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Watershed Nature-Based and Green Infrastructure Activities Avoiding Emission from Water Management Gray Infrastructure Construction and Operations Methodology v1.0

Expert Peer - R1 Review Round

Reviewer #1

August 15, 2023

CONTENT referenced by reviewer's comment *e.g. Section number + paste exact text*	**REVIEWER'S COMMENT** *Please paste the comment from the reviewer*	**AUTHOR'S RESPONSE** *Please describe how the comment was addressed and include new content in quotations*	**Reviewer's Conclusion** [PASSED/ REJECTED *WITH COMMENTS*]
1.	What about point?	Point source pollution is already regulated. The premise of our methodology is replacing treatment methods that cause emissions for point source pollution with alternative, more green, non-point source management.	

1.3 Credit Class	Not defined or referenced	Added reference to credit class title, “GHG & Co-Benefits in Watershed Carbon”.	
1.3.5 Per unit of time	Only “time”?	Removed “per unit of time” as could be a one-time event.	
1.2.5. Water quality credit	Clause suggests ambiguity. Eliminate ambiguity.	Our methodology exists within a broader ecosystem of water quality trading, where existing documentation may refer to “water quality credits”. We therefore include this statement to clarify that within our documents, “credits” are carbon credits and “benefits” may include water quality benefits.	
1.3.5 TMDL	define	Added	
1.3.11. Project Developer Project Proponent	Are these the same?	Not necessarily. In the carbon market world, there may be a project owner (proponent) who hires a consultant (developer). These are separate, distinct and recognized roles in the carbon registry world.	
2.1 implemented	define	“Implemented” is a common, well understood term in this field.	
3. Net reduction	Net GHG reduction	Added	
3.1.1	Consider PE of using zero-GHG electricity or buying RECS. seems this would qualify. Clarification - Consider Project	This is addressed in the LCA approach, which is based on the energy mix available based on the engineered trade analysis provided to the utility. If the utility has access to renewable energy and/or would build a RE source, those emissions would be	

	Emissions of a grey infrastructure system that uses only renewable electricity. In this scenario, the emissions of the grey and green systems would be the same (zero). Would a grey system that uses renewable electricity qualify for credits under this methodology?	close to zero.	
3.1.1.1.6. Finally	Use more formal style	“Finally” means, “the final step”. This is properly written.	
3.1.1.2	Inconsistent with 3.1.1.1.3.	There is no section 3.1.1.1.3. We assume the comment is in regard to the inclusion of the end of life language in section 3.1.1.3 but not in 3.1.1.2. The language around this has been updated to be consistent.	
3.1.1.2 Recommend or encourage	Why only recommend? Should be a requirement.	“Recommend” was used as the impact of capital emissions on large gray infrastructure projects is typically very small to the point of not dramatically impacting results. We agree with the reviewer and have made this a requirement for the life cycle accounting.	
3.1.1.3 end-of-life	define	End of life has now been defined in section 3.1.1.3	
3.1.1.4 Green or grey	Why “or”?	Edited	

3.1.1.4	Too broad. Will invite criticism. Clarification: They have noted that they could add in more details related to GHG equivalence factors. To me the methodology references ISO standards for LCA. The ISO standards are broad in general and this is what governs LCA. Is this what you are looking for? If not then could you provide more context? Consider listing specific ISO standards and requirements for following the ISO standards. As written, the verifier will first need to understand the rule book, and then ensure the project is developed in accordance with the rule book. Verifiers don't want this role - they want the rule book provided to them. Recognizing co-products is a slippery slope. This isn't done in high quality methodologies. It will become a distraction.	We have extensively revised the LCA methodology described, to reduce the ambiguity of how to interpret the ISO. Co-products are an important and well established requirement in LCA analysis.	
3.1.1.5 ISO standard	Which ISO standard?	ISO 104040, this has been included in the revised method	

3.1.1.7	First sentence is incorrect	Edited	
4.0 carbon	GHG	Edited	
4.0 electricity	Grid electricity (?)	Edited	
4.0 Third party	third-party	Edited	
4.0 Watershed model	Identify allowable options	We have deliberately not been prescriptive for several reasons. 1) there are lots of models. 2) different models are recognized formally or by convention in different jurisdictions.	
5.0	Who has rights to credits? Must be very specific.	This comment doesn't seem relevant to section 5.0. Further, credit ownership is identified in project documents, not in methodology documents.	
5.0	Must cite legal compliance	Added	
5.0	"Should" does not apply to necessary permits	Changed to "must".	
6.1 regional	Must be consistent Clarification: 6.1 broadly indicates all parameters are for the project developer to select. It is possible for this methodology to enforce	Added the following: "Specific parameters used in existing watershed solutions and supported by this methodology are: • **Temperature** - see example Temperature Standard IMD from the Department of Environmental Quality, Oregon USA.	

