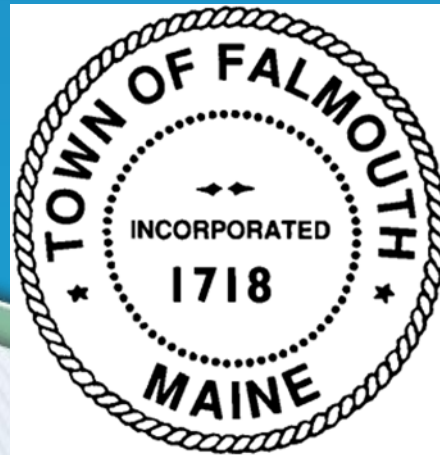


# West Falmouth Sewer Master Plan

Presentation to Town Council

March 28, 2016

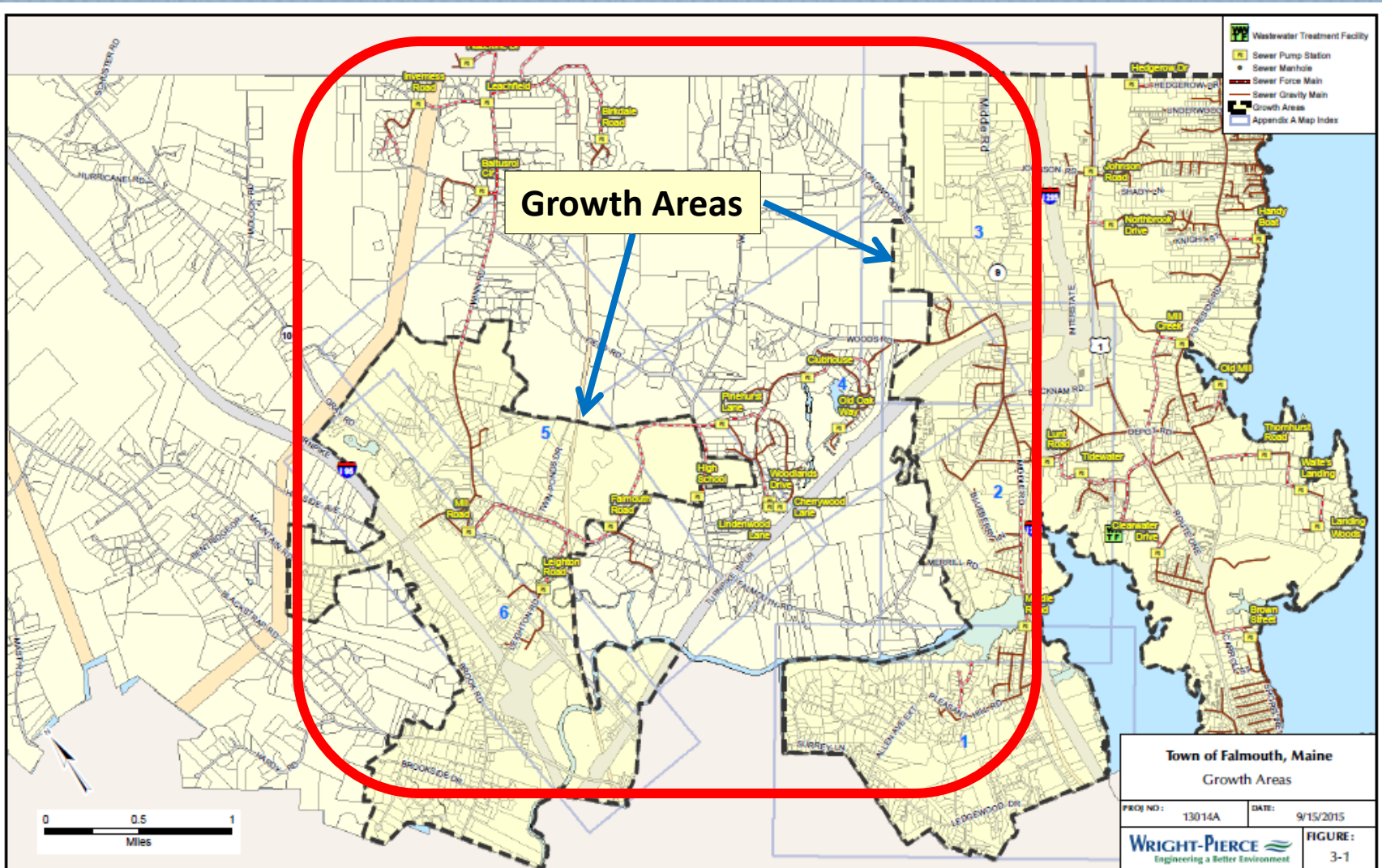


# Presentation Overview

1. Impetus for Sewer Master Plan
2. Scope of Plan
3. Work Performed
4. Draft Findings



# “West Falmouth” = Area West of I-295



# Impetus for Sewer Master Plan

1. Capacity issues at 4 pump stations
2. Capacity issues in Middle Rd. sewer line
3. Anticipated development and future flows along Route 100 corridor and west of I-295 in designated Growth Area



# Scope of Master Plan

1. Determine existing infrastructure bottlenecks
2. Estimate possible future sewer flows
3. Determine required upgrades and new infrastructure and cost estimates
4. Prioritize recommendations

Scope approved by Council in May 2014

# Work Performed



1. Meetings with staff and LPAC
2. West Falmouth field work
3. Estimate future flows in Designated Growth Area
4. Assessment of impacts, upgrades and new infrastructure required
5. Options, cost estimates, priorities

# Questions for Council to consider

- Do you agree that this plan is in keeping with 2014 Comprehensive Plan and 2016 Plan for Route 100?
- Do you agree that this plan represents good facility management?
- Do you agree that the financing plan for the recommended improvements is reasonable?

# Town of Falmouth Sewer Study

## Legend

-  Growth Area
-  Future Flow Study Area

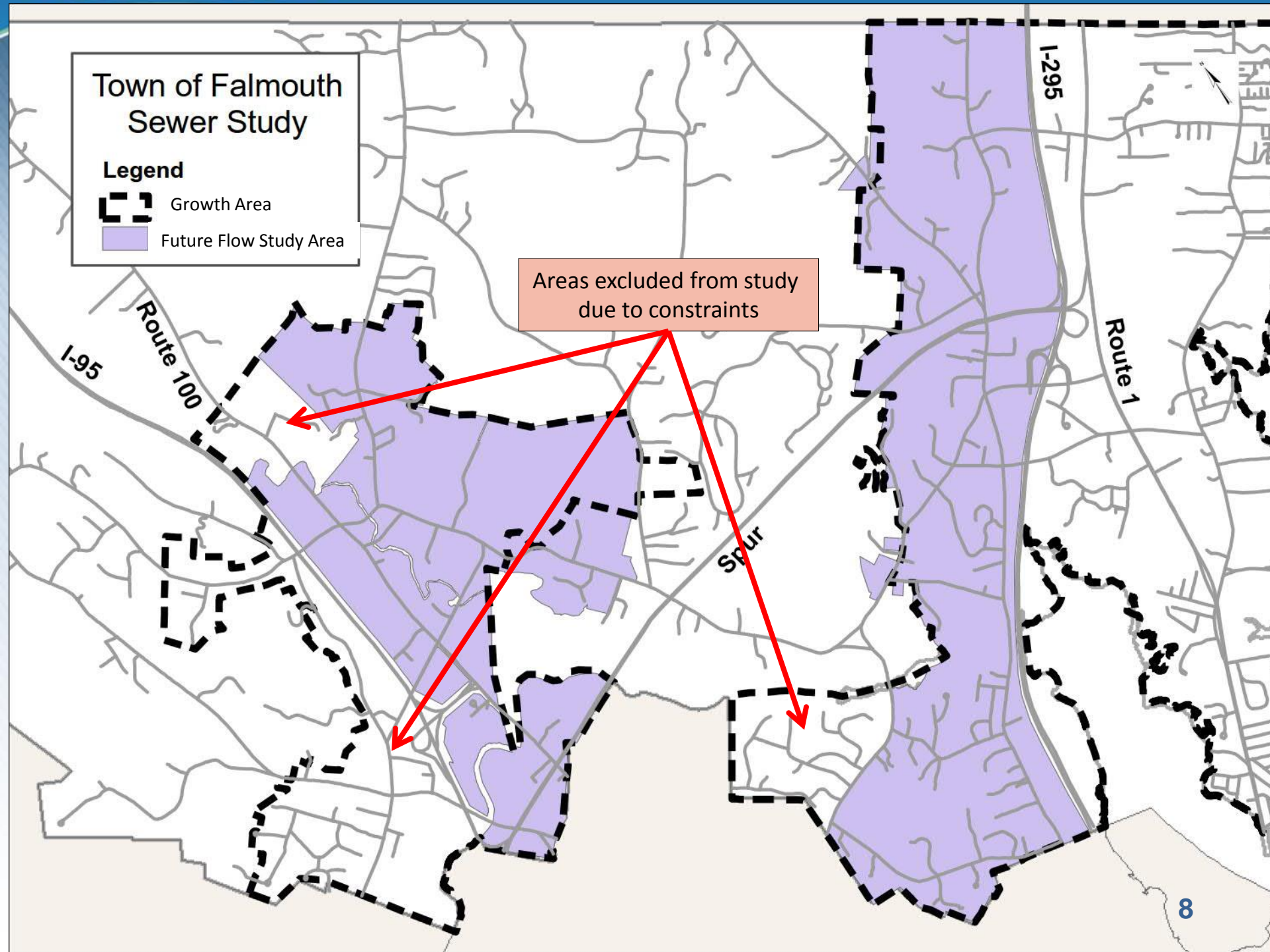
Areas excluded from study due to constraints

