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Geotechnical and
Environmental
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from the ground UP

News on Land Use Throughout the Region

SPRING 2007



Villages of Elizabethtown

Innovative Ideas for Mixed-Use Communities

Incorporating a mixture of retail stores into a residential community is nothing new, but with the revival of “main street” retail designs, the opportunity to create a real heart for a mixed-use community is too incredible to pass up. There are, however, challenges and solutions to successfully integrating these uses to create the best place at the right time.

The Mix

“Main Street” retail will be one of hopefully many front doors into the residential community, so the types of tenants and their inter-relationships are critical. Consider grouping restaurants, apparel, and home furnishing stores together to create synergy. Anchor tenants should not compete with smaller shops so every tenant can remain prosperous. The mixture of residential home types is equally critical. Should there be rental apartments, can these be built over the retail stores to create a 24/7 environment, and how best can you transition density from Main Street back into the residential community? These are some of the questions that should be asked during the planning process. Finally,

when should each use be constructed? Recognize that without the retail component, the Main Street concept will be difficult for most visitors to recognize.

Four Sides

Every retail building in a successfully integrated Main Street community has four articulated sides.

Residents should not look onto large blank walls or service areas. Use showcase windows, awnings, signage, lights and other architectural elements to enliven what would otherwise be a monolithic wall. Think vertical – not horizontal. Similarly, the backyards of homes should not abut retail stores. Uses should be face to face. This can be done successfully without developing unnecessary infrastructure.

Connectivity

The roadway and pedestrian connections between retail and residential components should be endless - the more the better. Excellent connectivity will promote interaction, reduce “dark spots” and provide excellent marketing windows for every use. Consider a network of streets, sidewalks, and pathways throughout the community. Use different materials to subtly define spaces and appropriate activities. Draw from the community activities, such as a community center and neighborhood parks.

Marketing

Marketing a Main Street Retail community is marketing a lifestyle, not shops or homes. Remember who the tenant/resident is and what they are looking for – activity! The marketing medium and content should (continued on page 2)

Wetlands Regulatory News

Over the past nine months, there have been multiple changes to the federal and state regulations governing waters of the U.S. and wetlands in our region. First, on June 19, 2006, the U.S. Supreme Court issued a controversial split decision in the Rapanos and Carabell cases regarding the United States Army Corps of Engineers’ (USACE) regulatory authority over waters of the U.S. including federally regulated wetlands. Following this decision, the USACE suspended Jurisdictional Determinations (JDs) to develop further guidance based on the Supreme Court’s ruling. To manage an increasing backlog, the USACE Philadelphia District began processing requests for JDs in February 2007, without the guidance from the USACE headquarters. The USACE



Wetlands Site

Philadelphia District personnel are conducting JD field reviews using their best professional judgment and the regulation, guidance, and policy in effect prior to the Supreme Court’s decision. The USACE Baltimore District has decided to wait for the additional guidance before beginning to process JDs.

Other regulatory news of significance includes the re-issuance, with modifications, of the Maryland State Programmatic General Permit-2 (MDSPPG-2) as the Maryland State (continued on page 2)



Villages of Elizabethtown

Innovative Communities

(continued from pg. 1)

always stress lifestyle and be as avant-garde as the community itself.

Details, Details

The devil is really in the details for Main Street communities. The architecture establishes the

vernacular, and everything else should flow from that. From light posts, to trash cans, to benches, to paving patterns, to plant materials, the community can either be tightly knit together or fall apart based on the details.

MRA is currently involved in several Main Street communities across the country. We would be delighted to speak with you more about our experience in this area and show you examples of our work. For more information contact Sean Davis at sdavis@mragta.com.



Sean D. Davis, RL A
Principal
MRA Laurel, MD office

Wetland Regs

(continued from pg. 1)

Programmatic General Permit-3 (MDSPGP-3) for a five year period, which began October 1, 2006. The Pennsylvania State Programmatic

General Permit-2 (PASPGP-2) was also re-issued with modifications as Pennsylvania State Programmatic General Permit-3 (PASPGP-3) on July 1, 2006, for a five-year period. State Programmatic General Permits authorize activities within Waters of the US that result in minimal adverse environmental effects. For determination of eligibility, these activities are reviewed at the State level and are either non-reporting to the USACE, or are reviewed by the USACE, other resource agencies, and in certain cases, the public. On March 19, 2007, the USACE re-issued all existing Nationwide Permits (NWP's), general conditions, and definitions with some modifications, and six new NWP's, two new general conditions, and 13 new definitions.

For further explanation of these changes in regulations and policy and how it could affect your existing and/or future projects, please do not hesitate to contact GTA's experienced and professional staff of wetland scientists in our Abingdon and Laurel offices.



