

Regional Wastewater Analytics Dashboard Development Questions and Answers (Updated 10.14.26)

General statement regarding MARC environment and platforms used:

MARC's information technology is mostly Windows-based. This includes self-hosting of servers for file serving as well as a few web servers (which are based on IIS and include some local user and data APIs as well as React websites). The database back-end of MARC is SQL Server and includes both geographic and tabular data for the region, primarily regarding transportation systems, Census demographic data, and other data involved with MARC's focus on the region but it does not include data specific to systems used at the local level or by private organizations. MARC self-hosts an ArcGIS Enterprise deployment with ArcGIS Server and ArcGIS Portal. MARC's cloud presence is limited to Microsoft 365 (and associated solutions such as SharePoint, Power Automate, etc.) and ArcGIS Online through our MARC ArcGIS Online Organization and Open Data Portal. MARC has a distributed collaboration from our on-premises ArcGIS Enterprise to our ArcGIS Online Organization through which geographic data is shared to organization staff and the public through published feature services or other ArcGIS Online items (web maps, StoryMaps, Web Experiences). MARC maintains a metadata database that documents all data

Tools used for data creation, maintenance, and visualization include; Microsoft Office, ArcGIS Pro, SharePoint etc. MARC's data development processes include automated scripting using ArcGIS Pro Models, Arcpy, Python, and Jupyter Notebooks.

Solutions proposed for this work should consider the existing capabilities of the MARC environment. However, if alternate platforms or solution stacks are proposed, they will be considered based on functionality, cost, and maintenance.

Solicitation, Proposal Submission & Evaluation

Addenda, Updates & Communications

1. I am writing to inquire whether there have been any addendum or Q&A issued for the Wastewater Data Standardization, Normalization and Predictive Analytics Dashboard Development Services. If so, could you please advise where the most recent addendum may be accessed or kindly share a copy for our reference?

Answer: This is the first Q&A and there have been no addendums. Any additional documents will continue to be posted in the location of the RFP:

<https://www.marc.org/about-marc/funding-and-rfps>

Note: this answer was provided in the first Q&A posted 9.29. There has now been one additional addendum which is the final update before the proposal deadline.

2. Does MARC require out-of-state firms to be registered with the Missouri Secretary of State to submit a proposal or to be awarded a contract?

Answer: No registration is required with the Missouri Secretary of State to respond to this RFP or be awarded a contract.

3. If MARC issues an amendment, addendum, or clarification to the RFP, will respondents be required to acknowledge receipt of the amendment or addendum as part of their proposal submission? If so, please specify the required acknowledgment format.

Answer: MARC expects respondents to track addendums as they are added on the website in the same place the RFP can be found before the response deadline. No formal acknowledgement is requested, but MARC does not take responsibility if respondents have not taken posted clarifications into account in their proposal.

4. Does MARC anticipate issuing any amendments, addenda, additional requirements, or clarifications to this RFP prior to the proposal submission deadline? If so, how will respondents be notified of such updates? Additionally, if the RFP requirements or scope are materially modified, will MARC consider extending the proposal submission deadline to allow respondents adequate time to address the changes?

Answer: No additional amendments or information are expected to be released after October 16, one week prior to the proposal deadline. Respondents are expected to check for updates prior to the deadline. No material modifications have been issued to this point.

Proposal Format, Page Limits & Attachments

1. Proposal format. Are a cover page and cover letter excluded from the five-page limit? Is there a minimum font size, and should the proposal and attachments be sent as a single PDF or as separate files? May a link to a working prototype be included as an example of relevant work?

Answer: Cover pages and cover letters are not required and are therefore not excluded from the five-page limit. There are no font size requirements but the

proposal should be easily readable. Proposals can be sent either as single files or separate files. Links may be included to relevant work but should not be the primary source of requested proposal information.

2. Do the cover page and any table of contents count toward the five-page limit, and are there formatting requirements such as minimum font size?

Answer: see answer above.

3. **Proposal format.** Does the five-page limit exclude a cover page, table of contents, and cover letter? Are there minimum font size or margin requirements, and are there page limits for attachments such as resumes and work product examples?

Answer: see answer above. Resumes may be included as attachments. While there are no specific page limits for attachments, they should be in a volume that is reasonable to review.

4. Are there font or margin requirements, and does a cover letter or title page count toward the five-page limit?

Answer: see answer above.

5. Does the five-page proposal limit include a cover page, table of contents, or other introductory pages, if included by the respondent?

Answer: see answer above.

6. The RFP limits the proposal to five pages while requiring the response to cover qualifications, technical approach, team, work plan, references, and cost summary. Please clarify whether respondents may include a detailed technical approach, architecture diagrams, work plan, and other supporting technical materials as attachments beyond the specifically listed attachments.

Answer: Technical diagrams may be included as attachments. However, any required elements of the proposal should not be only available in the attachments.

7. Can MARC confirm whether resumes, project descriptions, architecture diagrams, and technical case studies may be submitted as separate attachments without counting toward the five-page limit?

Answer: resumes and technical diagrams may be included as attachments, but any information required as part of the proposal must be included in the primary proposal document.

8. Does MARC have any preferred page allocation or recommended emphasis among the required proposal sections within the five-page limit, or may respondents determine the allocation based on the task areas being proposed?

Answer: Respondents should determine allocation.

9. Does MARC have a preferred format for the cost proposal summary included within the five-page proposal, or may respondents use their own summary format provided that pricing is clearly identified by task area?

Answer: respondents may use their own summary format provided the information is clear.

10. Could MARC please consider increasing the current five-page proposal limit? Given the required proposal content, including references, it may be challenging to address all requirements adequately within the existing limit. Would MARC consider allowing additional pages to facilitate a comprehensive response?

Answer: MARC is not currently anticipating increasing in the page limit.

11. Are vendors permitted to include a cover letter with their proposal? If so, will the cover letter count toward the five-page proposal limit?

Answer: cover letters are not required and will count toward the proposal page limit.

12. Please clarify whether there is a page limit for attachments such as examples of relevant work products, detailed technical documentation, or architecture diagrams.

Answer: see answer above.

13. Does MARC have any preferred or required formatting specifications for proposal submissions, including font type, font size, page size, margins, line spacing, or other document formatting requirements? If no specific formatting requirements are prescribed, may respondents use their standard professional proposal format, provided the proposal remains within the stated five-page limit?

Answer: see answer above.

14. Should respondents submit the proposal and permitted attachments as a single electronic file, or may the proposal and supporting attachments be submitted as separate electronic files in the same email?

Answer: see answer above.

15. Are the attachments identified in Section 5.1 intended to be submitted only when applicable to the respondent, or does MARC expect respondents to submit each listed attachment category as part of every proposal?

Answer: attachments are only required if applicable.

16. For the required three comparable project references, does MARC have a preferred reference format or minimum information that should be provided for each reference, such as client name, project description, period of performance, contract value, and contact information?

Answer: there is no preferred format for references.

Submission Forms, Signatures & Validity

1. Are platform, licensing, or hosting costs in scope for the proposal?

Answer: Hosting costs are anticipated to be covered by other parts of the budget. Any specific platform or licensing costs recommended or required by the respondents should be considered and provided as line items in a proposal to understand the impact of those costs on overall budget.

2. Contract documents: Are there insurance limits, required endorsements, certifications or contract forms that respondents should address or attach at proposal stage?

Answer: These items will be addressed with finalists and are not required at the proposal stage.

3. Does MARC require respondents to submit any mandatory administrative forms, cover sheets, certifications, representations, disclosures, or other forms in addition to the proposal of content and permitted attachments identified in Section 5.1? If so, please provide the required forms or identify where they can be obtained.

Answer: see answer above.

4. Is a signed proposal, cover letter, or certification by an authorized representative of the responding organization required? If so, please specify the required signature format and where the signature should be included.

Answer: All proposals should be submitted by authorized representatives of the responding organization. There is no required format for signatures.

5. If a respondent does not hold or require any certifications or licenses applicable to its proposed task area(s), should the respondent provide a statement indicating that no applicable certifications or licenses are required, or may this attachment category simply be omitted?

Answer: see answer above.

6. Does MARC have any preferred or required organization, labeling, or numbering convention for permitted attachments, such as resumes, relevant work products, certifications/licenses, and detailed pricing worksheets or rate schedules?

Answer: no specific formatting is requested or required.

7. Does MARC require proposals to remain valid for a specified period following the proposal's submission deadline? If so, please identify the required proposal validity period.

Answer: Proposals should remain valid through the end of the contract award timeline listed in the RFP.

Task-Area Bidding, Teaming & Evaluation

1. **Teaming.** For a respondent that proposes a named teaming partner for one task area within the single five-page submission, may the partner's references and personnel be presented in that submission, and do they count toward the page limit?

