

## MINUTES

7:30 PM

**PRESENT:** R. Dodds  
T. Kratzer  
P. Lubitz  
J. Mathieu  
S. McNicol  
M. Syrnick  
D. Banisch, Planner  
D. Pierce, Attorney

**ABSENT:** E. Niemann  
J. Strasser  
D. Floyd, Alt #1

### CALL TO ORDER

The meeting was called to order at 7:36 PM by R. Dodds.

### NOTIFICATION

In order to ensure full public participation at this meeting, all members of this Board, and members of the public are requested to speak only when recognized by the Chair so that there is no simultaneous discussion or over-talk, and further, all persons are requested to utilize the microphones which are provided for your use by the Township. Your cooperation is appreciated.

Notification of the time, date and place of this meeting has been published in the Hunterdon County Democrat and Courier News, and has been posted in the Kingwood Township Municipal Building at least 48 hours prior to this meeting and has been filed with the Municipal Clerk.

### NEW AND PENDING MATTER

Land Use Element – Discussion

D. Banisch reviewed the memo dated September 26, 2012 with the Board:

Kingwood Township commissioned a study in 1995 to evaluate groundwater in the Township. The study is entitled “Ground Water Study of the Argillite Formation in Kingwood Township, Hunterdon County, New Jersey,” prepared by Robert M. Hordon, Ph.D., P.J.H., dated November 5, 1995. The study analyzed potable well data, identified groundwater recharge estimates and included a discussion of nitrate dilution to assess the then minimum lot size requirement of 2 acres in the AR-2 Zone. Among the findings worthy of discussion from the study are the following:

1. Locketong argillite ( **Trl** ) formation (see Figure 4-attached): 36.6% of the Township is underlain by the Locketong argillite formation. “This formation has the dubious distinction of ranking among the poorest sources of ground water in the entire state, since the fractures and joints where water may be found are widely spaced, poorly connected and very tight (Kasabach, 1966).”
2. Baked shale ( **Trba** ) units (see Figure 4-attached): The baked shale units are hydrologically similar to the argillite and are therefore included in the well analysis and discussion. They are estimated

to occupy 28.1% of the Township. Together the argillite and baked shale units underlie 64.7% of the Township.

3. Page 19 - “In sum, the various estimates, hydrograph separation techniques and flow-duration curve analyses discussed in this section result in ground water yield estimates ranging from 52,000 to 319,000 gpd/sq mi. The variation in the yield estimates is attributed to the particular methodology employed and the recurrence interval selected.

4. Nitrate dilution modeling: Hordon referenced the Trela –Douglas Dilution Model as a means of assessing adequacy of lot sizes. Using the Trela-Douglas model, which requires an estimate for the “infiltration of precipitation” (IP). Dr. Hordon noted that “As previously discussed, the infiltration or recharge estimates for areas underlain by argillite (and baked shale) range from 52,000 to 319,000 gpd/sq mi, respectively. It is suggested that a more reasonable estimate would fall within the 100,000 to 200,000 gpd/sq. mi range. Using his assumption of 200,000 gpd/sq. mi of IP, Dr. Hordon calculated the theoretical diluted value of nitrate-nitrogen at the property line at 10.6 mg/l, and concluded:

“In conclusion, the 10.6 mg/l nitrogen concentration exceeds the drinking water standard of 10 mg/l. Application of the trela-Douglas model to Kingwood using a variety of recharge assumptions is shown in Table 2” (see attached). “Note that ground water quality standards are contravened whenever the recharge is too low or the lot sizes too small.”