I-95  
Route 100

I-295

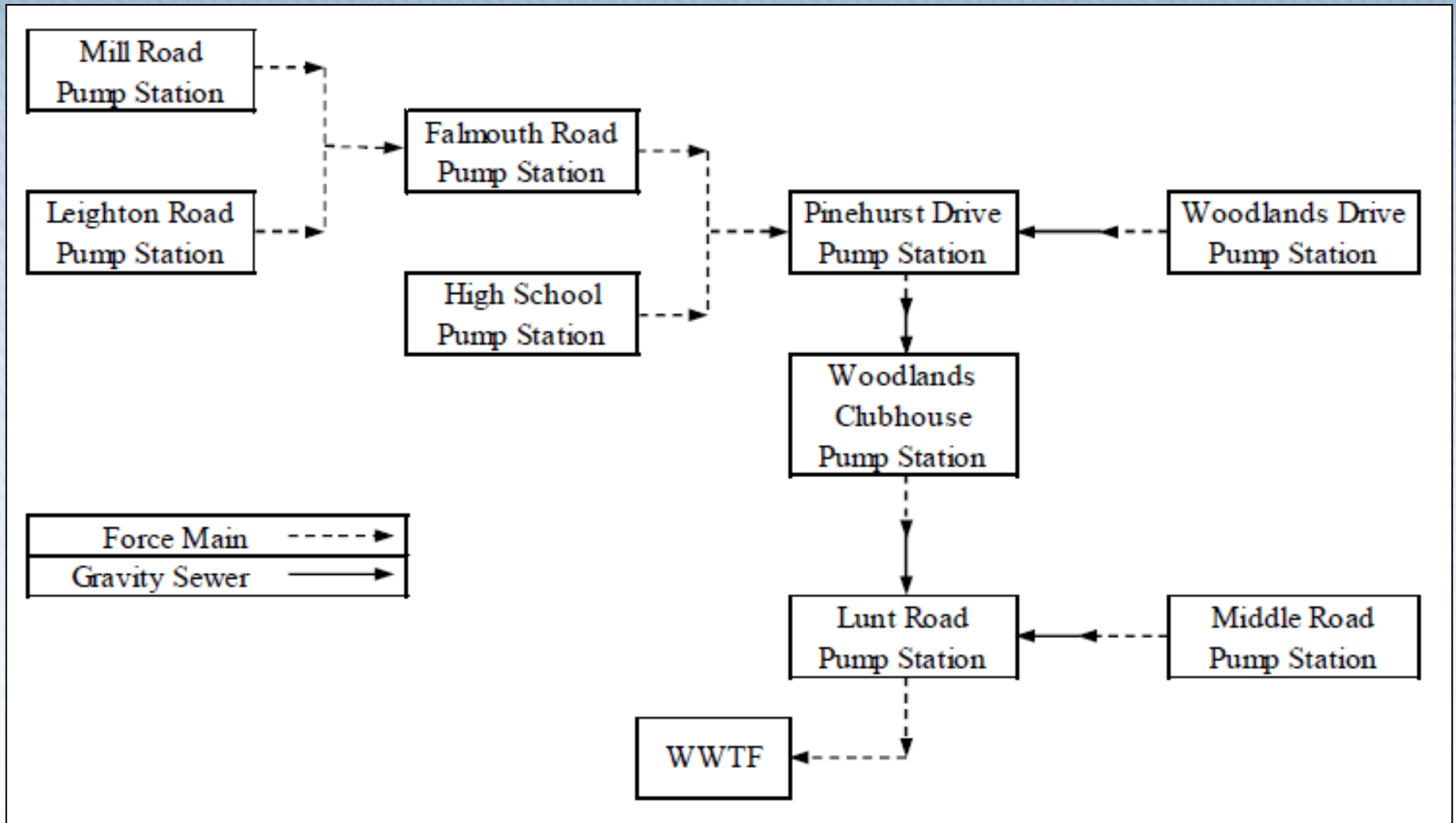
Route 1

Spur





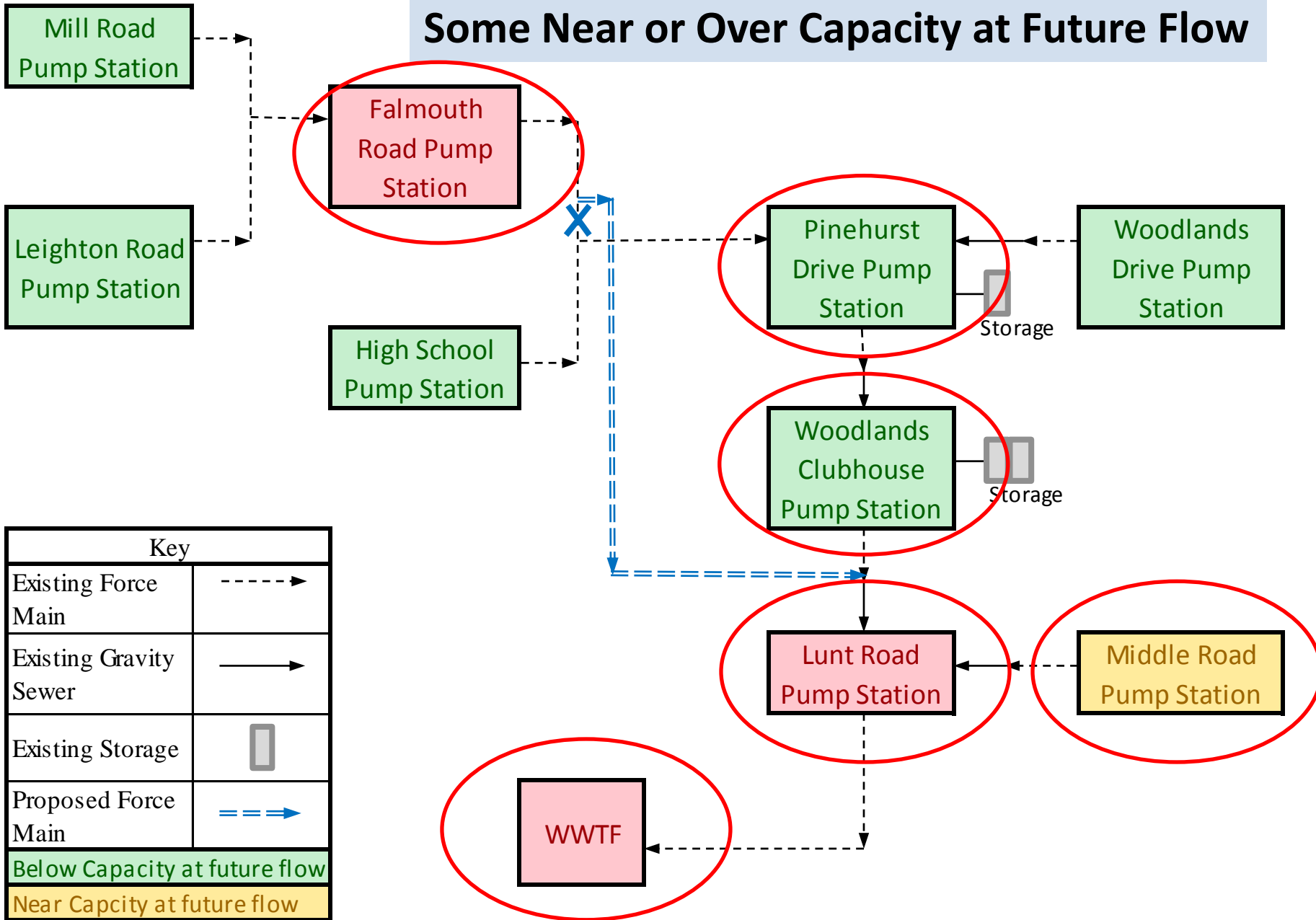
# Portion of Existing Linked Pumping Station System Studied



# General Findings

1. There is **little or no excess flow capacity** in current system (“bottlenecks”).
2. Some pump stations are reaching **end of their expected life** and will need work regardless.
3. In some cases, when making upgrades, **extra capacity can be created for relatively little extra cost** to serve long term needs (20-40 years).

