

Wastewater Treatment and Disposal Upgrade

Nampa Wastewater Advisory Group

Meeting #9

August 29, 2012



City of Nampa
Wastewater Division
www.cityofnampa.us/wastewater



Workshop Agenda & Objectives

- Update on the status of Nampa's wastewater program
- Review City of Nampa Wastewater Fund Industrial Incentives Policies
- Review Cost of Service Study methodology
- Discuss other policy considerations for the Cost of Service Study
- Review next steps



Wastewater Program Update

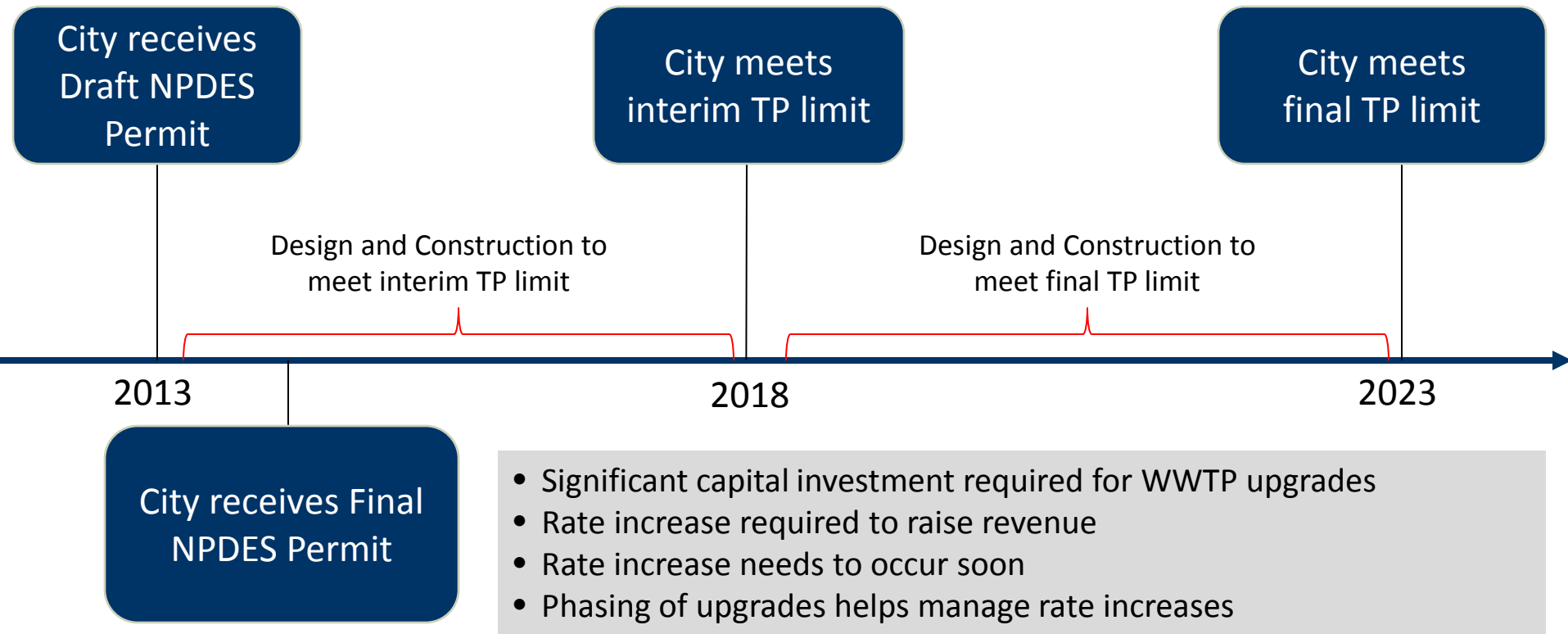
Steve Burgos, Brown and Caldwell

The City Continues to Make Good Progress

- Wastewater Program Action Plan
- All key components progressing:
 - Decision making process
 - Financing and rate studies
 - Technical evaluations
 - Regulatory coordination
 - Legal coordination
 - Public outreach

Reminder: Program Schedule

- What's driving the overall schedule? . . .



Regulatory/Permit Update

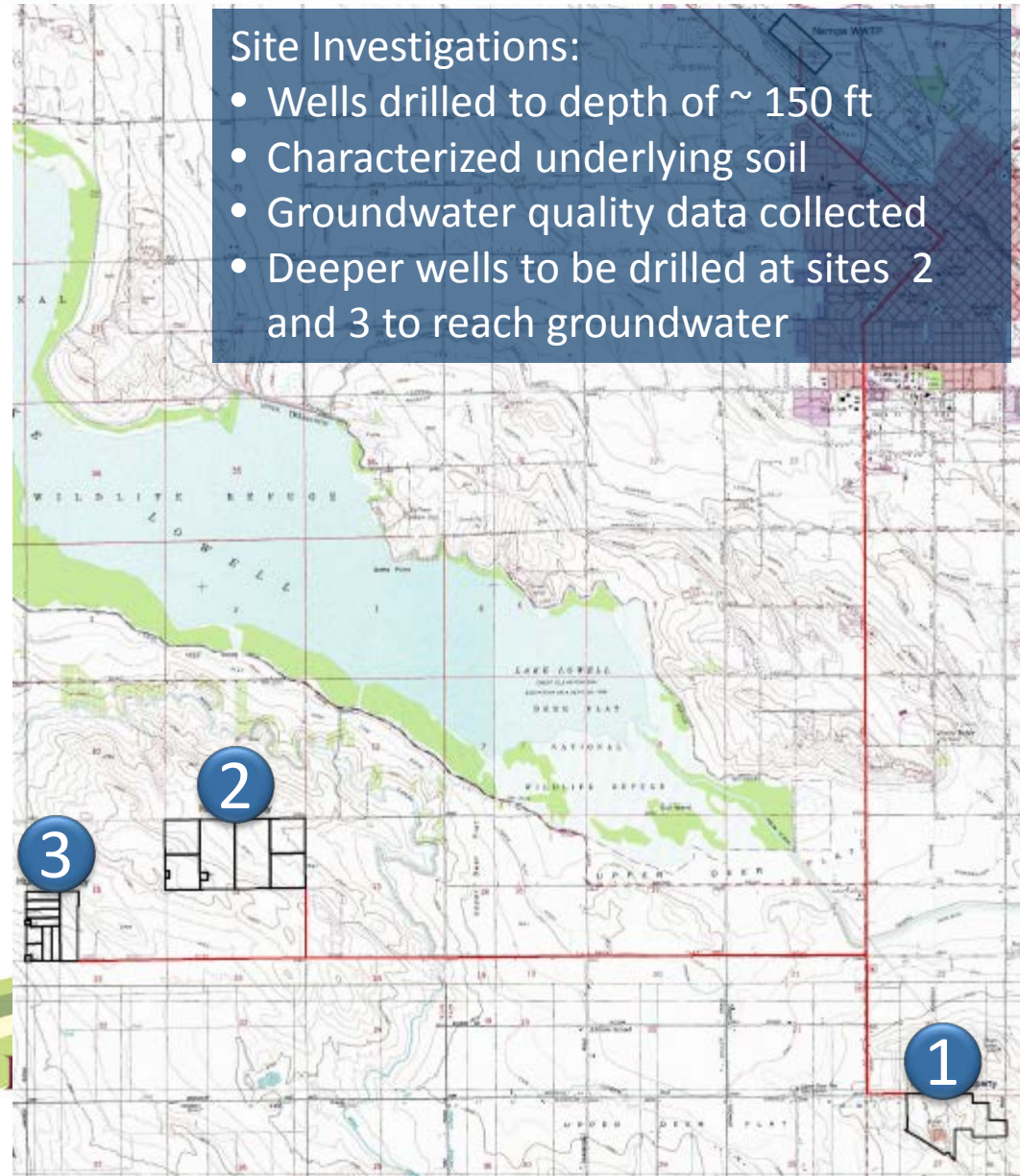
- City met with EPA on 3/13/12 to begin discussing renewed NPDES permit
- City has developed a negotiation strategy for the expected permit limits
- City will meet again with EPA in October to continue negotiations
- Expected renewed NPDES permit timeline:
 - Draft: Early 2013
 - Final: Late Spring or Early Summer 2013

