

Willamette Water Supply
Our Reliable Water



2018 TACOMA PNWS-AWWA

The Art of Indirectly Managing Construction Projects

April 25, 2018

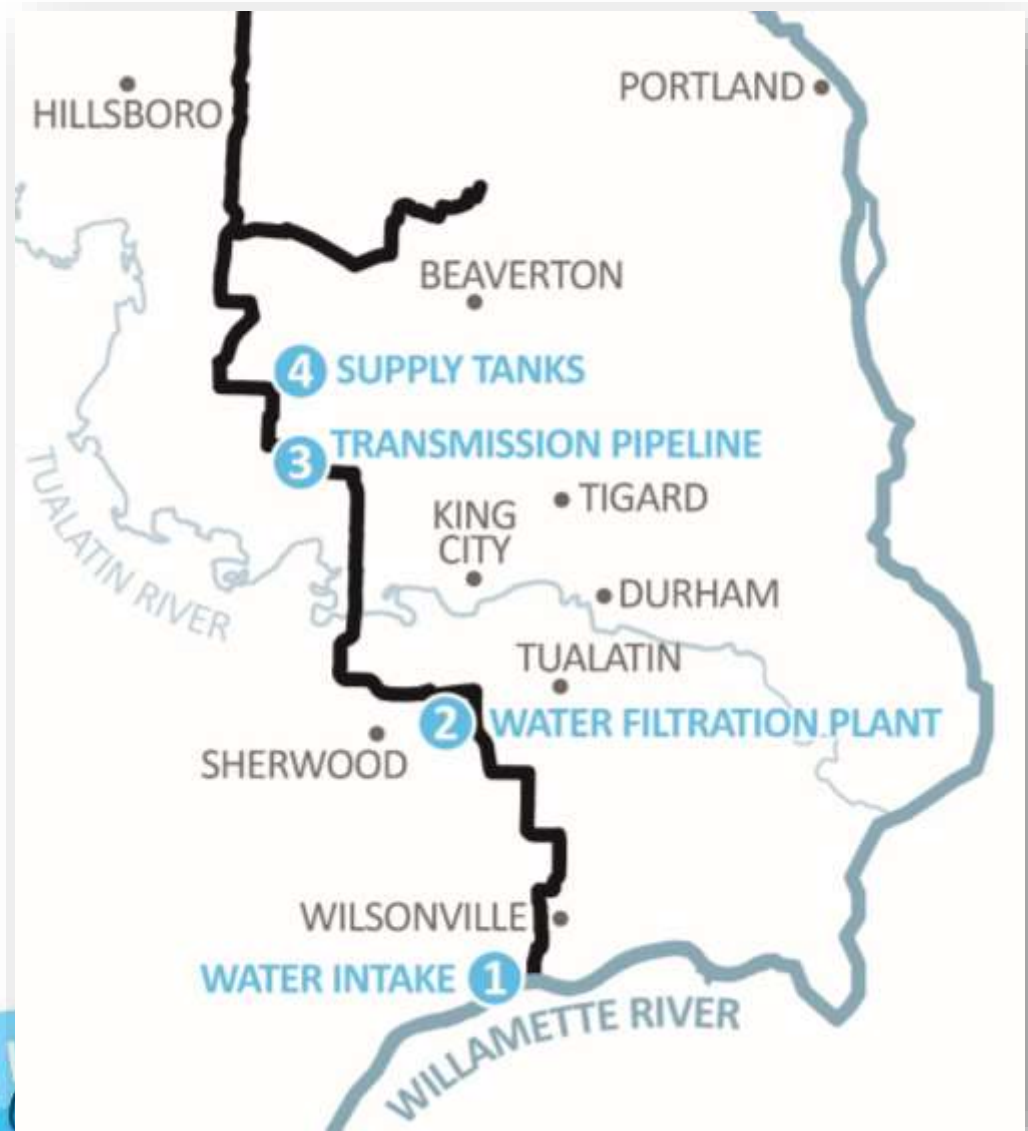
Andre Tolme



Corianne Hart



Willamette Water Supply Program (WWSP)



