Approved Minutes
Guilford Inland Wetlands Commission
Special Meeting
August 31, 2016 at 7:30pm
Guilford Community Center – Menunkatuck
32 Church St. Guilford CT

NOTE: Please be advised that at this time the following are strictly "Draft Minutes" until approved by the Inland Wetlands Commission

Once approved the minutes will be marked as "Approved Minutes" and will be available in the clerk's office or upon request.

Members Present: David Williams, Paul Mei, Eva Besmer, Calvin Page, Kevin Clark and Scott Williams
Member Absent: Rich Meier
Alternates Present: Jeff Parker & Susan Anderheggen
Alternates Absent: none
Staff: Kevin Magee, Environmental Planner
Reggie Reid, Wetland Enforcement Officer

Chairman Scott Williams opened the meeting at approximately 7:40 P.M.

Appointment by Chair of members sitting for this meeting D. Williams (Licensed Environmental Professional, Soil & Wetlands Scientist), C. Page (Building Contractor), K. Clark (Environmental Consultant), S. Williams(PHD Natural Resources), J. Parker (Professional Engineer) and E. Besmer (PHD Molecular Biologist) and P. Mei

A. APPROVAL OF AGENDA

August 31, 2016

Upon a motion by Commissioner S. Williams and seconded by Commissioner D. Williams, it was voted to unanimously to approve the agenda.

B. PUBLIC HEARING

1. 350 Goose Lane Guilford LLC, 350 Goose Lane, Map 75 Lot 1, Zone MU/C3, Regulated Activity, Site Plan Referral, Subdivision Referral, Construction of Low Impact Development Style Single Family Residential Development within 100' jurisdictional review area.

Consultants for the Commission:

Brian C. Curtis, P.E. of Nathan L. Jacobson and Associates
Edward M. Pawlak, MS of Connecticut Ecosystems, LLC

Present for Applicant:

Terrance Gallagher, P.E. of Luchs Consulting Engineers, LLC
Michael Harkin, P.E. of Harkin Engineering, LLC
William Kenny of William Kenny Associates, LLC
Megan Raymond of William Kenny Associates, LLC
Russell Campaigne of CK Architects
Attorney Marjorie Shansky

Brian C. Curtis of Nathan Jacabson &Associates:

Brian C. Curtis of Nathan Jacabson &Associates was hired to perform a third party review of the application. He is here to discuss the waste water disposal system, storm water management drainage design, and erosion control measures. At last meeting a review letter was submitted dated July 8, 2016 with comments concerning the stormwater management system, and erosion and sedimentation control measures. He received a copy of the latest revised plans today. The project is still in the state of review with the new updated plans. They included the revisions of the waste water system designed to Connecticut Department of Energy and Environmental Protections (DEEP) standards. The waste water system was approved for the previous building site plan to meet the health codes. DEEP won't review the application until it is through the local wetland and planning and zoning process. If any changes the DEEP will give back to the commissions to review. DEEP uses drinking water standard for nitrogen (10 mg/L) for discharge standards. If there is a more stringent requirement the commission would need to let DEEP know as part of their permit review.

Some drainage issues have been addressed such as slope protection, yard drains, and additional erosion controls. Main comment was regarding bioretention design which was designed with a stacked stone wall which allowed water to flow through. Brian Curtis asked that the wall be a solid wall to allow for the storage of water and the discharge of water through an outlet control. It was requested that the rip rap in the rain gardens come down the slope to help control the erosion, these items can be addressed.

With the close approximate of the site work being done to the proximity of the pond it was requested that the erosion controls be doubled up on items like 2 rows of silt fence backed by hay bales to provide protection during large storms.

Csmr. D. Williams asked about the status review – it isn't complete yet.

Brian Curtis – That is right, new plans have been submitted that he needs to review. A plan was submitted showing location of groundwater monitoring wells. Groundwater monitoring usually includes quarterly monitoring for nitrogen, phosphorus, and fecal coliform bacteria.

