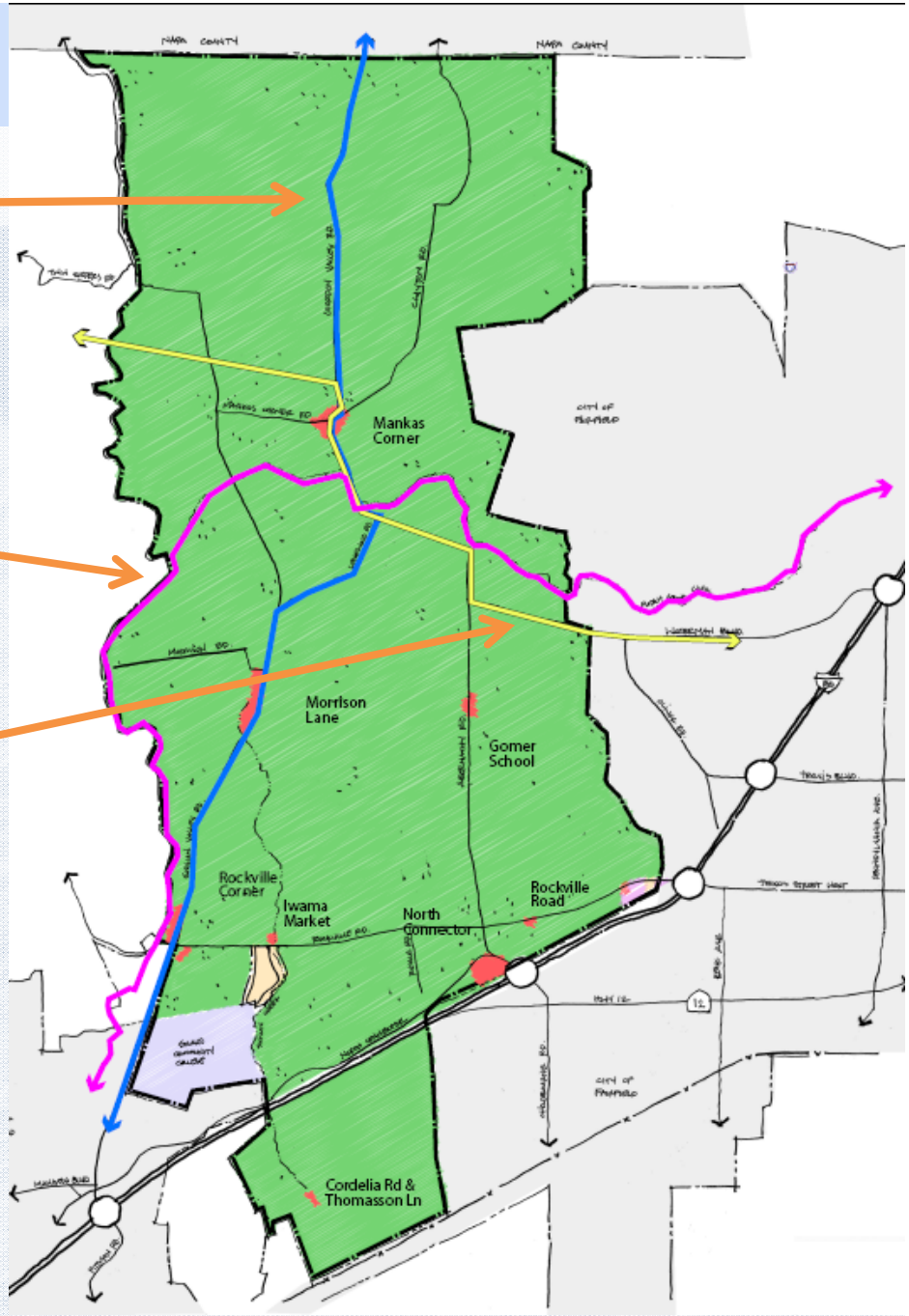
Infrastructure Recommendations and Cost Estimates

