RIVERSIDE PUBLIC UTILITIES

UTILITY 2.0

BOARD WORKSHOP - ROADMAPS

JULY 13,2015

WATER | ENERGY | LIFE

CITY OF RIVERSIDE PUBLIC UTILITIES

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RIVERSIDE PUBLIC UTILITIES - PLANNING DATELINE

WORKING THE PLAN

2014

General Manager Assessment

Q1 - 2015

February 12, 2015
Introduction to Utility 2.0

February 27, 2015
Utility 2.0 Feedback

Q2 - 2015

May 7, 2015
Joint Meeting #1
Utility 2.0 & Governance

Q3 - 2015

July 13, 2015
Utility 2.0 Infrastructure & Workforce Roadmaps

July 29, 2015
Utility 2.0 Resource Supply Thriving Financially Roadmaps

August 11, 2015
City Council to discuss Performance Audits Fiscal and Reserves Policy

August 28, 2015
Joint Meeting #2
Utility 2.0 - Roadmaps & Governance

September 1, 2015
Council Workshop
RPU Finance 101

Q4 - 2015

October 2015
Fiber Optic Plan
Northside Audit
Transactions to Board and Council

Oct.-Dec. 2015
Roadmap Feedback
Fiscal Policies Audit
Organizational Review
Thriving Financially to Board and Council

Q1 - 2016

Jan.-Mar. 2016
Draft Financial Plan
(5 year forecast)
Performance Audit
(next phase)
Detailed Finance Audit to Board and Council

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CITY OF RIVERSIDE
PUBLIC UTILITIES

COMPLETED

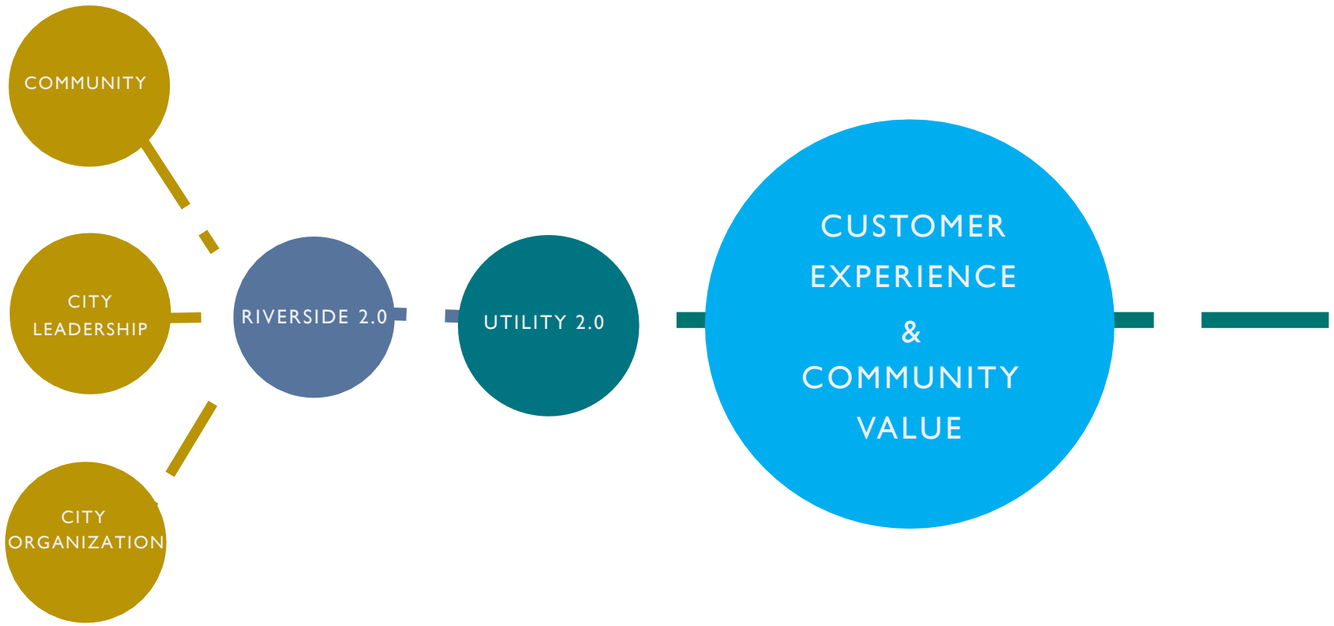
City Council

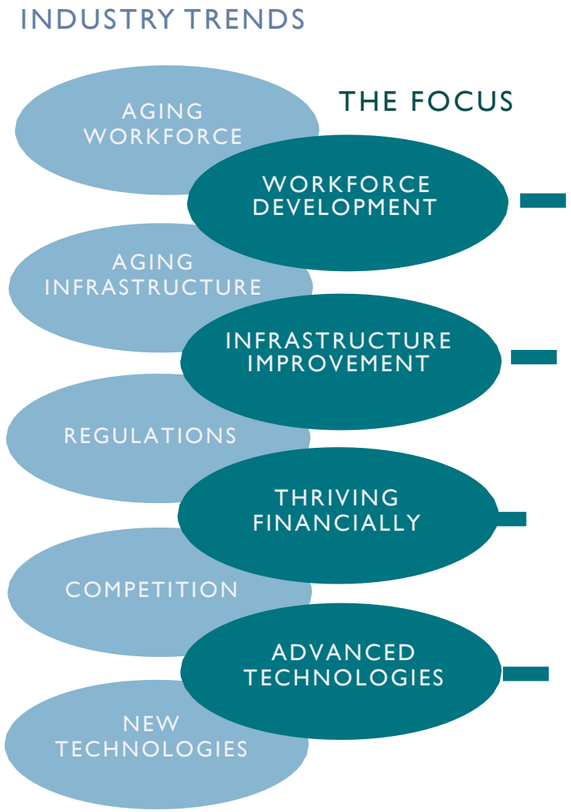
Board of Public Utilities

Joint Meeting Council Board

Reports to Board And Council

THE PLANNING PROCESS





THE PLANS

- RECYCLED WATER
- WATER INFRASTRUCTURE
- INTEGRATED WATER
- WORKFORCE DEVELOPMENT
- FACILITIES PLAN
- RPS POWER IMPLEMENTATION
- INTEGRATED POWER RESOURCES
- ELECTRIC INFRASTRUCTURE
- TRANSMISSION RELIABILITY
- FIBER BUSINESS
- TECHNOLOGY
- CONSERVATION AND EFFICIENCY
- FINANCIAL PRO FORMA - 10 YR

Riverside 2.0 was created after input from the Community through the Seizing Our Destiny process, the City Council's development of seven strategic goals in 2015, and the City Management's governing principles. This graphic illustrates the planning process and specifically outlines how RPU's plans fit within the City's broader plan.

HOW ROADMAPS SUPPORT OUR GOALS

CITY GOAL #1
Enhanced Customer Service: Improved quality of life

CITY GOAL #2
Economic Development: Continue to develop an economically vibrant City

CITY GOAL #3
Community Services: Provide appealing, accessible and safe venues

CITY GOAL #4
City Transportation Program: Continue to develop efficient transportation systems and provide affordable options for community mobility

CITY GOAL #5
Improve Housing Diversity and Options

CITY GOAL #6
Improve Teamwork and Communication

CITY GOAL #7
Reduce Taxpayer Liability and Reduce Costs Wherever Possible

RPU GOAL #1
Contribute to the City of Riverside's economic development while preserving RPU's financial strength

RPU GOAL #2
Maximize the use of technology to improve utility operations

RPU GOAL #3
Impact positively legislation and regulations at all levels of government

RPU GOAL #4
Develop and implement electric and water resource plans

RPU GOAL #5
Create and implement a workforce development plan

WORKFORCE DEVELOPMENT

INFRASTRUCTURE IMPROVEMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

THE PLANS

- RECYCLED WATER
- WATER INFRASTRUCTURE
- INTEGRATED WATER
- WORKFORCE DEVELOPMENT
- FACILITIES PLAN
- RPS POWER IMPLEMENTATION
- INTEGRATED POWER RESOURCES
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- CONSERVATION AND EFFICIENCY
- FINANCIAL PRO FORMA - 10 YR

RIVERSIDE PUBLIC UTILITIES

UTILITY 2.0

ELECTRIC INFRASTRUCTURE ROAD MAP

JULY 13, 2015

WATER | ENERGY | LIFE

CITY OF RIVERSIDE PUBLIC UTILITIES

RiversidePublicUtilities.com

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT –
ELECTRIC

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ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

INFRASTRUCTURE IMPROVEMENT

EXECUTIVE SUMMARY

WORKFORCE DEVELOPMENT

THRIVING FINANCIALLY

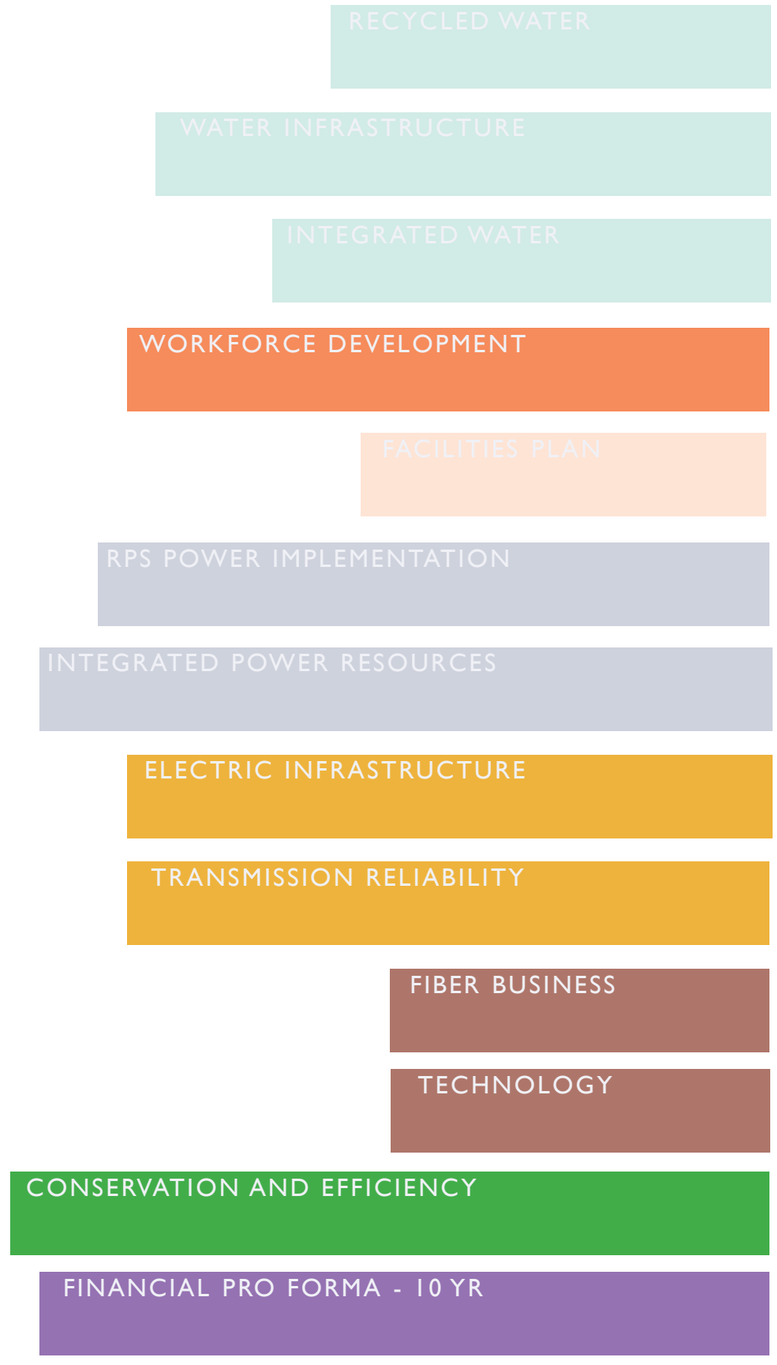
ADVANCED TECHNOLOGIES

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT – ELECTRIC - GOALS

INFRASTRUCTURE IMPROVEMENT

- Address aging infrastructure.
- Improve system safety and reliability.
- Increase the use of technology to inform future planning and increase conservation.
- Use financial pro forma to strike investment balance.

THE PLANS



Diamond Reliability Recognition

- APPA represents community-owned electric utilities in over 2,000 U.S. cities
- RP_3 recognizes utilities with high proficiency in reliability, safety, work force development and system improvement
- RP_3 one of two utilities in California - Diamond level

City of Riverside Electric System Area

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CITY OF RIVERSIDE PUBLIC UTILITIES

Electric Substations

Transmission Lines

SCE Transmission Lines

VISTA

ALUMAX

HUNTER

RIVERSIDE

UNIVERSITY

MTN. VIEW

PLAZA

MAGNOLIA

LA COLINA

SPRINGS

CASA BLANCA

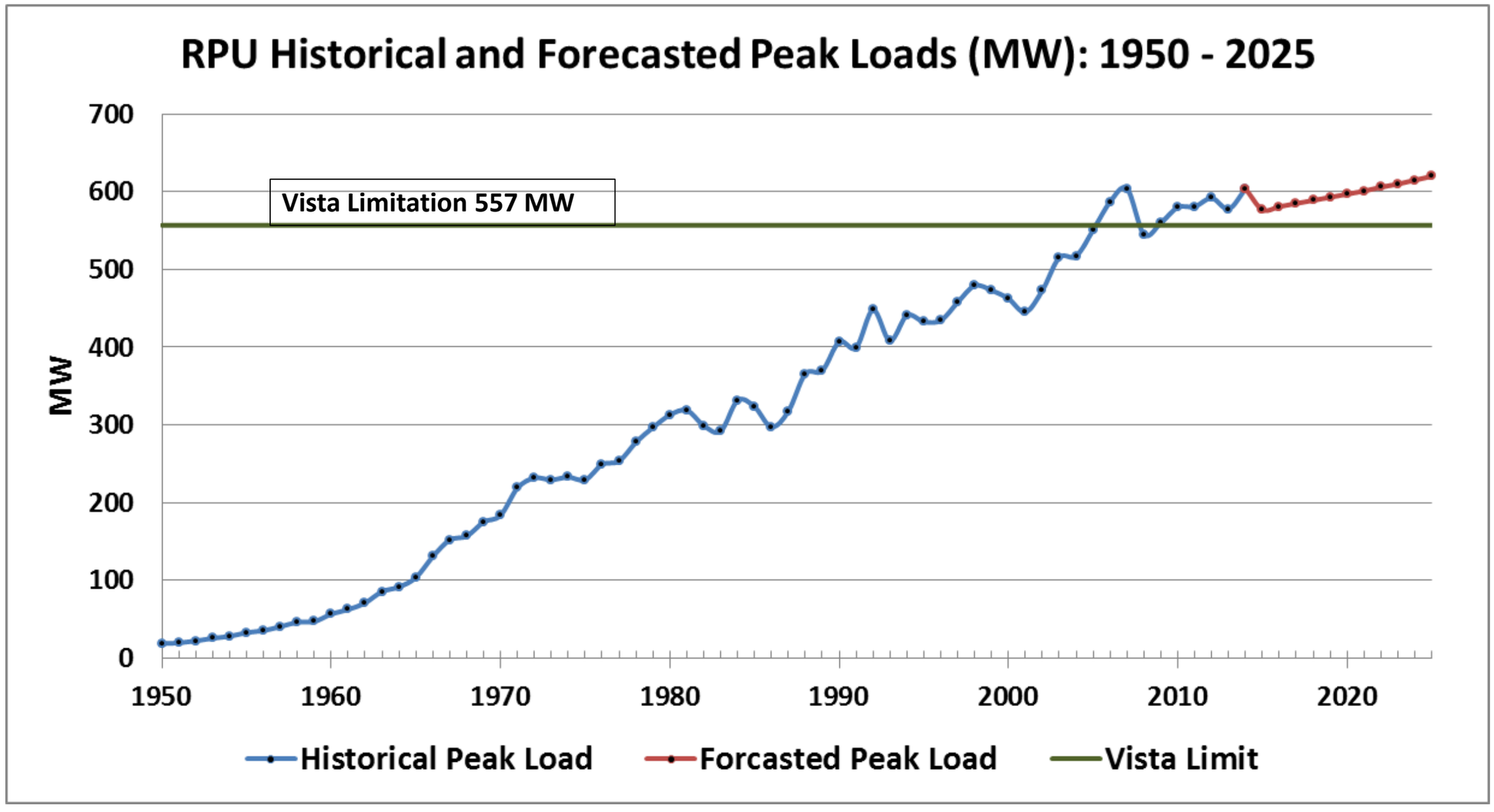
LYNN

FREEMAN

KAISER

ORANGECREST

Historic Peaks



Vista Substation

1 interconnection

Arizona Public Service

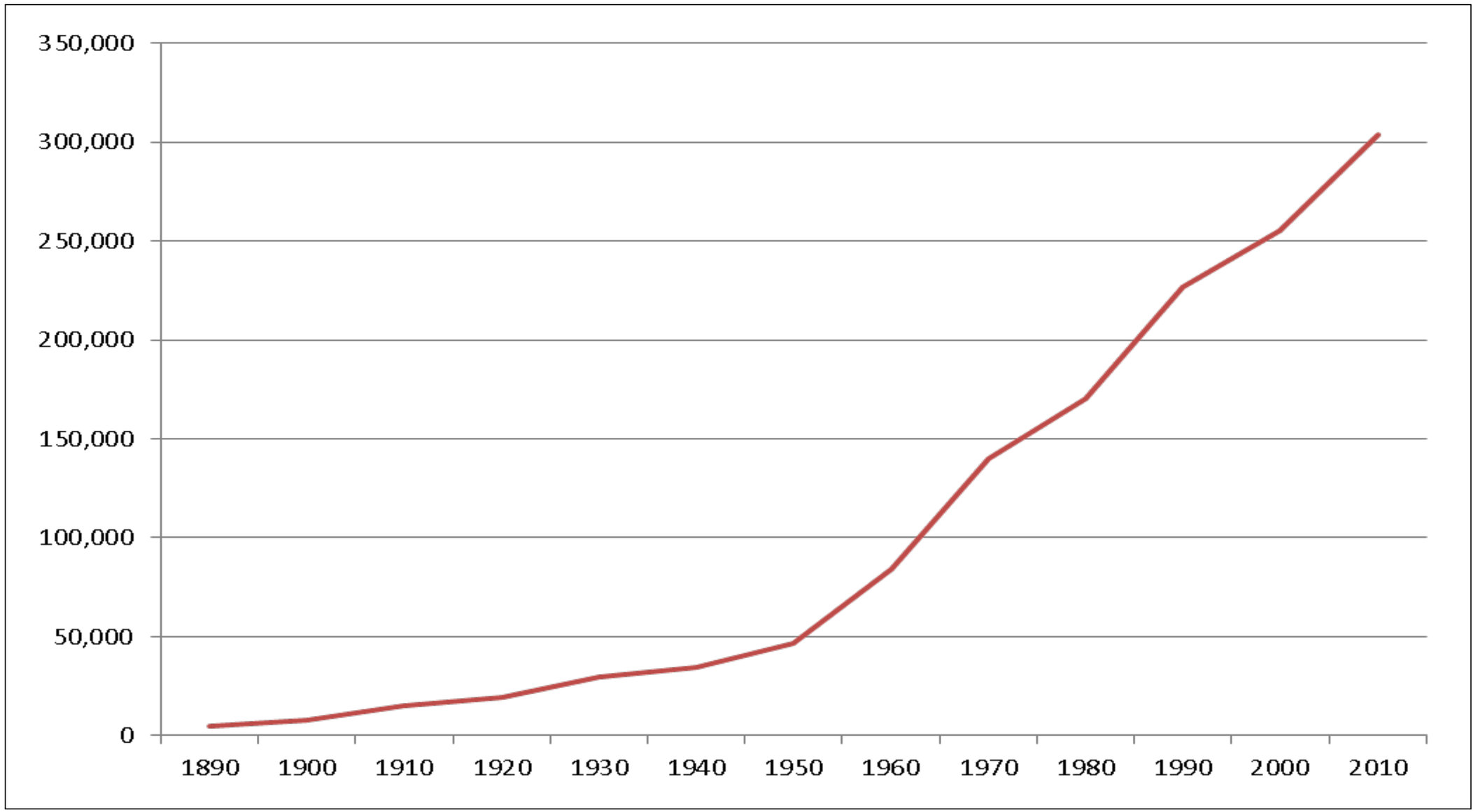
RTRP

LEGEND

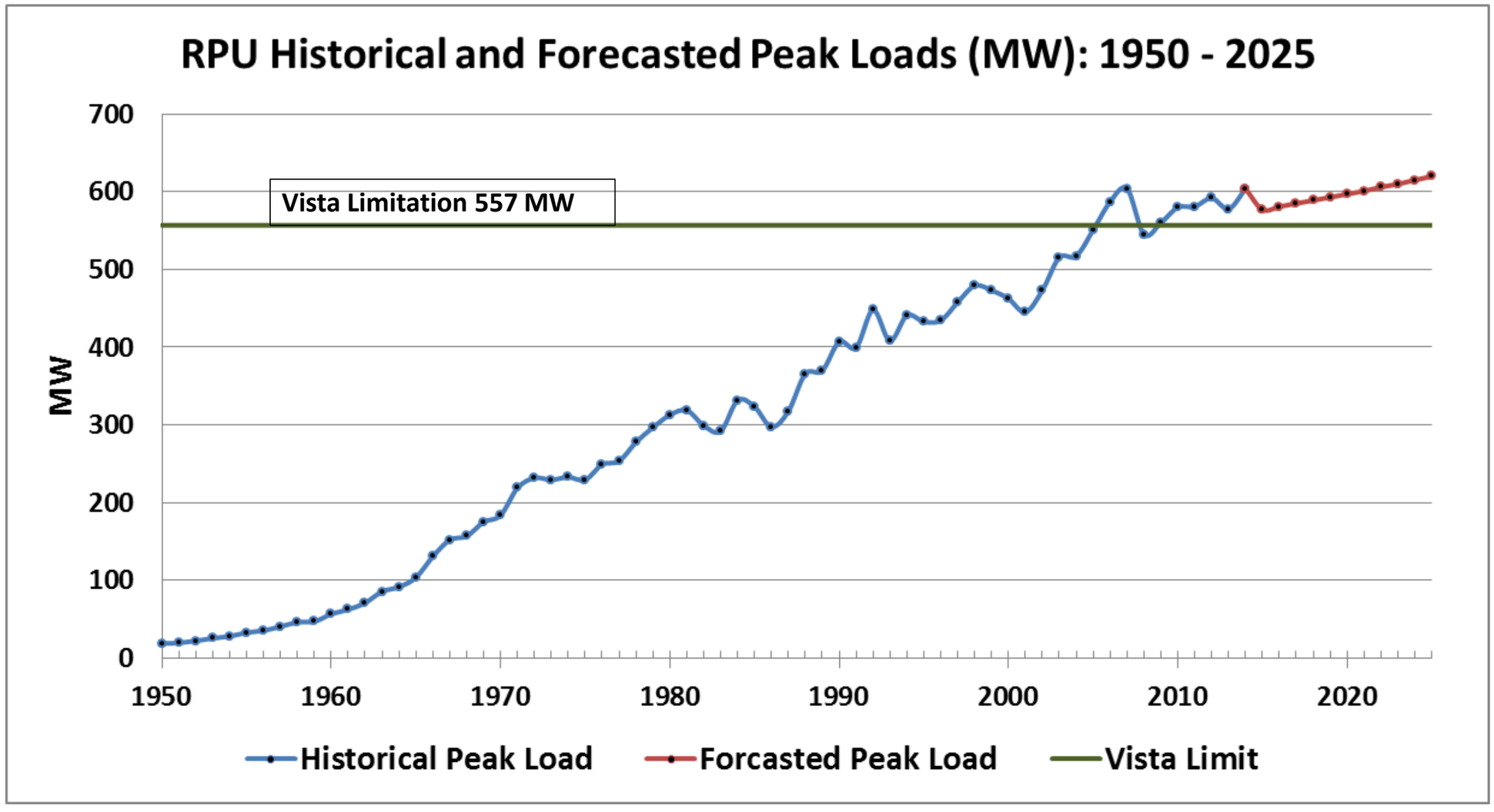
- Proposed 230 kV Transmission Line
- Proposed 69 kV Subtransmission Lines
- Mira Loma - Vista Transmission Line
- City Boundary

Proposed Routes

Riverside Population & Infrastructure Growth



Historic Peaks



Electric Infrastructure Assessment

Infrastructure:

- Many of our key infrastructure assets are more than 50 years old.
- Electric utility operations are changing.

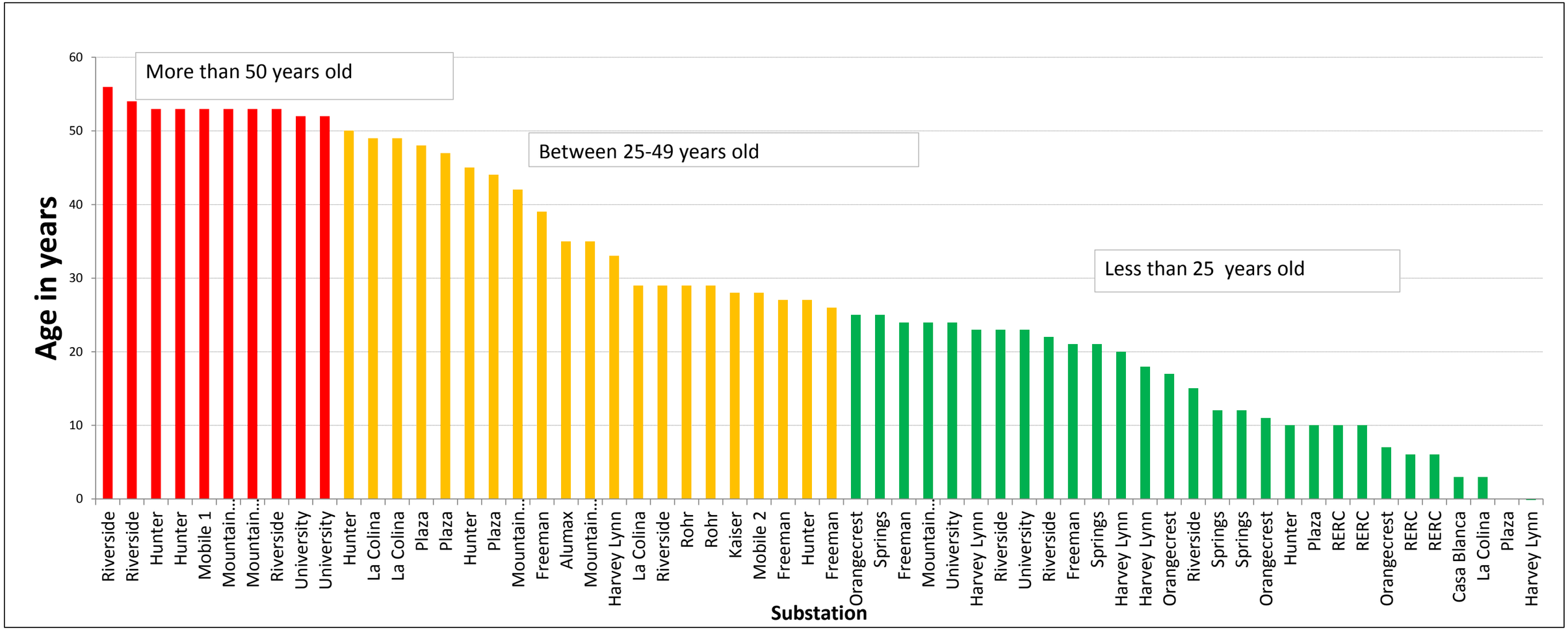
Technology:

- Smart Grid technologies are key to future success and system reliability/management.

Workforce:

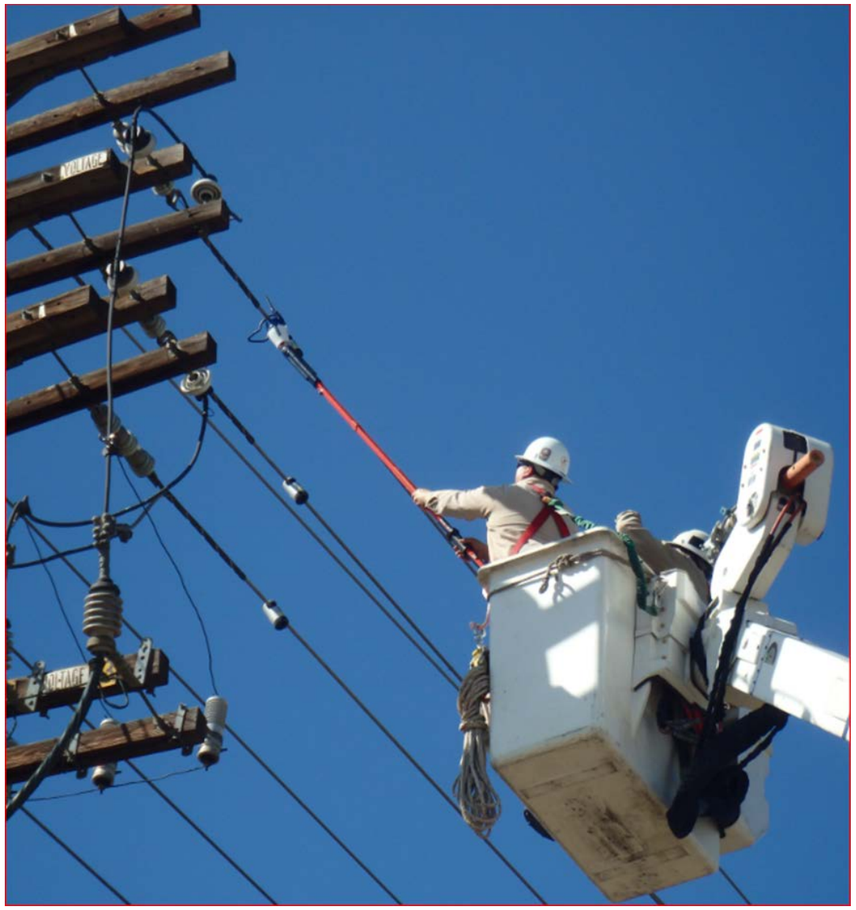
- Workforce needs training to have Utility 2.0 skill sets.
- Knowledge transfer needed for aging workforce.

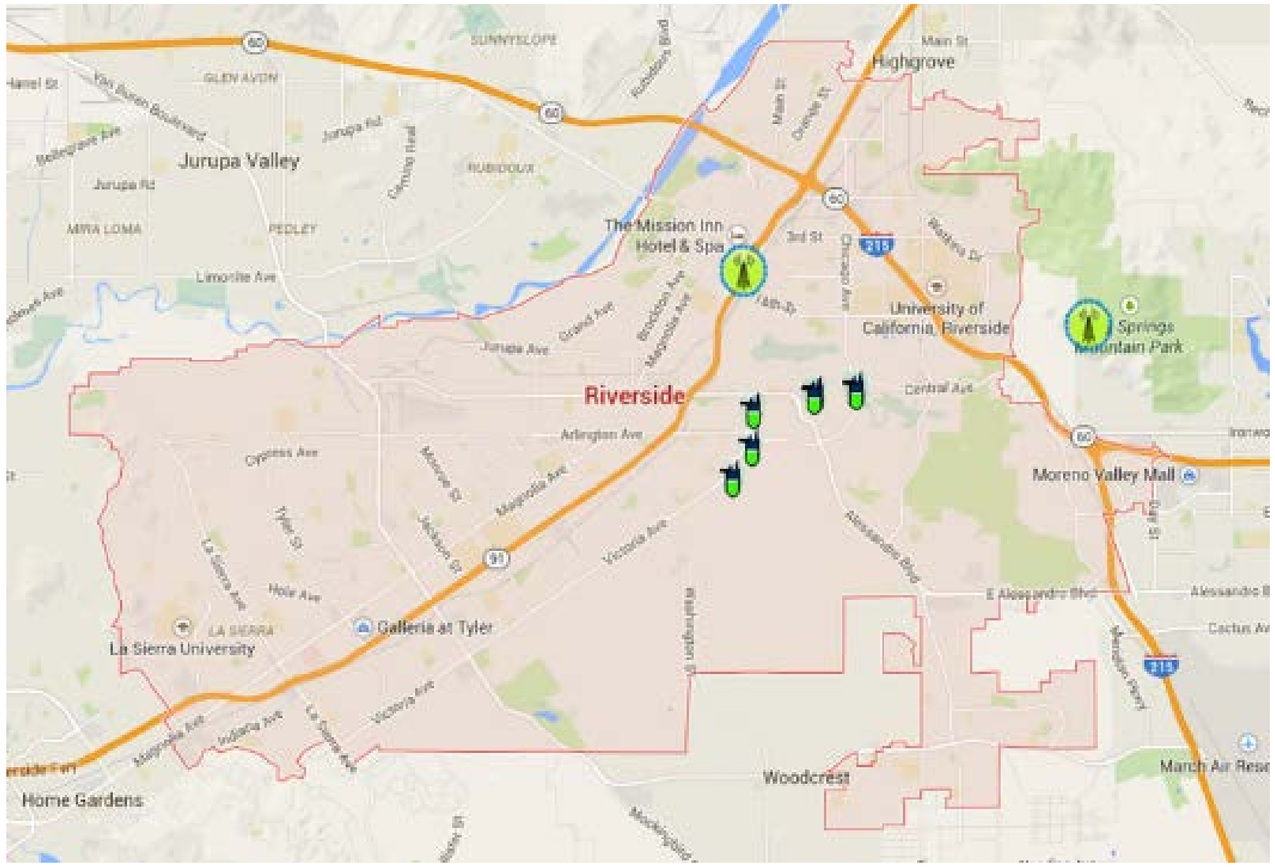
Substation Transformers – Current Condition



Changes To The Network

- Distributed Generation creates 2-way power flows
- Greater visibility of the system
- Future Grid: Sense - Communicate - Control





1950's → 2015

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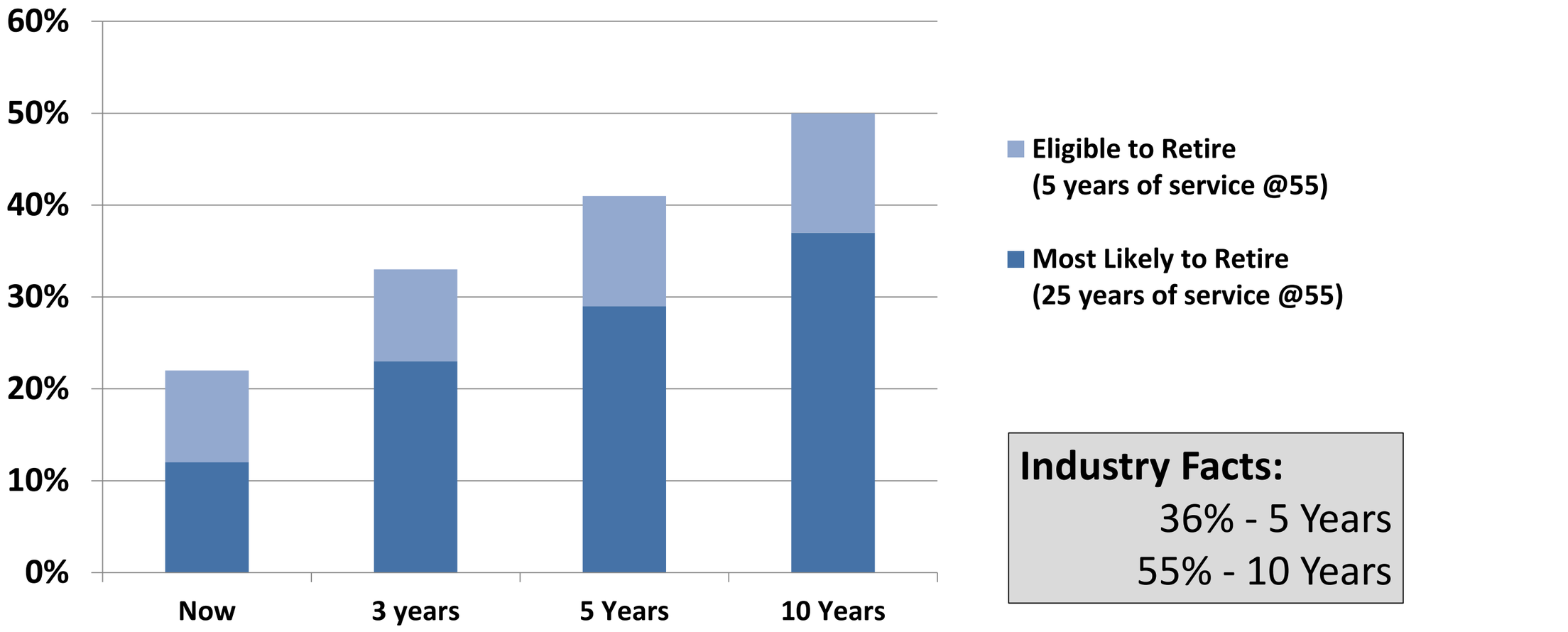
CITY OF RIVERSIDE PUBLIC UTILITIES

RPU Retirement Projections



Employees eligible to retire now and future

Industry Facts:

36% - 5 Years

55% - 10 Years

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CITY OF RIVERSIDE PUBLIC UTILITIES

Assessment

Current State

Run to Failure

Low - up front cost
High - future cost

Negative impact to service

Balance

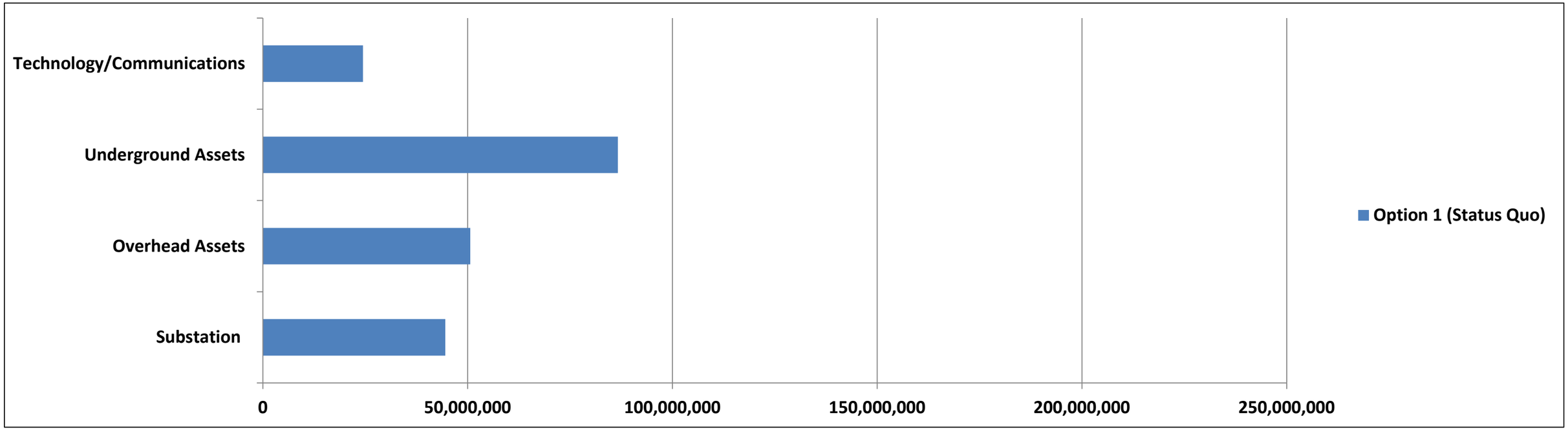
Ideal State

Immediate Replacement

High- up front cost
Lower - future cost

Positive impact to service

Option 1: Stay the Same (reactive mode), but fall behind as costs rise.



