

Wayland Town Center
Draft Environmental Impact Report

Table of Contents

CIRCULATION LIST

1.0	PROJECT DESCRIPTION	1-1
1.1	Introduction and ENF Certificate	1-1
1.2	Project Description	1-1
1.2.1	Wayland Town Center Project	1-1
1.2.2	Sustainable Design and Low Impact Development	1-9
1.2.3	Other Area Enhancements and Benefits	1-9
1.2.4	Existing and Proposed Grading	1-11
1.3	Adjacent Land Uses and Ownership	1-11
1.4	Project Phasing	1-14
1.5	Required State Permits	1-15
1.6	Consistency with Executive Order 385	1-15
1.6.1	Wayland Town Master Plan, Final Report –August 2004	1-15
1.6.2	Town of Wayland Open Space and Recreation Plan	1-17
1.6.3	Metropolitan Area Planning Council’s MetroPlan 2000	1-18
1.6.3.1	Housing Element	1-19
1.6.3.2	Land Resources Element	1-19
1.6.3.3	Transportation Element	1-19
1.6.3.4	Economic Development Element	1-20
1.6.3.5	Water Resources Element	1-20
1.7	Summary of Impacts and Mitigation Measures	1-20
2.0	ALTERNATIVES ANALYSIS	2-1
2.1	Introduction	2-1
2.2	Wayland Town Center – Preferred Alternative	2-1
2.3	ENF Alternative	2-3
2.4	No-Build Alternative	2-3
2.5	Traditional Stormwater Management Approach	2-4
3.0	TRANSPORTATION AND AIR QUALITY	3-1
3.1	Project Description	3-1
3.1.1	Study Methodology	3-3
3.1.2	Alternatives Studied	3-3
3.2	Existing Conditions	3-3
3.2.1	Study Area	3-3
3.2.2	Field Survey	3-5
3.2.3	Geometrics	3-5

3.2.3.1	Roadways	3-6
3.2.3.2	Intersections	3-8
3.2.4	Traffic Volumes	3-15
3.2.4.1	Seasonal Adjustment	3-20
3.2.4.2	Existing Site Generated Traffic Volumes	3-20
3.2.5	Gap Analysis	3-20
3.2.6	Delay Analysis	3-26
3.2.7	Motor Vehicle Crash Data	3-27
3.2.8	Vehicle Speeds	3-29
3.2.9	Sight Distances	3-29
3.2.10	Origin/Destination Analysis	3-32
3.2.11	Planned Roadway Improvements	3-38
3.3	Probable Impacts of the Project	3-39
3.3.1	No-Build Traffic Volumes	3-39
3.3.1.1	Specific Development by Others	3-40
3.3.1.2	Background Traffic Growth	3-41
3.3.1.3	No-Build Condition Traffic Volumes	3-41
3.3.2	Future Build Conditions With The Project	3-46
3.3.2.1	Proposed Site Traffic Generation	3-46
3.3.2.2	Pass-By Trips/Internal Trips	3-47
3.3.2.3	By-Pass Trips	3-51
3.3.2.4	Additional Trips	3-53
3.3.2.5	Trip Generation Comparison	3-53
3.3.2.6	Trip Distribution and Assignment	3-54
3.3.2.7	Future Traffic Volumes - Build Condition	3-71
3.4	Capacity Analysis	3-81
3.4.1	Methodology	3-82
3.4.1.1	Levels of Service	3-82
3.4.1.2	Unsignalized Intersections	3-82
3.4.1.3	Signalized Intersections	3-83
3.4.2	Analysis Results	3-84
3.4.2.1	Route 27 at River Road	3-85
3.4.2.2	Route 27 at Glezen Lane	3-85
3.4.2.3	Route 27 at Bow Road	3-99
3.4.2.4	Route 27 at Site Driveway	3-99
3.4.2.5	Route 27 at Route 126	3-100
3.4.2.6	Route 27/Route 126 at Pelham Island Road/Millbrook Road	3-100
3.4.2.7	Route 20 at Route 27/126	3-100
3.4.2.8	Route 27 at Winthrop Road	3-100
3.4.2.9	Route 126 at Bow Road	3-101
3.4.2.10	Route 126 at Plain Road	3-101

