

Willow Fiscal Analysis

House Finance Committee

Department of Revenue

March 23, 2023

Dan Stickel

Chief Economist, Tax Division
Alaska Department of Revenue

Owen Stephens

Commercial Analyst, Tax Division
Alaska Department of Revenue



Acronyms

ANS – Alaska North Slope

Bbl – Barrel

CBRF – Constitutional Budget Reserve Fund

CIT – Corporate Income Tax

DNR – Department of Natural Resources

DOR – Department of Revenue

FY – Fiscal Year

GVPP – Gross Value at Point of Production

GVR – Gross Value Reduction

NPR-A – National Petroleum Reserve Alaska

NSB – North Slope Borough

PTV – Production Tax Value

SB21 – Senate Bill 21, passed in 2013

SEIS – Supplemental Environmental Impact Statement

TAPS – Trans Alaska Pipeline System

Ths - Thousands



Disclaimer

- Alaska's severance tax is one of the most complex in the world and portions are subject to interpretation and dispute.
- These numbers are rough approximations based on public data, as presented in the Spring 2023 Revenue Sources Book and other revenue forecasts.
- This presentation is solely for illustrative general purposes.
 - Not an official statement as to any particular tax liability, interpretation, or treatment.
 - Not tax advice or guidance.
- Some numbers may differ due to rounding.



Foundational Discussion

- Order of Operations Refresher
- Increased Investment Example
- Gross Value Reduction (GVR) Discussion and Mechanics
- Lease Expenditure Deductions



Oil and Gas Revenue Sources

- Royalty – based on gross value of production
 - Plus bonuses, rents, and interest
 - Paid to Owner of the land: State, Federal, or Private
 - Usually 12.5% or 16.67% in Alaska, but rates vary
- Corporate Income Tax – based on net income
 - Paid to State (9.4% top rate)
 - Paid to Federal (21% top rate)
 - Only C-Corporations* pay this tax
- Property Tax – based on value of oil & gas property
 - Paid to State (2% of assessed value or “20 mills”)
 - Paid to Municipalities – credit offsets state tax paid
- Production Tax – based on “production tax value”
 - Paid to State – calculation to follow



* C-Corporation is a business term that is used to distinguish the type of business entity, as defined under subchapter C of the federal Internal Revenue Code.

Fiscal System: Overall Order of Operations

Royalties (State, Federal, or Private)



Property Tax



Production Tax



State Corporate Income Tax



Federal Corporate Income Tax



Production Tax “Order of Operations”: FY 2024

	Per Barrel	Barrels	Value (\$ million)	
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	496.4	\$36.2	
Total Annual Production/Value	\$73.00	181,682	\$13,262.8	
Royalty, Federal, and Other Barrels		(23,576)	(\$1,721.0)	
Taxable Barrels	\$73.00	158,106	\$11,541.8	
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$1,519.0)	
Gross Value at Point of Production (GVPP)	\$63.39	158,106	\$10,022.8	
North Slope Lease Expenditures				
Deductible Operating Expenditures	(\$17.23)		(\$2,723.4)	
Deductible Capital Expenditures	(\$11.80)		(\$1,865.9)	
Total Lease Expenditures	(\$29.03)		(\$4,589.3)	
Production Tax Value (PTV)	\$34.37	158,106	\$5,433.5	
Production Tax			<u>Min Tax Floor</u>	<u>Net Tax</u>
Gross Value or Production Tax Value			\$10,022.8	\$5,433.5
Gross Value Reduction (GVR)			\$0.0	(\$142.2)
GVPP or PTV after GVR			\$10,022.8	\$5,291.3
Tax rate			4%	35%
Tax before credits			\$400.9	\$1,851.9
Higher of minimum tax floor or net tax	\$11.71	158,106	\$1,851.9	
GVR Per-taxable-barrel credits	(\$1.73)	11,053	(\$19.1)	
Non-GVR Per-taxable-barrel credits	(\$7.61)	147,059	(\$1,119.2)	
Other credits against liability	(\$0.00)		(\$0.6)	
Total Tax after credits	\$4.51	158,106	\$713.1	
Other items / adjustments	\$0.18		\$28.7	
Total Tax paid to the state	\$4.69	158,106	\$741.8	
<i>Net New Lease Expenditures Earned and Carried Forward</i>			\$913.7	



Production Tax “Order of Operations”: FY 2024

<i>Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)</i>	Per Barrel	Barrels	Value (\$ million)	
	\$73.00	496.4	\$36.2	
Total Annual Production/Value	\$73.00	181,682	\$13,262.8	
Royalty, Federal, and Other Barrels		(23,576)	(\$1,721.0)	
Taxable Barrels	\$73.00	158,106	\$11,541.8	
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$1,519.0)	
Gross Value at Point of Production (GVPP)	\$63.39	158,106	\$10,022.8	
North Slope Lease Expenditures				
Deductible Operating Expenditures	(\$17.23)		(\$2,723.4)	
Deductible Capital Expenditures	(\$11.80)		(\$1,865.9)	
Total Lease Expenditures	(\$29.03)		(\$4,589.3)	
Production Tax Value (PTV)	\$34.37	158,106	\$5,433.5	
Production Tax			<u>Min Tax Floor</u>	<u>Net Tax</u>
Gross Value or Production Tax Value			\$10,022.8	\$5,433.5
Gross Value Reduction (GVR)			\$0.0	(\$142.2)
GVPP or PTV after GVR			\$10,022.8	\$5,291.3
Tax rate			4%	35%
Tax before credits			\$400.9	\$1,851.9
Higher of minimum tax floor or net tax	\$11.71	158,106	\$1,851.9	
GVR Per-taxable-barrel credits	(\$1.73)	11,053	(\$19.1)	
Non-GVR Per-taxable-barrel credits	(\$7.61)	147,059	(\$1,119.2)	
Other credits against liability	(\$0.00)		(\$0.6)	
Total Tax after credits	\$4.51	158,106	\$713.1	
Other items / adjustments	\$0.18		\$28.7	
Total Tax paid to the state	\$4.69	158,106	\$741.8	
<i>Net New Lease Expenditures Earned and Carried Forward</i>			\$913.7	

1. Royalty and Taxable Barrels



Production Tax “Order of Operations”: FY 2024

	Per Barrel	Barrels	Value (\$ million)	
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	496.4	\$36.2	
Total Annual Production/Value	\$73.00	181,682	\$13,262.8	
Royalty, Federal, and Other Barrels		(23,576)	(\$1,721.0)	
Taxable Barrels	\$73.00	158,106	\$11,541.8	
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$1,519.0)	
Gross Value at Point of Production (GVPP)	\$63.39	158,106	\$10,022.8	
North Slope Lease Expenditures				
Deductible Operating Expenditures	(\$17.23)		(\$2,723.4)	
Deductible Capital Expenditures	(\$11.80)		(\$1,865.9)	
Total Lease Expenditures	(\$29.03)		(\$4,589.3)	
Production Tax Value (PTV)	\$34.37	158,106	\$5,433.5	
Production Tax			<u>Min Tax Floor</u>	<u>Net Tax</u>
Gross Value or Production Tax Value			\$10,022.8	\$5,433.5
Gross Value Reduction (GVR)			\$0.0	(\$142.2)
GVPP or PTV after GVR			\$10,022.8	\$5,291.3
Tax rate			4%	35%
Tax before credits			\$400.9	\$1,851.9
Higher of minimum tax floor or net tax	\$11.71	158,106	\$1,851.9	
GVR Per-taxable-barrel credits	(\$1.73)	11,053	(\$19.1)	
Non-GVR Per-taxable-barrel credits	(\$7.61)	147,059	(\$1,119.2)	
Other credits against liability	(\$0.00)		(\$0.6)	
Total Tax after credits	\$4.51	158,106	\$713.1	
Other items / adjustments	\$0.18		\$28.7	
Total Tax paid to the state	\$4.69	158,106	\$741.8	
<i>Net New Lease Expenditures Earned and Carried Forward</i>			\$913.7	

**2. Gross Value
At Point of
Production
(GVPP)**



Production Tax “Order of Operations”: FY 2024

	Per Barrel	Barrels	Value (\$ million)
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	496.4	\$36.2
Total Annual Production/Value	\$73.00	181,682	\$13,262.8
Royalty, Federal, and Other Barrels		(23,576)	(\$1,721.0)
Taxable Barrels	\$73.00	158,106	\$11,541.8
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$1,519.0)
Gross Value at Point of Production (GVPP)	\$63.39	158,106	\$10,022.8
North Slope Lease Expenditures			
Deductible Operating Expenditures	(\$17.23)		(\$2,723.4)
Deductible Capital Expenditures	(\$11.80)		(\$1,865.9)
Total Lease Expenditures	(\$29.03)		(\$4,589.3)
Production Tax Value (PTV)	\$34.37	158,106	\$5,433.5
Production Tax			
Gross Value or Production Tax Value			Min Tax Floor
Gross Value Reduction (GVR)			Net Tax
GVPP or PTV after GVR			\$10,022.8
Tax rate			\$0.0
Tax before credits			\$10,022.8
Higher of minimum tax floor or net tax			4%
GVR Per-taxable-barrel credits			35%
Non-GVR Per-taxable-barrel credits			\$400.9
Other credits against liability			\$1,851.9
Total Tax after credits	\$4.51	158,106	\$713.1
Other items / adjustments	\$0.18		\$28.7
Total Tax paid to the state	\$4.69	158,106	\$741.8
Net New Lease Expenditures Earned and Carried Forward			\$913.7

3. Lease Expenditures



Production Tax “Order of Operations”: FY 2024

	Per Barrel	Barrels	Value (\$ million)	
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	496.4	\$36.2	
Total Annual Production/Value	\$73.00	181,682	\$13,262.8	
Royalty, Federal, and Other Barrels		(23,576)	(\$1,721.0)	
Taxable Barrels	\$73.00	158,106	\$11,541.8	
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$1,519.0)	
Gross Value at Point of Production (GVPP)	\$63.39	158,106	\$10,022.8	
North Slope Lease Expenditures				
Deductible Operating Expenditures	(\$17.23)		(\$2,723.4)	
Deductible Capital Expenditures	(\$11.80)		(\$1,865.9)	
Total Lease Expenditures	(\$29.03)		(\$4,589.3)	
Production Tax Value (PTV)	\$34.37	158,106	\$5,433.5	
Production Tax			Min Tax Floor	Net Tax
Gross Value or Production Tax Value			\$10,022.8	\$5,433.5
Gross Value Reduction (GVR)			\$0.0	(\$142.2)
GVPP or PTV after GVR			\$10,022.8	\$5,291.3
Tax rate			4%	35%
Tax before credits			\$400.9	\$1,851.9
Higher of minimum tax floor or net tax	\$11.71	158,106	\$1,851.9	
GVR Per-taxable-barrel credits	(\$1.73)	11,053	(\$19.1)	
Non-GVR Per-taxable-barrel credits	(\$7.61)	147,059	(\$1,119.2)	
Other credits against liability	(\$0.00)		(\$0.6)	
Total Tax after credits	\$4.51	158,106	\$713.1	
Other items / adjustments	\$0.18		\$28.7	
Total Tax paid to the state	\$4.69	158,106	\$741.8	
Net New Lease Expenditures Earned and Carried Forward			\$913.7	

