2020 SDWIS Modernization Analysis of Alternatives
Capability Scoring and Evaluation Criteria

Capability Scoring

Analysis of each of the options includes the calculation of a capability score. The capability score provides an indicator of how well each option meets the requirements (criteria) of the **Modernization of the Safe Drinking Water Information System (SDWIS)** effort. The capability score for each criterion is calculated using the factors of weighted importance multiplied by the analysis score for each individual criterion.

Evaluation Criteria

The SDWIS Modernization Board provided input into the determination of evaluation criteria and the relative importance of each criterion. The composition of the evaluation criteria included a mix of high-level functional requirements and technical system requirements gathered through the review of previous project documents. GDIT presented the initial set of evaluation criteria and reviewed them with the SDWIS Modernization Board during a collaborative working session. GDIT incorporated feedback from this session to compile the comprehensive set of evaluation criteria. Table 31 provides an overview of the general category and description of the evaluation criteria.

Table 1: Evaluation Criteria Category Descriptions

Category	Category Description
Data Quality	High quality data is critical for reliable support for meeting drinking water program primacy obligations. The category includes validation of data at entry point, validation of data imported into the system, and the ability to flag incomplete data or missing fields.
Satisfactory User Experience that Supports Efficient Workflows	Primacy agencies expect information technology (IT) applications/systems to be user friendly and provide a satisfactory user experience that aligns with or mimics actual data management workflows. This includes the ability to: • Tailor workflows, set due dates, and define delegation rules. • Tailor activity and action types to utilize primacy agency specific language. • Define standard responses in the form of a series of actions and/or activities. • Ensure a consistent user experience on all devices.
Business Rule Flexibility and Adaptability	Primacy agencies need the ability to quickly react to changes to existing drinking water rules and support requirements of new drinking water rules, including changes to compliance determination requirements. This includes the ability to: • Align business rules with the time of reporting and monitoring. • View and interpret existing and applicable rules to understand which ones apply to certain water systems. • Modify or add business rules at the state level.
Compliance Determination	Primacy agencies require the ability to determine water system compliance, including the ability to run compliance determination against both federal and state-specific standards for existing drinking water rules.

2020 SDWIS Modernization Analysis of Alternatives
Capability Scoring and Evaluation Criteria

Category	Category Description
State Controlled User Admin	Primacy agencies want to be responsible for user and data administration of all primacy agency-specific data.
Data Exchange / Transfer	Primacy agencies need efficient and secure data transfer to meet both federal reporting requirements and intra-agency exchange.
Support	Primacy agencies require support from both a technical and functional perspective.
Alerts and Notifications	Primacy agencies should receive alerts and notifications in the form of email, system notifications, and dashboards.
Enforcement Tracking	Primacy agencies require the ability to track enforcement actions. This includes the ability to: • Support the enforcement lifecycle and return to compliance to include tailoring workflow for administrative orders, scheduled actions with due dates, and enforcements. • Create enforcement cases linking relevant data and documents. • Export case files through API or file export.
Auditing	Primacy agencies require auditing capabilities related to user actions to track the user, time, and reason of change.
Data Schema	Primacy agencies require flexibility in schema to accommodate evolving requirements with minimal downtime.
Reporting	Primacy agencies require direct and ad-hoc reporting from the solution.
Document Management	Primacy agencies require document management capabilities to view, store, and link documents with the ability to generate letters or notices directly from the application.
Data Standards	Primacy agencies require the ability to support multiple data types and enforcement of data standards -- error checking based on standards to improve data quality.
Security	Primacy agencies require secure and encrypted data at rest and in transit and the ability to support public access and handle requests for data.

Scoring Exercise

The SDWIS Modernization Board then scored each of the 37 identified criteria from 1-4 in order to gain perspective into what should be considered the top differentiators when comparing alternatives. Table 32 describes the evaluation criteria weighting scale.

Table 2: Evaluation Criteria Scoring Scale

Score/Tier	Description
4	The evaluation criterion is among the top 40% of differentiators that would drive a decision when evaluating options as part of the SDWIS AoA.
3	The evaluation criterion is among the middle 30% of differentiators that would drive a decision when evaluating options as part of the SDWIS AoA.
2	The evaluation criterion is among the lower 20% of differentiators that would drive a decision when evaluating options as part of the SDWIS AoA.
1	The evaluation criterion is among the bottom 10% of differentiators that would drive a decision when evaluating options as part of the SDWIS AoA.

Appendix C: Overall Capability Scoring Matrices

Table 49 includes the detailed scoring matrices based on the overall evaluation criteria weightings as assigned by the SDWIS Modernization Board.