3.4.2.11	Route 126 at Claypit Hill Road and Training Field Road	3-101
3.4.2.12	Route 126 at Glezen Lane	3-102
3.4.2.13	Route 126 at Moore Road	3-102
3.4.2.14	Glezen Lane at Moore Road	3-103
3.4.2.15	Glezen Lane at Training Field Road	3-103
3.4.2.16	Plain Road at Claypit Hill Road	3-103
3.4.2.17	Plain Road at Glen Road	3-103
3.4.2.18	Route 20 at Winthrop Road	3-104
3.4.2.19	Route 20 at Pelham Island Road (North)	3-104
3.4.2.20	Route 20 at Pelham Island Road (South)	3-104
3.4.2.21	Route 20 at the Site Driveway	3-104
3.4.2.22	Route 20 at Old County Road	3-105
3.4.2.23	Route 20 at Union Avenue	3-105
3.4.2.24	Route 20 at Nobscot Road	3-105
3.4.3	Parking and Loading Analysis	3-106
3.4.3.1	Parking	3-106
3.4.3.2	Loading	3-106
3.5	Mitigation Measures and Conclusions	3-107
3.5.1	Mitigation Measures	3-107
3.5.2	Improvements – Existing Deficiencies	3-112
3.5.2.1	Route 27 at Glezen Lane	3-112
3.5.2.2	Route 27 at Bow Road	3-114
3.5.2.3	Route 126 at Glezen Lane	3-114
3.5.2.4	Route 20 at Old County Road	3-114
3.5.2.5	Route 20, Route 27 and Route 126	3-115
3.5.3	Improvements – Site Access	3-117
3.5.3.1	Traffic Calming Measures	3-127
3.5.3.2	Pedestrian Measures	3-131
3.5.3.3	Transportation Demand Management	3-131
3.5.4	Projected Vehicle Queues	3-132
3.5.5	Construction	3-143
3.5.5.1	Construction Period	3-143
3.5.5.2	Environmental Impacts	3-143
3.5.5.3	Land Taking	3-144
3.5.5.4	Schedule	3-144
3.5.6	Mitigation Commitment	3-144
3.6	Air Quality Analysis	3-147
3.6.1	Introduction	3-147
3.6.1.1	Mesoscale Analysis	3-147
3.6.1.2	Conclusion	3-148
3.6.1.3	Mitigation Measures and Conclusions	3-149

4.0	WETLANDS AND DRAINAGE	4-1
4.1	Wetlands	4-1
4.1.1	Wetland Delineation	4-1
4.1.1.1	Bordering Vegetated Wetlands	4-1
4.1.1.2	Land Under Water Bodies and Waterways	4-5
4.1.1.3	Bank	4-5
4.1.1.4	Bordering Land Subject to Flooding	4-5
4.1.1.5	Riverfront Area	4-6
4.1.1.6	Non-State Wetlands	4-6
4.1.2	Wetland Impacts	4-8
4.1.2.1	Wayland Town Center Project	4-8
4.1.2.2	Route 20 Improvements	4-10
4.1.3	Regulatory Overview and Wetland Impact Mitigation	4-12
4.1.3.1	Wayland Town Center Project	4-12
4.1.3.2	Route 20 Improvements	4-13
4.2	Stormwater Management	4-15
4.2.1	Stormwater Management Standards	4-17
5.0	WASTEWATER AND WATER	5-1
5.1	Wastewater	5-1
5.1.1	Projected Wastewater Generation	5-1
5.1.2	Wayland Municipal Wastewater Treatment Plant	5-1
5.1.2.1	WWTP NPDES Discharge Permit	5-2
5.1.3	Subsurface Disposal	5-3
5.2	Water and Water Resources	5-4
5.2.1	Projected Water Demand	5-4
5.2.2	Water Conservation Measures	5-5
5.2.3	Wayland Municipal Water Supply	5-6
5.2.3.1	Protection of Zone II	5-6
5.2.3.2	Water Management Act Compliance	5-6
6.0	HAZARDOUS WASTE	6-1
6.1	Previous Releases On-Site	6-1
6.2	Activity and Use Limitations (AULs)	6-4
6.2.1	1997 AUL	6-4
6.2.2	1999 AUL	6-5
6.2.3	Current Status of AULs	6-6
6.3	Compatibility of Proposed Development	6-6
7.0	RARE SPECIES	7-1
7.1	Rare Species Mapping	7-1
7.1.1	Least Bittern (<i>Ixobrychus exilis</i>) – State Endangered	7-4
7.1.2	American Bittern (<i>Botaurus lentiginosus</i>) - State Endangered	7-5