Also requested was a post construction management and maintenance plan.

Csmr. K. Clark asked about the state drinking water standard with nitrogen.

Csmr. D. Williams asked if there is specific criteria in the water quality standards

Brian Curtis – The state is using the drinking water standards since the1970's and depends on the individual site. If there is an environmental reason for a lower standard they would impose that, such as a large vernal pool.

Csmr. K. Clark – Will the DEEP comply with the commission?

Brian Curtis indicated the state may comply with town's recommendation.

Edward M. Pawlak, MS, Connecticut Ecosystems, LLC
Edward Pawlak provided his professional opinion in his review of the effects of development on the wetlands and watercourses at the site and went over his report dated July 20, 2016.

On July 20, 2016 he inspected the property with Brian Curtis and checked the wetlands flags and performed spot checks along the boundary and agrees with the current flagging. There is no evidence of wetlands beyond the flags.

There is large deciduous wooded swamp that lies on the western portion of the property. The swamp contains poorly drained organic soils that are characterized by surface ponding though out most of the year and are suitable for the habitat for pond breading amphibians such as wood frogs and spotted salamander. Request that the commission ask for a spring time survey for amphibians.

There is a water course on the westerly part of the property. Photographs of the channel where provided in an earlier letter to the commission. The timing of inspection was dry, no water flow at that time, but the soils where moist at the surface. Area is classified as a headwater since there are no tributaries to another course until Route 1.

Groundwater hydrology at the site be maintained.

There is a man made pond at the property and he did not see evidence of nutrient over enrichening.

Agrees with Kenny Associates report that the wetlands is a high quality resource.

Has a disagreement with Kenny Associates report with post construction wetlands functions. Report does not indicated that work will be conducted very close to valuable resource and significant of the loss of

vegetated buffers and the functions and values of the pond. Requested applicant to provide information on the pond.

Edward Pawlak discussed his research noted in his letter on buffers and how he came up with his recommendation for the 75 foot buffer. The wetland buffers provide for wildlife habitat, sediment and toxins removal, influence micro climate by providing shade, and also maintain critical upland habitat to protect the wetlands and watercourse. The State of Connecticut does not provide regulations on buffer sizes like other states have. Instead he has reviewed scientific literature and listened to the experts. Created matrix in Table 1 of his report detailing how he came up with his buffer distance.

He noted that on sheet C-1 that the grading is close to the wetlands and the pond. They are 5 to 10 feet from the wetlands and that distance is insufficient. A 100 foot buffer is needed for a high quality wetlands, a site with high silt content, and intense development.

The revision of the bioretention basin from a leaky wall to a point flow would create a stream flow. Edward Pawlak recommends that a level spreader be constructed.

Believes there will be impact to wetlands do to loss of wildlife habitat due to loss of screening, reduction of sediment removal to the wetlands. Most runoff is channeled to wetlands. Fine grain sediment can travel through silt fence and particles could travel through double silt fence. The standard for sediment removal for sediment basins is 80%. When you combine land clearing up slope, problems with silt fences, the efficiency of sediment basins and the minimum buffer between controls and wetland and pond Edward Pawlaks professional opinion is that there will be sediment impacting the resources and nutrients from the lawn will affect the wetlands by increasing the nutrient levels.

In review of the E&S plan he noted that the silt fence was 5 to 10 feet away from the wetlands and at one section a foot away which is inadequate. The use of the bioretention basin as a sediment trap for construction phase is not an appropriate measure for the construction phase. The basins would get clogged with sediment.

As part of their mitigation he requested a three year monitoring plan to guarantee success.

Asked in his report for feasible and prudent alternatives that will reduce or eliminate the likelihood of impacts that incorporate the 75 foot wide vegetated buffer.

At the last meeting, there was concern about the effects of road salt impacting the wetlands. Ed Pawlak submitted a handout “Road Salt – Moving toward the Solution – Special Report December 2010” by Cary Institute of Ecosystem Studies. Noted that you can ask the applicant to predict the concentration of road salt being applied. Without that information it is hard to predict the impacts.

