

ATTACHMENT B1:

**WASTEWATER FLOW PROJECTIONS FOR
WEST CONCORD FOCUS AREA,**

WESTON & SAMPSON

Projected Wastewater Flows for West Concord Focus Area Buildout Scenarios
Oct-08

Table WC-1: Estimated Wastewater Flow Summary

Development Scenario	Total Flow in Study Area			Incremental Flow to Municipal System	
	Projected Total Flow	Flow Component from Unsewered Baker Ave. parcels*	Projected Total Flow w/o Unsewered Baker Ave. parcels	Projected Flow Increase from Existing Condition w/o Unsewered Baker Ave. parcels	Projected Flow Increase from Existing Condition with Baker Ave. Area to Sewer
Estimated Wastewater Flow based on Existing Development	65,506 gpd	15,916 gpd	49,590 gpd		
Estimated Wastewater Flow based on Possible Development Under Existing Zoning	134,502 gpd	57,175 gpd	77,327 gpd	27,737 gpd	84,912 gpd
Estimated Wastewater Flow based on Possible Development Under Zoning Scenario 1	215,373 gpd	57,175 gpd	158,198 gpd	108,608 gpd	165,783 gpd
Estimated Wastewater Flow based on Possible Development Under Zoning Scenario 2	205,310 gpd	57,175 gpd	148,135 gpd	98,545 gpd	155,720 gpd
Estimated Wastewater Flow based on Possible Development Under Zoning Scenario 3	209,417 gpd	57,175 gpd	152,242 gpd	102,652 gpd	159,827 gpd
Estimated Wastewater Flow based on Possible Development Under Zoning Scenario 4	211,074 gpd	57,175 gpd	153,899 gpd	104,310 gpd	161,485 gpd

* Except for #300 Baker Avenue, the Baker Ave. area is not currently connected to the Town's sewer system. If development scenarios were to proceed in this area, sewer connection would likely be required as no land allocation for on-site systems has been considered in the buildout analysis.

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Table WC-2: Existing Land Use- Baseline Flows including Unsewered Baker Avenue Parcels (Reference Buildout of Selected Areas in West Concord document, Tables 1 & 2)

Land Use Code and Description	Existing Number of Parcels	Total Existing Residential Units	Existing Developed Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Residential Land Uses</u>					
1050 Three Family	1	3	-	330 gpd/unit	990 gpd
1110 Apts- 4-8 units	0	0	-	330 gpd/unit	0 gpd
1120 Apts- 8 plus	1	5	-	330 gpd/unit	1,650 gpd
<u>Commercial Land Uses</u>					
3250 Small Retail & Service (<10,000 sq. ft.)	1	0	3,132	0.05 gpd/square foot	157 gpd
3260 Eating & Drinking Establishment	1	0	3,009	0.946 gpd/square foot	2,846 gpd
3300 Auto Sales & Services	1	0	10,197	0.08 gpd/square foot	816 gpd
3320 Auto Repair	2	0	11,820	0.03 gpd/square foot	355 gpd
3340 Gasoline Service Stations	2	0	6,148	0.075 gpd/square foot	461 gpd
3370 Parking Lots	5	0	-	0 gpd/square foot	0 gpd
3400 General Office Building	8	0	584,827	0.075 gpd/square foot	43,862 gpd
3420 Medical Office Building	2	0	44,954	0.075 gpd/square foot	3,372 gpd
3530 Fraternal Organizations	1	0	4,800	0.270 gpd/person	1,297 gpd
<u>Industrial Land Uses</u>					
4000 Buildings for Manufacturing	3	0	54,944	0.04 gpd/square foot	2,198 gpd
4010 Warehouses for Store Manufacturing Products	5	0	108,503	0.03 gpd/square foot	3,255 gpd
4400 Industrial Developable Land	2	0	-	0.04 gpd/square foot	0 gpd
<u>Public Services Land Uses</u>					
9032 Fire	1	0	2,032	0.278 gpd/square foot	564 gpd
9120 Commonwealth of Massachusetts	1	0	-	20 gpd/square foot	0 gpd
<u>Multiple-Use Property</u>					
0104 Two Family MDL-01	1	2	672	330 gpd/unit	694 gpd
0110 Apt. 4-Unit MDL-94	1	2	8,446	330 gpd/unit	1,082 gpd
0322 Store/Shop/Apt. Com.	1	2	1,468	330 gpd/unit	733 gpd
0325 Conv./Food	1	2	1,932	330 gpd/unit	757 gpd
0340 Office Bld./Store/Apt. Com.	1	1	1,161	330 gpd/unit	417 gpd
0310 Primarily Commercial w/ Residential	0	0	-	330 gpd/unit	0 gpd
Totals	42	17	848,045		65,506 gpd

