



STRAND
ASSOCIATES®

Excellence in EngineeringSM
Since 1946

Our Team’s Responsive Service, Quality Engineering, and Attention to Detail Delivers Successful Long-Term Water Treatment Solutions

Village of Ashville, Ohio



Perfectly Matched Team Leaders Bring National Expertise and Local Familiarity



**Brian Hackman, P.E.,
P.H., BCCE**
Senior Project
Manager

- 25 years experience
- 23 years with Strand
- Director of Practice for Water Supply within our firm
- Manager of many during 127 projects throughout 23 years, including more than 13 clients in Ohio
- PE in 7 states



Jamie Mills, P.E.
Client Liaison /
Assistant Project
Manager

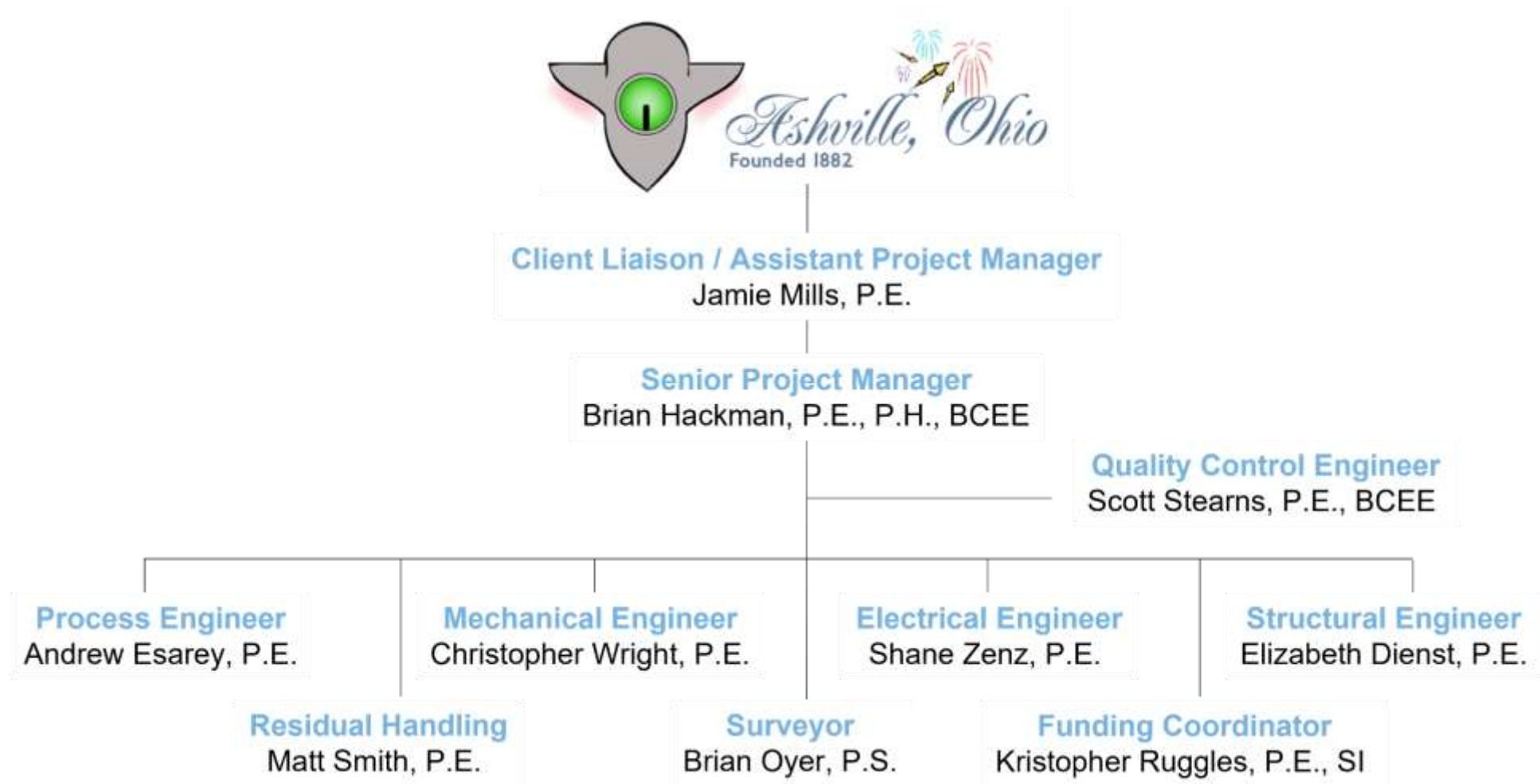
- 11 years experience
- 7 years with Strand
- Grew up in Ashville and lives 15 minutes away
- Has attended Village Council and Committee Meetings for the past 7 years to remain engaged and informed of Village needs



