



CITY OF MEDICINE LODGE

# Water Master Plan

JUNE 2012



# Project Overview

- Collect system data
- Create computer water model
- Project future population and demands
- Evaluate model
- Determine recommended improvements
- Establish proposed phasing for improvements

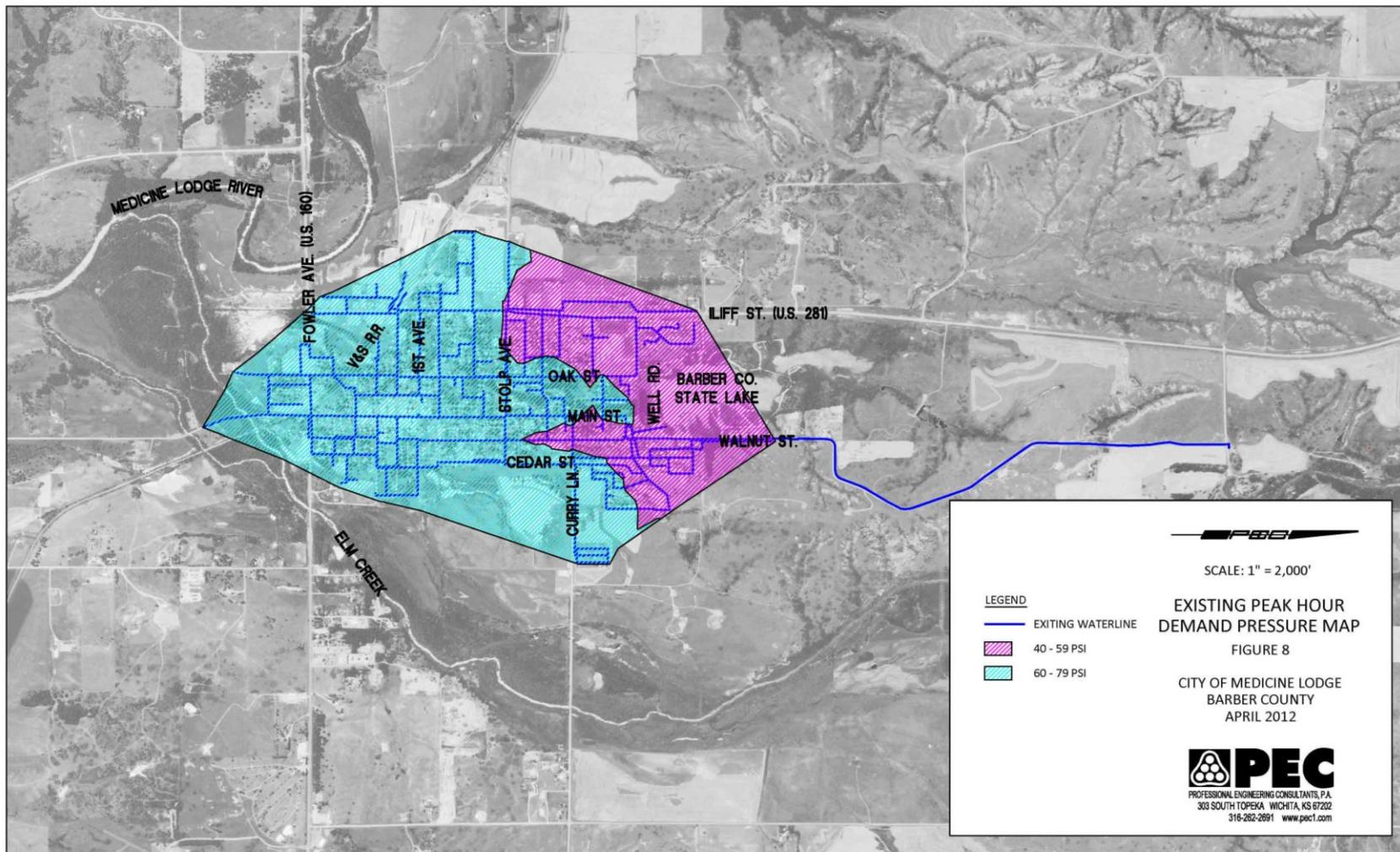


# Model Evaluation

- Existing System (2012 demands)
  - Pressure range of 37-80 psi
  - Fire flows
    - Approximately 50% of hydrants can provide residential fire flow (1,000 gpm)
    - 22% of hydrants flow <500 gpm