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Projected Wastewater Flows for West Concord Focus Area Buildout Scenarios

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Table WC-3: Build-out Under Existing Zoning including Unsewered Baker Avenue Parcels (Reference Buildout of Selected Areas in West Concord document, Tables 1 through 8)

Land Use Code and Description	Existing Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build-out Residential Units	Existing Non-Res Floor Area	Total Build-out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Residential Land Uses</u>								
1050 Three Family	1	1	3	3	-	0	330 gpd/unit	990 gpd
1110 Apts- 4-8 units	0	0	0	0	-	0	330 gpd/unit	0 gpd
1120 Apts- 8 plus	1	1	5	0	-	0	330 gpd/unit	0 gpd
<u>Commercial Land Uses</u>								
3250 Small Retail & Service (<10,000 sq. ft.)	1	6	0	0	3,132	57,707	0.05 gpd/square foot	2,885 gpd
3260 Eating & Drinking Establishment	1	1	0	0	3,009	4,799	0.946 gpd/square foot	4,540 gpd
3300 Auto Sales & Services	1	0	0	0	10,197	0	0.08 gpd/square foot	0 gpd
3320 Auto Repair	2	0	0	0	11,820	0	0.03 gpd/square foot	0 gpd
3340 Gasoline Service Stations	2	2	0	0	6,148	21,506	0.075 gpd/square foot	1,613 gpd
3370 Parking Lots	5	0	0	0	-	0	0 gpd/square foot	0 gpd
3400 General Office Building	8	10	0	0	584,827	1,121,640	0.075 gpd/square foot	84,123 gpd
3420 Medical Office Building	2	3	0	0	44,954	93,396	0.075 gpd/square foot	7,005 gpd
3530 Fraternal Organizations	1	0	0	0	4,800	0	0.270 gpd/person	0 gpd
<u>Industrial Land Uses</u>								
4000 Buildings for Manufacturing	3	6	0	0	54,944	552,171	0.04 gpd/square foot	22,087 gpd
4010 Warehouses to Store Manufacturing Products	5	6	0	0	108,503	221,572	0.03 gpd/square foot	6,647 gpd
4400 Industrial Developable Land	2	0	0	0	-	0	0.04 gpd/square foot	0 gpd
<u>Public Services Land Uses</u>								
9032 Fire	1	1	0	0	2,032	2,032	0.278 gpd/square foot	564 gpd
9120 Commonwealth of Massachusetts	1	0	0	0	-	0	20 gpd/square foot	0 gpd
<u>Multiple-Use Property</u>								
0104 Two Family MDL-01	1	1	2	2	672	978	330 gpd/unit	709 gpd
0110 Apt. 4-Unit MDL-94	1	1	2	2	8,446	8,446	330 gpd/unit	1,082 gpd
0322 Store/Shop/Apt. Com.	1	1	2	2	1,468	1,609	330 gpd/unit	740 gpd
0325 Conv./Food	1	1	2	2	1,932	5,988	330 gpd/unit	959 gpd
0340 Office Bld./Store/Apt. Com.	1	1	1	1	1,161	3,025	330 gpd/unit	557 gpd
0310 Primarily Commercial w/ Residential	0	0	0	0	-	0	330 gpd/unit	0 gpd
Totals	42	42	17	12	848,045	2,094,869		134,502 gpd

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Projected Wastewater Flows for West Concord Focus Area Buildout Scenarios

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Table WC-4: Build-out Under Scenario 1 Zoning Revisions including Unsewered Baker Avenue Parcels (Reference Buildout of Selected Areas in West Concord document, Tables 1 through 8)