Option 1: $171M – $206M

Option 2: $317M – $381M

Option 3: $365M – $439M

Option 4: $519M – $623M

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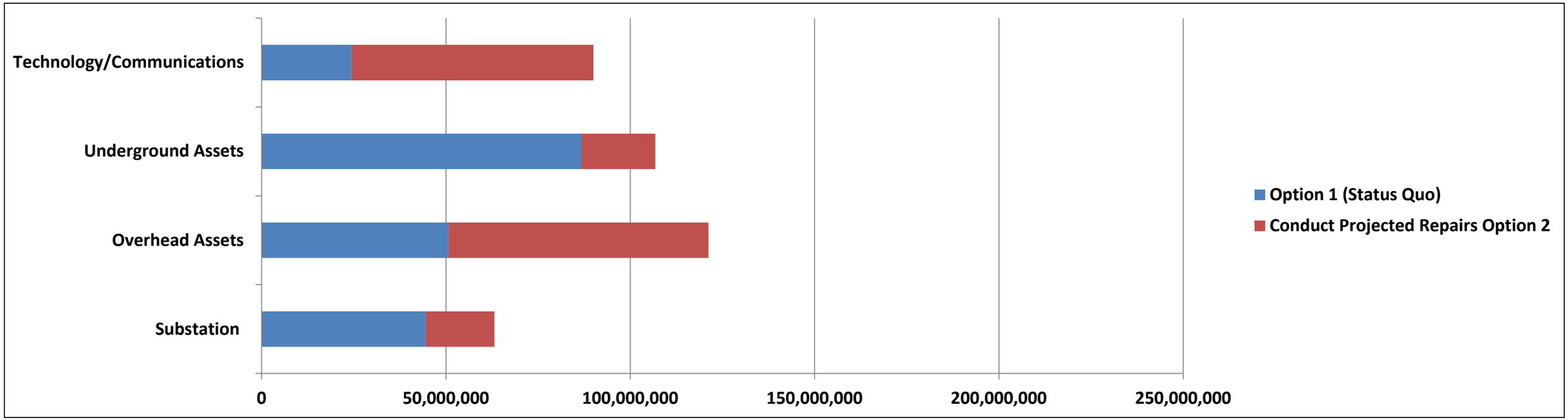
CITY OF RIVERSIDE PUBLIC UTILITIES

Option 2: Add Option 1 plus the costs to actively do projected repairs.



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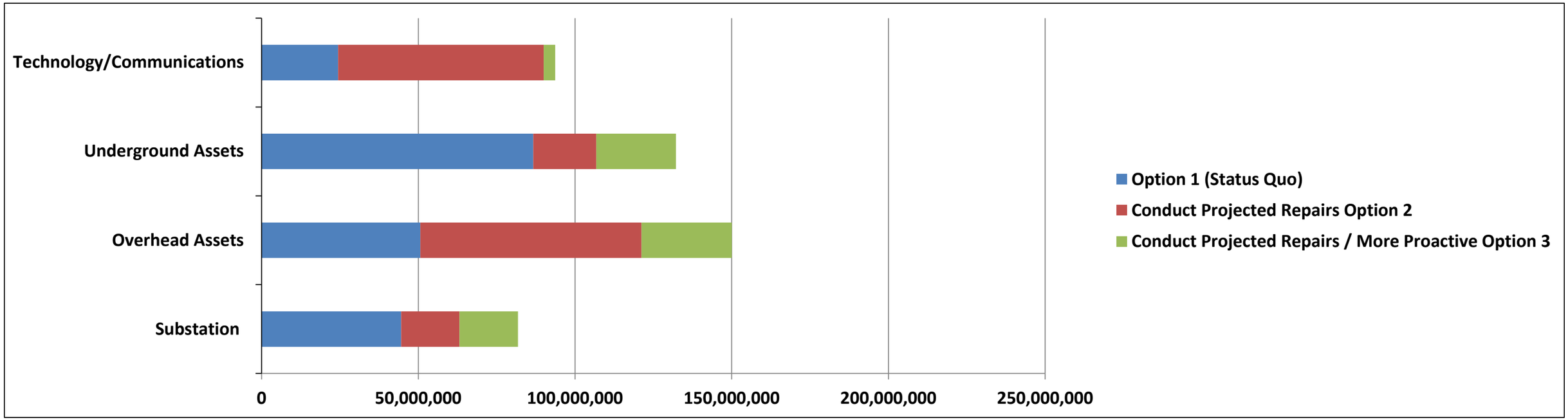
CITY OF RIVERSIDE PUBLIC UTILITIES

Option 3: Options 1 and 2 plus increase condition-based maintenance to be more proactive.



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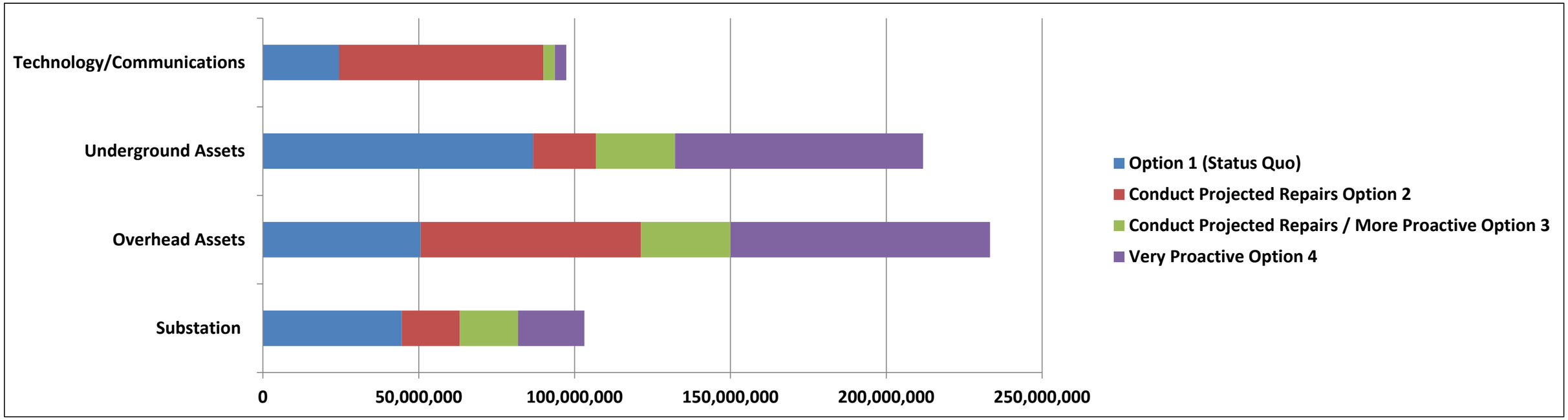
CITY OF RIVERSIDE PUBLIC UTILITIES

Option 4: Cost to be Highly Proactive



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CITY OF RIVERSIDE PUBLIC UTILITIES

Summary of Investment Options

Additional financial investment is required to address current backlog and improve maintenance.

Option 1	Option 2	Option 3	Option 4
Status Quo Fall Behind (reactive)	Conduct Projected Repairs	Conduct Projected Repairs (proactive)	Highly Proactive
↓ ↑	↓ ↑	↓ ↑	↓ ↑
$171 – 206 million	**$317 – 381 million**	**$365 – 439 million**	**$519 – 623 million**

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

INFRASTRUCTURE IMPROVEMENT

BACKGROUND

WORKFORCE DEVELOPMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Background

- Electric Service began in Riverside in 1895
- Population grew rapidly from 1950-2010
- Infrastructure grew along with population
- Serve population over 300,000
- System replacement cost over $2 Billion
- Annual revenues over $340 Million
- Vital Electric Infrastructure is over 50 years old.

RIVERSIDE, CAL., APR 1 1906

M C. B. Brennand

TO CITY OF RIVERSIDE ELECT. LT. DEPT., D

Balance, Account Rendered, $

Light on Flat Rate from ..... to ..... 190 .....

Power on Flat Rate from ..... to ..... 190 .....

or	Date of Readings	Location	Present Meter Reading	Previous Meter Reading	Difference	Factor	Watts Supplied	
LIGHT	2/17 to 3/17		321800	304600	17200	1	17200	
	to							
	to							
	to							
POWER	to							
	to							
	to							

TOTAL,

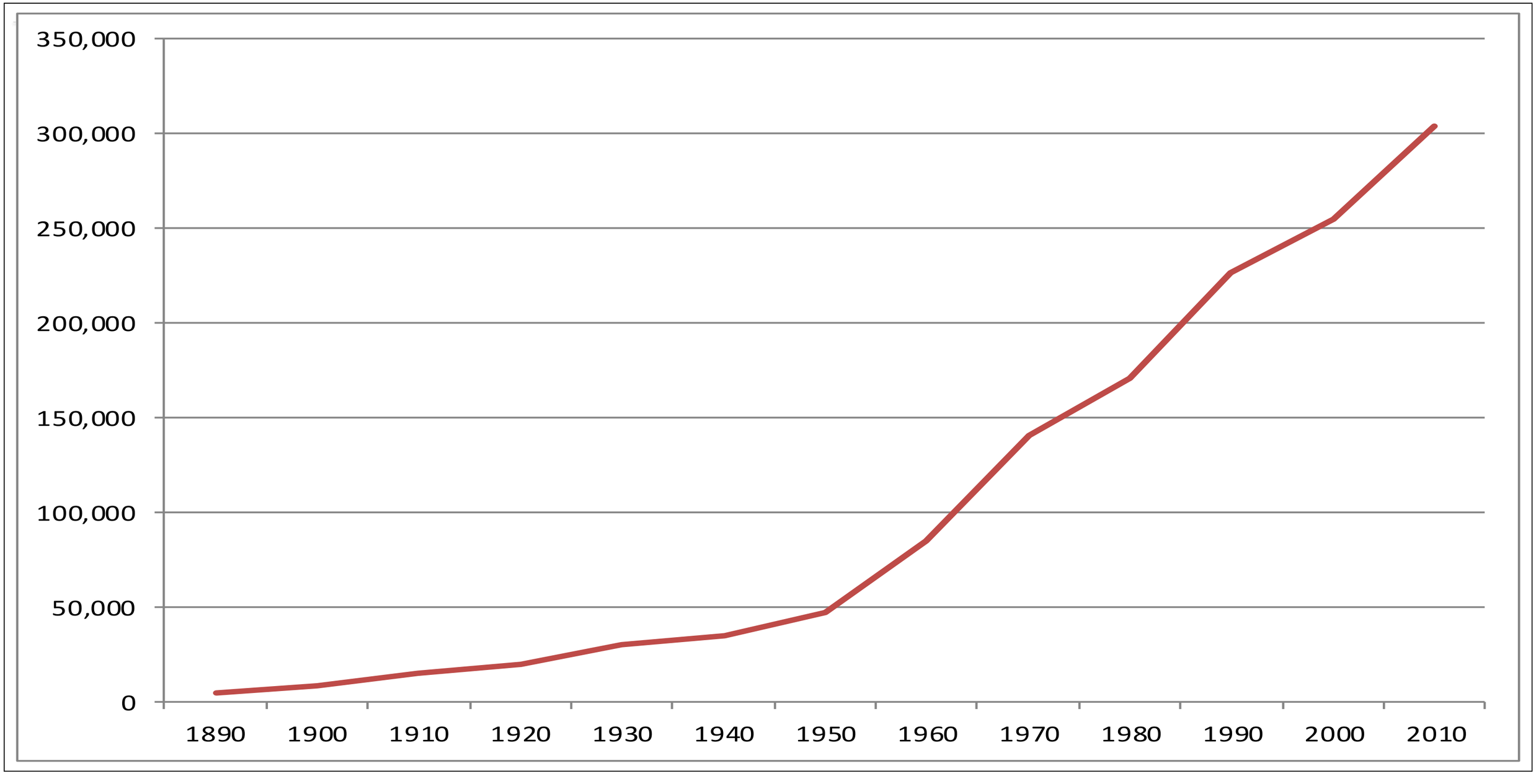
OFFICE AND POWER HOUSE
COrNER NINTH AND MULBERRY STREETS
SUNSET MAIN 7; HOME 1007

Received payment for City, 4/4/06 J. Lindeck

MUNICIPAL
LIGHT-WATER

MUNICIPAL-13

Riverside Population Growth



Electric Utility System Information

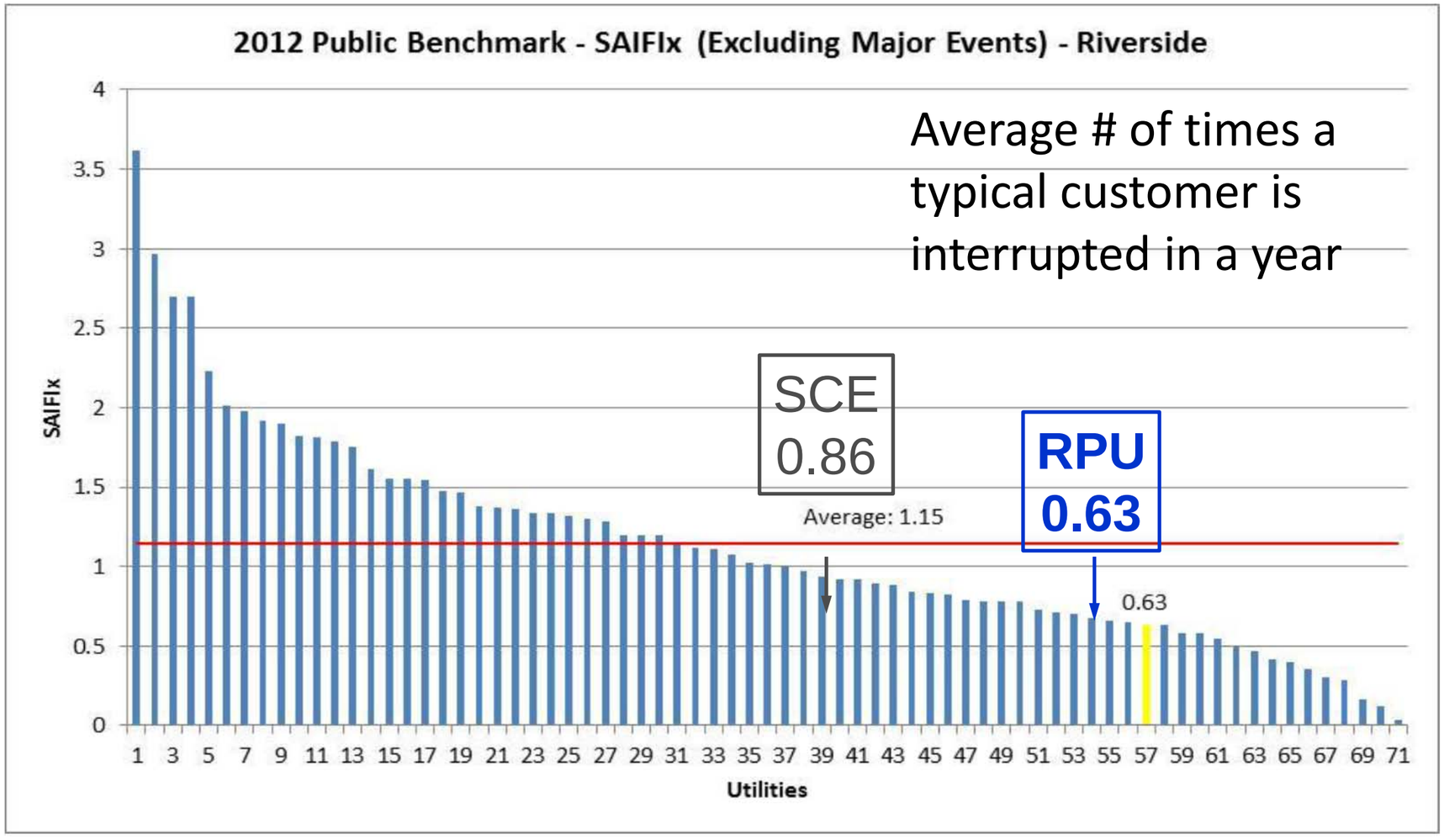
- Budget: $391,977,000
- 108,358 Electric meters
- 463 Employees
- 2,279 Million kWh produced
- Peak demand: 612 MW
- 14 Substations
- 1,327 miles of Distribution Lines

Diamond Reliability Recognition

- APPA represents community-owned electric utilities in over 2,000 U.S. cities
- RP_3 recognizes utilities with high proficiency in reliability, safety, work force development and system improvement
- RP_3 one of two utilities in California - Diamond level

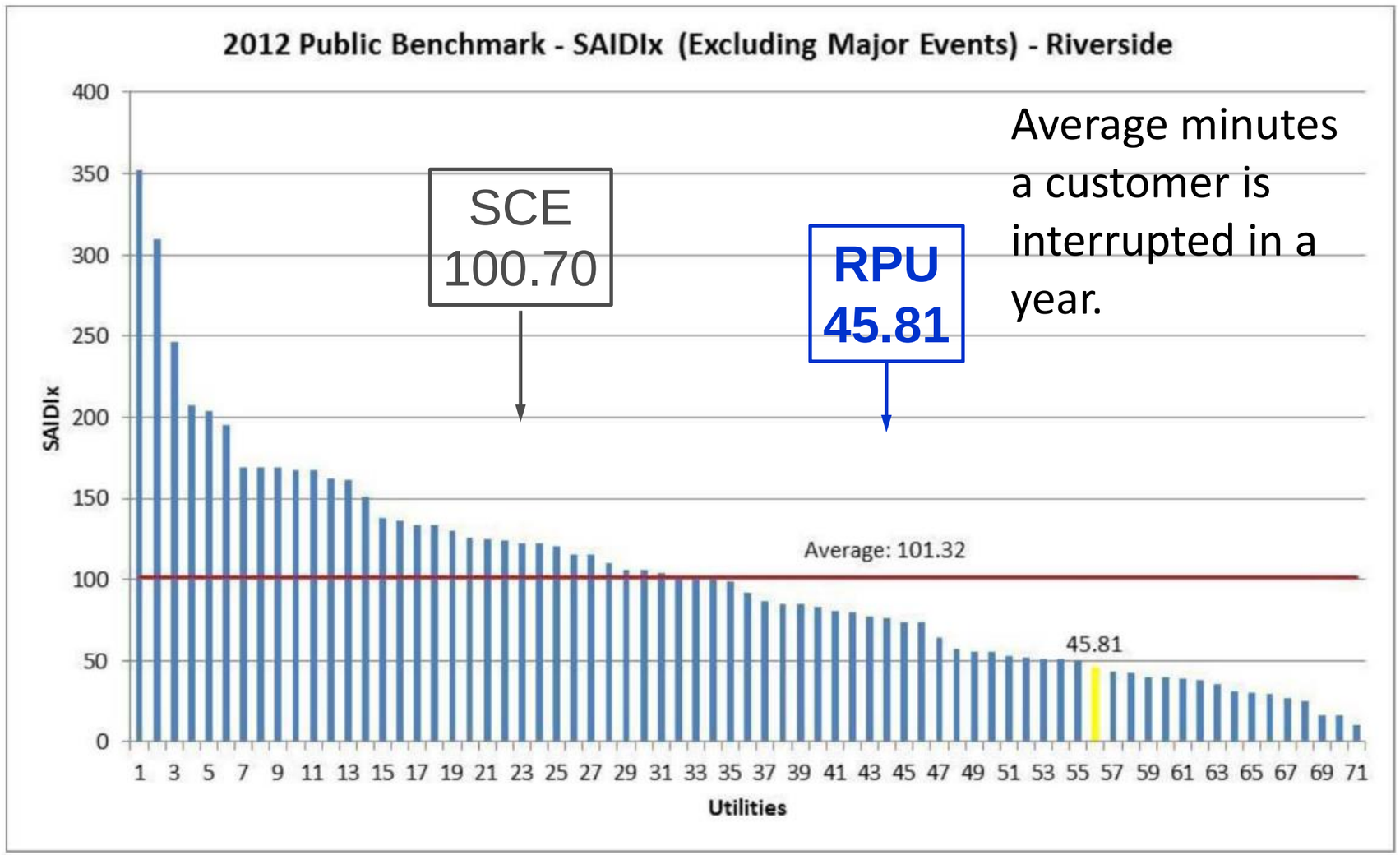
Electric System Reliability

System Average Interruption Frequency Index (SAIFIx)

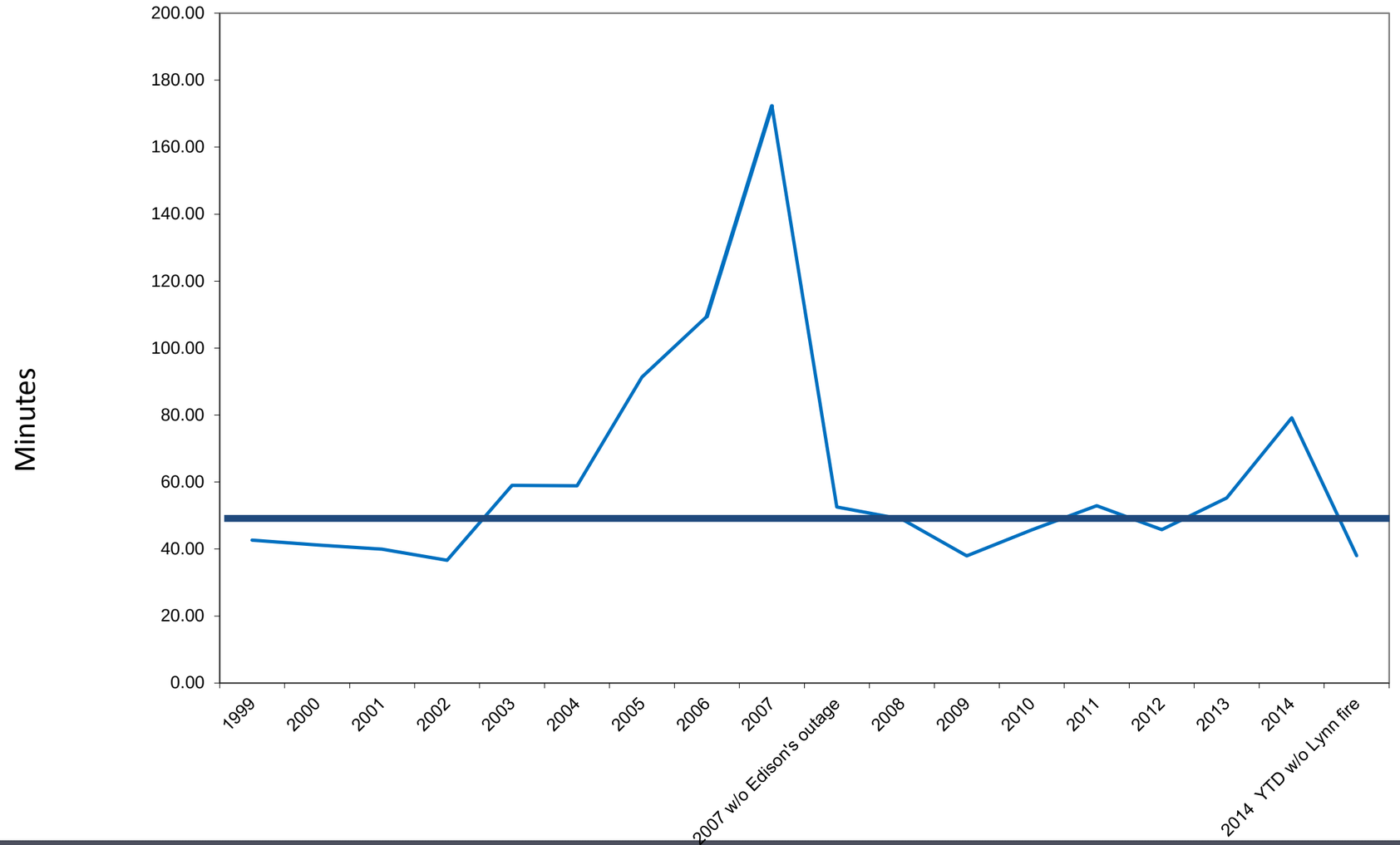


Electric System Reliability

System Average Interruption Duration Index (SAIDIx)



System Average Interruption Duration Index (SAIDIx) History



Goal 50 minutes

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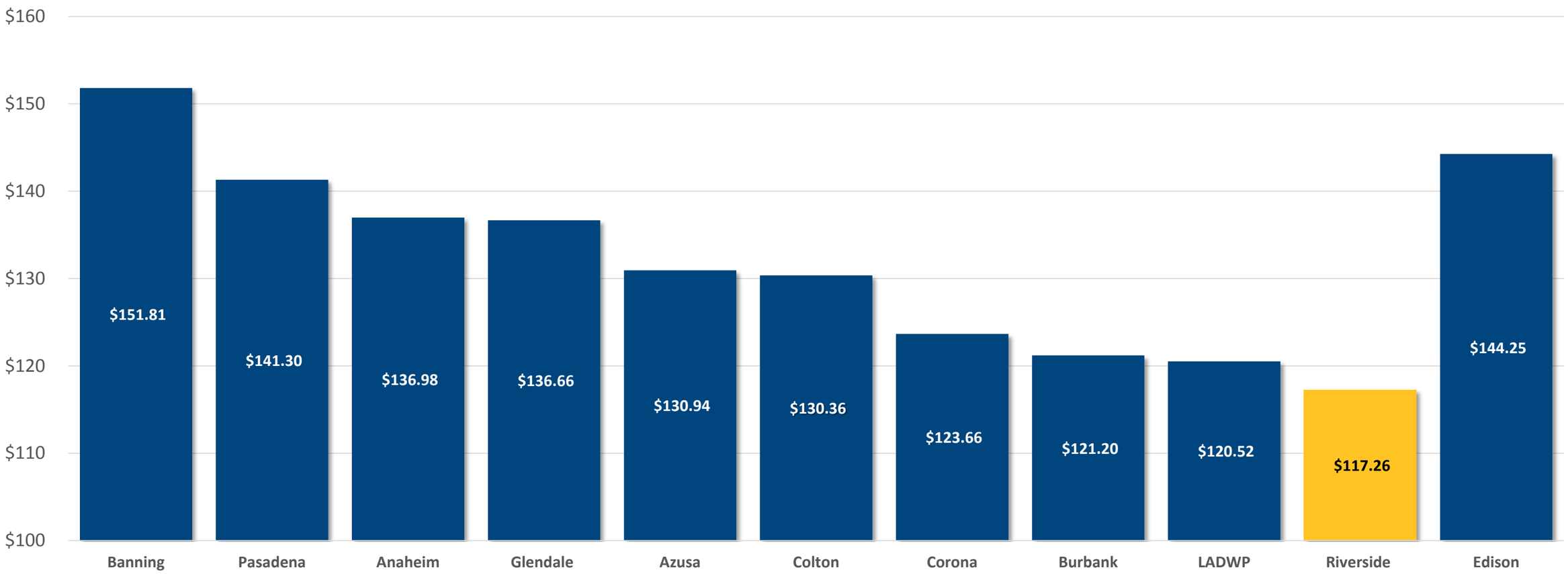
CITY OF RIVERSIDE PUBLIC UTILITIES

Electric – Rate Comparison



AVERAGE RESIDENTIAL RATE FOR 750 KWH PER MONTH

(AS OF AUG. 31, 2014)

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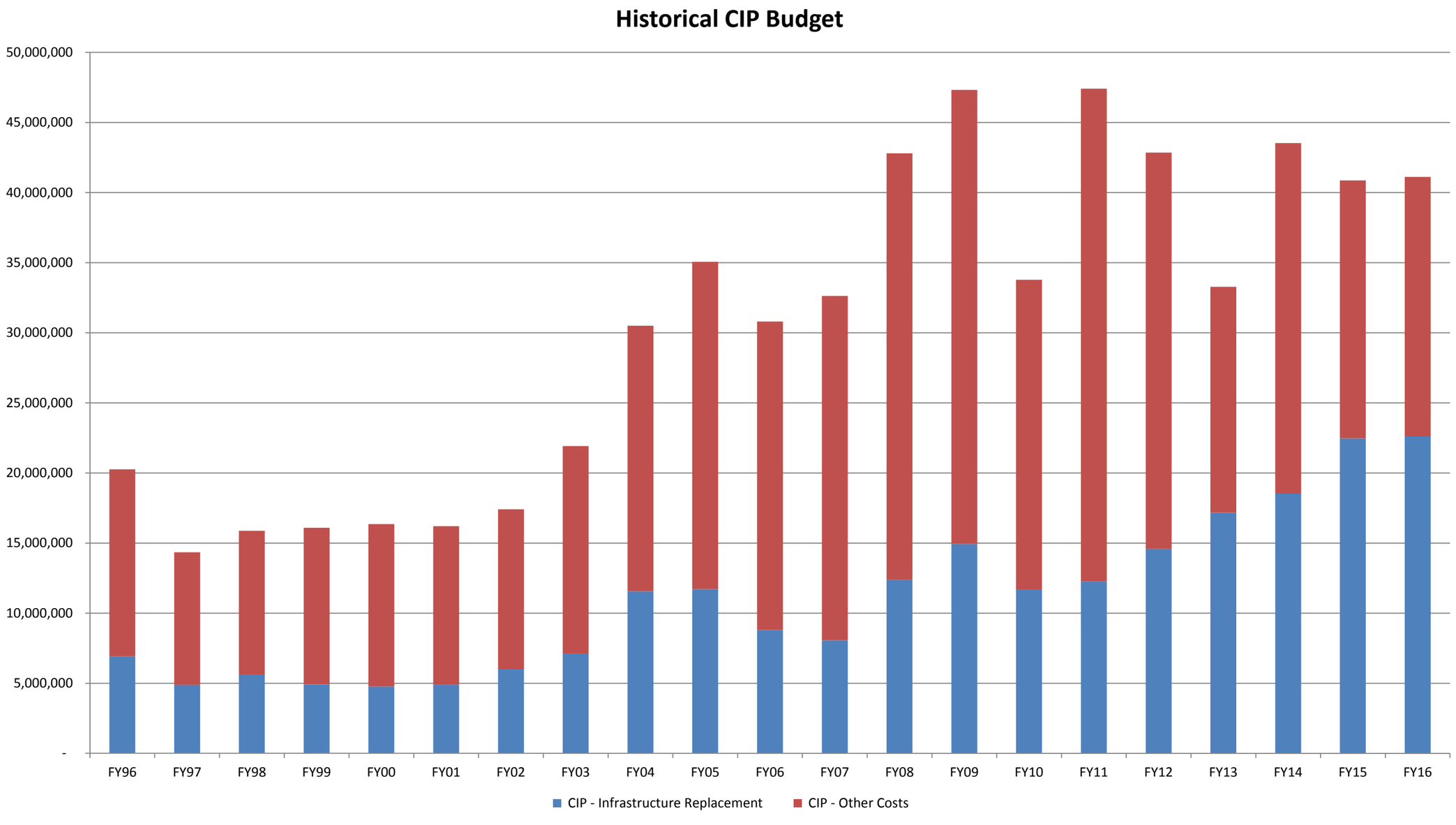
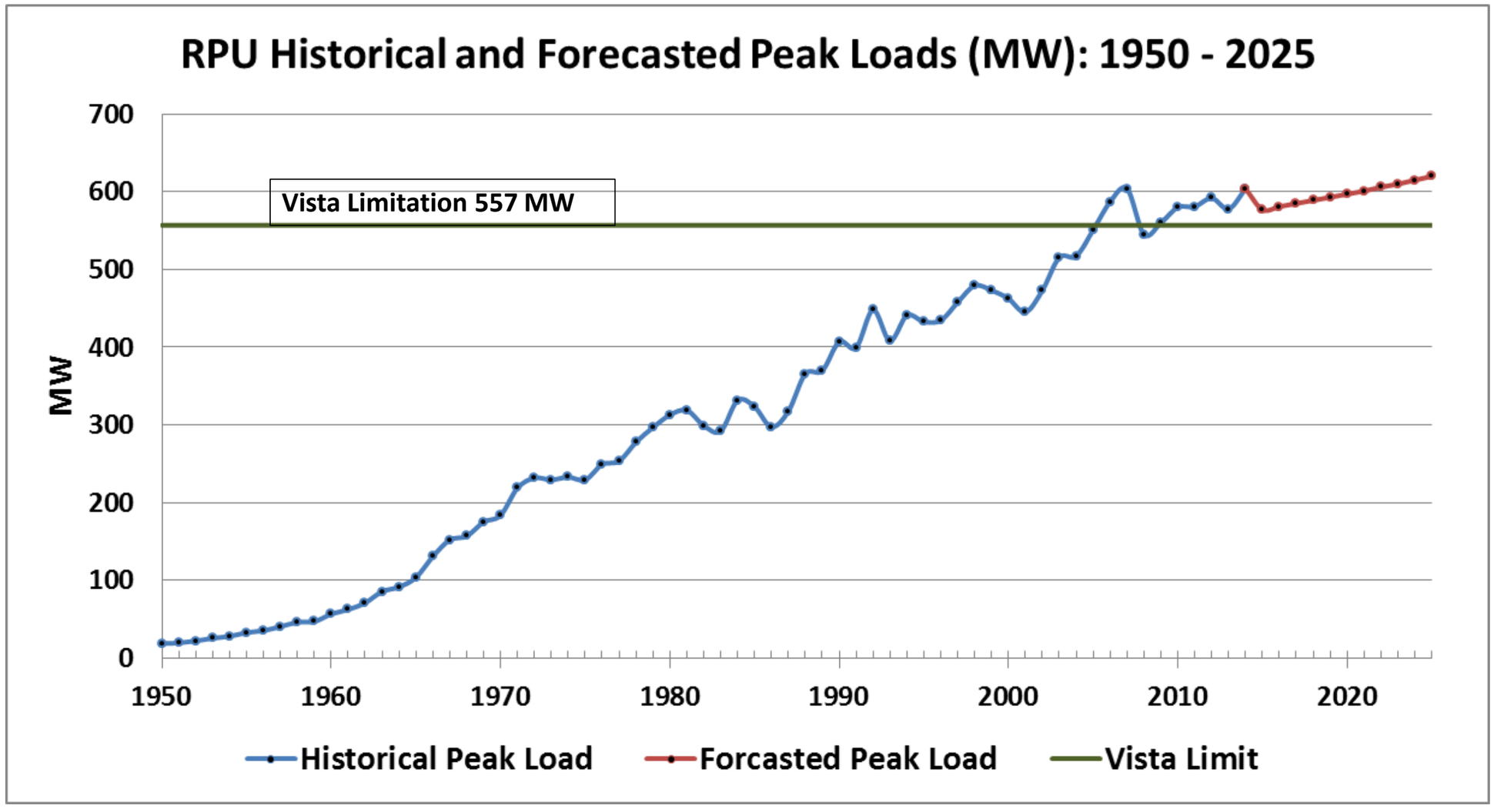
Historical CIP Budget



Current/Recently Completed Electric Infrastructure Efforts

- LED Street Light Pilot
- Harvey Lynn Substation Rehabilitation (La Sierra)
- Magnolia Plaza Reliability Project (MPRP)
- Riverside Transmission Reliability Project (RTRP)

Historic Peaks



Riverside Transmission Reliability Project

Proposed Routes

LEGEND

- Proposed 230 kV Transmission Line
- Proposed 69 kV Subtransmission Lines
- Mira Loma - Vista Transmission Line
- City Boundary

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

WORKFORCE DEVELOPMENT

INFRASTRUCTURE IMPROVEMENT

ASSESSMENT

–

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Electric Infrastructure Assessment

Infrastructure:

- Many of our key infrastructure assets are more than 50 years old.
- Electric utility operations are changing.

Technology:

- Smart Grid technologies are key to future success and system reliability/management.

Workforce:

- Workforce needs training to have Utility 2.0 skill sets.
- Knowledge transfer needed for aging workforce.