4. Production Tax Value (PTV)



Production Tax “Order of Operations”: FY 2024

	Per Barrel	Barrels	Value (\$ million)	
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	496.4	\$36.2	
Total Annual Production/Value	\$73.00	181,682	\$13,262.8	
Royalty, Federal, and Other Barrels		(23,576)	(\$1,721.0)	
Taxable Barrels	\$73.00	158,106	\$11,541.8	
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$1,519.0)	
Gross Value at Point of Production (GVPP)	\$63.39	158,106	\$10,022.8	
North Slope Lease Expenditures				
Deductible Operating Expenditures	(\$17.23)		(\$2,723.4)	
Deductible Capital Expenditures	(\$11.80)		(\$1,865.9)	
Total Lease Expenditures	(\$29.03)		(\$4,589.3)	
Production Tax Value (PTV)	\$34.37	158,106	\$5,433.5	
Production Tax			Min Tax Floor	Net Tax
Gross Value or Production Tax Value			\$10,022.8	\$5,433.5
Gross Value Reduction (GVR)			\$0.0	(\$142.2)
GVPP or PTV after GVR			\$10,022.8	\$5,291.3
Tax rate			4%	35%
Tax before credits			\$400.9	\$1,851.9
Higher of minimum tax floor or net tax	\$11.71	158,106	\$1,851.9	
GVR Per-taxable-barrel credits	(\$1.73)	11,053	(\$19.1)	
Non-GVR Per-taxable-barrel credits	(\$7.61)	147,059	(\$1,119.2)	
Other credits against liability	(\$0.00)		(\$0.6)	
Total Tax after credits	\$4.51	158,106	\$713.1	
Other items / adjustments	\$0.18		\$28.7	
Total Tax paid to the state	\$4.69	158,106	\$741.8	
Net New Lease Expenditures Earned and Carried Forward			\$913.7	

**5. Gross
Minimum Tax
Floor**



Production Tax “Order of Operations”: FY 2024

	Per Barrel	Barrels	Value (\$ million)	
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	496.4	\$36.2	
Total Annual Production/Value	\$73.00	181,682	\$13,262.8	
Royalty, Federal, and Other Barrels		(23,576)	(\$1,721.0)	
Taxable Barrels	\$73.00	158,106	\$11,541.8	
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$1,519.0)	
Gross Value at Point of Production (GVPP)	\$63.39	158,106	\$10,022.8	
North Slope Lease Expenditures				
Deductible Operating Expenditures	(\$17.23)		(\$2,723.4)	
Deductible Capital Expenditures	(\$11.80)		(\$1,865.9)	
Total Lease Expenditures	(\$29.03)		(\$4,589.3)	
Production Tax Value (PTV)	\$34.37	158,106	\$5,433.5	
Production Tax			Min Tax Floor	Net Tax
Gross Value or Production Tax Value			\$10,022.8	\$5,433.5
Gross Value Reduction (GVR)			\$0.0	(\$142.2)
GVPP or PTV after GVR			\$10,022.8	\$5,291.3
Tax rate			4%	35%
Tax before credits			\$400.9	\$1,851.9
Higher of minimum tax floor or net tax	\$11.71	158,106	\$1,851.9	
GVR Per-taxable-barrel credits	(\$1.73)	11,053	(\$19.1)	
Non-GVR Per-taxable-barrel credits	(\$7.61)	147,059	(\$1,119.2)	
Other credits against liability	(\$0.00)		(\$0.6)	
Total Tax after credits	\$4.51	158,106	\$713.1	
Other items / adjustments	\$0.18		\$28.7	
Total Tax paid to the state	\$4.69	158,106	\$741.8	
Net New Lease Expenditures Earned and Carried Forward			\$913.7	

**6. Net Tax and
Gross Value
Reduction (GVR)**



Production Tax “Order of Operations”: FY 2024

	Per Barrel	Barrels	Value (\$ million)	
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	496.4	\$36.2	
Total Annual Production/Value	\$73.00	181,682	\$13,262.8	
Royalty, Federal, and Other Barrels		(23,576)	(\$1,721.0)	
Taxable Barrels	\$73.00	158,106	\$11,541.8	
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$1,519.0)	
Gross Value at Point of Production (GVPP)	\$63.39	158,106	\$10,022.8	
North Slope Lease Expenditures				
Deductible Operating Expenditures	(\$17.23)		(\$2,723.4)	
Deductible Capital Expenditures	(\$11.80)		(\$1,865.9)	
Total Lease Expenditures	(\$29.03)		(\$4,589.3)	
Production Tax Value (PTV)	\$34.37	158,106	\$5,433.5	
Production Tax			<u>Min Tax Floor</u>	<u>Net Tax</u>
Gross Value or Production Tax Value			\$10,022.8	\$5,433.5
Gross Value Reduction (GVR)			\$0.0	(\$142.2)
GVPP or PTV after GVR			\$10,022.8	\$5,291.3
Tax rate			4%	35%
Tax before credits			\$400.9	\$1,851.9
Higher of minimum tax floor or net tax	\$11.71	158,106	\$1,851.9	
GVR Per-taxable-barrel credits	(\$1.73)	11,053	(\$19.1)	
Non-GVR Per-taxable-barrel credits	(\$7.61)	147,059	(\$1,119.2)	
Other credits against liability	(\$0.00)		(\$0.6)	
Total Tax after credits	\$4.51	158,106	\$713.1	
Other items / adjustments	\$0.18		\$28.7	
Total Tax paid to the state	\$4.69	158,106	\$741.8	
Net New Lease Expenditures Earned and Carried Forward			\$913.7	

**7. Tax Credits
Against
Liability**



Production Tax “Order of Operations”: FY 2024

	Per Barrel	Barrels	Value (\$ million)	
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	496.4	\$36.2	
Total Annual Production/Value	\$73.00	181,682	\$13,262.8	
Royalty, Federal, and Other Barrels		(23,576)	(\$1,721.0)	
Taxable Barrels	\$73.00	158,106	\$11,541.8	
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$1,519.0)	
Gross Value at Point of Production (GVPP)	\$63.39	158,106	\$10,022.8	
North Slope Lease Expenditures				
Deductible Operating Expenditures	(\$17.23)		(\$2,723.4)	
Deductible Capital Expenditures	(\$11.80)		(\$1,865.9)	
Total Lease Expenditures	(\$29.03)		(\$4,589.3)	
Production Tax Value (PTV)	\$34.37	158,106	\$5,433.5	
Production Tax			<u>Min Tax Floor</u>	<u>Net Tax</u>
Gross Value or Production Tax Value			\$10,022.8	\$5,433.5
Gross Value Reduction (GVR)			\$0.0	(\$142.2)
GVPP or PTV after GVR			\$10,022.8	\$5,291.3
Tax rate			4%	35%
Tax before credits			\$400.9	\$1,851.9
Higher of minimum tax floor or net tax	\$11.71	158,106	\$1,851.9	
GVR Per-taxable-barrel credits	(\$1.73)	11,053	(\$19.1)	
Non-GVR Per-taxable-barrel credits	(\$7.61)	147,059	(\$1,119.2)	
Other credits against liability	(\$0.00)		(\$0.6)	
Total Tax after credits	\$4.51	158,106	\$713.1	
Other items / adjustments	\$0.18		\$28.7	
Total Tax paid to the state	\$4.69	158,106	\$741.8	
Net New Lease Expenditures Earned and Carried Forward			\$913.7	

**8. Adjustments
and Total Tax Paid**



Example: Company with 200,000 Barrels Per Day Taxable Production

	Per Barrel	Barrels	Value (\$ million)
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	229.8	\$16.8
Total Annual Production/Value	\$73.00	84,115	\$6,140.4
Royalty, Federal, and Other Barrels		(10,915)	(\$796.8)
Taxable Barrels	\$73.00	73,200	\$5,343.6
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$703.3)
Gross Value at Point of Production (GVPP)	\$63.39	73,200	\$4,640.3
North Slope Lease Expenditures			
Deductible Operating Expenditures	(\$17.23)		(\$1,260.9)
Deductible Capital Expenditures	(\$11.80)		(\$863.9)
Total Lease Expenditures	(\$29.03)		(\$2,124.8)
Production Tax Value (PTV)	\$34.37	73,200	\$2,515.6
Production Tax			
Gross Value or Production Tax Value			Min Tax Floor \$4,640.3
Gross Value Reduction (GVR)			\$0.0
GVPP or PTV after GVR			\$4,640.3
Tax rate			4%
Tax before credits			\$185.6
Higher of minimum tax floor or net tax	\$11.71	73,200	\$857.4
GVR Per-taxable-barrel credits	(\$5.00)	5,117	(\$25.6)
Non-GVR Per-taxable-barrel credits	(\$8.00)	68,085	(\$544.7)
Other credits against liability	(\$0.00)		(\$0.3)
Total Tax after credits	\$3.92	73,200	\$286.9
Net New Lease Expenditures Earned and Carried Forward			\$0.0

All lease expenditures applied

Full value of per-taxable-barrel credits

35% benefit of lease expenditures

No carryforward



Example: \$200 million additional Capital Expenditure

	Per Barrel	Barrels	Value (\$ million)
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	229.8	\$16.8
Total Annual Production/Value	\$73.00	84,115	\$6,140.4
Royalty, Federal, and Other Barrels		(10,915)	(\$796.8)
Taxable Barrels	\$73.00	73,200	\$5,343.6
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$703.3)
Gross Value at Point of Production (GVPP)	\$63.39	73,200	\$4,640.3
North Slope Lease Expenditures			
Deductible Operating Expenditures	(\$17.23)		(\$1,260.9)
Deductible Capital Expenditures	(\$14.53)		(\$1,063.9)
Total Lease Expenditures	(\$31.76)		(\$2,324.8)
Production Tax Value (PTV)	\$31.63	73,200	\$2,315.6
Production Tax			
Gross Value or Production Tax Value			Min Tax Floor \$4,640.3
Gross Value Reduction (GVR)			\$0.0
GVPP or PTV after GVR			\$4,640.3
Tax rate			4%
Tax before credits			\$185.6
Higher of minimum tax floor or net tax	\$10.76	73,200	\$787.4
GVR Per-taxable-barrel credits	(\$5.00)	5,117	(\$25.6)
Non-GVR Per-taxable-barrel credits	(\$8.00)	68,085	(\$544.7)
Other credits against liability	(\$0.00)		(\$0.3)
Total Tax after credits	\$2.96	73,200	\$216.9
<i>Net New Lease Expenditures Earned and Carried Forward</i>			<i>\$0.0</i>