# Some Near or Over Capacity at Future Flow



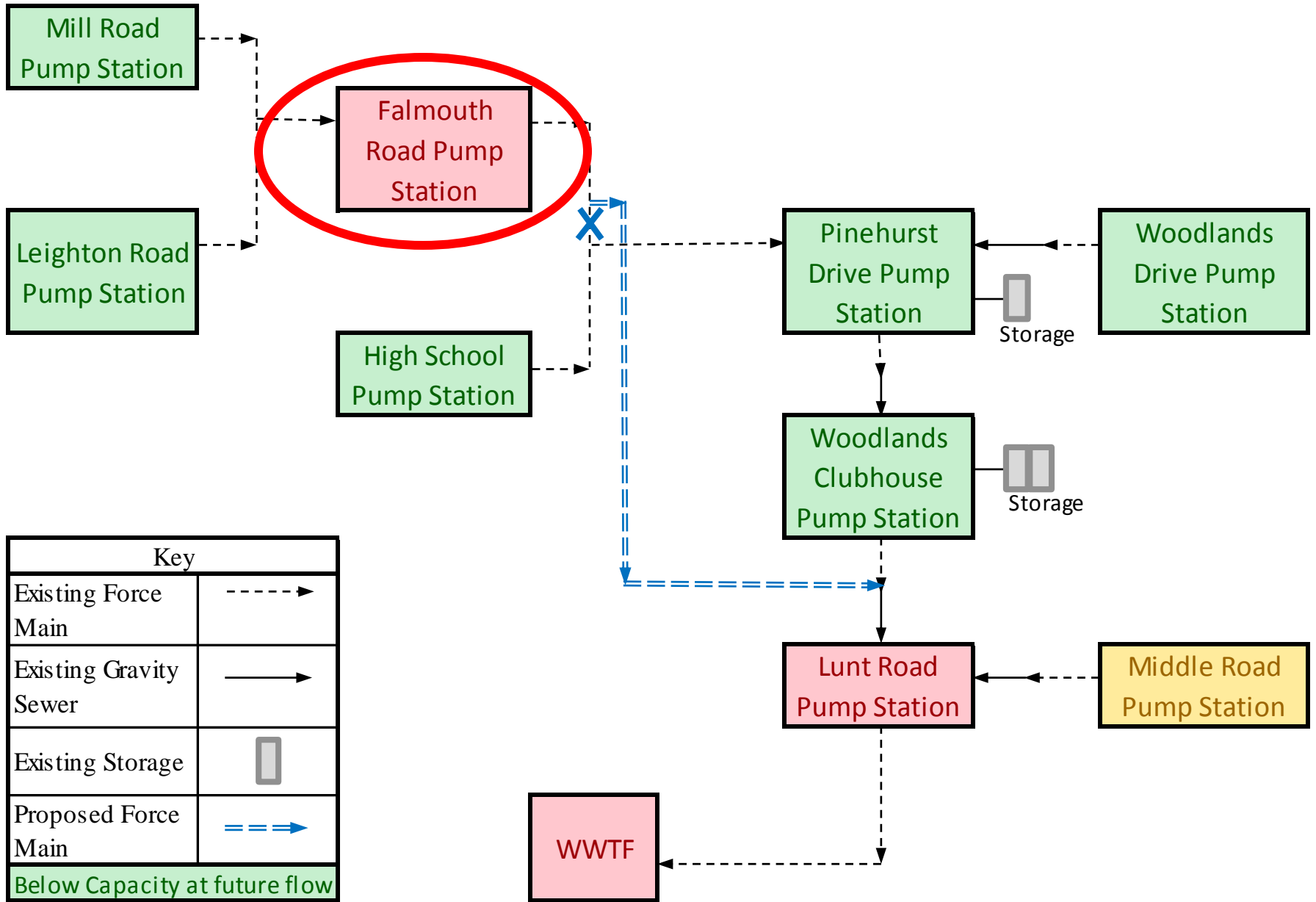
Key	
Existing Force Main	----->
Existing Gravity Sewer	----->
Existing Storage	▭
Proposed Force Main	=====>
Below Capacity at future flow	
Near Capacity at future flow	
Over Capacity at future flow	

# Near Term Bottlenecks

## 1. Falmouth Road Pump Station

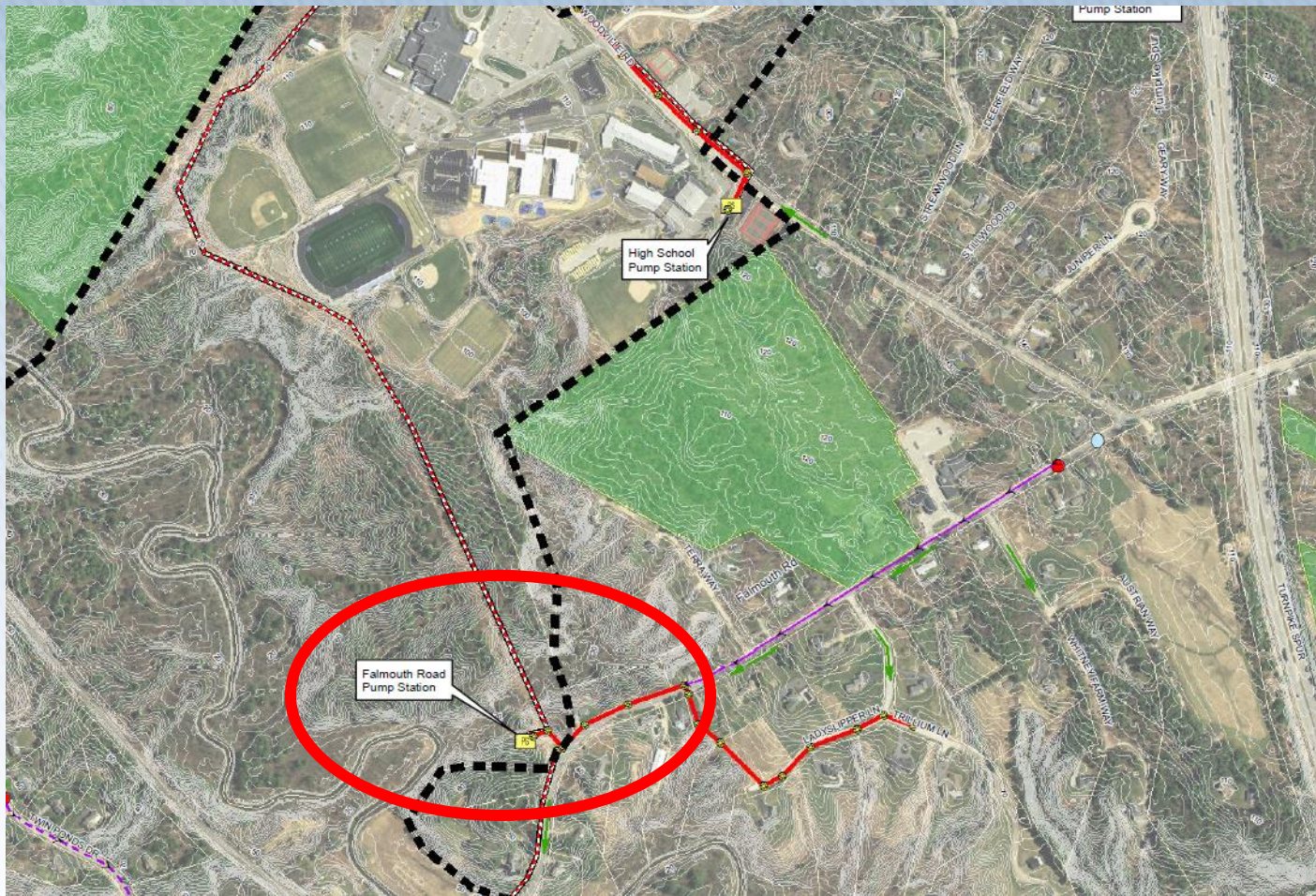
- Issue: 18 years old, no additional capacity
- Recommendation: Renovate station, increase capacity
- Cost: \$350K





Key	
Existing Force Main	----->
Existing Gravity Sewer	————>
Existing Storage	☐
Proposed Force Main	=====>
Below Capacity at future flow	
Near Capacity at future flow	
Over Capacity at future flow	

