,000	$2,000,000
Burke Canal Flume over Indian Creek	$659,600	$460,000	$990,000
Concrete Canal Lining – General Contractor[1]	$437,300	$310,000	$660,000
TOTAL[2]	**$11,000,000**	**$7,600,000**	**$16,000,000**

[1]Assumes 1,000 linear feet of canal lined.

[2]Totals are rounded values per U.S. Bureau of Reclamation rounding guidance and may vary slightly from the sum of individual projects.

Plan Development



Project Drivers

Condition

- assets are worn out

Capacity

- assets are too small

Expectations

- assets don’t do what we want them to do

Regulations

- assets don’t meet permit requirements

Risk

- assets don’t manage risk the way they need to

Project Drivers

Condition Driven

- Assets are worn out
- Rusted, corroded, broken

Capacity Driven

- Assets are too small (i.e. pumps, pipes, canals)
- Sedimentation in a canal or reservoir
- Loss of pump efficiency
- Office or shop space

Project Drivers

Expectation Driven

- Pathways
- Aesthetics
- Automation
- Piping

Regulation Driven

- Water quality
- Ag BMP implementation
- Local ordinance requirements

Project Drivers

Risk Driven

- Lining
- Piping
- Re-routing
- SCADA / telemetry

Examples projects

Condition	Capacity	Expectations	Regulations	Risk
Equipment replacement	Dredging of reservoir	Pathways	Sedimentation ponds	Canal lining
Dam repair	Deepening of canal	Aesthetics	Noise or light mitigation for facilities	Relocating facilities
Flume replacement	Office space	Automation		SCADA / Telemetry
	Shop space	Piping		Piping
	Upsizing siphons or pipelines			

Project Drivers

- Aging infrastructure
- Flood protection
- Environmental and wildlife protection
- Safety of public and NMID employees

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Project Narrative

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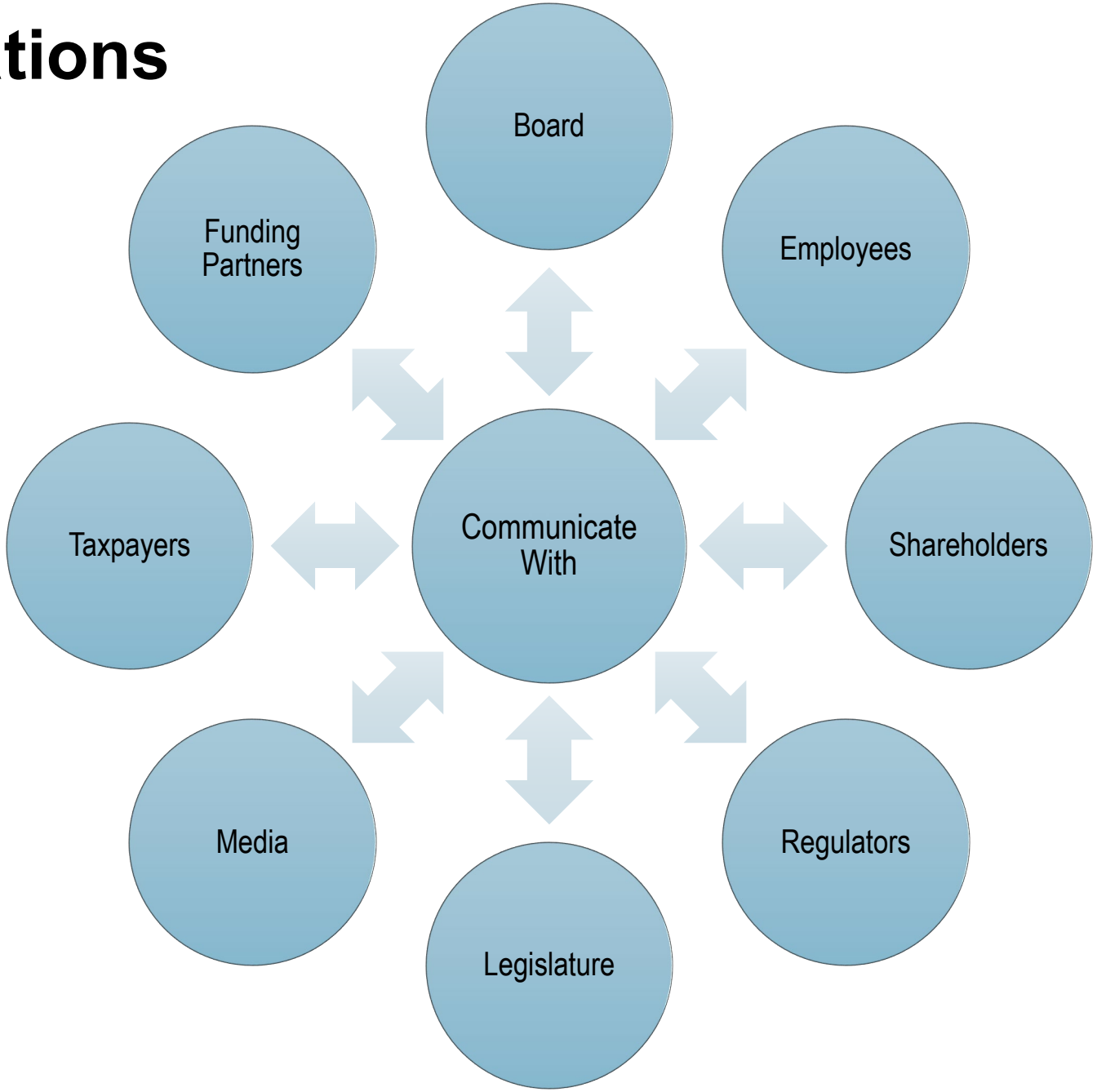
Use pictures to tell the story