All lease expenditures applied

Full value of per-taxable-barrel credits

35% benefit of lease expenditures

No carryforward



Example: \$1 billion additional Capital Expenditure

	Per Barrel	Barrels	Value (\$ million)
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	229.8	\$16.8
Total Annual Production/Value	\$73.00	84,115	\$6,140.4
Royalty, Federal, and Other Barrels		(10,915)	(\$796.8)
Taxable Barrels	\$73.00	73,200	\$5,343.6
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$703.3)
Gross Value at Point of Production (GVPP)	\$63.39	73,200	\$4,640.3
North Slope Lease Expenditures			
Deductible Operating Expenditures	(\$17.23)		(\$1,260.9)
Deductible Capital Expenditures	(\$25.46)		(\$1,863.9)
Total Lease Expenditures	(\$42.69)		(\$3,124.8)
Production Tax Value (PTV)	\$20.70	73,200	\$1,515.6
Production Tax			
Gross Value or Production Tax Value			Min Tax Floor
Gross Value Reduction (GVR)			Net Tax
GVPP or PTV after GVR			\$4,640.3
Tax rate			\$0.0
Tax before credits			\$4,640.3
			4%
			\$185.6
			\$507.4
Higher of minimum tax floor or net tax	\$6.93	73,200	\$507.4
GVR Per-taxable-barrel credits	\$0.00	5,117	\$0.0
Non-GVR Per-taxable-barrel credits	(\$4.73)	68,085	(\$321.8)
Other credits against liability	\$0.00		\$0.0
Total Tax after credits	\$2.54	73,200	\$185.6
Net New Lease Expenditures Earned and Carried Forward			\$0.0

All lease expenditures applied

Per-taxable-barrel credits limited by minimum tax floor

10% benefit of lease expenditures

No carryforward



Example: \$2 billion additional Capital Expenditure

	Per Barrel	Barrels	Value (\$ million)	
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	229.8	\$16.8	
Total Annual Production/Value	\$73.00	84,115	\$6,140.4	
Royalty, Federal, and Other Barrels		(10,915)	(\$796.8)	
Taxable Barrels	\$73.00	73,200	\$5,343.6	
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$703.3)	
Gross Value at Point of Production (GVPP)	\$63.39	73,200	\$4,640.3	
North Slope Lease Expenditures				
Deductible Operating Expenditures	(\$17.23)		(\$1,260.9)	
Deductible Capital Expenditures	(\$39.12)		(\$2,863.9)	
Total Lease Expenditures	(\$56.35)		(\$4,124.8)	
Production Tax Value (PTV)	\$7.04	73,200	\$515.6	
Production Tax			Min Tax Floor	Net Tax
Gross Value or Production Tax Value			\$4,640.3	\$515.6
Gross Value Reduction (GVR)			\$0.0	(\$65.8)
GVPP or PTV after GVR			\$4,640.3	\$449.7
Tax rate			4%	35%
Tax before credits			\$185.6	\$157.4
Higher of minimum tax floor or net tax	\$2.54	73,200	\$185.6	
GVR Per-taxable-barrel credits	(\$5.00)	5,117	(\$25.6)	
Non-GVR Per-taxable-barrel credits	\$0.00	68,085	\$0.0	
Other credits against liability	(\$0.00)		(\$0.3)	
Total Tax after credits	\$2.18	73,200	\$159.8	
Net New Lease Expenditures Earned and Carried Forward			\$0.0	

All lease expenditures applied

Per-taxable-barrel credits limited by minimum tax floor

6% benefit of lease expenditures

No carryforward



Example: \$3 billion additional Capital Expenditure

	Per Barrel	Barrels	Value (\$ million)
Avg ANS Oil Price (\$/bbl) & Daily Production (ths bbls)	\$73.00	229.8	\$16.8
Total Annual Production/Value	\$73.00	84,115	\$6,140.4
Royalty, Federal, and Other Barrels		(10,915)	(\$796.8)
Taxable Barrels	\$73.00	73,200	\$5,343.6
Downstream (Transportation) Costs (\$/bbl)	(\$9.61)		(\$703.3)
Gross Value at Point of Production (GVPP)	\$63.39	73,200	\$4,640.3
North Slope Lease Expenditures			
Deductible Operating Expenditures	(\$17.23)		(\$1,260.9)
Deductible Capital Expenditures	(\$46.17)		(\$3,379.5)
Total Lease Expenditures	(\$63.39)		(\$4,640.3)
Production Tax Value (PTV)	\$0.00	73,200	\$0.0
Production Tax			
Gross Value or Production Tax Value			Min Tax Floor
Gross Value Reduction (GVR)			Net Tax
GVPP or PTV after GVR			
Tax rate			
Tax before credits			
Higher of minimum tax floor or net tax	\$2.54	73,200	\$185.6
GVR Per-taxable-barrel credits	(\$5.00)	5,117	(\$25.6)
Non-GVR Per-taxable-barrel credits	\$0.00	68,085	\$0.0
Other credits against liability	(\$0.00)		(\$0.3)
Total Tax after credits	\$2.18	73,200	\$159.8
Net New Lease Expenditures Earned and Carried Forward			\$484.4

Most lease expenditures applied

Per-taxable-barrel credits limited by minimum tax floor

4-10% benefit of lease expenditures

Carryforward of excess lease expenditures



Lease Expenditures Example: Takeaways

- If company is above minimum tax floor, modest increases in investment benefit at 35% marginal tax rate.
 - Once company reaches minimum tax floor, the benefit of increased investment is much lower.
 - Once company reaches a net operating loss, some benefit of increased investment returns, in the form of a carried-forward loss.
 - Benefit of spending will also vary based on oil prices.
 - A low oil price scenario is very similar to a high investment scenario.
 - The changing benefits are a source of uncertainty to company making investment decisions, and to state revenue forecasting.
- This analysis is relevant to discussions of Willow because the field would require massive additional investment.



Gross Value Reduction

- Gross Value Reduction (GVR) is an incentive program for new fields.
- Available for the first seven years of production and ends early if ANS prices average over \$70 per barrel for any three years.
- Allows companies to exclude 20% or 30% of the gross value from the net production tax calculation.
- In lieu of sliding scale Non-GVR Per-Taxable Barrel Credit, qualifying production receives a flat \$5 GVR Per-Taxable-Barrel Credit.
- The \$5 GVR Per-Taxable-Barrel Credit can be applied to reduce tax liability below the minimum tax floor, assuming that the producer does not apply any sliding scale Non-GVR Per-Taxable Barrel Credits.
- GVR is relevant to discussions of Willow because the field would likely qualify for this benefit in early years of production.



Why Allow Lease Expenditure Deductions?

- Oil and gas exploration and development are high-risk, capital-intensive activities. There is no guarantee of success.
 - Cost recovery is critical for company investment decisions.
 - Deductions that allow companies to continue work even when unsuccessful, make exploration and development much less risky.
 - Alaska's net tax system balances lower state take early in field life, with higher state take later in field life.
 - Cost recovery is an integral part of a net tax system.
 - Slope-wide "ring fence" encourages reinvestment of profits in Alaska.
 - Lease expenditure deductions and GVR were designed to help companies recover costs quickly, improving project economics.
- Gross minimum tax floor ensures a minimum level of state revenue regardless of investments or oil price.



Willow Project Analysis

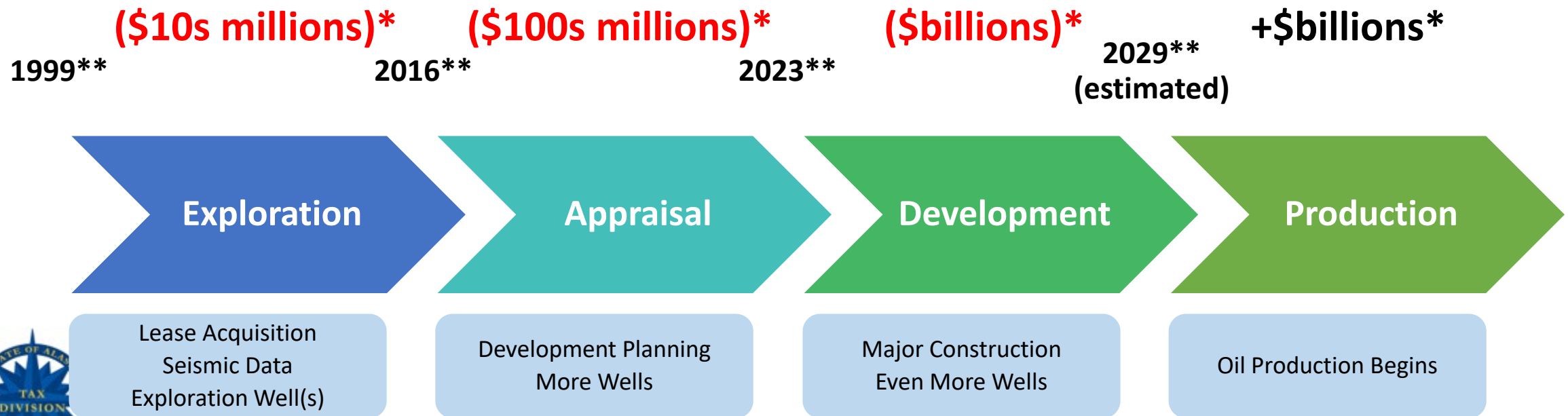
- Analysis Updates
- Description and Assumptions
- Revenue Analysis
- Uncertainty
- Spring Forecast Comparison
- Conclusions
- Appendix:
 1. Sensitivity Analyses
 2. Local Cash Flows



Typical Oil Field Development

Finding and developing an oil or gas field is heavily capital intensive:

- Very large up-front costs before any revenue received
- Reaching first production can take decades
- Especially true on Alaska's North Slope



* Ranges for comparable fields

** Dates for Willow

Analysis Description

- Goal is to demonstrate fiscal impact of Willow Field development.
- Department of Revenue (DOR) Lifecycle Model allows detailed financial analysis of a single oil development project.
 - Forecasts revenue to state, municipality, impacted communities, federal government, and producer
 - Results in nominal dollars
 - Deterministic analysis, not probabilistic, using a single set of assumptions
- Uses publicly available data only, no taxpayer confidential data.
 - Willow federal Supplemental Environmental Impact Statement (SEIS) (February 2023)
 - Spring 2023 Forecast by DOR (March 2023)
 - Use of confidential data could materially change analysis results



