

Norman Utilities Authority 2060 Strategic Water Supply Plan



**Ad Hoc Committee Meeting
July 16, 2013**

AGENDA

Status and Progress Update

Recommended Portfolios

Implementation Planning for Recommended Portfolios

Path Forward

Project Overview and Update on Progress

Public Meeting 1
(June 2012)

- Basis of Planning
 - Demand, supply options, and evaluation criteria

Public Meeting 2
(October 2012)

- Phase 1 – Individual Water Supply Options

Public Meeting 3
(March 2013)

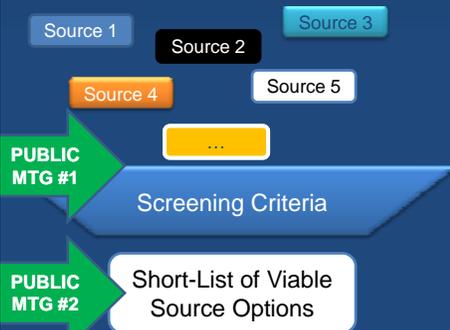
- Phase 2 (part A) – Future Water Supply Portfolios
 - Evaluation of initial supply portfolios

Public Meeting 4
(Tonight)

- Phase 2 (part B) – Future Water Supply Portfolios
 - Evaluation of revised portfolios

SWSP Planning Process

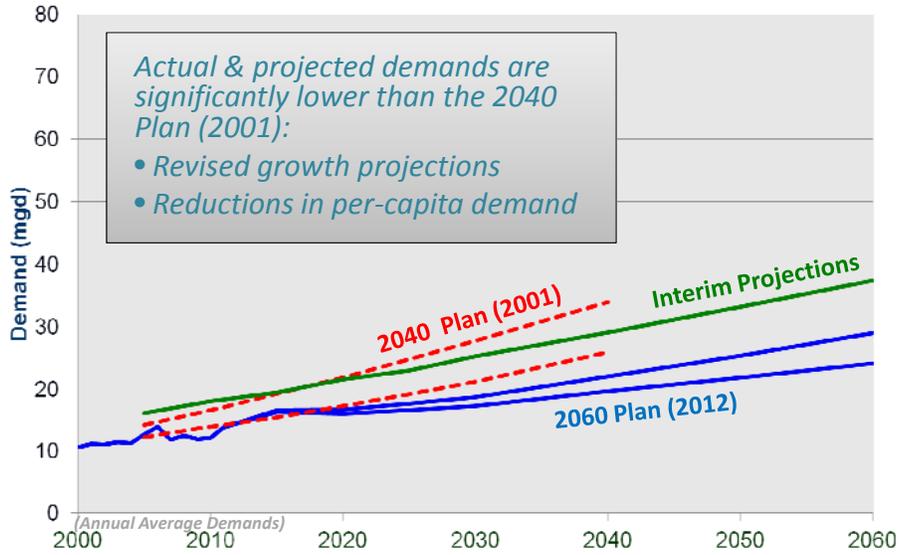
Source Options (Phase 1)



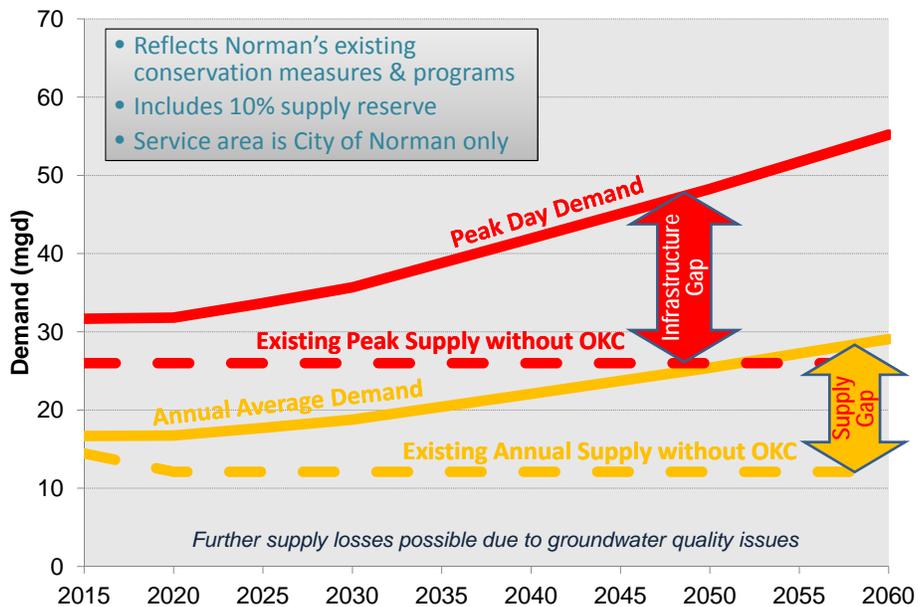
Supply Portfolios (Phase 2)



