LONDONDERRY, NH PLANNING BOARD

MINUTES OF THE MEETING OF MAY 11, 2011 AT THE MOOSE HILL COUNCIL CHAMBERS

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Members Present: Art Rugg; Mary Soares; Lynn Wiles; Laura El-Azem; Chris Davies; Tom Freda, Ex-Officio; Rick Brideau, CNHA, Ex-Officio; John Laferriere, Ex-Officio; Dana Coons, alternate member; Leitha Reilly, alternate member

Also Present: André Garron, AICP; Tim Thompson, AICP; John Trottier, P.E.; Libby Canuel, Community Development Secretary

A. Rugg called the meeting to order at 7 PM. A. Rugg appointed D. Coons to vote for C. Tilgner and L. Reilly to for M. Soares until she arrived.

Administrative Board Work

A. Reinstatement Request - Crowell's Corner Site Plan, Map 12, Lot 68

T. Thompson referenced the letter from Chris Paul, owner of 2 Litchfield Road, requesting a reinstatement of the site plan that had expired in 2010. In a meeting with C. Paul on December 2, 2010 between T. Thompson, J. Trottier, and the Senior Building Inspector informed C. Paul that in order for the Planning Board to consider reinstating the plan, the \$16,000 restoration surety and the \$3,400 site inspection escrow would need to accompany the written request for reinstatement, along with justification and a realistic commitment to complete all the require site work and inspections. T. Thompson stated that the plan still complies with current ordinances and regulations.

T. Freda recused himself and was not voting.

[M. Soares arrived at 7:07 PM.]

C. Paul, 118 Hardy Road and owner of 2 Litchfield Road, said he has met with staff and the Fire Inspector several times and has complied with all of the requests with the exception of the fire system, paving of the parking lot and some landscaping that will take place once the site plan is reinstated. He has also renewed the requisite driveway permit with the NH Department of Transportation (NH DOT). T. Thompson added that three impact fees related to Traffic, Police and Fire will be due when the applicant seeks Certification for Occupancy from the Building Department.

A. Rugg asked for questions and comments from the Board. J. Laferriere asked why the site plan expired. T. Thompson explained that it had expired in June 2010, during which time a court case ensued and ended when C. Paul withdrew his appeal to the NH Supreme Court.

D. Coons made a motion to grant a reinstatement for Crowell's Corner Site Plan, Map 12, Lot 68 (2 Litchfield Road) which will be valid for one year from the date of this vote. M. Soares seconded the motion. No

discussion. **Vote on the motion: 8-0-0**. Reinstatement Request for Crowell's Corner Site Plan was granted, valid for one year.

B. Selection of Planning Board Representative to Master Plan Steering Committee

L. Reilly volunteered to represent the Planning Board for this Steering Committee. M. Soares volunteered to act as the alternate representative. T. Thompson said that the Londonderry Housing and Redevelopment Authority, the Zoning Board of Adjustment and the Budget Committee have also chosen representatives. J. Laferriere said he will be representing the School Board. Four potential at-large volunteers have contacted T. Thompson. He said that all who express interest will

be interviewed at the June 1 Planning Board meeting to fill those three positions.

C. Regional Impact Determinations

T. Thompson reviewed the staff recommendation memo, recommending that both the site plan for 124-126 Rockingham Road LLC and the 2 lot subdivision for James and Cynthia Geulakos are not developments of regional impact, as they do not meet any of the regional impact guidelines suggested by Southern NH Planning Commission (SNHPC).

D. Coons made a motion to accept staff recommendations that these projects are determined not to be of regional impact under RSA 36:56. L. Wiles seconded the motion. No discussion. Vote on the motion: 9-0-0.

D. Discussions with Town Staff

T. Thompson thanked all those involved with the Apple Blossom Autism Walk on May 1, as well as all those who donated to and supported the event. He said the endeavor was very successful with over 60 walkers participating.

L. Wiles stated that the Open Space Task Force will be holding a meeting in the Moose Hill Council Chambers on Wednesday, May 25 to solicit public input and/or questions on any issues regarding open space in Londonderry.

Public Hearings/Workshops/Conceptual Discussions

A. Workshop – Woodmont Commons PUD Master Plan Discussion

Michael Kettenbach, Rick Chellman and John Michels stated they would be reviewing the refined zoning map that identifies the 13 various sections of the project (a/k/a the "W areas") and the proposed uses therein.

M. Kettenbach began by addressing what he said are misconceptions about the project, the most prominent one being that a total of 3,600 units will be built. He said the applicant has consistently stated that 1,300 market rate units (or an average density of 2 units per acre) are proposed. The only way any additional housing would be built would be if the Board specifically asked for any non-market rate workforce or elderly housing on top of the 1,300 proposed. Secondly, this project will not introduce an additional 2,600 school children into the Londonderry

school system as has been stated, but will instead result in an additional 600 students based on the 1,300 unit proposal. With regard to a recent request to address the project at a limit of 100 acre increments, M. Kettenbach said it would simply not be feasible to do so because the project would no longer be economically viable. He said he has used the Planned Unit Development Master Plan ordinance as put forth by the Town and has relied on that from the inception of the project. T. Thompson added that staff would recommend that the Board ensure any exact number beyond the 1,300 proposed be recorded in the written portion of the PUD Master Plan. He also explained that the latest revision will not include the alternative scenarios reflecting the design change of W-2-12 based on whether Exit 4A is built or not. The submission will be based on the assumption that it will not be constructed, therefore W-2-12 will be primarily residential. If Exit 4A is eventually built, the applicant will be required to return to the Board to amend the PUD Master Plan at that time.

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J. Michels began the review of the 13 separate areas. He noted that the final written portion for the PUD Master Plan will include specific definitions of the various uses once they are decided. Additionally, if a use is determined to be appropriate but only at certain scale and/or scope, that will be specified as well.

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W-2-1 (a/k/a, "The Village Center"): One of the three "heavy use" sections will be W-2-1, the Village Center, where businesses and goods and services will be mixed with a variety of 545 maximum housing units. J. Michels read through the other uses and the maximum square footage for each (see attached). He clarified that the statement "Fast Food Restaurants are not allowed" refers only to those with drive-thrus. A. Garron asked that the clarification be added to the written document. D. Coons asked if "retail sales establishment" included all types of retail. J. Michels verified that it would, regardless of the scale, up to a combined total of 300,000 square feet. R. Chellman added that one 300,000 square foot would not be built and that an exact limit on the scale of the retail buildings will be added to the document later on. C. Davies asked that a density rating of the residential units be identified in each section while M. Soares asked that the actual acreage of each piece be added as well. R. Chellman said that in the case of W-2-1, the residential density would be six units per acre. He then proposed that an additional 10% of the 1,300 units could be dedicated to senior and affordable housing, but following some discussion it was decided that with the overall time span of the project being 20 years or more, it would be too difficult to determine whether that number would be appropriate. T. Thompson has requested that an interactive spreadsheet be provided by the applicant so that during the site plan and subdivision process, staff can easily subtract what has been approved from the overall density, both within its specific area as well as the overall project and stay within the parameters of the PUD Master Plan. L. Wiles noted that medical use was mentioned in the list of maximas (i.e. TND 2) but not in the written document. A. Rugg replied that he assumed the written document was the most up to date. R. Chellman said it would be up to the Board as to whether it should be included. D. Coons also asked that a bus terminal be specifically identified in the appropriate area (most likely in the Village), even if it is already included under the broader heading of civic uses.

W-2-2: J. Michels explained that this would be primarily a variety of 195 units of housing along with a small amount of low impact recreational and civic space in a medium density (5.9 per acre maximum). It will serve as a transition zone between the commercial offices and hotels along I-93 and the Village (see attached). Commercial activity would be restricted to such things as home based businesses, child and adult day care and commercial recreation (e.g. bike rentals). T. Freda asked why parking structures would be allowed when most commercial and professional businesses are prohibited. J. Michels replied that it could be small scale satellite parking for W-2-3. J. Laferriere and L. Reilly expressed difficulty in being able to envision some of these combinations in W-2-2 as well as 2-1. R. Chellman clarified that sheet TND 1 is a guide of what is being envisioned for each area; therefore section W-2-2 appears to be entirely residential. The written description, however, includes more uses because the intent at this stage is simply to rezone these sections of land in case the opportunity should arise at some future date where other uses such as hotels and/or hospitals become appropriate. The list of uses in the written document is not what is anticipated, but instead allows the builder the flexibility should those opportunities arise. Following further discussion, R. Chellman offered to remove freestanding parking structures as described before. He said that parking would be restricted to that associated with an apartment complex.

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<u>W-2-3</u>: Large-scale businesses and commercial uses (i.e. offices and hotels) along with retail and civic uses will act as a visual and sound buffer between I-93 and the residential areas to the west (see attached). Some residential (up to 25 units) could be included, most likely next to the professional offices. D. Coons asked and received clarification that the prohibition of "fast food restaurants" would not include a cafeteria within an office building. R. Chellman noted that the uses here would produce the most significant traffic generator within the project west of I-93.

<u>W-2-4</u>: This is another area of transition, this time being one between the Village and commercial buildings on the highway fringe. It can also be another possible location for the hospital first discussed under W-2-1. While there may be some multifamily use (21 units maximum) on an edge of W-2-4, single and two-family housing would not be permitted. Proximity to the Park and Ride at Exit 4 has led the developer to propose that interactive uses such as a convention center, educational center, hotel, or performing arts center would be appropriate here. Retail sales would not be allowed. M. Soares commented that at some future point, the proposed "business center development" mentioned in the written document would need to be defined.

