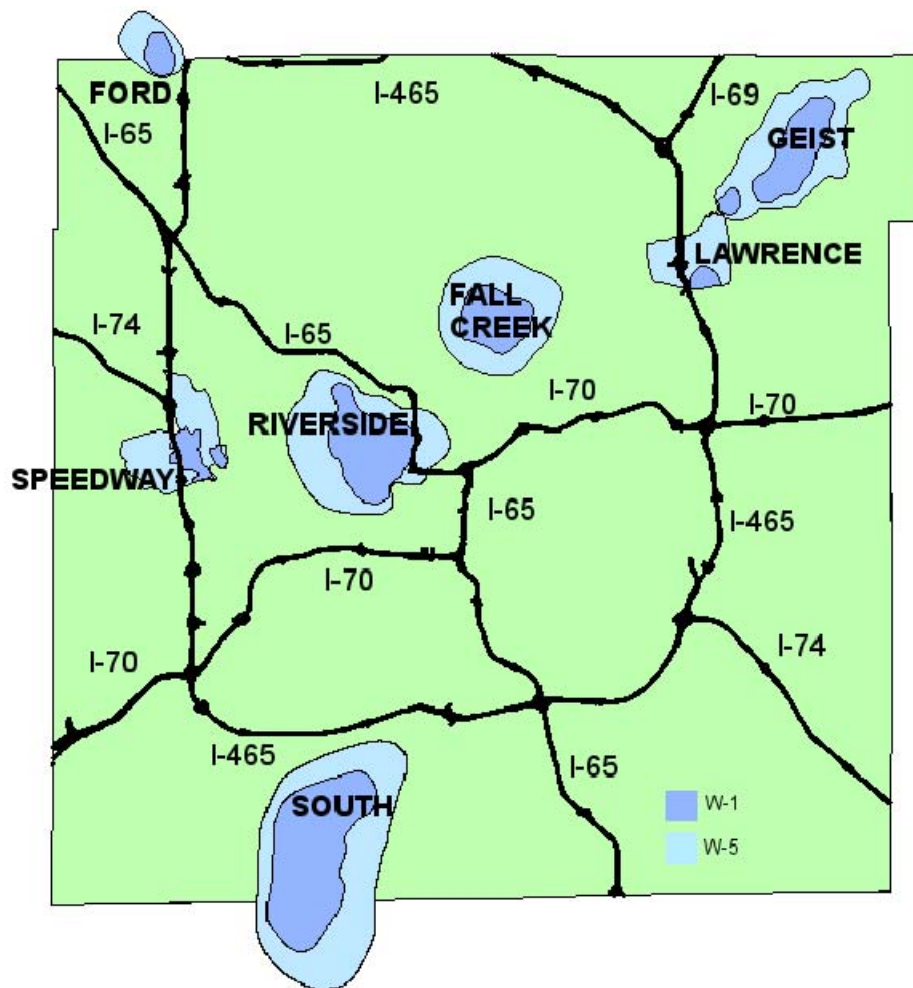




Marion County  
Wellfield Education Corporation  
[www.indyH2O.org](http://www.indyH2O.org)

# 2016 Wellfield Protection Activities Report



Marion County Wellfield Protection Areas



# Marion County Wellfield Education Corporation (MCWEC) 2016 Wellfield Protection Activities Report

## Introduction

Marion County's drinking water is provided to approximately 450,000 homes and businesses. Within the City of Indianapolis, drinking water is supplied by Citizens Water and consists of a continuous blend of surface water and groundwater. In the Town of Speedway, drinking water is provided either by surface or groundwater sources depending on the season. The City of Lawrence relies exclusively on groundwater for its drinking water.

Due to the importance of groundwater resources to Marion County, the Marion County Wellfield Education Corporation (MCWEC) was established as a 501(3)c non-profit corporation in 1996 by the Marion County Wellfield Protection Zoning Ordinance to support protection of groundwater and drinking water supplies in Indianapolis. Its mission is:

*"To prevent contamination to the groundwater resource of Marion County through public awareness and education."*

MCWEC's responsibilities include:

- 1) Educating the public about ground water concerns and wellfield protection;
- 2) Educating and providing technical assistance to businesses in Wellfield Protection Districts as to the proper use and storage of materials, as well as general wellfield education;
- 3) Overseeing the registration of potential business/commercial contaminant sources located within the Marion County wellfields to assist the water utilities in fulfilling their reporting requirements for the state wellhead protection program with the Indiana Department of Environmental Management (IDEM); and
- 4) Evaluating the effectiveness of wellfield protection program components.

This report summarizes the status of Marion County's wellfield protection program as of December 2016, and provides highlights of the various activities completed from January through December 2016 by MCWEC in support of groundwater protection. The MCWEC board of directors guides Mundell & Associates (MUNDELL), a local environmental consulting firm under contract with MCWEC, in the implementation of activities to be completed in support of its goals.