Land Use Code and Description	Existing Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build-out Residential Units	Existing Non-Res Floor Area	Total Build-out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Residential Land Uses</u>								
1050 Three Family	1	0	3	0	-	0	330 gpd/unit	0 gpd
1110 Apts- 4-8 units	0	3	0	244	-	0	330 gpd/unit	80,520 gpd
1120 Apts- 8 plus	1	0	5	0	-	0	330 gpd/unit	0 gpd
<u>Commercial Land Uses</u>								
3250 Small Retail & Service (<10,000 sq. ft.)	1	4	0	0	3,132	37,692	0.05 gpd/square foot	1,885 gpd
3260 Eating & Drinking Establishment	1	1	0	0	3,009	4,799	0.946 gpd/square foot	4,540 gpd
3300 Auto Sales & Services	1	0	0	0	10,197	0	0.08 gpd/square foot	0 gpd
3320 Auto Repair	2	0	0	0	11,820	0	0.03 gpd/square foot	0 gpd
3340 Gasoline Service Stations	2	1	0	0	6,148	12,007	0.075 gpd/square foot	901 gpd
3370 Parking Lots	5	0	0	0	-	0	0 gpd/square foot	0 gpd
3400 General Office Building	8	6	0	0	584,827	1,087,002	0.075 gpd/square foot	81,525 gpd
3420 Medical Office Building	2	3	0	0	44,954	93,396	0.075 gpd/square foot	7,005 gpd
3530 Fraternal Organizations	1	0	0	0	4,800	0	0.270 gpd/square foot	0 gpd
<u>Industrial Land Uses</u>								
4000 Buildings for Manufacturing	3	3	0	0	54,944	333,510	0.04 gpd/square foot	13,340 gpd
4010 Warehouses to Store Manufacturing Products	5	0	0	0	108,503	0	0.03 gpd/square foot	0 gpd
4400 Industrial Developable Land	2	0	0	0	-	0	0.04 gpd/square foot	0 gpd
<u>Public Services Land Uses</u>								
9032 Fire	1	1	0	0	2,032	2,032	0.278 gpd/square foot	564 gpd
9120 Commonwealth of Massachusetts	1	0	0	0	-	0	20 gpd/person	0 gpd
<u>Multiple-Use Property</u>								
0104 Two Family MDL-01	1	0	2	0	672	0	330 gpd/unit	0 gpd
0110 Apt. 4-Unit MDL-94	1	0	2	0	8,446	0	330 gpd/unit	0 gpd
0322 Store/Shop/Apt. Com.	1	0	2	0	1,468	0	330 gpd/unit	0 gpd
0325 Conv./Food	1	0	2	0	1,932	0	330 gpd/unit	0 gpd
0340 Office Bld./Store/Apt. Com.	1	0	1	0	1,161	0	330 gpd/unit	0 gpd
0310 Primarily Commercial w/ Residential	0	20	0	39	-	244,470	330 gpd/unit	25,094 gpd
Totals	42	42	17	283	848,045	1,814,908		215,373 gpd

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Table WC-5: Build-out Under Scenario 2 Zoning Revisions including Unsewered Baker Avenue Parcels (Reference Buildout of Selected Areas in West Concord document, Tables 1 through 8)

Land Use Code and Description	Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build-out Residential Units	Existing Non-Res Floor Area	Total Build-out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Residential Land Uses</u>								
1050 Three Family	1	0	3	0	-	0	330 gpd/unit	0 gpd
1110 Apts- 4-8 units	0	1	0	192	-	5,000	330 gpd/unit	63,360 gpd
1120 Apts- 8 plus	1	0	5	0	-	0	330 gpd/unit	0 gpd
<u>Commercial Land Uses</u>								
3250 Small Retail & Service (<10,000 sq. ft.)	1	4	0	0	3,132	37,692	0.05 gpd/square foot	1,885 gpd
3260 Eating & Drinking Establishment	1	2	0	0	3,009	6,831	0.946 gpd/square foot	6,462 gpd
3300 Auto Sales & Services	1	0	0	0	10,197	0	0.08 gpd/square foot	0 gpd
3320 Auto Repair	2	0	0	0	11,820	0	0.03 gpd/square foot	0 gpd
3340 Gasoline Service Stations	2	1	0	0	6,148	12,007	0.075 gpd/square foot	901 gpd
3370 Parking Lots	5	0	0	0	-	0	0 gpd/square foot	0 gpd
3400 General Office Building	8	6	0	0	584,827	1,087,002	0.075 gpd/square foot	81,525 gpd
3420 Medical Office Building	2	3	0	0	44,954	93,396	0.075 gpd/square foot	7,005 gpd
3530 Fraternal Organizations	1	0	0	0	4,800	0	0.270 gpd/square foot	0 gpd
<u>Industrial Land Uses</u>								
4000 Buildings for Manufacturing	3	3	0	0	54,944	333,510	0.04 gpd/square foot	13,340 gpd
4010 Warehouses to Store Manufacturing Products	5	0	0	0	108,503	0	0.03 gpd/square foot	0 gpd
4400 Industrial Developable Land	2	0	0	0	-	0	0.04 gpd/square foot	0 gpd
<u>Public Services Land Uses</u>								
9032 Fire	1	0	0	0	2,032	0	0.278 gpd/square foot	0 gpd
9120 Commonwealth of Massachusetts	1	0	0	0	-	0	20 gpd/person	0 gpd
<u>Multiple-Use Property</u>								
0104 Two Family MDL-01	1	0	2	0	672	0	330 gpd/unit	0 gpd
0110 Apt. 4-Unit MDL-94	1	0	2	0	8,446	0	330 gpd/unit	0 gpd
0322 Store/Shop/Apt. Com.	1	0	2	0	1,468	0	330 gpd/unit	0 gpd
0325 Conv./Food	1	0	2	0	1,932	0	330 gpd/unit	0 gpd
0340 Office Bld./Store/Apt. Com.	1	0	1	0	1,161	0	330 gpd/unit	0 gpd
0310 Primarily Commercial w/ Residential	0	22	0	47	-	306,450	330 gpd/unit	30,833 gpd
Totals	42	42	17	239	848,045	1,881,888		205,310 gpd