W-2-5 (a/k/a "The Northern Corridor"): Primarily comprised of residential (up to 340 units), some small scale mixed use development would also inhabit this area, along with accessible public spaces. J. Michels noted that the small amount of commercial space identified on TND 1 would probably be a little larger in actuality. This area will connect to the Village Center on W-2-1. He also mentioned that there have been several comments about whether an inn would be appropriate in that area. While it would fall under the definition of a hotel, it would be smaller and more like the Bedford Village Inn (without the convention amenities, but with a restaurant). The consensus of the Board was that an inn

would be appropriate but that business uses in this area would need to be restricted even more than they already are so that the scale and uses are very low-impact with regards to the residential aspect. J. Michels said the list would be pared down. An example of the kind of reduced scale on a business came when D. Coons stated that under the definition of "rental car facility," he would prefer to see a small office accompanied by just a car or two as opposed to the scale one would see at the airport. M. Kettenbach suggested using Zipcars because more could be on hand but not take much more space. L. Wiles asked if gas stations would be included anywhere in the overall plan. J. Michels said it would be considered a "motor vehicle, limited service." It could be included here or in W-2-1 and W-2-3. A. Garron posed limiting on the number of gas stations in a given area so a cluster is not developed.

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A. Rugg asked for public comment on the areas addressed so far. Joe Green, 25 Mammoth Road, asked the Board to revisit and make some decisions about whether to include any additional senior and workforce housing on top of the 1,300 total units as well as the total amount of professional office space in W-2-3. A. Rugg reiterated that as the Master Plan is revised, certain items can be removed, but for now it would be better to be as inclusive as possible so as not to hinder unforeseen possibilities. M. Soares added that the Council and the public were going to have more input on whether they would like to see additional specialized housing later on.

Mike Speltz, 18 Sugarplum, suggested adding to other limitations; one for the total amount of impervious surface and the other a minimum of acres of prime and statewide significant agricultural soils that must be preserved from development.

Ann Chiampa, 28 Wedgewood Dr., asked if enough square footage from the total allotted for civic uses will be adequate to support the number of children that will be added to the school system. Based on the sizes reported of Matthew Thornton (74,000 square feet) and the Middle School (163,000 square feet), she suggested the overall civic use maxima be increased and the developer agreed. L. Wiles noted, however, that schools are currently under capacity and he and A. Rugg agreed that the need for an additional school within Woodmont Commons would not be likely. Comments about the lack of need for a police station arose, although M. Soares stated she would like to see the existing Woodmont building be staffed with at least some police officers. J. Michels said that Chief Hart has already been approached on the idea. A. Chiampa also expressed concern for the addition of commercial aspects to W-2-5 when that was originally dedicated to residential use, as well as a lack of greenspace for those residences.

Jack Falvey, 22 Cortland St., stated that while Woodmont Commons is designed to be "walkable," those who live in other walker-friendly areas like Century Village still have cars and therefore still contribute to traffic. Therefore, assuming a minimum of two people per home in Woodmont Commons, there would be 2,600 cars which would be of great concern to those already living in the area. A. Rugg replied that the 1,300 figure may be reduced as the Board moves into the more detailed phase and traffic concerns force the issue.

<u>W-2-6</u>: While some retail, restaurant, and civic uses are allowed here, the main focus is for publicly accessible passive recreation and related commercial uses (e.g. kayak rentals, etc.). J. Laferriere asked who would maintain the recreational area. M. Kettenbach suggested having fees built into the commercial kiosk rental costs which would fund the maintenance. Maintenance agreements with the users could be established as well. L. Reilly asked if the pond and island could support any other use, especially if the pond dries up. Considering it holds the runoff for the Woodmont orchard area and seems to be continually fed year round, there was no concern that it would dry up. Because there are wetlands there, no other uses would be allowed.

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<u>W-2-8</u>: This will be a residential corridor along Gilcreast which will match the one-unit per acre residential density across the street (maximum of 10 units). The only possibility for commercial activity would be through a home occupation granted by the Zoning Board or a Bed and Breakfast which is currently allowed with conditions in the AR-I zone. Pathways around the water are anticipated. A. Rugg verified that three rows of apple trees will be left along the road as a buffer.

<u>W-2-7</u>: The residential uses planned here are dependent upon the outcome of the pond size and configuration. They would include everything except Assisted Living, Nursing Homes, Elderly Housing in Mixed-Age Building, etc. (see attached). Some civic uses are allowed (up to 5,000 sq. ft.) along with some limited commercial uses (up to 10,000 sq. ft.). A walkway between W-2-7 and W-2-1 may be sought with the approval from the owners of abutting map and lot 10-1.

<u>W-2-9</u>: This area at the corner of Gilcreast and Pillsbury would provide residential (up to 25 units) and civic uses (up to 5,000 sq. ft.), and limited commercial activity suited to the surrounding environment. Again, the makeup of the uses will be dependent on the final outcome of the pond. J. Michels suggested that a small inn could be a possibility where the pond juts into this section. D. Coons felt this area would be a more appropriate place for an inn than W-2-5. J. Laferriere asked that this area have the same limited uses as W-2-8. L. Wiles asked that any commercial activity with regard to the pond be kept towards the end that meets W-2-1. The overall consensus was to consider a small inn along with the residential in this area.

<u>W-2-10</u>: This would be another strictly residential area like W-2-8 that will act as a buffer and match the existing density across the road.

<u>W-2-11</u>: See W-2-10. C. Davies asked it be specified in the written description that the density along the edges will match the existing density of adjacent lots.

<u>W-2-12</u>: If Exit 4A is not constructed, this will be a mix of 120 residential units. Non-residential uses will be small in scope and will support the surrounding area. A limited amount of civic, retail and professional office use will be allowed. The Nutfield Country Store on the corner on Mammoth Rd. and Shasta Dr. was used as an example of the kind of scale envisioned.

<u>W-2-12</u>: Another transition zone of up to 42 residential units with some civic uses and a tree buffer. C. Davies again asked that the matching density be written into the written document.

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E-2-1: Up to 650,000 sq. ft. of both retail and business uses (except for a hospital), 7 office buildings totaling 700,000 sq. ft, 15,000 sq. ft. of civic uses and a maximum of 800 housing units could go in this area. Much will depend on what is decided for the Village. The edges would be greenspace and/or residential homes to buffer adjacent residential areas. M. Kettenbach said this portion would have a true mix of residential and business use with retail use, where, for example, residences or offices can be above or below retail uses, including larger box stores. L. Reilly asked why a hospital would not be considered for an area this large and with easy access to 4A. M. Kettenbach said it was in response to requests from the public but that it could be added back in. The consensus was to put it back in for consideration.

A. Rugg asked for public comment. Mike Brown, 5 Carousel Ct., asked the Board and developer to keep the scale, use, and look of the project in mind as the process continues in order to keep it palatable to the public. He asked if the current phasing in the zoning ordinance regarding AR-I would apply here and T. Thompson replied that it would, unless specifically changed during the PUD Master Plan process. In that case, he asked that it not be exempted in any way. He agreed with J. Laferriere that W-2-9 should be made strictly residential.

Mary Tetreau, 15 Isabella Dr., stated her interest in having affordable housing as part of the plan.

A. Chiampa, 28 Wedgewood Dr., asked why there would be a roundabout in the W-2-12 since it would slow traffic on the Hovey Rd. thruway. R. Chellman said the intent was specifically to slow the traffic down. T. Thompson added that the roadway network itself has not been developed fully, nor reviewed by staff at this stage, but would be a topic for future meetings.

Following further discussion of Exit 4A west, M. Soares suggested placing a note in the PUD Master Plan that if the exit to the west is to be created, the developer must return to the Planning Board to amend the existing Master Plan. R. Chellman said the roadway would be designed with the expectation of making proper accommodations if 4A west was constructed.

A. Chiampa also asked the developer to consider retaining some portion of an apple tree buffer along Hovey Rd similar to what will be done on Pillsbury and Gilcreast Roads.

Chuck DeRossi, Old Derry Road, asked if the apple trees to be saved will be maintained by the Town. A. Rugg said maintenance would be up to the entity that governs the development.

The next conceptual session for Woodmont Commons will take place at the June 8 meeting and will include the list of questions that have been posed by the public to both the developer and the Board and have been compiled by T. Thompson into

a PowerPoint presentation. L. Reilly asked what the next stage of discussion T. Thompson replied that it is up to the developer as to how comfortable he feels with the land uses as they have been discussed here and at the biweekly orchard meetings. R. Chellman said it would be possible that a formal submission could come as soon as June 8. If not then, it would be formally submitted in the next couple of months.

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B. Chinburg Builders Inc., Map 16, Lot 38 - Continued Public Hearing for a 51 lot (Phase I) Conservation Subdivision and Conditional Use Permit.

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Jonathan Ring from Jones & Beach Engineers, Inc., was joined by Eric Chinburg and Dave Lauze of Chinburg Builders and & hydrogeologist Jack McKenna, from Hydroterra Environmental Services. J. Ring explained that since the April 13 hearing, the Dredge and Fill permit and the waste water connection permits have been issued by the State. A hydrogeologic assessment report was submitted regarding the use of on-site wells in the project (see attached). J. Ring read into the record items E, F, and G of the Summary of Findings on page 7 (see After a complete build out of the project with 133 homes, the hydrogeologist has determined that available water surplus would range between 28 and 80 million gallons. It would provide sufficient water for the 59,850 gallons per day (qpd) needed for the residential subdivision and the water supply would not be negatively impacted by the Auburn Rd Landfill site based on the proposed bedrock withdrawals. A. Rugg asked if the report was based on ground water, bedrock water, or both. J. McKenna said both, but the expectation is that it bedrock wells would primarily be used. He added that the site of map and lot 16-38 was reviewed as well as the larger watershed that would contribute to the bedrock wells.