Substation Infrastructure

Transformer & Switchgear

Substation Yard

Overhead Infrastructure

(40% of electric system miles)

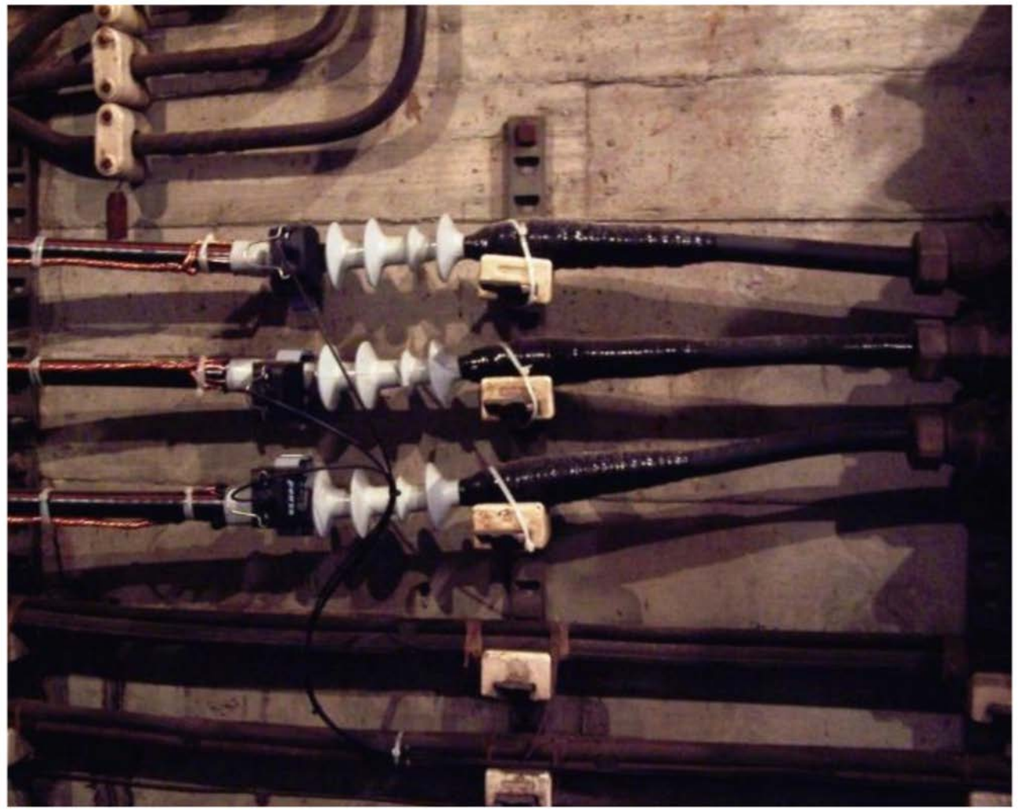
Overhead Transformer on Pole

Capacitor Bank & Streetlight

Underground Infrastructure

(60% of electric system miles)

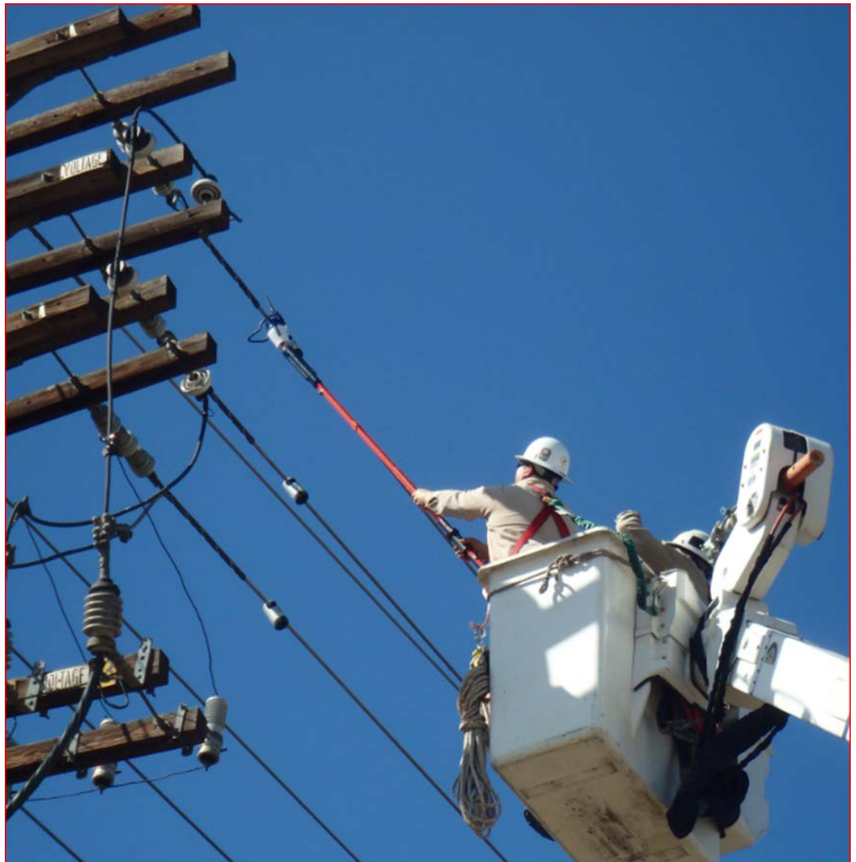
Aluminum Cable

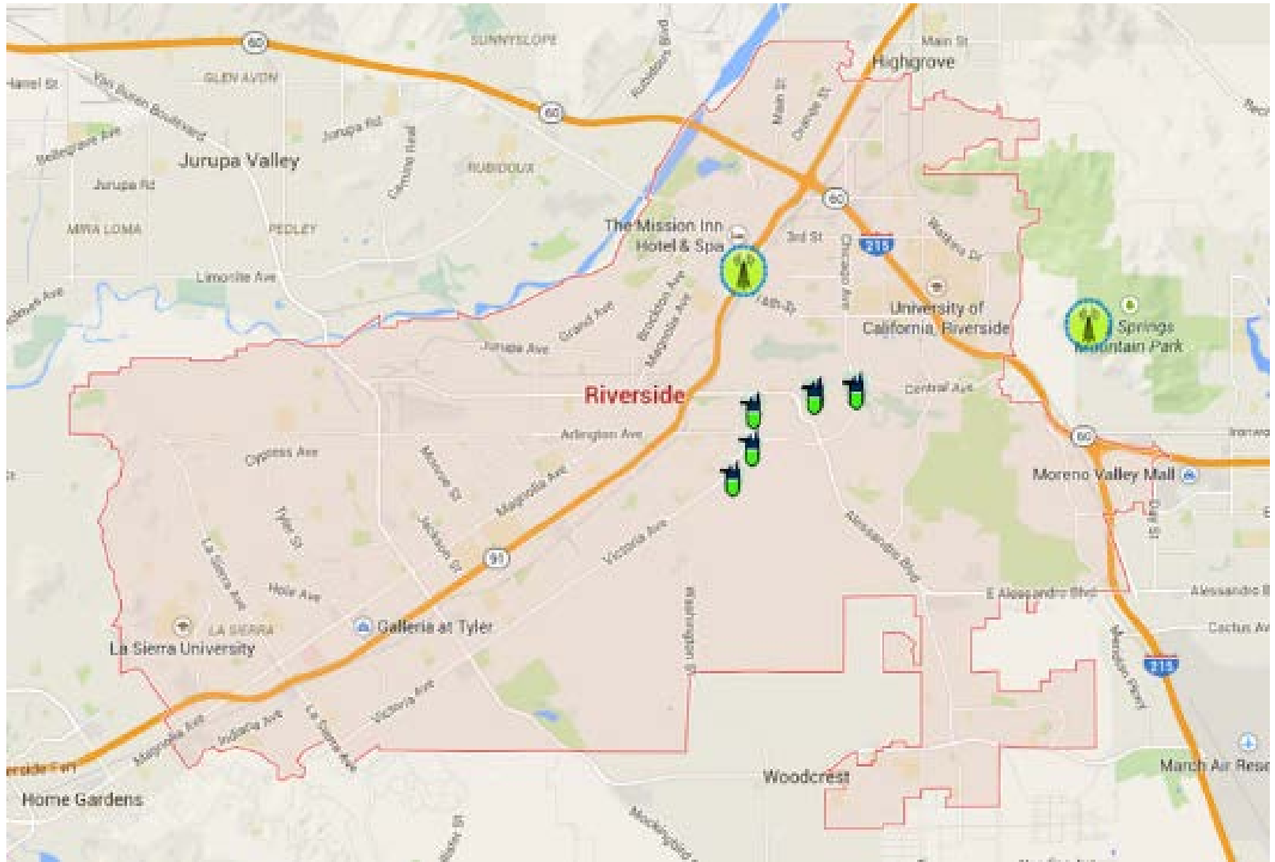


Various Cable in Vault

Changes To The Network

- Distributed Generation creates 2-way power flows
- Greater visibility of the system
- Future Grid: Sense - Communicate - Control





LED Street Lights

- LED pilot completed in 2014
  - 782 light pilot of 31,000
  - Auto Center, Market St, University Ave, Galleria, Plaza
- Estimated $15M to convert all lights to LED
- Continue to support City of Riverside sustainability goals

Electric Vehicles (EV's) - Impacts

- Today - 300 EV's , 13 public charging stations
- Estimate 5,000 EV's in 10 years
- Future electric network must support EVs and V2G
- Continue to take advantage of grant funding opportunities
- Closely monitor vehicle adoption rates and City of Riverside sustainability goals

Infrastructure Asset Value

Asset Class	Asset Count	Cost/Unit	System Value
Substation Transformers	65	1,660,000	107,900,000
Substation Switch Gears	54	900,000	48,600,000
Cable	1,329	420,487	558,828,292
69 kV Breakers	92	160,000	14,720,000
SCADA/SAS Panels	85	106,667	9,066,695
Civil Substation Work (Structures)	206	100,000	20,600,000
Underground Structures & Equip.	12,709	Varies	994,845,000
Communications	900	31,171	28,053,900
Poles & Overhead Equip.	22,637	15,078	341,320,686
Distribution Transformers	13,912	6,000	83,472,000
Streetlights	30,346	2,500	75,865,000
TOTAL			**$2,283,271,574**

Impact of Asset Failure

Asset Class	Impact of Failure
Substation Transformers & Switchgears	
Substation Civil	
Cable	
SCADA	
Underground Structures & Equip.	
Communications	
Poles & Overhead Equip.	
Distribution Transformers	
Streetlights	

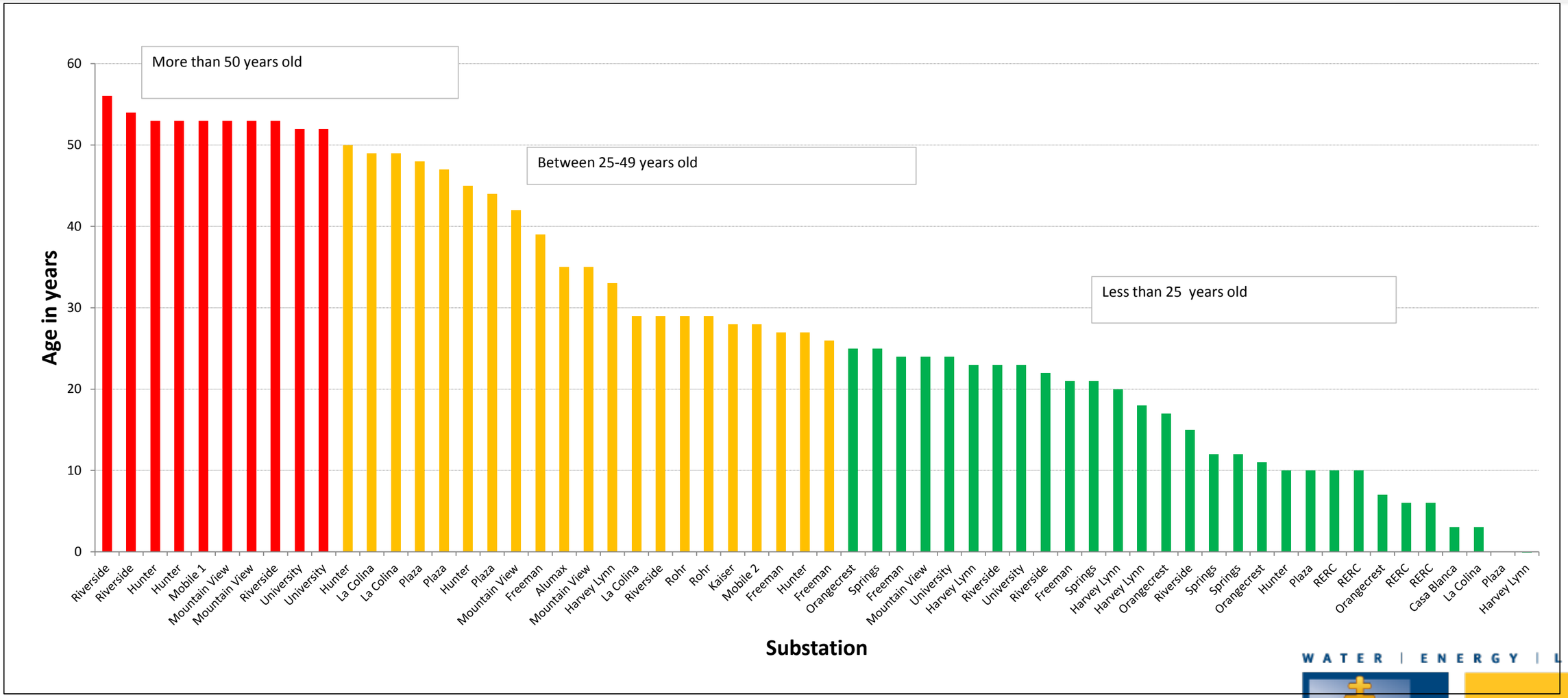
High **Medium** **Low**

Service Life

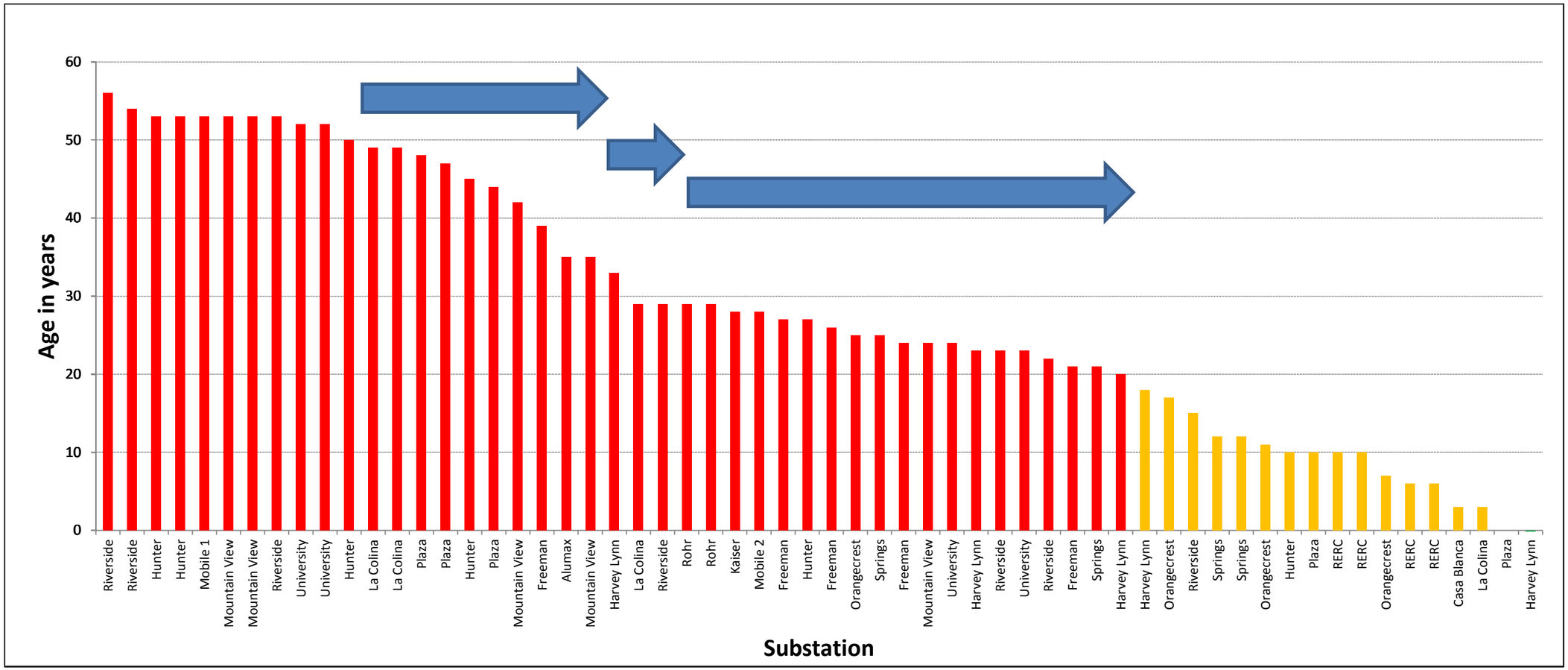
Asset Class	Impact of Failure	Service Life
Substation Transformers & Switchgears		60
Substation Civil		50
Cable		40
SCADA		8
Underground Structures & Equip.		60
Communications		20
Poles & Overhead Equip.		60
Distribution Transformers		60
Streetlights		70

High | Medium | Low

Substation Transformers – Current Condition



Substation Transformers – Potential Progression



Substation Transformer Replacements

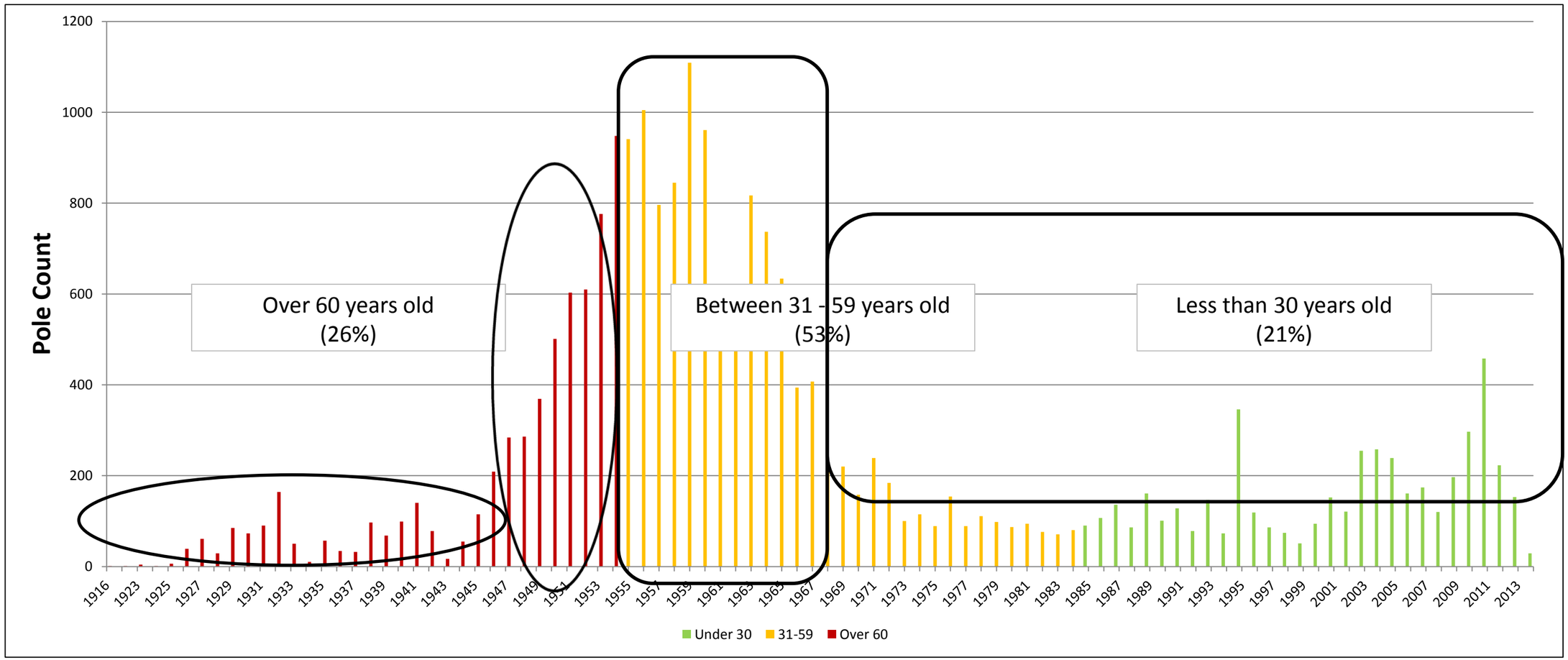
- Very complex and interconnected with other key infrastructure
- Long lead times for engineering and procurement
- Must be serviced in winter due to system loads

Wooden Poles

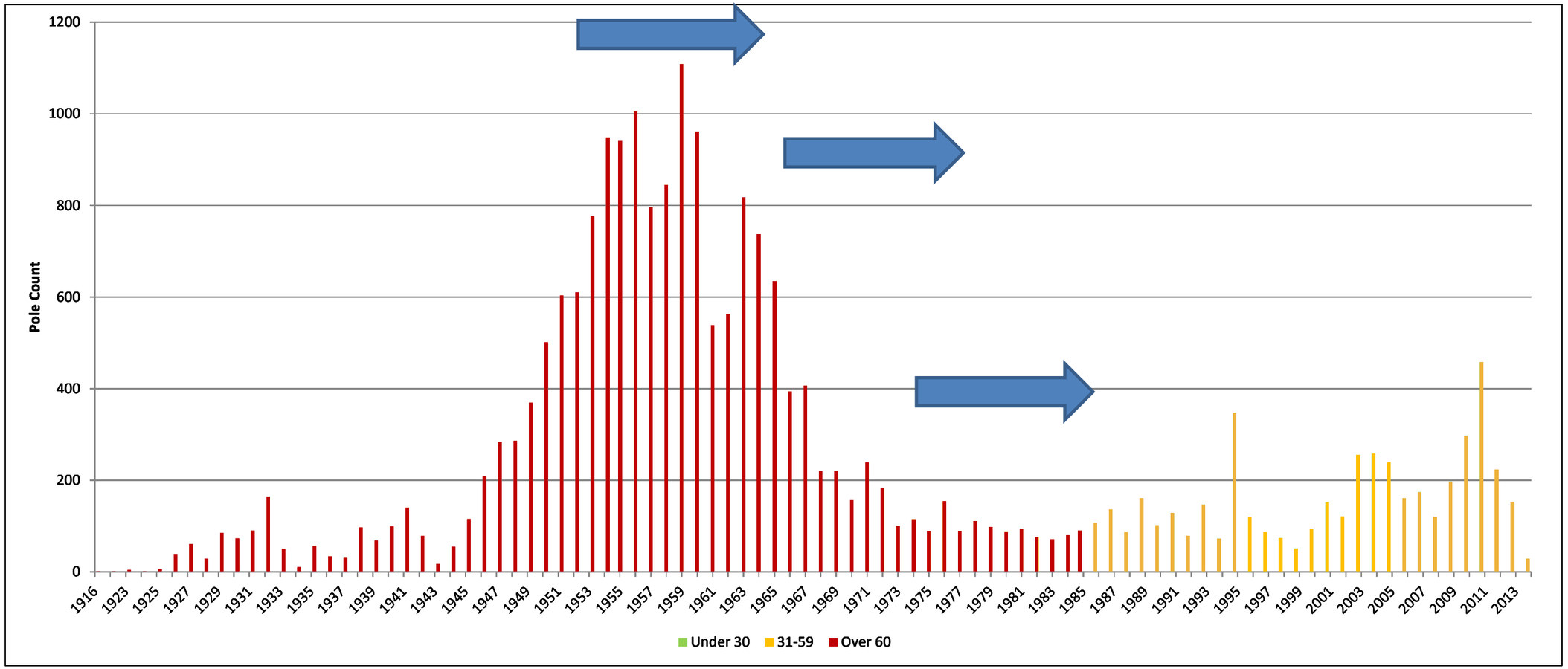
Replacement rates

Replacement Rate:		Assumed Service Life
Current:	200 / year	300 years
Goal:	800 / year	60 years

Poles– Current Condition



Poles– Potential Progression



ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

WORKFORCE DEVELOPMENT

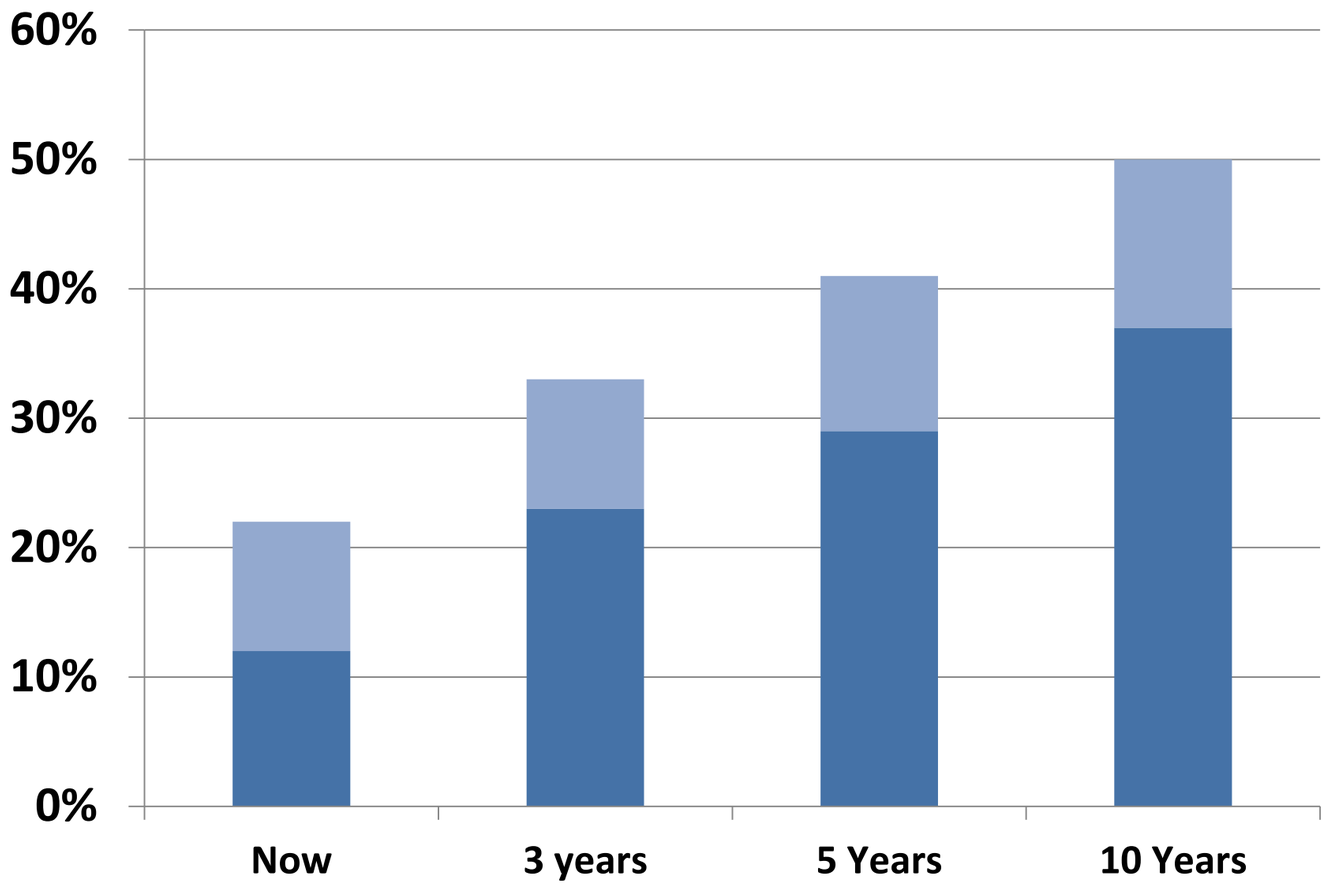
INFRASTRUCTURE IMPROVEMENT

WORKFORCE ASSESSMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

RPU Retirement Projections



Employees eligible to retire now and future

Industry Facts:

36% - 5 Years

55% - 10 Years

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ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

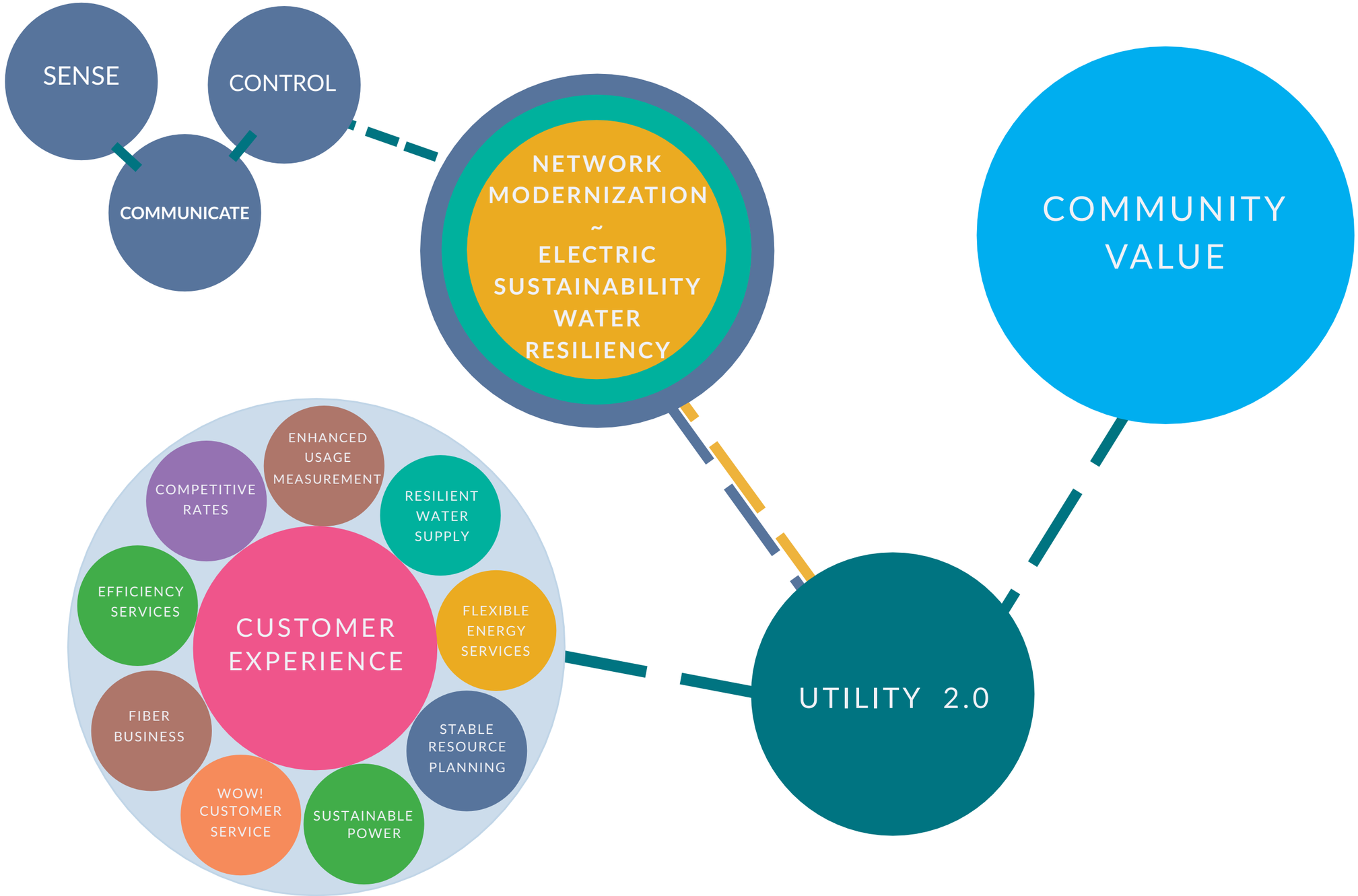
WORKFORCE DEVELOPMENT

INFRASTRUCTURE IMPROVEMENT

TECHNOLOGY ASSESSMENT

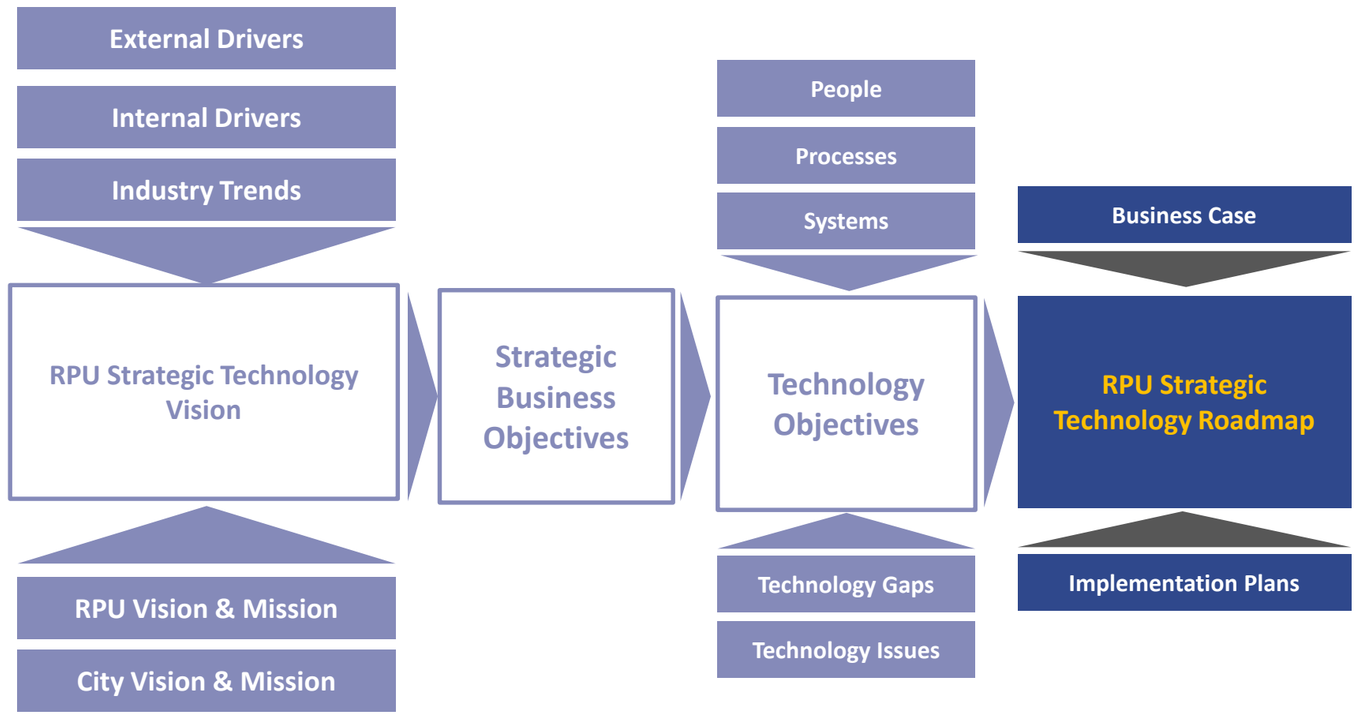
THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES


SENSE
CONTROL
COMMUNICATE
NETWORK MODERNIZATION ~ ELECTRIC SUSTAINABILITY WATER RESILIENCY
COMMUNITY VALUE
UTILITY 2.0
CUSTOMER EXPERIENCE
ENHANCED USAGE MEASUREMENT
RESILIENT WATER SUPPLY
FLEXIBLE ENERGY SERVICES
STABLE RESOURCE PLANNING
SUSTAINABLE POWER
WOW! CUSTOMER SERVICE
FIBER BUSINESS
EFFICIENCY SERVICES
COMPETITIVE RATES

Technology Assessment

Strategic Technology Roadmap completed by Leidos Engineering, LLC assessed the current state of RPU's technology and made recommendations based on desired future state, industry standards and best practices.



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Technology Master Plan

CUSTOMER FOCUSED

Directly influence customer experience and provide customer interaction

- Customer Information System (CIS)
- Customer Relationship Management (CRM)
- Customer Web Portal (CWP)
- Interactive Voice Recognition (IVR)

INFORMATION BASED

Decision and analysis, data management and process implementation based primarily on large databases

- Meter Data Management (MDM)
- Geographic Information Systems (GIS)
- Operational Data Management System (ODMS)
- Work Management System (WMS)
- Asset Management System (AMS)
- Warehouse Inventory System (WIS)

REAL-TIME OPERATIONAL

Used in real-time operations and control of water and energy delivery systems

- Advanced Metering (AMI)
- Automated Vehicle Loading (AVL)
- Network Communications System (NCS)
- Land Mobile Radio (LMR)
- Distribution Automation (DA)
- Substation Automation (SA)
- Outage Management System (OMS)
- Distribution Management System (DMS)
- Supervisory Control and Data Acquisition System (SCADA)

Base Technology Requirements

- Technology Governance
- Asset and Work Management
- Warehouse Inventory Control
- GIS
- Network Communications
- Land Mobile Radio, Vehicle Locating

Grid Technology Requirements

- Mobile Apps
- Operation Data Management System
- Automated Meter Reading and Data Management
- Distribution and Substation Automation
- Outage Management
- SCADA, Advanced Distribution Management

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

INFRASTRUCTURE IMPROVEMENT

FINDINGS

WORKFORCE DEVELOPMENT

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ADVANCED TECHNOLOGIES

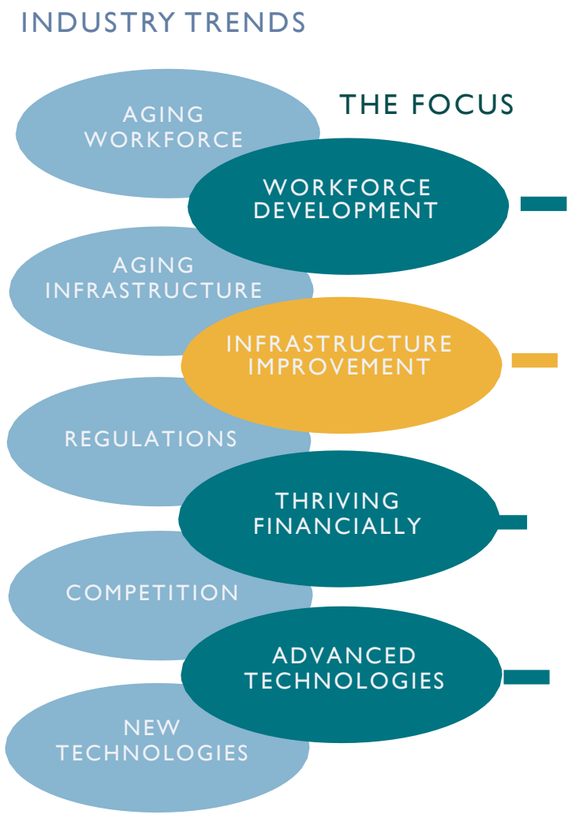
Infrastructure Findings

- Given the asset condition information that is currently available, additional investment is needed to address to maintain safety, reliability, and changing system demands:
- Key efforts include:
  - Replace assets in poor condition
  - Replace those that will move to poor condition in the next 10 years
  - Increase condition-based maintenance, particularly of critical assets
- Preserve system resiliency and sustainability
- Network Modernization

Workforce Development Findings

- Technical training needed on software, systems, & programs.
- Significant training gaps exist in advanced technology job classifications.
- Electric has approximately 32 vacancies (15%) and 18 staff likely to retire.
- No current process for knowledge transfer.

Technology Findings



- Excellent fiber system
- AMR Meters – residential nearly complete
- Behind in GIS and automation

Additional investment in technology infrastructure is required to support tomorrow's electric system and customer demands

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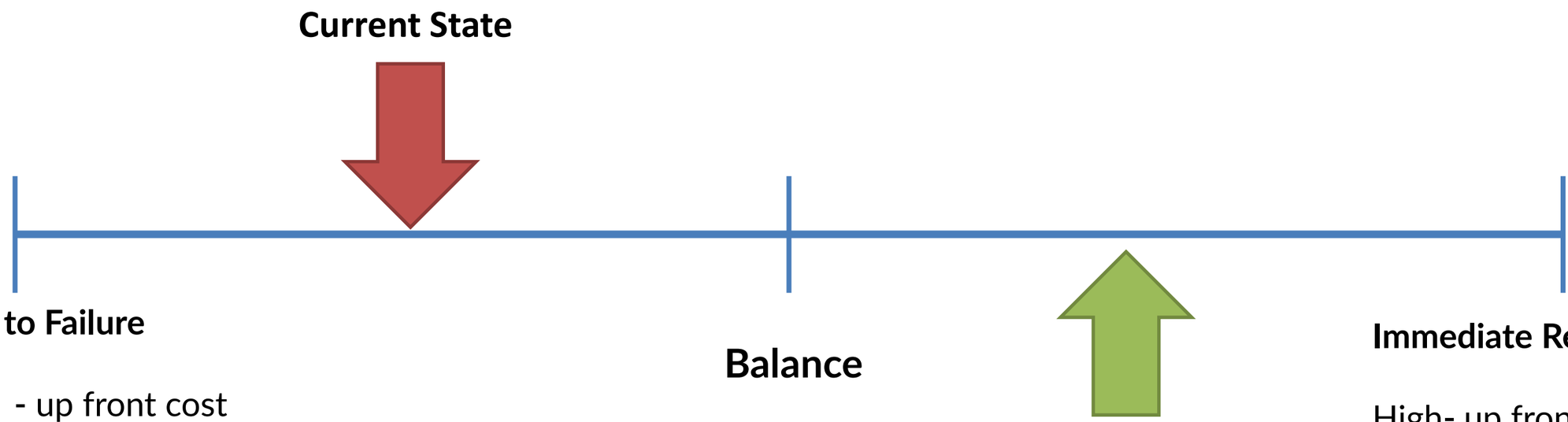
Assessment



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Impact of Asset Failure

Asset Class	Impact of Failure
Substation Transformers & Switchgears	
Substation Civil	
Cable	
SCADA	
Underground Structures & Equip.	
Communications	
Poles & Overhead Equip.	
Distribution Transformers	
Streetlights	

High | Medium | Low

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

INFRASTRUCTURE IMPROVEMENT
OPTIONS

—

WORKFORCE DEVELOPMENT

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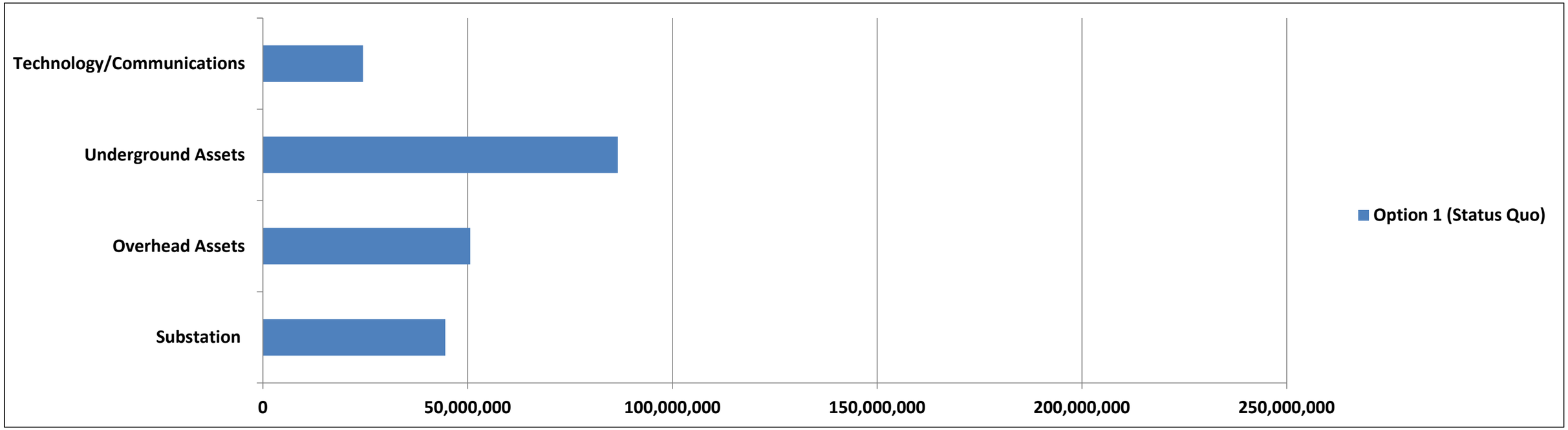
Option 1: Stay the Same (reactive mode), but fall behind as costs rise.



