



## Small Water System Business Opportunities - If I only had some data!

Groundwater Week  
Nashville TN  
Wednesday, December 6, 2017: 2:30 p.m.-3:30 p.m.  
Room 205 AB (Music City Center)  
Presented by Charles Job



## Workshop - Small Water System Infrastructure Needs



- Share challenges of small systems market & information needed
- Use survey data to understand market
- Prepare individual business objective and plan
- Identify infrastructure financing information



## What Challenges Do You Face in Looking for Business Opportunities?

- Where to look for opportunities – Online? In-person?
- What information to use – Reliability? Pertinent to my market?
- Are detailed data available – At what level? Is it accessible?
- What other challenges?



## Strategic Business Development Plan\* – Well Services

1. Company Mission Statement
2. Strengths, Weaknesses, Opportunities and Threats
3. **Goals** — Obtain national statistics on business growth prospects
4. **Key Performance Indicators (KPIs)** — Specific business measure - # prospects to contact
5. **Target Customers** — Communities — need operational inspection and assessment of asset use and condition
6. **Industry Analysis** — Assessment of market size and growth potential
7. Competitive Analysis & Advantage
8. Marketing Plan
9. Team
10. **Operations Plan** — Identify projects to reach goals
11. Financial Projections

\*Abstracted from: Lavinsky, Dave. 2013. Business Plan Template: What to Include. Forbes, July 13, 2013. URL: [www.forbes.com/sites/davelavinsky/2013/07/18/business-plan-template-what-to-include/#259ad8ec7fc6](http://www.forbes.com/sites/davelavinsky/2013/07/18/business-plan-template-what-to-include/#259ad8ec7fc6)



## National Data Available

- EPA 2007 Small Water System Survey
- Public Community Water Systems serving  $\leq 3300$
  - Survey: EPA random selection of 600 small water systems nationally
  - Timeframe: 2007-2026
  - Survey Reliability: High, done by trained Water System Engineers
  - Infrastructure Need Surveyed:

- |                     |                   |                 |             |
|---------------------|-------------------|-----------------|-------------|
| • Wells             | • Water Storage   | • Hydrants      | • Emergency |
| • Pumps             | • Pipes           | • Service Lines | • Power     |
| • Treatment Systems | • Pump Stations   | • Well Houses   | • Meters    |
|                     | • Valves/Controls | • Fencing       | • Monitors  |
|                     | • SCADA           | • Security      |             |



## National Data Available Small Water System Survey Estimates Derived

- Nationally, 41,000 Small Water Systems - Sampled 600 with Stratification



- Stratified by Water Source and Water System Size (Population Served)
  - Water Sources
    - Groundwater
    - Surface Water
  - System Size Ranges
    - 25-100 people served
    - 101-500 people served
    - 501-3,300 people served



- Survey **estimates** derived based on weight of number of systems in strata



EPA Small System Survey Stratification:  
Water Source and Size (# of People Served)

| Groundwater Source      | Surface Water Source    |
|-------------------------|-------------------------|
| 25-100 People Served    | 25-100 People Served    |
| 101-500 People Served   | 101-500 People Served   |
| 501-3,300 People Served | 501-3,300 People Served |



National Small System Survey Estimates:  
Example: Wells – New/Replaced/Rehabilitated

| Groundwater Source | Surface Water Source |
|--------------------|----------------------|
| 7,651 Wells        | 49 Wells             |
| 11,063 Wells       | 55 Wells             |
| 10,636 Wells       | 137 Wells            |

From 2007-2026: 29,591 Wells Need Attention



Small Water System Survey  
2007-2026 Estimates

New/Replacement/Rehabilitated Need for:

- 29,591 Wells
- 34,405 Well Pumps
- 34,310 Treatment Systems
- 34,118 Storage Units – Ground & Elevated
- 267 million feet of Pipe
- 10,573 Pump Stations
- 16,206 Water Pumps
- Other equipment



