

Procuring Contractor Support to Build a Data Dashboard

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Introduction to Guide

Before using this guide, a health agency should identify and develop health indicators, create a strategic plan for a data dashboard, and complete the Association of State and Territorial Health Officials' (ASTHO) eLearning course: [Designing Data Dashboards Using a Health Equity Lens](#).¹ The course concludes with the following recommended next steps for an agency's data visualization journey:

1. Identify the goal, purpose, and strategy for the data dashboard.
2. Evaluate agency and staff capacity.
3. Research and assess available data visualization tools.
- 4. Procure the data visualization software, test and implement the tool, and train the team.**
5. Publish, disseminate, and celebrate!
6. Maintenance and Continuous Quality Improvement.²

This guide focuses on considerations for step four, request for proposal (RFP) development – support for procuring data visualization software. This guide presumes preparation and planning are complete. Ideally, by the time an agency arrives at step four, they will know the data and metrics they want visualized, the story they want to tell, and their audience/s. They will also already know their agency and staff capacity for data sharing, data analysis, and data visualization, have an idea of the software or technical specifications/requirements they hope to use, and understand their budget. Knowing more in advance will support creating a clear and comprehensive RFP that results in what the agency wants and a data dashboard that can be reviewed and maintained long-term. [ASTHO's eLearning course](#) contains resources that support the planning and preparation for data dashboard software procurement, and [Puerto Rico's insights from developing a data dashboard](#) contains lessons learned from their experience. Specific resources will be referenced throughout this guide.

A health agency can choose to outsource as many of the above steps and project management as they wish and their budget, laws, and regulations allow. For example, some health agencies may choose to include data cleaning and analysis³ in the RFP's scope of work for the contractor, while others will do this in-house⁴ and provide the contractor with data ready to be visualized.

All the preparation, planning, and decisions impact the scope of work, deliverables, timeline, and budget that goes into an RFP for data visualization software.

Data Dashboard RFP Guidance

The following guidance should be used to support data dashboard RFP development and is not meant as guidance for information technology (IT) procurement broadly. It includes questions, tips, and information a health agency may consider including as they create their RFP for data dashboard software. Additionally, the guidance is not inclusive of all sections commonly included in RFPs. Therefore, this guidance is not a complete RFP template and should not be utilized as one. Always follow each agency's procurement and contracting processes and utilize required templates and language. Additionally, if utilizing federal funds, consult with the federal funding agency or legal counsel familiar with the regulations to ensure compliance.

Cost and Timeline Considerations

This guide does not cover cost and timeline considerations. There is too much variation in health agencies' budgets, capacity, systems, and goals, and in data dashboard software costs⁵ to be able to address cost and timeline in a valuable way. For example, to design, build, and publish a data dashboard can take one to five years and cost \$25,000 to \$1,000,000, maybe more, maybe less, and this does not include ongoing maintenance costs.

There is also a large range between the ideal dream data dashboard and what is actually feasible or realistic. This is solely up to the agency to consider what the data dashboard must have and what would be nice to have. Preparation and planning can help with this.

Establishing a budget at the beginning of the data dashboard planning and development process is helpful, when possible, and may direct all decision-making, such as the considerations included in this guide.

RFP Consideration: Background and Purpose

To be most effective, data dashboards should have a clear and strategic purpose.⁶ [ASTHO's eLearning course](#) offers tools to share the necessary steps to identify the goal(s), purpose, and strategy for the data dashboard. Helpful tools include the following ASTHO worksheets: [defining the purpose](#), [data inventory](#), and [designing for belonging](#).

In an RFP, provide the history and context that would be helpful to bidders. Consider including:

- Purpose: why do you want to create a data dashboard?
- Goal(s): what will it accomplish?
- Audience or users, including their experience interacting with and using data dashboards: Who will use it? How will they use it?
- Data sources or information about the data and metrics: what data will be included?
- A brief history of how you decided you need a data dashboard.