Table 3: Capability Scoring Matrix

#	Category	Evaluation Criteria	Tier
1	Data Quality	Ability to provide validation of data at UI entry point through the use of form validation, defined picklists, and conditional validity before writing to the database.	4
2	Data Quality	Ability to provide validation of data imported into the system through non-UI methods (API, bulk import).	4
3	Data Quality	Ability to flag incomplete data or missing fields.	3
4	Workflow/User Experience	Ability to design primacy agency specific workflows - define and tailor proper flow, set due dates, delegation rules.	4
5	Workflow/User Experience	Ability to tailor activity and action types to utilize primacy agency specific language - utilize business language common to the agency, not codes/fed level definitions.	3
6	Workflow/User Experience	Ability to define standard responses in the form of a series of actions and/or activities - ability to define a group of activities / schedules in response to a deficiency, template.	4
7	Workflow/User Experience	Ability to provide consistent user experience on all devices including computer, mobile, and tablet.	3
8	Business Rule Flexibility	Ability to align business rules with the time of reporting/monitoring.	3
9	Business Rule Flexibility	Ability for user to view/interpret existing and applicable rules to understand which ones apply to certain water systems.	4
10	Business Rule Flexibility	Ability to modify/add business rules at the state level.	3
11	Compliance	Ability to run compliance determination against both federal and state-specific standards for existing drinking water rules.	4
12	Compliance	Ability to tailor rules to specific primacy agency practices, waivers, variances, and exemptions - adjust the drinking water rules so that rule decisions are in line with primacy agency practices.	4

2020 SDWIS Modernization Analysis of Alternatives
Capability Scoring and Evaluation Criteria

#	Category	Evaluation Criteria	Tier
13	Administration	Ability for only primacy agency to administer USER access for water system users, federal staff, and other primacy agency staff.	4
14	Administration	Ability for only primacy agency to administer DATA access for water system users, federal staff, and other primacy agency staff.	4
15	Data Exchange	Ability for primacy agency capabilities for secure and timely data between SDWIS and primacy agency interfacing applications, including the capabilities for exchanging data in and out of SDWIS.	4
16	Data Exchange	Ability to exchange data (import and export) with EPA and/or other states in large bulk files or through API at any time needed.	4
17	Data Exchange	Ability to exchange data via single data elements and small groupings of data elements.	4
18	Data Exchange	Ability to support on-demand internal primacy agency sharing of data.	4
19	Support	Ability to provide technical support to primacy agencies during resource-restricted periods (federal shutdown, maintenance, etc.).	3
20	Support	Ability to provide both technical support and training to primacy agencies related to reporting requirements.	4
21	Support	Ability to provide various forms of training, including documentation, self-paced, online, or instructor-led.	3
22	Support	Ability to provide various levels of support to include online, phone, email, remote, or user communities/forums.	2
23	Alerts	Ability to provide role-based notifications/dashboards of important events and/or system alerts of required actions - due dates, actions completed by others.	3
24	Alerts	Ability to customize alert settings - customize how received/frequency.	1
25	Alerts	Ability to develop dashboards with EPA Lean Management System focus to monitor program/initiative performance.	1

2020 SDWIS Modernization Analysis of Alternatives
Capability Scoring and Evaluation Criteria

#	Category	Evaluation Criteria	Tier
26	Enforcement	Ability to support enforcement lifecycle - violation candidate, rejected, approval, rescind, and return to compliance including tailoring of workflow (e.g., administrative orders, scheduled actions with due dates, enforcements).	3
27	Enforcement	Ability to create enforcement cases linking relevant data and documents - enforcement officers/others gather relevant info for readily available access (linked, not duplicated).	2
28	Enforcement	Ability to export case files through API, file export, etc.	3
29	Audit	Ability to provide audit trail of user actions - record user, time, reason of change. This includes automated system logging as well as user input to record reasons for an action.	2
30	Data Schema	Ability to support a dynamic schema that can be modified to support evolving requirements with minimal downtime - ability to add fields as needed. This could be a set number of empty columns in each RDBMS record table or document database field additions (no limit per record).	2
31	Reporting	Ability for reporting directly from the solution.	1
32	Reporting	Ability to support ad-hoc data mining.	3
33	Document Management	Ability to interface with a document management system in order to view, store, and link to externally stored documents.	2
34	Document Management	Ability to generate letters/notices (approval letters, invoices, permit letters, violation/enforcement notices) directly from the application.	1
35	Data Standards	Ability to support multiple data types and enforcement of data standards - error checking based on standards to improve data quality.	4
36	Security	Ability to secure / encrypt data at rest and in transit.	3
37	Security	Ability to support public access / open-data utilization and handle requests for data.	2