5. A modified model by Pizor, Nieswand and Hordon (1984) applied to Kingwood Township, the Hordon study found that:

“The comparable minimum lot sizes using the same values as before” (in the Trela-Douglas model) “but varying the recharge estimates results in a value of 2.8 and 4.2 acres/DU for recharge values of 150,000 and 100,000 gpd/sq mi, respectively. As expected, both dilution models have similar results given the fact that many of the assumptions are the same. The main conclusion is that 2-acre zoning on the argillite and baked shale areas in Kingwood appears to be too small for the long-term ground water quality protection”

6. The modified nitrate dilution model used by Dr. Hordon utilized 10 mg/l as the nitrate planning target as follows:

$$A = (640 \times 0.78 \times 40 \times 75 \times 2.74) / (200,000 \times \mathbf{10})$$

$$A = \mathbf{2.1 \text{ acres/DU}}$$

7. If the nitrate dilution planning target is adjusted by applying NJDEP’s 2 mg/l nitrate dilution target, Dr. Hordon’s calculation would appear to result in the following:

$$A = (640 \times 0.78 \times 40 \times 75 \times 2.74) / (200,000 \times \mathbf{2})$$

$$A = \mathbf{10.258 \text{ acres/DU}}$$

After some discussion on D. Banisch’s memo, the Board decided to have the Horden report as an appendix of the Land Use Plan.

D. Banisch reviewed his memo dated September 19, 2012 with the Board:

The 3<sup>rd</sup> Draft incorporates the following revisions:

1. Added discussion of Lower Delaware River Wild and Scenic designation, Lower Delaware Management Plan, and The Lockatong and Wickecheoke Creek Watersheds Restoration and Protection Plan to the Introduction on Pages 3 & 4;
2. Added recommendation for grandfather provision to protect uses made nonconforming as a result of the proposed Route 12 Scenic Corridor Overlay Zone – Page 14;
3. Added discussion regarding groundwater availability and potential for new wells to negatively impact existing wells. Page 18.
4. Nitrate Dilution discussion, beginning on Page 18 – modified with a summary discussion of Nitrate Dilution modeling and indicated densities, based upon application of the Highlands modifications and municipal groundwater investigation reports. The discussion initially included in the prior drafts has been moved to an appendix to the plan.
5. Page 19 – added the following paragraph:  
 In crop production agricultural areas, a “plowpan” is encountered, similar in permeability characteristics to a fragipan (slow permeability). A plowpan is a compacted layer formed in the soil directly below the plowed layer.
6. Deleted discussion of recharge yields, well depth and median capacity of each of the bedrock formations. Page 21
7. Page 22: Todd’s note to reference the 1995 Hordon Report was deleted. We are attempting to obtain a copy from the Township.
8. Page 23: Tom Decker’s recommendation was added, as follows:  
*“At the time of the Land Use Plan update the NJ Water Supply Authority is conducting stormwater quality and quantity monitoring within the Lockatong and Wickecheoke watersheds. Upon availability, final results may be utilized in further evaluation of aquifer recharge estimate and nitrate dilution requirements within Kingwood Township.”*
9. Page 27 – 29: Added discussion of average farm lot size in Kingwood Township and introduction of the concept of sustainability.
10. Page 30: Mentioned 88-acre requirement for forested areas in the Highlands Preservation Area and 10- and 25-acre lot size requirements in the Highlands Planning Area.
11. Pages 31 & 32: Deleted references to “equity”.
12. Page 32: Added discussion and recommendation of density reduction and additional open lands requirements to retain and sustain agriculture and open lands.
13. Added recommendation for Rural Historic Roads and Scenic Corridors, pages 36 & 37; (Should add list of roads so designated);

After discussing D. Banisch’s above memo, the Board decided on the following changes or amendments to the draft of the Land Use Plan provided to them on September 19, 2012:

*Page 13: Long term planning objectives to preserve and protect areas of the community in conjunction with focused growth nodes, such as the EGVCO, through the use of “Transfer of Development Rights” or “TDR.”*

*“Transfer of Development Rights (TDR) is a land use tool that allows a community to use market forces to encourage the transfer of development potential from areas that the community wants to preserve (called sending zones) to areas that are more appropriate to accommodate increased growth (called receiving zones). Landowners in the sending zones receive compensation for restricting development on their property. As a market-based system, payment for this lost development potential comes from purchasers who buy credits representing the lost development potential in the sending*

zones. The credits then entitle the purchaser to build in a receiving zone at a density greater than that permitted in the underlying zoning.