Projected Water Use

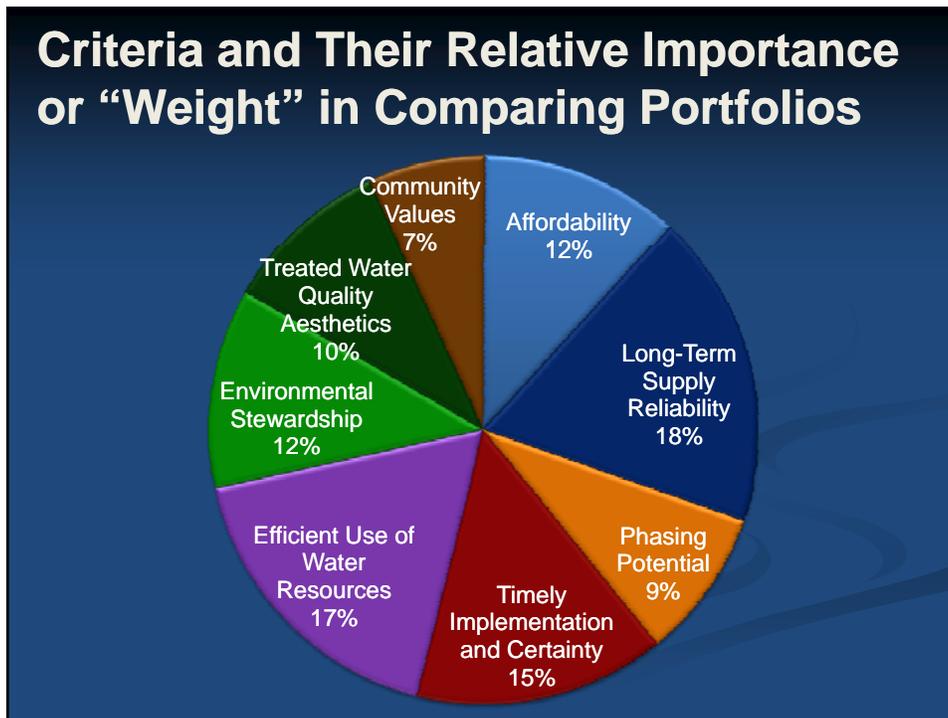


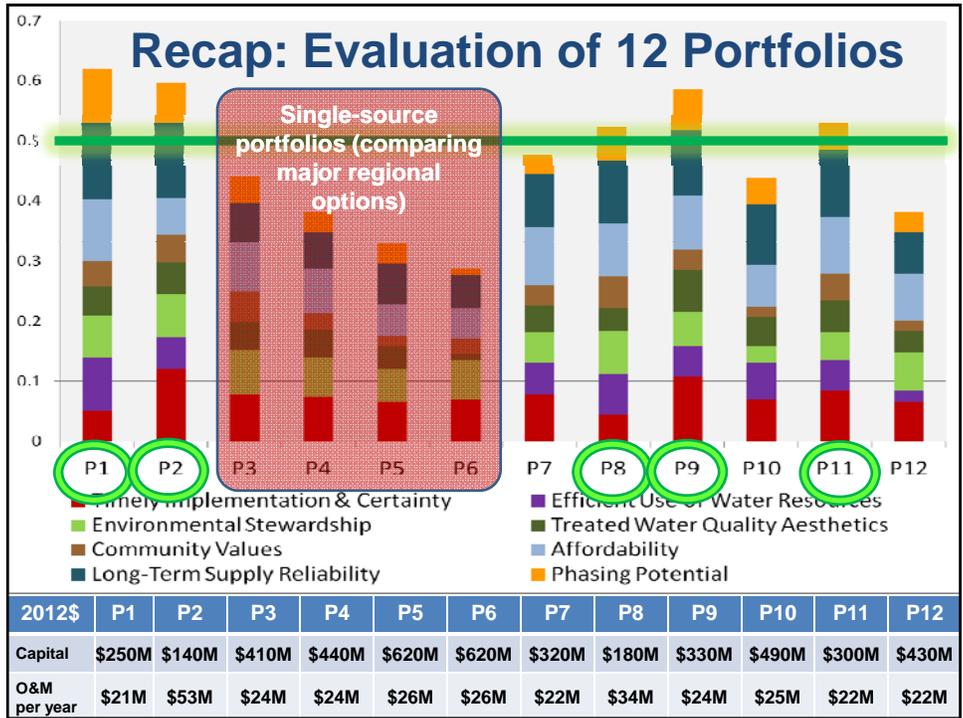
Use Already Exceeds Local Supply



Portfolio ID	Lake Thunderbird	Active Garber Wellington Wells (with treatment)	Inactive Garber Wellington Wells (with treatment)	New Garber Wellington Wells (with treatment)	Additional Conservation	Direct Non-potable Reuse	Lake Thunderbird Augmentation (IPR)	Treated Water from Oklahoma City (wholesale)	Treated Water from Oklahoma City (co-owner)	Raw Water from Oklahoma City (co-owner)	New Out of Basin Reservoir (Parker or Scissortail)	Kaw Lake
P1	6.1	6.0	2.1	0.7	1.0	0.8	12.4					
P2	6.1	6.0	2.1		1.0	0.8		13.1				
P3									29.1			
P4										29.1		
P5											29.1	
P6												29.1
P7	6.1				1.0	0.8			21.2			
P8	6.1				1.0		17.0	5.0				
P9	6.1	6.0	2.1	13.1	1.0	0.8						
P10	6.1	6.0	2.1		1.0	0.8					13.1	
P11	6.1	6.0	2.1		1.0	0.8			13.1			
P12	6.1				1.0						22.0	

2060 Annual Average Daily Supply (mgd)





Top 5 Portfolios for Meeting our Objectives

	Lake Thunderbird Allocation	Existing Groundwater Wells	New Groundwater Wells	Conservation & Non-potable Reuse	Lake Thunderbird Augmentation	Regional Supplies via Oklahoma City
P1 Max Local	6	8		2	13	
P2 Low Capital	6	8		2		13 ^{W T}
P8 Max Groundwater	P8 Eliminated: Impractical to Completely Eliminate Groundwater					
P9 Max Groundwater	6	8	13	2		
P11 Regional OKC	6	8		2		13 ^{O T}

Values are 2060 Annual Avg. Use (mgd) OKC Notes: W=Wholesale purchases, O=Owner, T=Treated, R=Raw