T. Andy Stansfield, Jr.
Project Scientist
GTA Abingdon, MD office

Did You Know...

Most municipalities in our region have adopted the International Building Code (IBC). Frequently, we find that an overlooked provision in the Code causes costly delays and extras during construction. Chapter 18, Section 1802 of the IBC, lists criteria when a Foundation and Soils Investigation may be required by the building official. Given the geologic conditions in the eastern United States, one or more of the criteria requiring a subsurface investigation are typically met at most sites. However, often local code officials waive this requirement for residential structures and smaller retail structures.

Section 1803 Excavation, Grading and Fill specifies that "where footings will bear on compacted fill materials, the compacted fill shall comply with the provisions of an approved report...". The approved report shall contain:

1. Specifications for the preparation of the site prior to placement of compacted fill.

2. Specifications for material to be used as compacted fill.
3. Test method to be used to determine the maximum dry density and optimum moisture content of the material to be used as compacted fill.
4. Maximum allowable thickness of each lift of compacted fill material.
5. Field test method for determining the in-place dry density of the compacted fill.
6. Minimum acceptable in-place density expressed as a percentage of the maximum dry density determined in accordance with Item 3.
7. Number and frequency of field tests required to determine compliance with Item 6.

The code provides an exception to the report requirement when the depth of fill is less than 12 inches, but still requires the fill to be tested. Section 1803 does not have a provision to be waived by the building official.

We are often called out to sites to observe the foundation subgrades for buildings that will be supported on fill. Typically, an approved report is not available and no observation or testing was performed during fill placement. There is no way to satisfy the provisions of Section 1803 after the work has been performed. This puts our clients at risk, and usually the best solution is complete or partial removal of the fill which is costly and time-consuming.

So, the next time the footings for your project will be supported on fill, don't forget to perform a subsurface exploration and have quality control testing done during the fill placement. This will reduce your risks and



costs in the long run. For additional information, feel free to contact your local Geo-Technology Associates, Inc. office.

Christopher M. Reith, PE
Vice President
GTA New Castle, DE office



Regulations of Groundwater Supply in Areas of MD Underlain by Fractured Rock Aquifers

In many cases, development of lands situated outside of existing water and sewer service areas necessitates establishment of on-site water supply facilities. A current trend is for municipalities to require developers to establish a source of water as a prerequisite to annexation. Thus, even the prospect of being tied into a public water system does not exempt one from the expense and rigor of supply establishment. Often the resource that is developed is groundwater, extracted via drilled wells.

Contrary to claims that may be voiced at public hearings, groundwater is a renewable resource. Aquifers nurtured by the temperate climate of Maryland are replenished by rainfall, and responsible, reasonable usage of groundwater for public and private consumption is appropriate. In this context, groundwater use in the State of Maryland is regulated by the Maryland Department of the Environment (MDE). The quantity of groundwater that may be permitted for withdrawal is intimately linked to the number of residential units and the type of commercial/industrial facilities that are feasible.

For practical purposes, proposed average withdrawals of less than 10,000 gallons per day (gpd) are associated with a generally straightforward and streamlined permit process. Depending upon which Maryland county a site is located, this usage rate translates to roughly 40 to 50 single-family residential units. The following discussion pertains primarily to proposed withdrawals that are greater than 10,000 gpd.

The MDE's approach to regulating groundwater supply depends in part upon whether a site is underlain by fractured rock or Coastal Plain deposits consisting of inter-layered sands, silts and clays. Coastal Plain deposits tend to be relatively productive and predictable with respect to groundwater supply, and generally greater productivity occurs with distance to the south and east. These deposits generally are found south and east of Route I-95 in Cecil, Harford and Baltimore Counties, and also underlie the counties that comprise Southern Maryland.

The remainder of Maryland is generally underlain by fractured rock aquifer systems.

For fractured rock aquifers, the quantity of groundwater that may be permitted is dependent in part upon the following:

- **Available Recharge** – For on-site community supplies, this is based on the site acreage, and for public supplies, it is based upon municipal service areas. MDE incorporates many layers of conservatism in their permit process – for available recharge, they estimate the permissible quantity of water based on recharge that occurs during a severe drought, minus some amount of water that is needed to keep streams flowing, minus recharge that is lost due to impervious areas. No provision is made for septic system return flows, or the artificial recharge requirements promulgated in the 2000 Maryland Stormwater Design Manual.

Further constraint of a given well's production is effected by dividing sites and service areas into discrete surface drainage areas. Thus, one can establish a very productive well, but suffer severe limitation of use due to being situated within a small drainage/recharge area.