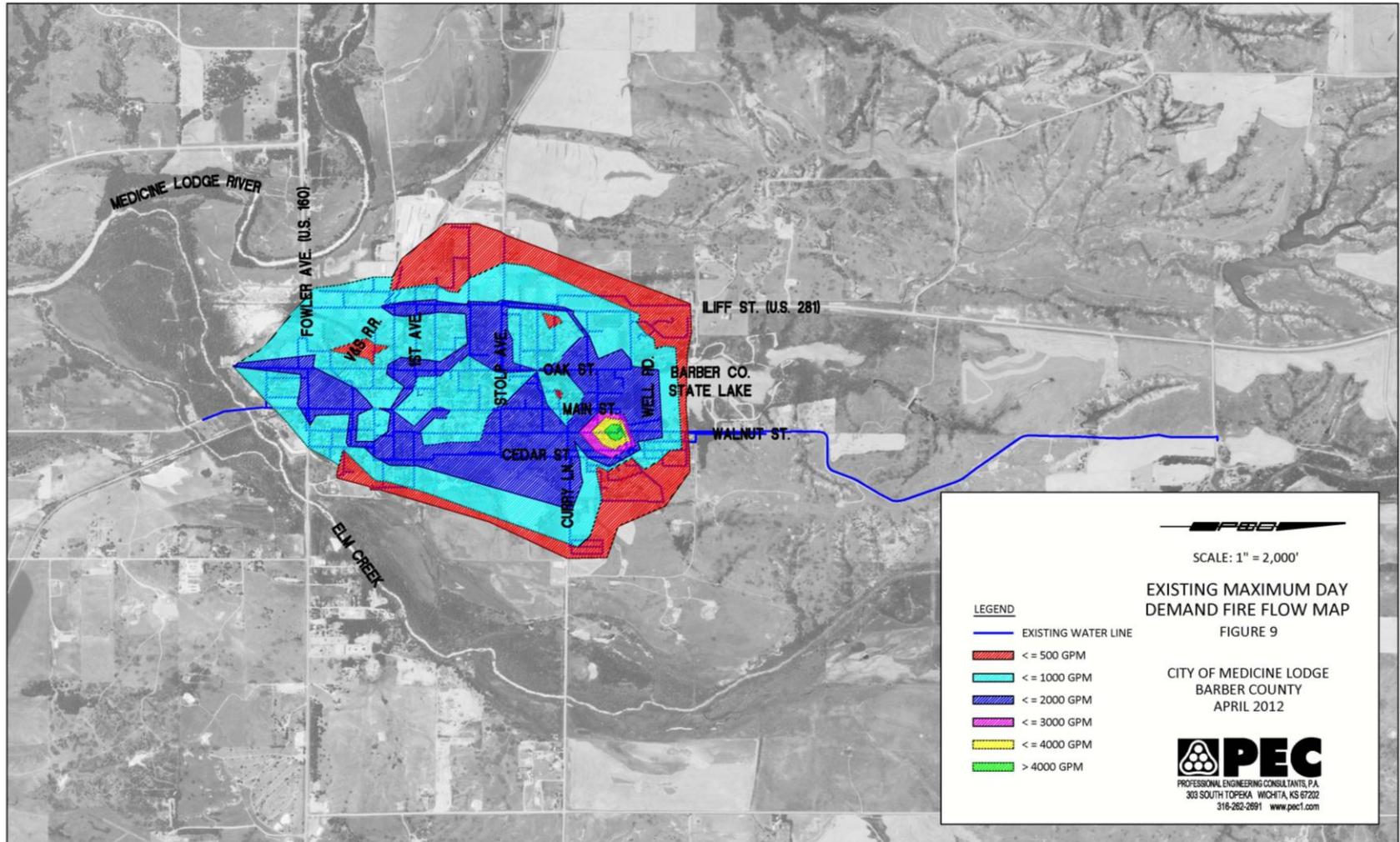


# Existing System-2012 Pressures





# Existing System-Fire Flows



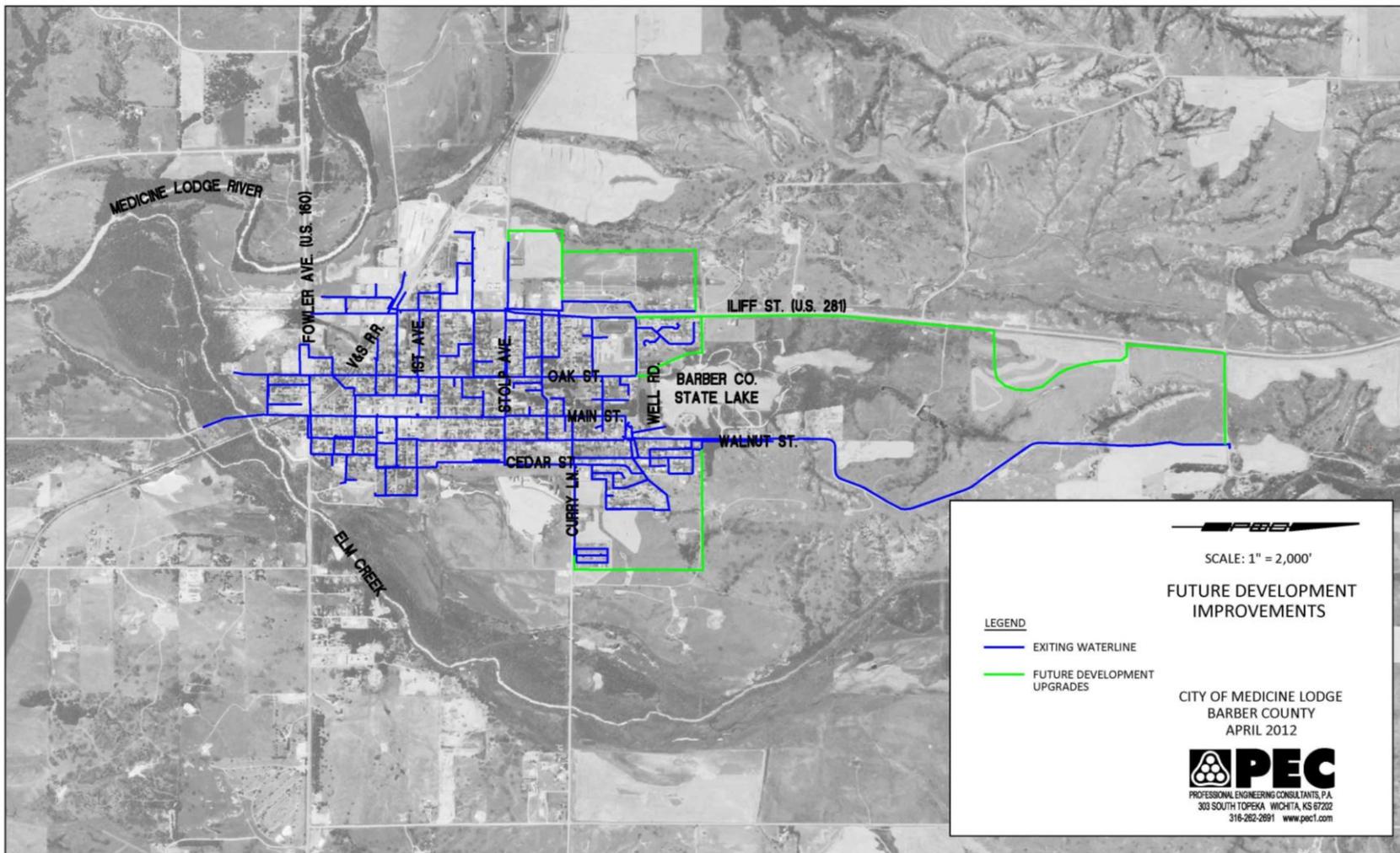


# Projected Development Areas

- Five primary areas
  - North – Industrial
  - Northwest – Commercial
  - Southwest – Commercial
  - Central – Residential
  - East - Residential