Portfolios that use significant regional supplies

	Lake Thunderbird Allocation	Existing Groundwater Wells	New Groundwater Wells	Conservation & Non-potable Reuse	Lake Thunderbird Augmentation	Regional Supplies via Oklahoma City
P2 Eliminated: High annual costs, lacks benefits of co-ownership						W T
P11 Modified to form New P13 (Regional Raw Water, co-owner w/OKC)						O T
NEW P13 Regional OKC	6	8		2		13 O R

Values are 2060 Annual Avg. Use (mgd)

OKC Notes: W=Wholesale purchases, O=Owner, T=Treated, R=Raw

Portfolios that focus on use of local sources

	Lake Thunderbird Allocation	Existing Groundwater Wells	New Groundwater Wells	Conservation & Non-potable Reuse	Lake Thunderbird Augmentation	Regional Supplies via Oklahoma City
P1 Max Local	6	8		2	13	
P9 Eliminated: Concerns with Excess Reliance on Groundwater						
NEW P14 Wells + TBird Aug.	6	8	2	2	11	

Values are 2060 Annual Avg. Use (mgd)

OKC Notes: W=Wholesale purchases, O=Owner, T=Treated, R=Raw

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Recommended Portfolios that Best Meet our Objectives

	Lake Thunderbird Allocation	Existing Groundwater Wells	New Groundwater Wells	Conservation & Non-potable Reuse	Lake Thunderbird Augmentation	Regional Supplies via Oklahoma City	Capital and O&M Costs (2012\$)
P1 Max Local	6	8		2	13		\$250M \$21M/yr
P13 Regional OKC	6	8		2		13 ^O _R	\$340M \$23M/yr
P14 Wells + TBird Aug.	6	8	2	2	11		\$270M \$22M/yr

Values are 2060 Annual Avg. Use (mgd)

