

Valuation, Crediting and Decision-Making

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Valuation

This is the process of attaching value to different benefits and dis-benefits resulting from potential decisions. A benefit is something positive that originates from the decision. A dis-benefit is something negative.

Sometimes we can use this approach to contribute to mitigation planning and calculating credits for good actions.

Valuation

What are the impacts (positive and negative) of the decisions?

How do we quantify the impacts?

How do we value the impacts relative to each other?

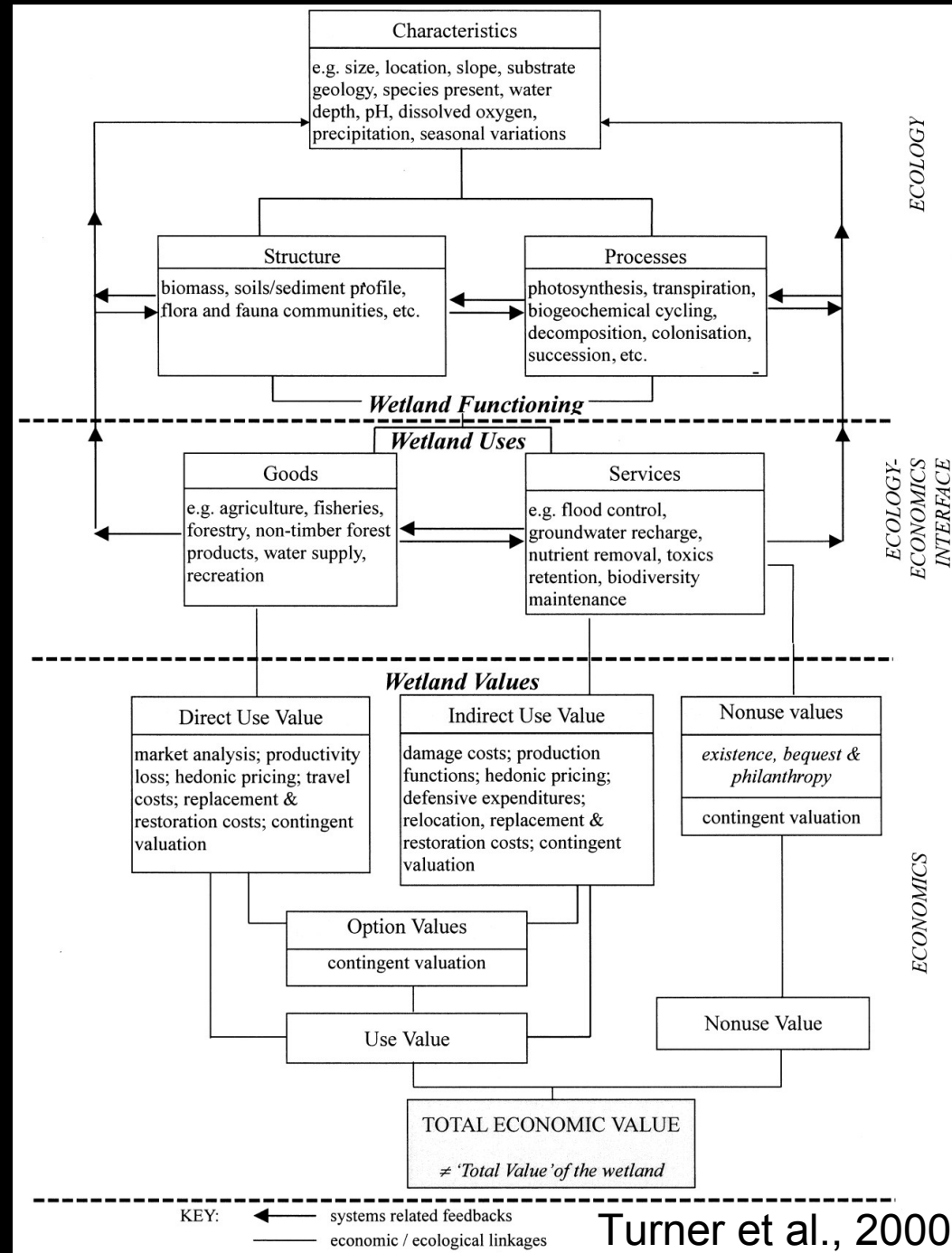
How do we use the values to optimize decisions?

How do we use values to help inform avoid, minimize and compensatory mitigation?

