

From: m_galligan <m_galligan@comcast.net>
To: Peggy Wang <peggywn@aol.com>
Sent: Fri, May 29, 2015 8:34 am
Subject: LGH nitrogen equivalency calculation

To the Zoning Board of Appeals

I asked Steve Ventresca at Nitsch to re-check his numbers on impervious area. He did so and he concluded that the roadway area is 29,154 s.f. The individual unit driveways and common parking areas are not included in that 29,154 s.f.

At the start of the hearing the ZBA recognized that we needed a baseline development method to measure the Lifetime Green Homes 40 B against. Since it seemed incorrect to use a single family home, a conservation cluster, or a common driveway development, the ZBA and the developer agreed to measure the project against the subdivision rules and regulations. Based on that, the developer has submitted his waiver requests as waivers from the subdivision rules and regulations. Therefore in this matter, we should use the subdivision rules and regulations to assess the relationship of impervious area and nitrogen loading. And in the DEP sample calculations, we'll use the subdivision example.

The calculations are in the attached spreadsheet. Since 9.17 acres is less than 9.35 acres, the development fails the equivalency calculation.

--

-Marty Galligan, m_galligan@comcast.net, c: 978-505-5185

Equivalency Calculations for nitrogen loading
 Based on document #219, provided by the developer

| No. Units | Bedrooms per unit | Total Flow Rate | | Equivalency (factor) |
|-----------|-------------------|-----------------------------------|-------------------------|-------------------------|
| | | Rate per Day (GPD) GPD/bedroom | (GPD) GPD/unit count | |
| 1 | 4 | 110 | 440 | 440 |
| 2 | 2 | 110 | 440 | 660 |
| 17 | 3 | 110 | 5610 | 660 |

Total acreage (43,560 acres) needed to support nitrogen flow

Total site area (43,560 acres):

Impervious roadway area of 29,154 sf, in (43,560 sf) acres

Site area available to support nitrogen flow (43,560 sf) acres:

Since 9.17 acres is less than 9.34 acres, the development fails the equivalency calc

-Marty Galligan

file: LGH_equivalency_mg.xlsx

5/27/15

| Number of builder's acres needed | Number of 43,560 acres needed |
|-------------------------------------|----------------------------------|
|-------------------------------------|----------------------------------|

| | |
|------|------|
| 1.00 | 0.92 |
|------|------|

| | |
|------|------|
| 0.67 | 0.61 |
|------|------|

| | |
|------|------|
| 8.50 | 7.82 |
|------|------|

| | |
|--|------|
| | 9.35 |
|--|------|

| | |
|--|------|
| | 9.84 |
|--|------|

| | |
|--|------|
| | 0.67 |
|--|------|

| | |
|--|------|
| | 9.17 |
|--|------|

ulation.