

Staff Report

TO: Board of Directors

FROM: Greg Jones, Assistant General Manager
John Ortiz, IT Administrator

DATE: October 28, 2026

SUBJECT: IT/OT Master Plan - Receive and File

ADMINISTRATION

RECOMMENDATION

Informational Only – Receive and File.

BACKGROUND

The Information Technology/Operational Technology (IT/OT) Master Plan has been developed to provide a strategic roadmap for NID's technology, cybersecurity, data governance, staffing, and operational systems over the next decade. The Plan is intended to align technology investments with District priorities while improving operational efficiency, resiliency, security, and service delivery.

On April 10, 2024, the Board approved a contract with HDR Engineering, Inc. (HDR) in the amount of \$231,707 to develop the IT/OT Master Plan. The project has included a comprehensive evaluation of the District's IT and OT environments across water, hydroelectric, and administrative operations.

To date, HDR has assessed existing infrastructure and operations, identified 44 improvement recommendations, and worked with District staff to prioritize 15 strategic initiatives focused on Culture & Retention, Network & Security, Expense Consolidation, and Information & Applications.

To further strengthen the Master Plan, the Board approved additional optional services on March 26, 2025, totaling \$173,070. These services included industrial control system (ICS) governance and configuration standards, recommendations for OT equipment standardization, OT network mapping and vulnerability assessments, and analysis of the Human Machine Interface (HMI) data historization architecture.

HDR has finalized the IT/OT Master Plan, which provides the organization with:

- a strategic vision for the District's IT and OT environments;
- a phased implementation roadmap for near-, mid-, and long-term initiatives;
- staffing and resource recommendations; and

- cybersecurity, data governance, and operational improvement strategies.

The IT/OT Master Plan represents a significant, forward-looking investment in the District's technological future and provides a comprehensive framework for prioritizing technology improvements, enhancing cybersecurity, supporting workforce development, and guiding technology-related investments over the coming decade. Staff intends to strategically use the framework, findings, and recommendations of this plan in future years as budget allows.

BUDGETARY IMPACT:

The total cost of the Plan, inclusive of the optional services, is \$404,777. The project is complete and finished on budget.



NID

Information Technology (IT) / Operational Technology (OT) Master Plan

Board of Directors Presentation | October 28, 2026

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Presentation Purpose

A practical roadmap for Nevada Irrigation District (NID) technology, people and practices.



The master plan proposes a flexible, phased roadmap; implementation decisions remain project by project.



Agenda

- 01** How We Got Here
- 02** What We Learned
- 03** From Findings to Portfolio
- 04** Business Need Alignment

01

How We Got Here

How We Got Here

Staff-informed evidence → prioritization → manageable portfolio



Project Journey / Milestones

Key dates in developing the master plan.

Date	Milestone
April-May 2024	Contract and project kickoff
September-November 2024	Site visits and staff interviews
March 25, 2025	Task #1: Current State
May-November 2025	Task #2: Recommendations and Prioritization
August 2025-March 2026	Optional services
September 17, 2026	Final Task #3: Master Plan
October 28, 2026	Board presentation

How NID Staff Shaped the Plan

1

DOCUMENT REVIEW

Existing plans, applications, roles and practices

2

INTERVIEWS

Management, IT, Water Operations, Hydro, Engineering, Maintenance, Finance, HR and Recreation

3

SITE OBSERVATIONS

Representative administrative, water, and hydro facilities

4

INTERNAL WORKSHOPS

Review, clarification and prioritization

5

NID STAFF DECISIONS

Consolidate, advance or set aside recommendations

HDR appreciates NID staff support throughout the master planning process.



02

What We Learned

Current-State Strengths

The roadmap builds on capabilities already working at NID.

1 FUNCTIONING ENVIRONMENTS
IT, Water OT and Hydro OT generally function effectively within their current domains.

2 POSITIVE DAILY SUPPORT
Contributors reported satisfaction with day-to-day IT support.

3 CENTRALIZED HELPDESK PROCESS
Contributors described the IT helpdesk process as effective and transparent.

4 KNOWLEDGEABLE STAFF
Experienced staff maintain operational systems across a geographically challenging service area.

5 MODERNIZATION UNDERWAY
NID already had major application and access-control modernization initiatives in motion.



Key Findings / Why a Roadmap Is Needed

Improvement Themes

Separate environments and support models

IT, Water OT and Hydro OT evolved independently.