# Projected Development Areas



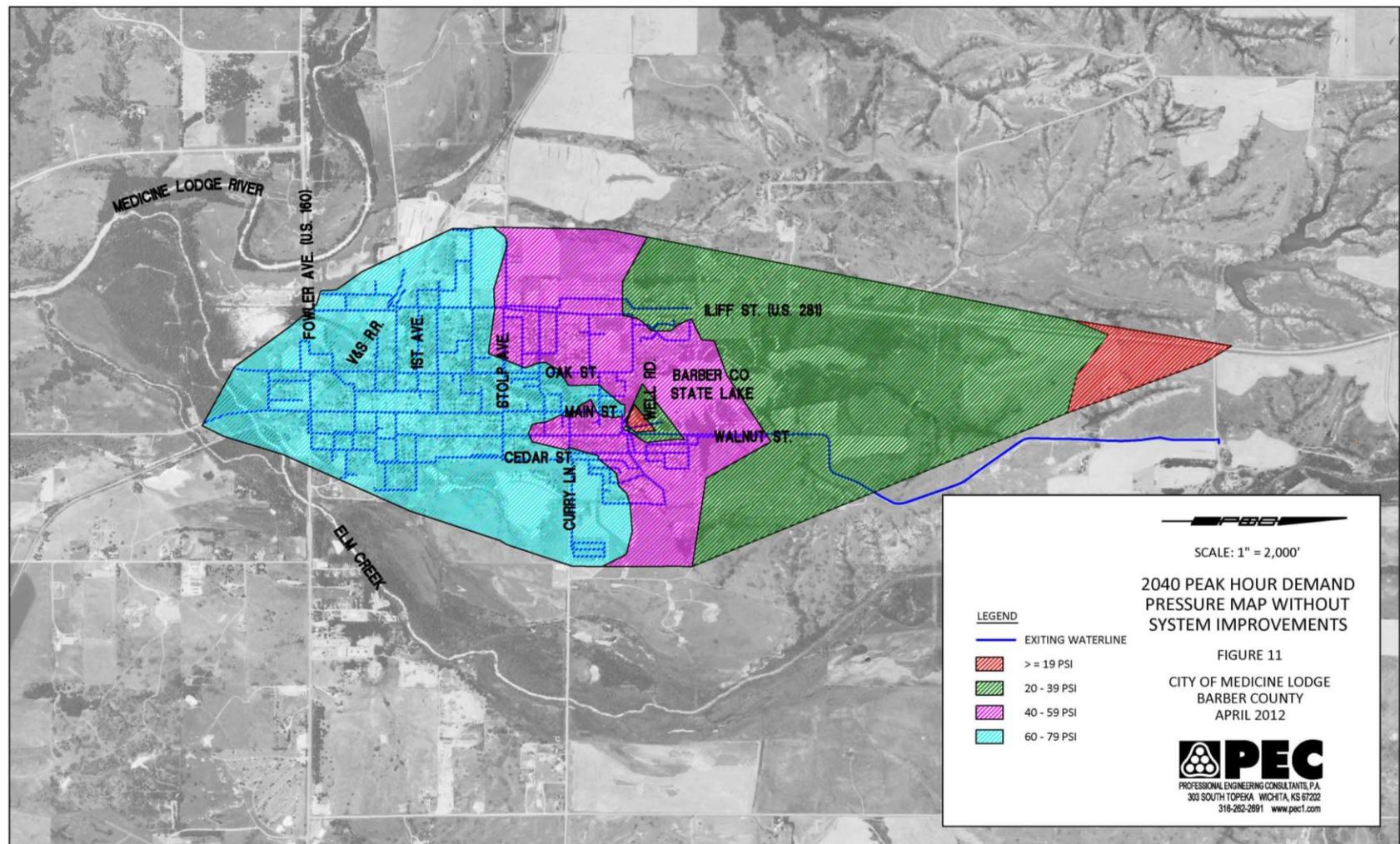


# Model Evaluation

- Existing System (2040 demands)
  - Pressure range of 13-79 psi
  - Fire flows
    - All hydrants flow <500 gpm