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J. Trotter stated that this application had been accepted as complete on March 2 and waivers were granted at the same time. On April 13, the requested Conditional Use Permit was granted. He then summarized the Sewer Utility and Hydrogeology notes from the DPW/Stantec memo.

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T. Thompson said that staff is confident, based on the hydrogeological report, that the 50 lots of Phase I specifically can be supported by wells and recommends conditional approval as outlined in the staff recommendation memo.

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C. Davies asked what hydro fracturing would do to nearby existing wells. He also asked what the cost would be to install a single water supply system versus the cost of 133 wells. T. Freda asked about the comment in the report that notes that lower water levels on site and off site and withdrawal from beneath the abutting lands can occur "under less than normal to drought conditions" once the project is built out. J. McKenna said that every well affects the water table to some degree and that with the relatively few wells in the area; even the entire 133 wells would not create a significant impact in his opinion. He and J. Ring clarified that while DES would consider a water supply system to be a large withdrawal, individual wells do not create a high, continuous demand from one central point in the bedrock and would not cause the same kind of impact. D. Coons asked what would preclude the use of public water in some areas and wells in the others. J.

50 Ring said it was mainly a cost factor and feasibility issue due to the elevation of the water tank at Exit 5 that would be used. J. Laferriere asked if a supplemental pump station could be used to boost the pressure but J. Ring said that would also be cost prohibitive. If at some point after the first Phase is built, the water level becomes a situation, wells for the rest of the project can be revisited.

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A. Rugg asked for public input. Chuck DeRossi, Old Derry Road, did some research and found that there is a slight possibility that once water is drawn down in the area, it could be siphoned back from the landfill area. He also discovered that residents in Derry were placed on municipal water because of a contamination issue at Scobie Pond. He asked that Town water be required for this entire project, particularly since Stantec cannot corroborate the methodology used by J. McKenna to assert that the entire 133 homes will not adversely affect the water supply in the area. He added that the municipal sewer system will prevent water from percolating back into the water table via a leachfield and will instead carry the water used off site completely. J. Ring said that infiltration beds will be used for each house where roof water runoff will be recharged into the ground. The Alteration of Terrain permit being sought through the State will also require the developer to recharge a volume of water into the ground which will be done through a gravel wetland. J. McKenna added that the State uses very conservative standards, for example requiring the assumption of 150 gallons used per day per bedroom when typically what would be used would be 50-75 gallon per day range. E. Chinburg reminded the Board and audience that Stantec has not yet met with the hydrogeologist to review the methodology and state whether or not they agree with it. He also reminded them that the conditional approval being sought is only for the first 50 houses, which Stantec did support.

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There was no further public comment

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D. Coons made a motion to conditionally approve the subdivision plan for Chinburg Builders, Inc. map 16, lot 38 based on staff recommendations dated May 11, 2011 with the following conditions:

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"Applicant", herein, refers to the property owner, business owner, or organization submitting this application and to his/its agents, successors, and assigns.

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PRECEDENT CONDITIONS

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All of the precedent conditions below must be met by the applicant, at the expense of the applicant, prior to certification of the plans by the Planning Board. Certification of the plans is required prior to commencement of any site work, any construction on the site or issuance of a building permit.

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1. The Applicant shall address the following relative to the revised and submitted project drainage report:

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a. The pipe summary table provided with this submission indicates reaches 12R, 14R-16R, 101R-105R with different pipe sizes than indicated on the plans and used in the analysis. The Applicant shall review and revise the summary table and analysis and plans, as necessary, to be consistent.

- b. The revised analysis indicates the size of pond 200 has increased with this submission, but the design for the pond shown on sheet R2 appears unchanged from the previous submission. In addition, the revised analysis indicates the size of pond 400 has also increased, but the pond does not appear changed on the grading plans. The Applicant shall review and revise the plans and report to be consistent.
- c. The Applicant update the riprap apron sizes at FES#1 and FES#3 listed on the sheets R1 and R2 to be consistent with the updated calculations.
- d. The Applicant's revised analysis at pond 200 indicates the minimum of 12" of freeboard above the 50-year elevation (352.02) is not provided in accordance with section 3.08.G of the regulations with a top of embankment elevation of 352.50. We note the top grate of the outlet structure is not included in the analysis. The Applicant shall review and revise the design, as necessary, in compliance with the regulations.
- e. The Applicant shall review and verify the 17" height at the secondary weir for the outlet structure information at pond 202 in the analysis, which is inconsistent with the design table on sheet D3. The Applicant shall review and revise to be consistent.
- f. The Applicant's report does not clearly address how the proposed off-site utility improvements and associated impacts for the project would not impact lot 60-3. In addition, the abutter summary table for the project indicates no impacts to the lot, but it is unclear how this would occur with the proposed off-site disturbance under phase 1 that is proposed across the lot. The Applicant shall provide additional information to clearly indicate the off-site improvement will not impact abutting lot 60-3 as implied and as previously requested. The information should clarify compliance with the regulations is achieved between pre and post development conditions.
- g. It appears that most of the runoff from post subcatchment 407 would pool adjacent to the driveway in the vicinity of the 348 contour on lot 38-36, and could not flow into pond 400 as implied by the analysis and noted in the Applicant's response letter, based upon the indicated revised grading depicted on sheet R1 in the plan set. Proposed contours 348 and 350 appear to be missing in this area. In addition, the subcatchment 407 calculations does not account for the additional tree removal to address the proposed 352 contour shown with this submission or the riprap aprons as previously requested. The Applicant's response letter states that subcatchment 407 was revised, but it is still unclear how the subcatchment will drain to the pond as stated. The Applicant shall update the analysis and/or revised the grading design (including providing spot elevations) to clarify the proposed runoff design intent and for proper construction.
- h. The analysis indicates the entirety of the subcatchment 110 runoff flowing to the cul-de-sac at CB#30, but the grading design indicates a portion of the subcatchment flow would drain to the

swale along the roadway at lots 50 and 51 and flow to a culvert under the driveway to lot 51 and thus, bypass CB30. The roadside swale at lots 50 and 51 is depicted on the roadway cross sections. The Applicant shall review the delineation for subcatchment 110 and address the indicated grading design adjacent to the cul-de-sac and revise as necessary to provide an analysis consistent with the design plans.

- i. The updated analysis for subcatchment 700S does not appear to address the riprap swale and apron. In addition, the Tc slope for subcatchment 701 does not appear to be representative of the proposed conditions. The Applicant shall review and update accordingly.
- 2. We understand the proposed sanitary sewer system for the project will be a privately owned and operated by a utility company and that the Applicant has submitted additional information relative to the new sewer utility necessary for obtaining the Londonderry Sewer Discharge Permit for the project that is currently under review by the Town. The Applicant shall update as necessary meeting Town approval and obtain a Londonderry Sewer Discharge Permit for the project in accordance with sections 4.14 and 4.18 of the Subdivision Regulations.
- 3. The Applicant notes the state permits will be provided when received in the response letter. We understand the NHDES Site Specific (AoT), NHDES Wetlands and NHDES Sewer Discharge Permits for the project have not been received at this time. The Applicant shall obtain and provide copies of all project permits in accordance with section 4.14 of the Subdivision Plan Regulations and indicate the approval numbers on the cover sheet and subdivision note 5 on sheet G1.
- 4. The Applicant shall address/clarify the following on subdivision plans, sheets A-1 to A-11:
 - a. The Applicant has previously provided documentation relative to covenants for the project that are currently under review by the Town. The Applicant shall verify the responsibility for the operation and maintenance of the private detention basin shown on sheet A9 in the covenants meets approval of the Town.
 - b. The updated plans indicate iron pins along the street right-of-way of Old Derry Road, which does not comply with section 3.02 of the regulations (stone bounds). The Applicant shall provide proper monuments along the street right-of-way of Old Derry Road per section 3.02 and 4.12.C.4 of the regulations. In addition, the Applicant shall provide the curve information along Old Derry Road boundary on sheets A2 and A3 that is missing on this submission.
 - c. The Applicant shall provide a slope easement along Old Derry Road for the proposed shoulder improvement shown on sheet R3 west of the temporary emergency access as indicated in the previous submission.

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- d. The Applicant shall provide the Owner signatures on the plans that are missing from this submission.
- The Applicant shall provide the existing topography on the existing 5. conditions plans that is missing from this submission.
- 6. The Applicant shall address/clarify the following on the roadway grading plans -sheets R1- R5:
 - a. The plans identify several swales, but the detail provided on sheet D1 does not include the dimensions of each swale for proper construction. The Applicant shall update the detail to include dimensions for each swale consistent with the drainage analysis and report.
 - b. The Applicant shall review and clarify the proposed grading design for the updated proposed gravel access drives to serve the detention basins provided with this submission. It appears that proper grading of the access drives has not been completed at this time. The Applicant shall include proposed contours and spot elevations as necessary for clarity and proper construction. In addition, it is unclear how the proposed riprap swale runoff from FES#8 will be maintained at the driveway crossing shown on sheet R5 at pond 110. The applicant shall clarify. The Applicant shall confirm the proposed access driveways to each pond are adequately designed and configured with the Department of Public The Applicant shall revise as necessary meeting the Works. approval of the Town.
 - c. The invert elevation at FES#11 at pond 202 on sheet R3 is noted at 342.85 and is below the forebay bottom of 343.0 and would not properly drain. It appears the pipe inverts at CB#37 have been updated. The Applicant shall review and update the pipe outlet as necessary to provide proper drainage. In addition, the Applicant shall clarify the configuration and depth of the riprap swale from the pond outlet to the headwall on sheet R2 for proper construction. The Applicant shall also update the sawcut limits to a diamond shape consistent with the Town's standard detail R105. In addition, the Applicant shall confirm the proposed wetland impact area was included under the wetland permit application that was recently submitted for the project.
 - d. The Applicant shall extend the location for FES#3 and FES#1 to within the basins, and update the riprap apron information to be consistent with the riprap dimensions shown in the drainage report.
- 7. The project is located along a significant portion of Old Derry Road. The project plans indicate minor improvements at the proposed intersections and replacement of a culvert on Old Derry Road associated with the proposed drainage system. The Applicant shall arrange a meeting with the Department of Public Works to discuss if additional offsite improvements are necessary under this project.

