

Route 20 Sewer Meeting

May 25, 2011



Town of Sudbury

Sewer Assessment Technical Advisory Committee

<http://www.sudbury.ma.us>

email: sewertech@sudbury.ma.us

Members:

Elizabeth D. Eggleston, Chair
Parker L. Coddington
William J. Cossart
John C. Drobinski
Robert Leupold

Planning Board Representative
Conservation Commission Representative
Sudbury Water District Representative
Selectmen Representative
Board of Health Director

Staff:

Jody Kablack, Director of Planning and Community Development

Consultants:

Weston & Sampson

Adam Ploetz, AICP

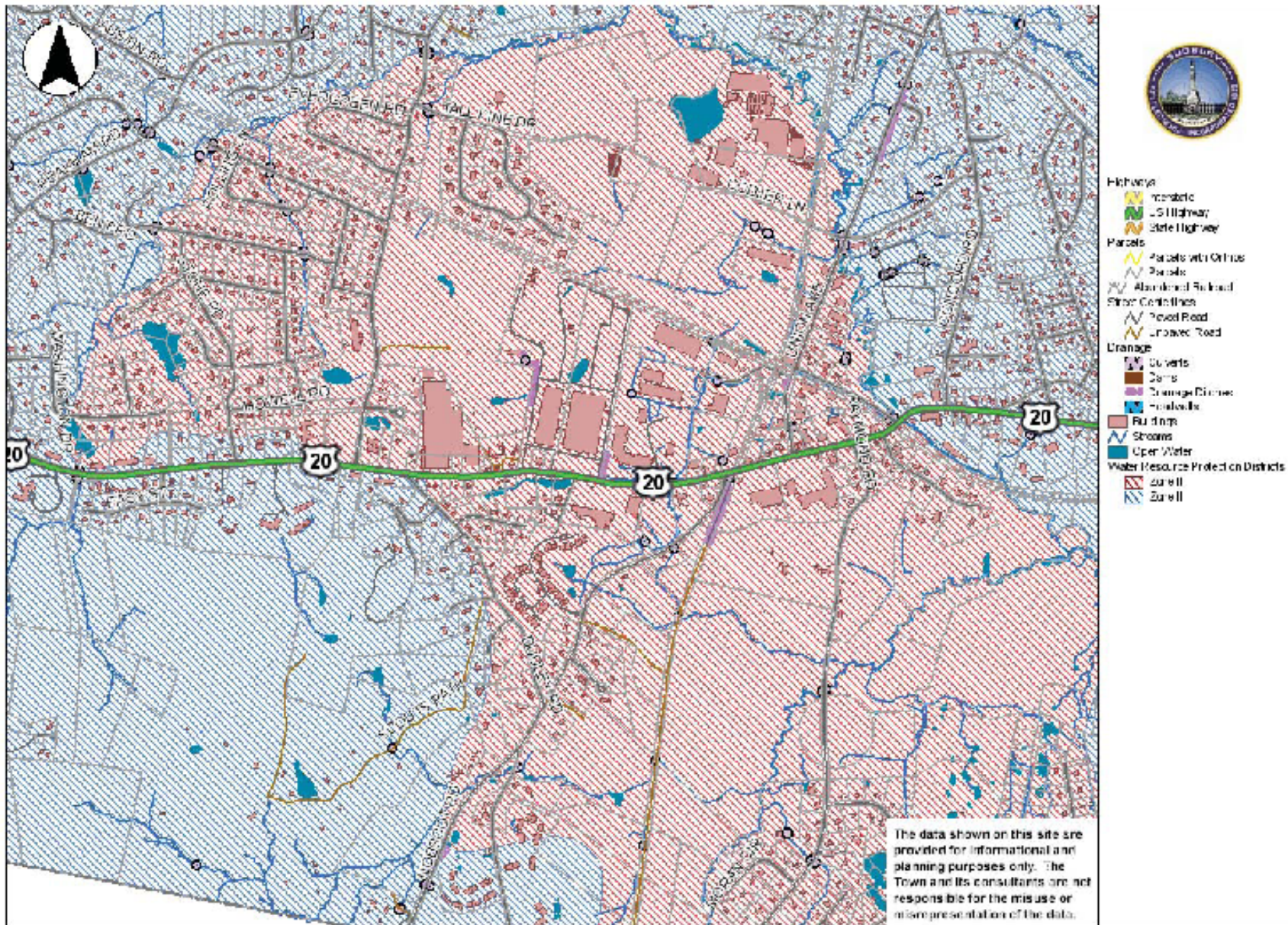
Weston & Sampson[®]
environmental/infrastructure consultants

