APPENDIX F

DECISION TREES

Appendix F – Supplemental Information

The descriptions provided here are intended to supplement the decision trees contained in this appendix. These are narrative descriptions of how to use each decision tree.

Step 1 and 1B – Management and Non-Infrastructure Solutions Evaluation

To initiate a management and non-infrastructure solution, a series of questions can be asked by owners, managers, board members, or operators. Is the supply greater than the demand? Does water quality meet the regulatory requirements? Is technical, managerial, and financial (TMF) capacity sufficient, and is the system operating efficiently? On the wastewater site, is the wastewater treatment and disposal capacity sufficient? Does effluent from the wastewater treatment plant meet waste discharge requirements? Is technical, managerial, and financial (TMF) capacity sufficient, and is the system operating efficiently?

If the answer to any of these questions is “no”, the community member, manager, board member, operator, or others should consider evaluating internal changes. If the answer to any of the questions above is “no”, the community member, manager, board member, operator, or others could also ask the next question, is there potential to coordinate with nearby water (or wastewater) systems? If the answer is “yes”, evaluate and consider implementing one or more of the various partnership alternatives.

If the answer is “no”, consider internal changes and/or move to the New Source Development, Technical Solutions, or Individual Households pilot decision trees.

If the reader is not sure how to answer any of the questions presented, they can do any of the following to help answer these questions:

- Complete Self Assessment Worksheet (see Appendix H);
- Review the most recent Sanitary Survey and/or Inspection Report completed for your system;
- Contact the California Department of Public Heath; or
- Contact the local County Environmental Health Department

Whether or not it is decided that a management and non-infrastructure solution is a potential alternative, the manager, board members, or operators can ask whether there are internal changes that could improve efficiency. If there are, these should be pursued.

Whether or not internal changes can be implemented, the manager, board members, owner, or operators should then evaluate the various levels of sharing that can be implemented. If the evaluation goes beyond informal cooperation, there will likely be the

need for a consultant or engineer, as well as legal counsel to help analyze the impacts of any possible changes.

Depending on the alternative(s) that the community decides to pursue, move to that respective decision tree.

Step 1C – Management and Non-Infrastructure Solutions Evaluation

Another type of management and non-infrastructure alternative may not involve partnering with another community. Step 1C is for communities that either (1) are served by a water system that is owned by a private entity, or (2) are on individual wells and septic systems, for which no entity exists with authority to provide water and/or sewer service.

If you are a private entity or a resident served by a private entity providing water and/or sewer service, would you be interested in transferring assets to a public entity? A private entity cannot “convert” to a public entity; however a public entity can be formed, assets transferred from the existing private entity to a new public entity, and the private entity can subsequently be dissolved. If the answer to this question is “yes”, encourage residents to pursue the formation of a legal public entity. If residents are interested in forming a public entity, move on to Step 3G to pursue formation of a legal entity. If the answer is “no”, consider pursuing another alternative.

If you are a private well or septic owner in a community where an entity does not existing for the purveyance of water or sewer service, are residents interested in forming a public entity to provide water and/or sewer service? If the answer to this question is “yes”, move on to Step 3G to pursue formation of a legal entity. If the answer is “no”, consider pursuing another alternative.

Step 3A – Internal Changes

The evaluation of Internal Changes can begin with the manager, operator, or board member asking various questions to assess the technical, managerial, and financial deficiencies in the system. The questions ask whether various necessary plans and procedures are in place. If the answer to any of the questions presented is “no”, then the system should move forward to implement the necessary plan or procedure until they are able to answer “yes” to all questions.

Step 3B – Informal Cooperation

The evaluation of Informal Cooperation can begin with the operator, manager, or board member asking the question, do we have equipment (or other resources) that could be shared with another water system? If the answer is “yes”, the operator, manager, and/or board member should begin to communicate with other communities. Based on their

communications, they should then ask, is there a community within 5-10 miles that has a need for this equipment? If “no”, continue communicating and considering other supplies that can be shared, and then ask the question again. If the answer is “yes”, continue to communicate and develop the relationship. Then, the operator, manager, and/or board member can develop an acceptable agreement for sharing this equipment or resource.

Alternatively, if the community has a need for a piece of equipment or other resource that could be shared, they can follow a similar process. Beginning with communicating with other nearby systems, is there a community within about 5-10 miles that has the needed equipments? Or, is there a community within about 5-10 miles that has a need for the same equipment? Are they willing to share this equipment (or share in the purchase for joint use)? If the answer is “yes”, continue communicating and developing the relationships until an acceptable agreement for this sharing is developed.

Step 3C – Contractual Assistance with a Private Third Party or Non-Profit Organization

The evaluation of Contractual Assistance with a private third party or non-profit organization can begin with the manager, operator, or board members asking a series of questions: Do we have an operator need that can be contracted with a private third party or non-profit organization? Do we have a management need that can be contracted? Do we have a bookkeeper need that can be contracted? Do we have any other needs that can be contracted? If the answer to any of these questions is “yes”, the manager and/or board members can move forward to find a reputable third party or non-profit organization to provide the desired contract services.

The manager and board members will need to work with the contract service provider to negotiate the terms of service, including:

- Define scope of work
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits for the contractor
- Define cost sharing parameters
- Define conditions and parameters for dissolution of contract

Each party will then ask the question, are the terms of service acceptable? If the answer is “no”, continue to negotiate the terms, or consider a different contract services

provider. If the answer is “yes”, finalize the agreement for contract services. It is recommended that an attorney assist in this. If a rate adjustment is needed, the water provider must identify the rate structure and initiate the Proposition 218 process. An engineer and/or an attorney should be consulted to assist.

Step 3D – Contractual Assistance to Share Services and/or Staff

To evaluate Contractual Assistance to share services and/or staff between communities, the manager, board member, or operator can begin by asking, is there a service, equipment, or resource need that could be contractually shared between communities? If the answer is “yes”, communicate with other nearby communities. Then ask the question, is there a community within about 5-10 miles that currently has the resources needed? If not, is there a community within about 5-10 miles that has the same need? If the answer to either question is “yes”, is the community willing to enter into a contract to share such services?

If the answer is “yes”, the manager and/or board members will need to work with the manager and/or board members of the partnering community to negotiate the terms of service, including:

- Define scope of work
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits for the contractor
- Define cost sharing parameters
- Define conditions and parameters for dissolution of contract

Each party will then ask the question, are the terms of service acceptable? If the answer is “no”, continue to negotiate the terms, or consider a different solution. If the answer is “yes”, finalize the agreement for contract services. It is recommended that an attorney assist in this.

Step 3E – Joint Powers Authority

To evaluate development of a Joint Powers Authority (JPA), the manager and/or board members of a community (or multiple communities) should begin by asking the question, is there a service need that could be shared between multiple communities? If the answer is “yes”, the communities must ask, are we a public agency or mutual water company? If the answer is “no”, the community cannot participate in a JPA. If the answer is “yes”, communicate with other communities. Then the manager or board

members (or facilitating entity) can ask, are there other public agencies or mutual water companies willing to collaborate to share this service?

If the answer is “yes”, the manager and/or board members from each entity will need to work with the contract service provider to negotiate the terms of service, including:

- Define scope of services to be provided
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits for the contractor
- Define cost sharing parameters
- Define conditions and parameters for dissolution of JPA
- Define makeup of the Authority officers, board members, and management governance structure
- Define decision making process
- Define individual entity operations and services independent of the JPA

Each party will then ask the question, are the terms of service acceptable? If the answer is “no”, continue to negotiate the terms, or consider a different solution. If the answer is “yes”, finalize the joint powers agreement, with the assistance of an attorney. If a rate adjustment is needed, the water provider must identify the rate structure and initiate the Proposition 218 process. It will be necessary to utilize the services of an engineer and an attorney for this process. In most circumstances, each entity will be responsible for their own Proposition 218 process.

Step 3F – Ownership Transfer

To evaluate Ownership Transfer, the manager or board members can ask, is a city or large community potentially able to consolidate a community system into their operations and management system? If the answer is yes, a consultant will be required to work with the community to perform the following tasks:

- Analyze budgets and rate structures in each entity
- Explore how to combine financial obligations
- Develop a full list of responsibilities of the existing entity, including maintenance, testing, operations, management, financials, etc.

Based on the analysis performed, the consultant will help the manager and board member determine if the ownership transfer is financially feasible. If the answer is “yes”, the consultant can assist the communities to define the rules for ownership transfer (what is being transferred and what is not). They must also define issues such as annexation, service agreements, dissolution of consolidating system, schedule, and other considerations that must be taken into account when preparing to transfer ownership.

The consolidating entities must obtain LAFCo approval. Once approved, the rate structures must be identified and the Proposition 218 process must be initiated. Once everything is in place, they must obtain approval from regulatory and political agencies, and then finalize the ownership transfer. It will be necessary to utilize the services of an engineer, an attorney, and other consultants to properly proceed through the LAFCo process.

Step 3G – Formation of a Legal Entity

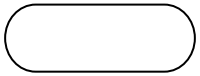
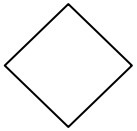
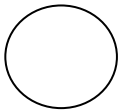
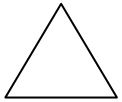
To evaluate formation of a legal entity, one or more concerned residents can begin to evaluate options for formation of an entity with the appropriate legal authority to enter into a contract with the State for funding opportunities. A non-profit organization specializing in community and water related issues can help initiate this process.

In order to form a legal entity, the geographic area to be served by the new entity will need to be identified. Public outreach will then need to be conducted to inform residents within the affected area about the benefits of forming a legal entity, and trying to get their support.

Formation of a legal entity will also involve petitioning the County Board of Supervisors, coordination with LAFCo, and preparation of environmental documents. There will be legal services and financial planning necessary prior to formation of the new entity. An attorney, engineer, and non-profit organization will be needed to assist with these activities.

Ultimately, and election will be held and the residents will need to approve formation of the entity, and elect an initial governing body. If formation of the new legal entity is approved by the voters, then the legal entity is formed. If not, residents can continue trying by performing additional outreach, possibly changing the parameters, and holding another election.

Legend – Symbols (Type of Action)

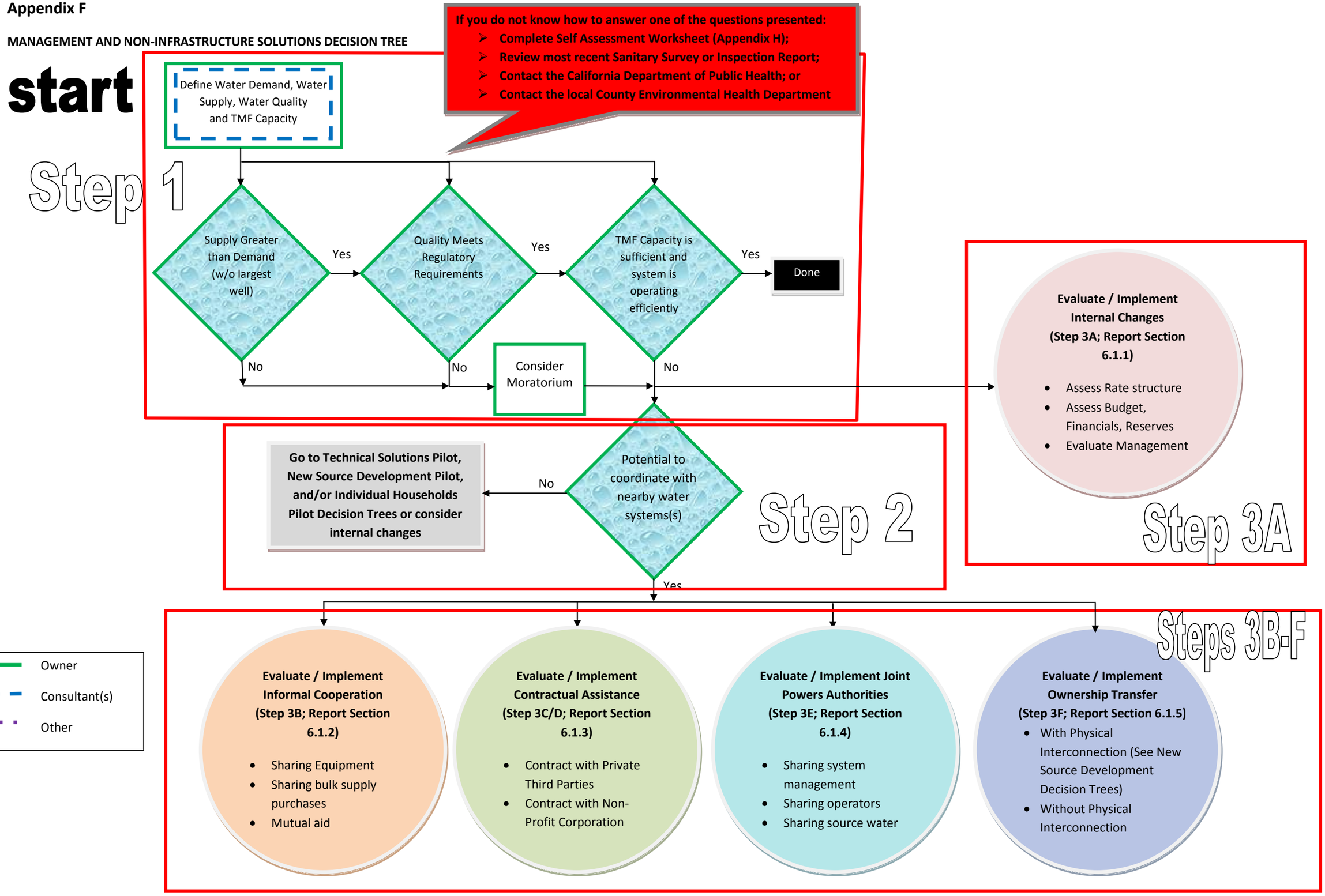
Flowchart Symbol	Name	Description	Notes
	Process	An operation or action step.	
	Terminator	A start or stop point in a process.	
	Decision	A question or branch in the process.	
	Connector	A jump from one point to another.	For example, a jump from one tree to another.
	Extract (Measurement, Finished Goods)	Extract (split processes) or more commonly – a measurement or finished goods	For example, an offer or acceptance of funds.
	Callout	Used to add comments to a flowchart.	
	Flow Line	Indicates the direction of flow for materials and/or information	

Legend – Line Types (Shape outline by entity making decision or action)

Flowchart Line Type	Name	Description	Notes
	Owner	Community, District, Individual	
	Consultant(s)	Engineers, attorneys, etc.	
	Other	Regulatory agencies, funding agencies, non-profit organizations	

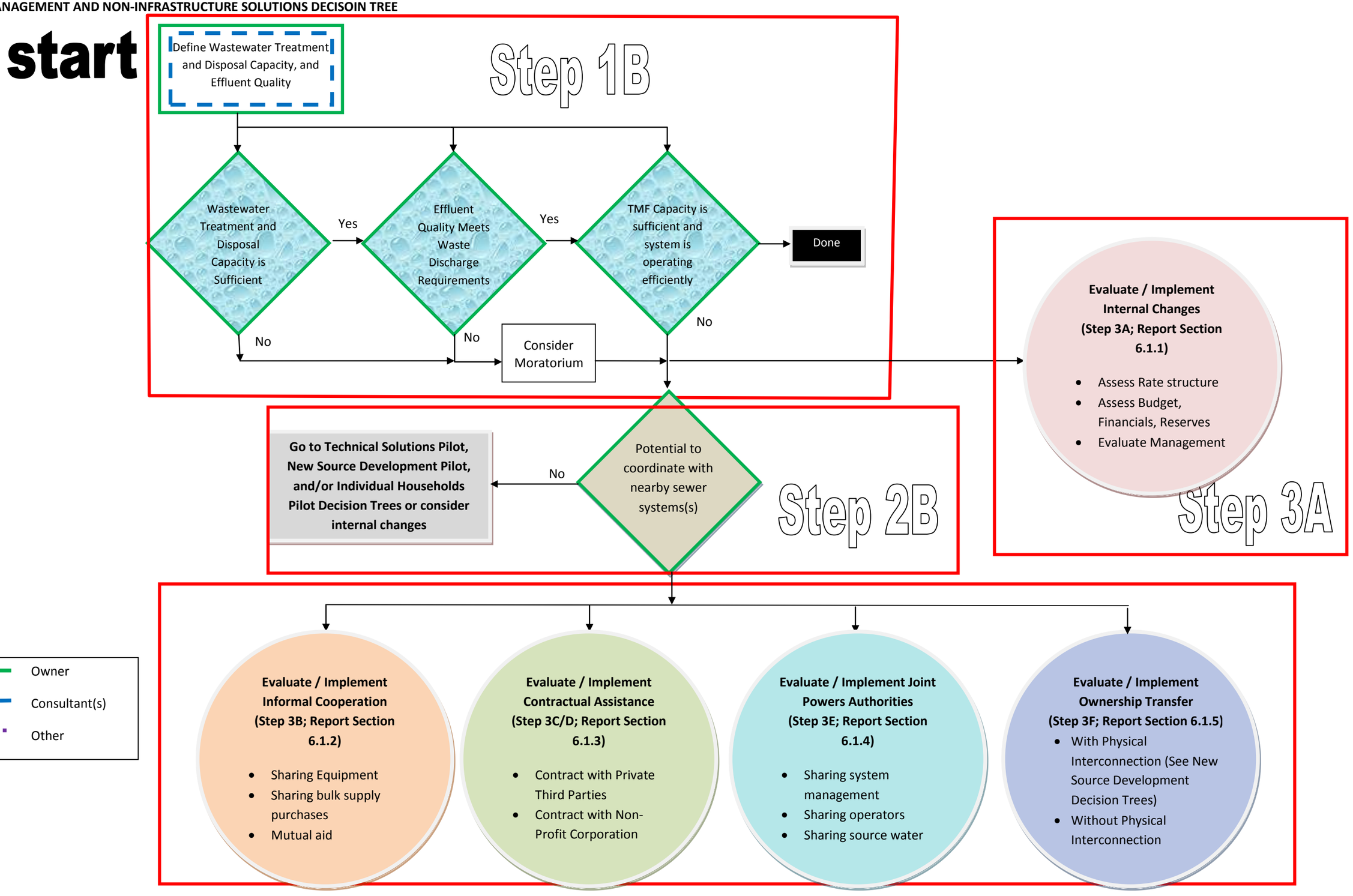
Appendix F

MANAGEMENT AND NON-INFRASTRUCTURE SOLUTIONS DECISION TREE



Appendix F

MANAGEMENT AND NON-INFRASTRUCTURE SOLUTIONS DECISOIN TREE



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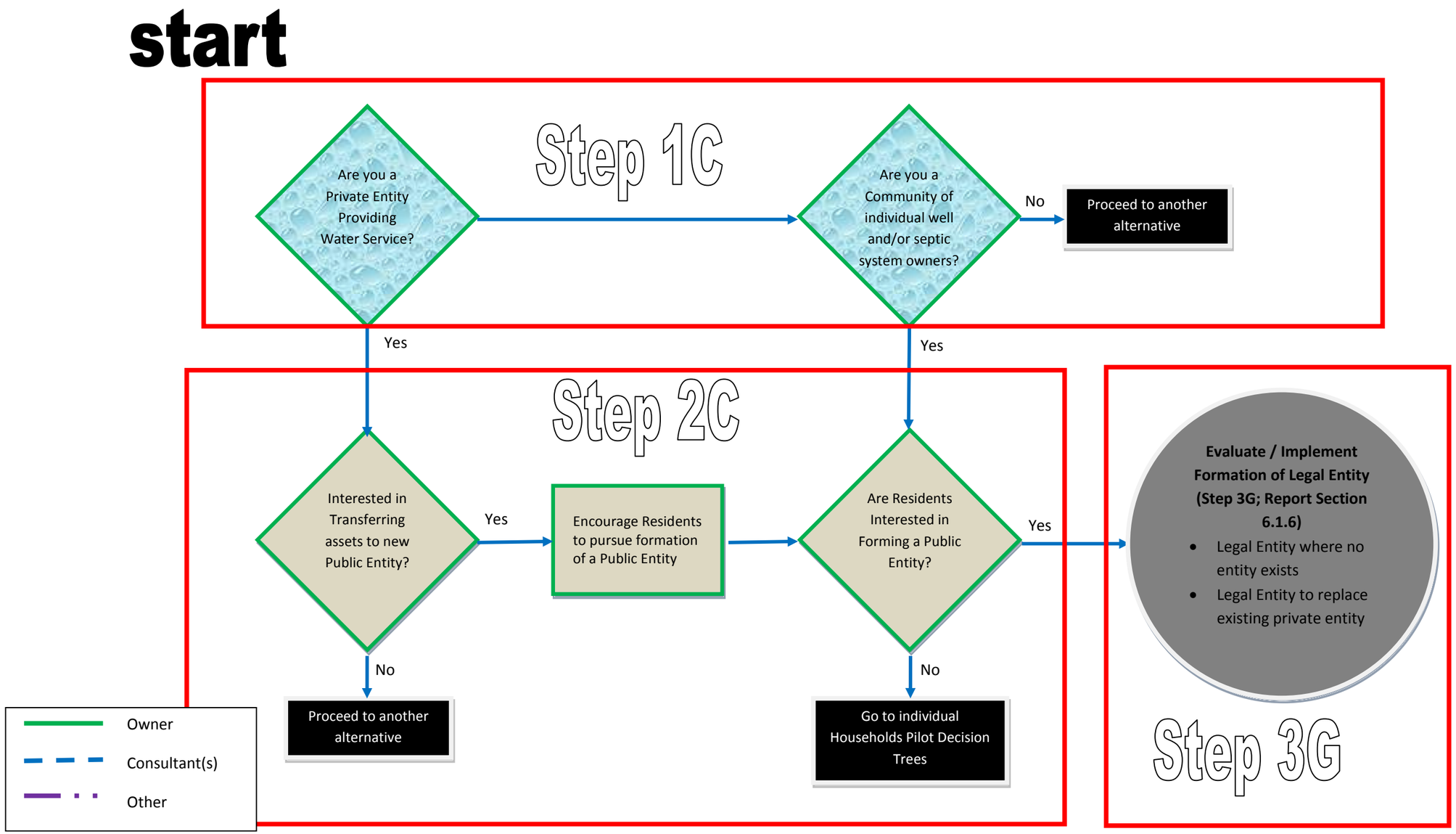
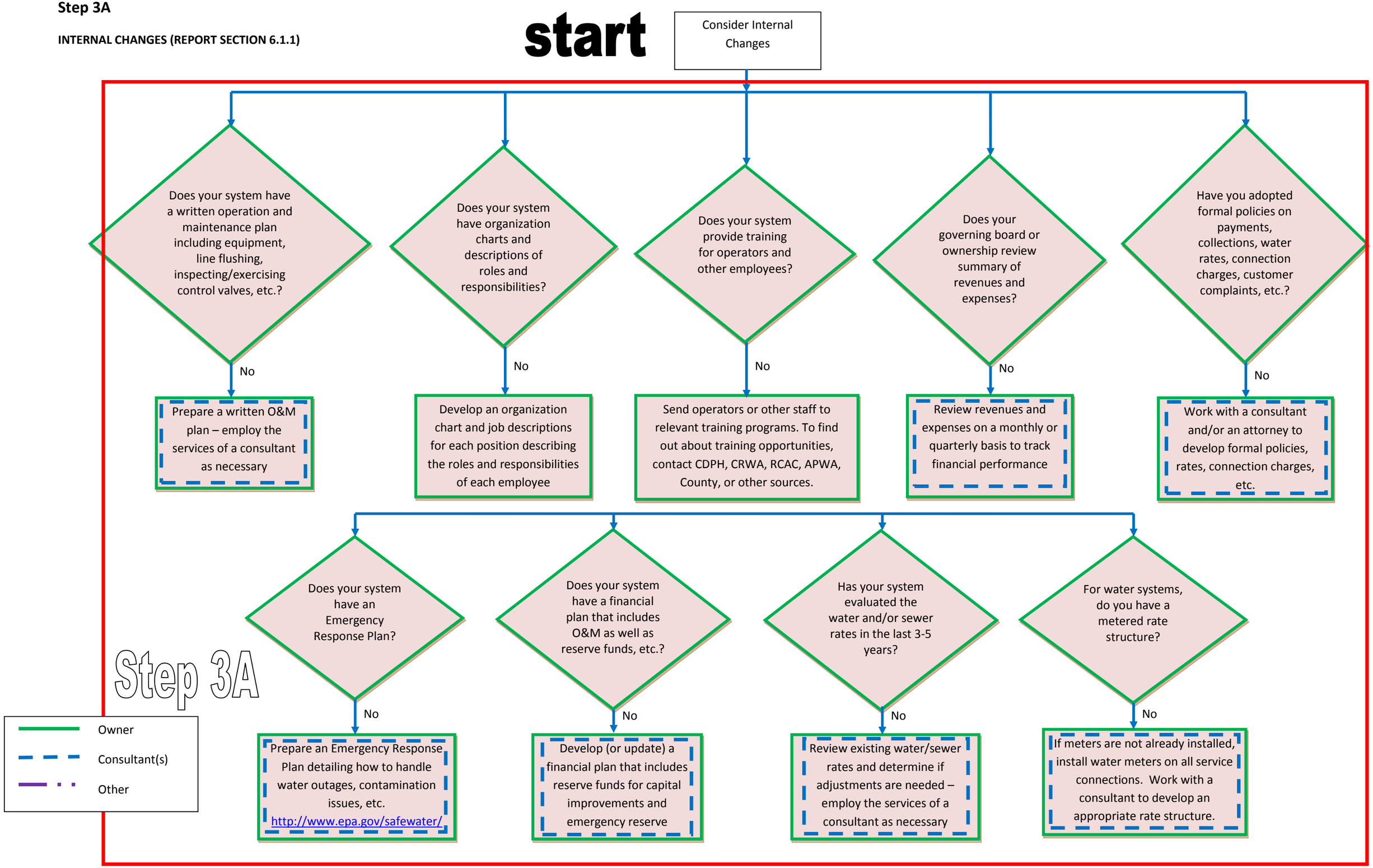
MANAGEMENT AND NON-INFRASTRUCTURE SOLUTIONS DECISION TREE



Step 3A

INTERNAL CHANGES (REPORT SECTION 6.1.1)

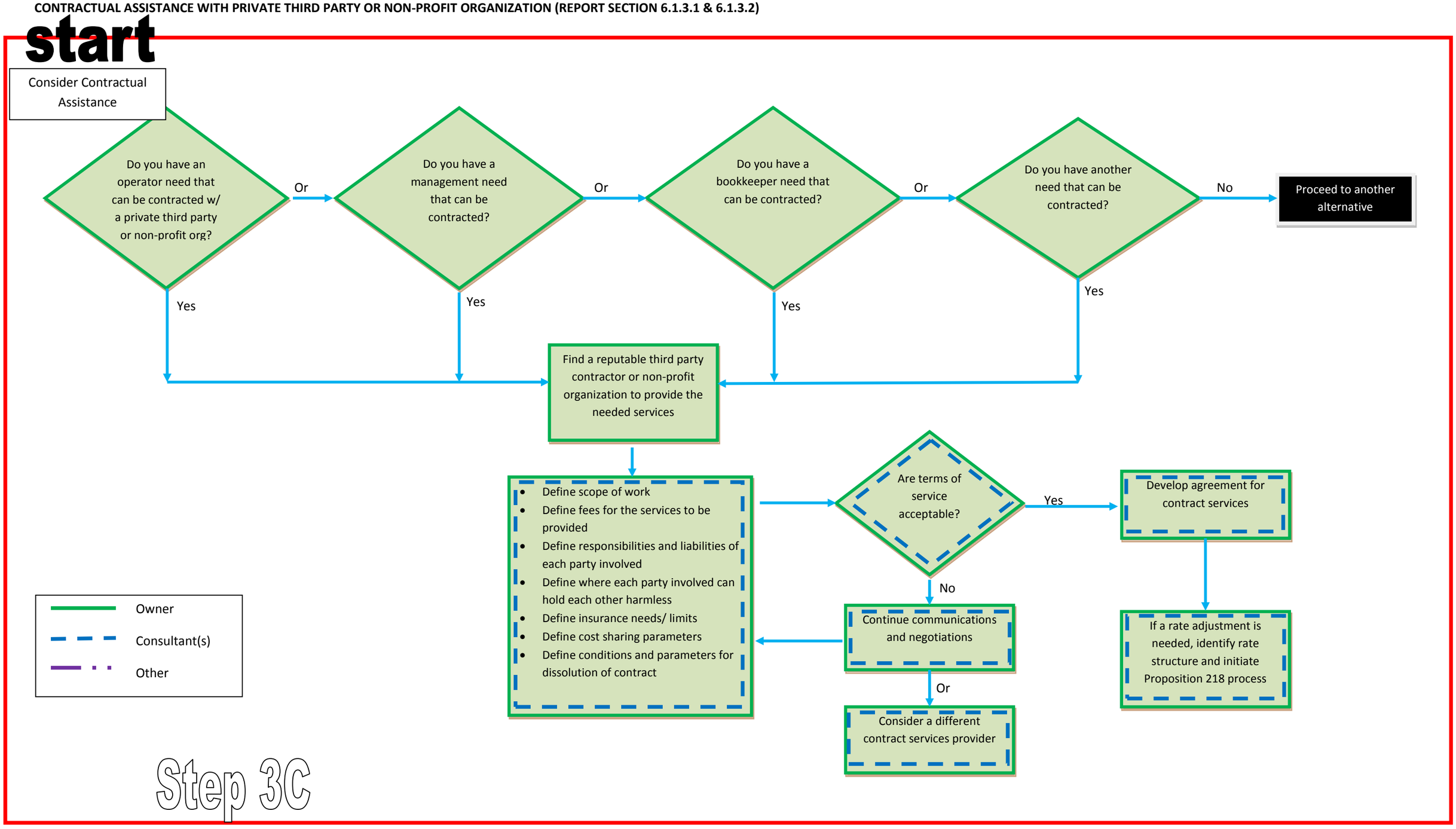


Step 3B

INFORMAL COOPERATION (REPORT SECTION 6.1.2)

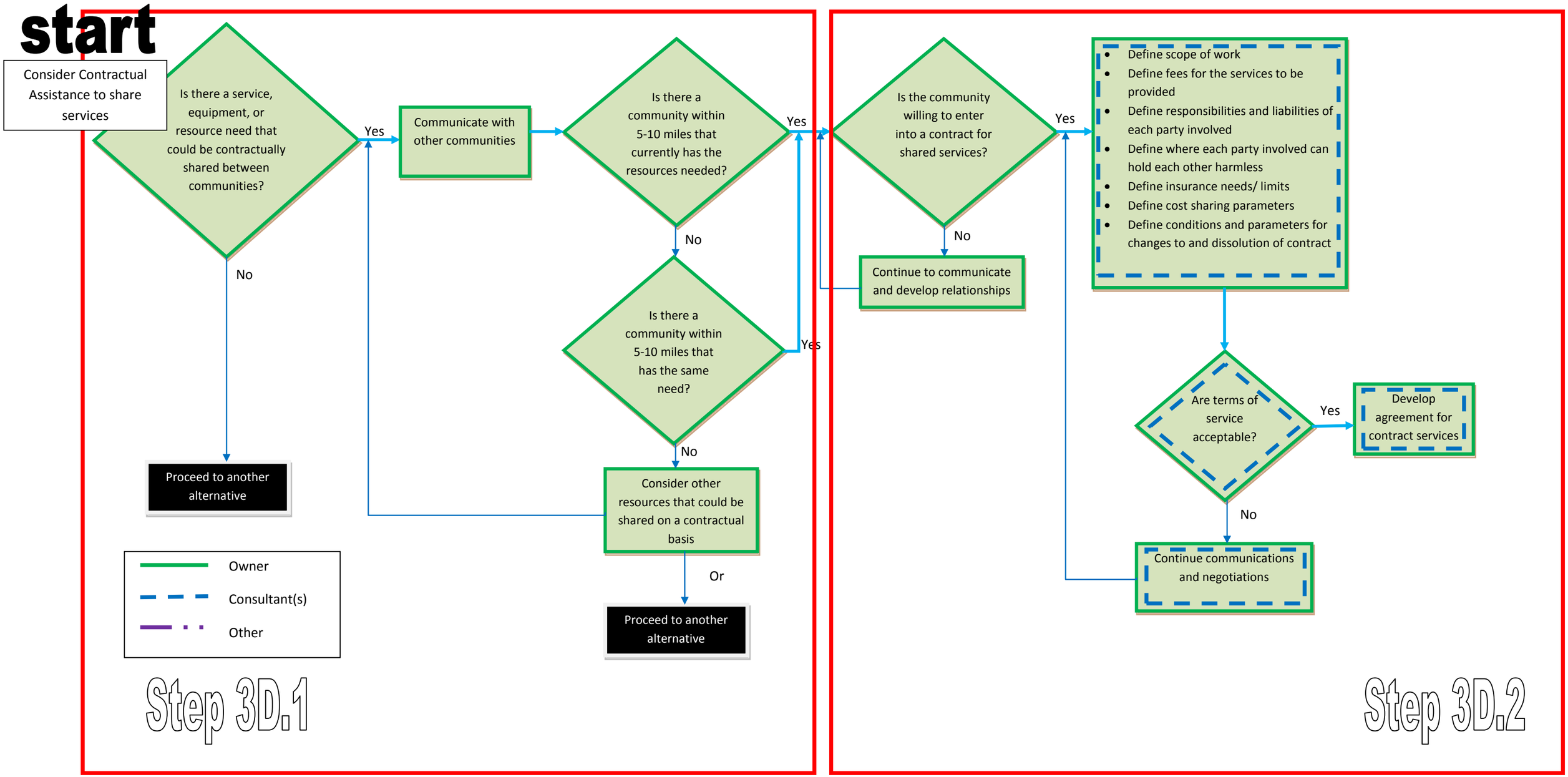
Step 3C

CONTRACTUAL ASSISTANCE WITH PRIVATE THIRD PARTY OR NON-PROFIT ORGANIZATION (REPORT SECTION 6.1.3.1 & 6.1.3.2)



Step 3D

CONTRACTUAL ASSISTANCE TO SHARE SERVICES AND/OR STAFF (REPORT SECTION 6.1.3.3)



Step 3E

JOINT POWERS AUTHORITY (REPORT SECTION 6.1.4)

start

Consider Joint Powers Authority

Is there a service need that could be shared between multiple communities?

Yes

No

Proceed to another alternative

Are you a **public agency** or a **mutual water company**?

Yes

No

Proceed to another alternative

Communicate with other communities

Are there other **public agencies** or **mutual water companies** willing to collaborate to share this service?

Yes

Step 3E.1

- Define scope of services to be provided
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits for the contractor
- Define cost sharing parameters
- Define conditions and parameters for dissolution of JPA
- Define makeup of Authority officers, board members, and management governance structure
- Define decision making process
- Define individual entity operations and services independent of the JPA

Are terms of service acceptable?

