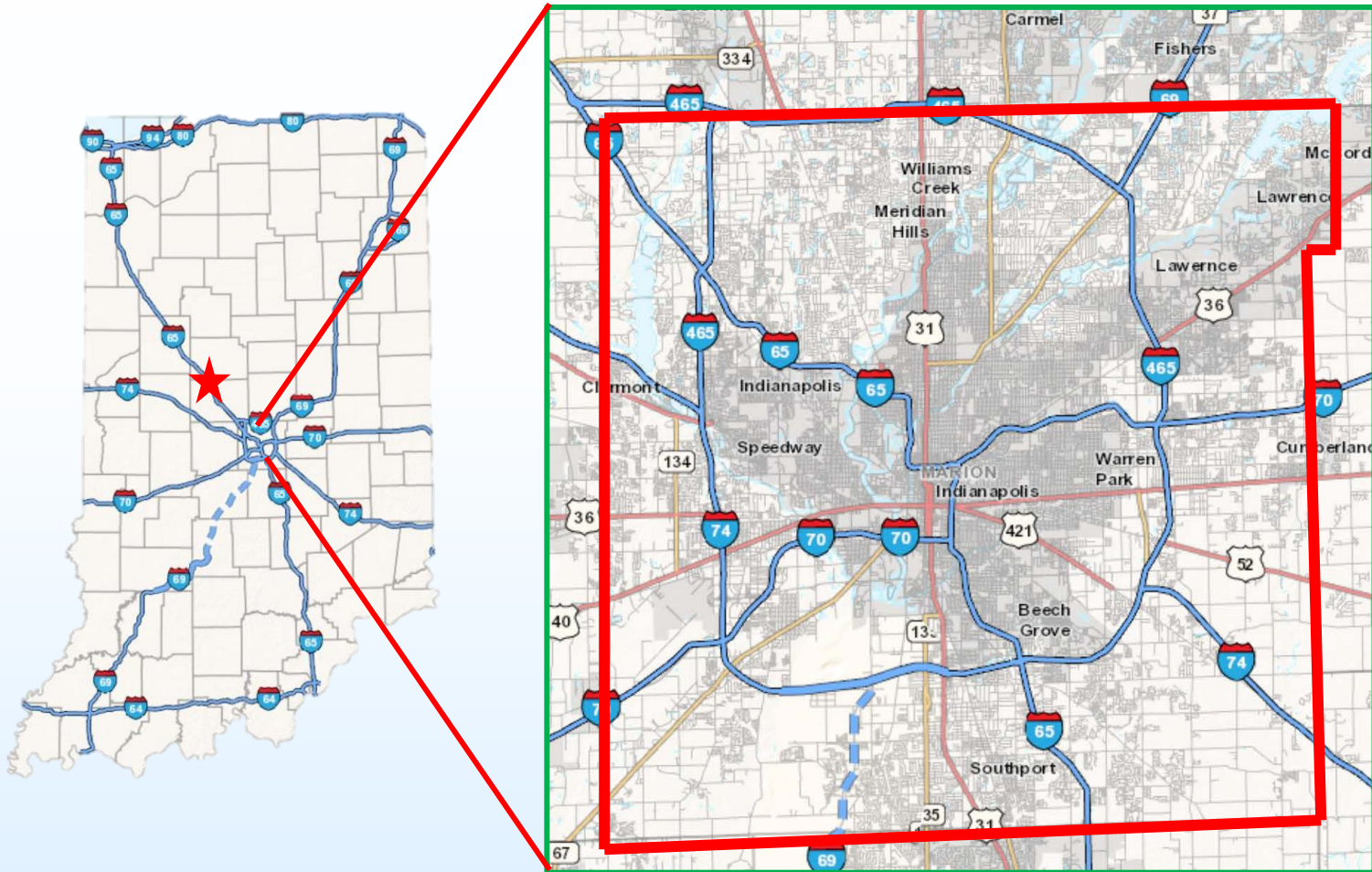


Groundwater Protection Programs in Marion County, Indiana

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



Marion County/City of Indianapolis



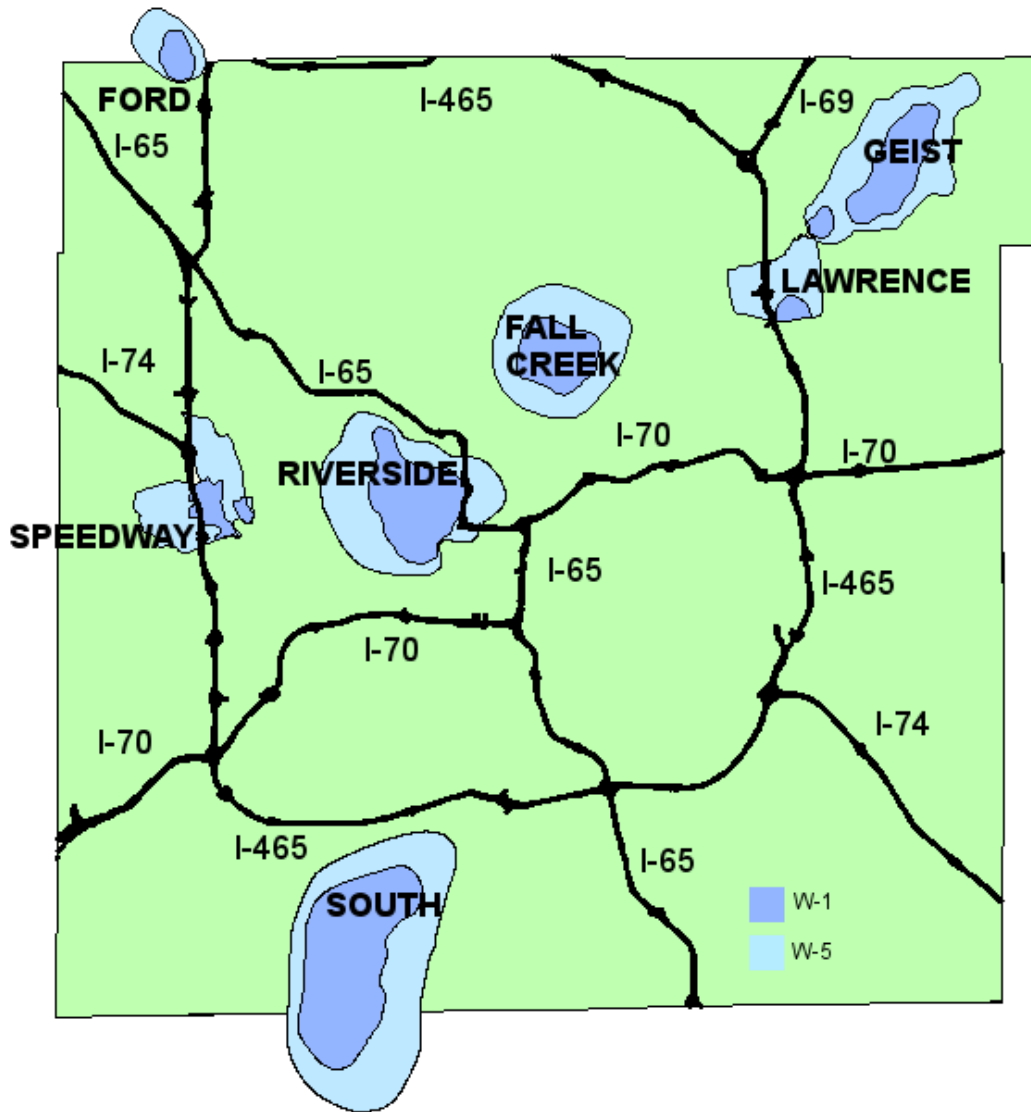
County Population: ~904,000 over 403 sq. miles



Have you seen these?