## General Wellfield Information Summary

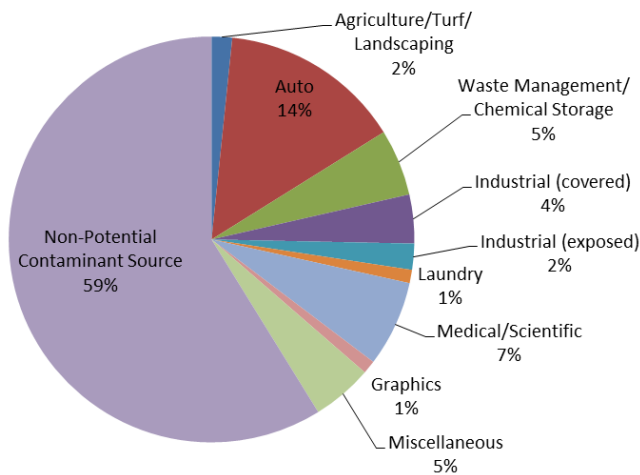
There are seven (7) Wellfield Protection Areas currently delineated within Marion County. They are known as the Fall Creek Wellfield, Ford Wellfield, Geist Wellfield, Lawrence Wellfield, Riverside Wellfield, Speedway Wellfield and South Wellfield.

These wellfield protection areas are defined by the surface land surrounding the withdrawal supply wells where groundwater in the surrounding area could reach the pumping wells within five (5) years. Currently, about 45.6 square miles are a part of the wellfield protection areas. This is an increase over 2015's 44 square miles due to the increase in size of the Speedway Wellfield in 2016 due to redelineation of wellfield borders. Based on land use data from the City of Indianapolis/Marion County, 47% of the well fields are used for residential purposes, 14% for commercial and industrial purposes, and 39% used for other purposes (such as vacant land, agriculture, places of worship, and parks). As of 2015, nearly 13 billion gallons of groundwater were withdrawn from wells inside Marion County, with almost 9 billion gallons used for public water supply. Approximately 85 pumping wells are used to supply water to over 450,000 homes and businesses by Citizens Water, Speedway Water Works, and Lawrence Utilities, collectively.

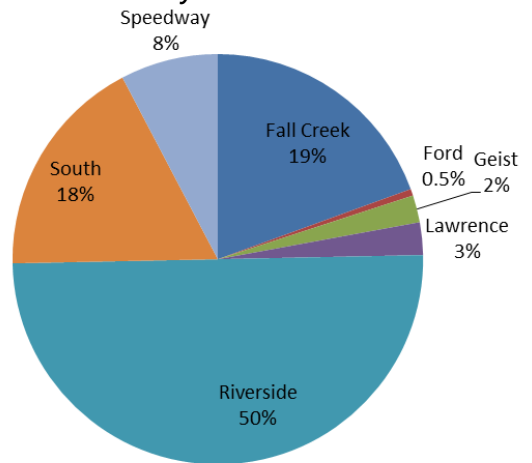
### Wellfield Commercial Use and Contaminant Sources

Within the seven Marion County wellfields, there are 2,264 active (non-historic and non-vacant) nonresidential sites. Of these, 933 have been identified as potential contaminant sources, including: 328 automobile-related sources, 155 medical/scientific use sources, 120 waste management/chemical storage sources, 88 covered industrial sources, 47 exposed industrial sources, 37 agriculture/turf/landscaping sources, 24 commercial laundry sources, 24 production of graphic sources and 109 miscellaneous sources. The remaining 1,331 active non-residential sites are considered low to no risk as potential contaminant sources.

*Business Types in All Wellfields*

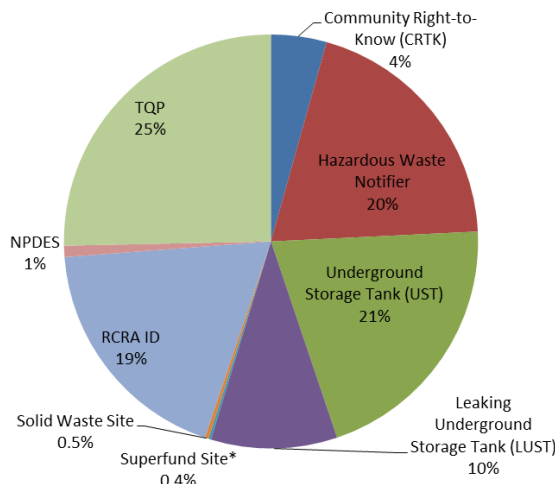


*Potential Contaminant Sources by Wellfield*

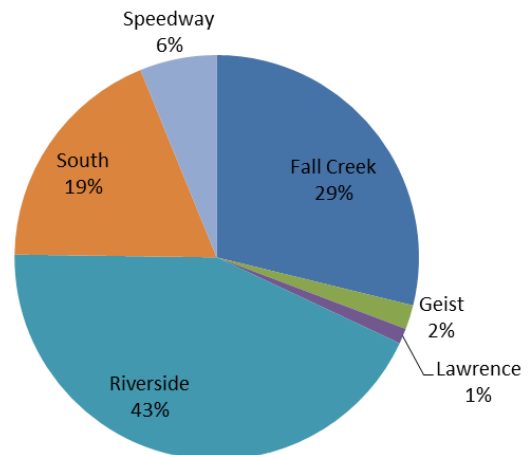


The Riverside Wellfield contains almost one-half of all potential contaminant sources, followed by the Fall Creek and South Wellfields. Of the 933 identified potential contaminant sources, 696 sites appear in regulatory databases, with 264 listed in the Hazardous Waste Notifiers database, which records operations that actively generate or temporarily accumulate hazardous waste as part of their normal operations. Of these regulated facilities, there are 261 sites with registered underground storage tanks (USTs), and 121 sites with recorded incidents of leaking underground storage tanks (LUSTs). There is also currently one United States Environmental Protection Agency (U.S. EPA) Superfund Site (National Priority List) located within the wellfields with another under official consideration.