1 2

- 8. Chinburg Builders, Inc. shall petition, and obtain approval, for granting a private sewer utility in the Town of Londonderry from the New Hampshire Public Utilities Commission (NHPUC) to operate and maintain a sewer utility to service the residential lots once Map 16 Lot 38 is subdivided, upon terms and conditions as the NHPUC and the Town of Londonderry permits in accordance with applicable laws and regulations.
- 9. This project is dependent on a related lot line adjustment plan and discontinuance of a Class VI roadway through the subject parcel. The Planning Board shall not grant final approval to this project until such time that the associated lot line adjustment (including the roadway discontinuance) are granted final approval by the Planning Board (and Town Council for the roadway discontinuance).
- 10. Note all waivers and the Conditional Use Permit granted on the plan.
- 11. The Applicant shall provide a digital (electronic) copy of the complete final plan sent to the Town at the time of signature by the Board in accordance with Section 2.06.N of the regulations.
- 12. The applicant shall provide a check for \$25 (made payable to the *Rockingham County Registry of Deeds*) to pay for the LCHIP tax that became effective on recording of all plans and documents at the registry on July 1, 2008.
- 13. The applicant shall note all general and subsequent conditions on the plans (must be on a sheet to be recorded, or a separate document to be recorded with the subdivision plans), per the new requirements of RSA 676:3.
- 14. Outside consultant's fees shall be paid within 30 days of approval of plan.
- 15. Financial guaranty if necessary.
- 16. Final engineering review

<u>PLEASE NOTE</u> - Once these precedent conditions are met and the plans are certified the approval is considered final. If these conditions are not met within 2 years to the day of the meeting at which the Planning Board grants conditional approval the board's approval will be considered to have lapsed and re-submission of the application will be required. See RSA 674:39 on vesting.

GENERAL AND SUBSEQUENT CONDITIONS

All of the conditions below are attached to this approval.

1. The Applicant shall meet with the Town Staff and Town's review consultant to address the issues raised in the review of the Applicant's hydrogeology

report as it relates to the ability of the development to support wells for the full build-out of the project (133 lots) prior to submission of application for the future phases of the development to the Planning Board.

1 2

No construction or site work for the amended site plan may be undertaken until the pre-construction meeting with Town staff has taken place, filing of an NPDES-EPA Permit and the site restoration financial guaranty is in place with the Town. Contact the Department of Public Works to arrange for this meeting.

3. The project must be built and executed exactly as specified in the approved application package unless modifications are approved by the Planning Department & Department of Public Works, or if staff deems applicable, the Planning Board.

4. All of the documentation submitted in the application package by the applicant and any requirements imposed by other agencies are part of this approval unless otherwise updated, revised, clarified in some manner, or superseded in full or in part. In the case of conflicting information between documents, the most recent documentation and this notice herein shall generally be determining.

5. All required School, Library, Recreation, Traffic, Police, and Fire impact fees must be paid prior to the issuance of a Certificate of Occupancy for development of each new lot.

6. It is the responsibility of the applicant to obtain all other local, state, and federal permits, licenses, and approvals which may be required as part of this project (that were not received prior to certification of the plans). Contact the Building Division at extension 115 regarding building permits.

R. Brideau seconded the motion. No discussion. Vote on the motion: 7-2-0 with T. Freda and C. Davies in opposition. Plan is conditionally approved.

C. Conceptual Discussion - Fritz Brown, Zoning Ordinance provisions related to livestock (chickens)

Fritz Brown, 6 Thornton Road, was present to discuss a change to the livestock ordinance which would allow chickens (and chickens only) on less than two acres of land. After being featured in local newspapers, he has found others with less than two areas would like to have chickens as well. Surrounding towns allow poultry with few restrictions, usually prohibiting roosters, according to his research. A. Rugg mentioned that local farmers in Londonderry can provide the fresh eggs that F. Brown is ultimately looking for. T. Thompson noted that several years ago, a Planning Board workshop entertained amendments, some more restrictive and others less, to the agricultural section of the ordinance which were ultimately left unchanged, mainly due to opposition from the agricultural community. A. Rugg suggested F. Brown speak with some of those members to get their opinion before submitting a formal application to the Board. L. El-Azem gave her opinion that the request was a good idea and suggested refining the

proposal with regard to how many chickens would be allowed on a range of acreage. D. Coons agreed, but added that even though direct abutters may be supportive, his experience is that neighbors further away will most likely complain about noise, even without a rooster. L. Wiles argued that he posed that question to other towns and was told the only noise complaints were with regard to roosters. He also pointed out that people can keep multiple dogs which usually make more noise than hens. T. Thompson offered to research the idea further with the applicant and added that the Board could consider amending the ordinance to say, for example, that chickens are allowed on less than two acres with the granting of a special exception by the Zoning Board. This way, criteria can be set and abutters would be notified in case they have any objections beforehand. L. Wiles noted that "poultry" encompasses other birds such as geese and peafowl, therefore any proposal should be limited to "chickens." He also suggested that with less than two acres, the ordinance could restrict the owner to producing for personal consumption only.

1 2

Rich Maynard, 10 Wilson Road, stated that if one decides to use the chickens commercially, the State imposes limitations and requires licensing. He also stated he was in favor of the idea of expanding on the livestock ordinance for small scale use.

Martin Srugis, 17 Wimbledon Dr., said he was opposed to the idea because of the noise the affect on residential life.

Mike Brown, 5 Carousel Ct., agreed, saying that as a former Zoning Board member, he saw many instances where the expectations of homeowners in a residential setting that only residential activities will occur is often frustrated by the introduction of more agricultural uses. The Town may have its history based on agriculture, he said, but it is restricted to certain areas of town. The two acre minimum, from his experience, is a reasonable one based on the expectations of those who purchase homes where surrounding properties are under two acres. A change to the ordinance to suit one person runs contrary to the spirit of the overall ordinance. If any change is made to the ordinance, T. Thompson's suggestion of making it exception based, which would bring the individual issue before the Zoning Board, would be preferable to him.

T. Thompson relayed that he received a call from a resident in support of an amendment and who is also interested in having chickens on her property.

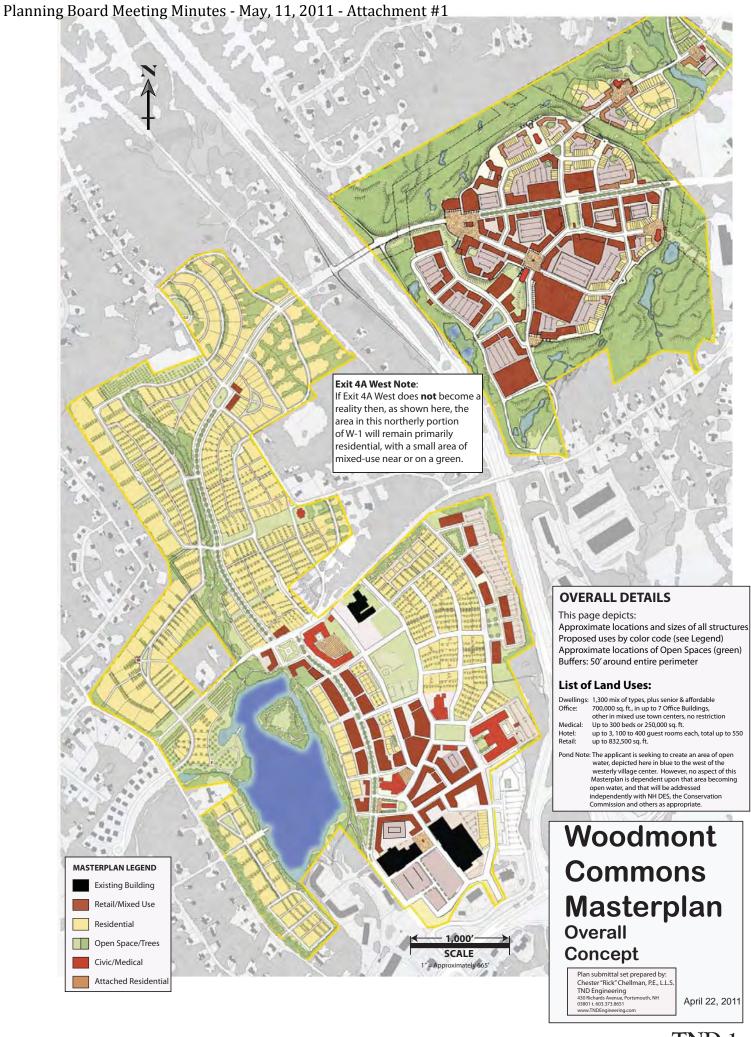
J. Laferriere disagreed with M. Brown and thought the ordinance should be reviewed with regard to chickens specifically, particularly for economic reasons.