*TDR has become an increasingly important tool in the preservation of lands with sensitive resources, whether those resources are environmental, agricultural, or historical. In New Jersey, TDR programs have been established to preserve large contiguous parcels of farmland to maintain agricultural viability, such as the programs in Chesterfield and Lumberton Townships in Burlington County, while in the New Jersey Pinelands TDR is used to preserve tracts of ecologically important lands to maintain ecosystem health and high water quality<sup>1</sup>.*

*For Kingwood Township, a municipal TDR Program could serve to compensate landowners that are interested in retaining the productivity of their farmland (i.e. lands situated within a sending zone) by allowing the transfer of development rights from farmland to areas such as the EGVCO (i.e. a receiving zone). A municipal TDR program is authorized in the M.L.U.L. at Section 140, which identifies the mandatory requirements to establish the program, which are summarized from the law as follows:*

**40:55D-140. Actions prior to adoption, amendment.** *Prior to the adoption or amendment of any development transfer ordinance, a municipality shall:*

- a. Adopt a development transfer plan element of its master plan pursuant to Sections 28 and 141 of the M.L.U.L.;*
- b. Adopt a capital improvement program pursuant to Section 29 of the M.L.U.L. for the receiving zone, which includes the location and cost of all infrastructure and a method of cost sharing if any portion of the cost is to be assessed against developers pursuant to Section 42 of the law;*
- c. Adopt a utility service plan element of the master plan pursuant to Section 28 of the M.L.U.L. that specifically addresses providing necessary utility services within any designated receiving zone within a specified time period so that no development seeking to utilize development potential transfer is unreasonably delayed because utility services are not available;*
- d. Prepare a real estate market analysis pursuant to Section 148 of the M.L.U.L., which examines the relationship between the development rights anticipated to be generated in the sending zones and the capacity of designated receiving zones to accommodate the necessary development; and*
- e. Either receive approval of: (1) its initial petition for endorsement of its master plan by the State Planning Commission or as part of a county or regional plan, provided that the petition included the development transfer ordinance and supporting documentation, or (2) the development transfer ordinance and supporting documentation as an amendment to a previously approved petition for master plan endorsement by the State Planning Commission.*

*The M.L.U.L requirements to establish a municipal TDR program are quite extensive. However, the benefits to the community should be evaluated to determine whether TDR is an appropriate land use tool for Kingwood Township.*

*Page 14: Farm markets ..... and parking layout shall be subject to Site Plan approval. (Paragraph will be deleted).*

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<sup>1</sup> NJ Highlands Council, Regional Master Plan explanation of TDR.

**Page 17: AR-2 Agricultural and Single-Family Residential District**

The AR-2 District has long been established in recognition of the rural and agricultural characteristics of the District .... The AR District is the largest zoning district in the Township, for which this Plan recommends a maximum density of one dwelling unit per ten (10) acres of land.

Page 22: For the Stockton and Passaic formations .....in recharge area requirements of 11.5 (11.48) acres for the Stockton and Passaic formations and 36.7 (36.68) acres for the Lockatong formation. Together, these two formations account for approximately 65% of the area of Kingwood Township.

Page 25: The Township’s existing minimum lot size requirement in zoning should be reevaluated based upon the data presented above. The Trela-Douglas model applied conservatively to Kingwood Township’s soils appears to indicate that the Township’s existing 7-acre minimum lot size is not sufficient for a variety of the soil classifications identified in the Township. A variety of factors discussed in this Plan indicate that septic disposal field limitations exist, which include: (1) depth to bedrock; (2) groundwater recharge; (3) aquifer recharge and groundwater availability (4) depth to seasonal high water table; and (5) soil hydrologic group infiltration rates. (Last sentence deleted).

Page 27: The following table identifies the average size of farm assessed lands in Kingwood Township. This table includes all Farm Assessed and Farm Qualified land in the Township accounted for in 507 parcels of land.

