
Housing Plan Element and Fair Share Plan

**Borough of Ringwood
Passaic County, New Jersey**

Prepared by the Ringwood Borough Planning Board
in consultation with Banisch Associates, Inc.
Flemington, NJ

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The original of this report was signed and sealed
in accordance with N.J.A.C. 13:41-1.3

Introduction & Fair Share Plan Summary

Ringwood Borough is located in eastern Passaic County and is entirely within the Highlands Preservation Area. The Borough has been closely working with the Highlands Council as it works towards Plan Conformance and has been deemed complete by the Highlands Council for its Plan Conformance petition. Ringwood has previously participated in COAH and submitted an adopted Housing and Fair Share Plan in 2005. This is the Borough's amended Third Round Housing Plan and Fair Share Plan to comply with COAH's amended regulations and the Highlands Regional Master Plan. This Plan responds to Ringwood Borough's affordable housing obligation as it is now constituted under COAH's revised 2008 Third Round rules.

COAH's initial Third Round rules identified affordable housing obligations for 2004-2014. The revised rules extend the Third Round affordable housing obligations by four years and continue to rely upon a 'growth share' methodology. The growth share methodology ties the municipal Third Round new construction affordable housing obligation to development that receives certificates of occupancy during the time period January 1, 2004 to December 31, 2018. COAH's revised Third Round rules continue the requirement that municipal Third Round Fair Share Plans address three components of municipal affordable housing need, including (1) the prior round obligation for the 1987-1999 period, (2) the Third Round rehabilitation share, and (3) the third round growth share obligation for the 2004-2018 time period.

Ringwood Borough is located in the heart of the Highlands region and is heavily constrained with environmental resources protected under the Highlands RMP. In addition, almost 68% of the Borough is preserved or deed restricted from further development. The remaining portions of the Borough are either heavily developed and are not able to support additional development, such as the lake communities surrounding the Borough's reservoirs, or are constrained against further development due to the Highlands RMP. Given the limited developable land, the Borough will be utilizing the Highlands Regional Master Plan (RMP) adjusted growth projections.

Currently, Ringwood has an affordable housing obligation of 30 rehabilitation units, 51 prior round units, 19 actual growth units and 1 projected unit for a total of 71 new affordable housing units. The Borough has satisfied 38 units, 26 units in alternative living arrangements and 12 bonus credits, of the prior Round and is seeking a durational adjustment under NJAC 5:97-5.4 for an additional 16 units of credit from the Sisters of Saint Francis Assisted Living Facility as approved under the Borough's Second Round Housing Plan. The following table summarizes the Borough's obligation:

Third Round Obligation (51 for prior round & 20 third round):	71
Supportive and Special Needs Housing – Existing units	26
Rental Bonus for Supportive and Special Needs Housing – Existing Bonus Credits	12
Sister’s of Saint Francis Assisted Living Facility	16
Accessory Apartments	10
Supportive and Special Needs Housing	7
Total	71
New Construction 3rd Round Obligation Deficit	0
Rehabilitation Program	30
Remaining 3rd Round Obligation:	0

These components of housing need result in a total remaining Third Round affordable housing obligation of 17 new construction affordable units and 30 rehabilitation units. This Housing Element and Fair Share Plan details Ringwood’s plan to address the full Third Round obligation.

Fair Share Plan Summary – Ringwood Borough’s amended Fair Share Plan is summarized as follow:

- (1) Accessory apartments (N.J.A.C. 5:97-6.8), 10 units;
- (2) Supportive and Special Needs Housing (N.J.A.C. 5:97-6.10), 7 units;
- (3) Sisters of Saint Francis Assisted Living Facility (N.J.A.C. 5:97-6.11), 16 units;
- (4) Rehabilitation (N.J.A.C. 5:97-6.2), 30 units.

These proposed affordable housing technique and compliance mechanism are explained below in the section entitled “Fair Share Plan”.

Goals and Objectives of the Highlands RMP for Affordable Housing

The Ringwood Borough Fair Share Plan and Housing Plan Element must be consistent with the rules and regulations set forth by the Highlands Water Protection and Planning Act and the Highlands RMP.

Statutory Affordable Housing Obligations

This Housing Plan Element has been prepared in accordance with the Municipal Land Use Law (MLUL) at N.J.S.A. 40:55D-28b(3) to address Ringwood Borough’s cumulative housing obligation for the period 1987- 2018. This Plan has also been prepared pursuant to N.J.S.A. 52:27D-310, which outlines the mandatory requirements for a Housing Plan Element, including an inventory and projection of the municipal housing stock; an analysis of the demographic characteristics of the Borough’s residents; and, a discussion of municipal employment characteristics. It also responds to the affordable housing mandates of the Third Round Substantive Rules of the Council on Affordable Housing (N.J.A.C. 5:94-1 et seq.).

At N.J.S.A. 40:55D-28.b.(3), the Municipal Land Use Law identifies the following requirements for a Housing Plan Element:

- (3) A housing plan element pursuant to section 10 of P.L.1985, c.222 (C.52:27D-310), including, but not limited to, residential standards and proposals for the construction and improvement of housing;

Ringwood Borough's amended Fair Share Plan responds to this M.L.U.L. requirement, and is designed to ensure that the provision of affordable housing in the Borough will result in a minimal impact on neighborhood character and community services. This plan calls for affordable housing initiatives including the creation of affordable accessory apartment units and group homes that mimic closely the existing historic character and development patterns of the Borough. In addition, the Sister's site is an existing facility and retains the existing developed character of the site. These compliance techniques are to be implemented within the context of the Borough's existing Land Use Plan and zoning ordinance regulations and Highlands RMP to satisfy the Prior Round and Third Round new construction affordable housing obligations.

At N.J.A.C. 5:97-2.3 *Content of a Housing Element*, COAH's regulations identify the following requirements:

(a) The Housing Element submitted to the Council shall include:

- 1. The minimum requirements prescribed by N.J.S.A 52:27D-310;*

The Fair Housing Act (N.J.S.A 52:27D-310) requires that:

- 1. A municipality's housing element shall be designed to achieve the goal of access to affordable housing to meet present and prospective housing needs, with particular attention to low and moderate income housing, and shall contain at least:*

N.J.S.A 52:27D-310.1.a. An inventory of the municipality's housing stock by age, condition, purchase or rental value, occupancy characteristics, and type, including the number of units affordable to low and moderate income households and substandard housing capable of being rehabilitated, and in conducting this inventory the municipality shall have access, on a confidential basis for the sole purpose of conducting the inventory, to all necessary property tax assessment records and information in the assessor's office, including but not limited to the property record cards;

This amended Housing Plan Element responds to subsection 1.a. above in Appendix A below.

N.J.S.A 52:27D-310.1.b. A projection of the municipality's housing stock, including the probable future construction of low and moderate income housing, for the next ten years, taking into account, but not necessarily limited to, construction permits issued, approvals of applications for development and probable residential development of lands;

Actual Growth January 1, 2004 to 2009

The Borough has issued a total of 67 residential Certificates of Occupancy (CO's) since January 1, 2004 and 14 residential demolitions, for a net total of 53 new units. The Borough has also issued 98,455 square feet of non-residential CO's which are identified in the following table:

Actual Residential Growth 2004 – 2009

	Housing units gained	Housing units lost	Net gain
2004	32	4	28
2005	14	2	12
2006	8	2	6
2007	6	2	4
2008	6	2	4
2009	1	2	-1
TOTAL	67	14	53

Actual Non-Residential Growth 2004 – 2009 (Square Feet)

	B (Business)	A-3 (Assembly)	H (Hazardous)	Storage	E (Educational)
2004	1,848		25,296	37,000	
2005		1,496		10,720	
2006		1,280			
2007	9,855			9,460	
2008					
Jan-Sept 2009					1,500
Totals	11,703	2,776	25,296	57,180	1,500

Therefore, the Borough has accrued a total of 19 affordable units for the period 2004-2009. The residential obligation totals 10.6 units of affordable housing and 8.4 for non-residential obligation. The total actual growth obligation of 19 will be satisfied through the accessory apartments and supported and special needs housing program.

N.J.S.A 52:27D-310.1.c. An analysis of the municipality's demographic characteristics, including but not necessarily limited to, household size, income level and age;

This Housing Plan Element responds to subsection 1.c. above in Appendix A below.

N.J.S.A 52:27D-310.1.d. An analysis of the existing and probable future employment characteristics of the municipality;

This amended Housing Plan Element responds to subsection 1.d. above in Appendix A below.

N.J.S.A 52:27D-310.1.e. A determination of the municipality's present and prospective fair share for low and moderate income housing and its capacity to accommodate its present and prospective housing needs, including its fair share for low and moderate income housing; and

Pursuant to the Borough's response to subsection 1.b. above, the following prospective growth share obligation is identified:

- Residential Growth Share: 10.6 units; and
- Nonresidential Growth Share: 8.4 units.

See 1.b. above.

N.J.S.A 52:27D-310.1.f. A consideration of the lands that are most appropriate for construction of low and moderate income housing and of the existing structures most appropriate for conversion to, or rehabilitation for, low and moderate income housing, including a consideration of lands of developers who have expressed a commitment to provide low and moderate income housing.

The Borough's full inclusion in the Highlands Preservation Area and lack of developable land and sewer has rendered most developable lands unsuitable for the density needed to provide a meaningful and realistic new construction affordable housing opportunity. The Borough has two approved prior round sites designated for affordable housing. The first is the Sister's of Saint Francis Living Facility, Block 1100, Lot 1, which is a developed site to be converted to income restricted units to address affordable housing. The second site is Block 601, Lots 14.03 and 14.07. These lots were designated as a result of a prior lot being determined unsuitable for affordable housing by COAH. The new lot is undeveloped, wooded and lacking any infrastructure. It is doubtful this site will meet the consistency review of the Highlands RMP and COAH regulations.

According to the Highlands Municipal Build-Out Report (Appendix D), only one site in the Borough is large enough to accommodate new development under the RMP standards and is able to support 3 septic systems. However, this site is located adjacent to preserved lands and not located near any supportive services. In addition, the site is fully wooded and includes other constraints. Therefore, much of the Borough is undevelopable for new construction leaving the Borough to utilize conversion of existing structures for affordable housing opportunities.

2. *The household projection for the municipality as provided in chapter Appendix F;*

Appendix F of N.J.A.C. 5:97-1 et seq. identifies the following household projection for Ringwood Borough:

Net Changes 2004 – 2018: 191 (units)
Highlands RMP Adjusted: 4 (units)

The Adjusted Highlands Growth Share obligation identifies a potential of 4 additional units in the Borough resulting from the remaining undeveloped parcel in the Borough that can achieve the standards for new construction under the Highlands Regional Master Plan. The Borough is utilizing the Highlands Adjusted RMP projections in preparing the Fair Share Plan.

3. *The employment projection for the municipality as provided in Appendix F;*

Appendix F of N.J.A.C. 5:97-1 et seq. identifies the following employment projection for Ringwood Borough:

Net Changes 2004 – 2018: -44 (jobs).
Highlands Projected: 0 (jobs)

The Highlands Adjusted Growth Share also identifies a zero gain in employment.

4. *The municipality's prior round obligation (from Appendix C);*

Appendix C of N.J.A.C. 5:97-1 et seq. identifies the following recalculated prior round obligation for Ringwood Borough:

1987-1999 Obligation: 51 (units)

5. *The municipality's rehabilitation share (from chapter Appendix B); and*

Appendix B of N.J.A.C. 5:97-1 et seq. identifies the following rehabilitation obligation for Ringwood Borough:

Total Rehab. Share: 30 (units)

6. *The projected growth share in accordance with the procedures in N.J.A.C. 5:97-2.4.*

Pursuant to N.J.A.C. 5:97-2.4.(a) & (b) the Ringwood Borough growth share has been identified by COAH, as follows:

(a)2. “. . . the municipality shall have an obligation of one affordable housing unit among five residential units projected to be constructed. For

the purpose of calculating the projected growth share obligation, the municipality shall divide the resulting total units by five:"

(b)2. ". . . the municipality shall have an obligation of one affordable housing unit for every 16 jobs projected:"

$$\frac{3 \text{ units}}{5} = .6 \text{ affordable units projected.}$$
$$\frac{0 \text{ jobs}}{16} = 0 \text{ affordable units projected.}$$

<u>Residential</u>		<u>Nonresidential</u>		<u>Affordable Units</u>
.6	+	0	=	.6

(b) Supporting information to be submitted with the Housing Element shall include:

1. A copy of the most recently adopted municipal zoning ordinance; and

Ringwood Borough zoning ordinance provided as Appendix B.

2. A copy of the most up-to date tax maps of the municipality, electronic if available, with legible dimensions.

Ringwood Borough tax maps are not available in electronic format.
Hard copy of most up-to-date tax maps provided as Appendix C.

(c) The municipality shall submit any other documentation necessary to facilitate the review of the municipal Housing Element as requested by the Council.

(d) As an alternate to the household and employment projections required by (a)2 and 3 above, a municipality may rely upon its own household and employment growth projections, provided the total growth share resulting from the municipal household and employment growth projections exceeds the total growth share resulting from the household and employment growth projections provided in Appendix F.

Ringwood Borough is relying upon the Highlands Adjusted Growth Share as identified in the Ringwood Municipal Build-Out Report dated June 2009 and located in Appendix D.

Summary of Ringwood Borough's Third Round Fair Share Obligation

Ringwood will be utilizing the Highlands Adjusted Growth Share Obligation which, consists of three components, including:

- The remaining prior round obligation adjusted (51 units); and,
- Actual Growth 2004-2008 (19 units); and,
- The third round growth share, attributable to residential and non-residential growth projected to occur between 2008 and 2018 (1 unit).

- Rehabilitation Obligation (30 units)

Prior Rounds Affordable Housing Remaining Obligation - Ringwood was assigned a combined obligation of 51 new construction units under the prior rounds (1987-1999).

Actual Growth January 1, 2004 to 2009

The Borough has issued a total of 67 residential Certificates of Occupancy (CO's) since January 1, 2004 and 98,455 square feet of non-residential CO's which are identified in the following tables:

Actual Residential Growth 2004 – 2009

	Housing units gained	Housing units lost	Net gain
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2005		1,496		10,720	
2006		1,280			
2007	9,855			9,460	
2008					
Jan-Sept 2009					1,500
Totals	11,703	2,776	25,296	57,180	1,500

Therefore, the Borough has accrued a total of 19 affordable units in the past 4 years. The actual growth obligation will be satisfied through the accessory apartment program and supportive and special needs housing.