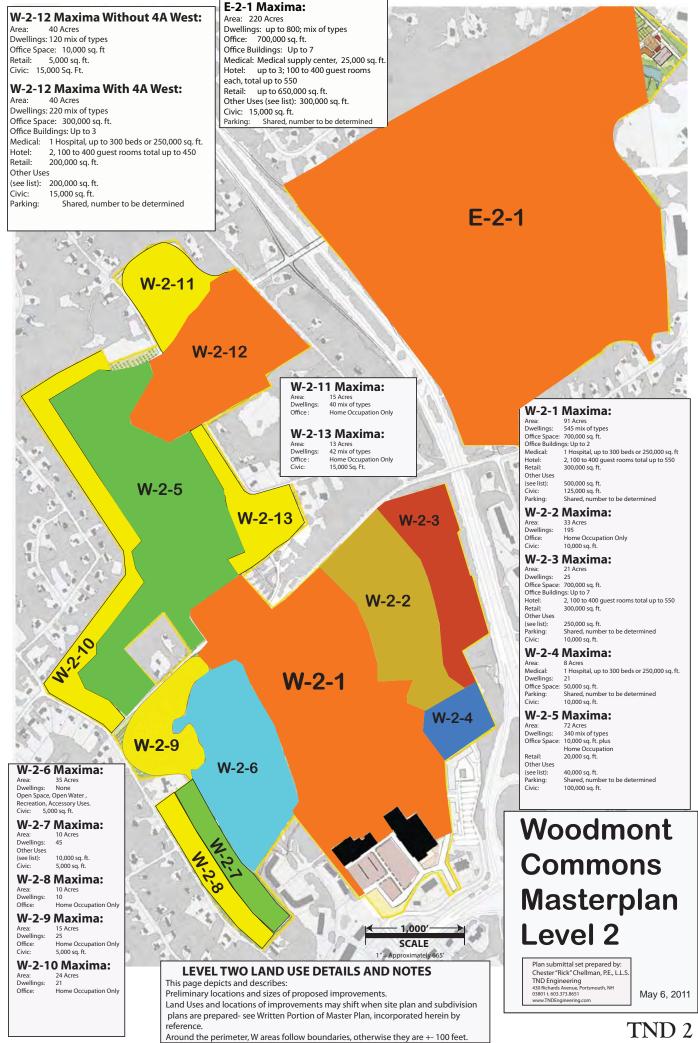
Matt Norris, 20 Tokanel Dr., spoke in favor of reviewing the ordinance for possible amendments but was concerned about an ordinance changing without the voters having the final say. T. Thompson explained the process which would ultimately end with the Town Council deciding whether to enact an amendment if the Planning Board recommends they review it. A citizen's petition requiring 25 signatures would also receive the input of the Planning Board, but regardless of their recommendation, it would ultimately go to the Town Council. In both situations, there would be public hearings where residents can speak, but the

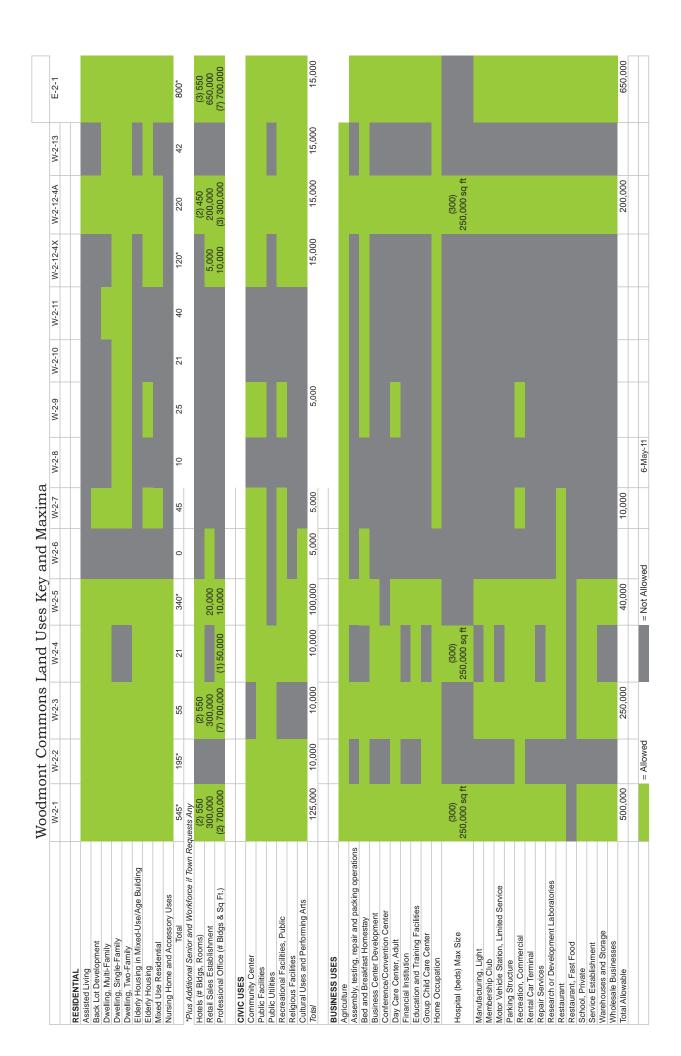
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Charles Tilgner, Secretary

1 2 3 4 5 6	public would not have the opportunity to directly vote on the issue under the Town Charter. L. Reilly was not in favor of any amendment. C. Davies thought is should be investigated. A. Rugg thought F. Brown should pursue a variance through the Zoning Board. The majority of the Board was not in favor of pursuing an amendment based on F. Brown's request.
7 8 9	D. Conceptual Discussion - L-Town Garage, LLC, potential rezoning of 525 & 527 Mammoth Road
10 11 12	No one was present for discussion. T. Thompson said he would reschedule this for the June 8, 2011 meeting.
13 14	Other Business
15 16	There was no other business.
17 18	Adjournment:
19 20 21 22	C. Davies made a motion to adjourn the meeting. M. Soares seconded the motion. Vote on the motion: 9-0-0. Meeting adjourned at 12:17 AM
23 24 25 26 27	These minutes prepared by Jaye Trottier and Libby Canuel, Community Development Secretaries.
28 29 30 31	Respectfully Submitted,

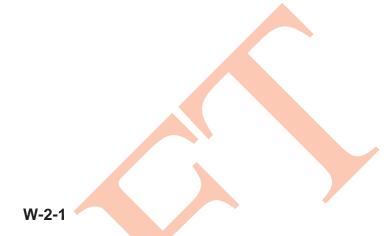






WOOODMONT COMMONS

AREA OVERVIEW SUMMARY SHEETS



Village Center

The primary intent of this area is to act as a business, goods and services center while also providing housing for a variety of lifestyles. The public environment in this area will be generally urban in character with buildings close to the public right of way. On-Street parking will be encouraged and parking lots will typically be relegated to the rear of buildings. This area will accommodate and foster the use of all modes of transportation equally.

Uses:

Residential: All Residential Uses are allowed with a total of up to 545 units.

Hotel: Up to 2 hotels with a combined total of up to 550 Rooms are allowed.

Retail Sales Establishment: A combined total of up to 300,000 square feet of Retail Sales Establishments are allowed.

Professional Office: Up to 2 Professional Offices are allowed with a combined total of up to 700,000 square feet.

Civic: All Civic Uses are allowed for a total of up to 125,000 square feet.

Business: Fast Food Restaurants are not allowed. All other Business uses are allowed for a total of up to 500,000 square feet.

Residential Neighborhood

The primary intent of this area is to provide a variety of housing and low impact recreational and civic space. This area is intended to be a medium-density residential buffer between commercial development on the west and east. Small scale care facilities may be considered appropriate for this area.

Uses:

Residential: All residential uses are allowed with a total of up to 195 units.

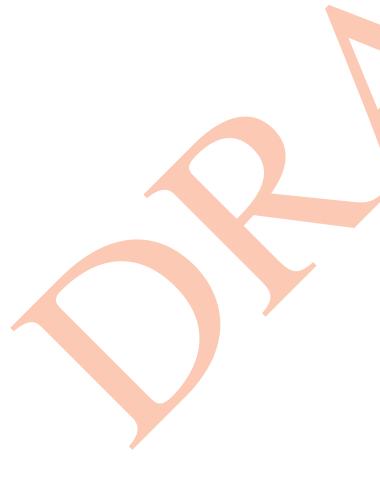
Hotel: Hotel uses are not allowed.

Retail Sales Establishment: Retail Sales Establishment uses are not allowed.

Professional Office: Professional Office uses are not allowed.

Civic: All Civic Uses are allowed with a total of up to 10,000 square feet.

Business: Agriculture, Bed and Breakfast Homestay, Adult Day Care Center, Group Child Care Center, Home Occupation, Parking Structures, and Commercial Recreation are allowed Business uses. All other Business uses are not allowed.



Highway Fringe

The primary intent of this area is to promote the large-scale business and commercial uses, such as offices and hotels that are suitable for the Town of Londonderry but may not be appropriate in the W-2-1. This area is meant to provide a visual and sound buffer between I-93 and residential units to the west.

Uses:

Residential: All residential uses are allowed with a combined total of 55 units.

Hotel: Up to 2 Hotels are allowed with a total of 550 rooms.

Retail Sales Establishment: Retail Sales Establishments are allowed with a maximum total square footage of 300,000 square feet.

Professional Office: Up to 7 Professional Offices are allowed with a combined total of 700,000 square feet.

Civic: Public Facilities and Public Utilities are allowed Civic uses for a total of up to 10,000 square feet. All other Civic uses are not allowed.

Business: Hospital and Fast Food Restaurants are not allowed. All other business uses are allowed with a combined total of 250,000 square feet.



Special Uses District

The primary intent of this area is to provide a transitional area between the Village Center and commercial buildings at the Highway Fringe. Due to its proximity to the Park and Ride, this area should be considered appropriate for uses utilized by people coming from outside of Londonderry and/or using public transportation. Interactive uses, including but not limited to, a convention center, educational facility, hotel or performing arts center would be considered appropriate for this area. Any residential use of this area will be medium-to-high density and single-family detached homes would not be considered appropriate in this area.

Uses:

Residential: Single-Family and Two-Family dwellings are not allowed. All other residential uses are allowed for a combined total of up to 21 units.