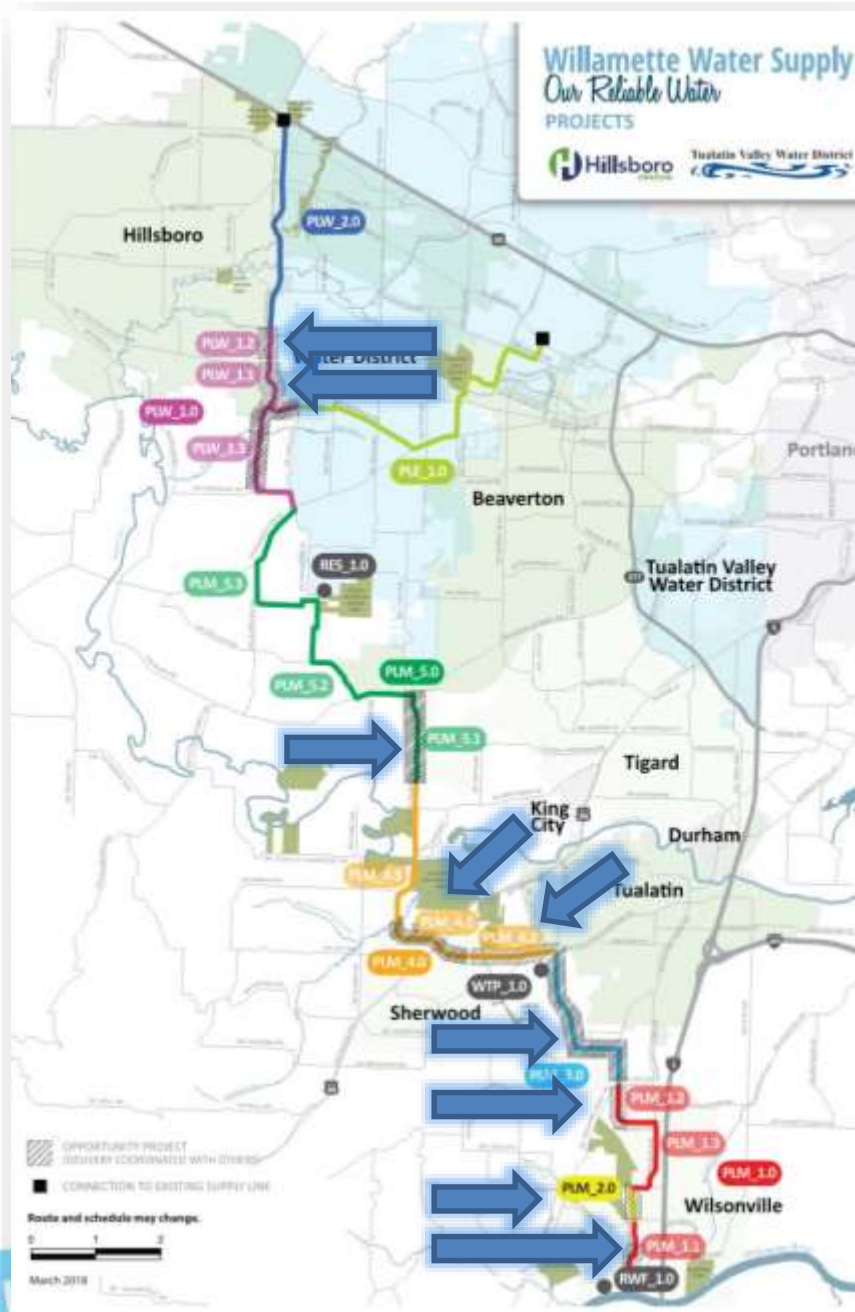
- Modified water intake
- New water filtration plant
- Water reservoirs
- 30+ miles of large diameter pipeline
- TVWD: 60%
City of Hillsboro: 40%
- Scheduled completion: 2026

Tualatin Valley Water District



WWSP Projects

- 8 Pipeline project areas
- Pipeline split into 16 construction packages to
 - accommodate opportunities with other agencies
 - facilitate small/local business participation
- 9 of the packages are “opportunity” projects with road construction projects



