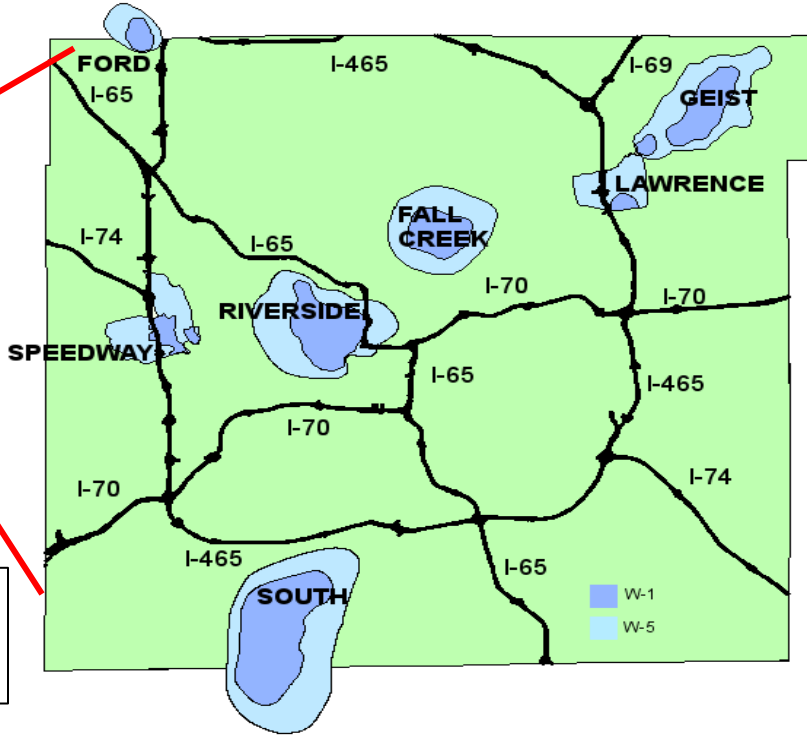


Advances in Groundwater Protection in Marion County, Indiana

Rachel Walker, *Mundell & Associates, Inc.*
John A. Mundell, *Mundell & Associates, Inc.*



Marion County/City of Indianapolis



~904,000 people
over 403 sq. miles

Citizens Water (95%)
Speedway Water Works (1%)
Lawrence Utilities (4%)

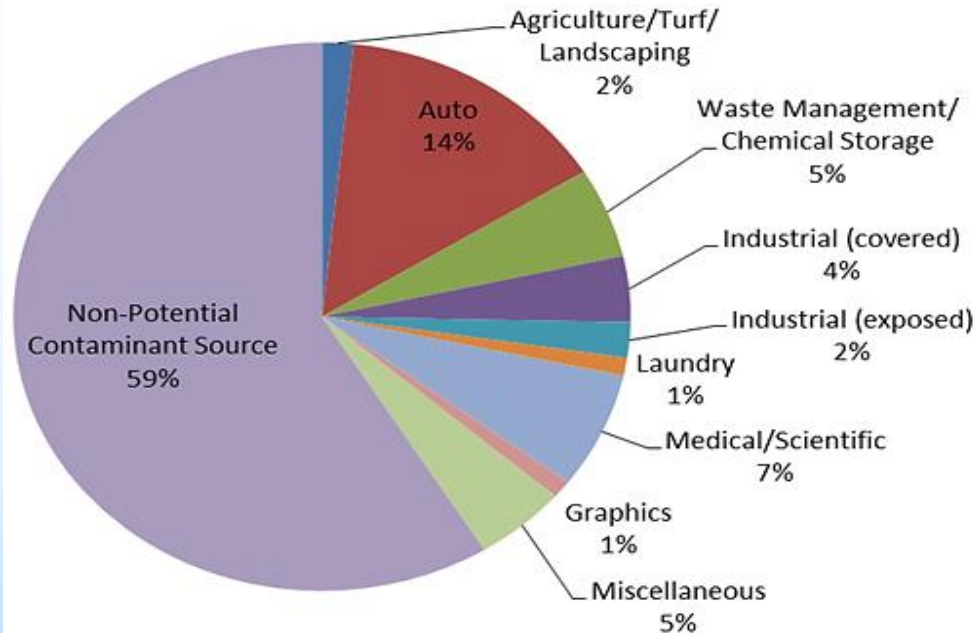
- Seven actively pumping wellfields in Marion County
- Almost 11 billion gallons of water are pumped from 85 wells across the seven wellfields each year, **comprising about 25% of water supply**
- Demand for water is growing with both the population and industry