	consistent parameters for many of the necessary calculations. Consider conflicting standards. Should a project comply with local, federal, or other standards?	• **Phosphorus** - see example Lake Winnipeg trading system architecture, Manitoba Canada. • **Nitrogen** - see proposed nitrogen trading application in Suffolk, England, the Taupo Nitrogen Market in New Zealand, or the Nitrogen Control Program for the Long Island Sound in New York, USA. • **Five-Day Carbonaceous Biochemical Oxygen Demand (CBOD5)** - see example Rahr Malting trading program in Minnesota, USA. • **Total Suspended Solids** - see example Adaptive Management webpage from the Department of Natural Resources, Wisconsin USA. • **Selenium** - see example Grasslands Bypass Project in the Central Valley of California, USA. • **Salinity** - see example Hunter River Salinity Trading Scheme in New South Wales, Australia • **Quantity** - see example JAWRA article on water transactions in Western USA. • **Mercury** - see example Mercury Offset Program evaluated by Regional San of Sacramento, USA.	

		• Other parameters such as Dissolved Oxygen, Acid, Metals, and Ammonia have been studied and modeled by regulatory agencies and regulated entities in the USA and elsewhere. Generally the parameters that a project manager should consider are clearly defined by national, regional, state or water-body quality standards. The following references are provided as guidance only - project proponents must select water quality standards appropriate to the specific context of the project activity. Local standards are more restrictive than national, and where they exist must be the focal point for this methodology."	
6.2	Which other stakeholders?	There are potentially many different stakeholders in a program. This would be addressed in project documents.	
6.6	Why not just require compliance with regulations?	By only requiring compliance with local regulations this methodology would make it harder for Project Proponents to develop credits, because there's a wide range of what that means in different nations and states. Much like the range of weak/strong forestry protections across nations, it is more logical to make clear requirements that tier to 'best in class' WQT examples, rather than leave this open to local compliance. The requirements in this	

		methodology, especially around instream monitoring, are beyond what is required to establish a trading program in any US state..	
6.6 Water utility supply intake	What if there is none?	Corrected to "discharge".	
6.6 Reliable and consistent	Very loose. Must be more prescriptive.	We have added, "In the Project Plan the Project developer must include a map and a justification for the selection of the locations, based on the consideration of the above factors, proving locations are appropriate/ best located within the possibilities and the local experts knowledge to be representative."	
6.6 sources	What "sources"?	We believe the reviewer is referencing section 6.6? "Data sources" is a common term.	

Post here any additional feedback or comments that are more general:

- **Methodology is very broad and loosely defined. Scope must be narrowed to ensure repeatable, successful implementation.**

The methodology has been updated based on reviewer feedback. Generally, detail is reserved to the Project Plan Template for project implementers to develop based on specific project level and regulatory considerations.

- **Needs more clarity and definition of Baseline Scenario and Project Scenario**
- **Additionality standards or performance test must be defined. This is the basis of current criticism of the VCM.**
    - **Response to comment: if only an attestation is required, then consider a developer that is not honest. Further 5.1 c) indicates that if a green system generates additional benefits, then the project is additional. Consider some of the more aggressive claims, such as beaver introduction, that would cause the project to qualify as additional.**

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The additionality definition in the credit class has been revised to:

Therefore, under this methodology additionality is sufficiently established as follows:

a.) The Project Proponent and/or Project Owner conducts an analysis consistent with the UNFCCC CDM "Tool for the demonstration and assessment of additionality". For avoidance of doubt, it is anticipated that proposed green infrastructure projects would usually be more financially attractive than gray infrastructure. Instead, the Project will likely establish additionality through the Barrier Analysis followed by the Common Practice Analysis.

AND:

b.) The water utility (which may or may not also be the Project Owner and/or Project Developer) attests in writing that the anticipated carbon revenue enables green infrastructure water quality solutions that: 1) enable pre-permit action, and/or, 2) provides a necessary performance risk-reduction incentive, and/or c) in the case of projects already deployed at least in part, that the additional monitoring and verification requirements of this methodology strengthen the program performance and accountability.