Answer: All proposed personnel should be included in the page limit. See answers above related to attachments and page counts.

2. If Task Area 1 is awarded to a different consultant, should Task Area 2 proposals assume they build to that consultant's common data model? When do you expect a draft to be available?

Answer: Subsequent task areas should build on previous task areas for the purposes of this project. Exact timing will not be known until project is awarded and all parties come together for scheduling negotiation.

3. Can a consultant submit a proposal covering only Task Areas 2 and 3, with deliverables coordinated with other consultants responsible for data architecture and dashboard development?

Answer: Responding organizations may propose on one or more areas. If your proposal requires a specific other consultant who is submitting a separate proposal, it should be noted as a dependency.

4. For the Executive Summary, should respondents provide an overview of the entire MARC initiative, or should the summary be tailored specifically to the task area(s) for which the respondent is proposing?

Answer: Proposals only need to address the areas they are responding to.

5. May respondents propose a team that includes subcontractors, partners, or specialized subconsultants for individual task areas, and if so, should their qualifications and roles be described within the five-page proposal or may supporting information be included as an attachment?

Answer: see answer above.

6. If MARC elects to conduct interviews or presentations as part of the evaluation process, will all respondents or shortlisted respondents be provided with advance notice of the interview format, duration, required participants, and presentation requirements?

Answer: All finalists selected for interviews, should interviews occur, will be provided with all relevant information for interview format, length and requirements in advance of the interview.

7. Could MARC please confirm whether vendors may submit proposals for individual tasks rather than being required to bid on all tasks? If separate bids are permitted, could you clarify how the total budget of \$200,000 will be allocated among the individual tasks?

Answer: As stated in the RFP, responding organizations may submit on one or more areas of the project. The final budget allocation will be determined based on selected consultants.

Licensing, Support & Internal Requirements

1. **Post-project licensing and support.** Following the answers to Q2 and Q3, should recurring license costs after July 31, 2027 be included in the cost proposal as an annual line item, and are they expected to fit within the approximately \$200,000 project budget or be budgeted separately? May respondents offer optional post-project maintenance or support as a separately priced item, with MARC remaining able to operate the system independently?

Answer: If proposing a solution that involves annual licensing fees, those should be made clear in the proposal but do not need to be considered part of the project budget. Respondents may offer post-project options but any budget dependencies must be made clear and they will not be considered in scoring.

2. **Internal requirements.** The answer to Q8 references internal requirements all projects must comply with. Can MARC share these before the proposal due date, including any insurance, security, or accessibility requirements?

Answer: see technical information above.

3. Should proposals include hosting, support, maintenance, and SaaS licensing beyond the July 31, 2027 final-deliverable date, and if so, what initial operating term, renewal assumptions, service levels, and funding constraints should respondents use for pricing?

Answer: see answer above.

4. Are there any specific certifications or licenses that MARC requires for this solicitation, or should respondents only provide certifications or licenses that are relevant to their proposed task areas?

Answer: see answer above.

Technical Scope, Dependencies & Existing Work

1. If two or more organizations submit a combined proposal as a teaming arrangement or joint team, does MARC require any specific documentation identifying the prime respondent, participating organizations, and respective roles and responsibilities?

Answer: It is up to respondents on how to self-organize if a combined proposal is suggested. If the proposal is submitted as joint, MARC will evaluate the proposal as a whole and not separate vendors who submit jointly.

2. Existing work and documentation. Is there existing work we would build on, such as a draft data model, data dictionaries, ETL scripts or dashboard designs? Could MARC share the schema or documentation, or describe it, before the proposal is due?

Answer: There is no existing product to build on for this project.

3. Will MARC consider proposals that recommend a single integrated delivery approach across multiple task areas rather than treating each task area independently?

Answer: As stated in the RFP, responding organizations can propose on one or more areas and can include a single delivery approach.

Vendor Eligibility, Qualifications, References & Teaming

Eligibility, Registration & Geographic Requirements

1. Is there anything about the intended scope or procurement that would make a university an inappropriate respondent?

Answer: A university may respond to any or all of the task items provided it is an implementation project of available methodology, not a research project.

2. The Q&A says the project is primarily focused on US-based contractors and can be delivered remotely. Would a US-registered LLC be eligible if its delivery personnel work from Bosnia and Herzegovina? Are there separate restrictions on overseas system/data access or use of subcontractors?

Answer: This project is focused on US-based contractors.

3. Could you kindly confirm that a US-registered firm is eligible when its lead developer works remotely from outside the US, with our US-based team handling all communication and meetings in Central Time business hours?

Answer: see answer above.

4. Eligibility. Answer 4 says the project is primarily focused on US-based contractors. Will a proposal from a firm registered outside the United States be evaluated if its team includes US-based personnel, and if all meetings are held during Central Time business hours?

Answer: see answer above.

5. May an India-registered company deliver this task remotely, with meetings in US Central time?

Answer: see answer above.

6. Does MARC permit the use of offshore and/or nearshore resources for project delivery?

Answer: see answer above.

7. Do you accept offshore resources?

Answer: see answer above.

8. Is the project supported in whole or in part by federal funds? If so, are there federal requirements respondents should plan for, such as [SAM.gov](#) registration or specific contract provisions?

Answer: This project is not funded by federal funds.

9. Vendor eligibility: Is active [SAM.gov](#) registration required at proposal submission or before contract execution? Our registration is currently inactive. Please identify any funding-related certifications or registrations required for this engagement.

Answer: Our procurement policies do not require SAM.gov registration or a UEI for this particular project. While we do not require compliance with federal funding requirements for this project, we have internal requirements all projects must comply with.

10. Does this engagement require [SAM.gov](#) registration, a UEI, or compliance with federal funding requirements?

Answer: Our procurement policies do not require SAM.gov registration or a UEI for this particular project. While we do not require compliance with federal funding requirements for this project, we have internal requirements all projects must comply with.

Comparable Experience & References

1. For the three comparable references, would production data platforms/dashboards in other sectors qualify if we clearly describe their relevance, or must they be public-health/wastewater projects?

Answer: While we would prefer public health applications, any production data platform/dashboard can be used as references.

2. Would comparable dashboard and data-integration projects outside public health satisfy the three-reference requirement?

Answer: see answer above.

3. Will MARC accept comparable technical-documentation and governance projects from other sectors, including work performed by the proposed principal before establishing the current business? We understand that references must substantiate comparable project work.

Answer: see answer above.

4. For references, will comparable public health data integration and dashboard projects be considered relevant, or is wastewater-specific experience required?

Answer: see answer above.

5. Must the three references be wastewater or public-health projects, or does MARC accept comparable data-integration and dashboard projects from other sectors?

Answer: see answer above.

6. Can the three comparable references include projects completed by our principals before forming the LLC or by proposed subcontractors? Must any references belong to the prime contractor?

Answer: As long as examples reflect both the work of the involved personnel and accurately reflect existing capabilities of the personnel, they can be previous work products.

7. Whose references count toward the three required: the firm's own projects, or projects the proposed principal delivered for clients while employed elsewhere before founding the firm? And does a named subcontractor's reference count for the task area it would perform?

Answer: see answer above.

8. For respondents proposing on individual task areas, may the required three comparable project references include projects performed by proposed key personnel or subcontractors prior to joining the respondent, provided their role and responsibility are clearly identified?

Answer: see answer above.

9. Building on Q&A answers 5 and 11, may a comparable production dashboard/data-platform reference count toward the three required references when the proposed principal contributed as an employee of another organization, with that employer

and the individual's role clearly attributed and an authorized contact able to verify the contribution?

Answer: see answer above.

10. May an ongoing engagement count if a comparable dashboard/data-platform component is already in production and its delivered scope can be verified, even though the overall project is unfinished? Must each reference instead represent a completed, formally accepted project, and are ongoing projects without a production component ineligible?

Answer: project references should be for completed, accepted products.

11. For Task Area 4 alone, how is the 20% specialist-expertise criterion for data integration, AI, analytics and public-health data systems applied? Is direct wastewater/public-health or AI-modeling experience a minimum qualification, or is it scored relative to the proposed dashboard scope and coordination with MARC and other task-area specialists?

Answer: Each proposal will be evaluated by the scoring rubric based on the task areas proposed. No proposals will be scored against other proposals.

12. For Task Areas 2, 4, and 5, is direct prior wastewater-surveillance/public-health experience a minimum qualification, or may a respondent demonstrate strong data integration, ETL, dashboard, governance, and documentation experience while incorporating a public-health/wastewater subject-matter expert into the proposed team?

Answer: Please review the scoring rubric for how experience will be evaluated for all task areas.

13. Since the RFP references that tasks can be awarded across multiple firms, is there a preference for partnerships versus individual firms?

Answer: There is no specific preference for one solution over another.