Reliance on institutional knowledge

A limited number of specialists hold critical knowledge.

Inconsistent standards and documentation

Practices vary, complicating support and recovery.

Different monitoring and security approaches

Visibility and administration are not consistent across environments.

Aging or difficult-to-support communications

Selected components create reliability and maintenance challenges.

Governed access to operational data

Business value requires secure, intentional data availability.

Staff Voice

Common themes shared by NID staff, supervisors, and management during the master planning process.

Preserve and share institutional knowledge

Operations, Hydro, Water, and technical staff emphasized the importance of capturing critical knowledge and reducing reliance on individual subject-matter experts.

Standardize where practical

IT and OT stakeholders identified opportunities to improve consistency through common standards, documentation practices, and support approaches.

Reduce duplication and improve coordination

Participants described benefits from closer alignment between IT, Water OT, and Hydro OT functions, reducing the need to solve similar challenges in different ways across the organization.

Improve data governance to unlock future business value

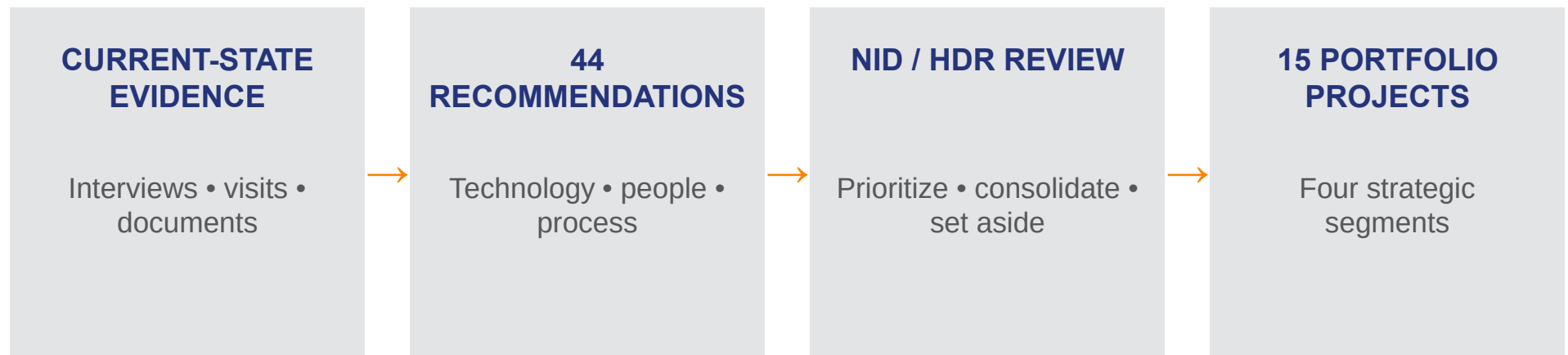
Management stakeholders highlighted the need to reduce data silos, improve data quality, and support future analytics, reporting, and artificial intelligence capabilities.



03

From Findings to Portfolio

From 44 Recommendations to 15 Projects



Related recommendations were packaged together, a few were not advanced after NID review.

Portfolio at a Glance

15 projects across four strategic segments.

3

**CULTURE /
RETENTION
(CR)**

People, roles, knowledge
and governance

4

**NETWORK / SECURITY
(NS)**

Access, communications,
visibility and planning

3

**NETWORK / EXPENSE
CONSOLIDATION
(EC)**

Standards, shared
management and reduced
duplication

5

**INFORMATION /
APPLICATION
(IA)**

Recovery, data, field
productivity and public
service

Project codes identify the four portfolio categories throughout the roadmap.

Phased Implementation Roadmap

Planning roadmap; sequencing may be adjusted as conditions and priorities evolve.