If updating an existing data dashboard, provide information such as:

- A link to the existing data dashboard (if available publicly) or other high-level details, such as the software or platform currently utilized.
- The reason you want or need to revamp, revise, or update your existing dashboard. Is it due to user feedback? Is it old technology or no longer supported?
- The current audience or user and the new audience or user.
- How is it currently used, and how it will be used?
- What data is currently included, and what data will be included with the update?
- If known, what needs to change?

RFP Consideration: Technical Requirements

Technical requirements are factors required for a data dashboard to meet its purpose and perform as desired for its users. Examples include information and data security, accessibility, and maintainability.⁷ It is essential to think through and identify the technical requirements of the data dashboard to be built or updated. Including identified technical requirements and their specifications in an RFP helps bidders understand what the dashboard needs and provide the best bid for the work. It also helps narrow down systems and bidders to those that can provide what is needed.

Inevitably, technical requirements will come up at some point in the process of working with the chosen contractor for data dashboard development or updates. The earlier they are identified, especially “must have” requirements and their specifications, the better. When updating an existing data dashboard, it is very likely that the needs and goals driving the project involve newly identified or missing technical requirements.

Also, consider whether and how user input and testing will drive technical requirements. For example, if user input and testing will occur as part of this project, whether completed by the contractor or the health agency staff, explain whether and how to use that input to determine some technical requirements.

The following sections outline some technical requirements for data dashboards and include questions and tips to consider reviewing and including in a data dashboard RFP.^{8,9,10,11,12} It is not necessary to know all the answers or include all the information in an RFP; in some cases, bidders may address the question(s) in their proposal; however, thinking about them up front and considering how they will impact cost, staff capacity, and ongoing maintenance is important. For example, without specific knowledge of the most fitting maintenance or service options, ask a bidder to provide a list of these options as part of their proposal.

[ASTHO's eLearning course](#) has tools and resources to support considerations for data dashboard technical requirements, such as the [Arizona Department of Health Services' Considerations when Defining Data Dashboard Requirements](#).

Data dashboard software

The following are questions to consider about the data dashboard software solution. There are many available options. [ASTHO's eLearning course](#) includes [a data dashboard software summary resource](#) describing some of them.

- Do you want a commercially available product or custom?
- Do you want a more flexible product (i.e., one that will likely have more coding requirements) like R Shiny, which is open source, or a more automated system like Tableau?
- Do you know which specific software programs you want or are considering and which you do not want? For example, do you already have Tableau available and want to use it? Or have you explored options and decided on a custom-coded dashboard embedded into your website?
- Customizability and modifications – what are your requirements for this?
- Annual costs – what are they (e.g., license cost per user, maintenance)?

Data dashboard features/functions

Data dashboard capabilities vary. If certain functions are necessary to fulfill its purpose and meet its users' needs, the software solution and contractor must be able to make that happen. [Arizona Department of Health Services' Considerations when Defining Data Dashboard Requirements](#) can help think through many data dashboard capabilities:

- **Accessibility protocols and requirements.** What are the agency's accessibility requirements? Determine the needs this data dashboard should meet. [International Web Content Accessibility Guidelines](#), [U.S. Section 508 Federal Requirements](#), and [WHO's Strategic Framework for Effective Communications](#) provide guidelines, requirements, and standards for accessible web-based content. Ultimately, a contractor should be able to support and build in accessibility protocols.
- **Means and timing of user-access.** When and through which mean(s) will users access the data dashboard?
 - Does it need to be available on-demand, 24/7?
 - Optimization: will users access it via the web, mobile, etc.?
 - Should all users be able to access it simultaneously?

- **User-interaction.** What should individual users have the capability to do with the data on the dashboard?
 - Filter? Sort? Compare?
 - Reports? Ad-hoc? Customizable? Standardized?
 - What downloading and exporting capabilities are necessary?
- **Types of visualization.** Provide examples of the types of data visualization the software should be capable of producing, such as graphs, maps, interactions, cross-visualization connections, filters, and tables. Also include, if known, the specific kinds of analyses to be visualized, such as trend data and weighted analysis.
- **Supporting information.** What other information is important for users to access in the data dashboard? Does the software need to be able to include text, resource links, static resource documents/supporting documents, etc.?
- **Automation.** Are there specific automation capabilities (such as reminders or notifications) that the data dashboard needs?