**Kris Ruggles,
P.E., S.I.**
Planning Engineer and
Funding Coordinator

- 17 years experience
- 17 years with Strand
- Local resident of Ashville and lives 10 minutes away
- City Engineer for City of Circleville
- Helped fund more than 40 communities in Ohio

Full-Service Project Team Covers All Project Needs with Available In-House Experts



Seventy-Six Years of Service Signifies Organizational Strength, Stability, and Commitment to Quality Within Close Proximity to the Village



RANKED 18th
IN THE
MIDWEST
TOP DESIGN FIRM 2021
by Engineering News-Record Midwest



- 495 employees
- 12 offices throughout the US

Innovative Yet Proven Solutions Provide Confidence in Equipment Technology Alternatives and Selection



Lime Softening – Cedar Rapids, IA



Ion Exchange – Romeoville, IL

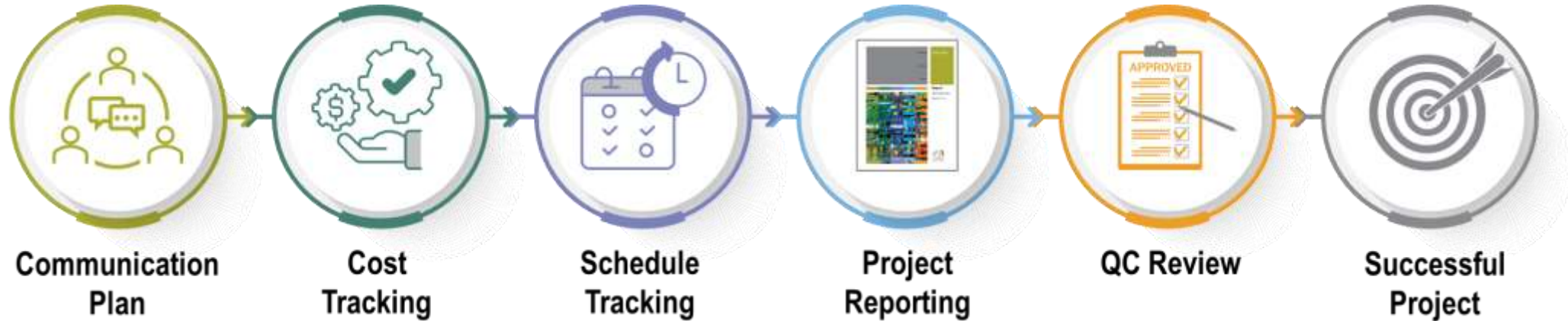


Fluidized Bed Reactors – Bargersville, IN

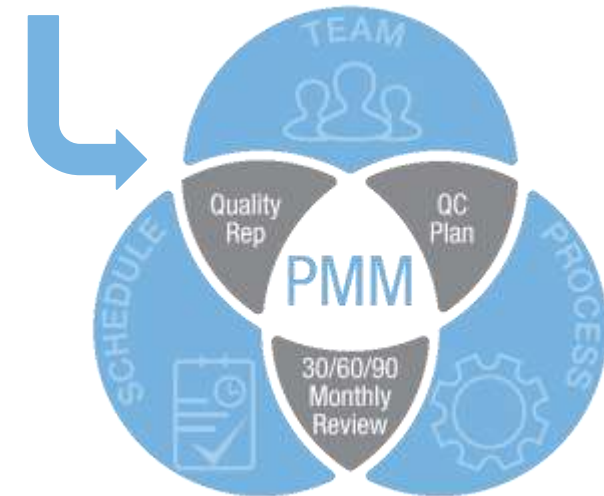


Reverse Osmosis – Aledo, IL

Our Proactive Project Management Approach Targets Client Satisfaction



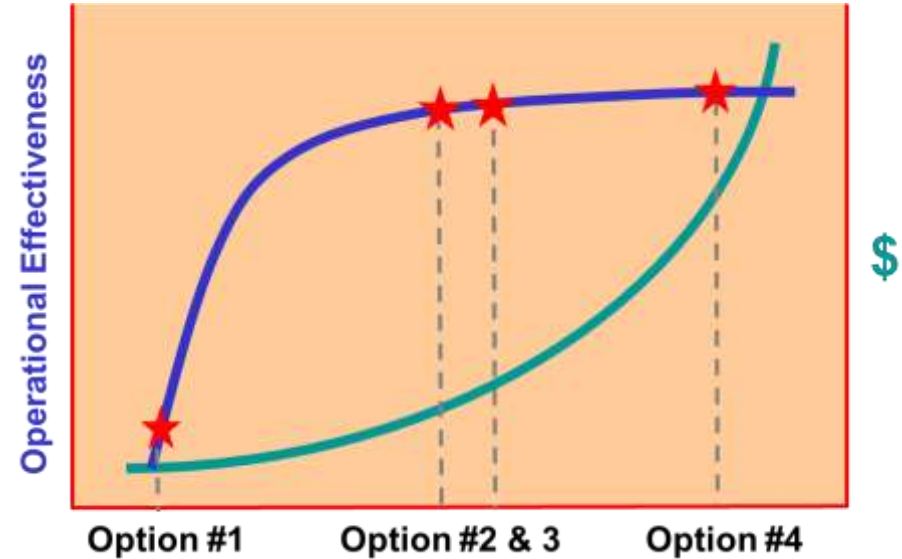
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- Weekly telephone calls
 - Monthly written reports
 - Routine in-person visits