Yes

No

Develop joint powers agreement

If a rate adjustment is needed, identify rate structure and initiate Proposition 218 process

Continue communications and negotiations

Step 3E.2

Owner

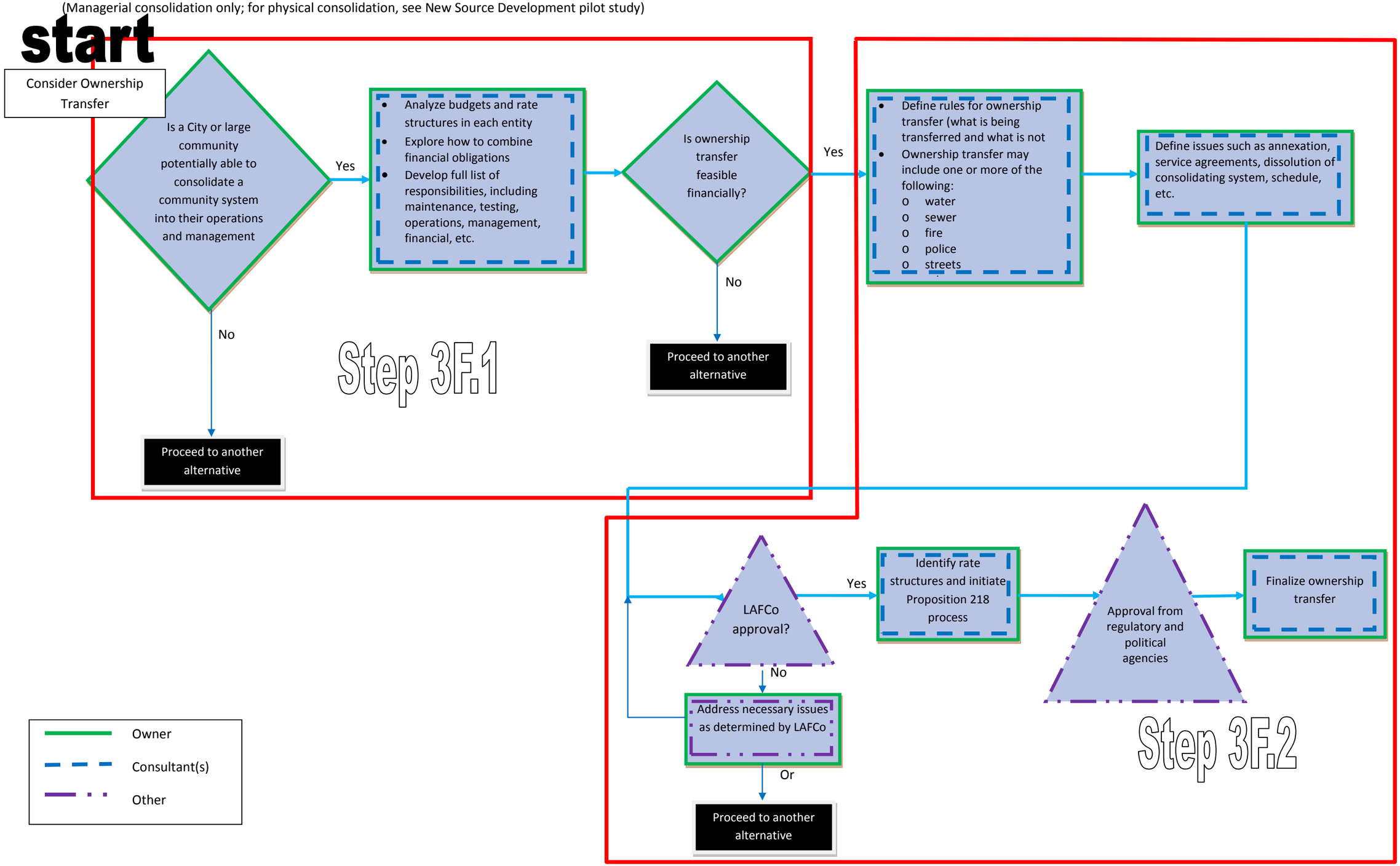
Consultant(s)

Other

Step 3F

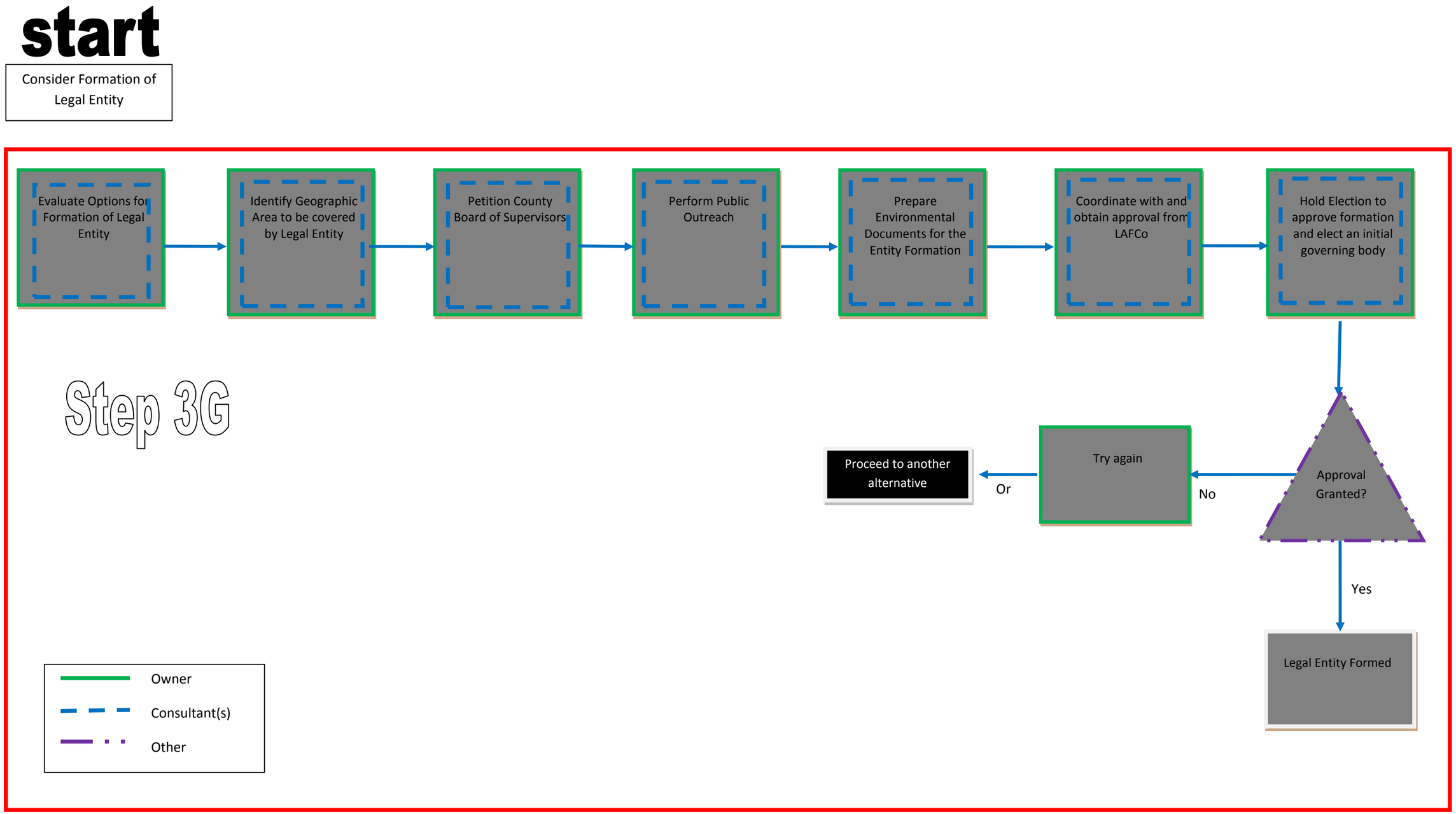
OWNERSHIP TRANSFER (REPORT SECTION 6.1.5)

(Managerial consolidation only; for physical consolidation, see New Source Development pilot study)



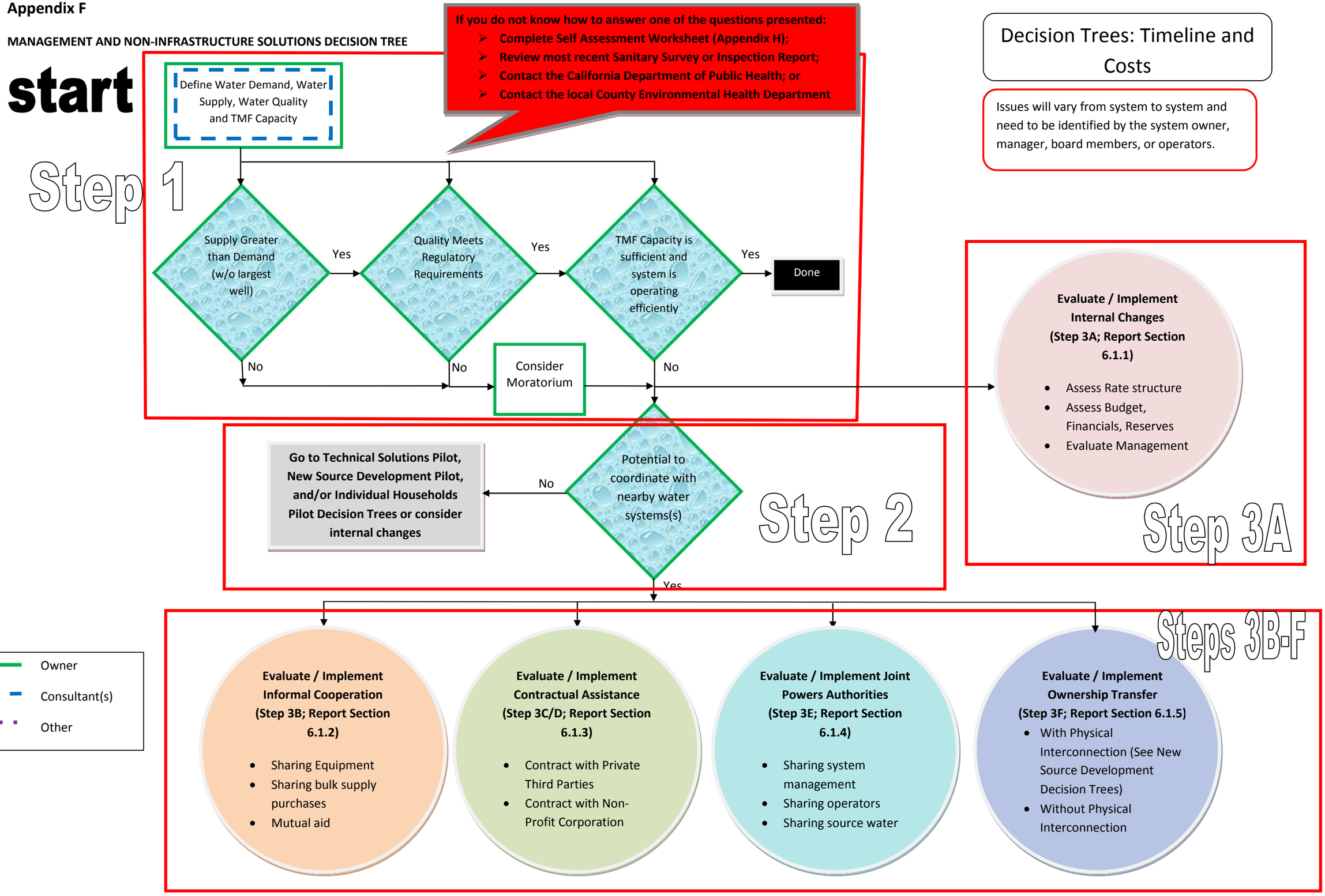
Step 3G

Formation of Legal Entity (REPORT SECTION 6.1.6)



Appendix F

MANAGEMENT AND NON-INFRASTRUCTURE SOLUTIONS DECISION TREE



Decision Trees: Timeline and Costs

Issues will vary from system to system and need to be identified by the system owner, manager, board members, or operators.

Appendix F

MANAGEMENT AND NON-INFRASTRUCTURE SOLUTIONS DECISOIN TREE

Decision Trees: Timeline and Costs

start

Define Wastewater Treatment and Disposal Capacity, and Effluent Quality

Step 1B

Wastewater Treatment and Disposal Capacity is Sufficient

Yes

Effluent Quality Meets Waste Discharge Requirements

Yes

TMF Capacity is sufficient and system is operating efficiently

Done

No

No

No

Consider Moratorium

Evaluate / Implement Internal Changes (Step 3A; Report Section 6.1.1)

- Assess Rate structure
- Assess Budget, Financials, Reserves
- Evaluate Management

Step 3A

Go to Technical Solutions Pilot, New Source Development Pilot, and/or Individual Households Pilot Decision Trees or consider internal changes

No

Potential to coordinate with nearby sewer systems(s)

Step 2B

Evaluate / Implement Informal Cooperation (Step 3B; Report Section 6.1.2)

- Sharing Equipment
- Sharing bulk supply purchases
- Mutual aid

Evaluate / Implement Contractual Assistance (Step 3C/D; Report Section 6.1.3)

- Contract with Private Third Parties
- Contract with Non-Profit Corporation

Evaluate / Implement Joint Powers Authorities (Step 3E; Report Section 6.1.4)

- Sharing system management
- Sharing operators
- Sharing source water

Evaluate / Implement Ownership Transfer (Step 3F; Report Section 6.1.5)

- With Physical Interconnection (See New Source Development Decision Trees)
- Without Physical Interconnection

Owner

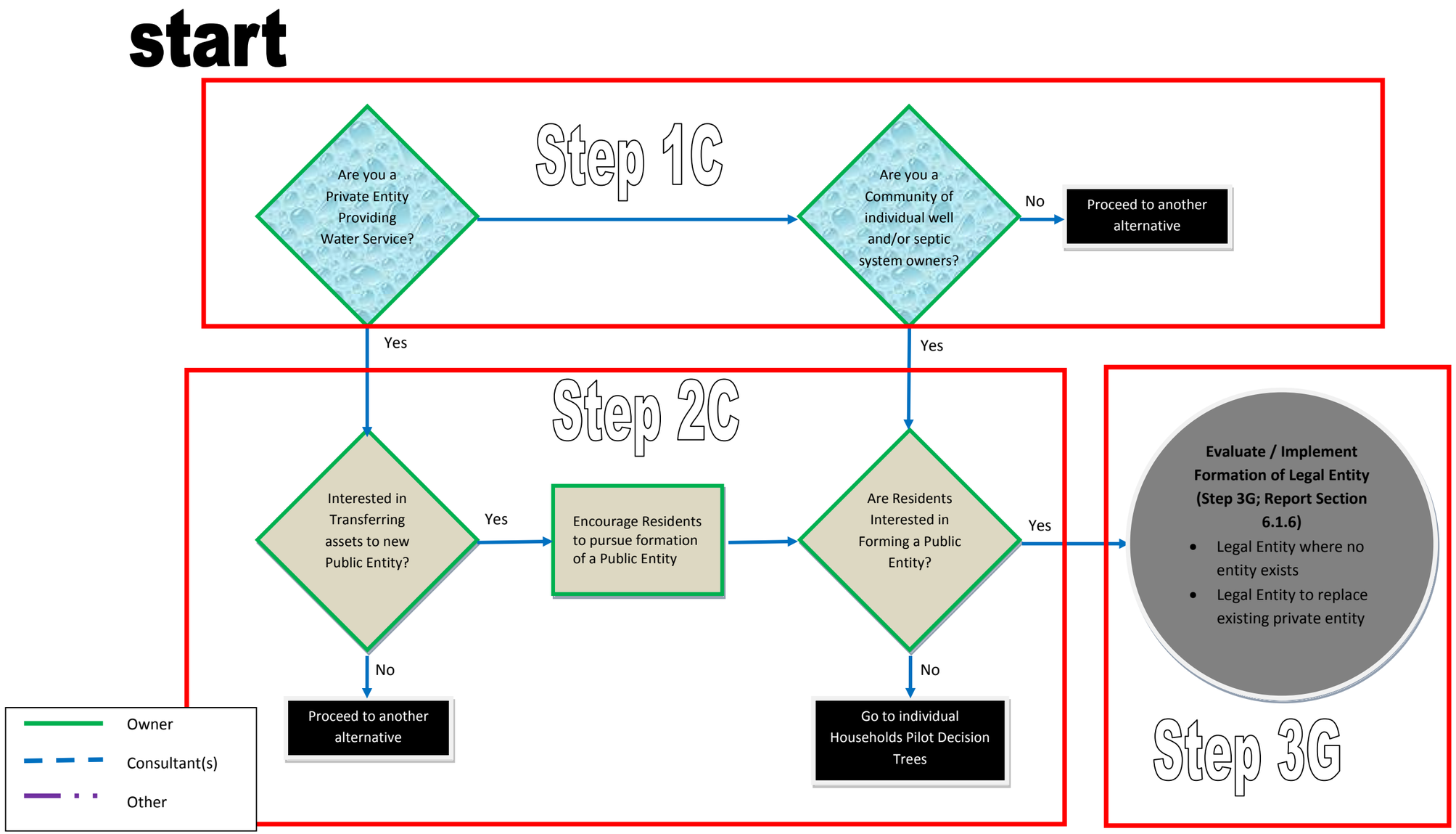
Consultant(s)

Other

Appendix F

MANAGEMENT AND NON-INFRASTRUCTURE SOLUTIONS DECISION TREE

Decision Trees: Timeline and Costs



Step 3A

INTERNAL CHANGES (REPORT SECTION 6.1.1)

start

Consider Internal Changes

These are self-assessment type questions aimed at developing an understanding of system management and operational deficiencies. These are questions that should be answered by a District manager, owner, operator, or board member.

Decision Trees: Timeline and Costs

Does your system have a written operation and maintenance plan including equipment, line flushing, inspecting/exercising control valves, etc.?

No

Prepare a written O&M plan – employ the services of a consultant as necessary

Does your system have organization charts and descriptions of roles and responsibilities?

No

Develop an organization chart and job descriptions for each position describing the roles and responsibilities of each employee

Does your system provide training for operators and other employees?

No

Send operators or other staff to relevant training programs. To find out about training opportunities, contact CDPH, CRWA, RCAC, APWA, County, or other sources.

Does your governing board or ownership review summary of revenues and expenses?

No

Review revenues and expenses on a monthly or quarterly basis to track financial performance

Have you adopted formal policies on payments, collections, water rates, connection charges, customer complaints, etc.?

No

Work with a consultant and/or an attorney to develop formal policies, rates, connection charges, etc.

Does your system have an Emergency Response Plan?

No

Prepare an Emergency Response Plan detailing how to handle water outages, contamination issues, etc. http://www.epa.gov/safewater/

Does your system have a financial plan that includes O&M as well as reserve funds, etc.?

No

Develop (or update) a financial plan that includes reserve funds for capital improvements and emergency reserve

Has your system evaluated the water and/or sewer rates in the last 3-5 years?

No

Review existing water/sewer rates and determine if adjustments are needed – employ the services of a consultant as necessary

For water systems do you have a metered rate structure?

No

If meters are not already installed, install water meters on all service connections. Work with a consultant to develop an appropriate rate structure.

If you answer "No" to several of these questions for your system, it will be important to develop a prioritized list of actions, until you are able to answer "yes" to each of these.

Step 3A

Owner

Consultant(s)

Other

Step 3B

INFORMAL COOPERATION (REPORT SECTION 6.1.2)

sta

This would be the first step. The community would need to determine if they have, use, or need something that could potentially be shared.

Communicating with other communities and determining if there is an opportunity to share resources could happen relatively quickly if there is a shared need and shared desire to work together. Alternatively, it could take years of relationship building to develop a cooperative agreement to share resources informally. There is minimal cost associated with this option. Costs are mainly in networking with neighboring communities.

Decision Trees: Timeline and Costs

Do you have equipment that could be shared with another water system?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that has a need for this equipment?

Yes

Continue to communicate and develop relationships

Is the community interested in sharing this equipment?

Yes

Develop an acceptable agreement for sharing of this equipment

No

Continue to communicate and develop relationships

No

Consider other equipment/info/supplies that could be shared

No

Step 3B.1

Do you have a need for a piece of equipment that could be shared?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that has the needed equipment?

Yes

Is the community willing to share this equipment?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Continue to communicate and develop relationships

No

Step 3B.2

It would be up to the community to answer these questions. The path will vary by community.

No

Is there a community w/in 5-10 miles that has a need for the same equipment?

Yes

Is the community willing to share in the purchase for shared use?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Proceed to another alternative

Continue to communicate and develop relationships

No

Do you purchase chemicals or supplies that others may use?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that uses the same chemicals?

Yes

Is the community willing to share in the purchase for shared use?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Proceed to another alternative

Owner

Consultant(s)

Other

No

Proceed to another alternative

Continue to communicate and develop relationships

No

Step 3B.3

Step 3C

CONTRACTUAL ASSISTANCE WITH PRIVATE THIRD PARTY OR NON-PROFIT ORGANIZATION (REPORT SECTION 6.1.3.1 & 6.1.3.2)

start

Consider Contractual Assistance

This would be the first step. The community would need to determine if they have a need that could be contracted.

Decision Trees: Timeline and Costs

Do you have an operator need that can be contracted w/ a private third party or non-profit org?

Or

Do you have a management need that can be contracted?

Or

Do you have a bookkeeper need that can be contracted?

Or

Do you have another need that can be contracted?

No → Proceed to another alternative

Yes

Yes

Yes

Yes

An attorney will be needed to finalize an agreement. Once the terms of service developed are acceptable to all parties, this may take approximately 2 to 3 months. The cost for this service may be about $3,000 to $5,000.

This process will involve the owner, contract operator, and an attorney. Developing the terms of service (assuming all parties are in agreement to move forward) may take approximately 3 to 6 months. Depending on the complexity of the terms, the cost to develop may be about $12,000 to $20,000.

Find a reputable third party contractor or non-profit organization to provide the needed services

- Define scope of work
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits
- Define cost sharing parameters
- Define conditions and parameters for dissolution of contract

Are terms of service acceptable?

Yes → Develop agreement for contract services

If **no** rate adjustment is needed, stop here.

If a rate adjustment is needed, identify rate

No → Continue communications and negotiations

Or → Consider a different contract services provider

Overall timeline: Approximately 5 to 15 months.

Overall cost: Approximately $15,000 to $65,000.

If a rate adjustment is needed, an engineer and/or an attorney will be needed to assist in this process. To analyze and identify the rate structure and administer the Prop 218 process may take about 4 to 6 months and cost about $30,000 to $40,000, depending on the size of the entity(ies) involved and complexity of the rate structure and changes to be made.

Owner

Consultant(s)

Other

Step 3C

Step 3D

CONTRACTUAL ASSISTANCE TO SHARE SERVICES AND/OR STAFF (REPORT SECTION 6.1.3.3)

Decision Trees: Timeline and Costs

start

Consider Contractual Assistance to share services

This would be the first step. It would be up to the owner/District to answer this question.

Is there a service, equipment, or resource need that could be contractually shared between communities?

Yes

Communicate with other communities

Is there a community within 5-10 miles that currently has the resources needed?

Yes

No

Is there a community within 5-10 miles that has the same need?

Yes

No

Consider other resources that could be shared on a contractual basis

Or

Proceed to another alternative

No

Proceed to another alternative

Owner

Consultant(s)

Other

Step 3D.1

Is the community willing to enter into a contract for shared services?

Yes

No

Continue to communicate and develop relationships

- Define scope of work
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits
- Define cost sharing parameters
- Define conditions and parameters for changes to and dissolution of contract

This process will involve the owners of each of the involved entities and an attorney. Developing the terms of service (assuming all parties are in agreement to move forward) may take approximately 2 to 6 months. Depending on the complexity of the terms, the cost to develop may be about $7,000 to $20,000.

Are terms of service acceptable?

Yes

Develop agreement for contract services

No

Continue communications and negotiations

An attorney will be needed to finalize an agreement. Once the terms of service are developed are acceptable to all parties, this may take approximately 1 to 3 months. The cost for this service may be about $3,000 to $5,000.

Step 3D.2

Overall timeline: Approximately 3 to 9 months.

Overall cost: Approximately $10,000 to $25,000.

Step 3E

JOINT POWERS AUTHORITY (REPORT SECTION 6.1.4)

start

Consider Joint Powers Authority

This would be the first step. It would be up to the owners/ Districts to answer this question.

Is there a service need that could be shared between multiple communities?

Yes

No

Proceed to another alternative

Are you a **public agency** or a **mutual water company**?

JPAs are limited to public agencies. One exception is Mutual Water Companies, which can also participate.

Yes

No

Proceed to another alternative

Communicate with other communities

Are there other **public agencies** or **mutual water companies** willing to collaborate to share this service?

This process will involve the owners of each of the involved entities and an attorney. Developing the terms of service may take approximately 6 to 8 months. Depending on the complexity of the terms, the cost to develop may be about $20,000 to $30,000. This will also be impacted by the number of entities involved.

Yes

Step 3E.1

Decision Trees: Timeline and Costs

- Define scope of services to be provided
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits for the contractor
- Define cost sharing parameters
- Define conditions and parameters for dissolution of JPA
- Define makeup of Authority officers, board members, and management governance structure
- Define decision making process
- Define individual entity operations and services independent of the JPA

Step 3E.2

An attorney will be needed to finalize an agreement. Once the terms of service developed are acceptable to all parties, this may take approximately 3 to 6 months. The cost for this service may be about $10,000 to $20,000.

Are terms of service acceptable?

Yes

No

Develop joint powers agreement

If **no** rate adjustment is needed, stop here.

Continue communications and negotiations

If a rate adjustment is needed, identify rate structure and initiate Proposition 218 process

If a rate adjustment is needed, an engineer and/or an attorney will be needed to assist in this process. Water rate evaluation and the Prop 218 process will most likely be done by each individual entity that is impacted. To analyze and identify the rate structure and administer the Prop 218 process may take about 4 to 6 months and cost about $30,000 to $40,000, depending on the size of the entity involved and complexity of the rate structure and changes to be made.

Owner

Consultant(s)

Other

Overall timeline: Approximately 9 to 20 months.

Overall cost: Approximately $30,000 to $90,000.

Step 3F

OWNERSHIP TRANSFER (REPORT SECTION 6.1.5)

(Managerial consolidation only; for physical consolidation, see New Source Development pilot study)

start

Consider Ownership Transfer

This would be the first step.

Is a City or large community potentially able to consolidate a community system into their operations and management

Yes

- Analyze budgets and rate structures in each entity
- Explore how to combine financial obligations
- Develop full list of responsibilities, including maintenance, testing, operations, management, financial, etc.

This will involve a consultant working with owners/Districts/City. This process (assuming all parties are in agreement to move forward) may take approximately 6 to 8 months and cost between $20,000 and $50,000.

This will need to be determined based on the results of the previous step.

Is ownership transfer feasible financially?

No

Proceed to another alternative

No

Proceed to another alternative

Step 3F.1

Yes

- Define rules for ownership transfer (what is being transferred and what is not
- Ownership transfer may include one or more of the following:
  - water
  - sewer
  - fire
  - police
  - streets

This will require cooperation between the owner of each system and/or City (as applicable) with assistance from a consultant, a non-profit advocacy group, and an attorney. This process may take approximately 4 to 6 months and cost between $20,000 and $40,000.

Define issues such as annexation, service agreements, dissolution of consolidating system, schedule, etc.

This process would require coordination between the entities involved, a non-profit advocacy group, and an attorney. This process may take approximately 6 to 12 months and cost between $20,000 and $40,000.

Approval from regulatory agencies may take about 3 months to obtain.

LAFCo approval?

Yes

Identify rate structures and initiate Proposition 218 process

An engineer and/or an attorney will be needed to assist in this process. This may take approximately 4 to 6 months and cost between $30,000 and $40,000.

Approval from regulatory and political agencies

Finalize ownership transfer

This will involve a consultant and an attorney to assist in the process. This process may take approximately 2 to 3 months and cost between $10,000 and $30,000.

No

Address necessary issues as determined by LAFCo

Or

Proceed to another alternative

Step 3F.2

Decision Trees: Timeline and Costs

Owner

Consultant(s)

Other

Overall timeline: Approximately 24 to 40 months.

Overall cost: Approximately $100,000 to $200,000.

Note: This does NOT include physical interconnection.

Step 3G

Formation of Legal Entity (REPORT SECTION 6.1.6)

start

Consider Formation of Legal Entity

This would be the first step.

Evaluate Options for Formation of Legal Entity

An engineer, attorney, and/or non-profit org can assist with evaluating options and identifying a service area. This may take approx 3 to 6 months and cost between $15,000 and $25,000.

Identify Geographic Area to be covered by Legal Entity

The service area covered by the Legal Entity will need to be coordinated with LAFCo.

Petition County Board of Supervisors

Perform Public Outreach

Public outreach can be performed with the assistance of a non-profit org. This may cost about $5,000 to $10,000.

Prepare Environmental Documents for the Entity Formation

An engineer or planner can assist with environmental documents. This may take approx 3 months and cost between $20,000 and $30,000.

Coordinate with and obtain approval from LAFCo

LAFCo approval may take about 3 months to obtain.

Hold Election to approve formation and elect an initial governing body

It may take 2 to 3 months to prepare for the election, and may cost about $20,000 to $30,000.

Approval Granted?

Yes

Legal Entity Formed

No

Try again

Or

Proceed to another alternative

Decision Trees: Timeline and Costs

Step 3G

Owner

Consultant(s)

Other

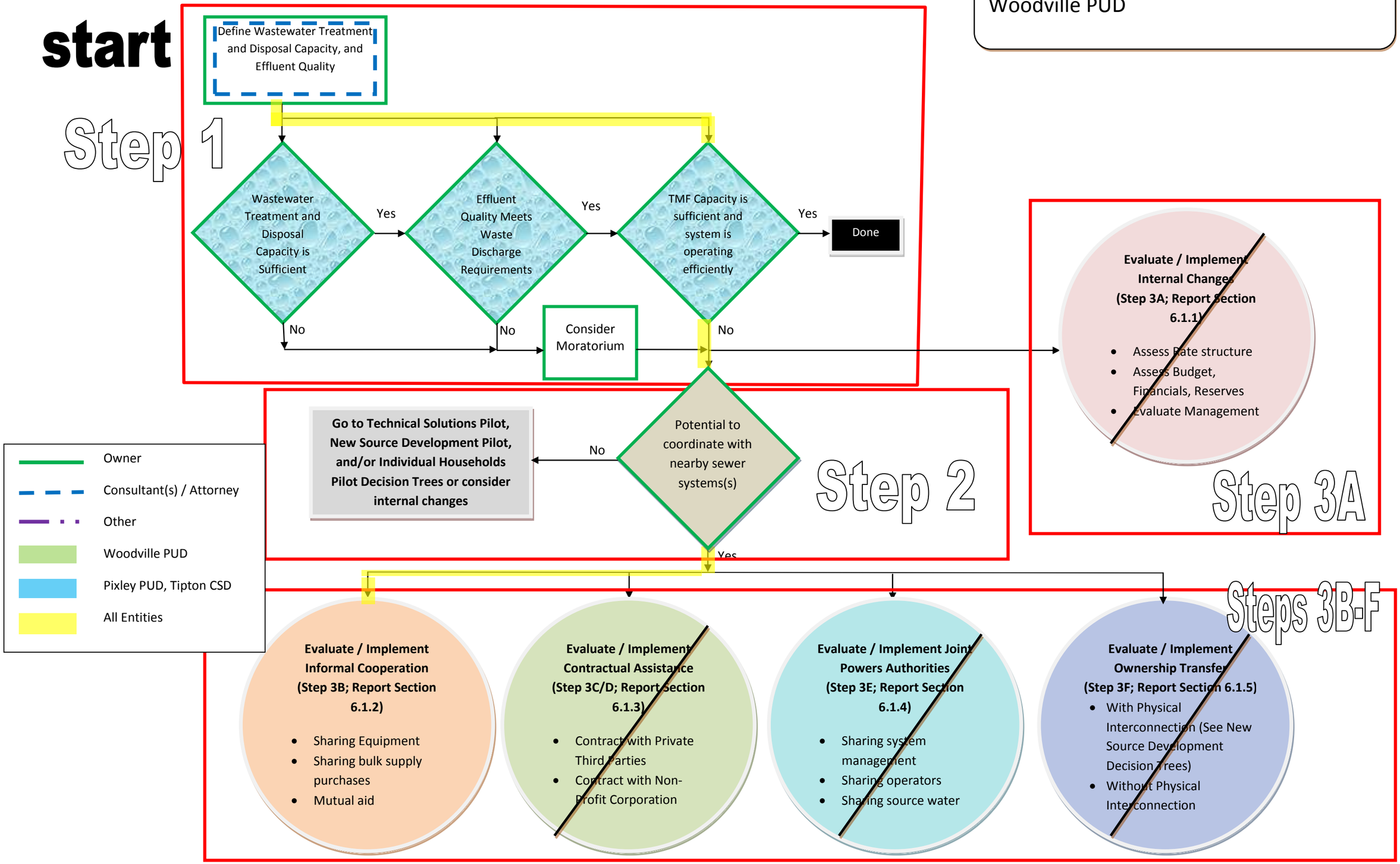
Overall timeline: Approximately 6 to 12 months.

Overall cost: Approximately $60,000 to $100,000.

Appendix F

MANAGEMENT AND NON-INFRASTRUCTURE SOLUTIONS DECISION TREE

Case Study: Pixley PUD, Tipton CSD, Woodville PUD



Step 3A

INTERNAL CHANGES (REPORT SECTION 6.1.1)

start

Consider Internal Changes

Case Study: Pixley PUD, Tipton CSD, Woodville PUD

Does your system have a written operation and maintenance plan including equipment, line flushing, inspecting/exercising control valves, etc.?

No

Prepare a written O&M plan – employ the services of a consultant as necessary

Does your system have organization charts and descriptions of roles and responsibilities?

No

Develop an organization chart and job descriptions for each position describing the roles and responsibilities of each employee

Does your system provide training for operators and other employees?

No

Send operators or other staff to relevant training programs. To find out about training opportunities, contact CDPH, CRWA, RCAC, APWA, County, or other sources.

Does your governing board or ownership review summary of revenues and expenses?

No

Review revenues and expenses on a monthly or quarterly basis to track financial performance

Have you adopted formal policies on payments, collections, water rates, connection charges, customer complaints, etc.?

No

Work with a consultant and/or an attorney to develop formal policies, rates, connection charges, etc.

Step 3A

Does your system have an Emergency Response Plan?

No

Prepare an Emergency Response Plan detailing how to handle water outages, contamination issues, etc. http://www.epa.gov/safewater/

Does your system have a financial plan that includes O&M as well as reserve funds, etc.?

No

Develop (or update) a financial plan that includes reserve funds for capital improvements and emergency reserve

Has your system evaluated the water and/or sewer rates in the last 3-5 years?

No

Review existing water/sewer rates and determine if adjustments are needed – employ the services of a consultant as necessary

For water systems, do you have a metered rate structure?

No

If meters are not already installed, install water meters on all service connections. Work with a consultant to develop an appropriate rate structure.

Owner

Consultant(s) / Attorney

Other

Woodville PUD

Pixley PUD, Tipton CSD

All Entities

Step 3B

INFORMAL COOPERATION (REPORT SECTION 6.1.2)

Case Study: Pixley PUD, Tipton CSD, Woodville PUD

start

Consider Informal Cooperation

Do you have equipment that could be shared with another water system?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that has a need for this equipment?

Yes

Continue to communicate and develop relationships

Is the community interested in sharing this equipment?

Yes

Develop an acceptable agreement for sharing of this equipment

No

Consider other equipment/info/supplies that could be shared

No

Continue to communicate and develop relationships

No

Step 3B.1

Do you have a need for a piece of equipment that could be shared?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that has the needed equipment?

Yes

Is the community willing to share this equipment?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Continue to communicate and develop relationships

No

Step 3B.2

No

Is there a community w/in 5-10 miles that has a need for the same equipment?

Yes

Is the community willing to share in the purchase for shared use?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Proceed to another alternative

Continue to communicate and develop relationships

No

Owner

Consultant(s) / Attorney

Other

Woodville PUD

Pixley PUD, Tipton CSD

All Entities

Do you purchase chemicals or supplies that others may use?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that uses the same chemicals?

Yes

Is the community willing to share in the purchase for shared use?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Proceed to another alternative

No

Proceed to another alternative

Continue to communicate and develop relationships

No

Step 3B.3

Step 3C

CONTRACTUAL ASSISTANCE WITH PRIVATE THIRD PARTY OR NON-PROFIT ORGANIZATION (REPORT SECTION 6.1.3.1 & 6.1.3.2)

Case Study: Pixley PUD, Tipton CSD, Woodville PUD

start

Consider Contractual Assistance

Do you have an operator need that can be contracted w/ a private third party or non-profit org?

Or

Do you have a management need that can be contracted?

Or

Do you have a bookkeeper need that can be contracted?

Or

Do you have another need that can be contracted?

No

Proceed to another alternative

Yes

Yes

Yes

Yes

Find a reputable third party contractor or non-profit organization to provide the needed services

- Define scope of work
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits
- Define cost sharing parameters
- Define conditions and parameters for dissolution of contract

Are terms of service acceptable?

Yes

Develop agreement for contract services

If a rate adjustment is needed, identify rate structure and initiate Proposition 218 process

No

Continue communications and negotiations

Or

Consider a different contract services provider

Owner

Consultant(s)

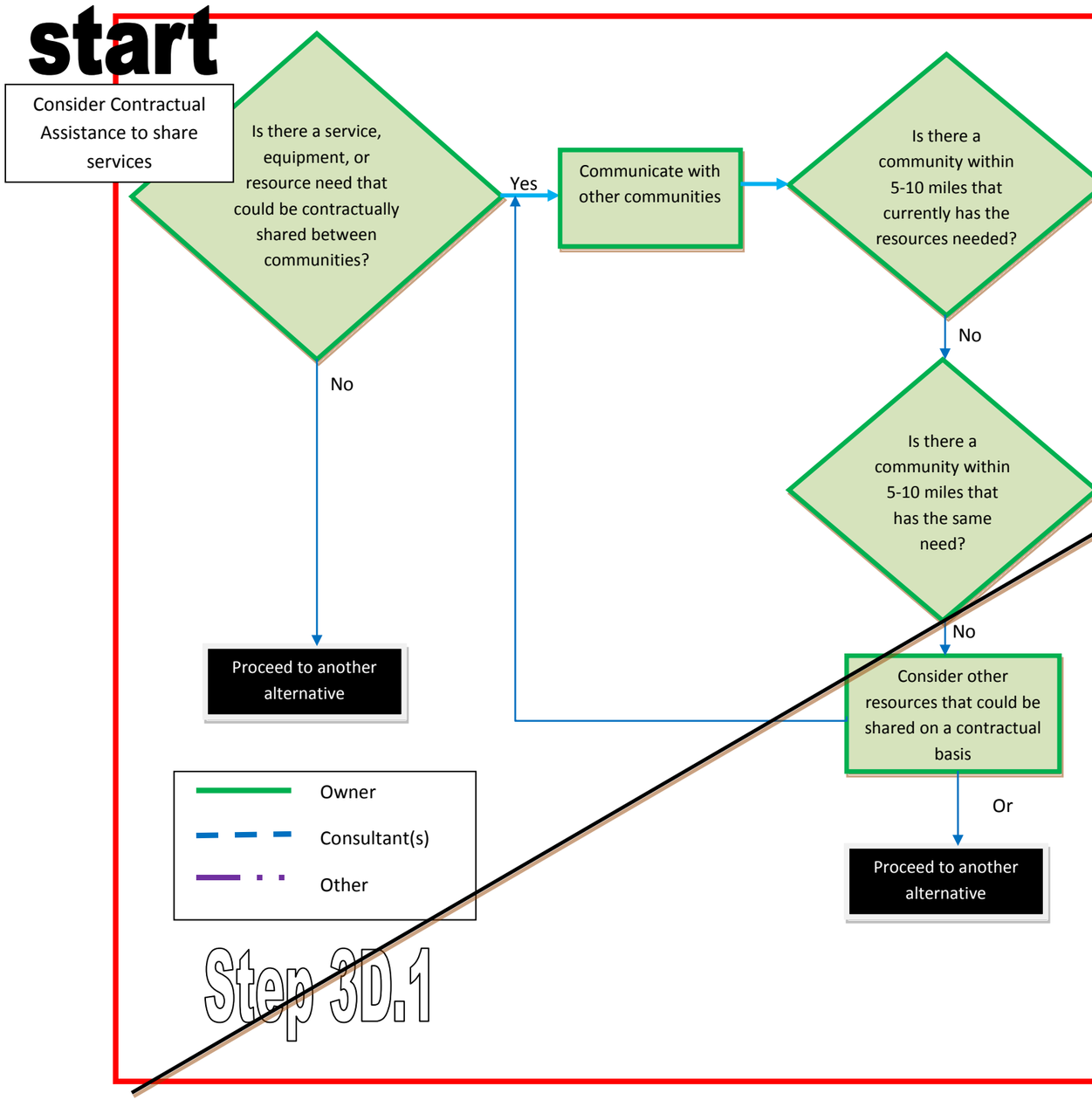
Other

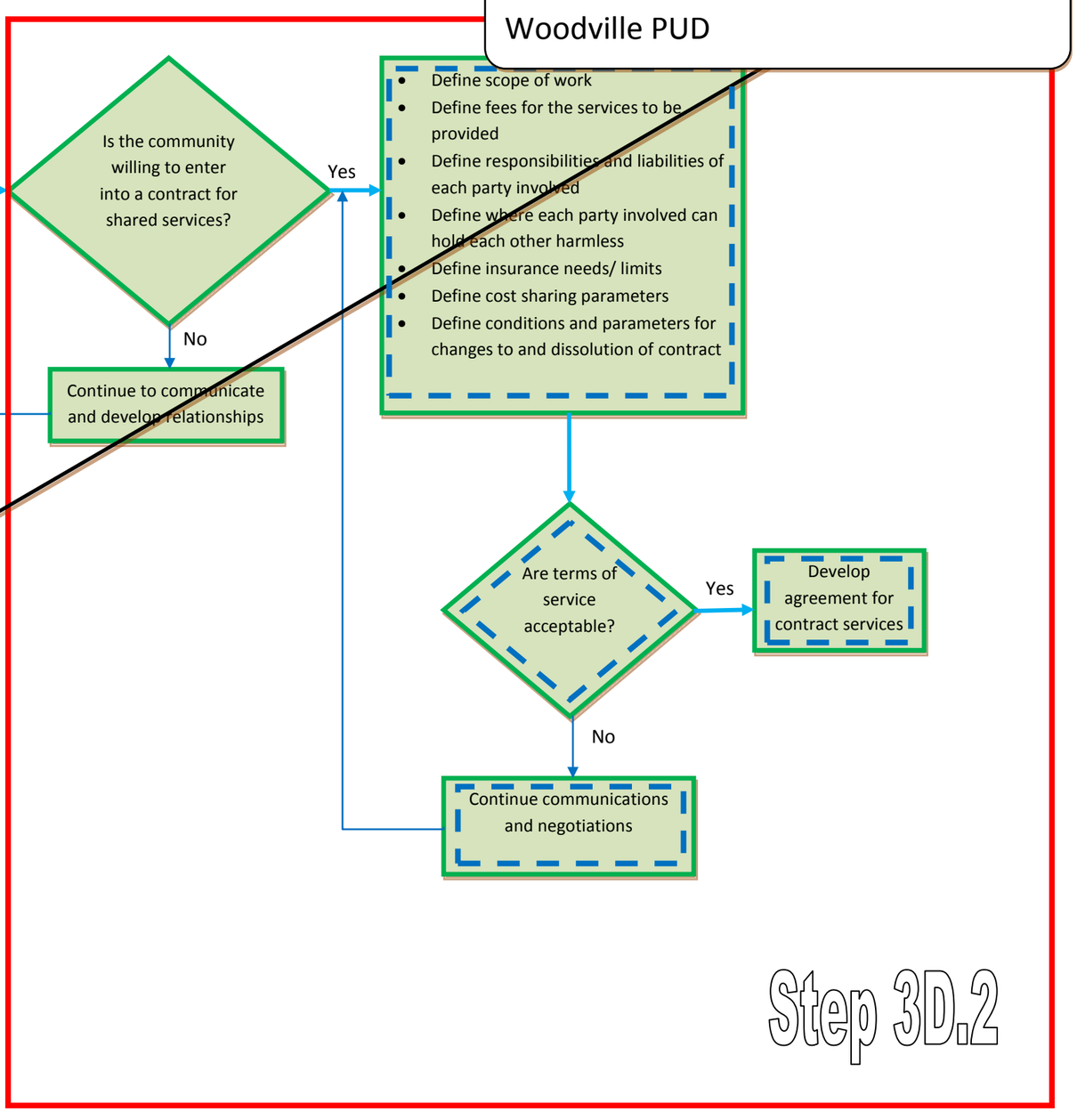
Step 3C

Step 3D

CONTRACTUAL ASSISTANCE TO SHARE SERVICES AND/OR STAFF (REPORT SECTION 6.1.3.3)

Case Study: Pixley PUD, Tipton CSD, Woodville PUD





Step 3E

JOINT POWERS AUTHORITY (REPORT SECTION 6.1.4)

start

Consider Joint Powers Authority

Is there a service need that could be shared between multiple communities?

