Experts in non-sewered development

CASE STUDY:

Granger, Indiana

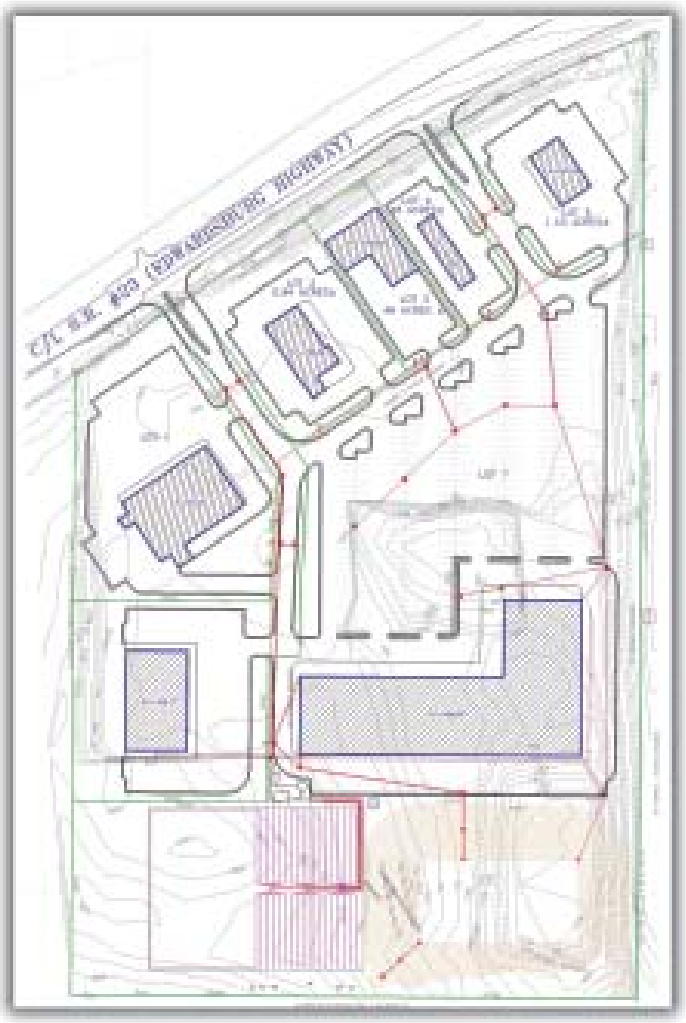
Granger Square

Background:

Granger Square is a mixed-use retail and commercial center located along SR23 in Granger, St. Joseph County, Indiana. Though the Granger community is sizable with nearly 700 equivalent dwelling units, including both residential and commercial properties, sewer service is not available. Businesses and residences in the area are all currently served by septic systems.

To develop Granger Square, Diversified Real Estate Company concluded early on that providing independent septic systems for each lot/business owner was not practical or economic. To maximize the value of the land, all frontage property must be build able (not set aside for septic) and significant grading would be required to address site topographical features and allow efficient lot layout. Instead, clustering of these lots into a common sewer system designed to serve all lots was the only realistic way the property could be developed. The site would likely remain undeveloped today without clustering.

Dan Akin, P.E., Danch, Harner & Associates, Inc. was given the task to design a clustered commercial sewer system. Based on extensive NCS Wastewater Solutions experience with commercial clients, Dan contacted NCS for assistance. Together, Danch Harner and NCS teamed to design a sewer system for the site and obtain a permit through the Indiana State Department of Health. ISDH approval of plans was issued in June 2006.



Site Plan

Special Challenges:

Though several lots/tenants were known at the time of design, there remained significant uncertainty as to what mix of businesses might ultimately occupy the site. In addition, designing a treatment system to serve restaurants, with their high grease and organic loading, is significantly different than designing a system to serve general retail businesses. The challenge was to design a wastewater treatment and onsite disposal system that could accommodate a wide range of prospective businesses and yet still be economical to install and operate.

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The Solution:

Based on the developer's best judgment, a design capacity of 15,000 gallons per day was established. A low-pressure sewer collection system was designed to deliver wastewater from each business to a central Granger Square treatment plant area. A Bioclere trickling filter supplied by Aquapoint Inc. was specified to achieve secondary treatment standards required by ISDH. For all restaurants, pretreatment was specified at each lot using the HDAP high strength wastewater treatment system. In this way, any number of restaurants could be accommodated so long as the total 15,000 gallons per day capacity limit was not exceeded. Some additional drainfield area was also set aside by the developer to accommodate greater flows if needed. The treatment facility can also be modularly expanded.

Bioclere trickling filter

NCS installed the central treatment plant and drainfield in the summer of 2006 with startup in August. The first HDAP pretreatment unit was installed during October to serve the Pit Stop restaurant, which came on line in November. A second HDAP pretreatment unit was installed in early 2007 to serve a new KFC restaurant. NCS now provides ongoing management and maintenance services at the site, reporting performance results quarterly to ISDH.

Businesses now served:

- The Pit Stop Restaurant w/ 16-pod HDAP pretreatment unit
- KFC Restaurant w/ 6-pod HDAP pretreatment unit
- Goodwill Retail Store
- Sherwin Williams Paint Store
- First Stop Gym (Athletic Club)

Businesses soon to be added:

- Credit Union
- Two Home Décor Retail Stores
- Fast Food Restaurant

Drainfield