Hotel: Up to _____ Hotels are allowed for a combined total of up to _____ rooms. Retail Sales Establishment: Retail Sales Establishment uses are not allowed.

Professional Office: One Professional Office is allowed up to 50,000 square feet.

Civic: All Civic uses are allowed for a combined total of 10,000 square feet.

Business: Allowed Business uses are Agriculture, Business Center Development, Conference/Convention Center, Adult Day Care Center, Education and Training Facilities, Home Occupation, 1 Hospital with up to 300 beds and a maximum of 250,000 square feet, Membership Club, Parking Structure, Commercial Recreation, Rental Car Terminal, Research or Development Laboratories, Restaurant, Private School and Service Establishment. All other Business uses are not allowed.

Northern Corridor

The primary intent of this area is to provide a connection between the Village Center and Exit 4A. This area should be mostly residential with some small scale mixed-use development and accessible public spaces. Most uses are considered appropriate for this area with careful consideration of scale and visual compatibility with the neighborhood as well as health and public safety.

Uses:

Residential: All residential uses are allowed with a combined total of up to 340 units.

Hotel: Hotel uses are allowed.

Retail Sales Establishment: Up to 20,000 square feet of Retail Sales Establishment uses are allowed.

Professional Office: Up to 10,000 square feet of Professional Office uses are allowed.

Civic: Public Utilities as a Principal Use are not allowed. All other Civic uses are allowed for a combined total of up to 100,000 square feet.

Business: Hospital and Fast Food Restaurants are not allowed. All other Business uses are allowed with a combined total of 40,000 square feet.



Waterfront/Wetland

The primary intent of this area is to provide for publicly accessible passive recreation. Small supporting uses should be considered carefully for their contribution to the public realm and enhancement of the quality and character of the pond. Only non residential and small scale businesses are considered appropriate.

Uses:

Residential: Residential uses are not allowed.

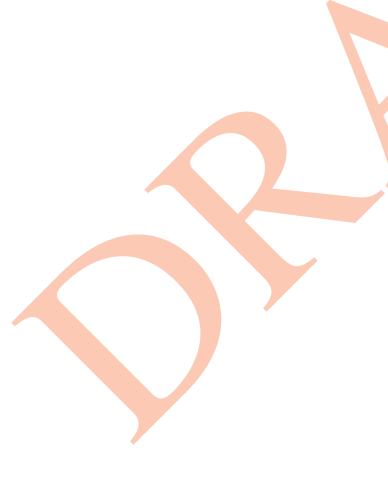
Hotel: Hotel uses are not allowed.

Retail Sales Establishment: Retail Sales Establishment uses are allowed.

Professional Office: No Professional Office uses are allowed

Civic: Public Utilities as a Principal Use and Religious Facilities are not allowed. All other Civic Uses are allowed with a combined total of 5,000 square feet.

Business: Agriculture, Commercial Recreation, and Restaurant Business uses are allowed. All other Business uses are not allowed.



Residential Waterfront

The primary intent of this area is to provide for residential uses and a pleasing, safe continuous pedestrian environment on the edges of the future pond. A variety of residential uses are permitted and unit types will depend on the immediate context and final pond size.

Uses:

Residential: Assisted Living, Elderly Housing in Mixed-Use/Age Building and Nursing
Home and Accessory Uses are not allowed. All other residential uses are allowed
with a combined total of 45 units.

Hotel: Hotel uses are not allowed.

Retail Sales Establishment: Retail Sales Establishment uses are not allowed.

Professional Office: Professional Office uses are not allowed.

Civic: Community Center, Public Facilities and Public Recreational Facilities are allowed with a combined total of up to 5,000 square feet. All other Civic uses are not allowed.

Business: Agriculture, Bed and Breakfast Homestay, Home Occupation, Commercial Recreation and Restaurant uses are allowed with a combined total of 10,000 square feet. All other Business uses are not allowed.



Residential Corridor

The primary intent of this area is to create a residential buffer between the existing homes facing Gilcreast Road and any activity created by the public use of the wetland. The residential buildings in this area and the general character of the public environment will be similar to the existing properties west of Gilcreast with the possible addition of pedestrian and cyclist amenities. Detached single-family homes and two-family homes are the only appropriate uses in this area.

Uses:

Residential: Single-Family Dwelling and Two-Family Dwelling Residential uses are allowed with a combined total of up to 10 units. All other Residential uses are not allowed.

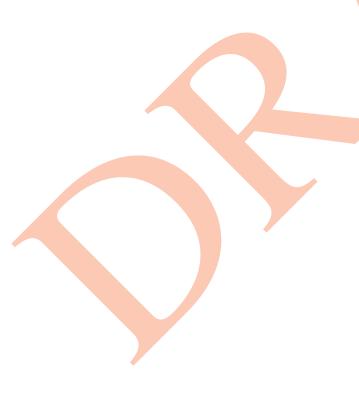
Hotel: Hotel uses are not allowed.

Retail Sales Establishments: Retail Sales Establishment uses are not allowed.

Professional Office: Professional Offices are not allowed.

Civic: Civic Uses are not allowed.

Business: Agriculture and Home Occupation are allowed Business uses. All other Business uses are not allowed.



Civic and Residential Boundary

The primary intent of this area is to provide a residential and civic use area compatible with the surrounding environment. Amenities may be included to foster a safe, pleasing and continuous environment along the wet land or future pond. Environmentally and culturally-related uses would be considered appropriate for this area with proper consideration given to traffic and parking requirements. An assisted life care center or Inn may be considered appropriate here as well.

Uses:

Residential: Single-Family Dwelling, Two-Family Dwelling, and Elderly Housing are allowed Residential uses with a combined total of up to 25 units. All other Residential uses are not allowed.

Hotel: One Hotel up to _____ rooms is allowed

Retail Sales Establishment: Retail Sales Establishment uses are not allowed.

Professional Office: Professional Office uses are not allowed.

Civic: Community Center, Public Facility and Public Recreation Facility uses are allowed with a combined total of up to 5,000 square feet. All other Civic Uses are not allowed.

Business: Agriculture, Bed and Breakfast Homestay, Adult Day Care Center, Home Occupation, and Commercial Recreation are allowed Business uses. All other Business uses are not allowed.



Residential Boundary

The purpose of this area is to provide a residential buffer between existing homes and the proposed development. Since these homes will be back-to-back with existing development, it is most important to keep lot size similar.

Uses:

Residential: Single-Family Dwelling and Two-Family Dwelling Residential uses are allowed with a combined total of up to 21 units. All other Residential uses are not allowed.

Hotel: Hotel uses are not allowed.

Retail Sales Establishment: Retail Sales Establishment uses are not allowed.

Professional Office: Professional Office uses are not allowed.

Civic: Civic uses are not allowed.



Residential Boundary

The primary intent of this area is to provide a residential transition between any commercial development and existing homes on Hardy Road.

Uses:

Residential: Single-Family Dwelling, Two-Family Dwelling, and Multi-Family Dwelling uses are allowed with a combined total of up to 40 units.. All other Residential uses are not allowed.

Hotel: Hotel uses are not allowed.

Retail Sales Establishment: Retail Sales Establishment uses are not allowed.

Professional Office: Professional Office uses are not permitted.

Civic: Civic uses are not allowed.



W-2-12 (Without 4A)

Residential Neighborhood Center

The primary intent of this area is to create a residential area consistent with the surrounding development. Any non-residential uses in this area will be supportive of the immediate environment and appropriately scaled as such. Most civic uses are appropriate here.

Uses:

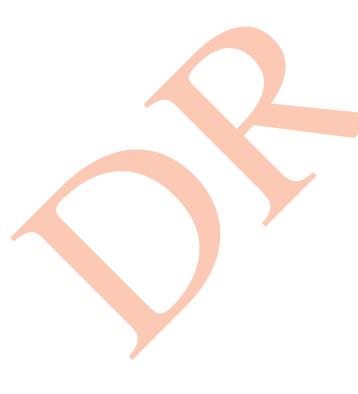
Residential: Single-Family Dwelling, Two-Family Dwelling, Elderly Housing and Mixed-Use Residential Uses are allowed with a combined total of up to 120 units. All other residential uses are not allowed.

Hotel: Hotel uses are not allowed.

Retail Sales Establishment: Retail Sales Establishment uses are allowed for a combined totally of up to 5,000 square feet.

Professional Office: Professional Office uses are allowed up to 10,000 square feet.

Civic: Public Utilities are not allowed. All other Civic uses are allowed with a combined total of up to 15,000 square feet.



W-2-12 (With 4A)

Highway Exit Mixed-Use Area

The primary intent of this area is to create a mixed-use development and commercial area on the east side of Exit 4A and W-2-1. if an when an Exit 4A West is approved. This area will then provide commercial activities without unduly affecting the existing nearby residential uses.

Uses:

If and when an Exit 4A West is approved, the land owners will come to the Planning Board and request approval of appropriate commercial uses for this area.



Residential Boundary

The primary intent of this area is to provide a buffer and transitional area between commercial development in W-2-5 and existing residential properties on Hovey Road. Civic and recreation uses would be considered appropriate in this area.

Uses:

Residential: Single-Family Dwelling, Two-Family Dwelling, Multi-Family Dwelling and Elderly Housing Residential uses are allowed with a combined total of up to 42 units. All other Residential uses are not allowed.

Hotel: Hotel uses are not allowed.

Retail Sales Establishment: Retail Sales Establishment uses are not allowed.

Professional Office: Professional Office uses are not allowed

Civic: Public Utilities are not allowed. All other Civic uses are allowed with a combined total of up to 15,000 square feet.



