

Cost Model: Assumptions & Methods



October 6, 2016

County Executive's Land Conservation Advisory Group

Cost Model: Elements

LAND COSTS	Land Costs (<i>target parcels, ~66,000 ac</i>)
	Regional Trail Costs (<i>land costs only</i>)
	SUBTOTAL LAND COSTS
OTHER COSTS	O&M
	Transaction-related costs & staffing
	SUBTOTAL OTHER COSTS
	TOTAL COSTS
	AVAILABLE FUNDING
	FUNDING GAP

Key Points

Three primary variables discussed today which affect costs and funding needs:

- ★ Amount of land acquired in fee vs. easement
- ★ Level of funding for operations & maintenance
- ★ Amount of land that remains in Current Use Taxation programs (rather than acquired)

Additionally, total amount of land protected also affects the costs & funding needs

Assumptions: Lands

- Best available information
 - Adopted plans, best available science, stakeholder input, GIS mapping, staff expertise, and other methods
- Addition of city priority lands
- May be minor addition of lands in the future
 - Due to emerging policy, plans, science, system needs
 - If other public agencies identify their lands for surplus/transfer
 - Farm unit acquisitions add to agriculture targets

Calculating Land Costs

Key Elements:

- Fee or easement
- Selecting property values to use
 - Assessed values and/or average cost per acre
- Selecting cost factors/multipliers

Fee or Easement Acquisition

Sample parcel



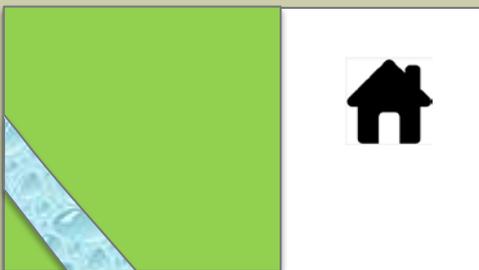
A few examples are provided below; there are many other approaches as well

Fee (more expensive)

Entire Parcel



Partial Parcel



Easement (less expensive)

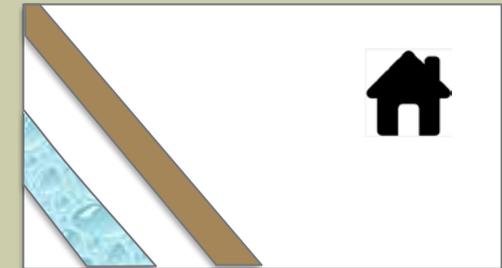
Entire Parcel



Partial Parcel



Trail Easement



Clustered Development



Selecting Property Values to Use

- Costs to acquire property were generally based on a percentage of Assessed Values (AVs):
 - Land AV
 - Improvements AV (for lands acquired in fee)
- Land Assessed Values not always available
 - Designated Forest Land Current Use Taxation properties

Background: Current Use Taxation (CUT)

- Authorized by Washington's Open Space Taxation Act (1970)
- Landowner incentives to voluntarily preserve open space, farmland or forestland
- Reduction in property taxes: property is assessed at "current use" rather than "highest and best use"
- Withdrawal requires repayment of seven years of avoided taxes
- Exit rate ~3% in King County since the early 1980s