Route 20 Sewer Meeting
Wednesday May 25, 2011
7:30 pm, Town Hall
AGENDA

- **Introduction** – Lisa Eggleston
- **History/Need** – Lisa Eggleston
- **Project Description** – Weston & Sampson
- **Elements of Cost Structure** - Eric Poch
- **Route 20 Vision/Zoning**– Jody Kablack
- **Citizen’s Advisory Committee** - Eric Poch
- **Q&A** – All Panelists
- **Wrap Up** – Lisa Eggleston

On-Site Constraints

- Soil Types – Moderate to Severe Limitations
- Shallow Depth-To-Groundwater
- Town Drinking Water – Underground Aquifers (DEP Zone II)
- Hop Brook – List of Impaired Surface Waters



Water Resource Protection Districts

2001 Wastewater Needs Matrix

- System Age
- Condition of System – repair/pump rate
- Soils Classification
- Groundwater Levels
- Lot Size
- Environmental Concerns – Zone II, wetlands, flood plain

2001 Needs Assessment

- 84 parcels in total
- 36 PRIORITY - 43%
- 29 CRITICAL - 34%

Total 77%

- 19 Non-Priority

Site Screening

- 86 Sites Screened
- Initial Testing/Investigation Performed at 6 Sites
 - Meader, Sykes, Bushey, Mahoney, Young, Shylovsky
- Hydrogeological Testing at 3 Sites
 - DPW
 - Haskell Field
 - Old Lancaster Road
 - Curtis Middle School

Curtis Middle School

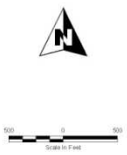
- Depth-to-groundwater:
 - Approximately 29 feet
- Sand and gravel deposits
- Estimated capacity of 100,000 – 200,000 gpd
- June 2010 Meeting with School Committee

TOWN OF SUDBURY,
MASSACHUSETTS

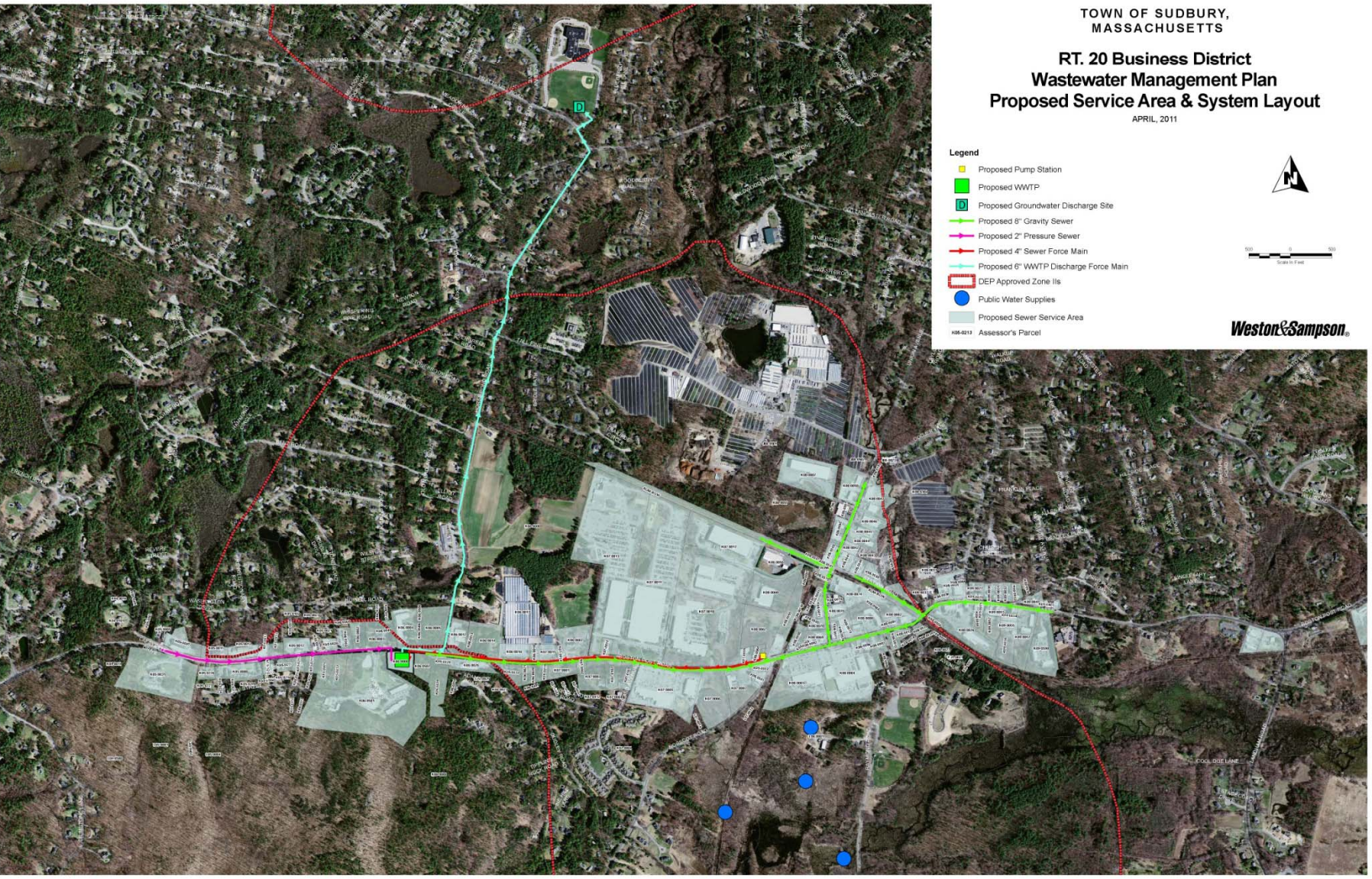
**RT. 20 Business District
Wastewater Management Plan
Proposed Service Area & System Layout**