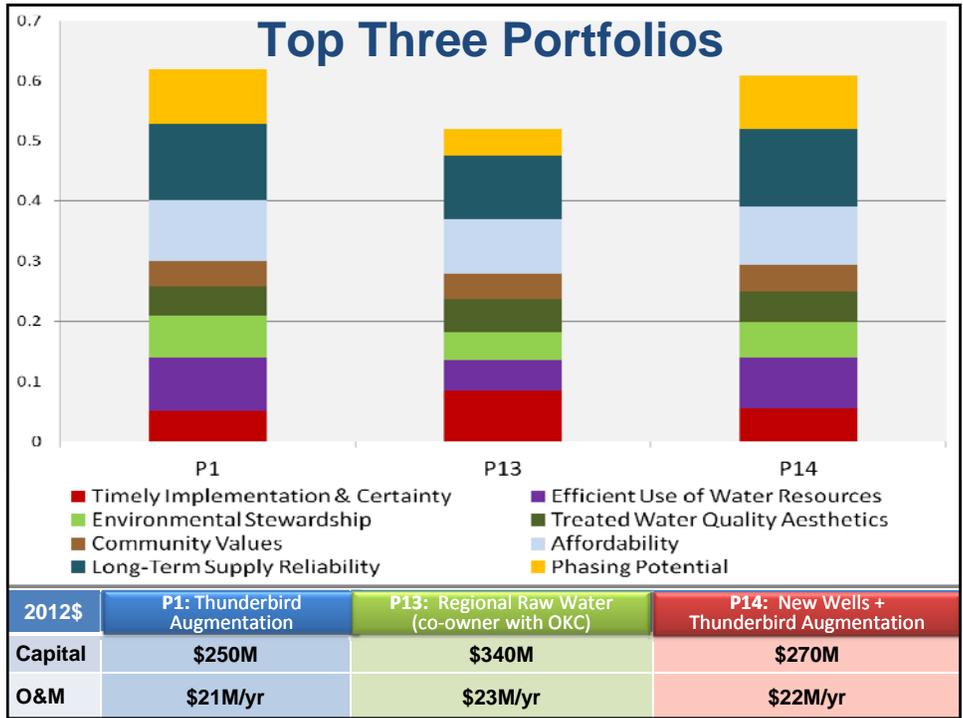
OKC Notes: W=Wholesale purchases, O=Owner, T=Treated, R=Raw

Recommended Portfolios

- All three have diverse supplies including:
 - Lake Thunderbird at reduced (firm) lake yield
 - Active & inactive existing wells with treatment
 - Additional conservation
 - Additional non-potable water reuse
- Meeting future growth in demand varies
 - P1: Lake Thunderbird Augmentation
 - P13: Regional Raw Water (co-owner with OKC)
 - P14: New Wells & Lake Thunderbird Augment'n

Key Attributes of Recommended Portfolios

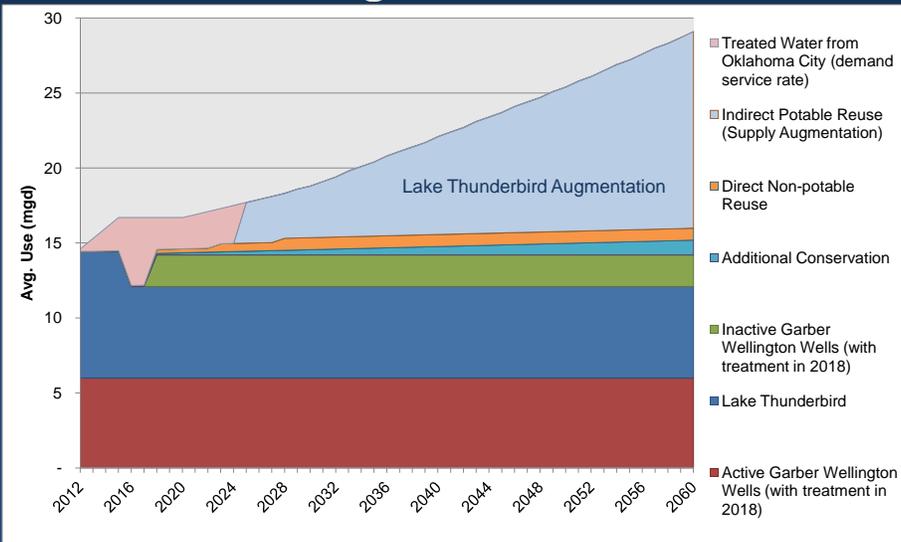
P1: Thunderbird Augmentation	P13: Regional Raw Water (co-owner with OKC)	P14: New Wells and Thunderbird Augmentation
<ul style="list-style-type: none"> ■ Discharge permitting uncertainties ■ Efficient use of water resources ■ Greater phasing potential than P13 	<ul style="list-style-type: none"> ■ Local control over treatment ■ Contingent on OKC projects 	<ul style="list-style-type: none"> ■ Local control over sources ■ Discharge permitting uncertainties ■ Efficient use of water resources ■ Greater phasing potential than P1