Status of Phase II Investigations

- Options #1 and #2: Direct Infiltration & Rapid Infiltration
 - Advanced exploratory borings on three properties
 - Meeting with DEQ to discuss TDS requirements
 - Install monitoring wells to groundwater (~500 ft)

Site Investigations:

- Wells drilled to depth of ~ 150 ft
- Characterized underlying soil
- Groundwater quality data collected
- Deeper wells to be drilled at sites 2 and 3 to reach groundwater



Status of Phase II Investigations

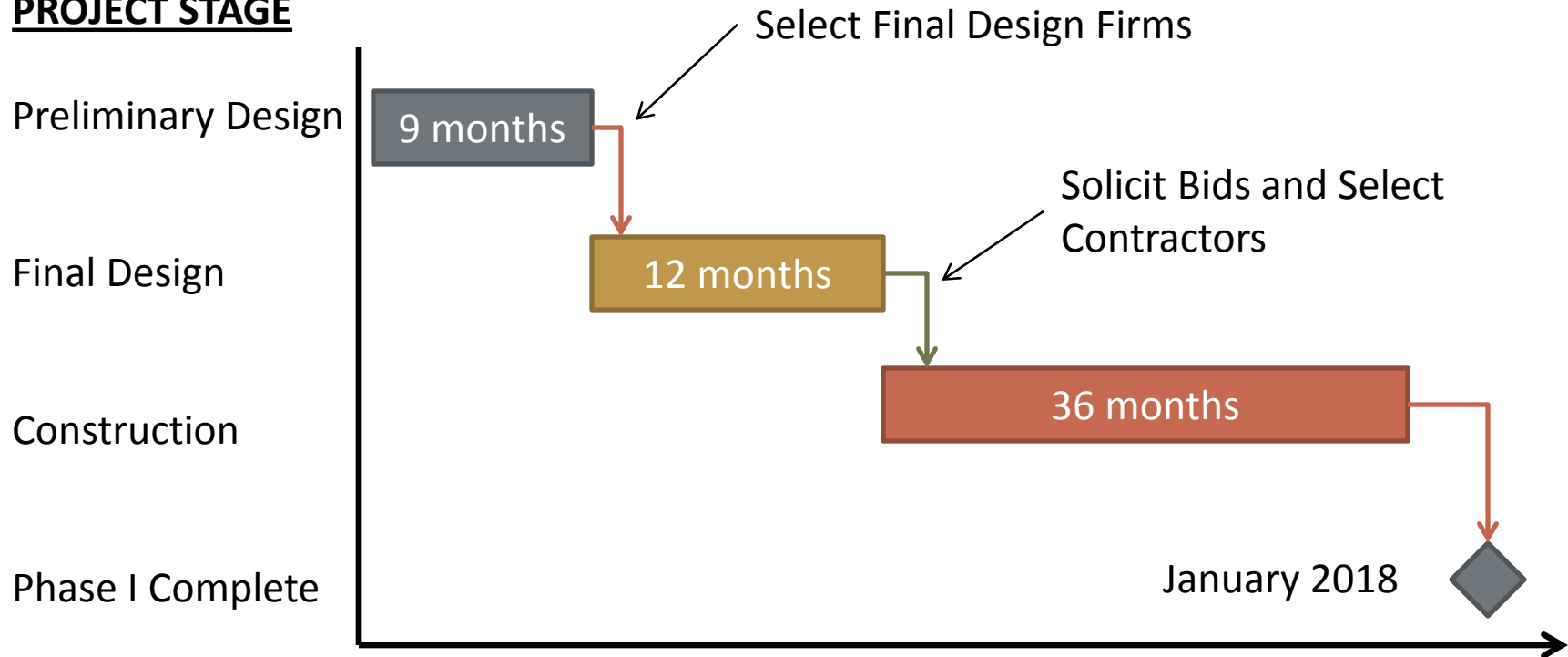
- Option #3: Treat and Offset
 - City of Boise is negotiating with EPA on Dixie Drain
 - Future investigations depend on outcome of Dixie Drain
- Option #4: Tertiary Filtration (formerly “Treat to EPA levels”)
 - No additional investigations needed in the short-term
- Option #5: Do Nothing More
 - No additional investigations needed in the short-term

Status of Phase I

- Supplemental Planning Document
 - Revises and updates the Facility Plan Update to account for Phase I decision
 - Draft submitted to City
 - Final to be submitted to IDEQ shortly
- Preliminary Design
 - Establishes basis of design for all new facilities
 - Includes evaluations of major equipment, site layout, construction sequencing, etc.
 - Schedule: September 2012 – April 2013