Third Round Fair Share Plan

At N.J.A.C. 5:97-3.2 *Content of a Fair Share Plan*, COAH’s regulations identify the following requirements:

(a) A Fair Share Plan describes the completed or proposed mechanisms and funding sources, if applicable, that will be utilized to specifically address a municipality’s rehabilitation share, prior round obligation, and growth share obligation.

As identified previously, the Borough is utilizing the Highlands Adjusted Growth Share Obligation. Under this scenario, Ringwood’s Third Round Fair Share Plan would respond to the prior rounds obligation that was not addressed and the third round growth share obligation. Ringwood’s prior rounds obligation is 51 units, the projected third round growth share obligation is 19 units and a rehabilitation obligation of 30 units. Therefore, Ringwood Borough’s Third Round Fair Share Plan will provide for a total of 71 affordable units. The Borough has satisfied it’s prior round obligation through the use of supportive and special needs housing. The Borough has three facilities including:

Address	Block	Lot	Bedrooms	Current License Date	Sponsor
432 Stonetown Road	222	6	5	7/26/2006	AdvoServ of NJ, Inc
18 Boro Parkway	601	6	5	7/26/2006	AdvoServ of NJ, Inc
20 Morris Rd.	902	1.03	16	8/31/2005	Spectrum for Living Group Homes, Inc

The total credits for the facilities totals 26 units and provide an addition 12 units of bonus credits under the prior round regulations that allow for 2 units of credit up to the rental obligation of 25%. The Borough’s 51 prior round obligation, allows for 12 units to be eligible for bonus credits for a total of 38 units of credit to be applied against the prior round.

5:97-3.2(a)1. Descriptions of any credits intended to address any portion of the fair share obligation, which shall include all information and documentation required by N.J.A.C. 5:97-4 for each type of credit;

Ringwood identifies the following affordable housing compliance technique for satisfying the Borough’s affordable housing obligation during the third round:

- (1) Accessory apartments (N.J.A.C. 5:97-6.8), 10 units;
- (2) Supportive and Special Needs Housing (N.J.A.C. 5:97-6.10), 7 units;
- (3) Sisters of Saint Francis Assisted Living Facility (N.J.A.C. 5:97-6.11), 16 units;
- (4) Rehabilitation (N.J.A.C. 5:97-6.2), 30 units.

5:97-3.2(a)2 *Descriptions of any adjustments to any portion of the fair share obligation, which shall include all information and documentation required by N.J.A.C. 5:97-5 for each adjustment sought;*

Addressing the Adjusted 3rd Round Obligation – The following table identifies a calculation of the Borough’s 3rd Round fair share obligation:

Third Round Obligation (51 for prior round & 20 third round):	71
Supportive and Special Needs Housing – Existing units	26
Rental Bonus for Supportive and Special Needs Housing	12
Sister’s of Saint Francis Assisted Living Facility	16
Accessory Apartments	10
Supportive and Special Needs Housing	7
Total	71
New Construction 3 rd Round Obligation Deficit	0
Rehabilitation Program (30)	30
Remaining 3 rd Round Obligation:	0

This table identifies that the Borough’s fair share plan is expected to yield a total of 71 new affordable units to be applied to the Borough’s third round fair share of 71 units.

Third Round Compliance Mechanisms

5:97-3.2(a)3. *Descriptions of any mechanisms intended to address the prior round obligation, the rehabilitation share, and the growth share obligation;*

The following mechanisms will be used to address the Borough’s full fair share obligation:

Accessory Apartments

An Accessory Apartment is a self contained residential dwelling unit which is created in an existing home or through the conversion of an existing accessory structure on the same site. The Accessory Apartment Program (N.J.A.C. 5:97-6.8) requires a minimum subsidy of \$20,000 for a moderate income accessory apartment and a \$25,000 subsidy for a low-income accessory apartment. The apartments must carry a 10 year control period for acceptance into the program. The Third Round regulations permit a maximum of 10 units, or 10% of the Borough’s Fair Share Obligation, whichever is greater, to be provided by this mechanism. The Borough will encourage units of three bedrooms or more and in compliance with UHAC standards to meet the Family Unit Classification, as per COAH’s definition of “family unit”. If the Borough is not able to create family units under NJAC 5:97-3.9, the Borough will seek a waiver from this provision under NJAC 5:96-15 based on the Borough lack of developable land, lack of sewers and the application of the Highlands RMP regulations. Any approval of accessory apartments in the Borough will be conditioned upon the requirements

of the Highlands RMP and the ability of a site to support any additional on-site water and wastewater systems.

The Borough's existing housing stock, as identified in the following section, lends itself to the Accessory Apartment program. The nature of the Borough includes a variety of larger homes on varying sized lots lend themselves to the ability to incorporate accessory apartments into the current fabric of the Borough without a loss of the Borough's character and sense of place.

Supportive and Special Needs Housing

Supportive and Special Needs Housing (N.J.A.C. 5:97-6.10) includes residential health care facilities, group homes for the developmentally disabled or mentally ill, and supportive shared living housing. The Borough has demonstrated a successful use of this mechanism to address affordable housing and currently has 3 facilities in the Borough restricted for COAH compliance. As with the Accessory Apartment program, the Borough's existing housing stock also lends itself to incorporate supportive and special needs housing. A number of larger traditional homes could be converted into group homes without difficulty or detracting from the character of the Borough. Conversion of an existing home to a supportive share living housing project also would not require increased sewer allocation for the Borough. However, any conversion or construction of supportive or special needs housing will be conditioned upon the requirements of the Highlands RMP and the ability of a site to support any additional on-site water and wastewater systems.

The Borough will solicit non-profit organizations to partner in creating such facilities in the Borough. The Borough is placing this program as a long term program as part of the implementation scheduled under N.J.A.C. 5:97-3.2(a)4. This will allow for the Borough to continue pursuing this option without a need to amend the Fair Share Plan in the future.

Sisters of Saint Francis Assisted Living Facility (Block 1100, Lot 1)

The facility will be able to accommodate at least 16 age-restricted units on-site with credits applied to the Borough's unmet need. Due to the Highlands RMP and standards on septic and wells, the Borough will seek a durational adjustment as detailed in 5:97-5.4. This site is currently developed and rehabilitation of an existing structure is proposed to accommodate the 16 units. The Highlands RMP encourages the reuse and redevelopment of sites to accommodate growth and affordable housing obligations, however the site requires improvements to onsite wastewater treatment to handle increased demand that would be generated by the assisted living facility. According to the consistency report (see attached Consistency Review Report) the site contains forest resource area, steep slopes, critical wildlife habitat, and prime groundwater recharge area however, none of these resources fall within the developed portion of the site where the proposed facility is to be located. The site is located within a Highlands Open Water Protection Area, Riparian Corridor, and located in a water deficit subwatershed.

The reuse of the site will require an expansion of wastewater disposal system to service the increase of demand for the 16 proposed bedrooms. Under the Highlands RMP, such expansion is not permitted and would require approvals by the DEP and Highlands to create. These issues will need to be reviewed by the Highlands Council to determine if the site is still a viable option for the Borough in addressing its fair share obligation.

Rehabilitation program

The purpose of a rehabilitation program is to renovate deficient housing units that are occupied by low- and moderate-income households. The units must be rehabilitated and any housing deficiencies be corrected and comply with the New Jersey State Housing Code. The municipal rehabilitation investment for hard costs shall average at least \$10,000 per unit, and include the rehabilitation of a major system. Municipalities shall provide sufficient dollars to fund no less than half of the municipal rehabilitation component by the mid-point of substantive certification. Financing of rehabilitation programs will be structured to encourage rehabilitation and continued occupancy. Low interest rates and forgivable loans are encouraged. Leveraging of private financing is also encouraged if the result is low interest loans that encourage rehabilitation. For owner-occupied units, the controls on affordability shall be for a minimum of 10 years and may be in the form of a lien recorded with the county clerk. For rental units, the controls on affordability shall be for a minimum of 10 years and in the form of a deed restriction and may also include a lien, each recorded with the county clerk.

The Borough has successfully participated in a rehabilitation program and completed 17 units in the prior round. The Borough will continue the rehabilitation of units in compliance with the 30 units assigned to the Borough for the Third Round. The Borough will seek Community Development Block Grant funding through the New Jersey Department of Community Affairs Small Cities Program and other funding sources and partnerships whose programs provide funds for economic development, housing rehabilitation, community revitalization and public facilities designated to benefit people of low and moderate-income or to address recent local needs for which no other source of funding is available.

Implementation Schedule

At N.J.A.C. 5:97-3.2(a)4. COAH's regulations identify the requirement for a municipality to provide a schedule for the implementation of the municipal affordable housing plan, which in pertinent part to Ringwood's Plan, includes subsection (a)4.i. Subsections (a)4.ii. – iii. are not applicable to the Plan. Subsection (a) iv. must be addressed during the course of Plan implementation in accordance with COAH's biennial review provisions in N.J.A.C. 5:96-10.

COAH's requirements at subsection (a)4.i state: *“An implementation schedule that sets forth a detailed timetable that demonstrates a “realistic opportunity” as defined under*

N.J.A.C. 5:97-1.4 and a timetable for the submittal of all information and documentation required by N.J.A.C. 5:97-6, based on the following:

i. Documentation for mechanisms to address the prior round obligation, the rehabilitation share, and the growth share obligation up to the first plan review pursuant to N.J.A.C. 5:96-10 shall be submitted at the time of petition;

Accessory Apartments

The Borough's implementation schedule anticipates creation of one (2) accessory apartment unit per year between 2011 and 2018 until the 10 unit obligation is met, or as actual growth occurs. The Borough will seek to create accessory apartments utilizing local annual appropriations. As opportunities may arise in conjunction with applications for development, which are expected to be primarily for zoning ordinance variances of existing developed properties, the Borough will seek to form partnerships with private landowners to create apartments.

Supportive and Special Needs Housing

The Borough's implementation schedule includes efforts to solicit a partnership with a private nonprofit organization to create 7 units in supportive and special needs housing in existing housing stock in the Borough. These efforts will begin in 2011.

Sisters of Saint Francis Assisted Living Facility

The Borough is in continued discussions with the Sisters of Saint Francis to convert the existing facility to accommodate 16 units of affordable assisted living rooms. Once control of the site is obtained, the Borough will need to work with the Highlands Council and NJDEP to gain approvals for any septic and water facility upgrades to support 16 units in the existing facility. The Borough is seeking a durational adjustment based on the lack of water and sewer to the site, but remains confident site control and approvals will be granted and affordable units will be created.

Rehabilitation Program

The rehabilitation program for thirty (30) existing units will be implemented during the third round and will include efforts to procure grant funding from State funding sources to fund rehabilitation.

The primary limiting factor to implementation of Ringwood Borough's Fair Share Plan is adequate funding for affordable housing creation. The Borough has had limited development and few funds remaining in the affordable housing trust fund to offset the cost of affordable housing creation. The Borough has utilized Highlands Plan Conformance Funding for the preparation of the Borough's Housing Plan and Fair Share Plan and will seek any available funding to continue the Borough's affordable housing implementation.

Year 1:

- Annual local budget appropriation for plan implementation.
- Adoption of Spending Plan.

Year 1-2, and ongoing for Third Round:

- Annual appropriations will be provided in the budget by Borough Council, which will be dedicated to affordable housing creation;
- Grant funding will be sought, to the extent that State, County and federal funding may be available, to assist with the creation of affordable housing.
- Creation of up to 2 accessory apartments per year until 10 units, or the Borough's affordable housing obligation is met.
- Conduct 4 units of rehabilitation project per year, or as resident interest occurs until the 30 unit obligation is met.

Year 3

- Partner with non-profit organization for the creation of 7 units of special and supportive needs housing.
- Gain site control of the Sisters of Saint Francis Assisted Living Facility

Year 4-5

- Provide assistance to non-profit organization to create 7 units of special and supportive needs housing.
- Apply to Highlands Council and NJDEP for all required approvals for the creation of 16 units of assisted living rooms.

Years 5 and ongoing

- Create 7 units of special and supportive needs housing and place controls on final approved and create units
- Conduct any required rehabilitation and reconstruction to create 16 units of affordable assisted living units.

Site suitability / realistic opportunity – Ringwood Borough's Fair Share Plan anticipates utilization of existing developed properties and buildings, which are currently served by municipal water. The Borough's existing developed residential properties and neighborhoods are capable of supporting and are compatible with the Borough's identified strategies for addressing its affordable housing obligation. In combination with there being adequate water infrastructure capacity to support the modest level of affordable housing that is called for in Ringwood's Plan, the Borough's existing housing stock and developed neighborhoods are suitable where opportunities for affordable housing may arise.

Ringwood's Plan also provides a realistic opportunity to create affordable housing because the Borough's existing neighborhoods are suitable and fully capable of supporting the affordable housing that is planned. The strategies identified in Ringwood's Plan are appropriate to the Borough's community character. As such, Ringwood's affordable housing strategies appear to present a reasonable likelihood that the affordable housing called for in the Fair Share Plan will

actually be constructed and provided during the 10-year period of certification. However, the limiting factor to fully implementing implementation of all components of the Plan will be adequate funding.

5:97-3.2(a)5. & 5:97-3.2(a)7. The Borough is not seeking a vacant land adjustment.

N.J.A.C. 5:97-3.2(a)6. calls for the submission of draft and/or adopted ordinances necessary for the implementation of the mechanisms designed to satisfy the fair share obligation.

It is anticipated that these ordinances will be adopted and implemented as a condition of substantive certification. However at the time of Plan preparation and adoption the ordinances are in preliminary draft stages of development. Therefore, draft ordinances will be submitted when they are available and completed. Draft ordinances will be appended to the Plan for submission of the Borough's petition for substantive certification.

N.J.A.C. 5:97-3.2(a)8. calls for " A demonstration of existing or planned water and sewer capacity sufficient to accommodate all proposed mechanisms;"

Ringwood's affordable housing obligation is essentially the creation of 10 accessory apartments, 7 group home units and 16 units in the existing Sister's of Saint Francis site. These mechanisms will require the use of existing on-site facilities or the upgrade of existing onsite wastewater systems. The accessory apartment and group home facilities should be able to use existing systems, unless they are shown to not be adequate to support additional usage. In the case of encouraging 3 bedroom accessory apartments to meet the family unit obligation, the borough may increase subsidies to help offset any cost of septic upgrades in the event the existing systems can not support additional gallonage. These cases will be reviewed on a case by case basis. The Borough is seeking a durational adjustment for the Sisters of Saint Francis site for the additional 16 units of assisted living care. The site currently has an onsite treatment system but will require upgrades to be compliant with NJDEP regulations and any Highlands regulations resulting from the Septic Systems Management ordinance, yet to be released and reviewed.