Use the plan

Using a Plan

1. Communications
2. Applications
3. Program management

Communications



Using a Plan

1. Discuss projects with stakeholders
   - Funding Partners
   - Agencies and Regulators
   - Public and media
2. Cite the plan within grant applications
   - Needs
   - Benefits
   - Costs
3. Establish a timeline to review and update your plan
   - Projects are developed
   - Needs change

Conclusion

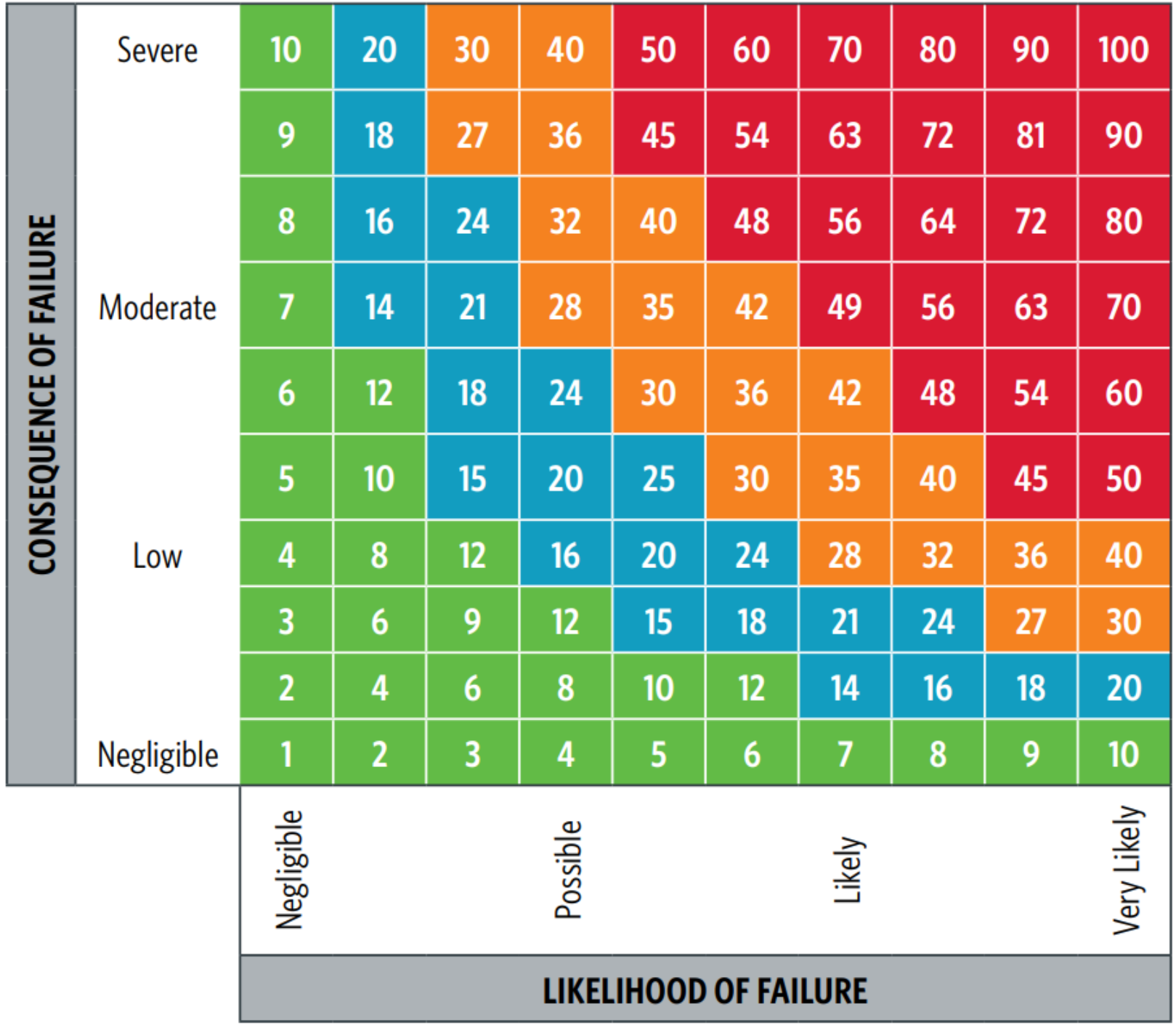
Summary

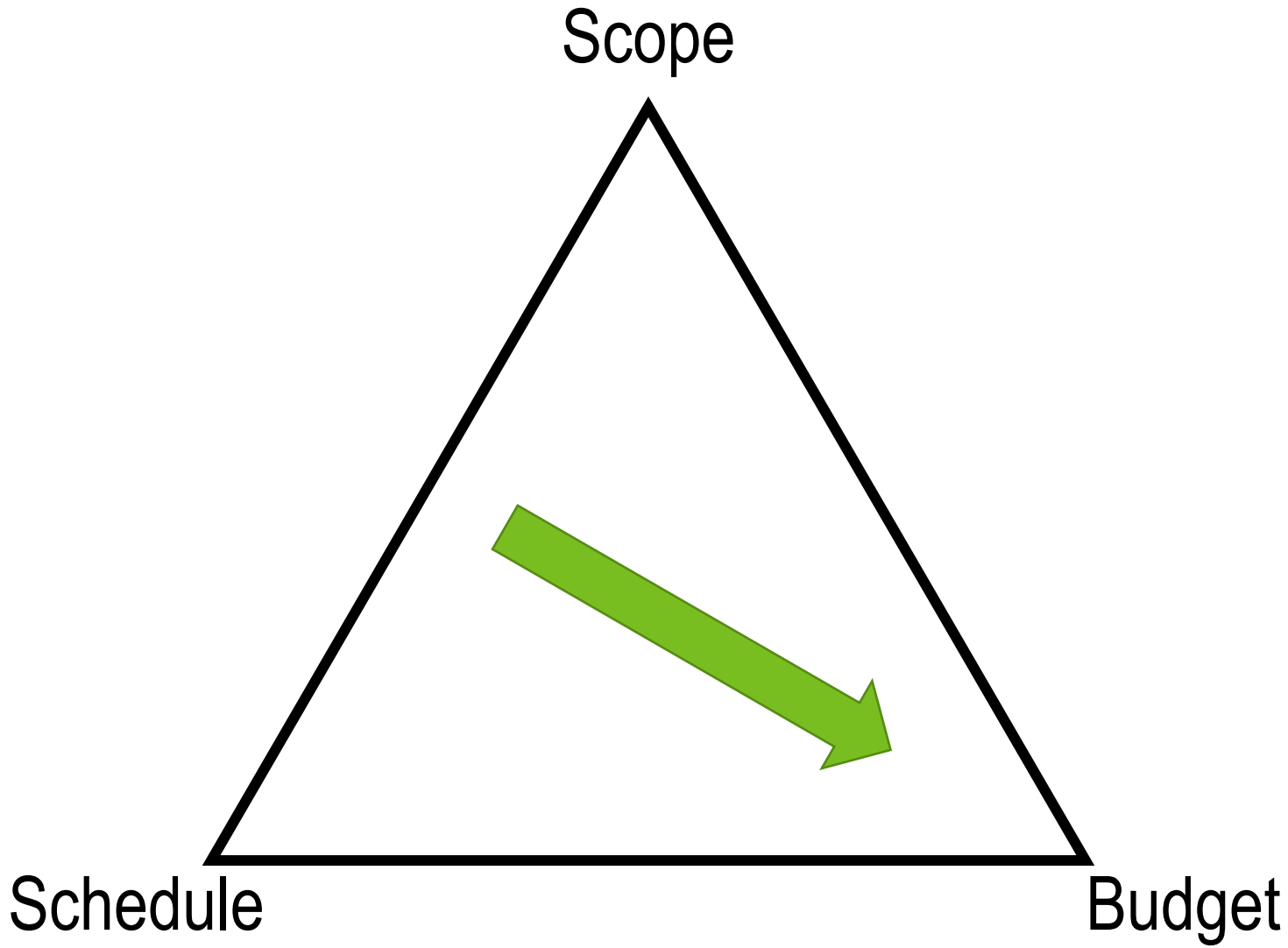
- Keep it simple
- Use your plan to communicate
- Remember the parts:
  - Scope
  - Schedule
  - Budget
  - Drivers
  - Narrative