Analysis Updates

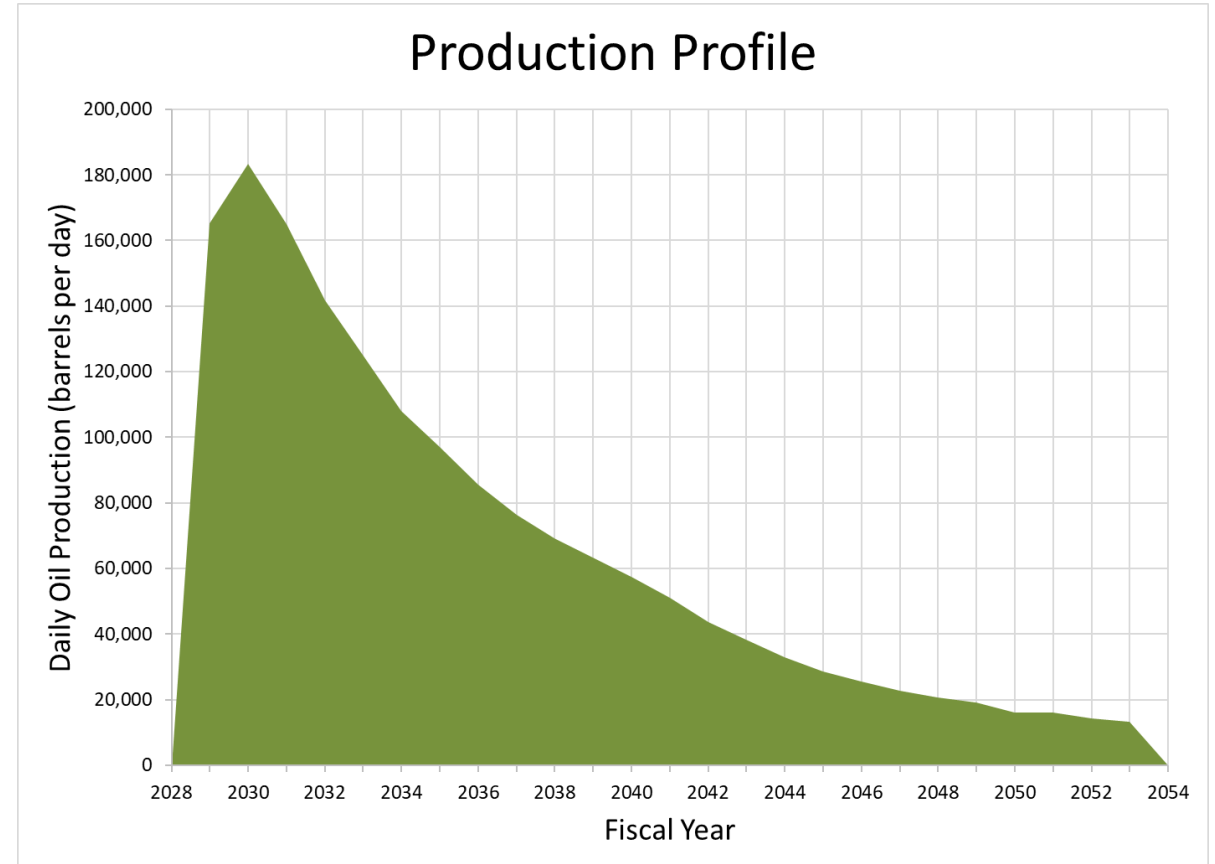
Four component updates from February 2023 analysis:

1. Spring 2023 forecast for oil prices and transportation costs
 - Previously used Fall 2022 forecast
2. Producer receives benefit of lease expenditure deductions only as far as minimum tax floor
 - Previously producer received benefit of all lease expenditure deductions
3. Zero impact on State Corporate Income Tax prior to production
 - Previously included negative impact on state corporate income
4. North Slope-wide state benefit from pipeline tariff now also includes feeder pipelines (Alpine and Kuparuk)
 - Previously only included Trans-Alaska Pipeline (TAPS)



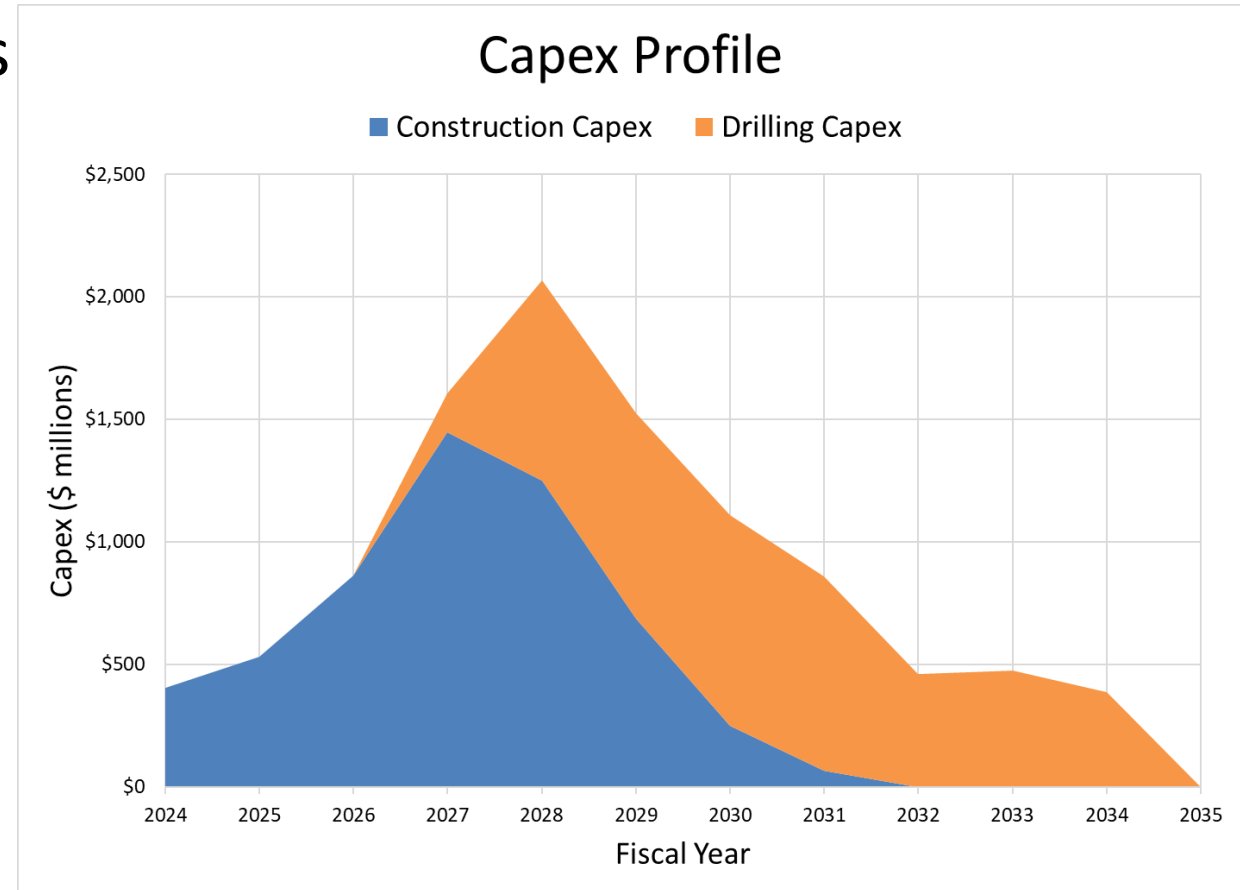
Oil Production

- Unrisked oil production profile for 3-drill pad development
 - Profile supplied by ConocoPhillips for SEIS
 - As approved by Record of Decision from US Department of Interior, Mar 2023
 - Assume first oil FY 2029
 - 613 million barrels total production to FY 2053
 - Peak production 183,000 barrels per day in FY 2030
- Represents a normal oil field production profile
 - High early production, with gradual decline as reservoir pressure decreases and/or water production rate increases
 - Further drilling during production could reduce decline, but general shape would remain



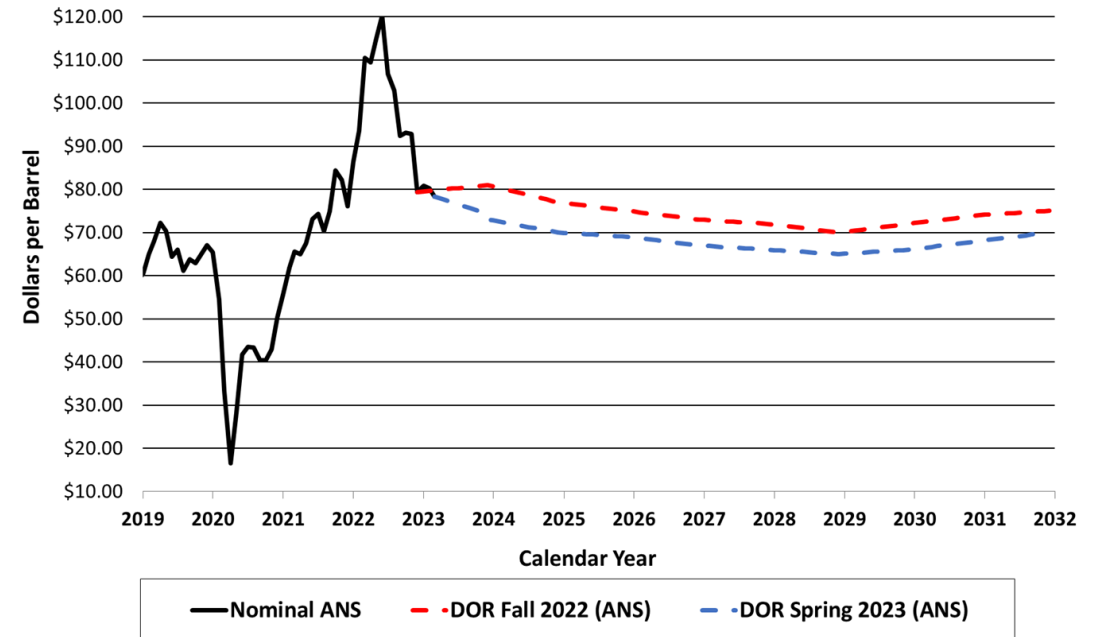
Lease Expenditures

- Composed of capital expenditures and operating expenditures
- Capital Expenditures estimated from ConocoPhillips public statements
 - \$10.3 billion total, timing fitted to expected employment
- Operating Expenditures from SEIS estimate (by Northern Economics)
 - \$6.1 billion total