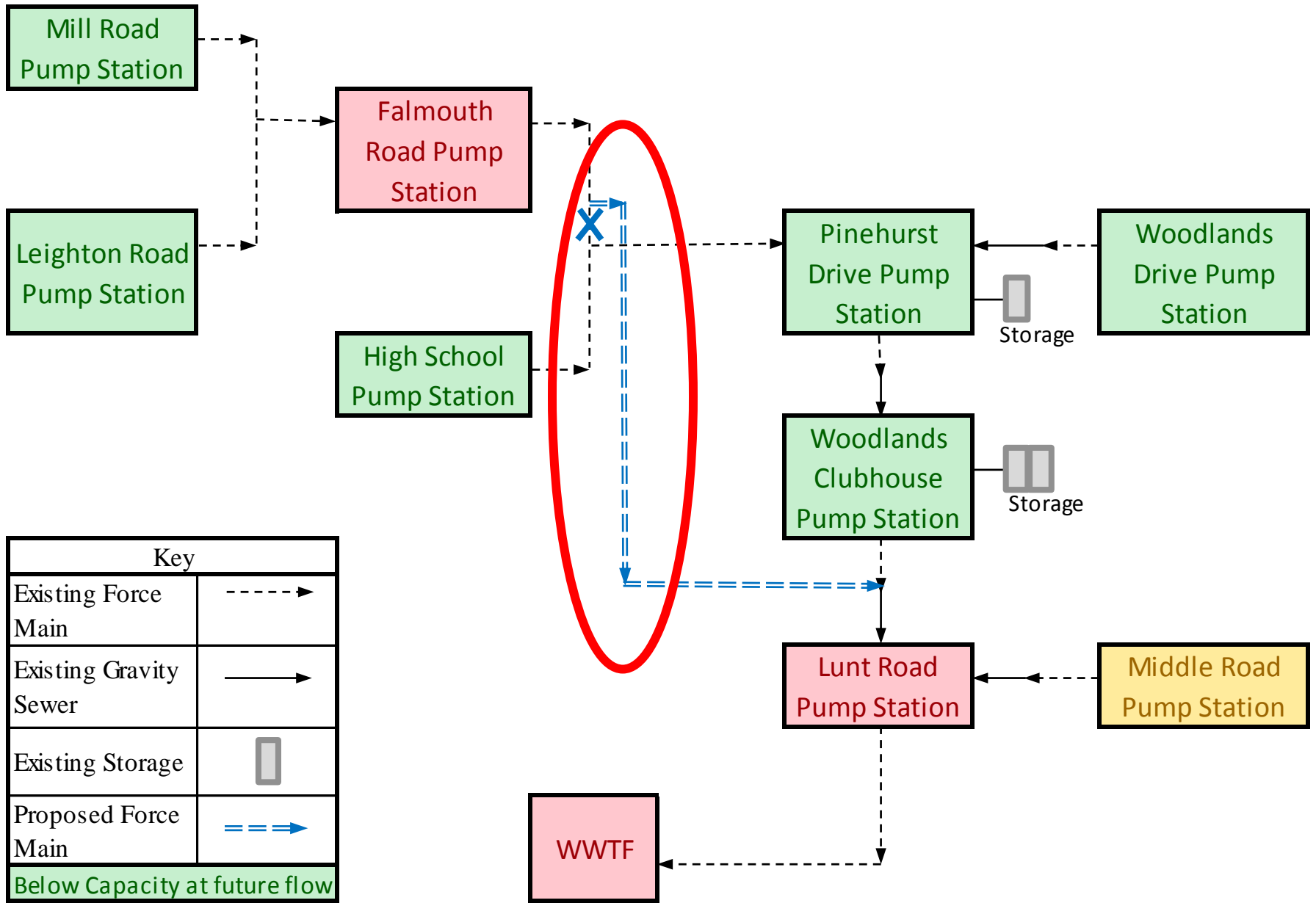
# Falmouth Road Pump Station



# Near Term Bottlenecks

## 2. Falmouth Road Pump Station Force Main

- Issue: Station capacity increase triggers multiple pump station capacity upgrades downstream
- Recommendation: Re-route force main to bypass Pinehurst and Woodlands pump stations
- Cost: \$1.1 million



Key	
Existing Force Main	----->
Existing Gravity Sewer	----->
Existing Storage	▭
Proposed Force Main	=====>
Below Capacity at future flow	
Near Capacity at future flow	
Over Capacity at future flow	



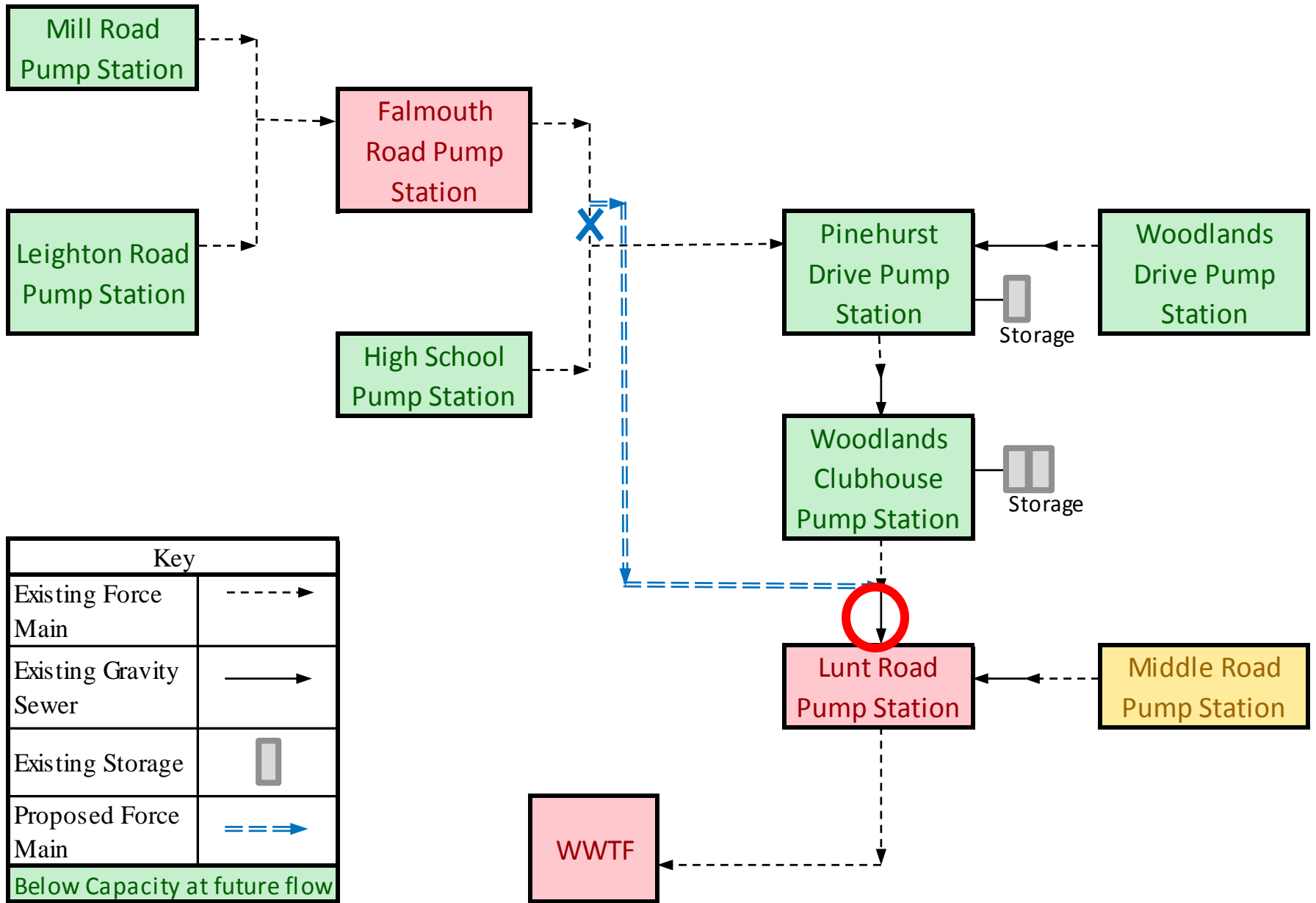
# Falmouth Road Pump Station Force Main




# Near Term Bottlenecks

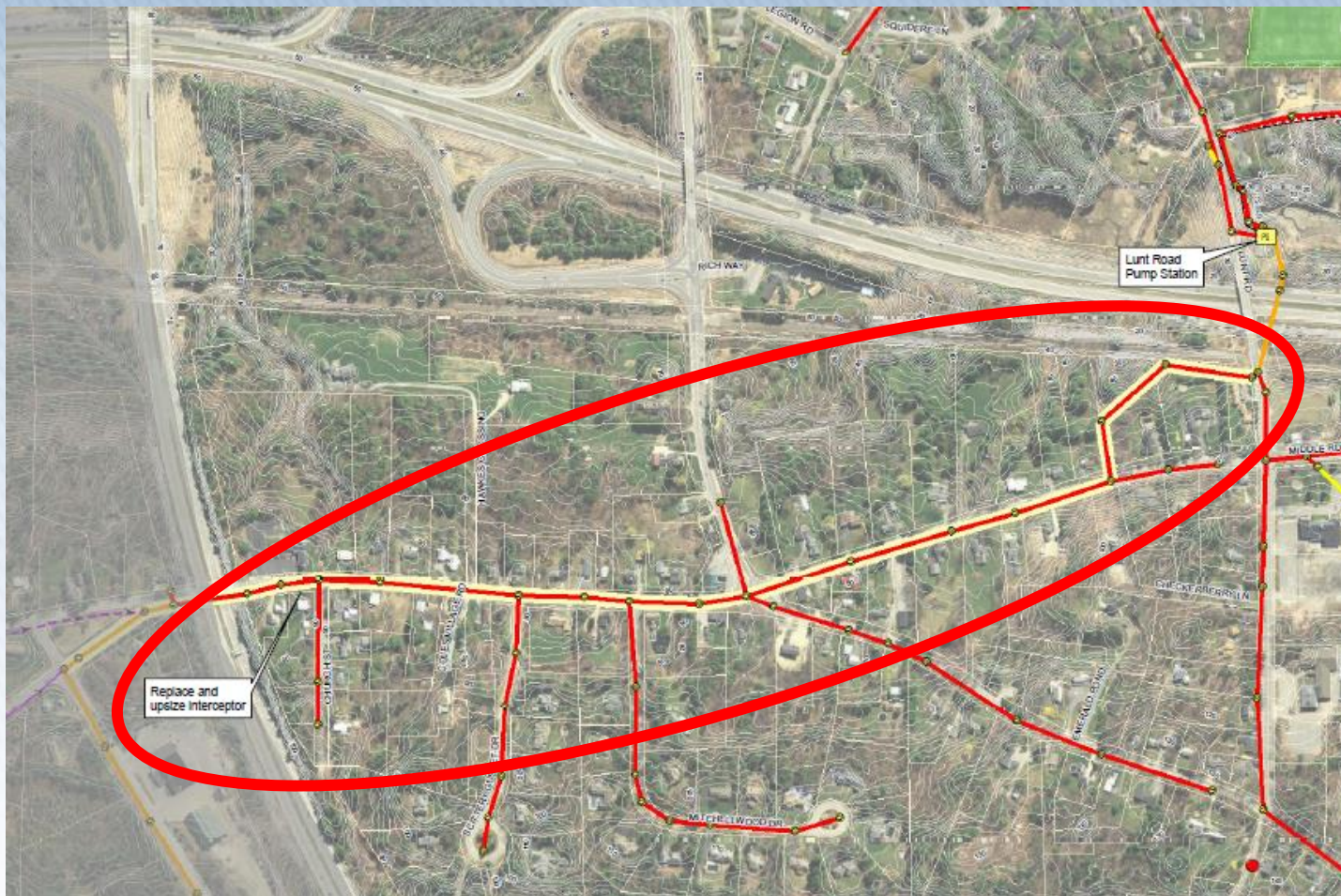
## 3. Middle Road Gravity Sewer (“Interceptor”)