WWSP Opportunity Projects

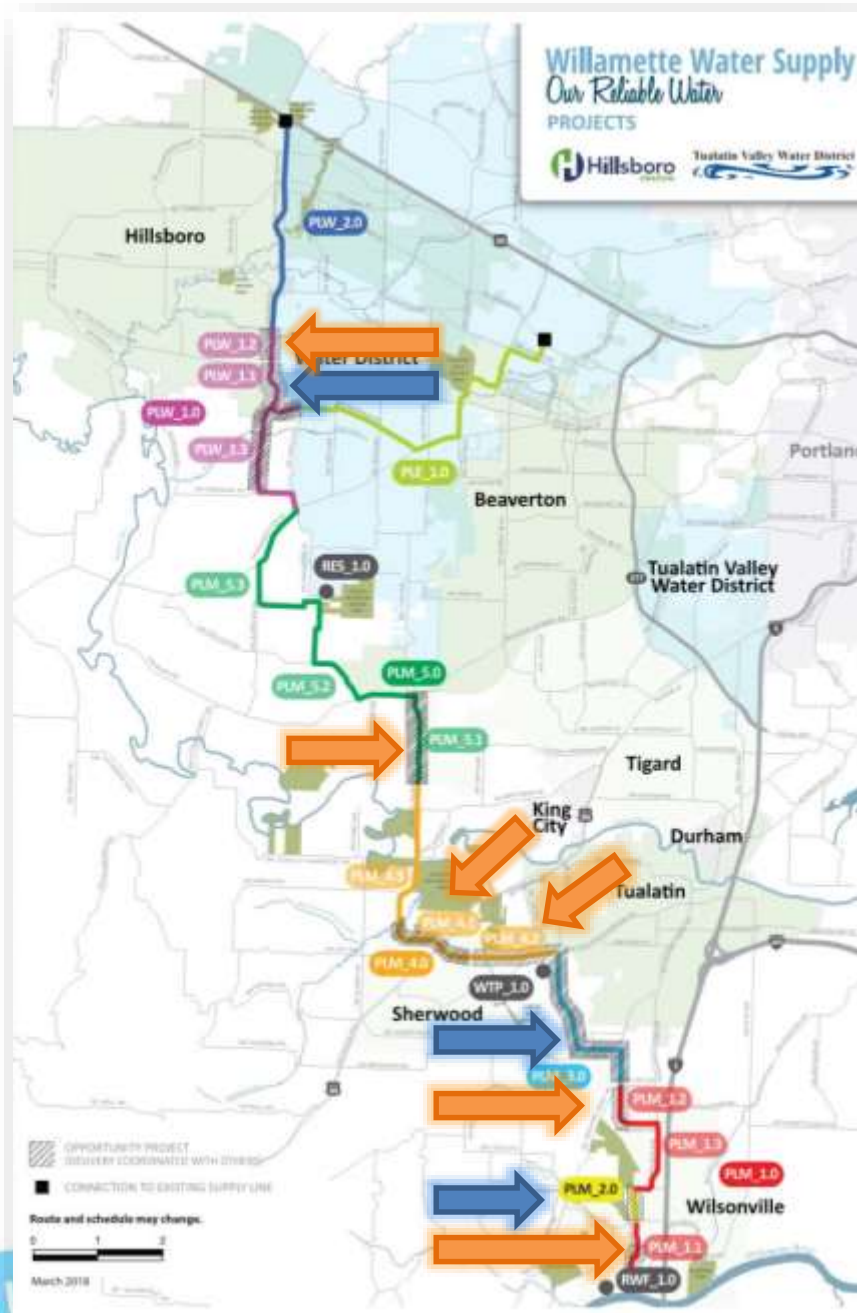
“WWSP will pursue opportunities to implement the WWSP in a cost-effective manner by coordinating projects with other agencies and municipal governments”

– WWSP Guiding Principle #12

Opportunities in coordination with:



Opportunity Projects



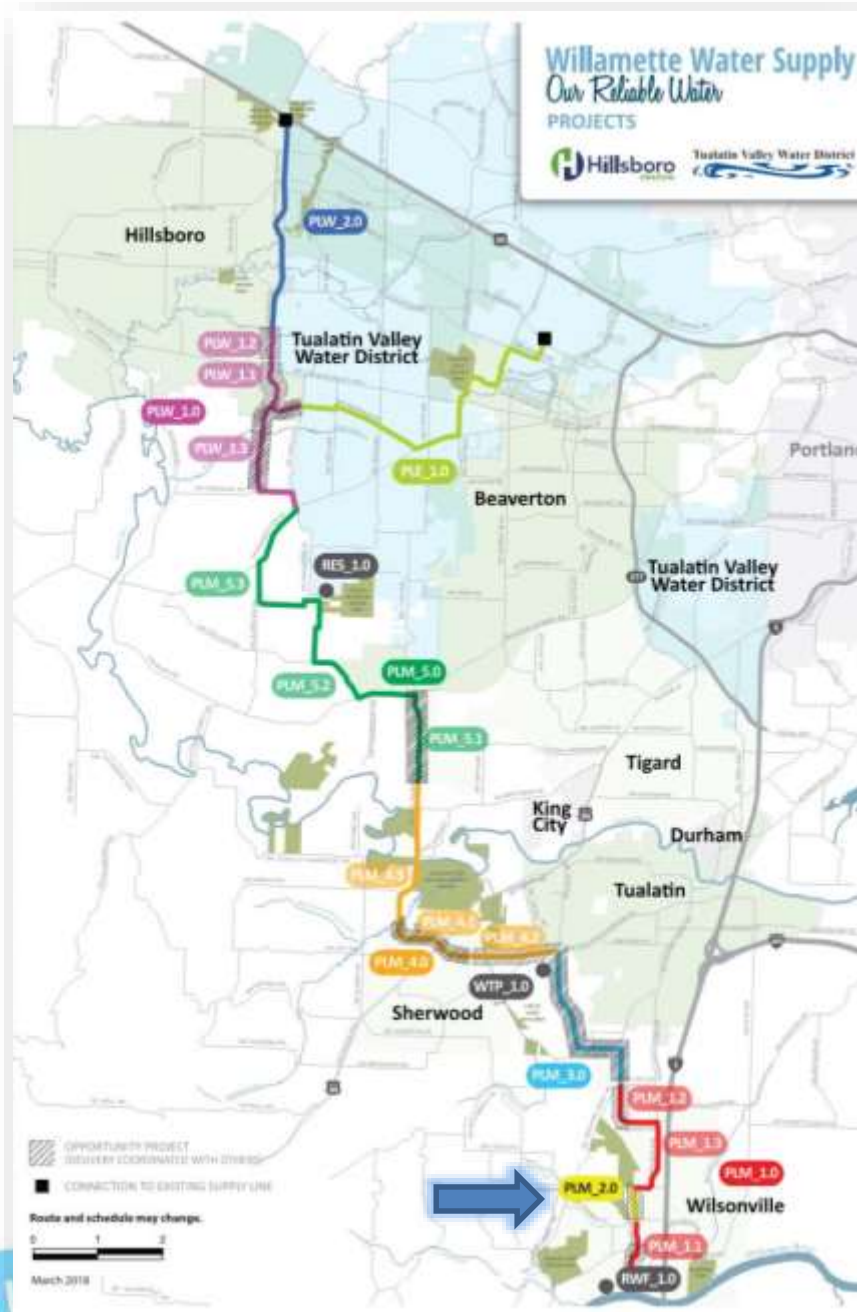
- Under Construction
 - PLM_2.0 (ODOT, City of Wilsonville)
 - PLM_3.0 (Washington County)
 - PLW_1.1 (Newland Communities)
- In Design:
 - PLW_1.2 (Washington County)
 - PLM_5.1 (Washington County)
 - PLM_4.1, 4.2 (Washington County)
 - PLM_1.1, 1.2 (City of Wilsonville)

(PLM: Pipeline Main)

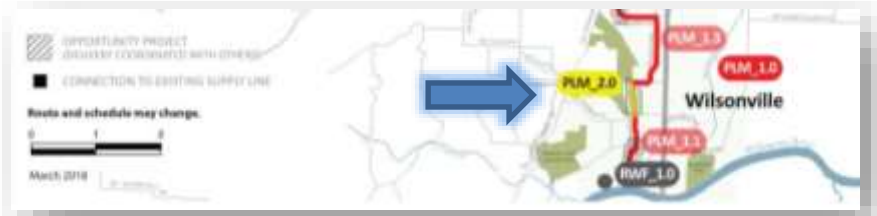
(PLW: Pipeline West)

Opportunity Projects

- Under Construction
 - PLM_2.0 (ODOT, City of Wilsonville)



PLM_2.0 (Kinsman Rd.)