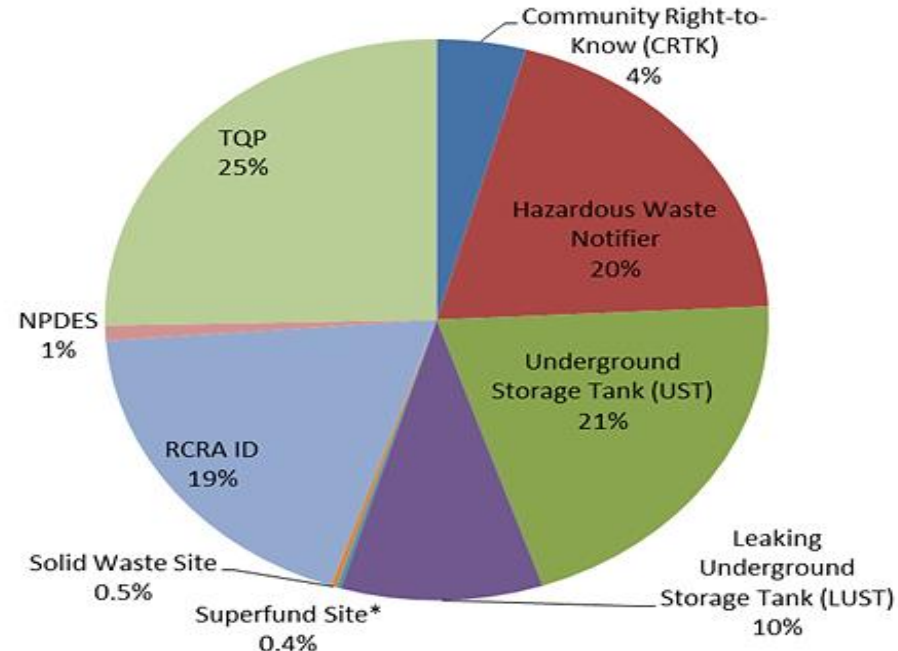
What's in the Wellfields?

- 2,300 active sites
- 950 (41%) have been identified as potential contaminant sources (PCS)
- Of the 950 PCS, 700 appear in a regulatory database (30% of active sites)

All Business Types in Wellfields



Regulated Business Types in Wellfields



Groundwater Protection Through Time in Marion County

1995

- City Wellfield Protection Zoning Ordinance established
- Wellfield Protection Hearing Officer

1996

- Marion County Wellfield Education Corporation (MCWEC) established

1998

- Technically Qualified Person (TQP) replaces Wellfield Hearing Officer (City Ordinance)




2007

- MCWEC begins Wellfield Business Inventories

2017

- Marion County Public Health Department enacts a Wellfield Protection Health Code

Wellfield Protection Approaches in Marion County

-  1 City Wellfield Zoning Ordinance (TQP)
-  2 Marion County Wellfield Education Outreach Program (MCWEC)
-  3 Health Department Wellfield Code



City Wellfield Zoning Ordinance and the Technically Qualified Person (TQP)

Regulation of New Development

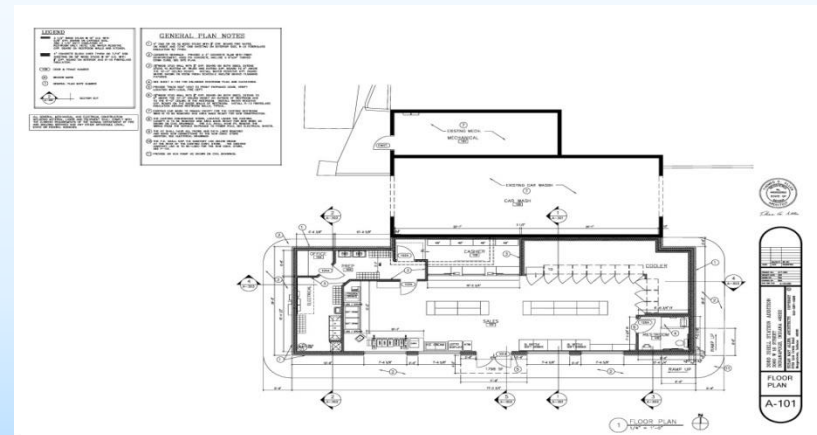
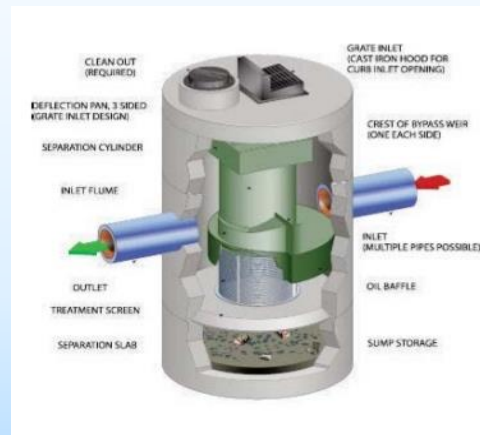
- Commercial construction within the wellfields is flagged for review by the TQP.
- The plans are reviewed with respect to the City Wellfield Zoning Ordinance to determine compliance.
- Design and construction conditions are imposed to ensure wellfield safety.