Marion County Wellfields



Ford Wellfield – Agricultural and residential

Geist – Residential and light retail

Lawrence – Residential and retail

Fall Creek – Retail, auto service, light industry

Riverside – Retail, auto service, major industry

Speedway – Retail, auto service, residential

South – Retail, auto service, major industry

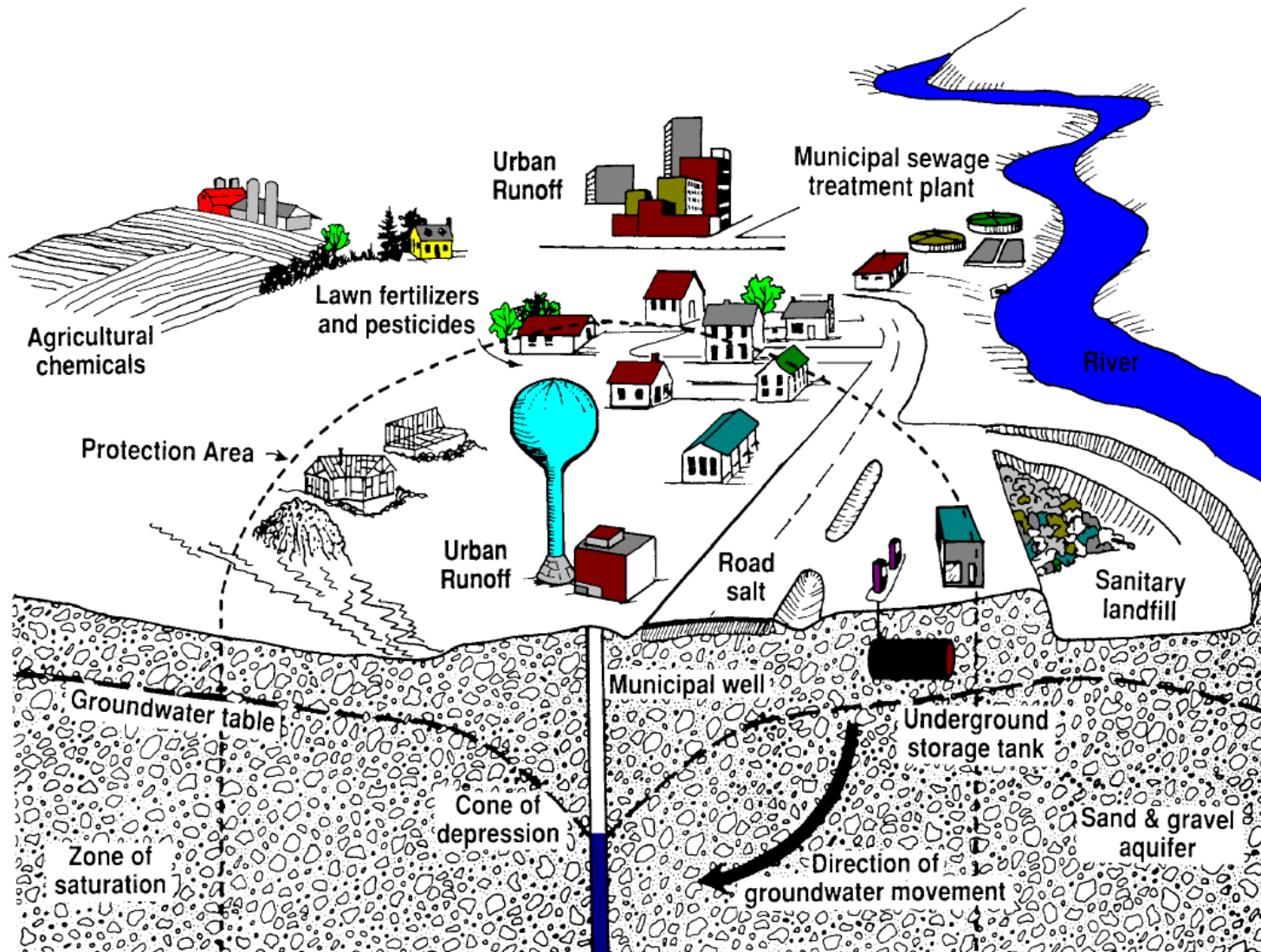


Wellfield Protection Regulations