E-2-1

Commercial Center

The primary intent of this area is to provide a mix of business, goods, services and residential units in a dense, walkable area while also providing a smooth connection to Derry from I-93. The public environment in this area will be generally urban in character with buildings close to the public right of way. On-street parking will be encouraged and parking lots will typically be relegated to the rear of buildings. This are will accommodate and foster the use of all modes of transportation.

Uses:

Residential: All Residential uses are allowed with a combined total of up to 800 units plus additional Senior and Workforce housing if requested by the Town

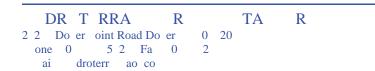
Hotel: Up to 3 Hotels are allowed with a combined total of up to 550 rooms.

Retail Sales Establishment: Retail Sales Establishments are allowed with a combined total of up to 650,000 square feet.

Professional Office: Professional Offices uses are allowed in up to 7 buildings with a combined total of 700,000 square feet.

Civic: All Civic uses are allowed with a total of up to 15,000 square feet. Business: A Hospital is not allowed. All other Business uses are allowed with a combined total of up to 650,000 square feet.







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RE: Hydrogeological Groundwater Assessment for the Lorden Commons Proposed Housing Development located off of Old Derry Road in Londonderry, New Hampshire (Job # 22047 921-1)

Dear Sirs:

HYDROTERRA Environmental Services (HYDROTERRA) is pleased to submit this letter report regarding the results of the groundwater availability analysis for the proposed residential housing development (total 133 residential homes) (Map 16 Lot 38) to be located off of Old Derry Road in Londonderry, NH (the Subject Property). The location of the Subject Property is shown on Figure 1. The layout of the proposed housing development, building phases, drainage and topography are presented in the Jones & Beach Engineers Drawing Set OV1 1-127 3/25/11.

Overall Project Understanding and Objectives of the Groundwater Analysis

The proposed Lorden Commons Development includes a four phase build-out of 133, 3- bedroom homes. The first Phase includes 50 homes to begin construction in 2011. Each home is expected to have a single, privately owned/operated water supply well. Based upon the site geology and the layout of the property lots, these wells are anticipated to be bedrock wells between 300 to 600 feet deep and positioned along the edge of each lot. Using an estimate of 150 gallons per bedroom per day, each well will be required to yield approximately 450 gallons per day (gpd). The 150 gpd per bedroom estimate is a conservative value used by the New Hampshire Department of Environmental Services (NHDES) Water Division. Typically homes consume 75 to 100 gpd per bedroom. The estimated water needs for the total build-out of the development is anticipated to be approximately 59,850 gpd, based upon the 150 gpd per bedroom conservative value.

The objective of this evaluation was to assess hydrogeologic conditions on and adjacent to the Subject Property in order to evaluate the availability of groundwater resources for the Lorden Commons Development. In addition, potential impacts from offsite hazardous waste contamination at the Auburn Road Landfill Superfund Site was also included in the analysis.

The scope of work included a file review of existing available Site Plans and regional/local hydrogeology for characterization of the subsurface geology and hydrogeology of the Subject Property and surrounding area, and the development of a conceptual hydraulic model and water budget for potential long term hydrogeological impacts of the groundwater withdrawal from the proposed residential wells.

Site Location and Description

The Subject Property is located in the northeastern edge of the Town of Londonderry, close to Interchange 5 of I-93 and the Derry town line. The Subject Property is currently wooded undeveloped lots. Access to the property is from Old Derry Road in Londonderry. The property abuts Old Derry Road to the north. Further north are existing residential homes. Residential homes are also located along the western edge of the property. East of the Subject Property is vacant, undeveloped property and to the south are commercial properties. The Auburn Road Landfill is located approximately 1,800 feet to the northeast.

The proposed subdivision of the Subject Property proposed layout and Phases of development are presented on the Jones & Beach Engineers Drawing Set OV1 1-127 3/25/11.

Site Drainage and Watershed

As shown on Figure 1, the Subject Property is situated within a topographic upland area (series of glacial drumlins) running northeastward with elevations between 330 and 466 feet above mean sea level (msl). Surface runoff and drainage flows outwards from the central upland area with the majority of the runoff draining to the lower areas to the east and west along small tributaries of the Cohas River. These small tributaries flow northward and merge with the Cohas River approximately 3,000 feet to the north of Old Derry Road. Based upon topography and glacial drumlin orientation, HYDROTERRA constructed a watershed sub-basin area to illustrate the drainage features of the Study Area using the small tributaries and the Cohas River as boundaries. This water sub-basin is shown on Figure 2 and consists of approximately 20,564,200 square feet.

Regional Geology

The present surficial geology and major topographic features of the Londonderry/Derry area are largely controlled by the glacial events that occurred during the last phase of the Pleistocene Epoch (14,000 to 15,000 years ago). The glacial deposits that are encountered throughout the region result from numerous and complex glacial depositional sequences consisting of clay, silt, sand, gravel, and boulders.

Glacial Till Overlying the bedrock is a poorly sorted mixture of sand, silt, gravel, and rocks. This glacial till outcrops along the highland areas and overlies bedrock throughout virtually the entire region. Two types of till are typically encountered. The till directly overlying the bedrock is more compact, less bouldery, and richer in clay and silt. The upper till typically has a much looser composition with large boulders and coarser sand layers. lacial till typically acts as a barrier/boundary for water bearing aquifers due to its low permeability (i.e., poor ability to transmit water).

Glacial Lake Deposits: As the glaciers retreated from the area, glacial meltwaters sorted and arranged sediments by grain size. These sorted, stratified sediments are called stratified drift. These deposits ranged from coarse grained gravels to inner-layered silts and clays.

Swamp Deposits: Swamp deposits overlie the lower elevation portions of the region, and may overlie fill or stratified drift. Swamp deposits contain organic peat deposits and fine grained silts and clays and are generally poorly drained deposits which act as retention areas for surface water drainage and groundwater which may discharge to the swamp areas. Similar to till deposits, these deposits typically act as a barrier to stratified drift aquifers, preventing or lowering infiltration of surface water into the aquifer.

Bedrock: Underlying the till at depths between 0 and 10 feet below grade is a metamorphic gneiss and biotite schist bedrock of the Massabesic niess Complex (Pmz). Regional aerial photographs reveal lineament features which suggest a northeast trending fracture orientation to the bedrock.

Site Geology

According to test logs, site observations, and US S surficial geologic mapping data of the Derry, NH quadrangle (ephart 1985), the Subject Property is predominantly underlain by glacial till associated with glacial highland drumlin deposits. Small pockets of glacial lake deposits are found along flanks of the drumlins. Swamp deposits are present within the lowland poor drainage areas to the south and to the north, adjacent to the Cohas River. Bedrock is encountered at depths between 0 and 10 feet below grade.

Hydrogeology

No significant groundwater occurrence or storage is expected within the overburden deposits on or adjacent to the Subject Property due to limited thickness and low permeability of the subsurface materials.

Rainfall within the area flows as sheet flow to the small tributaries and/or direct infiltration into the underlying bedrock along the lower elevation areas.

roundwater occurrence within the bedrock is along fractures zones which trend northeast across the area. Depths to key water bearing fracture zones on the Subject Property, based upon US S lineation data are estimated to be less than 300 feet below grade. Recharge zones for bedrock groundwater is bedrock outcrops and shallow bedrock areas that intersect the northeast trending bedrock fracture lineaments. roundwater flow is expected to be to the north, northeast along the regional fracture zones, towards the Cohas River.

Water Budget

A water budget is the tabulation of the water inputs (recharge) and the water outputs (withdrawals) within a watershed area. The water inputs would include direct recharge to groundwater from rainfall, infiltration of water from the surface water bodies such as streams, tributaries and wetlands and man-made discharges of water such as injection of stormwater, process water or septic systems. The outputs to a watershed would include precipitation losses due to evapotranspiration, direct surface water runoff, shallow groundwater evaporation and manmade groundwater and surface water supply withdrawals.

To provide an assessment of the availability of groundwater for the 133 private water supply wells proposed for the Lorden Commons development, HYDROTERRA developed a conservative water budget for the recharge basin. This budget is summarized on Table 1. For this analysis, in order to provide a realistic range for the size of the potential groundwater recharge zone, HYDROTERRA used two recharge areas. The first, is the area of the sub-drainage basin (approximately 20,564,200 ft²) as shown on Figure 2. The second more conservative area (10,252,800 ft²) is the area directly within the Lorden Commons development, as shown on the Jones & Beach Subdivision Plans.

The water budget assumes approximately 44 inches of annual precipitation falls on or adjacent to the Subject Property of which 8 to 10 inches per year is anticipated to be available for recharge of the bedrock groundwater within the drainage sub-basin recharge area. The 8 to 10 inches per year range is based upon published New Hampshire recharge information (Flynn and Tasker US S 2004 and Bent US S 1999). iven the limited amount of proposed pavement, and the stormwater management plan at the proposed Lorden Commons development, this range of recharge is believed to be conservative. Based upon the New Hampshire Department of Environmental Services (NHDES) IS mapping information for the area, no public surface water or groundwater withdrawals occur within the drainage sub-basin (see Figure 3). Five (5) private single home water supply wells were identified by the NHDES IS (NHDES registered private water wells) within the sub-basin. To be conservative, no recharge associated with man-made structures such as storm drain or septic system discharges were included in the water budget analysis.