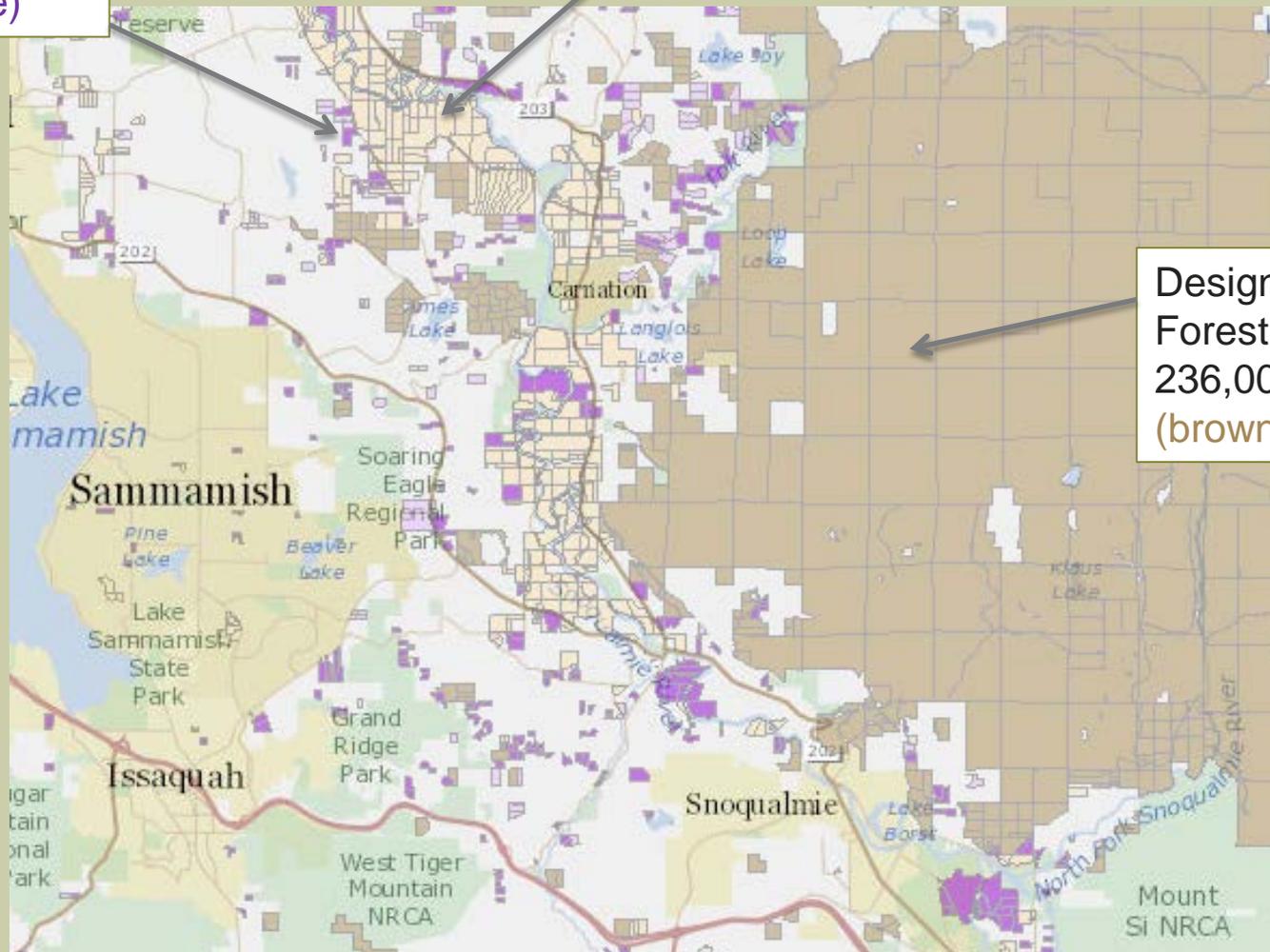


CUT Enrollment: 277,500 acres in King County

Public Benefit Rating System & Timber Land: 14,200 acres (pink/purple)

Farm & Agricultural Land: 27,300 acres (beige)

Designated Forest Land: 236,000 acres (brown)