Segment	SHORT TERM 2027-2029	MEDIUM TERM 2030-2032	LONG TERM 2033 onward
Culture / Retention	CR-1.1, CR-1.2	CR-1.3	—
Network / Security	NS-2.1, NS-2.2	—	NS-2.3, NS-2.4
Network / Expense Consolidation	EC-3.2, EC-3.3	—	EC-3.1
Information / Application	IA-4.4	IA-4.1, IA-4.2, IA-4.3, IA-4.5	—

Timing reflects priorities, prerequisites, resources, procurement and readiness.

Culture / Retention

Build capacity and preserve institutional knowledge.

CR-1.1

IT Resources to Support Strategic Technology Initiatives at NID

Capacity for support, security and major initiatives.

CR-1.2

IT/OT Role Alignment and Cross-Training Program

Clear ownership, collaboration and knowledge transfer.

CR-1.3

Development and Expansion of IT/OT Policies and Procedures

Consistent governance for secure, sustainable operations.

Network / Security

Strengthen access, communications, visibility and coordinated protection.

NS-2.1

Access Control Hardening and Role-Based Authentication Implementation

Improve accountability and align access with job roles.

NS-2.2

Modernization of OT Network Communications Infrastructure

Improve reliability, standardization and supportability.

NS-2.3

Development of IT and Cybersecurity Dashboard

Improve visibility into performance, support and security.

NS-2.4

Develop and Implement Physical Security Plan

Coordinate physical-security practices.

Network / Expense Consolidation

Standardize where practical and reduce duplicated support effort.

EC-3.1

Replacement of Unmanaged Network Switches

Improve visibility, manageability and lifecycle support.

EC-3.2

OT Infrastructure Standardization and Documentation Enhancement

Create common standards, documentation and maintenance practices.

EC-3.3

IT / OT Security and Operations Alignment Initiative

Reduce duplicated administration and improve coordinated monitoring.

Information / Application

Improve recovery, data availability, field productivity and public service.

IA-4.1

Develop an OT Backup Strategy

Standardize backup, validation and recovery practices.

IA-4.2

OT Historian Architecture and Data Transfer Optimization

Improve governed, supportable access to operational data.

IA-4.3

Develop an Emergency Response Plan (ERP)

Strengthen coordinated preparedness and recovery.

IA-4.4

Enhancement of Mobile Connectivity for Field Operations

Improve data access and productivity in remote work.

IA-4.5

Assessment and Upgrade of Campsite Reservation System

Evaluate options to improve public-facing service and operations.

04

Business Need Alignment

Purdue Model: Conceptual Planning Framework

Conceptual example illustrating how information, operations, and security functions can be better aligned and managed across the organization.

