Covington Public Works/Utilities

DIRECTOR OF PUBLIC WORKS

City of Covington

Public Works Meeting

City Hall

Downstairs Board Room 4:00 P.M.

April 4, 2023

1. **TDOT Pre- Construction meeting safety improvements on S.R. 59. Start date April 17th.**
2. **West TN Regional Opportunity Assessment Presentation. (See Attached)**
3. **FEMA/TEMA applicants briefing meeting for severe weather event.**
4. **2023 Multimodal Grant.**
5. **ARP Competitive Grant .**
6. **Update on generator Wastewater Treatment Plant .**

Other Business:

1. Code Division monthly report: (See attached)

Adjourn:

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Department of Environment & Conservation

West Tennessee Regionalization Opportunity Assessment

March 23, 2023

Agenda

- Overview & Purpose
- Governance Assessment & Methodology
- Population Projections & Wastewater Forecasts
- Alternatives Analysis
- Implementation
- Summary – Key Takeaways

OVERVIEW & PURPOSE

Overview & Purpose

Geography	Study commissioned to address regional wastewater needs in Fayette, Haywood and Tipton Counties through 2043.
Analysis	Four viable alternatives developed as potential solutions for how cities, counties, and utility districts can meet future wastewater demand.
Uses	Study is not prescriptive, but a planning resource and potential roadmap for future development and regionalization.

GOVERNANCE ASSESSMENT & METHODOLOGY

Governance Assessment: Model Feasibility

Regionalization provides an opportunity for individual wastewater service providers to achieve performance and customer service goals at a reduced cost through the creation of partnerships.

- Research indicates that four governance models will be the most applicable to the tri-county study area regionalization opportunity

Regional Wastewater Treatment Authority	Municipal System Extension
Membership Cooperative	Utility District

Governance Assessment: Methodology

Comprehensive research on governance models was conducted for this study and included:

- A literature review of guidance documents and the establishment of governance models
- A literature review of approved governance agreements associated with existing regional wastewater agencies
- A review of state code regulations with support from Tennessee Association of Utility Districts (TAUD) legal counsel
- Feedback from staff associated with regional wastewater agencies
- Development of qualitative rankings and comparison

Governance Assessment: Model Qualitative Comparison

Criteria for comparative ranking of governance models based on "high", "medium", and "low" achievability	Regional Authority	Municipal Extension	Utility District	Member Cooperative
Flexibility of oversight board appointments	**High**	Med	Med	Low
Flexibility to maintain local collection system ownership	**High**	**High**	Med	Low
Potential to deliver services at lowest cost to rate payers	**High**	**High**	**High**	Med
Staffing flexibility, recruitment, and retention	**High**	Med	**High**	Med
Recent use in and around Tennessee	**High**	**Med**	Med	Low
Potential for local, state, and federal funding	**High**	**High**	**High**	Med
Ease of future service area adjustments	**High**	**High**	Med	Med
Ease to establish regional model	**High**	**High**	Med	Med

Governance Assessment: Findings

Research outcomes indicated critical benefits and challenges to each possible governance model. Key findings for each model include:

- **Regional Wastewater Treatment Authorities** allow considerable flexibility and offer an easy path to include new service areas
- **Municipal System Extension/Consolidation** of existing wastewater providers is a simple process for nearby entities to begin the regionalization process
- **Utility Districts** have specific legal requirements that provide limited flexibility in terms of governance
- **Member Cooperatives** are the least proven governance model in large regional application and have not been common in Tennessee

POPULATION PROJECTION & WASTEWATER FORECASTS

Population Projection Methodology

20-year population projections were developed for the tri-county region based on the following approach:

1. Identifying the most robust source of baseline projections
2. Reviewing and evaluating growth factors within the 3 counties that will influence future population growth
3. Reviewing similar automotive plant projects to identify probable population impacts
4. Calculating the potential population impact attributed to Blue Oval City using metrics to assign the amount and timing to each county
5. Computing revised population projections by adjusting baseline projections utilizing findings from steps 2-4. *These projections were based on reasonable assumptions developed from credible sources and research*

