

September 9, 2022

To: Scott Redman and Angela Adams  
From: Aimee Kinney and Chris Wally Wright

RE: End of fiscal year update on IS-Science Award sub-task 2.d

The IS-Science Award FY22 workplan identified the following deliverable for Sub-task 2.d: ***An Excel spreadsheet that provides a crosswalk between the PS Info Ongoing Program Inventory and programs linked to specific IS approaches in BPAs in order to identify programs that contribute to the implementation of multiple strategy approaches.***

The purpose of this memo is to summarize work we completed during FY22; describe our methodology and two spreadsheet deliverables (*IS-Program Spreadsheet* and *Quantitative Prototype*); present visualization concepts for the prototype quantitative approach to ranking programs that support multiple IS and IS strategies; and identify potential next steps for discussion among the IS-Science Team.

## BACKGROUND

During FY21 we coordinated with and provided feedback to PSP Adaptive Systems Program staff as they developed an inventory and began populating a database of ongoing programs (OGP) through PS Info. They were interested in integrating information from PSI-prepared BPAs into this database. Since BPAs are long, narrative documents there was an appetite for a simpler, more “digestible” version of this content. At the same time, we were developing our workplan for FY22 and there was general interest in synthesis work that integrated content across multiple IS. This suggested to us that there were multiple potential audiences for curated BPA content that mapped OGPs to individual IS strategies in a more accessible manner, so we added this sub-task to the workplan. In July 2021, Adaptive Systems Program indicated that tagging OGPs to IS strategies could be a building block to inform Action Agenda content and requested that, if possible, we complete this mapping exercise by early November 2021.

By mid-October, we had developed a methodology for assigning program relevance to different IS strategies and tested the approach by linking programs and strategies for a few IS. We sent a brief description and some preliminary results to the Adaptive Systems Program. Further coordination with the Adaptive Systems Program, and between the Adaptive Systems Program and the Integrated Planning Program then occurred. In November, the Adaptive Systems Program made some adjustments to the tagging system<sup>1</sup> in the *IS-Program Spreadsheet* and a similar analysis assigning direct/indirect relationships to Action Agenda strategies to compare with our results. After compiling the associations made by us and multiple individuals in their group, the Adaptive Systems Program provided the

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<sup>1</sup> As described in the next section, we used multiple qualitative associations (higher, medium, lower, unknown) for each program/strategy combination. PSP’s Adaptive Systems Program instead used a binary association. Programs we rated as “highly relevant” were translated into “direct relationship” and medium/low ratings were assigned an “indirect relationship.”

information to the Integrated Planning Team for consideration in the Action Agenda.<sup>2</sup> The Adaptive Systems Program recommended that the Integrated Planning Program use OGP with “direct” linkages as a starting point for deciding what programs to feature in the Action Agenda. PSP determined that there was not enough time to socialize, complete, and seek reviews of the more complex ranking exercise (*Quantitative Prototype*) in time for Action Agenda publication.

At that time, the Adaptive Systems Program had not decided about using the direct/indirect assignments or quantitative scores in the PS Info database or for any other substantive purpose. They expressed interest in working together to track relationships in this manner but have not requested additional support from PSI to date. As a result, we have not dedicated additional time to complete the work. We have prepared this memo to jumpstart conversations with other potential audiences as to whether there is interest in us continuing this line of work.

## METHODOLOGY

### *IS-Program Spreadsheet*

This file provides a crosswalk of BPA content and PSP's OGP inventory. The sources of data used to populate Column A (programs) and Row 1 (strategies) were:

- Ongoing programs (n=160) – Downloaded from the PS Info Ongoing Program Portal (<https://www.pugetsoundinfo.wa.gov/OngoingProgram/Index/Dashboard>) on 9/24/21 .
- IS strategies (n=36) – We developed a list of strategies by using result chain titles and narrative descriptions from 8 Implementation Strategies (Shoreline Armoring, B-IBI, Toxics in Fish, Land Development and Cover, Floodplains and Estuaries, Marine Water Quality, Shellfish, Chinook). All but 3 of the 36 strategies directly correspond to a results chain. For Shoreline Armoring, we added a category to capture sources of beach restoration and acquisition funding because these programs have contributed to progress towards indicator targets even though they were not called out on any of that IS's 4 result chains. For Chinook, we added two strategies to capture “bold actions” added to the IS after results chains were developed.