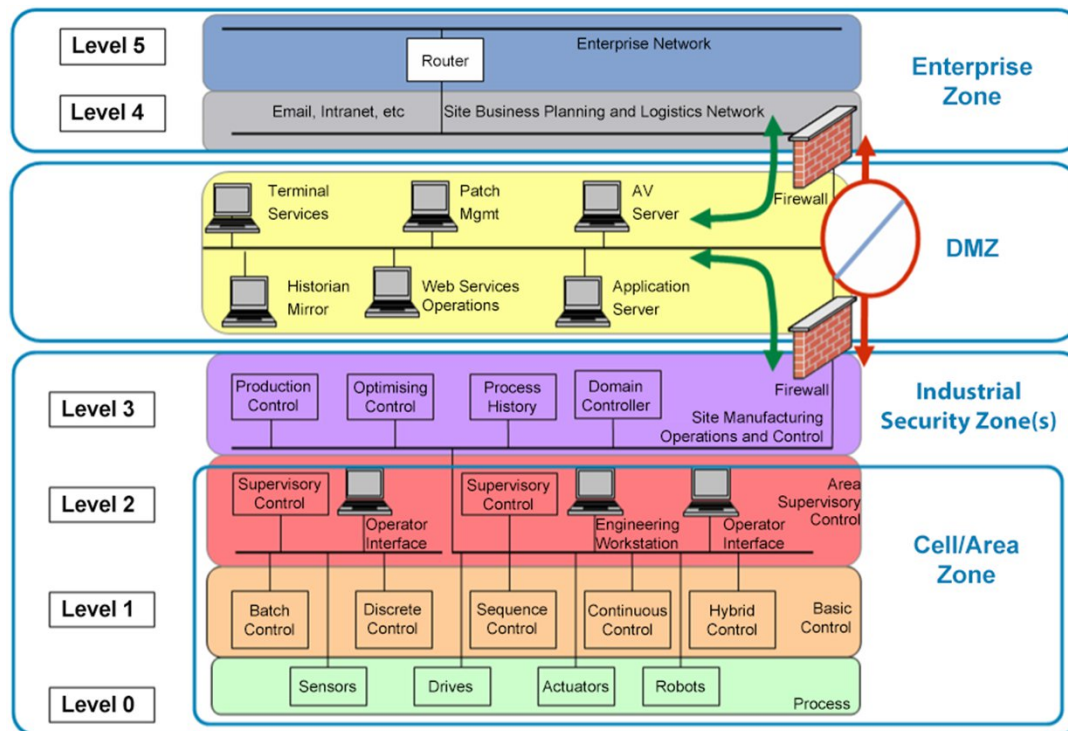


Diagram courtesy of Cisco Systems, Inc.

Diagram terms: DMZ = demilitarized zone; AV = antivirus; Mgmt = management.

CURRENT STATE

Separate IT and OT environments with different support practices.

FUTURE VISION

Better coordination, shared visibility and governed information flow.

ROADMAP CONNECTION

Fifteen phased projects support this direction. Detailed network design follows separately.

Why These Investments Matter

The value is not simply “invest in more technology and/or resources.”

LOWER OPERATIONAL COMPLEXITY

Standardization and aligned administration reduce duplicated effort.

EC-3.2 • EC-3.3

STRONGER SECURITY & RESILIENCE

Role-based access, monitoring alignment and planning reduce risk.

NS-2.1 • NS-2.3 • NS-2.4

SUSTAINABLE STAFFING & KNOWLEDGE

Role clarity, capacity and cross-training reduce reliance on individuals.

CR-1.1 • CR-1.2

RELIABILITY & RECOVERY

Communications, backups and emergency planning support continuity.

NS-2.2 • IA-4.1 • IA-4.3

BETTER USE OF INFORMATION

Governed operational data and field access improve decision support.

