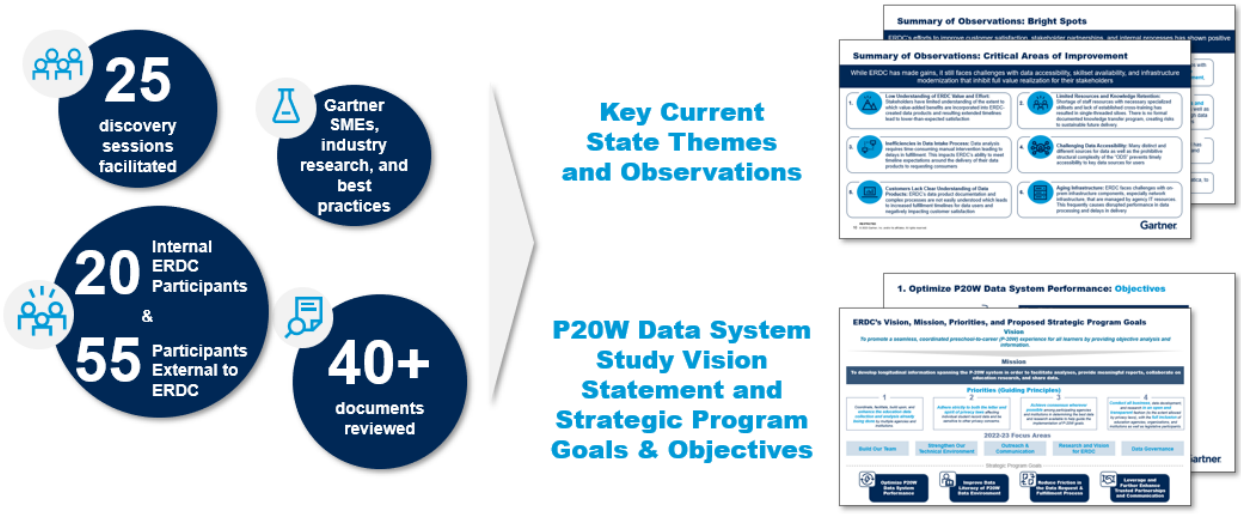
P20W Data System Study Summary

June 2023 | https://erdc.wa.gov/about-us/p20w-data-system-study

Observation Process

The Gartner Consulting team analyzed the current state of ERDC's P20W data system and related processes, using input from stakeholder interviews and document reviews to identify key findings and strategic goals.



Observations: Bright Spots

ERDC's efforts to improve customer satisfaction, stakeholder partnerships, and internal processes has shown positive impact both within and external to the organization.

Customer Satisfaction

External: Customers interviewed predominantly expressed satisfaction with the **quality of data products** and their **relationship** with ERDC, especially customers who work closely with them

Efforts to Build Trust

External: ERDC continues to focus effort on building relationships with data contributors/partners and users to **improve collaboration, transparency and expectation alignment**, such as the Data Contributors Meeting

Business Process Efficiencies

Internal & External: The 2020 Business Process Improvement Initiative made gains in efficiency of ERDC's business processes and reduced barriers for ERDC staff to fulfill customer requests, through **process standardization and formalization**

Clear Roles & Responsibilities

Internal: ERDC has established **well-defined responsibilities and tasks** in the data management process for each role as well as interaction between roles to drive clarity and ensure high data quality though completion of all essential activities

Efforts to Aid Data Accessibility

Internal: **Development of data marts** has increased accessibility of some key data for Data Users and aided request fulfillment

Simplified MDM Practices

Internal: **Consolidation of many key data sources** in MDM has streamlined data validation and loading processes and enabled quality assurance

Leading Vendor Relationships

Internal: ERDC has established strong technology capabilities by employing modern, market-leading technology vendors, such as Informatica and Tableau, to conduct data management activities **now and into the future.**

Observations: Areas of Improvement

While ERDC has made gains, it still faces challenges with data accessibility, skillset availability, and infrastructure modernization that inhibit full value realization for their stakeholders.