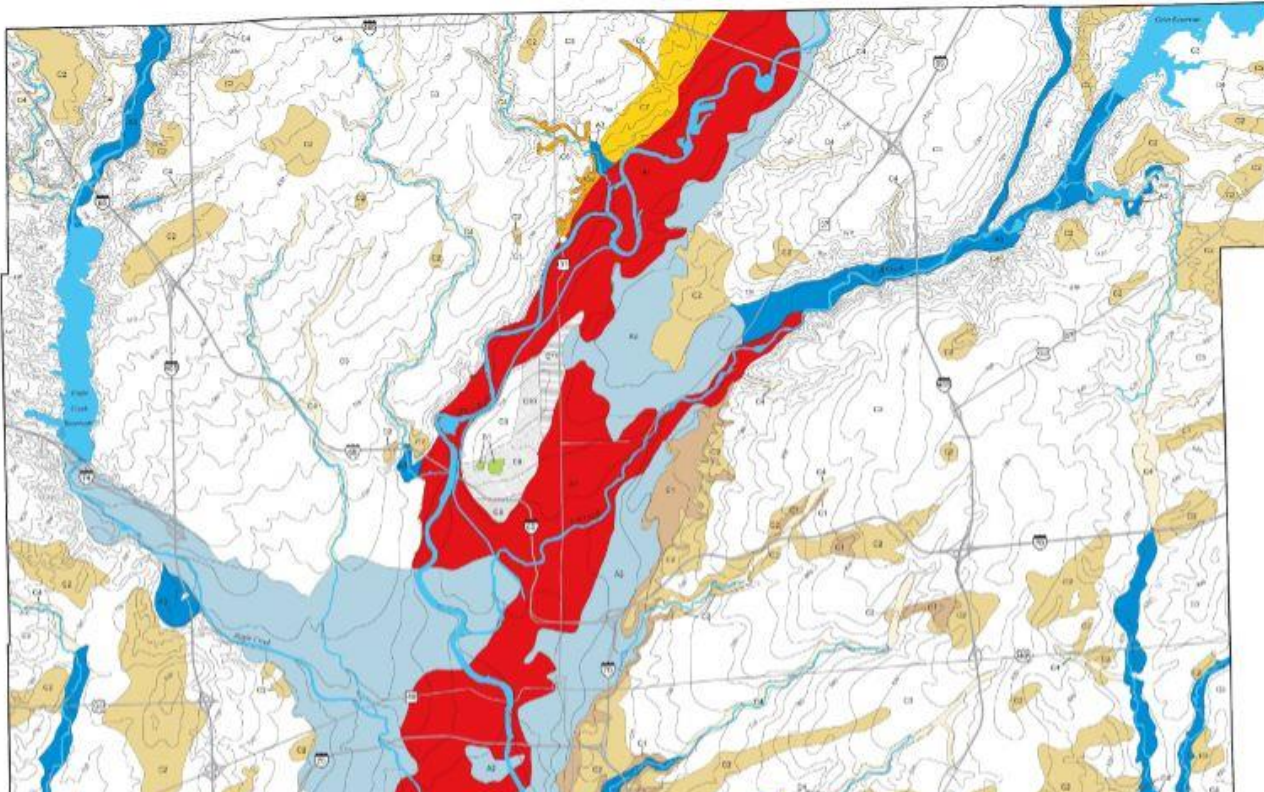
- The [Safe Drinking Water Act Amendments of 1986 \(SDWA\)](#) established a national priority of protecting groundwater drinking water sources from chemical contamination.
- [Title 327, Article 8, Rule 4.1 of the Indiana Administrative Code \(327 IAC 8-4.1\)](#), establishes the regulatory framework for local wellhead protection programs and defines local program performance expectations:

"Time of travel (TOT) threshold" means a threshold determined by the community or CPWSS to suit the hydrogeologic conditions and needs of the community; however, a minimum five (5) year TOT for modeled wellhead protection areas and three thousand (3,000) feet for fixed radius wellhead protection area is allowed.

Wellhead Protection Area



Geology and Hydrogeology of Marion County



Hydrogeologic Settings

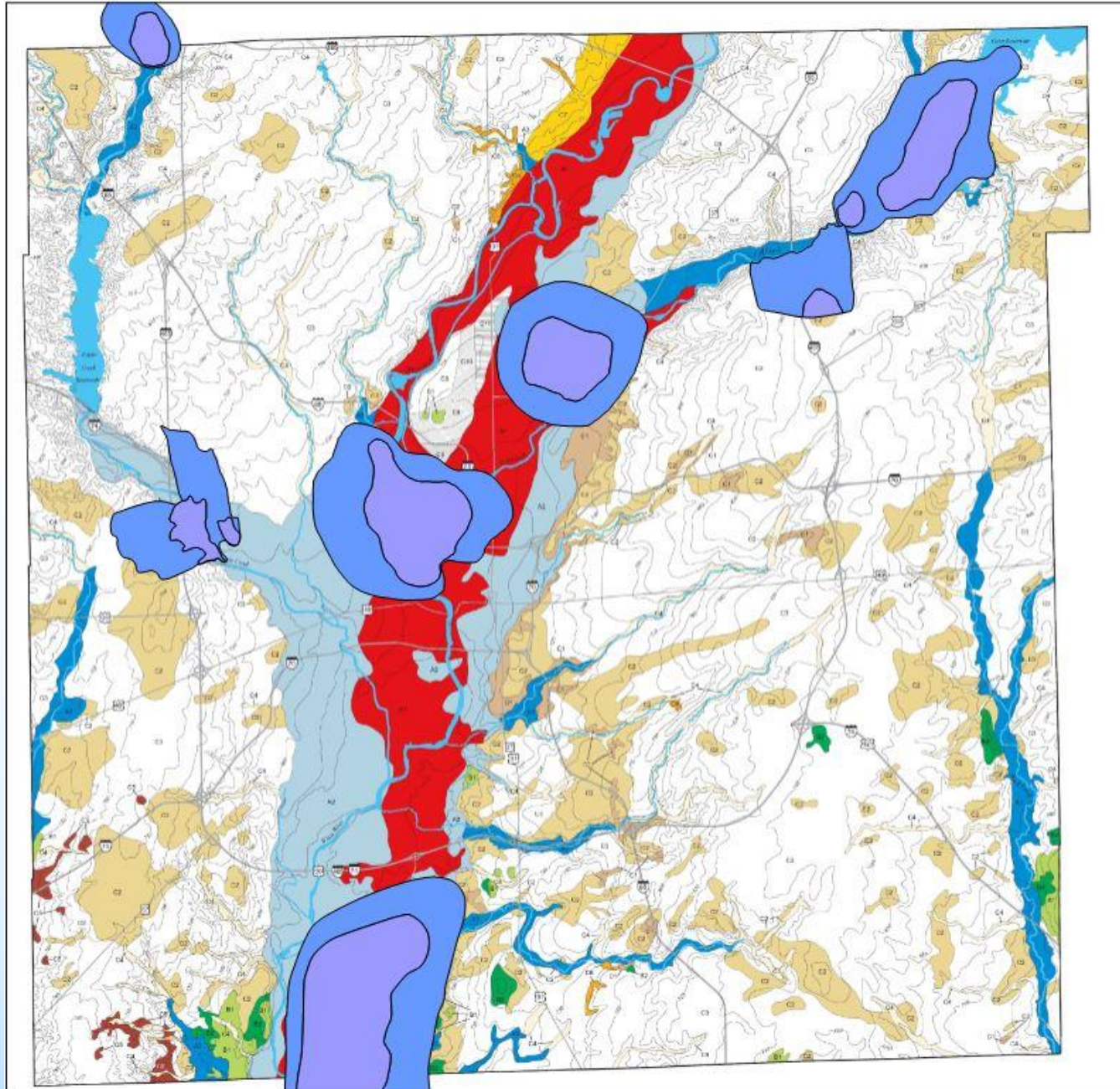
A1

Thick sections of unconfined sand and gravel interstratified with a few small widely scattered till units. This setting characterizes the axis of the White River Valley, which is the regional discharge area for all aquifers in the county.