Successful Approach Helps Village Determine Value of Future Facilities Based on Historical Data and Operational Effectiveness



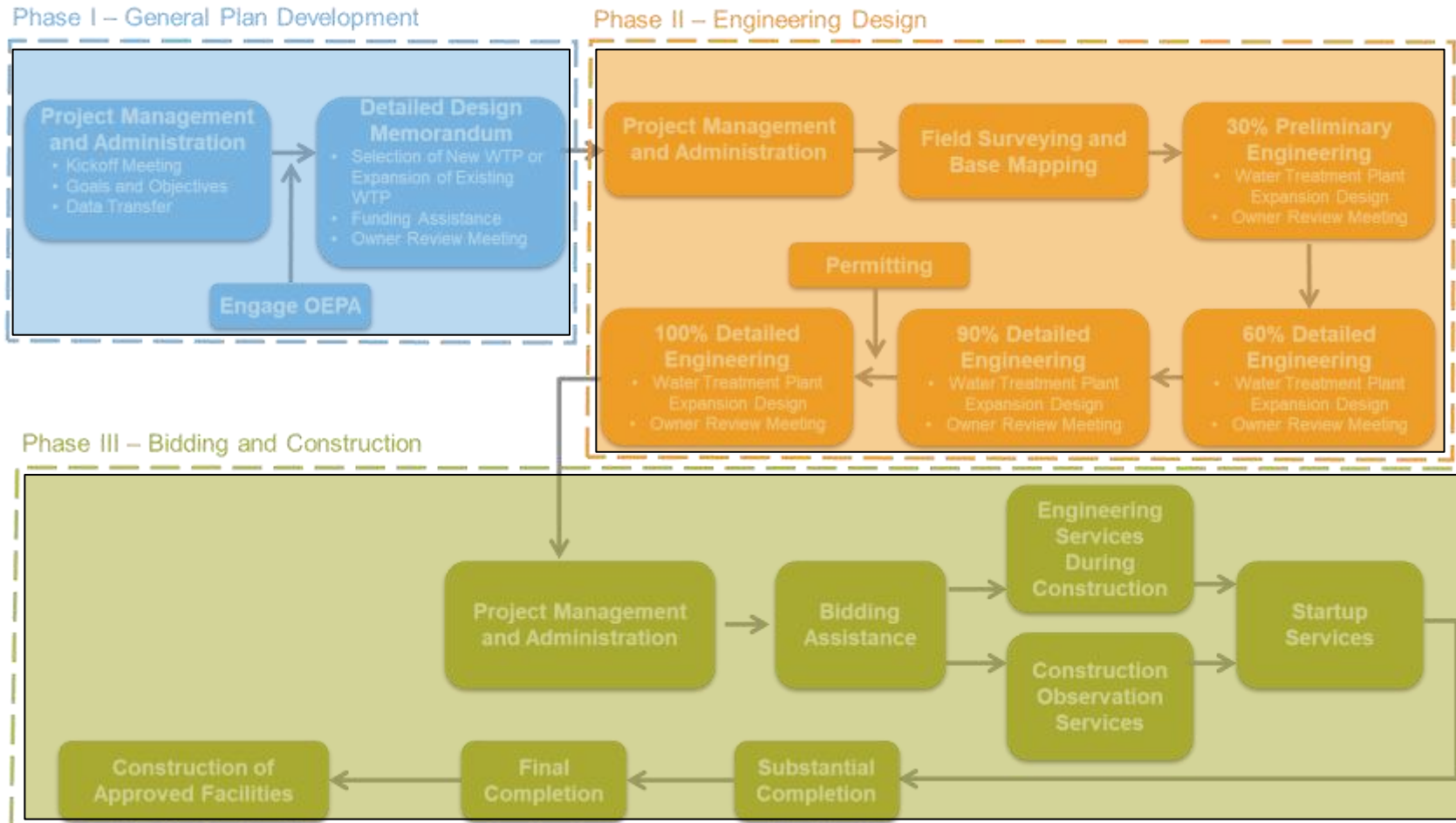
Example – Option 2
Morgantown, WV WTP



Village of Ashville, Ohio - Anticipated Budgetary WTP Replacement Project Costs			
Description	Treatment Alternatives		
	Reverse Osmosis	Ion Exchange	Lime Softening
Capital Cost (1.2 MGD Capacity)	\$6,560,000	\$4,360,000	\$7,640,000