1. **Low Understanding of ERDC Value and Effort (Internal & External):** Stakeholders have limited understanding of the extent to which value-added benefits are incorporated into ERDC-created data products and resulting extended timelines lead to lower-than-expected satisfaction

2. **Limited Resources and Knowledge Retention (Internal):** Shortage of staff resources with necessary specialized skillsets and lack of established cross-training has resulted in single-threaded siloes. There is no formal documented knowledge transfer program, creating risks to sustainable future delivery.

3. **Inefficiencies in Data Intake Process (Internal & External):** Data analysis requires time-consuming manual intervention leading to delays in fulfillment. This impacts ERDC's ability to meet timeline expectations around the delivery of their data products to requesting consumers

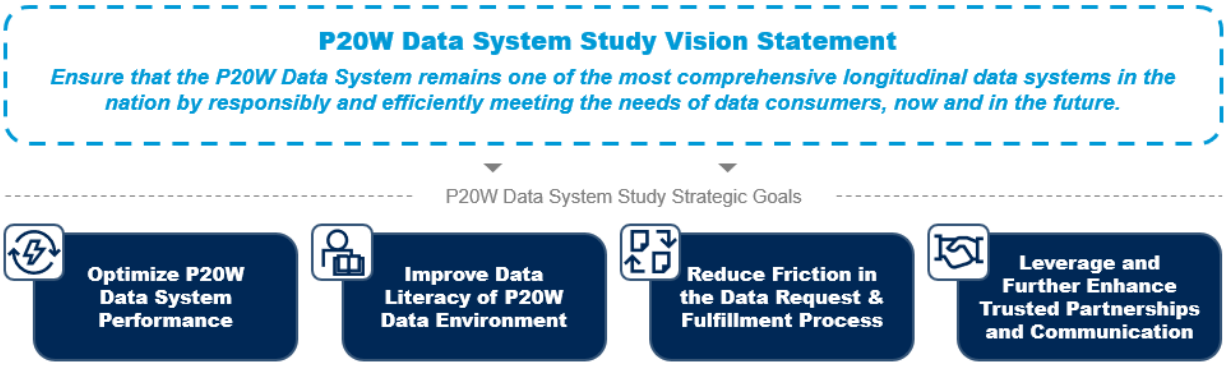
4. **Challenging Data Accessibility (Internal):** Many distinct and different sources for data as well as the prohibitive structural complexity of the "ODS" prevents timely accessibility to key data sources for users

5. **Customers Lack Clear Understanding of Data Products (Internal & External):** ERDC's data product documentation and complex processes are not easily understood which leads to increased fulfillment timelines for data users and negatively impacting customer satisfaction

6. **Aging Infrastructure (Internal):** ERDC faces challenges with on-prem infrastructure components, especially network infrastructure, that are managed by agency IT resources. This frequently causes disrupted performance in data processing and delays in delivery