Integration

Integration is often an important factor when exploring data dashboard software solutions. Consider what datasets, databases, data analysis software, data visualization software, and/or platforms with which the new data dashboard needs to communicate. Does it sync with other IT systems? Include specific integration capabilities and expectations in the RFP.

The ASTHO eLearning course’s [data visualization tools and software resource](#) contains integration information for many of the available data dashboard software.

Servers and hosting

When it comes to long-term maintenance considerations, it is important to share how data will be accessed (i.e., from which data servers and databases). Share information about who ultimately hosts the dashboard long-term and where the data and dashboard are hosted (e.g., on-premises, in a cloud environment). Explain who owns the data and the dashboard itself.

Another related consideration, also outlined in this guide’s RFP scope of work section starting on page eight, is whether the agency needs the contractor to set up the server and/or data sharing/collection.

User access, data security, and data privacy

Data dashboards require many security and privacy considerations. If the dashboard has specific security and privacy needs, including them in the RFP is helpful. The following questions can help:

- **Open or limited user access.** Will users need internal and/or external access? Will the dashboard be public facing (open to all), is access limited to certain people (via a login), or is it a mix of both?
- **User permissions, controls, or levels** (such as owner, editor, viewer, etc.). What permission levels are necessary? Who assigns and grants permissions and how?
- **Encryption and access controls** (such as password, MFA, etc.). Who controls access and manages this process?
- **User identification and audit trail abilities.** Is it possible to trace access and review viewing and/or editing history?
- **Data suppression needs.** Are there data privacy, confidentiality, or anonymity concerns that require data suppression? What is the minimum denominator sufficient to be included in graphs or tables (anything below that would be suppressed)?
- **Private health information.** Does the data include private health information?
- **Archiving, recoverability, and retention needs.** Are they automatic? What is the backup frequency?

Maintenance and support (both short- and long-term)

Data dashboard plans, budget, and staff capacity should inform the types of support needed during launch, immediately following launch, and thereafter.

During data dashboard development, launch, and for a period immediately following launch, the level of necessary support may look very different than it does longer term. Include as many specifics in the RFP as possible. In the absence of specifics, ask bidders to describe their quality control and launch processes and support. Often, this will include information related to onboarding, training, and the overall support plan for staff and users, how the contractor will deal with issues that arise and modifications needed during the launch period, and a timeline for these support processes.

Once the launch period is over, long-term support and maintenance needs remain. Again, include this information in the RFP and/or ask bidders to describe their options and experience. Considerations include:

- **Product updates, enhancements, versions, and maintenance.** Is there a known schedule or frequency? Are these things optional or mandatory? What are their associated costs? How are they completed? Who can complete them (e.g., internal staff)?
- **Dummy dashboards** (if needed). Is there long-term access to dummy/test dashboards for future development?
- **Modifications.** Is it possible to modify the dashboard ad-hoc when needed?

- **Customer support, service, and communication.** If a contractor will provide some of this support, find out their service and support hours and mechanism(s) (e.g., email, phone, etc.).
- **Training resources.** Will they be provided or developed by the contractor? How are they made available (e.g., online)? How are they maintained? What are the associated costs?

Overall, consider the level of IT support needed to sustain and maintain the data dashboard. This will impact costs, both short-and long-term, and staff capacity and skills needed. Maintenance and sustainability planning are critical to the data dashboard's overall success.

RFP Consideration: Scope of Work

The previous RFP consideration sections outline how an agency can define its data dashboard needs and requirements and provide bidders with good background and necessary details. The scope of work (SOW) section of an RFP explicitly outlines the key activities and required deliverables, milestones, or end products the chosen contractor will support and/or be responsible for, how they will interact with the agency and its partners to accomplish or meet them, and the timeline in which they must complete them. It helps a bidder understand the work they need to perform, their role, and the level of collaboration required. It gives them the necessary information to ensure they have the skills and capacity to complete the work and to produce an accurate application and budget for the project. Bidders will base their budget on the SOW. The SOW in an RFP is crucial as it forms the basis upon which bidders prepare their proposals. Bidders must demonstrate in their proposals how they will meet the requirements/expectations laid out in the SOW.