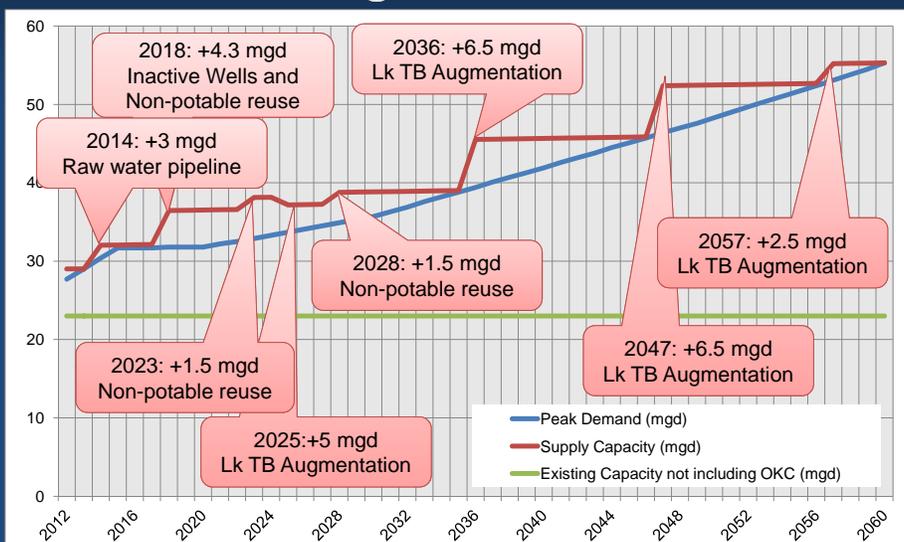
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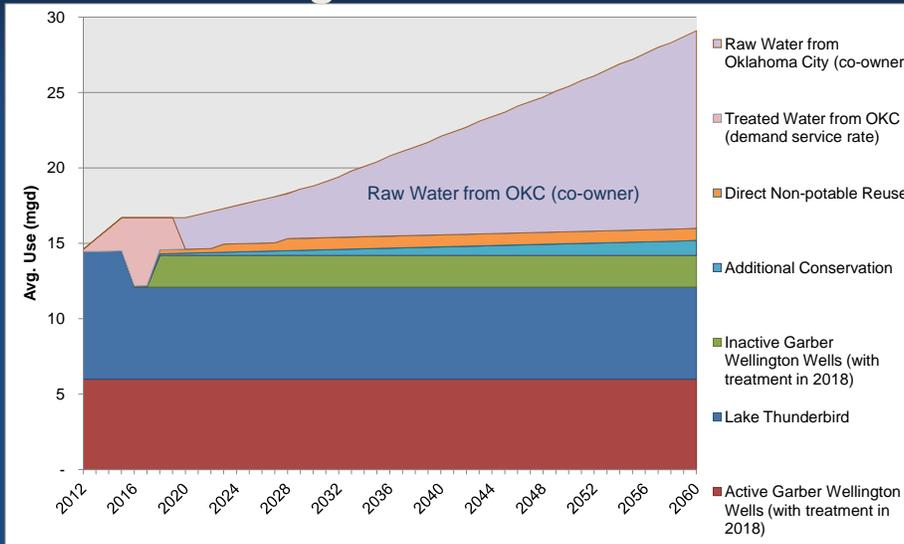
Phased Capacity Increases to Meet Growing Demand: Portfolio 1



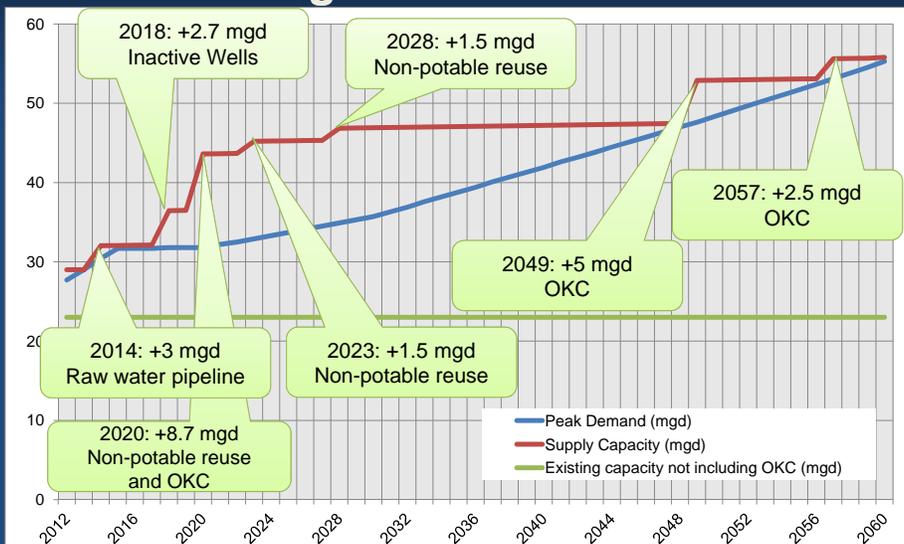
Phased Capacity Increases to Meet Growing Demand: Portfolio 1