WWSP

Waterline Designer: CH2M/Jacobs

WWSP Project: 2,900 LF of 66” waterline

ODOT and City of Wilsonville

Road and Sewer Designer: OBEC

Road Project: 3,000 LF of new city road, funded by FHWA, administered by ODOT

Sewer Project: 27” Sanitary Sewer

Partner Benefits:

One contractor, shared mobilization, traffic control, and other costs.

Reduce community disruption and new pavement rehab.

Construction substantially complete



PLM_3.0 (124th Ave.)

WWSP

Waterline Designer: HDR

WWSP Project: 14,200 LF of 66" waterline

Washington County

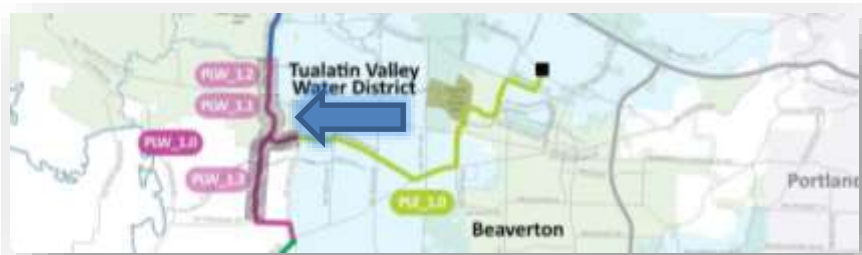
Road Designer: DEA

Road Project: Two miles of new road and two miles of road widening/rehab.

Partner Benefits:

Leveraging shared costs allowed the County to expand roadway project.
Avoids future disruption.

In Construction.



PLW_1.1

WWSP

Waterline Designer: Kennedy/Jenks

WWSP Project: 4,000 LF of 48” waterline

Newland Communities

Road Designer: McKay + Sposito

Road Project: Extension of major arterial road and lateral roads to serve part of a development with up to 20,000 new homes.

Coordination Benefits:

Coordinate utility crossings, install waterline before new road construction

In Construction.

Why Opportunity Projects?

- Financial:
 - Cost Savings!
 - Shared mobilization
 - Shared erosion/sediment control and other site requirements
 - Shared traffic control
 - Common submittals
 - Most efficient use of public money (both WWSP and partner agency)
 - May allow each agency to leverage existing funds and increase project scope

Why Opportunity Projects?

- Construction and Public Impact:
 - Reduces disruption and traffic congestion
 - New pavement moratoria
 - Coordinated sequencing of construction activities



Management of Opportunities

Step 1: Prequalification of Contractors

- Require large pipeline experience for company, project managers and superintendents
- Current WWSP pre-qual list includes nine contractors



Management of Opportunities

Step 2: Design

- Intergovernmental Agreements (IGAs) for public agencies
- Memoranda of Understanding (MOUs) for developers
- Sharing of CAD files, coordination meetings, utility conflict resolution, shared permits, constructability reviews

**AGREEMENT FOR WILLAMETTE WATER
SUPPLY SYSTEM IMPROVEMENTS
BETWEEN
TUALATIN VALLEY WATER DISTRICT,
THE CITY OF HILLSBORO
AND GLC-SOUTH HILLSBORO LLC**

- 6.1 Completion of PLW 1.1 Design by Consultant for WWSP and GLC review by November 10, 2016.
- 6.2 Preparation of Bid Documents and Advertisement for Bids by WWSP by November 21, 2016 that include PLW 1.1.
- 6.3 Receipt and evaluation of bids, award of construction contract and issuance by WWSP of a limited Notice to Proceed to the selected Contractor (as defined below) by February 1, 2017.
- 6.4 Installation of pipe between STA 1216+46 and STA 1235+00 shall be completed prior to April 28, 2017.
- 6.5 Installation of pipe between STA 1238+41 and STA 1240+85 shall be completed between May 16, 2017 and July 13, 2017.
- 6.6 All trenchless construction work including backfill of the launch and receiving shafts shall be completed by July 26, 2017.
- 6.7 Substantial completion of PLW 1.1 construction by September 29, 2017 and Final Completion of PLW 1.1 construction by November 30, 2017.
- 6.8 A schedule will be developed for PLW 1.3 as soon as reasonably practical and shall become part of this agreement.