7.1.3	Pied-Billed Grebe (<i>Podilymbus podiceps</i>) –State Endangered	7-5
7.1.4	Common Moorhen (<i>Gallinula chloropus</i>) – State Special Concern	7-6
7.2	Potential Impacts to Priority and Estimated Habitats	7-7
7.3	NHESP Consultations	7-9
7.4	Conservation Restriction	7-9
8.0	CONSTRUCTION PERIOD	8-1
8.1	Potential Impacts and Mitigation	8-1
8.1.1	Erosion and Sedimentation	8-1
8.1.1.1	Controls During Construction	8-1
8.1.1.2	Controls After Construction	8-3
8.1.2	Noise and Vibration	8-5
8.1.3	Dust	8-6
8.1.4	Traffic	8-6
8.2	Demolition	8-7
8.3	Clean Construction Equipment Initiative/ Diesel Retrofit Program	8-7
9.0	SUSTAINABLE DESIGN	9-1
9.1	Sustainable Site Provisions	9-1
9.1.1	Water Use	9-1
9.1.2	Energy and Atmosphere	9-1
9.1.3	Indoor Environmental Quality	9-2
9.2	Construction and Building Materials	9-2
9.3	Building Systems	9-3
9.4	Exterior Spaces	9-4
10.0	MITIGATION AND DRAFT SECTION 61 FINDINGS	10-1
10.1	Introduction	10-1
10.2	MassHighway Proposed Section 61 Findings	10-2
10.3	Department of Environmental Protection Proposed Section 61 Findings	10-7
11.0	RESPONSE TO COMMENTS	11-1

LIST OF FIGURES

Figure 1-1	USGS Locus Map	1-2
Figure 1-2	Existing Conditions Plan	1-3
Figure 1-3	Schematic Site Layout	1-5
Figure 1-4	Wayland Town Center - Southwest View	1-6
Figure 1-5	Wayland Town Center - Southeast View	1-7
Figure 1-6	Proposed Layout Superimposed on Existing Conditions	1-8
Figure 1-7	Existing Grading Plan	1-12
Figure 1-8	Proposed Grading Plan	1-13
Figure 3-1	Site Location Map	3-2
Figure 3-2	Traffic Count Locations	3-16
Figure 3-3	Cut-Through Routes and Approximate Cut-Through Volumes	3-19
Figure 3-4	2006 Existing Weekday Morning Peak Hour Traffic Volumes	3-22
Figure 3-5	2006 Existing Weekday Evening Peak Hour Traffic Volumes	3-23
Figure 3-6	2006 Existing Saturday Midday Peak Hour Traffic Volumes	3-24
Figure 3-7	2006 Existing Sunday Midday Peak Hour Traffic Volumes	3-25
Figure 3-8	2011 No-Build Weekday Morning Peak Hour Traffic Volumes	3-42
Figure 3-9	2011 No-Build Weekday Evening Peak Hour Traffic Volumes	3-43
Figure 3-10	2011 No-Build Saturday Midday Peak Hour Traffic Volumes	3-44
Figure 3-11	2011 No-Build Sunday Midday Peak Hour Traffic Volumes	3-45
Figure 3-12	Daily Trip Generation Distribution	3-49
Figure 3-13	Saturday Trip Generation Distribution	3-50
Figure 3-14	Sunday Trip Generation Distribution	3-52
Figure 3-15	Residential Trip Distribution	3-55
Figure 3-16	Office/Library Trip Distribution	3-56
Figure 3-17	Retail Trip Distribution	3-57
Figure 3-18	Site Generated Weekday Morning Peak Hour Traffic Volumes – Access Alternative A	3-59
Figure 3-19	Site Generated Weekday Evening Peak Hour Traffic Volumes – Access Alternative A	3-60
Figure 3-20	Site Generated Saturday Midday Peak Hour Traffic Volumes – Access Alternative A	3-61
Figure 3-21	Site Generated Sunday Midday Peak Hour Traffic Volumes – Access Alternative A	3-62