N.J.A.C. 5:97-3.2(a)9. calls for " A spending plan pursuant to N.J.A.C. 5:97-8.10, if the municipality maintains or intends to establish an affordable housing trust fund pursuant to N.J.A.C. 5:97-8.

Ringwood will be adopting an updated development fee ordinance and has an existing affordable housing trust fund. A draft development fee ordinance and spending plan is provided in Plan appendices.

APPENDIX A

INVENTORY OF MUNICIPAL HOUSING STOCK

Inventory of Municipal Housing Conditions

The primary source of information for the inventory of the Borough's housing stock is the 2000 U.S. Census, with the data reflecting conditions in 2000. According to the 2000 Census, the Borough had 4,221 housing units, of which 4,108 (97%) were occupied. Table 1 identifies the units in a structure by tenure; as used throughout this Plan Element, "tenure" refers to whether a unit is owner-occupied or renter-occupied. While the Borough largely consisted of one-family, detached dwellings (98% of the total, compared to 43% in the County), there were 101 units in attached or multi-family structures. The Borough had a lower percentage of renter-occupied units, 6%, compared to 43% in Passaic County and 32% in the State.

TABLE 1: Units in Structure by Tenure

Units in Structure	Vacant Units	Occupied Units		
		Total	Owner	Renter
1, detached	106	4,014	3,847	167
1, attached	7	27	0	27
2	0	60	33	27
3 or 4	0	7	0	7
5+	0	0	0	0
Other	0	0	0	0
Mobile home or trailer	0	0	0	0
Total	113	4,108	3,880	228

Source: 2000 U.S. Census, Summary Tape File 3 (STF-3) for Borough, QT-H10 and DP-4.

Table 2 indicates the year housing units were built by tenure, while Table 3 compares the Borough to Passaic County and the State. Approximately 66% of the owner-occupied units and all renter occupied units in the Borough were built before 1970.

TABLE 2: Year Structure Built by Tenure

Year Built	Vacant Units	Occupied Units		
		Total	Owner	Renter
1990-2000	0	163	163	0
1980-1989	0	296	296	0
1970-1979	14	892	876	16
1960-1969	34	1,329	1,281	48
1950-1959	44	571	529	42
1940-1949	0	503	427	76
Pre-1940	21	354	308	46

Source: 2000 U.S. Census, STF-3 for Borough, QT-H7.

Table 3 compares the year of construction for all dwelling units in the Borough to Passaic County and the State. The Borough had a much larger percentage of units built between 1960 and 1979 than the County or State, and a smaller percentage of units built between before 1950 and between 1990 and 2000. This is clearly seen in the median year built between the State, County and Borough.

TABLE 3: Comparison of Year of Construction for Borough, County, and State

Year Built	%		
	Ringwood Borough	Passaic County	New Jersey
1990 – 2000	3.8	5.3	10.5
1980 – 1989	7	6.2	12.4
1970 – 1979	21.5	8.6	14.0
1960 – 1969	32.3	16.9	15.9
1940 – 1959	26.5	36.9	27.1
Pre-1940	8.9	26.1	20.1
Median Year	1965	1954	1962

Source: 2000 U.S. Census, SF-3 for Borough, County, and State, DP-4.

The 2000 Census documented household size in occupied housing units by tenure, and the number of bedrooms per unit by tenure; these data are reported in Tables 4 and 5, respectively. Table 4 indicates that renter-occupied units generally housed smaller households, with 55% of renter-occupied units having 2 persons or fewer compared to 43% of owner-occupied units. Table 5 indicates that renter-occupied units generally had fewer bedrooms, with 57% having two bedrooms or fewer, compared to 13% of owner-occupied units.

TABLE 4: Household Size in Occupied Housing Units by Tenure

Household Size	Total Units	Owner-occupied Units	Renter-occupied Units
1 person	496	451	45
2 persons	1,289	1,207	82
3 persons	866	820	46
4 persons	924	891	33
5 persons	380	364	16
6 persons	100	93	7
7+ persons	53	52	1
Total	4,108	3,878	230

Source: 2000 U.S. Census, SF-3 for Borough, H-17.

TABLE 5: Number of Bedrooms per Unit by Tenure

Number of Bedrooms	Total Units	(%)	Vacant Units	Occupied Units		
				Total	Owner	Renter
No bedroom	18	.4	0	18	10	8
1 bedroom	66	1.6	0	66	57	9
2 bedrooms	586	13.9	49	537	423	114
3 bedrooms	1,863	44.1	29	1,834	1,783	51
4 bedrooms	1,512	35.8	35	1,477	1,431	46
5+ bedrooms	176	4.2	0	176	176	0

Source: 2000 U.S. Census, SF-3 for Borough, QT-H8 and QT-H5.

Table 6 compares the Borough's average household size for all occupied units, owner-occupied units, and renter-occupied units to those of the County and State. The Borough's average household size for owner-occupied units was higher than the County and the State's. The Borough's renter occupied units had an average household size lower than the County but higher than the State.

TABLE 6: Average Household Size for Occupied Units for Borough, County, and State

Jurisdiction	All Occupied Units	Owner-occupied units	Renter-occupied units
Ringwood Borough	3	3.02	2.64
Passaic County	2.92	2.99	2.84
New Jersey	2.68	2.81	2.43

Source: 2000 U.S. Census, SF-1 for Borough, County, and State, DP-1.

The distribution of bedrooms per unit, shown in Table 7, indicates that the Borough contained fewer small units (0-3 bedroom) than the County or State in 2000, and more large units (four or more bedroom) than either the County or State.

TABLE 7: Percentage of All Units by Number of Bedrooms

Jurisdiction	None or one	Two or Three	Four or More
Ringwood Borough	2	58	40
Passaic County	19.5	63.1	17.4
New Jersey	18.3	59.2	22.6

Source: 2000 U.S. Census, SF-3 for Borough, County, and State, QT-H4.

In addition to data concerning occupancy characteristics, the 2000 Census includes a number of indicators, or surrogates, which relate to the condition of the housing stock. These indicators are used by the Council on Affordable Housing (COAH) in calculating a municipality's deteriorated units and indigenous need. In the first Two Rounds of COAH's fair share allocations (1987-1999), COAH used seven indicators to calculate indigenous need: age of dwelling; plumbing facilities; kitchen facilities; persons per room; heating fuel; sewer; and, water. In the Round Three rules, COAH has reduced this to three indicators, which in addition to age of unit with more than 1 person per room (Pre-1940 units in Table 2), are the following, as described in COAH's rules.

Plumbing Facilities Inadequate plumbing is indicated by either a lack of exclusive use of plumbing or incomplete plumbing facilities.

Kitchen Facilities Inadequate kitchen facilities are indicated by shared use of a kitchen or the non-presence of a sink with piped water, a stove, or a refrigerator.

Table 8 compares the Borough, County, and State for the above indicators of housing quality. The Borough had fewer units with inadequate plumbing and kitchen facilities than the County and State.

TABLE 8: Housing Quality for Borough, County, and State

Condition	-----%-----		
	Ringwood Borough	Passaic County	New Jersey
Inadequate plumbing ¹	0	1	0.7
Inadequate kitchen ¹	.2	1.1	0.8
Overcrowding	1.9	4.3	5

Notes: ¹The universe for these factors is all housing units.

Source: 2000 U.S. Census, SF-3 for Borough, County, and State QT-H4.

The last factors used to describe the municipal housing stock are the housing values and gross rents for residential units. With regard to values, the 2000 Census offers a summary of housing values, seen in Table 9, which indicate that 87% of all residential properties in the Borough were valued over \$150,000 with 43% valued between \$150,000 and 199,999. The median housing value for the Borough was \$193,400.

TABLE 9: Value of Owner Occupied Residential Units

Value	Number of Units	%
\$0 – 50,000	0	0
\$50,000 – 99,999	35	.9
\$100,000 – 149,999	438	11.7
\$150,000 – 199,999	1,610	42.9
\$200,000 – 299,999	1,166	31
\$300,000 – 499,999	439	11.7
\$500,000 – 999,999	57	1.5
\$1,000,000 +	11	.3

Source: 2000 U.S. Census, SF-3 for Borough, County, and State, DP-4.

The data in Table 10 indicate that in 2000 virtually all housing units rented for more than \$750/month (93%) with the largest percentage, 36.4%, found between \$1,000 and \$1,499 per month, and 17.5% of the units renting for over \$1,500/ month.

TABLE 10: Gross Rents for Specified Renter-Occupied Housing Units

Monthly Rent	Number of Units	%
Under \$200	0	0
\$200 – 299	0	0
\$300 – 499	7	3.1
\$500 – 749	9	3.9
\$750 – 999	51	22.4
\$1,000 – 1,499	83	36.4
\$1,500 or more	40	17.5
No Cash Rent	38	16.7

Note: Median gross rent for Ringwood Borough is \$1,137.

Source: 2000 U.S. Census, SF-3 for Borough, QT-H12.

The data in Table 11 indicate that in 2000 there were 71 renter households making less than \$35,000 annually. At least 43 of these households were paying more than 30% of their income for rent; a figure of 30% is considered the limit of affordability for rental housing costs.

TABLE 11: Household Income in 1999 by Gross Rent as a Percentage of Household Income in 1999

Income	Number of Households	Percentage of Household Income					
		0 – 19%	20 – 24%	25 – 29%	30 – 34%	35% +	Not computed
< \$10,000	18	0	0	0	0	9	9
\$10,000 – 19,999	27	0	0	0	0	17	10
\$20,000 – 34,999	26	0	0	0	0	17	9
\$35,000 +	157	88	18	7	15	10	19

Note: The universe for this Table is specified renter-occupied housing units.

Source: 2000 U.S. Census, SF-3 for Borough, QT-H13.

ANALYSIS OF MUNICIPAL DEMOGRAPHIC CONDITIONS

As with the inventory of the municipal housing stock, the primary source of information for the analysis of the demographic characteristics of the Borough's residents is the 2000 U.S. Census. The Census data provide a wealth of information concerning the characteristics of the Borough's population in 2000.

The 2000 Census indicates that the Borough had 12,396 residents, or 227 fewer residents than in 1990, a decrease of 1.8%. The Borough's 1.8% decrease in the 1990's compares to a 12% increase in Passaic County and an 8% increase in New Jersey.

The age distribution of the Borough's residents is shown in Table 12. The age classes remain relatively evenly split between males and females with a predominance of males in the age range of 0-19 and a female predominance in the 19+ age groups.

TABLE 12: Population by Age and Sex

Age	Total Persons	Male	Female
0-4	935	496	439
5 – 19	2,727	1,446	1,281
20 – 34	2,014	975	1,039
35 – 54	4,424	2,163	2,261
55 – 69	1,682	855	827
70 +	614	266	348
Total	12,396	6,201	6,195

Source: 2000 U.S. Census, SF-1 for Borough, QT-P1.

Table 13 compares the Borough to the County and State for the same age categories. The principal differences among the Borough, County, and State occurs the age categories 20-34 where the Borough had fewer residents and 35-69 age groups where the Borough had a higher percentage of population located in those cohorts.

TABLE 13: Comparison of Age Distribution for Borough, County, and State (% of persons)

Age	Ringwood Borough	Passaic County	New Jersey
0 – 4	7.5	7.4	6.7
5 – 19	22	21.3	20.4
20 – 34	16.2	21.7	19.9
35 – 54	35.6	29.1	30.9
55 – 69	13.6	11.6	12.4
70 +	5	8.9	9.7
Median	37.4	34.8	36.7

Source: 2000 U.S. Census, SF-1 for Borough, County, and State. QT-P1.

Table 14 provides the Census data on household size for the Borough, while Table 15 compares household sizes in the Borough to those in Passaic County and the State. The Borough had a lower percentage of households with 1 person but a higher percentage of households with 2 to 5 persons than the County or State.

TABLE 14: Persons in Household

Household Size	Number of Households
1 person	12.1
2 persons	31.4
3 persons	21.1
4 persons	22.5
5 persons	9.3
6 persons	2.4
7 or more persons	1.3

Source: 2000 U.S. Census, STF-1 for Borough, QT-P10.

**TABLE 15: Comparison of Persons in Household for Borough, County, and State
(% of households)**

Household Size	Ringwood Borough	Passaic County	New Jersey
1 person	12.1	22.2	24.5
2 persons	31.4	27.3	30.3
3 persons	21.1	17.7	17.3
4 persons	22.5	16.6	16.0
5 persons	9.3	8.8	7.5
6 persons	2.4	3.8	2.7
7 or more persons	1.3	3.5	1.7
Persons per household	3	2.92	2.68

Source: 2000 U.S. Census, SF-1 for Borough, County, and State, QT-P10.

Table 16 presents a detailed breakdown of the Borough's population by household type and relationship. There were 2,446 family households in the Borough and 662 non-family households; a family household includes a householder living with one or more persons related to him or her by birth, marriage, or adoption, while a non-family household includes a householder living alone or with non-relatives only. In terms of the proportion of family and non-family households, the Borough had more persons in family households than the County or State (84% for the Borough, 73% for the County, and 70.3% for the State).

TABLE 16: Persons by Household Type and Relationship

	Total
In family Households:	2,446
Married	3,021
Child	1,820
In Non-Family Households:	662
Male householder:	325
Living alone	227
Not living alone	98
Female householder:	337
Living alone	269
Not living alone	68
In group quarters:	87
Institutionalized:	60
Non-institutionalized	27

Source: 2000 U.S. Census, SF-3 for Borough, QT-P11 and QT-P12.

Table 17 provides 1999 income data for the Borough, County, and State. The Borough's per capita and median incomes were higher than those of the County and State. The definitions used for households and families in Table 17 are similar to those identified in the description of Table 16, so that the households figure in Table 17 includes families.

TABLE 17: 1999 Income for Borough, County, and State

Jurisdiction	Per Capita Income (\$)	Median Income (\$)	
		Households	Families
Ringwood Borough	31,341	81,636	85,108
Passaic County	21,370	49,210	56,054
New Jersey	27,006	55,146	65,370

Source: 2000 U.S. Census, SF-3 for Borough, County, and State, DP-3.

Table 18 addresses the lower end of the income spectrum by providing data on poverty levels for persons and families. The determination of poverty status and the associated income levels are based on the cost of an economy food plan and ranged from an annual income of \$8,501 for a one-person household to \$28,967 for an eight-person family for the year 1999. According to the data in Table 18, the Borough had proportionately fewer persons and families qualifying for poverty status than the County and State. The percentages in Table 18 translate to 342 persons and 70 families in poverty status. Thus, the non-family households had a larger share of the population in poverty status.