Contingency (20%)	\$1,312,000	\$872,000	\$1,528,000
Total Construction	\$7,872,000	\$5,232,000	\$9,168,000
Technical Services and Legal (20%)	\$1,575,000	\$1,046,400	\$1,833,600
Total Basic Project	\$9.4 million	\$6.3 million	\$11.0 million

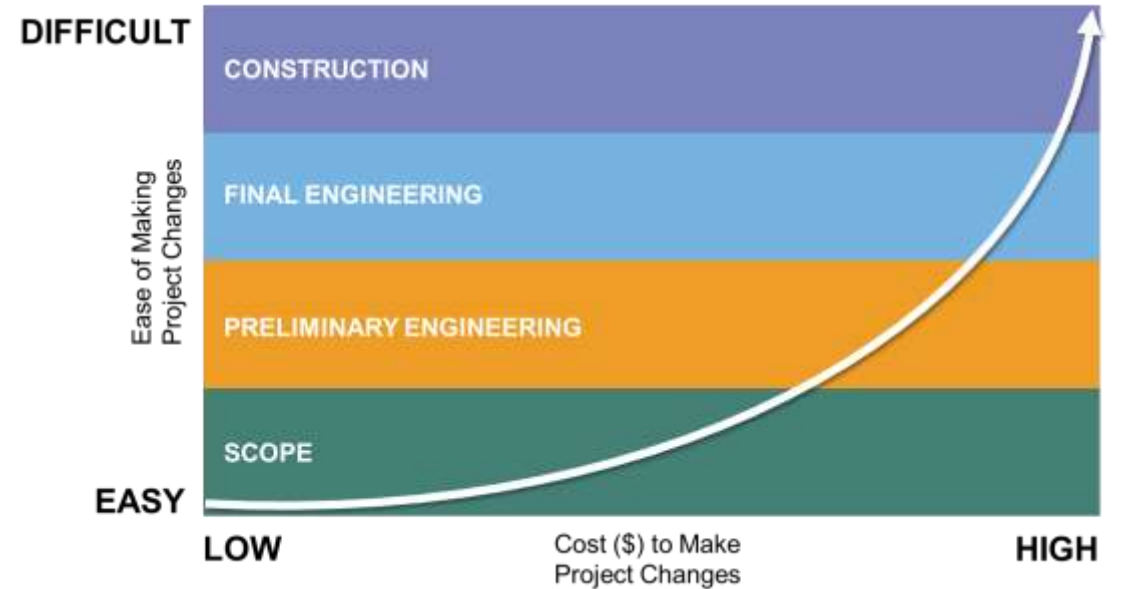
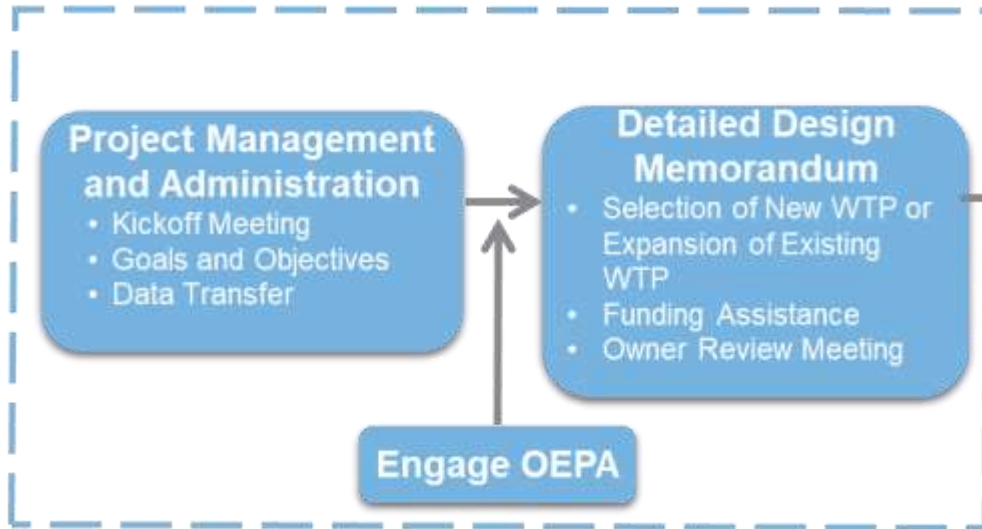
Probable cost above for relative alternative comparison only