Figure 3-22	Site Generated Weekday Morning Peak Hour Traffic Volumes – Access Alternative B	3-63
Figure 3-23	Site Generated Weekday Evening Peak Hour Traffic Volumes – Access Alternative B	3-64
Figure 3-24	Site Generated Saturday Midday Peak Hour Traffic Volumes – Access Alternative B	3-65
Figure 3-25	Site Generated Sunday Midday Peak Hour Traffic Volumes – Access Alternative B	3-66
Figure 3-26	Internal Traffic Volumes Weekday Morning Peak Hour	3-67
Figure 3-27	Internal Traffic Volumes Weekday Evening Peak Hour	3-68
Figure 3-28	Internal Traffic Volumes Saturday Midday Peak Hour	3-69
Figure 3-29	Internal Traffic Volumes Sunday Midday Peak Hour	3-70
Figure 3-30	2011 Build Weekday Morning Peak Hour Traffic Volumes – Access Alternative No.1	3-72
Figure 3-31	2011 Build Weekday Evening Peak Hour Traffic Volumes – Access Alternative No.1	3-73
Figure 3-32	2011 Build Saturday Midday Peak Hour Traffic Volumes – Access Alternative No.1	3-74
Figure 3-33	2011 Build Sunday Midday Peak Hour Traffic Volumes – Access Alternative No.1	3-75
Figure 3-34	2011 Build Weekday Morning Peak Hour Traffic Volumes – Access Alternative No.2	3-76
Figure 3-35	2011 Build Weekday Evening Peak Hour Traffic Volumes – Access Alternative No.2	3-77
Figure 3-36	2011 Build Saturday Midday Peak Hour Traffic Volumes – Access Alternative No.2	3-78
Figure 3-37	2011 Build Sunday Midday Peak Hour Traffic Volumes – Access Alternative No.2	3-79
Figure 3-38	Conceptual Improvements – Glezen Lane at Route 27	3-113
Figure 3-39	Preliminary Conceptual Improvement Plan – Route 20 at Routes 27/126, Access Alternative A	3-116
Figure 3-40	Preliminary Conceptual Improvement Plan – Route 20 at Routes 27/126, Access Alternative B	3-118
Figure 3-41	Preliminary Conceptual Improvement Plan – Route 20 at Proposed Site Driveway	3-119
Figure 3-42	Preliminary Conceptual Improvement Plan – Route 20 at Proposed Site Driveway/Relocated Russell’s Garden Center Driveway	3-121
Figure 3-43	Preliminary Conceptual Improvement Plan – Route 27 at Proposed Site Driveway	3-122
Figure 3-44	Conceptual Improvements - Glezen Lane and Training Field Road	3-128

Figure 3-45	Conceptual Improvements – Glezen Lane and Moore Road	3-129
Figure 3-46	Projected Vehicular Queues Weekday Morning Peak hour - Access Alternative No.1	3-137
Figure 3-47	Projected Vehicular Queues Weekday Morning Peak hour - Access Alternative No.2	3-138
Figure 3-48	Projected Vehicular Queues Weekday Evening Peak hour - Access Alternative No.1	3-139
Figure 3-49	Projected Vehicular Queues Weekday Evening Peak hour - Access Alternative No.2	3-140
Figure 3-50	Projected Vehicular Queues Saturday Midday Peak hour - Access Alternative No.1	3-141
Figure 3-51	Projected Vehicular Queues Saturday Midday Peak hour - Access Alternative No.2	3-142
Figure 4-1	Project Site – Wetland Resources	4-2
Figure 4-2	Boston Post Road – Wetland Resources	4-3
Figure 4-3	Project Site – Wetland Resources	4-9
Figure 4-4	Proposed Route 20 Roadway Improvements – Alternatives 1 & 2	4-11
Figure 5-1	Town of Wayland Wellhead Protection	5-8
Figure 6-1	Locations of Active On-Site Release Tracking Numbers	6-3
Figure 7-1	NHESP Priority and Estimated Habitat	7-2
Figure 7-2	NHESP Priority Habitat – Route 20 at Route 27	7-3
Figure 7-3	NHESP Priority and Estimated Habitat	7-8