Programs were then associated with IS strategies based on content included in each IS's respective BPA. For the Floodplains and Estuaries Implementation Strategy, content was pulled from PSI's [Synthesis of Integrated Floodplain Management in Selected Puget Sound River Deltas](#) (Wright 2021) as a BPA has not been prepared for that IS. Each Program-strategy combination was scored qualitatively. Scoring considerations include:

- Program alignment with the strategy approach based on extent of discussion in narrative report and professional judgement (based on research undertaken for BPA, synthesis documents, and other PSI deliverables)
- Whether a program is regulatory (ranking included capacity of agency enforcement of regulatory programs) or voluntary (ranking included assessing effectiveness of voluntary programs, based on quantitative and qualitative data acquired during previous PSI research)
- Geographic scale of impact (e.g., parcel vs. city vs. regional)

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<sup>2</sup> See Column I in the “OGP\_AAStrategies” tab of [this spreadsheet](#) for combined results that the Adaptive Systems Program submitted to the Integrated Planning Program.

- Administrative scale (local, state, federal)
- Whether a program protects or restores habitat
- Known ecological (and in some cases, administrative) effectiveness based on data

Assigned scores reflected a range of impact: higher, medium, lower, and unknown.

- “Higher” indicates high-value, particularly relevant programs (based on our subjective, qualitative criteria and expert judgement as PSI researchers)
- “Lower” indicates program that has minor association with an IS but perhaps isn’t funded, isn’t as important as others, is “under-used” (e.g. has a small-scale implementation with few data on ecological up-lift available) but shows potential to support that respective IS and Puget Sound recovery
- “Unknown” indicates some association with the IS but the effectiveness of the program is unknown. In this case, the program may have a high potential for impact but no data (qualitative or quantitative) are available to support a hypothesis on effectiveness

In this preliminary deliverable, there are many questions (designated by a “?” in the spreadsheet) indicating that more work needs to be done to formalize and standardize application of the scoring criteria. We suggest that involvement of IS leads and others at this stage would be beneficial if potential audiences agree that this tool is worth completing and updating.

During this second stage, some data cleanup tasks were completed:

- Some OGP had duplicate entries because multiple state agencies are involved in their administration. For example, Family Forest Fish Passage Program (OGP\_DNR04) and Family Forest Fish Passage Program grants (OGP\_RCO09). We combined the duplicates so as to not double count them but maintained PSP’s distinct program identification numbers.
- Programs mentioned in BPA(s) but not included in PSP database were added to the spreadsheet but separated from the others to alert PSP staff about missing programs as they continued to build out their database. 84 OGP have been added to the PSP database over the past year, so additional cleanup would be needed if we continue to develop this tool.

### *Quantitative Prototype Spreadsheet*

After compiling all this information in Excel, we thought it may be possible to develop a ranked list of OGP key for IS operationalization (i.e., a program that has higher impact for the most IS strategies would be the highest ranked). We developed a prototype quantitative method where the higher, medium, lower, unknown were converted to numerical values of 3 to 0 (in 0.5 intervals). The sum of scores for each program-strategy combination was then used to identify programs that “rise to the top” with respect to IS-identified priorities.

## **QUANTATIVE RANKING PRELIMINARY RESULTS**

Given the short timeframe for initial development, we were not able to develop complete scoring for all IS, attempt to develop a collaborative scoring process, or vet preliminary results with IS leads. Nevertheless, we wanted to show potential outputs of this tool and developed some **test** data

visualizations to display the data. These visualizations were developed using Tableau following the conversion of the qualitative data to numerical values.