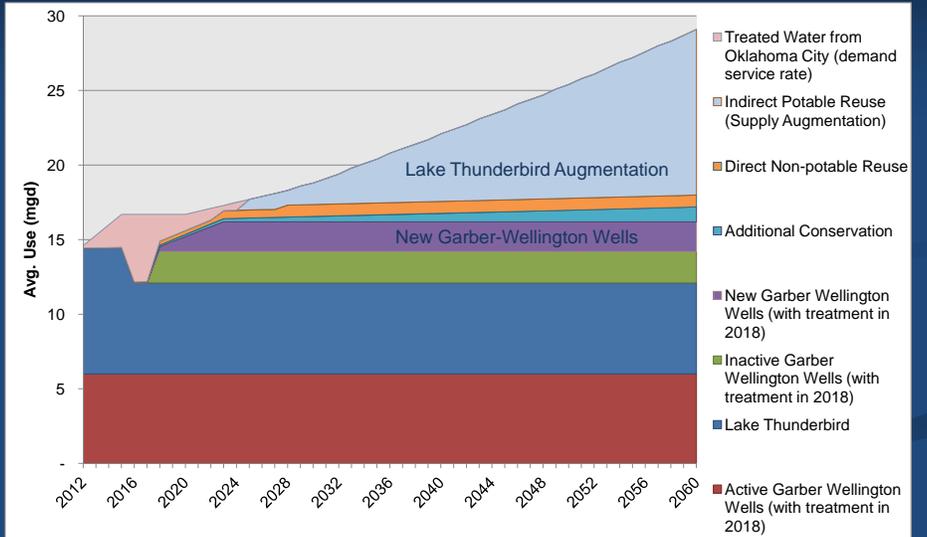
Phased Capacity Increases to Meet Growing Demand: Portfolio 13



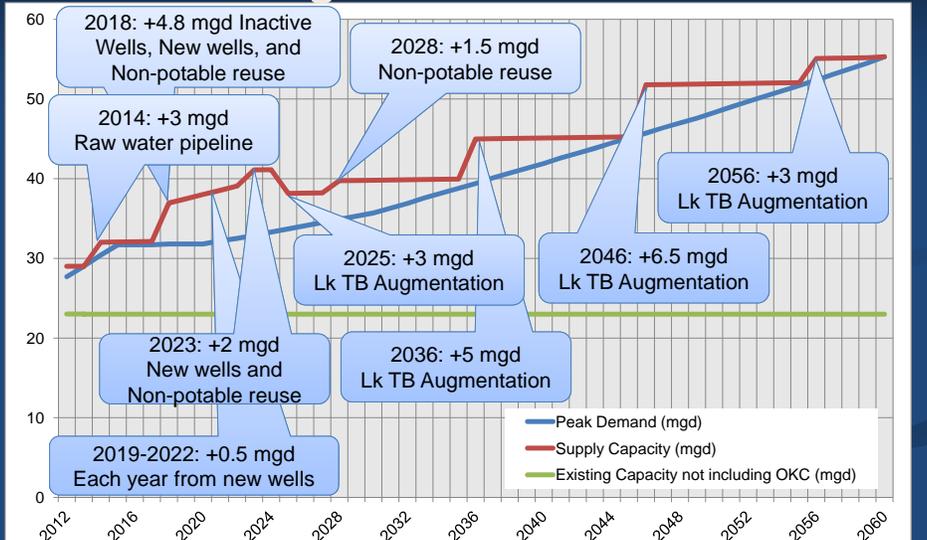
Phased Capacity Increases to Meet Growing Demand: Portfolio 13



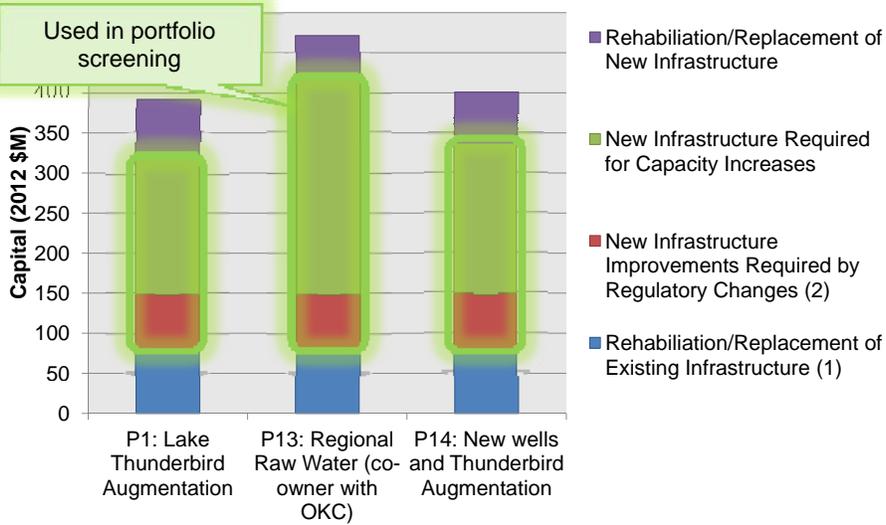
Phased Capacity Increases to Meet Growing Demand: Portfolio 14