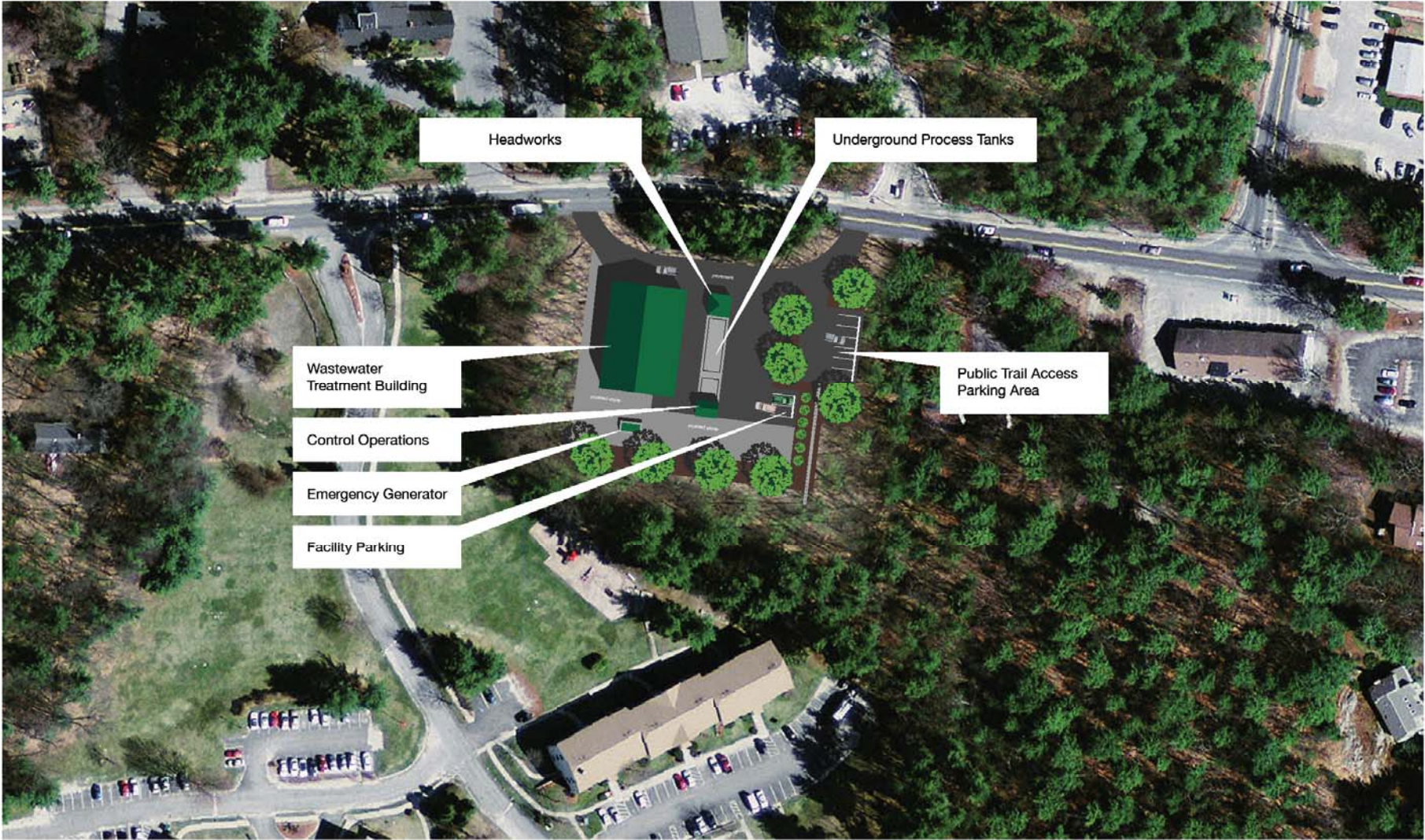
APRIL, 2011

- Legend**
- Proposed Pump Station
 - Proposed WWTP
 - Proposed Groundwater Discharge Site
 - Proposed 6" Gravity Sewer
 - Proposed 2" Pressure Sewer
 - Proposed 4" Sewer Force Main
 - Proposed 6" WWTP Discharge Force Main
 - DEP Approved Zone IIs
 - Public Water Supplies
 - Proposed Sewer Service Area
 - Assessor's Parcel

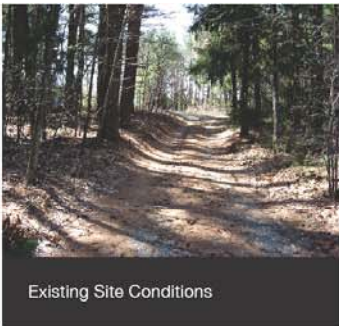


Weston&Sampson





SUDBURY DECENTRALIZED WASTEWATER TREATMENT FACILITY — CONCEPTUAL SITE PLAN



Conceptual Rendering of
Sudbury Decentralized Wastewater
Treatment Facility and Tipling Rock Trail
Parking Area as Viewed from Eastern
Access Road

(for conceptual purposes only — not to exact scale)

SUDBURY DECENTRALIZED WASTEWATER TREATMENT FACILITY — CONCEPTUAL RENDERING

Weston & Sampson.

Potential Layout of Recharge Fields



Sewer Project

- Phase 1 – Planning: Soil Tests, PER – In Process
- Phase 2 – Design & Permitting
- Phase 3 – Bidding & Construction
- Project Financing

Phase 1 – Planning

(Project Engineering Report)

- Wastewater Needs Analysis
- Wastewater Management Alternatives
- Hydrogeologic Investigations/Analysis
- Recommended Plan/Implementation
- Public Participation

Phase 2 – Design and Permitting

- Massachusetts Environmental Policy Act (MEPA)
 - Expanded ENF
- Final Design
 - Wastewater Collection System
 - Wastewater Treatment Facility
 - Treated Effluent Subsurface Disposal Field
- Groundwater Discharge Permit (through DEP)
 - Initial Hydrogeological Investigations
 - Final Application with Treatment Process Design

Phase 3 – Bidding and Construction

- Two Projects
 - Collection System (Chapter 30)
 - Treatment and Recharge (Chapter 149)
- Simultaneous Construction Schedules
 - Certain Restrictions
 - Minimize Adverse Impacts



Ashfield, MA Treatment Plant



Project Financing

- State Revolving Fund (SRF) Loan
 - Massachusetts Water Pollution Abatement Trust (MWPAT)
- Typically 2% Loan Financed over 20 Years
- Project Evaluation Form (PEF)
 - Intended Use Plan (IUP)
- Final Application and Approval Process