Yes

No

Proceed to another alternative

Are you a **public agency** or a **mutual water company**?

Yes

No

Proceed to another alternative

Communicate with other communities

Are there other **public agencies** or **mutual water companies** willing to collaborate to share this service?

Yes

Step 3E.1

Case Study: Pixley PUD, Tipton CSD, Woodville PUD

- Define scope provided
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits for the contractor
- Define cost sharing parameters
- Define conditions and parameters for dissolution of JPA
- Define makeup of Authority officers, board members, and management governance structure
- Define decision making process
- Define individual entity operations and services independent of the JPA

Are terms of service acceptable?

Yes

Develop joint powers agreement

If a rate adjustment is needed, identify rate structure and initiate Proposition 218 process

No

Continue communications and negotiations

Step 3E.2

Owner

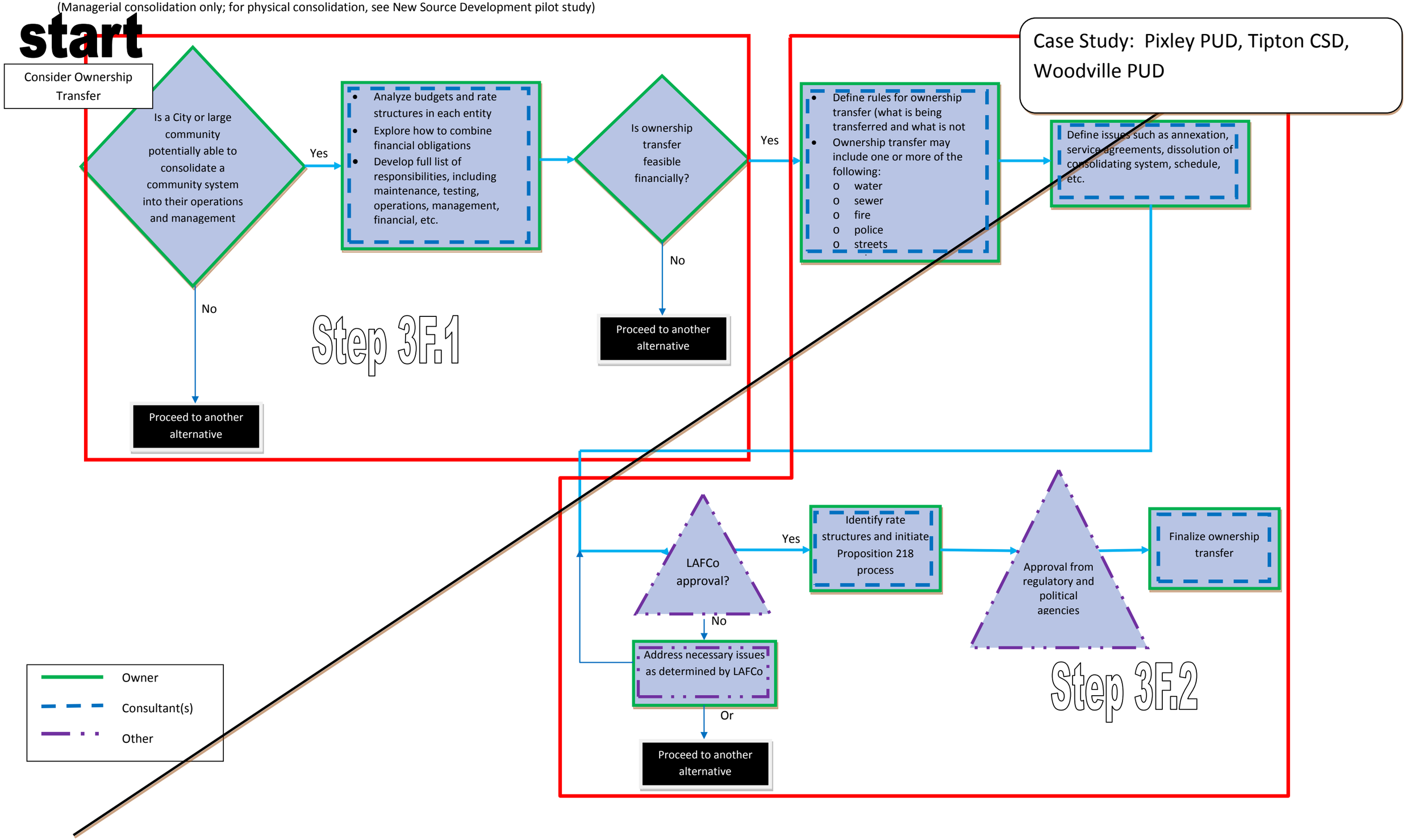
Consultant(s)

Other

Step 3F

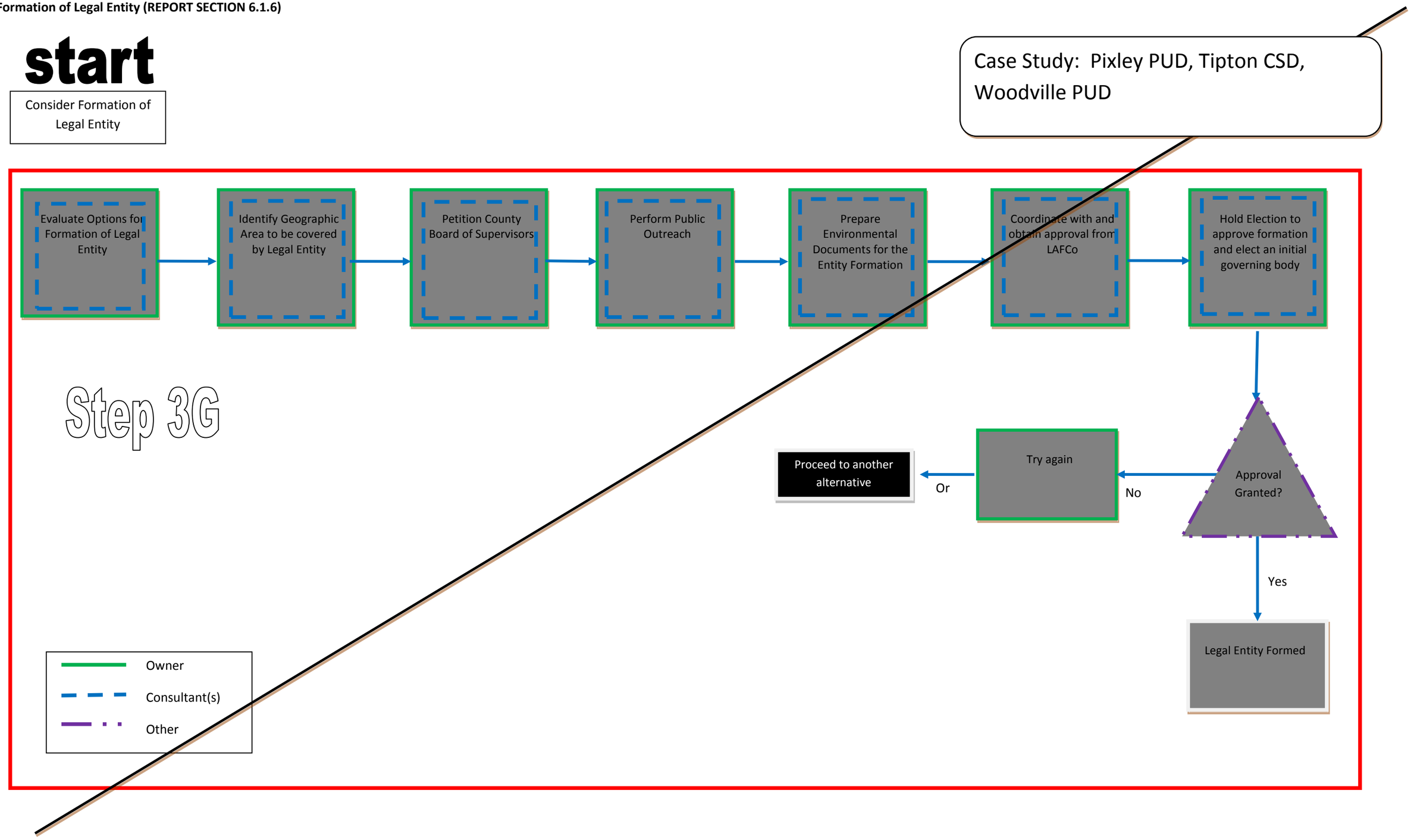
OWNERSHIP TRANSFER (REPORT SECTION 6.1.5)

(Managerial consolidation only; for physical consolidation, see New Source Development pilot study)



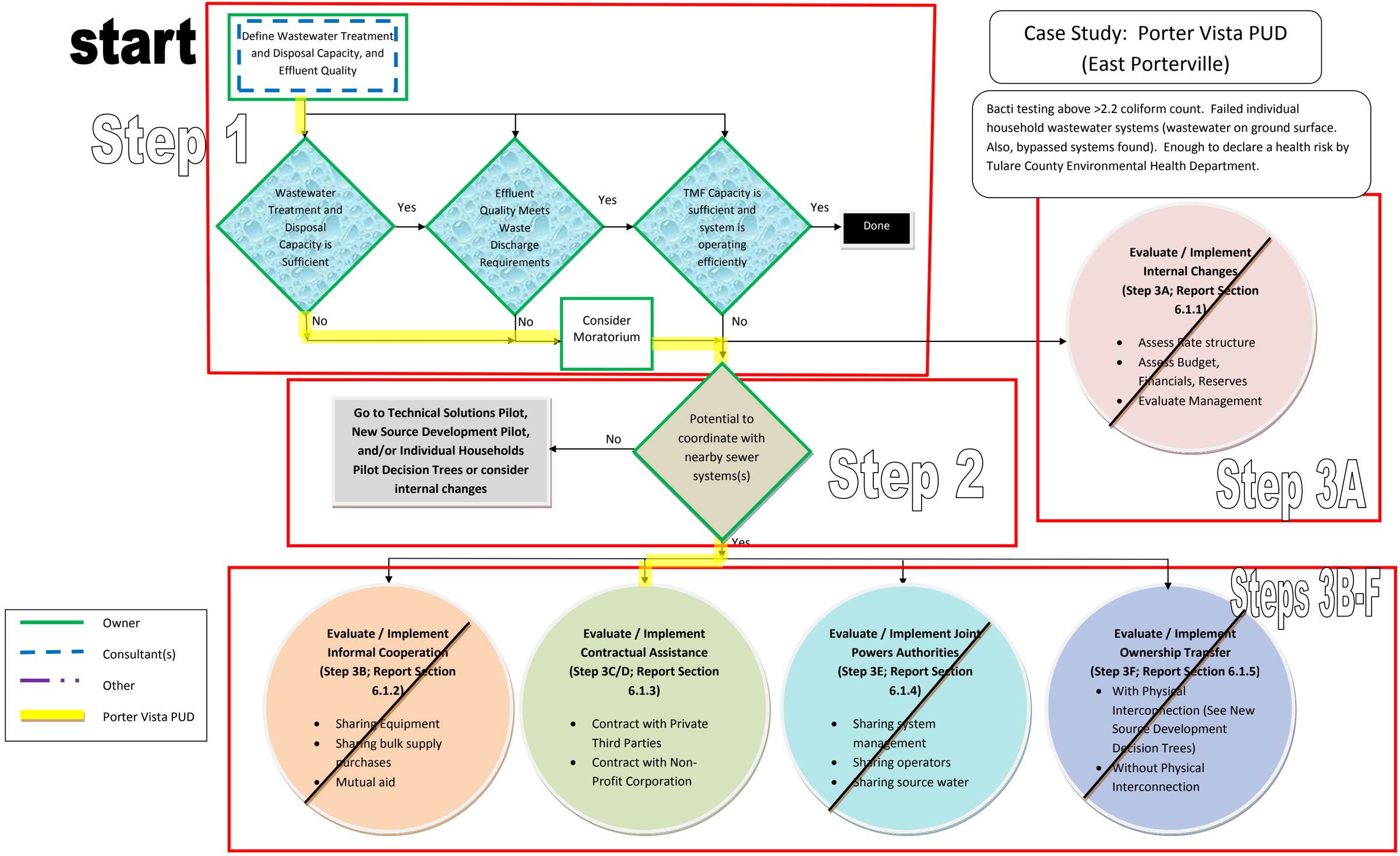
Step 3G

Formation of Legal Entity (REPORT SECTION 6.1.6)



Appendix F

MANAGEMENT AND NON-INFRASTRUCTURE SOLUTIONS DECISION TREE



Step 3A

INTERNAL CHANGES (REPORT SECTION 6.1.1)

start

Consider Internal Changes

Case Study: Porter Vista PUD (East Porterville)

Does your system have a written operation and maintenance plan including equipment, line flushing, inspecting/exercising control valves, etc.?

No

Prepare a written O&M plan – employ the services of a consultant as necessary

Does your system have organization charts and descriptions of roles and responsibilities?

No

Develop an organization chart and job descriptions for each position describing the roles and responsibilities of each employee

Does your system provide training for operators and other employees?

No

Send operators or other staff to relevant training programs. To find out about training opportunities, contact CDPH, CRWA, RCAC, APWA, County, or other sources.

Does your governing board or ownership review summary of revenues and expenses?

No

Review revenues and expenses on a monthly or quarterly basis to track financial performance

Have you adopted formal policies on payments, collections, water rates, connection charges, customer complaints, etc.?

No

Work with a consultant and/or an attorney to develop formal policies, rates, connection charges, etc.

Does your system have an Emergency Response Plan?

No

Prepare an Emergency Response Plan detailing how to handle water outages, contamination issues, etc. http://www.epa.gov/safewater/

Does your system have a financial plan that includes O&M as well as reserve funds, etc.?

No

Develop (or update) a financial plan that includes reserve funds for capital improvements and emergency reserve

Has your system evaluated the water and/or sewer rates in the last 3-5 years?

No

Review existing water/sewer rates and determine if adjustments are needed – employ the services of a consultant as necessary

For water systems, do you have a metered rate structure?

No

If meters are not already installed, install water meters on all service connections. Work with a consultant to develop an appropriate rate structure.

Step 3A

Owner

Consultant(s)

Other

Porter Vista PUD

Step 3B

INFORMAL COOPERATION (REPORT SECTION 6.1.2)

Case Study: Porter Vista PUD (East Porterville)

start

Consider Informal Cooperation

Do you have equipment that could be shared with another water system?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that has a need for this equipment?

Yes

Continue to communicate and develop relationships

Is the community interested in sharing this equipment?

Yes

Develop an acceptable agreement for sharing of this equipment

No

Consider other equipment/info/supplies that could be shared

No

Continue to communicate and develop relationships

No

Step 3B.1

Do you have a need for a piece of equipment that could be shared?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that has the needed equipment?

Yes

Is the community willing to share this equipment?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Continue to communicate and develop relationships

No

Step 3B.2

Is there a community w/in 5-10 miles that has a need for the same equipment?

Yes

Is the community willing to share in the purchase for shared use?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Proceed to another alternative

Continue to communicate and develop relationships

No

Owner

Consultant(s)

Other

Porter Vista PUD

No

Do you purchase chemicals or supplies that others may use?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that uses the same chemicals?

Yes

Is the community willing to share in the purchase for shared use?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Proceed to another alternative

No

Proceed to another alternative

Continue to communicate and develop relationships

No

Step 3B.3

Step 3C

CONTRACTUAL ASSISTANCE WITH PRIVATE THIRD PARTY OR NON-PROFIT ORGANIZATION (REPORT SECTION 6.1.3.1 & 6.1.3.2)

start

Case Study: Porter Vista PUD (East Porterville)

Consider Contractual Assistance

Do you have an operator need that can be contracted w/ a private third party or non-profit org?

Or

Do you have a management need that can be contracted?

Or

Do you have a bookkeeper need that can be contracted?

Or

Do you have another need that can be contracted?

No

Proceed to another alternative

Collection System Maintenance

Yes

Yes

Yes

Yes

Find a reputable third party contractor or non-profit organization to provide the needed services

Simon Maintenance Contract

Cleaning 1/3 of sewer collection system each year. Respond to plugs on an emergency basis. Monthly fee, plus hourly rate for emergency response.

- Define scope of work
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits
- Define cost sharing parameters
- Define conditions and parameters for dissolution of contract

Are terms of service acceptable?

Yes

Develop agreement for contract services

If a rate adjustment is needed, identify rate structure and initiate Proposition 218 process

Fees within existing rate structure for sewer service

No

Continue communications and negotiations

Or

Consider a different contract services provider

Owner

Consultant(s)

Other

Porter Vista PUD

Step 3C

Step 3D

CONTRACTUAL ASSISTANCE TO SHARE SERVICES AND/OR STAFF (REPORT SECTION 6.1.3.3)

Case Study: Porter Vista PUD (East Porterville)

start

Consider Contractual Assistance to share services

Is there a service, equipment, or resource need that could be contractually shared between communities?

Yes

Communicate with other communities

Is there a community within 5-10 miles that currently has the resources needed?

Yes

No

Is there a community within 5-10 miles that has the same need?

Yes

No

Consider other resources that could be shared on a contractual basis

Or

Proceed to another alternative

No

Proceed to another alternative

Owner

Consultant(s)

Other

Porter Vista PUD

Step 3D.1

Is the community willing to enter into a contract for shared services?

Yes

No

Continue to communicate and develop relationships

- Define scope of work
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits
- Define cost sharing parameters
- Define conditions and parameters for changes to and dissolution of contract

City of Porterville operates Porter Vista PUD lift station and treats sewage from Porter Visa PUD at the City of Porterville WWTP.

Are terms of service acceptable?

Yes

Develop agreement for contract services

No

Continue communications and negotiations

Step 3D.2

Step 3E

JOINT POWERS AUTHORITY (REPORT SECTION 6.1.4)

start

Consider Joint Powers Authority

Is there a service need that could be shared between multiple communities?

Yes

No

Proceed to another alternative

Are you a **public agency** or a **mutual water company**?

Yes

No

Proceed to another alternative

Communicate with other communities

Are there other **public agencies** or **mutual water companies** willing to collaborate to share this service?

Yes

Step 3E.1

Case Study: Porter Vista PUD (East Porterville)

- Define scope of ser… provided
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits for the contractor
- Define cost sharing parameters
- Define conditions and parameters for dissolution of JPA
- Define makeup of Authority officers, board members, and management governance structure
- Define decision making process
- Define individual entity operations and services independent of the JPA

Are terms of service acceptable?

Yes

No

Develop joint powers agreement

If a rate adjustment is needed, identify rate structure and initiate Proposition 218 process

Continue communications and negotiations

Step 3E.2

Owner

Consultant(s)

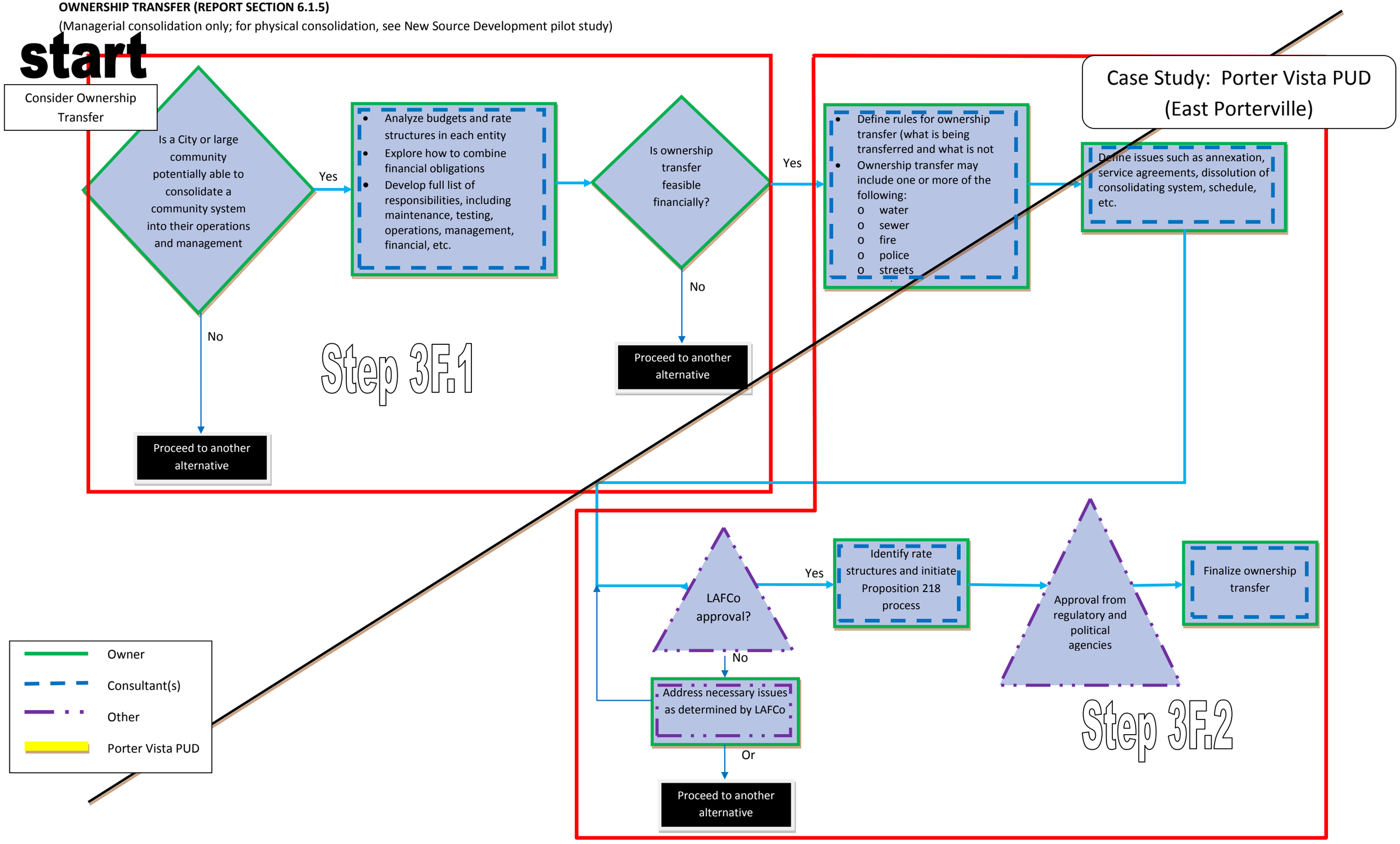
Other

Porter Vista PUD

Step 3F

OWNERSHIP TRANSFER (REPORT SECTION 6.1.5)

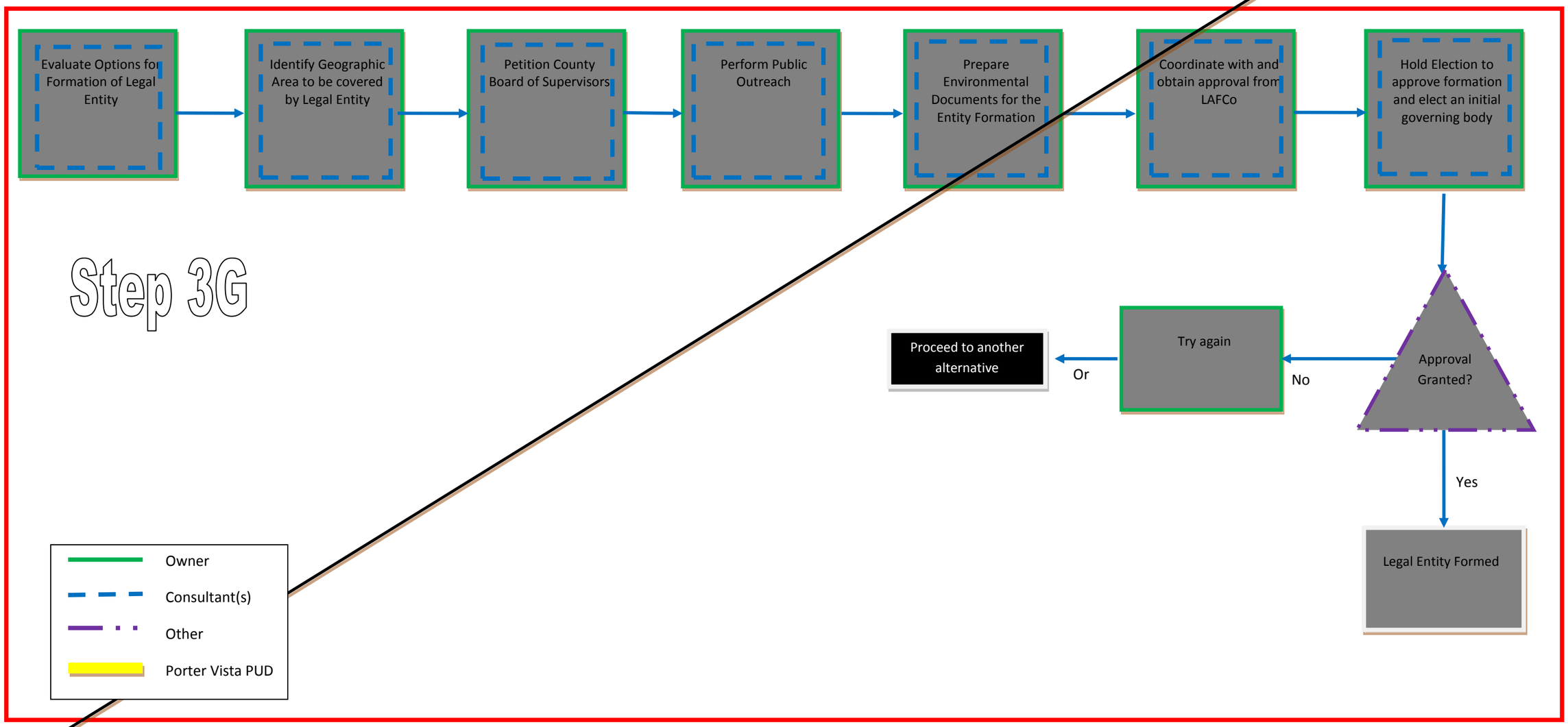
(Managerial consolidation only; for physical consolidation, see New Source Development pilot study)



Step 3G

Formation of Legal Entity (REPORT SECTION 6.1.6)

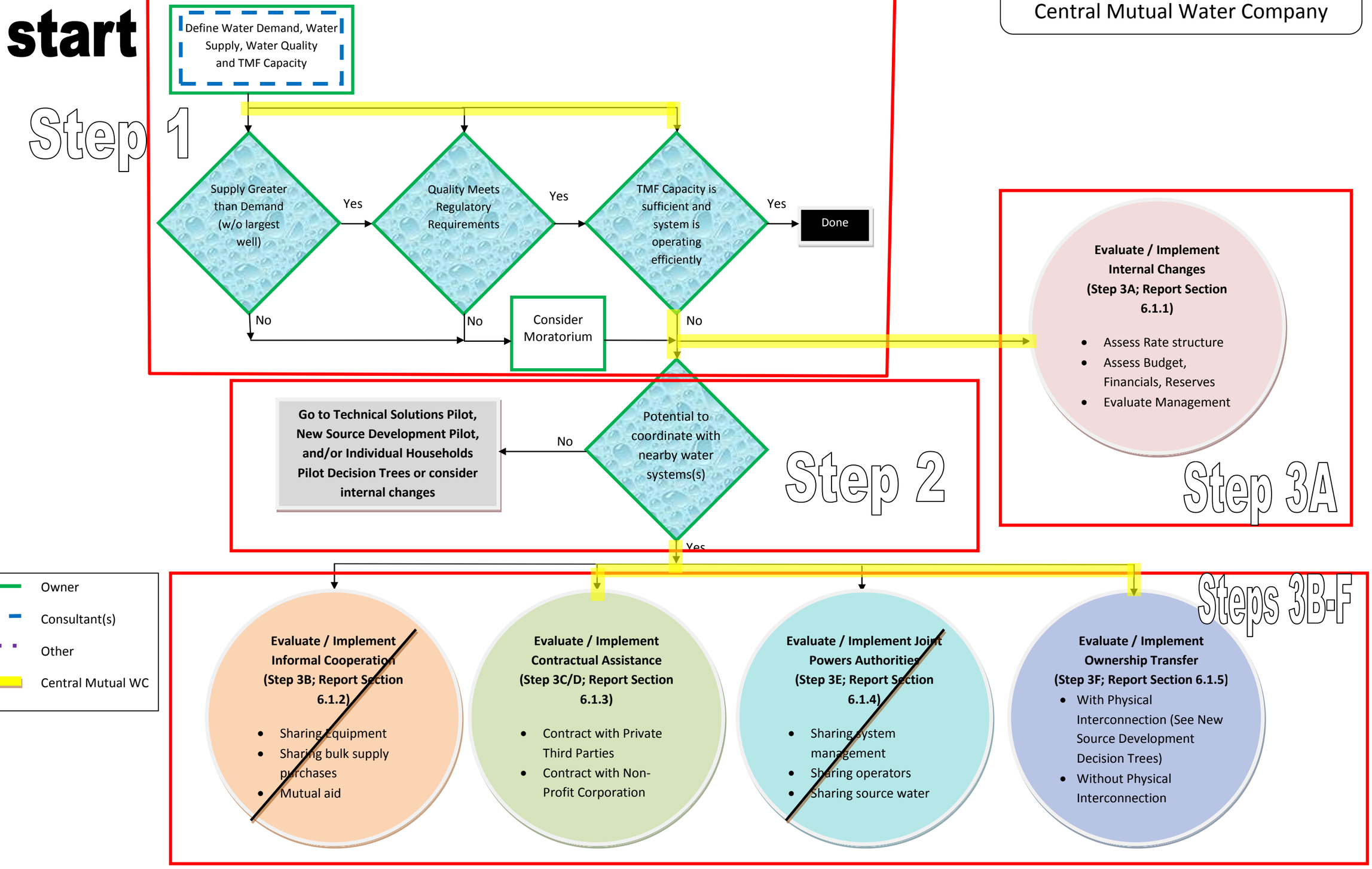
Case Study: Porter Vista PUD (East Porterville)



Appendix F

MANAGEMENT AND NON-INFRASTRUCTURE SOLUTIONS DECISION TREE

Community Review:
Central Mutual Water Company



Step 3A

INTERNAL CHANGES (REPORT SECTION 6.1.1)

start

Consider Internal Changes

Community Review:
Central Mutual Water Company

Does your system have a written operation and maintenance plan including equipment, line flushing, inspecting/exercising control valves, etc.?

No

Prepare a written O&M plan – employ the services of a consultant as necessary

Does your system have organization charts and descriptions of roles and responsibilities?

No

Develop an organization chart and job descriptions for each position describing the roles and responsibilities of each employee

Does your system provide training for operators and other employees?

No

Send operators or other staff to relevant training programs. To find out about training opportunities, contact CDPH, CRWA, RCAC, APWA, County, or other sources.

Does your governing board or ownership review summary of revenues and expenses?

No

Review revenues and expenses on a monthly or quarterly basis to track financial performance

Have you adopted formal policies on payments, collections, water rates, connection charges, customer complaints, etc.?

No

Work with a consultant and/or an attorney to develop formal policies, rates, connection charges, etc.

Does your system have an Emergency Response Plan?

No

Prepare an Emergency Response Plan detailing how to handle water outages, contamination issues, etc.
http://www.epa.gov/safewater/

Does your system have a financial plan that includes O&M as well as reserve funds, etc.?

No

Develop (or update) a financial plan that includes reserve funds for capital improvements and emergency reserve

Has your system evaluated the water and/or sewer rates in the last 3-5 years?

No

Review existing water/sewer rates and determine if adjustments are needed – employ the services of a consultant as necessary

For water systems, do you have a metered rate structure?

No

If meters are not already installed, install water meters on all service connections. Work with a consultant to develop an appropriate rate structure.

Step 3A

Owner
Consultant(s)
Other
Central Mutual WC

Step 3B

INFORMAL COOPERATION (REPORT SECTION 6.1.2)

Community Review:
Central Mutual Water Company

start

Consider Informal Cooperation

Do you have equipment that could be shared with another water system?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that has a need for this equipment?

Yes

Continue to communicate and develop relationships

Is the community interested in sharing this equipment?

Yes

Develop an acceptable agreement for sharing of this equipment

No

Consider other equipment/info/supplies that could be shared

No

Continue to communicate and develop relationships

No

Step 3B.1

Do you have a need for a piece of equipment that could be shared?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that has the needed equipment?

Yes

Is the community willing to share this equipment?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Continue to communicate and develop relationships

No

Step 3B.2

No

Is there a community w/in 5-10 miles that has a need for the same equipment?

Yes

Is the community willing to share in the purchase for shared use?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Proceed to another alternative

Continue to communicate and develop relationships

No

Owner

Consultant(s)

Other

Central Mutual WC

Do you purchase chemicals or supplies that others may use?

Yes

Communicate with other communities

Is there a community w/in 5-10 miles that uses the same chemicals?

Yes

Is the community willing to share in the purchase for shared use?

Yes

Continue to communicate and develop relationships

Develop an acceptable agreement for sharing of this equipment

No

Proceed to another alternative

No

Proceed to another alternative

Continue to communicate and develop relationships

No

Step 3B.3

Step 3C

CONTRACTUAL ASSISTANCE WITH PRIVATE THIRD PARTY OR NON-PROFIT ORGANIZATION (REPORT SECTION 6.1.3.1 & 6.1.3.2)

start

Consider Contractual Assistance

Community Review:
Central Mutual Water Company

Do you have an operator need that can be contracted w/ a private third party or non-profit org?

Or

Do you have a management need that can be contracted?

Or

Do you have a bookkeeper need that can be contracted?

Or

Do you have another need that can be contracted?

No

Proceed to another alternative

Yes

Yes

Yes

Yes

Find a reputable third party or non-profit organization to provide operator services

There is potential to contract with a private third party to operate the Central MWC Water System

- Define scope of work
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits
- Define cost sharing parameters
- Define conditions and parameters for dissolution of contract

Are terms of service acceptable?

Yes

Develop agreement for contract services

If a rate adjustment is needed, identify rate structure and initiate Proposition 218 process

Continue communications and negotiations

Or

Consider a different contract services provider

The next step for Central MWC would be to find a reputable contract operator to provide this service, define the terms of service with assistance from a consultant and/or attorney, and, if acceptable, finalize an agreement for contract services

Owner

Consultant(s)

Other

Central Mutual WC

Step 3C

Step 3D

CONTRACTUAL ASSISTANCE TO SHARE SERVICES AND/OR STAFF (REPORT SECTION 6.1.3.3)

start

Consider Contractual Assistance to share services

Is there a service, equipment, or resource need that could be contractually shared between communities?

Yes

No

Proceed to another alternative

Communicate with other communities

Is there a community within 5-10 miles that currently has the resources needed?

Yes

No

Is there a community within 5-10 miles that has the same need?

Yes

No

Consider other resources that could be shared on a contractual basis

Or

Proceed to another alternative

Owner

Consultant(s)

Other

Central Mutual WC

Step 3D.1

Community Review:
Central Mutual Water Company

Is the community willing to enter into a contract for shared services?

Yes

No

Continue to communicate and develop relationships

- Define sc
- Define fee
  provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits
- Define cost sharing parameters
- Define conditions and parameters for changes to and dissolution of contract

Are terms of service acceptable?

Yes

Develop agreement for contract services

No

Continue communications and negotiations

Step 3D.2

Step 3E

JOINT POWERS AUTHORITY (REPORT SECTION 6.1.4)

start

Consider Joint Powers Authority

Is there a service need that could be shared between multiple communities?

Yes

No

Proceed to another alternative

Are you a **public agency** or a **mutual water company**?

Yes

No

Proceed to another alternative

Communicate with other communities

Are there other **public agencies** or **mutual water companies** willing to collaborate to share this service?

Yes

Step 3E.1

Community Review:
Central Mutual Water Company

- Define scope of se provided
- Define fees for the services to be provided
- Define responsibilities and liabilities of each party involved
- Define where each party involved can hold each other harmless
- Define insurance needs/ limits for the contractor
- Define cost sharing parameters
- Define conditions and parameters for dissolution of JPA
- Define makeup of Authority officers, board members, and management governance structure
- Define decision making process
- Define individual entity operations and services independent of the JPA

Step 3E.2

Are terms of service acceptable?

Yes

No

Develop joint powers agreement

If a rate adjustment is needed, identify rate structure and initiate Proposition 218 process

Continue communications and negotiations

Owner

Consultant(s)

Other

Central Mutual WC

Step 3F

OWNERSHIP TRANSFER (REPORT SECTION 6.1.5)

(Managerial consolidation only; for physical consolidation, see New Source Development pilot study)

start

Consider Ownership Transfer

Is a City or large community potentially able to consolidate a community system into their operations and management

Yes

- Analyze budgets and rate structures in each entity
- Explore how to combine financial obligations
- Develop full list of responsibilities, including maintenance, testing, operations, management, financial, etc.

Is ownership transfer feasible financially?

Yes

- Define rules for ownership transfer (what is being transferred and what is not
- Ownership transfer may include one or more of the following:
  - water
  - sewer
  - fire
  - police
  - streets

Define issues such as annexation, service agreements, dissolution of consolidating system, schedule, etc.

No

Proceed to another alternative

No

Proceed to another alternative

Step 3F.1

There is potential for Central MWC to consolidate with City of Porterville or sell the system to a private water company

Community Review:
Central Mutual Water Company

The next step would be to explorer the financial feasibility of an ownership transfer. Issues such as annexation will also need to be discussed. Annexation will likely be a hurdle if physical consolidation with the City of Porterville is to be considered.

LAFCo approval?