Average Farm Size – Kingwood Township (2006)

<b>Acres</b>	<b>Total Acreage</b>	<b>Average</b>	<b># of parcels</b>
10 or less	735.86	3.81	193
Greater than 10 to 20	1,414.64	14.44	98
Greater than 20 to 40	2,511.19	30.26	83
Greater than 40	10,176.73	76.52	133
<b>TOTAL</b>	<b>14,838.42</b>	<b>29.27</b>	<b>507</b>

<b>Preserved farms</b>			<b># of parcels</b>
10 or less	0	0	0
Greater than 10 to 20	28.32	14.16	2
Greater than 20 to 40	225.59	32.26	7
Greater than 40	1,654.42	82.72	20
<b>TOTAL</b>	<b>1,908.33</b>	<b>65.80</b>	<b>29</b>

<b>Average farm size for non-preserved farms</b>	12,930.09	27.05	193
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Source: Hunterdon County Planning Division GIS parcel data - 2006

Page 33: This Land Use Plan recommends modifications to the Township’s minor subdivision options, as follows:

1. Increase the minimum frontage requirement to 300’.
2. Require combined driveway access whenever possible in all minor subdivisions and identify combined driveway access for future lot creation.

3. *Require recorded shared driveway access and maintenance agreements among landowners.*
4. *Require identification of a primary and reserve septic system on each lot created.*
5. *Extend the time interval required for resubdivision of any lots created or remainder lots from one year to five years.*

*Page 38: While property classification .....the State in 2002, but not in 1991-92 because of budget constraints.*

*Page 45: **Lockatong Creek:** The NJDEP upgraded from Category Two to Category One antidegradation designation the entire length of the Lockatong Creek (and named and unnamed tributaries) based on "exceptional ecological significance". The use classifications such as FW2-NT and FW2-TM, applicable to different segments of the Creek remain the same as indicated at N.J.A.C. 7:9B-1.15(d).*

***Nishisakawick Creek:** The NJDEP upgraded from Category Two to Category One antidegradation designation the entire length of the Nishisakawick Creek (and unnamed tributaries) based on "exceptional ecological significance". An assessment of the physical/chemical monitoring data demonstrated that the water quality of the Nishisakawick Creek meets standards except for fecal coliform. The in-stream habitat quality assessment indicates an exceptional (optimal) habitat quality. Nishisakawick Creek has reported State threatened wood turtle sightings, primarily in the upper portions of the drainage area. Sightings of the State threatened long-tailed salamanders have been reported in the Nishisakawick Creek throughout the upper and lower portions of the drainage area.*

***Wickecheoke Creek:** The NJDEP upgraded from Category Two to Category One antidegradation designation the entire length of the Wickecheoke Creek (including Plum Brook and unnamed tributaries) based on "exceptional ecological significance". An assessment of the physical/chemical monitoring data demonstrated that the water quality of the Wickecheoke Creek meets standards except for temperature, phosphorus, and fecal coliform. Wickecheoke Creek has reported State threatened wood turtle sightings, primarily in the upper portions of the drainage area. Sightings of the State threatened long-tailed salamanders have been reported in the Wickecheoke Creek throughout the upper and lower portions of the drainage.*

*Page 53:*

<b>Soil</b>	<b>Acres/Septic@ 4 Persons/Household</b>	<b>Area in Acres</b>	<b>Acres/Septic@ 3 Persons/Household</b>
Rowland	8.3	297.7	6.3
Riverhead	6.8	48.10	5.1
Reaville	7.9	2,442.01	5.9
Readington	8.1	422.53	6.2
Quakertown	8.5	571.17	6.4
Pope	6.9	339.47	5.2
Penn	7.9	4,649.6	6.0
Neshaminy Variant	8.1		6.2

Soil	Acres/Septic@ 4 Persons/Household	Area in Acres	Acres/Septic@ 3 Persons/Household
Neshaminy	6.7	533.68	5.1
Mount Lucas	8.2	239.3	6.2
Lehigh	8.4	14.68	6.3
Legore	7.0	8.16	5.3
Lansdale	7.0	64.12	5.3
Klinesville	6.8	550.52	5.1
Hazleton	6.7	305.9	5.1
Chalfont	7.7	6,190.51	5.8
Bucks	7.0	217.39	5.3
Birdsboro	6.9	182.91	5.3
Abbottstown	7.8	1,567.17	5.9
OTHERS			
Bowmansville	N/A	128.41	N/A
Croton	N/A	2,291.99	N/A
Pits, Sand & Gravel	N/A	9.33	N/A
Reaville variant	N/A	337.26	N/A
Rubble land	N/A	1,043.76	N/A
Water	N/A	350.62	N/A