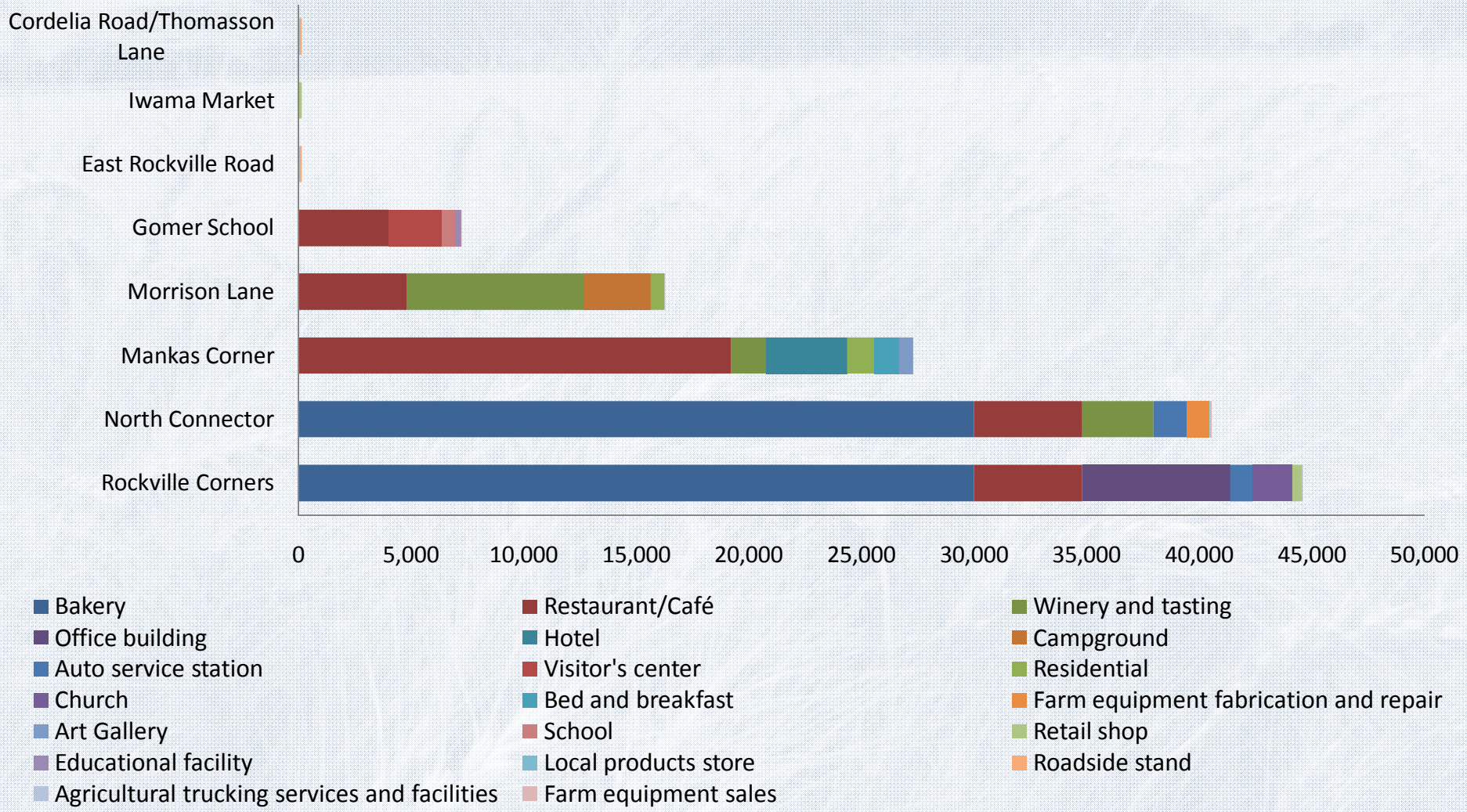
Existing Water Lines

- Gordon Valley Pipeline
- Putah South Canal
- SSWA Pipeline



Water Use Estimates

- Potable water demand based on estimate of probable uses
- 115,000 gallons per day potable water use



Water Infrastructure

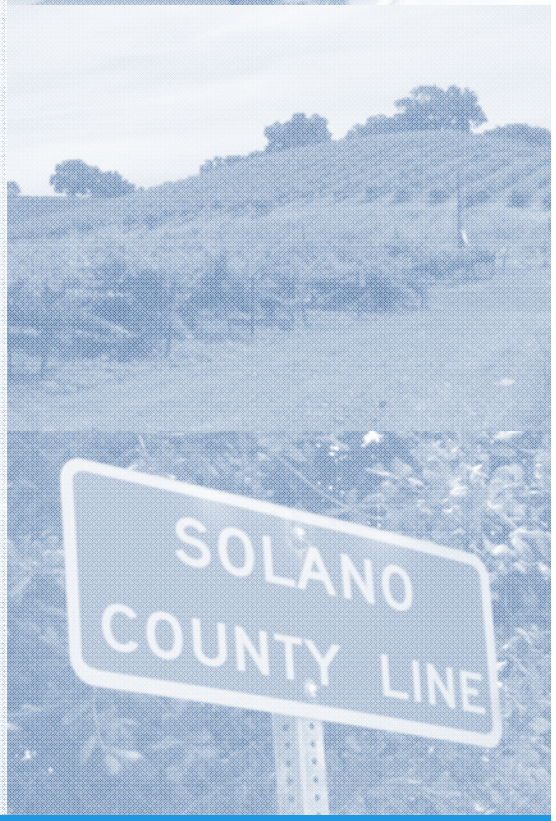
Water Use Assumptions

- Recommend separate potable water and fire suppression system
- Use existing Gordon Valley pipeline right-of-way and obtain additional ROW
- Each user buys-in through a ¾ inch tap
  - Allows 10 gpm flow rate
  - Higher water users must buy additional taps
  - Connection fees to be determined