Further Stratification – Estimates (Table 1)



| Infrastructure Category     | Small Groundwater Systems Service Population Ranges |         |          |
|-----------------------------|---|---------|----------|
|                             | 25-100  | 101-500 | 501-3300 |
| Wells                       | 7,651   | 11,063  | 10,636   |
| New                         | 3,320   | 3,438   | 1,386    |
| Replacement                 | 384   | 499     | 155      |
| Rehabilitation              | 3,947   | 7,126   | 9,095    |
| Small Surface Water Systems |   |         |          |
|                             | 25-100  | 101-500 | 501-3300 |
| Wells                       | 49  | 55      | 137      |
| New                         | 24  | 15      | 81       |
| Replacement                 | 9   | 17      | 0        |
| Rehabilitation              | 16  | 23      | 56       |



Derive State Estimates from National Estimates

- [Table 1](#) gives national estimate by strata and need category
- Already calculated state portion of national estimate – [Table 2](#) – by source and size
- Multiply national estimate by state portion for each infrastructure category of interest
- Example on next slides



TABLE 1 - Small Groundwater System Infrastructure Needs  
2007 National US Estimates

| TABLE 1 - Small Groundwater System Infrastructure Needs - 2007 National US Estimates |                |  |         |          |                                |                             |  |
|--|----------------|--|---------|----------|--------------------------------|-----------------------------|--|
| Infrastructure Category  | Condition      | Small Groundwater System Service Population Ranges |         |          | Small Groundwater System Total | US Small Water System Total | Percent Small GW System Total of US Small Water System Total |
|  |                | 25-100   | 101-500 | 501-3300 |                                |                             |  |
| WATER SOURCE   |                |  |         |          |                                |                             |  |
| Wells  | Subtotals      | 7,651  | 11,063  | 10,636   | 29,350                         | 29,591                      | 99.2%  |
|  | New            | 3,320  | 3,438   | 1,386    | 8,144                          |                             |  |
|  | Replacement    | 384  | 499     | 155      | 1,038                          |                             |  |
|  | Rehabilitation | 3,947  | 7,126   | 9,095    | 20,168                         |                             |  |



Example of Using National Estimates for Wells from Table 1

| WATER SOURCE |                | Small Groundwater System Service Population Ranges |         |           |
|--------------|----------------|--|---------|-----------|
|              |                | 25-100   | 101-500 | 501-3,300 |
| Wells        | Subtotals      | 7,651  | 11,063  | 10,636    |
|              | New            | 3,320  | 3,438   | 1,386     |
|              | Replacement    | 384  | 499     | 155       |
|              | Rehabilitation | 3,947  | 7,126   | 9,095     |



TABLE 2 ALL STATES - SMALL SYSTEM PERCENT OF NATIONAL SMALL COMMUNITY WATER SYSTEMS\* (<=3300) BY SOURCE & SIZE (% as decimal)

|          |    | Ground water |        | Surface Water |        |
|----------|----|--------------|--------|---------------|--------|
| Arkansas | AR | G 25-100     | 0.0022 | S 25-100      | 0.0165 |
|          |    | G 101-500    | 0.0089 | S 101-500     | 0.0158 |
|          |    | G >500       | 0.0199 | S >500        | 0.0413 |

\* Example: Based on 2016 EPA Drinking Water System GPR Inventory Data found at [https://obipublic11.epa.gov/analytics/saw.dll?PortalPages&PortalPath=/shared/SFDW/\\_portal/Public&Page=Inventory](https://obipublic11.epa.gov/analytics/saw.dll?PortalPages&PortalPath=/shared/SFDW/_portal/Public&Page=Inventory)



Example of Estimate of State Level Need Small System Percent (as decimal) – From Table 2

Arkansas

| Groundwater |        | Surface Water |        |
|-------------|--------|---------------|--------|
| G 25-100    | 0.0022 | S 25-100      | 0.0165 |
| G 101-500   | 0.0089 | S 101-500     | 0.0158 |
| G >500      | 0.0199 | S >500        | 0.0413 |