Management of Opportunities

Step 3: Construction

- Separate IGAs and MOUs for construction
- Cost splits for common work
- Road Agency typically lead for project (bid, CM, contract management)
- Coordination of Contracts
 - DIV 01
 - QA approach
 - health and safety
 - schedule submittals
 - document management
 - change orders



Challenges of Opportunities

- Negotiating and Obtaining signed agreements (IGA/MOUs)
- Construction management of:
 - Safety
 - Quality
 - Document Management
 - Contractor Payments
 - Change Orders
 - Contractor Schedules



Safety



Partner Agency Approach
Contractor's responsibility

WWSP Approach
Hands on, daily involvement and
management of contractor's
requirements

Quality

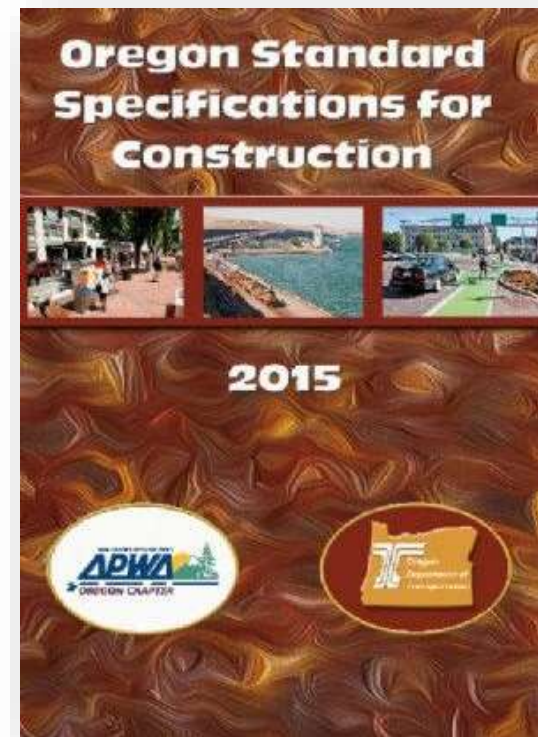
WWSP Approach

- Perform QA Testing
- Contract with 3rd party testing firm
- Welding, soils, concrete
- Technical Specifications provide requirements



Partner Agency Approach

- Follow standard specifications
- Follow “Manual of Field Testing Procedures”



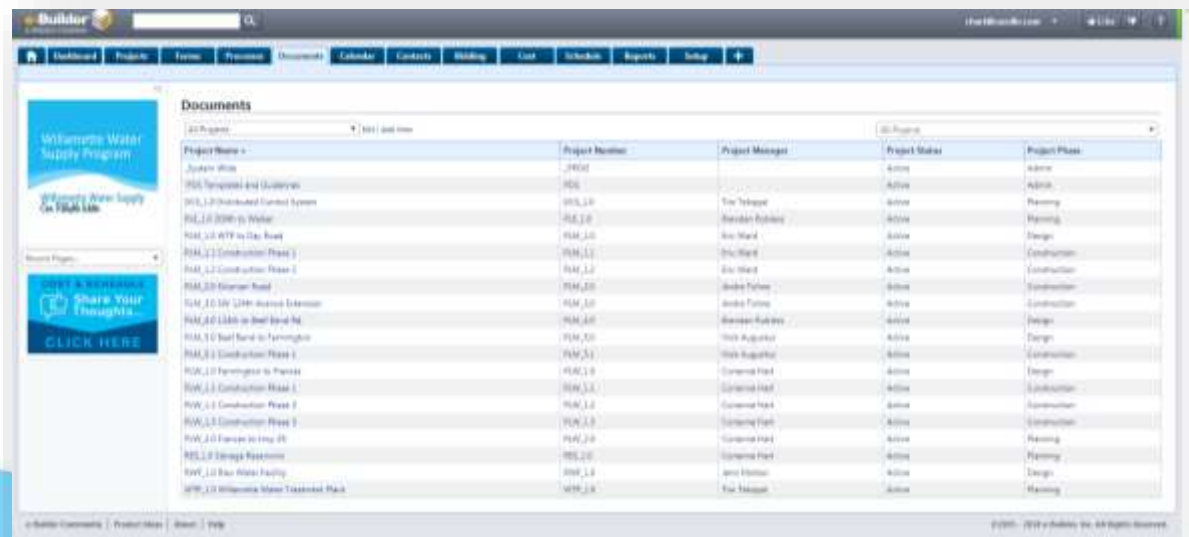
Document Management

WWSP Approach

- PMIS (e-Builder)
- All electronic communications
- Customized/automated processes and workflows
- Cloud storage