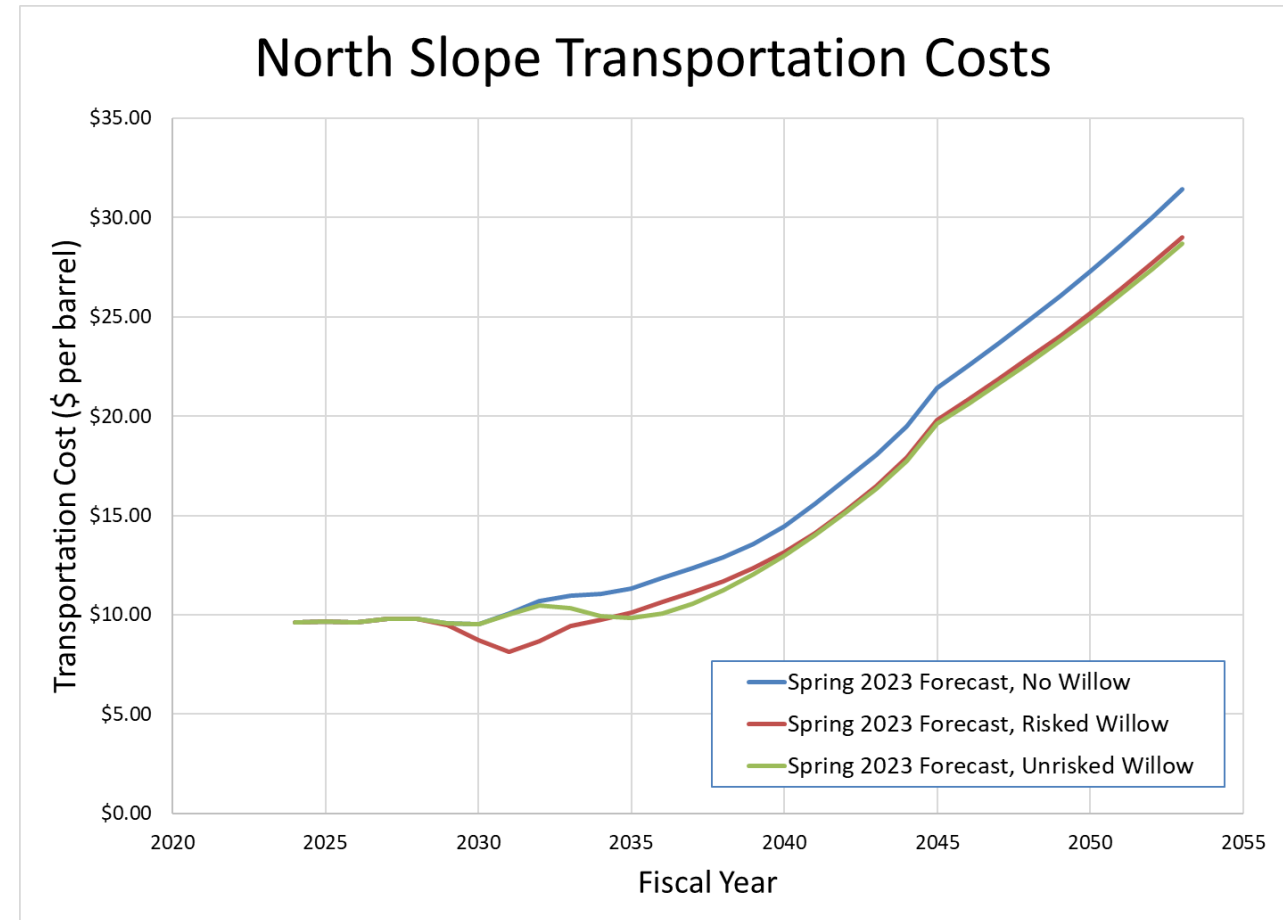
Oil Prices

- Department of Revenue Spring 2023 Oil Price Forecast
 - Derived from oil futures market, increasing with inflation for years where futures unavailable
 - Update from February 2023 white paper, which used Fall 2022 forecast
 - Spring 2023 price forecast lower than Fall 2022 by \$5 to \$8 per barrel



Transportation (Netback) Costs

- Increased flow through Trans-Alaska Pipeline (TAPS) and feeder pipelines (Alpine and Kuparuk) expected to reduce pipeline tariffs
- Reduced pipeline tariff would benefit all North Slope fields
 - Analysis includes resulting increase in state production tax and state royalty
 - Does not include secondary benefit of lower costs increasing investment elsewhere on North Slope



Fiscal Assumptions

- Current state and federal tax laws (March 2023)
- Gross Value Reduction (GVR) at 20%, with no producing area qualifying separately for GVR later in field life
- State Corporate Income Tax rate 4.25% (typical North Slope producer)
 - Impact only after start of production
- Producer able to deduct lease expenditures incurred at Willow against production elsewhere on North Slope, but benefit of those expenditures is limited by the minimum tax floor, until entering a net operating loss
 - Assume producer's North Slope production of 228,000 barrels per day (200,000 barrels per day after royalty) and at constant level in future
 - Assume lease expenditures of \$24.50 per barrel (real) for producer's other fields on North Slope, based on value for typical North Slope producer
 - Use of taxpayer confidential data could materially change analysis results

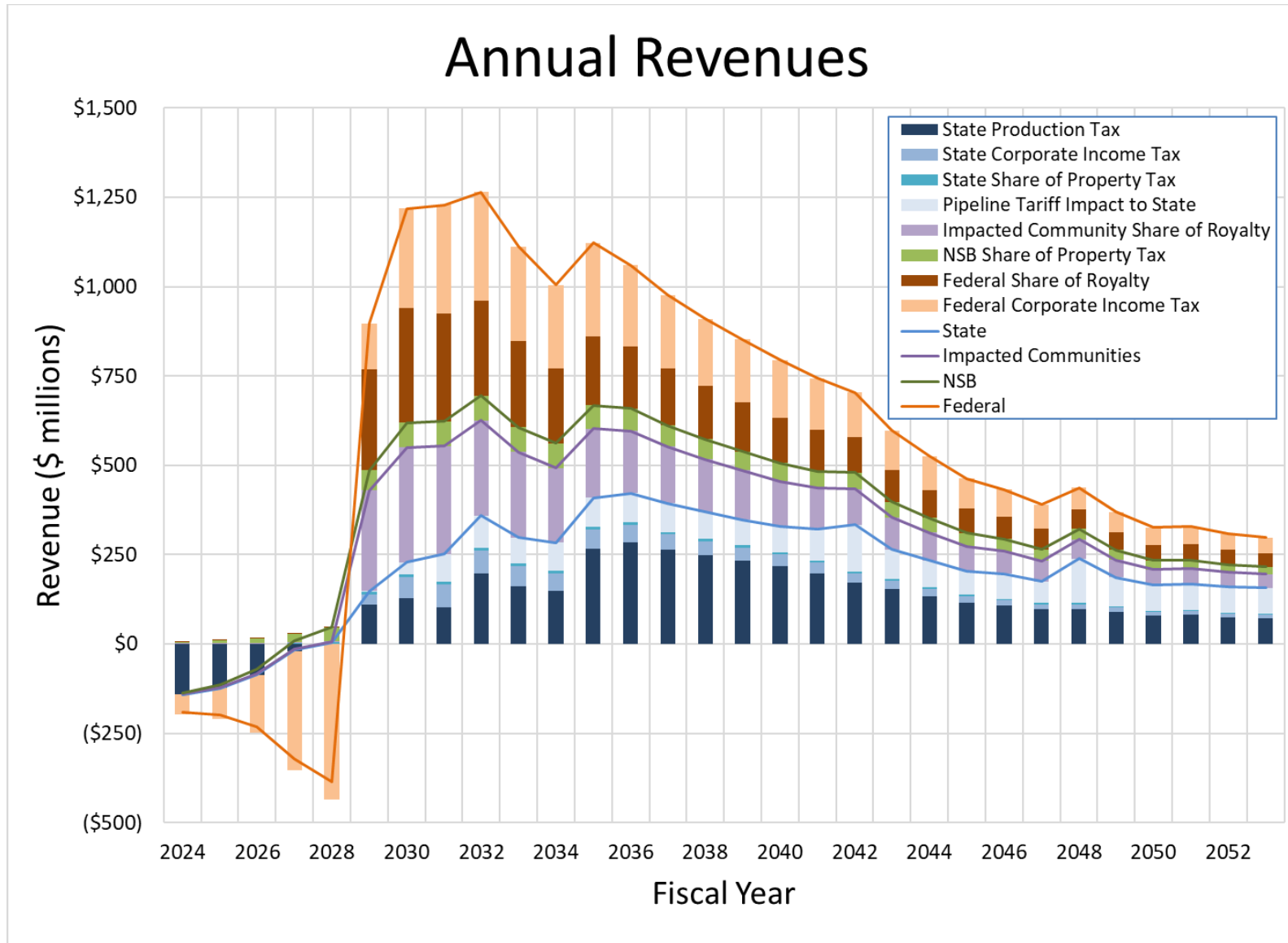


Revenue Categories

- State Revenue
 - Production Tax
 - State Corporate Income Tax
 - State Share of Property Tax
 - Pipeline benefit to State
- Impacted Community Revenue
 - Royalty share to Impacted Communities (50%)
- North Slope Borough (NSB) Revenue
 - NSB Share of Property Tax
- Federal Revenue
 - Federal Share of Royalty (50%)
 - Federal Corporate Income Tax
- Producer Revenue
 - Company Profit