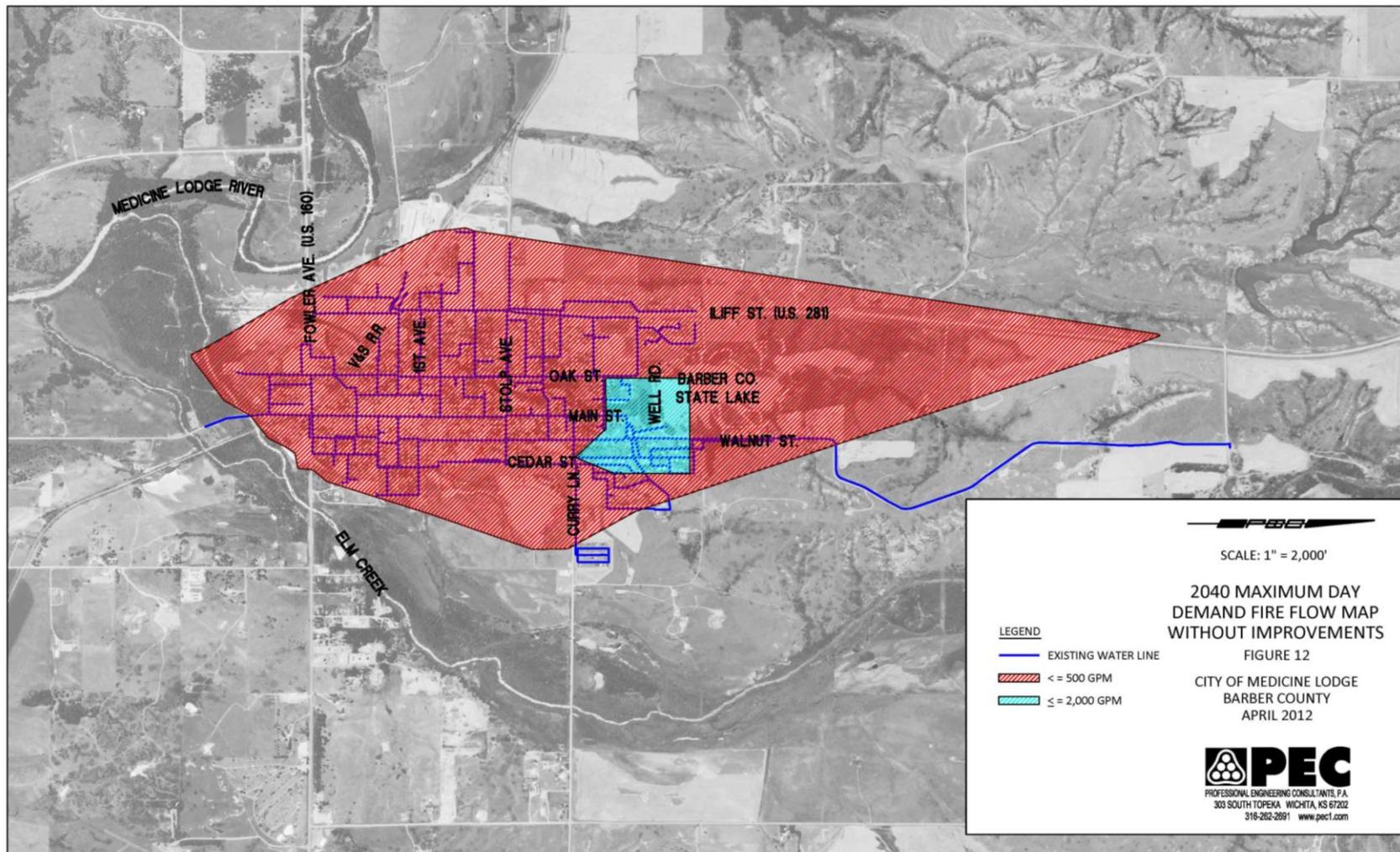


# Existing System-2040 Pressures





# Existing System-Fire Flows



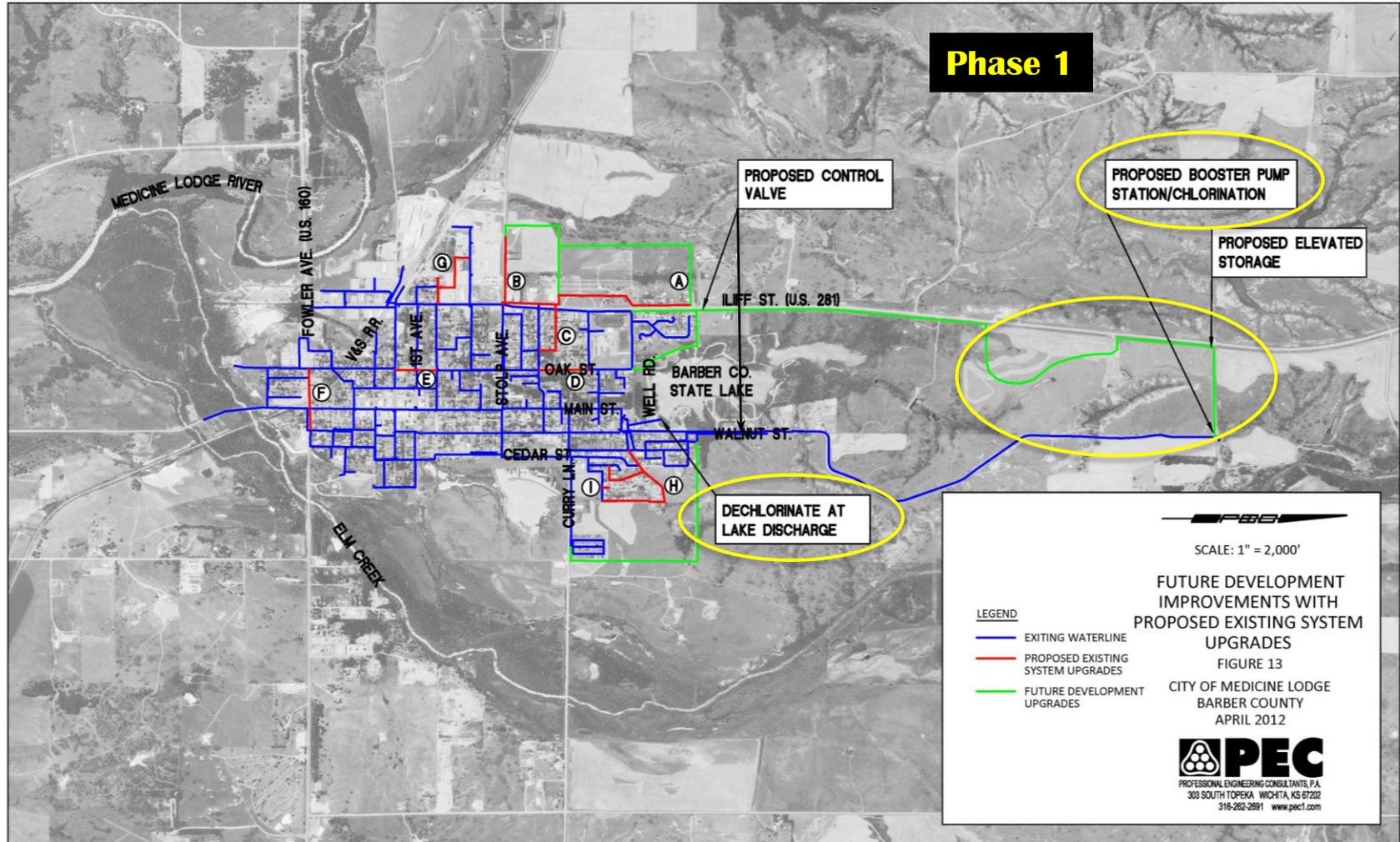


# Proposed Improvements

- Phase 1
  - New small booster pumps
  - New chlorination unit
  - 12” line from new booster pumps to proposed industrial park
  - Dechlorination unit at Barber Co. Lake connection