Status of Phase I

PROJECT STAGE





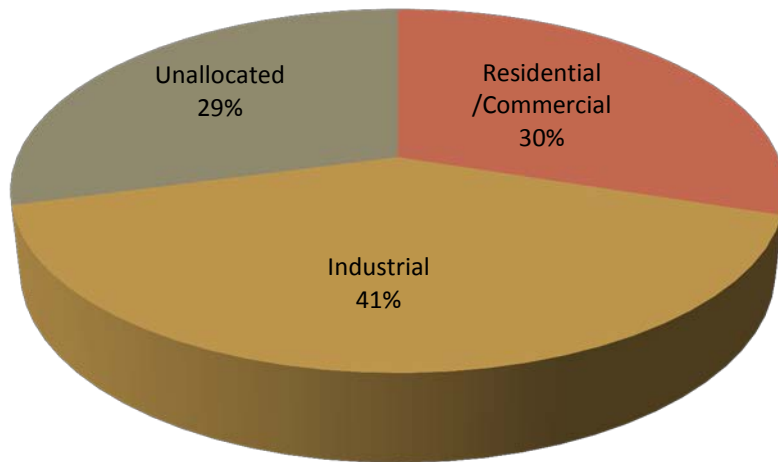
Draft City of Nampa Wastewater Fund Industrial Incentive Policies

Bill Jarocki, Voltaic Solutions

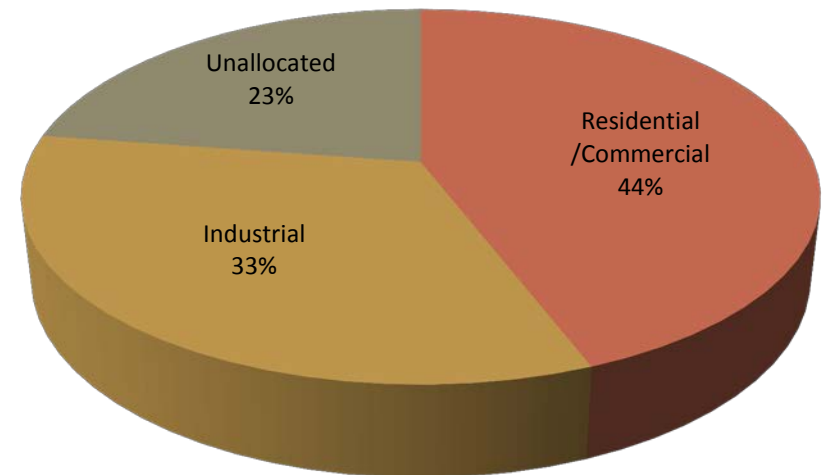
Draft Industrial Incentive Policy

- Why has this policy been developed?
 - Industry uses 30-40% of Nampa's WWTP

Nampa WWTP BOD Allocations



Nampa WWTP TKN Allocations



Draft Industrial Incentive Policy

- Why has this policy been developed?
 - City Council requested a policy
 - Gives certainty to industry
- It will take time to fully develop the policy.
 - Many details need to be worked out

Draft Industrial Incentive Policy

- Goals:
 - Complement City's economic development strategy
 - Optimize use of Nampa WWTP capacity
 - Provide real value to industrial development/existing industry expansion
 - Balance costs and benefits to prevent degradation of financial integrity of Wastewater Enterprise Fund

Draft Industrial Incentive Policy

- Capacity reservation methods:
 - Loan, Lease, Amortized Purchase
- Allows for the transfer of capacity between industries (i.e. creates a capacity market)
- Promotes capacity optimization



Cost of Service Rate Study

John Ghilarducci, FCS Group

Cost of Service Rate Study Result

- Study will give the City **ACTUAL** cost of service for each customer class
- Independent of past precedents
- Study results for individual customer classes can vary significantly from current conditions

Two Most Significant Analytical Steps

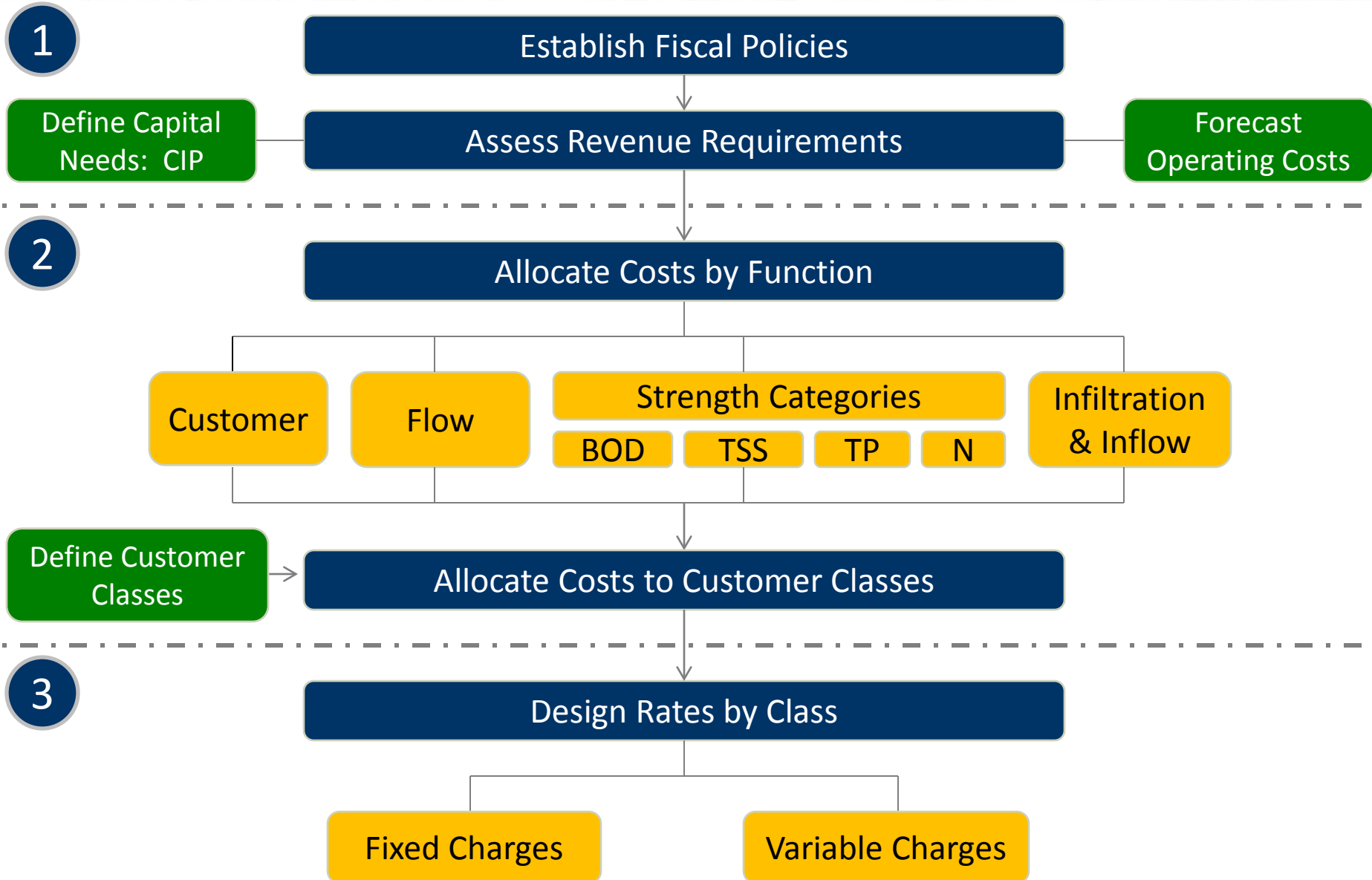
- Determination of the revenue requirement
 - Tells us the “size of the pie” in terms of revenue needs
 - Test of rate sufficiency
- Cost of service analysis
 - Tells us how the pie should be sliced among the City’s customer types
 - Test of rate fairness