A2

Variable thickness of outwash overlying complexly interbedded sand and gravel and till. Thick unbroken sections of sand and gravel are present locally. Sand and gravel units at depth are typically confined or semi confined by bodies of till, whereas the upper portions of the system are commonly unconfined.

Current Wellfield Protection Zones vs Geology



Marion County Public Water Supply

- Three water distributors

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

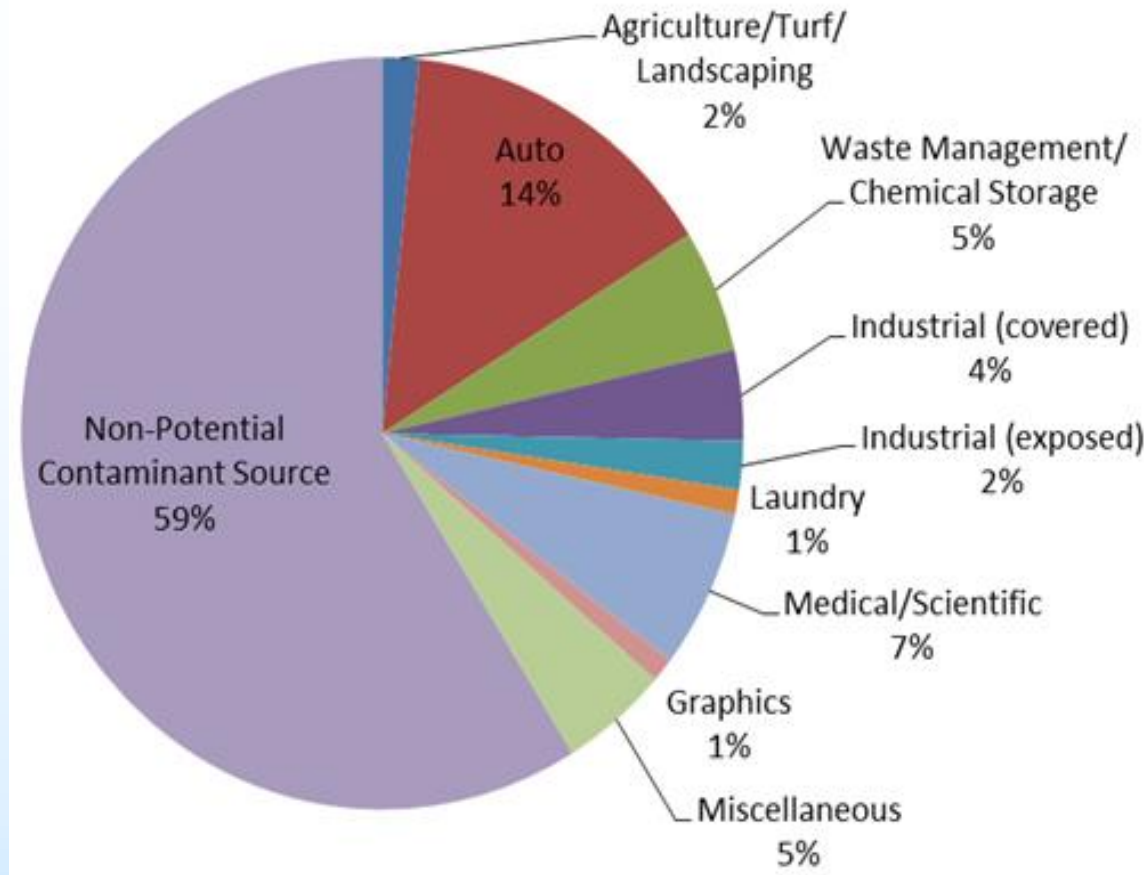


- Almost 11 billion gallons of water are pumped from the 85 wells across seven wellfields each year, **comprising about 25% of water supply**
- Demand for water is growing with the population and growth of industry



What's in the Wellfields?