Water Use Assumptions

- Fire flow water use based on guidelines from Suisun Fire and Cordelia Fire districts

- Serve fire flow through on-site water storage alternatives
  - Off-peak pumping from pipeline
  - Pumping from irrigation canals
  - Separate pipeline from Putah South Canal

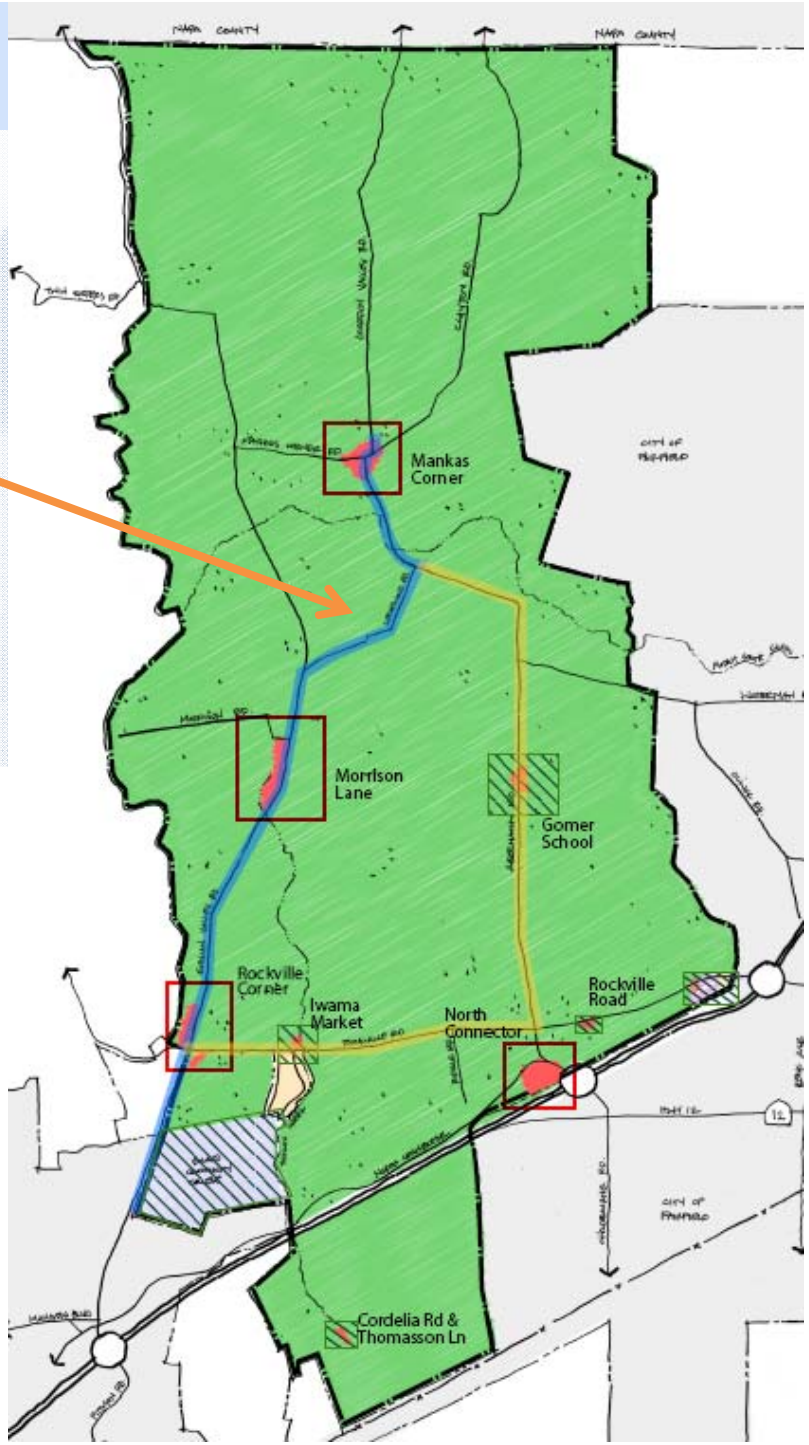


Water Use Assumptions

- Two fire districts
  - Cordelia Fire District
    - Mandatory sprinkler requirements
    - Commercial: 1,250 gpm for 2 hours (20 psi); 150,000 gallon tank
    - Residential: 17 gpm for two sprinkler heads for 10 minutes; 5,000 gallon tank
  - Suisun Fire District
    - Based on fire code; on-site water required even if sprinklers are not
    - Depends on size/type of use
- Fire Service
  - $.60 - $1.00/gallon for storage
  - On-site storage: Approx. $150,000 each center