Teaming, Subcontractors & Partner Conflicts

1. May a subcontractor handle core development while (respondent) manages the engagement and technical oversight? When must subcontractors be identified and approved, and are there any restrictions on their location or data access?

Answer: This project is focused on US-based contractors. All subcontractors must be identified in the proposal and included in the budget.

2. Section 6 asks respondents not to contact project partners about this solicitation. So that we can form our team without breaching this, could MARC say which organizations are project partners or advisory committee members? And may a respondent include a university or hospital group from the region as a subconsultant if it is not one of them?

Answer: The primary partners on this project are local public health departments.

3. **Teaming and participants:** May a respondent team with or subcontract to a laboratory or other entity that generates the wastewater data in scope, and may a teaming partner's projects count toward the three required references? To help respondents avoid conflicts under §6, can MARC identify the participating laboratories and agencies and the advisory committee members, or otherwise say which parties respondents should not team with?

Answer: see answer above.

4. Will MARC share the list of firms that downloaded the RFP or submitted questions, and the list of respondents after the close? It helps us settle teaming before the deadline.

Answer: MARC is not tracking RFP downloads. All questions submitted by the deadline are reflected here.

Insurance & Contract Qualifications

1. Please provide the agreement and internal requirements referenced in Q&A 8 that will govern this award, including required insurance and endorsements, compensation method, invoicing/payment terms, and deliverable acceptance terms.

Answer: These details will be negotiated with finalists and selected vendors.

2. On insurance: would a policy from a United States-incorporated surplus lines insurer that is eligible in Missouri satisfy Section 14.E of the Consultant Services Agreement?

Answer: It is not clear what Consultant Services Agreement referred to here.

3. Insurance. MARC's Consultant Services Agreement template asks for coverage from an insurer based in the United States and authorized in Missouri. Can this be provided at contract execution rather than with the proposal, and are the auto liability and workers' compensation requirements adjusted for remote-only work?

Answer: The consultant services agreement will be negotiated with the selected vendors.

4. Will MARC share its standard contract and insurance requirements? Are they needed with the proposal or only at award?

Answer: Responding organizations should indicate ability to meet requirements but are not expected to meet them until award.

Staffing, Remote Delivery & Resource Substitution

1. Do you expect the vendor to perform any tasks on-site, or can all work be performed remotely?

Answer: Work may be performed remotely.

2. If a proposed resource becomes unavailable or allocated to any other project at the time of award/project start date can we deploy another resource with the same/similar experience and skillset?

Answer: Any change in personnel must be disclosed and approved by MARC prior to any change being made.

Contract, Insurance, Legal, Funding & Intellectual Property

Contract Terms, Insurance & Payment

1. Are there required insurance limits, certifications or other contract conditions that are not included in the RFP, and at what stage would evidence be needed?

Answer: see answer above.

2. Are there minimum insurance requirements or a standard MARC contract template that selected consultants will be expected to sign?

Answer: see answer above.

3. Section 10 notes the project will begin with publicly displayed data. Which pathogens or targets, and roughly how many treatment plants and laboratories, should the first release include? If new sites, labs, or jurisdictions join after work begins, should that be included in the original price or handled as a contract change?

Answer: Exact scope and number of labs will be determined in initial scoping of the project but are not expected to exceed 5 initially. Any expansion of scope once approved will be assessed for feasibility and handled as a scope change.

4. **Contract terms.** MARC's answer to Question 8 refers to internal requirements all projects must comply with. Can MARC share them before the deadline, in particular the standard contract terms, insurance requirements, and ownership of code and documentation produced by the consultant when the consultant also supplies pre-existing software used in the work?

Answer: See answer above. If consultant is proposing pre-existing software, it must be available for MARC's use post-project without ongoing maintenance and support required.

5. Are progress invoices payable during delivery? Could you clarify invoice milestones, acceptance requirements, review periods and payment timing? Would payment for Task 4 depend on completion of other work areas?

Answer: All payment schedules will be negotiated with selected vendor(s). Payment may not be made in advance of work product acceptance.

6. Could you share the applicable agreement and requirements for insurance, intellectual property, data security and AI-assisted development tools?

Answer: see answer above.

7. Could you share the standard contract, payment terms, and required insurance types and limits, including any permitted exemptions?

Answer: see answer above.

8. Will MARC accept vendor-provided public-sector or nonprofit pricing, and does MARC have any existing purchasing agreements or cooperative contracts it prefers?

Answer: <https://www.marc.org/local-government/cooperative-purchasing> for existing cooperative purchasing mechanisms.

9. Does MARC currently have an incumbent consultant, contractor, or other service provider supporting the existing wastewater dashboards or related data services? If so, may MARC provide the incumbent's name, the scope of its current services, and whether any portion of that existing work is expected to continue or transition under this RFP?

Answer: see answer above.

10. Could you please share what type of contract is anticipated for this project (i.e. T&M)?

Answer: This is anticipated to be a fixed-price contract.

Funding, Budget Context & Procurement

1. The May 2026 board report describes a Public Interest Technology Infrastructure grant. Is that grant the funding source for this RFP? Is the contractual amount meant to cover all five task areas, and can MARC share the deliverables it committed to in its grant application?

Answer: The contractual amount is expected to cover the consultant portions of the project.

2. MARC's May 2026 Board materials identified approximately **\$200,000 in projected contractual expenses** within the broader wastewater-dashboard funding request. Is that still the current planning amount for consultant services under this RFP, and is MARC able to provide any anticipated allocation or budget range by task area?

Answer: This is the budgeted amount for all consultant services. There is no specified budget range for each task area.

3. Does the grant funding this project require code, data models or documentation to be released under an open license? That changes which platforms we can recommend.

Answer: see technical information above.

Intellectual Property, Licensing & Open Source

1. **Intellectual property transfer.** Please clarify whether MARC will require transfer or assignment of intellectual property rights in (a) work products created specifically for this project, and (b) a respondent's pre-existing software, platforms, or tools used to deliver the work. If (b) is not required, will a license that allows MARC to host and operate the system independently satisfy the expectation stated in the answer to Q3?

Answer: IP ownership for work products created for this project will be negotiated with selected vendors. See answer above re: pre-existing software and licensing.

Task-Area Interfaces & Integration Responsibilities

1. For a Task Area 4-only bid, what data access/interface, hosting environment and authentication responsibilities should we assume MARC or the other task-area contractor will provide?

Answer: MARC's Open Data Portal (www.marc.org/dataportal) is a repository of the work built and maintained by MARC. MARC expects to host the tool but will work with the selected contractor to make final decisions on all deliverables.

2. For a Task 4-only award, will MARC or the other task contractors supply documented, maintained read-only interfaces for normalized observations and model outputs, together with metadata and geographic assets? Please clarify who must build those interfaces, own refreshes and upstream failures, and provide representative data and stable interfaces before dashboard integration within the coordinated phasing described in Q&A 12.

Answer: All scopes and phasing will be negotiated with selected vendor(s) and agreed to prior to beginning any work.

3. Given that MARC may award task areas separately to multiple contractors, will MARC establish standard GIS formats (such as Esri Feature Services) as a mandated baseline integration format between Task Area 2 (ETL/Normalization) and Task Area 4 (Dashboard Development)?

Answer: see answer above.

Hosting, Deployment & Ownership

1. **Data use terms.** Do any data-sharing agreements with the state laboratories or utilities limit processing of the source files by a hosted cloud service located in the United States, or require that the files stay in an environment MARC controls?

Answer: All cloud services used for this project should be based in the United States.

2. Does MARC prefer a vendor-hosted SaaS platform, deployment into a MARC-designated cloud environment, or delivery of source code for MARC or another consultant to operate? Please also clarify the required ownership and licensing

treatment for platform components, custom code, ETL pipelines, and analytical models.

Answer: see answers above.

Budget, Pricing, Licensing & Procurement Model

Overall and Task-Area Budgets

1. Is there an anticipated budget range for Task Area 4?

Answer: There is not an anticipated budget range for each individual item. The total overall available budget is roughly \$200,000 for all items.

2. Is there an anticipated budget or budget range for the project overall or for individual task areas?

Answer: see answer above.

3. Is there a budget range or not-to-exceed amount for the project or for each task area?

Answer: see answer above.

4. Is there an anticipated budget range for Task 4 within the overall program budget?

Answer: see answer above.

5. What is the budget allocated for this project?

Answer: see answer above.

6. Does MARC have an established budget, estimated funding range, or not-to-exceed amount for this solicitation or for each individual task area that can be shared with prospective respondents?

Answer: see answer above.

7. What is the approved budget or range allocated for this project?

Answer: see answer above.

8. If multiple task areas are awarded separately, has MARC established individual budget allocations or target ranges for each task area?