- Approximately 2,300 active business sites
- Around 950 (41%) have been identified as potential contaminant sources (PCS)

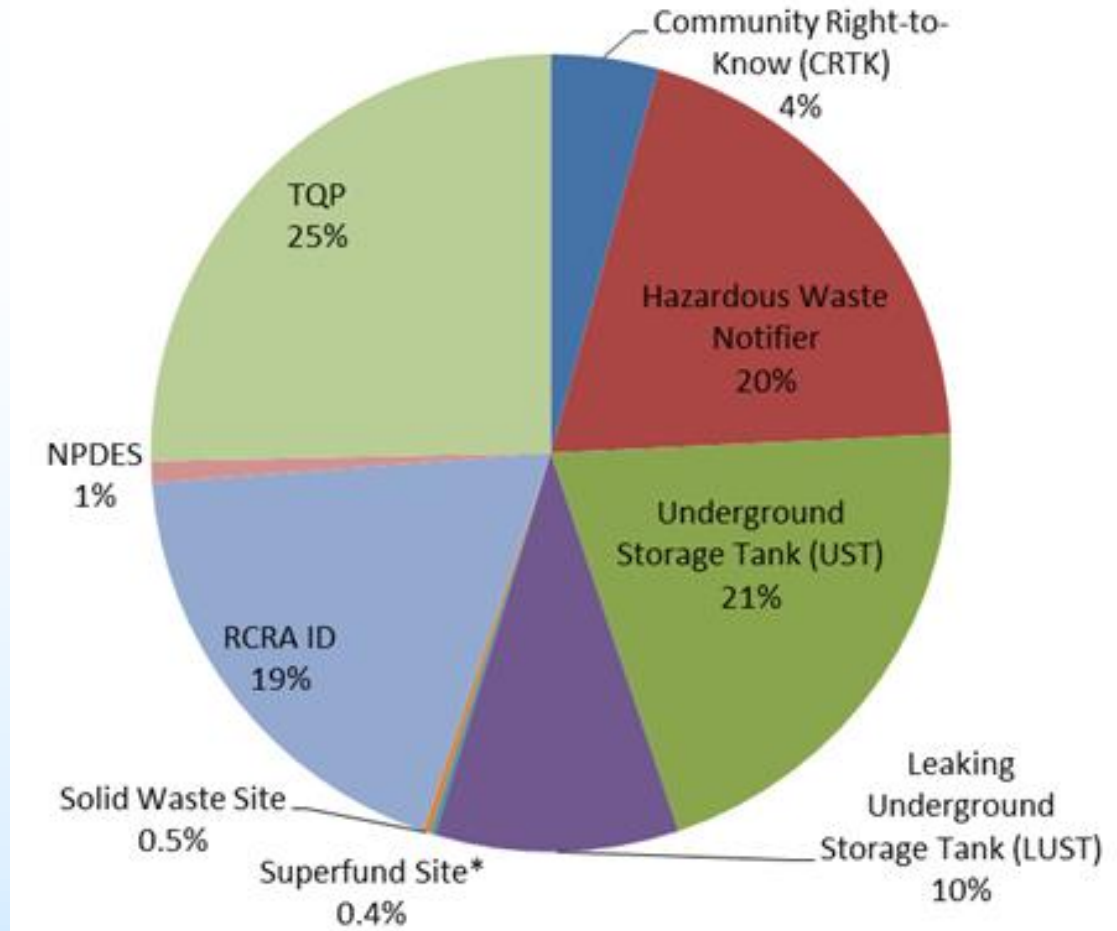


Business Types in all Wellfields



What's in the Wellfields?

- Of the 950 Potential Contaminant Sources, about 700 (73%) appear in a regulatory database.



Regulated Business Types in all Wellfields



Groundwater Protection Through Time in Marion County

1995

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

1996

- Marion County Wellfield Education Corporation (MCWEC) Established

1998

- Technically Qualified Person (TQP) program replaces Wellfield Hearing Officer

2007

- Wellfield Business Inventories started (MCWEC)

2017

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

Current Wellfield Protection Approaches in Marion County

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



Regulation of New Development

Technically Qualified Person (TQP)

- When companies want to build a new facility or improve an existing facility, they must file for a permit with the City – Improvement Location Permit (ILP)

The Zoning Ordinance – Indianapolis-Marion County – Effective April 1, 2016

Section 04. Wellfield Protection Secondary Zoning Districts

A. Purpose

Because of the risk that hazardous materials or objectionable substances pose to groundwater quality, it is recognized that the further regulation of the manufacturing of, handling, transfer, disposal, use or storage of hazardous materials or objectionable substances related to nonresidential use activities is essential in order to preserve public health and economic vitality within Marion County.

B. Applicability

No building, structure, premises or part thereof shall be altered, constructed, converted, erected, enlarged, extended, modified, or relocated except in conformity with this Section, and not until the proposed Site and Development Plan has been filed with and approved on behalf of the Commission by the Technically Qualified Person (TQP). The following regulations shall apply to all land within the Wellfield Protection zoning districts. The entire site shall be subject to review by the TQP. These regulations shall be in addition to all other primary and secondary zoning district regulations applicable to such land, and in case of conflict, the more restrictive regulations shall apply.