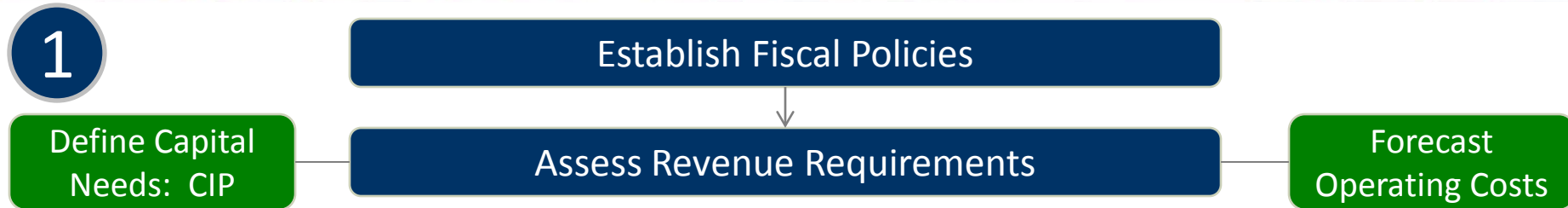
Role of Cost of Service Analysis

- Provides a rational basis for distributing calculated “Revenue Requirement” to each customer class
 - Distributes utility costs among customer classes according to the unique demand each class places on the system
- A distribution of cost shares that considers utility-specific data:
 - Measures of usage and demand (levels and patterns)
 - Planning, engineering, and design criteria
 - Facility requirements (effluent strength, specific constituents, peaks in flow, etc.)

Cost of Service Rate Analysis



Step 1: Develop Policies and Assess Rate Revenue Needs



- Establish Fiscal Policies
 - Target reserve balances
 - Bond coverage
 - Funding ongoing replacement needs
- Compile / forecast program costs
 - Operating budget
 - System replacement needs
 - Capital improvement plan (CIP)
 - Debt service

Key Assumptions

- Customer growth rates (per Nampa 2035 Comprehensive Plan):
 - 2.27% through 2015
 - 1.78% between 2015 and 2020
- Annual inflation rate: 3.06%
- Construction cost inflation: 3.06%
- Salary and wage inflation: 3.06%
- Benefits cost inflation: 5.0%
- Funds earnings rate: 0.5% in 2013, 1.5% in 2014 and 2015, 3.0% thereafter
- Working capital target balances
 - Min. of 60 days of cash operating expenditures
 - Max. of 90 days of cash operating expenditures

Key Assumptions

- Minimum capital fund balance target is set at 2% of the replacement value of the existing plant-in-service (target balance is approximately \$4.0 million on a \$199 million plant value)
- Rate funded system reinvestment continued - set equal to annual depreciation expense
- If bonding pursued, \$15.3 million revenue bond issue in FY 2015 with a net proceed of \$14.0 million
 - 20-year term
 - Interest rate of 4.8%
 - 0.5% issuance cost
 - Debt reserve requirement is equal to annual debt service payment and funded through bond proceeds, and
 - 1.50 coverage requirement

Define Capital Needs CIP: Phase I Upgrades

Facility	Cost
Secondary Treatment	\$5,977,000
Solids Handling Facility	\$12,311,000
Anaerobic Digester	\$3,733,000
Primary Effluent Pump Station	\$2,614,000
Demolition	\$2,661,000
Land Purchase	\$1,000,000
TOTAL	\$28,296,000