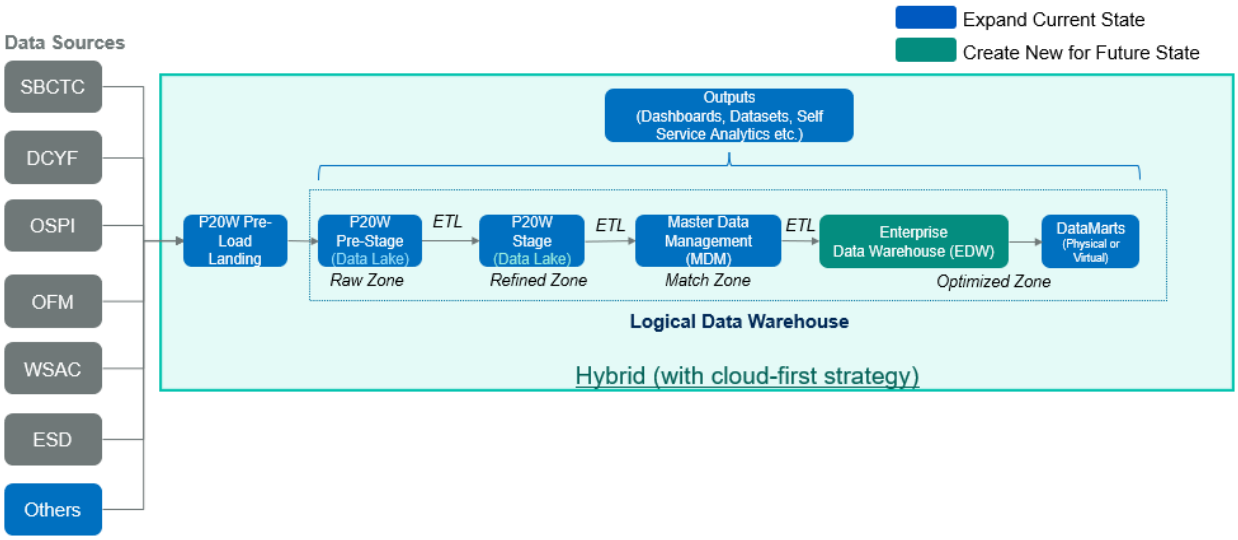
P20W Data System Study Vision Statement and Strategic Goals

ERDC's journey to continually enhance the P20W Data System is guided by a purposeful vision to align goals and corresponding initiatives that contribute to its progress.



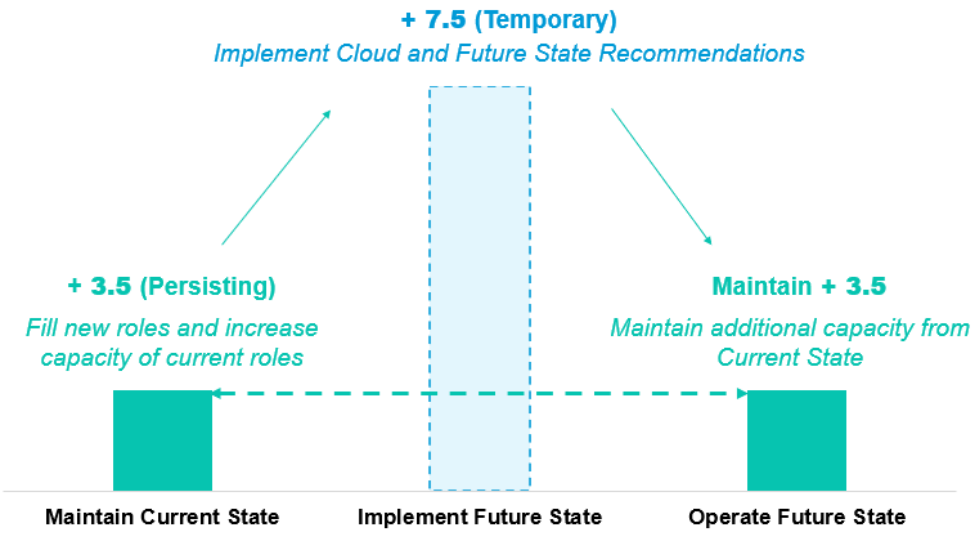
Proposed Future State P20W Technical Design

To meet future needs of the system, ERDC should create data lakes for pre-stage and staging, a new curated enterprise data warehouse (to replace the current Operational Data Storage) and expand the use of data marts that are organized around research cohorts. This data architecture should be created using a cloud-first strategy.



Proposed Future State P20W Operating Model

Roles: There is a need for 3.5 additional persisting full-time equivalents in the ERDC and Forecasting teams to maintain the current environment and operate the proposed future state across several role categories. To effectively implement the designed future state, the teams will need to increase capacity temporarily by 7.5 full-time equivalents to accommodate the additional workload.