Answer: see answer above

9. Is there an anticipated budget range for Task Areas 2 and 3 individually?

Answer: see answer above.

10. Q&A #2 says platform and licensing costs should be listed as separate line items.

Do those costs count against the roughly \$200,000 budget, or could they be funded from other sources?

Answer: All proposed costs should be included in proposed budget.

11. What annual operating budget is expected after July 2027 for storage, analytics, and the dashboard, as this will guide technology recommendations.

Answer: Ongoing operating budget depends on proposed solutions and is not currently identified.

Pricing Structure & Contract Model

1. **Pricing form:** Please confirm that stand-alone pricing for each proposed task area (e.g., Task Area 2 and Task Area 3), plus bundled pricing and dependencies, satisfies \$5.3. Does MARC prefer fixed-price (by deliverable), time-and-materials, or not-to-exceed pricing?

Answer: Responding organizations are responsible for organizing a budget in a way that meets the stated project budget. This is anticipated to be a fixed price contract.

2. Does MARC prefer a fixed-price implementation model or a time-and-materials model?

Answer: see answer above.

Hosting, Licensing & Recurring Costs

1. Hosting and identity: Will MARC supply and pay for the production hosting environment, software licenses and agency-user authentication service, or should Task Area 4 pricing include those recurring charges? If the consultant is to provide them, what operating period and service levels should be priced?

Answer: Operating level and service level should be set as high as reasonable for a non-emergency system such as 99% uptime. Costs associated with all elements identified should be included but identified as being the responsibility of MARC

2. Of the approximately \$200,000 overall budget, should respondents assume any amount is reserved for Task Area 5, hosting, licensing, or other project costs?

Answer: The budget for all 5 task areas is \$200,000.

3. How many years of licensing should be priced: only through July 31, 2027, or multi-year to cover ongoing operations?

Answer: see answer above.

4. Should respondents include cloud hosting, software licensing, third-party services, AI/ML consumption, GIS services, and other recurring technology costs within the proposed pricing?

Answer: see answer above.

Support, Training & Post-Project Operations

1. What frequency and typical duration of daytime Central-time meetings should we budget for? Is a warranty, defect-correction period or other support expected after final handover?

Answer: Responding organizations should suggest the most appropriate level of support and meeting cadence to meet timelines and complete the project successfully.

2. Should respondents include training and certification for MARC staff in their scope and pricing?

Answer: see answer above.

Scope Priorities & Budget Assumptions

1. What minimum prediction targets and dashboard outputs are expected within this budget? Will MARC's subject-matter experts help define and approve normalization methods and model acceptance criteria, or must the consultant independently establish and validate them?

Answer: Responding organizations should suggest targets and outputs. The advisory group will help define and approve methods and criteria.

2. **Scope Priorities:** Given the approximately \$200,000 overall budget, is there a preferred minimum viable platform or prioritization of task areas for initial implementation?

Answer: All task areas are priorities and will be necessary to complete within the budget and timeline.

Project Governance, Coordination, Schedule & Meetings

Remote Work, Meetings & Presentations

1. Are project meetings and working sessions expected to be in person in Kansas City, or may they be conducted virtually?

Answer: meetings may be conducted virtually.

2. How many in-person meetings are anticipated, and may routine meetings be held virtually?

Answer: In-person meetings and remote meetings are both allowable.

3. Can all work, including meetings and presentations, be delivered remotely?

Answer: Work, including meetings and presentations, can be delivered remotely but must prioritize daytime meetings in the central time zone.

4. How many advisory groups are there and how often do they meet? How many presentations should we plan, including any to the MARC Board or committees?

Answer: there is one advisory group for this project. Final number of presentations will be negotiated as part of scope definition and finalization of timeline.

Multi-Consultant Governance & Coordination

1. If task areas are awarded to different consultants, does MARC anticipate a sequenced handoff (for example, the Common Data Model in Task Area 1 being finalized before ETL development in Task Area 2 begins), or concurrent development?

Answer: tasks, when possible can be concurrent but many will need to be sequential.

2. Will MARC designate a lead consultant or serve as the coordinating party across task areas?

Answer: MARC will serve as the coordinating party across entities.

3. If task areas are awarded separately, what coordination process, meeting expectations, and delivery schedule will govern access to the other consultants' schemas, ETL documentation, model assumptions, validation results, and dashboard documentation?

Answer: MARC and an advisory committee will be guiding and coordinating the work of the contractor or contractors selected to complete this project. We will mutually determine a phasing schedule that aligns delivery schedule with project needs.

4. The RFP refers to subject matter experts across the Kansas City region. Which experts does MARC have in mind, and how does MARC expect the consultant team to work with them?

Answer: see answer above.

5. If separate consultants are awarded the data-model, ETL, predictive-analytics, and dashboard task areas, which party will own overall solution architecture, integration management, end-to-end testing, and acceptance, and what interface artifacts must each task-area consultant provide?

Answer: see answer above.

Schedule, Sequencing & Dependencies

1. The timeline shows testing in April 2027 and final deliverables by July 31. What does MARC expect from the consultant between May and July, and should respondents include post-launch support such as fixes or monitoring of data refreshes?

Answer: Responding organizations should suggest the most appropriate level of support to complete the project successfully. Review RFP to determine activities expected to take place during the end of the project timeline.

2. What data interfaces, model outputs, hosting and authentication services will be provided for the dashboard? Could you also clarify the expected maintenance period and how delays in upstream deliverables would affect our schedule?

Answer: All work products will be negotiated with selected vendors. Responding organizations should suggest the most appropriate level of support to meet timelines and complete the project successfully. MARC will act as the coordinating entity and, if delays become unavoidable, will manage schedule changes with all affected vendors.

3. The RFP identifies methodology and architecture development from December 2026 through February 2027, analytics and dashboard development in March 2027, and testing/refinement in April 2027. Please clarify the expected activities and deliverables between May and July 2027.

Answer: review task outlines in RFP to determine activities expected to take place during the end of the project timeframe.

4. Do you have an estimated project start date and desired go-live date? Please mention in months.

Answer: Review schedule in RFP for more information.

Stakeholders, Advisory Groups & User Engagement

1. What roles will Missouri DHSS and KDHE have in the project, and have they agreed to participate and share data?

Answer: We are working with state agencies to understand the best methods to access data and will be responsible for those relationships.

2. Will MARC provide access to the necessary datasets, technical documentation, and subject matter experts at project initiation?

Answer: MARC will act as the coordinating entity of the advisory group and all required public sector organizations and data sources.

3. Roughly how many stakeholder and end user groups should respondents plan for in requirements gathering and user testing?

Answer: Responding organizations should suggest the best approach for this project.

4. Advisory committee and stakeholder time. Who sits on the advisory committee, and how often does it meet? How much time should we assume health departments and state laboratory staff can give to requirements and validation workshops?

Answer: Responding organizations should suggest the most appropriate time needs for validation. The primary partners are local public health departments.

5. Who are the primary stakeholders collaborating with the vendor, and what are their roles?

Answer: The primary partners are local public health departments.

6. Which stakeholder groups will participate in requirements gathering and user testing, and approximately how many users should the contractor plan to engage?

Answer: The primary partners are local public health departments. MARC will act as the coordinating entity and negotiate specific number of user engagements during scope definition with selected vendor(s).

Deployment, Training & Post-Launch Support

1. Is the July 31, 2027 completion date intended to include production deployment, user training, knowledge transfer, stabilization/hypercare, and final documentation?

Answer: yes.

2. How does this project align with the current skill sets of stakeholders who will maintain dashboards and data pipelines going forward? Would MARC value training or capacity-building for staff and partners as part of knowledge transfer?

Answer: See answer above for MARC data capabilities. All training suggestions should be included in proposal.

3. What are the expectations and timeline for ongoing support and maintenance after the system is implemented?

Answer: MARC expects to maintain this system on its own after the project period.

Task-Area Deliverables & Handoffs

1. If Task 4 is awarded separately from Tasks 1 and 2, should the dashboard be built on the common data model those tasks produce, or on the existing public data while that model is finished? The answer decides whether we price Task 4 on its own or only together with Task 1.

Answer: The dashboard is being built for the common data model.

2. Does Task 5 primarily consolidate and develop documentation from those inputs, or also require independent reconstruction and technical validation of the underlying implementations?

Answer: Task 5 does not require independent reconstruction and technical validation but does require the development of a sustainability model and opportunities for future investment.

Data Sources, Access, Inventory, Volume & History

Source Inventory & Participating Organizations

1. How many source datasets, laboratories, and jurisdictions will feed the common data model during the project period?

Answer: Exact number of labs will be determined in initial scoping of the project but are not expected to exceed 5 initially.

2. **Data inventory.** How many jurisdictions, laboratories, and sampling sites currently contribute data, and in what formats and at what reporting frequency? Will the selected contractor have access to the underlying results and methodology metadata (for example, sample type, concentration and laboratory method, and flow data) behind the existing public dashboards?