Water Infrastructure Phases

- Phase I
- Phase II



Phase I

Potable Water

- Serve three primary focus areas
  - Mankas Corner
  - Morrison Lane
  - Rockville Corner

- From Fairfield limits to Rockville Corner
  - 8-inch pipeline
  - 4,700 feet
  - ~$63 per foot
  - Total: $296,000

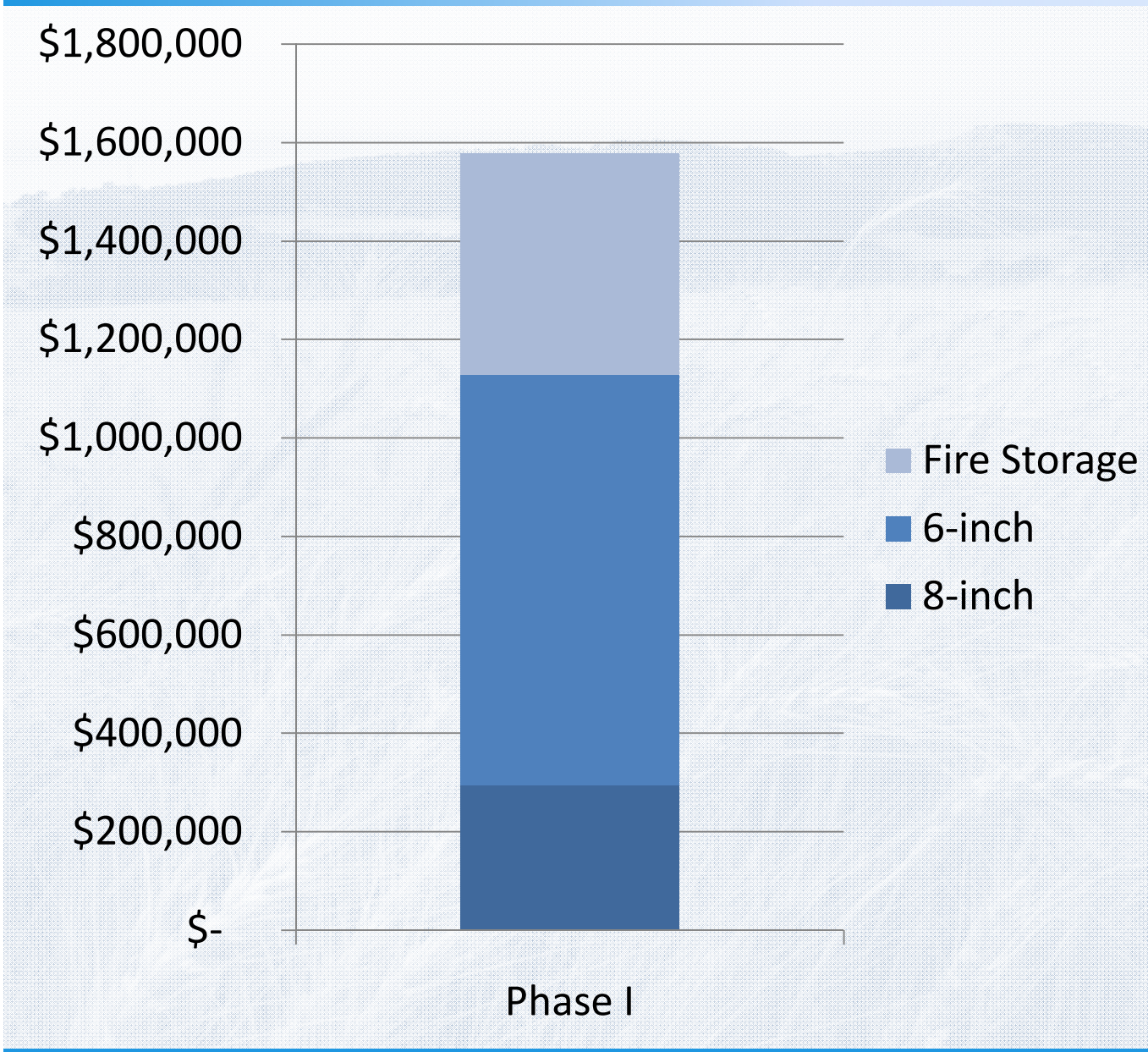
Phase I

Potable Water

- Rockville Corner to Mankas Corner
  - 6-inch pipeline
  - 18,500 feet
  - ~$45 per foot
  - Total : $833,000