Example of Estimate of State Level Need

ARKANSAS – Wells Needing Rehabilitation 2007-2026 For Groundwater Systems Serving 501-3,300 People (>500 on Table 2)

|                                  |   |   |   |                                   |
|----------------------------------|---|---|---|-----------------------------------|
| National Estimate (from Table 1) | X | State Portion (from Table 2)            | = | State Estimate                    |
| 9,095 wells                      | X | .0199                                   | = | 181 wells to be Rehab'd           |
| (Wells Needing Rehabilitation)   |   | (Decimal % of Selected National Strata) |   | (State Need by Category & Strata) |



TABLE 3 - MARKET SIZE: Year 2016 - ALL STATES NUMBER OF SMALL COMMUNITY WATER SYSTEMS (<=3300) BY SOURCE & SIZE\*

|    | CWS Size     | # of CWS | CWS Size      | # of CWS |
|----|--------------|----------|---------------|----------|
|    | Ground water |          | Surface Water |          |
| AZ | G 25-100     | 172      | S 25-100      | 3        |
|    | G 101-500    | 252      | S 101-500     | 8        |
|    | G >500       | 169      | S >500        | 10       |
| AR | G 25-100     | 25       | S 25-100      | 16       |
|    | G 101-500    | 118      | S 101-500     | 33       |
|    | G >500       | 195      | S >500        | 151      |
| CA | G 25-100     | 826      | S 25-100      | 115      |
|    | G 101-500    | 733      | S 101-500     | 162      |
|    | G >500       | 324      | S >500        | 143      |



Infrastructure Financing Information

Water Finance Clearinghouse

- Lists Federal, State and Local sources of water project financing
- <https://ofmpub.epa.gov/apex/wfc/f?p=165:1:8299480262384::NO::>





### Estimate Small Water Systems Market for Wells and Pumps (or other categories) in Your State -

Use Tables 1 & 2

- (1) Find your State and then Groundwater on both Tables 1 & 2
- (2) Find Water System Size of Interest on both Tables 1 & 2

(3) Calculate:  
 National Estimate (from Table 1) X State Portion (from Table 2) = State Estimate

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### Questions?

#### Contact Information

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### Appendices for Reference

- Strategic Business Plan Outline Examples
- Small Water System Information Sources

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### Strategic Business Development Plan Outline

1. Company Mission Statement
2. Strengths, Weaknesses, Opportunities and Threats
3. Goals
4. Key Performance Indicators (KPIs)
5. Target Customers
6. Industry Analysis
7. Competitive Analysis & Advantage
8. Marketing Plan
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\* Adapted from Livinsky, Dave. 2013. Business Plan Templates: What to Include. Forbes, July 13, 2013. URL: [www.forbes.com/sites/davelivinsky/2013/07/13/business-plan-template-what-to-include/#259a08ec716](http://www.forbes.com/sites/davelivinsky/2013/07/13/business-plan-template-what-to-include/#259a08ec716)

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### Strategic Business Development Plan Outline Well System Services

1. Company Mission Statement
2. Strengths, Weaknesses, Opportunities and Threats
3. Goals *Obtain national statistics on business growth prospects*
4. Key Performance Indicators (KPIs) *Specific business measure - # prospects to contact*
5. Target Customers *Communities - need operational inspection and assessment of asset use and condition*
6. Industry Analysis *Assessment of market size and growth potential*
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### Strategic Business Development Plan Outline Well System Services

#### Goals (Examples)

- a. Expand business activity measured in dollars of revenue by XX percent in 5 years
- b. Expand business activity measured in dollars of revenue by YY percent in 1 year
- c. Provide well services to 3 new customers in next quarter
- d. Obtain state, regional and national statistics on business growth prospects next month



### Strategic Business Development Plan Outline Well System Services

Key Performance Indicators (KPIs) (Examples)

- ⇒ a. Number of Prospects Contacted
- b. Total Sales measured in dollars
- c. Total Costs measured in dollars
- d. Number of visitors completing website contact form
- e. Number of proposals issued
- f. Number of proposals closed