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Table WC-6: Build-out Under Scenario 3 Zoning Revisions including Unsewered Baker Avenue Parcels (Reference Buildout of Selected Areas in West Concord document, Tables 1 through 8)

Land Use Code and Description	Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build- out Residential Units	Existing Non- Res Floor Area	Total Build- out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Residential Land Uses</u>								
1050 Three Family	1	0	3	0	-	0	330 gpd/unit	0 gpd
1110 Apts- 4-8 units	0	1	0	194	-	0	330 gpd/unit	64,020 gpd
1120 Apts- 8 plus	1	0	5	0	-	0	330 gpd/unit	0 gpd
<u>Commercial Land Uses</u>								
3250 Small Retail & Service (<10,000 sq. ft.)	1	4	0	0	3,132	37,692	0.05 gpd/square foot	1,885 gpd
3260 Eating & Drinking Establishment	1	1	0	0	3,009	4,799	0.946 gpd/square foot	4,540 gpd
3300 Auto Sales & Services	1	0	0	0	10,197	0	0.08	0 gpd
3320 Auto Repair	2	0	0	0	11,820	0	0.03 gpd/square foot	0 gpd
3340 Gasoline Service Stations	2	1	0	0	6,148	12,007	0.075 gpd/square foot	901 gpd
3370 Parking Lots	5	0	0	0	-	0	0 gpd/square foot	0 gpd
3400 General Office Building	8	6	0	0	584,827	1,087,002	0.075 gpd/square foot	81,525 gpd
3420 Medical Office Building	2	3	0	0	44,954	93,396	0.075 gpd/square foot	7,005 gpd
3530 Fraternal Organizations	1	0	0	0	4,800	0	0.270 gpd/square foot	0 gpd
<u>Industrial Land Uses</u>								
4000 Buildings for Manufacturing	3	3	0	0	54,944	333,510	0.04 gpd/square foot	13,340 gpd
4010 Warehouses to Store Manufacturing Products	5	0	0	0	108,503	0	0.03 gpd/square foot	0 gpd
4400 Industrial Developable Land	2	0	0	0	-	0	0.04 gpd/square foot	0 gpd
<u>Public Services Land Uses</u>								
9032 Fire	1	1	0	0	2,032	2,032	0.278 gpd/square foot	564 gpd
9120 Commonwealth of Massachusetts	1	0	0	0	-	0	20 gpd/person	0 gpd
<u>Multiple-Use Property</u>								
0104 Two Family MDL-01	1	0	2	0	672	0	330 gpd/unit	0 gpd
0110 Apt. 4-Unit MDL-94	1	0	2	0	8,446	0	330 gpd/unit	0 gpd
0322 Store/Shop/Apt. Com.	1	0	2	0	1,468	0	330 gpd/unit	0 gpd
0325 Conv./Food	1	0	2	0	1,932	0	330 gpd/unit	0 gpd
0340 Office Bld./Store/Apt. Com.	1	0	1	0	1,161	0	330 gpd/unit	0 gpd
0310 Primarily Commercial w/ Residential	0	22	0	70	-	250,750	330 gpd/unit	35,638 gpd
Totals	42	42	17	264	848,045	1,821,188		209,417 gpd

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Projected Wastewater Flows for West Concord Focus Area Buildout Scenarios

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Table WC-7: Build-out Under Scenario 4 Zoning Revisions including Unsewered Baker Avenue Parcels (Reference Buildout of Selected Areas in West Concord document. Tables 1 through 8)