LIST OF TABLES

Table 1-1	Required State and Local Permits	1-16
Table 1-2	Summary of Impacts and Mitigation Measures	1-21
Table 2-1	Alternatives Analysis – Impact Comparison	2-5
Table 3-1	Existing Roadway Traffic Volume Summary	3-21
Table 3-2	Gap Analysis	3-26
Table 3-3	Summary of Observed Delays	3-27
Table 3-4	Motor Vehicle Crash Summary	3-28
Table 3-5	WPD Motor Vehicle Crash Summary	3-30
Table 3-6	Observed Vehicle Speed Summary	3-31
Table 3-7	Site Driveway Sight Distance Analysis Summary	3-33
Table 3-8	Study Area Intersection Sight Distance Analysis Summary	3-34
Table 3-9	License Plate Summary	3-38
Table 3-10	Trip Generation	3-46
Table 3-11	Municipal Trip Generation Comparison	3-47
Table 3-12	Trip Generation Summary	3-51

Table 3-13	Trip Generation Comparison	3-54
Table 3-14	Trip Distribution Summary	3-58
Table 3-15	Traffic Volume Increases	3-80
Table 3-16	Level-of-Service Criteria For Unsignalized Intersections	3-83
Table 3-17	Level-of-Service Criteria For Signalized Intersections	3-84
Table 3-18	Level-of-Service Summary – Access Alternative A	3-86
Table 3-19	Level-of-Service Summary – Access Alternative B	3-91
Table 3-20	Level-of-Service Summary – Internal Intersections Access Alternative A	3-97
Table 3-21	Summary of Traffic Related Issues – Glezen Lane	3-108
Table 3-22	Summary of Traffic Related Issues – Bow Road	3-109
Table 3-23	Summary of Traffic Related Issues – Route 20 and Site Driveway	3-110
Table 3-24	Summary of Traffic Related Issues – Route 27 and Site Driveway	3-110
Table 3-25	Summary of Future No-Build Condition Against Future Build Conditions With Mitigation	3-111
Table 3-26	Level-of-Service Summary With Mitigation – Access Alternative A	3-123
Table 3-27	Level-of-Service Summary With Mitigation – Access Alternative B	3-125
Table 3-28	Vehicle Queue Analysis – Access Alternative A, Route 27 at Route 126	3-133
Table 3-29	Vehicle Queue Analysis – Access Alternative A, Route 20 at Route 27/126	3-134
Table 3-30	Vehicle Queue Analysis – Access Alternative B, Route 27 at Route 126	3-135
Table 3-31	Vehicle Queue Analysis – Access Alternative B, Route 20 at Route 27/126	3-136
Table 3-32	2011 Buildout Mesoscale Analysis Summary	3-150
Table 5-1	Estimated Peak Wastewater Generation	5-1
Table 5-2	Water Demand Summary	5-5
Table 6-1	Previous On-Site Releases	6-1
Table 10-1	Summary of Impacts and Mitigation Measures	10-9
Table 11-1	Comment Letters Received	11-1

APPENDICES

APPENDIX A	Transportation Data
APPENDIX B	Stormwater Management Study by R.J. O'Connell & Associates, Inc. dated November 13, 2006
APPENDIX C	Development Agreement between the Town of Wayland and the Project Proponent
APPENDIX D	1997 Activity and Use Limitation 1999 Activity and Use Limitation
APPENDIX E	Natural Heritage and Endangered Species Program letter dated October 10, 2006 and State-Listed Rare Species Fact Sheets
APPENDIX F	Air Quality

Circulation List