- ◆ Issue: 47 years old and current 8” sewer line is over capacity
- ◆ Recommendation: Upgrade to 15” sewer line from Turnpike Spur to I-295 Crossing
- ◆ Cost: \$1.1M
- Note: Does not include section north of Spur bridge that will be replaced as part of MaineDOT Route 9 Roundabout project



Key	
Existing Force Main	----->
Existing Gravity Sewer	————>
Existing Storage	
Proposed Force Main	=====>
Below Capacity at future flow	
Near Capacity at future flow	
Over Capacity at future flow	

# Middle Road Gravity Sewer

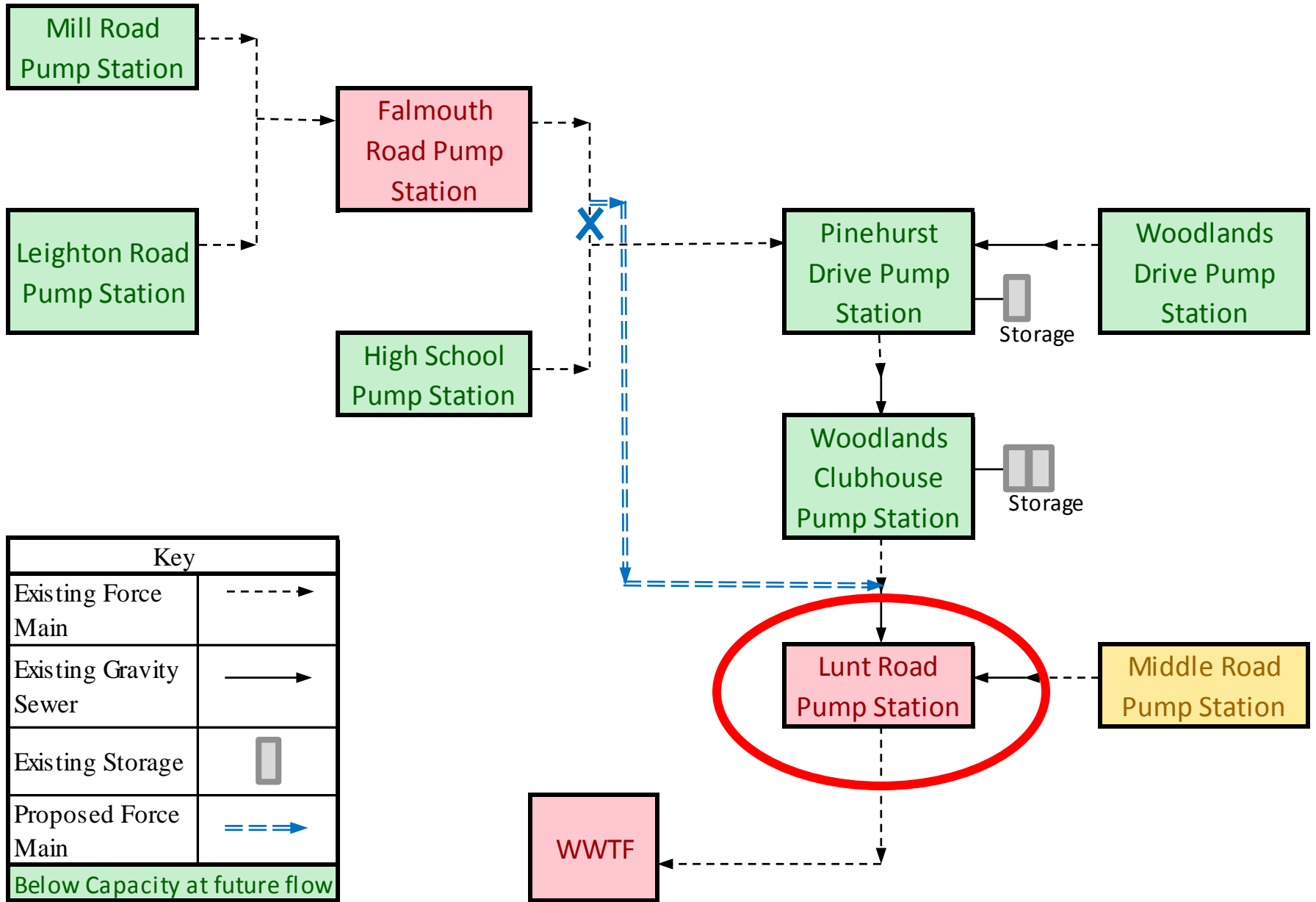



# Near Term Bottlenecks

## 4. Upgrade Lunt Road Pump Station

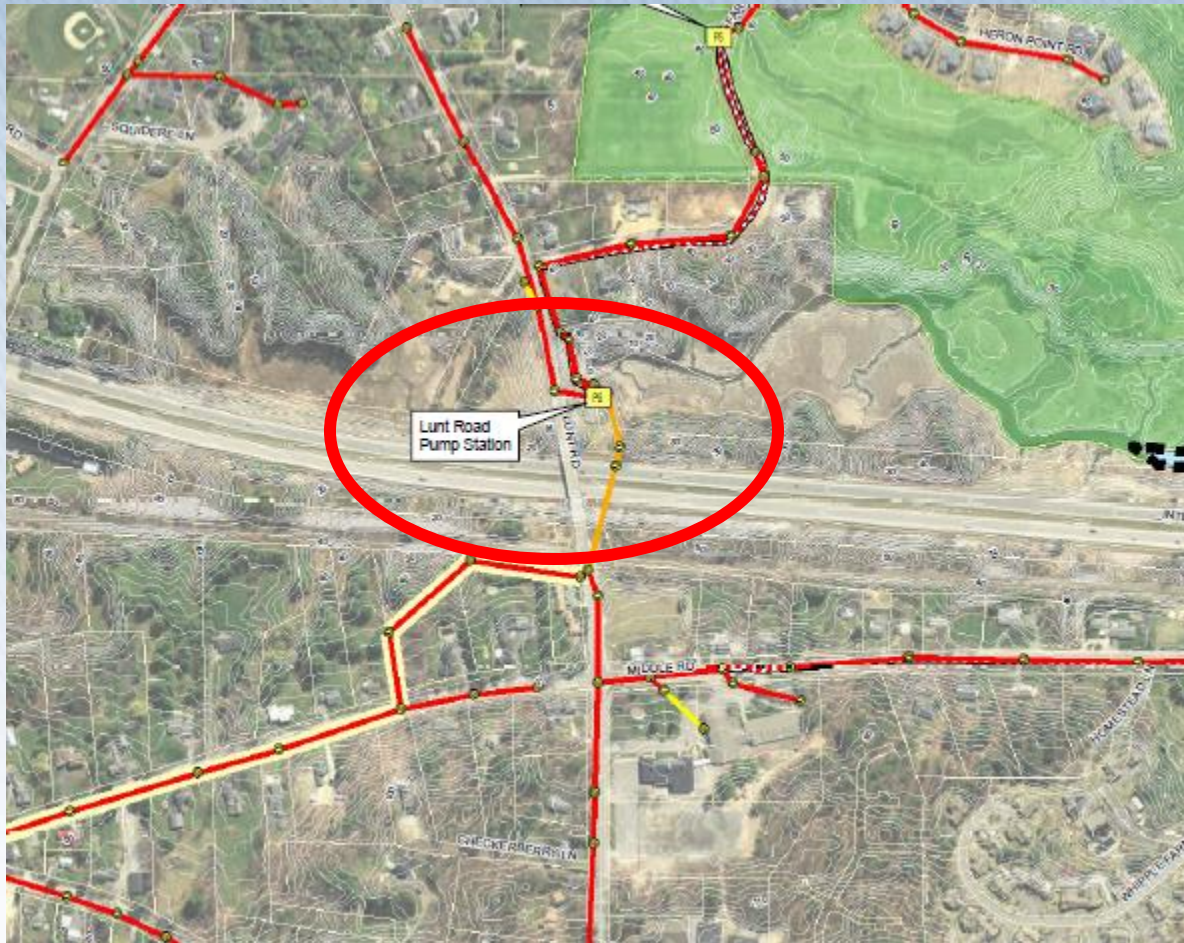
- ◆ Issue: 47 years old with some capacity upgrades in 2005. At capacity now, over capacity with proposed upgrade to Falmouth Road Pump Station
- ◆ Recommendation: Upgrade station to increase capacity
- ◆ Cost: \$1.4-\$2.1M (depends upon extent to which existing facilities can be reused/repurposed)