An agency's specific data dashboard goals will determine what to include in an RFP's SOW for the project and how roles and responsibilities are divided among agency staff and the chosen contractor. In general, an RFP for a data dashboard may include some variation of the example tasks outlined below,^{13,14,15} including an estimated timeline for each activity, specific deliverable(s) associated with them, and reference to any requirements or goals. The examples below are not inclusive of everything that may go into a data dashboard RFP's SOW section, so always use each health agency's required templates and language, and adhere to any funder requirements, to ensure all requirements are met.

Data Dashboard RFP Scope of Work Considerations – Example Tasks, Activities, and Deliverables

The following examples contain descriptions of high-level tasks, including example activities and deliverables. These examples are meant to provide ideas and considerations on how an agency could engage a contractor to support a data dashboard project and do not include how cost and timeline are impacted.

Example High-level Task: Project collaboration and management

To ensure role clarity, consider including a section that explicitly distinguishes the roles/responsibilities of the contractor vs. the agency in the entire data dashboard project. It should address the level of collaboration required and any project management requirements.

- Example Activities
 - Meet with health agency committee(s) weekly/monthly to plan, test, troubleshoot, and ensure data dashboard aligns with health agency’s goals/vision
 - Meet with health agency project managers weekly/monthly to review work plan and ensure project is on track
- Example Deliverables
 - Project work plan
 - Project engagement/collaboration plan

Example High-level Task: Data dashboard design and requirements

This task outlines the required steps or process to get the final design, data, and technical requirements for the data dashboard. Consider whether the contractor will lead or participate in this, with whom they need to collaborate, the timeline for gathering all the necessary information, and the review and approval process.

- Example Activities
 - Input gathering sessions
 - User experience assessments
 - Meeting or working with agency staff or a committee
- Example Deliverables
 - Detailed report of identified requirements

Example High-level Task: Data analysis and processing

Consider how the data will be analyzed and processed for inclusion in the data dashboard and explain the roles/responsibilities of the contractor vs. health agency staff in completing this task. Share how the contractor will access the data and in what state they will receive it (e.g., raw data, processed data). Include enough detail to inform the scope of the activity and timeline. For example, if the contractor will receive raw data and be responsible for analysis and processing, consider providing information about how the data is formatted and received in its raw state so that the contractor has an idea of the skill and capacity needed to complete this activity within the desired timeframe.

Another consideration is ongoing data analysis and processing needs. For example, if the data utilized in a data dashboard is real-time with regular updates and ongoing maintenance (vs. data collected once every five years, for example) or will be gathered and processed with regular frequency in-house, specify the data analysis software the contractor needs to use (such as SPSS, SAS, etc. – make sure internal staff have access to and the skill to use it in-house). This helps ensure ongoing data processing and analysis.

- Example activities
 - Process and analyze data from several sources across multiple Excel spreadsheets using SAS
 - Work with health agency staff to support data processing and analysis, refine SAS code, and finish the data dictionary
- Example Deliverables
 - The fully processed and analyzed data sets or data files
 - Detailed processing and analysis instructions
 - All code used to clean and analyze the data
 - Data dictionary

Example High-level Task: Data dashboard development and build

Consider the processes and activities the contractor will do in the data dashboard development process, and – once development is complete – the actual build process. There may be several activities and steps in these processes, so ensure the timeline reflects the necessary activities. It is also helpful to include information about the feedback and finalization processes and with whom the contractor needs to work.