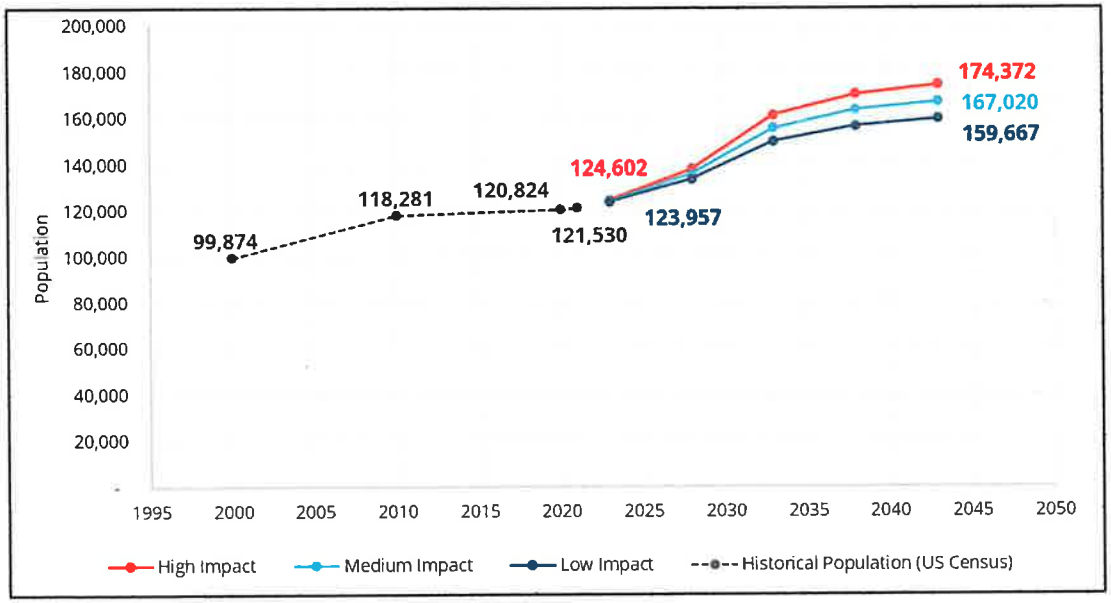
Community Growth Allocation Metrics

- To determine overall population growth for each geographic area, a scoring metric was used based on the community context and policy indicators including:
  - Socioeconomic Index (Ability to Pay Index)
  - Housing Availability and Trends
  - Wastewater Infrastructure Coverage
  - Quality of Schools
  - High-Capacity Roadways
  - Unemployment Rate
  - Economic Development Context
  - County Growth Trends
  - Proximity to Blue Oval City
- For each metric listed above, the community's statistic was evaluated and classified as either below average, average, or above average to assign future population (number of people and timing)

Metric	Below Average	Average	Above Average

Population Projection Results

- Forecasts prepared for each county utilized metrics previously discussed to phase in growth over time
- The chart below depicts population trendlines for "high", "medium", and "low" scenarios, as well as historic Census population counts.



Historical and Projected Population for Tri-County Study Area

Population Projections

- Based on population projections, the "high" scenario was selected and assumes the most population growth within the tri-county area for planning purposes

County	Baseline Year Projections (2023)	20-Year Projections (2043)
Fayette County	44,026	68,092
Haywood County	16,839	23,271
Tipton County	63,737	83,008
Tri-County Total	**124,602**	**174,372**

