



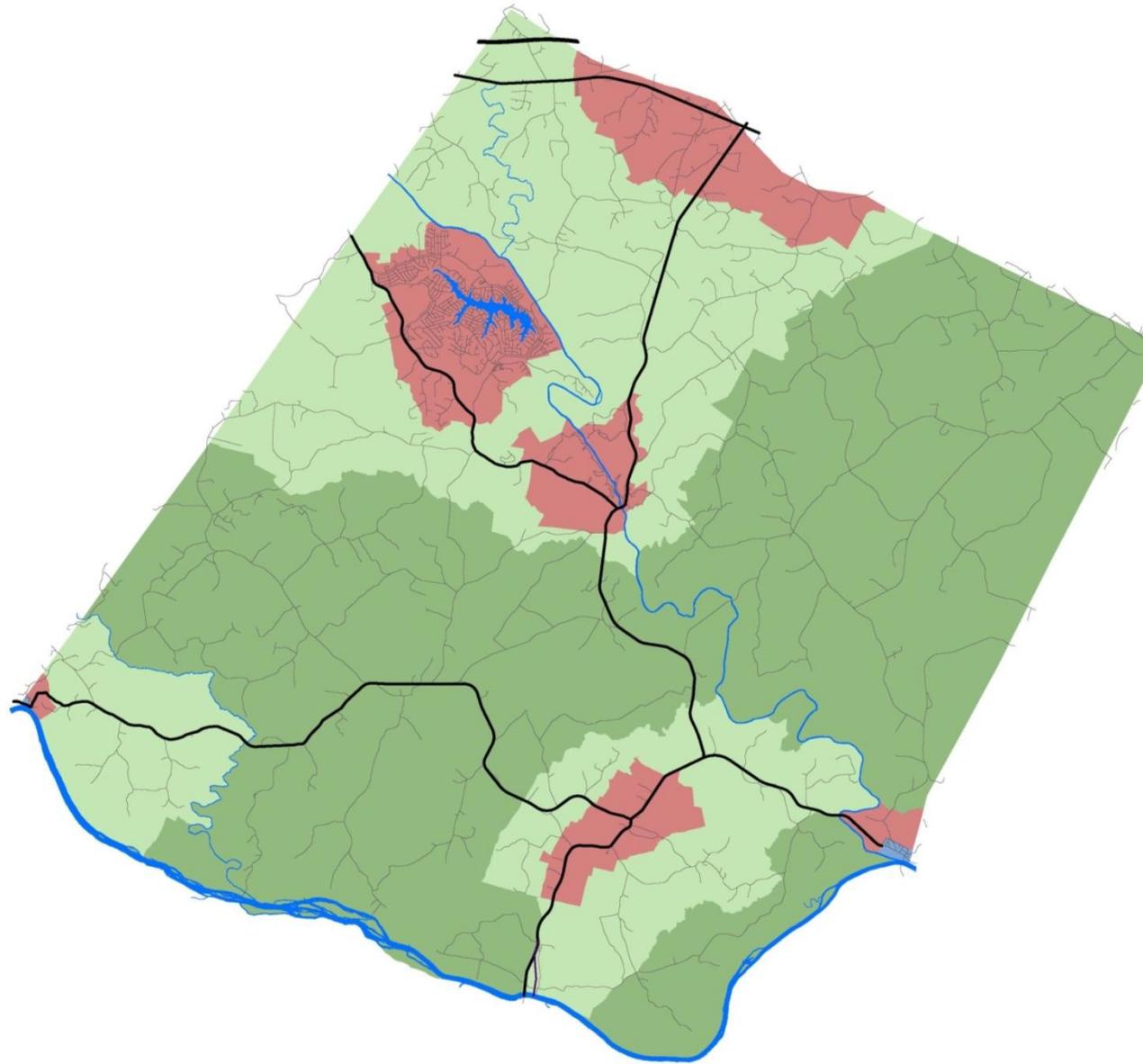
# Fluvanna County Water Discussion

# Water Source Review

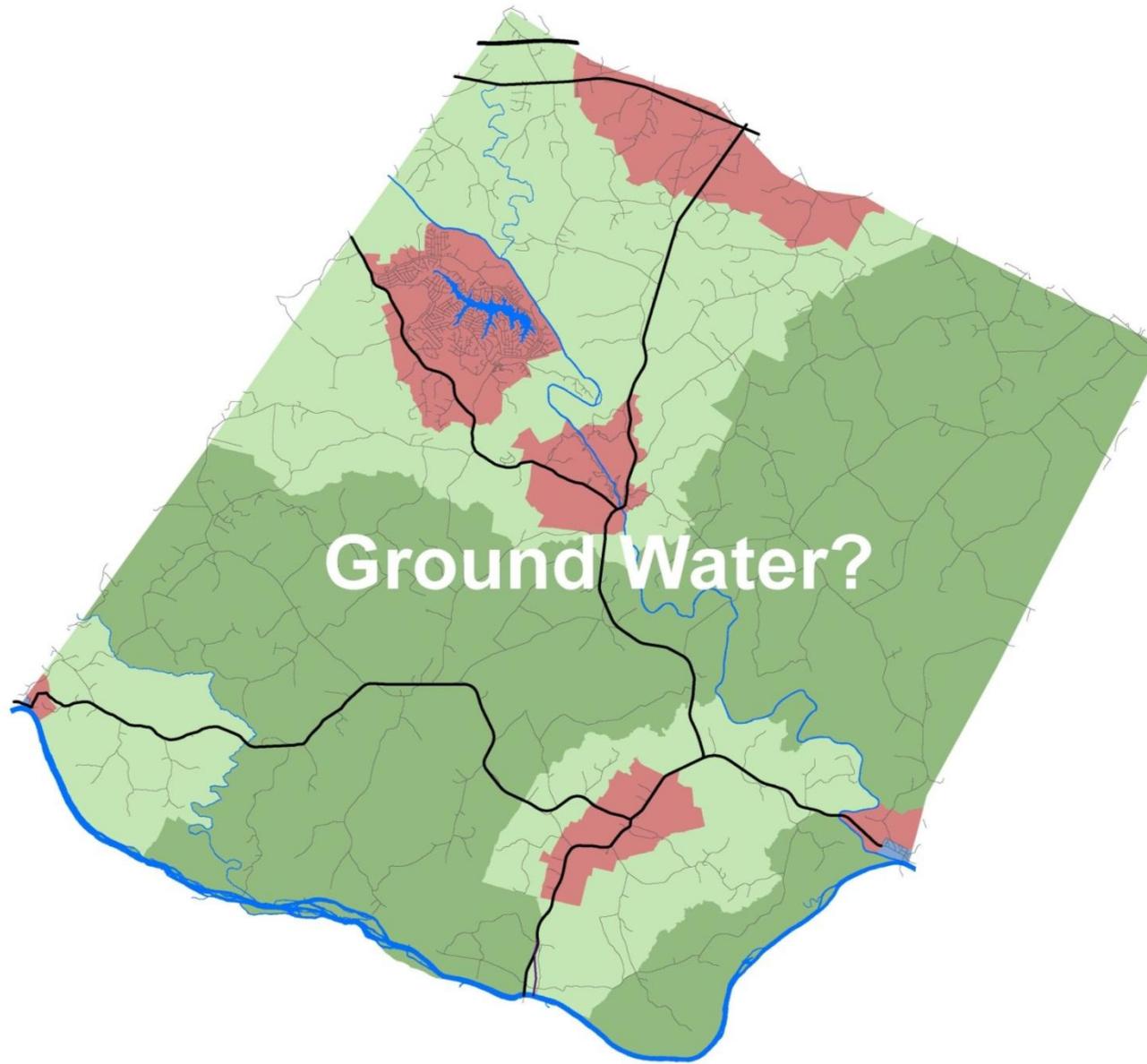
- **We are surface water “rich”**
  - Investigating all surface water sources
- **Are we ground water rich?**
  - Investigating ground water sources
  - Hydrologist will brief County on possible ground water options
- **Ground Water is typically not as reliable as surface water sources**
  - Comprehensive hydrogeological analysis can typically increase the reliability of ground water sources
  - Good quality, high yield wells are less expensive to develop, treat, and operate than surface water systems