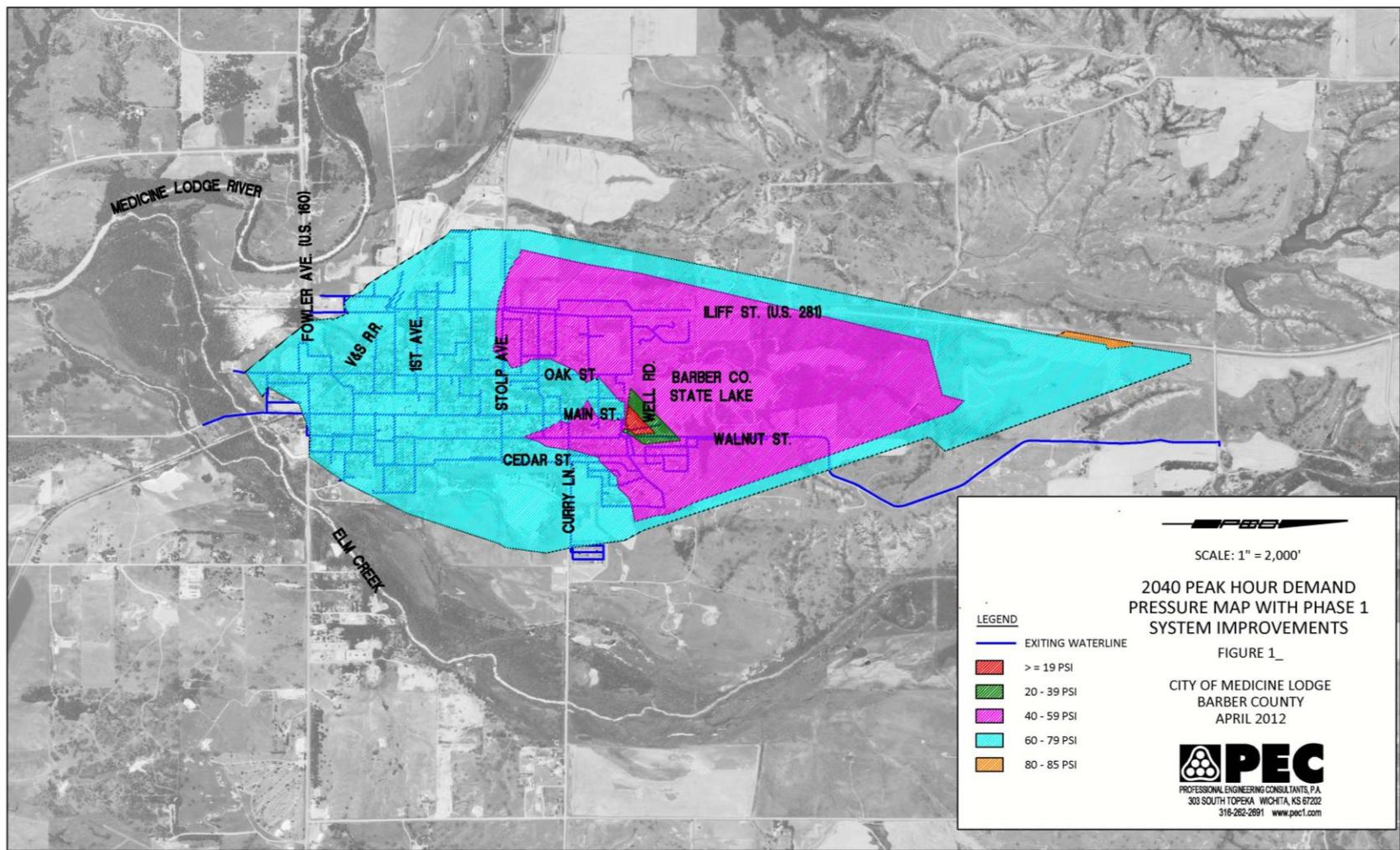


# Proposed Improvements



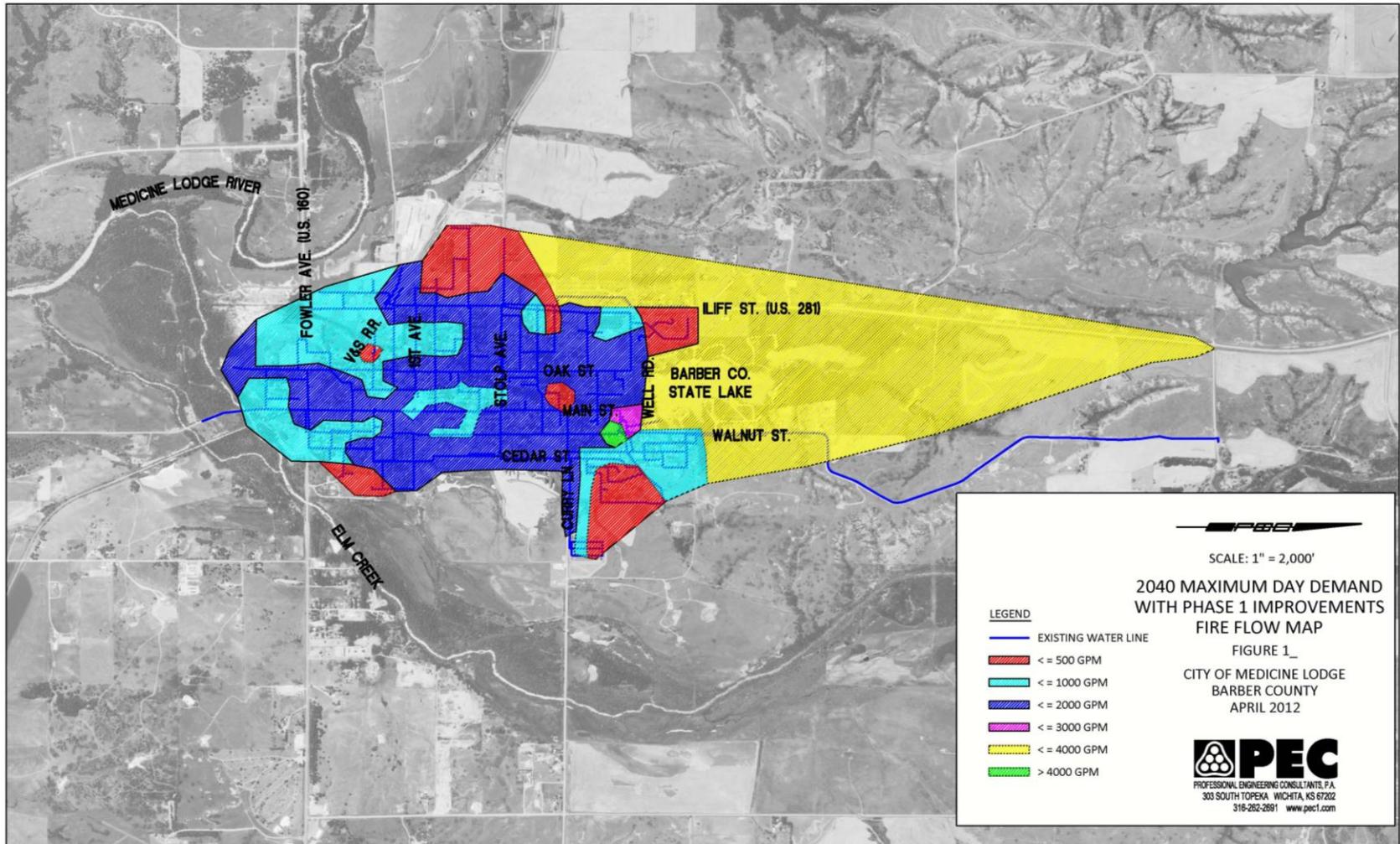


# Phase 1-System Pressures





# Phase 1-Fire Flows



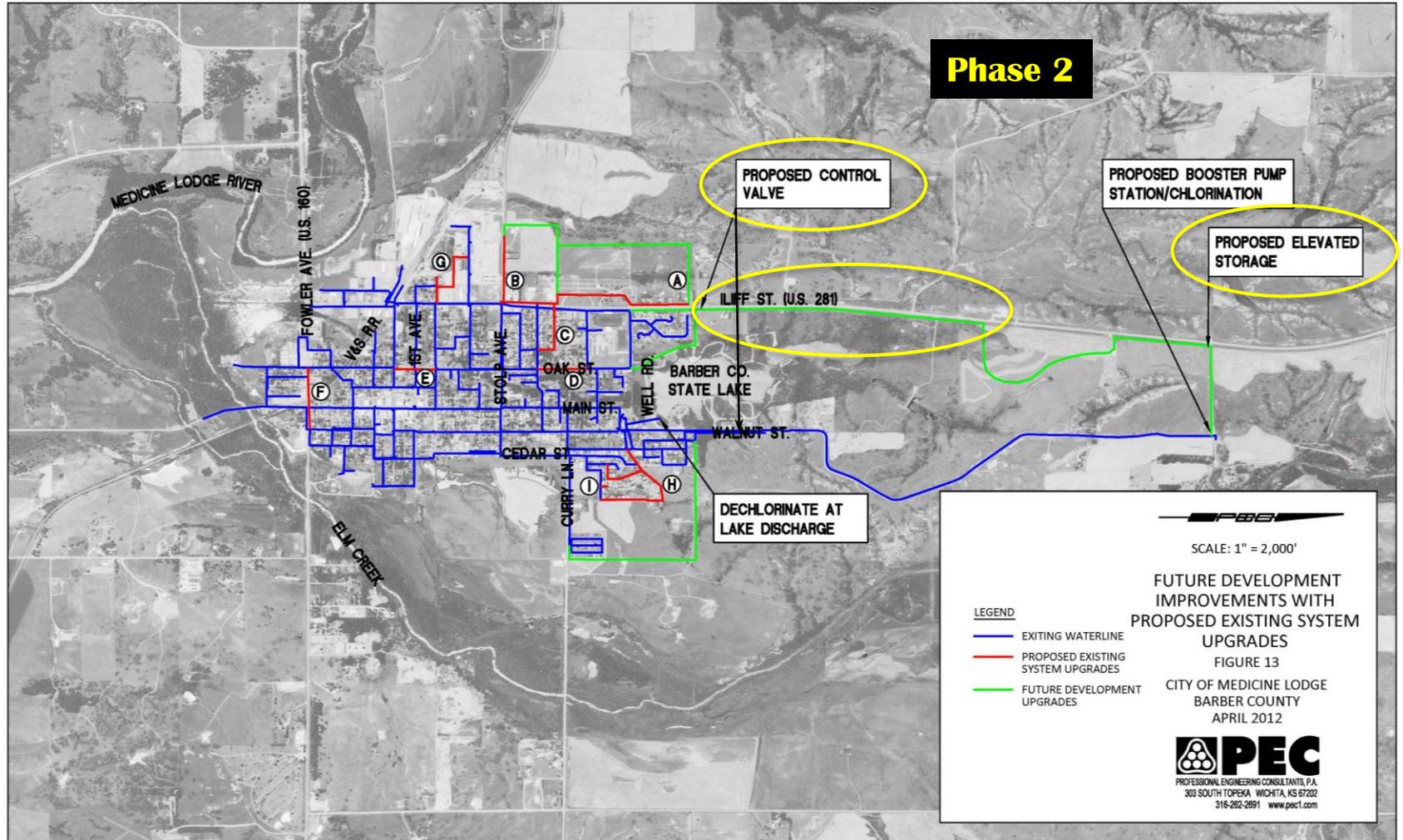


# Proposed Improvements

- Phase 2
  - Extend 12” water line from proposed industrial park to Osage Ave. on US 281
  - New control valves
  - New 300,000 gallon elevated storage tower