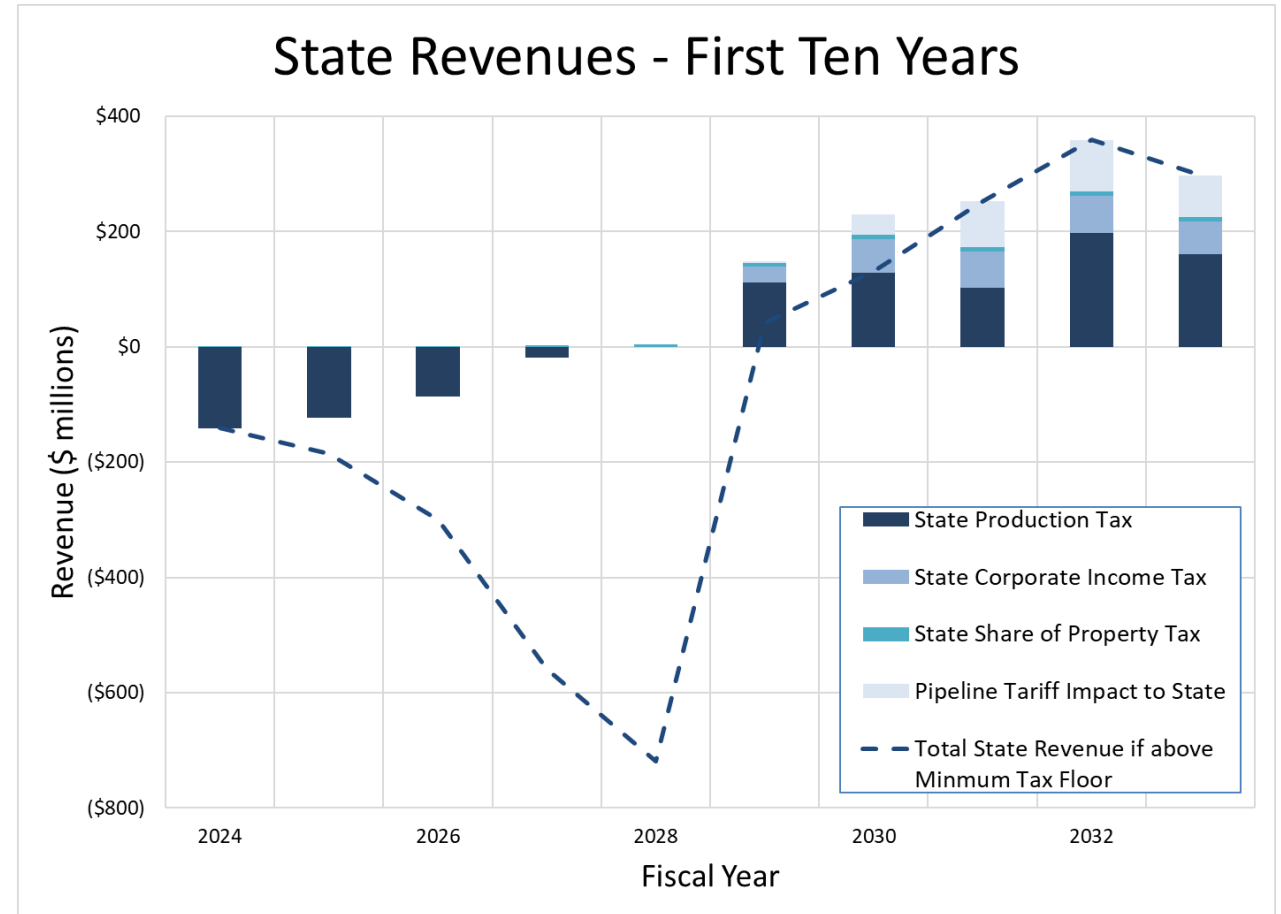


Annual Revenue by Category



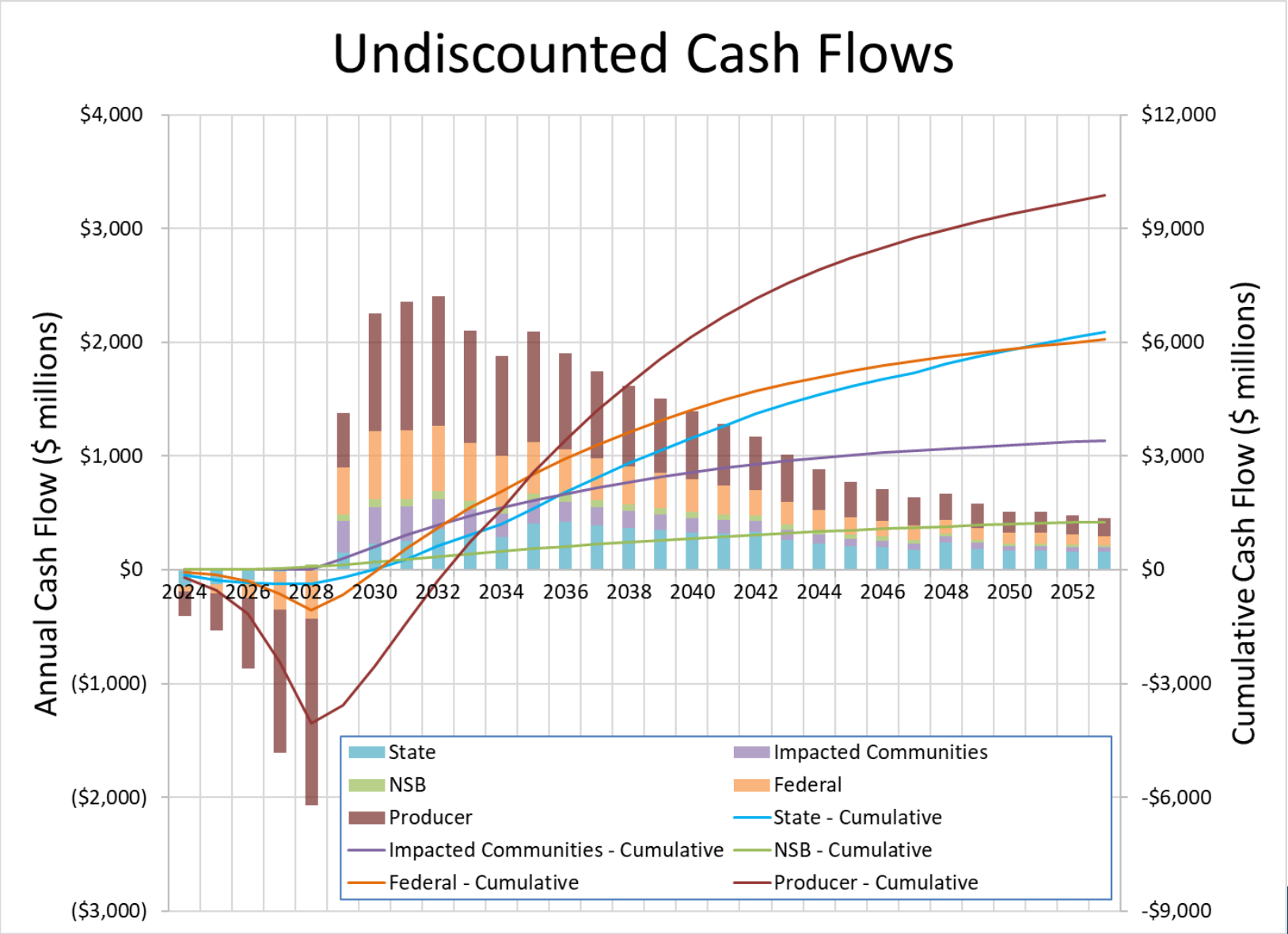
State Revenue – First Ten Years

- Producer benefit of Lease Expenditures is limited by the minimum tax floor
 - Average annual pre-production state revenue (\$72) million
 - (\$381) million if not limited by minimum tax floor (dashed line)
- Minimum tax floor reduces impact of pre-production Lease Expenditures on state revenue by more than 80% and reduction continues until 2030



(\$ Millions)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Production Tax	\$ (142)	\$ (124)	\$ (86)	\$ (19)	\$ -	\$ 111	\$ 128	\$ 102	\$ 198	\$ 161
State Corporate Income Tax	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 27	\$ 58	\$ 64	\$ 64	\$ 56
State Share of Property Tax	\$ 0	\$ 1	\$ 1	\$ 3	\$ 4	\$ 6	\$ 8	\$ 8	\$ 8	\$ 8
Pipeline Tariff Benefit to State	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3	\$ 35	\$ 79	\$ 89	\$ 72
Total State Revenue	\$ (141)	\$ (123)	\$ (85)	\$ (17)	\$ 4	\$ 149	\$ 229	\$ 252	\$ 359	\$ 297

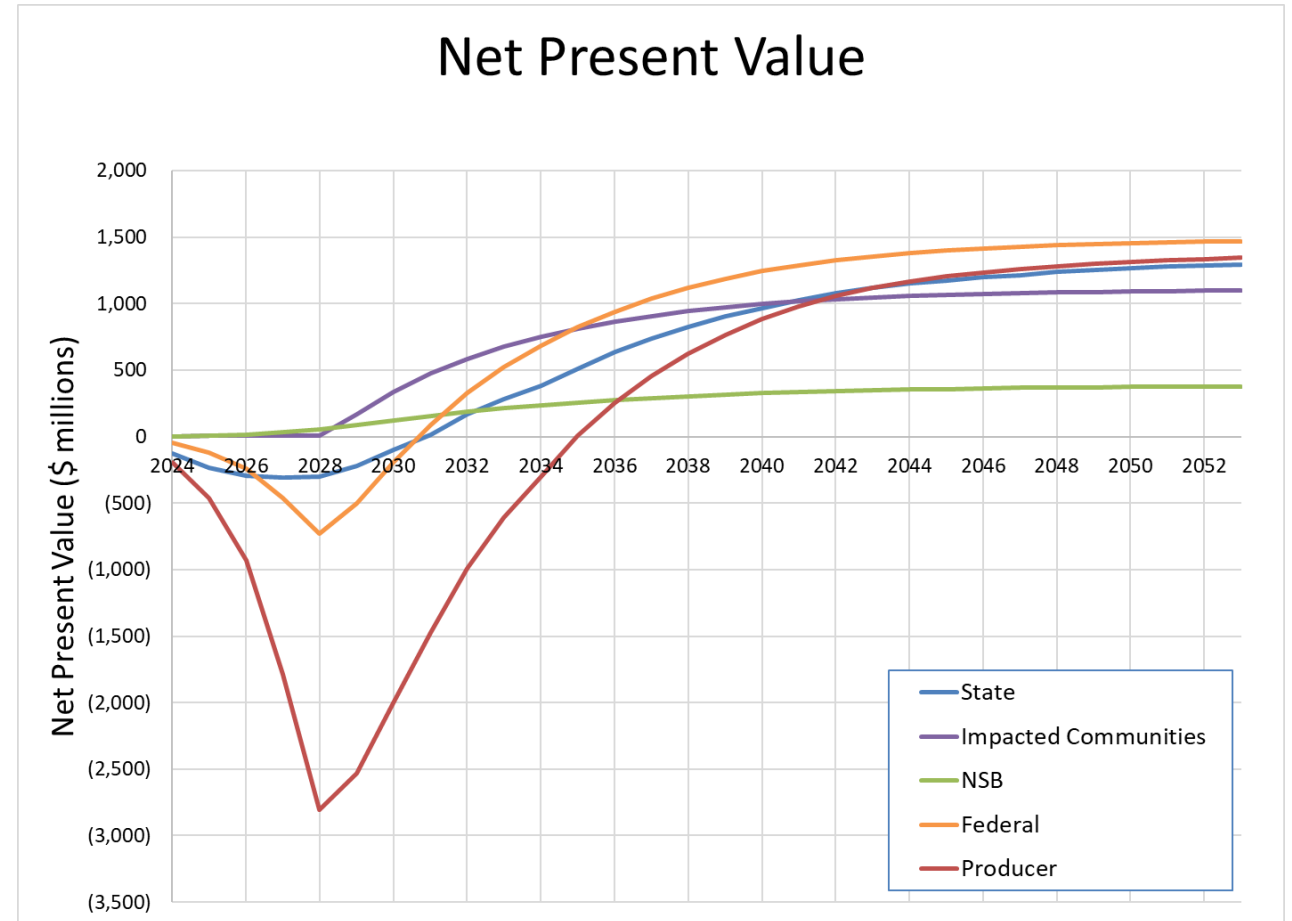
Annual and Cumulative Cash Flow



Net Present Value

- Net Present Value includes the time value of money
- State revenue 30-year net present value over \$1 billion, going NPV positive in FY 2031

Cumulative To Year	State	Impacted Communities	NSB	Federal	Producer
2033	\$ 283	\$ 680	\$ 213	\$ 526	\$ (609)
2043	\$ 1,119	\$ 1,048	\$ 349	\$ 1,357	\$ 1,119
2053	\$ 1,297	\$ 1,100	\$ 378	\$ 1,470	\$ 1,346
NPV Positive	FY 2031	FY 2024	FY 2024	FY 2031	FY 2035



Uncertainty

- Significant uncertainty in assumptions, elevated above typical levels:
 - Project risk and timing – environmental groups currently suing to prevent field development
 - Oil and gas industry costs – inflation, supply chain disruption, labor disruption, and increasing industry development activity
 - Oil price – higher volatility from Russian invasion of Ukraine and Covid-19 pandemic, greater impact on production tax from oil prices near to \$70 (threshold for 3 years or 7 years of Gross Value Reduction (GVR) eligibility)
 - Oil production rates and reserves – more uncertain prior to development
- Available benefit of lease expenditure deductions depends on oil prices, and on production rates and producer's lease expenditures elsewhere on the North Slope
 - Additional project uncertainty from producer's other fields



Conclusions

- Willow project development as modeled would lead to billions of dollars of revenue to:
 - State of Alaska
 - Impacted Communities
 - North Slope Borough
 - Federal Government
 - Producer
- Benefit to state of increased employment not modeled but also expected to be significant and material



THANK YOU

Dan Stickel
Chief Economist
Department of Revenue
daniel.stickel@alaska.gov
(907) 465-3279