It should be noted that the Code of Maryland Regulations stipulates that the MDE will not issue groundwater appropriation permits for housing subdivisions underlain by fractured rock "if the water is to be obtained from individual wells on each residential lot where the average lot size is less than 1 acre."

- **Impacts on the Aquifer or Other Water Users** – The MDE imposes testing requirements for new wells to evaluate potential impacts of the proposed withdrawal on other groundwater users. Excessive reduction in water levels within another well due to pumping of the proposed supply well may result in reduced allocation and/or requirement that mitigation be offered such as deepening of impacted wells, connection of affected users to the new community/public supply, etc.

- **Yield Evaluation** – The MDE's newly universal mode of estimating yield for fractured rock wells will likely result in a permitted withdrawal that is much lower than the pumping rate during the pumping test of a well.

Another universal and relatively recently enforced MDE requirement, which can lead

News Briefs

New GTA Owner, DDS Owner, and MRA Associate.

GTA recently announced the appointment of Paul S. Scott, PG, to Vice President and Shareholder. As Senior Hydrologist, Paul oversees GTA's groundwater and wastewater services throughout the mid-Atlantic region. (Paul is pictured at the bottom of this column.)

Decisive Data Systems (DDS) joined the MRA and GTA family of companies in 2003, and provides IT consulting services to architectural and engineering firms, developers, and construction companies in the mid-Atlantic region. Andrew S. Higinbotham, MSCE, has been named a Principal with the firm.

MRA has announced the promotion of Kenneth Evans, Jr., PLS, to Associate. Ken has over 21 years of experience in the land surveying and land planning fields.

Two GTA Offices Relocate:

In March of this year, GTA's Sterling, VA and Charlotte, NC office moved to larger quarters. Please note their new contact information:

43760 Trade Center Place, Suite 110
Sterling, VA 20166
703-478-0055 Fax 703-478-0137

710 Peninsula Lane, Suite B
Charlotte, NC 28273
704-553-2300 Fax 704-553-2400

to substantial delays in the regulatory approval process, is that projects must be incorporated into the county master water and sewer plan, and be confirmed as such by MDE, before the MDE will review a groundwater appropriation permit application.

The groundwater exploration, development and permitting process in Maryland is challenging. GTA welcomes the opportunity to assist you in moving through this process when the necessity arises.



Paul S. Scott, PG
Vice President
GTA Abingdon, MD office



Tax Credit Program for Historic Structures

Do you own a building or a home, or are you considering buying one that may have some historical significance or is located in a historic district? Are you contemplating a renovation project or an adaptive reuse of the building? If so, you may want to consider the Heritage Structure Rehabilitation Tax Credit Program. The Tax Credit Program has been widely used for the renovation of commercial and residential buildings that are in a historic district or buildings that may be individually listed on the National Register of Historic Places. I led the effort to place more than 750 structures in Guilford, a historic community in Baltimore City, on the National Register of Historic Places. Guilford was planned by Frederick Law Olmstead, the planner of Central Park at the beginning of the 20th Century. I have also been the architect for numerous renovations of individual buildings, including the Woman's Industrial Exchange in Baltimore City.

The Heritage Structure Tax Credit Program offers a 20% credit on the capital cost of

renovations. Engineering fees, architects' and consultants' fees can be included in the cost of renovations. The success of this Program can be seen in projects that include the conversion of a school into condominium units, abandoned industrial buildings into new retail centers, office buildings into new mixed-use facilities and many other examples where tax credits provided the incentive to preserve the historic character of a building.

There is a three-part application for the tax credit process. The first part is to determine if the project meets the guidelines to qualify for tax credits. The second part is determining the amount of the credit and the implementation of the project, and the third part is the issuing of the tax credits. Work that has been completed over a 24-month period can be included in the tax credit application. All of the work does not have to be done simultaneously or by the same contractor to be included. There is a minimum capital expense of \$5,000 that must be spent to be eligible, and the maximum amount that will be considered is \$15 million, or a \$3 million tax credit. Recipients of tax credits must keep the building in compliance with the approved application for five years, yet if the building is

sold, the new buyer is not bound to the requirements of the application. The Heritage Structure Rehabilitation Tax Credit Program is also available to organizations that are tax exempt under 501(c)(3) of The Internal Revenue Code.

If the tax credit program may be of benefit to a project that you are considering, it is important that the work is approved prior to the commencement of construction. Part one of the application requires a photographic survey with drawings that illustrate the existing conditions to determine if the proposed renovations comply with the Secretary of the Interior's Standard for Rehabilitation. As an architect, I enjoy working with the guidelines of the Tax Credit Program and though it may require owners a greater level of involvement in their projects, most

find it to be a rewarding process when the project is complete and a new life has been given to a part of our past.



*Kenneth Hart, ALA, IIDA
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