- If these are located within a wellfield they are flagged for review by the TQP



Regulation of New Development

Technically Qualified Person (TQP)

Plans are reviewed with respect to chemical storage

Table 742-204-2: Threshold amounts by district, state and container quantity				
District	Liquids		Water-Soluble Solids	
	Single-Container	Aggregate	Single-Container	Aggregate
W-1 District	1 gallon	2 gallons	6 pounds	6 pounds
W-5 District	40 gallons	100 gallons	240 pounds	600 pounds

3. Secondary containment requirement

Secondary containment shall be required for any single container holding 40 gallons or more of liquid for more than 24 hours. Secondary containment shall be required for containers holding 40 or more gallons of liquid in the aggregate for more than 24 hours. All secondary containment areas shall comply with the following requirements:

- a. If unenclosed or located outside, the secondary containment shall be:
 1. Covered;
 2. Located on an impervious surface that is properly drained; and
 3. Constructed to prevent intrusion of precipitation.
- b. All secondary containment areas shall be constructed to meet at least one of the following requirements:
 1. A containment area capable of containing 110% of the largest container and preventing any release from the container; or
 2. A storage tank designed and built with an outer shell and a space between the tank wall and the outer shell that allows for and includes interstitial monitoring.



Regulation of New Development *Technically Qualified Person (TQP)*

Construction and operational conditions are imposed on the business to ensure groundwater safety

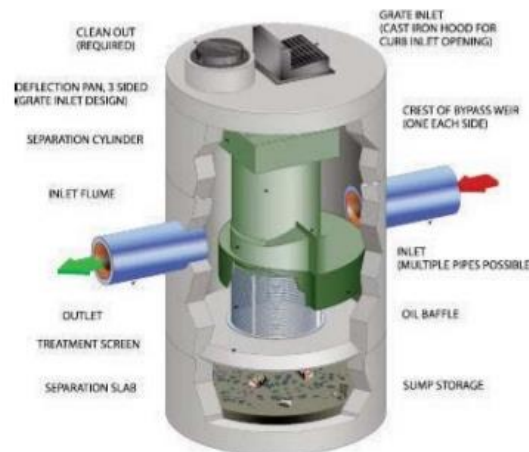
CHEMICAL SPILL CONTINGENCY PLAN

WARNING:

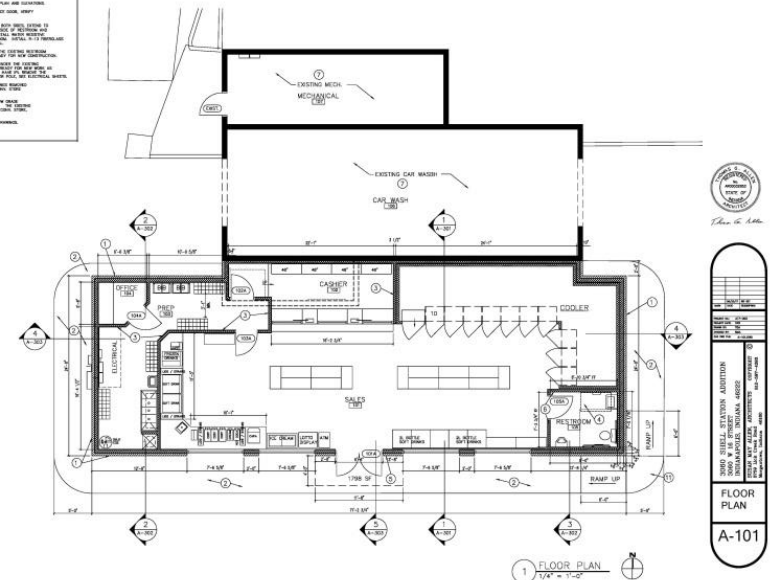
**NO CHEMICALS SHALL BE
DISCHARGED**



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



LEGEND	GENERAL PLAN NOTES
1. 1/4" = 1'-0" SCALE	1. ALL NEW CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE (IBC) AND THE INTERNATIONAL PLUMBING CODE (IPC).
2. 1/4" = 1'-0" SCALE	2. ALL NEW CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE (IBC) AND THE INTERNATIONAL PLUMBING CODE (IPC).
3. 1/4" = 1'-0" SCALE	3. ALL NEW CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE (IBC) AND THE INTERNATIONAL PLUMBING CODE (IPC).
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Regulation of New Development

Technically Qualified Person (TQP)

- Approximately 250 sites have been reviewed through this process
- Last update to ordinance was 2016 – introduced a ban on new underground storage tanks in both W-1 and W-5 wellfield zones

2. Prohibited uses

- a. Above ground, outdoor liquid storage tanks greater than 1,000 gallons are prohibited from locating in the W-1 Wellfield Protection zoning district.
- b. The above ground, outdoor storage of water soluble solids greater than 6,000 pounds per container in any one containment area are prohibited from locating in the W-1 Wellfield Protection zoning district.
- c. Underground storage tank. No new underground storage tank shall be permitted in the W-1 or W-5 Wellfield Protection zoning district. An existing underground storage tank located in the W-1 or W-5 Wellfield Protection zoning district may be replaced or upgraded in accordance with Section 742-204.F.1.a, Replacement or upgrading of an existing underground storage tank.