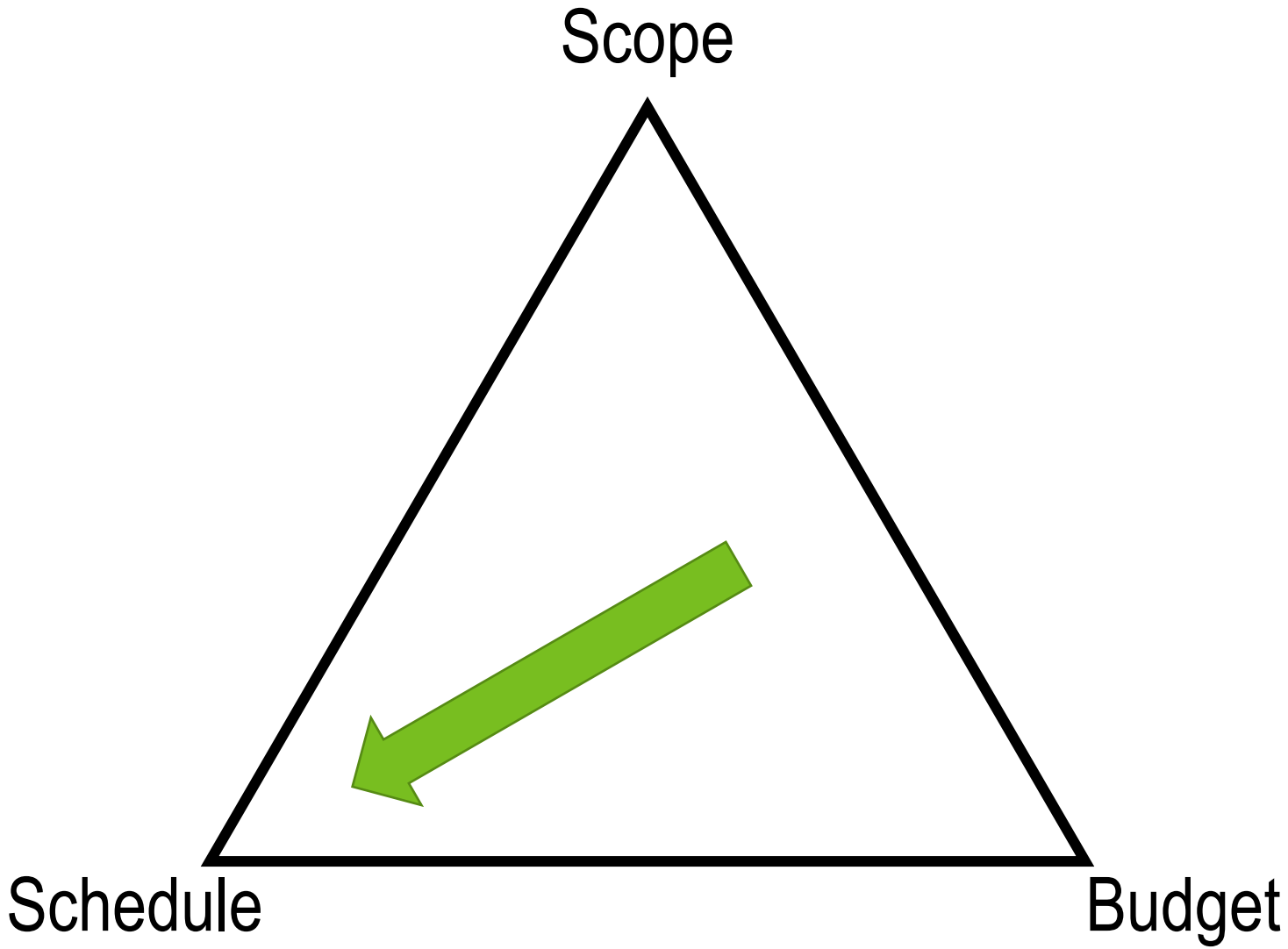

QUESTIONS?
Photo Copyright M. Comeskey

Table 2. Summary of Cost Estimates for Select Projects

Project	Direct Costs	Engineering, Design, Other Tasks, Contractor Construction Administration and Overhead/Profit	Total Construction Cost (Class 4/5 Estimate)	Low Range (-30%)	High Range (+50%)
Headworks of the Ridenbaugh Canal	$5,330,000	$3,115,000	$8,445,000	$5,900,000	$12,500,000
Ridenbaugh Canal Flume over Indian Creek	$832,500	$487,000	$1,319,500	$920,000	$2,000,000
Burke Canal Flume over Indian Creek	$416,600	$243,000	$659,600	$460,000	$990,000
Concrete Canal Lining – General Contractor[1]	$300,800	$136,500	$437,300	$310,000	$660,000
Concrete Canal Lining – Self-Performed with Grant[1]	$280,000	N/A	$280,000	$195,000	$420,000


CONSEQUENCE OF FAILURE
Severe
Moderate
Low
Negligible
10 20 30 40 50 60 70 80 90 100
9 18 27 36 45 54 63 72 81 90
8 16 24 32 40 48 56 64 72 80
7 14 21 28 35 42 49 56 63 70
6 12 18 24 30 36 42 48 54 60
5 10 15 20 25 30 35 40 45 50
4 8 12 16 20 24 28 32 36 40
3 6 9 12 15 18 21 24 27 30
2 4 6 8 10 12 14 16 18 20
1 2 3 4 5 6 7 8 9 10
Negligible
Possible
Likely
Very Likely
LIKELIHOOD OF FAILURE