Define Capital Needs CIP: Collection System

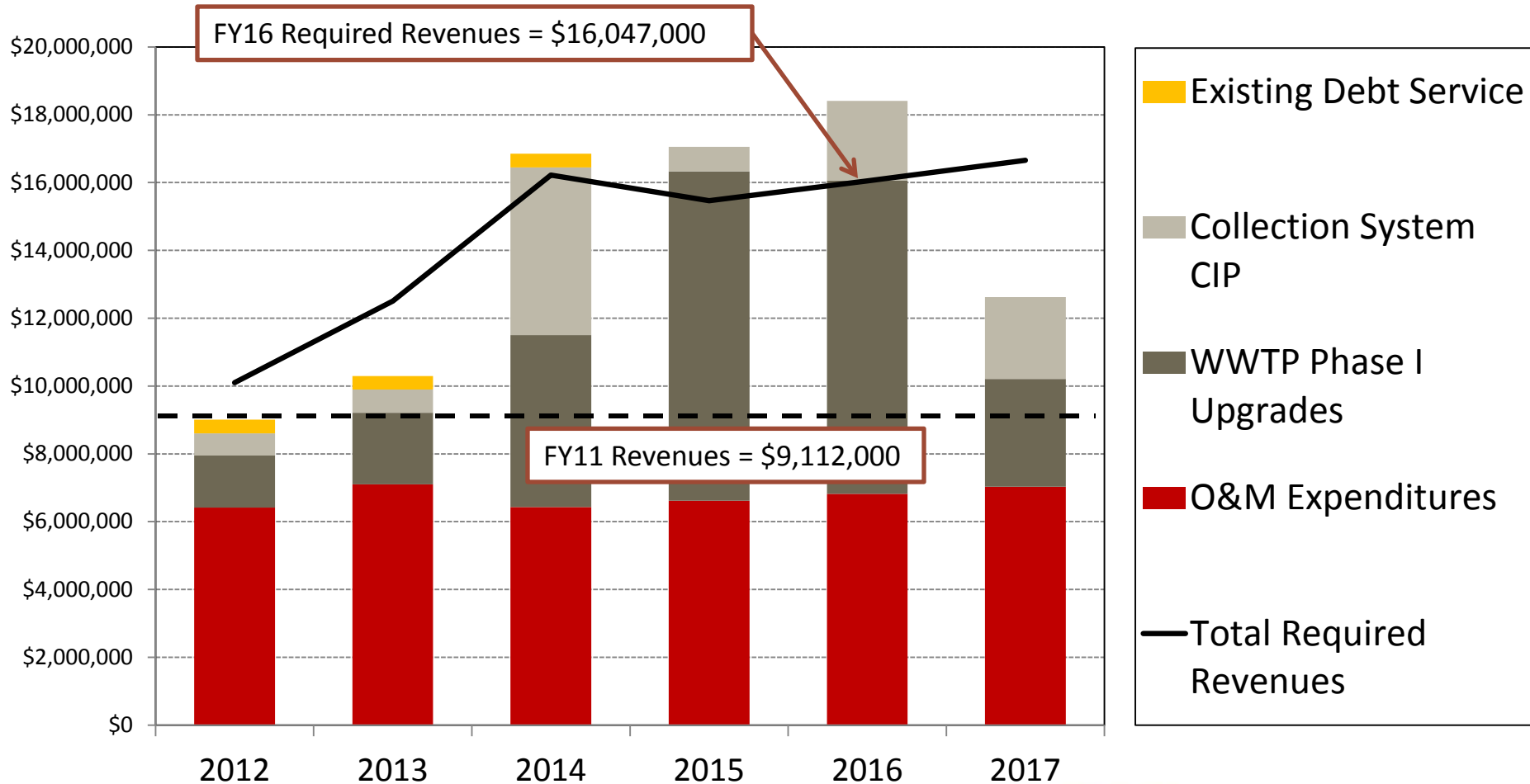
- 2008 Comprehensive Plan CIP
 - 2010-2015 Collection System Costs (City's portion)
 - Total cost = \$7.3 million
 - Purdam Lift Station = \$4.3 million
 - 2015-2020 Collection System Costs (City's portion)
 - Total cost = \$9.1 million
- Collection System CIP
 - 2010-2015 CIP evenly distributed between years (\$660K/yr)
 - Purdam Lift Station replaced in 2014
 - 2015-2020 CIP evenly distributed between years (\$2.08M/yr)

Forecast Operating Costs

Category	Average Yearly Cost ¹	Percent of Total Cost
Salaries	\$1,596,000	24%
Benefits and Taxes	\$886,000	13%
Operations and Maintenance	\$3,194,000	47%
Transfers Out	\$619,000	9%
Additional O&M Expenses	\$443,000	7%
TOTAL	\$6,738,000	100%

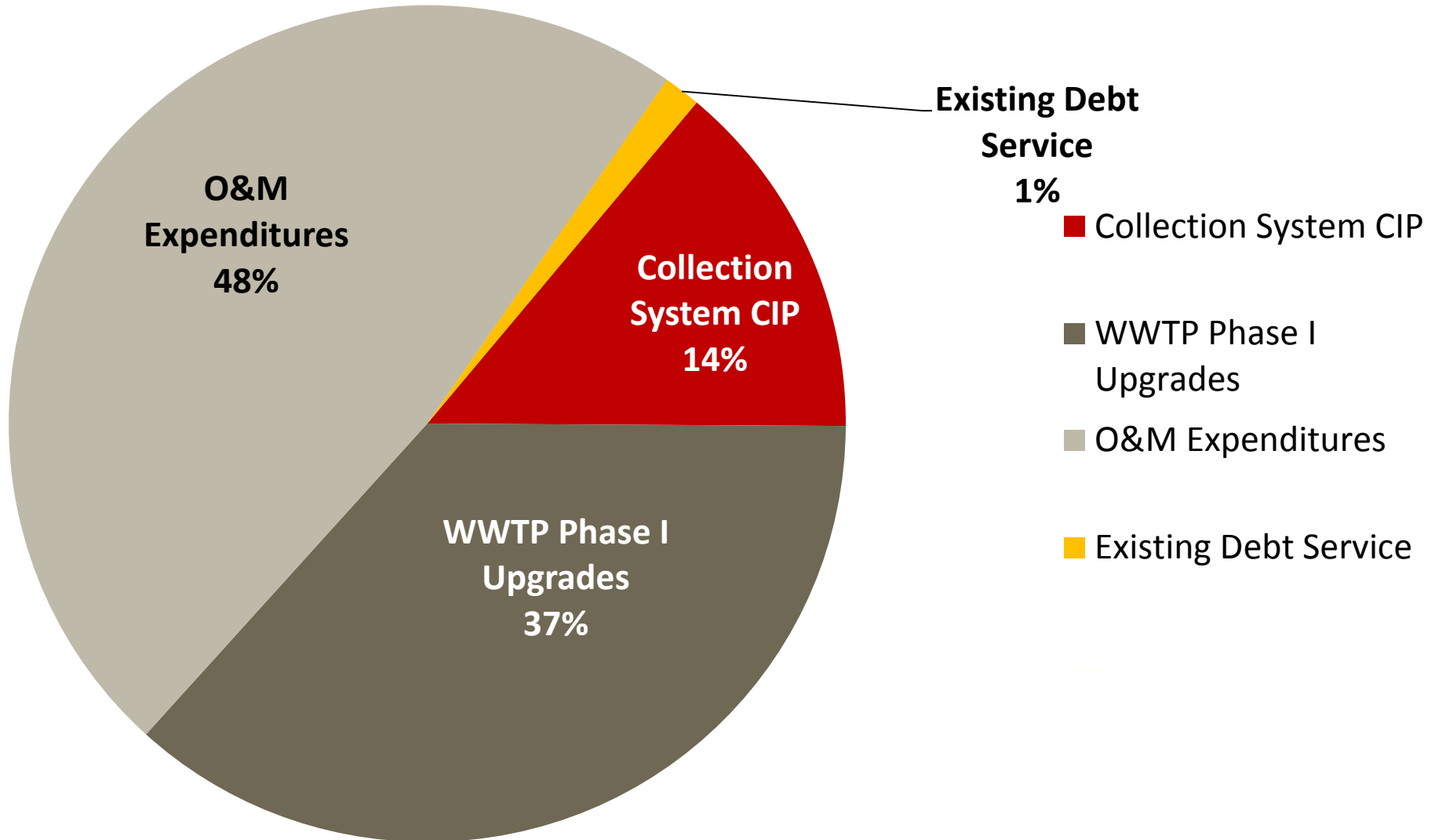
¹ Average yearly cost for FY12-FY17.