Project Approach is Based on Your Detailed Scope of Services Request

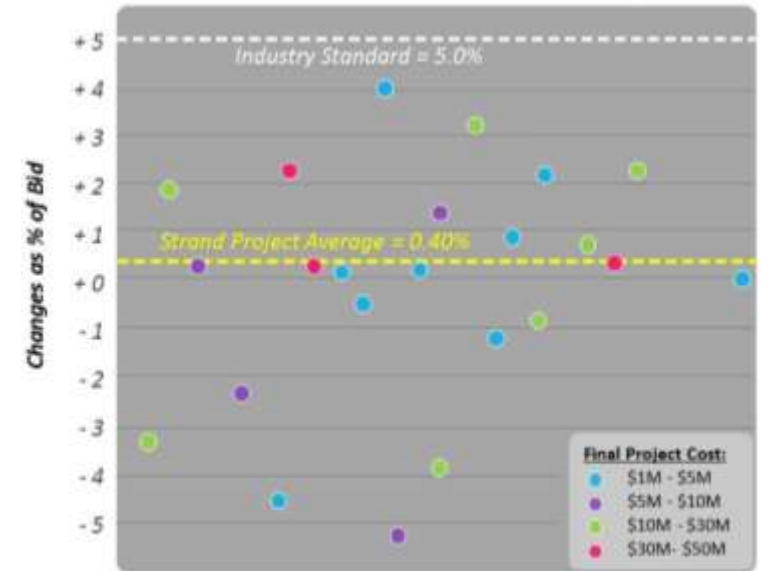
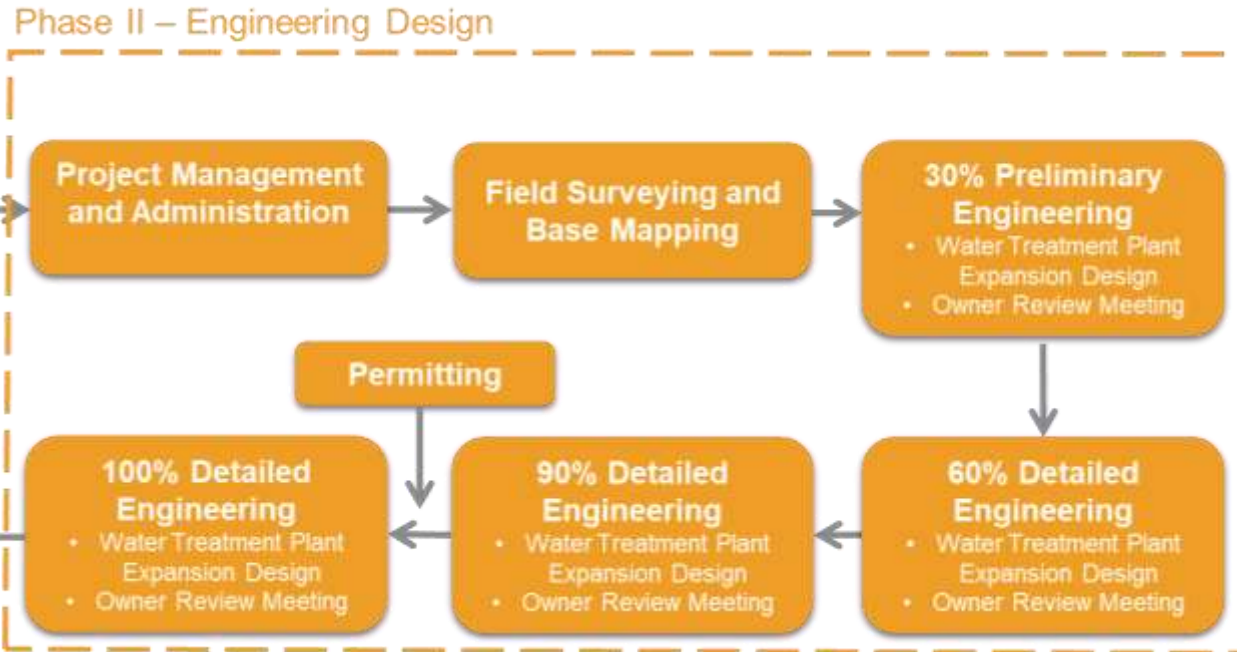


General Plan Development Accomplishes Preliminary Engineering that Establish Budgets and Design Criteria

Phase I – General Plan Development



Village Input Completes Our Engineering Design, Resulting in a Permit to Install (OEPA) and Bidding Documents



Our thorough designs reduce unexpected costs, Strand projects average 0.4% change orders compared to 5.0% industry standard.