Impacted Roles:

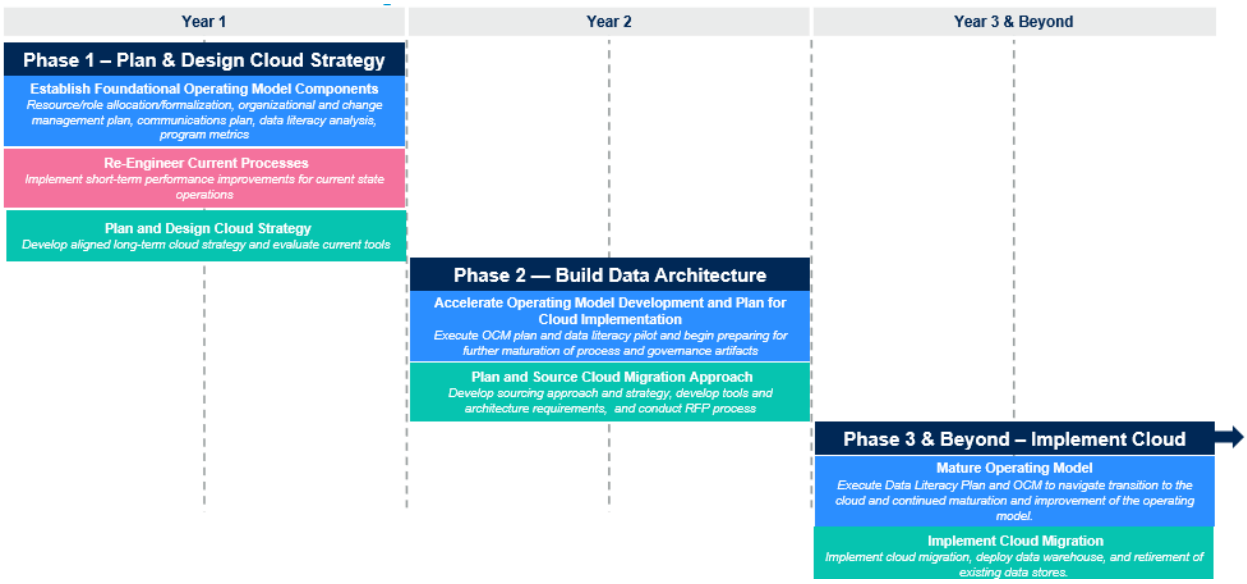
1. *Training Analyst*
2. *Data Literacy and Training Lead*
3. *Technical Manager*
4. *Knowledge Transfer Analyst*
5. *Scrum Lead*
6. *Integration Developer*
7. *Analytics and BI Developer(s)*
8. *Database (DB) Developer*
9. *MDM & Integration System Admin*
10. *MDM Developer*
11. *Data Steward*

Processes: Of the 22 data management and analytics processes supporting the P20W Data System that were evaluated, several arose as priority focus areas including funding and resourcing, change management, and data literacy training.

Governance Artifacts: Evaluation of 34 data management and analytics governance artifacts lead to the discovery of several governance improvements that should be iteratively established and maintained, including communication plans, fulfillment metrics and service level agreements, and data quality standards.

P20W Data System Implementation Plan

The future state can be realized through the execution of a three-phase roadmap to plan, build and implement the recommendations over a 3+ year time horizon, in addition to optimizing the current environment to achieve near-term value.



Technology Investments for the P20W Data System

In addition to addressing role capacity for both persisting and temporary needs, investments in key technology areas (data acquisition, database platforms, master data management, data quality, analytics and BI) will also be needed to achieve the proposed future state environment. Software and system implementation costs, along with considerations for process redesign, training, communications, and organizational change management, should also be considered in funding decisions.

Next Steps

The ERDC and Forecasting teams are reviewing the proposed recommendations from the study and how to move forward. The July Q&A Discussion is a great opportunity to discuss the findings with partners and staff. The ERDC and Forecasting teams are conducting additional outreach with other P20W data systems across the country to gather additional insights that inform the modernization of ERDC's P20W Data System.

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