Preliminary Estimated Project Schedule

- MEPA Process – July 2011 thru October 2011
- Final Design and Permitting – October 2011 thru March 2013
- Groundwater Discharge Permit – Dec. 2011 thru Dec. 2012
- Re-Submittal of Project Evaluation Form (PEF) – Aug. 2012
- Submittal of State Revolving Fund (SRF) Loan Application – March 2013
- Town Meeting Authorization of Construction Funding – April 2013
- Permission to Advertise – May 2013
- Public Bid/Award Process – May 2013 thru Aug. 2013
- Construction – Sept. 2013 thru June 2015

Elements of Cost Structure

- Taxation – design and construction
- Betterments/Privilege Fees
- Hook Up Fees
- User Fees

DESIGN: \$1 million Cost - Residential

Design Phase:
Residential Impact =
\$35/year for 5 years

Scenario Assumptions		Residential
Amount	1,000,000	
Issuance Costs	20,000	
Total Bonding	1,020,000	
Term/years	5	
Rate	2.500%	
Average value	628,000	
Res Value	3,599,570,656	
Resid share	90.92%	
Amortization	straight line	

Year	Balance	Principal	Interest	Total	Residen tial Share	1,000 Tax Impact	100,000 Tax Impact	628,000 Prop Tax Impact
1	1,020,000	204,000	25,500	229,500	208,671	\$0.08	\$5.80	\$36.41
2	816,000	204,000	20,400	224,400	204,033	\$0.08	\$5.87	\$35.60
3	612,000	204,000	15,300	219,300	199,398	\$0.08	\$5.54	\$34.79
4	408,000	204,000	10,200	214,200	194,759	\$0.05	\$5.41	\$33.98
5	204,000	204,000	5,100	209,100	190,122	\$0.05	\$5.28	\$33.17
Total		1,020,000	76,500	1,096,500	998,982	\$0.28	\$27.70	\$173.94

DESIGN: \$1 million Cost - Commercial

Design Phase:
Commercial Impact =
\$58/year for 5 years

Scenario Assumptions		Commercial
Amount	1,000,000	
Issuance Costs	20,000	
Total Bonding	1,020,000	
Term/years	5	
Rate	2.500%	
CIP share	9.076%	
Average value	\$ 810,357	
C&I Value	274,711,172	strictly CIP
C&I Parcels	339	strictly CIP
Amortization	straight line	

Year	Balance	Principal	Interest	Total	Comm- ercial Share	1,000	131% shift 100,000	810,357 Prop Tax Impact
						Tax Impact	Tax Impact	Tax Impact
1	1,020,000	204,000	25,500	229,500	20,829	\$0.08	\$7.58	\$61.44
2	816,000	204,000	20,400	224,400	20,387	\$0.07	\$7.41	\$60.08
3	612,000	204,000	15,300	219,300	19,904	\$0.07	\$7.25	\$58.71
4	408,000	204,000	10,200	214,200	19,441	\$0.07	\$7.08	\$57.35
5	204,000	204,000	5,100	209,100	18,978	\$0.07	\$6.91	\$55.98
Total		1,020,000	76,500	1,096,500	99,518	\$0.36	\$36.23	\$293.56

Construction Phase: Residential Impact = \$40/year for 20 years

Scenario Assumptions

Residential

Amount	3,500,000
Issuance Costs	50,000
Total Bonding	3,550,000
Term/years	20
Rate	4.000%
Average value	628,000
Res Value	3,599,570,656
Resid share	90.92%
Amortization	straight line