Page 55:

**Kingwood Township, NJ**  
**Total Population**  
**Population by Household Size**  
**Percent of Population by Household Size**  
**Source: US Census Bureau, 2010 Census**

	Persons
Total Population	3,845
Average household size	2.66
Average family size	3.04

Subject	Number	Percent of Households	Persons	Percent of Population
<b>HOUSEHOLD SIZE</b>				
<b>Total households</b>	1,446	100.0		
<b>1-person household</b>	262	18.1	262	
<b>2-person household</b>	536	37.1	1,072	
<b>3-person household</b>	260	18.0	780	
		<b>Total:</b>	<b>2,114</b>	<b>55%</b>
<b>4-person household</b>	269	18.6	1076	
<b>5-person household</b>	84	5.8	420	
<b>6-person household</b>	21	1.5	126	
<b>7-or-more-person household</b>	14	1.0	98	
		Total:	<b>1720</b>	<b>45%</b>

[1] A household that has at least one member of the household related to the householder by birth, marriage, or adoption is a "Family household." Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. Responses of "same-sex spouse" were edited during processing to "unmarried partner."  
 [2] "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

P. Lubitz inquired if the west side of Horseshoe Bend Road from Spring Hill Road to Route 12 could be 20 acre zoning. It would not have any appreciable effect on anyone and establishes a part of the Township that has 20 acre zoning. D. Pierce stated it seems arbitrary that the Township picked that area for no particular reason. There would have to be justification to make that area different from the remainder of the AR-2 zone. The Township does not want to be the leading edge. It should learn from other people’s mistakes and not their own. The Township does not want to be forced into a position as with the solar development defending a cutting edge ordinance.

After some discussion, the Board decided to leave the 50% open land requirements for developments. The Board also decided to require some buffering that would not fundamentally change the viewscape.

S. McNicol inquired about the definition of a “mixed use” core district. D. Banisch stated the district would provide a higher density in the center and the density would be reduced somewhat in the outer spokes of the center. S. McNicol stated her concern is a financial hardship for the Township for the TDR. She stated TDR’s take money to do them. There would have to be staff and continuous monitoring of the properties to make sure everything is working properly. There would have to be grants or some type of compensation in the sending areas of their rights. She is not sure how the Township wins. D. Banisch stated the two overlays are currently in draft ordinances before the Township Committee. The recommendation in the Land Use Plan would be to recommend those two overlays to the Township Committee and to investigate TDR for the EGVC to supplement the development capacity. The two draft ordinances before the Township Committee will work without the TDR. TDR could be added later to the two draft ordinances.

T. Kratzer stated the lot size decided on by the Township is not based on the science but a policy decision. On Page 21, paragraph #4 states an assumption. A formula could be used to come up with a cubic foot and convert it to gallons and divide it by water use. On Page 22, the multiplication factor of 2.8 came up with 8.2 acres. He stated the result should be 11.5 acres to 36.7 acres. There is an error in the multiplication.

The following were editorial corrections made to the Land Use Plan:

Footnote #5 was not indicated;

Page 3, the Land Use Plan indicates 35.7 square miles and on page 27 it indicates 35.6 square miles;

Page 15, paragraph #2, fourth sentence remove the words “in Kingwood”;

Page 17, AR-2 section, paragraph #1, last sentence contains two “a’s”;

Page 27, above chart, year should be indicated;

Page 22, paragraph #3, the sixth sentence contains two “recharge”;

Page 22, paragraph #5, correct the spelling of Matthew;

## **ADJOURNMENT**

It was moved by P. Lubitz, seconded by T. Kratzer and carried to adjourn the meeting at 9:35 PM. All members present voted **AYE**.

**Respectfully submitted,**

**Diane Laudenschick, Secretary**