Looked at the soil test conducted in the bioretention basins and summarized the data in a table that he handed out. Bioretention Basin #2 modeling was at 2.8’ to 3.1’ with seepage at 3.7’ to 6’. Rain garden 1 mottling was at 2.3’ and Birention basin 1 no mottling was detected but seepage was at 4.3’.

The applicant is being asked if there is sufficient poor space within the soil above the high groundwater table to except the groundwater recharge volume and will those basins drain dry between storms when there is a seasonal high water table. The basins are not supposed to have a wetlands vegetation.

Professional opinion feels that the development will have an adverse impact to the wetlands has described in his presentation.

Csmr. K. Clark asked Ed Pawlak two questions about salt water.
1. With the shallow water table near stormwater detention basin is it possible for water carrying salts naturally move upward to the root zone carrying with it dissolve salts?
2. Can the shallow water table contribute to the salinity problem by restricting the downward leaching of salt through the soil profile.

Ed Pawlak differed on these question due to he is not have the expertise on answering them.

Ed Pawlak touched on the nitrate and nitrogen subject and he is not aware of ecological criteria for receiving resources on nitrate and nitrogen in wetlands below 10 mg/liter and in the surface ground water. Ed Pawlak gave a website of Ctwetland.org which is maintained by scientist to look and review. The website noted the average background concentrations of nitrogen in the soil at 0.37mg/L.

Brian Curtis stated the wetlands with deep organic matter are good with reducing nitrogen levels, however it is hard to quantify due to different organic levels.

Csmr. K. Clark has a concern with overloading wetlands with nitrogen since it can increase vegetation and loose biological integrity of the wetlands.

Csmr. K. Clark noted that Industrial Stormwater permits have a discharge limit of 1.10 mg/L of nitrate for stormwater discharges and TKM of 3.30 mg/L. Find these levels more appropriate.

Csmr. D. Williams asked about the development close to the wetlands and management stormwater, is there enough coverage to treat the stormwater outfall?

Ed Pawlak stated there is not enough vegetation buffers. No stormwater BMP is 100% efficient. Rely on vegetated buffers to polish the stormwater.

<u>Attorney Marjorie Shansky</u>
Attorney Marjorie Shansky submitted an extension letter for the public hearing and also the resumes for Lauren Brown, Russ Campainge and Marjorie Shansky.

<u>Terrance Gallagher, of Luchs Consulting Engineers, LLC</u>
Terrance Gallagher, of Luchs Consulting Engineers, LLC submitted revised plans on Tuesday, August 30, 2016 and spoke about the changes on the map.

Sheet PL-1 was revised to show 50 foot and 100 foot buffer line as requested by the commission. The fifty foot goes through the existing shed.

Sheet C1 grading plan: The 50 foot and 75foot wetlands setbacks were added to the plan. The 50 foot goes around detention basin 2, across the road, through the rain garden and around biorention basin 1 and raps around 30" maple. At the request of the fire marshal the dry hydrant was moved closer to the pond along with a 12' wide grass pave access road.

Sheet C3 Sedimentation and Erosion Control Plan. The plan was revised per comments from Nathan Jacobson. Luchs Consultants has no problem with adding double silt fence, double hay bales and silt fence with wood chip controls.

Sheet C4 was revised to show detail of silt fence with wood chips and silt fence backed by hay bales

Map C9 details revised at fire marshal request to show dry hydrant detail. This detail is part of an ongoing discussion with the fire department regarding the need for the dry hydrant. Dry hydrant consist of 18" HDP pipe with three feet of water above it with trash rack that flows back to a catch basin.

Sheet C10 grass pave, curbing and pavement details were added.