Land Use Code and Description	Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build- out Residential Units	Existing Non- Res Floor Area	Total Build- out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Residential Land Uses</u>								
1050 Three Family	1	0	3	0	-	0	330 gpd/unit	0 gpd
1110 Apts- 4-8 units	0	1	0	194	-	0	330 gpd/unit	64,020 gpd
1120 Apts- 8 plus	1	0	5	0	-	0	330 gpd/unit	0 gpd
<u>Commercial Land Uses</u>								
3250 Small Retail & Service (<10,000 sq. ft.)	1	4	0	0	3,132	37,692	0.05 gpd/square foot	1,885 gpd
3260 Eating & Drinking Establishment	1	1	0	0	3,009	4,799	0.946 gpd/square foot	4,540 gpd
3300 Auto Sales & Services	1	0	0	0	10,197	0	0.08 gpd/square foot	0 gpd
3320 Auto Repair	2	0	0	0	11,820	0	0.03 gpd/square foot	0 gpd
3340 Gasoline Service Stations	2	1	0	0	6,148	12,007	0.075 gpd/square foot	901 gpd
3370 Parking Lots	5	0	0	0	-	0	0 gpd/square foot	0 gpd
3400 General Office Building	8	6	0	0	584,827	1,087,002	0.075 gpd/square foot	81,525 gpd
3420 Medical Office Building	2	3	0	0	44,954	93,396	0.075 gpd/square foot	7,005 gpd
3530 Fraternal Organizations	1	0	0	0	4,800	0	0.270 gpd/square foot	0 gpd
<u>Industrial Land Uses</u>								
4000 Buildings for Manufacturing	3	3	0	0	54,944	333,510	0.04 gpd/square foot	13,340 gpd
4010 Warehouses to Store Manufacturing Products	5	0	0	0	108,503	0	0.03 gpd/square foot	0 gpd
4400 Industrial Developable Land	2	0	0	0	-	0	0.04 gpd/square foot	0 gpd
<u>Public Services Land Uses</u>								
9032 Fire	1	1	0	0	2,032	2,032	0.278 gpd/square foot	564 gpd
9120 Commonwealth of Massachusetts	1	0	0	0	-	0	20 gpd/person	0 gpd
<u>Multiple-Use Property</u>								
0104 Two Family MDL-01	1	0	2	0	672	0	0.05 gpd/square foot	0 gpd
0110 Apt. 4-Unit MDL-94	1	0	2	0	8,446	0	0.05 gpd/square foot	0 gpd
0322 Store/Shop/Apt. Com.	1	0	2	0	1,468	0	0.05 gpd/square foot	0 gpd
0325 Conv./Food	1	0	2	0	1,932	0	0.05 gpd/square foot	0 gpd
0340 Office Bld./Store/Apt. Com.	1	0	1	0	1,161	0	0.075 gpd/square foot	0 gpd
0310 Primarily Commercial w/ Residential	0	22	0	74	-	257,500	0.05 gpd/square foot	37,295 gpd
Totals	42	42	17	268	848,045	1,827,938		211,074 gpd

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Projected Wastewater Flows for Baker Avenue parcels

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Table WC-8: Unsewered Baker Ave. Parcels Existing Land Use- Baseline Flows

Land Use Code and Description	Existing Number of Parcels	Total Existing Residential Units	Existing Developed Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Residential Land Uses</u>					
1050 Three Family				330 gpd/unit	0 gpd
1110 Apts- 4-8 units				330 gpd/unit	0 gpd
1120 Apts- 8 plus				330 gpd/unit	0 gpd
<u>Commercial Land Uses</u>					
3250 Small Retail & Service (<10,000 sq. ft.)				0.05 gpd/square foot	0 gpd
3260 Eating & Drinking Establishment				0.946 gpd/square foot	0 gpd
3300 Auto Sales & Services				0.08 gpd/square foot	0 gpd
3320 Auto Repair				0.03 gpd/square foot	0 gpd
3340 Gasoline Service Stations				0.075 gpd/square foot	0 gpd
3370 Parking Lots	1	0	-	0 gpd/square foot	0 gpd
3400 General Office Building	5	0	139,632	0.075 gpd/square foot	10,472 gpd
3420 Medical Office Building	2	0	44,954	0.075 gpd/square foot	3,372 gpd
3530 Fraternal Organizations	1	0	4,800	0.270 gpd/person	1,297 gpd
<u>Industrial Land Uses</u>					
4000 Buildings for Manufacturing	1	0	19,370	0.04 gpd/square foot	775 gpd
4010 Warehouses to Store Manufacturing Products				0.03 gpd/square foot	0 gpd
4400 Industrial Developable Land	2	0	-	0.04 gpd/square foot	0 gpd
<u>Public Services Land Uses</u>					
9032 Fire				0.278 gpd/square foot	0 gpd
9120 Commonwealth of Massachusetts				20 gpd/square foot	0 gpd
<u>Multiple-Use Property</u>					
0104 Two Family MDL-01				0.05 gpd/square foot	0 gpd
0110 Apt. 4-Unit MDL-94				0.05 gpd/square foot	0 gpd
0322 Store/Shop/Apt. Com.				0.05 gpd/square foot	0 gpd
0325 Conv./Food				0.05 gpd/square foot	0 gpd
0340 Office Bld./Store/Apt. Com.				0.075 gpd/square foot	0 gpd
0310 Primarily Commercial w/ Residential				0.05 gpd/square foot	0 gpd
Totals	12	0	208,756		15,916 gpd