Partner Agency Approach

- Triplicate carbon paper
- Scanned docs
- E-Mail
- Storage on County server and in file cabinets



The screenshot displays the e-Builder software interface. The main content area is titled "Documents" and shows a list of project documents. The table has the following columns: Project Name, Project Number, Project Manager, Project Status, and Project Phase. The table contains 20 rows of data, including projects like "Jupiter Water", "WIS Transport and Distribution", "WIS, LP Distributed Control System", "WIS, LP Distribution System", "WIS, LP WTP to Day Road", "WIS, LP Construction Phase 1", "WIS, LP Construction Phase 2", "WIS, LP Water Road", "WIS, LP WTP LPW Inflow Extension", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road", "WIS, LP LPW to Day Road".

Project Name	Project Number	Project Manager	Project Status	Project Phase
Jupiter Water	JW01	Active	Active	Active
WIS Transport and Distribution	WIS	Active	Active	Active
WIS, LP Distributed Control System	WIS_LP	Tom Torgesen	Active	Planning
WIS, LP Distribution System	WIS_LP	Brandon Ruckler	Active	Planning
WIS, LP WTP to Day Road	WIS_LP	Ken Ward	Active	Design
WIS, LP Construction Phase 1	WIS_LP	Eric Ward	Active	Construction
WIS, LP Construction Phase 2	WIS_LP	Eric Ward	Active	Construction
WIS, LP Water Road	WIS_LP	Andre Torres	Active	Construction
WIS, LP LPW LPW Inflow Extension	WIS_LP	Andre Torres	Active	Construction
WIS, LP LPW to Day Road	WIS_LP	Brandon Ruckler	Active	Design
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Design
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Construction
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Construction
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Construction
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Construction
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Construction
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Construction
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Construction
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Construction
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Construction
WIS, LP LPW to Day Road	WIS_LP	Ken Ward	Active	Construction

Contractor Payments

WWSP Approach

- Schedule of Values
- Bid items
- Contractor and CM discuss and negotiate at month-end

Partner Agency Approach

- Hundreds of bid items
- Inspectors write “Quantity Docs”
- Main office multiplies quantity x unit price

Item No.	Item Description	Unit	Qty
General Items			
1	Perform Pre-Mobilization (max 1% of the total bid)	LS	1
2	Provide Pre-Mobilization Standby	MO	4
3	Perform Mobilization (max 5% of the total bid)	LS	1
4	Perform Demobilization (min 3% of the total bid)	LS	1
5	Furnish and Install Haul Road/Access Road	LS	1
6	Perform Health and Safety Activities	LS	1
7	Furnish and Install Temporary Environmental Controls	LS	1
8	Furnish and Install Storm Water, Sediment, and Erosion	LS	1
9	Furnish and Install Dust Control	LS	1
10	Provide Site Security	LS	1
11	Provide Traffic Control	LS	1
12	Provide Work Limits Preparation	LS	1
		Total General Items (Items	

Change Orders

WWSP Approach

- PCOs and CCOs
- CM negotiates and resolves
- Lump sum or T&M
- CCOs add to the value of the contract

Partner Agency Approach

- Change Orders may require governing body approval
- Built-in contingency
- Field Directives



Schedule Management

WWSP Approach

- Primavera P6
- CPM logic-driven schedule
- Approved baseline before NTP
- Monthly updates

Partner Agency Approach

- No software requirements
- May not have any monthly updates or only periodic updates
- Not tied to payment



“Indirect” Construction Management

- Respect contractual relationships
 - Influence but don’t direct
 - Maintain project-level relationships
- Communicate
 - Be proactive
 - Be fair
- Maintain principles



Management of Relationships

- Contract correspondence to/from the contracted parties
- Hunting, fishing, guns, and golf
- Breakfast burritos trump everything



Communication is KEY

- Be proactive and use the 'cc:' button
- Fairness starts with understanding multiple perspectives
- Inspector and loader operator vs. project executives



Guiding Principles (The big picture)



Thank you!

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