Total Expenditures & Total Revenues



Total Expenditures

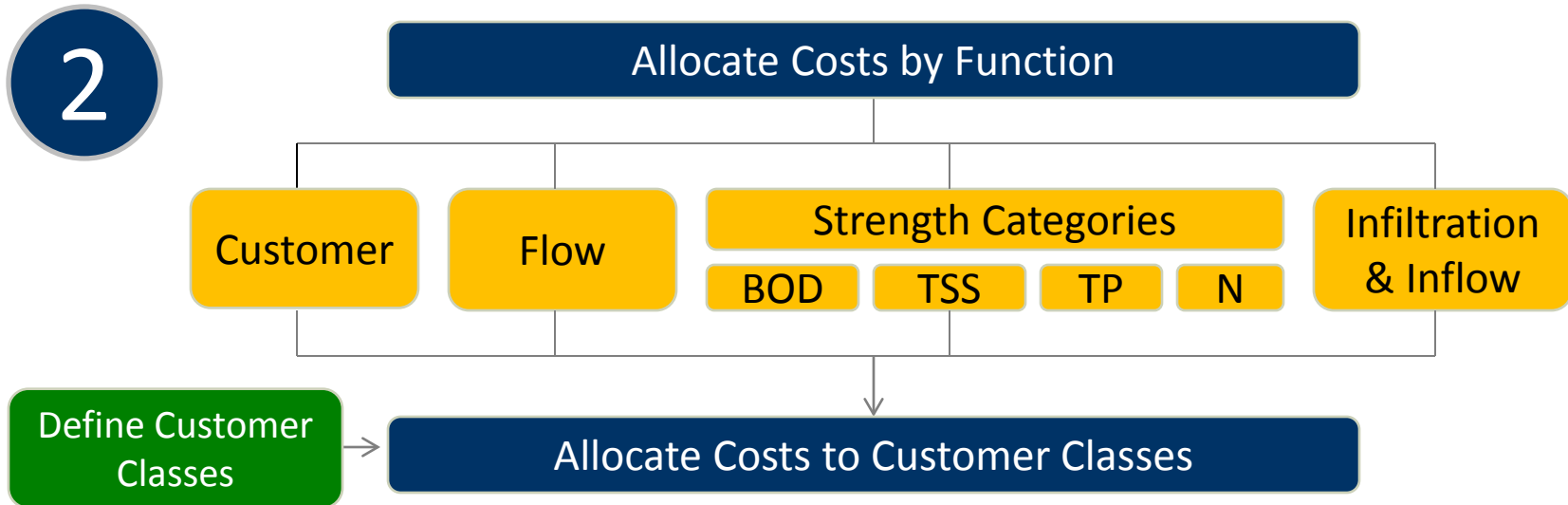
Nampa Sewer Fund Expenditures - 6-year Average (FY 2012 – FY 2017)



Projected Expenditures by Fiscal Year

Category	Projected Expenditures by Fiscal Year						
	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Capital Funding	\$3,502,000	\$2,192,000	\$2,790,000	\$10,023,000	\$10,434,000	\$11,584,000	\$5,593,000
Operations & Maintenance	\$5,610,000	\$6,415,000	\$7,105,000	\$6,428,000	\$6,622,000	\$6,823,000	\$7,031,000
Existing Debt Service	\$396,000	\$399,000	\$397,000	\$398,000	-	-	-
TOTAL	\$9,112,000	\$9,006,000	\$10,292,000	\$16,849,000	\$17,056,000	\$18,407,000	\$12,624,000

Step 2: Allocate Costs by Function and to Customer Classes



- Define customer classes
 - Look for distinctions in demand and service
 - Define levels of demand by service component
- Allocate plant and expenses by function
 - Engineering data
 - Industry standards

Current Customer Class Definitions

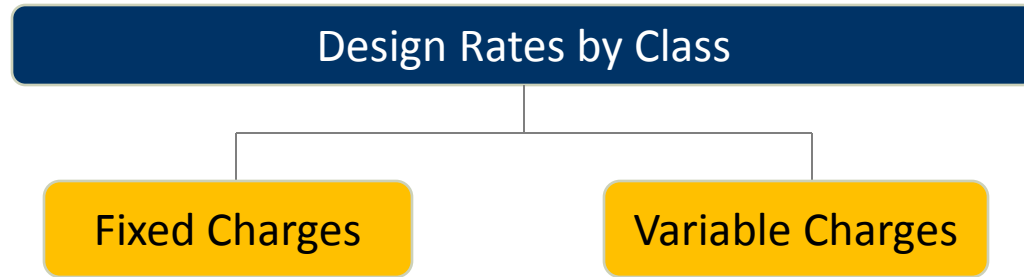
Customer Classes	Waste Strength	Number of Customers in Class	Example Customers
SE1	BOD = 0-200 mg/L	31	Laundromats & dry cleaners
SE2	BOD = 200-400 mg/L	27,208	Residential & retail stores
SE3	BOD = 400-600 mg/L	178	Schools & hospitals
SE4	BOD = 600-800 mg/L	76	Sit-down restaurants
SE5	BOD = 800-1000 mg/L	-	-
SE6	BOD = 1,000-1,500 mg/L	35	Drive-in restaurants
SE7	BOD = 1,500-2,000 mg/L	-	-
Industrial	By Permit	9	Simplot, TASC0, etc.

Preliminary Functional Allocation Results

Unit Process	Flow	BOD	TSS	TKN	TP
Collections	100%	-	-	-	-
Headworks	100%	-	-	-	-
Primary Clarifiers	16%	27%	57%	-	-
Trickling Filters	11%	89%	-	-	-
PEPS	100%	-	-	-	-
Aeration Basins/Final Clarifiers	-	30%	-	60%	10%
Disinfection	100%	-	-	-	-
Biosolids	-	32%	47%	21%	-
Septage	1%	40%	35%	24%	-
Lab/Pretreatment	40%	30%	20%	5%	5%

Step 3: Design Rates

3



- Allocate costs to customers
 - Determine cost by customer class
 - Develop unit costs
 - Build rates to meet revenue requirements equitably and consistent with policy objectives

Reminder: Cost of Service Rate Study Result

- Study will give the City **ACTUAL** cost of service for each customer class
- Independent of past precedents
- Study results for individual customer classes can vary significantly from current conditions



Other Policy Considerations

Steve Burgos and John Ghilarducci

Rate Study Policies

- Key analytical scenarios:
 - Fixed vs. variable rate design
 - Cash vs. bonding scenarios
- Scenarios are not mutually exclusive
- Goal: Focus list of possible scenarios to present to City Council based on input from IWG and NWAG

Fixed vs. Variable Rates

- Fixed Rate – Each customer pays regardless of volume
 - Ex. \$10/month/customer
- Variable Rate – Customer pays based on actual volume
 - Ex. \$1/100 ft³
- Rate can be made up of both fixed and variable portions
 - i.e. *Rate = Fixed Rate + Volume * Variable Rate*

Fixed vs. Variable Rates Considerations

- Fixed Rates
 - Predictable and reliable revenue stream
 - Most utility costs are fixed in nature
 - Does not reward conservers
- Variable Rates
 - Increases conservation incentive
 - Give customers the ability to effect their bill
 - Volatile revenue stream potentially causes rate adjustments

How Can You Affect Your Monthly Bill?