Key	
Existing Force Main	----->
Existing Gravity Sewer	————>
Existing Storage	
Proposed Force Main	=====>
Below Capacity at future flow	
Near Capacity at future flow	
Over Capacity at future flow	

# Upgrade Lunt Road Pump Station



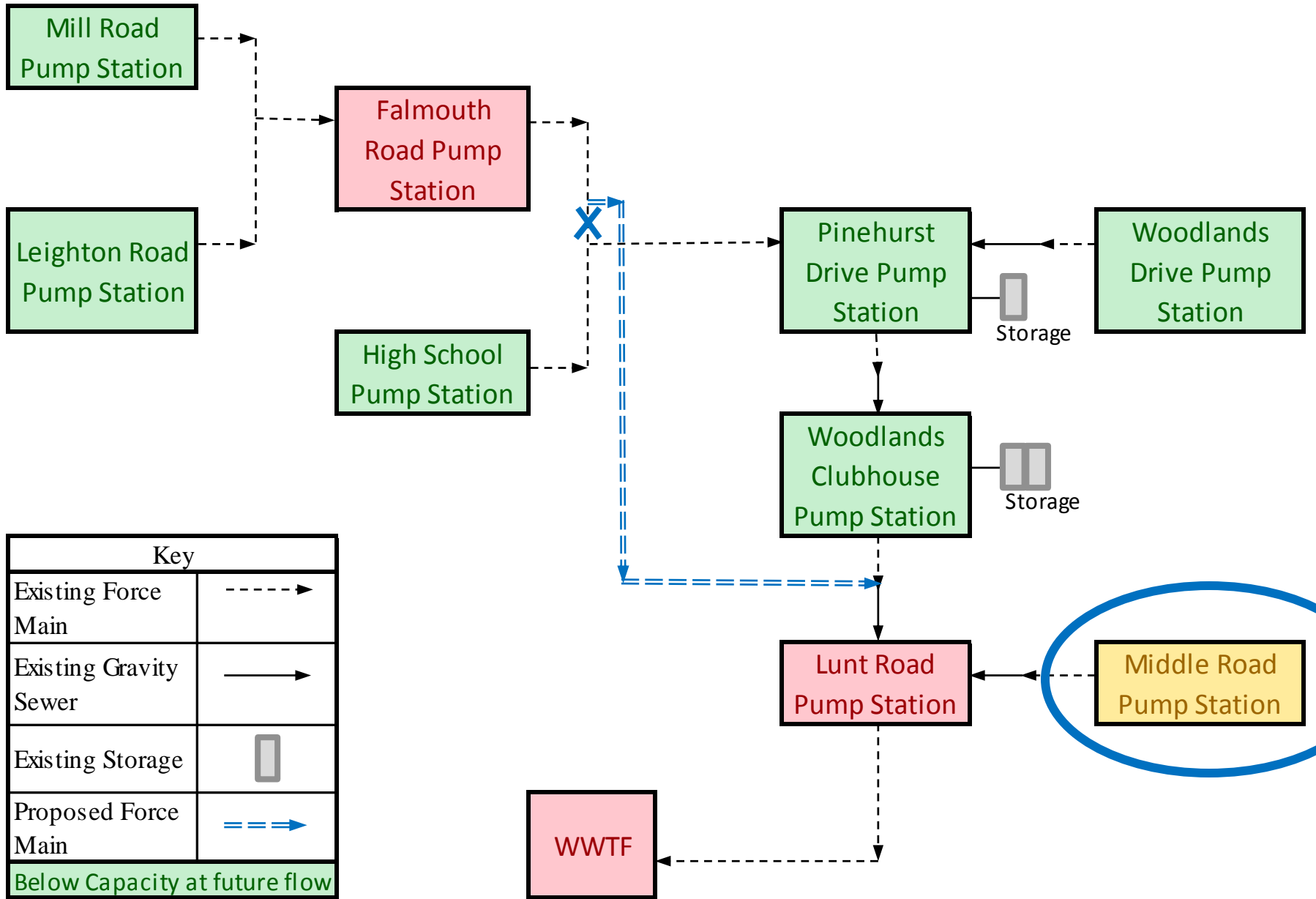
# Longer Term Projects


## 5. Upgrade Middle Road Pump Station

- ◆ Issue: 35 years old, predicted to be over capacity at future flows
- ◆ Recommendation: New pump station
- ◆ Cost: \$350K







Key	
Existing Force Main	----->
Existing Gravity Sewer	----->
Existing Storage	
Proposed Force Main	=====>
Below Capacity at future flow	
Near Capacity at future flow	
Over Capacity at future flow	