Regulation of New Development

Technically Qualified Person

Pros

- Thorough review process
- Allows decisions to be made based on risks
- Have new or expanding businesses build protections in from the start
- Work with City zoning department for compliance enforcement

Cons

- Focused on development stage: no impact on existing businesses
- Not really focused on regulating operations
- Re-inspections have found non-compliance issues with some businesses



Regulation of New Development

Technically Qualified Person

Compliance Example

Pit filling operation in South Wellfield

- Was mandated by TQP letter that no material with adverse lab results be placed in cavity.
- Inspection discovered that fill material with bad lab results was placed in cavity.
- TQP required Phase II assessment of fill already in place to determine whether a threat to groundwater was present.
- Re-drafted TQP letter with new guidelines to ensure material is staged and held until lab results are received.



Voluntary Assistance to Existing Businesses

Marion County Wellfield Education Corporation (MCWEC)

- Not-for-profit corporation established in 1996 by the Marion County 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> or <http://mcwec.org>



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



Marion County Wellfield Education Corporation

Groundwater and Drinking Water Protection for Indianapolis and Marion County Indiana



AM I IN A WELLFIELD?

GROUNDWATER IS YOUR DRINKING WATER. PROTECT IT!

[Wellfield FAQs](#)

[What We Do](#)

[Get in Touch](#)

Our mission is to protect the groundwater resources of Marion County by providing education and resources to individuals and businesses.



REGULATORY UPDATES

If your business is location in a wellfield, changes to Indianapolis zoning ordinances and Marion County health codes may affect you.



SCHEDULE ASSESSMENT

We conduct **free and confidential** personalized site assessments for any business located in one of Marion County's wellfields.



BUSINESS RESOURCES

Printable guides, forms, and checklists for best management practices and required for compliance with Marion County and Indianapolis wellfield regulations.

How bad can it possibly be?



How bad can it possibly be?



MCWEC business outreach includes donating spill equipment to businesses



MCWEC Business Outreach

Pros

- Voluntary, business friendly & aims to create positive relationships with businesses
- Can see what's really in the wellfield and what chemical storage practices people are using
- Donated spill equipment encourages new practices

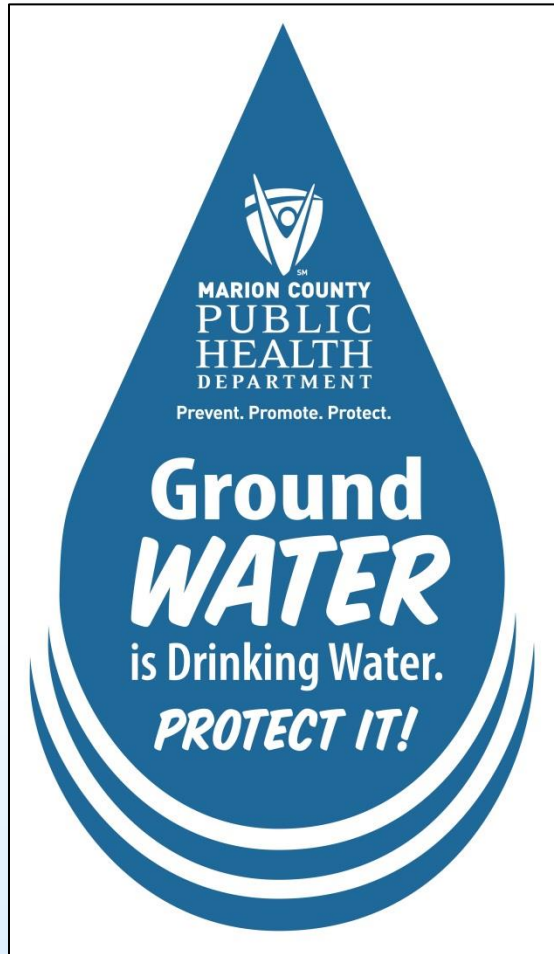
Cons

- Businesses most in need of help were the least likely to opt-in to receiving it
- Because the program is anonymous and voluntary, no way to report significant dangers to the wellfield when observed in the field



Marion County Public Health Department

Wellfield Health Code



- Drinking water protection is public health protection
- All businesses have the same expectations and applies to ALL businesses in the wellfields
- Passed effective 2017, enforcement began 2018
- MCPHD inspectors will visit each business, at an interval appropriate to the business, and enforce the health code
- Violators may receive notices of violation, fines, and/or legal action when appropriate



MCPHD Wellfield Health Code Requirements

Focus on business practices

Employee Training on Spill Response and Prevention



Proper Spill Kits



Inform chemical and waste transporters



Common Sense Practices Can Protect Drinking Water

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.
- MCWEC also provides assistance on technical issues to the MCPHD when requested.



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.