Yes

Identify rate structures and initiate Proposition 218 process

Approval from regulatory and political agencies

Finalize ownership transfer

No

Address necessary issues as determined by LAFCo

Or

Proceed to another alternative

Step 3F.2

Owner

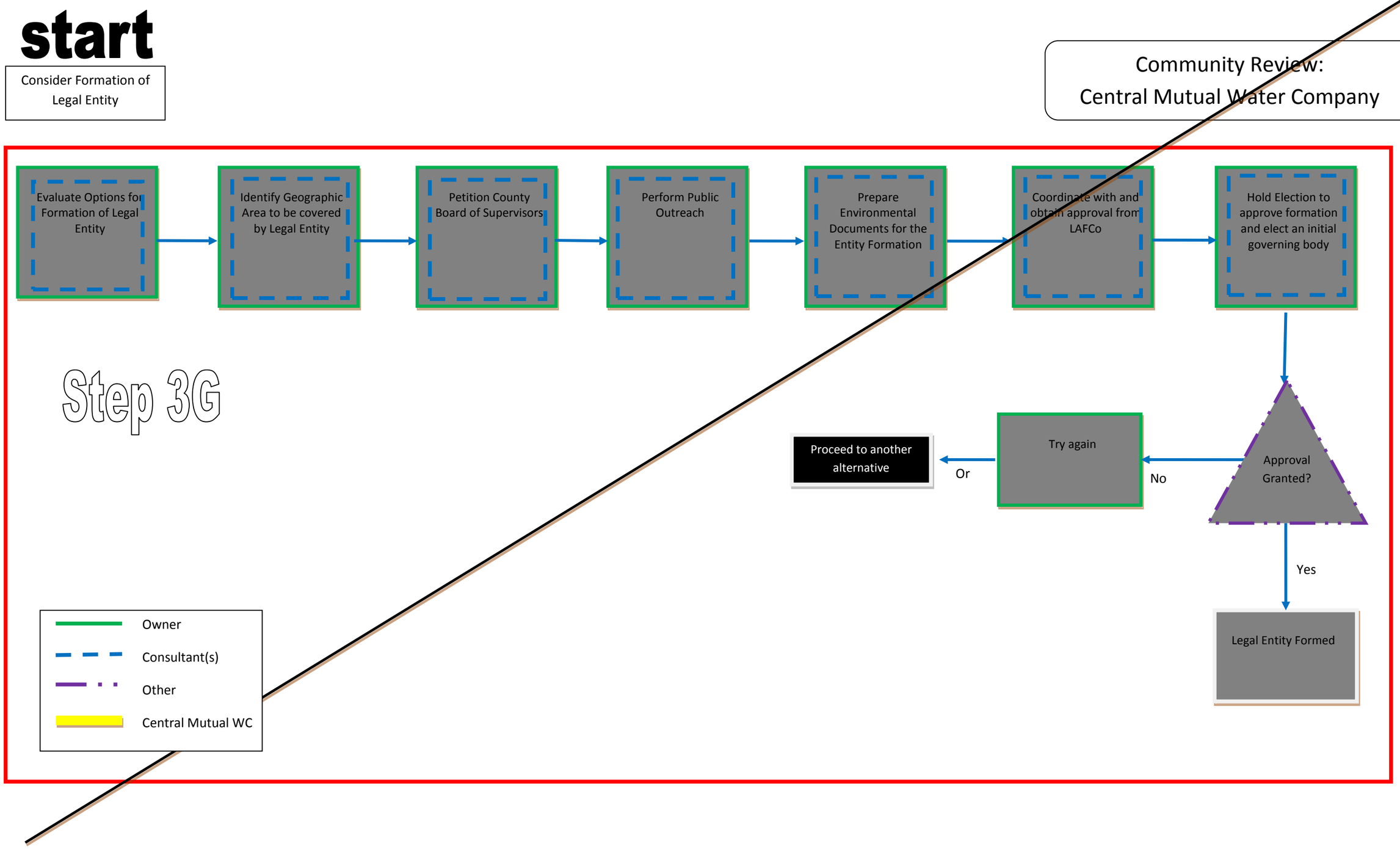
Consultant(s)

Other

Central Mutual WC

Step 3G

Formation of Legal Entity (REPORT SECTION 6.1.6)



APPENDIX G

COMMUNITY REVIEW MEETING NOTES

Tulare Lake Basin Disadvantaged Communities Water Study

Management and Non-Infrastructure Solutions Pilot

Funded by the California Department of Water Resources and Sponsored by County of Tulare

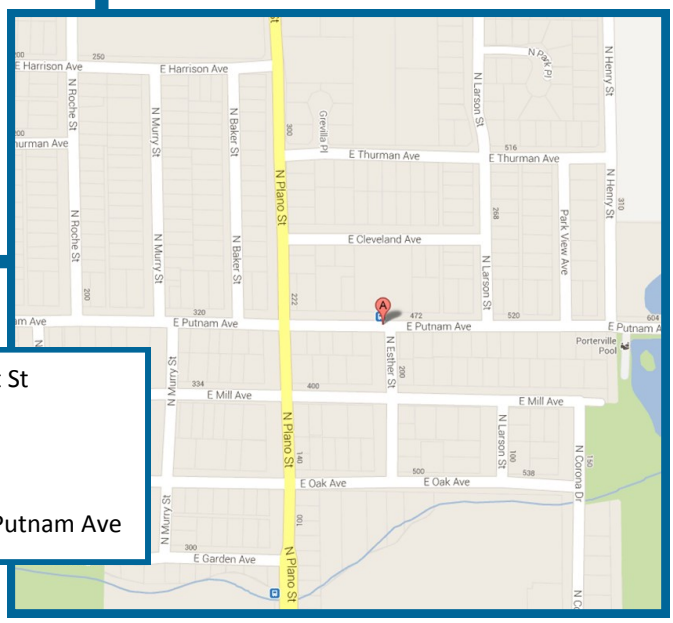
INVITATION

Representatives from the local communities in the Porterville area, water providers, board members, local residents and other interested parties are invited to a meeting to discuss local drinking water and wastewater needs and potential shared resources and management opportunities

Where: *Community Center at the Comision Honorifica Mexicana Americana Building*
466 E Putnum Avenue
Porterville, CA 93257

When: *Wednesday, June 26, 2013*

Time: *5:30pm—7:30pm*



- Head west on W Olive Ave toward N Hockett St
- Take the 1st right onto N Hockett St
- Take the 1st left to stay on N Hockett St
- Take the 3rd right onto W Putnam Ave
- Your destination will be on the left at 466 E Putnam Ave

The Purpose of this meeting:

- ***Get your input on local drinking water and wastewater needs***
- ***Get your feedback on the proposed shared solutions***
- ***Hear directly from you on what is needed to develop/implement solutions***

For more information or if you have any questions please call Community Water Center at (559) 733-0219 or Self Help Enterprises at (559) 802-1681

Estudio del Agua en las Comunidades de Bajos Recursos en la Cuenca del Lago Tulare

Piloto de Soluciones de Administración/No-Infraestructura

Financiado por el Departamento de Recursos Hídricos de California y Patrocinado por el Condado de Tulare

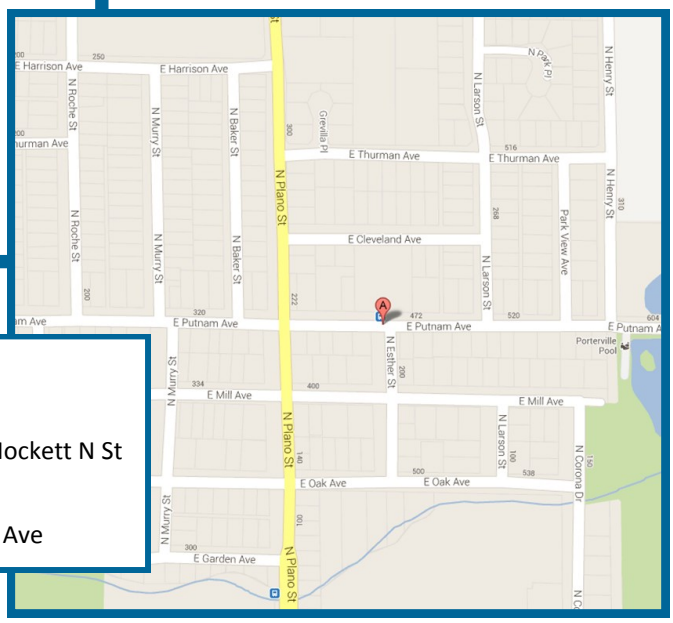
INVITACIÓN

Esta es una invitación a los representantes de las comunidades locales en el área de Porterville, a los proveedores del agua, a los miembros de las mesas del agua, a los residentes locales y otras partes interesadas para tener una junta y hablar sobre las necesidades locales del agua potable y aguas residuales y también sobre los posibles recursos compartidos y oportunidades de administración

Dónde: *Comision Honorifica Mexicana Americana Building "Centro Comunitario"*
466 E Putnum Avenue
Porterville, CA 93257

Cuando: *Miércoles, 26 de Junio, 2013*

Horario: *5:30pm—7:30pm*



- Hacia el oeste en W Olive Ave hacia Hockett Ave
- Gire a la derecha en N Hockett St
- Tome la primera izquierda para permanecer en Hockett N St
- Tome la tercera derecha en W Putnam Ave
- Su destino estará a la izquierda en 466 E Putnam Ave

Propósito de esta Junta:

- ***Obtener información sobre las necesidades locales del agua potable y aguas residuales***
- ***Obtener su opinión sobre las posibles soluciones compartidas***
- ***Escuchar directamente de usted sobre lo que es necesario para poder desarrollar y implementar soluciones***

Para obtener más información o si tiene alguna pregunta por favor comuníquese con el Centro Comunitario por el Agua al (559) 733-0219 o con Self Help Enterprises al (559) 802-1681

Levels of Sharing

Informal Cooperation – Informal cooperation can involve two or more entities working together in a mutual aid arrangement, without contractual obligations. By sharing equipment, bulk supply purchases, backup operation and maintenance personnel, sampling and testing services, billing services, or similar items or services, the cooperating communities can reduce some of their individual expenses without the need for a formal agreement.

Contractual Assistance – Contractual assistance can be provided in various forms. An entity or group of entities can contract with a third party entity to provide bookkeeping services, operation and maintenance services, management, engineering, or other services. This type of contract is under each individual system's control, and does not necessarily involve cooperation between two systems. Alternatively, the contractual assistance can be between service suppliers. In this case, an entity could enter into one or more contracts with other similar entities for the provision of services and/or the purchasing of supplies and equipment.

Agreement between Organizations – Agreements between organizations involve the creation of a new entity by several existing entities but allows each system to continue to exist as independent entities. This would most likely be in the form of a Joint Powers Agreement that can form a Joint Powers Authority (JPA). The JPA would provide one or more services for all participating entities; however the remaining services of each entity remain the responsibility of the individual system. For example, the JPA may provide shared system management structure, while each participating entity continues to operate its own system.

Ownership Transfer (Full Consolidation) – Ownership transfer involves full consolidation of two or more systems into one existing or newly created system. This solution also has various options, including: acquisition and physical interconnection between the systems; or acquisition and satellite management (no physical interconnection).

Types of Consolidation

Managerial Consolidation – The participating entities merge their customer accounts, integrate their billing system, and bank accounts. Eliminate redundancy of multiple professional contracts, i.e., engineers, accountants, bookkeepers, attorneys, etc. If the utilities involved are managed by board members, this option gives the participating entities the ability to identify a primary and an alternate to represent them on the regional entity board/council. (*Level of Sharing: Contractual Assistance or Agreement between Organizations*)

Operational Consolidation – Systems integrate their operations but remain autonomous. This option helps utilities to increase their operating capacity, provide a reliable service and establish redundancy through standardizing equipment, operating standards, etc. creating resiliency. In some cases, utilities interconnect with each other but do not commingle their water. The systems interconnect strictly for the purpose of back up in the event of an emergency. They do however, share equipment, chemicals, parts, etc. (*Level of Sharing: Contractual Assistance or Agreement between Organizations*)

Full Consolidation – This option integrates assets, liabilities, personnel and all aspects of the participating entities into either an existing or newly formed entity. The founding entities have as the ultimate goal their complete and absolute dissolution as a result of a full integration into an umbrella entity. This is the highest level of regionalization, consolidation and collaboration. In this case, everything becomes one unit. (*Level of Sharing: Ownership Transfer*)

Physical Consolidation – In this option the systems are connected pipe to pipe. This can be done to establish better fire protection, better coverage, extending lines to underserved areas and to abandon surplus infrastructure. It can mean developing a new water source together or can simply be done to sell water to each other. (*Level of Sharing: Contractual Assistance or Ownership Transfer*)

TLB DAC Study: Management and Non-Infrastructure Solutions Pilot Study

Porterville Community Review Meeting #1

Meeting Notes

June 26, 2013

Meeting notes are based on the opinions of the meeting participants. Statements and opinions made by participants have not been confirmed to be factual or correct, and they may or may not be consistent with the opinions of the water system board. These statements and opinions provide a basis for evaluation and a feel for the general sentiment of residents in the area regarding their water supply, but these statements and opinions should not be solely relied upon when analyzing the water systems needs and desires.

Questionnaire 1: Local Water Needs

What are the major drinking water and wastewater operations and management needs in your community or for the area?

Operator, Woodville PUD – Nitrates: 10-15 years ago nitrate levels were in the 20s, they are now in the 30s and approaching the nitrate limit. Dairies have been built around Woodville, which may be contributing to the problem. Also, groundwater depletion is a problem. Depth to groundwater use to be around 90'-100', but now it is closer to 210'.

Operator, East Plano and Grandview Gardens (Del Oro Water Company) – Mostly nitrates, sometimes in the 40s.

Operator, Central Mutual Water Company – 85 years old, and has been there since 1953. They have a single well for a 20 acre area. They have been fortunate because their water levels have actually gone up since the dam was constructed. They have 33 connections, and everyone kicks in their share as needed. No one is really in charge of running the system, but he does because he has been there the longest. He volunteers his time, and is 85 years old. There is also a language barrier (mostly Spanish speaking residents). Part of the problem is they keep letting people divide parcels, increasing the population/demand.

Resident/Water Board Member, Ducor CSD – Their water at times is too filthy and smelly even to shower in. There is sulfur in the groundwater, which has declined some, but is still not drinkable (in her opinion). Ducor is getting ready to drill a new well, and hopes to find better water. Currently residents have to buy bottled water to drink. They also have nitrate issues, and their distribution system is old. Water main breaks have caused them to be out of water for periods of time. They pay $70 per month for water they cannot drink. She noted as one of the primary problems, they are all on septic systems (no sewer system). Installing a sewer collection system may help.

Resident, Poplar CSD – Gentleman has a personal well that has been down since 2009. His property has been annexed into Poplar CSD, but they have not connected him. Other residents on individual wells have nitrate issues.

Resident, Poplar CSD – Consumer Confidence Report only in English. Most of the residents are Spanish speaking and cannot read English. They do not know what they are receiving notices about. Ralph Gutierrez noted that he use to send out CCRs in English and Spanish, but that CDPH makes it difficult to do so because they must have a template in Spanish if they are going to send it out (can't just send to SHE or others for translation). He therefore no longer sends in Spanish.

What are some of the solutions that you have implemented or are working on?

Operator, Woodville PUD – Currently no real treatment process for nitrates. Could modify well, but nitrates will continue to go down in the aquifer with the declining water levels, and would just have to modify again. Woodville currently operates two other small systems (a MHP and a manufacturer). This provides some additional income that benefits the community.

Resident/Water Board Member, Ducor CSD – Tried to get tied in to Terra Bella ID's water system, but failed. Also attempted to connect with Richgrove CSD. Neither District was interested in taking in Ducor.

Questionnaire 2: Gauging General Interest

Are the solutions presented, solutions you could see implemented in your community? Are there any solutions that you think we should consider (specify)?

City Engineer, City of Porterville – Recommends small systems utilize private water company (such as Del Oro Water Company). Will cost, but will alleviate the headache for the resident who has to operate and maintain, and there will be a professional running the system, who knows all of the sampling and other requirements, and the system can be run more efficiently.

As a result of this comment, operators from Del Oro Water Company and Central Mutual Water Company appeared to exchange cards.

City Engineer also said that Fairways Tract is a good example. No one within Fairways Tract knew about running a water system, or what opportunities were available, and it took an outside force to get them moving to consolidate with the City of Porterville.

Has your community implemented any type of shared resources solution? If so, what type(s)? What are things to consider or avoid when pursuing these solutions?

Operator, Woodville PUD – Tipton, Pixley and Woodville all share a sewer cleaner. This benefits all communities, and is also better for the equipment (rather than being used only once per year).

Resident/Water Board Member, Ducor CSD – Del Oro does billings/ financials, but not operations. This does not help their water quality.

What would you need for these or other types of shared solutions to work for you? What type of additional information, studies or analysis would be helpful for you to develop and implement these kinds of solutions?

Resident/Water Board Member, Ducor CSD – primary need is a sewer system, maybe connecting to Terra Bella or Richgrove.

Operator, Woodville PUD – Woodville, Tipton, Pixley and Poplar all share some on an informal basis… **Talk to your neighbor**.

Consider developing Mutual Aid Agreements to help other communities when emergencies arise. This would likely be larger communities that may have the equipment and resources to help. The problem is, the larger system will likely want to know “what’s in it for me?” There would need to be a mutual benefit.

There are a large number of communities who want operators for their systems but can’t find them.

TLB DAC Study: Management and Non-Infrastructure Solutions Pilot Study

Porterville Community Review Meeting #1

Ducor mentioned Center for Race Poverty and the Environments (CRPE), who initiated community meetings for Ducor to open a platform to talk and start making changes. This has been beneficial for Ducor, and a similar group may benefit others in starting community discussions.

The management non infrastructure pilot will include a roadmap to inform communities about shared solutions and provide guidance on how to implement those solutions. Are you interested in participating in the development of a plan that could be used to guide the implementation of shared resources solutions?

Most seemed interested in either individual contact or a second meeting.

Tulare Lake Basin Disadvantaged Communities Water Study

Management and Non-Infrastructure Solutions Pilot

Funded by the California Department of Water Resources and Sponsored by County of Tulare

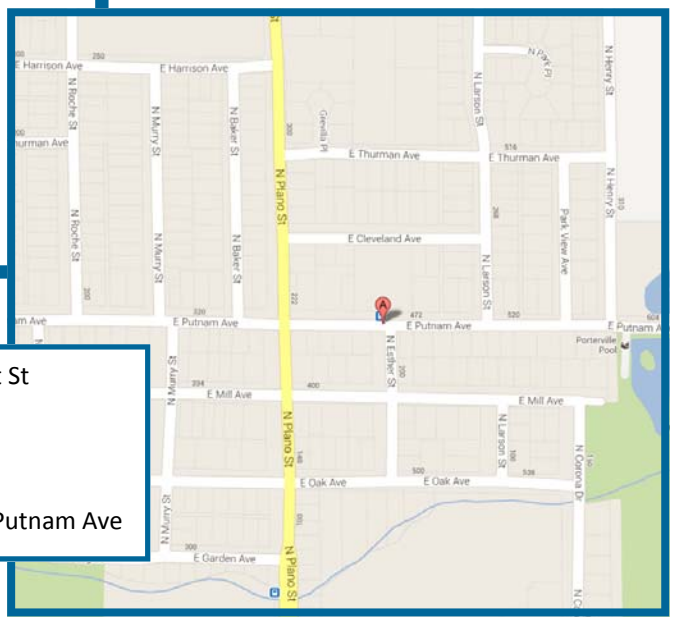
INVITATION

Representatives from the local communities in the Porterville area, providers of water and wastewater services, board members, local residents and other interested parties are invited to a second meeting to discuss local case studies and to ensure that the potential shared resources and management opportunities are realistic, achievable, and sustainable for your community.

Where: *Community Center Building*
466 E Putnum Avenue
Porterville, CA 93257

When: *Tuesday, September 3rd, 2013*

Time: *5:30pm—7:30pm*



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- Take the 1st left to stay on N Hockett St
- Take the 3rd right onto W Putnam Ave
- Your destination will be on the left at 466 E Putnam Ave

The Purpose of this meeting:

- ***Build on your feedback and interest on the proposed shared solutions.***
- ***Ensure solutions are realistic, achievable, and sustainable.***

For more information or if you have any questions please call Community Water Center at (559) 733-0219 or Self Help Enterprises at (559) 802-1681

Estudio del Agua en las Comunidades de Bajos Recursos en la Cuenca del Lago Tulare

Piloto de Soluciones de Administración/No-Infraestructura

Financiado por el Departamento de Recursos Hídricos de California y Patrocinado por el Condado de Tulare

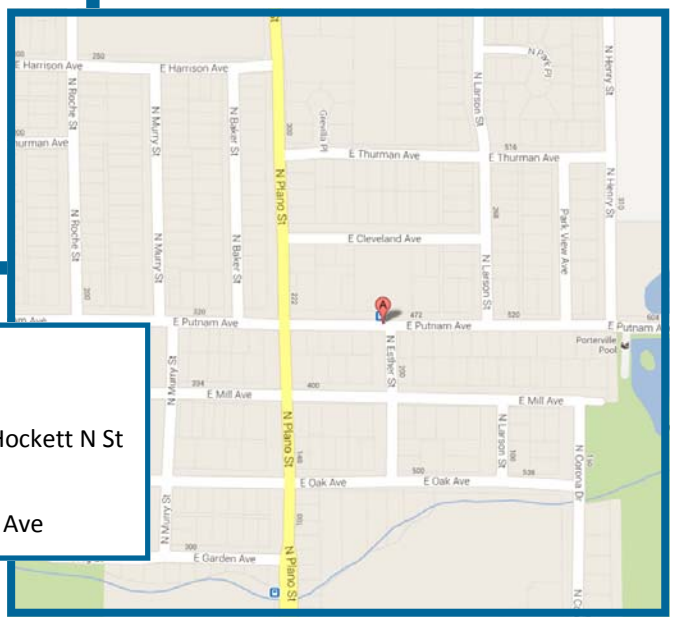
INVITACIÓN

Esta es una invitación a los representantes de las comunidades locales en el área de Porterville, a los proveedores del agua, a los miembros de las mesas del agua, a los residentes locales y otras partes interesadas para tener una segunda junta para hablar de casos de estudio locales y para asegurar que los posibles recursos compartidos y oportunidades de administración sean realistas, alcanzables y sostenibles para su comunidad.

Dónde: *Comision Honorifica Mexicana Americana*
466 E Putnum Avenue
Porterville, CA 93257

Cuando: *Martes, 3 de septiembre, 2013*

Horario: *5:30pm—7:30pm*



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- Tome la tercera derecha en W Putnam Ave
- Su destino estará a la izquierda en 466 E Putnam Ave

Propósito de esta Junta:

- ***Trabajar sobre su colaboración e interés en las soluciones compartidas propuestas.***
- ***Garantizar soluciones que sean realistas, alcanzables y sostenibles.***

Para obtener más información o si tiene alguna pregunta por favor comuníquese con el Centro Comunitario por el Agua al (559) 733-0219 o con Self Help Enterprises al (559) 802-1681

TLB DAC Study: Management and Non-Infrastructure Solutions Pilot Study

Porterville Community Review Meeting #2

Meeting Notes

September 3, 2013

Meeting notes are based on the opinions of the meeting participants. Statements and opinions made by participants have not been confirmed to be factual or correct, and they may or may not be consistent with the opinions of the water system board. These statements and opinions provide a basis for evaluation and a feel for the general sentiment of residents in the area regarding their water supply, but these statements and opinions should not be solely relied upon when analyzing the water systems needs and desires.

Break Out Session - Table 1

Types of Solutions:

1. *Agreement between Organizations*
2. *Ownership Transfer*

Considerations:

1. *Applicability of Solution*
2. *Implementation*
3. *Leadership and Capacity*

Agreement between Organizations

Facilitator, Community Water Center read the description from the "Levels of Sharing" fact sheet, and gave the example of the Cutler-Orosi WWTP JPA. Cutler and Orosi are equal members of the JPA, which provides wastewater treatment for six communities (Cutler, Orosi, Yettem, Seville, East Orosi, and Sultana).

Operator, Woodville PUD mentioned that he actually helped operate this system for a couple months. One of the main challenges he observed was that Cutler has 3 representatives on the board and Orosi has 3 representatives on the board, and there is no deciding vote. Additionally, the other four communities who are served have no representation.

When asked if he has a recommendation to fix this issue, he responded that he did not know the answer to this issue, but that Cutler and Orosi have typically have two different ideas and go against each other on the board. This leads to frustration for staff and

operators. He also noted that they need to hire a Grade 3 operator, but they currently only have a Grade 2 operator.

Despite the challenges noted, Woodville operator said it definitely saves money, when costs for repairs and replacement are split between six communities.

Facilitator, CWC responded to the concerns Woodville operator brought up with the Cutler Orosi JPA. It comes down to governance and developing the appropriate governance structure, including board representation.

Operator, Woodville PUD suggested that perhaps Cutler and Orosi could alternate every couple of years, with Cutler having 3 reps and Orosi 2 reps for two years and then Orosi getting 3 reps and Cutler 2 reps for the following two years, etc. This may however lead to other issues during times when one is in power versus the other.

Resident/Water Board Member, Ducor CSD - If someone was available to help the Ducor CSD operator, she thinks it would benefit the system. Using students as Woodville operator had mentioned in his presentation is a great idea [Woodville operator had mentioned that he hires students to help him in Woodville. This gives him a helping hand, and provides the students with valuable training.]

Ducor would like some kind of connection from Terra Bella and/or Richgrove, but they are not interested.

Resident, Porterville said that the local Board of Supervisor has suggested to the community that they wait to see the results of the Seville and Yettem Consolidation project before moving forward.

Resident/Water Board Member, Ducor CSD said Ducor Board President would need to be involved in any discussion regarding management solutions. Ducor has periodic coliform and nitrates in the water. They take care of the problem, but it is always there (ongoing issues). Del Oro runs the management/billings.

Operator, Woodville PUD commented that Richgrove's system is operated by the Earlimart operator.

Resident/Water Board Member, Ducor CSD thinks that if CWC or CRWA (or similar organization) could come into a Board meeting and show examples of successes, it may help.

Are communities aware of trainings that are available?

Operator, Woodville PUD is aware of various trainings and information mostly from personal relationships and experience. Some sources of information related to trainings are CRWA and RCAC.

Resident/Water Board Member, Ducor CSD receives mailers every month at the Board meetings, but has never attended a training program.

Operator, Woodville PUD – Operators get fliers (if part of CRWA) to notify of training opportunities. He noted that Board members are typically working people, and it is tough for them to get to training.

Resident/Water Board Member, Ducor CSD [Facilitator asked how often Ducor's operator goes to training]. He [operator] receives fliers every month, but always says he does not want or need to go.

Operator, Woodville PUD noted that there was an upcoming training session in Paso Robles. Training/education points are required to maintain operator classification.

Representative, Kings Basin IRWMP expressed the need to get DACs engaged and educate them. He suggested consolidating information related to case studies and levels of sharing, and connect people with RCAC or CRWA. He said it is difficult to get DAC representatives to come to IRWMP meetings because they are often part time and have other jobs, etc., and there is often no funding to pay for operators to go to meetings. This makes it difficult to get an understanding of their water/wastewater needs. Now that these issues have been mapped for the Kings Basin (Kings Basin DAC Study), they know what is out there and can try to help tackle the issues.

Resident/Water Board Member, Ducor CSD noted that in Ducor, if you want to go to trainings you can, but you have to pay for it yourself.

Representative, Kings Basin IRWMP said that the Kings Basin IRWMP could bring together training meetings, but how do they get a certified trainer/educator so operators can get training credits?

Operator, Woodville PUD said there is too much reliance on engineers for efforts that are not appropriate for engineers. Operators and board members often do not understand or know how, so the engineer does it. This obviously costs more money. Communities need trained people so they can use engineers for engineering work, but appropriate staff can do other tasks that do not require engineering.

<u>Ownership Transfer</u>

Facilitator, CWC read the description from the Levels of Sharing fact sheet.

Resident/Water Board Member, Ducor CSD – Connect Ducor and Terra Bella.

Operator, Woodville PUD - Distance becomes an issue with physical consolidation. Topography is also critical – are you pumping uphill? Does the additional pumping cost make sense (offset the benefit of consolidation, or still cheaper?)

Woodville operator also gave an example of a MHP within the City of Visalia that should connect to the City system, but the MHP owner does not want to. The County wants to

enforce this (require consolidation) now, due to a previous violation. The MHP is within the Cal Water sphere of influence.

Facilitator, CWC asked why the owner is against consolidation.

Operator, Woodville PUD - She (owner) does not want to lose the revenue from the water system. It would take State Health Department coming in to say they must connect.

Facilitator, CWC asked if there is any role for the residents of the MHP.

Operator, Woodville PUD – Residents do not want to connect. They are primarily older people; any dollar more is a dollar too much. A cost analysis or water quality education may help.

Cal Water was approached by the County to serve this MHP. Cal Water is willing, but the residents said “No”.

Resident/Water Board Member, Ducor CSD – Ducor use to be a private water system, but became as CSD due to difficultly in dealing with a private owner. They have issues now, but it is much better than what it once was. To become a CSD, residents got a petition and got everyone in the community to sign the petition in favor of forming a community services district. An attorney helped them through this process.

TLB DAC Study: Management and Non-Infrastructure Solutions Pilot Study

Porterville Community Review Meeting #2

Meeting Notes

September 3, 2013

Meeting notes are based on the opinions of the meeting participants. Statements and opinions made by participants have not been confirmed to be factual or correct, and they may or may not be consistent with the opinions of the water system board. These statements and opinions provide a basis for evaluation and a feel for the general sentiment of residents in the area regarding their water supply, but these statements and opinions should not be solely relied upon when analyzing the water systems needs and desires.

Break Out Session - Table 2

Types of Solutions:

1. *Informal Cooperation*
2. *Contractual Assistance*

Considerations:

1. *Applicability of Solution*
2. *Implementation*
3. *Leadership and Capacity*

Informal Cooperation

Facilitator, SHE read from the "Levels of Sharing" fact sheet and explained which two "Levels" the table would be discussing (Informal Cooperation and Contractual Assistance). We need to focus on whether these types of cooperation would work in the communities represented, and what they would need to help make it work well. Beginning with Informal Cooperation, examples were given.

Resident, Poplar CSD (also Tonyville) had questions regarding the definition of the term "contractual". Tonyville is very poor; connected to Lindsay for sewer service, but Tonyville does not have improvements like Lindsay does. Resident said that Lindsay got $5M to replace Tonyville's water lines but instead the City used the money to build a plaza downtown.

In Poplar, things have always been controlled (and most land owned) by the Walker family. Now the Walker sons have sold off most of the properties and they still run the Poplar Community Services District (PCSD). She said that the PCSD does not allow

people to attend board meetings. She cited a lack of communication between the board and residents. When residents do attend meetings (rarely), they feel that their concerns are not heard. Also, there are two dairies on each side of the town, which she believes contaminate the groundwater supply.

Representative, United Farmworkers Foundation asked Poplar resident if they (the unhappy residents) have anyone who could run for the board. **Poplar resident** stated that previous attempts have been unsuccessful.

Resident, Poplar CSD is concerned that the PCSD board will soon purchase a water filtration system with little or no competition and questionable success.

Facilitator, SHE suggested board and staff training to help with communication. **UFF representative** recommended training board members, and also getting people to run for seats on the board. **SHE** suggested visiting Woodville's board meetings to compare how differently things are done there.

Resident, Poplar CSD asked why Poplar property owners are being assessed a tax by the irrigation district. **SHE** explained the indirect benefit of recharging groundwater and bringing in surface water.

Resident, Poplar CSD said she wants to see financial statements.

Operator, Del Oro Water Company explained how Del Oro operates as a private system, and how they are a contractor to the Ducor CSD for billing purposes.

Resident, Poplar CSD returned to the topic of Poplar CSD, stating that $25,000 had been donated for park improvements at Poplar Park. Some small improvements were made with the money, but it did not seem that they would have cost $25,000. When residents asked the CSD where the money went, the Board responded that it was not the residents' business.

Resident, Poplar CSD also complained that the Poplar CSD switched trash companies and announced to the residents that they had to get a new container or face being fined. The Board makes announcements about what will be done, without seeking opinions or public comment. **Engineer, P&P** explained that there are some items that the Board can and should do in closed session.

Contractual Assistance

Operator, Del Oro Water Company described some more of the services that Del Oro offers, such as billing (see Ducor comment above); operations & maintenance; and a 24-hour emergency services hotline. It is one central call center for all 27 systems that Del Oro operates (as far north as Chico), which makes it cost-efficient. Del Oro is a private company, so the CA Public Utilities Commission (CPUC) approves/disapproves rate increases. The company has "open staff" and helps water systems do all the necessary compliance for CDPH and other agencies.

Resident, Poplar CSD (also Tonyville) said she has not attended any PCSD meetings in about a year but she is willing to go back and see how the meetings are run now. She has complaints that pesticides and manure leach into the canal that runs through the community. There is a warning put out by the local school that kids should bring bottled water to drink because of water quality issues at the school.

APPENDIX H

RURAL AND SMALL SYSTEMS GUIDEBOOK TO SUSTAINABLE UTILITY MANAGEMENT

USDA

EPA United States Environmental Protection Agency

Rural and Small Systems Guidebook to Sustainable Utility Management

2013

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INTRODUCTION

Background & Purpose

Many rural and small systems throughout the country struggle with various issues, which may include aging or inadequate infrastructure, difficulties recruiting or retaining qualified staff, growing or establishing financial reserves, and setting rates that are reflective of their operational costs.

This *Rural and Small Systems Guidebook to Sustainable Utility Management (Guidebook)* is an important part of a Memorandum of Agreement (MOA) signed by the United States Environmental Protection Agency (EPA) and the United States Department of Agriculture (USDA) in 2011 to jointly support a series of activities to help rural and small water and wastewater systems address various issues and more effectively provide sustainable services to the communities they support. As part of this MOA, EPA and USDA hosted a series of four, day-long pilot workshops, which included participants from over 60 rural and small water providers, in cooperation with local sponsors dedicated to small water and wastewater system management. The first workshop was held in Acme, Michigan, in cooperation with the Michigan Rural Water Association, the second in Santa Cruz, California, in cooperation with the Rural Community Assistance Corporation, the third in Helena, Georgia, with the Georgia Rural Water Association, and the fourth in Nashville, Tennessee, with the United South & Eastern Tribes.

The workshops were designed as a pilot project with the intent of each workshop building off of previous ones. Their goal was to provide information to help address rural and small water and wastewater system management concerns and improve rural and small system operations. At each workshop, participants were given an introduction to the management areas described in more detail in this guide, and then were asked to do a short self-assessment of their operations based on the management areas. Participants also identified management improvement opportunities at their systems based on the assessment, and shared experiences from their systems to better understand how to approach implementing the identified improvements and provide a basis for working with staff and community members to operate more effectively. Participants also provided feedback to EPA and USDA on the usefulness of the information used and exercises undertaken during the workshops. Finally, participants were introduced to a compendium of resources that could help them implement the improvements identified during the assessment.

Based on the approaches used in these workshops and feedback from the workshop participants, the *Guidebook* is designed to introduce rural and small water and wastewater systems to the key areas of effectively managed systems. It provides background information on ten key management areas, as well as instruction and assistance on how to conduct a system assessment process based on the key management areas. It also includes information on how to prioritize areas for improvement, while developing measures of progress that can help small systems with performance improvement. In addition to the *Guidebook*, a companion resource was developed for those who wish to host their own workshop. The *Workshop in a Box: Sustainable Management of*

Rural and Small Systems Workshops kit provides guidance for workshop preparations, execution, and copies of all materials necessary to run a successful workshop on utility management improvement.

The *Guidebook's* aim is to support rural and small water and wastewater systems in their common mission to become more successful and resilient service providers. Because of its dynamic nature, this resource can be used effectively in many different ways:

- By system managers, water systems operations specialists and staff as a guide for taking actions leading to short- and long-term improvement to system management and performance;
- By service providers as they work with individual systems or groups of systems through workshops or other assistance efforts;
- As a resource for system improvement workshops, like those sponsored by USDA and EPA;
- As a resource for guiding conversations about sustainability with utility board members; or
- As a resource for communicating and educating utility board members on the importance of effective management.

The information presented in the *Guidebook* draws on the results of four workshops conducted by EPA and USDA described above, as well as feedback from managers of rural and small systems that attended those workshops. Additionally, several small systems and water systems operations specialists provided input to this guide as it was developed.

The *Guidebook* begins by introducing each of the ten key management areas of effectively managed systems, followed by a self assessment to help users identify their strengths and challenges to prioritize where to focus improvement efforts. The *Guidebook* ends by discussing improving outcomes in the ten management areas by examining what constitutes high achievement in each area, and identifying resources for small systems. The overall approach and steps described in this *Guidebook* are similar to the approach in another initiative, called Effective Utility Management, which has been supported by EPA and several major water sector associations since 2008 and used successfully by a number of medium and larger utilities. The *Guidebook* takes the approach embodied in Effective Utility Management and adapts it for the needs of rural and small water and wastewater systems.

What's In It for Me:

Why Should My System Use this Guidebook?

The information in the Guidebook can help rural and small systems in several important ways by:

- *Giving you a simple and objective way to evaluate your system's strengths and areas for improvement*
- *Helping you develop an easy to follow plan for improving your operations based on your assessment*
- *Helping you better communicate internally and with others like board members and customers about your system and your challenges*
- *Help build the necessary support for improving your system over time*

THE SUSTAINABLY MANAGED UTILITY: TEN KEY MANAGEMENT AREAS

The ten key management areas of sustainably managed utilities described here can help rural and small water and wastewater system managers address many ongoing challenges and move toward sustainable management of both operations and infrastructure. In aiming to increase their long-term sustainability and effectiveness, the eventual goal for systems is high achievement, consistent with the needs and expectations of their communities, in each of the management areas.

The management areas were developed by drawing on information and experience from a wide range of rural and small water system operations specialists and managers from across the United States. The management areas were further validated through the workshops held with rural and small systems, sponsored by EPA and USDA. Each management area is described as a desirable outcome for a system to achieve, and can be considered a building block for improving system performance. Through working to improve performance in each of the ten areas, managers can help their systems to become more successful, resilient, and sustainable for the long term.

- Product Quality
- Customer Satisfaction
- Employee & Leadership Development
- Operational Optimization
- Financial Viability
- Infrastructure Stability
- Operational Resiliency
- Community Sustainability & Economic Development
- Water Resource Adequacy
- Stakeholder Understanding & Support

The management areas are not presented in a specific order, but together they make up the framework for a complete and well-rounded management approach. By making improvements in any of the areas, at a pace consistent with its most pressing challenges, a system will be able to deliver increasingly efficient, higher quality services. The graphic below depicts the interconnectedness of the management areas, while also showing that no one area is weighted more heavily than another – all areas are equal in the context of the *Guidebook.*

Descriptions of the management areas are found in the following pages, including the characteristics of successful outcomes for each area.

PRODUCT QUALITY: The system is in compliance with permit requirements and other regulatory or reliability requirements. It meets its community's expectations for the potable water or treated effluent and process residuals that it produces. The system reliably meets customer, public health, and ecological needs.

CUSTOMER SATISFACTION: The system is informed about what its customers expect in terms of service, water quality, and rates. It provides reliable, responsive, and affordable services, and requests and receives timely customer feedback to maintain responsiveness to customer needs and emergencies. Customers are satisfied with the services that the system provides.

EMPLOYEE & LEADERSHIP DEVELOPMENT: The system recruits and retains a workforce that is competent, motivated, and safe-working. Opportunities exist for employee skill development and career enhancement, and training programs are in place, or are available, to retain and improve their technical and other knowledge. Job descriptions and performance expectations are clearly established (in writing), and a code of conduct is in place and accepted by all employees.

OPERATIONAL OPTIMIZATION: The system ensures ongoing, timely, cost-effective, reliable, and sustainable performance in all aspects of its operations. The key operational aspects of the system (e.g., pressure,

flow, quality) are documented and monitored. It minimizes resource use, loss, and impacts from day-to-day operations. It has assessed its current energy use and water loss and performed related audits.

FINANCIAL VIABILITY: The system establishes and maintains an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues. The rates that it charges are adequate to pay its bills, put some funds away for both future capital expenditures and unanticipated issues, and maintain, repair, and replace its equipment and infrastructure as needed. The system discusses rate requirements with its customers, decision making authorities, and other key stakeholders.

INFRASTRUCTURE STABILITY: The system understands the condition and costs associated with its critical infrastructure assets. It has inventoried its system components, conditions, and costs, and has a plan in place to repair and replace these components. It maintains and enhances the condition of all assets over the long-term at the lowest possible life-cycle cost and acceptable level of risk.