- Example Activities
 - Create a dummy data dashboard website with dummy data for initial testing and input gathering
 - Create and work with health agency committee(s) to finalize the data dashboard wireframe (i.e., the data dashboard blueprint – a visual diagram of the data dashboard and how it functions)
 - Create the data dashboard website with health agency web team, including landing page
- Example Deliverables
 - Data dashboard wireframe
 - Dummy sites with dummy data
 - The specific dashboards and websites created

Example High-level Task: Data dashboard launch, including testing, training, and quality control

Consider what roles, responsibilities, processes, and steps are required for successful testing and launch of the data dashboard, how troubleshooting and onboarding will occur, and the training and quality control needed for successful launch and ongoing success. Ensure input gathering and finalization processes are built into the timeline. Indicate the expectations of the contractor so the scope of their role is clear.

For example, the scope of training responsibilities could vary greatly depending on needs, capacity, and budget. Consider the contractor’s standard training packages or outline the need for customized training and materials. Consider asking contractors to develop and provide a train-the-trainer for internal staff responsible for ongoing in-house support and maintenance. Or the contractor could create an electronic, interactive training manual and additional videos to support onboarding new users long-term.

- Example Activities
 - Develop and work with health agency staff to finalize a testing plan for all levels and types of users (external, internal, etc.)
 - Create a detailed launch process and training plan in collaboration with health agency project leads
 - Develop training materials based on final training plan
 - Develop a quality control plan and process to ensure the data dashboard’s ongoing accuracy and functionality and to control for other quality issues
- Example Deliverables
 - Detailed plan and timeline for the testing process
 - Detailed plan and timeline for the launch process
 - Detailed training plan and materials
 - Detailed quality control process

Example High-level Task: Maintenance and support (after successful launch)

This task focuses on activities related to training and support needed after the data dashboard is built and launched. Consider the vision and plan for longer-term maintenance and support and the type of activities the contractor could do to support this vision and plan. Whether or not the contractor has any direct responsibility for longer-term maintenance or support does not preclude them any responsibilities or activities related to this task.

- Example Activities
 - Work with health agency project leads to set-up and agree on a plan for ad-hoc support activities and customer support services
 - Create a user evaluation plan and a continuous quality improvement process (if not previously covered under other tasks) abiding by health agency policies
 - Work with health agency project leads to outline plans for hosting and maintaining the dashboard and/or website and maintaining the server
 - Set up the back-end user and management system and develop training for handoff to health agency staff
 - Develop training plan and materials (if not previously covered under other tasks)
- Example Deliverables
 - Detailed description of and plan for ad-hoc support services and their associated costs
 - Detailed description of and plan for customer support services and their associated costs
 - Backend user and password management system (including training in this system)
 - Detailed user evaluation plan
 - Detailed continuous quality improvement process
 - Detailed hosting and maintenance plans for server/website/dashboard
 - Detailed training plan and materials

RFP Considerations: Qualifications and Selection Criteria

Qualifications and selection criteria for an RFP are highly variable and depend on the data dashboard's goals/purpose, necessary technical requirements, and the scope of work and deliverables required of the contractor. It typically includes information, such as desired qualifications, submission requirements, and how a proposal is scored. A health agency may also have to follow a specific process and use specific templates, so always utilize the health agency's required templates, language, and processes to ensure all requirements are met.

Consider including skills and expertise needed to match the outlined scope of work and any must-have technical requirements. For example, if a contractor should have demonstrated experience developing dashboards with large datasets hosted on an agency's server using Tableau, include these as part of the desired qualifications in the RFP.

Also, specifying the type of organization/company agencies are open to working with (e.g., private sector consultants/developers, state/local public health departments, public health associations) can be helpful to potential bidders and impact the pool of applicants.

Other RFP Considerations

Other good RFP practices to consider including in a data dashboard RFP include:

- **Application and selection timeline.** Provide guidance to bidders that includes information on application deadlines and a high-level timeline for when the awarded contractor will be selected and notified.
- **Questions and responses.** Provide a way for bidders to submit questions, including how they will be addressed and shared. Questions and answers are often shared broadly for transparency and fairness.
- **Disclaimer notice.** For transparency to bidders, include a disclaimer notice that explicitly states the RFP does not constitute a contractual or legally binding offer. Consult with the agency's legal counsel for guidance.

References

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