Answer: This is a new project with no existing data contributions. Details of data will be negotiated between MARC and the supplying agencies.

3. Approximately how many laboratories and jurisdictions currently contribute wastewater data, and in what formats is that data received (for example, flat files, APIs, or existing dashboard exports)?

Answer: see answer above.

4. How many agencies, jurisdictions, laboratories, or wastewater monitoring partners are anticipated to participate in the initial deployment?

Answer: The primary partners are local public health departments.

5. How many jurisdictions, labs, and sampling sites are in scope at launch, and which existing public dashboards or data feeds will be the sources?

Answer: see answer above.

6. How many participating jurisdictions, wastewater treatment facilities, and laboratories are expected to contribute data during the initial project phase?

Answer: see answer above.

7. For the first release, how many jurisdictions and laboratories are in scope, and which indicators are required? Are opioid markers in this phase or a later one?

Answer: see answer above. Opioid markers are not part of the initial phase of work.

8. How many data sources (jurisdictions and laboratories) are expected to feed the common data model at launch?

Answer: see answer above.

9. What source systems and datasets are anticipated to be included in the solution?

Answer: see answer above.

10. How many jurisdictions, wastewater treatment facilities, laboratories, and other data providers are expected to participate in the initial implementation?

Answer: see answer above.

11. How many distinct jurisdictions and organizations will be in scope and supply data for integration through this project?

Answer: see answer above.

12. How many jurisdictions, laboratories and sampling sites are in scope at launch?

Answer: see answer above.

13. Roughly how many treatment plants will be represented in the dataset?

Answer: see answer above.

14. About how many labs and jurisdictions will provide data at launch, and how often is it updated (daily, weekly, other)?

Answer: see answer above.

15. How many laboratories are involved in sample preparation and analysis, and how diverse are their methods? Can MARC share method citations or SOPs?

Answer: see answer above.

16. Data sources and volume. How many wastewater sampling sites, utilities and laboratories currently supply data across Kansas and Missouri? Roughly how much data is there (number of sites, sampling frequency, length of history)?

Answer: see answer above.

17. **Data sources:** Approximately how many wastewater data sources, jurisdictions, laboratories, and existing databases or systems are expected to be integrated during the initial phase of the project? How are these data currently made available (e.g., APIs, CSV/Excel files, FTP, hosted feature layers on ArcGIS Online (AGOL), etc.)?

Answer: see answer above.

18. Have the region's laboratories compared their results on samples collected from the same sites on the same dates? Do all of them also measure a common fecal normalization marker such as PMMoV?

Answer: We have no information on current comparison, if any.

19. **Source formats and volume.** What form do the laboratory and utility results take today (PDF reports, scanned pages, spreadsheets, exports from the public dashboards), roughly how many files or pages arrive per week across all sources, and how many months of history should the first load cover?

Answer: Format of incoming data are currently unknown and will be part of the discovery process.

20. Can you share a source-data inventory and representative samples or data dictionaries showing the number of sources, formats, historical coverage, and known data-quality issues, including the outcome data available to validate predictions?

Answer: see answer above

21. Have specific inconsistencies already been identified between laboratories, sampling methodologies, measurement units, or reporting standards?

Answer: We have no existing information on this.

22. **Data scope and access:** Please describe the wastewater data in scope: number of jurisdictions, laboratories, and sampling sites; file formats and delivery method; update frequency; and depth of history. Are a sample extract or data dictionary available before award? Will MARC provide, or should the consultant source, covariate data such as clinical case counts, hospitalization or ED data, and sewershed boundary and population files?

Answer: see answers above. Responding agencies should suggest the most appropriate additional data needs.

23. Can you provide an inventory of the existing public dashboards and datasets that are in scope?

Answer: Available public dashboards for the states of Kansas and Missouri can be found on their respective websites.

24. Can you please share details including a) Name of the MARC's existing data sources and its types; b) estimated size of each data sources and its YoY growth rate; c) where it is hosted?

Answer: see answer above.

25. Could MARC provide an inventory of the existing wastewater data sources and dashboards that will be included in the initial implementation?

Answer: see answer above.

26. Opioid data. What data source is envisioned for the opioid prevalence component: wastewater testing for drugs or metabolites by a partner laboratory, clinical or overdose data, or both? Is this data available now, or expected during the contract?

Answer: opioid data will not be part of this phase of work.

27. What wastewater normalization variables are currently available for each site? Does MARC have a preferred methodology for normalizing wastewater measurements across sites, or is the contractor expected to develop and recommend the methodology?

Answer: responding agencies should suggest methodologies.

28. Do you have any streaming data sources? If yes, please mention in details.

Answer: see answer above.

29. **Data in scope.** Which existing data sources and dashboards will the project start from (for example, the KDHE Kansas Wastewater Monitor, the Missouri DHSS wastewater program, WastewaterSCAN, CDC NWSS)? Will consultants receive sample-level records with laboratory method metadata, or only the values already published?

Answer: see answer above.

30. What are the current sources, and how do we reach them: CDC NWSS/DCIPHER, WastewaterSCAN, KDHE and MO DHSS dashboards, county files? Are there APIs or scheduled file drops, or will data have to be pulled from public dashboards?

Answer: see answer above.

Formats, Access Methods & Delivery

1. Inputs from other task areas: What validated data feeds, geographic files, model outputs, interface specifications and delivery dates should the Task Area 4 consultant assume? Who will approve the scientific interpretation and public-facing language?

Answer: The schedule will be negotiated among selected vendor(s) during scope negotiation prior to work beginning. The advisory group will approve methodologies and project language.

2. **ArcGIS Online environment:** We noted that MARC currently maintains an AGOL environment and uses ArcGIS Hub for web-based information delivery. Is it correct to assume that the regional dashboard described in the RFP is expected to be developed within MARC's existing AGOL environment, with hosted feature layers serving as the data source for the dashboard?

Answer: MARC is open to proposals for other systems but would prefer to stay within the solution stack already developed. See statement regarding MARC environments and platforms.

3. In what formats will the datasets be provided (CSV, Excel, SQL databases, APIs, or other formats)?

Answer: TBD as part of the discovery process

4. How do labs deliver data today: file uploads, APIs, direct database access, or manual entry? Which existing public dashboards will be the initial data source?

Answer: see answer above, [Kansas Wastewater Monitor for Respiratory Viruses](#), [Missouri Wastewater Surveillance](#)

5. Are the source datasets already accessible electronically through APIs, databases, files, or other automated interfaces, or will the consultant be responsible for establishing the required data access mechanisms?

Answer: see answer above

6. How will data be provided to the contractor? Will the contractor have access to source data beyond what is publicly posted?

Answer: see answer above

7. For each planned source, what additional information can MARC share about the available formats, access methods (e.g. API, file export, database connection), refresh cadence, and depth of historical data?

Answer: see answer above

8. In what format is the current data available (e.g., CSV, API, SQL database, or web pages)?

Answer: see answer above

9. What formats do the data come in, how often are they updated, and how many years of history should we load?

Answer: see answer above

10. Will geospatial network information be provided? In what format, and from which utilities?

Answer: see answer above

11. Current data formats and access. How is the data received today: CSV or Excel files, the CDC NWSS/DCIPHER feeds, lab system exports, or APIs? Will the selected consultant get direct access to the raw data from the start of the project, or only to the already-public dashboard data?

Answer: see answer above

Historical Coverage, Volume & Refresh Frequency

1. **Historical data:** Could you provide an approximate volume and temporal extent of the historical wastewater data expected to be incorporated into the platform?

Answer: historical data scope to be negotiated with data sources and selected vendor(s) during scope negotiation.

2. What historical datasets are currently available, and what is their approximate time coverage?

Answer: see answer above.

3. What historical wastewater data will be available to support data standardization, analytics, and any predictive capabilities contemplated by the project?

Answer: see answer above.

4. Roughly how much historical data needs to be standardized and loaded?
Answer: see answer above.
5. Please provide an inventory of the wastewater data sources currently available to MARC and participating agencies, including source systems, data formats, data frequency, historical data period, approximate data volumes, and data owners.
Answer: see answers above.
6. Will MARC provide historical wastewater datasets for development and model training, and if so, approximately how many years of historical data are available?
Answer: see answer above.
7. Please provide an inventory of the wastewater and related public-health data sources expected for the initial implementation, including formats, approximate record volumes, historical coverage, refresh frequency, delivery methods or APIs, and whether representative schemas or sample datasets will be available to selected consultants.
Answer: see answers above.