OPERATIONAL RESILIENCY: The system ensures that its leadership and staff members work together to anticipate and avoid problems. It proactively identifies legal, financial, non-compliance, environmental, safety, security, and natural threats to the system. It has conducted a vulnerability assessment for safety, natural disasters, and other environmental threats, and has prepared an emergency response plan for these hazards.

COMMUNITY SUSTAINABILITY & ECONOMIC DEVELOPMENT: The system is active in its community and is aware of the impacts that its decisions have on current and long-term future community health and welfare. It seeks to support overall watershed, source water protection, and community economic goals, where feasible. It is aware of, and participates in, local community and economic development plans.

WATER RESOURCE ADEQUACY: The systems ensure that water availability is consistent with current and future customer needs. It understands its role in water availability, and manages its operations to provide for long-term aquifer and surface water sustainability and replenishment. It has performed a long-term water supply and demand analysis, and is able to meet the water and sanitation needs of its customers now and for the reasonable future.

STAKEHOLDER UNDERSTANDING & SUPPORT: The system actively seeks understanding and support from decision making bodies, community members, and regulatory bodies related to service levels, operating budgets, capital improvement programs, and risk management decisions. It takes appropriate steps with these stakeholders to build support for its performance goals, resources, and the value of the services that it provides, performing active outreach and education to understand concerns and promote the value of clean, safe water and the services the utility provides, consistent with available resources.

SYSTEM IMPROVEMENT PRIORITIES: SELF ASSESSMENT

A useful first step in identifying where a system should start making improvements in the ten management areas is completing a candid and comprehensive self assessment. The self assessment included in this guide is designed to help rural and small systems identify their strengths and challenges to prioritize where efforts and resources should be focused. It can be completed by a number of different individuals within a utility (e.g., managers, staff), or as a team exercise amongst management, staff, and external stakeholders such as board members or customers (if appropriate). If used as a team exercise, it is recommended that each participant complete the assessment on his/her own, followed by a group discussion about the similarities and differences in results. Regardless of how the utility uses the assessment, the goal for all systems should be high achievement, consistent with the needs and expectations of their communities, in each of the management areas.

The self assessment has three main steps:

1) Rate achievement for each management area;
2) Rank the importance of each management area; and
3) Plot results to identify critical areas for improvement.

Once completed, the self-assessment exercise can help the systems to develop a plan for improving its outcomes in the management areas.

The Self Assessment Worksheet

STEP 1 – RATING ACHIEVEMENT AREAS

Assess your system by rating your current level of achievement for each management area. Consider how effectively your current management efforts support each of the areas, and note that each management area has several dimensions (represented by the bullet points listed for each). Your rating should reflect the dimension with the lowest level of achievement. For example, if you felt that your achievement in one dimension of a management area was low, but your achievement in another dimension of that area was high, your overall rating for the area would be low. An example of the rating exercise can be found on the following page.

Scale from low achievement to high achievement:

- Select **Low** if your system has no workable practices in place for addressing this area – very low capacity and performance.
- Select **Medium** if your system has some workable practices in place with moderate achievement, but could improve – some capacity in place.
- Select **High** if your system has effective, standardized, and accepted practices in place. It either usually or consistently achieves goals – capacity is high and in need of very little or no further development.

YOUR TURN: Proceed to Table A in Appendix I and fill out the column labeled "Step 1" for each management area before moving to Step 2.

STEP 2 - RANKING PRIORITY AREAS

Rank the importance of each management area to your system. Base this ranking on your goals and the specific needs of your community. Your ranking may be influenced by current or expected challenges (e.g., if your community is experiencing elevated population growth rates, Water Resource Adequacy may be ranked as a high priority area to address). Again, note that each management area has multiple dimensions (represented by the bullet points listed) – your ranking should represent the highest priority of all of the points listed, and should be ranked independently of the achievement level (i.e., an area can remain, and therefore be ranked, as a high priority even if the utility is already undertaking needed improvement efforts). An example of the rating exercise can be found on the following page.

Scale from low priority to high priority, keeping in mind the following:

- Current or expected challenges
- Customer or stakeholder impact (reliability, quality, timeliness)
- Consequences of not improving (non-compliance, increased cost, lost credibility, impacts to health and safety)
- Urgency (near or long term needs)
- Community priorities

YOUR TURN: Proceed to Table A in Appendix I and fill out the column labeled "Step 2" for each management area before moving to Step 3.

TABLE A: EXAMPLE

Key Management Area	Management Area Description	Step 1: Rate Achievement (Low – High)	Step 2: Rank Priority (Low – High)
1. Water Resource Adequacy **(e.g., water quantity)**	• My system is able to meet the water or sanitation needs of its customers now and for the reasonable future. • My system or community has performed a long-term water supply and demand analysis. (Applies to drinking water systems only.) • My system understands its relationship to local water availability. (Drinking water utilities should focus on utilization rates relative to any local water stress conditions, wastewater utilities should focus on return flows.)	Low	High
2. Product Quality **(e.g., clean & safe water)**	• My system is in compliance with permit requirements and other regulatory or reliability requirements. • My system meets local community expectations for the potable water and/or treated effluent and process residuals that it produces.	Medium	High
3. Customer Satisfaction	• Customers are satisfied with the services the system provides. • My system has procedures in place to receive and respond to customer feedback in a timely fashion.	High	Medium
4. Community Sustainability & Economic Development	• My system is aware of and participating in local and regional community and economic development planning activities. • My system's goals also help to support overall watershed and source water protection, and community economic goals.	High	Low
5. Employee & Leadership Development	• Training programs are in place to retain and improve institutional knowledge. • Opportunities exist for employee skills development and career enhancement. • Job descriptions, performance expectations, and codes of conduct are established.	Low	Medium
6. Financial Viability	• The rates that my system charges are adequate to pay our bills, put some funds away for the future, and maintain, repair, and replace our equipment and infrastructure as needed. (O&M, debt servicing, and other costs are covered). • My system discusses rate requirements with our customers, board members, and other key stakeholders.	Medium	High
7. Operational Optimization **(e.g., energy/water efficiency)**	• My system has assessed its current energy usage and performed an energy audit. • My system has maximized resource use and resource loss (e.g., water loss, treatment chemical use). • My system understands, has documented, and monitors key operational aspects of the system (e.g., pressure, flow, quality).	Medium	Medium
8. Infrastructure Stability **(e.g., asset management practice)**	• My system has inventoried its current system components, condition, and cost. • My system has a plan in place for repair and replacement of system components.	Low	Medium
9. Operational Resiliency	• My system has conducted an all hazards vulnerability assessment (safety, natural disasters, environmental risks, etc.). • My utility has prepared an all hazards emergency response plan.	Medium	Low
10. Stakeholder Understanding & Support	• My system actively engages with local decision makers, community, watershed (where relevant), and regulatory representatives to build support for its goals, resources, and the value of the services it provides. • My system performs active customer and stakeholder outreach and education to understand concerns and promote the value of clean and safe water.	Low	Low

STEP 3 - PLOT RESULTS

To compare your results for each management area, you will plot each pair (rating, ranking) in Table B of Appendix I. For each management area, identify your high/medium/low rating in the green Step 1 box, and find the corresponding row in the table. Then, for the same management area, identify your high/medium/low ranking in the blue Step 2 box, and find the corresponding column in the table. The box where the row and column intersect is where you should place that management area (note abbreviations below for use in the plotting exercise). The example below shows how the plotting exercise in Step 3 should be completed. The ranking and rating for each management area should be paired and placed into the corresponding box in the grid, based on the low/medium/high determinations given in Steps 1 and 2.

WA	Water Resource Adequacy	FV	Financial Viability
PQ	Product Quality	OO	Operational Optimization
CS	Customer Satisfaction	IS	Infrastructure Stability
CE	Community Sustainability & Economic Development	OR	Operational Resiliency
ED	Employee & Leadership Development	SS	Stakeholder Understanding & Support

TABLE B: EXAMPLE

Key Management Area	Management Area Description	Step 1: Rate Achievement (Low – High)	Step 2: Rank Priority (Low – High)
1. Water Resource Adequacy (e.g., water quantity)	• My system is able to meet the water or sanitation needs of its customers now and for the reasonable future. • My utility or community has performed a long-term water supply and demand analysis. (Applies to drinking water systems only) • My system understands its relationship to local water availability. (Drinking water utilities should focus on utilization rates relative to any local water stress conditions, wastewater utilities should focus on return flows)	Low	High
2. Product Quality (e.g., clean & safe water)	• My system is in compliance with permit requirements and other regulatory or reliability requirements. • My utility meets local community expectations for the potable water and/or treated effluent and process residual that it produces.	Medium	High
3. Customer Satisfaction	• Customers are satisfied with the services my system provides. • My system has procedures in place to receive and respond to customer feedback in a timely fashion.	High	Medium

Rating (Achievement)	Low	Medium	High
High		CS	
Medium			PQ
Low			WA
	Ranking (Priority)		

YOUR TURN: Complete the plotting exercise in Step 3 in Table B of Appendix I before moving to Step 4.

STEP 4 - ANALYZE RESULTS:

Examining the results of the plotting exercise in Step 3 can help identify management areas on which to focus improvement efforts. Generally speaking, management areas that fall into the **red box** are both **very important and need improvement,** meaning that they should be seen as a top priority for improvement. Management areas that land in the **yellow boxes** should be next on the list for improvement efforts, and those that fall into the **white boxes** are important to consider for long-term improvement efforts, but likely do not need to be prioritized for immediate action. The eventual goal for all utilities should be high achievement in each of the management areas.

QUESTIONS TO CONSIDER:

Where is my system strong?

Where is there the most room for improvement?

What should my areas of focus be?

Why are these areas priorities?

A good way to identify and prioritize the actions is to create a utility management improvement plan, which should be incorporated, as appropriate, into the utility's annual budget and coordinated with its capital improvement plans. The improvement plan should be tied directly to the analysis of the self-assessment results described above.

The results of the self assessment and an improvement plan can act as building blocks for long-range planning. Preparing a long-range plan involves taking a long-term view of each of the system's goals and establishing a clear vision and mission. Improvement goals and plans from the utility management improvement plan for each priority management area should be included in a utility's long-range plan in a logical sequence, in addition to plans for maintaining high achievement in the areas of current strong performance. Even if the utility does not have a long-range plan, it is important to develop the improvement plan based on the self-assessment. Utilities are encouraged to repeat the assessment as changes to its system operations or infrastructure are made.

Types of Plans:

System Management Improvement Plan: A plan that addresses specific areas of utility management that need improvement. This type of plan should be designed around the assessment of the management areas presented in this *Guidebook.*

Capital Improvement Plan: A mid-term plan (typically over a period of four to ten years) that identifies capital projects and equipment purchases. It provides a planning schedule and identifies options for financing each item.

Long-Range Plan: A plan that addresses future outcomes to help meet goals over a long period of time (typically over a period of twenty years or more) by evaluating an organization and the environment in which it operates.

IMPROVING OUTCOMES

To create a successful systems management improvement plan, it is important to have at least a basic understanding of the following items:

- What it means to accomplish "high achievement" in each area;
- The changes a system will need to make to reach this level;
- The challenges that may arise for each management area; and
- How to track performance and progress.

This section of the *Guidebook* is designed to help systems develop a strategy for addressing each of these components of becoming a more sustainable and resilient system.

QUESTIONS TO CONSIDER FOR EACH MANAGEMENT AREA:

What will constitute 'high achievement' in this area?

What factors have led to performance gaps in this area?

What changes will my utility need to make to improve performance?

Who will need to be involved for changes to take place?

How will my utility track performance progress?

What will be the biggest challenges to performance improvement?

Are there external resources that can support the improvement of performance in this management area?

How to Succeed in Each Management Area: High Achievement and Common Challenges

Once a system has decided to improve its performance in one or more of the key management areas, the next step is to develop and implement a plan. To create a plan, it is important to have an idea of what challenges may arise, and what practices can be adopted to address each area. Found on the following pages are overviews of challenges and effective practices for five management areas that were discussed in-depth at the small system workshops that served as background for the *Guidebook*. Also included are examples of ways in which systems can measure their performance in each management area.

EMPLOYEE & LEADERSHIP DEVELOPMENT

> **Try This:**
>
> Develop relationships with neighboring systems to share training resources.

Challenges specific to **Employee & Leadership Development** include:

- Employee motivation and opportunities for development can be hampered by a lack of resources.
- Not having access to training opportunities can prevent personal and professional development.
- Not having written job responsibilities can lead to uncertainty about management expectations and a lack of recognition for the work that is done.
- Time constraints on employees.

Examples of actions taken by high performing utilities in **Employee & Leadership Development** include:

- Have programs in place to retain and improve institutional knowledge, such as a "living document" with best practices for different areas of utility operations that is updated regularly (e.g., have a "best practices" document that includes sections for each area of operation, and every six months ask an operator from each area to review the content and make updates as necessary).
- Ensure that staff members are cross-trained (i.e., more than one staff member can do a specific job).
- Allow employees to work non-traditional schedules (e.g., a modified overtime schedule) to allow for on-the-job-training (e.g., job shadowing of other employees as a part of cross-training).
- Identify and schedule key training events that staff members are required to attend. Whenever possible, make training events short and focused, and build them into the regular work day.
- Establish and clearly communicate staff performance requirements (e.g., create a table of capabilities for successful performance in the different positions and review with staff annually).
- Create an outreach plan to attract qualified staff (e.g., with local schools or veteran's associations).
- Create incentive programs to retain staff, encourage training, or encourage staff to take on additional duties (e.g., monthly or quarterly recognition/awards for staff that have gone above and beyond their regular duties or competition between staff members for accruing the most training hours in a set period of time).
- Develop training module templates for how to conduct trainings on different topics. Include presenter notes and materials for participants.
- Check in with staff regularly to identify new training needs.
- Create partnerships with the system's insurance agency or state water organization to benefit from free or reduced rate training programs that they may offer.
- Help train, or otherwise assist, staff from neighboring utilities.

Measures that you might consider for tracking accomplishments in Employee & Leadership Development:

- **Employee turnover rate:** $\frac{Number\ of\ employee\ departures\ per\ year}{Number\ of\ total\ positions\ per\ year}$
- **Employee job satisfaction rate:** $\frac{Number\ of\ employees\ satisfied\ with\ their\ jobs\ per\ year}{Total\ number\ of\ employees\ per\ year}$
- **Annual training hours per employee**

FINANCIAL VIABILITY

> **Try This:**
>
> Undertake a rate study to determine if current rates are adequate to meet both current and future needs.

Challenges specific to **Financial Viability** include:

- It is uncomfortable and politically challenging to discontinue service to neighbors, acquaintances, elderly customers, or fixed income customers who have not paid their bills.
- It is difficult to communicate to elected officials and consumers about how much it costs to produce drinking water and process wastewater, making it a challenge to get rate increases approved.
- Customers feel that flat rate billing practices are unfair (low volume users paying the same as high volume users).
- Many times, board members were elected by running on the platform of no rate increases.

Examples of actions taken by high performing utilities in **Financial Viability** include:

- Discuss rate requirements and related system repair requirements with its customers, board members, and other key stakeholders so that there is a better understanding within the community of why rate decisions and changes are made. (Consider using a respected member of the community to facilitate this discussion).
- Have a study on rate requirements conducted by an independent consultant (e.g., National Rural Water Association, Rural Community Assistance Partnership) to back up discussions about rate requirements.
- Establish predictable rates, consistent with community expectations and acceptability.
- Have financial accounting policies and procedures in place.
- Have ordinances in place for automatic rate increases tied to cost of living increases.
- Set aside funds for reserves (i.e., have a "rainy day" fund).
- Increase equity in billing practices by using meters whenever possible.
- Conduct quarterly budget reviews.
- Identify priorities for system improvements to aid in allocation of available funds.
- Improve practices for reducing the number of outstanding bills (e.g., limit the carry-forward balance to a fixed amount or increase service connection fees or service deposits to discourage customers who move frequently or avoid paying their bills).
- Create incentives for early bill payment (e.g., a 5% discount for bills paid early, or a good customer discount such as a discount on the seventh month's bill after six months of paying on time).
- Communicate financial viability information to stakeholders to keep them informed about rates.

Measures that you might consider for tracking accomplishments in Financial Viability:

- **Revenue to expenditures ratio:** $\frac{Total\ annual\ revenue}{Total\ annual\ expenditures}$
- **Debt ratio:** $\frac{Total\ liabilities}{Total\ assets}$
- **Number of late or unpaid bills per billing period**
- **Number of annual shutoffs**

INFRASTRUCTURE STABILITY

Challenges related to **Infrastructure Stability** include:

- Planning for repair and maintenance of infrastructure is hampered by a limited knowledge of the condition of existing infrastructure components.
- Many systems are trapped in a reactive repair and maintenance mode leaving little or no time for undertaking the proactive work needed to establish an asset management program.

Try This:

Create an inventory of your assets over time by setting up a template for logging assets. Log assets at the time that regular maintenance is performed.

Examples of actions taken by high performing utilities in **Infrastructure Stability** include:

- Create a complete and organized inventory of its current system components, condition, location, age, life expectancy, and cost.
- Conduct inflow and infiltration (I&I) and water loss analyses to determine the revenue and cost implications of deteriorating pipe conditions.
- As major collection system replacements are needed, consider sewer (sanitary and stormwater) separation to improve treatment performance and preserve treatment capacity.
- Track the status of all system components to be better aware of where weaknesses exist and when maintenance may be required (e.g., plotting valves, hydrants, and main breaks on a map).
- Coordinate asset repair, rehabilitation, and replacement with other community projects and repairs (e.g., road maintenance) to minimize disruptions and other negative consequences. Communicate these repairs in advance with customers in case of service disruptions.
- Track the frequency and cause of repeat collection, distribution, and maintenance problems.
- Establish a capital improvement plan that identifies capital projects and equipment purchases, as well as the resources needed to fund them.
- Have an understanding of system operating parameters (e.g., pressure).
- Organize all system documentation in a manner that it can be easily accessed by multiple staff members in the case of a break-down or other event.
- Focus on small annual projects and system upgrades rather than major undertakings.

Measures that you might consider for tracking accomplishments in Infrastructure Stability:

- **Inventory completeness rate:** $\frac{Total\ number\ of\ critical\ assets\ inventoried}{Total\ number\ of\ critical\ assets\ owned\ and\ operated}$
- **Condition assessment rate:**

$$\frac{Number\ of\ assets\ with\ condition\ assessed\ and\ put\ into\ condition\ categories}{Total\ number\ of\ assets}$$

OPERATIONAL RESILIENCY

Challenges related to **Operational Resiliency** include:

- A lack of system documentation.
- Insufficient time to conduct training and exercises on the emergency response plan.
- Employee and board member turnover makes it difficult to maintain familiarity with emergency response procedures and materials.

> **Try This:**
>
> Use an annual board meeting as an opportunity to distribute and review key emergency documents.

Examples of actions taken by high performing utilities in **Operational Resiliency** include:

- Conduct an all hazards vulnerability assessment.
- Prepare an all hazards emergency response plan, including all associated documents (e.g., shut off checklists, notices, and contact information), and conduct training and exercises on the plan. In this plan, make sure to indicate who is responsible for each activity.
- Distribute all emergency documents to board members and other essential personnel, including local emergency responders.
- Participate in your state's Wastewater Agency Response Network (WARN) program to share resources with neighboring utilities during an emergency through mutual aid and assistance.
- Develop relationships with contractors to ensure the types of equipment and services needed during emergencies are available in a timely fashion.
- Have safety policies in place to protect employees against work-related injuries.
- Identify and establish risk communication roles and responsibilities.
- Coordinate emergency response plans with local response partners, including emergency management agencies, police, fire, and critical independent sectors (e.g., hospitals and power companies).
- Identify a state certified laboratory that can help with emergency water testing during an incident.
- Plan for recovery by identifying funding resources that may be available to restore and strengthen the resiliency of your system.
- Identify opportunities to mitigate and adapt to climate change.

Measures that you might consider for tracking accomplishments in Operational Resiliency:

- **Annual number of work-related injuries**
- **Annual number of emergency response trainings or exercises held**
- **Period of time (hours or days) that minimum daily demand can be met with the primary water source unavailable**

STAKEHOLDER UNDERSTANDING & SUPPORT

Challenges related to **Stakeholder Understanding & Support** include:

- Customers and stakeholders display a lack of interest in gaining a better understanding of utility needs.
- Customer resistance to paying water bills or supporting rate increases.

Try This:

Host an open house or annual barbeque at your facility for stakeholders and community members. Offer tours of the facility to citizens and local media as a part of this event.

Examples of actions taken by high performing utilities in **Stakeholder Understanding and Support** include:

- Perform active customer and stakeholder outreach and education (e.g., hold meetings with stakeholders at the facility to convey a basic understanding and knowledge of utility operations).
- Utilize engagement and outreach activities as opportunities to also better understand community and customer needs and interests related to utility operations.
- Promote the value of clean and safe water (e.g., utilize pre-prepared National Rural Water Association education materials associated with its Quality on Tap program).
- Actively engage with local decision makers, watershed, and regulatory representatives through newsletters, regular meetings, and surveys.
- Have a capital improvement plan or other document to share with stakeholders that summarizes utility priorities. Make this information easily available.
- Establish active level of service goals to set performance measures for the utility and share with customers.
- Use space in bills to provide important information to customers.
- Share positive information on your utility with local media sources as a way of establishing a positive working relationship.

Measures that you might consider for tracking accomplishments in Stakeholder Understanding & Support:

- **Annual number of stakeholder outreach activities conducted**
- **Amount of annual positive media coverage (number of media stories per year)**
- **Rate of responsiveness to stakeholder suggestions/complaints:**

$$\frac{\textit{Number of stakeholder suggestions or complaints responded to}}{\textit{Total number of stakholder suggestions or complaints}}$$

Developing and Implementing a System Management Improvement Plan

CREATING A PLAN

Having gained a more complete understanding of strengths and challenges based on the self-assessment and an idea of what actions can strengthen performance in the management areas, a system will be better equipped to develop an effective utility management improvement plan. It is often useful for a "champion" to be assigned to be in charge of overseeing the development of an improvement plan (or parts of the plan), but various staff members and managers should be involved in its creation, if possible. In drafting a plan, the utility should create specific tasks and tactics for addressing its targeted improvement areas, and identify management adjustments necessary to make the desired changes.

Upon completion of the self assessment exercise, the system will choose priority improvement areas based on the results, choosing areas in the red and yellow boxes of the plotting exercise first. The utility management improvement plan should be **simple, specific, realistic, and complete.** For each improvement action, the following components should be included in the plan:

- An easy-to-understand, but still thorough, **description** of what actions will be taken;
- Identification of **who will be responsible** for taking the action;
- Known **resources** already on-hand or needed to successfully complete the actions (financial, informational, or other);
- Identification of key **challenges** that will need to be addressed;
- A **timeline** with key milestones for the actions in the plan, and a date by when the plan will be completed (or acknowledgement if it is ongoing); and
- A **review loop** to periodically assess progress in implementing the plan and adapting the plan to changing conditions (e.g., implementing a new billing system, measuring the efficiency of the system as implemented, and refining the system based on the information from the performance measures).

The utility can create its own improvement plan format based on its unique needs and circumstances, or use the System Management Improvement Plan Worksheet that is provided in Appendix II.

The System Management Improvement Plan Worksheet

Instructions:

1. *List your top three priority management areas – these should be drawn from the self assessment activity.*
2. *List the improvement actions that you will undertake to address the priority management areas – you should have at least one action for each priority management area (actions may address multiple management areas).*
3. *Fill out the details in the table below for each improvement action separately (i.e., one table per action).*

EXAMPLE SYSTEM MANAGEMENT IMPROVEMENT PLAN WORKSHEET

Priority Management Areas:

1. Water Resource Adequacy
2. Product Quality
3. Financial Viability

Improvement Action:	Improve practices for reducing the number of outstanding bills
Description: ✓ Action ✓ Management Area(s) addressed ✓ Objective(s)	✓ Limit the carry-forward balance to a fixed amount and increase service deposits to discourage customers who move frequently or avoid paying their bills. ✓ Financial Viability ✓ Reduce the amount of money lost to unpaid bills
Timeline: ✓ Start date ✓ Milestones ✓ Target completion date	✓ June 2013: Start –Draft new carry-forward balance allowance and new service deposit requirements for new customers ✓ July 2013: Propose and approve new balance and deposit requirements at board meeting August 2013: Notify customers of new requirements ✓ September 2013: Completion – Implement new balance and deposit requirements
Responsible Party (or Parties):	✓ Bill Smith ✓ Jane Anderson
Relevant Resources (on-hand or needed):	✓ Example ordinance text created by other utilities to support the desired policy change
Challenges to Address:	✓ Public pressure on board members to reject rate increases
Review Process: ✓ Performance indicators or measures ✓ Status reports and updates frequency/cycle	✓ Milestone dates met ✓ Weekly progress checks with utility director relative to identified milestones
Other Notes:	✓ Conduct calls with each board member to explain the need for the policy change and answer their questions

YOUR TURN: Complete the Improvement Plan Worksheet in Appendix II.

MEASURING PROGRESS

As a part of the review loop built into an action plan, the system must determine how to track progress toward achievement of performance goals. For rural and small systems, it is most feasible to measure internal performance, rather than trying to gather external data needed for more complex evaluations. Some measurements to consider are included in the "How to Succeed in Each Area" section of the *Guidebook*, beginning on page 11, but it is important to remember that performance measures should be tailored to the specific needs and goals of each system.

Some points to keep in mind when selecting performance measures are included below:

- Select the **right number, level, and type of measures** for the utility's capabilities and capacity. (As a general rule, having a short list of measures is probably best)
- Measuring performance will require some level of **resource commitment**. (Resources can include money, time, and personnel)
- Develop **clear and consistent definitions** for each measure. (How will it be tracked and reported?)
- Set **reasonable targets** based on criteria such as performance and improvement in previous years, or customer expectations. (How quickly does the community expect projects to be completed?)
- Develop a process for **evaluating and responding to the results** of measuring progress. (Now that the utility knows how it is doing, how will it use this information to continue to improve its performance?)
- Select measures that support the system's **short-term and long-term goals**. (How do these measurements fit into the "big picture" of the utility?)
- Periodically report on progress to the board and other key stakeholders in the community.
- **Recognize and celebrate** progress along the way! (Every little bit counts)

ASSESSING ACCOMPLISHMENTS AND MAKING IMPROVEMENTS

Having created a system for measuring progress toward meeting improvement goals, a system will need to complete the third step in the review loop: assessing accomplishments (or pitfalls) and making adjustments as needed. Setting aside time on a quarterly, biannual, or annual basis to discuss the progress that has been made towards key management goals is one of the simplest, but most important, actions that a system can take. By addressing the key questions and modifying the improvement plan on a regular basis, a system will keep the goals, and itself, up-to-date on current issues and on the path to being a more resilient, sustainable system.

QUESTIONS TO CONSIDER:

What is working? Why?

What is not working? Why?

Have internal or external conditions for my utility changed?

How can my plan be adjusted accordingly?

APPENDICES

Appendix I: Self Assessment Worksheet

Appendix II: System Improvement Plan Worksheet

Appendix III: Resources for Rural and Small Systems

APPENDIX I: SELF ASSESSMENT WORKSHEET

STEP 1 – RATING ACHIEVEMENT AREAS

Assess your system by rating your current level of achievement for each management area. Consider how effectively your current management efforts support each of the areas, and note that each management area has several dimensions (represented by the bullet points listed for each). Your rating should reflect the dimension with the lowest level of achievement.

Scale from low achievement to high achievement:

- Select **Low** if your system has no workable practices in place for addressing this area – very low capacity and performance.
- Select **Medium** if your system has some workable practices in place with moderate achievement, but could improve – some capacity in place.
- Select **High** if your system has effective, standardized, and accepted practices in place. It either usually or consistently achieves goals – capacity is high and in need of very little or no further development.

STEP 2 - RANKING PRIORITY AREAS

Rank the importance of each management area to your system. Base this ranking on your goals and the specific needs of your community. Your ranking may be influenced by current or expected challenges (e.g., if your community is experiencing elevated population growth rates, Water Resource Adequacy may be ranked as a high priority area to address). Again, note that each management area has multiple dimensions (represented by the bullet points listed) – your ranking should represent the highest priority of all of the points listed, and should be ranked independently of the achievement level (i.e., an area can remain, and therefore be ranked, as a high priority even if the utility is already undertaking needed improvement efforts).

Scale from low priority to high priority, keeping in mind the following:

- Current or expected challenges
- Customer or stakeholder impact (reliability, quality, timeliness)
- Consequences of not improving (non-compliance, increased cost, lost credibility, impacts to health and safety)
- Urgency (near or long term needs)
- Community priorities

TABLE A

Key Management Area	Management Area Description	Step 1: Rate Achievement (Low – High)	Step 2: Rank Priority (Low – High)
1. Water Resource Adequacy **(e.g., water quantity)**	• My system is able to meet the water or sanitation needs of its customers now and for the reasonable future. • My utility or community has performed a long-term water supply and demand analysis. (Applies to drinking water systems only.) • My system understands its relationship to local water availability. (Drinking water utilities should focus on utilization rates relative to any local water stress conditions, wastewater utilities should focus on return flows.)		
2. Product Quality **(e.g., clean & safe water)**	• My system is in compliance with permit requirements and other regulatory or reliability requirements. • My utility meets local community expectations for the potable water and/or treated effluent and process residuals that it produces.		
3. Customer Satisfaction	• Customers are satisfied with the services the system provides. • My system has procedures in place to receive and respond to customer feedback in a timely fashion.		
4. Community Sustainability & Economic Development	• My utility is aware of and participating in local and regional community and economic development planning activities. • My utility's goals also help to support overall watershed and source water protection, and community economic goals.		
5. Employee & Leadership Development	• Training programs are in place to retain and improve institutional knowledge. • Opportunities exist for employee skills development and career enhancement. • Job descriptions, performance expectations, and codes of conduct are established.		
6. Financial Viability	• The rates that my utility charges are adequate to pay our bills, put some funds away for the future, and maintain, repair, and replace our equipment and infrastructure as needed. (O&M, debt servicing, and other costs are covered.) • My utility discusses rate requirements with our customers, board members, and other key stakeholders.		
7. Operational Optimization **(e.g., energy/water efficiency)**	• My utility has assessed its current energy usage and performed an energy audit. • My utility has maximized resource use and resource loss (e.g., water loss, treatment chemical use). • My utility understands, has documented, and monitors key operational aspects of the system (e.g., pressure, flow, quality).		
8. Infrastructure Stability **(e.g., asset management)**	• My utility has inventoried its current system components, condition, and cost. • My system has a plan in place for repair and replacement of system components.		
9. Operational Resiliency	• My utility has conducted an all hazards vulnerability assessment (safety, natural disasters, environmental risks, etc.). • My utility has prepared an all hazards emergency response plan.		
10. Stakeholder Understanding & Support	• My system actively engages with local decision makers, community, watershed (where relevant), and regulatory representatives to build support for its goals, resources, and the value of the services it provides. • My utility performs active customer and stakeholder outreach and education to understand concerns and promote the value of clean and safe water.		

STEP 3 - PLOT RESULTS

To compare your results for each management area, you will plot each pair (rating, ranking) in the grid below. For each management area, identify your high/medium/low rating in the green Step 1 box, and find the corresponding row in the table. Then, for the same management area, identify your high/medium/low ranking in the blue Step 2 box, and find the corresponding column in the table. The box where the row and column intersect is where you should place that management area (note the abbreviations below for use in the self assessment plot).

WA	Water Resource Adequacy	FV	Financial Viability
PQ	Product Quality	OO	Operational Optimization
CS	Customer Satisfaction	IS	Infrastructure Stability
CE	Community Sustainability & Economic Development	OR	Operational Resiliency
ED	Employee & Leadership Development	SS	Stakeholder Understanding & Support

TABLE B

Rating (Achievement)				
	High			
	Medium			
	Low			
		Low	**Medium**	**High**
		Ranking (Priority)		

STEP 4 - ANALYZE RESULTS

Examining the results of the plotting exercise in Step 3 can help identify management areas on which to focus improvement efforts. Management areas that fall into the **red box** are both very important and under-developed, meaning that they should be seen as a top priority for improvement. Management areas that land in the **yellow boxes** should be next on the list for improvement efforts, and those that fall into the **white boxes** are important to consider for long-term improvement efforts, but likely do not need to be prioritized for immediate action. The eventual goal for all systems should be high achievement in each of the management areas.

QUESTIONS TO CONSIDER:

Where is my utility strong?

Where is there the most room for improvement?

What should my areas of focus be?

Why are these areas priorities?

APPENDIX II: SYSTEM MANAGEMENT IMPROVEMENT PLAN WORKSHEET

Instructions:

- ✓ *List your top three priority management areas – these should be drawn from the self assessment activity.*
- ✓ *List the improvement actions that you will undertake to address the priority management areas – you should have at least one action for each priority management area (actions may address multiple management areas).*
- ✓ *Fill out the details in the table below for each improvement action separately (i.e., one table per action).*

Priority Management Areas:

1.
2.
3.

Improvement Action:
Description: ✓ Action ✓ Management Area(s) addressed ✓ Objective(s)
Timeline: ✓ Start date ✓ Milestones ✓ Target completion date
Responsible Party (or Parties):
Relevant Resources (on-hand or needed):
Challenges to Address:
Review Process: ✓ Performance indicators or measures ✓ Status reports and updates frequency/cycle
Other Notes:

APPENDIX III: RESOURCES FOR RURAL AND SMALL SYSTEMS

As a companion resource to this *Guidebook*, this list of resources offers additional information and guidance specific to small systems on the ten key management areas. Resources are identified in the table by the key management areas that they address (abbreviations in the table are identified in the key below). The majority of the resources listed are available free of charge.