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Projected Wastewater Flows for Baker Avenue parcels

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Table WC-9: Unsewered Baker Ave. Parcels Build-out Under Existing Zoning

Land Use Code and Description	Existing Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build-out Residential Units	Existing Non-Res Floor Area	Total Build-out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Residential Land Uses</u>								
1050 Three Family							330 gpd/unit	0 gpd
1110 Apts- 4-8 units							330 gpd/unit	0 gpd
1120 Apts- 8 plus							330 gpd/unit	0 gpd
<u>Commercial Land Uses</u>								
3250 Small Retail & Service (<10,000 sq. ft.)							0.05 gpd/square foot	0 gpd
3260 Eating & Drinking Establishment							0.946 gpd/square foot	0 gpd
3300 Auto Sales & Services							0.08 gpd/square foot	0 gpd
3320 Auto Repair							0.03 gpd/square foot	0 gpd
3340 Gasoline Service Stations							0.075 gpd/square foot	0 gpd
3370 Parking Lots	1	1	0	0			0 gpd/square foot	0 gpd
3400 General Office Building	5	6	0	0		491,067	0.075 gpd/square foot	36,830 gpd
3420 Medical Office Building	2	3	0	0		93,396	0.075 gpd/square foot	7,005 gpd
3530 Fraternal Organizations	1	1					0.270 gpd/person	0 gpd
<u>Industrial Land Uses</u>								
4000 Buildings for Manufacturing**	1	3	0	0		333,510	0.04 gpd/square foot	13,340 gpd
4010 Warehouses to Store Manufacturing Products***							0.03 gpd/square foot	0 gpd
4400 Industrial Developable Land	2						0.04 gpd/square foot	0 gpd
<u>Public Services Land Uses</u>								
9032 Fire							0.278 gpd/square foot	0 gpd
9120 Commonwealth of Massachusetts							20 gpd/square foot	0 gpd
<u>Multiple-Use Property</u>								
0104 Two Family MDL-01							0.05 gpd/square foot	0 gpd
0110 Apt. 4-Unit MDL-94							0.05 gpd/square foot	0 gpd
0322 Store/Shop/Apt. Com.							0.05 gpd/square foot	0 gpd
0325 Conv./Food							0.075 gpd/square foot	0 gpd
0340 Office Bld./Store/Apt. Com.							0.05 gpd/square foot	0 gpd
0310 Primarily Commercial w/ Residential							0.05 gpd/square foot	0 gpd
Totals	12	12	0	0	-	917,973		57,175 gpd

* plus flow from bays, if applicable

** with cafeteria

*** without cafeteria

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ATTACHMENT B2:

**WASTEWATER FLOW PROJECTIONS FOR
CONCORD CENTER FOCUS AREA,**

WESTON & SAMPSON

**Town of Concord, Massachusetts
Integrated Planning Initiative**

Projected Wastewater Flows for Concord Center Focus Area Buildout Scenarios

Oct-08

Table CC-1. Estimated Wastewater Flow Summary

<i>Development Scenario</i>	<i>Projected Total Flow</i>	<i>Estimated Increase in Total Flow</i>
Estimated Wastewater Flow based on Existing Development	4,529 gpd	
Estimated Wastewater Flow based on Possible Development Under Existing Zoning	10,411 gpd	5,882 gpd
Estimated Wastewater Flow based on Possible Development Under Zoning Scenario 1	74,321 gpd	69,792 gpd

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Assumes all parcels included in the analysis are currently sewered.

Town of Concord, Massachusetts
Integrated Planning Initiative

Projected Wastewater Flows for Concord Center Focus Area Buildout Scenarios

Oct-08

Table CC-1. Estimated Wastewater Flow Summary

Land Use Code and Description	Existing Number of Parcels	Total Existing Residential Units	Existing Developed Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Residential Land Uses</u>					
1010 Single Family	1	1	-	330 gpd/unit	330 gpd
<u>Commercial Land Uses</u>					
3100 Tanks Holding Fuel ¹	1	0	2,592	0.075 gpd/square foot	194 gpd
3130 Lumber Yard ²	1	0	8,957	0.050 gpd/square foot	448 gpd
3320 Auto Repair	1	0	3,760	0.03 gpd/square foot	113 gpd
3370 Parking Lots	2	0	-	0 gpd/square foot	0 gpd
3407/3401 Office/Bank/Gas Station	2	0	16,301	0.075 gpd/square foot	1,223 gpd
3401/3407 Retail	1	0	14,429	0.05 gpd/square foot	721 gpd
<u>Public Services Land Uses</u>					
9030 Municipal (Town Offices)	2	0	20,000	0.075 gpd/square foot	1,500 gpd
Totals	11	1	66,039		4,529 gpd

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¹ Assumes existing building use is office space.