Geospatial Data & Boundaries

1. What are the authoritative boundary sources (sewersheds, treatment plant service areas, counties, ZIP codes)? Who maintains them? How should the model handle sewersheds that cross county or state lines?
Answer: MARC has watershed boundaries, treatment plants and other demographic and geographic data.
2. **Geospatial Data:** Will MARC provide wastewater catchment boundaries, associated population estimates, and relevant GIS datasets for regional analysis?
Answer: see answer above

Clinical, Public-Health & Validation Data

1. Will historical clinical surveillance or other public health datasets be available for model calibration and validation?
Answer: TBD as part of the discovery process

Data Availability, Acquisition & Sharing

1. Should respondents assume the necessary data is already available, or should the schedule include time to finalize data sharing arrangements with the health departments and laboratories?

Answer: Respondents should include the time to finalize any applicable data sharing agreements

2. For Task Area 2, does MARC anticipate providing source-system inventories, representative data extracts, API/interface documentation, and existing data dictionaries where available, or should respondents assume source discovery and connection development are fully within consultant scope?

Answer: Respondents should assume source discovery and connection development with the consultant scope.

3. **Data Availability:** Which wastewater datasets and historical periods will be available at kickoff? Will underlying laboratory data be accessible, or only data published through existing dashboards?

Answer: see answer above

4. Are the sources for the wastewater data already established or is it anticipated that acquisition of data will represent a piece of this project?

Answer: see answer above

5. Building on Q&A answer 6, should Task 4 pricing assume MARC or the other contractors will provide validated data, documented APIs and any required authentication before implementation? Or should we include building those services? I understand MARC expects to host and maintain the finished dashboard.

Answer: see answer above

Initial Indicators, Sites & Release Scope

1. **Modeling scope:** Which pathogens or indicators are priorities for predictive modeling (e.g., SARS-CoV-2, influenza, RSV, opioids/other substances)? What forecast horizon and geographic resolution (e.g., sewershed, county, region) does MARC expect, given the \$10 limit on site-level hotspot analysis? For opioid

prevalence (\$2), is wastewater opioid or metabolite testing currently under way at any participating laboratory, or would that work rely on other data sources?

Answer: scope will be negotiated with selected vendors and data sources during scope development. Opioid data will not be in this phase of the work.

Data Quality, Standardization, Normalization & Common Data Model

Common Data Model Scope & Standards

1. Where should the common data model and ETL run: ArcGIS Enterprise or a geodatabase, Azure or SQL Server, or something else MARC already licenses? Will MARC supply the environments and licenses, including any Power BI Premium or Fabric capacity needed for public sharing?

Answer: See statement regarding MARC environments and platforms.

2. Does MARC have an existing Common Data Model, data dictionary, metadata standard, or canonical data structure that the consultant should extend, or is the consultant expected to develop the CDM from the ground up?

Answer: MARC does not have an existing CDM for wastewater.

3. Are there existing regional, state, federal, laboratory, or public-health data standards that MARC expects the proposed CDM to support in addition to the standards identified in the RFP?

Answer: Responding organizations should propose the most appropriate approach to the project as they understand it.

4. Do we have to use the three data models named in the RFP (Microsoft, OGC, FIWARE), or are they just examples? Can we also use wastewater standards like CDC's NWSS data dictionary or PHES-ODM?

Answer: Responding organizations should suggest the most appropriate approach to the project. The data models named are non-exhaustive suggestions.

5. Task Area 1 mentions evaluating models such as FIWARE, OGC, and the Microsoft for Sustainability Water Data Model. If an Esri-based spatial data model (e.g., ArcGIS Feature Layers/Geodatabases linked to relational backend tables) is used to

support geospatial sewershed boundaries and sampling sites, will MARC consider this sufficient for the Common Data Model deliverable?

Answer: Responding organizations should propose the most appropriate approach to the project as they understand it.

6. Which OGC standards are specifically needed (e.g., OGC API - Features, SensorThings API, Observations/Measurements/Samples)? Is there an existing system we should match?

Answer: This is a new project with no existing system.

7. Does any lab or utility report data in a format other than CDC's NWSS format?

Answer: TBD pending discovery process.

8. Should the Common Data Model support only the initial wastewater surveillance use case, or should it be designed from the outset to accommodate future public health datasets beyond wastewater

Answer: Responding organizations should propose the most appropriate approach to the project as they understand it.

9. **External reporting formats.** Must the common data model map to any required external reporting or submission format, or to one of the three models named in Task Area 1 specifically, or is the choice among them left to the consultant?

Answer: This responsibility is expected to be within the scope of work of the consultant.

Data Quality & Normalization Methods

1. Does MARC have established data quality and normalization standards, or is the selected consultant expected to develop and recommend these methodologies?

Answer: This responsibility is expected to be within the scope of work of the consultant.

2. What data quality issues have been observed (e.g., missing values, non-comparable methods, inconsistent collection intervals, method changes, non-detect reporting)?

Answer: TBD during discovery process

Metadata, Laboratory Variables & Quality Flags

1. Are supporting variables, such as wastewater flow rates, population-served estimates, laboratory detection limits, and sampling metadata, available to support normalization?

Answer: TBD during discovery process.

2. Will the underlying laboratory result data include LOD/LOQ, censored/non-detect results, QC flags, recovery efficiencies, dilution factors, and other analytical qualifiers?

Answer: TBD during discovery process.

3. **Normalization:** What sampling and laboratory metadata will be available to support normalization across jurisdictions (e.g., sample collection methods, flow rates, detection limits, and laboratory controls)?

Answer: This is part of the discovery process

Implementation Environment & Task Ownership

1. If another firm delivers Tasks 1 and 2, when will a documented schema and sample data be available for the March 2027 dashboard build, and what interim data should Task 4 use for wireframes?

Answer: TBD as part of consultant selection and delegation. Consultant coordination will be necessary to determine appropriate workflow.

2. Is building and loading the database part of Task Area 1 or Task Area 2?

Answer: This is part of the Common Data Model and Data Architecture development from Task 1

ETL, Integration, Automation & Data Architecture

Existing Infrastructure & Preferred Technology

1. Is there a preferred database (for example SQL Server, PostgreSQL, ArcGIS or Azure)? Are there any you would rule out?

Answer: See statement regarding MARC environments and platforms.

2. Which database, cloud, and visualization platforms does MARC currently host and maintain for its Open Data Portal?

Answer: See statement regarding MARC environments and platforms. For visualization, MARC has used ArcGIS Online, self-hosted JavaScript websites, and integrations with third-party charting software.

3. Does MARC have an existing data infrastructure or preferred programming languages and analytical platforms for ETL development and predictive modeling?

Answer: See statement regarding MARC environments and platforms.

4. Does MARC currently use any data integration, ETL, orchestration, data catalog tools that respondents should be aware of for use or integration?

Answer: See statement regarding MARC environments and platforms.

5. **Existing data infrastructure:** The RFP references ETL processes for integrating data from multiple sources. Could you provide additional information on the existing data infrastructure, including any databases, data warehouses, cloud environments, or other data management systems currently in use? Does the scope include development of a new database, or would the selected contractor be expected to integrate with and build upon the existing infrastructure? If a new database is required, is there a preferred database platform, and is database hosting expected to be included within the scope of work and we should include the cost in the budget?

Answer: See statement regarding MARC environments and platforms. Database creation of schema, relationships, indexing, etc. are considered a part of this task with the consultant providing drafts for review by MARC staff.

6. Is there a requirement for developing a data warehouse? If so, do you have any preferred technologies for its development, such as Azure DWH, AWS, BigQuery, etc.?

Answer: See above. Consultant is expected to provide recommendations.

ETL Automation, Refresh & Orchestration

1. **Data update frequency and automation:** What is the anticipated frequency of incoming data (e.g., daily, weekly, or event-based), and is the expectation that ETL workflows operate automatically as new data become available?

Answer: TBD as part of the discovery process

2. How often should the data refresh (daily, twice a week, weekly)? Is near-real-time required?

Answer: see answer above

3. Does MARC have a preferred ETL, ELT, data integration, or orchestration technology?

Answer: See statement regarding MARC environments and platforms.

4. Going forward, how does MARC envision new data being added to the platform (e.g., automated pulls from existing dashboards or databases, EDD submission by labs or utilities through a portal, administrator uploads)?

Answer: TBD as part of the discovery process

5. **ETL maintenance and training:** We have observed that source data formats can change specially where laboratory analyses results are concerned and they are delivered via spreadsheets. Such changes can affect automated ETL workflows. Do you expect the scope to include staff training and knowledge transfer on maintaining and troubleshooting ETL workflows, including how to identify and address issues resulting from changes to source data formats?

Answer: Robust documentation should be sufficient.

Databases, Warehouses & Storage Targets

1. Should Task 2 write normalized results into the Enterprise geodatabase or hosted feature layers?

Answer: Yes, but appropriate outputs are yet to be determined

2. What data warehouse or database tools does MARC staff run and support?

Answer: See statement regarding MARC environments and platforms.