Figure 1 visualizes the programs by showing programs ranked by total score. For instance, of the top seven ranked programs, those involving 'Water Quality' constitute five of the seven, suggesting these programs are impactful in part because they are connected to multiple IS and may be particularly relevant for further investigation (e.g. ensuring funding is secured, investigating effectiveness, ecological up-lift, regional implementation, etc.)

Figure 1.

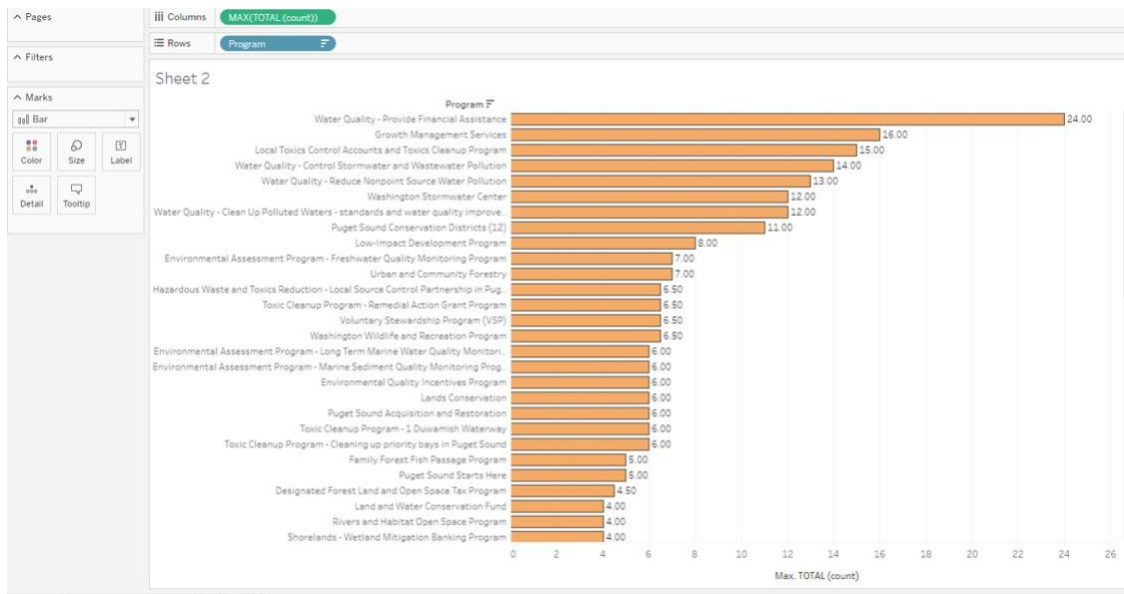
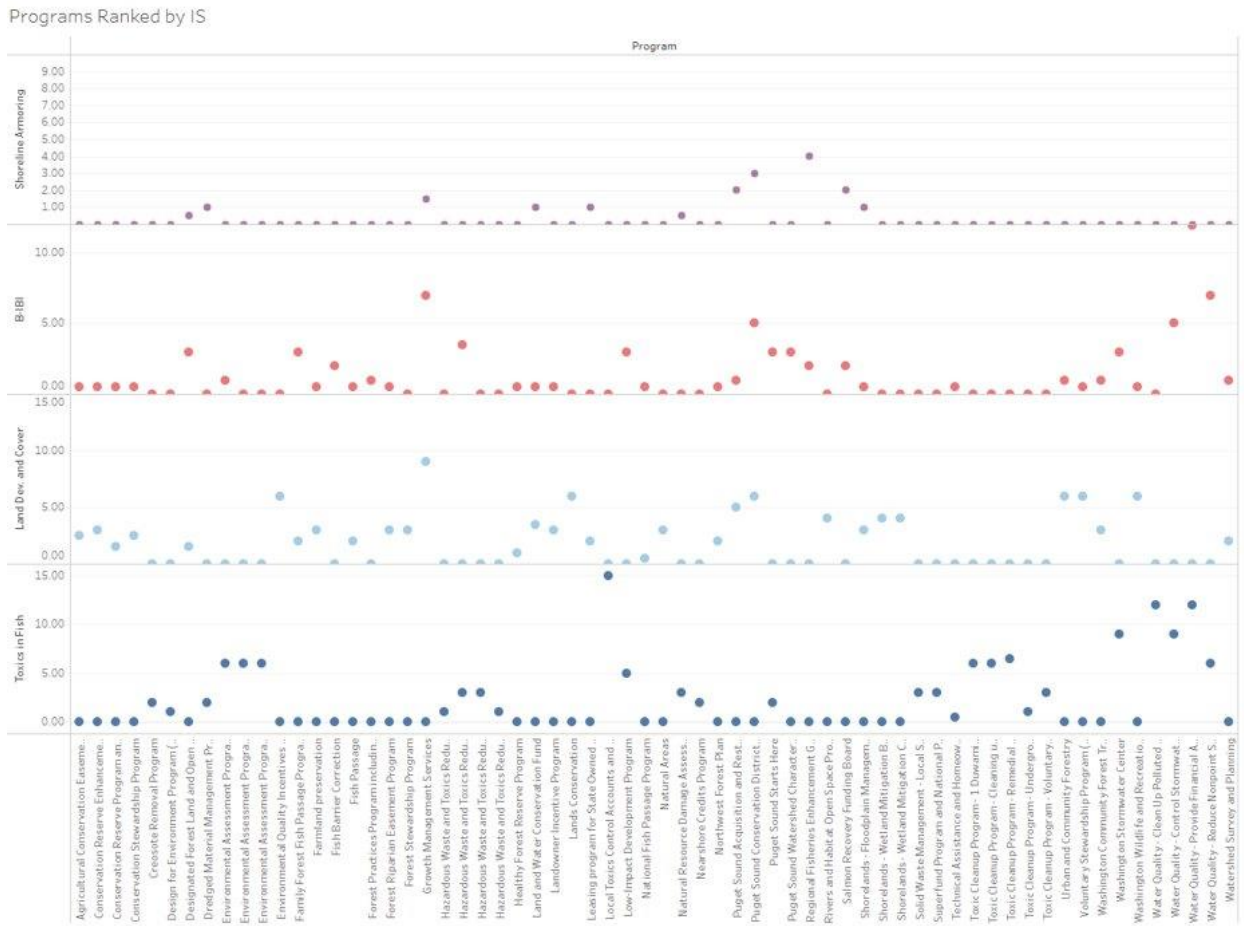


Figure 2 presents an example dashboard of programs ranked by individual IS with sub-strategies combined; the highest dots within each IS area are programs that individually received rankings of "higher". The programs with consistently high dots are very important at the cross-IS level. Each of the horizontal "boxes" are the individual ISs and the programs are labeled along the bottom.

Figure 2.



**NEXT STEPS**

After the initial burst of attention at the beginning of the fiscal year to meet Action Agenda deadlines and the somewhat lukewarm response from the Adaptive Systems Program, the PSI team held off on completing scoring for all IS. There seemed to be some political sensitivity around ranking programs for impact given that the Adaptive Systems Program has a role in ranking budget requests by state agencies.

Despite the value we see in this product, we did not “shop” this product around to other potential audiences in the IS program given other pressing priorities this fiscal year. We recommend a discussion during an IS-Science Award meeting (perhaps after a new IS manager is in place) to determine if a presentation about this tool would be suitable for an ISWG meeting. In that setting, the working group, or a select team of partners, could discuss whether there is broader interest in completing the work collaboratively. Since the strength of linkages between programs and IS strategies are somewhat subjective, we recommended that a wider audience (e.g., IS leads, SIATs, ISWG, AACG) participate in the score process we piloted here.