Option 1: $171M – $206M

Option 2: $317M – $381M

Option 3: $365M – $439M

Option 4: $519M – $623M

Option 1 continues the past CIP budget pattern for the next 10 years. Based on current data, equipment condition will decline over time.

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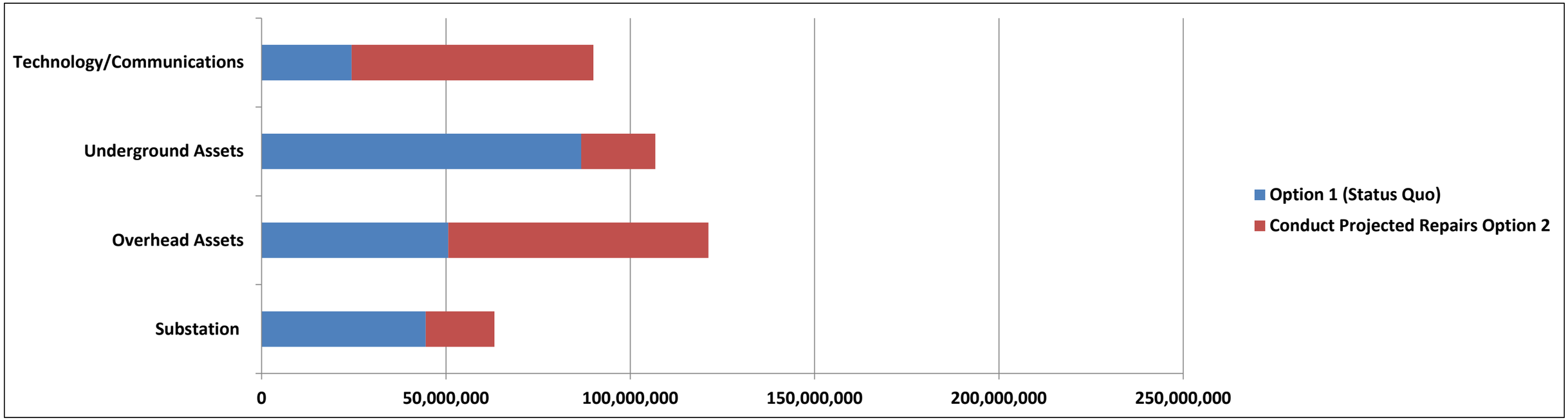
Option 2: Add Option 1 plus the costs to actively do projected repairs.



Option 1: $171M – $206M

Option 2: $317M – $381M

Option 3: $365M – $439M

Option 4: $519M – $623M

Based on current data, Option 2 halts the decline budgets for all repairs and replacements expected in the next 10 years, all technology recommendations, LED Streetlights, some EV infrastructure, maintains the system.

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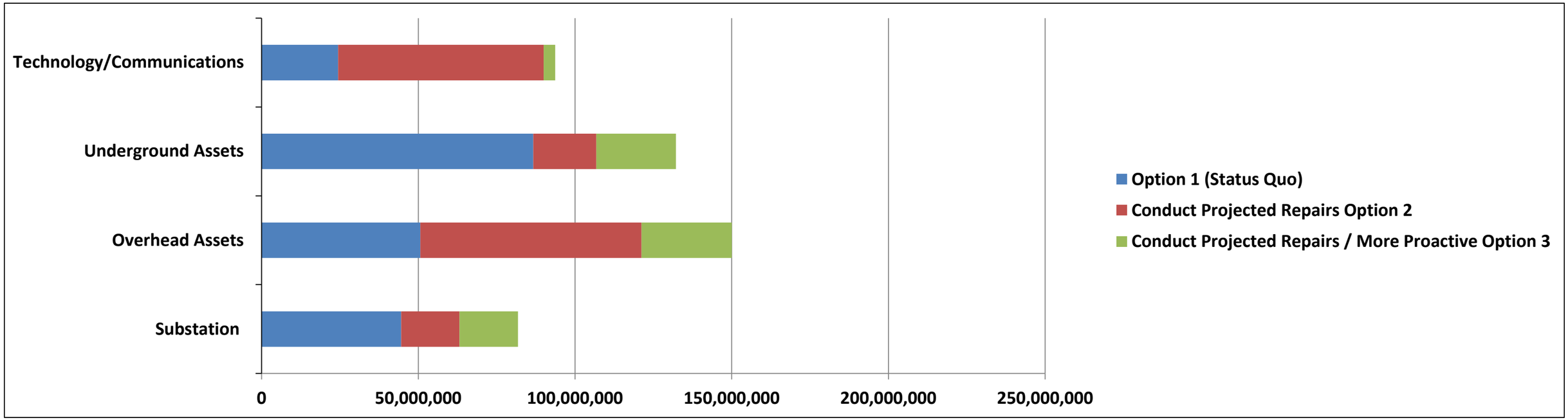
Option 3: Options 1 and 2 plus increase condition-based maintenance to be more proactive.



Option 1: $171M – $206M

Option 2: $317M – $381M

Option 3: $365M – $439M

Option 4: $519M – $623M

Includes Option 2 plus allows for significant additional condition-based maintenance to improve system performance, reliability and safety.

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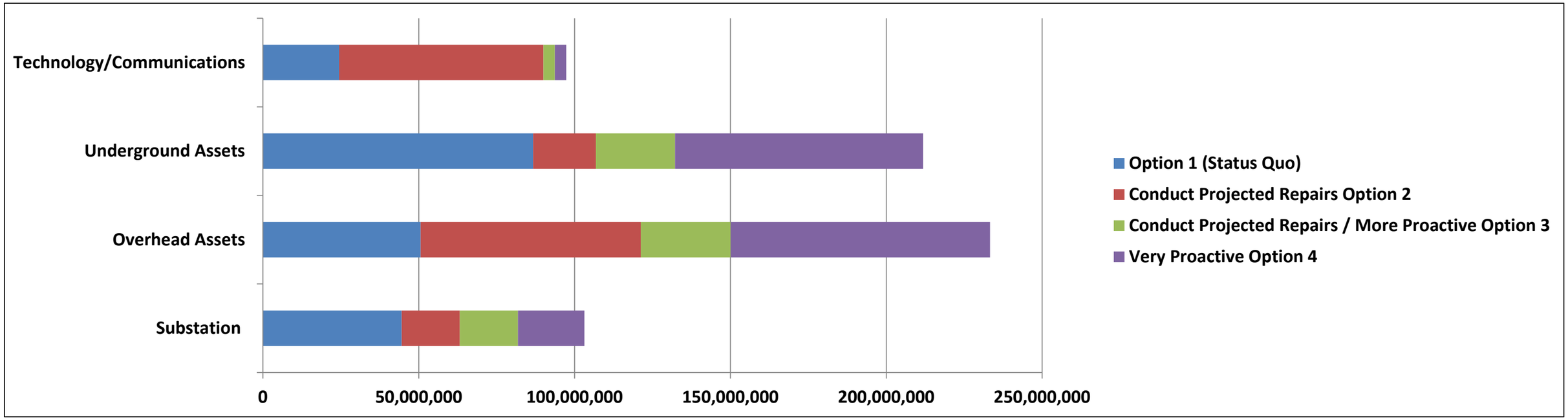
Option 4: Cost to be Highly Proactive



Option 1: $171M – $206M

Option 2: $317M – $381M

Option 3: $365M – $439M

Option 4: $519M – $623M

Includes Option 3 plus allows for aggressive replacement to virtually eliminate equipment failures to dramatically reduce interruptions. Uncommon in the industry.

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Summary of Investment Options

Additional financial investment is required to address current backlog and improve maintenance.

Option 1	Option 2	Option 3	Option 4
Status Quo Fall Behind (reactive)	Conduct Projected Repairs	Conduct Projected Repairs (proactive)	Highly Proactive
↓ ↑	↓ ↑	↓ ↑	↓ ↑
$171 – 206 million	**$317 – 381 million**	**$365 – 439 million**	**$519 – 623 million**

Summary

Infrastructure:

- Many of our key infrastructure assets are more than 50 years old.
- Electric utility operations are changing.

Technology:

- Smart Grid technologies are key to future success and system reliability/management.

Workforce:

- Workforce needs training to have Utility 2.0 skill sets.
- Knowledge transfer needed for aging workforce.

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

WORKFORCE DEVELOPMENT

INFRASTRUCTURE IMPROVEMENT

RECOMMENDATIONS

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Sample Short-Term Recommendations – Year 1

Electric Infrastructure	• Replace assets in order of criticality with available resources: 250 poles, 9 Load Tap Changers, 5 sets Sub. transformer bushings, 40 Relays, 15 Breakers, install FCI's on 11 circuits, pilot underground FCI's • Review Asset Management Standards and Policies
Technology Infrastructure	• Work with the Operations Technology Office to assess needs and develop implementation plan. • Expand Asset Management Program and plan integration with key systems • Complete in-flight projects: GIS, prototype reliability tracking in ODMS
Workforce	• Work with HR to fill vacancies and establish a knowledge transfer process • Hire resources needed to support asset management (Asset Manager & Project Manager)

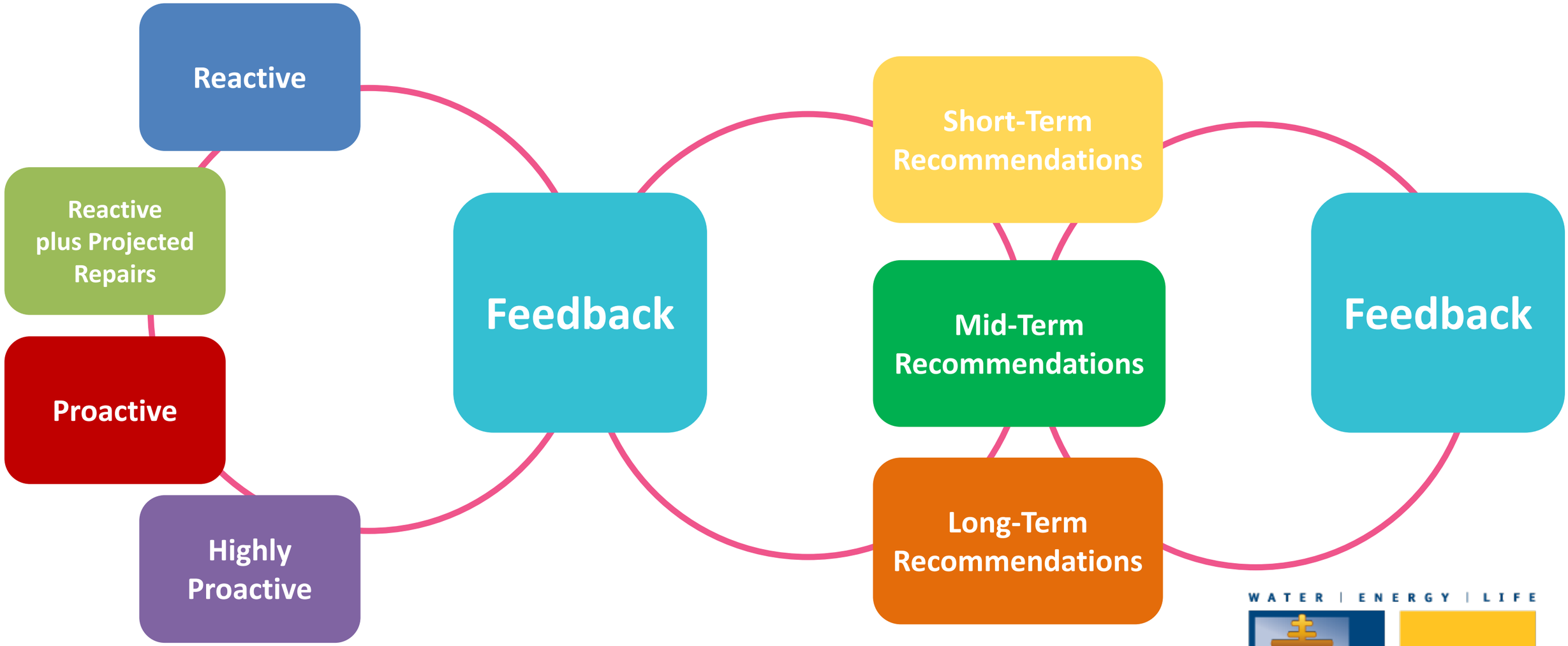
Sample Mid-Term Recommendations – Years 2-5

Electric Infrastructure	• Replace assets in order of criticality with available resources: 3,200 poles, 3 Sub. Transformers, 2 Switchgears, 250 Relays, 65 Breakers, 9 Vaults. Install FCI's on 27 circuits. Automated distribution devices on 5+ circuits. • Capture inspections in routine work with mobile technology.
Technology Infrastructure	• Implement priority projects: GIS, AMI/AMR, ODMS, DA, & OMS, mobile, NCS, LMR, AVL, replace SCADA hardware
Workforce	• Hire additional resources needed to support asset management and advanced technology efforts • Utilize Talent & Learning Management System to capture training data. • Provide technical training to staff on advanced technology equipment and software

Sample Long-Term Recommendations – Years 6-10

Electric Infrastructure	• Replace assets in order of criticality with available resources: 4,000 poles, 4 Sub. Transformers, 2 switchgears, 250 Relays, 20 Breakers, 12 Vaults. Install FCI's on 15 circuits, automated distribution devices on 5 circuits. • Re-evaluate the asset management program, and revise processes based on industry standards and best practices. • Continue to address physical and cyber security needs for utility sites and infrastructure.
Technology Infrastructure	• Implement remaining technology projects: AVL and expanded Substation Automation
Workforce	Expand training provided to staff on advanced technology equipment and software

Options & Recommendations Decided from Feedback



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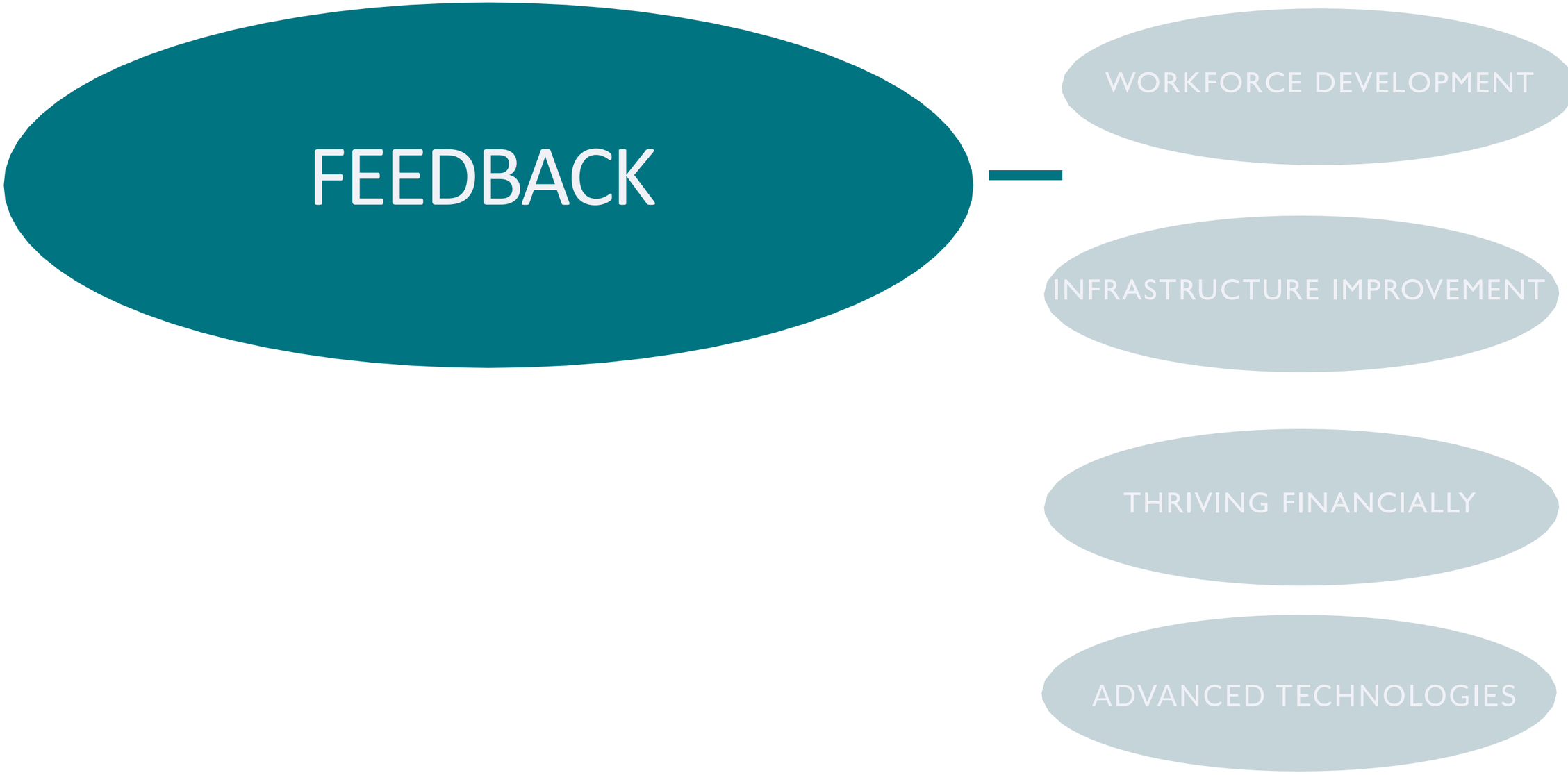
Next Steps

- Incorporate Comments
- Formulate Detailed recommendations
- Review
- Report Back

ROAD MAPS –


FEEDBACK
WORKFORCE DEVELOPMENT
INFRASTRUCTURE IMPROVEMENT
THRIVING FINANCIALLY
ADVANCED TECHNOLOGIES

RIVERSIDE PUBLIC UTILITIES

UTILITY 2.0

WATER INFRASTRUCTURE ROAD MAP

JULY 13, 2015

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ROAD MAPS – INFRASTRUCTURE IMPROVEMENT –
WATER

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WORKFORCE DEVELOPMENT

INFRASTRUCTURE IMPROVEMENT EXECUTIVE SUMMARY

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT – WATER - GOALS

WATER INFRASTRUCTURE

- Address aging infrastructure.
- Improve system safety and reliability.
- Increase the use of technology to inform future planning and increase conservation.
- Use financial pro forma to strike investment balance.

THE PLANS

- RECYCLED WATER
- WATER INFRASTRUCTURE
- INTEGRATED WATER
- WORKFORCE DEVELOPMENT
- FACILITIES PLAN
- RPS POWER IMPLEMENTATION
- INTEGRATED POWER RESOURCES
- ELECTRIC INFRASTRUCTURE
- TRANSMISSION RELIABILITY
- FIBER BUSINESS
- TECHNOLOGY
- CONSERVATION AND EFFICIENCY
- FINANCIAL PRO FORMA - 10 YR

Water Infrastructure Assessment

Water System:

- Significant improvement have been made through the CIP process, but areas of criticality remain.
- Significant pipeline replacement needed.

Technology:

- Leverage technology to realize increased efficiency and effectiveness.
- Improve SCADA and network communication to further enhance security.

Workforce:

- Workforce needs training to have Utility 2.0 skill sets.
- Knowledge transfer needed for aging workforce.

Financials:

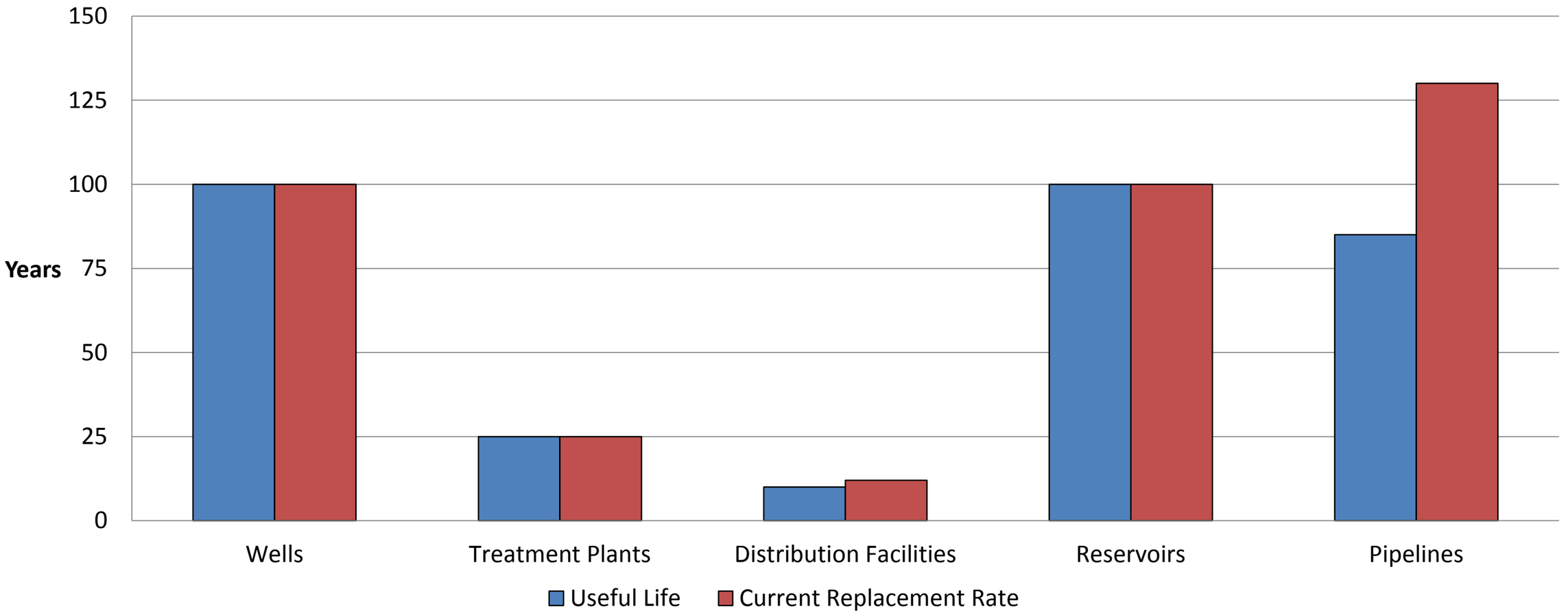
- Strong Financial Position
- Continue efficiency improvements

Infrastructure Assessment

Asset	Criticality	Last 10 Years	Status	Next 10 Years
Wells		$20 Million	On target	$21-$29 Million
Treatment Plants		$30 Million	On target	$19-$27 Million
Distribution Facilities		$15 Million	On target	$6-$10 Million
Reservoirs		$45 Million	On target	$5-$7 Million
Transmission Mains		$35 Million	Deficient	$84-$102 Million
Distribution Pipelines		$90 Million	Deficient	$107-$198 Million
Technology		$15 Million	Deficient	$44-$64 Million

Criticality:	High		Moderate		Low	

Useful Life vs. Replacement Rate



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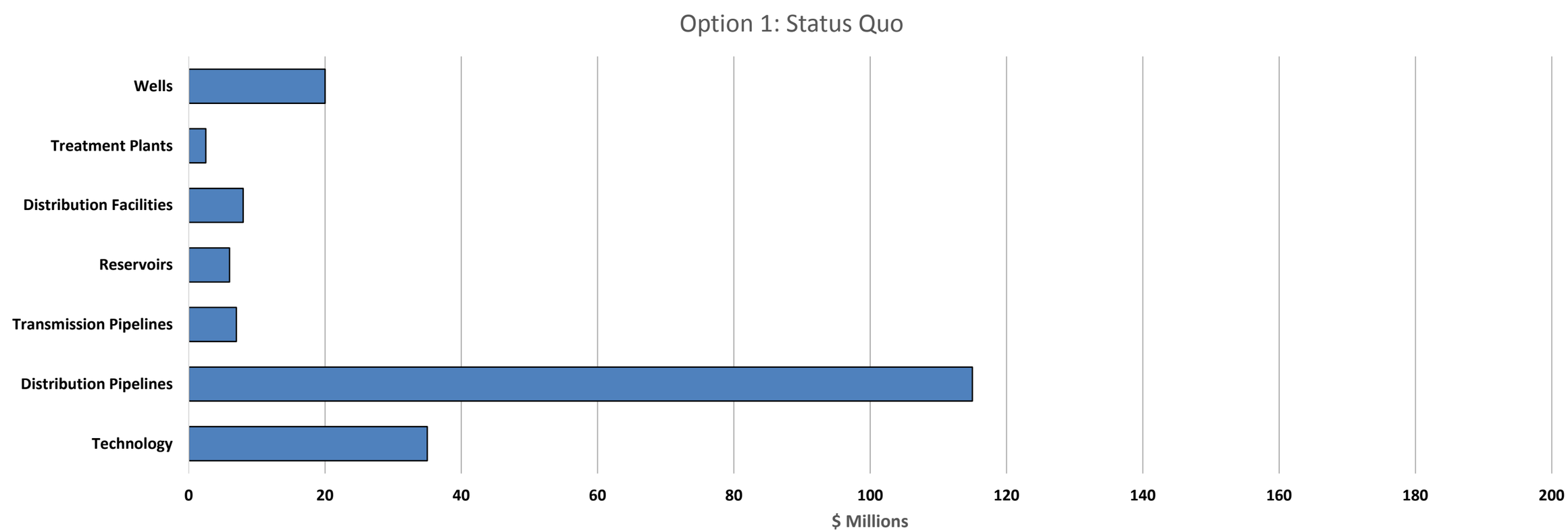
Option 1: Stay the Same (reactive mode), but fall behind as costs rise.



Option 1 = $170-$216 Million
Option 2 = $226-$293 Million
Option 3 = $279-$357 Million
Option 4 = $342-$437 Million

Option 1: Existing programs continue. Distribution pipeline at 130 year replacement cycle. Basic RPU technology improvements with ODMS and asset management.

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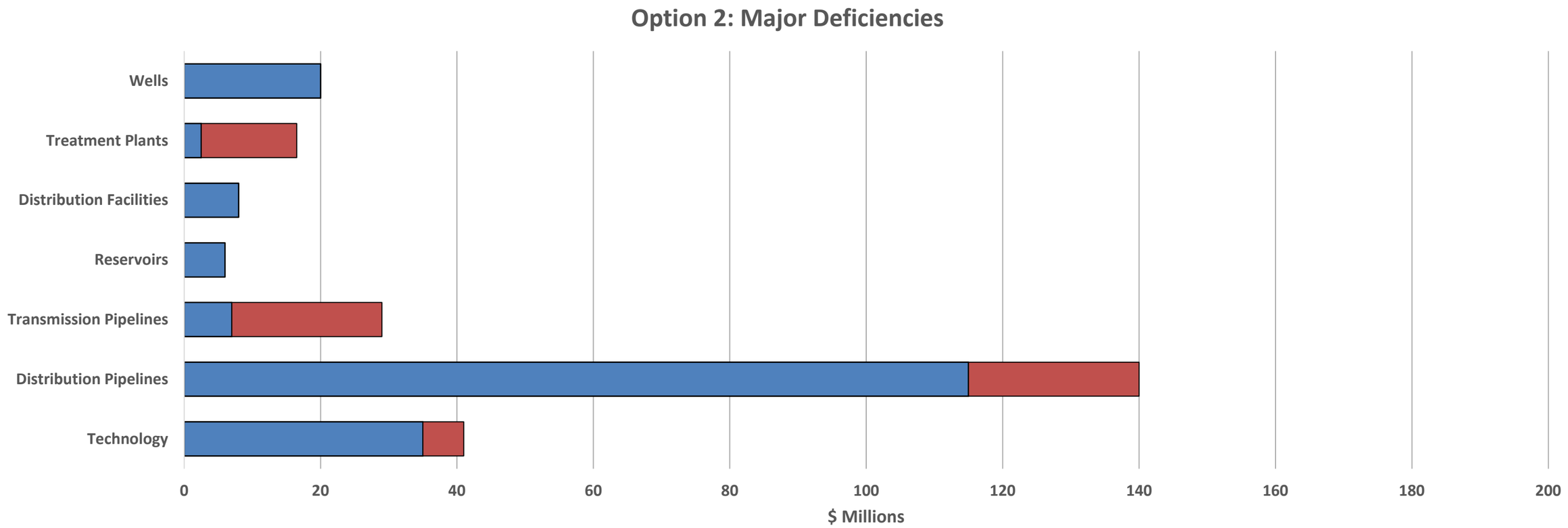
Cost to Address Major Deficiencies



Option 1 = $170-$216 Million
Option 2 = $226-$293 Million
Option 3 = $279-$357 Million
Option 4 = $342-$437 Million

Option 2: Replace Techite pipe, no upsizing. Replace Distribution Pipeline at a 100-year life cycle. Construct North Waterman Treatment Plant. Upgrade SCADA System and automate distribution system.

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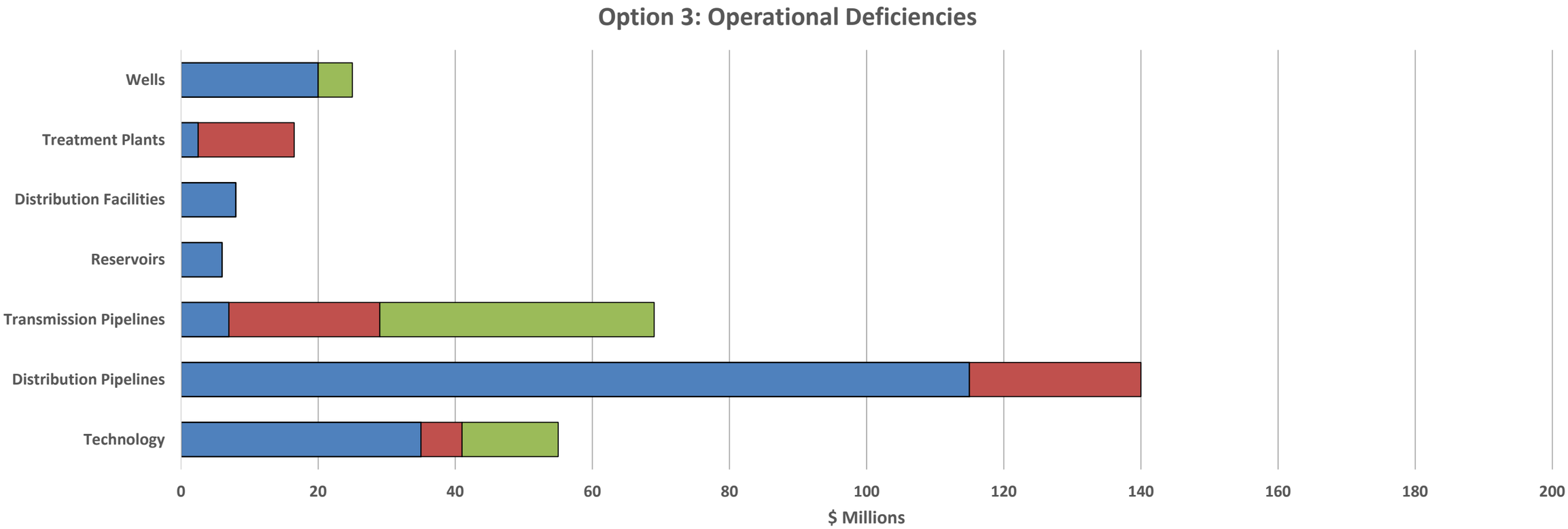
Cost to Address Operational Deficiencies



Option 1 = $170-$216 Million
Option 2 = $226-$293 Million
Option 3 = $279-$357 Million
Option 4 = $342-$437 Million

Option 3: Upsize Techite pipeline and address transmission bottlenecks. Install AMI meters. Replace two irrigation wells.

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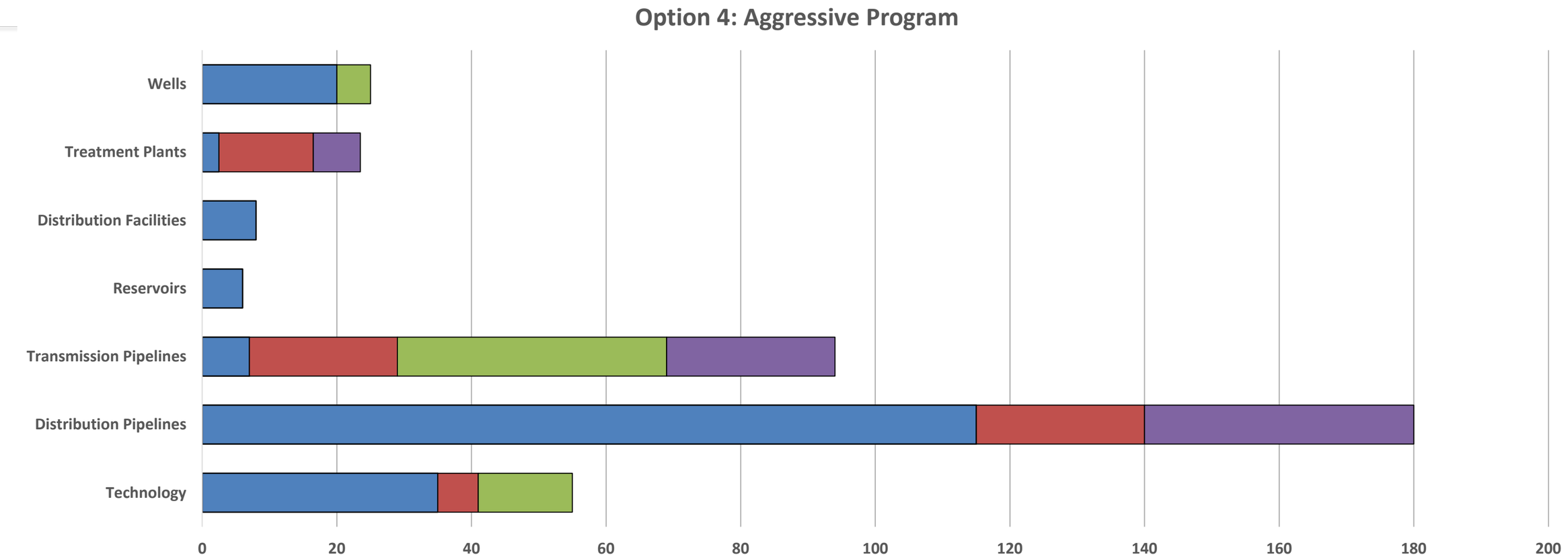
Cost for Aggressive Program



Option 1 = $170-$216 Million
Option 2 = $226-$293 Million
Option 3 = $279-$357 Million
Option 4 = $342-$437 Million

Option 4: Replace old and undersized transmission mains. Replace distribution pipelines at 75-year life cycle. Construct the Riverside Canal Treatment Plant.

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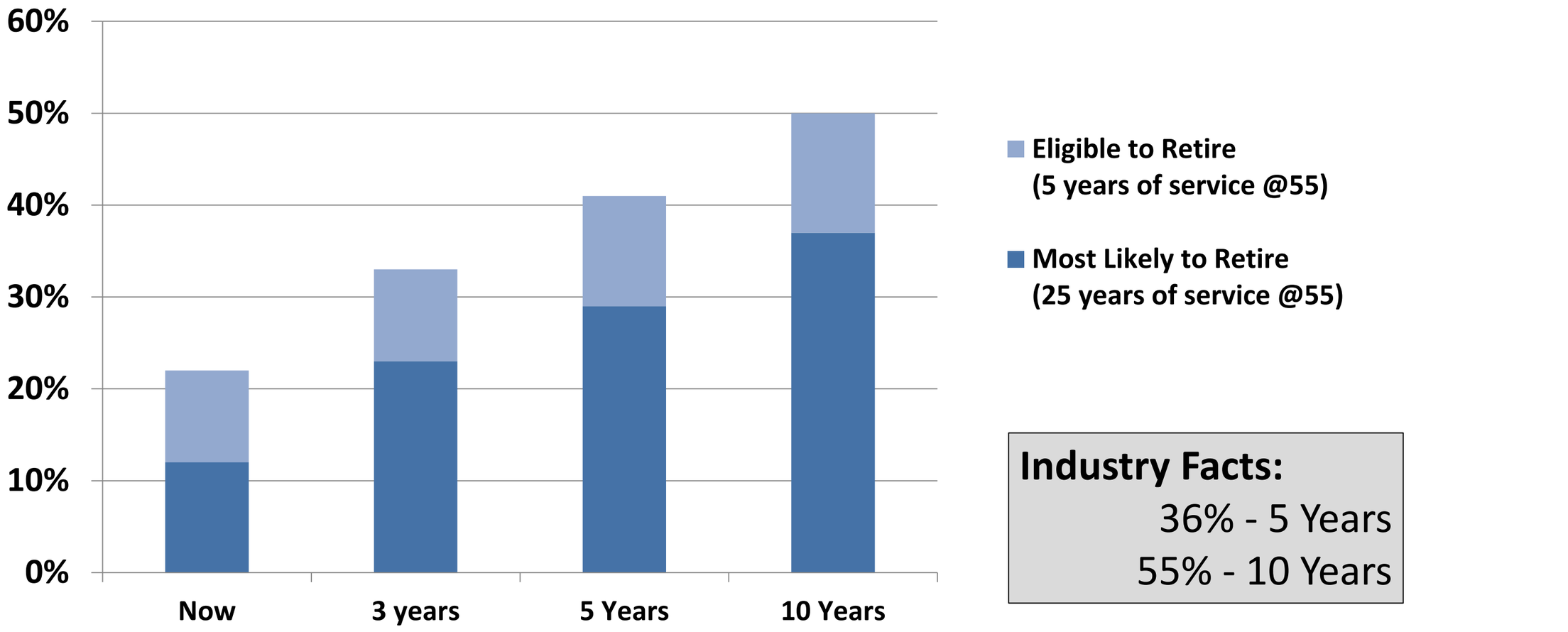
PUBLIC UTILITIES

Summary of Investment Options

Additional financial investment is required to address current backlog and improve maintenance.