### Strategic Business Development Plan Outline Well System Services

Target Customers (Example)

Communities – need operational inspection and assessment of asset use and condition

- USE CONTACT INFO ⇒
- a. Within 100 miles
  - b. Within state
  - c. Within region



### Strategic Business Development Plan Outline Well System Services

Industry Analysis (Example)

- ⇒ Assessment of market size and growth potential

Opportunities for diversification of related services to improve growth potential



### Strategic Business Development Plan Outline Well System Services

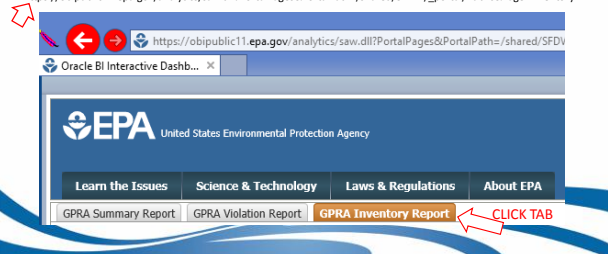
Operations Plan (Example)

- USING CONTACT INFO ⇒
- Identify projects to reach goals
  - Map initiatives to start



EXAMPLE: Information Sources

THIS WEBSITE Arkansas Water System Inventory (SDWIS) – Systems Serving 101-500 People  
[https://obipublic11.epa.gov/analytics/saw.dll?PortalPages&PortalPath=/shared/SFDW/\\_portal/Public&Page=Inventory](https://obipublic11.epa.gov/analytics/saw.dll?PortalPages&PortalPath=/shared/SFDW/_portal/Public&Page=Inventory)



EXAMPLE: Information Sources

Arkansas Water System Inventory (SDWIS) – Systems Serving 101-500 People

| PWS Type Code      | Population Size Category | # of Systems  | Population Served Count | # of Systems |
|--------------------|--------------------------|---------------|-------------------------|--------------|
|                    | <=500                    | # of Systems  | Population Served Count |              |
| CWS                | 118                      | 35,768        | 118                     |              |
| <b>Grand Total</b> | <b>118</b>               | <b>35,768</b> | <b>118</b>              |              |

CLICK NUMBER

SUBMISSIONYEARQUARTER is equal to 2016Q3  
 and PRIMACY\_AGENCY\_CODE is equal to AR  
 and PWS\_TYPE\_CODE is equal to CWS  
 and GW\_SW\_CODE is equal to GW  
 and POP\_CAT\_11\_DESCRIPTION is equal to 101-500  
 and NPM\_CANDIDATE is equal to / is in Y

SELECT FROM PICK LISTS

Refresh -Print -Export



**EXAMPLE: Information Sources**  
Arkansas Water System Inventory (SDWIS) – Systems Serving 101-500 People

Access My Account | Email | D... | X EPWY Connect Index | GPA Inventory Summary R... X