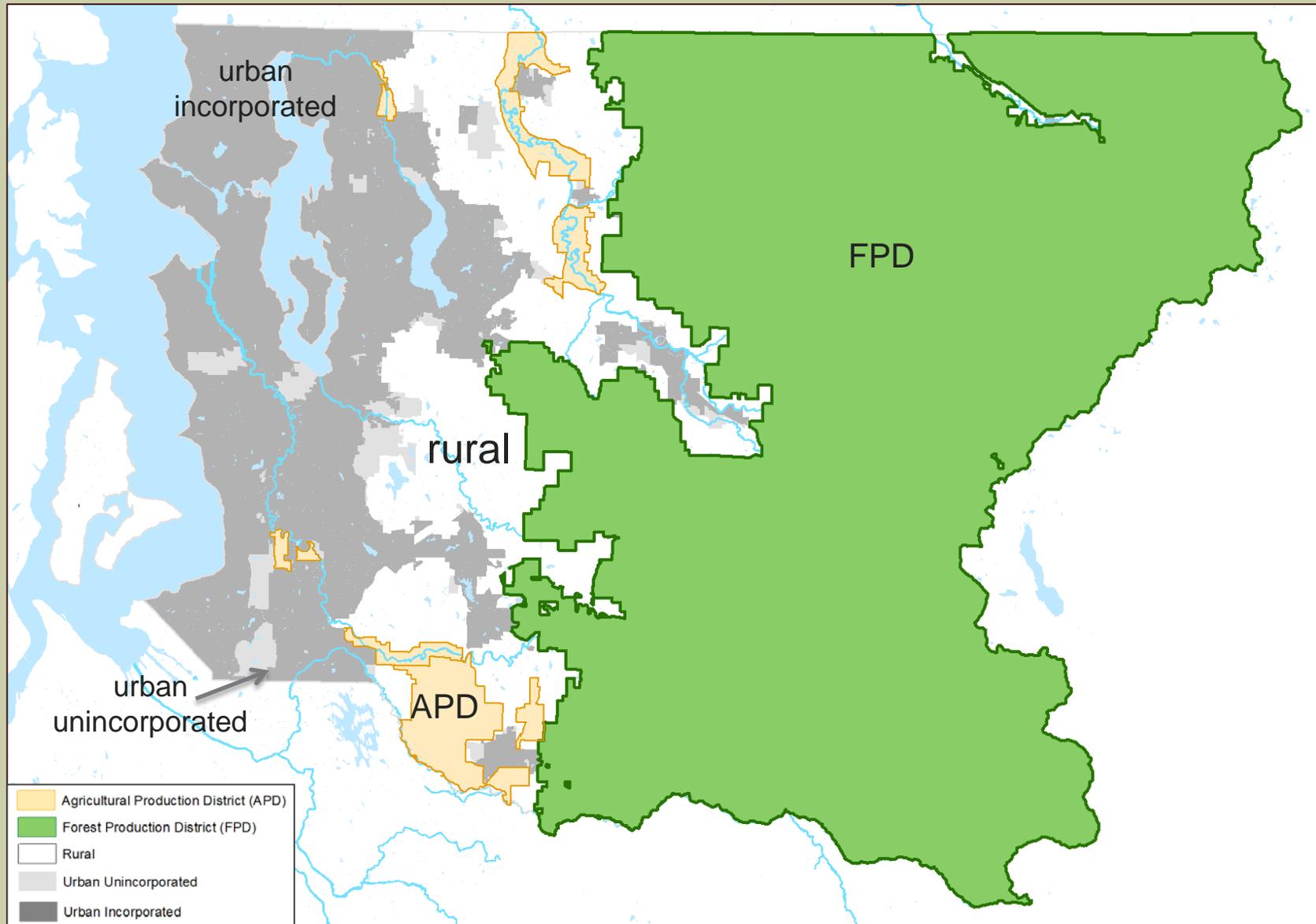
Cost Calculations: Forest Land CUT

- PBRs, Timber Land, Farm & Ag CUT Programs:
 - “Assessed/Appraised Value”
 - “Taxable Value” (reflects CUT discount)
- “Designated Forest Land” CUT Program:
 - Assessor is not required to maintain an accurate “Assessed/ Appraised” land value
- Use average cost per acre for target parcels, specific to that part of the county
 - 26,400 acres of our 66,000 priority acres are in Designated Forest Land CUT



Location in King County

- Applies to “Designated Forest Land” calculations
- Applies to easement calculations



Method: Calculating Land Costs

		EASEMENT PURCHASE PREFERRED	FEE PURCHASE PREFERRED
AREA OF COUNTY	APD	54% x Land AV	115% x (Land AV + Improvements AV))
	FPD	\$5,000/acre	
	Rural	75% x Land AV	
	Urban Unincorporated		
	Urban Incorporated		

- Designated Forest Land CUT parcels lack Land AV; model instead uses average cost per acre within that area of county
- FPD easements: cost per acre calculated by analysis of estimated values of FPD land in relation to distance from existing infrastructure/development
- Timber value factor not included

Assumptions: Cost Model

- We will protect 100% of the targeted parcels
- Steady rate of acquisition each year, over 30 years
- Figures presented in 2016 dollars
- If adding inflation, the following factors would apply
(per Office of Economic and Financial Analysis):
 - 5% annual increase in assessed values
 - 3.5% annual increase in staffing costs (incl. overhead), materials, services
 - Changes in revenues over time to be addressed in the next presentation

Cost Model: Elements

LAND COSTS	Land Costs <i>(target parcels, ~66,000 ac)</i>
	Regional Trail Costs <i>(land costs only)</i>
	SUBTOTAL LAND COSTS
OTHER COSTS	Operations & Maintenance (O&M)
	Transaction-Related Costs & Staffing
	SUBTOTAL OTHER COSTS
	TOTAL COSTS
	AVAILABLE FUNDING
	FUNDING GAP

Cost Model: Variation Factors

LAND COSTS	Land Costs	★
	Regional Trail Costs	
	SUBTOTAL LAND COSTS	
OTHER COSTS	O&M	★
	Transaction-related costs & staffing	★
	SUBTOTAL OTHER COSTS	
	TOTAL COSTS	
	AVAILABLE FUNDING	
	FUNDING GAP	★

1. Percentage of acreage in fee vs. easement

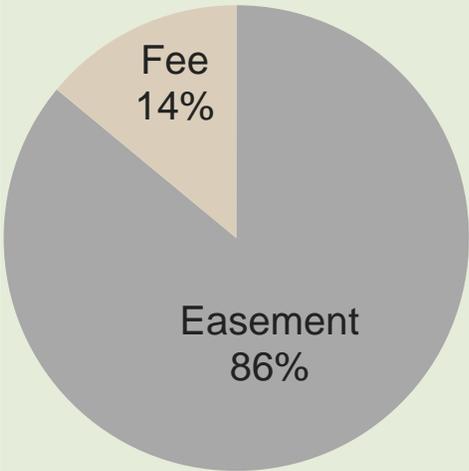
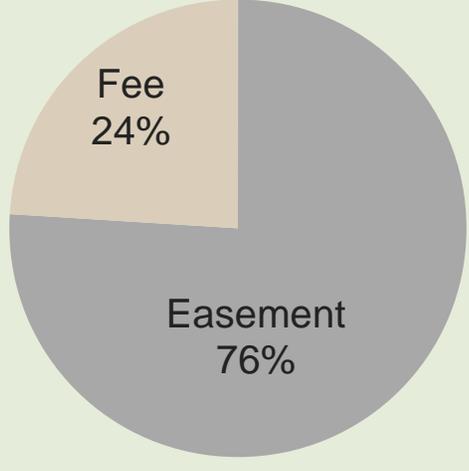
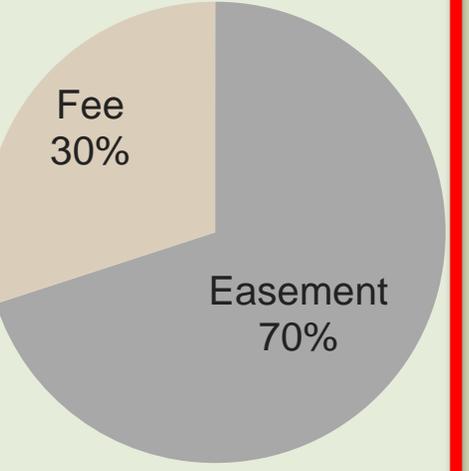
2. O&M funding levels