WA	**Water Resource Adequacy**	**FV**	**Financial Viability**
PQ	**Product Quality**	**OO**	**Operational Optimization**
CS	**Customer Satisfaction**	**IS**	**Infrastructure Stability**
CE	**Community Sustainability & Economic Development**	**OR**	**Operational Resiliency**
ED	**Employee & Leadership Development**	**SS**	**Stakeholder Understanding & Support**

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
A Drop of Knowledge The Non-operator's Guide to Drinking Water Systems http://www.rcap.org/sites/default/files/rcap-files/publications/RCAP-Non-operator%27s%20Guide%20to%20DRINKING%20WATER%20Systems.pdf *Explains in simple, everyday language the technical aspects of drinking water utilities from source to tap. Helpful as an orientation and background guide for new small utility board members and small community decision makers.*										✓
ArcGIS for Water Utilities http://resources.arcgis.com/content/water-utilities *An industry specific configuration of ArcGIS designed to meet common needs of water, wastewater and stormwater utilities and is delivered as module of ArcGIS for Local Government. ArcGIS for Water Utilities is a free download that you can deploy on top of either the entire ArcGIS System or the individual components of the ArcGIS System that your organization licenses.*								✓		
ArcGIS for Water Utilities – Infrastructure Operations Dashboard Template http://www.arcgis.com/home/item.html?id=00109211bfba4a89a82b512a78f3b9f5 *Provides a high-level view into the health and operations of public infrastructure. Also provides relevant base maps and operational layers from several sources, and provides a series of information pop-ups and reports so concise map-centric content can be visualized and used to support the day to day operations of a water utility or public works agency.*							✓			

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
ARRA Registering and Reporting Guide for Water/Wastewater Systems with Loans/Grants from the U.S. Department of Agriculture-Rural Utilities Service **http://www.rcap.org/sites/default/files/rcap-files/publications/RCAP%20ARRA%20Registering%20and%20Reporting%20Guide.pdf** *Walks communities that received loans of American Recovery and Reinvestment Act (ARRA) funds through USDA Rural Utilities Service (RUS) (for water and wastewater projects) through the special reporting processes that must be followed for ARRA funds.*						✓				
Arsenic and Radionuclides: Small Water System Treatment Experience **http://watercenter.montana.edu/training/arads/default.htm** *Consists of four 10-minute video presentations and auxiliary resource files to help small-water-system personnel understand the requirements and challenges of treating their source water for arsenic or radionuclides from the perspective of their peers who operate treatment facilities.*		✓								
Assessing The Impact Of Current And Future TMDL Designations On Small Wastewater Systems **http://www.nrwa.org/benefits/whitepapers/2010_Update/kramer%20TMDL%20impact%20assessment%20final.doc.pdf** *The impact of a TMDL on a given water body can result in much more stringent permit limits for a wastewater treatment plant discharging to that water body. A significant financial impact can befall a community if the community's current wastewater treatment plant is unable to meet the new limits and a new plant or substantial upgrades are required. This paper is an attempt to quantify the impacts of the TMDL program on small communities.*		✓								
Asset Management: A Handbook for Small Water Systems **http://epa.gov/safewater/smallsystems/pdfs/guide_smallsystems_asset_mgmnt.pdf** *Presents basic concepts of asset management and provides the tools to develop an asset management plan. It is designed for owners and operators of small community water systems (CWSs). CWSs include all systems (both publicly and privately owned) with at least 25 year-round residential customers or 15 year-round service connections.*						✓	✓	✓		
Asset Management Guide for Wastewater Utilities Including Total Electronic Asset Management System (TEAMS) Software **http://www.mcet.org/am/am%20toolkit.html** *Modules on the principles of asset management, as well as Train the Trainer materials to multiply this information.*							✓	✓		
AWWA Water Audit Software **http://www.awwa.org/resources-tools/water-knowledge/water-loss-control.aspx** *Free software to compile a preliminary audit.*										

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
The Basics of Financial Management for Small-community Utilities http://www.rcap.org/finmgmtguide *A basic guide that is ideal for a board member of a drinking water or wastewater utility who needs to understand the financial aspects of a utility's operations.*					✓	✓				
The Big Guide for Small Systems: A Resource for Board Members http://www.rcap.org/boardguide *A comprehensive desk reference that is ideal as an orientation and background for new members on a utility's board of directors. Designed for members of the board of a drinking water and/or wastewater system in a small community. In various parts of the guide, sample documents are provided that utilities can take and adapt for use in their own situations.*			✓		✓					✓
Board Member Training http://msucares.com/water/waterboard/waterindex.html *Trains board members in the areas of laws and regulations, duties and responsibilities, ethics, operation and maintenance, management and finance, rate setting, and public relations and customer service.*										✓
Capital Improvement Plan (CIP) Tool for Water and Wastewater Utilities http://www.efc.unc.edu/tools.htm#CIPTool *CIP tool with example data and tools to create easy-to-understand predictions on: financial reserves, rate increases, and capital investment.*								✓		
Care and Conserve Sewer Line Repairs http://www.atlantawatershed.org/bureaus/waste/Sewer_Care%20&%20Conserve%20Web.pdf *Sample program for low income assistance.*						✓				
Check Up Program for Small Systems http://epa.gov/safewater/cupss/ *Provides a simple, comprehensive approach based on EPA's highly successful Simple Tools for Effective Performance (STEP) Guide series. Use CUPSS to help you develop: a record of your assets, a schedule of required tasks, an understanding of your financial situation, and a tailored asset management plan.*						✓	✓	✓		
Circuit Rider Program http://www.nrwa.org/state%20associations/map.aspx *Provides technical assistance for the operations of rural water systems. Rural Utilities Service through contracting, has assisted rural water systems with day-to-day operational, financial, and management problems. The assistance may be requested by officials of rural water systems or RUS. The program compliments the loan supervision responsibilities for RUS. The National Rural Water Association has entered into a contract with RUS to provide this service. National Rural Water Association - State Affiliates do the work in their states.*					✓	✓		✓	✓	
Control and Mitigation of Drinking Water Losses in Distribution Systems http://water.epa.gov/type/drink/pws/smallsystems/upload/Water_Loss_Control_508_FINALDEc.pdf	✓	✓		✓			✓	✓	✓	

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
Information on establishing water loss control programs.										
Drinking Water Security for Small Systems Serving 3,300 or Fewer Persons **http://water.epa.gov/infrastructure/watersecurity/upload/2005_12_12_smallsystems_very_small_systems_guide.pdf** *Presents basic information and steps you can take to improve security and emergency preparedness at your water system.*									✓	
EFC Financial Dashboard **http://efc.boisestate.edu/efc/Tools/Dashboard/tabid/154/Default.aspx** *Allows users to use CUPSS data for strategic purposes (login).*						✓	✓	✓		
eLearning – Leadership & Management Courses **http://apps.awwa.org/ebusmain/Elearning/Courses.aspx?Category=ELMGMTLEADERSHIP** *AWWA's online courses on leadership and management.*					✓					
eLearning – "Water Basics for Decision Makers" **http://www.awwa.org/Conferences/learning.cfm?ItemNumber=56775&navItemNumber=56779** *Series for new decision makers in water or wastewater utilities, or for those who regularly interact with professionals but don't clearly understand how water is distributed and treated.*										✓
Energy Audit Webcast **http://www.rcap.org/energyauditswebinar** *The Association of State Drinking Water Administrators (ASDWA) and RCAP partnered to host an energy audit webinar for state drinking water program staff. The webinar covers a "how-to" plan for conducting energy audits for small water utilities and outlined a national training effort to bring an energy audit approach to all RCAP offices including undertaking a pilot initiative involving selected small water systems.*							✓			
ENERGY STAR for Wastewater Plants and Drinking Water Systems and Portfolio Manager Tool **http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager** *An interactive energy management tool that allows you to track and assess energy and water consumption across your entire portfolio of buildings in a secure online environment.*							✓			
Energy Use Assessment Tool for Water and Wastewater Systems (includes User Guide, Tool and Example) **http://water.epa.gov/infrastructure/sustain/energy_use.cfm** *An Excel-based tool to help small and medium sized water and wastewater utilities assess their current energy usage and help identify possible ways to use energy more efficiently.*				✓			✓	✓		
Financial Management Courses						✓				

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
http://www.newwa.org/NetCode/courseDescList.aspx *Search under course category "Management."*										
Financial Planning: A Guide for Water and Wastewater Systems http://www.nmenv.state.nm.us/dwb/Documents/Public%20Info/RCAC%20Financial%20guide_final_6.pdf *Guidebook that walks a utility through the annual budgeting process, the rate setting process, and creating a 6-year financial plan.*						✓				
Formulate Great Rates: The Guide to Conducting a Rate Study for a Water System http://www.rcap.org/rateguide *A guide to developing a fair and equitable rate structure in a small drinking water or wastewater system.*		✓	✓			✓				
Getting in Step: A Guide for Conducting Watershed Outreach Campaigns http://water.epa.gov/type/watersheds/outreach/upload/gettinginstepedition3.pdf http://water.epa.gov/type/watersheds/outreach/index.cfm *Provides some of the tools needed to develop and implement an effective watershed outreach plan. For a watershed practitioner trained in the sciences, this manual will help you address public perceptions, promote management activities, and inform or motivate stakeholders.*										✓
Getting Your Project to Flow Smoothly: A Guide to Developing Water and Wastewater Infrastructure http://www.rcap.org/sites/default/files/rcap-files/publications/RCAP%20Getting%20Your%20Project%20to%20Flow%20Smoothly.PDF *A comprehensive guide on all the steps a project owner (governing body of a utility) should go through in planning, designing and constructing infrastructure.*	✓			✓		✓	✓	✓		✓
The Homeland Security Exercise and Evaluation Program (HSEEP) Toolkit https://hseep.dhs.gov/pages/1001_Toolk.aspx *The HSEEP Toolkit is an interactive, on-line system for exercise scheduling, design, development, conduct, evaluation and improvement planning. The HSEEP Toolkit is not a system, but rather a collection of systems and tools.*									✓	
Local Safe Disposal Programs: Ex. Safe Medicine Disposal for Maine http://www.safemeddisposal.com/ *The Safe Medicine Disposal for ME program provides Maine's residents with a safe disposal option for unused and unwanted medicine. Free medicine mail-back envelopes are available at participating sites.*										✓
National Cost Estimate for Cross Connection Control in Small Water Systems http://www.nrwa.org/benefits/whitepapers/risks/risks03/risk03/risk03.pdf *A national regulation for cross connection control will impact the 49,497 Community Water Systems (CWS) and 19,668 Non transient and Noncommunity Water Systems (NTNCWS) in the U.S. that serve 10,000 or fewer persons (USEPA 2003). This report presents a methodology to estimate the national cost for a cross connection control program for these water systems.*		✓						✓	✓	

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
National Rural Water Association Job Network **http://www.nrwa.org/benefits/jobtarget.aspx** *Helps to connect the most skilled professionals in the fields of drinking water, wastewater, source water protection, utility management & engineering to potential employers.*										
National Rural Water Association Technical Training and Assistance Program **http://www.nrwa.org/state%20associations/map.aspx** *Click on your state for contact information to obtain services under the Technical Assistance and Training Program. National Rural Water Association provides training and on-site technical assistance to waste water systems in the contiguous 48 states, Alaska, Puerto Rico, and Hawaii. The training is provided to help reduce exposure to waste related health and safety hazards and enhance the sustainability of wastewater systems in rural and small communities.*		✓					✓			
National Rural Water Association Website **www.nrwa.org** *Website of the National Rural Water Association, the largest water and waste water utility membership association.*										
Only Tap Water Delivers Campaign **http://www.awwa.org/Government/Content.cfm?ItemNumber=3846&navItemNumber=3847** *A public outreach campaign that is available to AWWA utility members free of charge. The materials are available in a CD toolkit, and can be adapted to meet local needs.*										✓
Pipe Repair Checklist **http://www.awwa.org/Resources/SmallSystem.cfm?ItemNumber=3640&navItemNumber=32930** *AWWA small systems pipe repair checklist.*							✓			
Preventive Maintenance Card File for Small Public Water Systems Using Ground Water **http://www.epa.gov/ogwdw/smallsystems/pdfs/booket_smallsystems_preventmaint.pdf** *Schedules for maintenance tasks and checklists and logs for easily recording your findings.*							✓			
Protecting Your Community's Assets: A Guide for Small Wastewater Systems **http://www.nesc.wvu.edu/subpages/WW_manage_plan.cfm** *Helps utility managers, operators, and local officials improve security and plan for emergency situations affecting wastewater treatment systems.*		✓						✓	✓	
Public Communications Toolkit **http://www.awwa.org/Government/Content.cfm?ItemNumber=3851&navItemNumber=3852** *Website with and online toolkit of various resources for water professionals related to public communication.*										✓

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
Public Education and Outreach on Stormwater Impacts http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=min_measure&min_measure_id=1 *EPA's website for local officials and communities to conduct education and outreach about stormwater, what it is, who contributes to it, and best practices related to stormwater.*										✓
Quality On Tap! Publication http://www.nrwa.org/benefits/QOT.aspx *A nationwide, grassroots public relations and awareness campaign designed especially for the drinking water industry. Quality On Tap is the first practical "hands-on" guide to better public relations for small water utilities. It contains the tools small water systems need to do the most important job of all - spreading the truth to the public of the quality of work they do and the quality water they produce.*										✓
Record Keeping Rules: A Quick Reference Guide http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_records_08-25-06.pdf *A rule-by-rule summary of requirements for keeping monitoring, public notice, and other records, as well as helpful tips on record maintenance and security.*		✓					✓			
Recruiting and Training Veterans Brochure: For Careers in the Water Sector http://www.workforwater.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=2147483686 *The Department of Veterans Affairs and Department of Labor administer programs to assist Veterans in their transition to civilian careers and oversee funding to pay for education and job training. The Environmental Protection Agency, American Water Works Association and Water Environment Federation are working with these agencies to promote water sector careers nationally.*					✓					
Restructuring and Consolidation of Small Drinking Water Systems http://www.epa.gov/safewater/smallsystems/pdfs/compendeum_smallsystems_restruct.pdf *Contains information on restructuring and consolidation authorities for public drinking water systems. It provides an individual summary for each state by listing available statutes, regulations, or policies that encourage or require consolidation or restructuring of drinking water systems.*		✓	✓	✓		✓	✓	✓	✓	
Revolving Loan Fund Program http://www.nrwa.org/benefits/revolvingloan.aspx *The NRWA Revolving Loan Fund was established under a grant from USDA/RUS to provide financing to eligible utilities for pre-development costs associated with proposed water and wastewater projects. RLF funds can also be used with existing water/wastewater systems and the short term costs incurred for replacement equipment, small scale extension of services or other small capital projects that are not a part of your regular operations and maintenance.*						✓				

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
Rural Community Assistance Partnership Website **www.rcap.org** *Aims to provide technical assistance and training services to rural communities develop and sustain critical infrastructure and promote economic opportunity.*										
Rural Water Supply and Sewer Systems: Background Information **http://www.nationalaglawcenter.org/assets/crs/98-64.pdf** *CRS report for congress.*										
Saving Water and Energy in Small Water System **http://watercenter.montana.edu/training/savingwater/default.htm** *A training program that consists of four 45-minute presentations and associated resource files. The presentations are meant for use in classroom or workshop settings. The four modules address the following topics: water conservation, energy management, alternative energy, and water accounting (audit and leak detection).*	✓			✓			✓			
Security and Emergency Management System (SEMS) **http://semstechnologies.com/RAMCAP.asp** *Software to assist small water systems in completing a vulnerability self-assessment.*								✓	✓	
Security and Emergency Response Planning Toolbox for Small Water and Wastewater Systems **http://www.rcap.org/toolbox** *Consists of five core modules, appendices, and introductory text that relate security and emergency preparedness to best practices of system operation and management.*								✓	✓	
Setting Small Drinking Water Rates for a Sustainable Future **http://www.epa.gov/owm/waterinfrastructure/pdfs/final_ratesetting_guide.pdf** *A step-by-step rate setting guide for small utilities for assessing annual costs, revenue needs, and reserve requirements and setting appropriate rates.*						✓				✓
Simultaneous Compliance Tool **http://www.simultaneouscompliancetool.org/SCToolSmall/jsp/modules/welcome/welcome.jsp** *Assists in making appropriate choices to comply with various water quality goals emanating from water quality regulations.*		✓								
Small Drinking Water Systems Handbook A Guide to "Packaged" Filtration and Disinfection Technologies with Remote Monitoring and Control Tools **http://www.epa.gov/nrmrl/pubs/600r03041/600r03041.pdf** *Provides information to the small system operator, manager, and/or owner about different approaches to providing safe and affordable drinking water to your community.*		✓						✓		
Small System Electric Power Use - Opportunities For Savings **www.nrwa.org/benefits/whitepapers/risks/2008papers/regnier%20SMALL%20SYSTEM%20ELECTRIC%20POWER%20USE%206.doc** *Describes the typical rate structures utilized by U.S. Electric utilities and how these rate structures can most effectively be utilized by water utilities, especially small*							✓			

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
ones, to minimize their electric costs and thereby save money and energy.										
Small System Guide to Safe Drinking Water Act Regulations **http://epa.gov/safewater/smallsystems/pdfs/guide_smallsystems_sdwa.pdf** *A resource for understanding current and anticipated drinking water regulations with which utilities need to comply.*		✓								
Small Utilities Rates and Finances Spreadsheet (and Instructions) **http://www.awwa.org/Resources/SmallSystem.cfm?ItemNumber=3640&navItemNumber=32930** *A self-guided, interactive financial spreadsheet application designed to assist small systems.*						✓				
Small Utility Board Training **http://watercenter.montana.edu/training/board_training/default.htm** *A training course designed to help water board members and elected officials understand the basic principles of public water system regulation, operation, planning, budgeting and communication.*					✓					✓
Small Water Systems: A Vital Component of WARN **http://www.epa.gov/mutualaid** or **www.nationalwarn.org** *Describes how small systems can participate in WARN to share resources with neighboring utilities during an emergency.*									✓	
Strategic Planning: A Handbook for Small Water Systems, Simple Tools for Environmental Protection (STEP) Guide **http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_stratplan.pdf** *Presents basic concepts on strategic planning for small water systems and explains how this process can help improve your technical, managerial, and financial capabilities. It provides background information on the process of strategic planning and a series of worksheets to use in developing a written strategic plan.*				✓		✓	✓	✓	✓	
Stakeholder Analysis **http://www.sswm.info/category/planning-process-tools/exploring#StakeholderAnalysis** *A portion of the Sustainable Sanitation and Water Management online Toolbox.*										✓
Survival Guide: Public Communications for Water Professionals **www.wef.org/WorkArea/DownloadAsset.aspx?id=7120** *A guidebook to help utilities learn how to communicate effectively with their community and customers. It provides an overview focused on the learning the basics of public communication and different public communication scenarios.*										✓
Sustainable Infrastructure for Small System Public Services: A Planning and Resource Guide **http://www.rcap.org/sites/default/files/rcap-files/publications/RCAP%20Sustainable%20Infrastructure%20Guide.PDF**				✓		✓	✓	✓	✓	

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
Provides worksheets, examples, case studies and resources on water conservation, energy efficiency and renewable energy resources for small utilities.										
System Development Charge Calculator **http://efc.boisestate.edu/Tools/SDCCalculator/tabid/87/Default.aspx** *System development charges (SDCs), otherwise known as impact fees, are difficult for most small systems to determine. This calculator predicts the unit cost of adding new development to an existing water system. The calculator gives users the option of two methodologies when determining the cost impact of new connections.*						✓		✓		
Tabletop Exercise Tool for Water Systems **http://yosemite.epa.gov/ow/SReg.nsf/description/TTX_Tool** *A PC-based tool that contains materials to assist those interested in planning and facilitating tabletop exercises that focus on Water Sector-related issues. The updated TTX Tool contains fifteen scenarios that address an all-hazards approach to emergency preparedness and response, including natural hazards and manmade incidents, as well as introduces users to the potential impacts of climate change.*									✓	
Taking Stock of Your Water System: A Simple Asset Inventory for Very Small Drinking Water Systems **http://www.epa.gov/ogwdw/smallsystems/pdfs/final_asset_inventory_for_small_systems.pdf** *Helps very small water systems, such as manufactured home communities and homeowners' associations, assess their condition by preparing a simple asset inventory.*						✓		✓		
Talking to Your Decision Makers: A Best Practices Guide **http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsys_decision_makers_08-25-06.pdf** *Tips for working successfully with decision makers in your community to meet your water system's needs.*										✓
Talking to Your Customers About Chronic Contaminants in Drinking Water: A Best Practices Guide **http://water.epa.gov/drink/contaminants/upload/2007_11_02_contaminants_fs_containminants_chronic_talkingtocustomers.pdf** *Guidelines for effectively communicating with customers about the dangers of chronic contaminants and how water systems protect against contamination.*			✓	✓						✓
Technitrain Program **http://www.rcap.org/technitrain** *Helps to protect public health and foster economic development in targeted rural communities throughout the United States and its territories by providing onsite, community-specific technical assistance and training that: identifies and evaluates solutions to water and waste disposal problems, assists communities in preparing funding applications for their water and waste projects, and improves operation*				✓	✓	✓				

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
and maintenance of existing water and waste-disposal facilities. It is part of RCAP's overall mission of working with small, rural communities to increase local capacity.										
USDA Rural Utilities Service Borrower's Guide: A How-to for Water and Wastewater Loans from USDA Rural Development **http://www.rcap.org/pubs/usdaborrguide** *Summarizes the managerial and financial requirements for communities that are receiving U.S. Department of Agriculture Rural Utilities Services (RUS) loan funds for their water or wastewater utility.*						✓				
Utility Budgeting Worksheets **http://efc.boisestate.edu/Tools/UtilityBudgetingwithUtilityBudgetingWorksheet/tabid/86/Default.aspx** *Worksheets that assist operators, managers and board members in determining whether key criteria of financial viability are being met by a utility system and help determine if that system will have the financial capabilities necessary for the sustained provision of services for its customers.*						✓				
Valve Record Template **http://www.awwa.org/Resources/SmallSystem.cfm?ItemNumber=3640&navItemNumber=32930** *Valve master record template spreadsheet.*							✓			
Vulnerability Self-Assessment Tool (VSAT) **http://water.epa.gov/infrastructure/watersecurity/techtools/vsat.cfm** *A risk assessment software tool that assists drinking water and wastewater utilities in assessing security threats and natural hazards and updating utility Emergency Response Plans; appropriate for any water system size or type.*								✓	✓	
Water and Environment Programs - Engineering Success Stories **http://www.usda.gov/rus/water/ees/englib/success.htm** *The information in these stories is provided by Rural Development, Water and Environmental Programs as a service to all those persons looking for alternative, innovative, or just plain successful approaches to rural water and waste problems.*							✓			
Water System Operator Roles and Responsibilities: A Best Practices Guide **http://water.epa.gov/type/drink/pws/smallsystems/upload/2008_07_01_smallsystems_guide_smallsystems_operator_08-25-06.pdf** *Helps to understand: (1) Roles and responsibilities in delivering safe drinking water to system's customers; (2) Additional responsibilities, which can vary depending on size, characteristics, managerial structure, and regulatory requirements.*		✓			✓				✓	
WaterPro Conference Website **http://www.waterproconference.org/** *WaterPro is the annual conference of the National Rural Water Association. It takes place in even numbered calendar years. WaterPro is designed to bring together water and wastewater utility systems - large and small, municipal and rural - for*										

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
sessions in operations, management, boardsmanship and governance.										
WaterSense **http://www.epa.gov/WaterSense/** *EPA's program to promote water efficiency and conservation. Provides information for consumers to identify products and practices that save water. Utilities and local governments can partner with EPA to receive access to a network of partners working on water conservation and promoting the value of water and using it wisely.*			✓							✓
Water System Owner Roles and Responsibilities: A Best Practices Guide **http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_owner_08-25-06.pdf** *A summary of system owners' key duties in protecting public health, overseeing system operation, and working with local officials.*					✓					✓
Water Quality in Small Community Distribution Systems **http://www.epa.gov/nrmrl/pubs/600r08039/600r08039.pdf** *Assists the operators and managers of small- and medium-sized public water systems. Provides a comprehensive picture of the impact of the water distribution system network on distributed water quality.*		✓						✓	✓	
Water University **http://www.wateruniversity.org/** *The intent of Water University and the National Rural Water Association is to provide the highest level of instruction, education, training and discussion to the largest audience possible. To meet that goal, most of the webinar/lecture portions of these courses are presented at low or no cost. In addition to providing information to the entire water industry, Water University provides a method for licensed water professionals to earn their necessary Continuing Education Units through our advanced on-line educated modules. Access to these modules requires enrollment fees, but these fees are still very affordable compared to in-person training.*										
Water & Wastewater Pricing **http://water.epa.gov/infrastructure/sustain/Water-and-Wastewater-Pricing-Introduction.cfm** *EPA Website on water and wastewater pricing, explaining the concept of pricing and water conservation, as well as supplying tools, guides, and reports on pricing.*						✓				
White Paper on Climate Change Impacts on Small and Rural Public Water Systems **http://www.nrwa.org/benefits/whitepapers/2010_Update/Climate%20white%20paper%20June%2022_2010%20-%20Final.pdf** *Presents a critical evaluation of the possible impacts of climate change on small and rural water systems and management/operational techniques or actions that may be affected as a result of these potential impacts.*	✓			✓					✓	

	WA	PQ	CS	CE	ED	FV	OO	IS	OR	SS
Work for Water Website **http://www.workforwater.org/** *Materials to encourage careers in the water sector, where opportunities to protect and preserve water resources are virtually unlimited and the chance to make a difference is unmatched.*					✓					

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Rural and Small Systems Guidebook to Sustainable Utility Management

October 2013

APPENDIX I

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH TECHNICAL, MANAGERIAL, FINANCIAL REPORT REQUIREMENTS

California Department of Public Health
Drinking Water Program

TMF Assessment Form

ASSESSMENT TYPE: ☐ **Funding Project** ☐ **New System** ☐ **Change of Ownership**

WATER SYSTEM CLASSIFICATION:
☐ **Community Water System**
☐ **Nontransient Noncommunity Water System**
☐ **Transient Noncommunity Water System**

WATER SYSTEM INFORMATION

Water System Name:
Water System Number:
Water System Physical Address:
County:
District Office or Local Primacy Agency:

PERSON COMPLETING THIS TMF ASSESSMENT

Name:	**Signature:**
Title :	**Date Submitted to CDPH:**
Phone Number:	**Email Address:**
Company Name and Address:	

MAIN WATER SYSTEM CONTACT PERSON INFORMATION

Name:	**Title:**
Phone Number:	**Email Address:**
Water System Mailing Address:	

TMF Assessment Instructions

In California the technical, managerial, and financial (TMF) assessment must be completed by public water systems that are applicants for California Department of Public Health (CDPH) funding programs, new water systems, and water system changes of ownership.

To complete this TMF assessment form refer to the guidance and explanations in the TMF Criteria document located on the CDPH web site at:

http://www.cdph.ca.gov/certlic/drinkingwater/Pages/TMFCommunityWaterSystems.aspx .

If requested system information has already been provided with the funding application submittal or been provided directly to the CDPH district office or the LPA, note the location of that information on the assessment form in the comments space. Update information as circumstances change. Required documentation may be submitted electronically on a compact disk (if submission is electronic indicate on assessment).

For each TMF element described below place the required information in the appendix and identify it by the attachment number that corresponds to the TMF element number. For example, the documentation required for element number seven, Water Rights, should be identified in the appendix as Attachment 7, Water Rights. In addition, in the comments section of each TMF element list the actual documents that are provided in the appendix. For example, under the Water Rights comments section of this TMF assessment indicate that in the appendix Attachment 7 copies of the deeds to Wells 1 and 2 and the State Water Resources Control Board surface water permit are provided.

Under each TMF element below check the boxes where applicable. If the item is not applicable (NA), indicate NA to show that these items have been considered.

TMF Elements

1. Consolidation Feasibility

[Funding Projects, New Systems, Change of Ownership - ***Mandatory***]

Each public water system applying for construction funding or a refinancing loan must perform an evaluation, including costs and feasibility, of physically consolidating with another public water system. Guidelines for when a consolidation is most feasible include, but are not limited to:

- when one of the water systems is located within another's established service area,
- when one of the water systems is within an existing General Plan's zone of influence of the other,
- Or when the water system is within five miles of another public water system.

If the water system applying for construction funding or a refinancing loan is a "small community water system" (which is defined as: a community water system that serves no more than 3,300 service connections or a yearlong population of no more than 10,000 persons) and the water system is considered "disadvantaged" (which is defined as: the entire

service of area of a community water system, or a community therein, in which the median household income is less than 80 percent of the statewide average), consolidation is *highly encouraged* and the water system may be allowed funding for a consolidation feasibility study and/or may be giving priority when seeking construction funding.

☐ List all large water systems and the number of connections that are within five miles of the system.
Record NA if there is no water system in the vicinity. ☐ NA

_____

_____

☐ Submit a consolidation assessment that includes the name of all water systems contacted, and the results of any consolidation discussions conducted with at least one system within the five mile radius. ☐ NA

Comments _____

_____

2. System Description

[Funding Projects - ***Necessary****;* New Systems and Change of Ownership - ***Mandatory***]

Provide a system map that illustrates the location of all of the components of the water system including the:

☐ Current service area boundary
☐ Sources ☐ NA
☐ Treatment facilities ☐ NA
☐ Pumping stations ☐ NA
☐ Pressure zones ☐ NA
☐ Storage tanks ☐ NA
☐ Potential contamination hazards ☐ NA
☐ Projected ten-year growth boundaries

Comments _____

_____

3. Certified Operators

[Funding Projects -***Necessary***; New Systems and Changes of Ownership- ***Mandatory***]

The regulating agency has determined that this water system needs a:
☐ Certified distribution operator, Grade _____ ☐ NA
☐ Certified treatment operator, Grade _____ ☐ NA

☐ Provide copies of current certificates with operator names and grades as documentation that the distribution and treatment operators are certified for the appropriate level that is required for the water system.

☐ For a contract certified operator, provide a copy of the contract that describes the: ☐ NA

- Level of certification that the operator will be required to maintain
- Specific duties for which the operator will be responsible
- Time to be spent serving the water system
- Procedures to follow for complaints, compliance discrepancies, and emergencies

Comments _____

_____

4. Source Capacity

[Funding Projects - ***Necessary***; New Systems and Changes of Ownership - ***Mandatory***]

At all times a water system must have the capacity to meet the system's maximum day demand and to ensure that it has suitably adequate sources of water supply to serve the needs of its constituents in the future. Develop and submit the following:

☐ Documentation which demonstrates that the water system has a sufficient water supply as described in California Code of Regulations, Section 64554.

☐ A water conservation plan to address potential drought conditions.

☐ A plan to install water meters on all connections as well as a master meter on each source in order to accurately measure water consumption. [Note that all water systems applying for CDPH funds must consider the feasibility of installing meters at each service connection that lacks a meter. Additionally, the funding requirements for the project must include conditions that the system will incorporate provisions into its operating procedures and expenses to read the meters and to charge rates based on usage.
☐ N/A – System is metered

☐ A map of the existing service area and surrounding locations that includes the location of all water sources as well as sources of potential contamination such as waste disposal sites, landfills, feedlots, underground storage tanks, out-of-service wells, and other potential contaminants.

☐ Documentation that demonstrates the water sources are protected from vandalism, tampering, contamination, or other threats.

☐ Ten year potential growth plans consistent with local land use plans and projected water demand. Describe how the system will ensure that potential water sources will meet all water quality standards.

☐ A plan to start the process to obtain additional water rights for new water sources if needed. ☐ NA

Comments _____

_____

5. Operations Plan

[Funding Projects-***Necessary***; New Systems and Changes of Ownership- ***Mandatory***]

An operations plan describes all of the activities needed to maintain the system in compliance with all standards. Operations plans need to be updated whenever changes occur. The date of the latest operations plan review was _____.

Provide an operations plan that describes the tasks that would enable another qualified operator to assume the operation of the system in an emergency. Include tasks that will be completed:

☐ Daily
☐ Weekly
☐ Monthly
☐ Yearly

Include non-routine activities relating to:

☐ Positive analytical results
☐ Complaints
☐ Emergency operational practices
☐ Record keeping
☐ Other duties

Templates for a number of sample operations plan can be found on the CDPH web site at:

http://www.cdph.ca.gov/certlic/drinkingwater/Pages/TMF.aspx

Comments _____

_____

6. Training

[Funding Projects, New Systems, and Changes of Ownership - ***Necessary***]

Submit a plan describing the training that will be provided to ensure that everyone associated with the water system has the knowledge to competently comply with existing requirements and to be informed about new compliance requirements, new technologies, and newly identified hazards. The plan needs to describe the training for the following:

☐ Certified operators: Contact hours needed to maintain operator certification at the required grade for the system and other related training.
☐ Governing board and managers: Training that covers board and management roles and responsibilities including ethics and financial management.
☐ Other staff: Pertinent training to enable all staff to competently perform activities necessary to the operation and maintenance of the system.

Comments _____

_____

7. Ownership
[Funding Projects; New Systems, and Changes of Ownership - ***Mandatory***]

Ownership must be clearly identified for all components of the water system. Check the type of water system ownership:

☐ Sole proprietorship
☐ Partnership
☐ Corporation
☐ Mutual
☐ Governmental agency
☐ Other formation type

A copy of the deed for any well locations may document both ownership and water rights. Provide the following ownership documentation as hard copies or in electronic format:

☐ Formation papers such as incorporation articles, partnership documentation, by-laws, and governing ordinances. ☐ NA

☐ Deeds and other ownership documentation of all system property including land, buildings, wells, storage tanks, treatment facilities, and other system components. ☐ NA

☐ Easements, leases, or agreements for long term use regarding land or system components that are not owned by the water system. Specify the duration of the authorization. ☐ NA

☐ Encumbrances, trust indentures, bankruptcies, decrees, legal orders, or other items that may affect the owner's control of the water system. ☐ NA

☐ If the water system is under temporary ownership such as a developer, describe the timing for the change in ownership and the contact information for the eventual owner. ☐ NA

☐ If the owner of the water system has owned or managed any other public water system within the last ten years, list these systems by name and number. ☐ NA

☐ For a sole proprietor submit a plan that describes how the system will continue to be operated in the event the owner becomes incapable of carrying out this responsibility.
☐ NA

Comments _____

_____

8. **Water Rights**
[Funding Projects; New Systems, and Changes of Ownership - ***Mandatory***]

Provide the following documentation as hard copies or electronic format:

☐ List the current and emergency water sources that will be used to operate the system including groundwater, surface water, purchased water, and any other sources.
_____

☐ Describe the long-term availability of the sources used by the water system to meet a projected 10-year water demand._____
_____

Groundwater: ☐ Yes ☐ No

- Unadjudicated Basin: Provide the following: ☐ NA

  ☐ A statement that the groundwater is extracted from a basin that is not adjudicated.

  ☐ Copies of the deeds for the parcels of each unadjudicated groundwater source used by the system.

- Adjudicated Basin: Attach the deed for the parcels of each adjudicated groundwater source that notes the adjudication or provide documentation of the Basin Water Master's terms of the adjudication as they relate to the water system's right to extract water from the adjudicated basin. ☐ NA

Surface Water: ☐ Yes ☐ No

Circle the type of water rights the water system holds for surface water from the list below:

a. Appropriative
   1) Pre-1914
   2) State Water Resources Control Board (SWRCB) Permit or License

b. Riparian

Appropriative

☐ If Pre-1914, provide a statement that water rights were established prior to 1914. ☐ NA

☐ If after 1914, provide a copy of the SWRCB water rights permit or license. Note that an application to the SWRCB does not document water rights. ☐ NA

Riparian

☐ Provide a statement that water is derived from a surface source pursuant to a riparian right. ☐ NA

Purchased Water: ☐ Yes ☐ No

☐ Provide a copy of the water service agreement for purchased water that specifies the duration of the authorization. Note that for funding projects the long term use agreements must extend for the life of the loan or a minimum of 20 years for grant funded projects. ☐ NA

Comments _____

_____

9. Organization

[Funding Projects – ***Necessary***; New Systems, and Changes of Ownership - ***Mandatory***]

In order to establish the lines of authority and communication between employees and management including the governing board, managers, certified operators, and clerical staff, provide a:

☐ Structural organizational chart for positions associated with the water system that indicates the lines of authority. Specify the frequency of board meetings where appropriate.

☐ Separate chart that lists the names and phone numbers of the specific people who fill those positions. Update this information as needed.

☐ List on the organization charts information on any contract certified operators the system may utilize. Indicate the level of certification and the number of hours for which the services of a certified operator are contracted. ☐ NA

Comments _____

_____

10. Emergency Response Plan

Water System Number _____

[Funding Projects – ***Necessary***; New Systems, and Changes of Ownership - ***Mandatory***]

A sample emergency response plan template is located on the CDPH website at:

http://www.cdph.ca.gov/certlic/drinkingwater/Documents/TMFplanningandreports/EmergencyResponsePlan_revised.doc

Ensure that the emergency response plan for the water system includes:

☐ A list of all disasters and emergencies that is likely to occur in the water system's service area. Include earthquakes, fires, and disinfection failure at minimum as well as flooding, water outages, water contamination, power outages, and other potential local emergencies.

☐ The names and contact information of water system personnel including the decision makers. Identify responsibilities, and provide a clear chain of command.

☐ An inventory of system resources used for normal operations and available for emergencies including maps and schematic diagrams, lists of emergency equipment and suppliers, emergency contract agreements, and emergency water interconnections or sources.

☐ A communication network that describes a designated location for an emergency operations center, emergency contact information for equipment suppliers, emergency phone and radio communication capabilities, coordination procedures with governmental agencies for health and safety protection, technical and financial assistance, and public notification procedures.

☐ Emergency procedures to quickly assess damage to water system facilities including logistics for emergency source activation and repairs, procedures for monitoring progress of repairs and restoration, and procedures for documenting damage and repairs.

☐ Describe steps that will be taken to resume normal operations and to submit reports to appropriate agencies.

Comments _____

_____

11. Policies

[Funding Projects; New Systems, and Changes of Ownership - ***Necessary***]

☐ A policy manual has been adopted that describes procedures pertinent to the management of the water system. At a minimum the policies described should cover:

a. Nonpayment of water charges
b. Unauthorized use of water
c. Hours worked and overtime

d. Complaint responses
e. Contract operators, if applicable
f. Governing board activities such as regulatory responsibilities, expenditure allowances, meeting notifications, resolution adoptions, and other issues as applicable

Comments _____

_____

12. Budget Projection / Capital Improvement Plan
[Funding Projects; New Systems, and Changes of Ownership - ***Mandatory***]

Use the sample 5-year budget projection/capital improvement plan (CIP) template, or an equivalent alternative, that is located on the CDPH website at http://www.cdph.ca.gov/certlic/drinkingwater/Documents/TMFplanningandreports/swsbudgetcalculator-CIPandMinRateGen.xls . This file consists of guidelines for completing this spreadsheet on the first Excel tab, the 5-year budget projection on the second tab, and the CIP on the third tab.

Submit the following:

☐ 5-Year budget projection/CIP template

☐ Documentation that reserve funds have been created for the CIP, operations and maintenance expenses, potential emergency needs, and any other reserve accounts necessary for the management of the system.

☐ Documentation of the current rate structure. ☐ NA

☐ Documentation of the average annual cost of water per connection for the last calendar year. ☐ NA

☐ Documentation that revenues cover expenses including the CIP reserve, or describe the plan to increase revenues to cover these expenditures? ☐ NA

☐ Where appropriate, include the Proposition 218 voter approval process that will be followed if a rate increase is planned. ☐ NA

☐ For investor owned systems documentation from the California Public Utilities Commission of an approved budget, CIP, and rate schedule. ☐ NA

☐ NEW SYSTEMS OR FUNDING PROJECTS ONLY: Proposed rate structure. ☐ NA

☐ NEW SYSTEMS OR FUNDING PROJECTS ONLY: Estimated average annual cost of water per connection based on the proposed new funding amount. ☐ NA

Comments _____

13. Budget Control

[Funding Projects - ***Necessary;*** New Systems, and Changes of Ownership - ***Mandatory***]

A financial policy that includes:

☐ Budget control procedures in which one person records a transaction and a manager review and approves it. Describe budget controls for:
   a. Cash receipts and disbursements
   b. Bank accounts
   c. Payroll

☐ Financial reports prepared for review by governing board such as:
   a. Customer Receivables Report
   b. Check Register Review
   c. Bank Reconciliation Report
   d. Budget Comparison Report
   e. Quarterly Comparative Balance Sheet
   f. Tax Returns

☐ Criteria and withdrawal guidelines for the maintenance of reserve accounts including:
   a. CIP Reserve
   b. Operations and Maintenance Reserve
   c. Contingency or Emergency Reserve
   d. Other Reserves

☐ Reporting procedures to appropriate levels of authority to ensure that there is no commingling of revenue sources. ☐ NA

☐ Periodic reviews of the budget status by a Certified Public Accountant or appropriately qualified financial officer of the water system to ensure continuing financial viability. Three years of the most current audited financial reports must be submitted for all CDPH funding projects. ☐ NA

Comments _____

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APPENDIX J

RECOMMENDATIONS HANDOUNT

Plan Recommendations for the Tulare Lake Basin Disadvantaged Community Water Study[1]

13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.1 Enhance Internal Awareness	
Recommendation	13.1.1.A. Ensure that the specifics regarding existing infrastructure are known. The location, size, condition, and depth of private well or septic system facilities should be known by the property owner and maintained in a database by the county [See Recommendation 13.7.1.C].
Lead Entity	The owner of a private well or septic system
Why	If a property owner has knowledge of the infrastructure that exists on his property, it will help to more effectively and efficiently address problems (e.g. well goes dry or septic system fails) when they arise, and may help to understand when a problem may be coming so it can be addressed before a failure occurs.
How	Obtain information from the well driller, pump contractor, or contractor who is installing the septic system. Confirm that the well driller or contractor has obtained appropriate permits from the county and that details of the construction are submitted to the county to maintain in their database. For existing facilities, information should be available at the county.
When	Anytime that a new well is drilled, septic system installed, or when any modifications to an existing well or septic system are made (for example, deepening a well). This information should also be requested when purchasing a property, either from the seller or the County. If the information is not available, it would be advisable to have a contractor inspect these facilities and produce the necessary information so that the buyer knows what he is purchasing.
Funding	Funding: No funding source is necessary. This is a matter of maintaining records of what is on a landowner's property.

[1] The recommendations contained herein are provided for general consideration by the various entities identified. The information contained herein is not intended to be and should not be construed as legal advice. Readers should seek the advice of an attorney when confronted with legal issues, and an attorney should perform an independent evaluation of the issues addressed in these materials.

13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.1 Enhance Internal Awareness	
Recommendation	13.1.1.B. Ensure that specifics regarding existing water or wastewater system infrastructure are known. The location, size, condition, and capacity of facilities should be known and records maintained by the community services management personnel.
Lead Entity	Water or wastewater system owner
Why	When the owner of infrastructure has information regarding the location, size, depth, materials, age, capacity, and condition of the facilities, the owner will be able to a) effectively respond to problems with the facilities, and b) know the capability of the existing infrastructure to meet existing and proposed demands. Knowledge of the existing infrastructure is critical when planning expansions or upgrades to said infrastructure. This information is also useful for LAFCos conducting Municipal Service Reviews for publicly-owned systems and mutual water companies, and should be integrated into those reports to the extent appropriate.
How	Records of existing infrastructure should be available at the office of the local service provider. If records of existing infrastructure are not readily available, the county may have information regarding infrastructure within existing rights of way. Another source of information may be the engineer of record for the respective improvements. The RWQCB and SWRCB Division of Drinking Water may also have information associated with wastewater treatment and water supply infrastructure, respectively. If no records are available, a survey of ground surface infrastructure (manhole lids, cleanouts, valves, hydrants, meters, wells) may provide limited information regarding the location of infrastructure.
When	Improvement plans are required to be approved by the local service provider prior to construction. Copies of the “as built” plans are to be maintained by the local service provider upon completion of construction. Records of repairs or modifications to the existing infrastructure are to be maintained by the local service provider.
Funding	The source of funding is the water or sewer fund of the local service provider. The source of revenues is the water or sewer charge for service.

13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.1 Enhance Internal Awareness	
Recommendation	13.1.1.C. Conduct a review of fiscal resources annually and determine the necessary levels of reserves for replacement and maintenance of all infrastructure. Determine an appropriate time frame and funding plan to achieve the necessary levels of reserves.
Lead Entity	Water or wastewater system owner
Why	The owner of the water or wastewater system has the responsibility to operate and maintain the facilities. Operation and maintenance responsibilities include payment for power, chemicals, labor, insurance, communications, maintenance equipment, regular maintenance of the facilities, response to failures or damage of the facilities, and replacement of facilities that have reached the end of their respective useful life. Reserves are necessary to be able to respond to catastrophic failures or emergencies (ie. failure of a well pump). If the fiscal resources are not sufficient to satisfy the basic demands of sustaining the facilities, adjustments to the monthly rates are necessary.
How	Public water and sewer systems are subject to annual audits of fiscal resources and procedures. In addition, the owners of water and sewer systems should define an operations budget for all required expenditures and necessary savings for replacement/repair of infrastructure. Private water and sewer systems should also define an operations budget for all required expenditures.
When	Review and adjustments to fiscal resources should be an ongoing activity. However, the owner of the facilities should define a budget annually. Typical fiscal year cycles for public systems begin on July 1 of each year. The activity of preparing the budget for the next fiscal year would typically include a review of the fiscal performance of the previous year so that appropriate adjustments may be included in the upcoming budget.
Funding	Review of fiscal resources and performance of the water or sewer system is funded through the operations funds of the owner of the facilities.