GPA Inventory Summary Report Detail

| EPA Region | Primary Agency Code | PWS ID                         | PWS Name               | PWS Type Code | Population Served | Population Size Category |
|------------|---------------------|--------------------------------|------------------------|---------------|-------------------|--------------------------|
| 06         | AR                  | AR000002                       | MOUNT HOLLY WATERWORKS | CWS           | 384               | <=500                    |
| AR         | AR000003            | ST CHARLES WATERWORKS          | CWS                    | 379           | <=500             |                          |
| AR         | AR000004            | ALMYRA WATERWORKS              | CWS                    | 406           | <=500             |                          |
| AR         | AR000012            | NORTH LAGUNE WATER ASSOC       | CWS                    | 299           | <=500             |                          |
| AR         | AR000014            | BONDELL WATER ASSOCIATION      | CWS                    | 133           | <=500             |                          |
| AR         | AR000019            | PARADISE WATERWORKS            | CWS                    | 288           | <=500             |                          |
| AR         | AR000020            | MONTICELLO WATERWORKS          | CWS                    | 496           | <=500             |                          |
| AR         | AR000023            | NORTH EAST CROSSETT WATER ASSN | CWS                    | 160           | <=500             |                          |
| AR         | AR000024            | DEARCLIFF WATERWORKS           | CWS                    | 313           | <=500             |                          |
| AR         | AR000025            | BELLEFOURTE WATER              | CWS                    | 455           | <=500             |                          |
| AR         | AR000043            | LEAD HILL WATERWORKS           | CWS                    | 495           | <=500             |                          |
| AR         | AR000046            | BIRDS WATERWORKS               | CWS                    | 248           | <=500             |                          |
| AR         | AR000071            | HARRELL WATERWORKS             | CWS                    | 305           | <=500             |                          |
| AR         | AR000084            | READLAND-GRANDLAKE WATER ASSOC | CWS                    | 223           | <=500             |                          |
| AR         | AR000095            | PENNY OCHOKO WATERWORKS        | CWS                    | 158           | <=500             |                          |
| AR         | AR000092            | POLLARD WATERWORKS             | CWS                    | 287           | <=500             |                          |
| AR         | AR000094            | ST FRANKS WATER SYSTEM         | CWS                    | 235           | <=500             |                          |
| AR         | AR000095            | SUCCESS WATERWORKS             | CWS                    | 395           | <=500             |                          |
| AR         | AR000097            | GREENWAY WATERWORKS            | CWS                    | 171           | <=500             |                          |

Total PWS Entries = 118



- Environmental Health
  - Water
  - Engineering Home
  - Capacity Development
  - Cross Connection
  - Drinking Water
  - Operator Certification
  - Plan Review
  - Regulatory, Fees & Policies
  - Rules & Regulations
  - Source Water Protection
  - Staff

**Drinking Water Information for Arkansans**

Clicking on a letter in the block below will open a new browser window which will contain a list of community public water systems whose names start with that letter. Information for each water system includes:

|                                   |  |
|-----------------------------------|--|
| Contact Name                      | Public Water System ID number  |
| Mailing Address                   | Retail Population Served   |
| Phone Number                      | Source Type(s)   |
| Email Address (when available)    | A link to obtain more detailed information about this particular system. |
| Web Site Address (when available) |  |

Also provided is a list of sources for this system and the status of its source water protection documents.

The data files available for downloading contain similar information, and these files can be obtained by clicking on the appropriate **CLICK BOX**



**EXAMPLE: Information Sources**  
Arkansas Water System Inventory – From Arkansas Website

http://www.healthy.arkansas.gov/programs-services/topics/drinking-water-information-for-arkansans

**SYSTEM**      **CONTACT**      **ADDRESS**      **TELEPHONE**

| A  | B                     | C                  | D            | E            | F    | G                | H            | I                  | J | K | L |
|----|-----------------------|--------------------|--------------|--------------|------|------------------|--------------|--------------------|---|---|---|
| 1  | system name           | email              | address1     | address2     | city | office area code | office phone | retail pop. served |   |   |   |
| 2  | 1001 MARYSVILLE WATER | JERRY GLASS        | P O BOX 106  | MOUNT HOLLY  | 870  | 8638007          |              | 700                |   |   |   |
| 3  | 002 MOUNT HOLLY       | DANNY WOOD         | 151 WOOD     | EL DORADO    | 870  | 8622784          |              | 384                |   |   |   |
| 4  | 002 MOUNT HOLLY       | STEVE ROSS         | 7482 MT.     | MOUNT HOLLY  | 870  | 8622784          |              | 384                |   |   |   |
| 5  | 003 CALICO ROCK       | RONNY              | PO BOX 370   | CALICO ROCK  | 870  | 2973772          |              | 1842               |   |   |   |
| 6  | 003 CALICO ROCK       | STEPHEN HICKS      | P O BOX 370  | CALICO ROCK  | 870  | 2973772          |              | 1842               |   |   |   |
| 7  | 004 FORREST CITY      | watertrea EDWARD   | P O BOX 816  | FORREST CITY | 870  | 6332921          |              | 15435              |   |   |   |
| 8  | 004 FORREST CITY      | watertrea FC WATER | P O BOX 816  | FORREST CITY | 870  | 6332921          |              | 15435              |   |   |   |
| 9  | 005 ST CHARLES        | ROBERT             | P O BOX 226  | ST CHARLES   | 870  | 2823425          |              | 379                |   |   |   |
| 10 | 006 ALMYRA            | SWSDPT MARK        | Box 389      | ALMYRA       | 870  | 9923579          |              | 348                |   |   |   |
| 11 | 006 ALMYRA            | SWSDPT MARK        | P O BOX 389  | ALMYRA       | 870  | 9923579          |              | 348                |   |   |   |
| 12 | 007 NORTHEAST DEWITT  | DAVID ESTES        | 101 E GEORGE | DEWITT       | 870  | 4675616          |              | 682                |   |   |   |