TABLE 18: Poverty Status for Persons and Families for Borough, County, and State (% with 1999 income below poverty)

Jurisdiction	Persons (%)	Families (%)
Ringwood Borough	2.8	2
Passaic County	12.3	9.4
New Jersey	8.5	6.3

Source: 2000 U.S. Census, SF-3 for Borough, County, and State, DP-3.

The U.S. Census includes a vast array of additional demographic data that provide insights into an area's population. For example, Table 19 provides a comparison of the percent of persons who lived in the same house since 1995; this is a surrogate measure of the mobility/stability of a population. The data indicate that the percentage of Borough residents residing in the same house as in 1995 was more than that of the State and County.

TABLE 19: Comparison of 1995 Place of Residence for Borough, County, and State

Jurisdiction	Percent living in same house in 1995
Ringwood Borough	72.6
Passaic County	59.4
New Jersey	59.8

Source: 2000 U.S. Census, SF-3 for Borough, County, and State, QT-H7.

Table 20 compares the educational attainment for Borough, County, and State residents. The data indicates that more Borough residents achieved a high school diploma or higher or a bachelor's degree or higher than the County or State.

TABLE 20: Educational Attainment for Borough, County, and State Residents (Persons 25 years and over)

Jurisdiction	Percent (%) high school graduates or higher	Percent (%) with bachelor's degree or higher
Ringwood Borough	91.5	39.2
Passaic County	73.3	21.2
New Jersey	82.1	29.8

Source: 2000 U.S. Census, SF-3 for Borough, County, and State, DP-2.

The 2000 Census also provides data on the means of transportation which people use to reach their place of work. Table 21 compares the Census data for the Borough, County, and State relative to driving alone, carpooling, using public transit, and using other means of transportation. The Borough had a relatively high percentage of those who drive alone, and a relatively low percentage of workers who carpool or use public transit. Of the 4.4% of workers who resided in the Borough and used other means of transportation to reach work, 249 workers worked at home and 16 workers walked to work.

**TABLE 21: Means of Transportation to Work for Borough, County and State Residents
(Workers 16 years old and over)**

Jurisdiction	Percent who drive alone	Percent in carpools	Percent using public transit	Percent using other means
Ringwood Borough	84.7	8.1	2.7	4.4
Passaic County	71.2	13.5	8.1	7.2
New Jersey	73	10.6	9.6	0.9

Source: 2000 U.S. Census, SF-3 for Borough, County, and State, DP-3.

ANALYSIS OF EXISTING AND FUTURE EMPLOYMENT CHARACTERISTICS

Table 22 shows that in 2000 the distribution of employment within the Borough.

TABLE 22: Employed Population 16 and over by Major Industries

Industry	Male	Female	Totals	Percent
Total:	6,618			
	3,657	2,961	6,618	
Agriculture, forestry, fishing and hunting, and mining:	0	8	8	0.10%
Agriculture, forestry, fishing and hunting	0	8	8	
Mining	0	0	0	
Construction	569	48	617	9.32%
Manufacturing	522	323	845	12.77%
Wholesale trade	255	135	390	5.89%
Retail trade	485	387	872	13.18%
Transportation and warehousing, and utilities:	153	35	188	2.84%
Transportation and warehousing	113	27	140	
Utilities	40	8	48	
Information	285	81	366	5.53%
Finance, insurance, real estate and rental and leasing:	234	350	584	8.82%
Finance and insurance	191	256	447	
Real estate and rental and leasing	43	94	137	
Professional, scientific, management, administrative, and waste management services:	480	381	861	13.01
Professional, scientific, and technical services	356	286	642	
Management of companies and enterprises	0	0	0	
Administrative and support and waste management services	124	95	219	
Educational, health and social services:	245	916	1161	17.54%
Educational services	177	368	545	
Health care and social assistance	68	548	616	
Arts, entertainment, recreation, accommodation and food services:	164	117	281	4.25%
Arts, entertainment, and recreation	100	51	151	
Accommodation and food services	64	66	130	
Other services (except public administration)	149	127	276	4.17%
Public administration	116	53	169	2.55%

Educational, health and social services provides the largest employment sector with 53.1% in health care and social services.

Detailed statistics regarding employment trends are only provided on a regional basis. Passaic County is within the (Bergen Hudson Passaic) New York-Wayne-White Plains, NY-NJ region. Table 23 demonstrates the trend by industry type. The table portrays the national economic downturn has also impacted the regions.

TABLE 23 Current Employment within the (Bergen Hudson Passaic) New York-Wayne-White Plains, NY-NJ region.

Industry	Apr-09	Mar-09	Apr-08	Change - Month-	Change - Year-
Total Nonfarm	880.7	879.5	906.2	1.2	-25.5
Total Private	751.6	750.8	782	0.8	-30.4
Goods Producing	89.9	90.4	101.8	-0.5	-11.9
Service-Providing	790.8	789.1	804.4	1.7	-13.6
Private Service Providing	661.7	660.4	680.2	1.3	-18.5
Natural Resources and Mining and Construction	26.5	26.1	32.1	0.4	-5.6
Manufacturing	63.4	64.3	69.7	-0.9	-6.3
Durable Goods	28.7	28.9	30.2	-0.2	-1.5
Non-Durable Goods	34.7	35.4	39.5	-0.7	-4.8
Trade, Transportation, and Utilities	204.2	207.6	209.3	-3.4	-5.1
Wholesale Trade	67.6	69.2	69.5	-1.6	-1.9
Retail Trade	96.2	97.5	98	-1.3	-1.8
Transportation Warehousing and Utilities	40.4	40.9	41.8	-0.5	-1.4
Information	21.7	21.7	23.5	0.0	-1.8
Finance	71.6	70.3	74.9	1.3	-3.3
Professional and Business Services	130.2	129.2	137.1	1	-6.9
Educational and Health Services	136.7	135.6	134.5	1.1	2.2
Leisure and Hospitality	58.3	57.5	62	0.8	-3.7
Other Services	39	38.5	38.9	0.5	0.1
Government	129.1	128.7	124.2	0.4	4.9
Federal Government	10	9.9	10.4	0.1	-0.4
State Government	16.5	16.5	16.5	0.0	0.0
Local Government	102.6	102.3	97.3	0.3	5.3



Ringwood Borough
Municipal Build-Out Report

Prepared by the State of New Jersey Highlands Water Protection and Planning Council in Support of the Highlands Regional Master Plan: Report on the Results of Modules 1 and 2 of the 2009 Plan Conformance Process

June 2009

RINGWOOD BOROUGH MUNICIPAL BUILD-OUT REPORT

for
HIGHLANDS REGIONAL MASTER PLAN CONFORMANCE

Purpose and Scope

The Highlands Regional Master Plan (RMP) requires that conforming municipalities develop a local build-out analysis that incorporates the policies and objectives of the RMP. Specifically, conforming municipalities are required to “use the Highlands Build-Out Model to develop a local build-out analysis that incorporates RMP policies and objectives to evaluate land use capability and capacity planning” (Objective 6G4c). The RMP build-out process requires a Limiting Factor Analysis to examine three categories of constraints:

1. Land Based Capacity (potential developable lands);
2. Resource Based Capacity (Septic System Yield and Net Water Availability); and
3. Utility Based Capacity (public water and wastewater).

This Municipal Build-Out Report provides the results of the local build-out analysis based on potential developable lands and existing municipal conditions, including sewer and water supply capacity and Net Water Availability where relevant. It incorporates the results of the first two modules of the 2009 Plan Conformance Grants Program: Module 1 “Current Municipal Conditions and Build-Out Analysis,” and Module 2 “Land Use and Resource Capacity Analysis.” Both modules were completed through a detailed process involving a cooperative effort of the municipality and the Highlands Council. This process was designed to ensure use of the most current municipal information available and proper application of RMP requirements in the conduct of all analyses. The results for Ringwood Borough are presented in the section “**Full Build-Out and Constraints Summary**” and tabulated in Table 4 below.

The results of the local build-out analysis are for use by conforming municipalities for other planning activities required for Plan Conformance, such as development of Fair Share Plans addressing affordable housing obligations (Module 3). They also will be useful in complying with the New Jersey Department of Environmental Protection (NJDEP) wastewater management planning requirements under the Water Quality Management Planning rules at N.J.A.C. 7:15-5. The results are intended to assess current municipal conditions as they relate to specific RMP policies and objectives. It is important to note that the build-out analysis incorporates many but not every constraint to development included in the RMP, State regulations or local zoning. Future activities under Plan Conformance will address issues such as more refined or current analyses of land availability, resource capacity, resource protection and utility capacity that may modify these results to either increase or decrease the projected build out of the municipality (e.g., reducing build-out

Municipal Build-Out Report for Ringwood Borough

projections through land preservation, increasing build-out projections by increasing Net Water Availability or designation of Highlands Redevelopment Areas).

The results of the municipal build-out analysis are designed to be utilized at a municipal scale and are not appropriate for determining if a particular parcel or development project is consistent with the RMP. Therefore, the Highlands Build-Out Model is not intended to be applied at a parcel level to determine the development potential of that parcel, as the municipality must apply additional planning and zoning analyses to determine appropriate future sustainable development.

All of the data and figures regarding specific parcels, including, but not limited to, preserved lands and water and sewer service, are based on a review of currently available information; however, unintentional inaccuracies may occur and may be formally addressed as RMP Updates. Any request for a formal determination to address updated information may be submitted to the Highlands Council in accordance with the RMP policies and procedures for RMP Updates. In addition, this report does not address any Map Adjustments that a municipality may seek to revise the Land Use Capability Zone Map; these will be addressed at a later date.

It is critical to note that this build-out analysis was conducted based on the requirements of Plan Conformance with the RMP, as applied to parcels deemed potentially developable (vacant, oversized and redevelopable) as of early 2009. These results do not include:

- development that has been approved but not completed as of early 2009, which may yield more or less growth than the build-out results calculated for the affected parcels;
- the potential impact of some future development that may be deemed exempt from the Highlands Act, which may yield more or less growth than the build-out results calculated for those lands;¹
- the potential impact of future redevelopment that may be approved through designation of Highlands Redevelopment Areas or other approvals granted with waivers as authorized by the Highlands Act, which may yield more growth than the build-out results calculated for those lands;
- the potential impact of certain land use restrictions based on State regulations and local ordinances that could not be assessed through a municipal level of analysis; and

¹ Where such development is located in an approved wastewater service area in the RMP Existing Community Zone (not including the Environmentally-Constrained Sub-Zone) or the Lake Community Sub-Zone, the results should be similar because the build-out analysis used local zoning. Future developments that may be authorized within the Environmentally-Constrained Sub-Zones, Protection Zone or Conservation Zone that use public or community on-site wastewater systems will have significantly different yields than calculated through the RMP build-out process. Likewise, the Septic System Yields for lands that will rely on septic systems may be significantly different from what those allowed by current municipal zoning.

Municipal Build-Out Report for Ringwood Borough

- any reductions in build-out projections due to land preservation for open space or farmland beyond those preserved lands identified by the municipality through Module 1.

Therefore, the Highlands Municipal Build-Out Report for a municipality is a result of current conditions and application of RMP requirements. It provides a critical planning tool but cannot be used as a definitive prediction of the future or as a basis for parcel-based development potential.

This is a final Municipal Build-Out Report, which supersedes the Module 1 Summary Report. The results may be used in Module 3 by the municipality in support of its Housing Element and Fair Share Plan and other relevant purposes.

Report Structure

This Highlands Council report is based on the municipal build-out results from Modules 1 and 2 performed by Ringwood Borough and the Highlands Council, in conformance with the Highlands Regional Master Plan (RMP). These results include consideration of potential land availability, utility capacity, municipal zoning in wastewater utility service areas, Septic System Yield and Net Water Availability in accordance with the RMP. The RMP build-out analysis estimates the potential for new development in Ringwood Borough, for the entire municipality (see **Full Build-Out and Constraints Summary**, below).

First, the analysis addressed the build-out potential of the available lands, assuming application of RMP requirements for septic system yields and utility service areas without constraints related to the available capacity of public water supply and wastewater utilities or Net Water Availability. Essentially, the land-based build out represents the maximum potential for development in conformance with the RMP if no other constraints exist. Where sewer development is in conformance with the RMP, municipal zoning is used to determine build-out potential. Where septic systems will be used, the RMP requirements apply and the resulting septic system yield is assumed to be entirely residential in nature. To the extent that septic system capacity is used for non-residential development based on a proportional reallocation from residential development, the projected growth will be different than those reported above. Any reallocations of septic system yield will be addressed in Module 3 – Housing Element and Fair Share Plan.

Second, the public water supply and wastewater demands of development projected for the utility service area is compared to the utility capacity available to the municipality, regarding both public water supply and wastewater utilities. Where capacity is insufficient to support the build-out demand, the build-out estimates are reduced.

Third, the resulting water supply demands from build out in both public water supply utility service areas and domestic well service areas are compared to the Net Water Availability for the HUC14 subwatershed. In many cases, this step required information regarding water supply demands from other municipalities, so that the full demands against each HUC14 subwatershed could be assessed. Again, where Net Water Availability is insufficient to support the build-out demand, the build-out estimates are reduced.

This report also includes a discussion of technical methods used in the build-out process, including quality control assessments and build-out impact factors.

Full Build-Out and Constraints Summary for Ringwood Borough

Overview

Ringwood Borough is one of five municipalities within the Highlands Region that is entirely within the Preservation Area. The RMP build-out analysis for Ringwood Borough estimates the following new development results for potential developable lands for the entire municipality, which are discussed in detail in the following section:

1. Development in Wastewater Utility Service Areas: There is no HDSF wastewater utility in the municipality.
2. Development in Septic System Areas: 3 septic systems in the Preservation Area.

The build-out results based on potential developable lands are not constrained by water supply utility capacity. The water supply demands from the build-out are not constrained by water availability.

Municipal Capacity Conditions and Analysis

A summary of findings on municipal build-out capacity conditions appears in Table 1. It includes the following: potential developable vacant, over-sized and redevelopable lands in the RMP wastewater utility area; potential developable vacant, over-sized and redevelopable parcels in the septic system areas; RMP Septic System Yield; RMP Build-Out Environmentally Constrained lands; available wastewater utility capacity; and available Public Community Water Supply utility capacity.

All figures are the results of an RMP consistency analysis applied to the information supplied by the Highlands Council, as supplemented and verified by Ringwood Borough. Each Figure shows all of the parcels that were used in the build-out process, whether for Septic System Yield or for build out of RMP wastewater utility areas.