Production Readiness, Integration & Hosting

1. Will MARC provide a cloud environment or compute resources for scheduled data processing?

Answer: The primary cloud environments that MARC uses are Microsoft 365 and ArcGIS Online. See statement regarding MARC environments and platforms.

2. Are consultants expected to develop production-ready automated processes and models, or primarily provide validated methodologies, documented code, and analytical frameworks?

Answer: Consultants are expected to provide production-ready processes and models

3. Are there any 3rd party software or tools that need to be integrated? If yes, can we assume that the department provides an API for Integrations?

Answer: 3rd party software will be discovered as part of the process. Consultants should not assume availability of existing APIs for integrations.

Predictive Analytics, AI, Indicators & Validation

Priority Diseases, Opioids & Indicators

1. Which opioid or other drug indicators are included in the wastewater data MARC expects to provide for Task Area 3?

Answer: opioid data is not part of this phase of work.

2. Should the first release include opioid/drug-metabolite data, or only infectious-disease targets?

Answer: see answer above.

3. Which specific infectious disease indicators and opioid-related measures should be prioritized for predictive modeling?

Answer: opioid data is not part of this phase of work. Priority infectious disease indicators are those on existing publicly-available dashboards.

4. Which pathogens, indicators and main KPIs are the priority for launch? How should “opioid prevalence” be handled, given the anonymization concerns? Does MARC has a series of clearly defined metrics already available to work from?

Answer: see answers above.

5. How many predictive models does MARC envision developing? Are there specific trends or diseases that are a priority for modeling?

Answer: Responding organizations should suggest the most appropriate approach based on understanding of the project.

Forecasting Outcomes, Horizons & Model Count

1. Which outcomes and decisions should the predictive models support, and which outcome data, such as hospital, emergency department or overdose data, will partners make available?

Answer: TBD during discovery process.

2. What forecasting horizons are anticipated (e.g., 7, 14, or 30 days)?

Answer: Responding organizations should suggest the most appropriate approach based on understanding of the project.

3. For predictive analytics, what specific outcomes does MARC want the models to predict or estimate?

Answer: Responding organizations should suggest the most appropriate approach based on understanding of the project.

Training and Validation Data

1. **Validation data.** For Task Area 3, will MARC or its partners provide aggregated surveillance data, such as reported case counts, hospitalizations, or overdose data, for model validation? Does current wastewater testing in the region include opioid-related biomarkers, or is that testing anticipated during the project period?

Answer: TBD during discovery process. Opioid data is not part of this phase of work.

2. Validation data. For Task Area 3, will consultants have access to clinical or syndromic data (for example, emergency department visits, hospital admissions, or EMS overdose data) to validate forecasts? If so, at what geographic level, and under what data use agreement?

Answer: TBD during discovery process.

3. Will clinical, syndromic, laboratory-confirmed case, emergency department, hospitalization, mortality, prescription, overdose, or other public-health outcome data be available? At what geographic and temporal resolution, and for what historical period?

Answer: TBD during discovery process.

4. **Predictive Modeling:** Will corresponding clinical surveillance data be available for model training and validation? Are there specific diseases or forecasting horizons MARC wishes to prioritize?

Answer: This is part of the discovery process, and consultant is expected to develop recommendations in response to input from stakeholders

Performance Metrics & Acceptance Criteria

1. Does MARC have preferred statistical performance metrics or minimum accuracy requirements for predictive models?

Answer: TBD, and recommended as part of consultant scope of work

AI and Generative AI Use Cases

1. Could MARC clarify the specific AI use cases envisioned beyond traditional predictive analytics and statistical modeling?

Answer: TBD during discovery process.

2. What AI use cases are in scope for this project?

Answer: TBD during discovery process.

3. Does MARC anticipate using generative AI as part of the proposed solution?

Answer: Responding organizations should suggest the most appropriate approach based on understanding of the project.

4. Is AI and using natural language to create dashboards and ask questions of your data a must have?

Answer: Responding organizations should suggest the most appropriate approach based on understanding of the project.

Model Deployment & Platform Integration

1. Task Area 3 outlines predictive modeling for disease trends and opioid prevalence. Does MARC prefer predictive models to run natively within an Esri environment or via an external data pipeline that feeds model-based predictions back into MARC's GIS portal?

Answer: TBD, and consultant is expected to provide recommendations

Dashboard Scope, Users, Functionality & Accessibility

Public and Agency-Facing Views

1. Are the public-facing and agency-facing dashboards both within the scope of Task Area 4? Are there specific accessibility standards, such as WCAG 2.1 AA, the dashboard must meet?

Answer: Yes, the dashboards are included within the scope of Task Area 4. As a pseudo governmental agency. WCAG 2.1 applies to our solutions.

2. The RFP calls for public-facing and agency-facing visualization tools. How do you expect the agency-facing tools to differ from the public-facing tools, if at all?

Answer: This is expected to be part of the consultant discovery process

3. Does MARC expect a single dashboard with separate public and agency-facing views, or separate public-facing and agency-facing applications?

Answer: The solutions can either use independent sites for the public and agency-facing tools or an authentication system can be implemented.

4. Does MARC envision a single dashboard serving both public and agency users, or separate public-facing and agency-facing views?

Answer: see answer above

5. Dashboard audiences and accessibility. Will the public dashboard and the agency dashboard be separate products, or one tool with role-based views? Is there a required accessibility standard, such as WCAG 2.1 AA or Section 508?

Answer: see answer above, Accessibility standards should meet those of WCAG 2.1 AA

6. **Public- and agency-facing dashboards:** The RFP mentions both public-facing and agency-facing visualization tools. Do you envision separate dashboards that primarily differ in the level of data access, with the public-facing dashboard providing limited access compared to the agency-facing dashboard, or are there distinct functionality and analytical requirements envisioned for each audience?

Answer: See answer above regarding public vs. agency-facing tools. Functional requirements will be defined as part of the discovery process.

7. Which existing public dashboards are expected to be used as initial data sources?

- [Kansas Wastewater Monitor for Respiratory Viruses](#)
- [Missouri Wastewater Surveillance](#)

8. Can you point to the public wastewater dashboards this project is meant to standardize?

Answer: see answer above

9. Could MARC provide examples of the current reports, dashboards, analytical outputs, or workflows that the proposed solution is expected to improve or replace?

Answer: see answer above

10. Who built and currently maintains the existing wastewater dashboards, and will that team or vendor be involved in this project?

Answer: see answer above

11. Section 10 notes the project begins with data already publicly displayed through existing dashboards. Which dashboards does this refer to?

Answer: see answer above

12. What existing wastewater dashboards, databases, data warehouses, APIs, or other data platforms are currently being used by MARC or its partner agencies?

Answer: see answer above regarding existing dashboards, see statement regarding MARC environments and platforms

13. Which existing wastewater dashboards does the project start from (Section 10), and what platforms are they built on?

Answer: see answer above regarding existing dashboards

14. Roughly how many internal MARC users and how many partner agency users will need secure access to agency-facing views?

Answer: TBD

15. Is AI and using natural language to create dashboards and ask questions of your data a must have?

Answer: TBD

16. Are there any public-facing dashboards that needs to be embedded on existing sites/systems?

Answer: TBD, but at a minimum, links may need to be provided

Users, Roles, Authentication & Security

1. The RFP describes both public-facing and agency-facing tools and says the initial data is already publicly displayed. Does the initial dashboard require restricted agency views or logins, or only public access? If restricted access is required, what user roles and authentication/authorization service will MARC supply, and what must Task 4 implement or administer?

Answer: User access will be part of the discovery process and will be dependent upon dashboard platform selection.

2. **Agency-facing views.** Will agency-facing views include non-public data that requires user authentication and access controls?

Answer: See answer above

3. For agency-facing visualization tools, are there any requirements for varying levels of security based on user? Role-based security, row-level security, etc.

Answer: See answer above

4. What accessibility and security standards, acceptance criteria, and review or revision rounds should we plan for? If these aren't defined yet, may bidders propose explicit assumptions?

Answer: See answer above

5. Please identify the anticipated user populations and access model for the agency-facing dashboard, including estimated named and concurrent users, participating organizations, role types, SSO or identity-provider requirements, accessibility standards, security requirements, and expected public-dashboard traffic.

Answer: See answer above

6. Approximately how many agency users should respondents plan for in the agency facing view?

Answer: TBD during discovery process.

7. How many users do you have? Please provide the internal and external users who utilize this solution?

Answer: TBD during discovery process.

8. Is the agency view limited to MARC's portal login, or do local health departments and state labs need their own access? About how many groups should requirements sessions include?

Answer: TBD during discovery process.