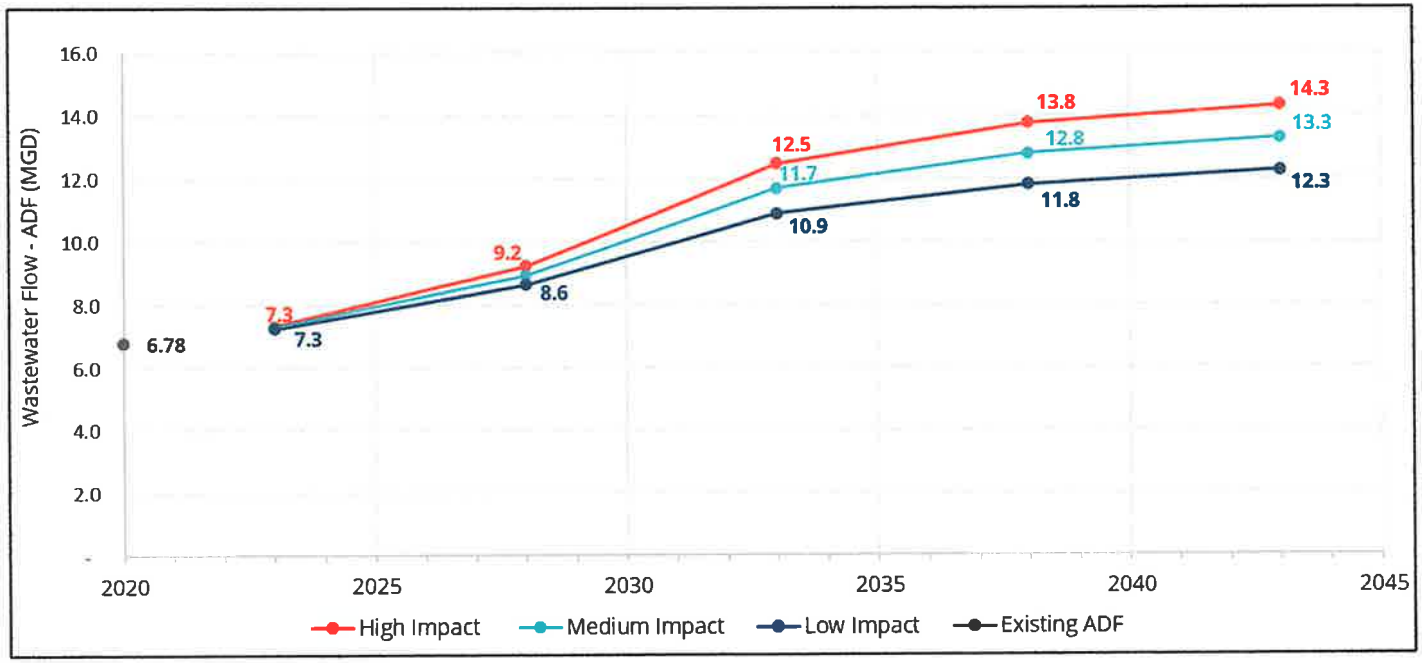
Wastewater Flow Forecasts Overview

20-year wastewater flow forecasts were developed using the following:

- Reviewing existing flows for the tri-county area to set up base flows
- Applying future population growth to each planning year using unit rates to convert to flow
- The unit rate applied was selected using TDEC guidelines and included residential, commercial and industrial flow

Wastewater Flow Forecast Results

The chart below depicts wastewater flow trendlines for *"high"*, *"medium"*, and *"low"* scenarios, as well as historical wastewater flow.



Historical and Projected Wastewater flow for Tri-County Study Area

ALTERNATIVES ANALYSIS

Alternatives Analysis Approach and Overview

Primary Focus - Regionalization

- Why?
  - Economies of Scale
  - Improvements in Compliance
- Consistency with Future Regionalization
  - Focus on Building For Future
  - Avoid Costs that don't Yield Long Term Results
- Focused on Four Alternatives
- 30,000 Foot Review
- Initial Improvements Sufficient for 10-Year Flows (Minimum)
- Shorter Term Needs May Precede Regional Authority
  - Utilities that participate in a regionalization wastewater solution need to consider how their current short-term infrastructure needs would be a part of a long-term regionalization plan

Alternative 1: Full Regionalization

- All treatment is centralized in a new regional facility
  - 20-year design flow: 14.3 MGD
  - Existing facilities converted to lift stations
  - Outfall to Mississippi River
  - Lowest plant operating costs
- Impacts
  - Requires long force mains, up to 50 miles long
  - Significant sunk costs for existing facilities
  - Most expensive alternative

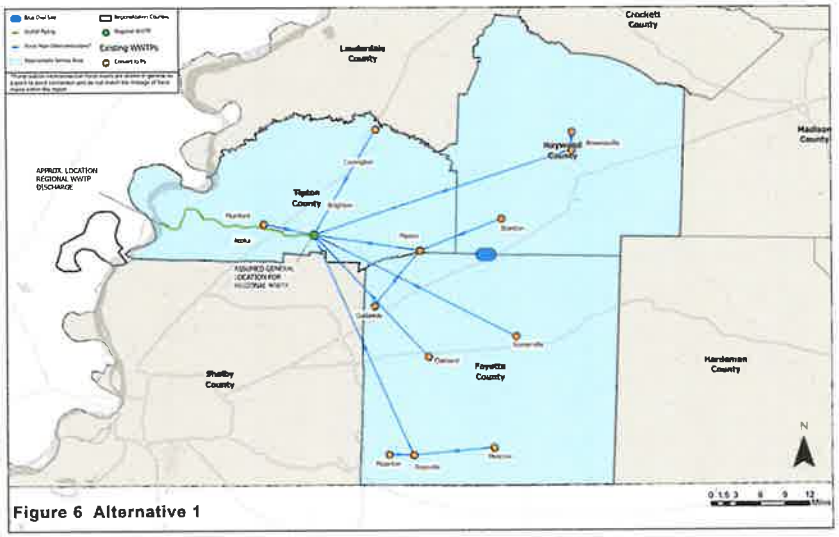


Figure 6 Alternative 1

Alternative 2: Partial Regionalization

- Treatment flows from smaller communities and is centralized in one facility
  - Larger facilities, Covington and Brownsville, remain as stand-alone facilities
  - Regional Facility 20-year design flow: 9.0 MGD
  - Existing facilities converted to lift stations
- Impacts
  - Requires long force mains, up to 50 miles long
  - Some sunk costs for existing facilities