# Water Capacity Requirements to Support Zion Crossroads Economic Development (Example)

Ten Year Rate of New Business Types	Number of Businesses	Total GPD Required
Restaurants	2	5,000
Motel	1	9,750
Fast Food	2	15,000
Medical Facility	1	45,000
Doctors Offices	4	2,000
Light Industry	2	6,000
Misc.	1	1,000
<b>Total Gallons Per Day (Ten Year Span)</b>		<b>83,750</b>

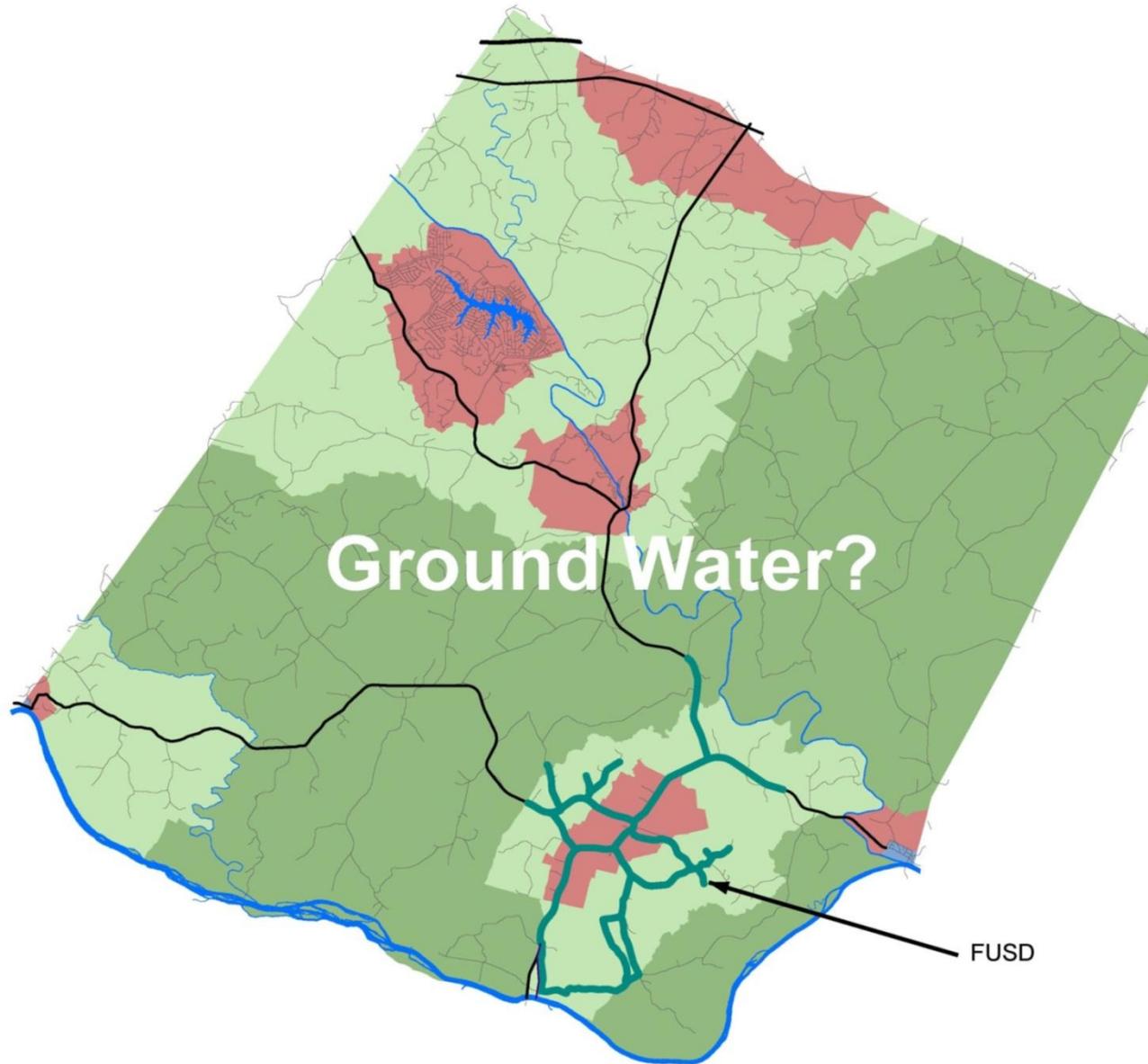


**2009 Planning Areas**  
Community Planning Areas  
Rural Preservation  
Rural Residential  
Town Boundaries



Ground Water?