² Assumes all existing building floor area is retail, though a portion may be warehouse.

Town of Concord, Massachusetts
Integrated Planning Initiative

Projected Wastewater Flows for Concord Center Focus Area Buildout Scenarios

Oct-08

Table CC-1. Estimated Wastewater Flow Summary

Land Use Code and Description	Existing Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build-out Residential Units	Existing Non-Res Floor Area	Total Build-out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Residential Land Uses</u>								
1010 Single Family	1	1	1	1	-	0	330 gpd/unit	330 gpd
<u>Commercial Land Uses</u>								
3100 Tanks Holding Fuel ¹	1	1	0	0	2,592	22,133	0.075 gpd/square foot	1,660 gpd
3130 Lumber Yard ²	1	1	0	0	8,957	36,308	0.05 gpd/square foot	1,815 gpd
3320 Auto Repair	1	1	0	0	3,760	25,579	0.03 gpd/square foot	767 gpd
3370 Parking Lots	2	2	0	0	-	0	0 gpd/square foot	0 gpd
3401/3407 Office/Bank/Gas Station	2	2	0	0	16,301	30,621	0.075 gpd/square foot	2,297 gpd
3401/3407 Retail	1	1	0	0	14,429	40,837	0.05 gpd/square foot	2,042 gpd
<u>Public Services Land Uses</u>								
9030 Municipal (Town Offices)	2	2	0	0	20,000	20,000	0.075 gpd/square foot	1,500 gpd
Totals	11	11	1	1	66,039	175,478		10,411 gpd

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¹ Assumes existing building use is office space.

² Assumes all existing building floor area is retail, though a portion may be warehouse.

Town of Concord, Massachusetts
Integrated Planning Initiative

Projected Wastewater Flows for Concord Center Focus Area Buildout Scenarios

Oct-08

Table CC-1. Estimated Wastewater Flow Summary

Land Use Code and Description	Existing Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build-out Residential Units	Existing Non-Res Floor Area	Total Build-out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
Residential Land Uses 1010 Single Family	1	0	1	0	-	0	330 gpd/unit	0 gpd
Commercial Land Uses 3100 Tanks Holding Fuel ¹ 3130 Lumber Yard ² 3320 Auto Repair 3370 Parking Lots 3401/3407 Office/Bank/Gas Station 3401/3407 Retail 3250 Small Retail & Service (<10,000 sq. ft.)	1 1 1 2 2 1 0	0 0 0 0 0 0 2	0 0 0 0 0 0 0	0 0 0 0 0 0 0	2,592 8,957 3,760 - 16,301 14,429 -	0 0 0 0 0 0 96,507	0.075 gpd/square foot 0.05 gpd/square foot 0.03 gpd/square foot 0 gpd/square foot 0.075 gpd/square foot 0.05 gpd/square foot 0.05 gpd/square foot	0 gpd 0 gpd 0 gpd 0 gpd 0 gpd 0 gpd 4,825 gpd
Public Services Land Uses 9030 Municipal (Town Offices)	2	0	0	0	20,000	0	0.075 gpd/square foot	0 gpd
Multiple-Use Property 0310 Primarily Commercial w/ Residential	0	9	0	178	-	215,110	330 gpd/unit 0.05 gpd/square foot	69,496 gpd
Totals	11	11	1	178	66,039	311,617		74,321 gpd

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¹ Assumes existing building use is office space.

² Assumes all existing building floor area is retail, though a portion may be warehouse.

ATTACHMENT B3:

**WASTEWATER FLOW PROJECTIONS FOR
THOREAU ST./SUDBURY RD. FOCUS AREA,**

WESTON & SAMPSON

**Town of Concord, Massachusetts
Integrated Planning Initiative**

Projected Wastewater Flows for Thoreau St./Sudbury Rd. Focus Area Buildout Scenarios

Oct-08

Table TS-1: Estimated Wastewater Flow Summary

<i>Development Scenario</i>	<i>Projected Total Flow</i>	<i>Estimated Increase in Total Flow</i>
Estimated Wastewater Flow based on Existing Development	10,596 gpd	
Estimated Wastewater Flow based on Possible Development Under Existing Zoning	38,455 gpd	27,859 gpd
Estimated Wastewater Flow based on Possible Development Under Zoning Scenario 1	42,498 gpd	31,902 gpd
Estimated Wastewater Flow based on Possible Development Under Zoning Scenario 2	65,842 gpd	55,246 gpd

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Assumes all parcels included in the analysis are currently sewerred.