TABLE 1	Water Budget Summary - Lorden Commons Development			
Water Budget Components	Watershed Sub-basin Area (20,564,200 ft²) (see Figure 2)	Lorden Commoms Area (10,251,760 ft²) (see Jones&Beach Plans)	Notes	
Recharge 10 /year - 0.80 ft/year 8 /year - 0.67 ft/year Total Recharge	16,451,361 ft ³ /yr (123,056,180 gal/yr) 13,778,015 ft ³ /year (103,059,550 gal/yr) 103,059,550 to 123,056,180 gal/yr	8,201,409 ft ³ /yr (61,346,539 gal/yr) 6,868,680 ft ³ /year (51,377,725 gal/yr) 51,377,725 to 61,346,539 gal/yr	Based upon 44 of total annual rainfall and 8 to 10 inches per year range published recharge information (Flynn and Tasker US S 2004 and Bent US S 1999)	
Withdrawal Proposed - 133 - 3 Bedroom Homes Existing 5 Residential Wells (4 bedrooms) Total Withdrawal	59,850 gpd (21,845,250 gal/yr) 3,000 gpd (1,095,000 gal/yr) 22,940,250 gal/yr	59,850 gpd (21,845,250 gal/yr) 3,000 gpd (821,250gal/ <u>yr)</u> 22,940,250 gal/yr	Residential estimate water consumption 150 gallons per bedroom/day. 133 proposed homes -based upon Jones&Beach Site Plans 5 existing homes (4 bedroom) - based upon current NHDES well inventory information within the watershed basin shown on Figure 3.	
Net Balance Recharge -Withdrawal	Recharge -Withdrawal + 80,119,300 to 100,115,930 gal/yr Surplus	Recharge -Withdrawal + 28,437,475 to 38,062,289 gal/yr Surplus	Surplus range between 28,437,475 and 80,119,300 gal/year	

Auburn Road Landfill Contamination Source Impact Analysis

In order to assess potential water issue concerns regarding the future withdrawal of bedrock groundwater from the Lorden Commons development as a result of the Auburn Road Landfill Superfund Site (the Site), HYDROTERRA reviewed the NHDES file information and information provided by the Town of Londonderry regarding the current nature and extent of contamination associated with the Site and evaluated the potential for contamination from the landfill impacting groundwater withdrawals at Lorden Commons property. The Auburn Road Landfill site is located approximately 1,800 feet to the north of the property.

Current data indicates that groundwater at and directly downgradient of the Site remains impacted with arsenic and Volatile Organic Compounds (VOCs). roundwater flow from the Site is to the north towards the Cohas River. The extent and migration of contamination remains stabilized within the delineated roundwater Management one (M) (see Figure 2 for location of M). The Site is currently monitored twice a year for contamination levels, changes in flow directions and compliance with the M boundary.

Based upon the review of data from the Auburn Road Landfill Site and an understanding of anticipated behavior of the surrounding watershed, the following observations are made regarding potential withdrawal of groundwater from the Lorden Commons property and the Auburn Road Landfill Site

- 1.) The groundwater flow is to the north towards Cohas River. As such the Lorden Common property is upgradient of the landfill site;
- 2.) The M for the Auburn Road Landfill Site is located approximately 1,800 feet from the Lorden Common property. roundwater impacts from the landfill, based upon bi-annual monitoring is confined and appear stabilized within the M; and
- 3.) The water budget analysis of the proposed withdrawal at the Lorden Common property indicates a surplus of available recharge. This suggests that no significant stress(s) on the bedrock groundwater flows will occur from the proposed withdrawal which are likely to alter groundwater directions and/or cause hydraulic gradients which may cause changes of flow direction at the Auburn Road Landfill Site.

Based upon these observations, HYDROTERRA does not anticipate any significant impacts from the landfill on the proposed bedrock withdrawals.

Study Area Water Resources Conceptual Model and Summary of Findings

Based upon the hydrogeologic assessment completed, a conceptual model has been developed for the groundwater resources on the Lorden Common property and estimates of the yield capacity of onsite groundwater to meet the demand of the proposed housing development have been made. The findings are summarized below

- A. roundwater at and adjacent to the Subject Property occurs primarily in bedrock fractures zones (150 to 300 depths) with a northeast flow direction. No significant groundwater storage is anticipated in the thin, low permeable till deposit encountered across the Study Area;
- B. Recharge to groundwater occurs directly to exposed bedrock and/or lowlands/wetlands surrounding the small tributaries of the Cohas River;
- C. Using the small tributaries and the Cohas River as boundaries, a small sub-basin watershed area of approximately 20,564,200 square feet has been delineated. Water within this basin is assumed to be available for groundwater recharge;
- D. It is anticipated the each well at the proposed development will require approximately 450 gpd and total build out of the development will require 59,850 gpd;

- E. Water budget analysis after complete build out of the 133 homes at the Subject Property suggest an available water surplus of between 28,437,475 and 80,119,300 gallons per year would still remain;
- F. roundwater within the Subject Property is adequate to provide the required water usage of 59,850 gpd for the proposed residential home subdivision; and
- . Based upon the NHDES file review regarding current conditions at the Auburn Road Landfill Site and from the hydraulic analysis of the proposed bedrock wells at the Lorden Commons development, no significant impacts from the landfill would be anticipated from the proposed bedrock withdrawals.

Please feel free to call me at (603) 743-5728 if you have any questions. HYDROTERRA appreciates this opportunity to provide you with this hydrogeological assessment.

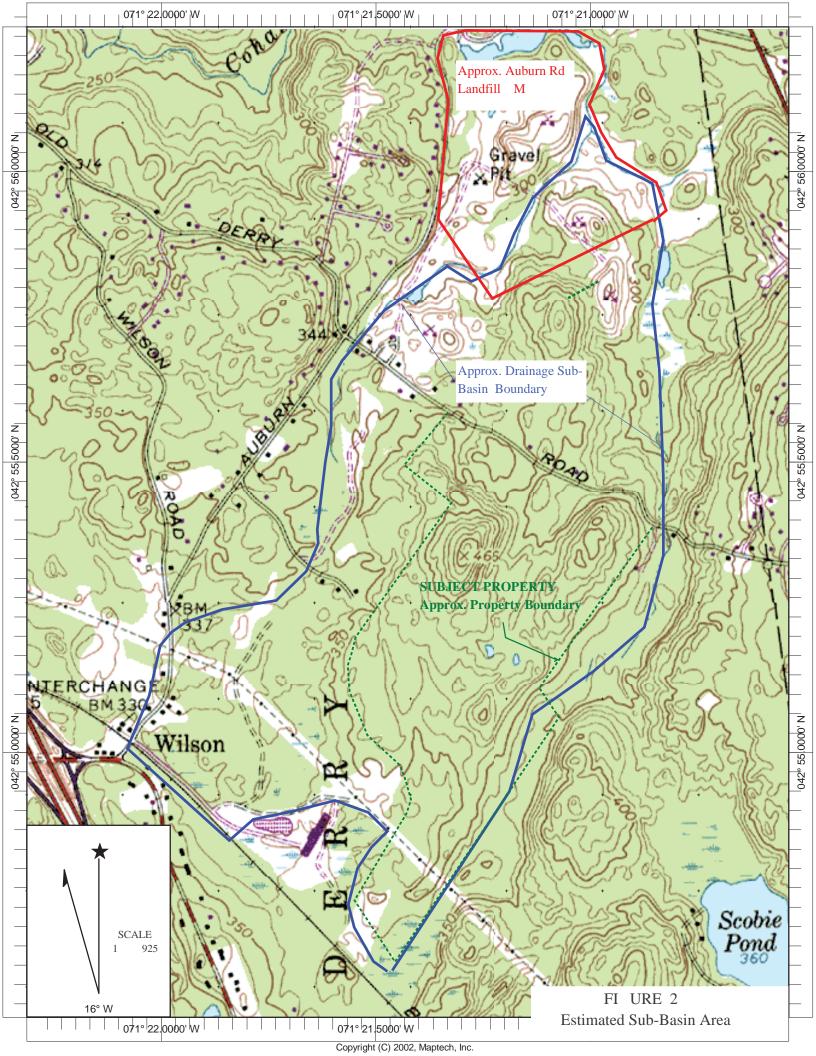
Sincerely,

Jack M. Mc enna, P , PH Manager

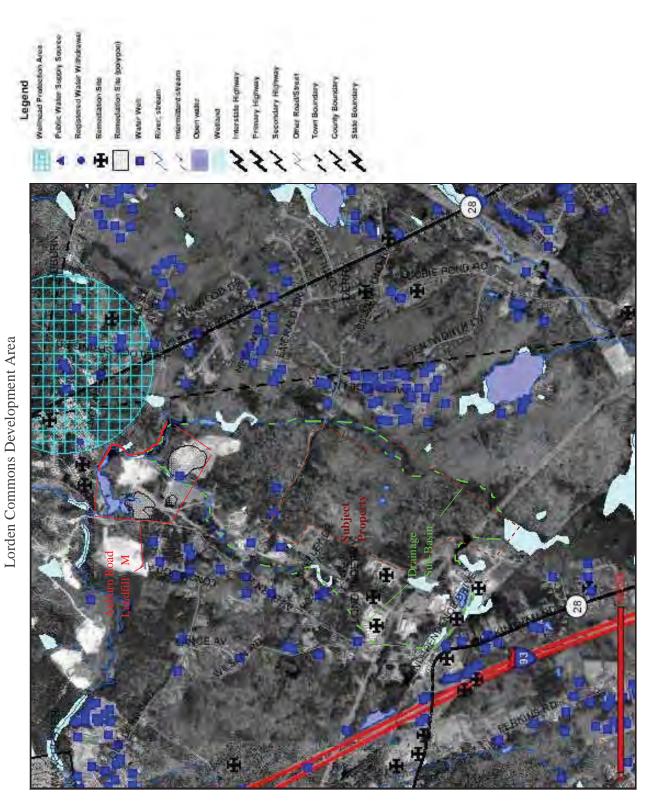
Scobie Pond Rd Emerald Or Wilson Rd DE CONTRACTOR

FI URE 1 Subject Property Location

HYDROTERRA Environmental Services



FI URE 3 NHDES IS MAP



Map Scale = 1:51889 (1" = 0.8 miles or 4324 feet)