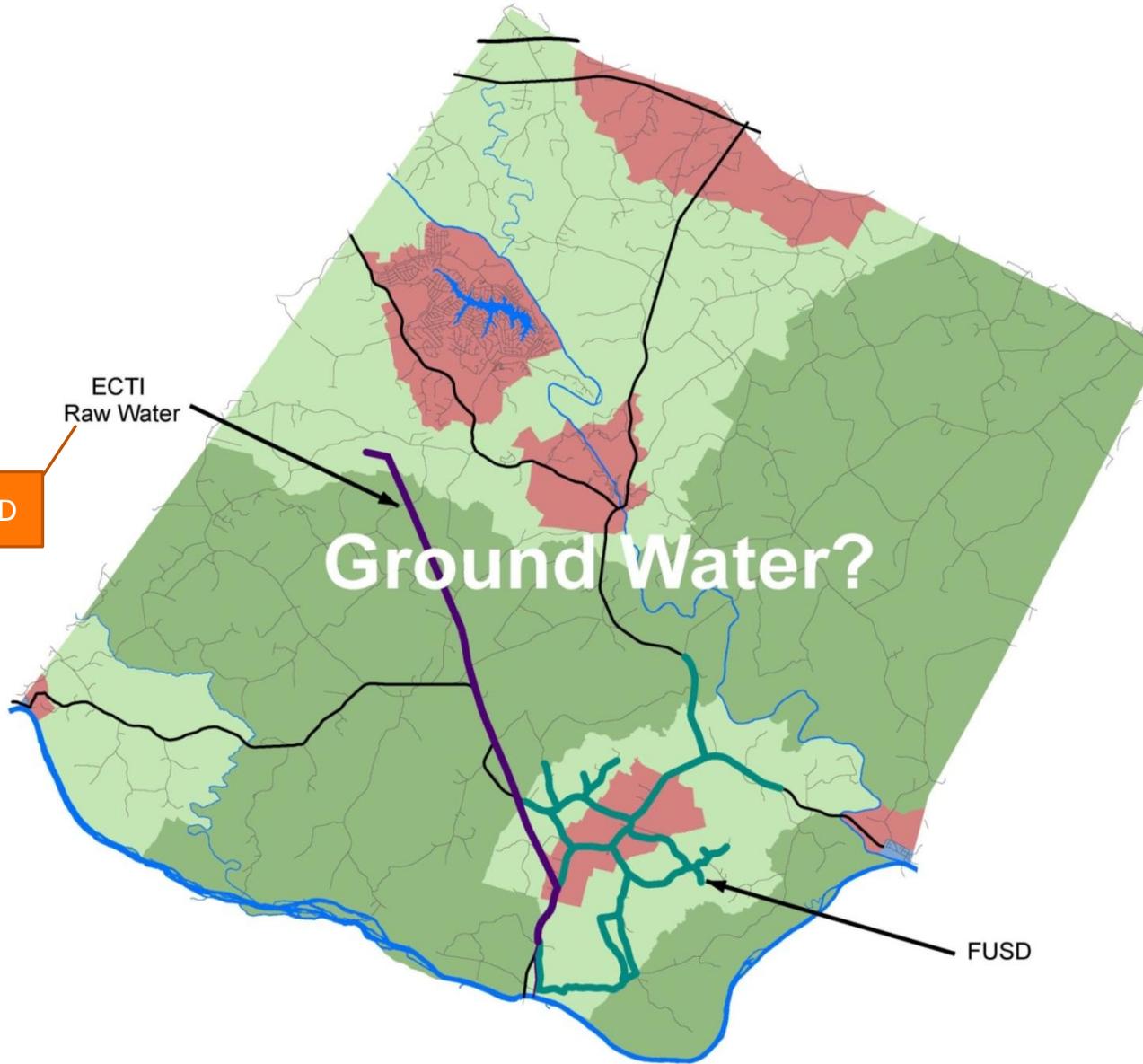
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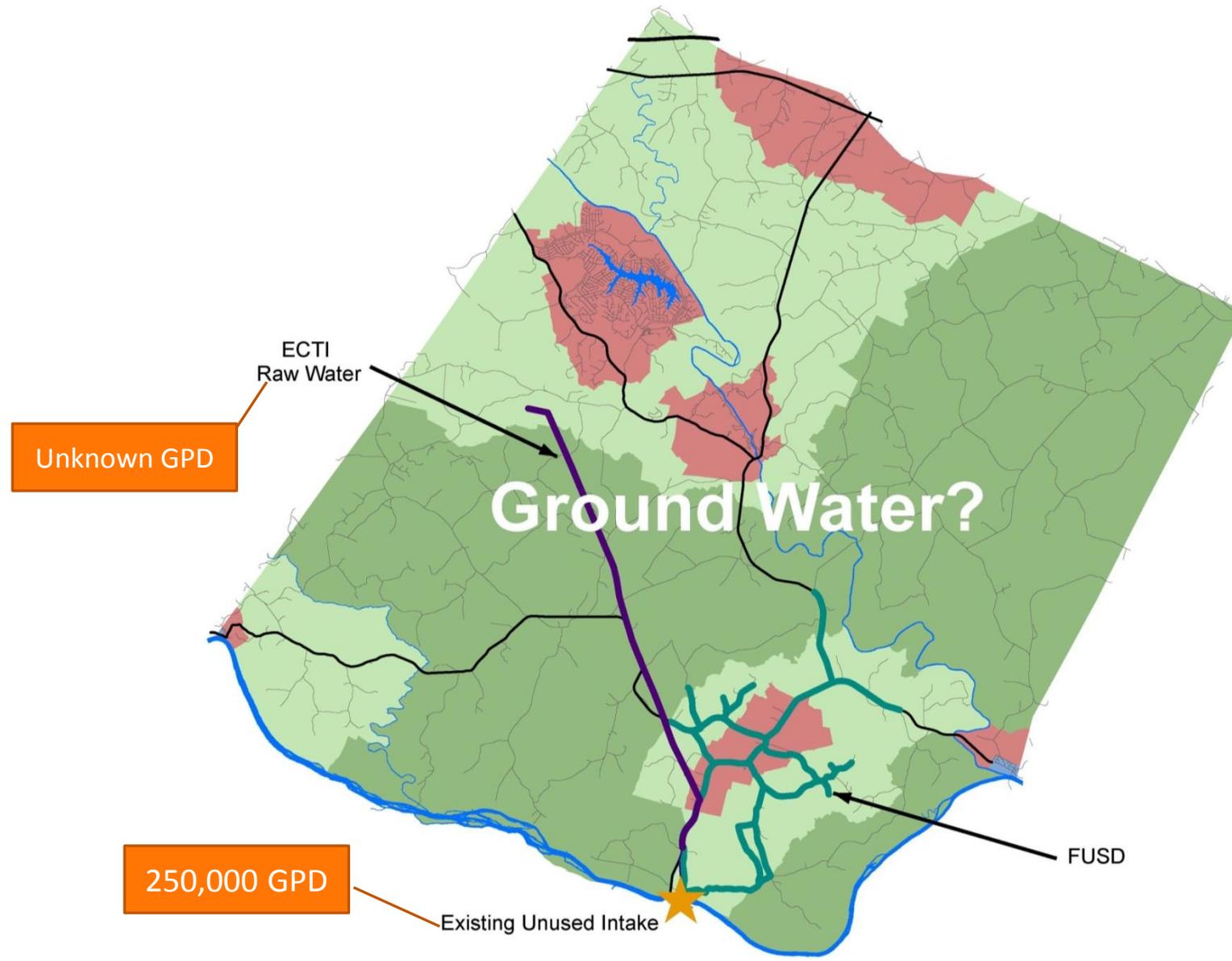
— Fork Union Sanitary District (FUSD)