Option 1	Option 2	Option 3	Option 4
Status Quo Fall Behind	Major Deficiencies	Operational Deficiencies	Aggressive Program
↓ ↑	↓ ↑	↓ ↑	↓ ↑
$170 – 206 million	**$226 – 293 million**	**$279-357 million**	**$342-437 million**

RPU Retirement Projections



Employees eligible to retire now and future

Industry Facts:

36% - 5 Years

55% - 10 Years

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ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - WATER

WORKFORCE DEVELOPMENT

INFRASTRUCTURE IMPROVEMENT

BACKGROUND

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Background

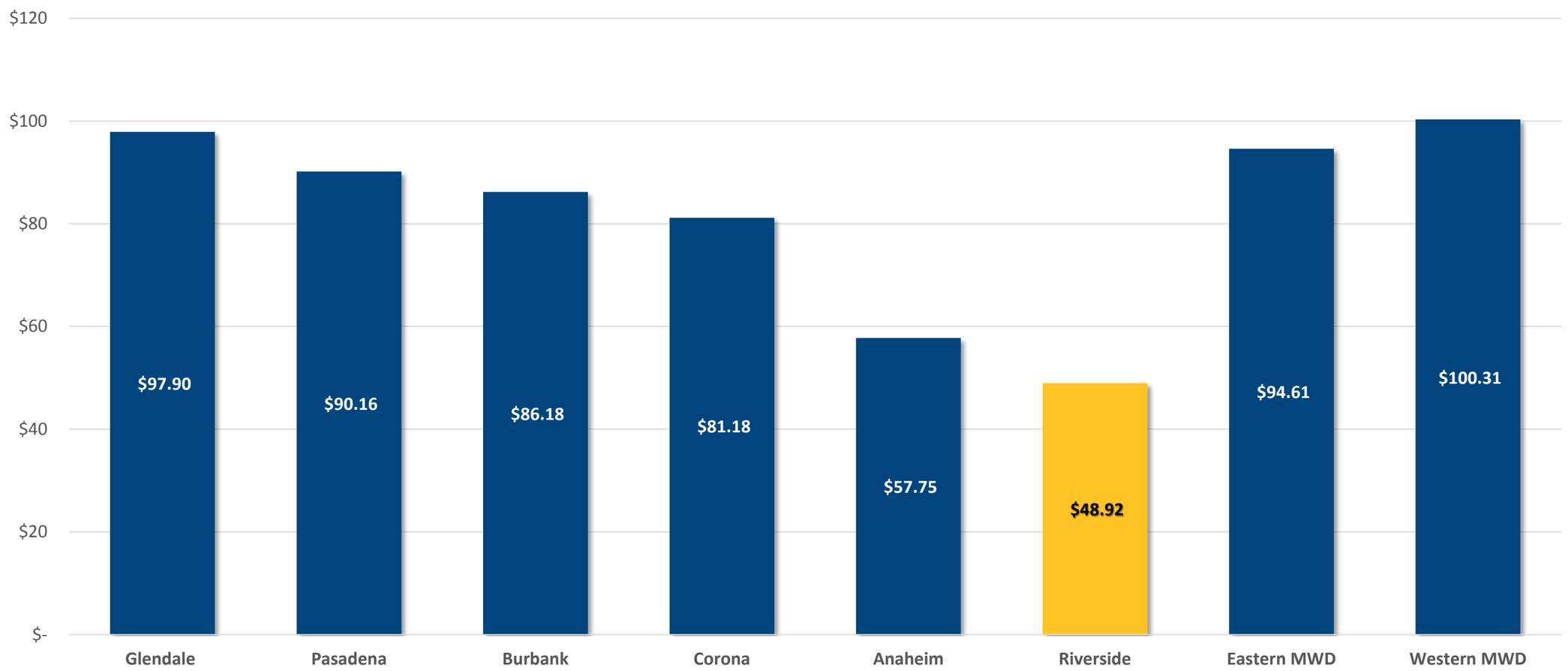
- City acquired water system in 1913
- Serve population over 300,000
- System replacement cost over $2 Billion
- Annual revenues over $60 Million

An Irrigating Canal

Safe W.A.T.E.R. Plan (2006)

- Invested $250,000,000
- Age based replacement
- Last rate increase 2010
- Purchasing power has diminished
- Good work done / more needed

Affordable Water Rates



AVERAGE RESIDENTIAL RATE FOR 25 CCF PER MONTH

(AS OF SEPT. 30, 2014)

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ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

WORKFORCE DEVELOPMENT

INFRASTRUCTURE IMPROVEMENT

ASSESSMENT

–

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

RPU Water System

- 49 active domestic wells
- 16 storage reservoirs (109 MG)
- 11 treatment plants
- 3 imported water connections
- 41 booster stations
- 8 emergency inter-ties
- 46 Hydraulic Zones (925–1750)
- 954 miles pipeline (4–72 inch)
- Riverside Canal and Gage Exchange system

Estimated Replacement Value

Item	Quantity		Unit Price		Total
Water Supply Mains	180,000	ft..	$ 810	/ft..	$ 145,800,000
Transmission Pipelines	516,900	ft.	$ 650	/ft.	$ 335,985,000
Distribution Pipelines	4,342,300	ft.	$ 250	/ft.	$ 1,085,575,000
Service Laterals	67,500	ea.	$ 2,000	ea.	$ 135,000,000
Meters	67,500	ea.	$ 250	ea.	$ 16,875,000
Reservoirs	109	MG	$ 1,000,000	/MG	$ 108,500,000
Pump Stations	10,860	HP	$ 4,000	/HP	$ 43,440,000
Domestic Wells	49	ea.	$ 3,000,000	ea.	$ 147,000,000
Pressure Stations	60	ea.	$ 300,000	ea.	$ 18,000,000
Treatment Plants	6	ea.	$ 12,000,000	ea.	$ 72,000,000
Chlorination Facilities	6	ea.	$ 1,200,000	ea.	$ 7,200,000
Riverside Canal Facilities	14	miles	$ 2,000,000	mi.	$ 28,000,000
Control Systems		LS	$10,000,000	LS	$ 10,000,000
Total System Valuation					$ **2,153,375,000**

Estimated Replacement Value

Item	Quantity		Unit Price		Total
Water Supply Mains	180,000	ft..	$ 810	/ft..	$ 145,800,000
Transmission Pipelines	516,900	ft.	$ 650	/ft.	$ 335,985,000
Distribution Pipelines	4,342,300	ft.	$ 250	/ft.	$ 1,085,575,000
Service Laterals	67,500	ea.	$ 2,000	ea.	$ 135,000,000
Meters	67,500	ea.	$ 250	ea.	$ 16,875,000
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pressure Stations	60	ea.	$ 300,000	ea.	$ 18,000,000
Treatment Plants	6	ea.	$ 12,000,000	ea.	$ 72,000,000
Chlorination Facilities	6	ea.	$ 1,200,000	ea.	$ 7,200,000
Riverside Canal Facilities	14	miles	$ 2,000,000		$ 28,000,000
Control Systems		LS	$10,000,0000	LS	$ 10,000,000
Total System Valuation					**$ 2,153,375,000**

Buried Assets = 80%

Infrastructure Assessment

Asset	Criticality	Last 10 Years	Status	Next 10 Years
Wells		$20 Million	On target	$21-$29 Million
Treatment Plants		$30 Million	On target	$19-$27 Million
Distribution Facilities		$15 Million	On target	$6-$10 Million
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Distribution Pipelines		$90 Million	Deficient	$107-$198 Million
Technology		$15 Million	Deficient	$44-$64 Million

Criticality:	High		Moderate		Low	

Well Production Assessment

- $20 Million Invested
  - 10 wells in last 10 years (20% of capacity)
  - 5 built or financed by others
- $21-29 Million Needed
  - Replace 1 well every other year
  - Rehab 5 wells per year
  - Replace 2 irrigation wells
- On Target

Treatment Assessment

- $30 Million Invested
  - JW North
  - Gas Cl_2 to sodium hypochlorite conversion
- $19-$27 Million Needed
  - Maintain JW North
  - Build North Waterman Treatment Plant (Perchlorate)
  - Build Riverside Canal Treatment Plant
- On Target

STATUS MAP
BUNKER HILL PLUMES

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PUBLIC UTILITIES

Map Developed By:
Riverside Public Utilities
Water Resources
April 2015

- Fault
- Crafton-Redlands Plume* **
- Highland Plume*
- Muscoy-Newmark Plume*

* Data Source: Tetra Tech Inc.
Distribution of Perchlorate in HSU-4
Comprehensive Sampling 2012
&
** Sturchio, N.C., J.R. Hoagland III, R.J. Marroquin, A.D. Beloso Jr, L. Heraty, S.E. Bortz, and T.L. Patterson
2012. Isotopic mapping of groundwater perchlorate plumes. Groundwater. 50 (1):94-102.

BUNKER HILL BASIN

RIALTO-COLTON BASIN

SAN JACINTO

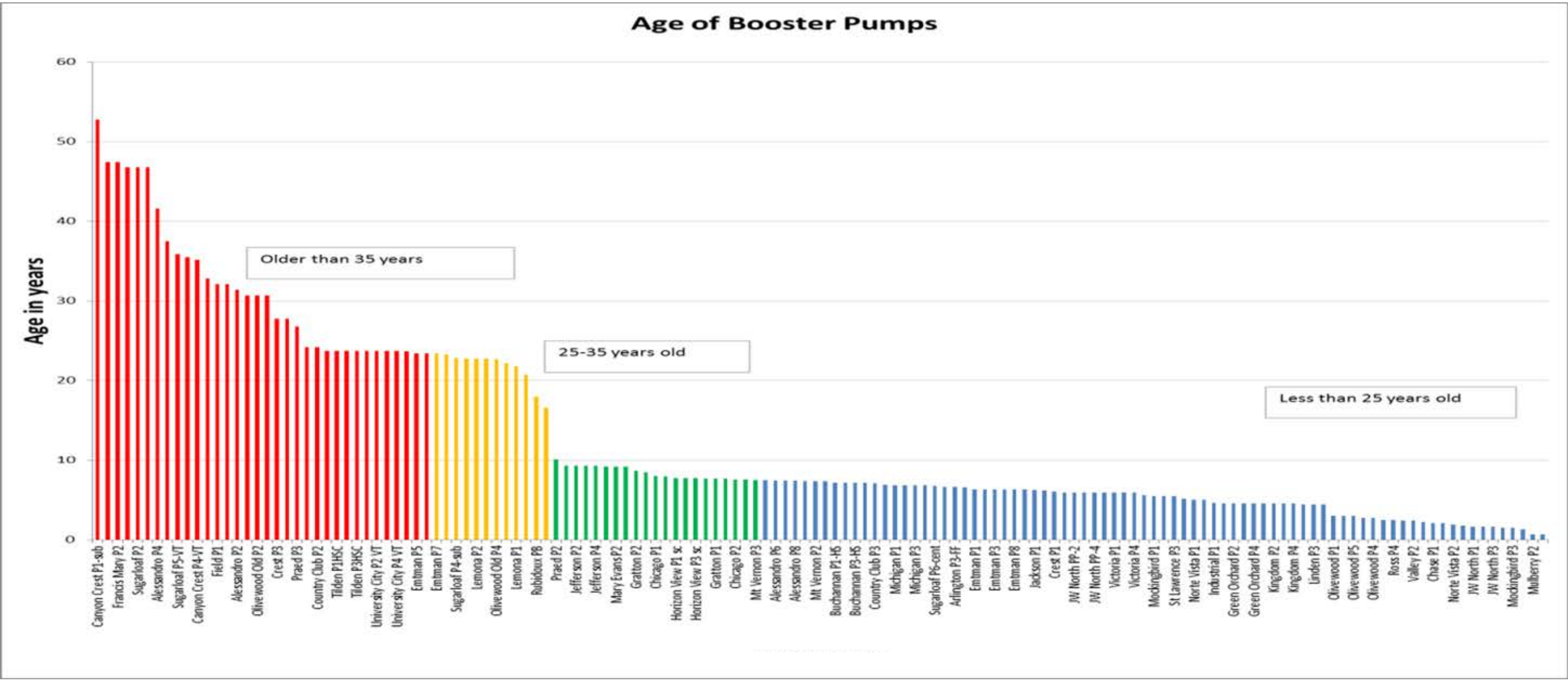
Distribution Facilities Assessment

- $15 Million Invested
- Booster Stations
  - 18 of 38 stations are new or rebuilt
- Pressure Reducing Stations
  - 14 of 27 stations are new or rebuilt
- Meters
  - 35,000 of 64,000 replaced
- On Target

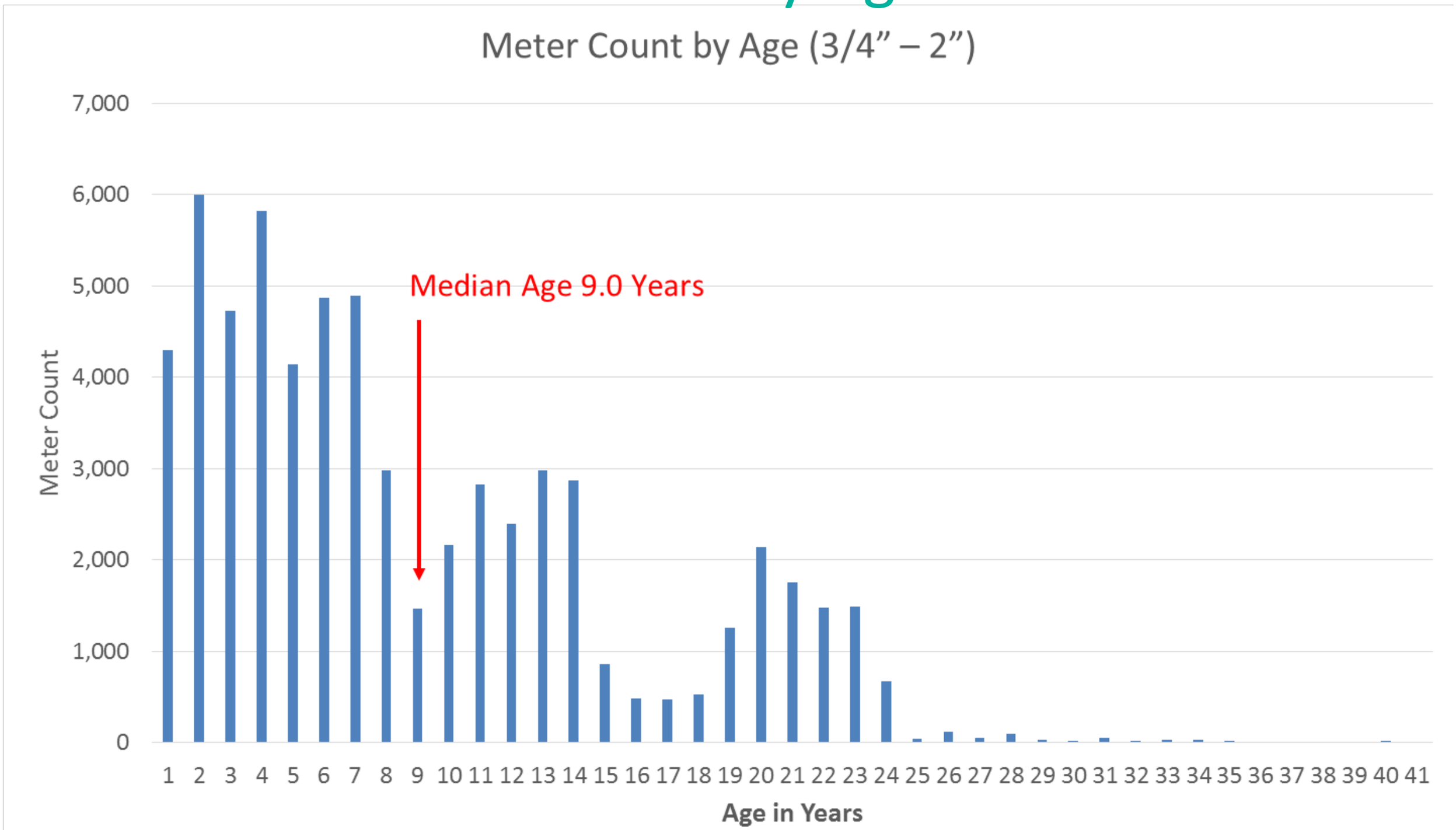
Distribution Facilities Assessment

- $6-$10 Million needed
  - –2 booster station replacements
  - –1 pressure reducing station replacement
  - –4,500 meter replacements / year

Booster Pumps by Year



Meters by Age



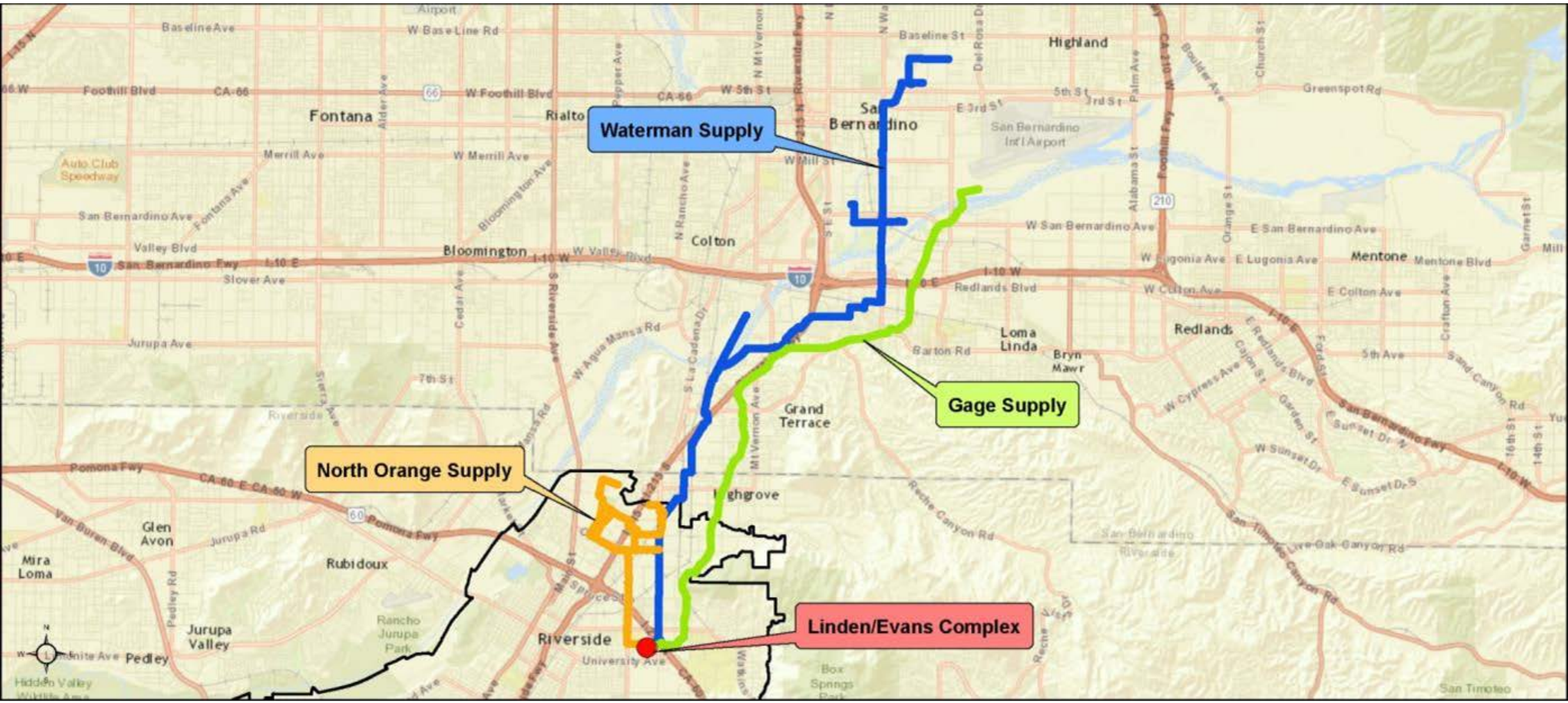
Storage Reservoir Assessment

- $45 Million Invested
  - Evans, Whitegates I and Whitegates II rebuilt
  - Linden Roof replacement
- Most reservoirs are in good condition
- $5-$7 Million needed
  - Maintenance
- On Target

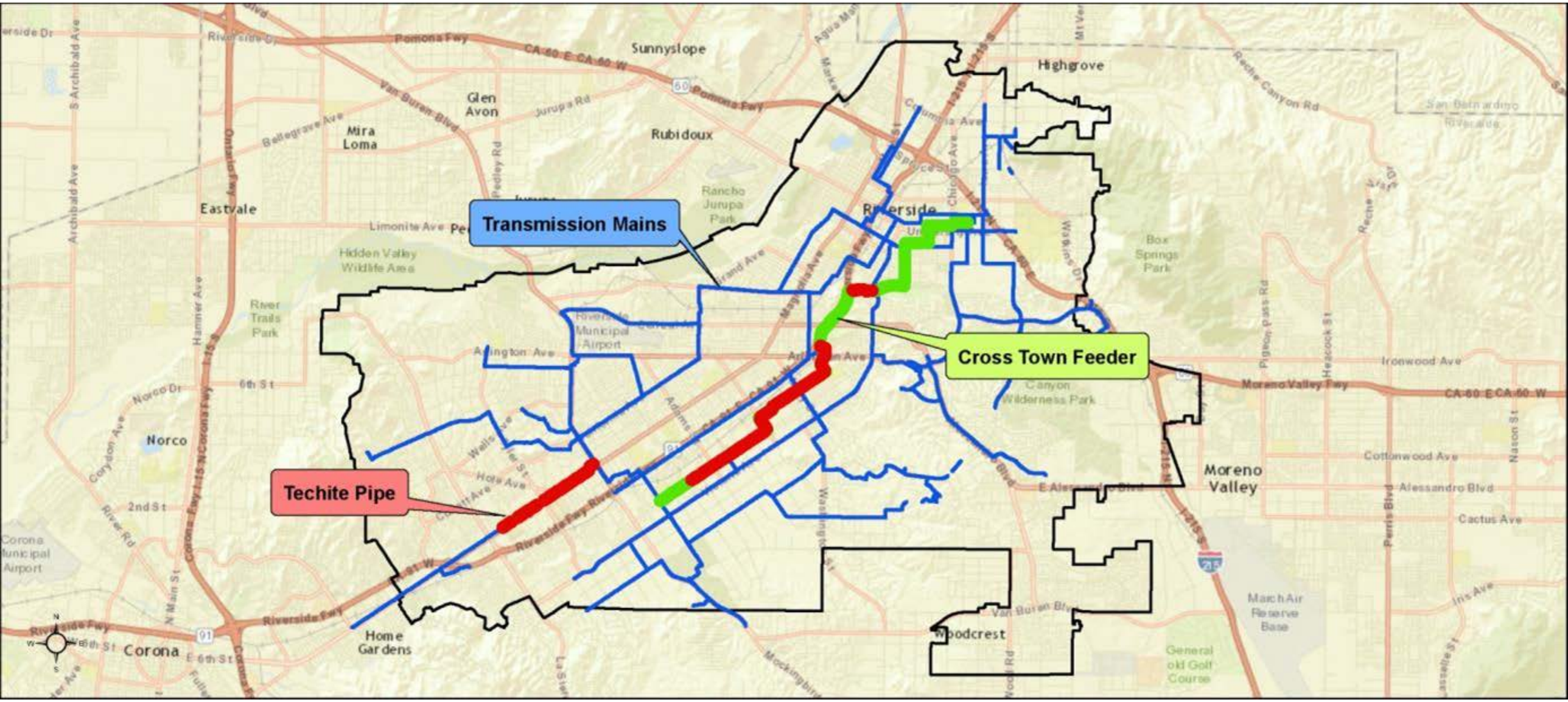
Transmission Mains Assessment

- $35 Million Invested
  - San Bernardino TM replacements (9 projects)
  - Short segment of Cross town feeder (SR-91 widening)
- $84-$102 Needed
  - Techite Pipe should be replaced
  - Old and undersized pipelines
  - Operational deficiencies
- Deficient

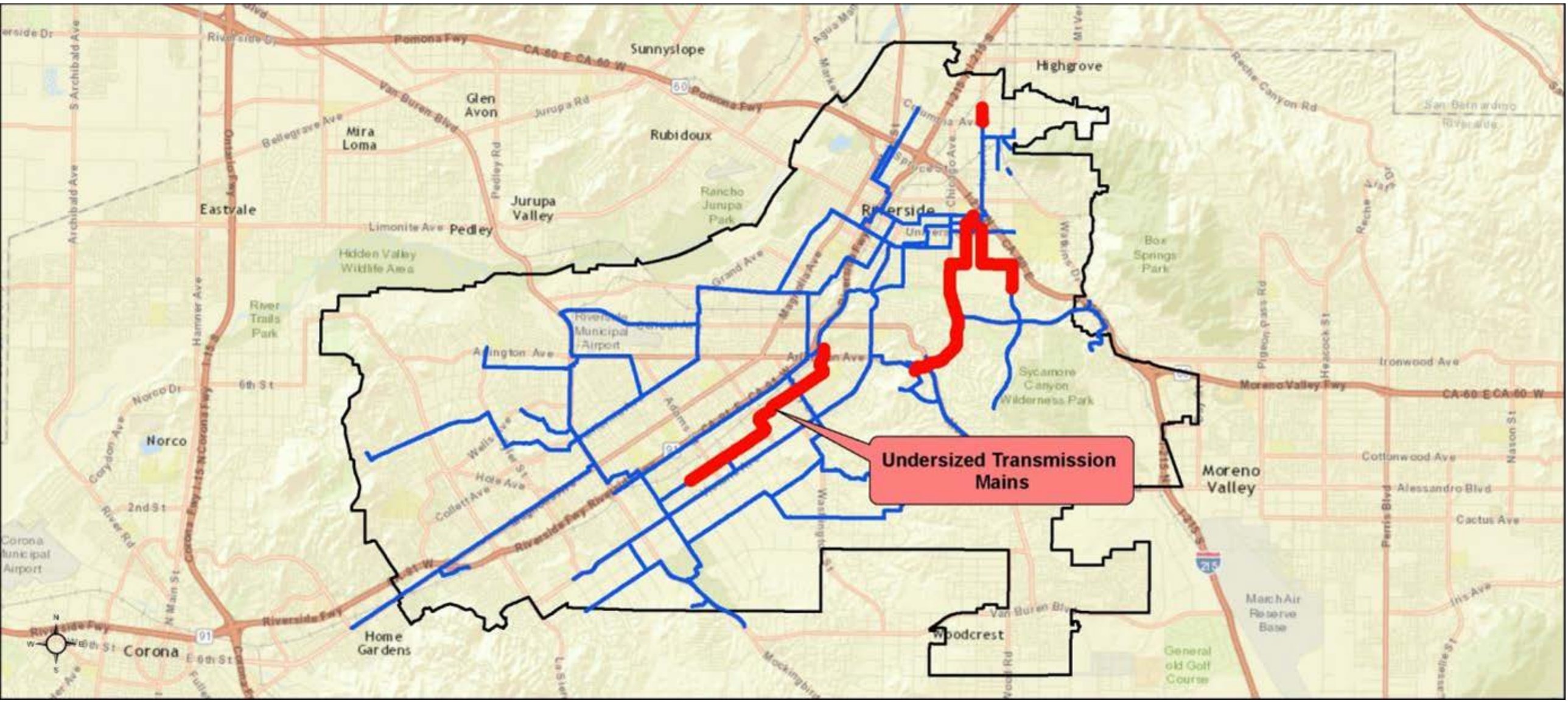
Supply Transmission Mains Map



Distribution Transmission Mains Map



Distribution Transmission Mains Map (undersized)



Techite Pipe

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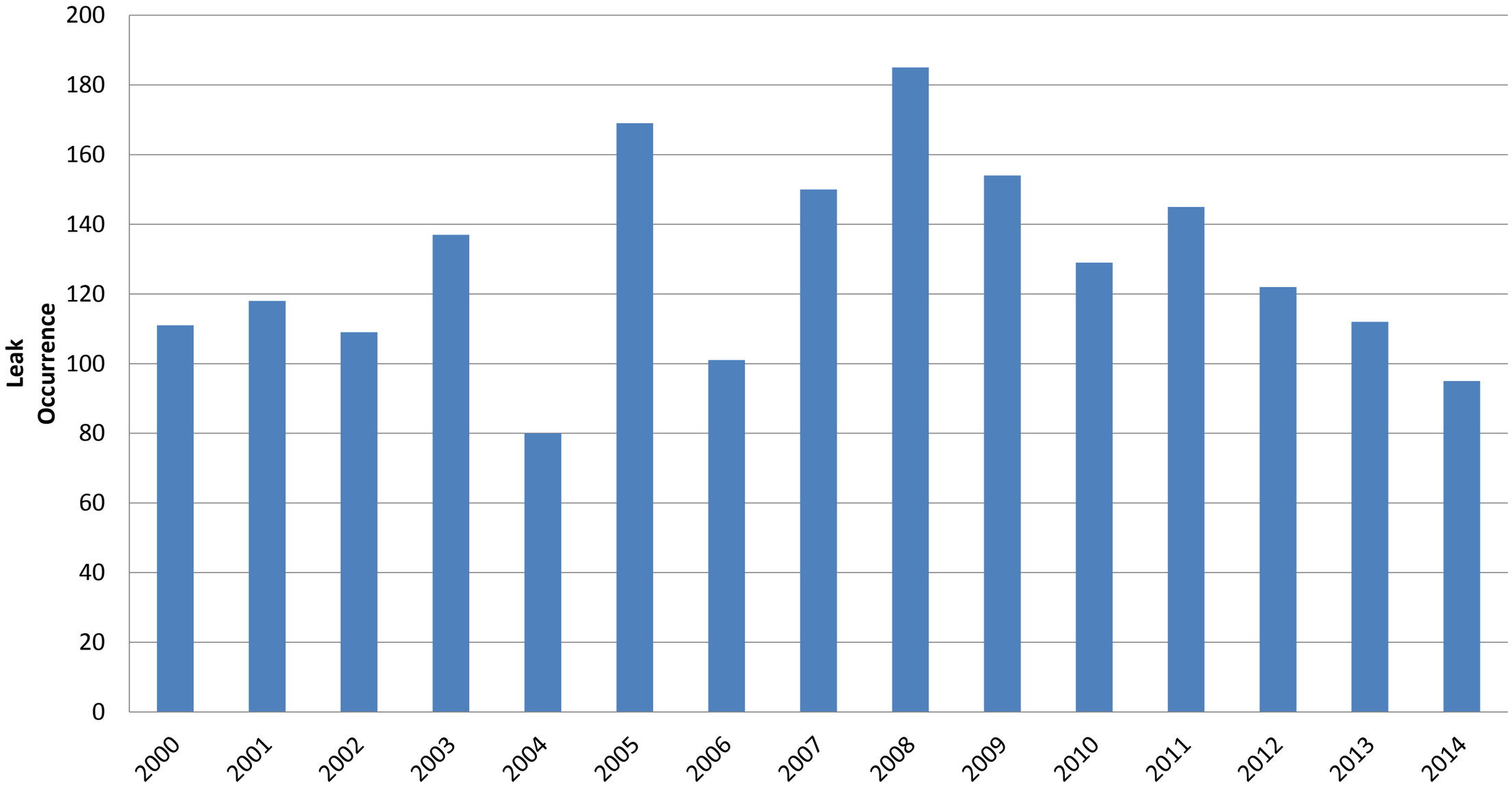
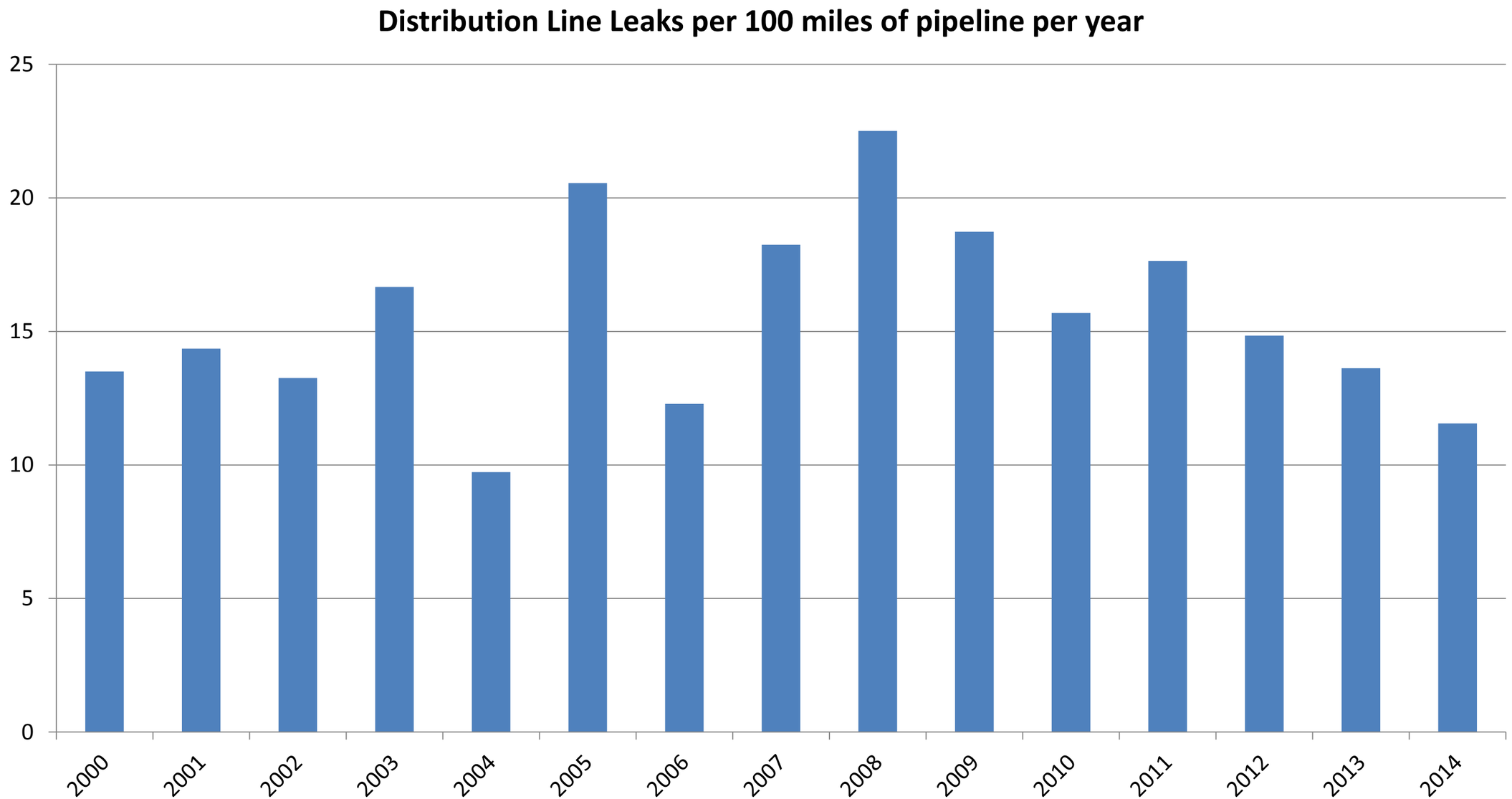
Distribution Pipelines Assessment

- $90 Million Invested
  - 60 Miles replaced ($63 Million)
    - 130 year replacement cycle
  - System expansion, Public Works projects
- $107-$198 Million needed
  - Approaching “Tsunami” of Cast Iron pipe
  - Develop improved assessment methods
- Deficient

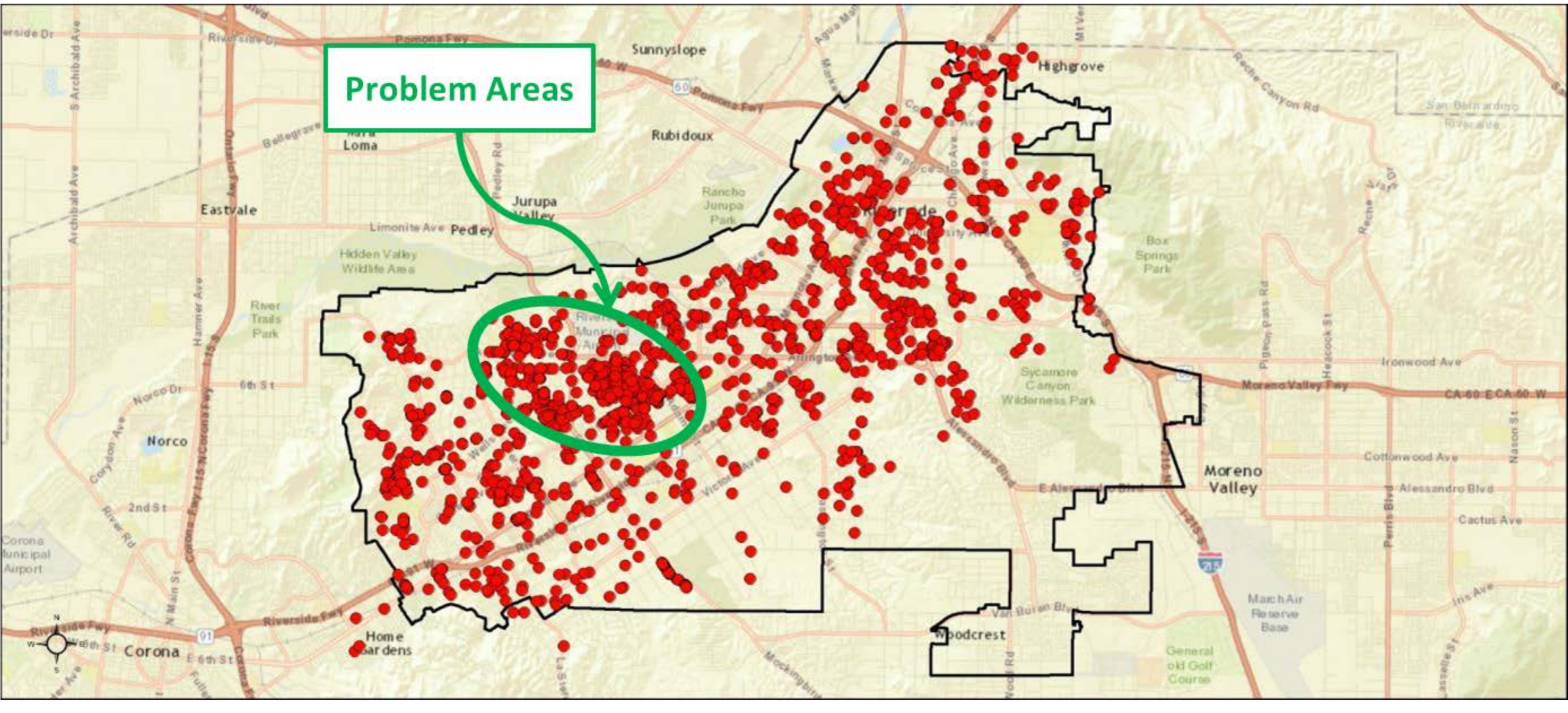
Annual Distribution Line Leaks



Normalized Leak Rating



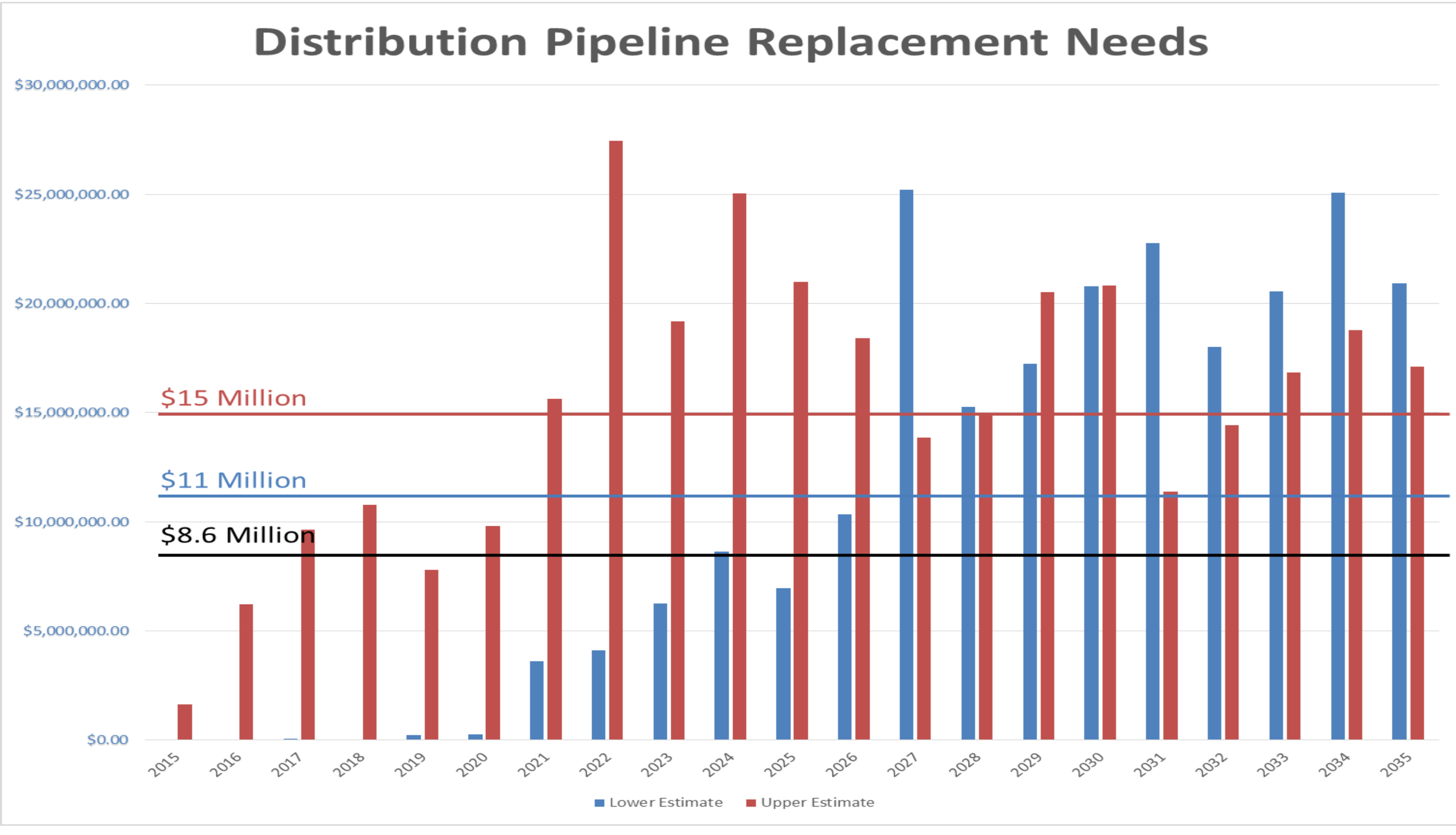
Active Leaks Map



Premature Distribution Pipeline Failure

Failed Cast Iron Distribution mains removed from service December 2014. Installed c. 1950.