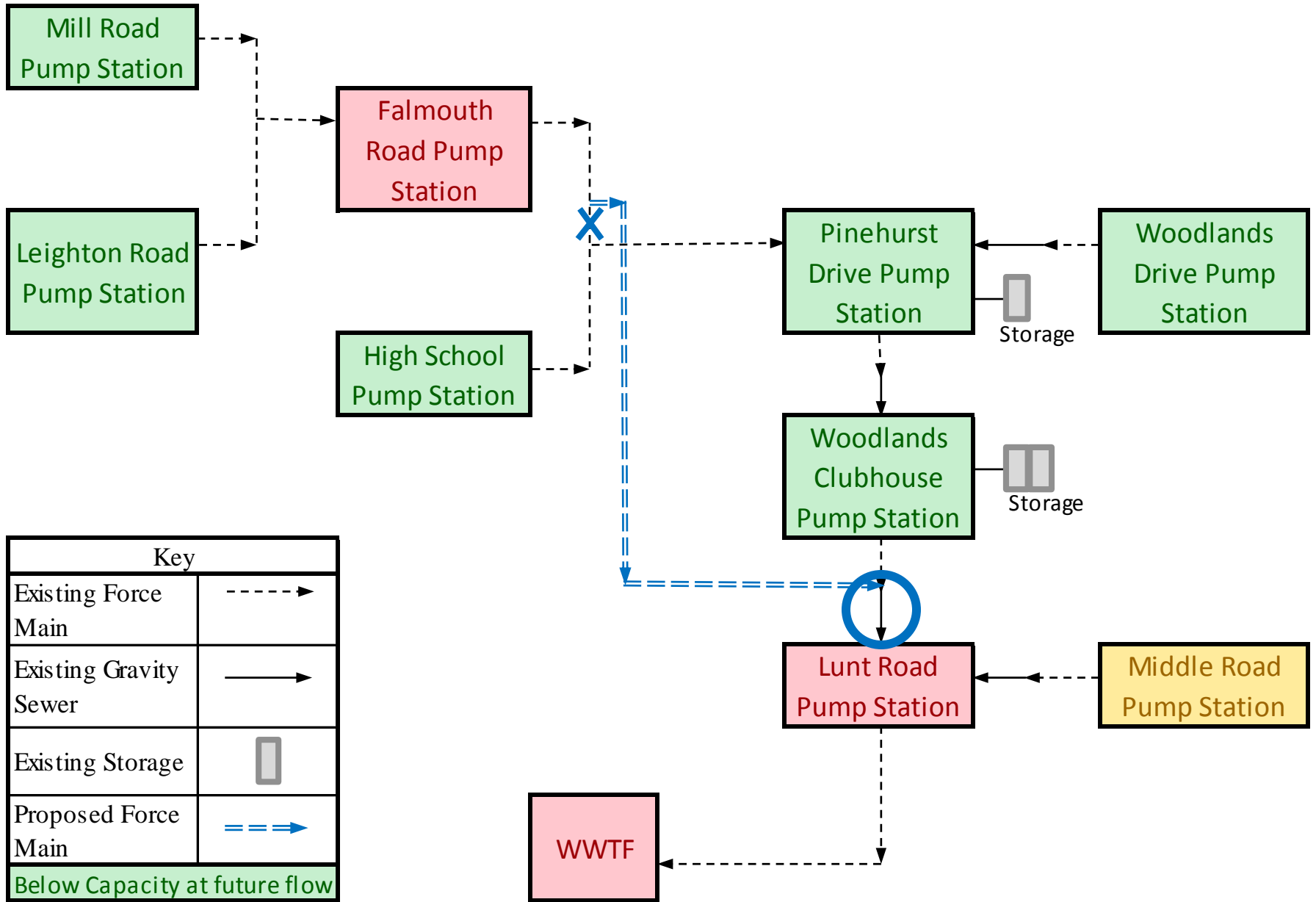
# Upgrade Middle Road Pump Station




# Longer Term Projects

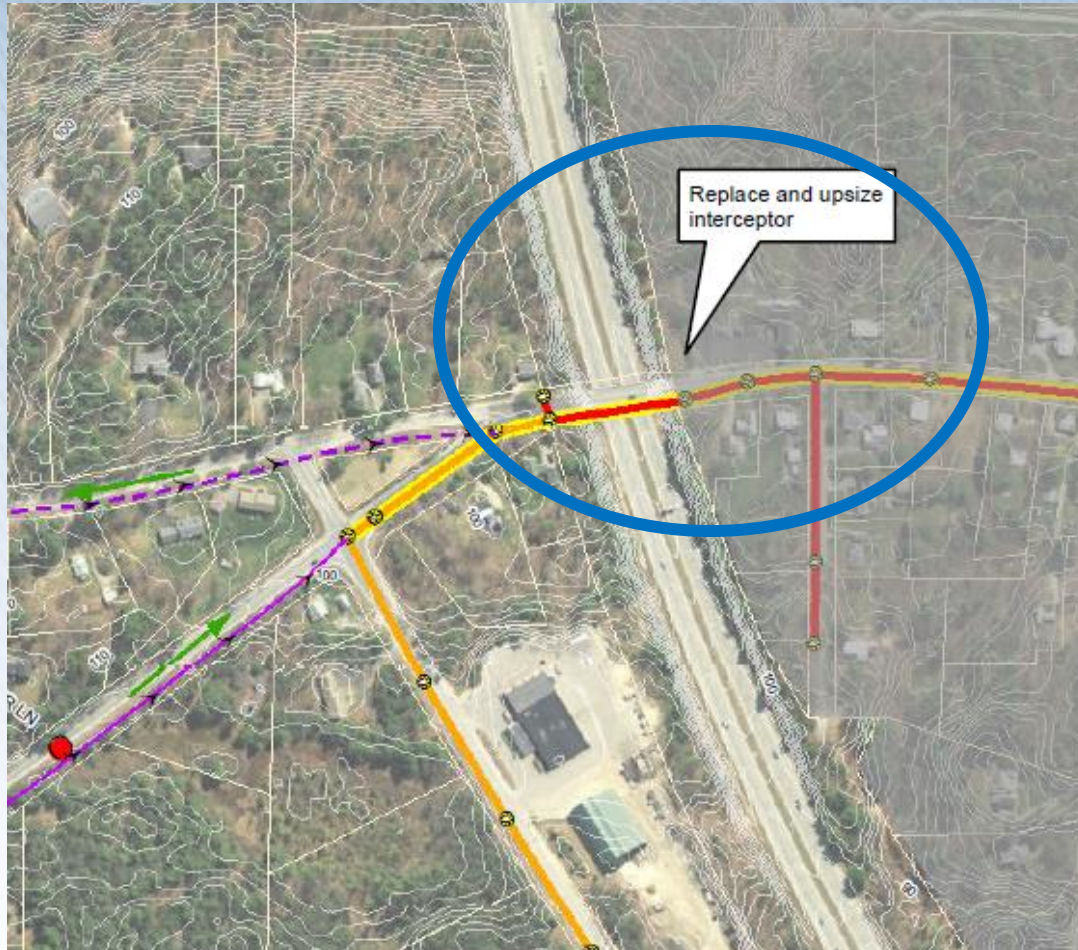
## 6. Spur Bridge Crossing

- ◆ Issue: 35 years old. Possibly over capacity at future flows
- ◆ Recommendation: Increase from 12" to 15" sewer
- ◆ Cost: \$100K



Key	
Existing Force Main	----->
Existing Gravity Sewer	----->
Existing Storage	
Proposed Force Main	=====>
Below Capacity at future flow	
Near Capacity at future flow	
Over Capacity at future flow	

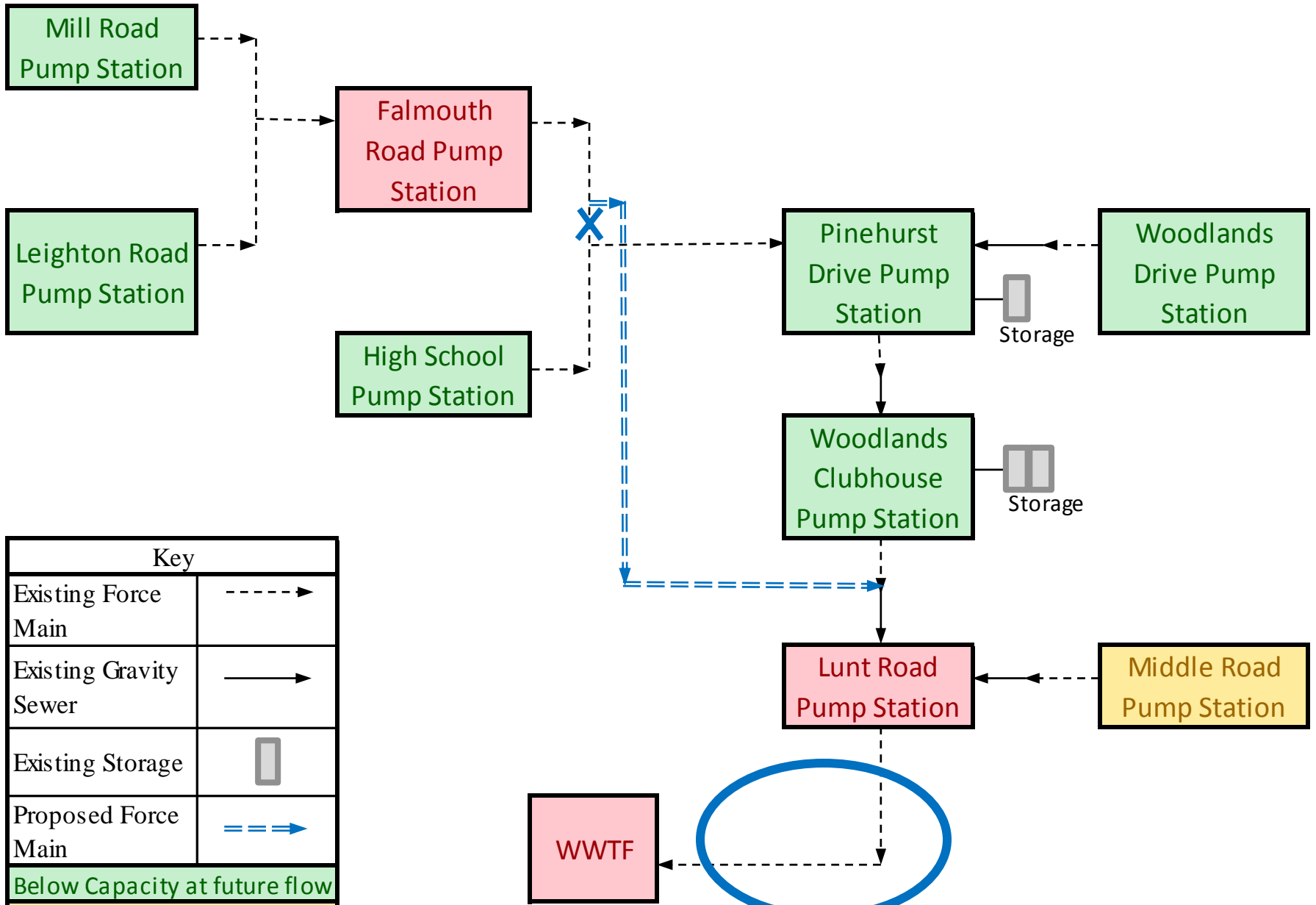
# Spur Bridge Crossing



# Longer Term Projects

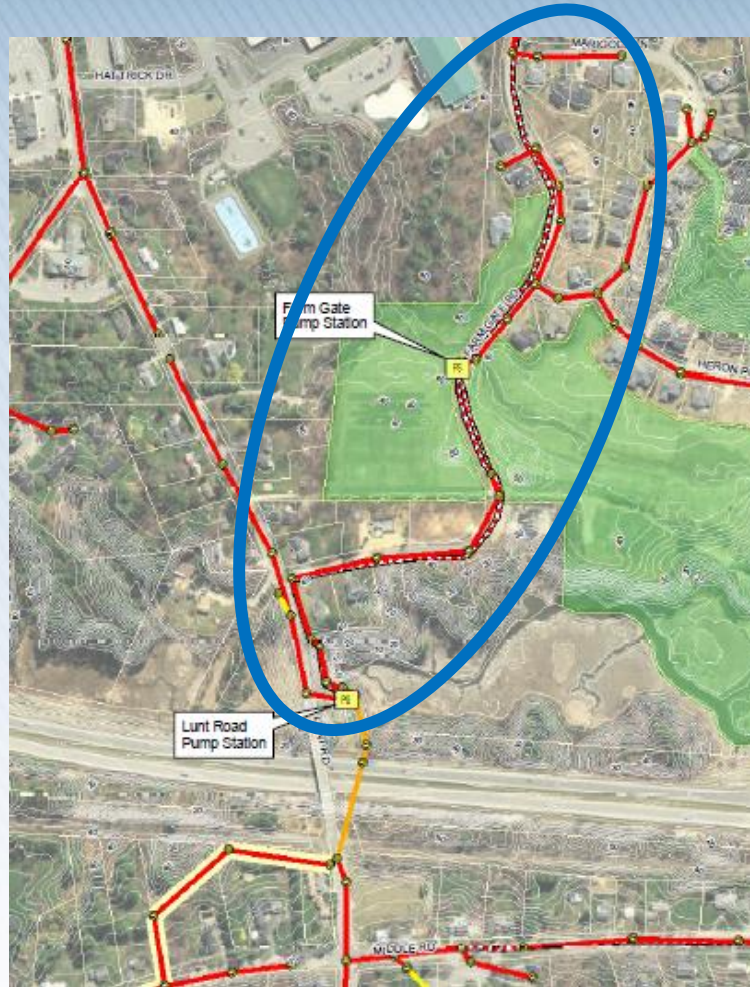
## 7. Install new force main from Lunt Road Pump Station to WWTF