IA-4.2 • IA-4.4



One Mission, Connected Departments

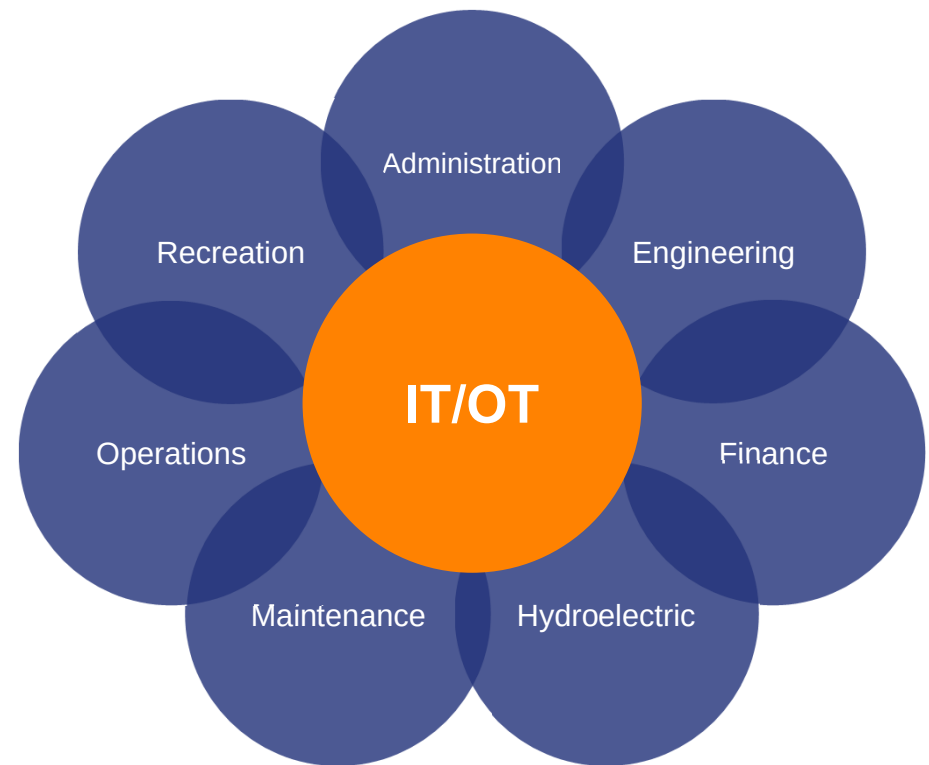
NID MISSION

“The District will provide a dependable, high-quality water supply for the communities we serve.”

MASTER PLAN VISION

Provide a forward-looking IT/OT network and the situational data staff need to steward constituents’ investments and safely serve the public interest.

IT/OT CONNECTS THE DEPARTMENTS



Sources: NID mission; Master Plan vision; NID 2024 organizational charts. Conceptual collaboration, not reporting lines.

Roadmap to Action and Discussion

- 1 Confirm the operating need and near-term priorities
- 2 Validate prerequisites, staffing capacity and readiness
- 3 Develop project-specific scope and budget
- 4 Include selected work in Capital Improvement Program (CIP) and operating plans
- 5 Revisit the roadmap as systems and priorities change

Implementation can proceed project by project.

Questions?



Appendix A - Complete Project Portfolio

Final Technical Memorandum 3 (TM-3): projects, priorities, prerequisites and implementation phases.

Code	Title	Segment	Priority	Phase	Prerequisite(s)
CR-1.1	Additional IT Resources to Support Strategic Technology Initiatives at NID	CR	Critical	Short	CR-1.2
CR-1.2	IT/OT Role Alignment and Cross-Training Program	CR	Critical	Short	None
CR-1.3	Development and Expansion of IT/OT Policies and Procedures	CR	Critical	Medium	CR-1.2
NS-2.1	Access Control Hardening and Role-Based Authentication Implementation	NS	Critical	Short	None
NS-2.2	Modernization of OT Network Communications Infrastructure	NS	Moderate	Short	EC-3.2
NS-2.3	Development of IT and Cybersecurity Dashboard	NS	Low	Long	CR-1.3
NS-2.4	Develop Physical Security Plan	NS	Moderate	Long	EC-3.2
EC-3.1	Replacement of Unmanaged Network Switches	EC	Moderate	Long	CR-1.3; EC-3.2
EC-3.2	OT Infrastructure Standardization and Documentation Enhancement	EC	Moderate	Short	CR-1.2
EC-3.3	IT / OT Security and Operations Alignment Initiative	EC	Critical	Short	CR-1.2
IA-4.1	Develop an OT Backup Strategy	IA	Critical	Medium	EC-3.2
IA-4.2	OT Historian Architecture and Data Transfer Optimization	IA	Low	Medium	EC-3.2
IA-4.3	Develop an Emergency Response Plan (ERP)	IA	Critical	Medium	CR-1.2
IA-4.4	Enhancement of Mobile Connectivity for Field Operations	IA	Moderate	Short	None
IA-4.5	Assessment and Upgrade of Campsite Reservation System	IA	Low	Medium	None

Appendix B - Deliverables Produced

Type	Deliverable	Status
CORE	Technical Memorandum 1 – Current State	Final - March 25, 2025
CORE	Technical Memorandum 2 – Recommendations for Improvement	Final - May 13, 2025
CORE	Technical Memorandum 3 – IT/OT Network Master Plan	Final - September 17, 2026
OPTIONAL	Interim ICS Programming & Configuration Revision Control Policy	Final - August 12, 2025
OPTIONAL	ICS Approved Equipment List	Final - August 12, 2025
OPTIONAL	OS5: HMI Data Historization Architecture Review	Final - March 31, 2026
OPTIONAL	OS6: Network Mapping / Vulnerability Reports	Final - December 11, 2025

Appendix C – Roadmap Implementation Schedule