Sheet C11 Phasing Plan: The construction sequence were added which indicate that the bioretention basins and perimeter controls will be built before the site construction. Added extra temporary sediment traps upstream of biorention basins to have a belt and suspender treatment train of any run off going to the wetlands. The biorention basin acts as an extra level of protection. Terrance indicated that they do not plan on stripping the whole site. The bottom of the basins will be two feet above modeling.

Sheet C14 Bioretention Basin 3: The wall will be pulled back from the wetlands. The bioretention basin has moved from 5 feet away to 20 feet away from the wetlands. There will be a three foot cut to the bottom of the basin, 18" of sandy material will be placed back in the bottom, and will be seeded with conservation mix. The temporary sediment trap (TST) will be the primary sediment control. Each of the outfall pipes are rapped in filter fabric and crushed stone so there will be little that will get through. The wall will be made impervious and will be built by hand. Terrence also discussed the construction sequence of the bioretention basins. All basins will be 2 to 3 feet above high ground water.

Sheet C13 Bioretention Basin 2: The soil will be replaced with high porosity soils.

Terrance Gallagher noted that the water coming out of the bioretention basins will be clean since there is recharge at the houses, infiltration trenches from parking, perforated pipe with stone, and the catch basins have hoods. They are providing BMPS that the town and state are looking for. Will have clean runoff.

Sheet C15 Rain Gardens #1 and #2: Revised to rip rap extending to the bottom of the basin.

Handed out stormwater quantity calculations completed today. Summary is that volume required is 9,003 cubic feet of storage and they are providing 15,500 which is 1.5 times greater than state required.

Csmr P. Mei asked if soil that is brought in from out town will have a certificate stating that it is clean.

Michael Harkins, of Harkins Engineering, LLC
Michael Harkins answered the commissions question from the previous meeting regarding the difference in nitrogen in the waste water between residential and commercial properties and submitted the information.

Residential Nitrogen levels per DEEP is 60 to 65 mg/L with an average of average 62 mg/L which calculated out for the site has a discharge of 9.9 mg/L.

Commercial Nitrogen levels per DEEP is 80 to 85 mg/L with an average of 82 mg/L which calculated out has a discharge of 13.5 mg/L.

Michael Harkins indicated that the difference is because residential is cleaner.
The location of seven monitoring wells have been added to the plan. The physical locations on monitoring the wells are subject to change due to DEEP.

Michael Hart at DEEP has indicated to Michael Harkins that the discharge limit will be 10 mg/L at the wetlands.

Csmr. K. Clark asked what happens when levels are above average.

Michael Harkins indicated that the water usage would be lower based on reviewing results from another property Village Victoria located near the site.

Michael Harkins presented to the record Department of Health requirements for a conventional septic system.

Megan Raymond of William Kenney Associates, LLC
Prepared response letter dated August 26, 2016 to the commission which she summarized to the commission and provided to the record.

Megan Raymond noted that the south side of Carter Pond has a culvert and is abutted by industrial park that has lawn to the pond with a geese population which may impair water quality. Water samples analyzed from the pond indicate that it is eutrophic to highly eutrophic water body per CT DEEP surface water quality standards. However no algae blooms were observed.

William Kenney Associates conducted nitrogen loading calculations to evaluate potential impact to the pond from nitrogen discharge from the sanitary system. The calculations assumed 100 percent of the sanitary discharge is going to the pond. The increase in nitrogen concentration of the pond due to the sanitary system discharge is 0.14 mg/L. Megan considers this increase quite low and insignificant. Results do not consider up take of nitrogen by vegetation.

Lauren Brown looked at vegetation along the northern edge of the pond which contains a monoculture of mugwort in the uplands and young willow and red maple saplings along the pond banks. Two area of sandy substrate that have interesting species but there are no state listed species. There were two species of Schoenoplectus observed, *S. pungens* and *S. smithii*. They are not state listed species.

Megan indicated that they did not conduct a seasonal investigation for obligate amphibians and there was no features within the wetlands area indicating classic vernal pool morphology.