Year	Balance	Principal	Interest	Total	Residen tial Share	1,000 Tax Impact	100,000 Tax Impact	628,000 Prop Tax Impact
1	3,550,000	177,500	142,000	319,500	290,502	\$0.08	\$8.07	\$50.68
2	3,372,500	177,500	134,900	312,400	284,047	\$0.08	\$7.89	\$49.56
3	3,195,000	177,500	127,800	305,300	277,591	\$0.08	\$7.71	\$48.43
4	3,017,500	177,500	120,700	298,200	271,135	\$0.08	\$7.53	\$47.30
5	2,840,000	177,500	113,600	291,100	264,680	\$0.07	\$7.35	\$46.18
6	2,662,500	177,500	106,500	284,000	258,224	\$0.07	\$7.17	\$45.05
7	2,485,000	177,500	99,400	276,900	251,769	\$0.07	\$6.99	\$43.92
8	2,307,500	177,500	92,300	269,800	245,313	\$0.07	\$6.82	\$42.80
9	2,130,000	177,500	85,200	262,700	238,857	\$0.07	\$6.64	\$41.67
10	1,952,500	177,500	78,100	255,600	232,402	\$0.06	\$6.46	\$40.55
11	1,775,000	177,500	71,000	248,500	225,946	\$0.06	\$6.28	\$39.42
12	1,597,500	177,500	63,900	241,400	219,491	\$0.06	\$6.10	\$38.29
13	1,420,000	177,500	56,800	234,300	213,035	\$0.06	\$5.92	\$37.17
14	1,242,500	177,500	49,700	227,200	206,579	\$0.06	\$5.74	\$36.04
15	1,065,000	177,500	42,600	220,100	200,124	\$0.06	\$5.56	\$34.91
16	887,500	177,500	35,500	213,000	193,668	\$0.05	\$5.38	\$33.79
17	710,000	177,500	28,400	205,900	187,213	\$0.05	\$5.20	\$32.66
18	532,500	177,500	21,300	198,800	180,757	\$0.05	\$5.02	\$31.54
19	355,000	177,500	14,200	191,700	174,301	\$0.05	\$4.84	\$30.41
20	177,500	177,500	7,100	184,600	167,846	\$0.05	\$4.66	\$29.28
Total		3,550,000	1,491,000	5,041,000	4,583,479	\$1.27	\$127.33	\$799.66

Scenario Assumptions

Amount	3,500,000
Issuance Costs	50,000
Total Bonding	3,550,000
Term/years	20
Rate	4.000%
CIP share	9.076%
Average value	\$ 810,357
C&I Value	274,711,172
C&I Parcels	339
Amortization	straight line

Commercial

strictly CIP

strictly CIP

Construction Phase:
Commercial Impact =
\$48/year for 20 years

					Comm- ercial Share	1,000 Tax Impact	100,000 Tax Impact	810,357 Prop Tax Impact
Year	Balance	Principal	Interest	Total				
1	3,550,000	177,500	142,000	319,500	28,998	\$0.11	\$10.56	\$85.54
2	3,372,500	177,500	134,900	312,400	28,353	\$0.10	\$10.32	\$83.64
3	3,195,000	177,500	127,800	305,300	27,709	\$0.10	\$10.09	\$81.74
4	3,017,500	177,500	120,700	298,200	27,065	\$0.10	\$9.85	\$79.84
5	2,840,000	177,500	113,600	291,100	26,420	\$0.10	\$9.62	\$77.94
6	2,662,500	177,500	106,500	284,000	258,224	\$0.07	\$7.17	\$45.05
7	2,485,000	177,500	99,400	276,900	251,769	\$0.07	\$6.99	\$43.92
8	2,307,500	177,500	92,300	269,800	245,313	\$0.07	\$6.82	\$42.80
9	2,130,000	177,500	85,200	262,700	238,857	\$0.07	\$6.64	\$41.67
10	1,952,500	177,500	78,100	255,600	232,402	\$0.06	\$6.46	\$40.55
11	1,775,000	177,500	71,000	248,500	225,946	\$0.06	\$6.28	\$39.42
12	1,597,500	177,500	63,900	241,400	219,491	\$0.06	\$6.10	\$38.29
13	1,420,000	177,500	56,800	234,300	213,035	\$0.06	\$5.92	\$37.17
14	1,242,500	177,500	49,700	227,200	206,579	\$0.06	\$5.74	\$36.04
15	1,065,000	177,500	42,600	220,100	200,124	\$0.06	\$5.56	\$34.91
16	887,500	177,500	35,500	213,000	193,668	\$0.05	\$5.38	\$33.79
17	710,000	177,500	28,400	205,900	187,213	\$0.05	\$5.20	\$32.66
18	532,500	177,500	21,300	198,800	180,757	\$0.05	\$5.02	\$31.54
19	355,000	177,500	14,200	191,700	174,301	\$0.05	\$4.84	\$30.41
20	177,500	177,500	7,100	184,600	167,846	\$0.05	\$4.66	\$29.28
Total		3,550,000	1,491,000	5,041,000	3,334,069	\$1.39	\$139.21	\$966.20

How will the project be paid for?

Betterments vs. Raising Taxes

What is a Sewer Betterment?