Maintaining Design Responsibility During Construction Keeps the Contractor's Focus on Successful Project Completion

Owner
Workshop
No. 2

Detailed
Design

Bidding

Construction



Provide contract
administration
services

Provide full-time
resident project
representative

Provide
commissioning
services

Provide record
drawings compiled
from contractor's
records

Project Management and Observation Services Extend the Value of Your Constructed Infrastructure

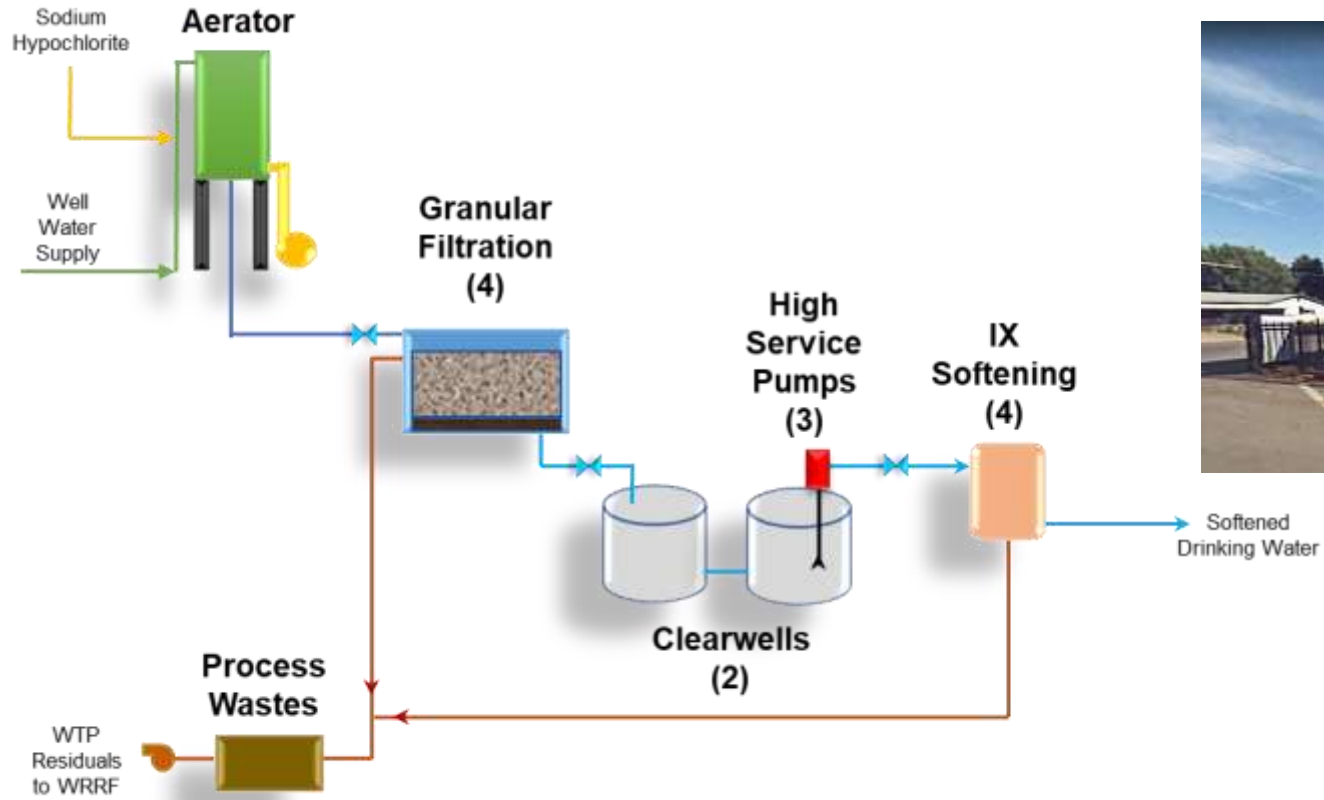


Source: The Columbus Dispatch, 5/18/2018

Funding	CR ANT	Loan Savings	Rate	Deadline	Available
DEFA Backup Power	\$50,000	N/A	N/A	Aug 2019	Jan 2020
DEFA Septage/FOG		\$1,000,000	0.50%	Aug 2019	Jan 2020
DEFA Green Project		\$678,503	1.10%	Aug 2019	Jan 2020
ARC	\$250,000	N/A	N/A	May 2019	May 2020
OPWC	\$500,000	\$141,627	0%	Oct 2020	Jul 2020
RPIG	\$450,000	N/A	N/A	May 2020	May 2021
Economic Development	\$3,000,000	N/A	N/A	Open	TBD
	\$4,250,000	\$1,910,716			