- Residential customers are billed based on volume of water used
 - Less water used = Lower bill
- Residential treatment systems
 - Reduce constituent loadings
 - Do not reduce flow (i.e. do not lower bill)

Example: Fixed vs. Variable Rates

- Two Customers
 - Customer #1: Single-person household (low volume)
 - Customer #2: Six-person family (high volume)
- Fixed Rate Design
 - Customers #1 and #2 pay the same bill
- Variable Rate Design
 - Customer #1 pays lower bill than Customer #2 due to reduced usage

Cash vs. Bonding Preferences

What did the City learn about funding the upgrades from the NWAG?

The majority of the NWAG members said they could support either cash or bond financing

- **Common Comments**

- The pay-as-you-go (cash) option would avoid putting the City in debt and could be cheaper in the long run
- A bond could be a good option because more people would pay for the upgrades over a longer period of time
- If the community votes down the bond, rates would still need to be increased
- It might be a good option to pay for the first phase of upgrades with cash and the second phase with a bond
- The City needs to work with industries and the Nampa community to find a funding option that works for everyone

Implementation Options

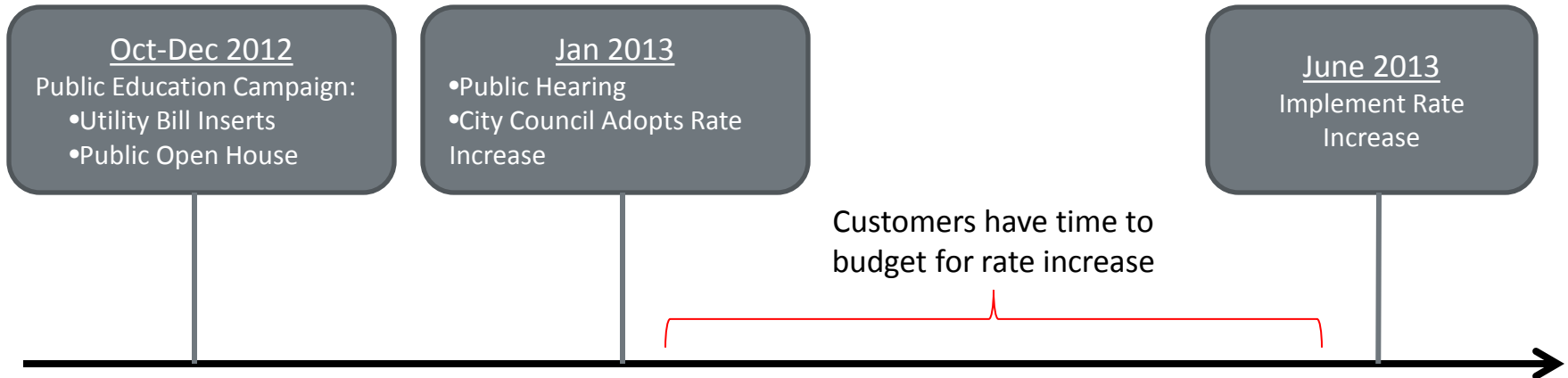
- City is considering three main options:

Scenario 1: Cash – Single Rate Increase

Scenario 2: Cash – Stepped Rate Increase

Scenario 3: Cash & Bonding – Single Rate Increase

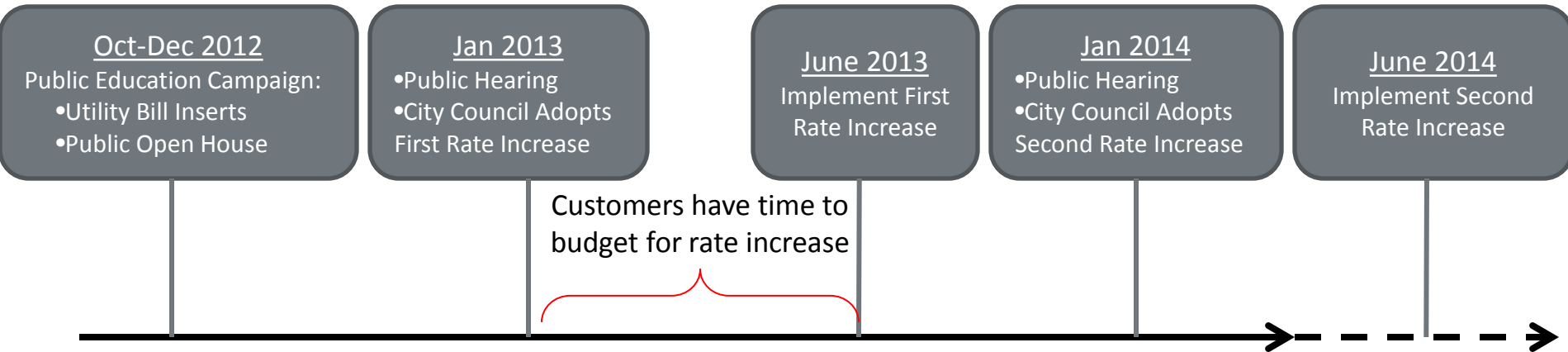
Scenario 1: Cash – Single Rate Increase



- Considerations:

- Requires only one rate increase until Phase II
- Revenue will be generated to meet requirements
- Potentially over collects in the short-term and under collects in the long-term
- Large rate increase for customers
- Current customers will pay for improvements that will serve future customers