3. Acreage remaining in Current Use Taxation

Cost Model Variation Factor:

1. Percentage of acreage in fee vs. easement

LOWER COST RANGE <-----> HIGHER COST RANGE

		LOWER COST RANGE	MIDDLE COST RANGE	HIGHER COST RANGE
LAND COSTS	Land Costs <i>(target parcels)</i>	 <p>Fee 14% Easement 86%</p>	 <p>Fee 24% Easement 76%</p>	 <p>Fee 30% Easement 70%</p>
	Regional Trail Costs	\$1,288,000,000	\$1,394,000,000	\$1,457,000,000
	SUBTOTAL	\$1,363,000,000	\$1,469,000,000	\$1,532,000,000
	OTHER COSTS	<i>DISCUSSED ON LATER SLIDES</i>		
O&M				
Transaction-related costs & staffing				
SUBTOTAL				
TOTAL COSTS				
AVAILABLE FUNDING				
FUNDING GAP				

Cost Model Variation Factor

2. O&M Funding Levels

Work plan estimate included basic maintenance funding for the new lands acquired

- Inspections, site maintenance, gates/fences, demolitions, control of regulated weeds

King County Parks would own and manage majority of fee lands, therefore Parks O&M costs are key focus of the work

Assumptions

Fee/Easement and CUT Factors:

- 76% easement – 24% fee
- 50% remain in CUT (20,150 ac)
- Acquire 45,800 acres

Inventory by Custodial Agency:

- Agriculture: 6,630 acres – all easement
- Rivers: 560 acres – fee
- Parks: 11,640 acres – fee & 27,000 acres – easement

Scenarios present the total maintenance costs summed over 30 years, in 2016 dollars, assuming steady annual addition of acreage

Cost per acre is calculated based on Year 30 data

Scenarios based on best current estimate of O&M needs

How Does King County Parks Maintain Its Lands?

Staffing

- **Regular Site Maintenance**
(Primary Field Staff - permanent & seasonal)
- **Noxious & invasive weed management**
(Vegetation Management Crew)
- **Heavy equipment – drainage, grading, infrastructure, emergency response**
(Grounds Crew)
- **Manage crews, respond to concerns**
(Crew Leads & Regional Supervisors)
- **Contracts, HR, property agents/project manager**

Direct Costs

- **Vehicles**
(for field staff)
- **Property Taxes/Fees**
(SWM, noxious weed fees; road maintenance dues)
- **Infrastructure & Supplies**
(signage, gravel, gates, concrete, lumber)
- **Maintenance Facilities**
- **Services**
(Sheriff's office safety patrols, training, phones, etc.)

Staffing a Growing System

Current Parks Levy provides an “accelerator” to fund roughly two additional field staff per ~800 acres acquired

Accelerator helps fund regular site maintenance proportionate to acreage growth

Our existing resources are spread more thinly to address these responsibilities on increased acreage

Staffing

- **Regular Site Maintenance**
- Noxious & invasive weed management
- Heavy equipment – drainage, grading, infrastructure, emergency response
- Manage crews, response to concerns
- Contracts, HR, property agents/project manager

Direct Costs

- Vehicles
- Property Taxes/Fees
- Infrastructure & Supplies
- Maintenance Facilities
- Services

O & M Funding Scenarios

Four O & M funding scenarios were identified here

Scenarios vary how much a new funding source would contribute to staffing levels and direct costs

Elements that are not funded under a new funding source would need an alternative source of funding (e.g. incorporate into Parks Levy)

Scorecard

Would funding achieve this outcome?

~ Partially

✓ Yes

Rating	How are these new lands maintained under this funding scenario?	Is this function staffed or funded (& who does the work?)
✓	Parks are clean, safe, and welcoming	<p>Fully - or partially - funded (Primary Field Staff)</p> <p>OR: Existing funds spread more thinly to perform this work</p>
~	Noxious weeds are controlled	
~	Signage and infrastructure support use	
etc	Responsiveness to concerns of the public and stakeholders	
	Property management (encroachments, easements, boundary issues)	
	Management oversight and administrative support	
	Enforcement to protect health & safety	
	Adequate training, vehicles, facilities, equipment	

Scenario 1

Mimic Current Parks Levy Accelerator

Total 30-Year Cost: \$73,577,000

Cost per Acre: \$408

Rating	How are these new lands maintained under this funding scenario?	Is this function staffed or funded (& who does the work?)
~	Parks are clean, safe, and welcoming	Partial staffing (Primary Field Staff <i>at a low staffing rate</i>) Existing funds spread more thinly to perform this work
~	Noxious weeds are controlled	
~	Signage and infrastructure support use	
~	Responsiveness to concerns of the public and stakeholders	
~	Property management (encroachments, easements, boundary issues)	
~	Management oversight and administrative support	
~	Enforcement to protect health & safety	
~	Adequate training, vehicles, facilities, equipment	