Unknown GPD



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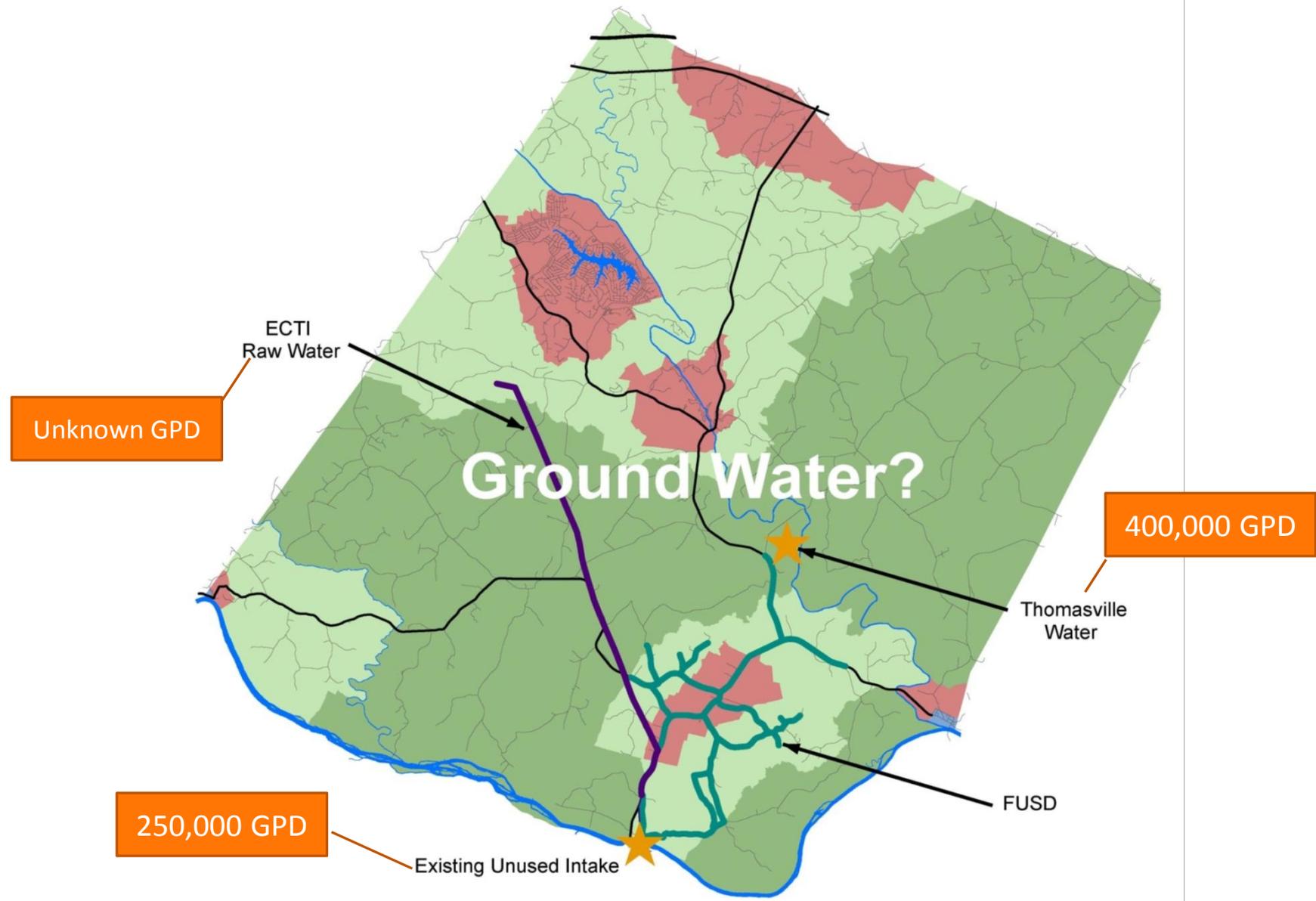
- Existing ECTI Raw Water Line
- Fork Union Sanitary District (FUSD)



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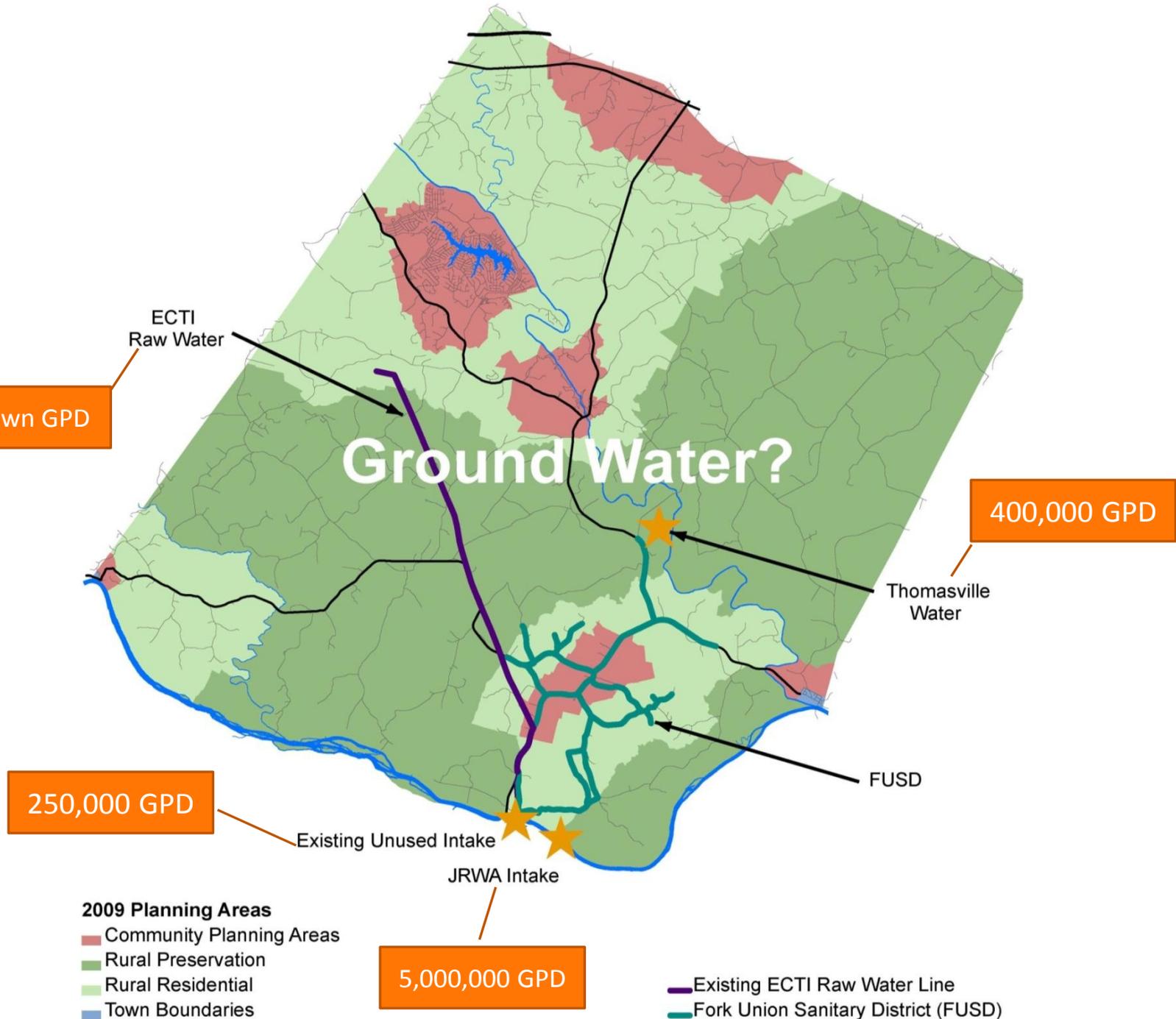


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# Ground Water?