Distribution Pipeline Replacement Needs



Distribution Main Replacement Rate

- $8.6 Million/year
  - 6.5 Miles (130-year cycle)
- $11 Million/year
  - 8.5 Miles (100-year cycle)
- $15 Million/year
  - 11 Miles (75-year cycle)

Infrastructure Assessment Summary

Significant Progress with CIP

- Most areas are making good progress
  - Wells, Treatment Plants, Distribution Facilities, Reservoirs

Some areas need attention (10 years)

- Transmission Mains ($84-$102 Million)
- Distribution Pipelines ($107-$198 Million)

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

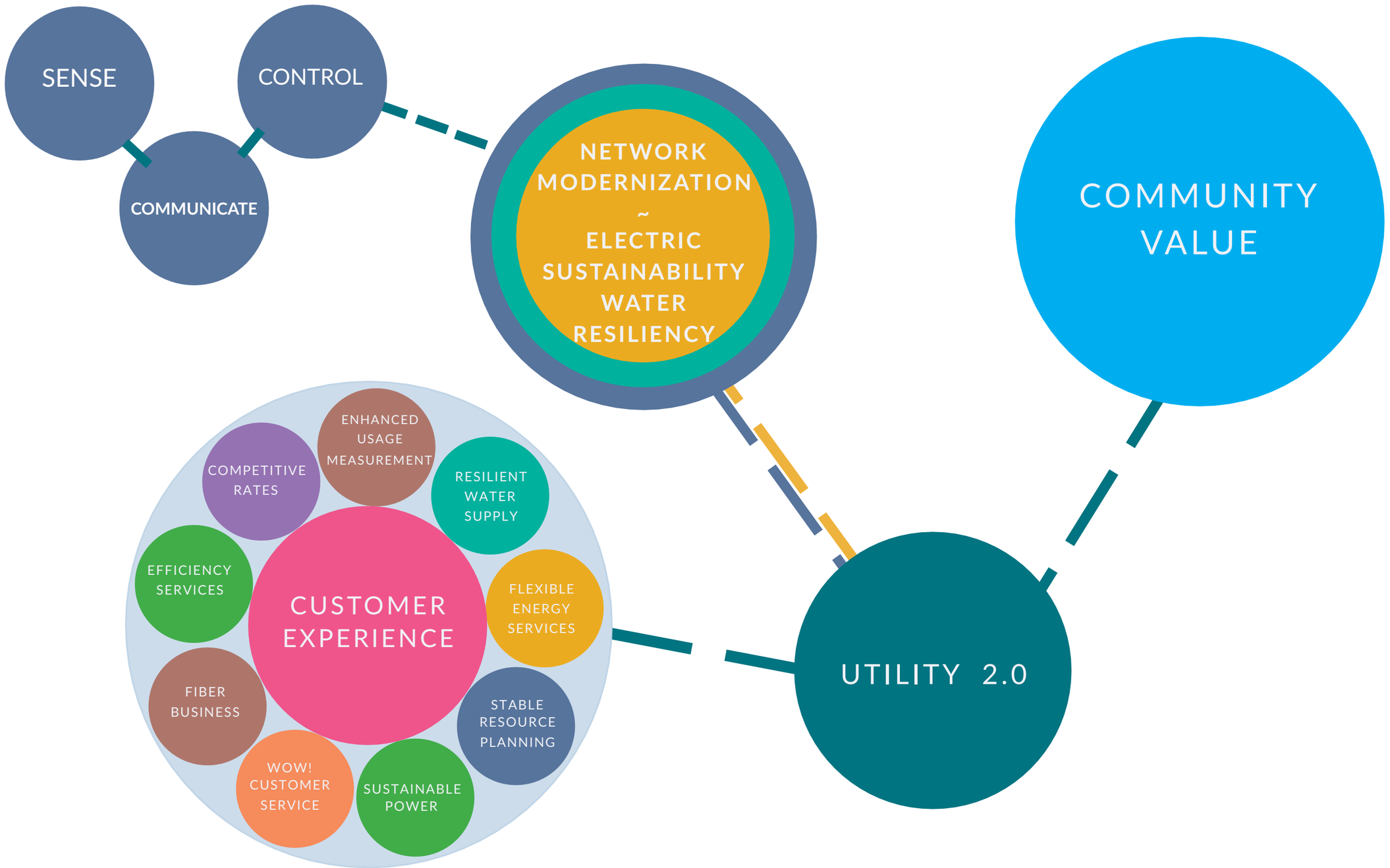
WORKFORCE DEVELOPMENT

INFRASTRUCTURE IMPROVEMENT

TECHNOLOGY ASSESSMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES


SENSE
CONTROL
COMMUNICATE
NETWORK MODERNIZATION ~ ELECTRIC SUSTAINABILITY WATER RESILIENCY
COMMUNITY VALUE
UTILITY 2.0
CUSTOMER EXPERIENCE
ENHANCED USAGE MEASUREMENT
COMPETITIVE RATES
RESILIENT WATER SUPPLY
EFFICIENCY SERVICES
FLEXIBLE ENERGY SERVICES
FIBER BUSINESS
STABLE RESOURCE PLANNING
WOW! CUSTOMER SERVICE
SUSTAINABLE POWER

Technology Assessment

- $15 Million Invested
  - Replaced SCADA system (10 years old)
  - Well automation/SCADA expansion
  - ODMS
- $44-$64 Million needed
  - Information gathering/storage/extraction/analysis
  - Real time and efficient system operation

Technology Master Plan

CUSTOMER FOCUSED

Directly influence customer experience and provide customer interaction

- Customer Information System (CIS)
- Customer Relationship Management (CRM)
- Customer Web Portal (CWP)
- Interactive Voice Recognition (IVR)

INFORMATION BASED

Decision and analysis, data management and process implementation based primarily on large databases

- Meter Data Management (MDM)
- Geographic Information Systems (GIS)
- Operational Data Management System (ODMS)
- Work Management System (WMS)
- Asset Management System (AMS)
- Warehouse Inventory System (WIS)

REAL-TIME OPERATIONAL

Used in real-time operations and control of water and energy delivery systems

- Advanced Metering (AMI)
- Automated Vehicle Loading (AVL)
- Network Communications System (NCS)
- Land Mobile Radio (LMR)
- Distribution Automation (DA)
- Substation Automation (SA)
- Outage Management System (OMS)
- Distribution Management System (DMS)
- Supervisory Control and Data Acquisition System (SCADA)

Technology Assessment

- ODMS
  - Underway
  - Store operational data
  - Interact with multiple databases
  - Platform for dashboards
  - Segue way for advanced analysis and decision making
- Asset Management
  - Underway
  - Fully utilize existing software
  - Automate gathering of field data
  - Streamline maintenance
  - Refine CIP program

Technology Assessment

- Communication Upgrade
  - Remote facilities
  - High failure rate
  - Low bandwidth
- Distribution Automation
  - Optimize system operation
  - Added level of reliability
  - Reduce energy costs
- Advanced Metering Infrastructure (AMI)
  - Enhance customer service
  - Leak detection
  - Real time monitoring of system
  - Non-revenue water detection
  - Advanced meters

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - ELECTRIC

WORKFORCE DEVELOPMENT

INFRASTRUCTURE IMPROVEMENT

WORKFORCE ASSESSMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Workforce Assessment

- RPU has strong competency for today's needs
- Improved processes may require new skillsets
  - Changes in workforce make-up?
- Retiring employees
- Onboard/train incoming staff
- Continuous education

Workforce Assessment Summary

- Participate in Utility 2.0 development
- Provide continuous training
  - Water University (technical staff)
  - Soft skills development (supervisors, managers)
  - Technology utilization skills
- Increased CIP?
  - Reduce 20% vacancy rate

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - WATER

INFRASTRUCTURE IMPROVEMENT

FINDINGS

—

WORKFORCE DEVELOPMENT

THRIVING FINANCIALLY

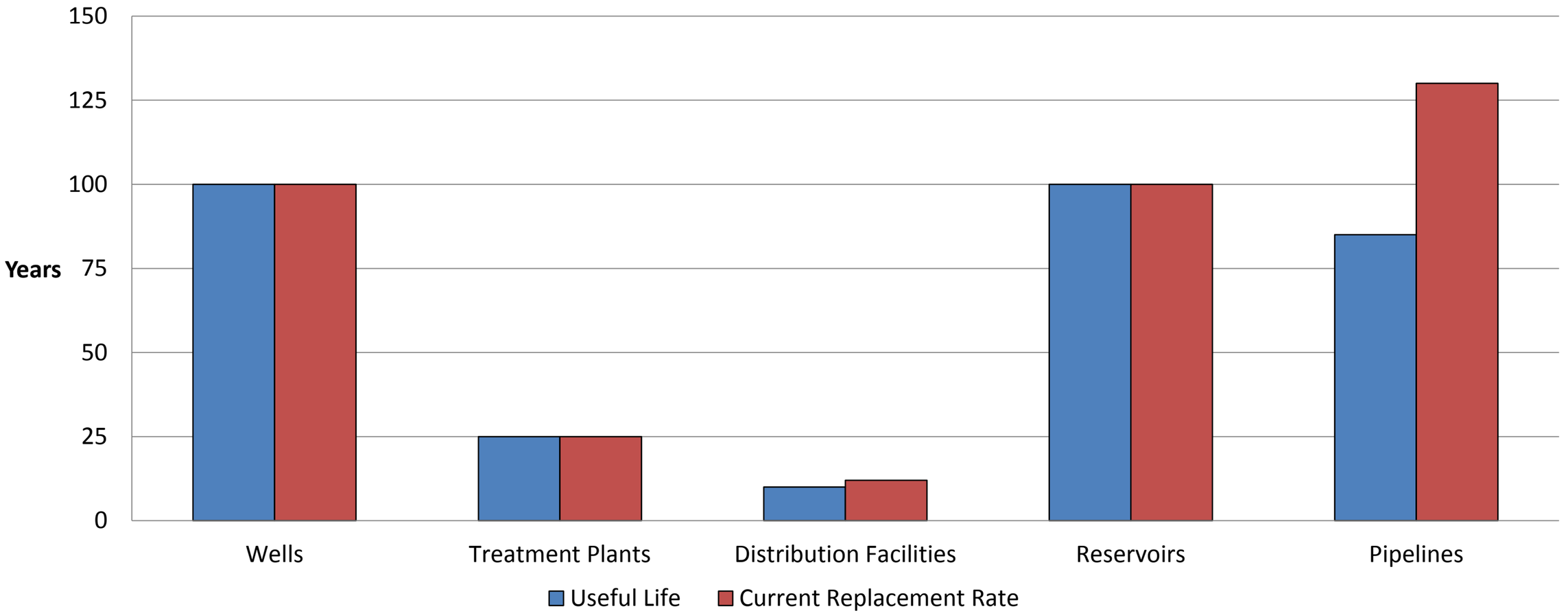
ADVANCED TECHNOLOGIES

Infrastructure Assessment

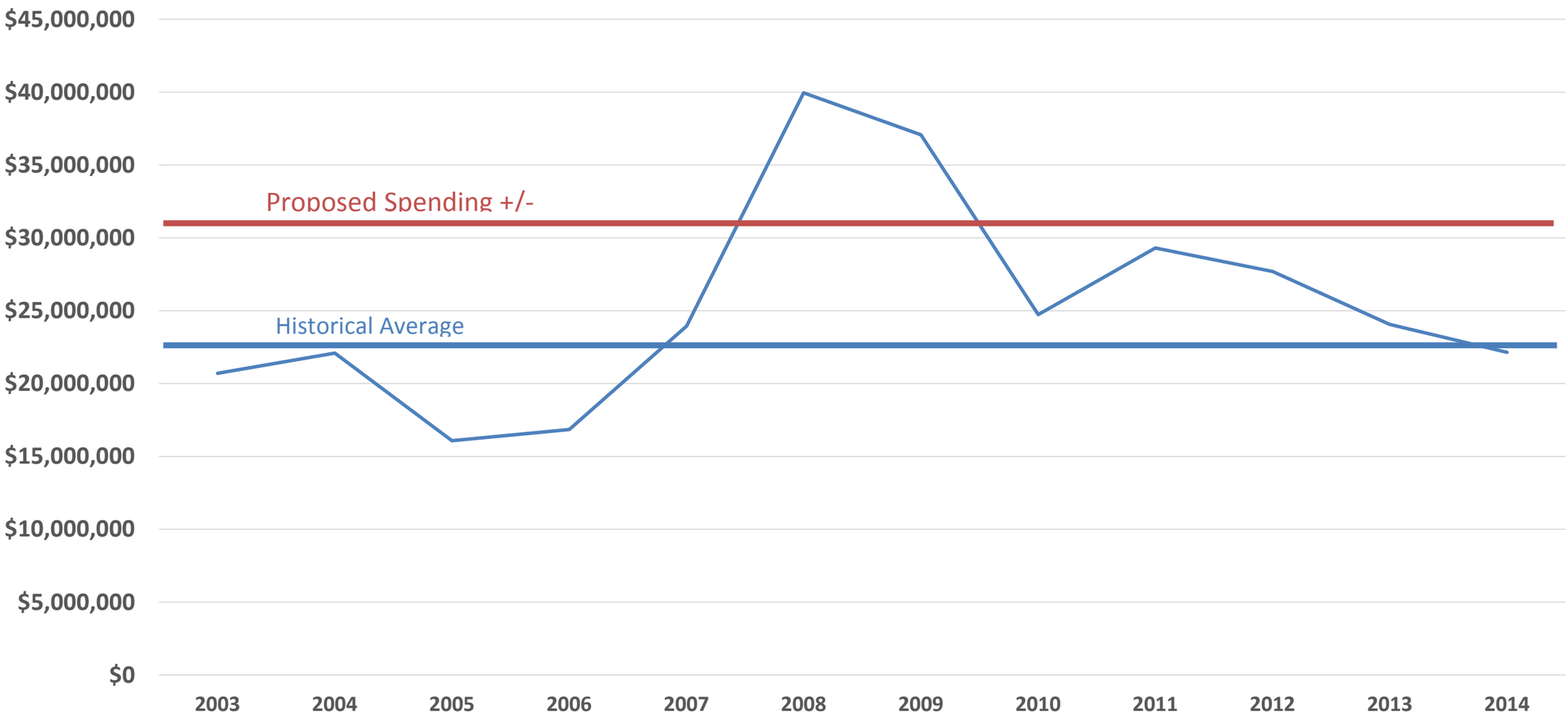
Asset	Criticality	Last 10 Years	Status	Next 10 Years
Wells		$20 Million	On target	$21-$29 Million
Treatment Plants		$30 Million	On target	$19-$27 Million
Distribution Facilities		$15 Million	On target	$6-$10 Million
Reservoirs		$45 Million	On target	$5-$7 Million
Transmission Mains		$35 Million	Deficient	$84-$102 Million
Distribution Pipelines		$90 Million	Deficient	$107-$198 Million
Technology		$15 Million	Deficient	$44-$64 Million

Criticality:	High		Moderate		Low	

Useful Life vs. Replacement Rate



Historical and Proposed CIP Spending



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ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - WATER

WORKFORCE DEVELOPMENT

INFRASTRUCTURE IMPROVEMENT
OPTIONS

—

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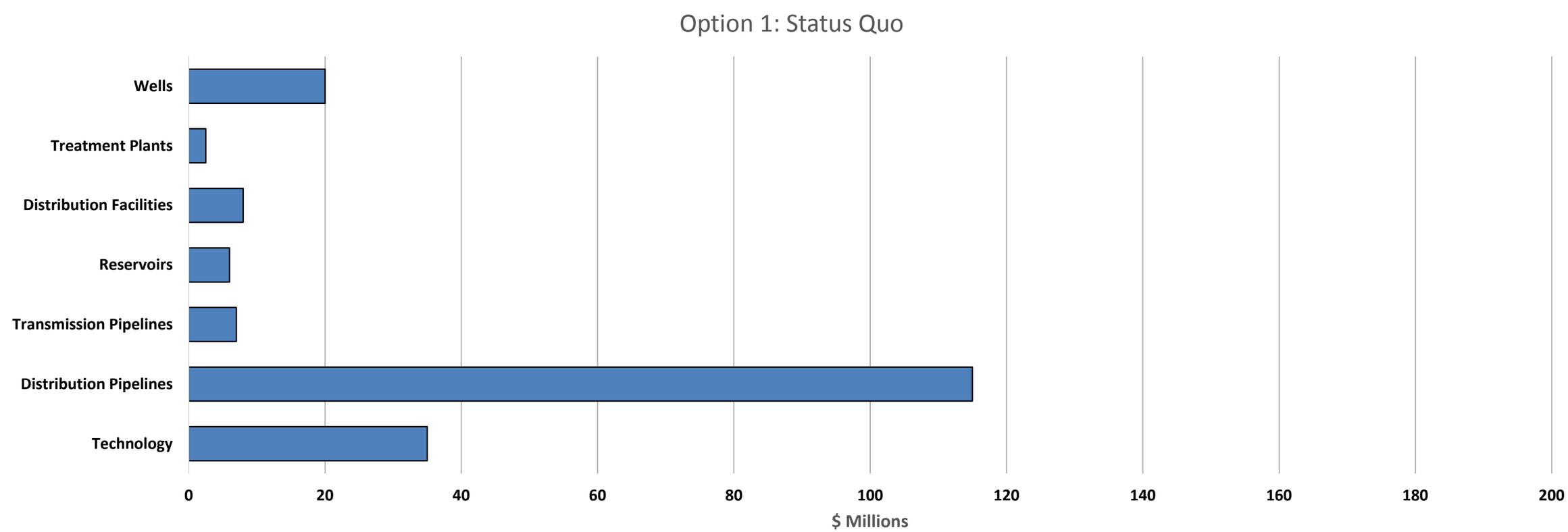
ADVANCED TECHNOLOGIES

Option 1: Stay the Same (reactive mode), but fall behind as costs rise.



Option 1 = $170-$216 Million
Option 2 = $226-$293 Million
Option 3 = $279-$357 Million
Option 4 = $342-$437 Million

Option 1: Existing programs continue. Distribution pipeline at 130 year replacement cycle. Basic RPU technology improvements with ODMS and asset management.

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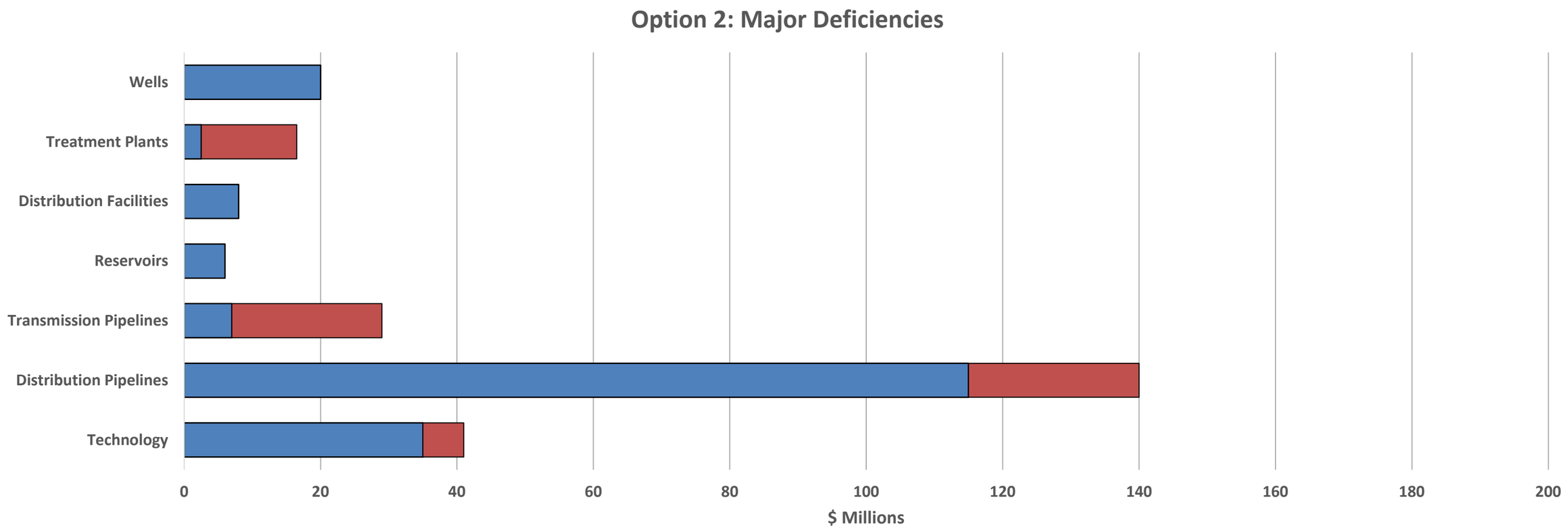
Cost to Address Major Deficiencies



Option 1 = $170-$216 Million
Option 2 = $226-$293 Million
Option 3 = $279-$357 Million
Option 4 = $342-$437 Million

Option 2: Replace Techite pipe, no upsizing. Replace Distribution Pipeline at a 100-year life cycle. Construct North Waterman Treatment Plant. Upgrade SCADA System and automate distribution system.

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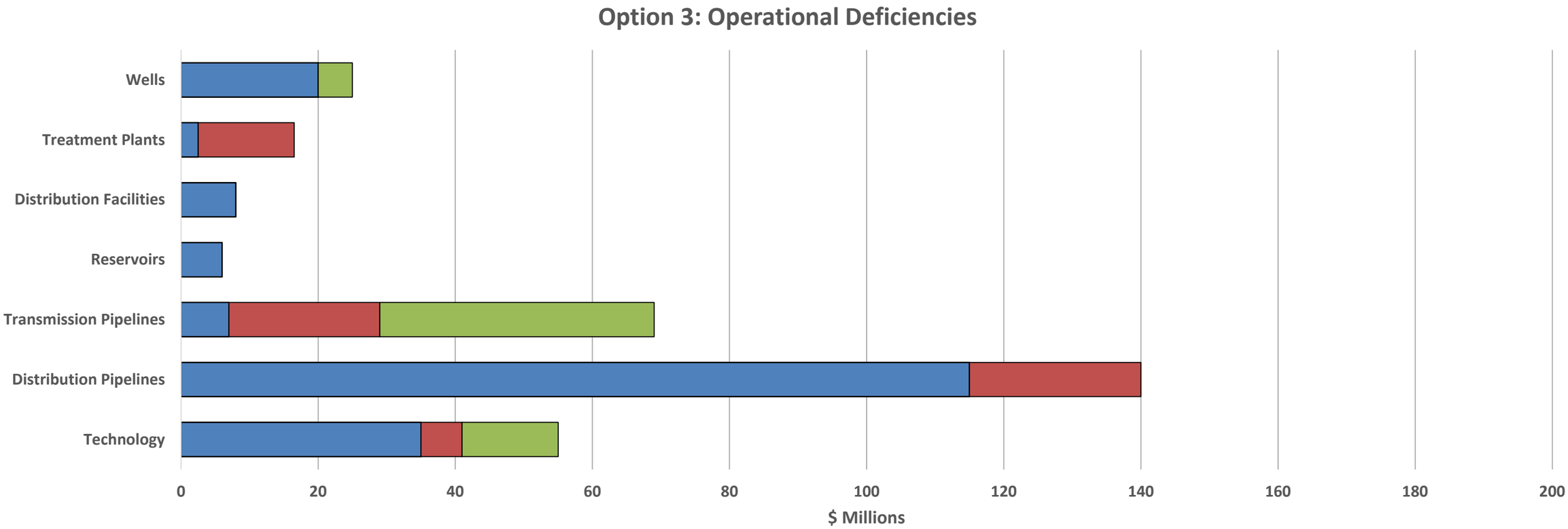
Cost to Address Operational Deficiencies



Option 1 = $170-$216 Million
Option 2 = $226-$293 Million
Option 3 = $279-$357 Million
Option 4 = $342-$437 Million

Option 3: Upsize Techite pipeline and address transmission bottlenecks. Install AMI meters. Replace two irrigation wells.

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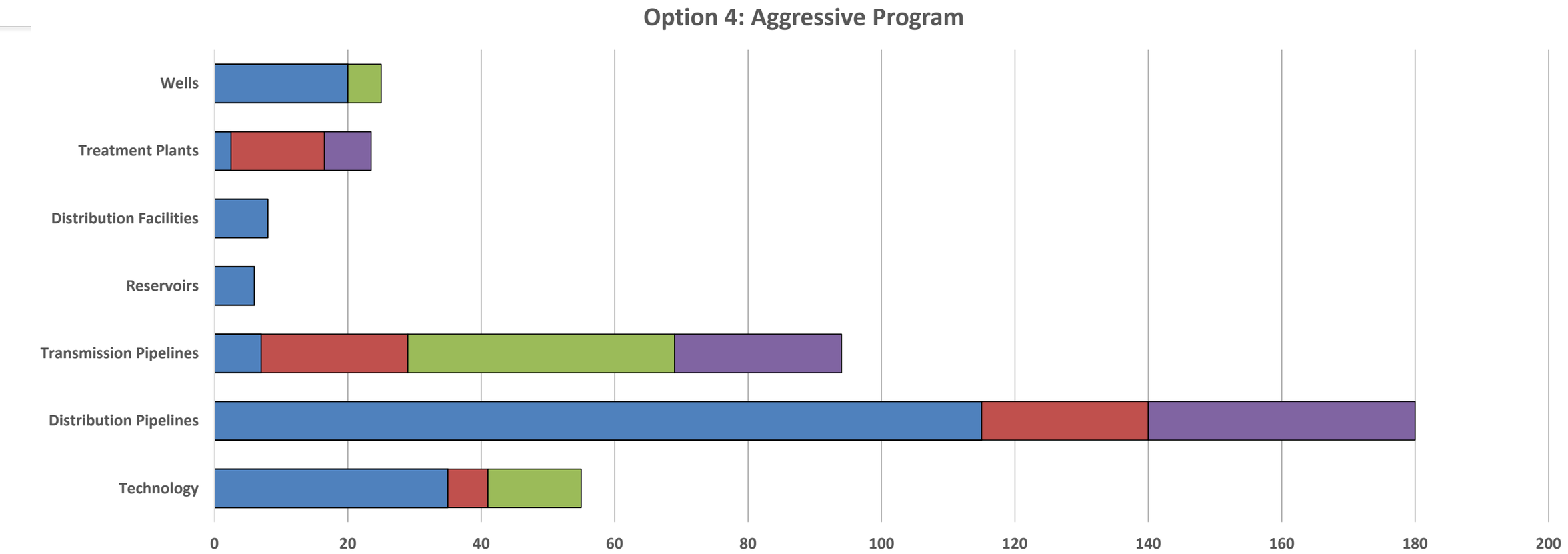
Cost for Aggressive Program



Option 1 = $170-$216 Million
Option 2 = $226-$293 Million
Option 3 = $279-$357 Million
Option 4 = $342-$437 Million

Option 4: Replace old and undersized transmission mains. Replace distribution pipelines at 75-year life cycle. Construct the Riverside Canal Treatment Plant.

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Summary of Investment Options

Additional financial investment is required to address current backlog and improve maintenance.

Option 1	Option 2	Option 3	Option 4
Status Quo Fall Behind	Major Deficiencies	Operational Deficiencies	Aggressive Program
↓ ↑	↓ ↑	↓ ↑	↓ ↑
$170 – 206 million	**$226 – 293 million**	**$279-357 million**	**$342-437 million**

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT - WATER

INFRASTRUCTURE IMPROVEMENT
RECOMMENDATIONS

–

WORKFORCE DEVELOPMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Sample Short-Term Recommendations – Year 1

Water Infrastructure	• Continue with current asset replacement program • Finalize plans and rollout timing of Recycled Water System • Rubber Dam EIR and permitting process
Technology Infrastructure	• Initial ODMS rollout • Initiate SCADA and communications upgrades • Input facilities into OWAM and begin automated capturing of field data • Refine and implement five dashboards
Workforce	• Assess personnel needs to implement Water Utility 2.0

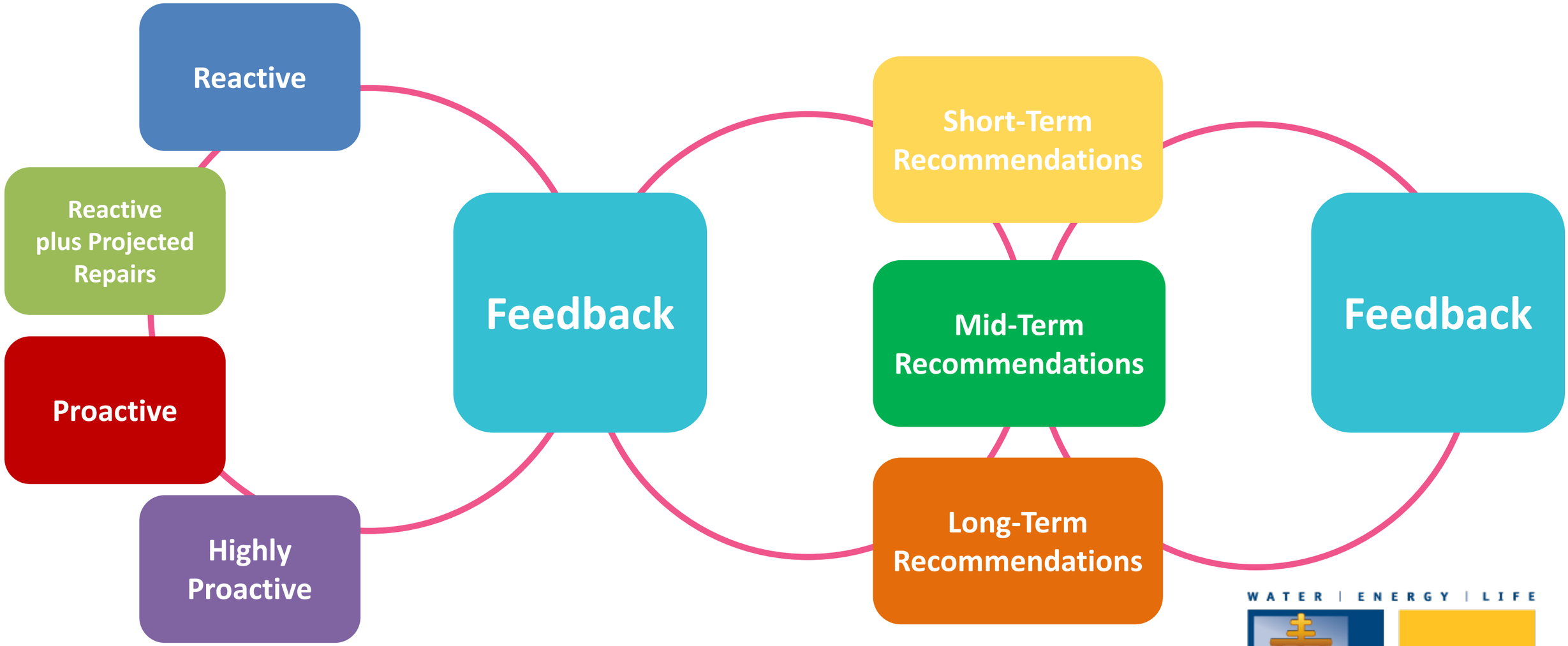
Sample Mid-Term Recommendations – Years 2-5

Water Infrastructure	• Identify and utilize advanced pipeline characterizations to refine replacement program • Replace and upsize Crosstown Feeder and Magnolia Main (Techite) • Complete phase I of recycled water program. • Complete Rubber Dam • Study and pilot test the North Waterman Treatment Plant
Technology Infrastructure	• Rollout AMR/AMI system • ODMS to interface with all major systems • Complete GIS and SCADA and communication upgrades • Fully implement automated field data gathering • Fully operational asset management system • Automate production/distribution system
Workforce	• Implement continuous technical, technological and soft skills training • Revise job classifications and employee allocations for Utility 2.0

Sample Long-Term Recommendations – Years 6-10

Water Infrastructure	• Reassess and refine asset management program for the next 10 year timeframe • Review/revise all planning studies
Technology Infrastructure	• Databases to become more connected • Prepare for Utility 3.0
Workforce	• Expand training provided to staff on advanced technology equipment and software

Options & Recommendations Decided from Feedback



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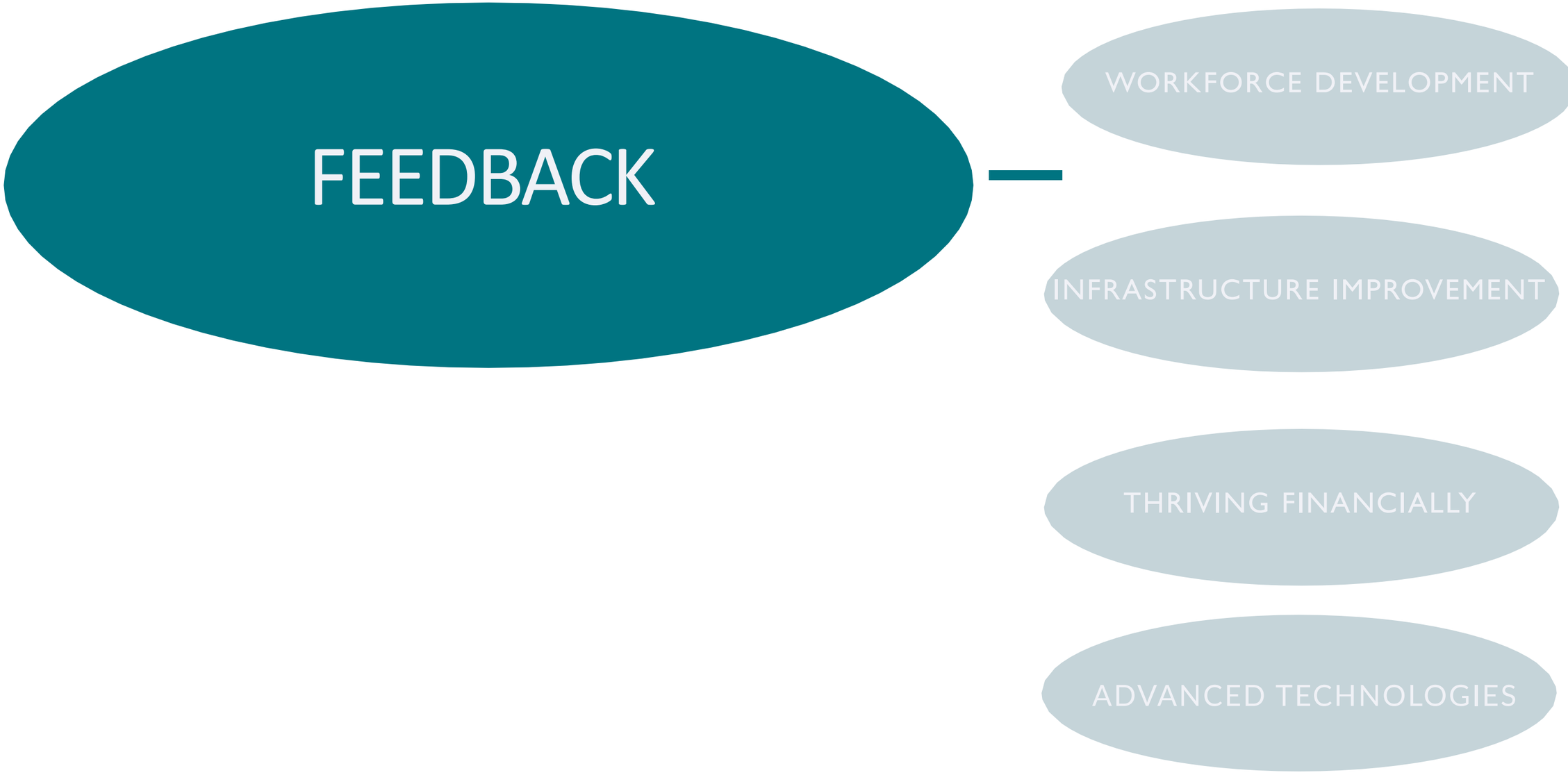
Next Steps

- Incorporate Comments
- Formulate Detailed recommendations
- Review
- Report Back