Scenario 2

Mimic Accelerator + Direct Costs

Total 30-Year Cost: \$104,839,000

Cost per Acre: \$554

Rating	How are these new lands maintained under this funding scenario?	Is this function staffed or funded (& who does the work?)
~	Parks are clean, safe, and welcoming	Partial staffing (Primary Field Staff <i>at a low staffing rate</i>) Existing funds spread more thinly to perform this work
~	Noxious weeds are controlled	
~	Signage and infrastructure support use	
~	Responsiveness to concerns of the public and stakeholders	
~	Property management (encroachments, easements, boundary issues)	
~	Management oversight and administrative support	
✓	Enforcement to protect health & safety	Full funding (Direct Costs)
✓	Adequate training, vehicles, facilities, equipment	Full funding (Direct Costs)

Scenario 3: Mimic Accelerator + Direct Costs + Full Field Staff

Total 30-Year Cost: \$158,219,000

Cost per Acre: \$823

Rating	How are these new lands maintained under this funding scenario?	Is this function staffed or funded (& who does the work?)
✓	Parks are clean, safe, and welcoming	Full staffing (Primary Field Staff <i>50% more than Scenarios 1 & 2</i>)
✓	Noxious weeds are controlled	Full staffing (Veg. Mgmt Crew)
✓	Signage and infrastructure support use	Full staffing (Grounds Crew)
~	Responsiveness to concerns of the public and stakeholders	Partial staffing (Crew Leads)
~	Property management (encroachments, easements, boundary issues)	Existing funds spread more thinly to perform this work
~	Management oversight and administrative support	
✓	Enforcement to protect health & safety	Full funding (Direct Costs)
✓	Adequate training, vehicles, facilities, equipment	Full funding (Direct Costs)

Scenario 4: Mimic Accelerator + Direct Costs + Full Field Staff + Supervision/Support

Total 30-Year Cost: \$188,354,000

Cost per Acre: \$990

Rating	How are these new lands maintained under this funding scenario?	Is this function staffed or funded (& who does the work?)
✓	Parks are clean, safe, and welcoming	Full staffing (Primary Field Staff <i>50% more than Scenarios 1 & 2</i>)
✓	Noxious weeds are controlled	Full staffing (Veg. Mgmt Crew)
✓	Signage and infrastructure support use	Full staffing (Grounds Crew)
✓	Responsiveness to concerns of the public and stakeholders	Full staffing (Crew Leads & Regional Supervision)
✓	Property management (encroachments, easements, boundary issues)	Full staffing (Property Agent/Project Manager)
✓	Management oversight and administrative support	Full staffing (Regional Supervisors, HR, Admin)
✓	Enforcement to protect health & safety	Full funding (Direct Costs)
✓	Adequate training, vehicles, facilities, equipment	Full funding (Direct Costs)

Comparison of the Four Funding Levels

CATEGORY	SCENARIO 1. MIMIC ACCELERATOR – STAFF ONLY	SCENARIO 2. MIMIC ACCELERATOR + DIRECT COSTS	SCENARIO 3. MIMIC ACCELERATOR + DIRECT COSTS + FULL FIELD STAFF	SCENARIO 4. MIMIC ACCEL. + DIRECT COSTS + FULL FIELD STAFF + SUPERVISION/SUPPORT
Parks O&M	\$73,577,000	\$104,839,000	\$158,219,000	\$188,354,000
<i>Cost per acre</i>	<i>\$408</i>	<i>\$554</i>	<i>\$823</i>	<i>\$990</i>
Ag O&M <i>(\$10/acre easement monitoring)</i>	\$1,028,000	\$1,028,000	\$1,028,000	\$1,028,000
Rivers O&M <i>(\$1,500/acre)</i>	\$13,020,000	\$13,020,000	\$13,020,000	\$13,020,000
Demolitions	\$52,780,000	\$52,780,000	\$52,780,000	\$52,780,000
Subtotal O&M	\$140,405,000	\$171,667,000	\$225,047,000	\$255,182,000

O&M Calculations Assume:

- 76% easement – 24% fee
- 50% remain in CUT (20, 150 ac)
- Acquire 45,800 acres

By Custodial Agency:

- Ag esmt @ \$10/acre (6,630 acres)
- Rivers fee @ \$1,500/acre (560 ac)
- Parks acquires
 - 11,640 ac fee (cost/acre varies)
 - 27,000 ac esmt (@\$10/ac)

Transaction-Related Costs & Staffing

Transaction-Related Costs & Staffing

- Costs to acquire the land (appraisal, title, real estate agents or contractors, due diligence, etc)
- Funding for staff to lead acquisitions and associated work, and for management of a new funding program
- Model gradually adds these staff over 15 years

O&M and Transaction Costs are 18-21% of total costs

Cost Model Variation Factor:

2. O & M Funding Levels

LOWER COST RANGE ←-----→ HIGHER COST RANGE

LAND COSTS	Land Costs 	86% esmt – 14% fee \$1,288,000,000	76% esmt – 24% fee \$1,394,000,000	70% esmt – 30% fee \$1,457,000,000
	Regional Trails	\$75,000,000	\$75,000,000	\$75,000,000
	SUBTOTAL	\$1,363,000,000	\$1,469,000,000	\$1,532,000,000
OTHER COSTS	O&M 	<i>Scenario 1</i> \$140,405,000	<i>Scenario 3</i> \$225,047,000	<i>Scenario 4</i> \$255,182,000
	Transaction-related costs & staffing	\$102,644,000	\$102,644,000	\$102,644,000
	SUBTOTAL	\$243,049,000	\$327,691,000	\$357,825,000
TOTAL COSTS		\$1,606,049,000	\$1,796,691,000	\$1,889,825,000
AVAILABLE FUNDING		\$1,266,500,000	\$1,266,500,000	\$1,266,500,000
<i>FUNDING GAP</i>		<i>\$339,549,000</i>	<i>\$530,191,000</i>	<i>\$623,325,000</i>

O&M costs calculated based on: 76% easement – 24% fee; 50% remain in current use taxation to allow for comparison between O&M funding levels (they do not match the “land cost” scenarios in the first row)

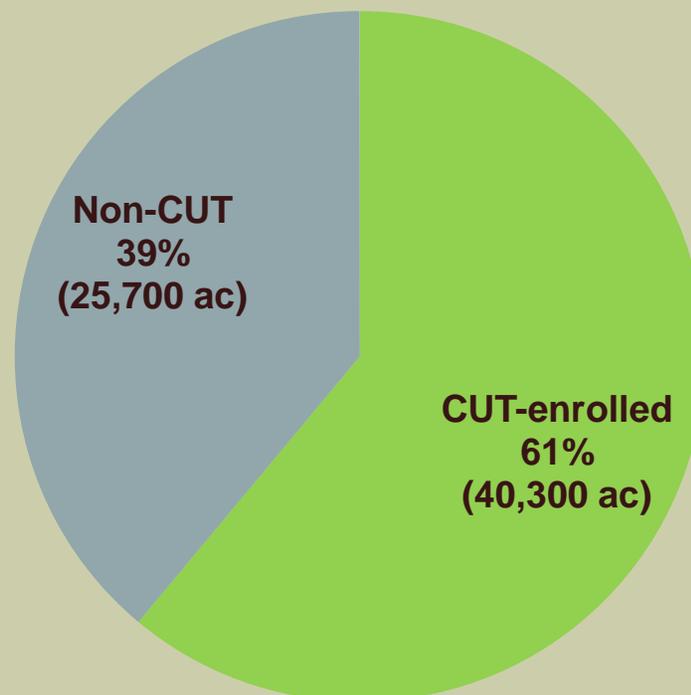
Cost Model Variation Factor

3. Current Use Taxation Enrollment

66,000 acres total identified for protection

- 40,300 of these acres (61%) are enrolled in CUT
- These represent \$522 million in land costs

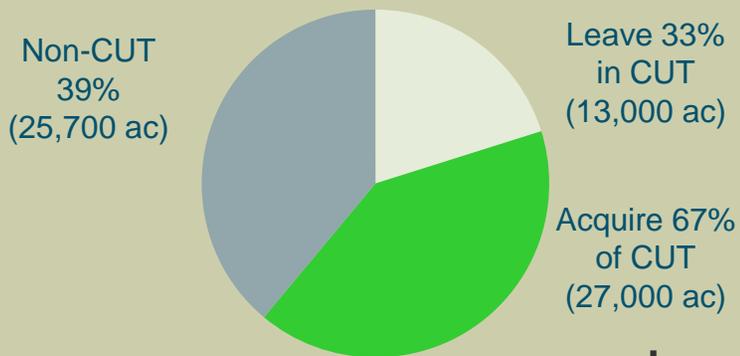
CUT enrollment of the 66,000 acres



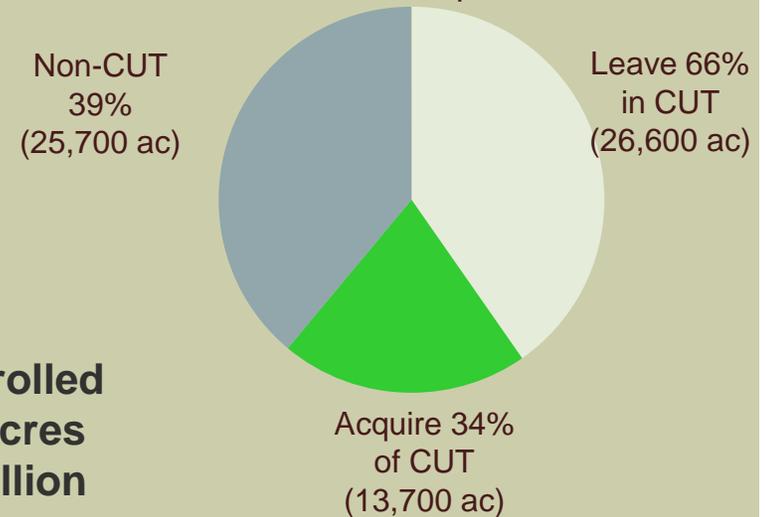
Extent of CUT Parcels Acquired

Revenue model presumes that a percentage of CUT-enrolled parcels would be retained in CUT, not acquired