Megan Raymond disagrees with the classification the headwater stream in the western wetlands. Megan considers the stream as a first order stream and considers this wetlands system outside of the disturbed wetlands finger as a high functioning forested wetlands system.

<u>William Kenney of William Kenney Associates, LLC</u>
William Kenney of William Kenney Associates, LLC spoke about the enhancement to the wetlands. They plan on removing 5,700 square feet of fill within the disturbed wetlands from the nursery operations and restore the vegetation to a wetlands meadow. They plan on removing invasive plants and planting trees in the wetlands and in the buffer. Invasive plants will also be removed. The planting of trees will have a 3-5 year plan with monitoring. During this monitoring period they would remove any invasive plants by hand to reestablish the forest. Plans show native plantings in the bioretention areas and on the uphill side native shrubs. Near vehicular traffic they are proposing the planting of native evergreen trees to protect the wetlands from light. William Kenny believes with the improvements shown he is improving the wetlands and buffer.

William Kenny discussed how the BMP's are designed to be a buffer to the wetlands in certain areas. The primary reason for a buffer is for water management, quantity and quality. Secondary reasons are for controlling micro climates and buffering light and noise. William indicated that they are not disturbing an existing forested wetlands buffer. He indicated that the way BMP's are designed, the water is infiltrating into the ground, into the water table, and then moving through the ground. Having a buffer 75 feet beyond BMP with the majority of the water from storms infiltrating into the ground water, since first one inch of rain is treated by the water quality measures, that the buffer is not providing that function.

William Kenny discussed that there are studies that show direct relations to increase in nutrients to invasive species. William noted that the studies show environmental conditions such as light, environmental disturbance and successional states of the habitats such as a narrow habitat that is early successional with a lot of light will encourage phragmites or cattails. A heavenly forested late successional will not find those affects. William indicated that we may see the effects of invasive species in the bioretention basins.

Csmr. D. Williams asked if the enhancement area is a buffer to the red maple swamp adjacent to it. William Kenny indicated that the wetland is not considered a buffer, but the disturbed wetland does protect the higher quality wetlands to the west.

William Kenney indicated that the enhancement would be done prior to the creation of the wall and the work be done under the supervision of a wetlands scientist. They will be pulling back the fill material six inches at a time down to the wetlands soil.

Csmr. S. Williams asked for clarification regarding the buffer and if the lower quality wetlands was being classified as a buffer.

William Kenney indicated that the primary use of a buffer is water management and there is no need for a buffer since the water is being managed by BMP's. He indicated that there is a ten foot buffer and feels that the buffer is not need since stormwater directed away from the area by stormwater management.

Csmr P. Mei asked about inspections and if staff would get a report. What happens after 5 years?

William Kenney indicated that they would give a report to staff and after a few years it would be manageable. The uplands would be cared for by organic lawn care management and nothing would be applied without testing that determines the application rate of the fertilizer.

Csmr. E. Besmer asked will you be applying fertilizer to the plantings in the wetlands.

William Kenney indicated that they are not anticipating using any fertilizers there.

Csmr. K. Clark asked about what type of shrubs will be planted

William Kenney indicated that they are using fast growing trees such as tulip trees, sycamore, white oak, and sasafrass.

Csmr. K. Clark concerned that large trees planted in the wetlands would dry it up.

William Kenney sees the planting of the trees as an enhancement.

Csmr. P. Mei asked about American Chestnut Trees.

Csmr. S. Anderheggen asked about the area of planting and if any nests will be disturbed.

William Kenney stated that a survey will be done before any planting starts.

Kevin Magee asked about the buffer to the wetland along the pond edge

William Kenney indicated that there will be a disturbance for the construction of the bioretention basins which will be replanted with a native meadow seed mix.
William Kenney indicated that they there is a temporary disturbance for the dry hydrant but other than that they are not proposing any changes.

Kevin Magee asked about grading on the hill side since that area has native vegetation such as willows holding the bank in place. Concern about disturbing this area would create erosion.