Cost Effective Replacement of Aging Infrastructure Meets Future Water System Demands



Village's General WTP Schematic



Map Data: Google Earth



Our Understanding of the Village's Preferences Drives Conceptual Renderings for Fine-Tuning Facility Details



Innovative Engineering Tools Allow Staff to More Easily Visualize Complicated Designs



Conceptual Renderings Enhance Operational Discussions and Design Reviews



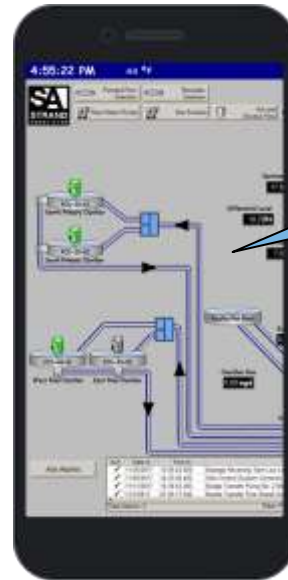
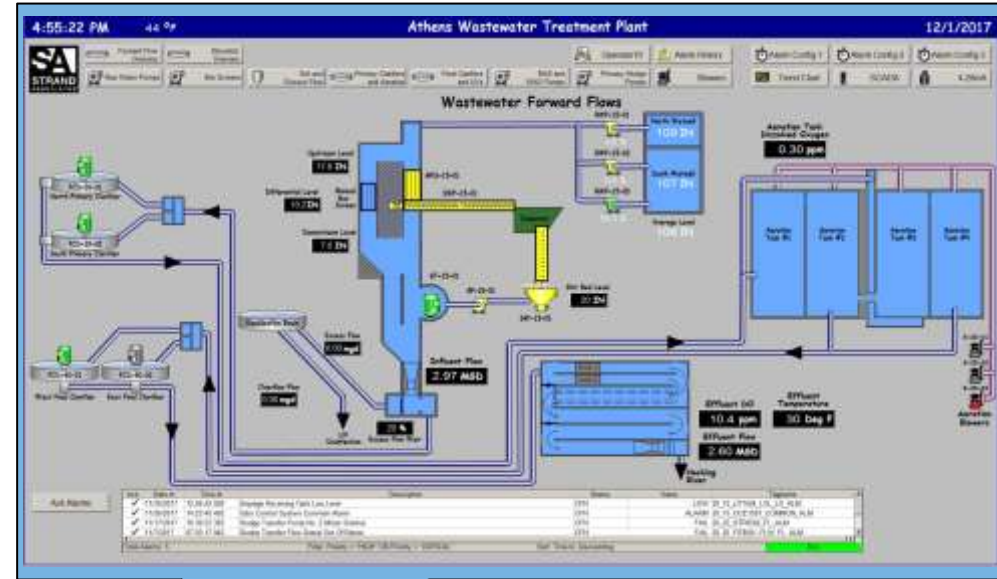
Practical Approach to Automation Improves Dependability, Convenience, and Cybersecurity

Maintainability

- Avoiding Obsolete Software
- Simple, Practical, Consistent

Operational Effectiveness

- Remote Access
- Security



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Engineering Value is Demonstrated Through Project Savings



Detailed Knowledge of Funding and Permitting Enhances Village's Access to Grants, Project Savings, and Approvals

Funding agencies with which we have worked include:

- OEPA DEFA
- Ohio Public Works Commission
- CDBG (RPIG)
- EECEBG
- Appalachian Regional Commission Grants
- OWDA
- SCEIG
- EDA
- Army Corps 594
- 319 Grants
- USDA RD



Understanding Financing Options Enhances Affordability



Loan	Term (yrs)	Interest Rate	Total Debt Service
OWDA	20	2.41%	\$ 7,597,106.20
OEPA	20	1.16%	\$ 6,740,193.60