- Fire Protection
  - Three centers
  - 150,000 gallon tank per ATC
  - Total: $450,000

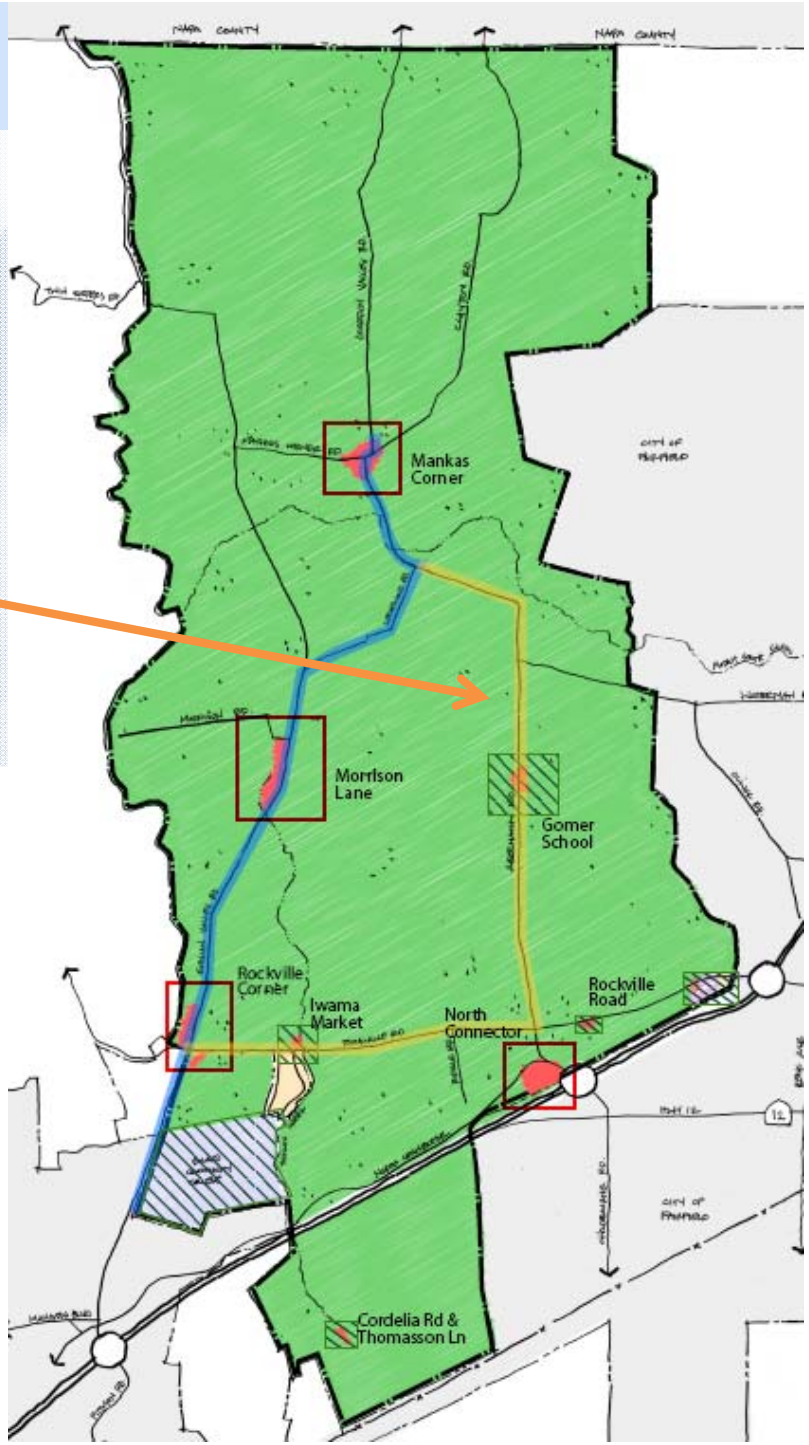
Phase I


$1,800,000
$1,600,000
$1,400,000
$1,200,000
$1,000,000
$800,000
$600,000
$400,000
$200,000
$-
Phase I
Fire Storage
6-inch
8-inch