Megan Raymond indicated that any disturbance is will be upgradient to that vegetation and would involve the area disturbed by the mugwort.

Csmr. K. Clark asked about the 5 to 10 foot buffer on the other side of the buffer. Looking for the buffer distance between the units and wetlands.

Terrance Gallagher of Luchs Consulting updated the commission on sheet C14 bioretention basin #3 by the shed – there will be crushed stone walkway with a split rail fence at the edge of bioretention pond. There will be a managed lawn and the slopes will be native plants with a meadow mix. Terrance indicated that the buffer ranged on average from 10 feet depth to a 45 foot depth which included the bioretention basins.

Csmr. K. Clark asked if the pavilion could be removed away from the pond.

Terrance Gallagher indicated that the pavilion can not be moved.

Csmr. K. Clark asked if the northern road which is adjacent to the wetlands can be pulled away from the wetlands.

William Kenney indicated that the wall could be pushed closer to the road.

Kevin Magee how the construction silt fencing will be installed at the cul-de-sac for the north road with wetlands being adjacent to the proposed silt fence.

Terrance Gallagher stated there will be 2 rows of silt fencing close to the wetlands line.

William Kenney stated that a wall will be built that would become a sediment barrier.

Csmr. K. Clark asked if there is room to slide the northern most bioretention basins away from the buffer.

Terrance Gallagher will check into it and look at the grade. May be able to move north end.

Russell Campiange of CK Architects, LLC

Russell Campiange of CK Architects, LLC submitted a letter regarding the noise concerns with the generator and described his letter to the commission. The condenser is less than 2 tons with the decibel at 72. The units are at 50 feet from the wetlands and the noise at the wetlands is reduced to 38 decibels. There is one generator located outside of the buffer area that will run the septic. The sound level at the wetlands would be 40 decibels.

Csmr. E. Besmer asked about the formula to the decibels

Russell Campiagne – sound calculations are log rhythmic.

Csmr. D. William asked if it is based on a backup generator or a portable

Russell Campiagne stated the generator will be 50ft away from the wetlands

Csmr. S. Anderheggen asked if personal generators will be banned.

Russell Campiagne stated that there will be professional landscapers that will be maintaining the land, they have moved the units back from the wetlands, and 0.43 acre each unit will be less dense than required by Planning and Zoning for the zone.

Csmr. S. Williams asked if there are any questions from the public.

Kevin Magee stated that Attorney Chuck Andrews, the towns' attorney will be at the next meeting.

Kevin Magee read the Conservation Committee note into the record.

Kevin Magee read Mark Damiani, Assist. Town Engineers letter into the record.

Attorney Marjorie Shansky stated she will give her at presentation at the next meeting

Mark Larkin of 1 Potter Hill Dr. lives across from the development and is in favor. Mark indicated that gallons per day per a bedroom is a conservative number.

Sherrye Krause of 221 Goose Lane, if there are 14 units in the upland review area how many are in the 75 foot upland area.

George Krall, Town of Guilford Town Planner discussed the wetlands regulations to protect the citizens of the state by minimizing the effects of pollution and the need to balance economics. The smaller houses are the type of development that the town is trying to encourage.

Upon a motion by Csmr. P. Mei and seconded by Csmr. K. Clark to continue the public hearing on September 14, 2016 at 7:30.

C. APPLICATIONS TO BE RECEIVED

1. Leonard Prygoda, 1004 Boston Post Rd, Map 46, Lot 10, Zone PV, Regulated Activity, Enlarge-Upgrade septic system and driveway enlargement within 100' jurisdictional review zone.

Upon a motion by Commissioner S. Williams and seconded by Commissioner C. Page, it was unanimously voted to receive the application and set a walk date of September 10, 2016.

Then, with no further business before it, upon a motion by Commissioner C. Page and seconded by Commissioner E. Besmer it was unanimously voted to adjourn the meeting of the Guilford Inland Wetlands Commission at approximately 10:30 P.M.

Respectfully submitted,

Michelle C. Nazario