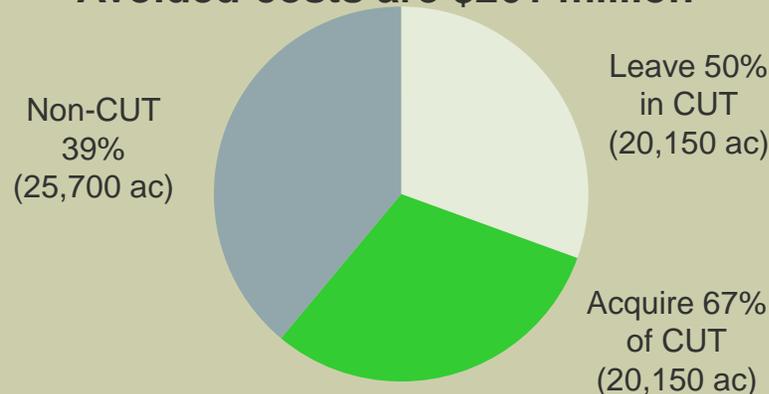
Leave 33% CUT parcels enrolled
Acquire 52,700 of 66,000 acres
Avoided costs are \$172 million
(33% was used in original work plan)



Leave 66% CUT parcels enrolled
Acquire 39,400 of 66,000 acres
Avoided costs are \$345 million



Leave 50% CUT parcels enrolled
Acquire 45,800 of 66,000 acres
Avoided costs are \$261 million



Retaining vs. Acquiring CUT Parcels

Retaining a percentage of lands in CUT has the following impacts in the model:

- Cost side:
 - Reduces O&M costs
 - Reduces transaction costs
 - *The actual amount saved by not purchasing properties is taken off on revenue side, not cost side*
- Revenue side:
 - Includes “avoided cost”: the cost of not acquiring these lands
 - E.g. Leaving 50% of CUT-enrolled lands in CUT rather than acquire is an avoided cost of \$261 million (50% of \$522 million)
- Funding gap decreases as a result

Cost Model Variation Factor:

3. Current Use Taxation Enrollment

LOWER COST RANGE <-----> HIGHER COST RANGE

		Scenario 1	Scenario 3	Scenario 4
LAND COSTS	Land Costs 	86% esmt – 14% fee \$1,288,000,000	76% esmt – 24% fee \$1,394,000,000	70% esmt – 30% fee \$1,457,000,000
	Regional Trails	\$75,000,000	\$75,000,000	\$75,000,000
	SUBTOTAL	\$1,363,000,000	\$1,469,000,000	\$1,532,000,000
OTHER COSTS	O&M 	Scenario 1 \$140,405,000	Scenario 3 \$225,047,000	Scenario 4 \$255,182,000
	Transaction-related	\$102,644,000	\$102,644,000	\$102,644,000
		66% remain in CUT (rather than 50%) O&M: -\$11,621,000 Trans.: -\$1,000,000	50% remain in CUT	50% remain in CUT
	SUBTOTAL	\$230,427,000 \$243,049,000	\$327,691,000	\$357,826,000
TOTAL COSTS	\$1,593,427,000 \$1,606,049,000	\$1,796,691,000	\$1,889,826,000	
AVAILABLE FUNDING	Increase of \$83M, to \$345 M Avoided Costs \$1,350,120,000 \$1,266,500,000	\$261 M Avoided Costs \$1,266,500,000	\$261 M Avoided Costs \$1,266,500,000	
FUNDING GAP 	\$243,307,000 \$339,549,000	\$530,191,000	\$623,326,000	