Phased Capacity Increases to Meet Growing Demand: Portfolio 14

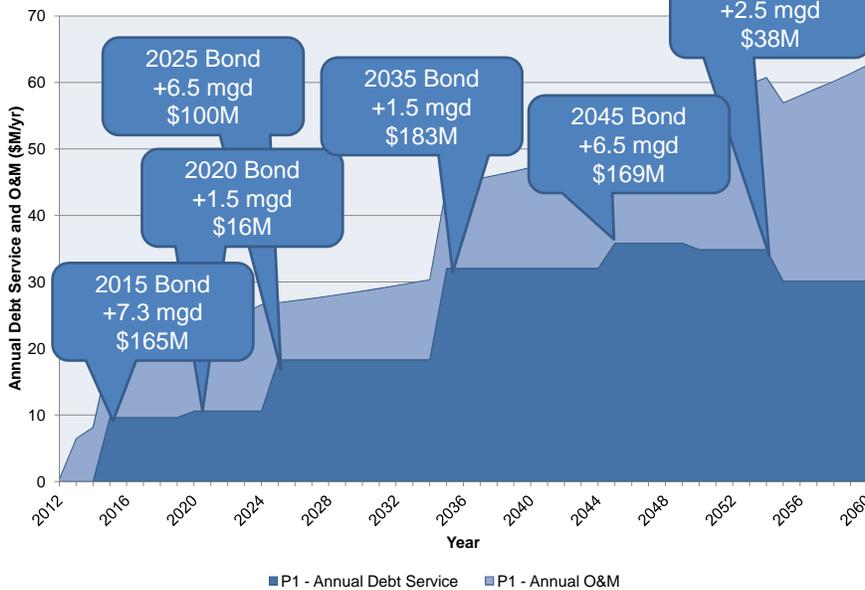


Comparison of Capital Costs (2012 \$M)

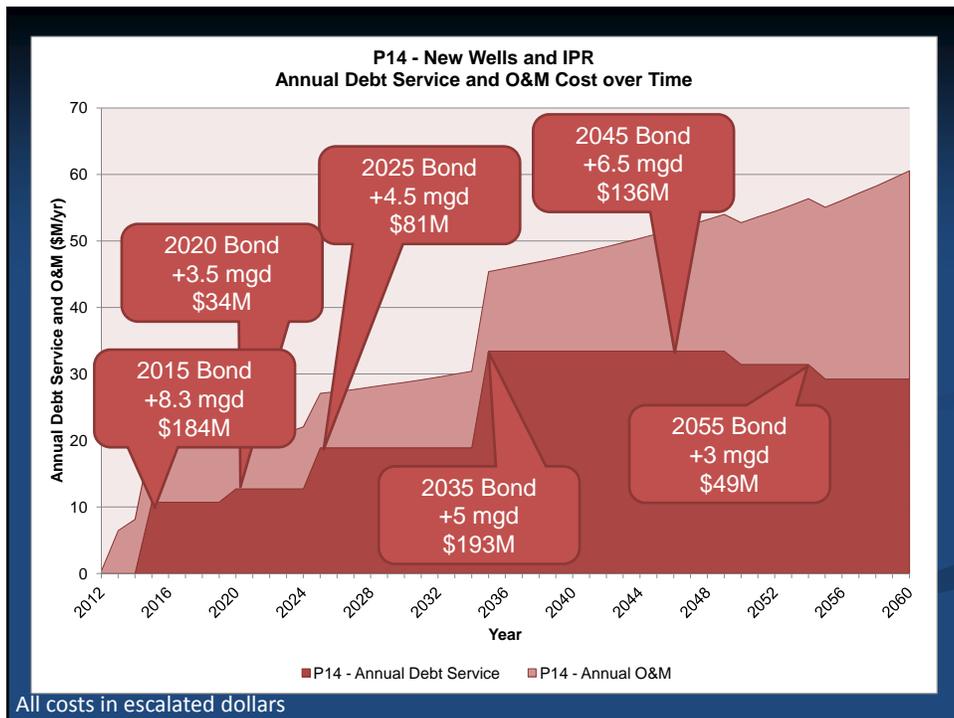
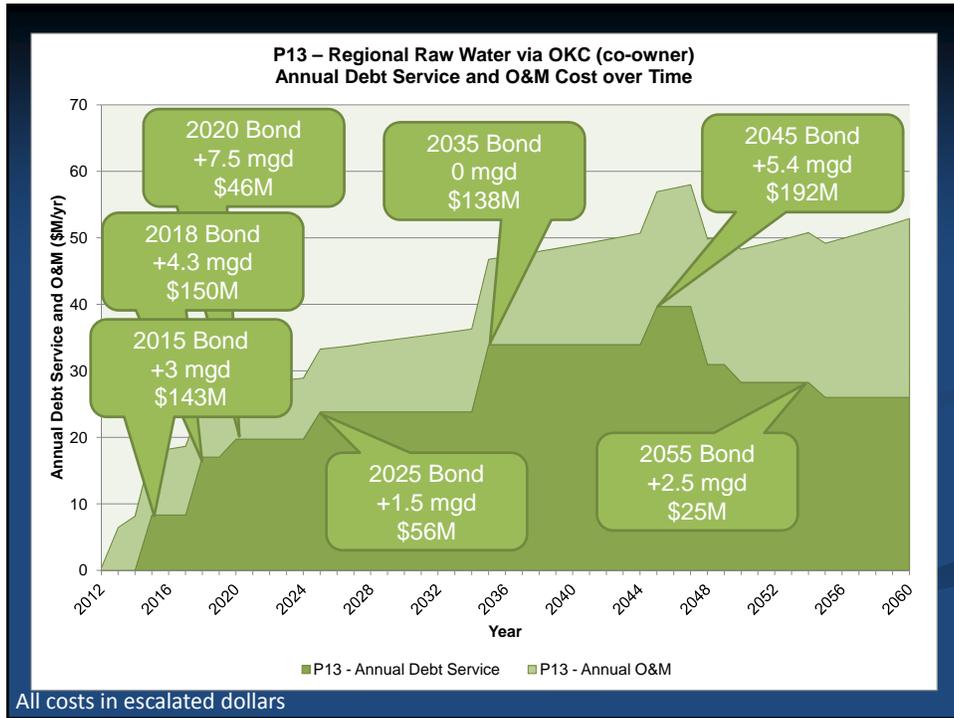