**Town of Concord, Massachusetts
Integrated Planning Initiative**

Projected Wastewater Flows for Thoreau St./Sudbury Rd. Focus Area Buildout Scenarios

Oct-08

Table TS-2: Existing Land Use- Baseline Flows (Reference Buildout of Selected Areas in Thoreau Street & Sudbury Road Area document, **Tables 1**

Land Use Code and Description	Existing Number of Parcels	Total Existing Residential Units	Existing Developed Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
<u>Commercial Land Uses</u>					
3240 Supermarket (including Retail & Small Restaurant	1	0	32,910	0.097 gpd/square foot	3,192 gpd
3260 Eating & Drinking Establishment	1	0	6,200	0.946 gpd/square foot	5,865 gpd
3400 General Office Building	3	0	20,512	0.075 gpd/square foot	1,538 gpd
Totals	5	0	59,622		10,596 gpd

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Town of Concord, Massachusetts
Integrated Planning Initiative

Projected Wastewater Flows for Thoreau St./Sudbury Rd. Focus Area Buildout Scenarios

Oct-08

Table TS-3: Build-out Under Existing Zoning (Reference Buildout of Selected Areas in Thoreau Street & Sudbury Road Area document, Tables 1 and 2)

Land Use Code and Description	Existing Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build-out Residential Units	Existing Non-Res Floor Area	Total Build-out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
Commercial Land Uses								
3240 Supermarket (including Retail & Small Restaurant)	1	1	0	0	32,910	76,302	0.097 gpd/square foot	7,401 gpd
3260 Eating & Drinking Establishment	1	1	0	0	6,200	31,145	0.946 gpd/square foot	29,461 gpd
3400 General Office Building	3	3	0	0	20,512	21,226	0.075 gpd/square foot	1,592 gpd
Totals	5	5	0	0	59,622	128,673		38,455 gpd

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Assumes existing uses are maintained and future expansion is of the same use.

Town of Concord, Massachusetts
Integrated Planning Initiative

Projected Wastewater Flows for Thoreau St./Sudbury Rd. Focus Area Buildout Scenarios

Oct-08

Table TS-4: Build-out Under Revised Zoning Scenario 1 (Reference Buildout of Selected Areas in Thoreau Street & Sudbury Road Area document, Tables 1 and 2)

Land Use Code and Description	Existing Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build-out Residential Units	Existing Non-Res Floor Area	Total Build-out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
Commercial Land Uses								
3240 Supermarket (including Retail & Small Restaurant)	1	0	0	0	32,910	0	0.097 gpd/square foot	0 gpd
3260 Eating & Drinking Establishment	1	0	0	0	6,200	0	0.946 gpd/square foot	0 gpd
3400 General Office Building	3	0	0	0	20,512	0	0.075 gpd/square foot	0 gpd
Multiple-Use Property								
0310 Primarily Commercial w/ Residential	0	5	0	83	-	302,160	330 gpd/unit	42,498 gpd
Totals	5	5	0	83	59,622	302,160		42,498 gpd

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Assumes all existing uses are abandoned and converted to a consistent multi-use of residential (25%) and commercial retail (75%).

Town of Concord, Massachusetts
Integrated Planning Initiative

Projected Wastewater Flows for Thoreau St./Sudbury Rd. Focus Area Buildout Scenarios

Oct-08

Table TS-5: Build-out Under Revised Zoning Scenario 2 (Reference Buildout of Selected Areas in Thoreau Street & Sudbury Road Area document, Tables 1 and 2)

Land Use Code and Description	Existing Number of Parcels	Revised Number of Parcels	Existing Residential Units	Total Build-out Residential Units	Existing Non-Res Floor Area	Total Build-out Non-Res Floor Area	Title 5 Flow Basis	Calculated Title 5 Flow
Commercial Land Uses								
3240 Supermarket (including Retail & Small Restaurant	1	0	0	0	32,910	0	0.097 gpd/square foot	0 gpd
3260 Eating & Drinking Establishment	1	0	0	0	6,200	0	0.946 gpd/square foot	0 gpd
3400 General Office Building	3	0	0	0	20,512	0	0.075 gpd/square foot	0 gpd
Multiple-Use Property								
0310 Primarily Commercial w/ Residential	0	5	0	169	-	201,440	330 gpd/unit	65,842 gpd
Totals	5	5	0	169	59,622	201,440		65,842 gpd

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Assumes all existing uses are abandoned and converted to a consistent multi-use of residential (50%) and commercial retail (50%).