WARNING:

NO CHEMICALS SHALL BE DISCHARGED



THIS FACILITY IS LOCATED IN A DESIGNATED WELLFIELD PROTECTION ZONE OF MARION COUNTY, INDIANA



City Wellfield Zoning Ordinance and the Technically Qualified Person (TQP)

Regulation of New Development

Pros

- Thorough review process
- Allows decisions to be made based on risks
- Have new or expanding businesses build protections in from the start

Cons

- Focused on development stage: **no impact on existing businesses**
- Not really intended to regulate operations
- Re-inspections have found non-compliance issues



Voluntary Assistance to Existing Businesses

Marion County Wellfield Education Corporation (MCWEC)

- Not-for-profit corporation established in 1996 by the Wellfield Protection Zoning Ordinance
- Voluntary & confidential business outreach and education
- Maintain database of potential contaminant sources
- Visit potential contaminant sources in the wellfield and offer free consulting on how to improve waste/chemical storage and handling.
- Website: <http://indyH2O.org>



Mission: To prevent contamination to the valuable groundwater resources of Marion County through public awareness and education.



MCWEC Business Outreach



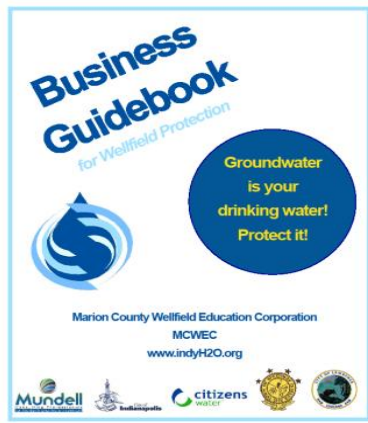
MCWEC Business Outreach

Pros

- Voluntary and business friendly
- Lets us see what's really going on in the wellfield
- Create positive relationships with businesses

Cons

- Businesses most in need of help were the least likely to voluntarily reach out
- Because the program is anonymous, no way to report observed significant dangers to the wellfield



Marion County Public Health Department

Wellfield Health Code



- Drinking water protection is public health protection
- **Applies to ALL businesses in the wellfields – new and existing**
- Code based on the City Wellfield Zoning Ordinance (TQP) in order for the two to be as in-sync as possible
- Code was passed in 2017; enforcement began in 2018
- MCPHD inspectors will visit each business and perform inspections
- Persistent violators will receive notices of violation, fines, and/or legal action when appropriate

MCPHD Wellfield Health Code

Focus on Operations and Behaviors

Employee Training on Spill Response and Prevention



Proper Spill Kits



Inform chemical and waste transporters



Floors in good condition



Chemicals properly labeled & stored



Overfill alarms on tanks



Proper waste disposal



MCPHD Wellfield Health Code and MCWEC

Better results through collaboration

- Prior to the existence of the MCPHD Wellfield Code, MCWEC encountered a relatively small number of businesses.
- Once Wellfield Code enforcement began in 2018, that number increased substantially. Businesses are invited to contact MCWEC for compliance assistance by MCPHD inspectors.
- MCWEC responded to this increase by making more funds available for purchasing spill and containment equipment.
- The MCPHD and MCWEC also collaborate on technical issues such as which chemicals are potential groundwater contaminants and what forms of containment technology are suitable.

Three-Pronged Approach to Wellfield Protection for Marion County

- **City Wellfield Zoning Ordinance** builds protection into new construction. Follow-up inspections of sites can lead to enforcement actions to ensure compliance.
- **MCWEC voluntary program** has proven most effective when providing free spill equipment to businesses. However, this program originally interacted with only a small number of businesses. After the MCPHD Wellfield Code came into effect, that number has increased substantially. MCWEC also provides technical support to the MCPHD.
- **MCPHD Wellfield Health Code** is in its first year of enforcement. MCPHD inspections have prompted many more businesses to make use of MCWEC services and MCWEC has also assisted inspectors with technical support.