13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.1 Enhance Internal Awareness	
Recommendation	13.1.1.D. Consider adding requirement for more frequent or comprehensive and standardized assessment of TMF capacity for local water and wastewater providers, as well as updating regulatory and permit requirements for water and wastewater systems to clarify that it must meet TMF requirements to maintain permit to operate.
Lead Entity	State Agencies and Local Primacy Agencies
Why	There is a lack of comprehensive information and standardized indicators of water and wastewater providers to assess TMF capacity. Additionally, Federal and state statute enables the SWRCB Division of Drinking Water to require a demonstration of TMF capacity only (1) on formation of a new public water system; (2) on change of ownership of a public water system; or (3) when state funding is provided to a public water system through one of its three funding sources. SWRCB can recommend TMF assessments at other times and has been able to require specific TMF demonstrations through some enforcement actions, however a clearer requirement that systems must meet TMF requirements and a standardized assessment would drastically improve the ability to enforce these requirements and ensure more universal compliance. Also, note that wastewater system permitees are not required to provide a demonstration of TMF capacity under the SWRCB permits so this should be added to permits. This information would also be useful for LAFCos conducting municipal services reviews and should be integrated into that process, as available and appropriate.
How	The State Water Board should update its permitting guidelines and initiate rule making processes as appropriate to clarify these requirements and provide standardized assessments and indicators. These indicators could then be applied through the annual inspection process and reported to the regulating entity annually through the sanitary assessments. Permit requirements for individual permits could be added as they are renewed, if a general rulemaking is not feasible. Resources and enforcement could be used in tandem to bring systems into compliance. It is important that enforcement not be used to penalize a system that is in-capable of correcting the problem without providing assistance to build TMF capacity. Assistance could be in the form of training, technical assistance, and funding assistance to assess joint solutions or supporting forms of consolidation to build TMF capacity.
When	The sooner this is conducted, the easier it will be to ensure all systems meet TMF requirements and target resources and enforcement to those systems that are unable or unwilling to comply.
Funding	Funding at the State level would be needed to enact new guidance and undertake rulemaking and added time for annual assessments.

13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.2. Provide Assistance and Training	
Recommendation	13.1.2.A. Attend training programs and encourage or require other staff and board members to attend training programs.
Lead Entity	Water or wastewater system owner
Why	Training is appropriate for everyone involved in the management of a water or wastewater system, regardless of size. Especially in small or isolated communities, boards and staff may get stuck in ruts or patterns of management that persist over many years. Minimal outside intervention and a limited pool of board/staff candidates combine to create an insular environment that may be resistant to change. Training brings in new perspectives and new approaches and can revitalize institutions that lack forward motion.
How	The water or wastewater system owner or manager should convey the importance of attending trainings and what it can mean for the community. ○ Attend trainings provided by Rural Community Assistance Corporation (RCAC) in coordination with SWRCB. RCAC provides free statewide training throughout the year at locations around California under a contract with SWRCB. Local SWRCB Division of Drinking Water District Offices can request specific training topics be offered in their area, if information is available indicating an interest in that topic. The Division of Drinking Water encourages local water providers and assistance organizations to review the RCAC training topics and provide input to the local District Office on desired local training. The RCAC training program can be viewed at http://www.rcac.org/event/1114. ○ Operator training – Participate in existing local entities such as California Water Environment Association (CWEA) and California Rural Water Association (CRWA). ○ Board and leadership training – Participate in board training opportunities such as leadership training and ethics training. SWRCB (Division of Drinking Water) in coordination with Rural Community Assistance Corporation (RCAC) and Self-Help Enterprises (SHE) will be providing targeted board training for several communities in the Study Area; there is potential for this program to be expanded and continued to other communities. ○ Network with other communities, share resources and information, and provide informal training to one another. ○ Utilize web portals from state agencies and counties, as well as funding fairs, to access information on training programs, funding opportunities, and other available resources.
When	Managers, board members, and operators should attend appropriate training programs annually, at minimum.
Funding	The source of funding is the water or sewer fund of the local service provider. Technical assistance funding

	from State agencies may be available to supplement these costs in some cases (i.e. operator certification reimbursement programs) or bring specific trainings to local areas.
13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.2. Provide Assistance and Training	
Recommendation	13.1.2.B Create a single local point of contact for local service providers and private well owners to obtain information and access resources to provide guidance related to water and wastewater challenges.
Lead Entity	Counties and/or district offices of SWRCB could develop a single point of contact. Local service providers and private well and septic system owners can utilize existing resources at the county and State levels.
Why	Currently, it is difficult for individuals and small DACs to navigate existing requirements, resources, and opportunities. A single point of contact would allow communities or private well owners to obtain information and access resources to provide guidance related to water and wastewater challenges more efficiently. Additionally, a single point of contact could help coordinate more effective access for other public, private and non-profit agencies (such as LAFCo, private water companies or contractors, and assistance providers) trying to provide support to address these issues. Some counties, and the SWRCB, RWQCB, and other agency websites provide forms of an information clearinghouse that are good resources for information on many water and wastewater related programs, requirements, and resources. A point of contact at the local level would help water and wastewater service providers or private well owners navigate and identify existing resources to get information related to their system issues.
How	Designating a staff person as the primary single point of contact in each local county or each district office of SWRCB would enable local water and wastewater providers or private well owners to identify appropriate websites, resources, and other information from the County Environmental Health, SWRCB, RWQCB, or other websites to access information, answer questions, obtain necessary forms, learn about training and funding opportunities, and stay aware of new regulations. The point of contact could also have recommendations on more specific contact persons on any particular topic or program that could help provide more detailed information and assistance.
When	Ongoing
Funding	Creation of a single point of contact would likely need to be included in county or state agency staff/operating budgets. Some funding may be able to be targeted to support this through capacity building or technical assistance set asides of the SRFs. Funding for this resource could also be developed through permit fees for local water systems, domestic well owners, septic owners, and wastewater systems as part of the support services for administration of the drinking water and/or wastewater regulatory permitting programs.

13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.2. Provide Assistance and Training	
Recommendation	13.1.2.C Consider providing regular Special District Board training opportunities, including leadership and ethics training. General legal topics may be covered, but the local service provider should seek specific legal advice from its own legal counsel.
Lead Entity	Counties
Why	Boards, in particular, may develop habits over time that may or may not be compatible with special district law. Periodic training on ethics and legal issues, as well as a place to go to ask basic questions, can help boards avoid inadvertent missteps. However, special district law can be complex and difficult for communities to comprehend, and therefore specific legal advice should be provided by an attorney hired by the water or wastewater system provider.
How	Holding periodic trainings in the physical context of government buildings can remind participants of the larger system in which they function as local government representatives. Tulare County has sponsored a series of ongoing "Government 101" trainings that have been successful. They are held on a weekday evening at the County administrative building, and dinner is provided.
When	Trainings should be held one to two times per year. Weekday evenings may work best.
Funding	Local water or wastewater service providers and counties.
13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.2. Provide Assistance and Training	
Recommendation	13.1.2.D Continue to convene a DAC focused stakeholder group for the Tulare Lake Basin, and expand outreach and engagement to further enhance DAC, County, IRWM, and other local stakeholder engagement and participation. Expanded outreach and engagement efforts should educate local board members, operators, and residents on local water and wastewater challenges and priority issues, as well as resources that are available, including findings and recommendations developed through this Study and existing resources from technical assistance providers. Continuation of stakeholder meetings should occur at least quarterly to track progress on the recommendations of this Study and provide updates on new program, challenges, resources or opportunities.
Lead Entity	The stakeholders that have participated in the Tulare Lake Basin Disadvantaged Community Water Study (particularly those in the SOAC), including state agencies, counties, IRWMs, DAC representatives, and non-profit organizations.
Why	Local DAC stakeholders have found it to be valuable to come together on a regular basis to discuss local DAC issues, opportunities and programs, and reflect on recommendations through this multi-year Study

	process. The SOAC recommended that the group continue to meet quarterly to track progress on the recommendations of this Study, as well as engage more extensive DAC stakeholders through a local follow-up outreach and engagement campaign. Expanded outreach and engagement would help enable local systems to utilize tools and lessons learned through this Study, as well as other existing resources, and develop appropriate solutions. This would help ensure that this Study is more than just a report, but will actually be accessed by communities and help to develop long-term sustainable solutions to local water and wastewater challenges.
How	This would be best accomplished through continuation of the SOAC process through a coordinated effort with all the stakeholders, counties, organizations and agencies that have participated in the Tulare Lake Basin Disadvantaged Community Water Study. Some funding would be needed to 1) have a coordinating entity continue to facilitate these groups and invite representatives to participate in local stakeholder meetings, and 2) support planning and implementation of expanded outreach and engagement throughout the Basin. Participation from local disadvantaged communities, counties, non-profits and funding agencies directly in the outreach and engagement would help make these efforts more effective by lending credibility, resources, and reliability through personal connections from communities in similar situations.
When	Following completion of this Study, meet quarterly and identify a plan and funding to expand outreach and engagement to additional stakeholders in the Basin.
Funding	Counties could fund continuation of quarterly meetings of the SOAC. Additionally, the group could approach state or federal funding agencies about funding for a coordinating entity (a non-profit or local agency) to coordinate an expanded outreach, education, and engagement campaign to follow up after this Study has ended. Local non-profits could approach private and public funding sources to support these efforts.
13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.2. Provide Assistance and Training	
Recommendation	13.1.2.E Target existing technical assistance training programs to specific communities who have shown a need and interest, to focus on their needs and provide locally available and specialized training programs.
Lead Entity	State Agencies and technical assistance providers (RCAC, SHE, etc.)
Why	Local, targeted trainings are more effective because they are more accessible to rural communities, and can be tailored to meet the unique needs identified by water and wastewater system representatives. There is an additional benefit to bringing local water and wastewater system representatives together so they can network and learn from each other.
How	SWRCB (Division of Drinking Water) in coordination with Rural Community Assistance Corporation (RCAC) and Self-Help Enterprises (SHE) will be providing targeted board training for several communities in the Study Area. This initial effort can inform how a program can be expanded, improved and continued to other

	targeted groups of communities. SWRCB staff and technical assistance providers should work together to identify target communities. A local venue would be identified and invitations extended to water system representatives, including board, staff and operators.
When	Quarterly or biannually, in different locations. Follow-up trainings could be scheduled as needed, depending on response.
Funding	State Water Resources Control Board technical assistance funding through the SRF set aside, or current or future bond funding.
13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.2. Provide Assistance and Training	
Recommendation	13.1.2.F Improve the operator certification process by providing more frequent testing, and offering certification tests in more locations.
Lead Entity	SWRCB Operator Certification Programs
Why	Operator certification is challenging for people in remote areas and for those without English language skills. Training opportunities are limited, testing sites are distant, and the exams are offered only in English. Sometimes valued staff members are lost because they cannot achieve a basic distribution operator certification, despite adequate skills and long experience. Particularly for lower-level certifications, such as water distribution or treatment certification level D-1 or T-1, or wastewater operator Grade I, the need for accessibility and affordability of certification programs may outweigh other precautions. Currently, drinking water treatment and distribution system operator exams are only offered in eight locations throughout the State, including one location (Fresno) within the Tulare Lake Basin Study Area. Each distribution and treatment certification test is offered two times per year. Similarly, wastewater treatment plant operator certification exams are currently held two times per year, with only one exam location in the Tulare Lake Basin (Fresno).
How	Provide opportunities for examinations in more locations, on a more frequent basis. Consider providing exams in at least three locations throughout the Tulare Lake Basin (for example, Fresno, Visalia, and Bakersfield). Also consider remote testing that could be done online, possibly from local libraries. Consider making examinations available in Spanish or other dominant languages, at least for lower-level certifications that do not require English literacy to perform relevant duties. Note that regulatory documents are in English only, and therefore this may not be a feasible consideration.
When	Exams should be offered quarterly.
Funding	SWRCB Operator Certification Programs.

13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.2. Provide Assistance and Training	
Recommendation	13.1.2.G Consider developing operator training programs at local community colleges to address the lack of licensed water and wastewater operators.
Lead Entity	Local Community Colleges (State Center Community College District, Sequoias Community College District, Kern Community College District, West Hills College, or others)
Why	There is a lack of properly certified operators available to operate water and wastewater systems throughout the Study Area. With increasing regulations necessitating the need for more and higher grade treatment facilities, this will only become more of an issue if operator training programs do not become a higher priority. Training programs have been attempted at local community colleges, however, they have had trouble filling seats, and so these programs have not been sustainable. It may require some outreach efforts to encourage students to pursue this career path, but local job opportunities and compensation would need to support that.
How	Community college districts should discuss and evaluate the need for providing operator training programs. If such programs are developed, the community college district should outreach to youth to inform them of the benefits of these training programs and the need for water and wastewater system operators. It is recommended that an evaluation be conducted of the magnitude of operator needs and relative compensation levels for those who complete such training programs, so that the outreach efforts can be properly informed. These discussions should involve CWEA and their experience related to operator training needs.
When	Ongoing
Funding	Community college districts
13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.3. Encourage Sharing of Resources to Build TMF Capacity	
Recommendation	13.1.3.A Even outside of larger infrastructure project development processes, alternatives such as sharing common resources, forming joint governmental agencies, or other forms of consolidation should be evaluated to determine if O&M costs could be reduced or TMF capacity improved.
Lead Entity	Local water and wastewater providers and entities developing applications for improvements to disadvantaged community water and wastewater systems should examine these alternatives. Also, state and federal funding agencies should support examination of these alternatives within the scope of work of public funding agreements
Why	For some areas, a sustainable and affordable solution could be made possible through some form of

	regional or shared solution that would allow communities to share ownership and operation of water infrastructure as well as create a sizable enough funding base of rate payers to have a sufficient economy of scale for operations and maintenance. Local agencies should examine the full range of alternatives and evaluate how costs may be able to be reduced through shared solutions in order to address immediate and long-term operations and maintenance funding and TMF capacity challenges.
How	Water and wastewater providers should ask local district engineers to examine these alternatives, and should seek out contractors and engineers that have experience with this kind of analysis and have proven experience in successfully developing these kinds of solutions. A third party entity, such as a county, non-profit or other group could also develop an analysis of alternatives with a number of communities jointly. However, in all cases analysis should be transparent and community-driven, allowing the community to understand and provide input into the pros and cons and real O&M costs of alternatives.
When	It is easiest to do this as part of funding applications for feasibility studies when solutions are being developed because there are funding sources available to cover the costs of providing these types of analysis. However, similar analysis should be discussed with local district engineers outside of larger capital project development as well.
Funding	The primary source of funding is the water or sewer fund of the local service provider. The source of revenues is the water or sewer charge for service. Sources of external funding for this may include the new pre-planning entity formation set aside as part of the SDWSRF. However, all feasibility study planning funding from the state or federal funding sources should include this kind of analysis. In addition, IRWM funding could support this, as well as sustainable community planning funding grants.
13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.3. Encourage Sharing of Resources to Build TMF Capacity	
Recommendation	13.1.3.B Establish local DAC coordinator(s) for the Tulare Lake Basin to support DAC outreach, collect updated information on DAC water and wastewater needs, help link communities to funding sources, training opportunities, and technical assistance resources, and help integrate DACs into planning processes, including IRWMPs.[2] Specific responsibilities could include some or all of the following:

[2] This recommendation is intended to be consistent with recommendations related to the need for DAC coordinators and DAC representation provided in both the Kings Basin DAC Study and the Governor's Drinking Water Stakeholder Group's Report on New and Expanded Funding Sources.
Kings Basin DAC Study: http://www.krcd.org/_pdf_ukbirwma/Kings%20Basin%20DAC%20Final%20Report.pdf
Governor's Drinking Water Stakeholder Group Report:
http://www.swrcb.ca.gov/water_issues/programs/groundwater/docs/stakeholders/8132013_2_final_rep_new_expanded_funding.pdf

	○ Provide outreach, communication, and capacity development with local disadvantaged communities in unincorporated areas. ○ Collect updated information on DAC water and wastewater needs and collect new information to close data gaps (i.e., TMF capacity needs, source of water where unknown in database, water supply needs, etc.). ○ Provide technical assistance to DAC water and wastewater entities who are trying to integrate their needs within IRWM and other local and regional planning efforts. ○ Work with individual DACs to determine appropriate funding programs. ○ Provide information to DACs on available training and technical assistance providers and resources, including fundraising, grant writing, fiscal management, and project management assistance. ○ Link local DACs to experts (including NGOs and private contractors) that can effectively facilitate and support locally-developed, voluntary consolidation or other forms of shared solutions and regional planning efforts by providing expertise for studies or analysis, stakeholder facilitation, as well as legal and LAFCo process assistance, with the goal of advancing the most sustainable and affordable solutions.
Lead Entity	Existing local non-profits organizations or technical assistance providers could provide DAC coordination and outreach activities. State agencies, local counties, and IRWMs could also provide support for this position.
Why	In order to effectively and efficiently plan and implement water and wastewater solutions in the Tulare Lake Basin, where there are a large number of disadvantaged communities in unincorporated areas without safe drinking water and wastewater services, targeted assistance is needed to support coordination of DACs. Without this kind of coordination, disadvantaged communities in unincorporated areas will likely remain isolated, disjointed, and often unorganized without structural capacity and an ability to implement cost effective drinking water and wastewater solutions and effectively participate in planning or regional project development processes.
How	Given the hundreds of DACs in the TLB, ideally coordinators could be funded for each county and/or for each watershed within the TLB. Efforts to coordinate DACs locally could be organized through local DAC associations or tasks forces, although a DAC coordinator would likely be (at least initially) housed within an existing local non-profit organization. State and federal funding agencies could consider setting aside specific funding for local DAC coordinators as part of state funding program outreach and technical assistance budgets. It is noted that this would be a voluntary program for those communities interested in utilizing the services of a DAC coordinator for the potential services described above. Counties, local IRWMs and local non-profit organizations should also consider ways to provide these

	services or support these efforts. Local counties and IRWM groups could support this through official recognition of DAC coordinators within planning and project development processes, providing DAC update items within relevant meeting agendas, and deliberate coordination with staff and decision-making bodies with explicit intent to integrate DAC issues and support effective DAC outreach and engagement.
When	Ongoing
Funding	State funding could be targeted through existing technical assistance set-asides, such as the SRF, through existing funding program outreach and assistance budgets, or through new bonds or funding sources. For DACs directly represented by a coordinator, the local water or wastewater provider could provide funding to support this position. Additionally, non-profit organizations could seek private sources of funding to support these activities, at least to get processes started.
13.1 Improve Local TMF Capacity	
Priority Issue: Lack of Technical Managerial and Financial Capacity by Water and Wastewater Providers	
13.1.3. Encourage Sharing of Resources to Build TMF Capacity	
Recommendation	13.1.3.C Support the evaluation and development of a regional entity or entities to provide regional operations, management, or other services in regions that are interested in exploring such services. Efforts should begin with a small region or group of interested communities to show interest and success before considering scaling-up to any type of larger regional entity. Regional DAC operations or management services may include some or all of the following: 1) provide the organization, structure, and capacity needed to support development and funding of sustainable and affordable shared solutions, particularly for communities not currently served by centralized water and wastewater providers, 2) provide direct management and operations of existing DAC water systems when needed or requested, and 3) directly represent participating DACs in IRWM groups or other forums, when appropriate.
Lead Entity	Counties, non-profit organizations, or other regional entity (including one or more special districts). If a special district structure is used, LAFCos would need to support consolidation or creation of the new regional special district serving areas that may or may not be physically connected. This may also necessitate legislative action.
Why	Many disadvantage communities lack sufficient organization, capacity, and representation structure required to develop, implement and maintain drinking water and wastewater systems. This is particularly true of DACs without an existing centralized public water system or wastewater system, as well as systems that go into receivership, or are just not sustainable due to inadequate technical, managerial, and financial capabilities. Some DACs within smaller regions of a county have started to consider options to create different forms of unified regional entities to provide water and/or wastewater services (e.g. Northern Tulare County, Alpaugh-Allensworth area, and communities in western Fresno County). While counties and other existing water and wastewater agencies are able to support some of these functions on a case by case basis, counties and

	existing providers are often reluctant to take on additional responsibilities for troubled DAC systems. There is a need and interest in some areas for an entity or entities that can have the focused capacity to regionally or jointly operate systems when needed (e.g., receivership) and/or requested. Additionally, where regional entities are established, they can directly represent those DACs within local IRWMs and facilitate enabling more in-depth integration of DAC needs and projects within planning efforts and regional project development.
How	It is most feasible to begin with a smaller group of DACs voluntarily working together to establish a regional operating entity that can perform some of these functions to test such a model, show success, and build the framework and trust in such an entity. Additionally, rather than taking on all planning, project development, operation and representation functions at once, an entity could start by taking on one or two of these functions, such as operating existing entities as a receiver or taking on operations of zones of benefits from a county that no longer wants to directly provide that role. Areas to begin initial efforts, where DACs have already expressed interest in exploring a regional operation model, include the South Tulare County forum or the Northern Tulare County regional water system study efforts. Such an entity or organization could be housed in an existing agency or local government or non-profit organization, or be a new independent entity. LAFCos must be involved in development of these concepts and should support consideration for allowing regional entities that may or may not by geographically contiguous or physically connected.
When	Some regions are already pursuing these models and further development should be supported following the completion of this Study.
Funding	The funding to start up a new entity to provide regional operations services may take some support by state funding sources. However, the funding to maintain this type of entity and fund the operations and maintenance of the entity beyond a start-up phase would need to rely entirely on funding from local rate payers and other revenues generated by the local provider. Therefore, it is important that any start up phase include developing the ability to collect fees and a sufficient economy of scale to fully sustain these services. State funding sources to support piloting small regional entities could include the Clean Up and Abatement Account, SRF Pre-Planning and Legal Entity, and IRWM funding. Future bonds or budget allocations may be able to provide funding for these activities. Additionally, pilot project funding could be pursued from private foundation sources, USEPA, or USDA for purposes tailored to meet the criteria of those funding sources. In other parts of the country, local governments, states and the federal government have funded part or all of start-up and implementation of regional water entities.

13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.1 Reduce Costs	
Recommendation	13.2.1.A Project alternatives should be analyzed to minimize ongoing costs and secure TMF capacity. If O&M costs cannot be supported or TMF capacity challenges are not adequately addressed, other alternatives should be pursued.
Lead Entity	Any DAC considering making any improvements to their water or wastewater system.
Why	O&M costs have to be borne by the users in the community. Depending on the median household income in the community, the utility rate increase may adversely impact the users. State agencies have implemented requirements within their funding programs for full evaluation of the operation and maintenance lifecycle costs for a selected project, along with a water rate study to identify what impact the project has on the cost of water for that community. If the projected water rate is deemed to be unaffordable, they will not (and should not) fund the selected project.
How	Solutions should be analyzed to minimize ongoing costs. If O&M costs of a project cannot be supported, other alternatives should be pursued. Developing an O&M plan that includes the types of ongoing O&M costs needed, O&M servicing and parts replacement schedule, and amount needed for O&M fund reserve can help the community plan ahead to address covering O&M adequately. If O&M costs cannot be supported by the community, it may be that the system is not viable (too small, too remote, insufficient water supply or water quality, etc.) and should be discontinued.
When	Whenever a DAC is evaluating potential improvements to their water or wastewater system.
Funding	Local Funding from the water or sewer fund of the local service provider should support O&M costs. The source of revenues is the water or sewer charge for service. Funding agencies fund an analysis of alternatives conducted in a feasibility study, and/or during the project planning phase.

13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.1 Reduce Costs	
Recommendation	13.2.1.B Even outside of larger infrastructure project development processes, alternatives such as sharing common resources, forming joint governmental agencies, or other forms of consolidation should be evaluated to determine if O&M costs could be reduced or TMF capacity improved. [See Recommendation 13.1.3.A for full description]
13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.1 Reduce Costs	
Recommendation	13.2.1.C Consider providing increased funding for capital improvements for water (or wastewater) related projects when it would allow for reduced O&M costs over the long term. For example, construction of dual water systems for DACs with poor distribution systems or high non-potable water demand.
Lead Entity	State and Federal funding agencies
Why	Grant funding for DACs is currently capped at $5 million for capital costs (for Prop 84 funding). O&M costs must be paid by the system customers. There may be instances when a capital cost greater than $5 million may provide a DAC with less O&M costs compared to an improvement with a capital cost less than $5 million. For example, a dual water system would allow the DAC to treat a smaller volume of potable water resulting in lower on going O&M costs. Other funding sources such as SRF and USDA are available, which typically have loan components.
How	Consider allowing DACs to obtain grant funding for capital costs greater than $5 million if the higher capital costs solution will lower ongoing O&M costs. An evaluation to determine appropriate levels of funding and qualifications would need to be done prior to increasing current funding limits.
When	When considering new funding programs or funding program updates.
Funding	Local funds, State legislature, SWRCB

13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.1 Reduce Costs	
Recommendation	13.2.1.D Support the development and implementation of water conservation policies/measures by providing incentives and technical assistance to DACs and promoting the use of water and energy efficient equipment upgrades, such as energy-efficient or solar powered pumps.
Lead Entity	State Agencies
Why	Water systems that implement water conservation techniques and bill their customers based on water used will use less water. Less water used will mean less water needing treatment that will result in lower O&M costs. Energy efficient upgrades to pumps and other large electrical consumption equipment will lower electrical costs to the water system.
How	Provide incentives for water systems to install water meters and implement water conservation policies, and measure their effectiveness. Energy companies can provide incentives in the manner of rebates or funding for water systems to install more energy efficient equipment.
When	Now for water conservation measures. When existing pumps or electrical equipment is due for replacement for energy efficient upgrades.
Funding	Local funding, State legislature, SWRCB/RWQCB, energy companies
13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.2 Increase Revenues	
Recommendation	13.2.2.A Evaluate water and sewer rates at least every three to five years and when any major improvements are constructed, and modify as appropriate to achieve the necessary financial resources for annual operations and reserves for the next five year period. This should include development of a rate study to determine appropriate reserves and rate increases, and follow Prop 218 requirements. Typically the Prop 218 hearing will address increases for several years and, if necessary, will include increases for subsequent years at a set frequency.
Lead Entity	Local water and/or wastewater providers
Why	Many community water or wastewater systems do not bring in enough revenue to offset the system expenses. This is often due to rates that were set many years ago and rarely if ever increased. Increases in regulatory requirements, system age, changes in the economy (inflation), as well as other factors necessitate an increase in rates at least every five years, if not more frequently. Additionally, any changes to the system that impact the operation and maintenance costs, should be reflected in the rates. Delaying

	adequate cost increases means O&M costs are not addressed, needed repairs are not made, and systems are not planning to address water capacity and/or water quality issues.
How	Develop a rate study determine appropriate reserves and rate increases, and follow Proposition 218 requirements. This will likely require the services of an engineer or other technical service provider. The California League of Cities put out a Proposition 218 Implementation guide in 2007. It may be available from the League at 1400 K St., 4th Floor, Sacramento, CA 95814.
When	At minimum, every five years, and when any major improvements are constructed or other changes to the system that impact O&M costs.
Funding	Local service provider
13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.2 Increase Revenues	
Recommendation	13.2.2.B Each local service provider (water or wastewater) should develop a single rate structure (which may include different categories, such as residential, commercial, and industrial), and no exceptions should be made to that structure. A tiered rate structure should be developed with appropriate base rates and water usage rates to encourage conservation while ensuring sufficient revenue. Certain discounts (such as senior citizen discounts) may be employed, as long as they are consistently used and part of the written rate structure.
Lead Entity	The water or wastewater system owner.
Why	The rate structures for many communities have not been updated or reviewed for many years. In addition, there are many occasions that have been discovered where special undocumented rates had been established for specific properties many years ago. There have been other instances of properties receiving service with no requirement to pay for said services.
How	A review of the fiscal requirements to operate the water or wastewater system should be conducted annually by the owner. An equitable distribution of charges necessary to sustain the water or wastewater system is necessary so that all customers are treated in a consistent manner. The owner of the system may need to contract for the services of legal counsel and a rate structure consultant to determine an appropriate rate structure.
When	The basis for charging for water or wastewater service should be consistent and sufficient to meet system demands at all times.
Funding	The source of funding is the water or sewer fund of the local service provider. The source of revenues is the water or sewer charge for service.

13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.2 Increase Revenues	
Recommendation	13.2.2.C Seek funding to install or replace water meters. The replacement meters should be capable of being read remotely (if the system size or agreements with neighboring systems support it) to reduce labor costs. ○ Consider installing same meters as neighboring community(ies) so that meter reading and billing systems can be shared. ○ Develop a tiered rate structure with appropriate base rates and water usage rates to encourage conservation while ensuring sufficient revenue.
Lead Entity	Local government boards, technical assistance providers/consultants
Why	Installation of water meters is a basic and very effective method of water conservation. Metering leads to natural behavioral changes by water consumers because meters tie water use directly to household finances. Reduction in water use results is lower operating and maintenance expenses to the utility. Use of water meters also provokes the development and use of tiered rate structures, which are an excellent tool for improving overall utility finances and distributing costs over customers with different use patterns. Additionally, installing compatible meters in several locations in a given region can provide a very good opportunity for communities to enter into contractual agreements to share equipment, software, billing functions and staffing positions.
How	Consult with a technical service provider and/or engineering consultant to determine the available funding opportunities. Water meter installation could be considered as part of a larger infrastructure project, or as a separate project.
When	Immediate and ongoing
Funding	A source of funding is the water or sewer fund of the local service provider. State agencies could redefine Category H projects (as defined by the State Revolving Fund Project Ranking Criteria) to include replacement metering projects, including meter reading equipment and necessary software. DWR could fund an ongoing Water Use Efficiency program (currently the program is funded only periodically) in which metering and re-metering projects are eligible.

13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.2 Increase Revenues	
Recommendation	13.2.2.D Establish appropriate connection fees for any new connections to support the capital improvements required to provide service to those new connections.
Lead Entity	The water or wastewater system owner
Why	The water or wastewater systems are faced with capital expenditures necessary to satisfy infrastructure demands resulting from growth of the population served and from needs of the existing population (changes to regulatory requirements and the need to replace existing facilities). Connection fees are imposed as a means to collect funds from new developments to be served by the water or wastewater system. The existing water or wastewater system should not be required to assume additional capital improvement burdens imposed by new development demands upon the systems.
How	The water or wastewater system owner may conduct a review of the existing infrastructure and its relative ability to serve the existing and future demands. Capital improvements necessary to meet the demands of existing and future populations of the service area may be described and the relative capital cost of the improvements may be estimated. The relative benefit of the capital improvements for the existing and future population may be estimated. Based on the information described above, the relative connection fee per new connection may be estimated. The owner of the water or wastewater system would review the information and determine the appropriate connection fee. Proposition 218 is not applicable when establishing new connection fees. However, the fees must reasonably relate to the costs incurred by the service provider.
When	If there is not a connection fee established for the system, the owner should prepare the supporting documents and establish connection fees as soon as possible. If connection fees are established, the basis for the fees, and the fees themselves, should be reviewed at a frequency of at least every few years.
Funding	The source of funding is the water or sewer capital improvement fund of the local service provider. The source of revenues is from developers of new residential, commercial, and industrial service connections.

13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.2 Increase Revenues	
Recommendation	13.2.2.E Consider establishing a transitional funding program to assist with O&M costs on a temporary basis.
Lead Entity	State agencies and the legislature
Why	At the state level there is a need for a targeted and coordinated funding program with the clear goal of transitioning small disadvantaged communities in unincorporated areas without safe drinking water (including those communities with and without existing public water systems) to achieve, self-sustaining, affordable drinking water systems.
How	This newly targeted program should specifically include funding for the following: ✓ Technical Assistance for both 1) project application and project operation and management (currently eligible under SWRCB Division of Drinking Water funding but not DWR IRWM funding), and 2) leadership and capacity training; ✓ A pooled capital reserve fund, which can cover both short-term financing costs and help lower O&M costs; and ✓ Some O&M subsidies for an initial period of time until long-term solutions are implemented and self-sustaining. As a “transitional” program, the associated funding should be limited to supporting the transition of existing disadvantaged communities into self-sustaining systems that can achieve compliance with the applicable regulatory requirements and ensure affordable rates. The program should not be a long-term, ongoing financial support mechanism. As such, a disadvantaged community’s participation in a transitional funding program should have conditions and incentives to ensure it is meeting certain objectives and milestones in a timely manner. In particular, at minimum state agencies should require and provide TMF training and improvements as a condition of receiving this O&M funding.
When	This should be considered as part of the IUP process, state budget and legislative process, and within the creation or appropriation of new funding sources, including the new water bond.
Funding	Such an effort would need to include targeting significant amounts of existing funding sources, and will need new and additional funding sources to adequately address the needs and gaps identified above. The modified Water Bond should include significant funding for this effort. It may be possible to create a set aside in the SRF Intended Use Plan (IUP) for some or all of this purpose, as well as utilizing the Clean Up and Abatement Account and IRWMPs for at least some of these purposes. If a statewide or other scale of water user fee were established, part of it could be used for this purpose. Funding for ongoing O&M costs should

	be from the water or sewer fund supported by local users through water or sewer rates.
13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.3 Provide Assistance, Training and Information	
Recommendation	13.2.3.A Develop an O&M plan that includes the types of ongoing O&M costs needed, O&M servicing and parts replacement schedule, and amount needed for O&M fund reserve to help the community plan ahead to address covering O&M adequately. This will also help identify any potential for cost savings through reduced O&M costs and explain any need for regular rate increases.
Lead Entity	The water or wastewater system owner
Why	The water or wastewater system is subject to regulatory requirements from the SWRCB, County Environmental Health Department, or RWQCB. In addition, the physical facilities require maintenance and confirmation that the facilities operate as required. An operations and maintenance plan provides the basis for the activities and procedures necessary to satisfy the regulatory and operational demands of the systems.
How	The owner of the water or wastewater system is required to have certified operators for the systems. Either the owner, operator, or a consultant may prepare the appropriate operation and maintenance plan for the system(s).
When	An operations and maintenance plan should be in place at all times.
Funding	The source of funding is the water or sewer fund of the local service provider. The source of revenues is the water or sewer charge for service.
13.2 Improve O&M Funding	
Priority Issue: Lack of Funding to Offset Increasingly Expensive Operations and Maintenance Costs in Large Part due to Lack of Economies of Scale	
13.2.3 Provide Assistance, Training and Information	
Recommendation	13.2.3.B Continue to provide, expand, and better publicize technical assistance training on developing rate studies and establishing rate policies, which should also include guidance on conducting a Prop 218 hearing. This type of assistance is currently available for disadvantaged communities from SWRCB technical assistance providers.
Lead Entity	State Agencies, Technical Assistance providers
Why	The Prop 218 process in California is complicated and nuanced. Many legal questions remain unanswered, even after almost twenty years. Many questions arise during a Prop 218 process, and can therefore become very expensive due to extensive legal consultation. The more training that Boards and staff receive before

	embarking on a Prop 218 rate change, the more adept they will be at navigating the process and avoiding pitfalls. The availability of State agencies or other technical service providers for assistance during the process would be very useful to many small districts that do not retain regular counsel, however this does not dismiss the need for legal counsel. The local entity should hire an attorney for specific guidance through this process.
How	Holding periodic trainings in the physical context of government buildings can remind participants of the larger system in which they function as local government representatives. On the other hand, it might be most impactful to hold a training related to developing a rate study and conducting a Prop 218 hearing in particular communities, scheduled to precede a planned rate change.
When	Trainings should be held one to two times per year. Weekday evenings may work best.
Funding	Local funding, state agencies, or technical assistance funds already available could be used for this purpose.
13.3 Improve Water Supply Quality and Reliability	
Priority Issues: Poor Water Quality, Inadequate Supply Reliability, Inadequate Existing Infrastructure, and Insufficient Quantity of Water	
13.3.1 Prevent Worsening of Problems	
Recommendation	13.3.1.A Do not allow new connections if the service capacity is not confirmed. This may require imposition of a moratorium. Developing appropriate connection fees, as recommended above, is necessary to provide a means to ensure that capacity can be made available for planned new connections.
Lead Entity	The water or wastewater system owner
Why	An existing system is responsible to provide the water and wastewater services to the properties connected to the system. The existing system would not be able to fulfill the service obligation to new connections if the capacity was not available.
How	The owner of the water or wastewater system must know what the relative capacity and demands of the system are at all times so a determination of whether sufficient capacity is available to meet the proposed demands can be made. Establishing appropriate connection fees can help ensure capacity can be developed when necessary. If sufficient capacity is not available, and funds are not available to develop additional capacity, a moratorium on new connections should be pursued.
When	Ongoing
Funding	The source of funding is the water or sewer fund of the local service provider. The source of revenues is the water or sewer charge for service.