- ◆ Issue: 12 years old. Flow output of new Lunt Road Pump Station will be limited with existing force main.
- ◆ Recommendation: Replace existing 8" force main with 10" force main
- ◆ Cost: \$750K



Key	
Existing Force Main	----->
Existing Gravity Sewer	----->
Existing Storage	▭
Proposed Force Main	=====>
Below Capacity at future flow	
Near Capacity at future flow	
Over Capacity at future flow	

# Install new force main from Lunt Road Pump Station to WWTF



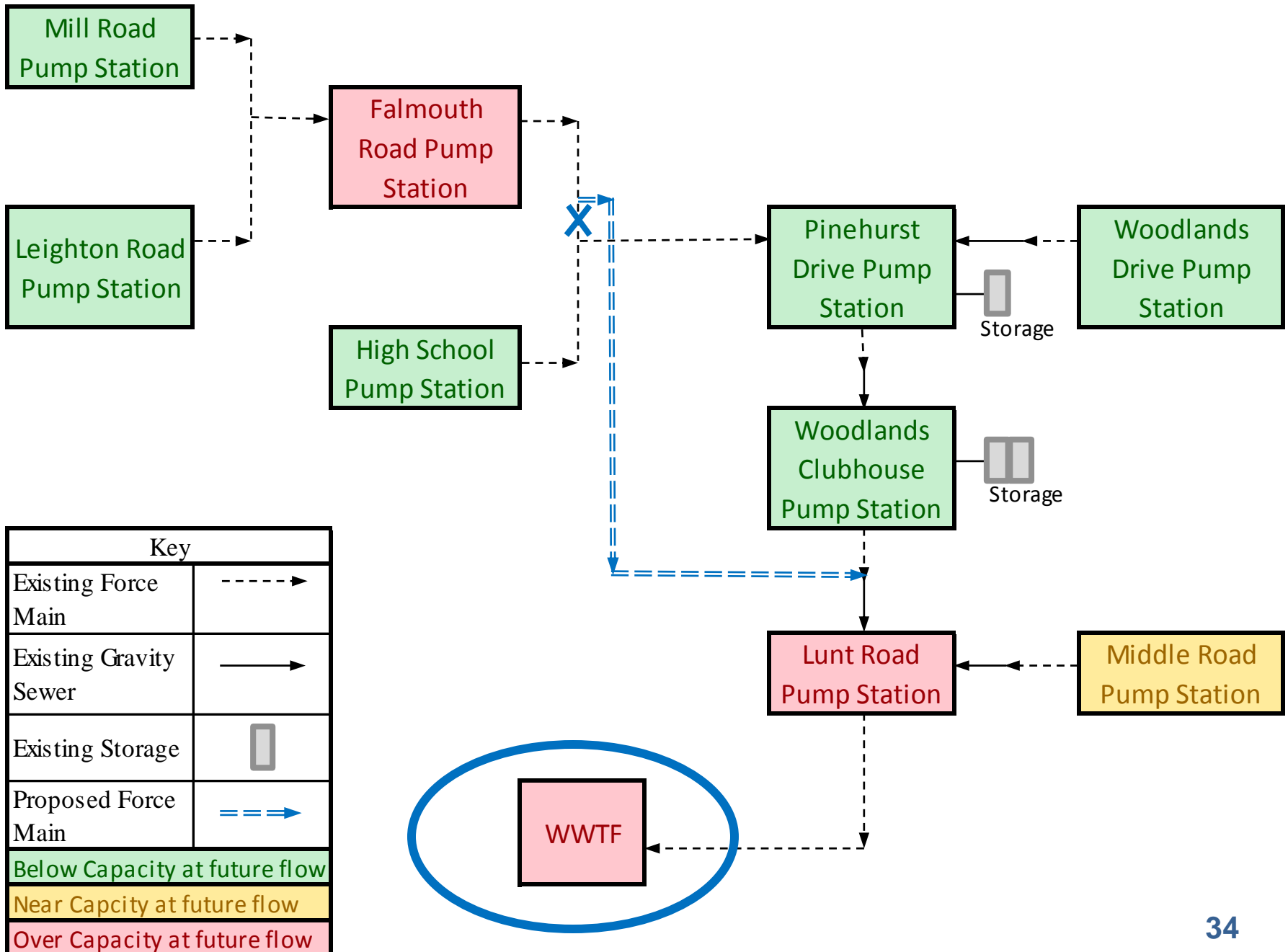


# Longer Term Projects

## 8. Capacity upgrades at WWTF

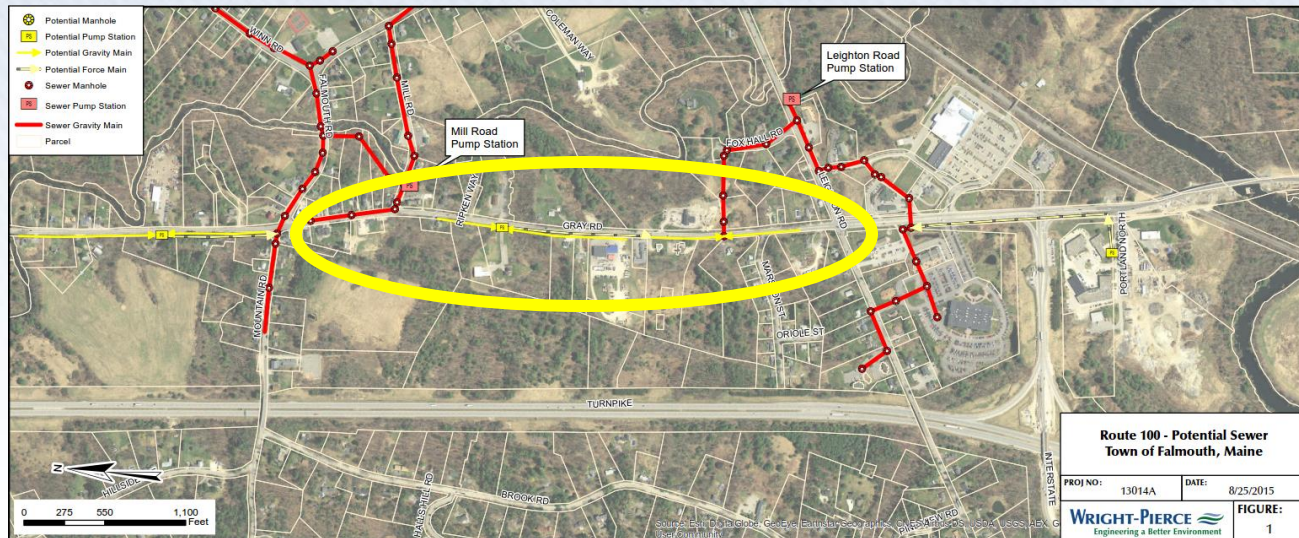
- ◆ Issue: Limits on hydraulic and organic loading and possible future nutrient removal/permit changes
- ◆ Recommendation: Address limits noted above
- ◆ Cost: ~\$6M





# Route 100 Sewer Extension

- Provide sewer service to unsewered area on Route 100 between Leighton Road and Mountain Road
- Cost: \$1.5M



# Near Term Priorities

Infrastructure	Cost	Required if there is no Route 100 extension?	Required with similar growth to last 10 years?	Required with faster growth?
Middle Road – Spur to Roundabout		Will be completed regardless (\$250K)		
Falmouth Rd. Pump Station and Force Main	\$1.5M	✓	✓	✓
Middle Road – Spur to Lunt Rd. Pump Station	\$1.1M	✓	✓	✓
Lunt Road Pump Station	\$1.4M	✓	✓	✓

# Possible Future Flow

- Near Term Improvements will create collection system capacity to handle 600-900 new units in area west of I-295 (“West Falmouth”) over 40-50 years
  - Collection capacity issue addressed for 40-50 years instead of 5-15 years
  - A capacity to handle up to 2,200 new units will be created when the Long Term Improvements are completed.

# Recommended Project Expenses

- \$4.0M Near Term improvements
  - Falmouth Rd. Pump Station and Force Main
  - Middle Road – Spur to Lunt Rd. Pump Station
  - Lunt Road Pump Station
- \$1.5M Extension
  - Route 100

# What will Town get for its \$5.5M investment?

1. Resolve existing pump station and pipeline capacity issues
2. Upgrade infrastructure that is up to 35 years old
3. Serve future growth in designated Growth Areas
  - Serve unsewered section of Route 100

## How does cost relate to potential future flows?

- \$5.5M improvements allows for 600-900 new units
- If 400 new units over next 10 years, then cost is \$13.75K/unit
  - Compare to typ. septic system = \$15K/unit
- Town could consider future financing options, including impact fees, to help defray its cost



# Next Steps for Council

- What questions and clarifications are needed to assist Council with decision making?
- Decide financing method for Route 100 sewer extension (recommend TIF/bond method)
- Schedule follow-up Council meeting to answer questions
- Seek public input on draft plan
- Make decision

# Proposed Schedule to Finalize Study

- May: Follow-Up Discussion with Council
- July: Public Input on Draft Plan
- September: Review final draft plan + additional public input
- October: Council decision, authorize preliminary engineering for short term projects

# Questions / Discussion

