PROCUREMENT OF ECOSYSTEM SERVICES FOR MUNICIPAL REGULATORY REQUIREMENTS: “HIDDEN” INVESTOR GEMS?

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Outline

- What are we paying for now?
- Mobilization and shift to “new” capital sources and models?
  - private investment
  - partnerships

Comparative study of recent projects in the Mid-Atlantic, US

- Knowledge gaps need to be filled through understanding:
  - transaction costs, supply, and demand
  - shared information set for parties (regulator, buyer, seller)
  - performance to account for progress (metrics)
  - heterogeneity in measurement of outcomes
## Knowledge gaps

<table>
<thead>
<tr>
<th>Elements</th>
<th>DC Water</th>
<th>RWF (PFS)</th>
<th>P.G. County CB-P3</th>
<th>Anne Arundel, Full-delivery (PFP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply</td>
<td>Who currently supplies the ecosystem services</td>
<td></td>
<td></td>
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<tr>
<td>Demand</td>
<td>Who currently demands the ecosystem services</td>
<td></td>
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<tr>
<td>Metric</td>
<td>How are outcomes or outputs measured</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Investor role</td>
<td>How can investors inject capital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency gain</td>
<td>Where are there gains to be made from change</td>
<td></td>
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<tr>
<td>Risk transfer</td>
<td>How is the risk allocated with new models</td>
<td></td>
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</table>
Openspace funds/USDA Agricultural Best Management

- Current funding pays for preservation, conservation, restoration and implementation
- What are outputs, outcomes?
- How are they measured?
Brief economic setting – the age old problems

- Public goods – something everyone can enjoy without exclusion and one person’s enjoyment does not affect another person’s enjoyment
  - No one really voluntarily pays to make sure public goods are available
  - Government intervention needed (e.g. tax to secure good for public)
- Common pool resources – something everyone enjoys but one person’s enjoyment may and does affect another person’s enjoyment
  - Lack of management and cooperation depletes or degrades the resource
  - Interventions that regulate human decisions (e.g. incentives, laws and regulations)
“If our region’s open space were lost to development, we would need to spend more than $132.5 million per year to do what our preserved lands already do.” (DVRPC Return on Environment, 2010)

OPEN SPACE ENHANCES HOME VALUES.

- Open space adds $16.3 billion to the value of southeastern Pennsylvania's housing stock.
- Protected open space generates $240 million annually in property tax revenues to support county and municipal governments and local school districts.

OPEN SPACE PROTECTS PROPERTY, FILTERS DRINKING WATER, AND CLEANS THE AIR.

- Southeastern Pennsylvania realizes nearly $61 million in annual cost savings from protected open spaces' ability to naturally filter out pollutants and replenish water supply.
- The total annual benefit generated by natural flood mitigation services is more than $37 million.
- Trees on protected open space are estimated to provide $17 million in annual air pollution removal and carbon sequestration services.

http://www.chesco.org/DocumentCenter/View/5672/DVRPC_GSA_EconomicValueSummary?bIdId=
Maryland Open Space

Measurement = millions spent, acres secured

Program Open Space funds will be used to purchase a permanent conservation easement on property located north of Unionville.

“Through our partnership with Frederick County, we can preserve agriculture and farmland while benefiting the environment and water quality,” Maryland Natural Resources Secretary Mark Belton said. “This voluntary program is a win-win for our bay and our farmers, and is essential to protecting the state’s 134 unique watersheds.”

Outcomes based contracting

“Traditional Grant” as Status Quo presents challenges to innovative performance based contracting

“Free services” to beneficiaries i.e. municipalities with Stormwater permits

Service parsing

Importantly, the funds are expended and investment is not fully realized.

How do we **monetize** the conservation outcomes to generate more investment in restoration?
The situation with funding restoration

“In order to bridge the funding gap that exists...philanthropic resources, foundations...need strategies to attract additional resources and new partners. They need leverage from new sources. Philanthropic organizations have a long history of partnering with the public sector. However, its engagement with the private sector offers potential that has been less explored – especially as the number of impact investors and socially responsible entrepreneurs rise.”

https://efc.umd.edu/assets/delawarewatershed.pdf

Money is available from the private sector - but needs deployed differently and necessitates new fund “vehicles.”
Ample demand and capital exists but not enough is being directed to early-stage market development. Impact capital is largely deployed to deliver services rather than foster innovation and capacity – leaving a much needed and vital role for philanthropic capital.

Innovation is in the partnerships AND the mechanics. Existing instruments for deploying capital are sufficiently robust and applicable to watershed restoration.
Elements of Mechanism

- Established relationships or new paradigm?
- Clear output – metrics?
- Risk transfer – to whom

- What is different by sector and program?
DC Water – Environmental Impact Bond

- Clean Rivers Project
- $2.6 B - $25 M tax-exempt bond, private
- Green infrastructure to reduce CSO into Anacostia & Potomac Rivers and Rock Creek
- Public Right of Way projects
Brandywine Christina Water Fund
Public-private partnership (P3) – Design-Build-Operate-Maintain (DBOM)

Prince George’s County, Md. (2015)
- $100 M (30-yr)
- 2,000 acres of storm water infrastructure with low impact development (LID) and green infrastructure (GSI)

City of Chester, PA
- $50 M (20 – 30-yr)
- 350 acre GSI
- Employ local businesses

https://www.corvias.com/about/insights/partnership-library/municipal/the-clean-water-partnership
“Full-Delivery” or Pay for Performance
Anne Arundel County, MD

- Two contracts for $5 M (2017, 2018)
  
- One contract for $8 M (2019)

- Not prescriptive of practice, just had to be approved by MDE for crediting towards MS4 permit

- Had to be on private property

- All “mitigation, natural resource, and water quality improvement credits” associated with the project belong to the County
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<tbody>
<tr>
<td>Supply</td>
<td>Public land</td>
<td>Private land</td>
<td>Mix</td>
<td>Private land</td>
</tr>
<tr>
<td>Demand</td>
<td>Public utility</td>
<td>MS4s Public water /Private water Companies</td>
<td>MS4</td>
<td>MS4</td>
</tr>
<tr>
<td>Metric</td>
<td>Uniform (1.3”/20 acres)</td>
<td>Non-uniform (EIU)</td>
<td>Uniform (1” rainfall)</td>
<td>Non-uniform (multi-metric)</td>
</tr>
<tr>
<td>Investor role</td>
<td>Initial capital</td>
<td>Impact</td>
<td>None (SRF)</td>
<td>None (federal and state funds)</td>
</tr>
<tr>
<td>Efficiency gain</td>
<td>Liquidity</td>
<td>Admin/partnership leveraging, liquidity</td>
<td>Admin, O&amp;M, overall project</td>
<td>Admin, overall project</td>
</tr>
<tr>
<td>Risk transfer</td>
<td>Shared public/private</td>
<td>Public to private</td>
<td>Public to private</td>
<td>Substantial from public to private</td>
</tr>
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</table>
Challenges

- Regulator concurrence – stability
- Project evaluation rigor (not low cost but “best value”)
- Whole cost or life cycle cost for true project comparison – long run view
- Private land poses challenges public does not (perpetuity)
- Metrics and data analytics
Metrics Challenges

- EIU – environmental impact unit, bundle of services explicit
- Index – against forested, other HUC-12 loads
- Matrix of removal efficiencies (similar to low carbon methods, “carbon intensity”

Suggestions from interviews

- Know what the parameters are that you are contracting services for
  - What are your areas to gain efficiency
  - What will cause a loss in efficiency

- Have the right people at the table at the right time

- Regulator dialog – examples and clear ask