9. What are the primary user groups for the dashboard, and what decisions do you expect each user group to make with it?

Answer: TBD during discovery process.

Dashboard Features, Views & Visualizations

1. Is there a minimum set of dashboard views, visualizations, filters, exports and user roles you expect, or should bidders propose that scope and state their assumptions?

Answer: Consultant should provide recommendations within the scope of work.

2. Can you please specify the number of dashboards that needs to be developed?

Answer: see answer above

3. Could MARC provide an approximate number of dashboard pages, views, KPIs, or visualization components anticipated for the initial implementation?

Answer: see answer above

4. What level of geospatial visualization and analysis is expected in the initial dashboard?

Answer: TBD

Accessibility, Privacy & Branding

1. **Accessibility.** Is there a required accessibility standard for the public-facing dashboard, such as WCAG 2.1 AA?

Answer: Yes, as a pseudo governmental agency. WCAG 2.1 applies to our solutions.

2. Are WCAG 2.1 AA and any MARC branding standards required for the public dashboard?

Answer: see answer above

3. What are the accessibility (for example WCAG 2.1 AA), single sign-on, or security requirements the tools must meet?

Answer: See answer above regarding accessibility. Security requirements are TBD but individual website for public consumption and/or authenticated website for internal use. Single sign-on is not predicted to be needed at this time.

4. What geographic aggregation, minimum population thresholds, suppression rules, or other privacy safeguards does MARC expect for public-facing data?

Answer: TBD

Hosting, Embedding & Platform Preferences

1. Given MARC's independent hosting and maintenance requirement and openness to platform recommendations, are there mandatory runtime or deployment constraints? What security and accessibility standards, testing, or review evidence must the dashboard satisfy for acceptance?

Answer: Runtime, deployment, security are yet to be determined. Consultant recommendations are welcome. WCAG 2.1 applies to MARC hosted solutions.

2. Does MARC have a preferred or existing platform for data storage and dashboard hosting (for example, Microsoft Azure, Power BI, Esri ArcGIS, Tableau, or open-source tools)?

Answer: MARC is open to proposals for other systems but would prefer to stay within the solution stack already developed. As mentioned, MARC uses ArcGIS Online but solutions using solutions based on the Microsoft application stack. MARC staff can assist with access to the ArcGIS Online organization for project deliverables.

3. Where will the public dashboard be hosted, for example on MARC's ArcGIS Hub open data portal or on [MARC.org](https://marc.org), and what technical or security requirements must the hosting environment meet?

Answer: At a minimum, the solutions will be linkable from the MARC Open Data Portal. All solutions should have some way to track usage and internal solutions should utilize authentication methods based on whichever platform the solution uses.

4. **Hosting environment.** The answer to Q6 notes MARC expects to host the tool. To align proposed solutions with what MARC staff will maintain, can MARC describe its current hosting environment (cloud provider, on-premises, or both) and the tools supporting the Open Data Portal and the existing wastewater dashboards?

Answer: see statement regarding MARC environments and platforms.

5. Does MARC have a preferred dashboard platform or hosting environment, and will MARC provide the licenses?

Answer: see statement regarding MARC environments and platforms; licensing is yet to be determined.

6. Does MARC currently license or use any business intelligence or data visualization tools? If so, what are they?

Answer: See statement regarding MARC environments and platforms.

7. Should the dashboard be an ArcGIS Dashboards or Experience Builder app on MARC's existing ArcGIS Enterprise system, with the public view on the open data portal? Which Enterprise version is in production, and who administers it?

Answer: TBD, open to recommendations, see statement regarding MARC environments and platforms.

8. MARC's Open Data Portal is already natively built on ArcGIS Hub, and MARC confirmed in Q&A #6 that deliverables will be hosted via MARC's portal. Does MARC prefer solutions built within its existing Esri ecosystem (e.g., ArcGIS Dashboards,

Experience Builder, ArcGIS Hub Premium) to avoid external hosting fees, or do you prefer custom web application frameworks hosted on cloud infrastructure?

Answer: TBD, open to recommendations, see statement regarding MARC environments and platforms.

9. What platform or tools power MARC's Open Data Portal and the existing public wastewater dashboards (for example ArcGIS, Power BI, or a custom build)? Should Task Area 4 build within that environment?

Answer: TBD, open to recommendations, see statement regarding MARC environments and platforms.

10. Should the public-facing dashboard be hosted on a free public platform, or embedded in MARC's website or Open Data Portal?

Answer: TBD, open to recommendations, see statement regarding MARC environments and platforms.

11. Does MARC have a preferred dashboard/visualization platform, or should the consultant recommend the platform?

Answer: TBD, open to recommendations, see statement regarding MARC environments and platforms.

12. Do you have any technology preferences in terms of developing the reports/dashboards (PowerBI or Tableau)?

Answer: TBD, open to recommendations, see statement regarding MARC environments and platforms.

Administration, Staffing & User Skills

1. Does MARC have staff have existing BI knowledge or skills, such as Tableau or open-source tools? Who will own and administer the dashboard after July 2027?

Answer: see statement regarding MARC environments and platforms

2. How many folks would be creators? XX Explorers? XX Viewers? XX

Answer: TBD during discovery process.

Hosting, Platforms, Technology & Security

Preferred Cloud, Hosting & Deployment

1. Does MARC have an existing preferred cloud or analytics environment respondents should build on?

Answer: We build and work in several ways and are open to suggestion, but must be able to host and maintain the system independent of consultant support after the project timeline. See statement regarding MARC environments and platforms

2. What hosting provider is currently being used for the existing solution, and will the awarded vendor be expected to continue with this provider or propose and manage a new hosting environment?

Answer: see answer above.

3. What is your preferred hosting service provider (AWS or Azure)?

Answer: see answer above.

4. What is the hosting preference – Cloud vs On-prem?

Answer: see answer above.

5. **Hosting environment and technology:** We understand that MARC expects to host the tool and must maintain it independently after the project (Q&A Q3/Q6). Are on-prem, private cloud, or air-gapped deployments within MARC's environment acceptable? Is there a required or preferred technology stack for the Task Area 2 and Task Area 3 components? Is MARC's Open Data Portal the intended place to publish model outputs?

Answer: see answer above.

6. Who will be responsible for hosting?

Answer: MARC will host the tools developed as part of this project.

Existing Platforms, Licenses & Technology Stack

1. If a specific platform expectation does exist, which license type is required?

Answer: No directive platform has been specified. MARC is open to ideas on platforms. See statement regarding MARC environments and platforms.

2. Which tools and technologies does the MARC team receiving the platform already use?

Answer: See statement regarding MARC environments and platforms

3. What platform is the MARC Open Data Portal built on, and is the new tool expected to integrate with it, be embedded in it, or run separately? Is Open Data Portal the system of record, a publishing layer, or both?

Answer: see answer above.

4. Does MARC have an existing GIS platform or preferred GIS technology that should be integrated with the analytics solution?

Answer: see answer above.

5. What data platforms, business intelligence, or GIS tools does MARC currently use that respondents should consider incorporating in their technical approach?

Answer: see answer above.

6. Which analytics, BI or GIS platforms do MARC staff currently license and maintain?

Answer: see answer above.

7. Does MARC have a preferred GIS platform or mapping technology?

Answer: see answer above.

8. MARC's hosting environment and skills. Q&A #1 says MARC must host and maintain the system on its own. Which platforms do MARC staff currently prefer for the Open Data Portal and similar tools (for example Azure, AWS, ArcGIS Hub, Socrata, Power BI, Tableau)? What skills does the in-house team have that we should design around?

Answer: see answer above.

9. Which analytics and mapping platforms does MARC already license and maintain, for example ArcGIS Online, Tableau, Power BI or SQL Server? We would rather build on tools your staff already support than add a new licence line.

Answer: see answer above.

Operations, Maintenance & Internal Skills

1. Following project completion in July 2027, does MARC anticipate maintaining the platform internally, or should respondents plan for ongoing support options?

Answer: Respondents should plan on MARC, or its designee, to take over maintenance and ownership of the solutions. As such, methodology and code will be licensed for free usage to MARC or whomever they wish to share. A plan to maintain the solutions should be included in this project deliverable.

2. What team will run the platform day to day after July 2027, and what languages and tools do they use (Python, SQL, ArcGIS Pro, Power Query)

Answer: MARC staff will maintain the platform. See statement regarding MARC environments and platforms.

Other Scope & Deliverables

Incumbent Vendor

1. Is there an incumbent for this work?

Answer: no, this project is a new project.

2. Who is the incumbent vendor currently supporting similar services?

Answer: see answer above.

3. Is the incumbent vendor allowed to participate in this RFP?

Answer: see answer above.

Current Challenges & Improvement Needs

1. What are the current limitations and challenges that you are facing?

Answer: refer to RFP for description of problem being addressed by this project.