Owen Stephens
Commercial Analyst
Department of Revenue
owen.stephens@alaska.gov
(907) 334-5965



dor.alaska.gov



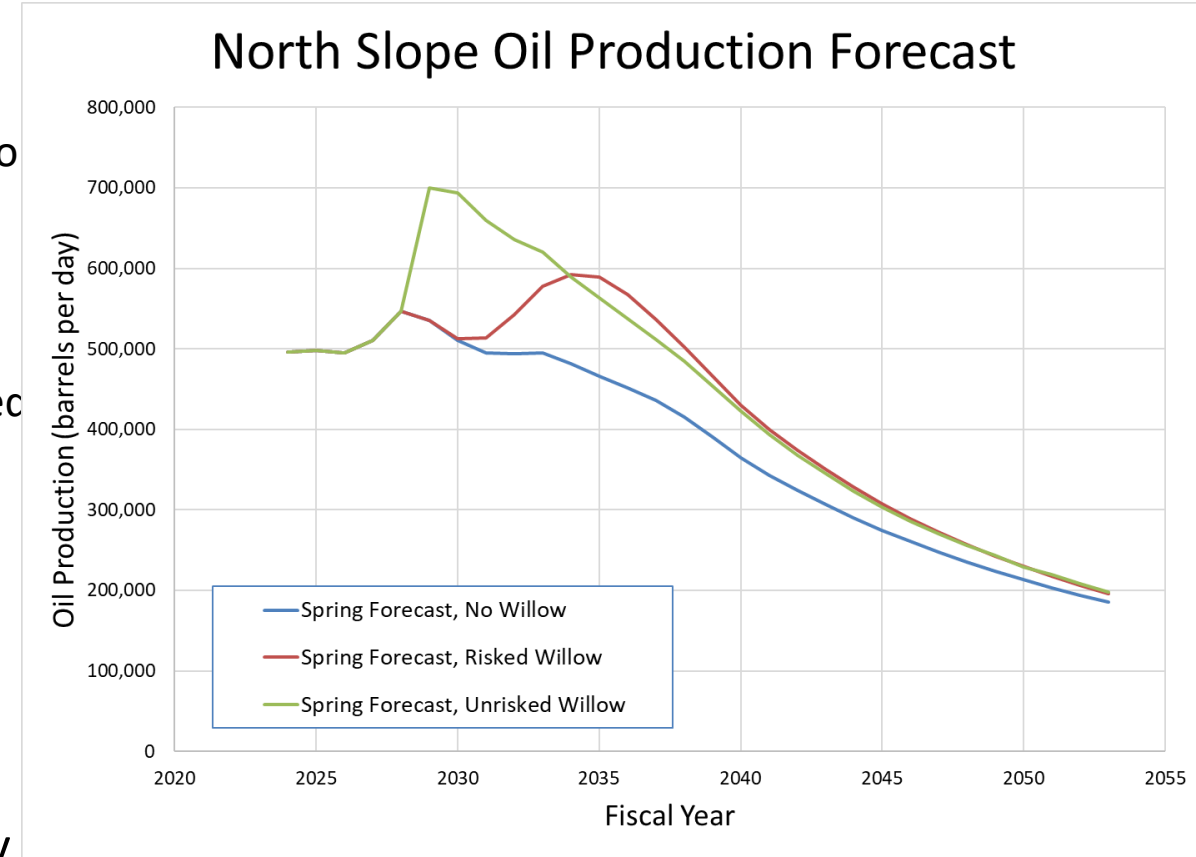
Appendix: Sensitivity Analyses

Department of Revenue

March 23, 2023

Spring Forecast Comparison

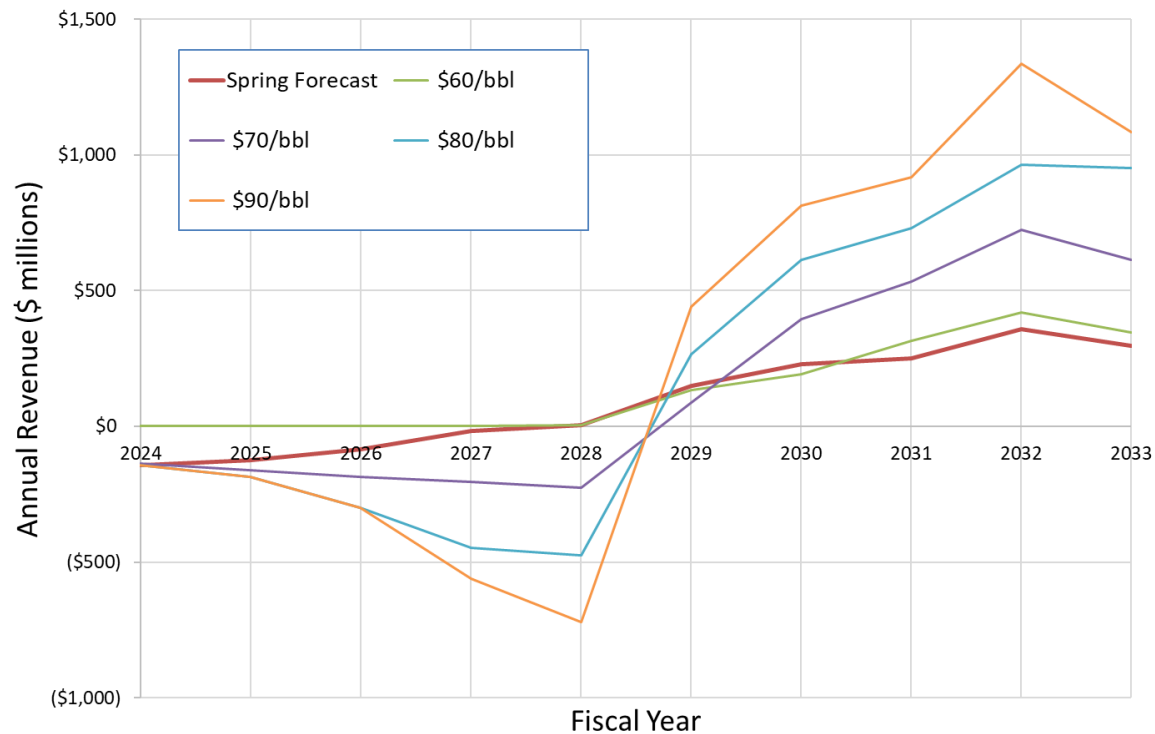
- Spring Production Forecast with Three Cases:
 1. Willow (Risky) – current Spring 2023 forecast
 - Risks chance of occurrence, reducing forecast production
 - Risks project timing, delaying forecast production
 - Peak production lower, and outside 10-year forecast window
 2. Willow (Unrisked)
 - Single deterministic case, assuming project as presented in this analysis
 - Peak production of 183,000 barrels per day in FY 2030
 3. No Willow
- Base Production Data from State Forecast
 - 2023 to 2032 Official forecast, provided by DNR
 - 2033 to 2042 Continued for an additional 10 years by DNR
 - 2043 to 2053 Long-term forecast – extrapolation by DOR, for illustrative purposes only



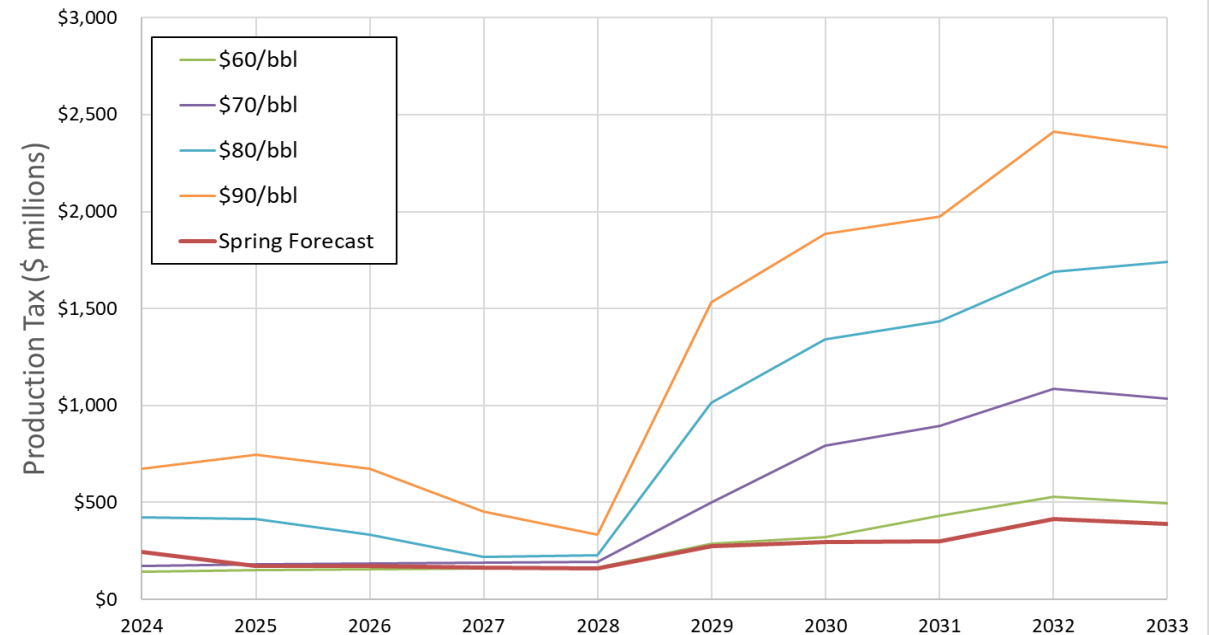
Oil Price Sensitivities

- Compared DOR Spring Forecast oil price to range
 - \$60 / \$70 / \$80 / \$90 in FY 2024, increasing with inflation (2.5%)
- Minimum tax floor materially impacts fiscal analysis during construction period