SOLANO
COUNTY LINE

Water Infrastructure Phases

- Phase I
- Phase II

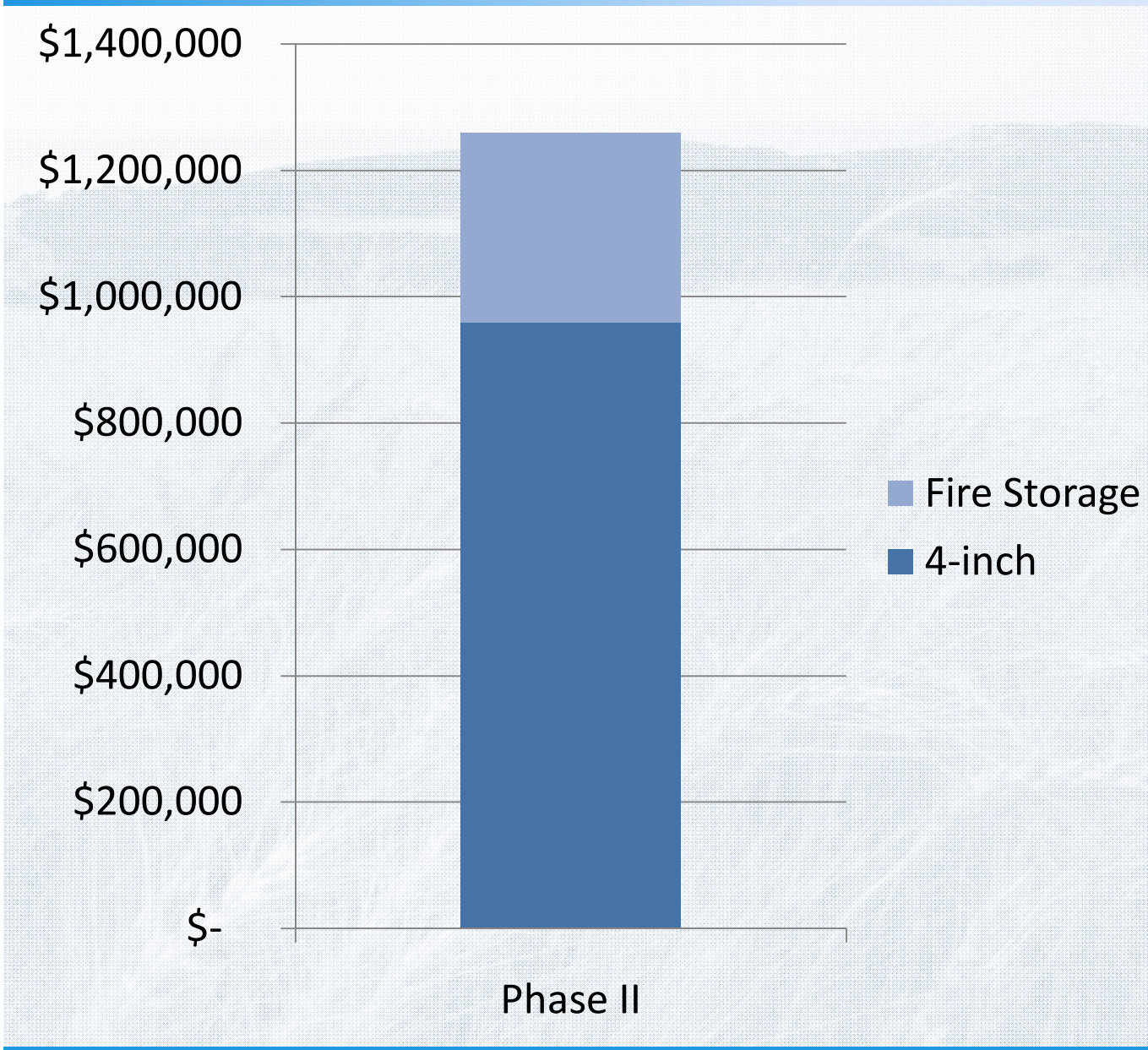


Phase II

Potable Water

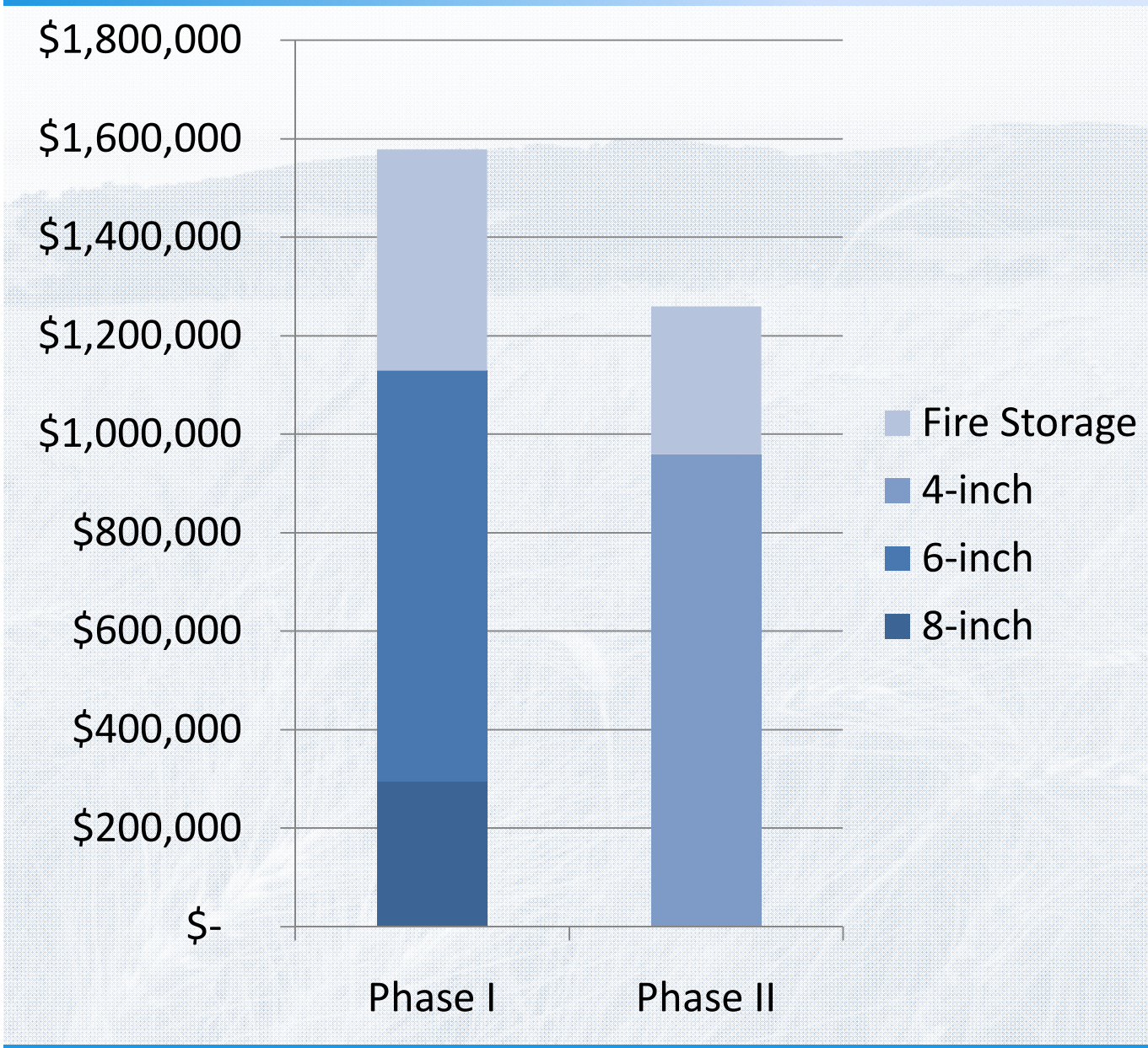
- Serve additional service areas
  - Gomer School
  - Iwama Market
- 4-inch pipeline
  - 24,000 feet
  - ~$40 per foot
  - Total: $960,000
- Fire Service
  - 150,000 gallon tank per ATC
  - Total: $300,000

Phase II


$1,400,000
$1,200,000
$1,000,000
$800,000
$600,000
$400,000
$200,000
$-
Phase II
Fire Storage
4-inch