- **Figure 1** presents the parcel-based potential developable lands and their association with HUC14 subwatersheds and Land Use Capability Zones, which relate to the RMP Septic System Yield values where the parcels will be served by septic systems.
- **Figure 2** presents the parcel-based potential developable lands and the RMP Build-Out Environmentally Constrained lands (i.e., steep slopes, flood prone areas and Highlands Open Water buffers). Some of these areas are within the RMP Environmentally-Constrained Sub-Zones while others are smaller-scale environmental features outside those sub-zones.

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- **Figure 3** presents the parcel-based potential developable lands and their association with the RMP utility area² for RMP HDSF³ wastewater utilities.
- **Figure 4** presents the parcel-based potential developable lands associated with the RMP utility area⁴ for RMP Public Community Water System utilities.

RMP Build-Out Developable Land, Over-Sized Lot Analysis and Redevelopable Land

Ringwood Borough identified 266 acres of potential developable vacant lots and no (0) acres of potential developable lands on over-sized lots within areas that will be served by septic systems, for a total of 266 acres of potential developable Septic System Yield lands. These lands were used as the basis for Septic System Yield, regardless of the extent to which any of the lands were steep slopes, flood prone areas or Highlands Open Water buffers.

In addition, there are no (0) acres of potential developable vacant lands and no (0) acres of identified potential redevelopable land (either over-sized lots or specifically identified by the municipality as being a redevelopment target) within the Existing Area Served by utilities. The municipal information for potential developable lands, over-sized lots and redevelopable land was evaluated by the Highlands Council in accordance with the RMP for the build-out analysis. The results for all report figures are summarized in Table 1.

RMP Septic System Yield Analysis

There are five (5) HUC14 subwatersheds located entirely or partially within the Preservation Area of Ringwood Borough. The RMP Septic System Yield analysis determined a yield of 3 units for the Preservation Area in Ringwood Borough. Refer to Table 1 and Figure 1 for additional details.

The build out for septic systems in the Preservation Area identifies the number of septic systems that would be considered permissible under the NJDEP Preservation Area Rules at N.J.A.C. 7:38-3.4. Each vacant or over-sized lot identified through Module 1 and 2 was assessed to determine whether it was of sufficient size to accommodate one or more septic systems, based on NJDEP

² The RMP utility area for wastewater includes the Existing Areas Served based on the RMP, plus any NJDEP-approved Sewer Service Area that is within the Existing Community Zone (not including the Environmentally-Constrained Sub-Zone) or the Lake Community Sub-Zone.

³ HDSF - Highlands Domestic Sewerage Facility. These are wastewater treatment works that provide wastewater treatment primarily of sanitary sewage rather than industrial wastewater as a public utility, and may include service areas and treatment capacities sufficient to support redevelopment and regional growth opportunities. As such, they provide service to multiple parcels under different ownership, rather than to specific developments (e.g., schools, shopping centers, public institutions).

⁴ The RMP utility area for public water supply includes the Existing Areas Served based on the RMP, plus any additional properties identified by the municipality that are within the Existing Community Zone (not including the Environmentally-Constrained Sub-Zone) or the Lake Community Sub-Zone.

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requirements for 1 unit per 25 acres of non-forested lands, 1 unit per 88 acres of forested lands, or some proportional combination thereof. The yield is assigned by parcel, not by aggregate acreage across multiple parcels, and is compiled for the entire Preservation Area of the municipality as shown in Table 1. Parcels that were too small to accommodate a new septic system under these provisions received no Septic System Yield.

The RMP Septic System Yield is calculated for all potential developable lands reliant on septic systems, which may include lands zoned for both residential and non-residential development. Any yields are provided in “equivalent residential units” which may later be allocated among residential and non-residential development using flow translation factors provided in the *Highlands Regional Build-Out Technical Report* (see Appendix B of this report). Therefore, Septic System Yield calculated for Ringwood Borough would equate to 3 residential units only if no yield is allocated to non-residential development. Septic System Yield may be allocated to non-residential development by reducing the number of residential units and increasing the amount of non-residential development proportionally based on relative flows. This allocation process and the implications for affordable housing requirements will be addressed in Module 3 - Housing Element and Fair Share Plan; this analysis is not part of this report. Therefore, no estimate is made here of non-residential development. All development on septic systems is assumed to rely on domestic wells for the purposes of this analysis.

RMP Build-Out Environmentally Constrained Lands

The RMP Build-Out analysis identified portions of the potential developable lands that are environmentally constrained based on the RMP (i.e., steep slopes, flood prone areas and Highlands Open Water buffers). These constraints were used in the build-out analysis to determine, where wastewater utility service was anticipated based on conformance with the RMP and approved sewer service areas, whether specific parcels had at least 1,400 square feet of unconstrained area. In addition, the nature and extent of these lands may influence the future development of lands in the septic system areas regarding the allocation of Septic System Yield to them and utility lands that are suitable for development. Out of the 266 gross developable acres in Ringwood Borough, for vacant parcels there is a potential net developable area of 28 acres in the Preservation Area; for over-sized parcels there is a potential net developable area of 0 acres in the Preservation Area. These values are a summation of the parcel-specific analyses. Refer to Table 1 and Figure 2 for additional details. This analysis should be viewed as an indicator of the level of environmental constraints in potentially developable lands, not as a parcel-based measure of development capacity.

In certain instances, the municipal potential net developable acres may be under-reported relative to actual buildable area conditions, and may even show a zero or negative value. A zero or negative value indicates that a very high degree of environmental constraints exists on the potential developable parcels of the municipality as a whole and especially on the over-sized lots; however, some potential developable lands may still exist. This result reflects the evaluation of over-sized lots and of vacant lots that are partly included in the sewer service build-out analysis. The potential

Municipal Build-Out Report for Ringwood Borough

developable acres for over-sized parcels are calculated by subtracting the equivalent of a buildable area for a single unit of development (e.g., one house) under the RMP from the total parcel size. Likewise, some parcels are only partially eligible for sewer development. In both cases the environmental constrained acres for these parcels are calculated based on the entire parcel area due to GIS processing issues. This section of the Municipal Build-Out Report uses a municipal aggregate land area analysis. This information will be used in later aspects of Plan Conformance at a parcel level and not as a municipal land aggregate value. Evaluation of the relationship of septic system yield and buildable lands will be based on the build-out parcel data information and not the Table 1 municipal summary reported values.

As part of that analysis, the municipality will be able to use the database to analyze vacant parcels in septic system areas, to help identify parcels that could be considered to have some reasonable potential for development based on the amount of unconstrained land within them. Further analysis in later phases of Plan Conformance would then identify additional constraints to the realistic development potential of these parcels based on one or more of the following factors:

1. lack of a minimum one-acre contiguous, unconstrained building site;
2. the potential building site is not accessible or access will result in damage to environmentally constrained lands;
3. application of municipal zoning constraints such as those prohibiting creation of flag lots, landlocked parcels, etc.; or
4. parcel configuration or other parcel-specific issues.

This information on vacant lands with a reasonable potential for development can be used to support the evaluation of Septic System Yield assignment in later phases of Plan Conformance.

Available HDSF Wastewater Utility Capacity

No HDSF facility serves Ringwood Borough. Therefore there are no results for this part of the analysis.

Available Public Community Water System Utility Capacity

The primary public water utility serving Ringwood Borough is the Ringwood Water Department, with a very small service area served by the Wanaque Water Department. The current available Highlands Region capacity for the utility is 62.1 MGM, with essentially all of it available to Ringwood Borough as the municipal available capacity. The total water demand from the build out indicates 0.0 MGD for the Preservation Area and does not exceed the utility capacity conditions. Refer to Table 1 and Figure 4 for additional details.

Based on the current municipal available capacity minus the build out for this water supply utility, there may be capacity available for future allocation. Priority shall be given to addressing additional needs based on Objective 2J4c, such as imminent threats to public health from areas of failing septic

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systems, designated TDR Receiving Zones, and to infill or redevelopment projects in the Existing Community Zone (not including the Environmentally-Constrained Sub-Zone) and the Lake Community Sub-Zone that are consistent with the RMP and either address affordable housing obligations or have final municipal approval. Additional priorities include Highlands Redevelopment Areas or cluster development consistent with the RMP. Capacity may also be allocated to the Existing Area Served for redevelopment purposes.

Water Availability Constraints

The build-out results for Ringwood Borough, based on developable land and utility capacity, were compared to Net Water Availability by the Highlands Council to determine if Net Water Availability posed an additional constraint on development capacity. This analysis determined the potential for Net Water Availability constraints by HUC14 subwatershed, including water demands from both Ringwood Borough and other municipalities and water users that withdraw water from the same HUC14 subwatershed. The Highlands Council determined whether each demand was consumptive or depletive. For the purpose of this analysis, all septic system units were considered to represent a residential land use in accordance with the Highlands Module 2 Build-out Impact Factors presented in Appendix B, and were addressed as consumptive water uses.

The results were compared to Net Water Availability, whether for non-deficit (surplus) subwatersheds, or deficit (Conditional Water Availability) subwatersheds. These values, whether from a deficit or surplus subwatershed, are collectively referred to as Net Water Availability. In HUC14 subwatersheds dominated by Conservation Zone lands, the water availability dedicated for agricultural purposes is not used for this analysis.

Based on this analysis, the Highlands Council determined that the following HUC14 subwatersheds, both within the municipality and in other municipalities but relied upon for municipal water supply, have insufficient Net Water Availability to support the build out demand:

HUC14 Subwatershed	Build-Out Demand (MGD)*	Net Water Availability (MGD)	Shortfall (MGD)
NA			

*Subsequent to any reductions due to utility constraints.

For the remaining HUC14 subwatersheds partially or entirely in the municipality, the Highlands Council also assessed the amount of Net Water Availability remaining after build out. The results are in Table 3, which indicates the remaining Net Water Availability for each HUC14 subwatershed (where positive) and the associated public water supply systems that rely upon the HUC14 subwatershed for supply. This information can be used by the municipality to determine whether there is water available to the public water supply system that could support development within any associated wastewater utility service area, whether within the same HUC14 subwatershed or another, for purposes consistent with the RMP as describe above. The wastewater utility must also have

Municipal Build-Out Report for Ringwood Borough

remaining capacity available to the municipality. (Note: this available water cannot be used to increase the Septic System Yield beyond the amount calculated by the Highlands Council, nor can it be used to justify creation or expansion of utilities in violation of RMP requirements.) A decision as to the allocation of this capacity may occur in Module 3 regarding affordable housing needs identified in the Fair Share Plan, or later in the Plan Conformance process regarding other uses. Where a HUC14 subwatershed is relied upon by more than one municipality for water supply, whether on-site or a public water supply system, coordination will be needed among the municipalities to ensure that proposals for additional use do not exceed the remaining Net Water Availability. Also, there may be additional HUC14 subwatersheds not within the municipality that supply water to the municipality, which are not assessed here.

HUC14 Subwatershed	Remaining Net Water Availability (MGD)	Public Water Supply System(s) Reliant Upon the HUC14 Subwatershed (w/ PWSID)
02030103070030 Wanaque R/Greenwood Lk(aboveMonks gage)	0.0214	1615012 West Milford Twp MUA (Awosting) 1615002 West Milford Twp MUA (Greenbrook Lake) 1615001 West Milford Twp MUA (Birch Hill)
02030103070050 Wanaque Reservoir (below Monks gage)	0.0317955	1611002 Ringwood Water Department
02030103070040 West Brook/Burnt Meadow Brook	0.015597	1615008 Passaic Valley Water Commission-Post Brook
02030103070060 Meadow Brook/High Mountain Brook	0.006438883	1611002 Ringwood Water Department 1613002 Wanaque Water Department
02030103100010 Ramapo R (above 74d 11m 00s)	0.006890939	0233001 Mahwah Water Department

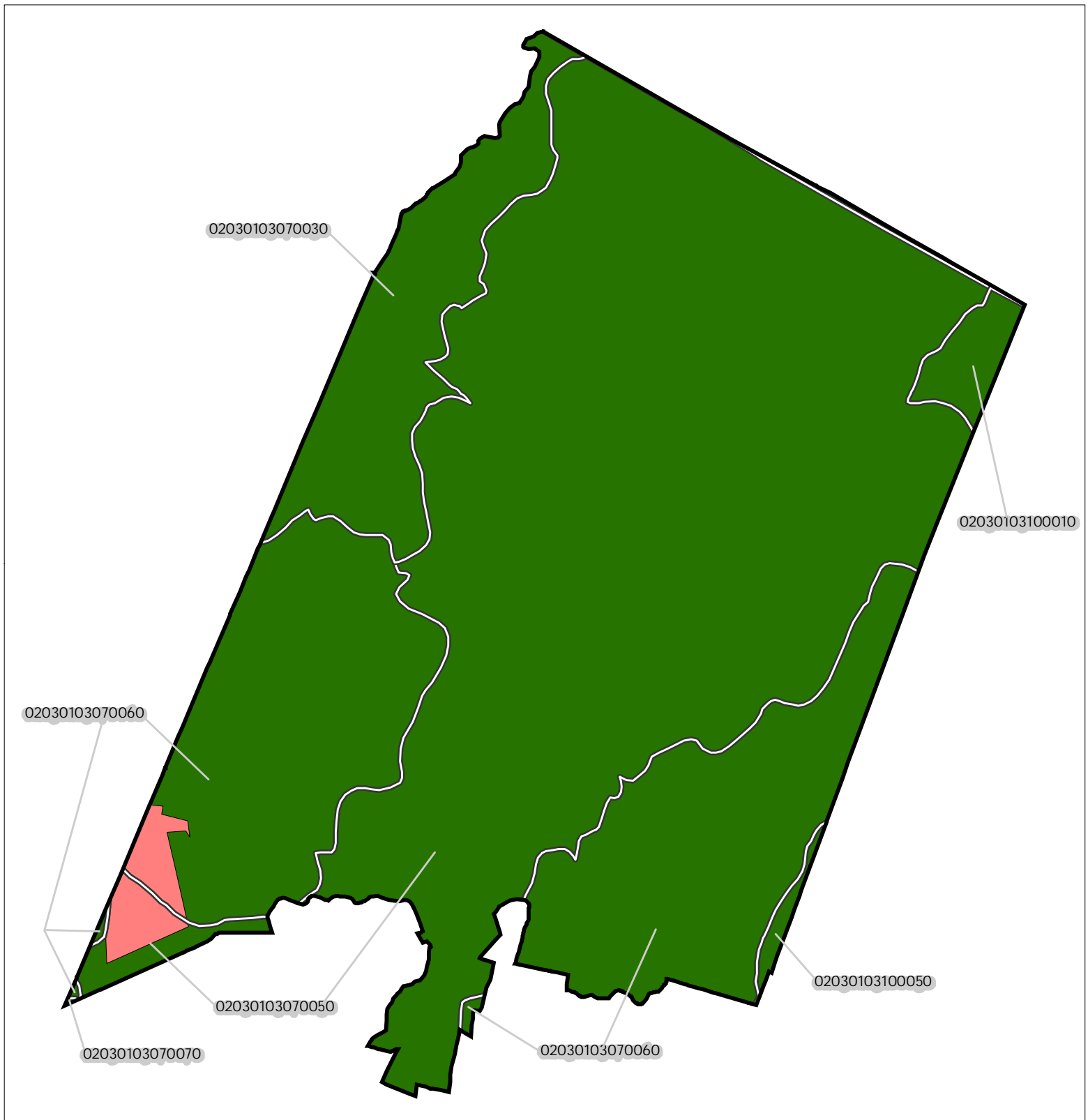
Final Build-Out Results

The build-out results for Ringwood Borough are summarized in Table 4, based on land based capacity (potential developable land in both wastewater and septic system service areas), utility capacity and resource based capacity (Net Water Availability). These results are to be applied in Module 3 - Housing Element and Fair Share Plan toward the determination of affordable housing obligations. To assist in the evaluation of this information, an Excel file of the Module 2 database has been prepared by the Highlands Council for use in Module 3, where applicable. The Excel file is included on the Module 2 CD.