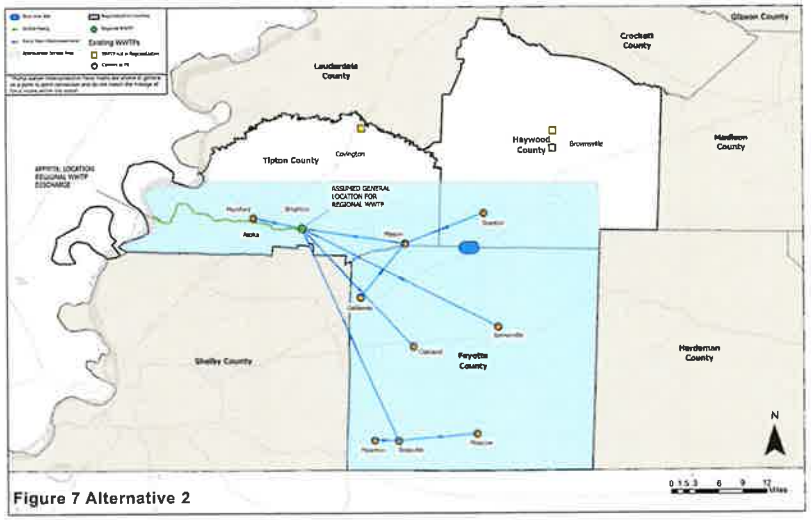


Figure 7 Alternative 2

Alternative 3: Growth Area Regionalization

- Wastewater flows from growth area communities are combined in one facility
  - Western portion of Tipton County and Brownsville stand-alone
  - Regional Facility 20-year design flow: 6.14 MGD
  - Existing facilities converted to lift stations
  - Lowest capital cost
- Impacts
  - Requires discharge to Loosahatchie River
    - Potential Use of Oakland Discharge Point
  - Western Tipton County will have to address growth separately

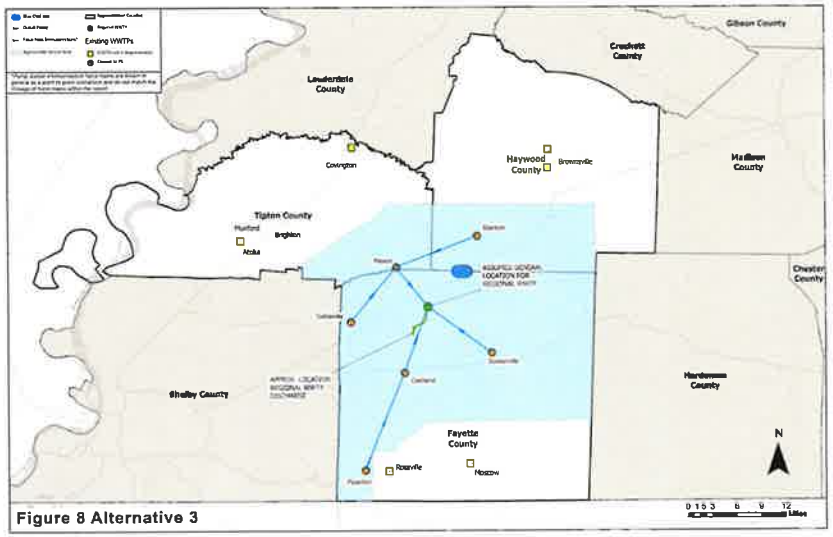


Figure 8 Alternative 3

Alternative 4: Two Service Areas

- Wastewater flows from growth area communities are combined in two facilities
  - Covington and Brownsville stand-alone
  - NW facility 20-year design flow: 3.2 MGD
  - SE facility 20-year design flow: 5.4 MGD
  - Existing facilities converted to lift stations
  - Second-lowest capital cost
- Impacts
  - Requires discharge to Loosahatchie River
    - Potential Use of Oakland Discharge Point
  - Requires two treatment facilities