- **Refine scope to reduce risk, increase quality**
    - **Response to comment: stay focused on the activity that directly causes the avoidance of GHG emissions. Claims not related to GHG emissions, such as installing fencing, are so far removed from GHG that they will draw attention.**

There is no claim that installing fencing sequesters GHGs. The installation of fencing in this example is closely related to a reduction in GHG emissions where the water quality improvement created by fence installation creates a scenario where a facility does not have to construct and operate a tertiary treatment system.

- **Used defined terms and acronyms**
- **Any methodology that is based on plants must have a buffer or contingency because plants die. Or, more conservatively, use ex-ante issuance.**
    - **Response to comment: Either 1) I do understand the methodology and read that living plants could be involved in treatment of water, or 2) the methodology is not easily understood.**

The new preamble to the methodology clarifies this point.

The credit generating activity is the avoidance of electricity use, which is codified through a permitting process. The nature-based alternative is not generating carbon credits. Buffers and contingencies are relevant if the project developer is following another methodology for any stacked claims of carbon sequestration. Or, if required by local/state regulators as part of a permit approval process. Either way, prescribing a buffer requirement is out of scope for this methodology and does not impair the integrity of the GHG reductions.

- **This methodology could create leakage. This must be addressed.**
    - **Response to comment: Consider contaminated water that is treated by project. Project fails. Water must be treated. Municipality rents short-term treatment equipment that uses grid electricity, or Municipality diverts water to other existing treatment facility, or other municipality must provide additional treatment, or pre-existing grey system that was not enlarged because of project must be run at a higher rate thereby increasing grid consumption.**

The new preamble to the methodology clarifies this point.

1) Water quality trading has been formally used in the USA since 1986. The scenario that the reviewer describes has never happened. 2) The most clear instances that we know of regulatory agencies demonstrating patience in waiting for a watershed restoration project to achieve its goals are in Wisconsin and Oregon. In Wisconsin's Department of Natural Resources' technical handbook (https://apps.dnr.wi.gov/swims/Documents/DownloadDocument?id=83656445), the DNR states that when using adaptive management, "A maximum duration of twenty years can be granted to achieve compliance with P criteria; PS compliance with permit requirements based on criteria being attained." The same handbook states that water quality trading "May be used to demonstrate compliance indefinitely, as long as credits are generated". Oregon's Department of Environmental Quality has consistently offered longer compliance schedules for watershed restoration programs - in this regulatory document for the Hells Canyon Dam relicensing (https://www.oregon.gov/deq/wq/Documents/HCCFinalEvalReport.pdf), ODEQ's response on page 122 is formally: "To attain compliance with the spawning temperature criteria, [the permittee] has 15 years to attain half of the thermal benefits and 30 years to attain 100% of the thermal benefits using the Snake River Stewardship Program. Oregon's temperature standard allows establishment of a compliance schedule, and this schedule is reasonable given the necessary project design and implementation that must occur.

In practice, 20+ year periods are standard in the USA to assess the environmental improvements from watershed programs. Thus we've never seen a failure or leakage of the type described here.

- **Consider Ex-Ante issuance to be recognize actual emission avoidance.**
    - **Response: correct. Looks like this sentence was cropped. It was originally: Consider ex-ante vs issuance to recognize actual emission avoidance.**
    - **"Once the project takes root" is not ex-post if the issuance represents future GHG avoidance.**

The avoided emissions are codified once a project is approved by a regulator. As above, failure of the alternative treatment method does not imperil the reality of the avoided emissions. It just becomes a project management task for the utility.

<u>OVERALL REFLECTIONS AND COMMENTS ON REVISIONS FROM REVIEWER:</u>

Credits should be issues after green infrastructure is in place and the methodology needs to better measure/account for leakage and should include buffer pools

Still thinks it is still way too broad - it should focus on the pilot projects they are currently running and add buffer pools - appendixes can be added to adjust for additional project scenarios.

Upfront project costs should be addressed by bringing revenue options to a bank and getting a loan for the project - get ex-anti credit contracts as collateral for bank loans. A government will not give a license to a company that can not show that they can implement the project which could come from ex-anti sale of credits but probably a bank loan or investment underwriting is a better path.