Municipal Build-Out Report for Ringwood Borough

Table 4 – Municipal Build-Out Results With Resource and Utility Constraints			
	Preservation Area	Planning Area	Totals
Residential units – Sewered	0	NA	0
Septic System Yield	3	NA	3
Total Residential Units	3	NA	3
Non-Residential Jobs – Sewered	0	NA	0

Figure 1: Municipal Build-Out Report Septic System Yield by HUC14 and LUCM Zone *
RINGWOOD BOROUGH



Potential Undevelopable Lands	Potential Oversized Lots	Potential Developable Lands	Potential Redevelopable Lands
Conservation Zone	in Conservation Zone	in Conservation Zone	in Conservation Zone
Existing Community Zone	in Existing Community Zone	in Existing Community Zone	in Existing Community Zone
Protection Zone	in Protection Zone	in Protection Zone	in Protection Zone
Preservation Area	in Preservation Area	in Preservation Area	in Preservation Area

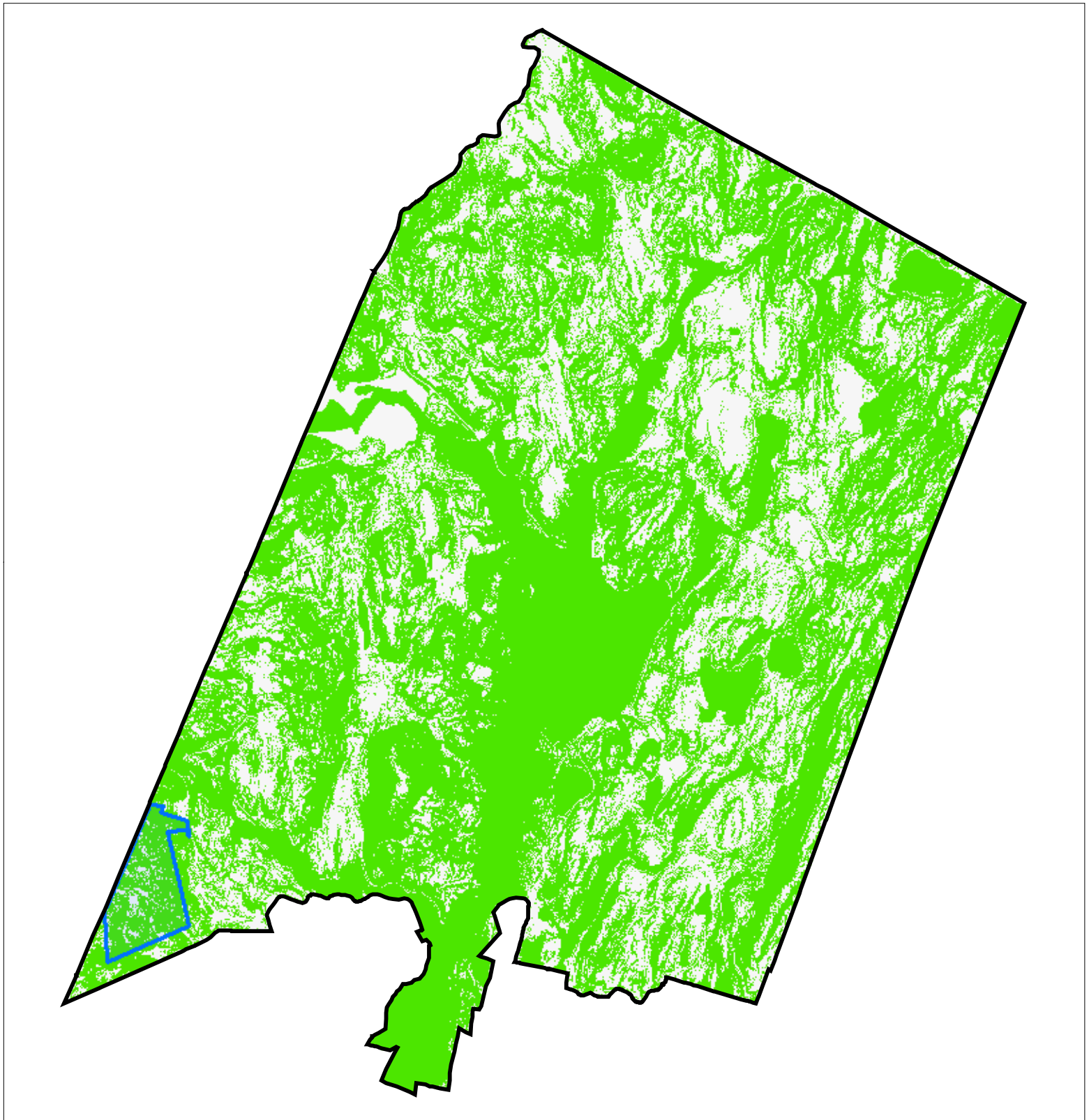
HUC14 Subwatersheds
 02030103070050 HUC14 ID Number


Miles 0 1 2 N


Highlands Council
New Jersey


* Refer to Table 1 for Septic System Yield values, indexed by HUC14 ID


Figure 2: Municipal Build-Out Report Environmental Constrained Lands



 Highlands Build-Out Environmental Constrained Lands
Constraints:
Highlands Open Water Buffers (300ft)
Flood Prone Areas
Steep Slopes (Moderate and Severe)

 Potential Oversized Lots

 Potential Developable Lots

 Preservation Area

RINGWOOD BOROUGH

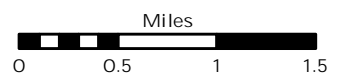
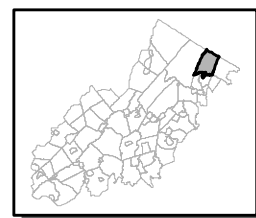
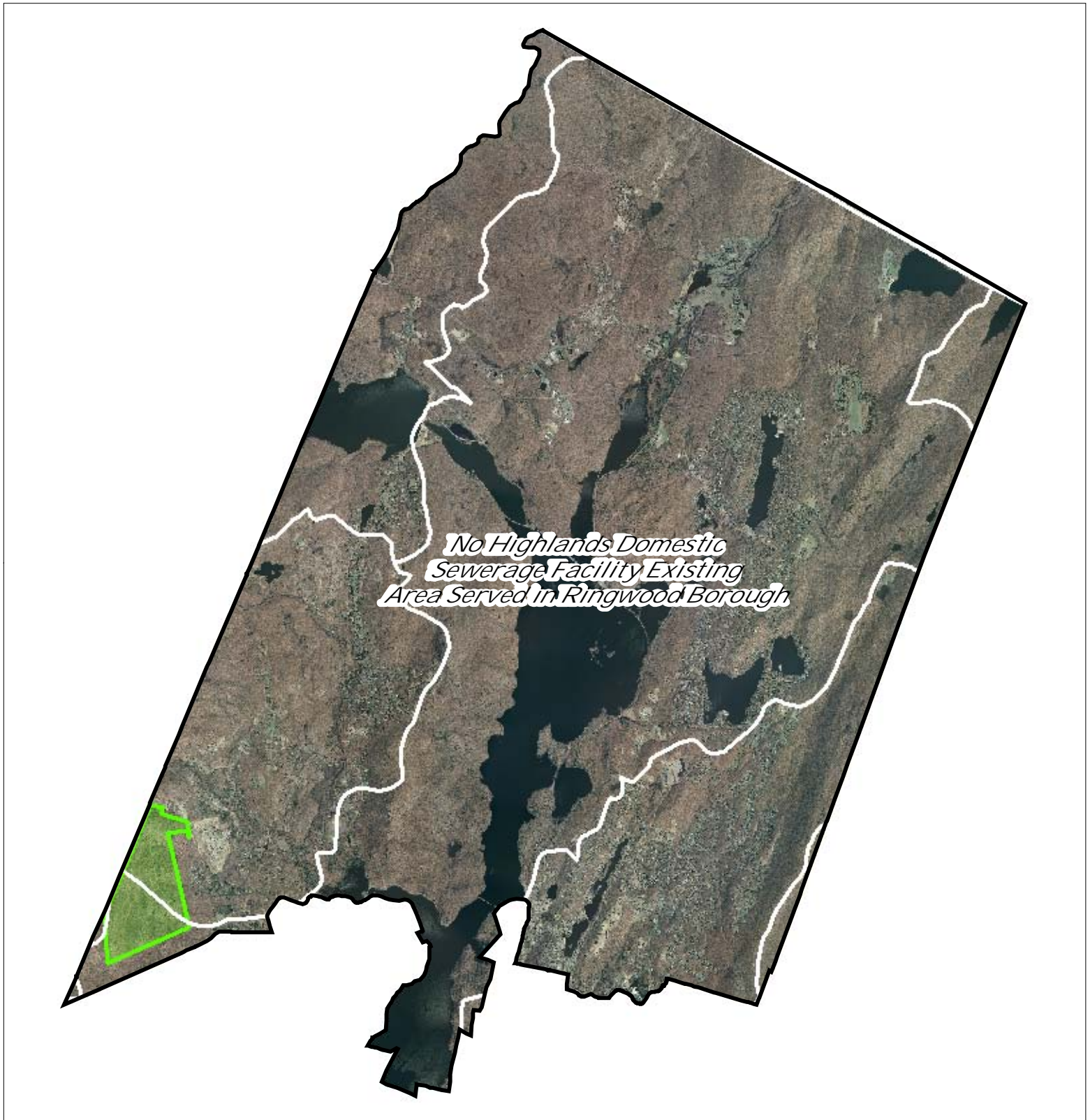




Figure 3: Municipal Build-Out Report RMP HDSF Wastewater Utilities




Highlands Domestic Sewerage Facilities "2008 RMP Existing Area Served"

 N/A

 HUC14 Subwatersheds

 Potential Oversized Lots

 Potential Developable Lots

 Preservation Area

RINGWOOD BOROUGH

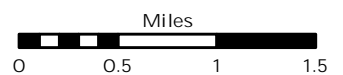
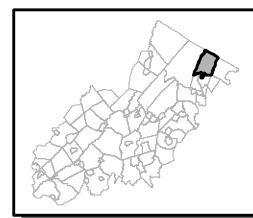
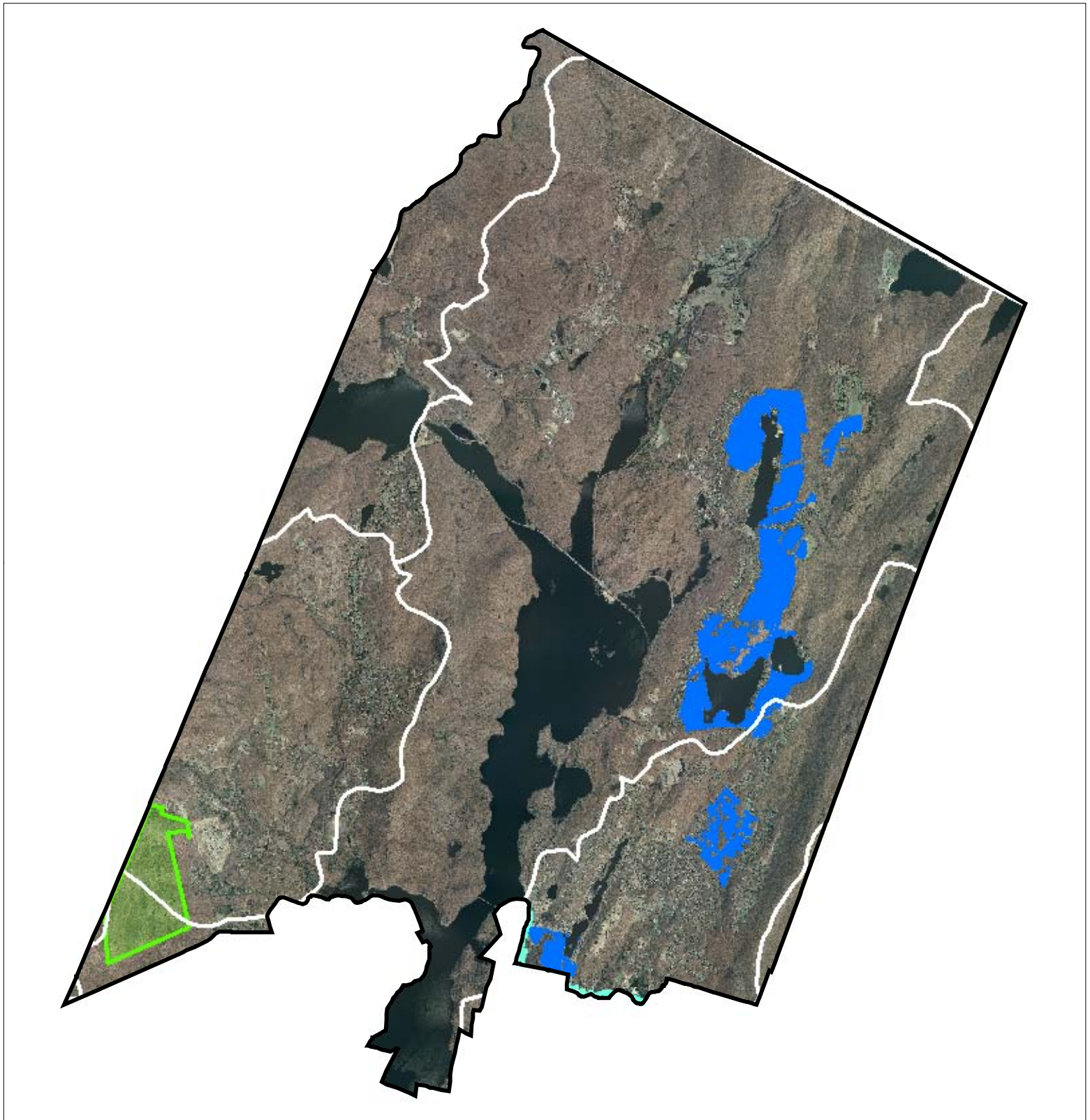