Notes:
 1. Existing infrastructure includes Vernon Campbell WTP, raw water piping, and treated water connection to OKC.
 2. Infrastructure required because of anticipated regulatory changes includes treatment for active Garber-Wellington Aquifer wells.

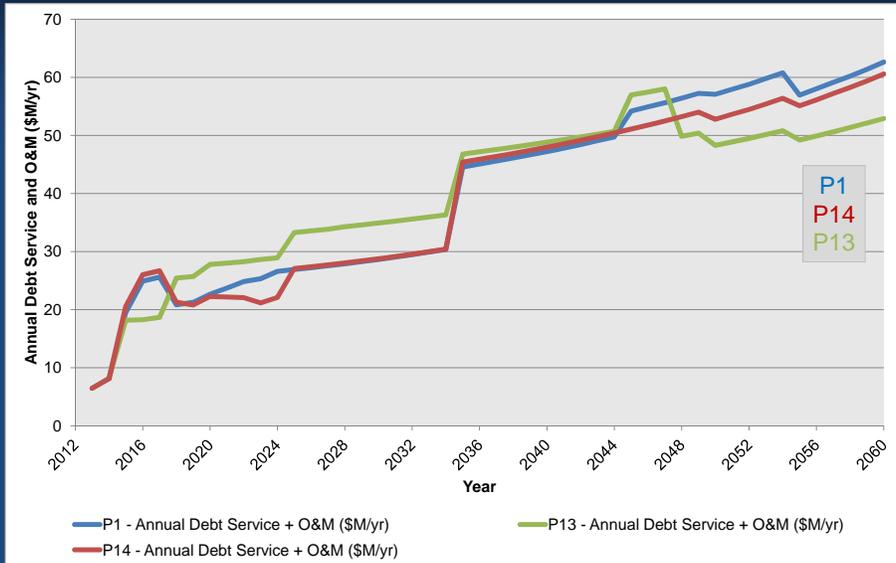
P1 - Maximize Local Sources Annual Debt Service and O&M Cost over Time



All costs in escalated dollars



Comparison of Annual Costs



Key Attributes of Recommended Portfolios

P1: Thunderbird Augmentation

- Discharge permitting uncertainties
- Efficient use of water resources
- Greater phasing potential than P13

P13: Regional Raw Water (co-owner with OKC)

- Local control over treatment
- Contingent on OKC projects

P14: New Wells and Thunderbird Augmentation

- Local control over sources
- Discharge permitting uncertainties
- Efficient use of water resources
- Greater phasing potential than P1

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