13.3 Improve Water Supply Quality and Reliability	
Priority Issues: Poor Water Quality, Inadequate Supply Reliability, Inadequate Existing Infrastructure, and Insufficient Quantity of Water	
13.3.1 Prevent Worsening of Problems	
Recommendation	13.3.1.B [See recommendations below under Recommendation 13.6 – Improve Land Use Planning to Minimize Creation of New Water/Wastewater Issues]
13.3 Improve Water Supply Quality and Reliability	
Priority Issues: Poor Water Quality, Inadequate Supply Reliability, Inadequate Existing Infrastructure, and Insufficient Quantity of Water	
13.3.1 Prevent Worsening of Problems	
Recommendation	13.3.1.C Improve Groundwater Management Planning to address both declining water levels and increased water quality contaminant levels, and evaluate ways the two trends may be exacerbating each other.
Lead Entity	Department of Water Resources and local water agencies
Why	Groundwater levels within many areas of the Tulare Lake Basin Study Area have declined over time and there does not appear to be any reason to expect groundwater levels to stabilize. There are currently three basic methods available for managing groundwater resources in California: 1) management by local agencies under authority granted in the California Water Code or other applicable State statutes, 2) local government groundwater ordinances or joint powers agreements, and 3) court adjudications. However, no law requires that any of these forms of management be applied in a basin. Instead, groundwater management is often instituted after local agencies or landowners recognize a specific groundwater problem. The level of groundwater management in any basin or sub-basin is often dependent on water availability and demand. With the declining groundwater levels, it is becoming increasingly critical to manage and protect this resource, which is relied on for domestic uses by approximately 90% of communities in the Study Area.
How	To be determined by the State of California. Local control of groundwater management activities may be maintained, however it is recommended that the Department of Water Resources consider ways to ensure that sufficient groundwater management planning is being conducted within the Basin to address declining groundwater levels and increasing water contaminant levels.
When	Ongoing
Funding	Unknown

13.3 Improve Water Supply Quality and Reliability	
Priority Issues: Poor Water Quality, Inadequate Supply Reliability, Inadequate Existing Infrastructure, and Insufficient Quantity of Water	
13.3.1 Prevent Worsening of Problems	
Recommendation	13.3.1.D Clarify the interpretation of a well site control zone with a 50-foot radius, as referred to in Title 22, Chapter 16, Article, Section 64560 of the California Regulations Related to Drinking Water. The current interpretation in Tulare County is that there must be a 50-foot radius onsite around a well. This interpretation would require communities to purchase properties that are significantly larger than necessary. This interpretation would also eliminate existing lots within the community from consideration for use as well sites. Guidance should clarify how well sites may be able to meet the requirement to have a 50-foot control zone for source water protection, even if the well site itself is smaller.
Lead Entity	State Agencies
Why	It is noted that there is an acknowledgement of the need for some control of facilities or activities within the immediate proximity of public water supply wells. However, there have been interpretations of the subject code section that would require owners of new wells to physically acquire property that would exceed many properties available within a community. It is not believed that the intent of the code section is consistent with some of the interpretations. Some interpretations would impose a significant financial hardship to both acquire a large parcel and construct the water distribution facilities to connect the parcel to the existing community system. In addition, the definition of a control zone is in need of clarification for all parties involved (owner of the water system, county regulatory staff, SWRCB regulatory staff). Considerations of existing property uses and existing public rights of way adjacent to proposed water supply wells require clarification.
How	It is suggested that examples are provided by the SWRCB (Division of Drinking Water) that would clarify the definition of a control zone, as it may extend beyond the limits of the actual well site property.
When	Now
Funding	Unknown
13.3 Improve Water Supply Quality and Reliability	
Priority Issues: Poor Water Quality, Inadequate Supply Reliability, Inadequate Existing Infrastructure, and Insufficient Quantity of Water	
13.3.1 Prevent Worsening of Problems	
Recommendation	13.3.1.E Consider ways to encourage and provide funding to sewer communities that rely on individual septic systems that are failing or are on inadequately sized lots.
Lead Entity	Funding agencies including the State Water Resources Control Board, USDA and possibly county agencies utilizing Community Development Block Grant funds

Why	Failing septic tanks endanger public health in a number of ways, not least by exposing humans to raw sewage, and by contaminating groundwater supplies with bacteria and nitrates.
How	Conduct studies in communities that gauge the degree to which septic tanks are failing, what it costs homeowners to pump, repair and/or replace them. Conduct preliminary engineering studies that recommend a solution and develop estimated project costs and monthly sewer rates, so homeowners can make informed decisions.
When	Immediate and ongoing
Funding	State Water Board, USDA, CDBG
13.3 Improve Water Supply Quality and Reliability	
Priority Issues: Poor Water Quality, Inadequate Supply Reliability, Inadequate Existing Infrastructure, and Insufficient Quantity of Water	
13.3.1 Prevent Worsening of Problems	
Recommendation	13.3.1.F Allow drinking water funding agencies to fund infrastructure for fire flow requirements. Where affordability or feasibility of the project is jeopardized by meeting full fire flow requirements, also allow drinking water projects to be funded for domestic purposes provided a limited level of fire flow is available. Where a viable option, the feasibility of installing a dual water distribution system to meet domestic supply and fire flow requirements, should be considered (especially where irrigation demands can be accommodated through the non-potable system used for fire flow).
Lead Entity	County Fire, County Boards of Supervisors, and funding agencies such as USDA
Why	Especially in communities where water must be treated to remove contaminants, it should be an option for utilities to choose to treat only the water that is actually consumed by people. Fire flow and outside irrigation demands can represent a significant portion of the total water demand in a given community, and requiring that fire flow is always available means that more water is being pumped and treated than is being consumed. Dual systems present one way for communities to protect public safety without building oversized treatment and potable water distribution systems. The dual system can also allow for use of untreated water for irrigation purposes, additionally reducing the system treatment requirements. In cases where a dual system is cost prohibitive, and attaining fire flow requirements through the main potable system is much too expensive to operate, allowing a reduced fire flow capacity should be considered.
How	Adjust fire codes to allow for greater flexibility in the manner in which communities meet fire flow requirements, or perhaps reducing those requirements. Provide funding (e.g., Community Facility loans and grants through USDA) to install parallel piping that is dedicated for fire flow and landscape irrigation use. Utilize existing wells that do not meet Title 22 requirements to supply the second system, when available.
When	As soon as practicable
Funding	USDA Community Facilities or Water & Wastewater loans/grants.

13.3 Improve Water Supply Quality and Reliability	
Priority Issues: Poor Water Quality, Inadequate Existing Infrastructure, and Insufficient Quantity of Water	
13.3.2 Encourage Shared Solutions to Reduce Vulnerability	
Recommendation	13.3.2.A Provide funding opportunities to encourage the development of regional cooperation, partnerships, and consolidation of services, where appropriate.
Lead Entity	State agencies
Why	To encourage swifter implementation of appropriate shared or regional solutions, both "carrot" and "stick" approaches should be used in collaboration as appropriate towards that goal. Many local entities are otherwise uninterested and unwilling to even consider sharing services with neighboring systems and need further motivation.
How	State agencies should not issue permits to new water or wastewater systems within a municipality or within ½ mile radius of an existing entity providing water or sewer service without showing of a good faith attempt to obtain service from an existing provider and help bring them into compliance, if needed. For existing public water systems that are struggling to meet compliance or have a history of non-compliance, regulatory agencies should promote or enforce action towards consolidation or shared solutions, as appropriate.
When	These requirements should be used as part of the permit application approval process, funding application review process, and MCL enforcement and annual system inspection process.
Funding	State agencies would not need extra funding to utilize this oversight power. However, state funding sources should be made available to support development and implementation of these solutions in conjunction with any enforcement or regulatory action, as appropriate.
13.4 Improve Funding to DACs	
Priority Issues: Inadequate or Unaffordable Funding, Constraints to Make Improvements	
13.4.1 Improve Scoring Criteria and Guidelines	
Recommendation	13.4.1.A Consider changes on Category E (insufficient source water capacity or delivery capability) project rankings, to make it easier to get funding for that category of projects.
Lead Entity	State Agencies
Why	There are many communities with insufficient water supply, however, the criteria for funding eligibility is heavily weighted on water quality challenges. The lack of sufficient water quantity is often a significant problem.
How	Review and revise the guidelines for ranking of funding eligibility criteria to enable funding assistance for water supply sources, especially for those communities with a single source of supply.
When	Now
Funding	Unknown

13.4 Improve Funding to DACs	
Priority Issues: Inadequate or Unaffordable Funding, Constraints to Make Improvements	
13.4.1 Improve Scoring Criteria and Guidelines	
Recommendation	13.4.1.B Continue the Pre-Planning and Legal Entity Formation Assistance Program. Consider creation of similar programs for wastewater for areas currently on septic.
Lead Entity	State Agencies
Why	There is a need for more flexible pre-planning funding to enable evaluation of appropriate governance alternatives to develop shared and regional solutions and to support solutions for areas not currently served by a public water system. The first round of applications for this indicated there was a large demand and unmet need, and additional rounds should be extended. This will both enable California to use its SRF effectively, and help communities most in need of developing solutions be able to do the analysis it needs to develop the best solution, and address eligibility barriers by developing appropriate entities for construction and full project implementation. Historically the evaluation and development of regional solutions has not been able to score high or pass through eligibility barriers and this funding pot was created specifically to help address those challenges and allow these sorts of projects to be developed when they address disadvantaged community safe drinking water needs. Similarly, creation of a similar program should be evaluated for areas on septic or with unaffordable wastewater services to evaluate development of shared or regional wastewater solutions.
How	Implement this through the Intended Use Plans of the SRF programs.
When	The IUPs are developed annually. Additionally, applications should be accepted throughout the year.
Funding	This is primarily aimed at utilizing funding through the SRF programs.
13.4 Improve Funding to DACs	
Priority Issues: Inadequate or Unaffordable Funding, Constraints to Make Improvements	
13.4.1 Improve Scoring Criteria and Guidelines	
Recommendation	13.4.1.C Continue the Consolidation Incentive Program, however, modify the system so that large systems do not obtain benefits that are significantly out of proportion to the benefits provided by consolidation. Also consider expanding the consolidation incentive program and make it available to larger systems seeking to assist communities of private well owners impacted by the drought and/or facing water quality challenges.
Lead Entity	State Agencies
Why	There does not appear to be any limitation on the benefits received by the entity willing to allow the consolidation of a smaller system. If the larger entity (Incentive System) can receive funding assistance drastically beyond the scale of the cost of improvements to receive a consolidation then the use of public funds consistent with the Priority Categories may be in question.

How	Consider placing a limit on the allowed value of Incentive System projects that may be re-ranked to a higher Priority Category by virtue of a consolidation project. Also, consider allowing extension of services to those on State Small Systems and private wells that are contaminated or going dry, to be considered eligible for appropriate consolidation incentives.
When	Now
Funding	Unknown
13.4 Improve Funding to DACs	
Priority Issues: Inadequate or Unaffordable Funding, Constraints to Make Improvements	
13.4.1 Improve Scoring Criteria and Guidelines	
Recommendation	13.4.1.D Consider ways to expedite the funding process, so that communities applying for funding do not spend several years drinking water that does not meet primary drinking water standards, and/or relying on insufficient water supply.
Lead Entity	All funding agencies (US EPA, SWRCB, USDA, DWR)
Why	Currently, communities cannot apply for funding until an actual water quality violation is documented. Often, though, it is apparent that a problem is emerging as contaminant levels slowly climb. Allowing systems to apply for funding based on documented contamination levels that are projected to exceed an MCL in the coming two to five years, for example, would give communities a big head start on fixing problems. This could significantly reduce the time that people spend drinking unsafe water. Another consideration would be to streamline the funding process so that it does not take five plus years from the time of initial application to implementation of a project.
How	Consider amending funding regulations and intended use plans to allow application by water systems that can demonstrate a documented increase in a regulated contaminant that is projected to exceed the MCL in two to five years. Also, consider methods to speed up the funding process, including amending planning contracts by adding design and construction phases.
When	This is a change to regulations that could be made immediately. It is anticipated that the recent Drinking Water Program transition from CDPH to SWRCB may help the Drinking Water Program funding process.
Funding	The Safe Drinking Water State Revolving Fund would be the most obvious, and possibly this change could be implemented through a change to the Intended Use Plan. DWR IRWMP funding could also be a good source for funding to avert future problems. In both cases, planning funding could be expanded to allow for studies that monitor, assess and project contamination that could exceed a health standard.

13.4 Improve Funding to DACs	
Priority Issues: Inadequate or Unaffordable Funding, Constraints to Make Improvements	
13.4.1 Improve Scoring Criteria and Guidelines	
Recommendation	13.4.1.E Streamline the process for payment of claims for state-funded projects, so that local water providers can receive more timely reimbursement. Simplify DWR IRWM claims reimbursement forms to be in line with SWRCB (Division of Drinking Water) claims process.
Lead Entity	All state funding agencies. USDA already makes payment electronically and in a matter of days.
Why	Waiting six weeks or more for state reimbursement puts water and wastewater systems in a difficult position. Often they owe hundreds of thousands of dollars to a contractor for a month's work, and simply have no way to pay until they receive their state check. Payment made quickly and electronically would save weeks of delay, interest paid, and intense hardship by small systems.
How	Streamline reimbursement processes by being less stringent on documentation. Set up electronic fund reimbursement and other processes to expedite payments. Consider making advances in cases of hardship.
When	As soon as possible
Funding	None
13.4 Improve Funding to DACs	
Priority Issues: Inadequate or Unaffordable Funding, Constraints to Make Improvements	
13.4.1 Improve Scoring Criteria and Guidelines	
Recommendation	13.4.1.F Require privately owned for-profit systems to conform to all requirements (including audits and other fiscal requirements) of publicly owned systems in order to receive public funding assistance.
Lead Entity	State Agencies
Why	Private for-profit systems are owned by an individual or private corporation. The general purpose of a private system is associated with the fiscal incentive for the owner of the system. Providing public funding assistance to upgrade privately owned water or wastewater systems may be construed as a gift of public funds. Private systems may not have been constructed or operated to the same standards as public systems. It may periodically be perceived that the users (tenants) of the private system are the primary consideration for determining if public funding assistance is appropriate. Care should be exercised to not remove the private owner responsibility for the water or wastewater infrastructure.
How	Ensure that the requirements associated with audits, fiscal reserves, rate structures, operational budgets, operational and managerial requirements, and technical requirements are mandated equally to all potential recipients of public funding assistance.
When	Ongoing
Funding	No additional funding is necessary.

13.4 Improve Funding to DACs	
Priority Issues: Inadequate or Unaffordable Funding, Constraints to Make Improvements	
13.4.2 Target Outreach and Technical Assistance	
Recommendation	13.4.2.A Local service providers should attend existing grant application workshops, including CFCC Funding Fairs, and participate in other training opportunities provided through SWRCB, CWEA, CRWA, RCAC, and other resources.
Lead Entity	The water or wastewater system owner.
Why	Preparing funding applications is complex and challenging, and can often be expensive due to printing costs, the need for studies, and the time invested. Developing a better understanding of the application process, and learning about resources available to help, will help communities through this process.
How	Visit the CFCC Funding Fairs website for more information on funding fairs. http://www.cfcc.ca.gov/funding_fairs.htm
When	Annually
Funding	The CFCC funding fairs are no cost. Other training opportunities should be paid for through the water or wastewater system user fees.
13.4 Improve Funding to DACs	
Priority Issues: Inadequate or Unaffordable Funding, Constraints to Make Improvements	
13.4.2 Target Outreach and Technical Assistance	
Recommendation	13.4.2.B Participate in Integrated Regional Water Management Planning group meetings and consider becoming an “Interested Party” or “Member” of an IRWMP group.
Lead Entity	Water or wastewater system owner or manager
Why	Participation in local IRWM groups allow systems to understand the regional water management efforts being developed, inform those efforts with the needs of their local community, and develop joint projects to improve water quality, water supply, storm water management and flood control in each sub-basin. Disadvantaged community impacts and needs may not be adequately addressed in local management plans or understood by water management and other local agencies if local disadvantaged communities do not participate. Additionally, disadvantaged communities need to participate in order to ensure specific projects are developed and funded that address their critical needs.
How	Each IRWM group has its own unique governance structure and meeting process. Community representatives should contact the group in their region to get on the email list and ask how to become members or interested parties of the group. In general, becoming a member allows you to vote on decisions made by the group. Membership may be limited to public agencies in some cases. In some cases, fees are required, although DWR states that IRWM groups cannot require payment for local stakeholders to participate. Becoming an interested party may be a good way of getting started. That formal status means

	that an entity has adopted and is supportive of the regional plan and its goals and objectives, and means it is a formal part of the planning group and generally invited to be part of any Advisory Board or stakeholder group meetings. Some IRWM groups only allow for formal submittal of projects by members, so interested parties can only propose projects that are formally sponsored by members.
When	Entities can join IRWM groups at any time. Contact the appropriate IRWM group to find out when the next meeting is and what the process is for becoming part of the group. It is best to join soon so that communities are able to be part of the process by the time the next funding and planning update takes place.
Funding	Each IRWM has different membership fee requirements, although all have an option for some form of formal participation that is free for disadvantaged communities. Communities should ask for technical assistance to support their ability to effectively participate in planning and project development from local IRWM groups, the Department of Water Resources (DWR), and local technical assistance providers. IRWM groups can include projects in regional applications that fund planning and project development and construction for disadvantaged communities. Under DWR's current funding guidelines for funding available to IRWMs, projects that advance critical needs in disadvantaged communities qualify for extra points and are not required to meet the same funding match and project readiness requirements as other projects. Additionally, DWR has set a goal for at least 10% of DWR's IRWM funding to fund disadvantaged community projects so local IRWMs may include DAC projects in regional applications to increase the competiveness of funding applications.
13.4 Improve Funding to DACs	
Priority Issues: Inadequate or Unaffordable Funding, Constraints to Make Improvements	
13.4.2 Target Outreach and Technical Assistance	
Recommendation	13.4.2.C IRWM groups should consider organizing pre-application and grant application workshops or training opportunities for DACs that are "Interested Parties" or "Members" of the IRWM group, as well as prepare and distribute outreach and educational materials to those DACs as funding from DWR is made available.
Lead Entity	IRWM groups
Why	Local IRWM groups benefit from engagement of DACs within IRWMs and development of DAC projects as part of integrated regional water management planning and project development applications. 10% of IRWM funding is aimed to be used for DAC projects. Additionally, IRWM applications receive additional points in scoring and cost waivers if projects to address critical water needs in DACs are included. Additionally, IRWM plans were created to address priority water needs in the region, which include disadvantaged community needs, particularly in the Tulare Lake Basin. If these plans and the projects to implement the plans are not addressing disadvantaged community needs, they are not accomplishing their goals and not adequately accomplishing the mission of IRWMs and the funding source. Because of that,

	each region should proactively encourage and facilitate effective inclusion of DAC needs and projects within IRWM planning and project application processes. Local IRWMs in the region have already taken many steps to do this, and this recommendation is to continue as well as expand these efforts to do more formal, extensive and timely outreach, training, workshops and technical assistance with each funding round.
How	IRWM groups can organize formal and timely workshops and trainings specifically aimed at providing information and answering questions and supporting integration of DAC needs and projects for each round of DWR funding and plan updates. It would be most useful to invite the local DWR IRWM representative to also be present for these meetings in order to be able to answer any questions that may arise. Outreach and facilitation of these meetings would be done more effectively in partnership with local community-based nonprofits and technical assistance providers. The database of DACs and outreach contact lists developed for this TLB DAC Study should be integrated into each IRWM group's database and used for planning, communication and outreach efforts.
When	This should be conducted enough in advance to allow for preparation and submission of projects within the IRWM application timeline, as well as any regular plan updates.
Funding	The costs of hosting meetings and outreach could be funded as part of administrative staff costs of IRWM groups, and could also be included in any applications for planning and technical assistance grants through State agencies.
13.4 Improve Funding to DACs	
Priority Issues: Inadequate or Unaffordable Funding, Constraints to Make Improvements	
13.4.2 Target Outreach and Technical Assistance	
Recommendation	13.4.2.D Consider ways to allow communities in IRWM "white areas" (areas not currently within an IRWM group boundary) to participate in the IRWM process.
Lead Entity	DWR
Why	There are communities that are not within the boundaries of an IRWM group, but would like to participate in the IRWM process. The communities are currently unable to participate.
How	Needs to be considered by DWR
When	Now
Funding	DWR and IRWM groups

13.5 Improve DAC Awareness and Participation	
Priority Issues: Lack of Informed, Empowered, or Engaged Residents	
13.5.1 Provide Community Outreach and Engagement	
Recommendation	13.5.1.A Provide the community as much information as possible and opportunity to provide input early on in the process. Local water and wastewater providers should include funding and/or staff time as part of annual and project budgets to conduct community outreach, education, consultation with community residents/users (through community meetings) in order to address barriers and lack of information and to evaluate and implement recommendations identified by the users.
Lead Entity	Local water or wastewater providers or entities acting as project applicants on behalf of DACs.
Why	Communication is critical for community acceptance. Community acceptance will help implementation of the solutions and overcoming barriers. It will also help support acceptance of reasonable rate increases needed to ensure adequate service or improvements.
How	How: Local providers should consider holding regular community meetings and sending out letters to consumers with updates on services and inviting them to participate in consideration of alternatives and throughout the development of major projects. The more transparent information that is available and opportunities for discussion, the more that community leaders can support informed choices and gain broad support. There are two primary activities to accomplish this: ○ An effective communications plan. Local services providers should proactively update the community on its services and notify customers of opportunities for input on new project development. Notices should be delivered to each household and translation should be provided as needed. In most DACs, a significant percentage of the population is primarily Spanish-speaking and therefore Spanish translation should be provided for notices and at public meetings. Local service providers should consider having bilingual staff or securing a contract with a translator to regularly translate important public documents and provide interpretation at public meetings when needed. Translation should be included in job descriptions or contracts included as part of the system's annual budget. ○ A responsive scope of work for project development. Local service providers should ensure that any scope of work with an engineering firm includes transparent evaluation of alternatives to minimize O&M costs, and includes the need to explain project alternatives to the community and effectively incorporate and respond to feedback. For large, complex project planning processes involving more than one community, the contracts should include subcontracts with a community facilitation team that relates well to community members, as well as engineers, and that should be included in any funding scope of work. The more board members and community members and other interested parties can be provided analysis of the pros and cons and realistic estimated costs for consumers of

	various alternatives, the better decision-making that can take place.
When	This is particularly important for systems when developing new projects, and is important to include within any project application scope of work. But there is also an ongoing need to communicate with consumers effectively about the services being provided.
Funding	Funding for ongoing regular communication should be included in the system's annual budget as part of the cost of services. However, when more intensive analysis, facilitation and communication services are needed around major project development, this can be funded by including it in the scope of work for project applications, particularly within planning and pre-planning funding sources.
13.5 Improve DAC Awareness and Participation	
Priority Issues: Lack of Informed, Empowered, or Engaged Residents	
13.5.1 Provide Community Outreach and Engagement	
Recommendation	13.5.1.B Attempt to use in-person, phone or mail outreach to DAC residents as much as possible; email and website should be utilized, but are not sufficient on their own.
Lead Entity	Local service providers and other entities providing outreach and communication with DACs.
Why	Many DAC members and representatives do not have access to internet or email. Residents of DACs can be better reached by mail, phone or through in-person outreach. Email outreach is not sufficient on its own to reach DAC stakeholders.
How	Flyers sent out with bills, door-to-door outreach, and direct mail are the most effective. Mailing lists may be obtained with the local water provider and county registrar. Consider asking local community leaders within the community to help do door to door outreach to distribute flyers or contract with other service providers that specialize in culturally appropriate outreach and community engagement. Local non-profit organizations can be used to aid in outreach efforts and updating contact information.
When	Any major outreach efforts, including notices of meetings for major project development or updates from the water or wastewater system should strive to use effective forms of communications.
Funding	These costs should be included as part of administrative budgets or outreach budgets within project development scopes of work.
13.5 Improve DAC Awareness and Participation	
Priority Issues: Lack of Informed, Empowered, or Engaged Residents	
13.5.1 Provide Community Outreach and Engagement	
Recommendation	13.5.1.C Expand community engagement in the development of projects. Funding to facilitate community engagement should be included in project budgets and standard approved scopes of work for project development at both the planning and construction phase. Feasibility studies funded by public funds must evaluate alternatives (including costs to end users and an evaluation of pros and cons) This information

	should be provided to the community at a public meeting for feedback as part of the planning process to select final alternatives for implementation. While this is typically already required to be presented during open session Board meetings, increased community engagement is recommended.
Lead Entity	Local service providers and State agencies
Why	In order to ensure that the best project alternative is developed and that there will be strong community-support to facilitate swift implementation and support any rate increases, there needs to be effective community engagement and sufficient analysis to provide for informed and transparent decision-making. Opportunities for community engagement are typically required through open session Board meetings, for which agendas must be posted for the public.
How	Standard scopes of work for planning and construction phases should include community engagement, and feasibility studies should evaluate alternatives to show pros and cons and estimated resulting costs to end users.
When	During development of any proposed project.
Funding	Outreach efforts could be funded through the project funding program and/or through the water or sewer fund of the local service provider.
13.6 Improve Land Use Planning to Minimize Creation of New Water/Wastewater Issues	
Priority Issues: Lack of Vision and Integrated Planning to Develop Solutions	
13.6.1 Restricting Permits for Development	
Recommendation	13.6.1.A County planning departments should require any new development near an existing system (within 1-2 miles) to evaluate the feasibility of connecting to the existing system, rather than permit the creation of a new system.
Lead Entity	County Planning Departments, LAFCos, and State Agencies
Why	Permitting development of a new water system where there is the potential to connect to an existing neighboring system perpetuates the priority issues that this Study and the recommendations herein aim to resolve. It is creating a new small system that will likely struggle to maintain sufficient TMF capacity, primarily due to lack of economy of scale, and where there are water quality issues known, this creates another system for which water quality issues will need to be resolved. On the other hand, if the new development connects with an existing system, it can help to bring that system into compliance rather than constructing a new system, it can provide improved economy of scale and additional rate payer base, it may allow access to additional resources, and it will allow for increase reliability for the system.
How	Address policy issues and permitting requirements for new systems to more actively require new development to connect with existing water and wastewater systems where feasible. County Planning Departments may not necessarily have the legal authority to require the existing system to make the connection. However, they can and should recommend that the property to be developed be annexed.

	LAFCos should also consider this within the LAFCo approval processes.
When	Any time new development is proposed.
Funding	County, SWRCB
13.6 Improve Land Use Planning to Minimize Creation of New Water/Wastewater Issues	
Priority Issues: Lack of Vision and Integrated Planning to Develop Solutions	
13.6.1 Restricting Permits for Development	
Recommendation	13.6.1.B Require and actively support investment in bringing existing systems into compliance and developing long-term sustainable and affordable solutions before allowing growth and as part of permitting growth in communities where the existing water system cannot accommodate growth due to inadequate drinking or wastewater infrastructure.
Lead Entity	Local entity, County, LAFCo, State funding agencies, and Legislature.
Why	Unless a local entity water or wastewater system is in compliance with regulatory requirements and is fiscally sustainable, it is unable to provide reliable and sustainable water and wastewater services to any new connections
How	The local entity must prove the ability to provide Technical, Managerial, and Financial capabilities for a sustainable system prior to consideration of growth. County planning should require such proof prior to proceeding with consideration of new development that would rely upon the local system(s). LAFCos should also consider this within the LAFCo approval processes.
When	Ongoing
Funding	Local entity rate structure
13.6 Improve Land Use Planning to Minimize Creation of New Water/Wastewater Issues	
Priority Issues: Lack of Vision and Integrated Planning to Develop Solutions	
13.6.1 Restricting Permits for Development	
Recommendation	13.6.1.C In cases where there is a moratorium on connecting to a public water system, the county should not issue a permit to drill a private well on a property within the district boundary. Additionally, public water systems should consider implementing an ordinance prohibiting new well drilling within the PWS boundary and notify the county of this ordinance. Permitting of a private domestic well outside of the district boundary should be allowed only if the new well meets primary drinking water quality standards and will not significantly impact existing PWS. Counties should not permit a new well that does not meet standards, unless it is demonstrated that a treatment system will be installed.
Lead Entity	County, local service provider
Why	Typically a water system will issue a moratorium if they have insufficient supply to serve new customers. If a landowner is then allowed to drill a new well within the district boundary it can impact the district's supply

	source, and may allow a path for contamination of the district's supply. In areas where water quality is an issue, issuance of a permit for a new well also allows for the homeowner to develop a new source of supply which is likely to have water quality problems.
How	Consider amending county well permitting ordinances to clarify that permits will not be issued for new private wells to be drilled within the boundaries of an existing public water system. It is important that systems implement a moratorium and notify the county of the existence of a moratorium. Existing water systems should also consider establishing an ordinance prohibiting drilling new private wells within the system boundaries (not just a moratorium on connections). Additionally, consider amending county well permitting ordinances to clarify that permitting of new domestic wells outside of water system boundaries are required to show that the new well can meet drinking water standards for commonly known contaminants in the area (or implement adequate treatment devices) and will not impact water supplies of existing users.
When	Anytime
Funding	No funding source necessary.
13.6 Improve Land Use Planning to Minimize Creation of New Water/Wastewater Issues	
Priority Issues: Lack of Vision and Integrated Planning to Develop Solutions	
13.6.1 Restricting Permits for Development	
Recommendation	13.6.1.D In areas where there is no existing water system infrastructure available, building permits should only be issued if adequate supply and quality from a private well is confirmed to be available. This may include installation of a viable treatment system (POU or POE) with acceptable maintenance service.
Lead Entity	Counties, Legislature
Why	Issuance of a permit to build a home on a property where there is not existing water system infrastructure available, and where the supply and quality available from a private well are not confirmed to be sufficient, puts the homeowner or tenant at risk of having a water supply that does not meet water quality standards and/or water supply that may be insufficient.
How	Require an analysis of water supply prior to issuing a building permit. In areas of known groundwater contamination (high levels of primary constituents), counties should not zone for residential building.
When	Now, ongoing
Funding	No funding necessary.

13.6 Improve Land Use Planning to Minimize Creation of New Water/Wastewater Issues	
Priority Issues: Lack of Vision and Integrated Planning to Develop Solutions	
13.6.1 Restricting Permits for Development	
Recommendation	13.6.1.E Provide enforcement action when people do not obtain a permit for drilling of a new well or installation of an onsite wastewater system.
Lead Entity	County
Why	It has been noted that some property owners have drilled a private well and/or installed a septic system without a permit from the county. This poses a health risk for the well user in addition to neighboring well owners whose well could be contaminated by an improperly constructed well or septic system.
How	To be determined at county level. Enforcement action may include fines and/or shutting down the well.
When	Soon, ongoing
Funding	Counties
13.6 Improve Land Use Planning to Minimize Creation of New Water/Wastewater Issues	
Priority Issues: Lack of Vision and Integrated Planning to Develop Solutions	
13.6.2 Planning and Zoning	
Recommendation	13.6.2.A All counties shall identify areas where new growth should be directed based on the existence of public water and sewer governance and infrastructure. Counties shall only zone for residential development where there is safe and reliable water, except in situations where there are viable plans to provide safe and reliable drinking water, and additional growth will create more economy of scale and bring a greater rate payer base that will allow for a solution to be sustained. *Note: this is not intended to limit the ability to create infrastructure in existing communities that currently rely on private wells or septic systems; rather, this recommendation is intended to limit growth in areas that do not have sufficient governance and infrastructure to accommodate such growth.*
Lead Entity	County Planning Department and LAFCos
Why	The proliferation of small water systems that lack economy of scale and proper technical, managerial, and financial capacity is a large part of the problem faced by communities in the Study Area. By encouraging growth around existing public water and sewer systems and discouraging growth in other areas, this problem can be minimized in the future. However, it is important to confirm the capacity of the existing systems prior to zoning for residential development that would rely on those systems. Implying the potential for growth in areas that do not have proven safe and reliable water supply sources is not exercising due diligence in land use planning.
How	Planning documents should account for existing infrastructure and governance structures that are available when zoning for residential land use. When growth is encouraged near (within 3-5 miles) existing public systems through planning documents, those systems potentially impacted should be notified. Counties

	should require proof of the existence or reasonable capability to provide safe and reliable water supply to an area prior to defining land uses or zoning for potential land uses in areas within the county. LAFCos should also consider this within LAFCo approval processes. Where this would require re-zoning of areas, legal counsel should be consulted to make sure property rights of owners are not being infringed upon.
When	Now and any time planning documents are reviewed and updated.
Funding	County Planning Department
13.6 Improve Land Use Planning to Minimize Creation of New Water/Wastewater Issues	
Priority Issues: Lack of Vision and Integrated Planning to Develop Solutions	
13.6.2 Planning and Zoning	
Recommendation	13.6.2.B The water quality from private wells shall be analyzed and any contaminants exceeding primary drinking water quality standards should be disclosed upon sale of a property. The contaminants to be analyzed may vary by county or region within California; however for the Tulare Lake Basin it is recommended that, at minimum, water quality from private wells should be analyzed for coliform bacteria, nitrates and arsenic. If other contaminants, such as uranium, TCP, Chrome-6, perchlorate, or DBCP are known to be prevalent in the area near the subject property, a buyer may request analysis of the known contaminants in the area. This would put some onus on the Department or Real Estate to inform realtors of the water quality issues in their area of service.
Lead Entity	State Agencies, Department of Real Estate, Legislature, property owners
Why	There are currently no requirements for ongoing monitoring of private well water quality. As such, a homeowner may have no reasonable way to know the quality of water that is being consumed, and may not even consider that it could have contaminant levels in exceedance of a water quality standard. A buyer has the right to know what is in the water and whether it may have potential health impacts, just as he has the right to know if there are termite issues or roof damage.
How	Through State Agencies, Legislature, and/or Department of Real Estate require that water quality be disclosed upon sale of a home. The water quality disclosure will be between the seller and the buyer. This is not recommended to be public information, due to the confidentiality and privacy considerations of property owners.
When	Now, ongoing
Funding	Funding for water quality sampling will be through real estate transactions.

13.6 Improve Land Use Planning to Minimize Creation of New Water/Wastewater Issues	
Priority Issues: Lack of Vision and Integrated Planning to Develop Solutions	
13.6.2 Planning and Zoning	
Recommendation	13.6.2.C Clarify conflicting policies related to farm worker housing. The policy that counties shall permit and encourage the development of sufficient farm labor housing (California Health and Safety Code Section 17021.6) can be inconsistent with the requirement to provide safe drinking water (in areas where water quality does not meet drinking water standards). There should be no requirement to issue a permit if doing so causes a violation of water quality standards for the tenants to be served. These conflicting policies put counties in a difficult position.
Lead Entity	State Agencies
Why	The California Department of Housing and Community Development analyzes special housing needs for farm workers. There can be a legal conflict if it is demonstrated that there is a need for farm labor housing under the Housing Element, but water meeting drinking water standards is not available to that farm labor housing development. In this case, the county has a dilemma as to whether or not to permit the farm labor housing knowing that their water supply will not meet State and Federal drinking water standards. In either case, they would be required to violate a State policy.
How	To be determined by State agencies.
When	Now
Funding	Unknown
13.7 Develop & Maintain Information on DAC Water/Wastewater Needs	
Priority Issues: Lack of Information on DACs	
13.7.1 Improve Data Collection	
Recommendation	13.7.1.A Tulare County should continue to update and maintain the database that was developed through this Study. Local data stewards from each of the other three counties (Fresno, Kern, and Kings) should be established to assist in the quality control of the data collected for each respective county. The uses of this database could be many, but the primary purpose would be to track improvements to the water supply quality and reliability in the Study Area.
Lead Entity	Tulare County (Lead), Fresno, Kern, and Kings Counties (local data stewards)
Why	The uses of this database could be many, but the primary purpose would be to track water quality and supply issues in the Study Area, as well as changes overtime (improvements in the conditions, or otherwise). It is noted that at present there are many communities with an unknown source of water.
How	Data will be maintained by Tulare County and updated on approximately an annual basis.
When	Current and ongoing

Funding	Tulare County
13.7 Develop & Maintain Information on DAC Water/Wastewater Needs	
Priority Issues: Lack of Information on DACs	
13.7.1 Improve Data Collection	
Recommendation	13.7.1.B Tulare County should track progress with respect to the priority issues identified in this Study. Monitor and measure the success of improving the circumstances of DAC water and wastewater systems through implementation of recommendations, relative condition of drinking water supplies, and condition of wastewater service. This could be done in coordination with the SOAC, if the SOAC is continued as recommended.
Lead Entity	Tulare County (Lead), Fresno, Kern, and Kings Counties (local data stewards)
Why	To monitor and measure the success of this Study through implementation of recommendations, based on relative condition of drinking water supplies and wastewater service.
How	The website that will host the data is currently being developed. Data will be maintained by Tulare County and updated on approximately an annual basis. Statistics related to the number of water quality issues, water supply issues, wastewater treatment and disposal issues, and other factors can be compared and charted to monitor progress.
When	Ongoing
Funding	Tulare County, and other local and State agencies
13.7 Develop & Maintain Information on DAC Water/Wastewater Needs	
Priority Issues: Lack of Information on DACs	
13.7.1 Improve Data Collection	
Recommendation	13.7.1.C Improve the County Environmental Health Department responsibilities, fee authorities, and requirements to permit and monitor on-site systems. (There was a frequent observation that records for on-site systems were non-existent – i.e. Plainview, Rodriquez Labor Camp). Improve data collection, reporting, and management for private domestic wells, State Small Systems and septic systems so that the water supply and onsite wastewater conditions can be better documented and understood. Local counties or state agencies should maintain a database of information related to private wells and septic systems, including the location, size, condition, and depth of facilities. This database should be created to include all new individual wells and septic systems, as well as any modifications to existing facilities that are requested. Eventually the goal should be to include data on existing facilities, however it is understood that the effort to collect and report data on existing facilities would take years to complete.
Lead Entity	County Environmental Health Departments
Why	It is apparent that there are many private, on-site water and wastewater systems with non-existent or

	insufficient records of the facilities. The lack of records includes topics such as design capacity, on-site sustainability, inspections, and records of "as-constructed" facilities. The lack of records impacts the ability to evaluate adequacy of existing systems and impacts the ability to develop new community systems in areas that are served by on-site systems. In order to ensure private well and septic systems are adequate to provide safe drinking water and protect local water quality and public health, counties maintain local ordinances and implement permitting programs. A database could provide more efficient and accurate means of ensuring that local facilities are protective of public health and meeting all requirements, and could be used to inform ongoing planning, permitting and code enforcement activities. Specifically, it is important to understand the physical location, depth and design of facilities so that 1) the county can confirm sufficient separation between facilities is available, 2) the property owner is knowledgeable when facilities need to be maintained, fixed, or replaced, and 3) in the case that a new water or sewer system is being considered, the county and/or engineers can understand the location of facilities during the feasibility analysis.
How	The building permit process must include complete records regarding proposed and "as-constructed" on-site water and wastewater systems.
When	Now, ongoing
Funding	Well drilling and onsite wastewater permit fees. Current county permit fees for these activities should be re-evaluated to ensure they are adequate to meet administrative costs for an effective permitting program.
13.7 Develop & Maintain Information on DAC Water/Wastewater Needs	
Priority Issues: Lack of Information on DACs	
13.7.2 Improve Data Management and Accessibility	
Recommendation	13.7.2.A Improve the County Environmental Health Department responsibilities, fee authorities, and requirements to permit and monitor on-site systems. (There was a frequent observation that records for on-site systems were non-existent – i.e. Plainview, Rodriquez Labor Camp). [See Recommendation 13.7.1.C]
13.7 Develop & Maintain Information on DAC Water/Wastewater Needs	
Priority Issues: Lack of Information on DACs	
13.7.2 Improve Data Management and Accessibility	
Recommendation	13.7.2.B Develop a centralized reporting and data management system so that water supply related data can be shared and coordinated among agencies. For example, well logs retained by DWR can be correlated with water quality information retained by SWRCB. This will likely require confidentiality agreements between agencies.
Lead Entity	State Water Agencies (DWR, State Water Board)
Why	Water data is currently housed in many different agencies and not accessible or easily integrated to inform planning, regulatory activities, or water management. The state should provide consistent and ideally

	centralized or easily integrated data management systems to allow for water data to be more effectively utilized and support good decision-making.
How	All state agencies should have consistent protocols and requirements for electronic reporting in water monitoring or data reporting requirements within regulatory or other related programs. Currently, Geotracker GAMA seems to include most water quality data, while DWR holds records on water supply and well completion reports. Integration of the Drinking Water Program into the State Water Board will likely speed up integration of drinking water reporting systems with other State Water Board databases. However, it is unclear how DWR data and State Water Board data will be better integrated. Confidentiality issues will need to be coordinated between state agencies that may obtain access to confidential data
When	This should be evaluated as part of the Governor's efforts to improve groundwater management.
Funding	This could be funded through general funds, program fees, and bond where appropriate within the State budget and appropriation process.
13.7 Develop & Maintain Information on DAC Water/Wastewater Needs	
Priority Issues: Lack of Information on DACs	
13.7.2 Improve Data Management and Accessibility	
Recommendation	13.7.2.C Disclosure of water quality data – Require disclosure to the buyer of water quality on sale of property. In areas where there is a Public Water System, this may be in the form of recent Consumer Confidence Reports. For properties with private wells, this would be laboratory reports for samples collected from the private well. Recommend sampling for known and suspected contaminants in the area [See Recommendation 13.6.2.B].
Lead Entity	State Agencies, Legislature, Department of Real Estate, local water service providers, property owners
Why	A buyer has the right to know what is in the water and whether it may have potential health impacts, just as he has the right to know if there are termite issues or roof damage.
How	How: Through State Agencies, Legislature, and/or Department of Real Estate, require that water quality be disclosed upon sale of a home. For properties served by a regulated Public Water System, this may be in the form of recent Consumer Confidence Reports. For properties with private wells, this would require sampling and disclosure of laboratory reports indicating constituent levels and whether or not they are in exceedance of any primary water quality standards.
When	Now, ongoing
Funding	Funding for water quality sampling and disclosure will be through real estate transactions.