# Proposed Improvements



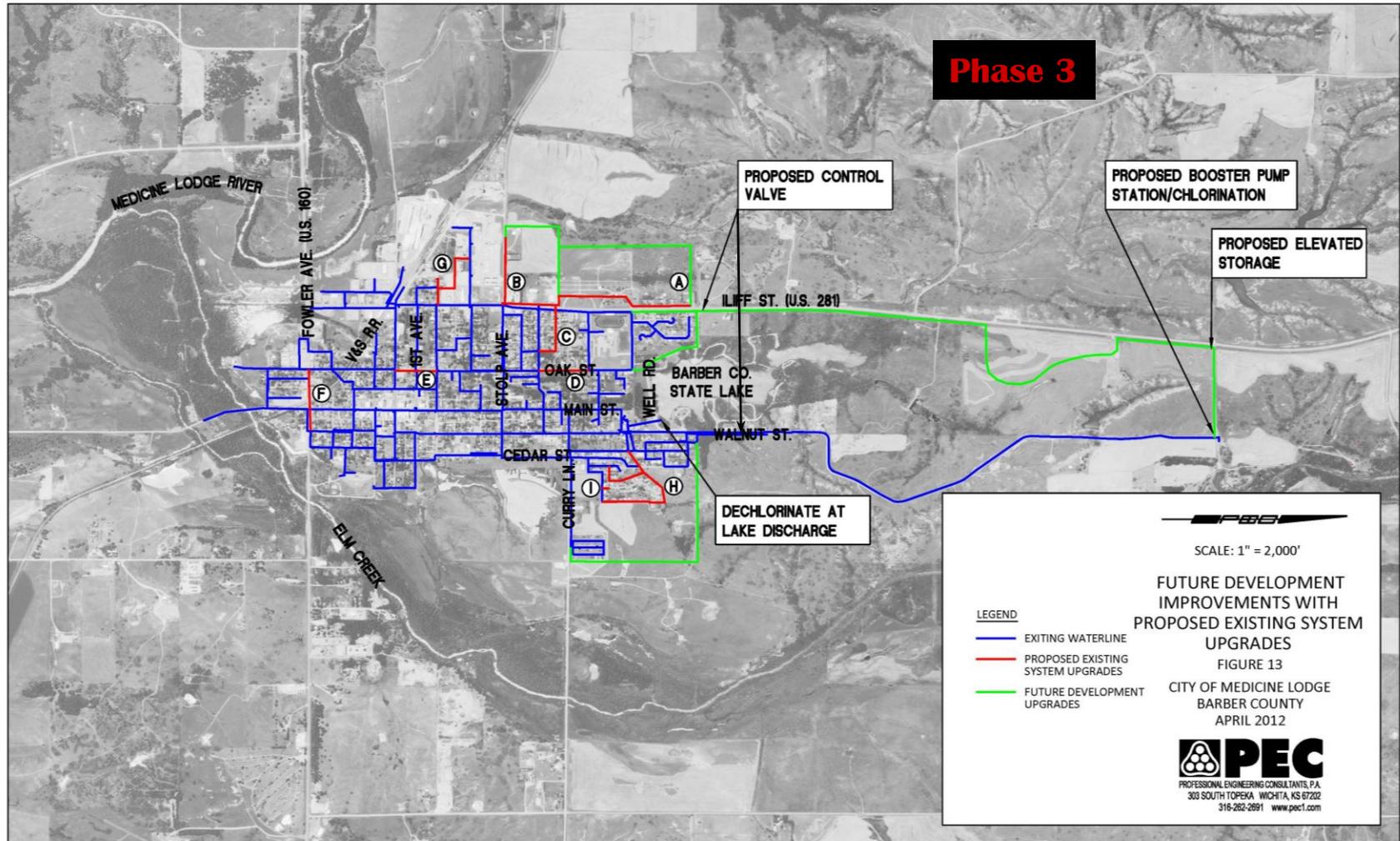


# Proposed Improvements

- Phase 3
  - Replace existing water lines
    - US 281 from approximately Kelly to Stolp Ave.
    - Stolp Ave. west from US 281
    - Hibbard Ave. from US 281 to Adams, south to Jefferson
    - Oak from Robie to Jefferson
    - Oak from 2nd Ave. to Kansas Ave.
    - US 160 from Oak to Cedar
    - Stolp Ave. to 2nd Ave., west of US 281
    - Water Ave./Locust/Elm/SW Ayde Dr.
    - Elm, north of Pine



# Proposed Improvements





# Cost and Completion Estimates

Improvement Phase	Estimated Cost	Completion Time (Design and Construction)
Phase 1	\$1,023,000	10-12 months
Phase 2	\$1,726,000	12-14 months
Phase 3	\$ 989,500	6-8 months

Note that the estimated completion schedules do not include delays for funding acquisition.



# Funding

- Potential Funding Sources
  - Kansas Public Water Supply Loan Fund (KPWSLF)
  - Community Development Block Grants (CDBG)
  - General Obligation Bonds (GO Bonds)



# Questions?