TRB Process Steps

1. Collaborative partnerships
Planning region, partners, stakeholders, MOU building
2. Characterize natural conditions
Spatial data, endangered species, data sharing, conservation prioritization
3. Regional ecosystem framework
Combined conservation and transportation planning
4. Quantify land-use and transportation impacts
Cumulative effects assessment, location and extent of impacts
5. Establish ecological-stewardship actions
Select stewardship actions that have the least impact and avoid need for impact-compensatory mitigation as much as possible
6. **Develop crediting strategy**
Valuation of affected ecosystem attributes and services, develop system for comparison of transportation and ecological benefits
7. Develop permitting strategy
Adaptive management approach to permit and performance measurement
8. Implement agreements, conservation, transportation
Describe implementation of package consistent with stewardship principles
9. Update regional ecosystem framework

Finding the value of wetlands?



Transportation Research Board Step 6

Step 6a

- Diagnose the measurement need : creation of a matrix divided into:
 - themes (e.g. environment)
 - criteria : objectives (e.g. conservation of wetlands)
 - indicators (e.g. protected species)

Step 6b

- Identify measurement options : use of condition-based measures

Step 6c

- Select or develop units and rules for crediting :
 - definition of scores for each criteria for each theme with:
 - 1) scoring for each criteria : aggregation of indicators within a criteria through weighting process
 - 2) scoring for each theme : aggregation of criteria within each theme
 - test of rules : test of uncertainty and sensitivity of criteria and feedback from stakeholders

Step 6d

- Test applicability of units and rules in local conditions :
 - test of evaluation on current conditions and forecasted conditions in alternatives
 - check if evaluation can be conducted at any time throughout project life
 - graphic representation of results

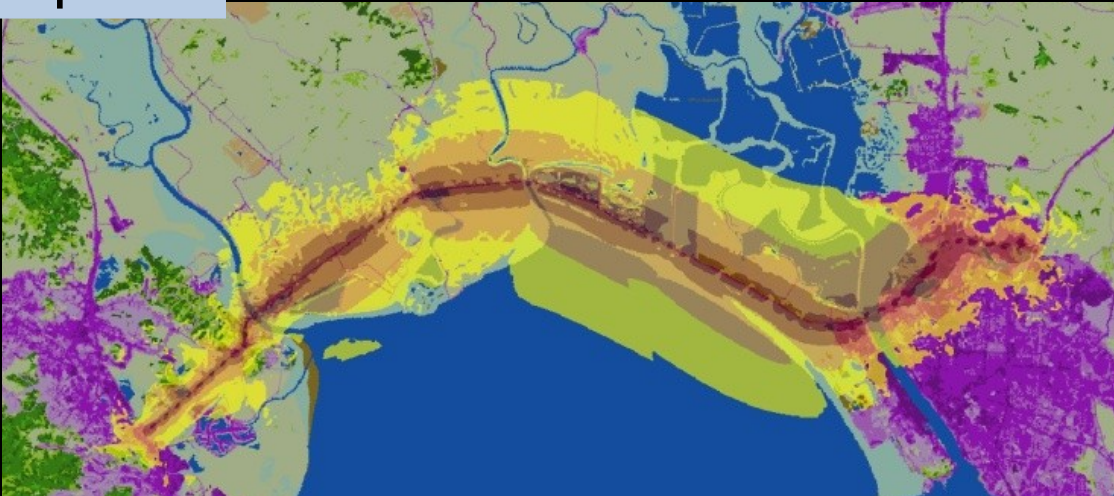
Step 6e

- Evaluate local market opportunities for ecosystem services : not accurate for SR 37

Step 6a

Theme	Objective	Indicator
Transportation	Change traffic mode	Mode share (%countywide of drive alone) AADT
	Reduce recurring congestion	volume to capacity ratio LOS (0=A, 5=F)
	Improve travel reliability	travel time reliability incident occurrence/duration
	Improve safety	total accident rate injuries/death + property damage
Community	Improve accessibility	job accessibility destination accessibility
	Reduce noise impacts	number of residences/people exposed to excessive noise monetarized noise impacts (includes health)
	Improve air quality	vehicle emissions
Environment	Maintain or improve ecological functions of potentially affected ecosystems or habitat areas	loss of habitat natural resource plan consistency disturbance of wildlife (sound) losses of native plants/animals
	Maintain or improve water quality	water quality losses of riparian and foodplain habitats water resource plan consistency
	Avoid effects on wetlands	area wetland affected wetlands plan consistency
	Climate change: reduce risk to transportation infrastructure or indirectly from infrastructure, due to global climate change	infrastructure vulnerability/effects projected effects of sea level rise
Land use	Minimize negative impacts on agricultural lands	acreage of affected agricultural lands
	Transportation land consumption	amount of land converted to transportation uses
	Local-regional plan consistency	consistency of local land use policies with regional transportation-land use vision
Costs	Cost	rough cost
	Feasibility	feasibility of implementation
	Restoration cost	restoration costs