Energy Savings at Athens WTP Significantly Reduced Operating Expenses



Solar Power Generation Reduces Energy Dependence and Operational Costs



Roof Mounted PV Array



Solar Inverter and Disconnects



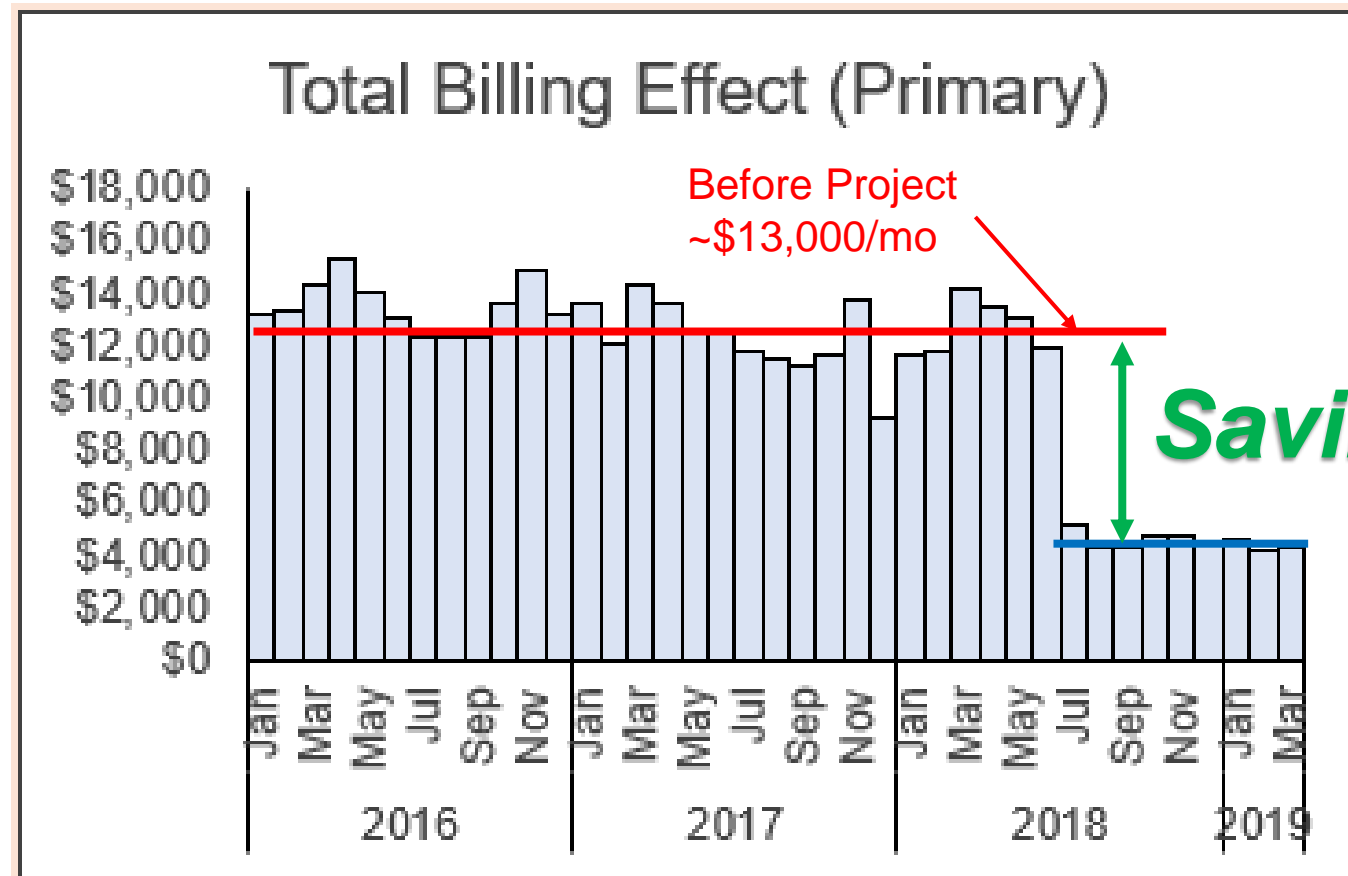
Ground Mounted PV Array

~ \$40,000 energy saved/year

Reduced Operating Expenses Positively Impact Rate Payers

City of Athens *Savings!*

- ~\$8,000 per month by reduced energy costs
- ~\$1,900,000 saved over 20 years!



After Project
~\$5,000/mo

Return on Investment is Expanded Through Cost Control Measures and Focus on Value-Added Approach

Project Cost Control

- Engineer fee: percentage vs. developed hours
- Weekly review of project progress vs. time spent

Project Schedule Control

- Review of scheduled availability before project begins

Construction Observation

- Full time vs. part time
- Qualifications of assigned person

Conflict Resolution

- Extension of Owner during construction

Selecting Strand Provides Responsive Service, Quality Engineering, and Attention to Detail to Deliver a Successful Long-Term Water Treatment Plant Solution

Because our:

- Perfectly matched team leaders bring national expertise and local familiarity.
- 76 years of service signifies organizational strength, stability, and commitment to quality within close proximity to the Village.
- Cost effective replacement of aging infrastructure meets future water system demands.
- Engineering value is demonstrated through project savings.
- Return on investment is expanded through cost control measures and focus on value-added approach.



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Since 1946