ROAD MAPS –


FEEDBACK
WORKFORCE DEVELOPMENT
INFRASTRUCTURE IMPROVEMENT
THRIVING FINANCIALLY
ADVANCED TECHNOLOGIES

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UTILITY 2.0

WORKFORCE DEVELOPMENT ROAD MAP

JULY 13,2015

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ROAD MAPS – INFRASTRUCTURE IMPROVEMENT –
WORKFORCE DEVELOPMENT

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WORKFORCE DEVELOPMENT EXECUTIVE SUMMARY

INFRASTRUCTURE IMPROVEMENT

THRIVING FINANCIALLY

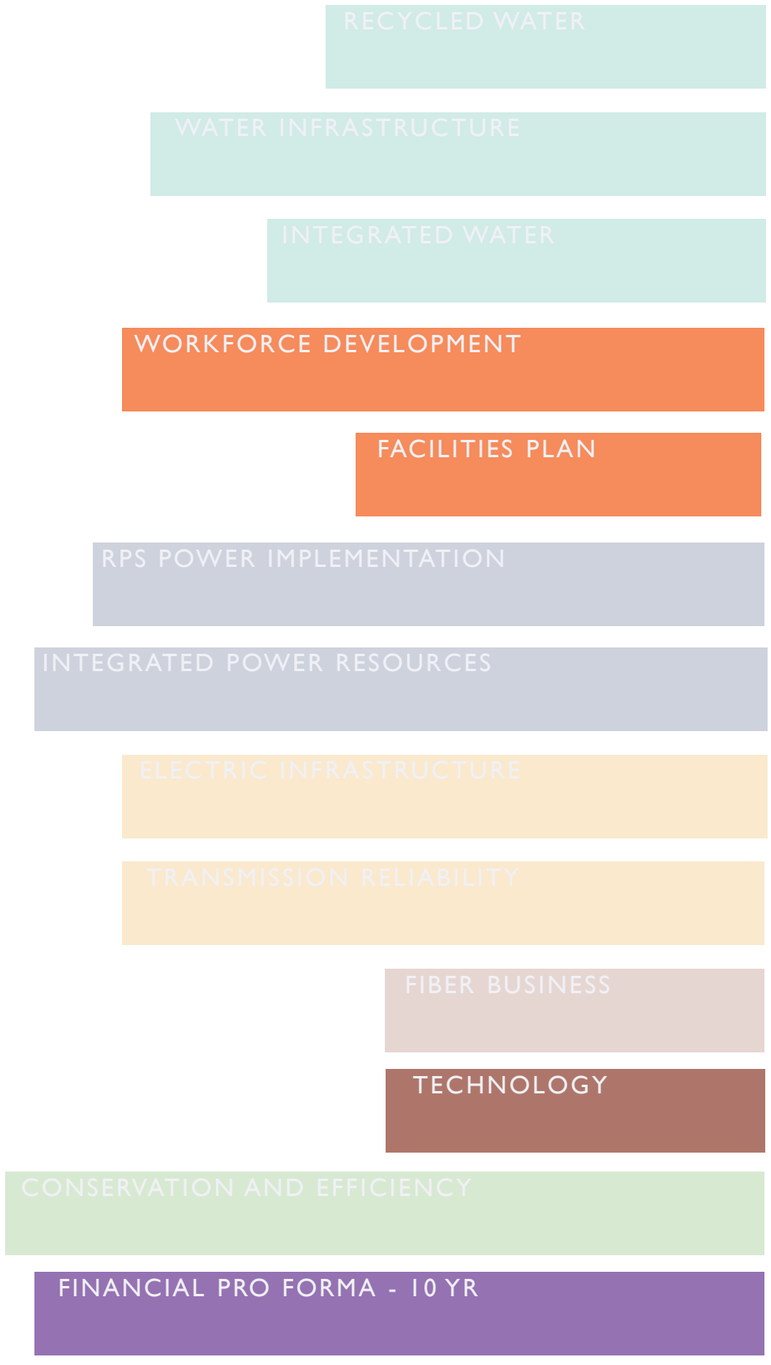
ADVANCED TECHNOLOGIES

ROAD MAPS – INFRASTRUCTURE IMPROVEMENT –
WORKFORCE DEVELOPMENT GOALS

WORKFORCE DEVELOPMENT

- Ensure ready labor force to implement Utility 2.0
- Address ongoing resource and skill requirements for RPU to function in the changing utility environment
- Promote and facilitate employee training and development
- Enhance customer service

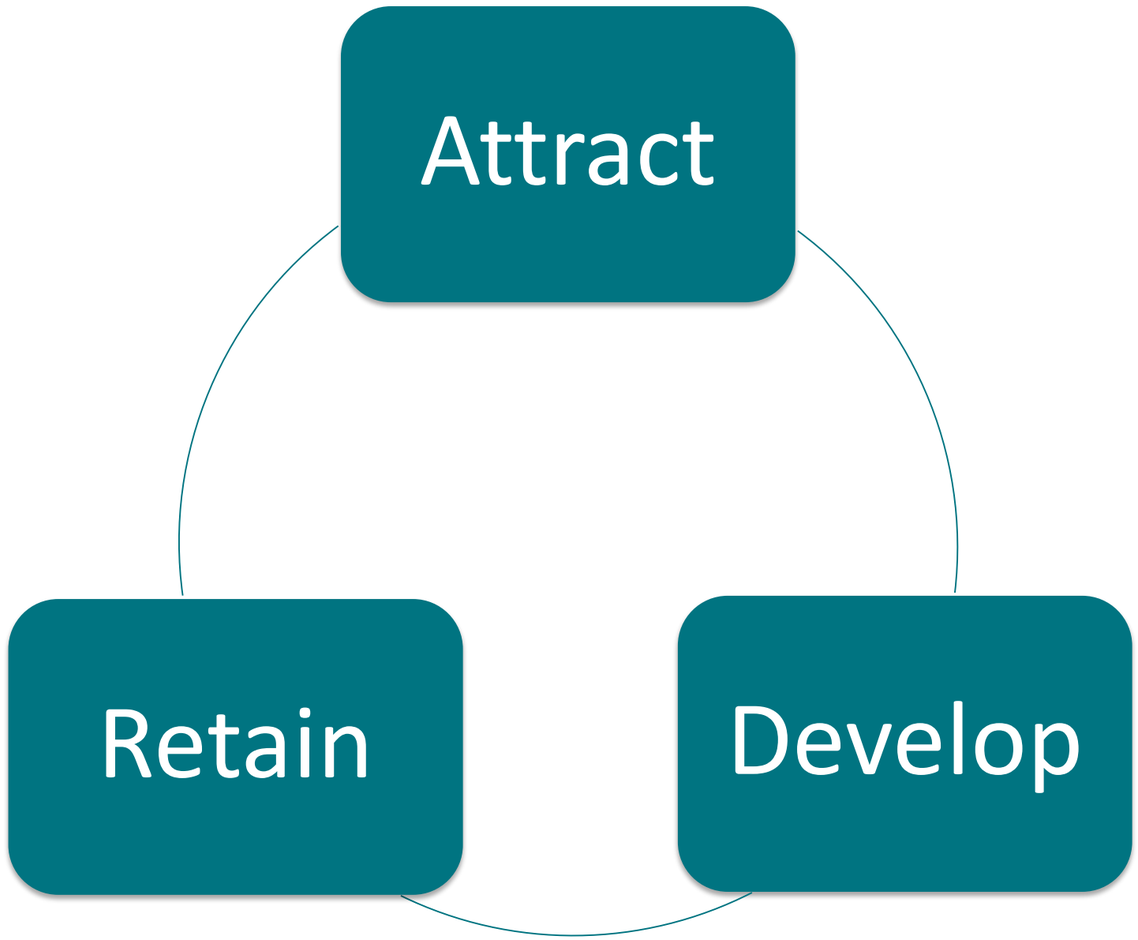
THE PLANS



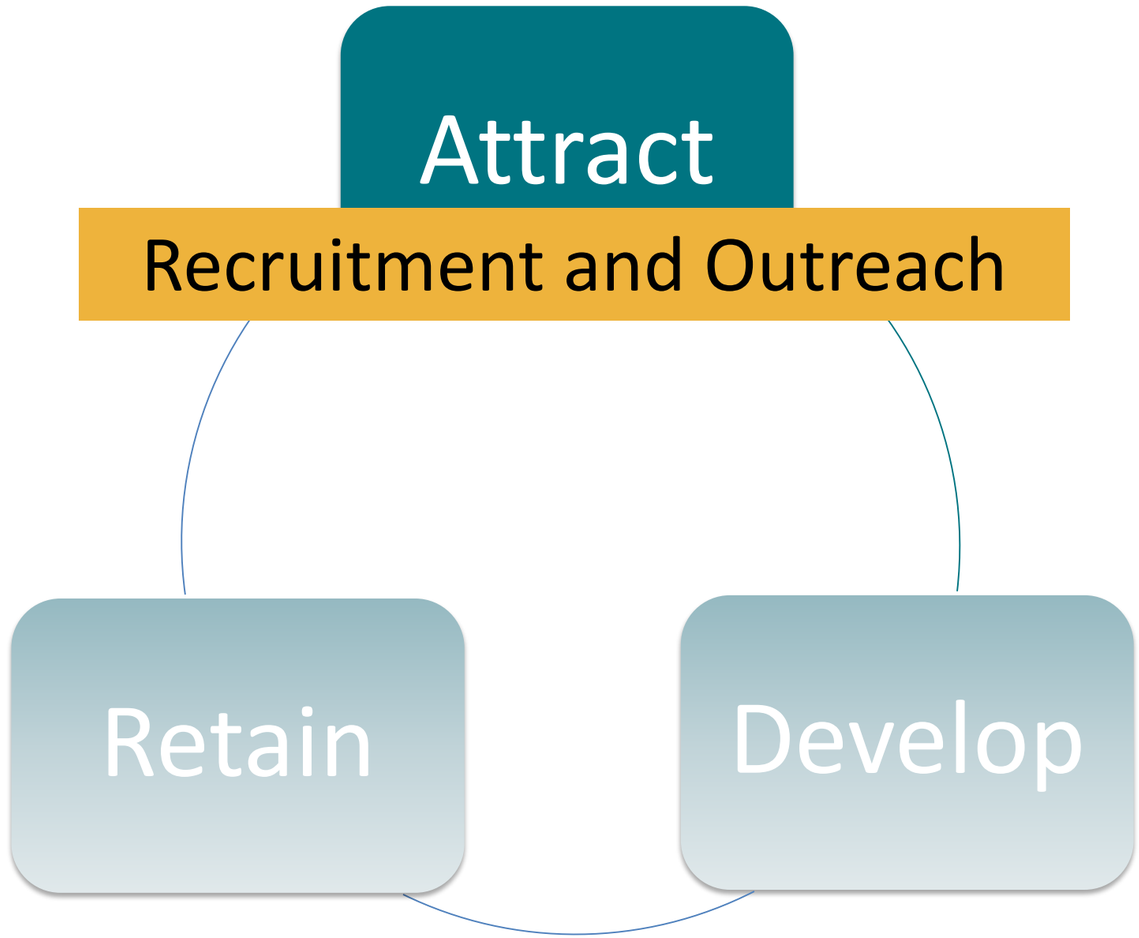
Workforce Development Objectives

- Identify, assess, and bridge competency gaps that result from changes workplace and technology
- Align workforce requirements with strategic plan and division "roadmaps"
- Address recruitment challenges in partnership with Human Resources Department
  - Aging workforce "Silver Tsunami"
  - Evolving job specifications
  - Expectations of millennials

Workforce Development Plan Model



Workforce Development Plan Model



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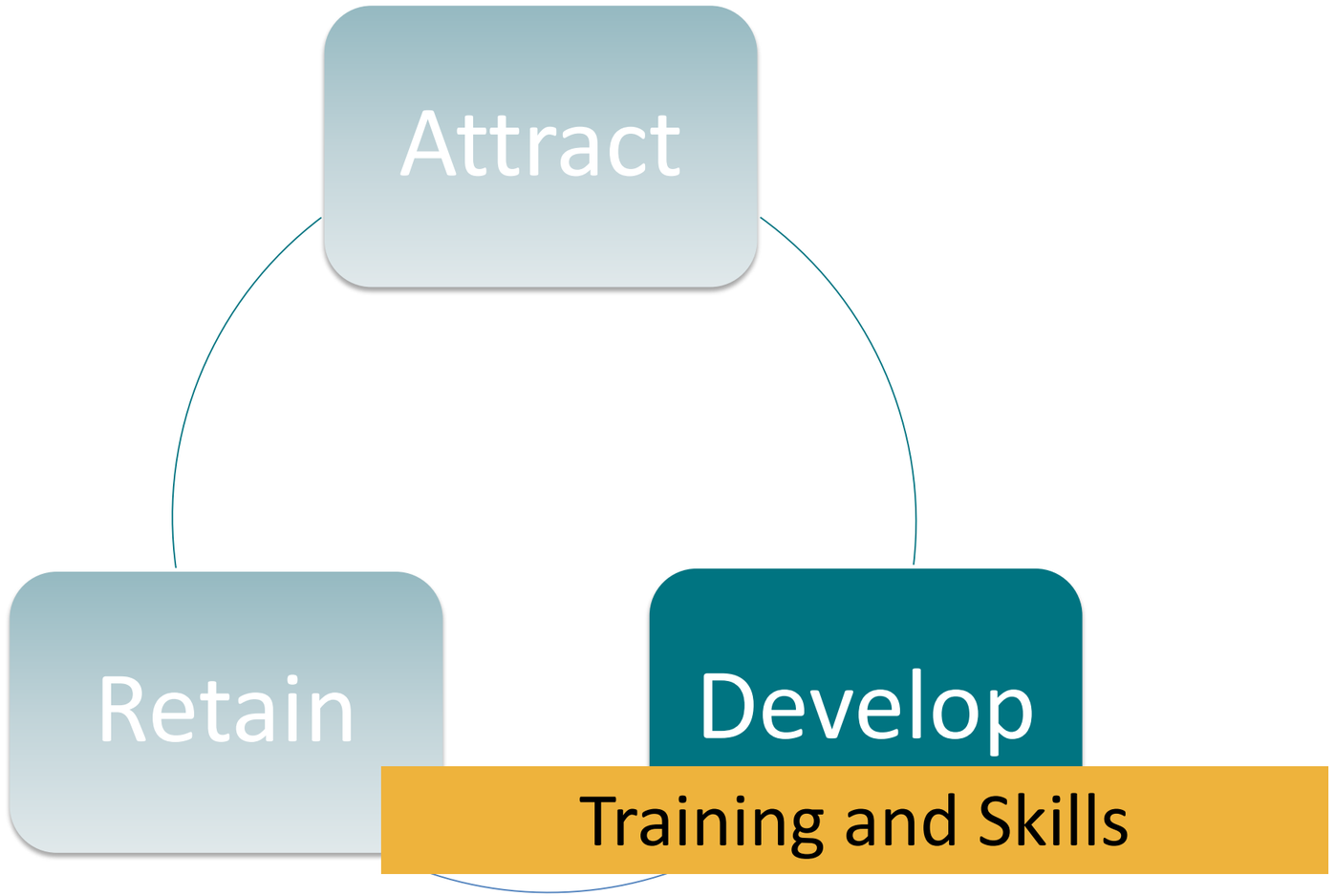
Workforce Development Plan Model



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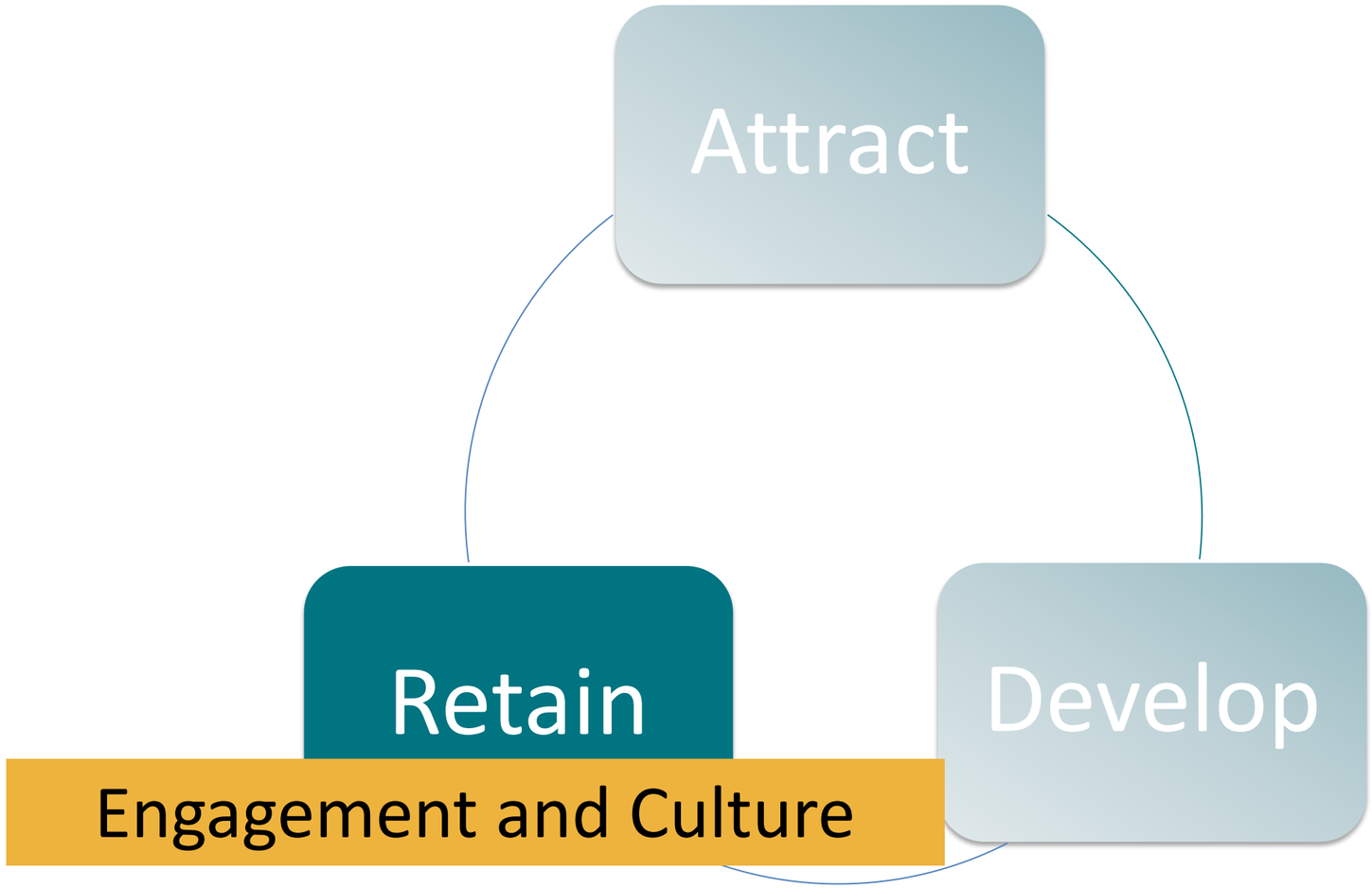
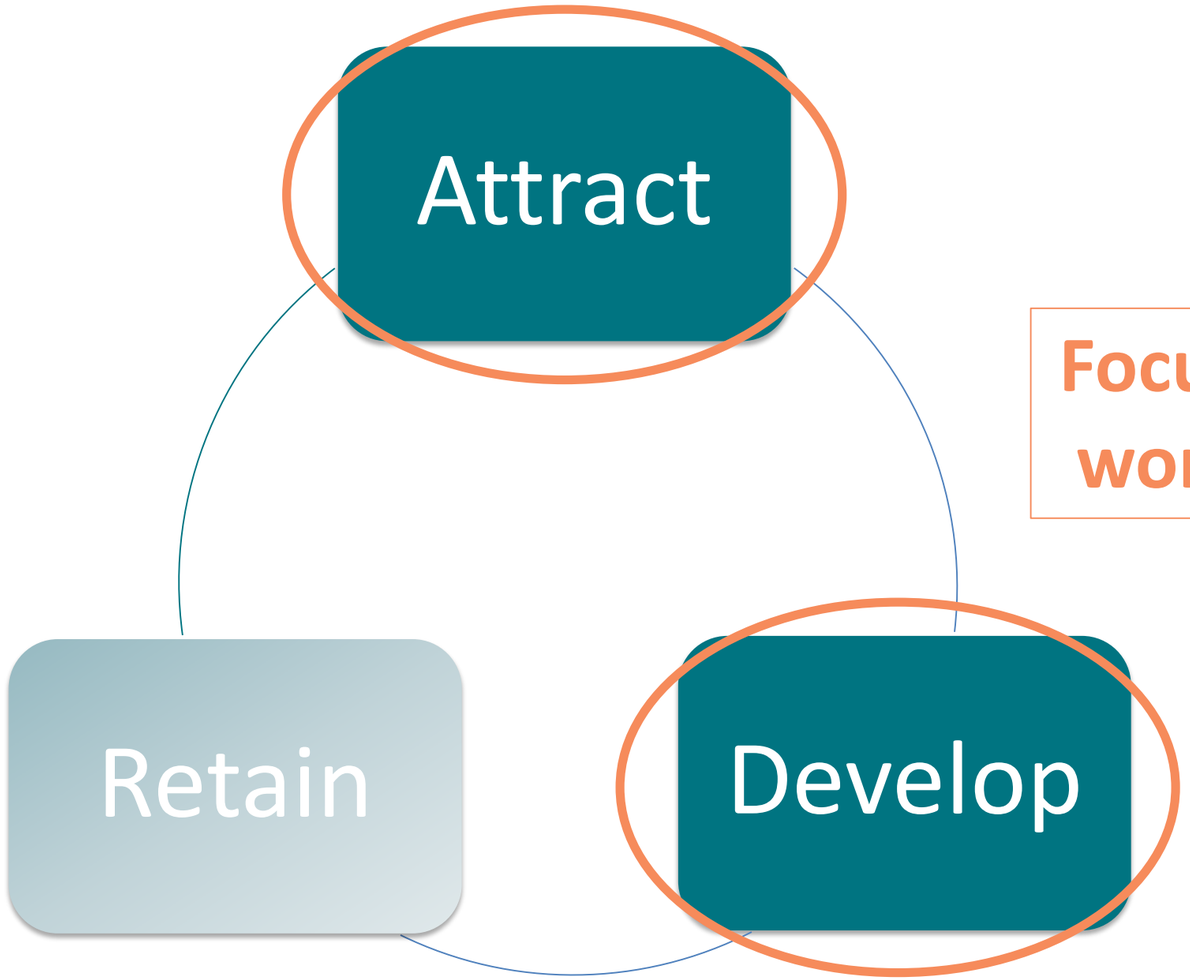
Workforce Development Plan Model



Workforce Development Plan Model



Focus of current workforce plan

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Workforce Assessment
Current

- Strong competencies for today's needs
- Improved processes dictate new skill sets
- Lack of classifications for jobs of the future
- No formal tracking system for assessing and measuring employee competencies and skills growth
- Tuition reimbursement program not adequate to sustain today's workforce

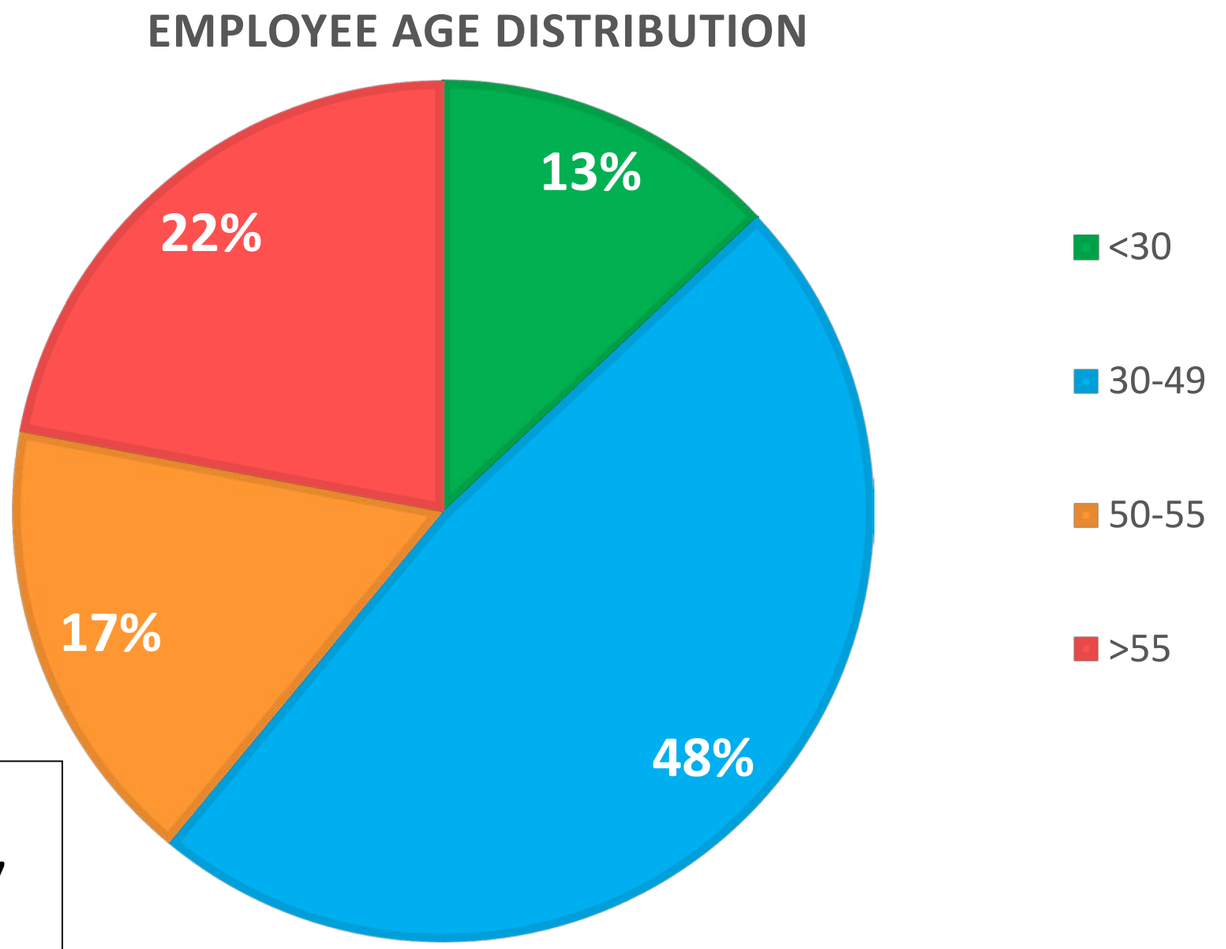
Utility 2.0 Competency Gap

Initial Gap Analysis: Score Differentials

	Utility 2.0 Job Competencies	Advanced Components	Advanced Control Technologies	Sensing and Measurement Elements	IT System, Networks and Architecture	Integrated Communications Protocols & Technologies	Cyber Security and Interoperability Standards	Business Transformation Challenges	Legal and Regulatory Issues	Utility Decision Support Applications	Customer Communication and Relationships	Supply Side Management	Customer Energy Management Systems
Organizational/Department Classifications													
1	Officers/Executives (6 Emp)	0.00	0.00	0.00	0.00	0.00	0.00	-1.00	-1.00	-1.00	-1.00	-1.00	0.00
2	Managers/Supervisors (48 Emp)	-1.40	-1.52	-0.58	-0.63	-0.65	-0.44	-0.96	-0.21	-1.17	-1.17	-1.33	-1.25
3	Field Employees - Other (17 Emp)	-1.82	-1.18	-1.18	0.82	-2.00	-1.00	0.18	0.00	0.00	-0.82	0.18	-1.00
4	Electric Operations (29 Emp)	-1.28	-1.28	-1.28	0.17	-1.83	-0.83	0.00	0.00	0.00	-1.00	0.00	-1.00
5	Electric Field (50 Emp)	-2.00	-2.00	-2.00	0.00	-2.00	-1.00	1.00	0.00	0.00	-1.00	0.00	-1.00
6	Water Operations (19 Emp)	-1.00	0.00	-1.00	1.00	-2.00	-1.00	0.00	0.00	0.00	0.00	1.00	-1.00
7	Water Field (74 Emp)	-1.00	-2.00	-2.00	0.00	-2.00	-1.00	0.00	0.00	0.00	-1.00	0.00	0.00
8	Field Services (35 Emp)	-2.00	-2.00	-2.00	0.00	-2.00	-1.00	0.00	0.00	0.00	-1.00	0.00	-1.00
9	Customer Service (58 Emp)	-1.00	0.00	0.00	0.00	0.00	0.00	-1.00	-1.00	-1.00	-1.00	-1.00	-2.00
10	Comm & PR/Program Srvc/Marketing (18 Emp)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.44	0.00	-1.00	-0.44	-1.44
11	Business & Support Specialists (102 Emp)	-0.60	-0.72	0.22	0.25	0.25	0.32	-1.00	-0.23	-0.19	-1.08	-0.50	-0.10
12	Legal & Regulatory (2 Emp)	0.50	0.50	0.00	0.00	0.50	0.00	-0.50	-0.50	0.50	0.00	0.00	0.50
Functional Expert Classifications													
21	Engineers - Electric (19 Emp)	-1.00	-1.00	-1.00	-2.00	-1.00	-1.00	-1.00	0.00	-1.00	0.00	-1.00	-1.00
22	Engineers - Water (13 Emp)	-1.23	-0.85	-1.38	-1.77	-1.54	-1.31	0.00	0.08	-1.00	0.77	-0.77	-1.08
23	IT/Telecom/Cyber Security/Data Management (36 Emp)	-1.44	-1.44	-1.31	-1.64	-1.78	-1.44	-0.56	-0.58	-1.58	-0.56	-0.58	-0.61
24	Architects/Design (41 Emp)	-1.10	-0.24	-1.10	-0.93	-0.93	-0.93	0.15	0.07	0.17	0.88	-0.24	-0.24

Competent Above -0.499
Marginal Gap -.5 to -1.499
Significant Gap -1.5 +

RPU Workforce by Age



Utility Industry:
Industry Avg. Age – 47
RPU Avg. Age – 45

RPU Retirement Projections

Industry Facts:

36% - 5 Years

55% - 10 Years

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Utility 2.0 Workforce Assessment

- Begin shift from organization of the past
- Embed workforce development staff within RPU
- Staff support for needed for the future
  - Data analytics and visualization
  - Project and technology management
  - Business process analytics
- Knowledge transfer needed for aging workforce
- Training needed to prepare for Utility 2.0 competencies

Summary of Recommendations

People

- Develop new Utility 2.0 appropriate classifications
- Embedded workforce support within RPU
- Implement formal training programs

Process

- Modify recruitment processes to be more nimble (partnership with Human Resources)
- Review compensation policies and levels more frequently

Technology

- Implement Talent Management System
  - Knowledge capture and transfer

ROAD MAPS – WORKFORCE DEVELOPMENT

WORKFORCE DEVELOPMENT
BACKGROUND & ASSESSMENT

INFRASTRUCTURE IMPROVEMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Overview of Assessments

- RPU Demographics
- Retirement Heat Map
- Utility 2.0 Competency Heat Map
- Workforce Process – Recruitment & Development

Workforce Snapshot

654 Budgeted Positions

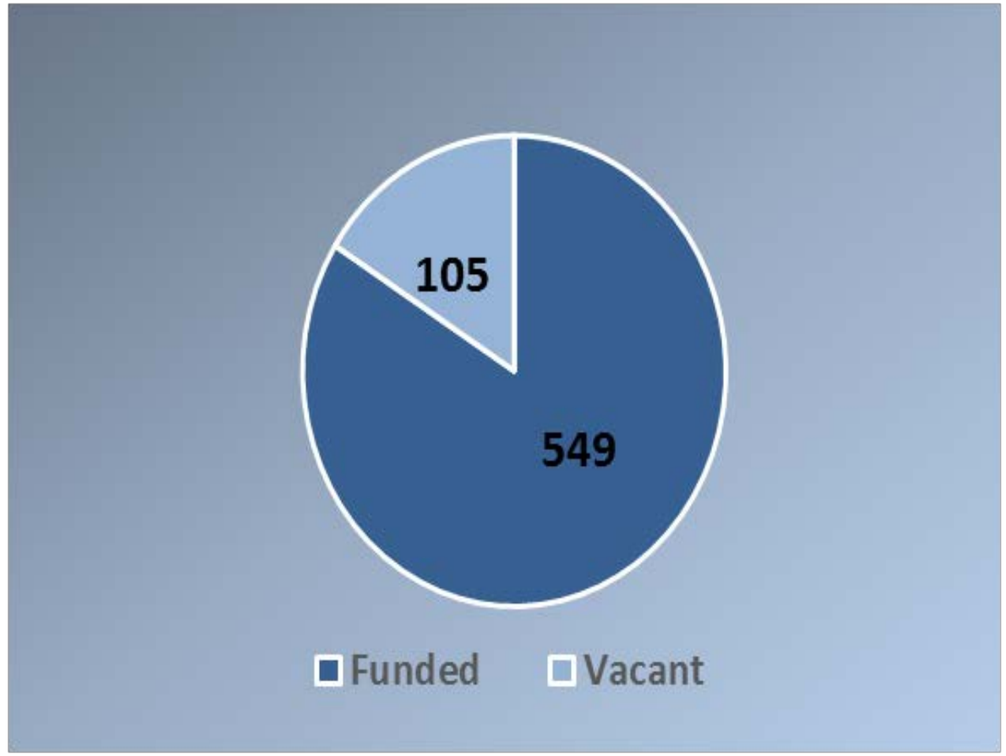
16% Vacancy rate (105 FTEs)

Electric Fund

472

Water Fund

182



(as of 12/2014)

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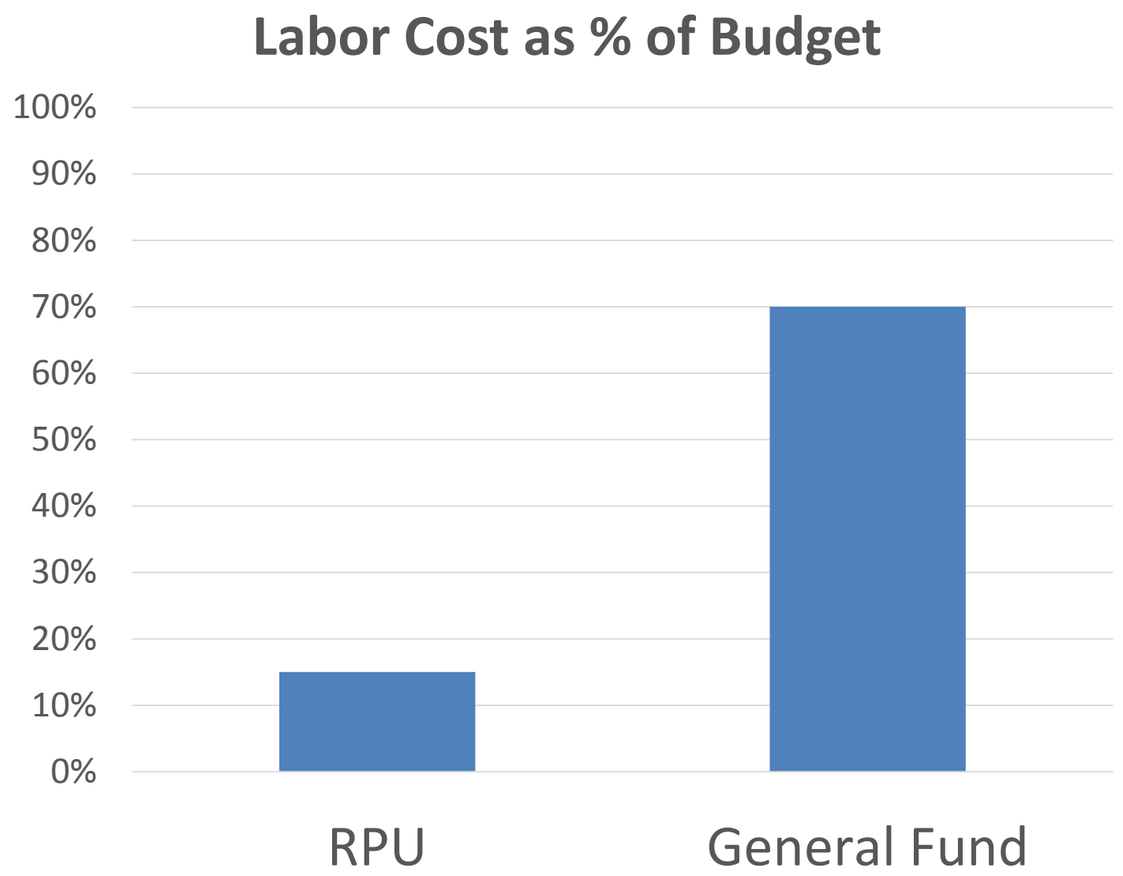
Labor Costs Relative to Budget

- General Fund Labor costs – **70%** of Gross Budget
- RPU Labor costs -**15%** of Gross Budget
  - Provides opportunity for Utility 2.0 job implementation without significant budget impacts