# Ground Water?

500,000 GPD

Aqua PPEA

Unknown GPD

ECTI Raw Water

400,000 GPD

Thomasville Water

250,000 GPD

Existing Unused Intake

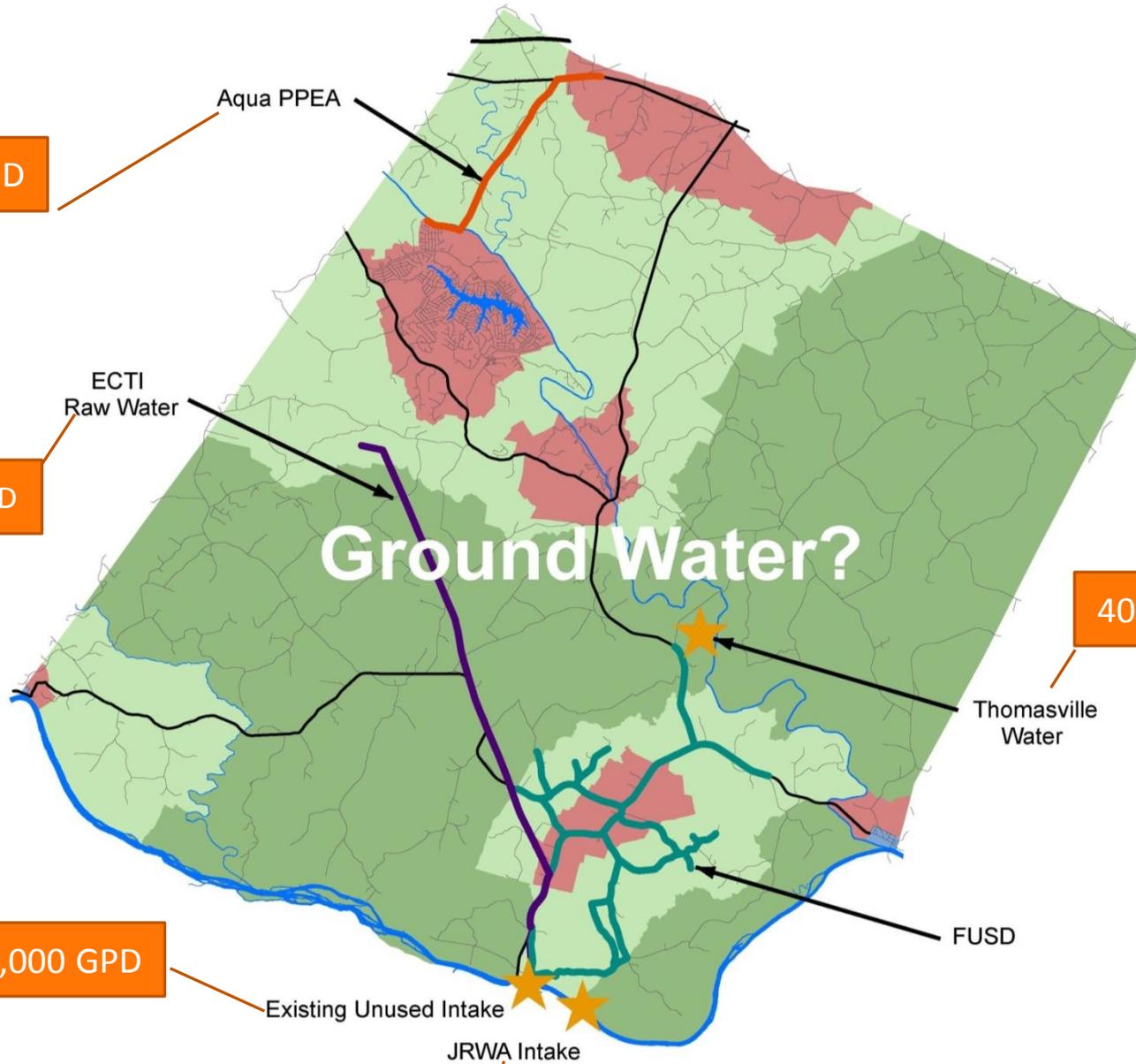
FUSD

JRWA Intake

5,000,000 GPD

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# Ground Water?

500,000 GPD

150,000 – 175,000 GPD

Unknown GPD

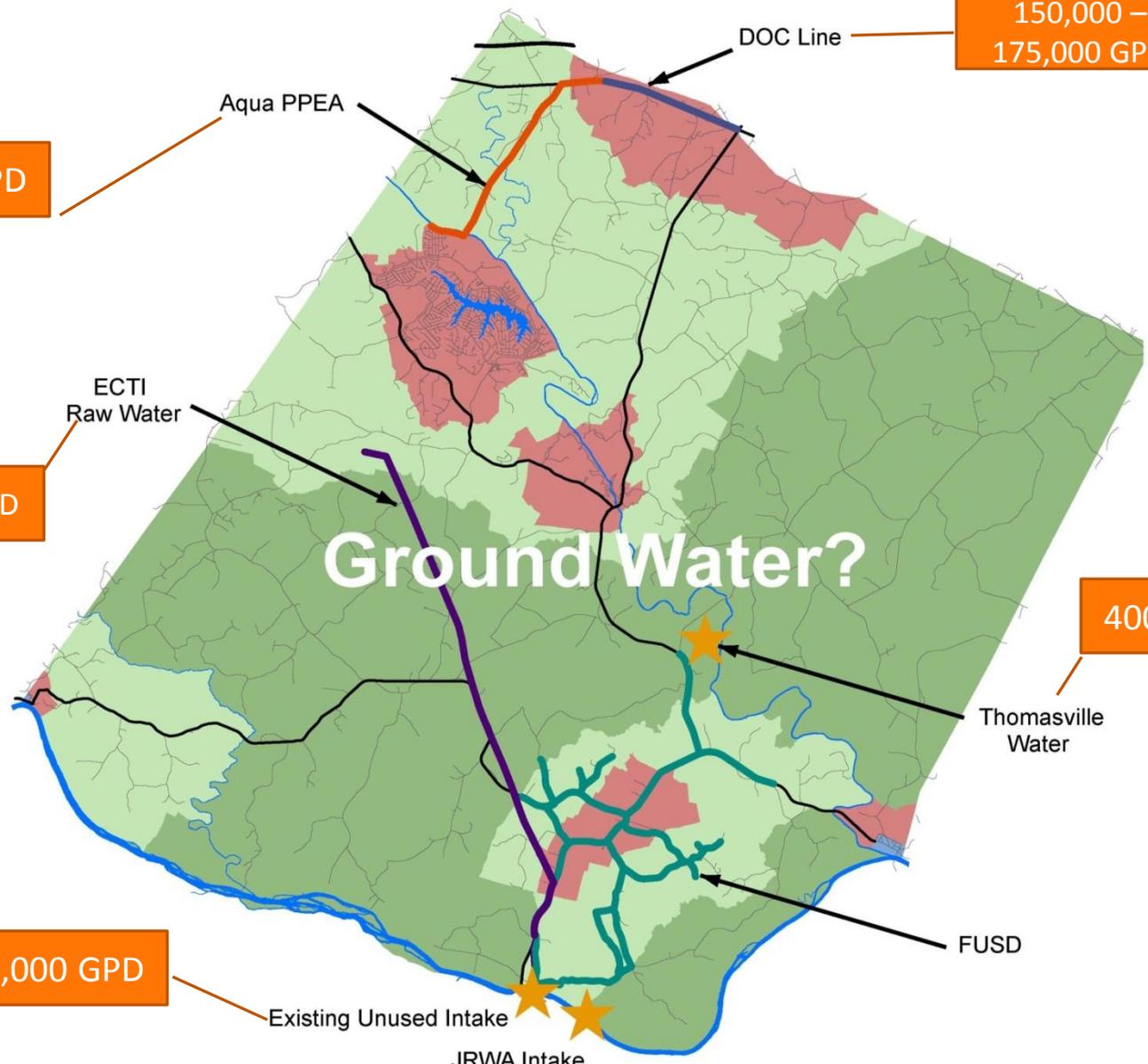
400,000 GPD

250,000 GPD

5,000,000 GPD

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# Ground Water?