Step 6b



Measure impacts

Step 6c

General theme (themes suggested by TCAPP are :
transportation, environment, economy and community)

Scoring of
theme given by
the aggregation
of criteria

Classification of
alternatives
with graphic
representation
of performance
of each
alternative for
each theme

Criteria: strategic objectives defined by
stakeholders concerns and analysis of
environmental, social and regulatory setting

Aggregation
of criteria
within the
them
through
weighting
process

Indicators : available data (e.g. on
site measures)

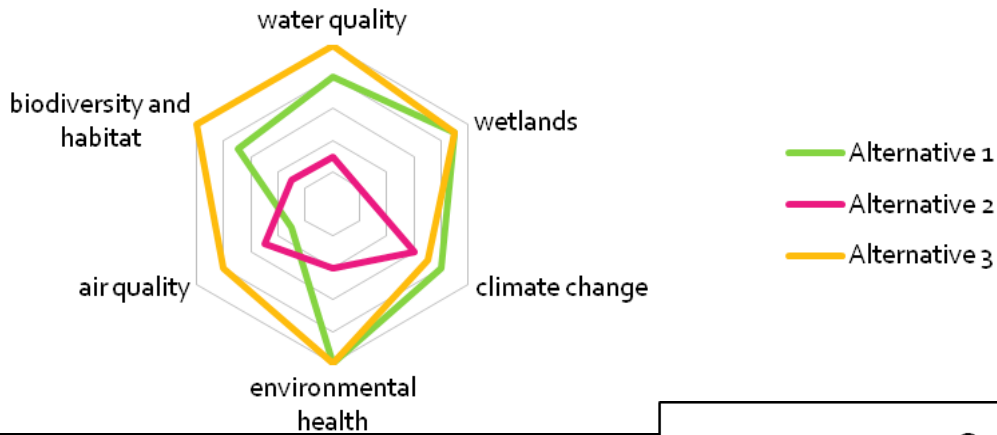
Normalizations of
indicators

Aggregation of indicators
within the criteria through
weighting process

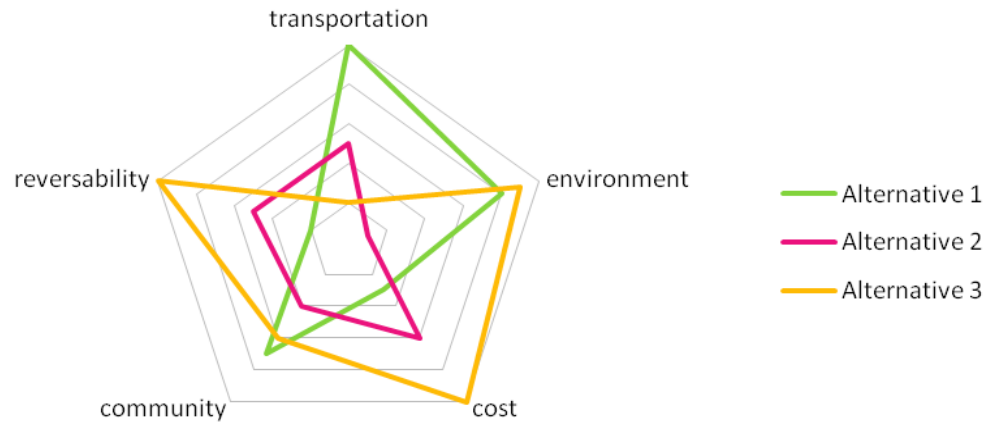
Step 6f

Use to assist decision-making

Performance of alternatives for the environment



General performance of alternatives



Valuation

Share what you think the impacts could be from different scenarios for the corridor.

Help us measure/quantify the impacts.

Give us your ideas about sources of data for the impacts.

Suggest the main considerations that would affect your opinion about the corridor's future.