- A tax assessed by Municipalities to properties “bettered” by construction of a public sewer (MGL C. 80 & C. 83)
- Public sewer is considered an improvement over on-site wastewater disposal
- Therefore the value of the those properties abutting the sewer line is improved or “bettered”
- Total costs recovered through Assessments (Betterments & Privilege Fees) cannot exceed the cost of the project

Property Taxes (within or outside Proposition 2 ½ tax limits)

- Raising taxes implies a General Benefit to entire community

Combination of Both

- Betterment Assessments - Only to serviced properties for a Specific Benefit
- Compensatory Sewer Privilege Fees - Additional Fee for future Change in use/expansion of serviced properties
- Hook up Fees – only to serviced properties
- User Charges (Annual Operation & Maintenance Costs) – only to serviced properties
- Some taxation

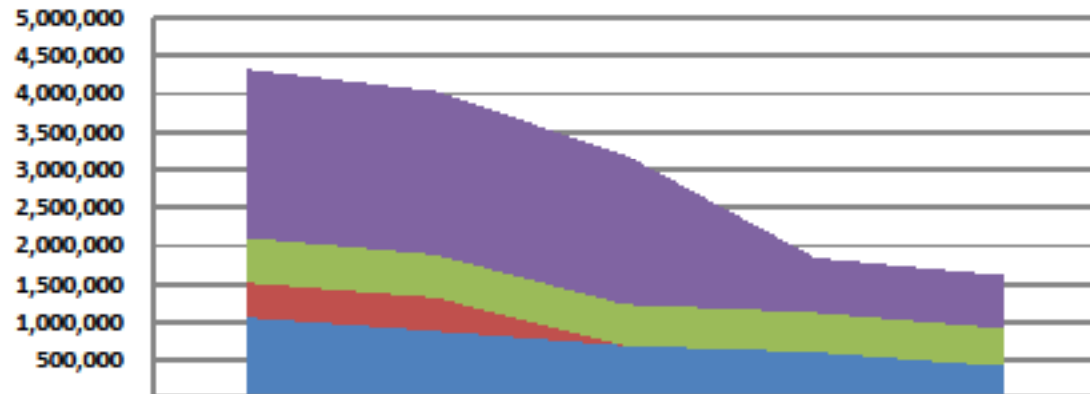
Route 20 Sewer Estimated Betterment

- Based on existing design flows of properties in the service area; Includes room for growth
- Estimated assumption of 75% betterment and 25% taxation
 - \$10.5 million raised from betterment charges
 - \$3.5 million raised from taxpayers
- Many different scenarios possible

1 Betterment unit = \$15,000 to \$20,000

Equivalent to a single family home (330 gal/day)

5-Year Debt Service Summary



	FY12	FY13	FY14	FY15	FY16
LS	2,179,636	2,121,175	1,917,223	679,035	659,316
Land (non-CPA)	591,144	560,950	540,513	519,113	502,238
Town	455,898	440,449	-	-	-
SPS	1,073,573	893,204	706,022	621,578	430,978

Est. Tax Impact	<u>FY12</u>	<u>FY13</u>	<u>FY14</u>	<u>FY15</u>	<u>FY16</u>	<u>5-Year</u>
	\$ 682.15	\$ 637.03	\$ 501.87	\$ 288.66	\$ 252.62	\$ 2,109.71

	<u>FY12</u>	<u>FY13</u>	<u>FY14</u>	<u>FY15</u>	<u>FY16</u>	<u>5-Year</u>
SPS	1,073,573	893,204	706,022	621,578	430,978	3,725,355
Town	455,898	440,449	-	-	-	896,347
Land (non-CPA)	591,144	560,950	540,513	519,113	502,238	2,713,958
LS	2,179,636	2,121,175	1,917,223	679,035	659,316	7,556,385
Exempt Debt Service	<u>4,300,251</u>	<u>4,015,778</u>	<u>3,163,757</u>	<u>1,819,725</u>	<u>1,592,531</u>	<u>14,892,042</u>

A Community Vision for the Old Post Road
Issues and Opportunities

- Star Market (landscape, infill and street frontage development)