500,000 GPD

150,000 – 175,000 GPD

Unknown GPD

400,000 GPD

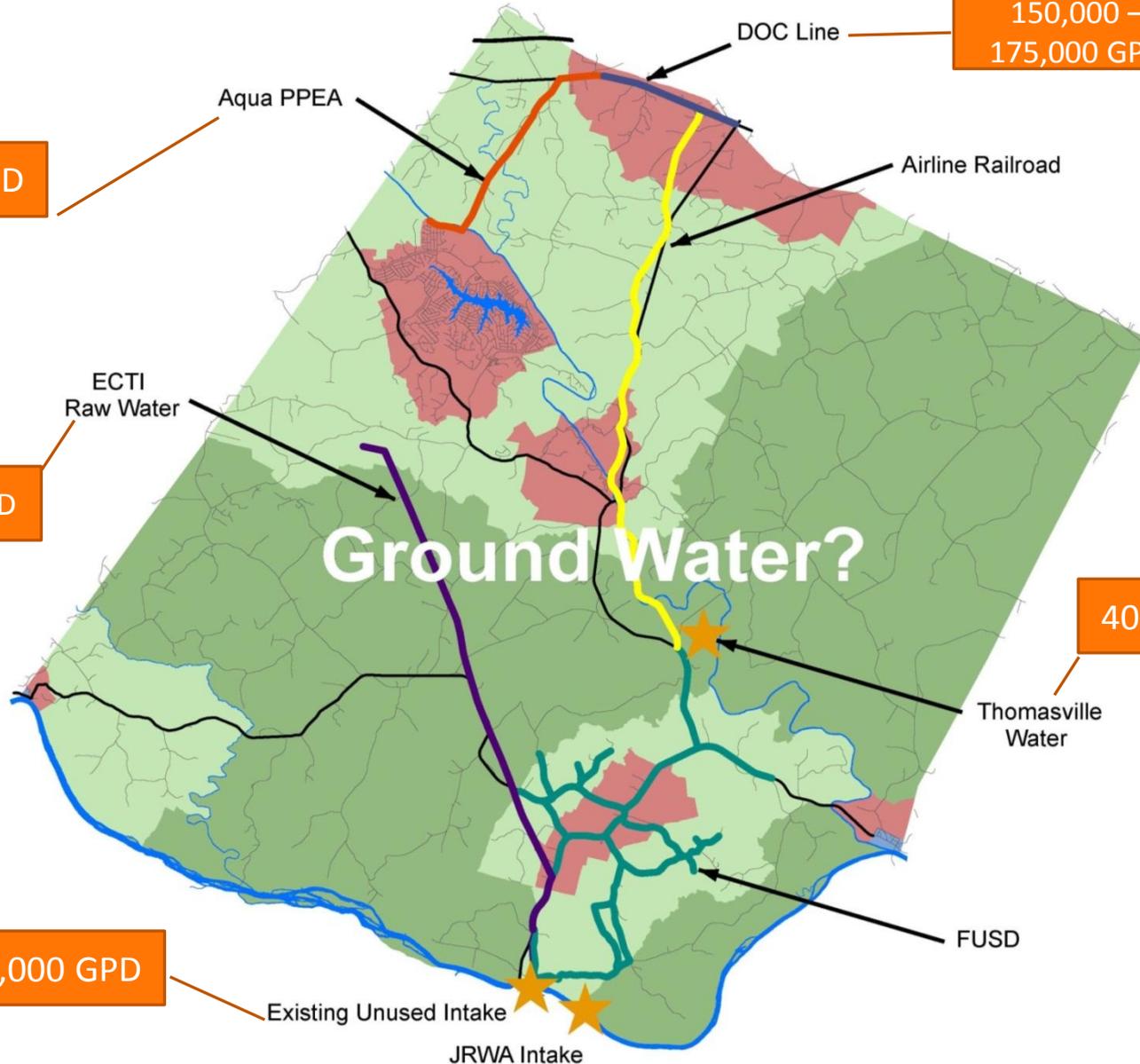
250,000 GPD

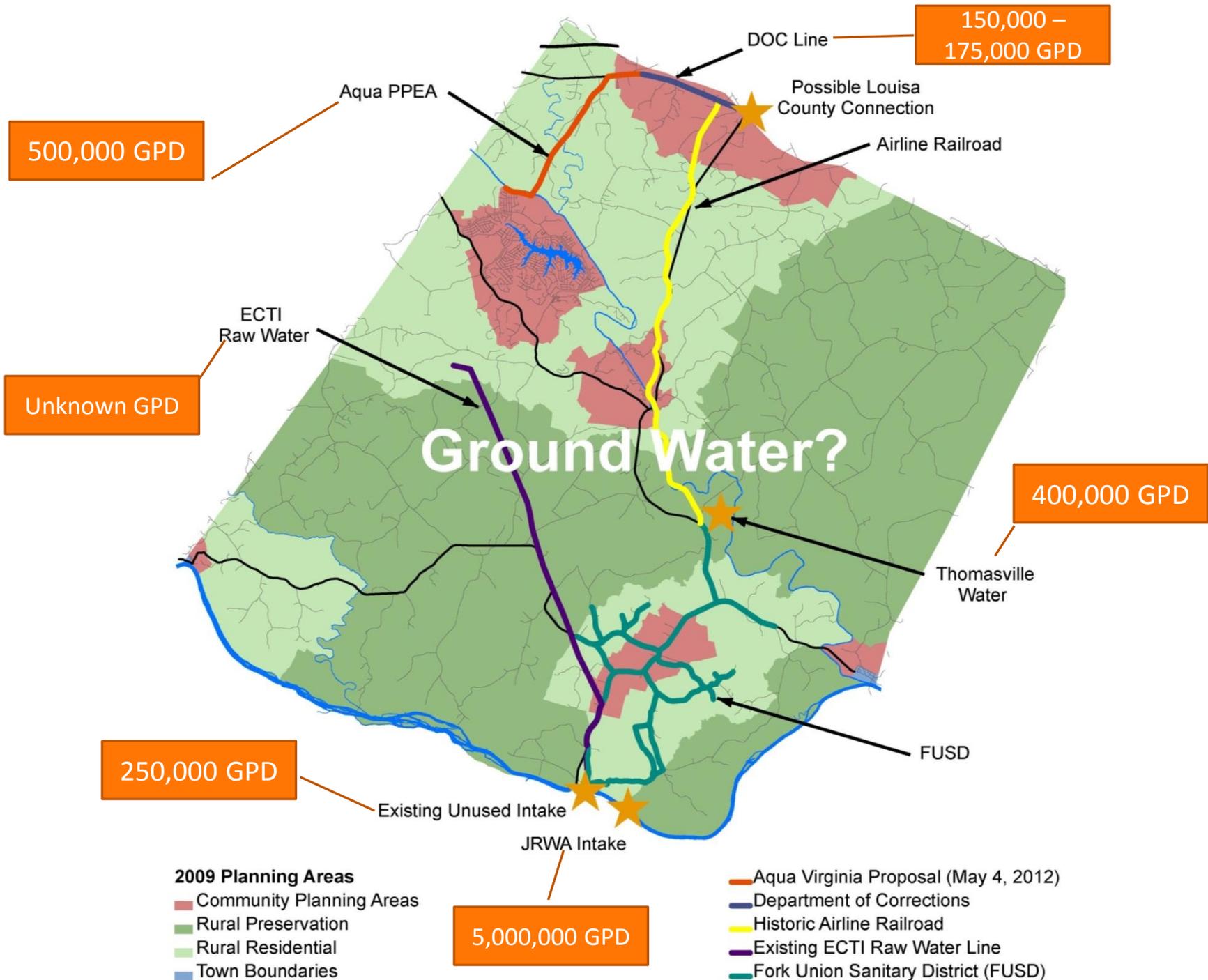
5,000,000 GPD

### 2009 Planning Areas

- Community Planning Areas
- Rural Preservation
- Rural Residential
- Town Boundaries