Scope
Schedule
Budget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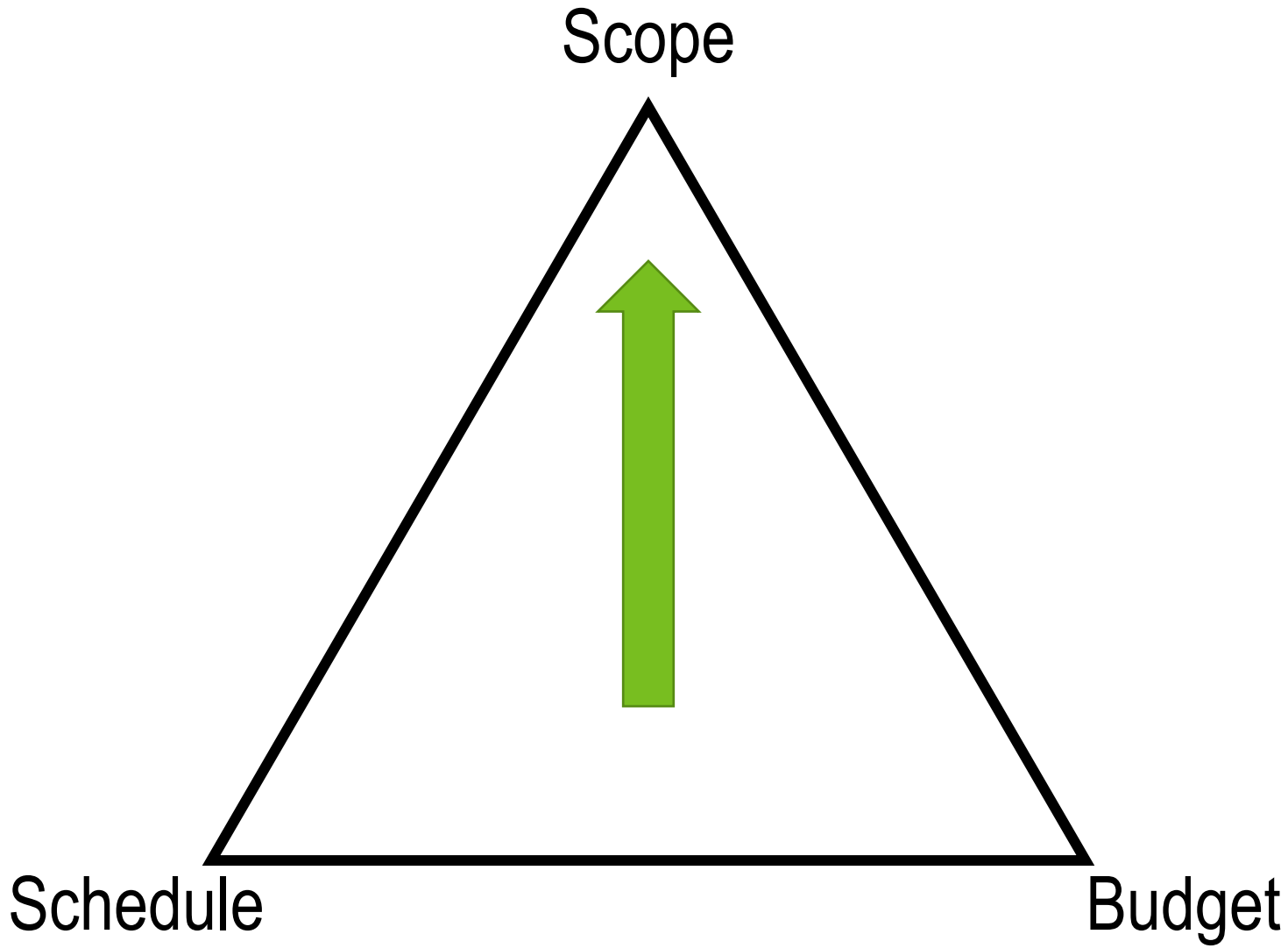
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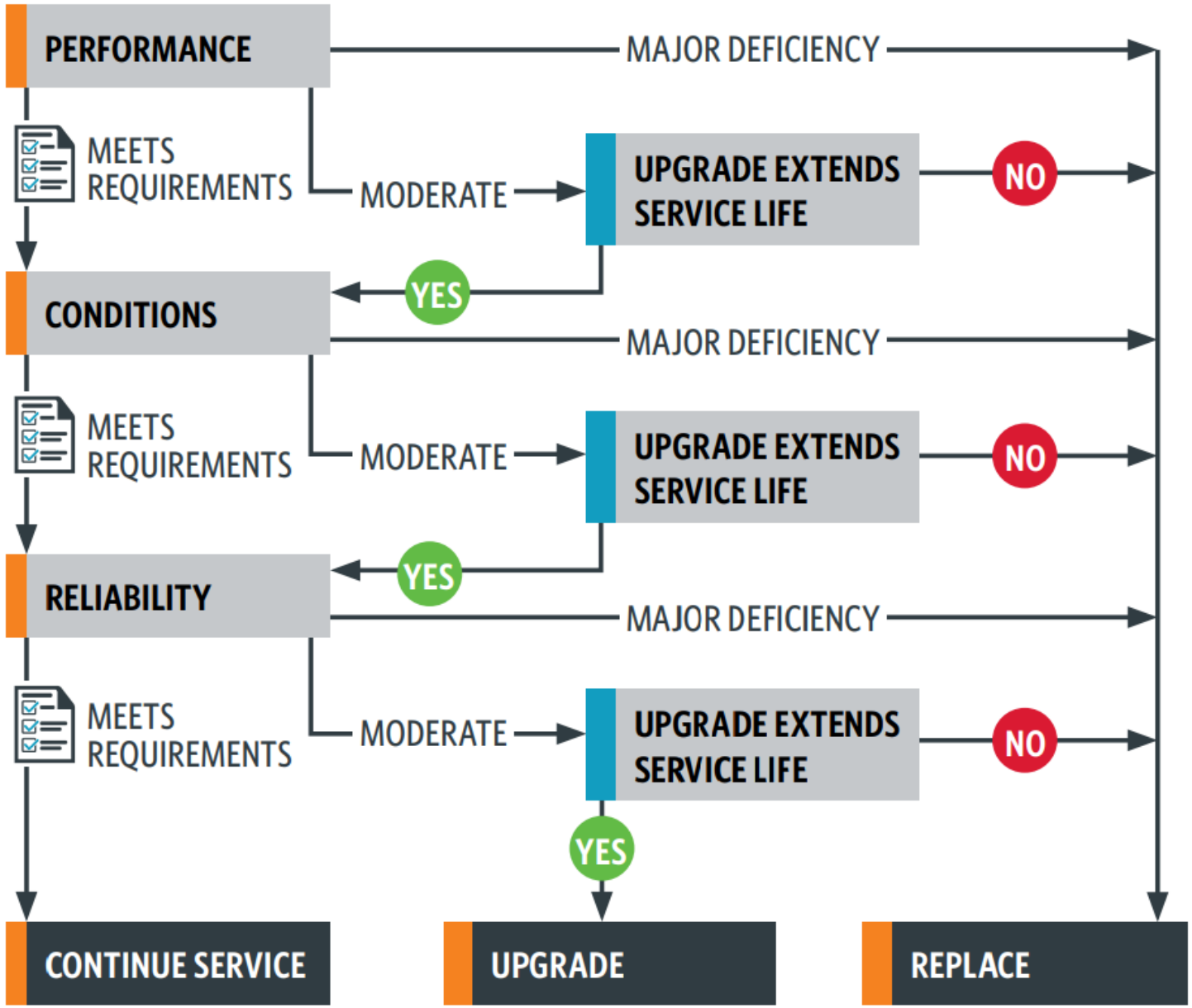
PERFORMANCE
MAJOR DEFICIENCY
MEETS REQUIREMENTS
MODERATE
UPGRADE EXTENDS SERVICE LIFE
NO
YES
CONDITIONS
MAJOR DEFICIENCY
MEETS REQUIREMENTS
MODERATE
UPGRADE EXTENDS SERVICE LIFE
NO
YES
RELIABILITY
MAJOR DEFICIENCY
MEETS REQUIREMENTS
MODERATE
UPGRADE EXTENDS SERVICE LIFE
NO
YES
CONTINUE SERVICE
UPGRADE
REPLACE