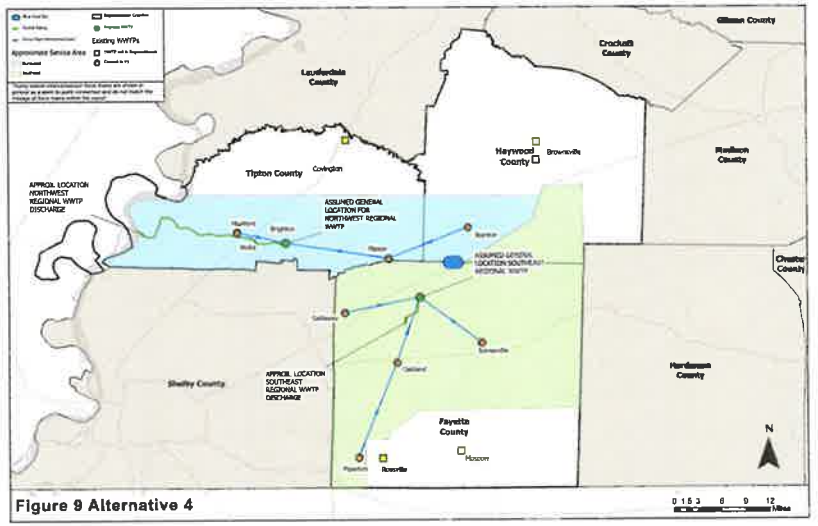


Figure 9 Alternative 4

Alternatives Analysis: Cost Estimates

Alternative	2023$ Capital Cost Total	2023$ Annual Operational Cost Range
Alternative 1	$1,385M	$4.3-$18.34M
Alternative 2	$890M	$4.60-$12.26M
Alternative 3	$350M	$1.67-$4.45M
Alternative 4	$505M	$2.07-$7.29M

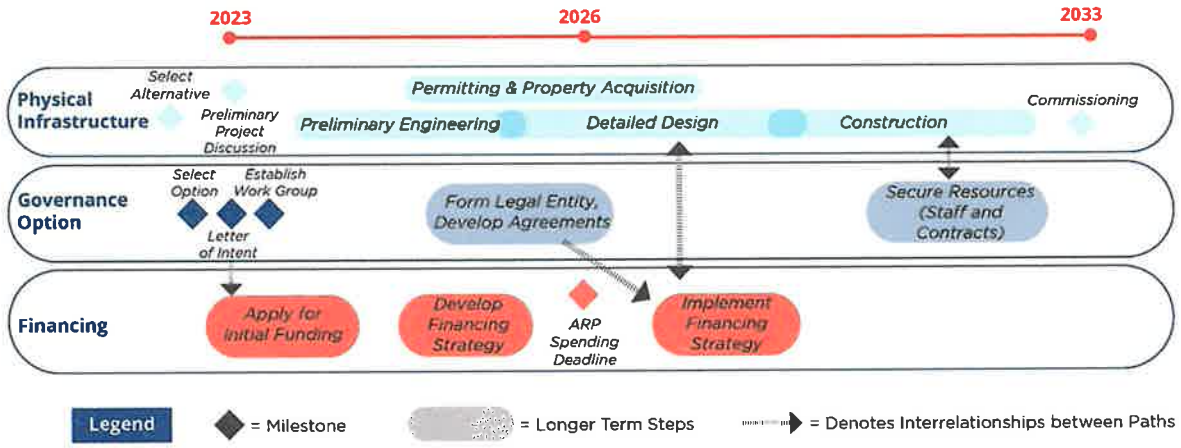
**Detailed cost estimates for each alternative are included in the appendix.*

IMPLEMENTATION & SUMMARY

Implementation

To create a regional governance plan to design, finance, and construct infrastructure to serve the region, several milestones must be met along coordinated paths.

- Planning, designing, and constructing the physical infrastructure (e.g., regional plant(s))
- Creating a regional governance structure (e.g., a regional authority), and
- Developing and implementing a financing strategy.



Summary – Key Takeaways

- **Wastewater Demand** – Potential impact on the 3 counties
  - By 2033 - demand could increase 70% (7.3 MGD to 12.5 MGD).
  - By 2043 demand could increase to 14.3 MGD.
  - Investment in additional capacity will be required.
- **Alternatives Analysis**
  - Four potential alternatives presented based on full to partial regionalization. Based on current state of infrastructure in the region.
- **Governance**
  - Given the infrastructure needs to meet future demand, a Regional Wastewater Treatment Authority is likely best operating model.
- **Conceptual Capital and Operating Costs**
  - Cost estimates are intended to be used for comparing alternatives at a high level and in the early stage of decision making.
  - Detailed engineering plans required for investment / funding models.

Q&A

CODE COMPLIANCE DEPARTMENT
REPORT: April 4, 2023

TOUCHPOINTS:

Personnel Report: Full Staff

Training: On going in numerous subjects

On Going Projects: Administrative Review Amendments

Blight Grant

Property Maintenance Concerns