- Aqua Virginia Proposal (May 4, 2012)
- Department of Corrections
- Historic Airline Railroad
- Existing ECTI Raw Water Line
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# Gallons Per Day of Various Options

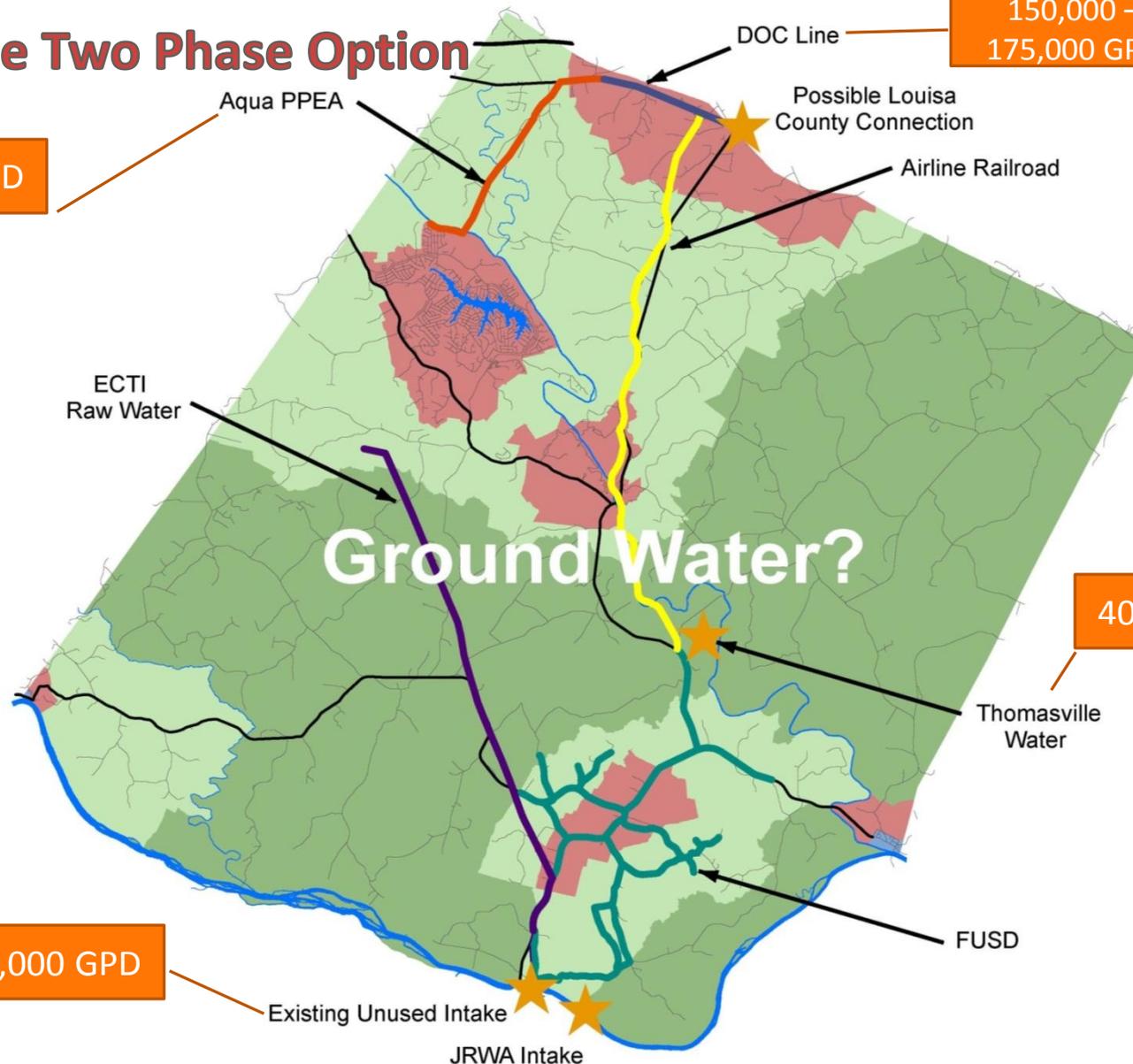
<b>Water Source</b>	<b>Gallons Per Day (GPD)</b>
<b>Aqua Virginia Proposal</b>	<b>500,000</b>
<b>Department of Corrections</b>	<b>150,000 to 175,000</b>
<b>“Thomasville” Wells</b>	<b>400,000</b>
<b>ECTI Raw Water</b>	<b>Full GPD Unknown</b>
<b>Existing Unused Intake (James)</b>	<b>250,000</b>
<b>James River Water Authority</b>	<b>5,000,000</b>