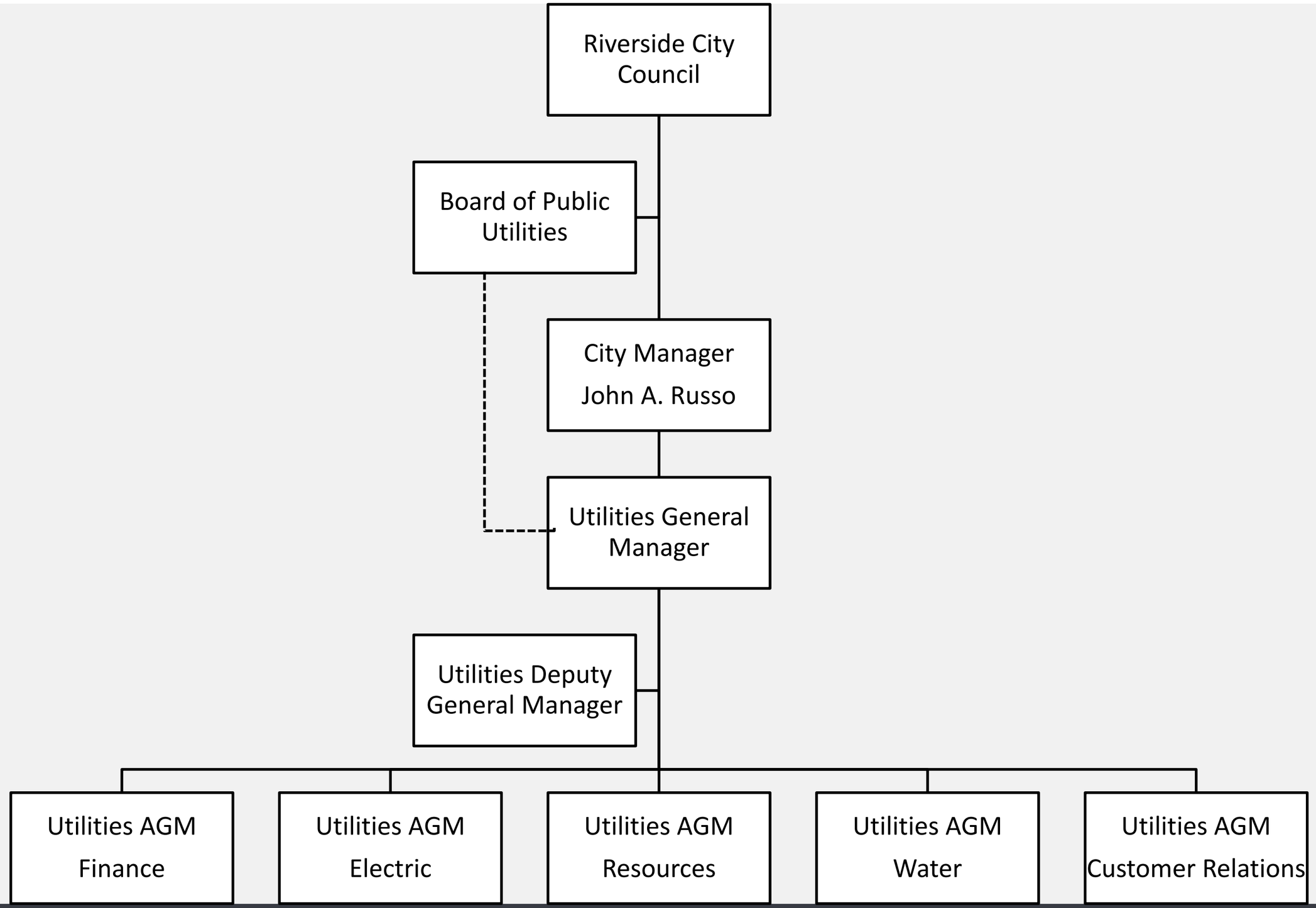
WATER | ENERGY | LIFE

CITY OF RIVERSIDE PUBLIC UTILITIES

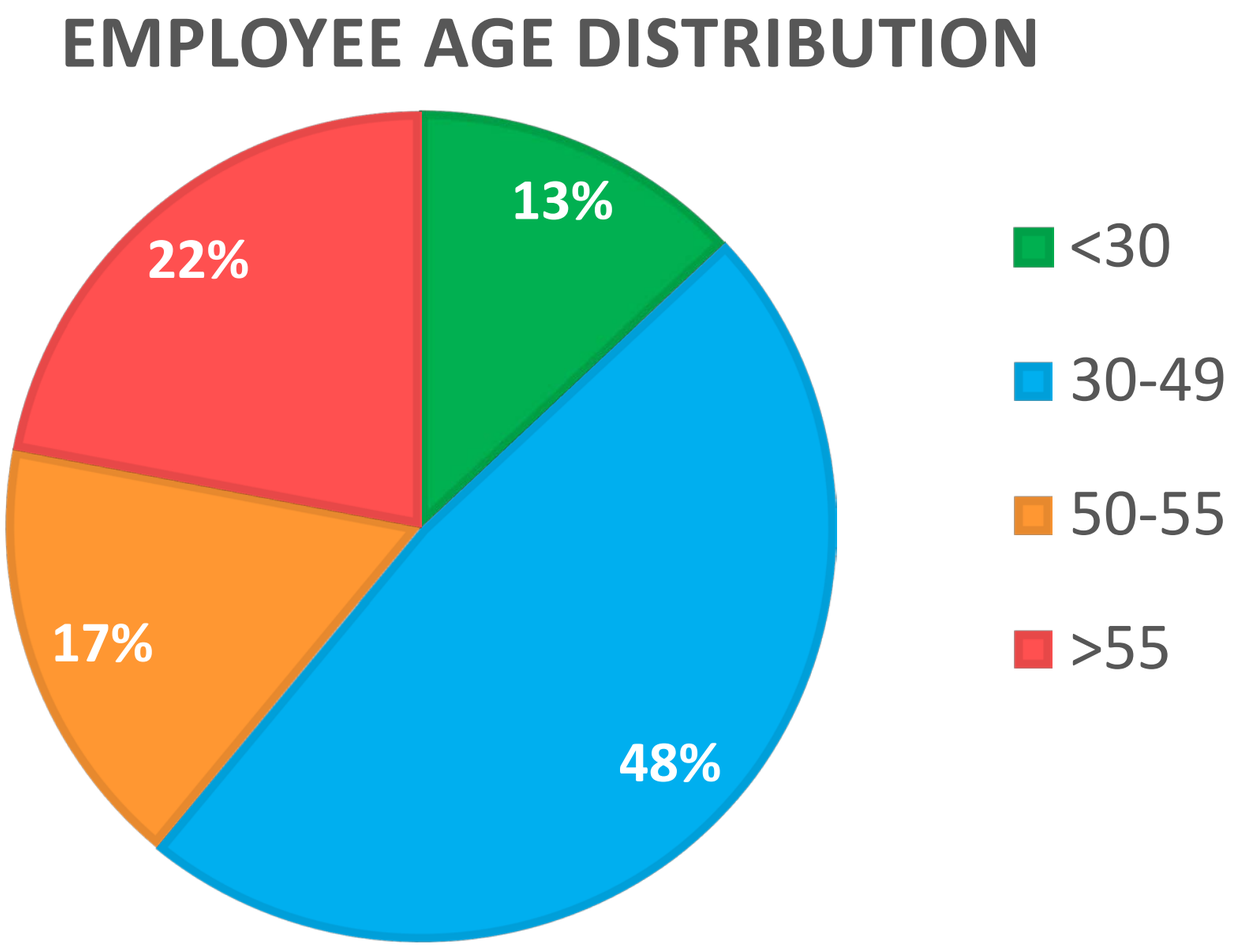
Workforce Structure

- 200+ Job classifications in RPU
  - 152 unique “Utilities” job classifications
  - 50+ city-wide classifications
- Two formal bargaining units
  - IBEW Local 47
  - SEIU Local 721
- Management Structure
  - Classified
  - Non-classified

Organizational Structure

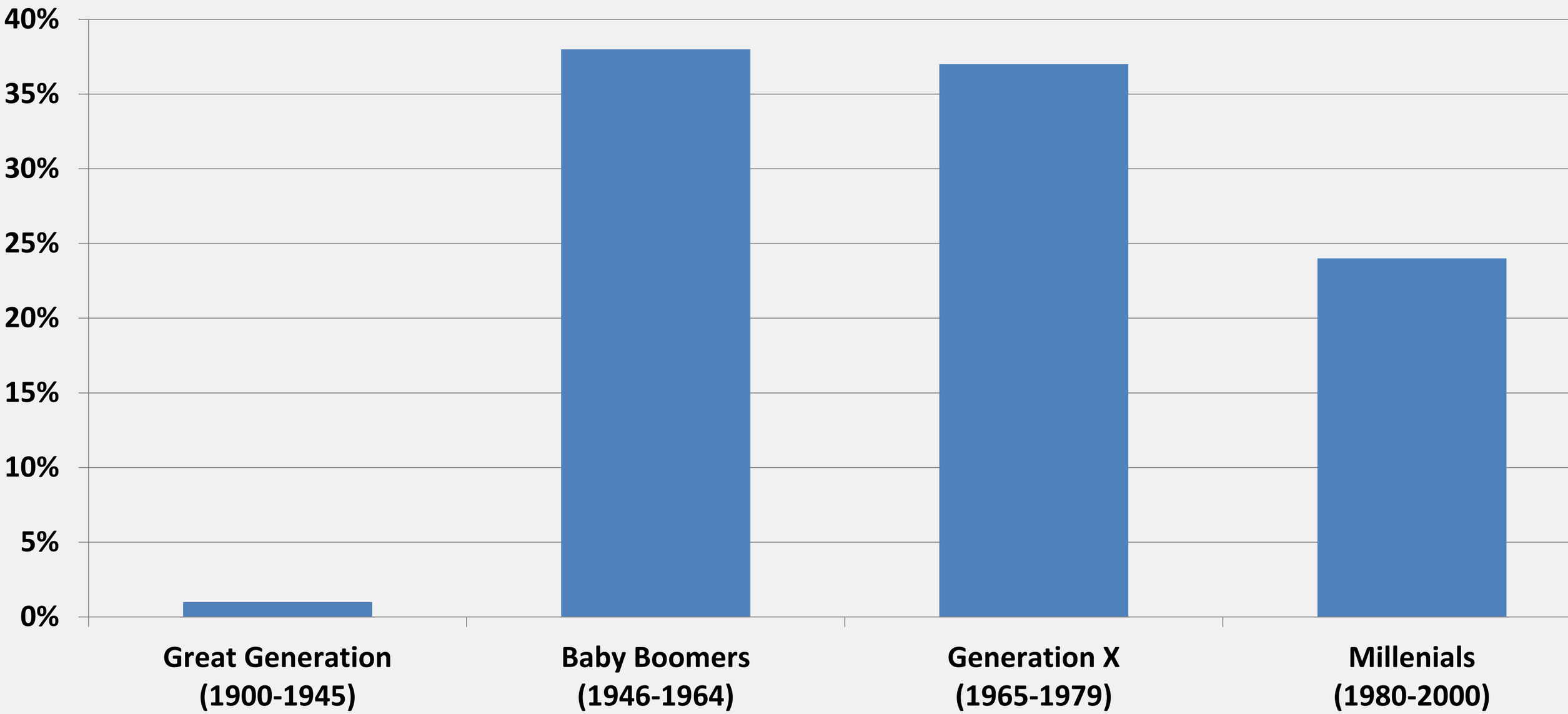


RPU Workforce by Age



Utility Industry:
Industry Avg. Age – 47
RPU Avg. Age – 45

RPU Workforce by Generations



ROAD MAPS – WORKFORCE DEVELOPMENT

WORKFORCE DEVELOPMENT
RETIREMENT HEATMAP
ASSESSMENT

—

INFRASTRUCTURE IMPROVEMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Retirement Heat Map

- Assessed the potential for near-term and mid-term retirements
- Assessed the likelihood of retirements from each division
  - Age
  - Years of service

RPU Retirement Summary Projection

GROUPS	LOWER LIMIT	UPPER LIMIT
RED	85	
YELLOW	70	85
GREEN		70

CURRENT AND FUTURE RETIREMENT PROJECTIONS

RIVERSIDE PUBLIC UTILITIES

BASED ON INDEX (AGE + YEARS OF SERVICE)

CURRENT

OVERALL STATS

INDEX RANGE	QTY	% of TOTAL	AVE AGE	AVE YOS
>85	37	7%	61.0	30.3
70 - 84.99	109	19%	55.8	21.7
<70	418	74%	39.8	8.2
TOTAL	564	100.0%		

DISTRIBUTION ACROSS BARGAINING UNITS

10 - MANAGEMENT		20 - GENERAL		30 - SPECIAL		35 - IBEW		45 - IBEW SUP	
12	9%	15	7%	0	0%	7	4%	3	12%
34	25%	40	19%	0	0%	23	13%	12	48%
90	66%	159	74%	18	100%	141	82%	10	40%

Management includes "Executive" and "Confidential" bargaining units.

FUTURE PROJECTIONS

3 YEAR

OVERALL STATS

INDEX RANGE	QTY	% of TOTAL	AVE AGE	AVE YOS
>85	79	14%	62.0	30.2
70 - 84.99	111	20%	57.5	20.3
<70	374	66%	41.2	10.6
TOTAL	564	100.0%		

DISTRIBUTION ACROSS BARGAINING UNITS

10 - MANAGEMENT		20 - GENERAL		30 - SPECIAL		35 - IBEW		45 - IBEW SUP	
27	20%	28	13%	0	0%	17	10%	7	28%
30	22%	43	20%	1	6%	25	15%	12	48%
79	58%	143	67%	17	94%	129	75%	6	24%

Management includes "Executive" and "Confidential" bargaining units.

5 YEAR

OVERALL STATS

INDEX RANGE	QTY	% of TOTAL	AVE AGE	AVE YOS
>85	110	20%	62.9	30.8
70 - 84.99	118	21%	57.8	19.4
<70	336	60%	41.9	12.1
TOTAL	564	100.0%		

DISTRIBUTION ACROSS BARGAINING UNITS

10 - MANAGEMENT		20 - GENERAL		30 - SPECIAL		35 - IBEW		45 - IBEW SUP	
36	26%	36	17%	0	0%	25	15%	13	52%
34	25%	47	22%	1	6%	27	16%	9	36%
66	49%	131	61%	17	94%	119	70%	3	12%

Management includes "Executive" and "Confidential" bargaining units.

10 YEAR

OVERALL STATS

INDEX RANGE	QTY	% of TOTAL	AVE AGE	AVE YOS
>85	182	32%	66.6	31.8
70 - 84.99	145	26%	56.9	20.5
<70	237	42%	43.2	16.0
TOTAL	564	100.0%		

DISTRIBUTION ACROSS BARGAINING UNITS

10 - MANAGEMENT		20 - GENERAL		30 - SPECIAL		35 - IBEW		45 - IBEW SUP	
56	41%	67	31%	1	6%	41	24%	17	68%
42	31%	50	23%	0	0%	46	27%	7	28%
38	28%	97	45%	17	94%	84	49%	1	4%

Management includes "Executive" and "Confidential" bargaining units.

Riverside Public Utilities
Energy Delivery – Electric Field 6105000

1-07-2015

- 55 yrs. and 5 or more yrs. svc.
- 50 yrs. and 5 or more yrs. svc.

Vacant (Acting) Electric Supt.

Bobby Harris
Interim Electric Field Manager

Valorie Goode
Senior Office Specialist

Vacant
Superintendent

Vacant
Utilities Analyst

ASSET MANAGEMENT (2)

Julian Cardenas
Sup. Engineering Technician

Rita Rivera
Accountant II

Stephanie Heyl
Sr. Engineering Aide

CONTRACT ADMINISTRATION (3)

Gerald McAllister
Principal Electrical Engineer

Dave McLellan
Electric Superintendent

Bill Crumley
Electric Supervisor
Acting E. Superintendent

Ramona Martinez
Administrative Analyst

Kathie Buckley
Administrative Analyst

Vacant
Electric
Supt.

Vacant (4)
Technical Intern

TECHNICAL INTERNS (0)

Brian Bozarth
Electric Supervisor
OH Crew #112

Casey Whitney
Electric Supervisor
OH Crew #121

Kelly Starkey
Electric Supervisor
OH Crew #123

Victor Garcia
Electric Supervisor
OH Crew #118

Walter White
Electric Supervisor
SVC Crew #129

Vacant
Electric Supervisor

Jeff Hill
Electric Supervisor
UG Crew #115

Mike Grossmann
Electric Supervisor
UG Crew #114

Rick Holmes
Electric Supervisor
UG Crew #122

Rob Staples
PLT
Acting E Supervisor
UG Crew #127

Dale Underwood
Electric Supervisor
SL Crew #128

ELECTRIC FIELD SUPERVISORS(10)

1 Vacant
Electric Supervisor

Bill Shoemaker
Powerline Technician

Brian Golden
Powerline Technician

Cesar Vazquez
Powerline Technician

Clay Kittleson
Powerline Technician

Curtis Smith III
Powerline Technician

Damien Perez
Powerline Technician

Darin Hefner
Powerline Technician

Felipe Franco
Powerline Technician

Greg Myers
Powerline Technician

James Judnick
Powerline Technician

Jason Svacina
Powerline Technician

John Orduno
Powerline Technician

John Wolpack
Powerline Technician

Julio Pineda
Powerline Technician

Kelly Stone
Powerline Technician

Ken Starbuck
Powerline Technician

Kevin Ryan
Powerline Technician

Lee Shepeard
Powerline Technician

Mark Truitt
Powerline Technician

Neil Heffernan
Powerline Technician

Ryan Eche
Powerline Technician

Aaron Inskeep
PLT Apprentice

Cory Schleiden
PLT Apprentice

Dennis McDonnell
PLT Apprentice

Dexter Cole
PLT Apprentice

Garry Smith
PLT Apprentice

Luis Garcia
PLT Apprentice

Ryan Mossel
PLT Apprentice

Vacant (11)
Powerline Technician

Chris Wright
Apprentice Trainee

Lake Trout
Apprentice Trainee

Matthew Richardson
Apprentice Trainee

Zach Neel
Apprentice Trainee

POWERLINE TECHNICIANS (21) & PLT APPRENTICES (11)

11 Vacant
Power Line Tech
Positions

Chris Avila
Electric Troubleshooter

Frank Paz
Electric Troubleshooter

Raymond Ybarra
Electric Troubleshooter

Steve Jones
Electric Troubleshooter

ELECTRIC TROUBLESHOOTERS (4)

Greg Yates
Construction Inspector

Vacant
Construction Inspector

Richard Huerta
Construction Inspector

CONSTRUCTION INSPECTORS (2)

Bernard Robles
Streetlight Maint. Worker

Rusty Clarke
Streetlight Maint. Worker

STREETLIGHT MAINT. WORKERS (2)

Existing Vacancy

RPU Retirement Projections

Industry Facts:

36% - 5 Years

55% - 10 Years

WATER | ENERGY | LIFE

CITY OF RIVERSIDE PUBLIC UTILITIES

ROAD MAPS – WORKFORCE DEVELOPMENT

WORKFORCE DEVELOPMENT
UTILITY 2.0 SKILLS ASSESSMENT

—

INFRASTRUCTURE IMPROVEMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Workforce Assessment
Current

- Strong competencies for today's needs
- Improved processes dictate new skill sets
- Lack of classifications for jobs of the future
- No formal tracking system for assessing and measuring employee competencies and skills growth
- Tuition reimbursement program not adequate to sustain today's workforce

Job Skills Assessment – Utility 2.0

- Completed a comprehensive assessment of the current status of RPU's workforce in a Heat Map format:
    - Identified skills of current workforce
    - Identified skills required by job classification of future employees (Utility 2.0)
    - Identified gaps

Model Methodology

The model identified future job classifications, skills and competency levels required for successful implementation of Utility 2.0

- Adapted from electric utility national consulting firm
- Further adapted to water industry jobs and skills

Utility 2.0 Heat Map
Job Classifications

Organizational Classifications	Functional/Expert Classifications
Officer/Executive	Engineering (Electric & Water)
Manager/Supervisor	IT/Telecom/Cyber Security/Data Management
Field Employees - Other Electric Op Electric Field Water Ops Water Field Field Services	Architects/Manufacturing/Building Design
Customer Service	
Business & Support Specialist	
Legal & Regulatory	
Communication & Public Relations/Mktg	

Utility 2.0 Competency Map

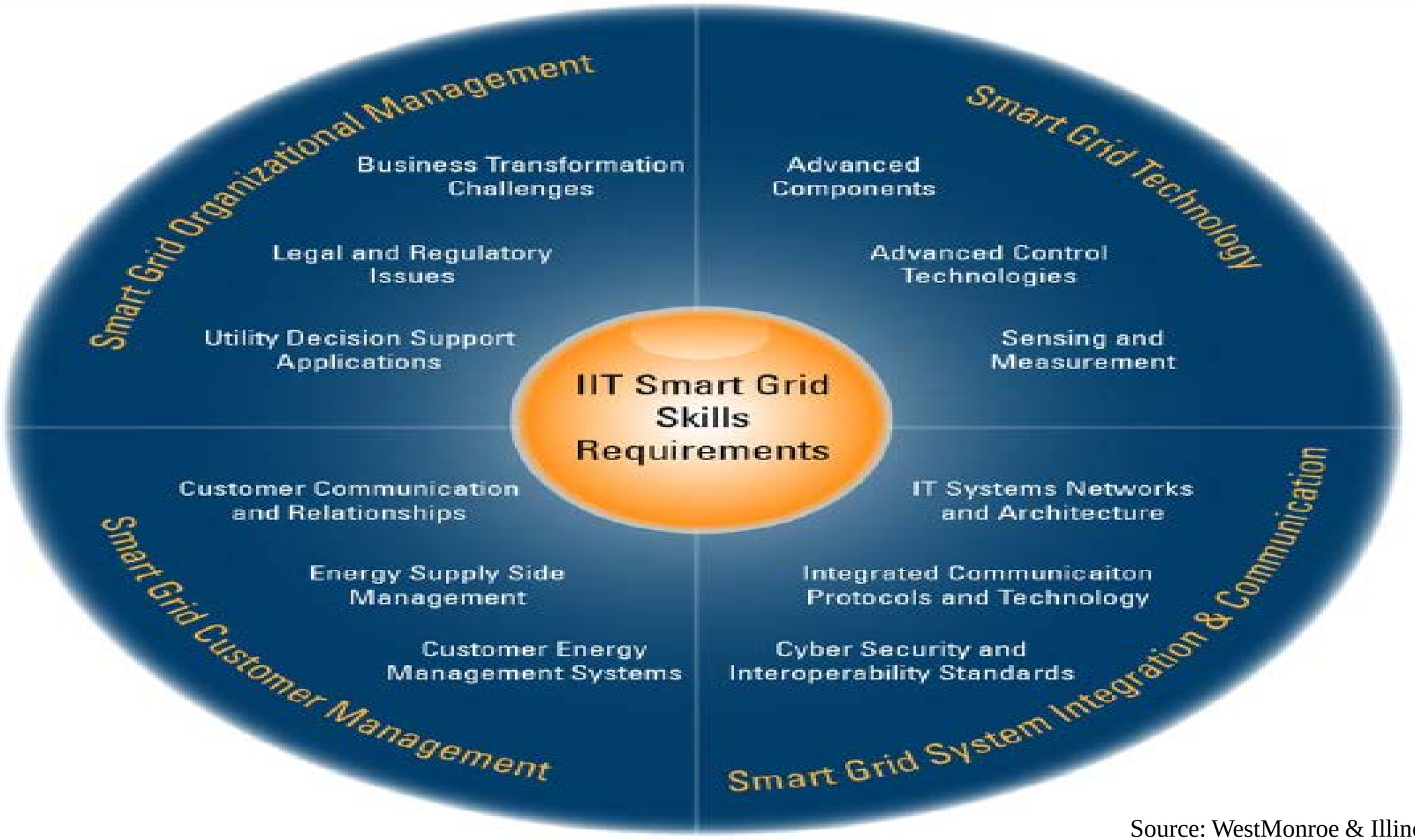


Figure 2: Smart Grid Skills Requirements

Source: WestMonroe & Illinois Institute of Technology

Adapted Baseline - Utility 2.0 Competencies

	Utility 2.0 Job Competencies	Advanced Components	Advanced Control Technologies	Sensing and Measurement Elements	IT System, Networks and Architecture	Integrated Comm. Protocols & Technologies	Cyber Security and Interoperability Standards	Business Transformation Challenges	Legal and Regulatory Issues	Utility Decision Support Applications	Customer Communication and Relationships	Supply Side Management	Customer Energy Management Systems
Organizational/Department Classifications													
1	Officers/Executives	2	1	1	1	1	2	3	3	3	3	3	2
2	Managers/Supervisors	3	3	2	2	2	2	3	2	3	3	3	3
3	Field Employees - Other	3	3	3	1	3	2	1	1	1	2	1	2
4	Electric Operations	3	3	3	1	3	2	1	1	1	2	1	2
5	Electric Field	3	3	3	1	3	2	1	1	1	2	1	2
6	Water Operations	3	3	3	1	3	2	1	1	1	2	1	2
7	Water Field	3	3	3	1	3	2	1	1	1	2	1	2
8	Field Services	3	3	3	1	3	2	1	1	1	2	1	2
9	Customer Service	2	1	1	1	1	1	2	2	2	3	2	3
10	Comm & PR/Program Srvc/Marketing	1	1	1	1	1	1	2	2	1	3	2	3
11	Business & Support Specialists	2	2	1	1	1	1	3	2	2	3	2	2
12	Legal & Regulatory	1	1	1	1	1	2	2	3	1	2	2	1
Functional Expert Classifications													
21	Engineers - Electric	3	3	3	3	3	3	2	2	3	2	3	3
22	Engineers - Water	3	3	3	3	3	3	2	2	3	2	3	3
23	IT/Telecom/Cyber Security/Data Management	3	3	3	3	3	3	2	2	3	2	2	2
24	Architects/Design	3	2	3	2	2	2	1	1	1	1	2	2

1 = Aware

2 = Knowledeable

3 = Expert

Utility 2.0 Competencies - Baseline and RPU Assessed

	Utility 2.0 Job Competencies	Advanced Components	Advanced Control Technologies	Sensing and Measurement Elements	IT System, Networks and Architecture	Integrated Comm. Protocols & Technologies	Cyber Security and Interoperability Standards	Business Transformation Challenges	Legal and Regulatory Issues	Utility Decision Support Applications	Customer Communication and Relationships	Supply Side Management	Customer Energy Management Systems
Adapted Baseline - Utility 2.0 Competencies													
Organizational/Department Classifications													
1	Officers/Executives	2	1	1	1	1	2	3	3	3	3	3	2
2	Managers/Supervisors	3	3	2	2	2	2	3	2	3	3	3	3
3	Field Employees - Other	3	3	3	1	3	2	1	1	1	2	1	2
4	Electric Operations	3	3	3	1	3	2	1	1	1	2	1	2
5	Electric Field	3	3	3	1	3	2	1	1	1	2	1	2
6	Water Operations	3	3	3	1	3	2	1	1	1	2	1	2
7	Water Field	3	3	3	1	3	2	1	1	1	2	1	2
8	Field Services	3	3	3	1	3	2	1	1	1	2	1	2
9	Customer Service	2	1	1	1	1	1	2	2	2	3	2	3
10	Comm & PR/Program Srvc/Marketing	1	1	1	1	1	1	2	2	1	3	2	3
11	Business & Support Specialists	2	2	1	1	1	1	3	2	2	3	2	2
12	Legal & Regulatory	1	1	1	1	1	2	2	3	1	2	2	1
Functional Expert Classifications													
21	Engineers - Electric	3	3	3	3	3	3	2	2	3	2	3	3
22	Engineers - Water	3	3	3	3	3	3	2	2	3	2	3	3
23	IT/Telecom/Cyber Security/Data Management	3	3	3	3	3	3	2	2	3	2	2	2
24	Architects/Design	3	2	3	2	2	2	1	1	1	1	2	2

1 = Aware
2 = Knowledeable
3 = Expert

	RPU Assessed Competencies												
Organizational/Department Classifications													
1	Officers/Executives (6 Emp)	2.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
2	Managers/Supervisors (48 Emp)	1.60	1.48	1.42	1.38	1.35	1.56	2.04	1.79	1.83	1.83	1.67	1.75
3	Field Employees - Other (17 Emp)	1.18	1.82	1.82	1.82	1.00	1.00	1.18	1.00	1.00	1.18	1.18	1.00
4	Electric Operations (29 Emp)	1.72	1.72	1.72	1.17	1.17	1.17	1.00	1.00	1.00	1.00	1.00	1.00
5	Electric Field (50 Emp)	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
6	Water Operations (19 Emp)	2.00	3.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
7	Water Field (74 Emp)	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00
8	Field Services (35 Emp)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
9	Customer Service (58 Emp)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00
10	Comm & PR/Program Srvc/Marketing (18 Emp)	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.56	1.00	2.00	1.56	1.56
11	Business & Support Specialists (102 Emp)	1.40	1.28	1.22	1.25	1.25	1.32	2.00	1.77	1.81	1.92	1.50	1.90
12	Legal & Regulatory (2 Emp)	1.50	1.50	1.00	1.00	1.50	2.00	1.50	2.50	1.50	2.00	2.00	1.50
Functional Expert Classifications													
21	Engineers - Electric (19 Emp)	2.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	2.00	2.00	2.00
22	Engineers - Water (13 Emp)	1.77	2.15	1.62	1.23	1.46	1.69	2.00	2.08	2.00	2.77	2.23	1.92
23	IT/Telecom/Cyber Security/Data Management (36 Emp)	1.56	1.56	1.69	1.36	1.22	1.56	1.44	1.42	1.42	1.44	1.42	1.39
24	Architects/Design (41 Emp)	1.90	1.76	1.90	1.07	1.07	1.07	1.15	1.07	1.17	1.88	1.76	1.76

Initial Gap Analysis: Score Differentials

	Utility 2.0 Job Competencies	Advanced Components	Advanced Control Technologies	Sensing and Measurement Elements	IT System, Networks and Architecture	Integrated Communications Protocols & Technologies	Cyber Security and Interoperability Standards	Business Transformation Challenges	Legal and Regulatory Issues	Utility Decision Support Applications	Customer Communication and Relationships	Supply Side Management	Customer Energy Management Systems
Organizational/Department Classifications													
1	Officers/Executives (6 Emp)	0.00	0.00	0.00	0.00	0.00	0.00	-1.00	-1.00	-1.00	-1.00	-1.00	0.00
2	Managers/Supervisors (48 Emp)	-1.40	-1.52	-0.58	-0.63	-0.65	-0.44	-0.96	-0.21	-1.17	-1.17	-1.33	-1.25
3	Field Employees - Other (17 Emp)	-1.82	-1.18	-1.18	0.82	-2.00	-1.00	0.18	0.00	0.00	-0.82	0.18	-1.00
4	Electric Operations (29 Emp)	-1.28	-1.28	-1.28	0.17	-1.83	-0.83	0.00	0.00	0.00	-1.00	0.00	-1.00
5	Electric Field (50 Emp)	-2.00	-2.00	-2.00	0.00	-2.00	-1.00	1.00	0.00	0.00	-1.00	0.00	-1.00
6	Water Operations (19 Emp)	-1.00	0.00	-1.00	1.00	-2.00	-1.00	0.00	0.00	0.00	0.00	1.00	-1.00
7	Water Field (74 Emp)	-1.00	-2.00	-2.00	0.00	-2.00	-1.00	0.00	0.00	0.00	-1.00	0.00	0.00
8	Field Services (35 Emp)	-2.00	-2.00	-2.00	0.00	-2.00	-1.00	0.00	0.00	0.00	-1.00	0.00	-1.00
9	Customer Service (58 Emp)	-1.00	0.00	0.00	0.00	0.00	0.00	-1.00	-1.00	-1.00	-1.00	-1.00	-2.00
10	Comm & PR/Program Srvc/Marketing (18 Emp)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.44	0.00	-1.00	-0.44	-1.44
11	Business & Support Specialists (102 Emp)	-0.60	-0.72	0.22	0.25	0.25	0.32	-1.00	-0.23	-0.19	-1.08	-0.50	-0.10
12	Legal & Regulatory (2 Emp)	0.50	0.50	0.00	0.00	0.50	0.00	-0.50	-0.50	0.50	0.00	0.00	0.50
Functional Expert Classifications													
21	Engineers - Electric (19 Emp)	-1.00	-1.00	-1.00	-2.00	-1.00	-1.00	-1.00	0.00	-1.00	0.00	-1.00	-1.00
22	Engineers - Water (13 Emp)	-1.23	-0.85	-1.38	-1.77	-1.54	-1.31	0.00	0.08	-1.00	0.77	-0.77	-1.08
23	IT/Telecom/Cyber Security/Data Management (36 Emp)	-1.44	-1.44	-1.31	-1.64	-1.78	-1.44	-0.56	-0.58	-1.58	-0.56	-0.58	-0.61
24	Architects/Design (41 Emp)	-1.10	-0.24	-1.10	-0.93	-0.93	-0.93	0.15	0.07	0.17	0.88	-0.24	-0.24

Competent Above -0.499
Marginal Gap -.5 to -1.499
Significant Gap -1.5 +

Utility 2.0 Heat Map

22	Engineers - Water (13 Emp)	-1.23	-0.85	-1.38	-1.77	-1.54	-1.31	0.00	0.08	-1.00	0.77	-0.77	-1.08

Next Steps:

- Refine Heat map skills categories
- Apply to individual incumbents
- Prepare individual employee development plans
- Review classification specifications

Utility 2.0 Workforce Assessment

- Begin shift from organization of the past
- Embed workforce development staff within RPU
  - Specialized skills
  - HR of today not the same organization needed for future
- Staff support for needed for the future
  - Data analytics and visualization
  - Project and technology management
  - Business process analytics

Utility 2.0 Workforce Assessment

- Knowledge transfer needed for aging workforce
  - Bridge gap on legacy systems
  - Pass critical infrastructure and historic operating knowledge to next generation
- Training needed to prepare for Utility 2.0 competencies
  - No formal training program to prepare today's employees for the future
  - Tuition reimbursement not adequate to sustain tomorrow's workforce

ROAD MAPS – WORKFORCE DEVELOPMENT

WORKFORCE DEVELOPMENT
RECRUITMENT & COMPENSATION ASSESSMENT

INFRASTRUCTURE IMPROVEMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Recruitment

- Process is largely paper based
- Automation of application process has created efficiencies
- Constraints of public agency law can impede progress
  - Example: Power Line Technicians
    - Highly mobile
    - Competitive private market sector
    - Hiring timeframes identified anecdotally as impediment

Compensation

- Recent surveys indicate RPU compensation below market
  - Not a comprehensive assessment
  - RPU market basket different from City
- IBEW compensation set to market in 2014
- Several compression issues exist

ROAD MAPS – WORKFORCE DEVELOPMENT

WORKFORCE DEVELOPMENT
FINDINGS

—

INFRASTRUCTURE IMPROVEMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Findings – Utility 2.0 Workforce

- Current workforce does not possess the levels of knowledge or expertise to implement Utility 2.0
  - Marginal to significant skill gaps
- Investment needed in training and retraining programs
- Heightened communication skills required in all job classifications
- Need for individualized training plans

Findings – Utility 2.0 Workforce

- Advanced technologies will bring new jobs, titles and roles
- Existing job classifications need to evolve
- Increased system visibility and customer communication requires additional staffing for resources and analytics
  - Data scientists & analysts
  - Programmer analysts & data control staff
  - Project & technology management staff

Findings – Aging Workforce

- 39% of workforce is at or near retirement age
- RPU lacks formal knowledge transfer plan and practices
- Succession planning needs to be refreshed for Utility 2.0

Findings – Recruitment & Compensation

- New organizational structures needed to compete in Utility 2.0
- Embedded workforce support with RPU is needed
- Current compensation policies & practices not competitive in rapidly evolving utility industry
  - Results in competitive disadvantage

WORKFORCE DEVELOPMENT
OPTIONS & ALTERNATIVES

INFRASTRUCTURE IMPROVEMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Options

	Attract	Develop	Retain
Option 1	Status Quo	Status Quo	Status Quo
Option 2	RPU with HR support: • Implement innovative workforce recommendations • Sooner than other departments	Repurpose vacancies for Utility 2.0 needs: • Over/under fill • Requires flexibility in current process	Serve as: • Incubator • Innovation hub

Alternatives

- Contract labor & consultants to support Utility 2.0 implementation
- Use temporary agencies to fill vacancies

ROAD MAPS – WORKFORCE DEVELOPMENT

WORKFORCE DEVELOPMENT
RECOMMENDATIONS

—

INFRASTRUCTURE IMPROVEMENT

THRIVING FINANCIALLY

ADVANCED TECHNOLOGIES

Summary of Recommendations

People

- Develop new Utility 2.0 appropriate classifications
- Embedded workforce support within RPU
- Implement formal training programs

Process

- Modify recruitment processes to be more nimble (partnership with Human Resources)
- Review compensation policies and levels more frequently

Technology

- Implement Talent Management System
  - Knowledge capture and transfer

Short-term Recommendations (1 Year)

PEOPLE	• Review job classifications-create or revise as needed • Hire Programmer Analysts & Data Scientists • Develop Office of Technology Management and fill staff
PROCESS	• Identify hard to recruit classifications • Develop formal protocol to assess and test for competencies • Assess vacant positions to identify work competencies • Assist HR in developing procedures to streamline recruitment processes • Develop a curriculum to address immediate training needs implement through contract education
TECHNOLOGY	Identify and develop a Talent Management System to support training and development activities

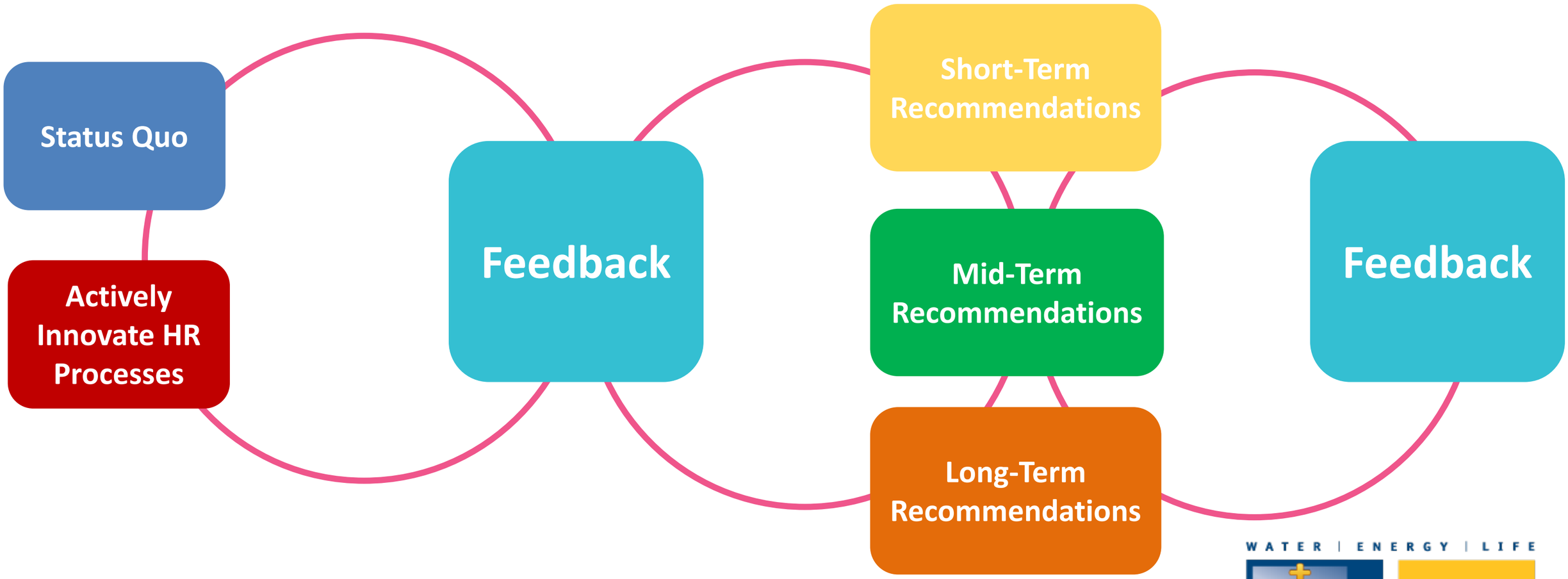
Mid-term Recommendations (1 - 2 Years)

PEOPLE	• Review job classifications-create or revise as needed • Retirement succession planning • Embed workforce support function within RPU
PROCESSES	• Develop specialized recruiting plans • Establish and implement knowledge transfer procedures • Train workforce on advanced technology equipment and software • Develop individualized development plans • Revise guidelines for apprenticeship program • Revamp tuition reimbursement program
TECHNOLOGY	Implement Talent Management System

Long-term Recommendations (2+ Years)

PEOPLE	• Evaluate and review workforce needs
PROCESSES	• Review job classifications-create or revise as needed • Continue training workforce on advanced technology equipment and software • Develop & implement a 3-5 year training plan for competencies by functional area • Create a resource plan to identify how we will fill vacancies • Create procedures to add/drop positions across organization • Conduct a comprehensive salary study for organization • Evaluate and review processes
TECHNOLOGY	• Evaluate and review Talent Management System

Options & Recommendations Decided from Feedback



Next Steps

- Incorporate Comments
- Formulate Detailed recommendations
- Review
- Report Back

ROAD MAPS –

WRAP UP & NEXT STEPS

- WORKFORCE DEVELOPMENT
- INFRASTRUCTURE IMPROVEMENT
- THRIVING FINANCIALLY
- ADVANCED TECHNOLOGIES

RIVERSIDE PUBLIC UTILITIES - PLANNING DATELINE

WORKING THE PLAN

2014

General Manager Assessment

Q1 - 2015

February 12, 2015
Introduction to Utility 2.0

February 27, 2015
Utility 2.0 Feedback

Q2 - 2015

May 7, 2015
Joint Meeting #1
Utility 2.0 & Governance

Q3 - 2015

July 13, 2015
Utility 2.0 Infrastructure & Workforce Roadmaps

July 29, 2015
Utility 2.0 Resource Supply Thriving Financially Roadmaps

August 11, 2015
City Council to discuss Performance Audits Fiscal and Reserves Policy

August 28, 2015
Joint Meeting #2
Utility 2.0 - Roadmaps & Governance

September 1, 2015
Council Workshop
RPU
Finance 101

Q4 - 2015

October 2015
Fiber Optic Plan
Northside Audit
Transactions to Board and Council

Oct.-Dec. 2015
Roadmap Feedback
Fiscal Policies Audit
Organizational Review
Thriving Financially to Board and Council

Q1 - 2016

Jan.-Mar. 2016
Draft Financial Plan
(5 year forecast)
Performance Audit
(next phase)
Detailed Finance Audit to Board and Council

WATER | ENERGY | LIFE
CITY OF RIVERSIDE
PUBLIC UTILITIES

COMPLETED

City Council
Board of Public Utilities
Joint Meeting Council Board
Reports to Board And Council