State Revenues Willow only - First Ten Years

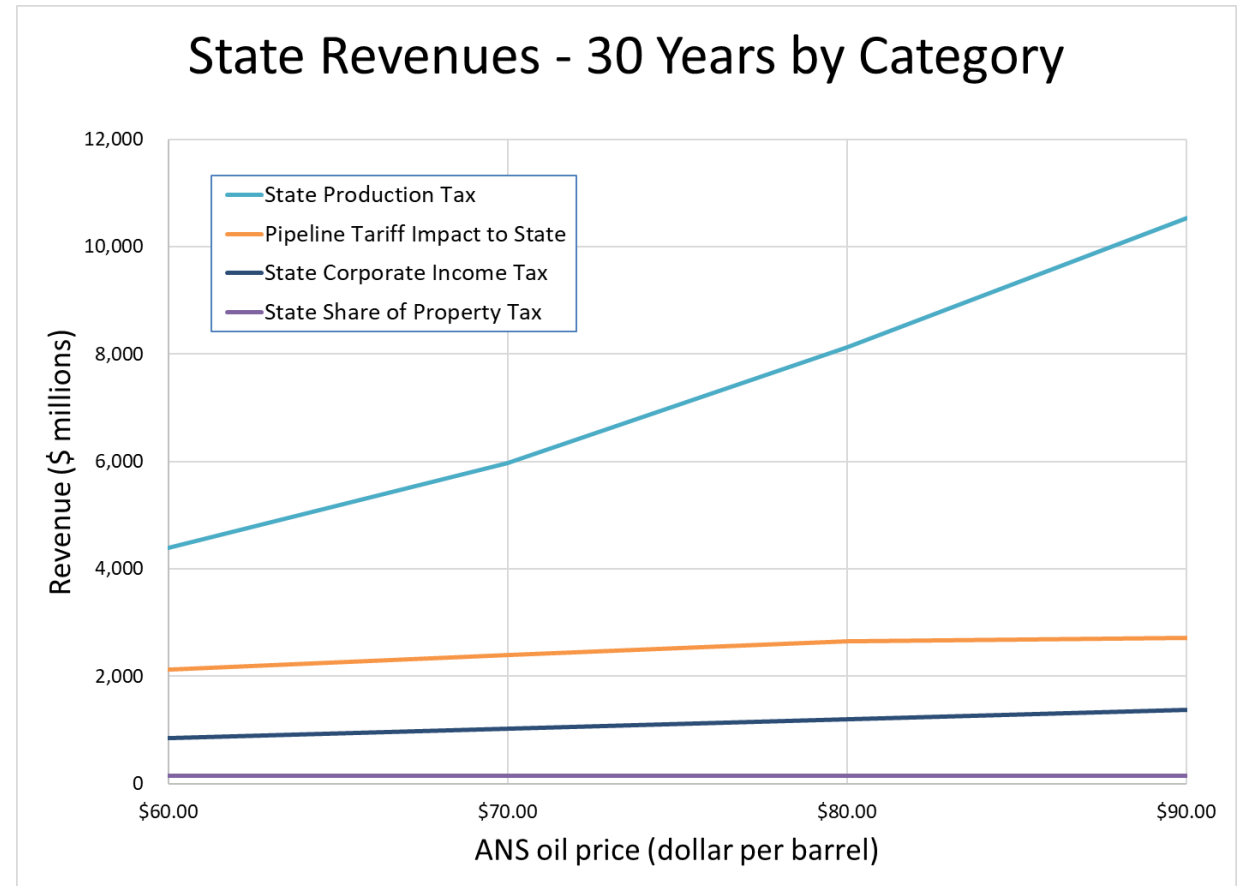


Producer North Slope Production Tax - First Ten Years



Oil Price Sensitivities

- Production Tax and State Corporate Income Tax vary strongly with oil price
- Property tax and pipeline tariff benefit show less variation
- Total undiscounted state revenue and Net Present Value to State remain material at all modeled oil prices



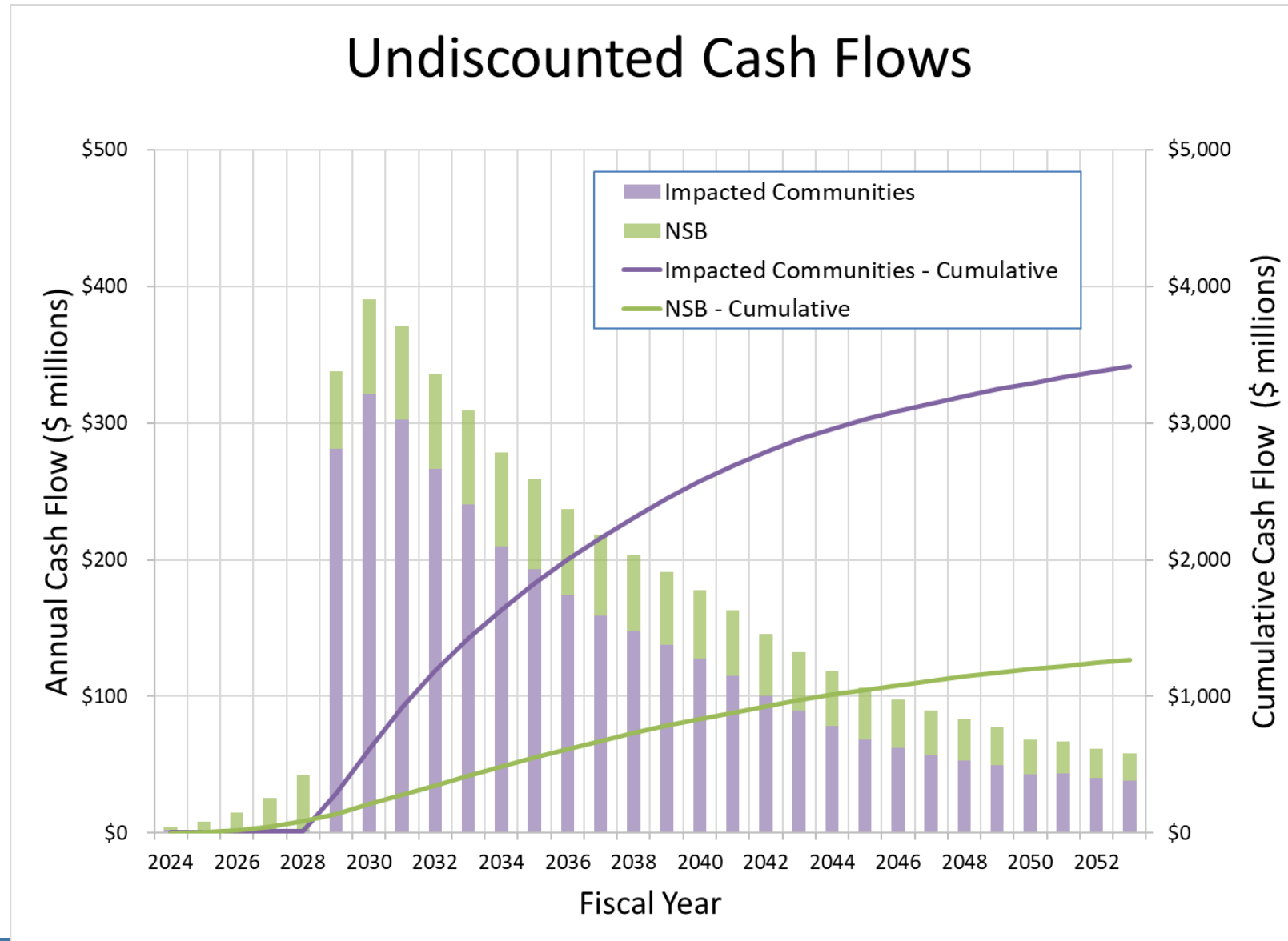
Oil Price (dollar per barrel)	\$60.00	\$70.00	\$80.00	\$90.00
NPV10 (\$ millions)	\$ 1,811	\$ 1,957	\$ 2,502	\$ 3,183

Appendix: Local Cash Flows

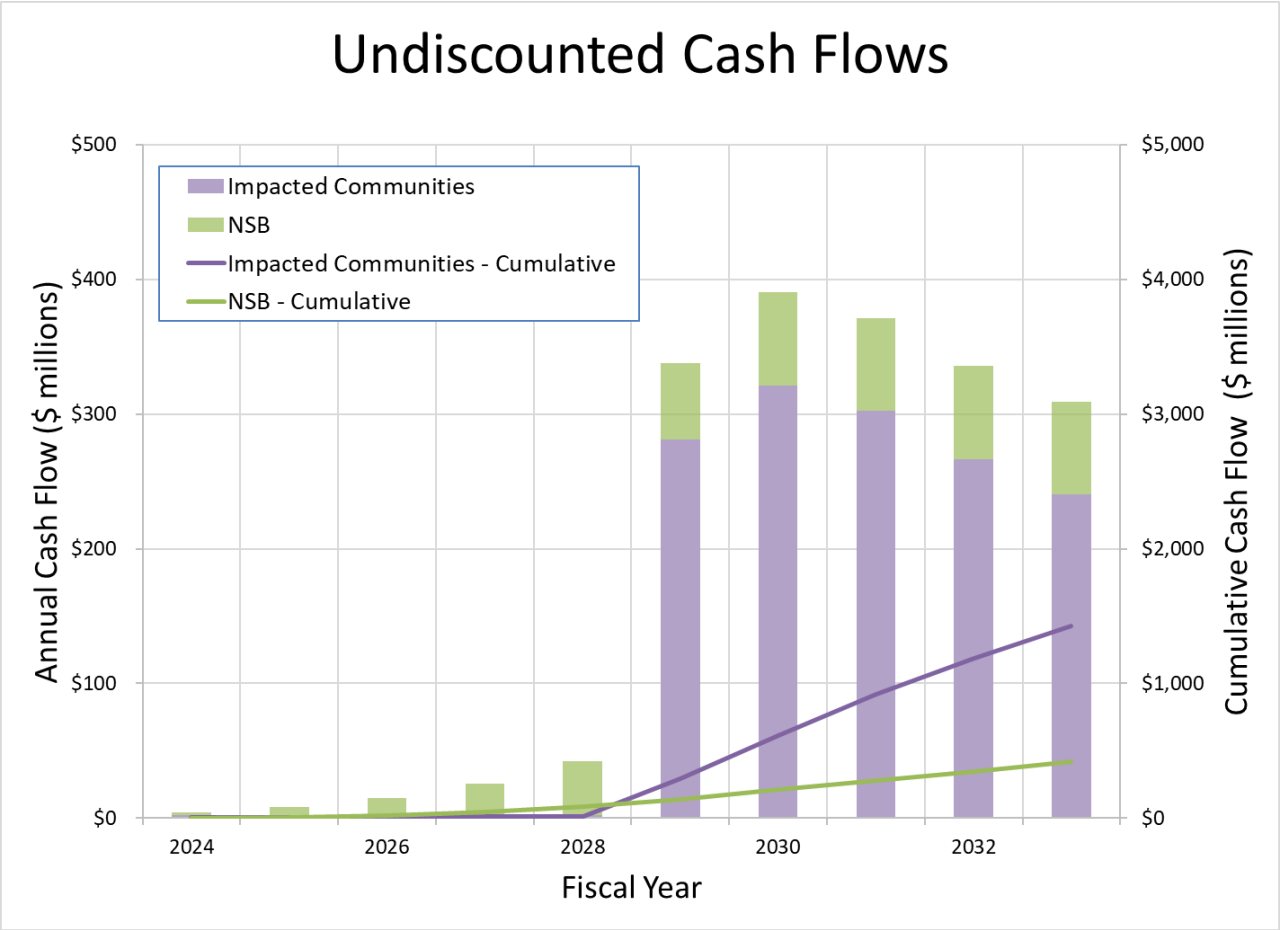
Department of Revenue

March 23, 2023

Annual and Cumulative Cash Flow – Local Only



Local Annual and Cumulative Cash Flow – First Ten Years



(\$ Millions)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Impacted Communities	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 2.5	\$ 281.0	\$ 321.4	\$ 302.2	\$ 266.4	\$ 240.2
North Slope Borough	\$ 1.8	\$ 6.0	\$ 12.3	\$ 23.4	\$ 39.9	\$ 57.1	\$ 69.3	\$ 69.2	\$ 69.6	\$ 69.0