**EXAMPLE: Information Sources**  
Arkansas Water System Inventory (EPA Website)  
Systems Serving 101-500 People

Learn the Issues      Science & Technology      Laws & Regulation

GPA Summary Report      **GPA Violation Report**      GPA Inventory Report

**Report Filters**

\* Submission Year Quarter: 2016Q3      EPA Region: --Select Value--      Primary: AR

PWS Activity: Active      Ground Water/Surface Water Populati: GW

**GPA Violation Summary Report**

| Violation Category  | MCL        |                      |                         | MON        |                      |                         |
|---------------------|------------|----------------------|-------------------------|------------|----------------------|-------------------------|
|                     | Violations | Systems in Violation | Population in Violation | Violations | Systems in Violation | Population in Violation |
| Rule Code           |            |                      |                         |            |                      |                         |
| Total Caliform Rule | 14         | 11                   | 3,220                   |            |                      |                         |



**EXAMPLE: Information Sources**  
Arkansas Water System Inventory (SDWIS) – Systems Serving 101-500 People

List of Water Systems in Violation

GPA Violation Summary R... X

GPA Violation Detail Report

| Water System | Violation                    |               |                   |              |           |                     |           |
|--------------|------------------------------|---------------|-------------------|--------------|-----------|---------------------|-----------|
| PWS ID       | PWS Name                     | PWS Type Code | Population Served | Violation ID | Rule Code | Rule                | Violation |
| AR000012     | NORTH LAGUNE WATER ASSOC     | CWS           | 299               | 9411415      | 110       | Total Caliform Rule | MCL       |
| AR000047     | GREENWAY WATERWORKS          | CWS           | 322               | 407830       | 110       | Total Caliform Rule | MCL       |
| AR000018     | WYNCHESSTER WATERWORKS       | CWS           | 444               | 832413       | 110       | Total Caliform Rule | MCL       |
| AR000074     | RIGGERS WATERWORKS           | CWS           | 378               | 8344614      | 110       | Total Caliform Rule | MCL       |
| AR000039     | EASTSIDE HOMEOWNERS ASSOC    | CWS           | 175               | 8822910      | 110       | Total Caliform Rule | MCL       |
| AR000060     | WILLISVILLE WATERWORKS       | CWS           | 448               | 8939720      | 110       | Total Caliform Rule | MCL       |
| AR000094     | DEERFORD FALLS WWP           | CWS           | 105               | 1180519      | 110       | Total Caliform Rule | MCL       |
| AR000029     | GREAT LAKES CHEMICAL SOUTH   | TNCWS         | 240               | 914210       | 110       | Total Caliform Rule | MCL       |
| AR000052     | CLEARWATER PAPER CORPORATION | TNCWS         | 339               | 907909       | 110       | Total Caliform Rule | MCL       |
| ART000372    | HOODE LODGE 1953             | TNCWS         | 220               | 214208       | 110       | Total Caliform Rule | MCL       |
| ART001086    | CITGO FLASH MARKET           | TNCWS         | 290               | 400718       | 110       | Total Caliform Rule | MCL       |
| 11           | <b>Grand Total</b>           |               | <b>3,220</b>      |              | <b>14</b> |                     |           |