A Community Vision for the Old Post Road

Issues and Opportunities

- Intersection of Nobscot Road and Old Post Road



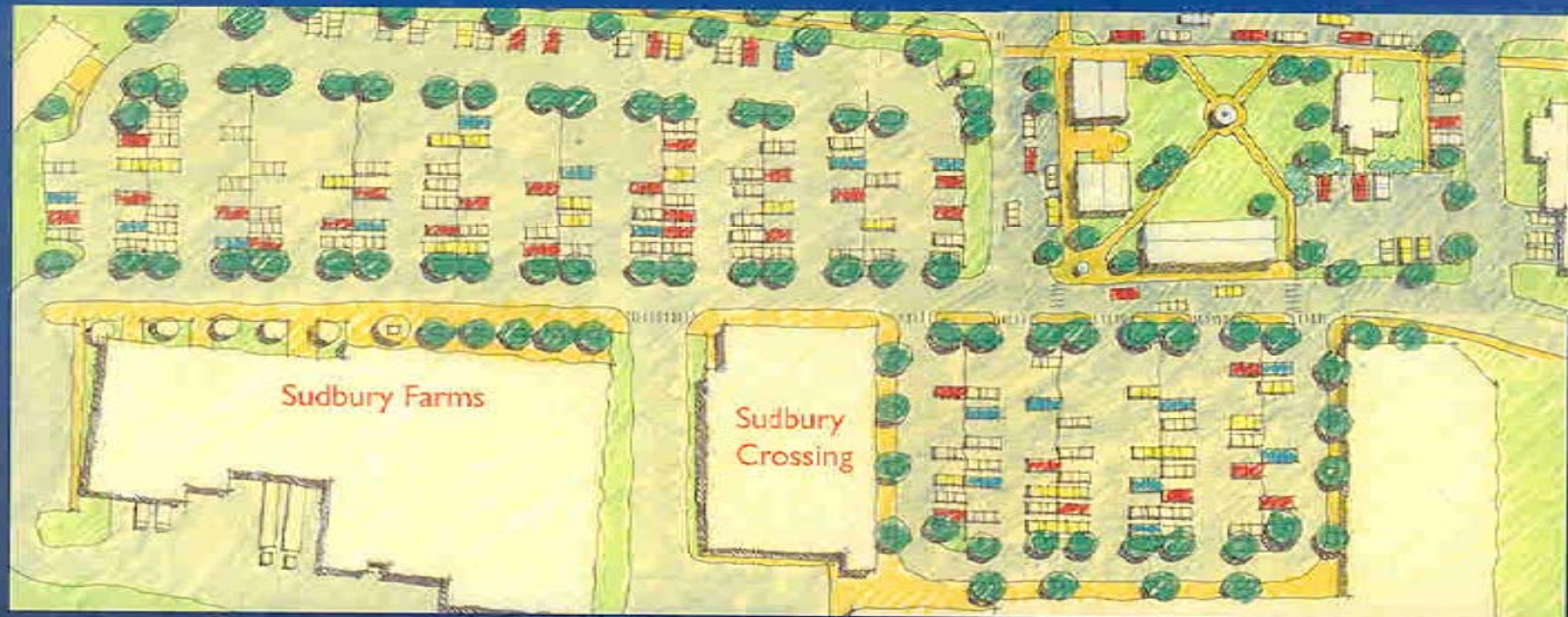
A Community Vision for the Old Post Road
Issues and Opportunities

- Intersection of Union Avenue and Old Post Road



A Community Vision for the Old Post Road
Issues and Opportunities

- Sudbury Crossing (landscape, village green & appropriate building in-fill)



Key Concepts from Visioning Session:

- Regulations that provide incentives for high quality development is good for business, good for commercial development and good for the tax base
- Use public property or public infrastructure to spur appropriate redevelopment
- Private sector redevelopment initiatives help complete the vision

Zoning Protections In Place

- No fast food drive-through
- Parking located behind buildings
- Buildings moved closer to the street
- Review process for large buildings - >20,000 sf
- Landscaping standards
- Wetlands Bylaw
- Groundwater Protection Bylaw
- Stormwater Bylaw

Citizen's Advisory Committee (CAC)

- Public involvement and process
- Creating a vision for Route 20
- Writing zoning bylaws
- Defining the sewer service area
- Preparing bylaws and regulations for the sewer district including its operation
- Innovative technology
- Reviewing financing options and betterment charges
- Planning for other Route 20 streetscape improvements

Questions & Answers

Email:

sewertech@sudbury.ma.us

Ways to Get Involved

- TAC – environmental impacts, technical oversight
- CAC – financial, zoning, sewer district, public participation
- BOS – process, recommendations to Town Meeting
- Town Meeting – all votes (betterments, district set-up, bonding, zoning)

Next Steps

- June 7, 2011 Election
- Create CAC
- Email Board of Selectmen if interested
selectmen@sudbury.ma.us