Overall Cost Model

LOWER COST RANGE <-----> HIGHER COST RANGE

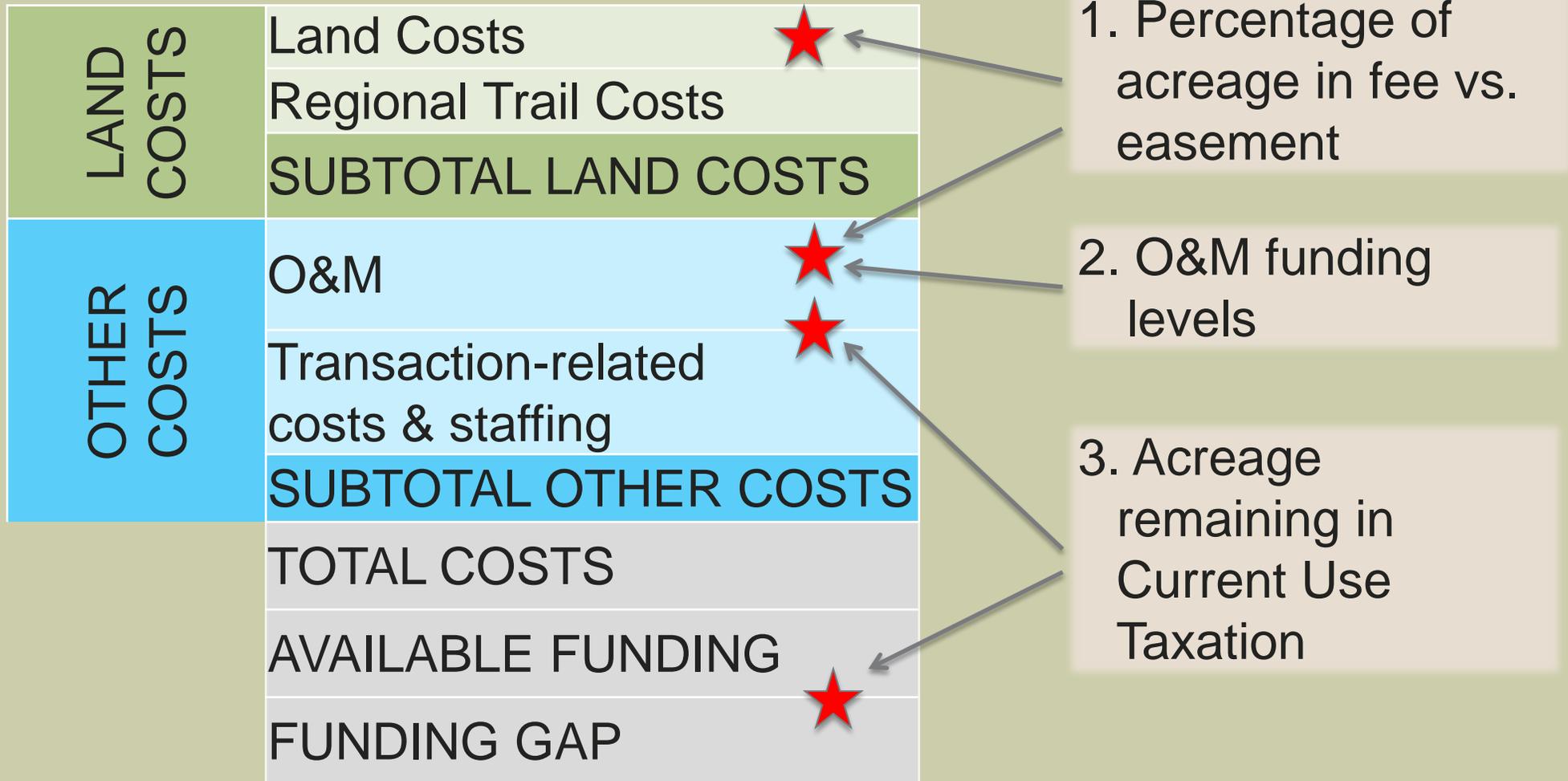
		86% esmt – 14% fee \$1,288,000,000	76% esmt – 24% fee \$1,394,000,000	70% esmt – 30% fee \$1,457,000,000
LAND COSTS	Land Costs 			
	Regional Trail Costs	\$75,000,000	\$75,000,000	\$75,000,000
	SUBTOTAL	\$1,363,000,000	\$1,469,000,000	\$1,532,000,000
OTHER COSTS	O&M 	<i>1. Mimic Accelerator – Staff Only</i> \$140,405,000	<i>3. Low End Staffing</i> \$225,047,000	<i>4. Optimal Staffing</i> \$255,182,000
	Transaction-related costs & staffing	\$102,644,000	\$102,644,000	\$102,644,000
		<i>66% remain in CUT</i> O&M: -\$11,621,000 Trans.: -\$1,000,000	<i>Keep at 50% in CUT</i>	<i>Keep at 50% in CUT</i>
	SUBTOTAL	\$230,427,000	\$327,691,000	\$357,826,000
TOTAL COSTS		\$1,593,427,000	\$1,796,691,000	\$1,889,826,000
AVAILABLE FUNDING 	<i>Increase of \$83.62M in avoided costs on revenue side</i> \$1,350,120,000	\$1,266,500,000	\$1,266,500,000	
FUNDING GAP @ 50% CUT	\$339,549,000	\$530,191,000	\$623,326,000	
FUNDING GAP @ 66% CUT	\$243,307,000	<i>Approx. \$430,000,000</i>	<i>Approx. \$520,000,000</i>	

Funding gap estimated for these two columns

Example: With & Without CUT Enrollment

		KEEP 50% IN CUT Purchase 45,820 acres	KEEP 0% IN CUT Purchase 66,000 acres
LAND COSTS	Land Costs	76% esmt – 24% fee \$1,400,000,000	76% esmt – 24% fee \$1,400,000,000
	Regional Trail Costs	\$75,000,000	\$75,000,000
	SUBTOTAL	\$1,475,000,000	\$1,475,000,000
OTHER COSTS	O&M	2. Low End Staffing \$225,000,000	2. Low End Staffing <i>More parcels to maintain</i> \$280,000,000
	Transaction-related costs & staffing	\$102,644,000	<i>Higher transaction costs</i> \$126,113,000
		<i>Keep at 50% in CUT</i>	<i>Keep at 0% in CUT</i>
	SUBTOTAL	\$327,644,000	\$406,463,000
TOTAL COSTS		\$1,796,691,000	\$1,875,463,000
AVAILABLE FUNDING		\$1,266,500,000	<i>Eliminate \$261,500,000 in CUT "avoided costs"</i> \$1,005,000,000
FUNDING GAP		\$530,191,000	\$870,463,000

Cost Model: Variation Factors



Additionally, total amount of land protected also affects the costs & funding needs