Figure 4: Municipal Build-Out Report RMP Public Community Water System Utilities





Public Community Water Systems "2008 RMP Existing Area Served"

 RINGWOOD WATER DEPARTMENT

 WANAQUE WATER DEPARTMENT

 HUC14 Subwatersheds

 Potential Oversized Lots

 Potential Developable Lots

 Preservation Area

RINGWOOD BOROUGH

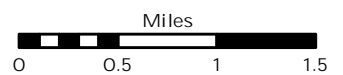
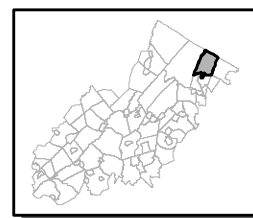


Figure 5: Municipal Build-out Report Final Build-out Results



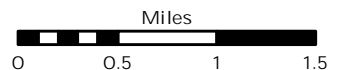
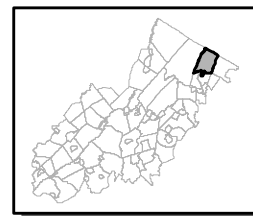
Table 4 - Municipal Build-out Results With Resource and Utility Constraints

	Preservation Area	Planning Area	Totals
Residential Units - Sewered	0	N/A	0
Septic System Yield	3	N/A	3
Total Residential Units	3	N/A	3
Non-Residential Jobs - Sewered	0	N/A	0



Preservation Area Boundary

RINGWOOD BOROUGH



Overview of Technical Method for Build-Out Analysis

Module 1 “Current Municipal Conditions and Build-Out Analysis” (results of which are incorporated into or modified as appropriate for this report) was based on municipal information regarding potential developable lands (including identification of preserved lands and fully developed lands) and areas currently served with public water supply and wastewater utilities. It also included the current capacity conditions of public water supply and wastewater utilities, and was evaluated for municipal Land Use Capability in accordance with the RMP. The information was initially prepared by the Highlands Council and has been edited and verified by the municipality as representing the best available information on existing potential developable lands, which include vacant, non-preserved lands, as well as partially-developed lands having potential for further development (i.e., over-sized parcels) or redevelopment. The Highlands Council performed a quality control assessment to ensure that the database was technically sufficient for the build-out process (see Appendix A – Module 1). The build-out capacity conditions represent the complete build out of potential developable lands in accordance with the RMP, assuming no constraints other than location within areas served by water supply or wastewater utilities or, for those lands not within a wastewater utility service area, the Septic System Yield based upon RMP Land Use Capability Zone Map policies (which incorporate the NJDEP Rules for the Preservation Area at N.J.A.C. 7:38-3.4). The Module 1 Summary Report was prepared by the Highlands Council and provided to the municipality, which further verified or corrected land availability and municipal zoning information in the report as the first step in Module 2.

The build-out capacity conditions in Module 1 identified the available utility capacity (in units of flow) allocated to the municipality for associated Highlands Domestic Sewerage Facilities (HDSF), on-site wastewater facilities, and Public Community Water Supply Systems. The Highlands Council initially used available capacity information from the *Utility Capacity Technical Report (2008)*, which used 2003 data for wastewater utilities (comparing permitted flows to the rolling maximum three month daily average in million gallons per day, or MGD) and 2004 data for public water supply utilities (comparing permitted flows to the maximum monthly demand, in million gallons per month, or MGM). The available capacity estimates initially assumed that the capacity for regional utilities (i.e., serving more than one municipality) would be allocated on a first-come, first-served basis; available capacity was apportioned among the municipalities based on relative land availability in the service area municipalities. In the Module 1 process, municipalities and regional utilities were requested to provide both updated flow data and any available information on contracted flows for a municipality. Where such information was provided and verified, it was used to update both utility-wide and municipal available capacity estimates.

The build-out impacts analysis within RMP utility areas was performed by the Highlands Council using build-out environmental constraints, municipal zoning and various impact factors (e.g., water demand, sewerage demand, population, jobs) as identified in the *Highlands Regional Build-Out Technical Report (2008)* and listed in Appendix B of this report. This analysis was applied only within the RMP utility service areas, defined as the lands within a NJDEP approved utility service area that are also

Municipal Build-Out Report for Ringwood Borough

located within the Existing Community Zone or Lake Community Sub-Zone (not including the Existing Community-Environmentally-Constrained Sub-Zone). Of these lands, only parcels with at least 1,400 square feet of land that is not environmentally constrained based on the RMP (i.e., steep slopes, flood prone areas and Highlands Open Water buffers) were evaluated for build out in RMP utility service areas. Potential developable lands that did not meet the criteria of the build-out RMP utility areas were evaluated as lands contributing to Septic System Yield.

In addition, the RMP Septic System Yield was calculated for the municipality. The build out for septic system areas in the Planning Area is based on the RMP Septic System Yield Analysis and does not incorporate or evaluate the effects of environmental constraints or municipal zoning. The build-out of septic system areas in the Preservation Area is based on the NJDEP Preservation Area Rules at N.J.A.C. 7:38-3.4, as required by the RMP. The total acreage of all vacant lands, the net acreage of over-sized parcels (i.e., the total lot size minus the acreage needed for one lot under the RMP) and redevelopable lands were used in the Septic System Yield analysis. In the Planning Area, the analysis used the nitrate target for the appropriate Land Use Capability Zone and the drought recharge value for the appropriate HUC14 subwatershed. In the Preservation Area, the analysis used the forested and non-forested lands at a parcel level. In keeping with RMP policies, preserved lands (including SADC, Green Acres, federal, State, county and local lands, and land trust properties and conservation easements where known) were excluded from this analysis. Environmentally constrained lands (i.e., steep slopes, flood prone areas and Highlands Open Water buffers) were included in the septic system yield analysis because the methodology assumes a mixture of constrained and unconstrained lands, but will affect how Septic System Yield is allocated in later stages of the Plan Conformance Process.

The information from Module 1 directly supported the Module 2 Land Use and Resource Capacity Analysis, results of which are incorporated into this report. In Module 2, the Highlands Council and the municipality evaluated the build-out impacts and the associated wastewater and water supply demands within the RMP utility areas as identified in Module 1.

In Module 2, municipalities reviewed the RMP build-out impacts for RMP utility areas and verified that they reflect densities allowed by existing municipal zoning. Areas included in the build-out process for sewer service included those lands within the wastewater Existing Area Served, as defined by the RMP, and also those lands within an NJDEP-approved Sewer Service Area that is also within the Lake Community Sub-Zone or the Existing Community Zone (excluding the Existing Community-Environmentally Constrained Sub-Zone). If the existing municipal zoning conditions have changed from the 2005 data used by the Highlands Council, then the municipality provided the current zoning and the Highlands Council revised the build-out impacts accordingly. The Highlands Council performed a quality control assessment to ensure that the database was technically sufficient for the build-out process (see Appendix A – Module 2).

When the land based build out of potential developable lands in Module 1 exceeded the available utility capacity conditions, further analysis by the Highlands Council was required in Module 2 to

Municipal Build-Out Report for Ringwood Borough

determine the extent to which the build out was constrained by the lack of utility capacity. In such cases, the land-based build-out potential is lowered proportionately for residential and non-residential development within the service area. It is important to note that no change is made to the Existing Area Served for the utility; only the build-out potential is reduced.

Where utility capacity exceeded the land-based build out of potential developable lands in Module 1, the utility capacity is potentially available for future demands. The municipality will evaluate utility capacity assignment in Module 3 where appropriate to support affordable housing, and in support of later phases of Plan Conformance.

For some HUC14 subwatersheds in the municipality, the projected consumptive or depletive water demand based on both domestic well sources (either as derived from Septic System Yield, which is assumed to be supplied by domestic wells, or within a RMP wastewater utility area served by domestic wells) and water supply utility service indicate that the complete municipal build out of potential developable lands might exceed the Net Water Availability. In such cases, the Highlands Council then calculated Net Water Availability values in Module 2 for use as a further constraint on growth, and determined the extent to which the Net Water Availability would reduce the build out. The Highlands Council also assessed the extent to which the use of remaining wastewater utility capacity (i.e., beyond full build-out), if any, would be constrained by Net Water Availability. This information can be used by the municipality to determine whether the wastewater utility capacity can reasonably be used for purposes consistent with the RMP (e.g., affordable housing projects, TDR receiving zones, Highlands Redevelopment Areas, redevelopment within the Existing Area Served) as provided for by Objective 2K3e. A decision as to the allocation of this capacity will occur in Module 3 regarding affordable housing needs identified in the Fair Share Plan, or later in the Plan Conformance process regarding other uses.

Municipal Build-Out Report for Ringwood Borough

Appendix A: Technical Sufficiency Review

MODULE 1

The Module 1 Geodatabase (GDB) and utility capacity spreadsheet information submitted by the municipality were evaluated for technical sufficiency and quality assurance and quality control purposes by the Highlands Council staff. The Highlands Council reviewed the GDB (GDB#1 and GDB#2, with GDB#3, where relevant) to determine that all the changes that the municipality made to the GDB are technically sufficient in order to process for RMP Build-out. All revisions made to a GDB by the Highland Council are reflected in the NJHC_QA_QC_COMMENTS field of the GDB. The same Build-out QA/QC Review method is conducted for both GDB#1 and GDB#2. These results were reviewed by the municipality in Module 2 (see below). Any database issues that were not specifically responsive to the technical sufficiency review and not specific to the Module 1 Build-Out Analysis were flagged in the GDB by the Highlands Council for future reference.

When a municipality received GDB#3 (the updated public water utility database), the Council joined and updated the PWSID data from GDB#3 into GDB#1 so all the Module 1 information was in GDB#1 for build-out processing.

Before a GDB is processed for Build-out, the Highlands Council reviewed the material submitted by the municipality including cover letters and any email correspondence for additional information relevant to the build-out analysis. The Highlands Council utilizes Microsoft Access to process the GDB through the NJHC QA/QC review method to create a Technical Protocol Status (TPS) report that flags all parcels that have contradictory data, as well as a SDE check which identifies inserted, deleted and updated information in the GDB. The Highlands Council utilized the TPS Report and the GDB along with the supporting documentation to evaluate any contradictory data reported as Error Codes on the TPS Report.

The TPS report created by the Highlands Council identifies parcels that may contain contradictory data in the GDB and therefore not process correctly in the build-out. There are 11 Error Codes and 5 Data Conditions that may potentially be flagged by the Highlands Council within a GDB. The identification of an Error Code may or may not result in an edit by the Council. If an edit was required in order to technically correct the GDB for build-out processing, the edit was conducted by the Highlands Council and recorded in the GDB. The following is a list of the TPS Error Codes and Data Conditions that may be applicable to the municipality:

- **Error Code 01: Municipal Verification Field Missing** - every verifiable field and row should include the Module 1 verifier's name. If a row was blank, the NJHC QA/QC reviewer would populate the field with the verifier's name or consult with the municipality as required, and enter a comment in the NJHC_QA_QC_COMMENTS field in the GDB.

Municipal Build-Out Report for Ringwood Borough

- **Error Code 02: Parcels identified as both a Condo and Open Space** - the Highlands Council evaluated the parcel's development and land preservation status to determine if the necessary data fields were populated correctly by the municipality.
- **Error Code 03: Parcels identified as both Developable and Open Space** - the Highlands Council evaluated the parcel's development status and land preservation status and determined if the necessary data fields were populated correctly by the municipality.
- **Error Code 04: Parcels identified as Oversized or Redevelopable and missing the oversized or redevelopable acreage value** - the Highlands Council would either consult with the municipality in order to edit the data field or utilized the GDB information to determine the missing value.
- **Error Code 05: Parcels identified as Oversized or Redevelopable that were also listed as Not Developable** - the Highlands Council evaluated the parcel and edited the PARC_STAT_DEV_STATUS data field accordingly.
- **Error Code 06: Parcels identified as connected to a wastewater utility however no System Provider was identified** - the Highlands Council would consult with the municipality and/or review the GDB and supporting documentation in order to edit the missing entry.
- **Error Code 07: Parcels identified as a "Yes" indicating they are currently both connected and not connected to a wastewater utility** - the Highlands Council edited Not Developable, oversized or redevelopable parcels in the wastewater no connect field to a "No." and if the parcel is vacant and developable then the Highlands Council edited the wastewater existing served field to a "No."
- **Error Code 08: Parcels identified as being connected to a wastewater utility and also identified as vacant or developable** - the Highlands Council evaluated these parcels to see if they are developable, redevelopable or oversized and edited and documented accordingly in the GDB.
- **Error Code 09: Parcels identified as connected to a public water utility however no System Provider was identified** - the Highlands Council would consult with the municipality and/or review the GDB and supporting documentation in order to edit the missing entry.
- **Error Code 10: Parcels identified as a "Yes" indicating they are currently both connected and not connected to a public water utility** - the Highlands Council edited Not Developable, oversized or redevelopable parcels in the public water no connect field to a "No." and if the parcel is vacant and developable then the Highlands Council edited the public water existing served field to a "No."
- **Error Code 11: Parcels identified as being connected to a public water utility and also identified as vacant or developable** - the Highlands Council evaluated these parcels to see if they are developable, redevelopable or oversized and edited and documented accordingly in the GDB.

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- **Data Condition 1: Parcels identified as Not Developable due to Environmental Constraints or Inadequate Lot Geometry** - these parcels were evaluated in septic served areas to ensure that the environmentally constrained parcels in the GDB were not a water body and therefore not appropriate for inclusion in the RMP Septic System Area analysis. Otherwise, vacant parcels indicated to be “Not Developable” due to environmentally constrained lands were included in the Septic System Yield analysis. Parcels that were identified as an inadequate lot geometry but developable with an adjacent parcel may require further review by the municipality to ensure that the build-out process was applied correctly because the Highlands Council is not able to discern the adjacent parcel record that is in common ownership and referenced by the municipality.
- **Data Condition 2: Parcels identified as having a WW Utility with a Contractual Allocation** were flagged in the TPS Report.
- **Data Condition 3: Parcels identified for PW Utility with a Contractual Allocation** were flagged in the TPS Report.
- **Data Condition 4: Parcels containing entries as “OTHER” with associated comments** were reviewed to see if the proper data field associated with the comment had been completed correctly and to assist in the review of the GDB information.
- **Data Condition 5: Parcels with entries in any of the “Comment” data fields-** the Council reviewed this information as a means to assist in GDB technical evaluation and QA/QC review.