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# Possible Two Phase Option

500,000 GPD

150,000 – 175,000 GPD



250,000 GPD

400,000 GPD

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# Two Phase Option

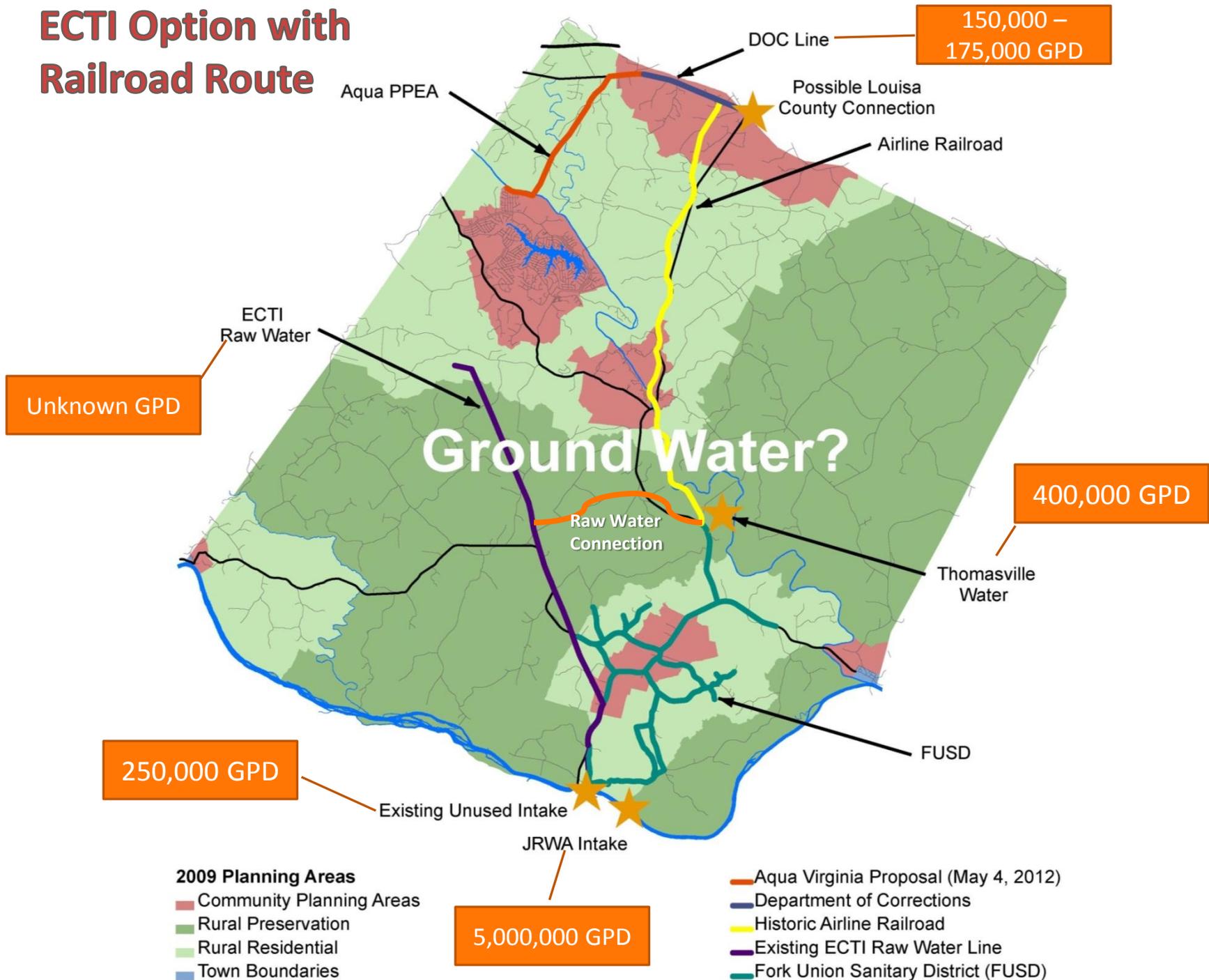
- **Pros**

- FUSD Intake is still viable according to DEQ and has given permission to exercise existing pumps
- “Thomasville” Site
  - Tank - 1,000,000 Gallon
  - Wells Capacity - 400K GPD

- **Cons**

- FUSD Intake taken offline in the 70’s, requires new permit (Expedited Process)
- New water treatment plant required
- “Thomasville” water source requires special treatment (Charcoal System)

# ECTI Option with Railroad Route

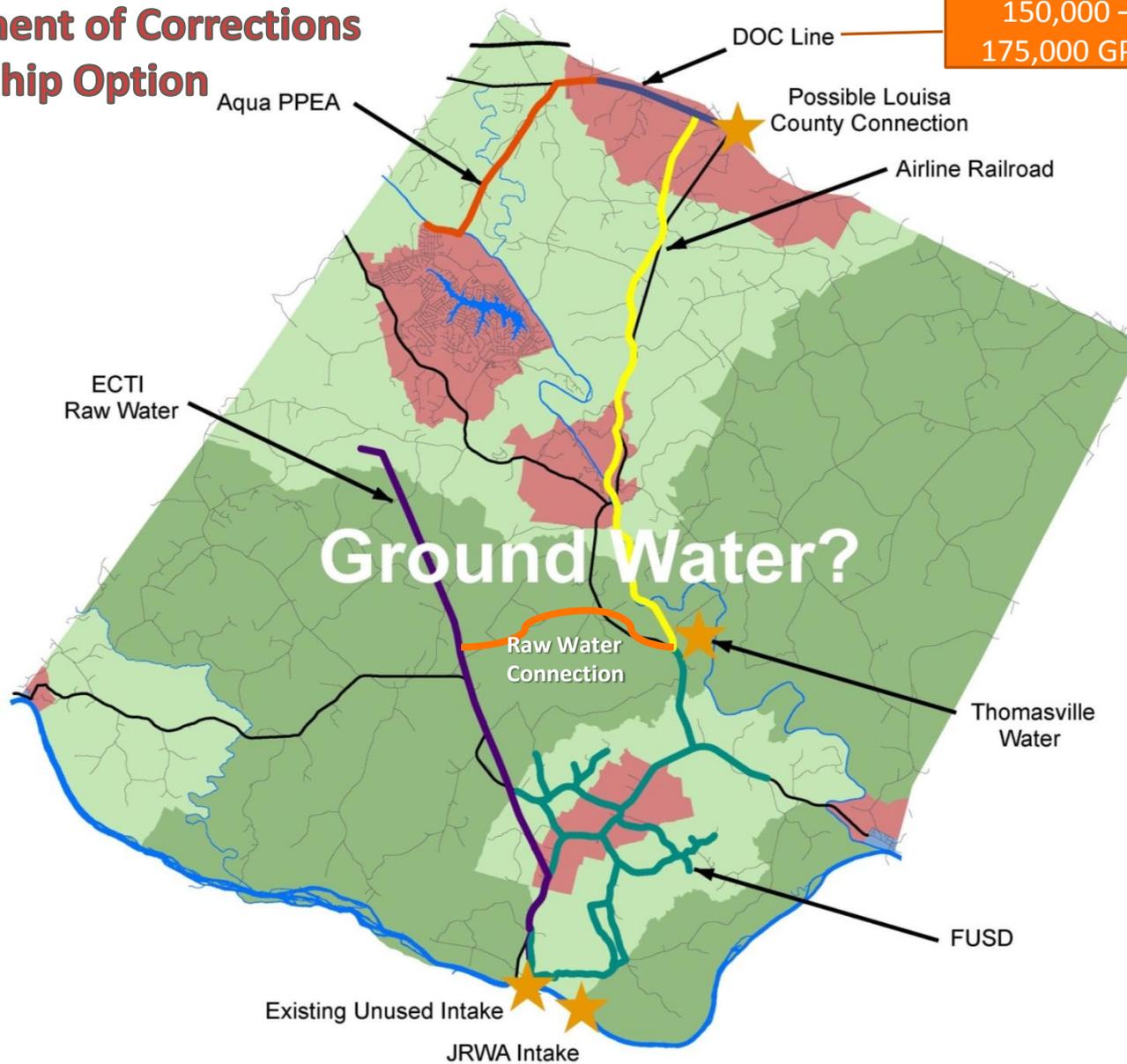


# Viability Unknown

- **Pros**
- **Cons**

# Department of Corrections Partnership Option

150,000 – 175,000 GPD



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# Department of Corrections Option

- **Pros**

- DOC has other County partnerships across the Commonwealth
- Expenses charged by DOC are at cost
- Short distribution line

- **Cons**

- Cost of DOC plant upgrade, distribution and additional personnel not known
- Not clear on the total quantity of water available

# Staff Recommendations

- **Immediate**

- Pursue preliminary ground water investigation and develop a list of options
- Pursue the Department of Corrections Partnership Option
- Continue with PPEA process
- Further investigate the “Thomasville” option

- **Mid-Term (3-6 months)**

- Develop a phased Strategic Water plan.