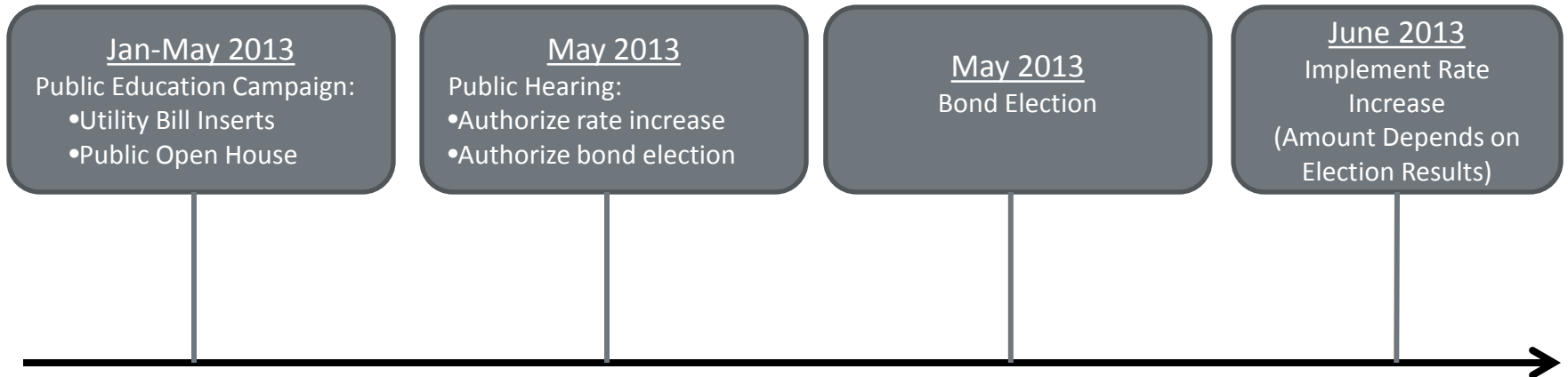
Scenario 2: Cash – Stepped Rate Increase



- Considerations:

- Sewer rates will be raised twice (2013 and 2014)
- Overall rate increase will be larger because of lost revenue in 2013
- Requires two actions from City Council
- Obligates future City Councils
- Public education may be needed prior to second rate increase

Scenario 3: Bonding & Cash – Single Rate Increase

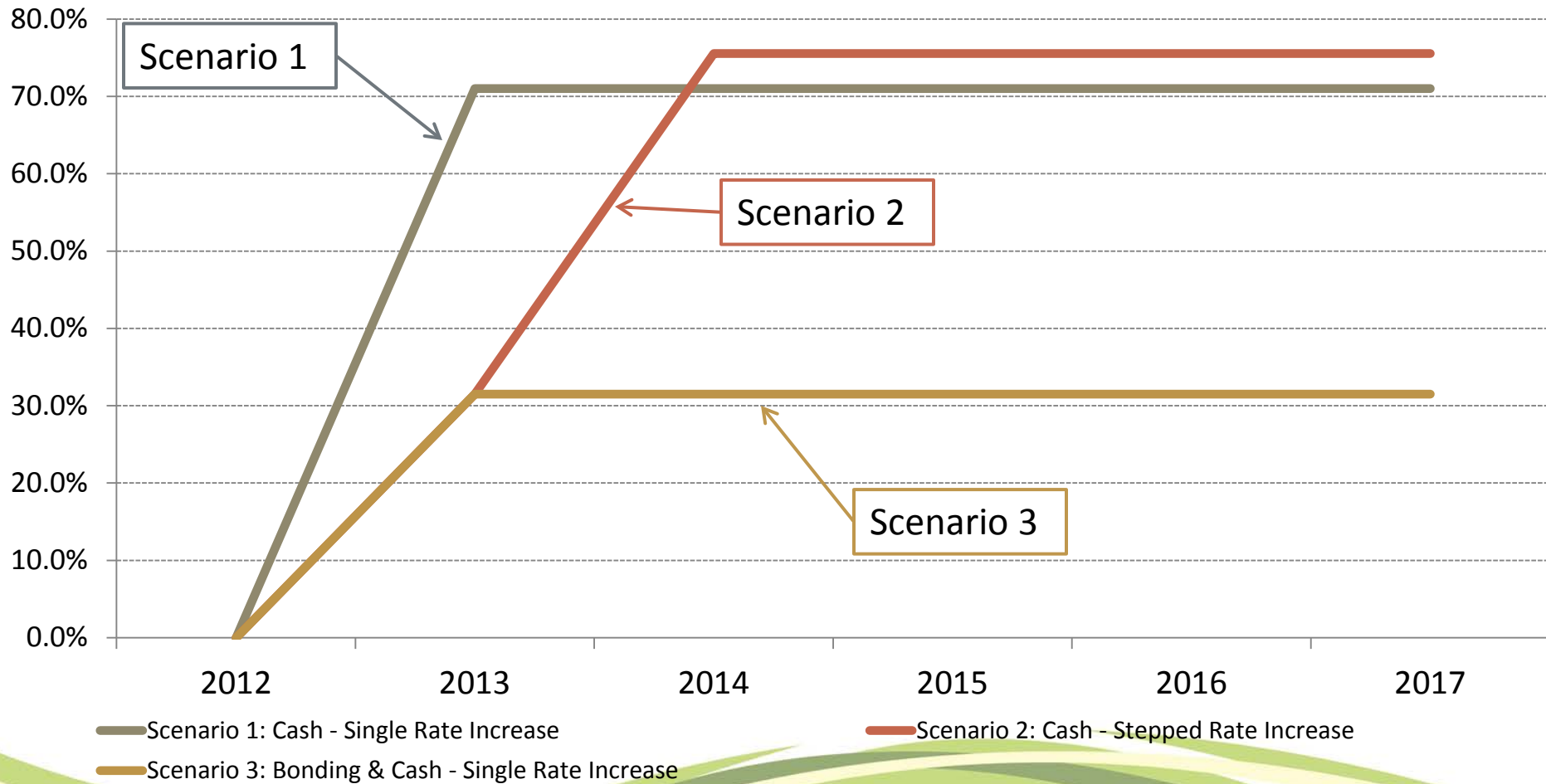


- Considerations:

- Requires only one rate increase until Phase II
- Minimizes rate increase
- Better spreads cost over current and future customers
- Results in larger overall costs when financing costs are considered
- Requires bond election and simple majority support

Implementation Options

Projected Increase in Revenue Requirements





What's Next

Rosemary Curtin, RBCI

Next Steps

- City Council Workshop – September 11th
- NWAG #10 – Possibly End of September
- Phase I Preliminary Design – September thru April

Nampa Wastewater Advisory Group Workshop

Wastewater Program Update
August 29, 2012

Questions?

www.cityofnampa.us/wastewater