In addition to going through the TPS Report as described above, the Council evaluated all open space parcels to ensure they are technically correct in the GDB. The Council also reviewed parcels that have no provider listed for public water or wastewater to ensure that there are no “Yes” data fields in the utility connection status data field, as these parcels are on septic/domestic wells and not relevant regarding a utility connection status in the GDB. Lastly, the Council QA/QC reviewer initialed and dated the GDB to complete the TPS Report and QA/QC Review process.

The municipality then received a modified GDB that:

1. incorporated the results of all edits by the Highlands Council;
2. merged the final results of GDB’s #1 and, where applicable, #2 and #3 into a single GDB;
3. identified the parcels that were processed for build out as potential developable vacant, redevelopable and over-sized lots in both septic system and sewer areas; and
4. incorporated additional fields used by the Highlands Council in running the build-out process, including municipal zoning for potential developable vacant and redevelopable parcels associated with sewer service conforming with RMP requirements, and having at least 1,400 square feet of land that is not environmentally constrained. Where such parcels were associated with public water supply service, they were also evaluated for water demands.

Municipal Build-Out Report for Ringwood Borough

The Municipal Conditions Geodatabase may include in some cases duplicate parcel records within the municipality. These duplicates derive from the process of creating a spatial representation of parcels in GIS. The Highlands Council has taken the necessary steps to avoid double counting of developable duplicate parcels, in the summary reports and in the geodatabase and any derivatives thereof.

MODULE 2

In Module 2, the municipality completed a final check on parcel information and verified the municipal zoning applicable to parcels that were processed for build out in RMP utility areas. Where edits were made and returned to the Highlands Council, the Council incorporated the edits and, where necessary, performed a revised build-out analysis, the results of which are reflected in this report.

Please note that the Type A and Type B edits conducted by the municipality were reviewed by the Highlands Council and only when an edit was relevant to the RMP Build-out analysis was it incorporated and re-processed for build-out analysis as required.

Type A Edits – Tabular

- The information will be updated in the GDB as indicated.
- The nature and extent of the information may or may not affect the build-out results.
- Type A tabular edits that require a revised build-out will be processed and reported as a Module 2 Municipal Build-out Summary Report.

Type A Edits – Spatial

- The revised spatial information will be reviewed in accordance with the Module 1 Technical Review Protocols.
- Type A spatial edits that require a revised build-out will be processed and reported as a Module 2 Municipal Build-out Summary Report.

Type B Edits – Municipal Zoning

- The information will be updated in the GDB as indicated.
- Updated zoning changes only affect parcels in RMP utility areas.
- Type B edits that require a revised build-out will be processed and reported as a Module 2 Municipal Build-out Summary Report.

Appendix B – Highlands Module 2 Build-Out Model Impact Factors

Highlands Zone Type	Comparison Zone/Unit Type	Source	Region	Density Dwelling unit (du)/acre *	Efficiency Factor % (1)	Average Household Size (2)	Average School Children in Household (2)	Percent Impervious (3)	Consumptive/Depletive Water Use includes Indoor demand (gpd per person) plus outdoor demand as (gpd per unit) multiplied by Consumptive/Depletive Use Coefficient (4)	Public Water System Demand (5)	Public Wastewater System Generation (6)
SF Estate Residential or (PA-5)				0.05 to 0.20 (0.17 maximum)	95			0.075* acres	(75 gpd/person + 50 gpd/unit) * Consumptive/Depletive Coefficient	100 gallons per person per day	75 gallons per person per day
	Single-family Detached 4-5 BR	Statewide NJ Demographic Multipliers (2)	Northern ¹			3.809	1.072				
Single-family Detached 4-5 BR	Central ²					3.780	1.094				
SF Rural Residential, Resource Residential, or (PA-4B)				0.21 to 0.5 du/acre (0.17 maximum)	95			0.075* acres	(75 gpd/person + 50 gpd/unit) * Consumptive/Depletive Coefficient	100 gallons per person per day	75 gallons per person per day
	Single-family Detached 4-5 BR	Statewide NJ Demographic Multipliers (2)	Northern ¹			3.809	1.072				
Single-family Detached 4-5 BR	Central ²					3.780	1.094				
SF Low Density or (PA-4)				0.51 to 1.0 du/acre (1.16 maximum)	80			0.075* acres	(75 gpd/person + 50 gpd/unit) * Consumptive/Depletive Coefficient	100 gallons per person per day	75 gallons per person per day
	Single-family Detached 4-5 BR	Statewide NJ Demographic Multipliers (2)	Northern ¹			3.809	1.072				
Single-family Detached 4-5 BR	Central ²					3.780	1.094				
SF Medium Density, Suburban Residential, or (PA-3)				1.01 to 3.0 du/acre (3.81 minimum)	75			26.7	(75 gpd/person + 30 gpd/unit) * Consumptive/Depletive Coefficient	100 gallons per person per day	75 gallons per person per day
	Single-Family Detached, 2-3 BR	Statewide NJ Demographic Multipliers (2)	Northern ¹			3.137	0.607				
Single-Family Detached, 2-3 BR	Central ²					2.578	0.367				
SF High Density or (PA-2)				3.01 to 8.0 du/acre (7.04 minimum)	75			33.7	(75 gpd/person + 5 gpd/unit) * Consumptive/Depletive Coefficient	75 gallons per person per day	75 gallons per person per day
	Single-Family Attached, 2-3 BR	Statewide NJ Demographic Multipliers (2)	Northern ¹			2.477	0.296				
Single-Family Attached, 2-3 BR	Central ²					2.296	0.292				
Attached/Townhouse or (PA-1)				8.01 to 16.0 du/acre (9.78 minimum)	75			45.7	(75 gpd/person + 5 gpd/unit) * Consumptive/Depletive Coefficient	75 gallons per person per day	75 gallons per person per day

Appendix B – Highlands Module 2 Build-Out Model Impact Factors

Highlands Zone Type	Comparison Zone/Unit Type	Source	Region	Density Dwelling unit (du)/acre *	Efficiency Factor % (1)	Average Household Size (2)	Average School Children in Household (2)	Percent Impervious (3)	Consumptive/Depletive Water Use includes Indoor demand (gpd per person) plus outdoor demand as (gpd per unit) multiplied by Consumptive/Depletive Use Coefficient (4)	Public Water System Demand (5)	Public Wastewater System Generation (6)
	Single-Family Attached, 2-3 BR	Statewide NJ Demographic Multipliers (2)	Northern ¹			2.477	0.296				
	Single-Family Attached, 2-3 BR		Central ²				2.296	0.292			
Garden Apartment or (PA-1)				16.01+ du/acre (9.78 minimum)	70			57.1	(75 gpd/person + 5 gpd/unit) * Consumptive/Depletive Coefficient	75 gallons per person per day	75 gallons per person per day
	5+ Units (Own/Rent), 2-3 BR	Statewide NJ Demographic Multipliers (2)	Northern ¹			2.262	0.308				
	5+ Units (Own/Rent), 2-3 BR		Central ²				2.342	0.373			
Mixed use/Age Restricted Housing (percent mix based on 40% residential and 60% non-residential as Office/Commercial)		Municipal Zoning		Apply zone density and FAR value Note: Use Retail/Commercial Impact factors for non-res %	70	Varies Based on zoning Du/Acre description	0.00	68.8	(75 gpd/person + 5 gpd/unit) * Consumptive/Depletive Coefficient	75 gallons per person per day	75 gallons per person per day
Mixed use (percent mix based on 40% residential and 60% non-residential as Office/Commercial)		Municipal Zoning		Apply zone density and FAR value Note: Use Retail/Commercial Impact factors for non-res %	70	Varies Based on zoning Du/Acre description	Varies Based on zoning Du/Acre description	42.0	(75 gpd/person + 5 gpd/unit) * Consumptive/Depletive Coefficient	75 gallons per person per day	75 gallons per person per day
Senior or Age restricted Housing		Municipal Zoning		Varies Based on zoning Du/Acre description	70	Varies Based on zoning Du/Acre description	0.00	60.3	(75 gpd/person + 5 gpd/unit) * Consumptive/Depletive Coefficient	75 gallons per person per day	75 gallons per person per day

Highlands Build-Out Residential Impact Factors – Sources

* Residential dwelling units generated by the build-out model include both market rate and affordable units.

(1) Source: Efficiencies are given as a percentage, between 0 and 100, where a 100 value means complete efficiency (no land lost to development), and a 0 value means no buildings will be estimated for that land use. For example an efficiency of 70% may be representative of developable land that has a 10% set aside for parks and 20% for roads (100% - 10% - 20% = 70%). Project determined values.

(2) Source: Who Lives in New Jersey Housing? New Jersey Demographic Multipliers, The Profile of Occupants of Residential and nonresidential Development. Listokin, D., Voicu, I., Dolphin, W., Camp, M. Center for Urban Policy Research, Rutgers University, November 2006. Northern NJ values were applied to Bergen, Morris, Passaic, Sussex and Warren County municipalities. Central NJ values were applied to Hunterdon and Somerset County municipalities.

1 Table II-C-1 North Region of New Jersey Total Persons and Persons by Age (2000) (p. 85)

2 Table II-D-1 Central Region of New Jersey Total Persons and Persons by Age (2000) (p. 99)

(3) Source: NCNBR, Rutgers University, April 27, 2006. The impervious surface area for new dwelling units large lot zoned areas (*) is based on an average 15% impervious surface value (per NJDEP LU/LC) and a project determined average homestead area of 0.50 acres. No impact value is attached to the remaining undeveloped area. The impact percentage factors for the other residential composite zones represent weighted averages of NJ Highlands Percent Impervious Surface for all residentially developed lands in that composite zone. The raw data was obtained by overlaying NJ Highlands Zoning and DEP 2002 LU/LC spatial data files, and extracting the calculated percent impervious surface area attached to each LU/LC residential developed land polygon and the acres of associated developed land in each intersecting municipal zone polygon. The impervious surface areas in each municipal zone within the composite zone were aggregated and then divided by the total developed residential land area, to produce a weighted IS average for each composite zone.

(4) Source: Center for Urban Policy Research (CUPR), September 2000. NJGS Consumptive Use Coefficients. For consumptive uses, a factor of 29% is utilized. For depletive uses, a factor of 100% is used

(5) Source: NJDEP N.J.A.C. 7:10 Safe Drinking Water Act Regulations Adopted November 4, 2004, 7:10-12.6 Water Volume Requirements and State Plan Impact Assessment

(6) Source: NJDEP N.J.A.C. 7:14A-23.3 Pollutant Discharge Elimination System: Technical Requirements For TWA Applications; Projected flow criteria

Appendix B – Highlands Module 2 Build-Out Model Impact Factors

Highlands Composite Zone Type	Floor Area Ratio	Efficiency Factor % (1)	Region	Jobs per 1,000 sf (2)	Percent Impervious (3)	Consumptive/Depletive Water Use multiplied by Consumptive/Depletive Use Coefficient (4)	Public Water System Demand (5)	Public Wastewater System Generation (6)
Office/Commercial	Based on zoning	80	Northeast US	2.99	78.3	0.125 gpd/sf * Consumptive/Depletive Coefficient	0.125 gallons/day/sf	0.10 gallons/day/sf
Retail	Based on zoning	80	Northeast US	1.63	72.5	0.125 gpd/sf * Consumptive/Depletive Coefficient	0.125 gallons/day/sf	0.10 gallons/day/sf
Industrial	Based on zoning	80	Northeast US	1.11	53.4	25 gpd/person * Consumptive/Depletive Coefficient	25 gallons per person per day	25 gallons per person per day

Highlands Build-Out Non-Residential Impact Factors – Sources

(1) Source: Efficiencies are given as a percentage, between 0 and 100, where a 100 value means complete efficiency (no land lost to development), and a 0 value means no buildings will be estimated for that land use. For example an efficiency of 70% may be representative of developable land that has a 10% set aside for parks and 20% for roads (100% - 10% - 20% = 70%). Project determined values.

(2) Source: Who Lives in New Jersey Housing? New Jersey Demographic Multipliers, The Profile of Occupants of Residential and nonresidential Development. Listokin, D., Voicu, I., Dolphin, W., Camp, M. Center for Urban Policy Research. Rutgers University. November 2006.

a Table II-I-3 Commercial - Office Employees per 1,000 Square Feet of Gross Floor Area (GFA) (p. 136) (Reported Northeast mean value).

b Table II-I-4 Commercial – Retail Employees per 1,000 Square Feet of Gross Floor Area (GFA) (p. 139)

(Value derived by averaging the mean number of employees per 1,000 sq. ft. of GFA for retail (excluding mall), retail (enclosed mall), and retail (strip shopping mall) space in the Northeast).

c Table II-I-6 Industrial – Warehouses Employees per 1,000 Square Feet of Gross Floor Area (GFA) (p. 143)

(Value derived by averaging the mean number of employees per 1,000 sq. ft. of GFA for Non-Refrigerated and Refrigerated space in the Northeast).

(3) Source: NCNBR, Rutgers University, April 27, 2006. The impervious surface area for new dwelling units large lot zoned areas (*) is based on an average 15% impervious surface value (per NJDEP LU/LC) and a project determined average homestead area of 0.50 acres. No impact value is attached to the remaining undeveloped area. The impact percentage factors for the other residential composite zones represent weighted averages of NJ Highlands Percent Impervious Surface for all residentially developed lands in that composite zone. The raw data was obtained by overlaying NJ Highlands Zoning and DEP 2002 LU/LC spatial data files, and extracting the calculated percent impervious surface area attached to each LU/LC residential developed land polygon and the acres of associated developed land in each intersecting municipal zone polygon. The impervious surface areas in each municipal zone within the composite zone were aggregated and then divided by the total developed residential land area, to produce a weighted IS average for each composite zone.

(4) Source: Center for Urban Policy Research (CUPR), September 2000. NJGS Consumptive Use Coefficients. For consumptive uses, a factor of 29% is utilized. For depletive uses, a factor of 100% is used

(5) Source: NJDEP N.J.A.C. 7:10 Safe Drinking Water Act Regulations Adopted November 4, 2004, 7:10-12.6 Water Volume Requirements and State Plan Impact Assessment

(6) Source: NJDEP N.J.A.C. 7:14A-23.3 Pollutant Discharge Elimination System: Technical Requirements For TWA Applications; Projected flow criteria