SOLANO
COUNTY LINE

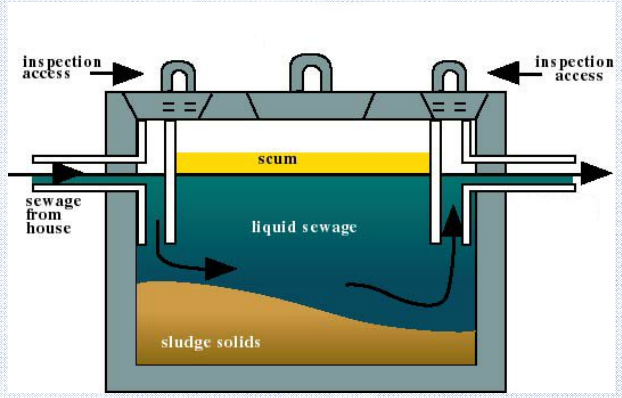
Water Infrastructure Phases



Wastewater Infrastructure

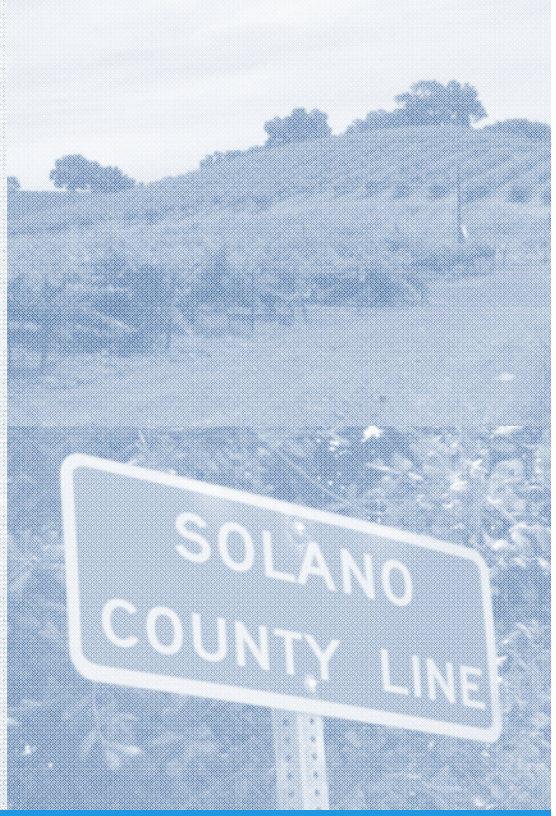
Wastewater

- Allow either:
  - septic and leach field systems or
  - small package sewage treatment plants
- Handle wastewater treatment locally
- Establish improvement districts with several property owners in close proximity
- Subject to State and Environmental Health regulations



Wastewater

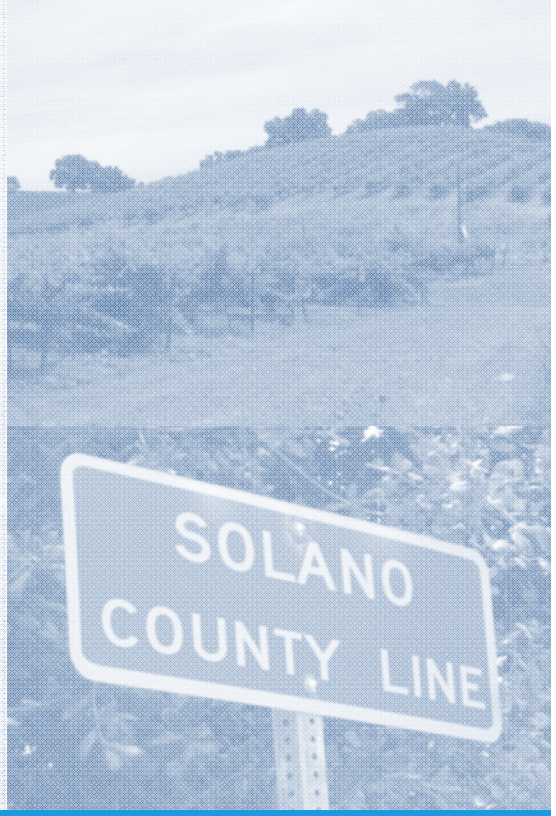
- Estimates based on 1,500 gallons per day wastewater generation
- Septic
  - Tank
    - Multiple tanks; 3,200 gallon tank
    - Size: 1,200 sf or larger
    - Cost: $15,000 plus $40-50 per foot installed for 4-6 inch pipe
  - Leach field
    - Size: Approx. 600 sf, depending on percolation
    - Cost: Approx. $12,000
  - Total Cost: $27,000 +



Wastewater

Packaged Treatment Plant

- Size: 1500 sf
- Cost depends on type
- Types
  - Sequencing Batch Reactors (SBR)
    - $50,000 installed
  - Membrane bioreactors (MBR)
    - $100,000 installed
- Effluent disposal
  - Depends on level of treatment
  - Leach field, seepage pit, or landscape watering if treated enough



Pros/Cons

Septic

- Pros
  - Less expensive to install and operate
- Cons
  - Potential contamination of water sources over time
  - If soil percolation is poor, systems may not operate well

Packaged Treatment

- Pros
  - Treated wastewater can be re-used as irrigation
  - Seepage pits or reuse of water allows smaller footprint
- Cons
  - More expensive than a septic system
  - Requires skilled maintenance

Improvement Financing

Improvement Financing

- Investigating relevance of proposed Regional Transportation Impact Fee
- Understanding Green Valley and English Hills impact fee structure
- Finding alternatives to an impact fee (improvement district, grant funding)
- Gathering additional data to determine the structure and amount of potential impact fee