*Regulated Sites in All Wellfields*



*Regulated Sites by Wellfield*



Since the adoption of the 1996 Marion County Wellfield Ordinance, the construction of new facilities in wellfield protection areas has required development plan reviews by a Technically Qualified Person (TQP). As of 2016, about 25 percent of the regulated sites have received TQP reviews.

The Riverside Wellfield again has the greatest number of regulated contaminant sources, followed by the Fall Creek and South Wellfields. This data is presented in tabular form in **Table 1** and **2**. Detailed contaminant source summaries and maps of each wellfield are provided as **Attachments 1** through **7**.

## Summary of 2016 Program Activities

### Outreach and Education

The MCWEC educational program focuses on direct contact and technical support for actively operating wellfield businesses identified as potential contaminant sources to prevent or minimize future chemical leaks or spills from impacting the drinking water supply. Participation in the program is voluntary and requires that businesses allow MUNDELL to conduct an on-site visit to provide personalized recommendations. During site assessments, MUNDELL reviews facility chemical product storage and waste management procedures in order to recommend modifications that minimize the potential for groundwater contamination. In addition, MUNDELL is available by phone and email at all times to provide assistance to any business related to wellfield protection.

During 2016, MUNDELL contacted over 100 businesses to offer services and was able to conduct seventeen (17) detailed site visits of businesses within the wellfields. Business types visited included fifteen (15) auto-related businesses, one (1) dry cleaner, and one (1) miscellaneous business. During these visits, MUNDELL provided recommendations for compliance with upcoming Marion County Public Health Department (MCPHD) regulations and best management practices (BMPs).

MUNDELL also provided assistance to approximately five (5) businesses regarding wellfield protection. Generally, these businesses were interested in information about proper waste disposal and were referred to the City of Indianapolis ToxDrop program.

### Current Educational Tools

The MCWEC business education program has developed a number of practical tools available to participating businesses. The following support documents are currently being used as part of the educational program. These documents are also available on <http://indyh2o.org/>.

- 1) *Business Guidebook for Wellfield Protection* (updated March 2016)
  - Describes MCWEC, upcoming regulatory changes, describes actions needed to comply with upcoming regulations, provides general facility and operational improvements for handling chemical and waste product and transfer to reduce the risk of contaminating groundwater.
- 2) *MCWEC Program Brochure* (updated February 2016)
  - Provides a general description of MCWEC and the business assessment program, information about groundwater and wellfield protection, and general wellfield facts.
- 3) *Vehicle Maintenance Best Management Practice Summary* (updated July 2016)
  - Provides a summary of specific pollution prevention practices for vehicle maintenance shops.
  - Available in English and Spanish.
- 4) *Dry Cleaner Best Management Practice Summary* (updated October 2016)
  - Provides a summary of specific pollution prevention practices for dry cleaners.
  - Available in English and Spanish.
- 5) *Wellfield Protection – Floor Sealant Guidance* (updated May 2016)
  - Provides general guidance regarding the importance of floor sealants and options available.

- 6) *Wellhead Protection – Emergency Response/Spill Prevention Plan Outline* (updated May 2016)
  - Provides general guidance regarding the development of a site-specific plan.
- 7) *Spill Kit Information* (updated May 2016)
  - Provides general guidance regarding spill kits.
- 8) *Spill Kit Use* (updated May 2016)
  - Provides information about how to properly use a spill kit and clean up spills.
- 9) *Employee Training Log*, (updated May 2016)
  - Form for businesses to log important information regarding their employees' spill training.
- 10) *Chemical Inventory Log* (updated May 2016)
  - Form for businesses to log the chemicals they maintain on site along with other relevant information.

### **Business Reassessments for Program Evaluation**

MUNDELL conducted four (4) detailed site visits at businesses who had previously received technical assistance in order to determine the long-term impact of the MCWEC educational program. Obstacles to conducting reassessments included extensive business turnover and lack of interest by business owners. From the reassessments conducted, it appears that management and employee turnover was a significant hindrance to the passing down of information and recommendations from earlier site visits. However, at locations where MCWEC donated equipment, MUNDELL found that that equipment was often still in use and the business had some recollection of the program. The reassessments have highlighted the challenges that turnover in business operations and personnel pose to a cohesive wellfield protection program and illustrated the need for intensive and frequent educational involvement in the wellfields.

### **Database and Mapping**

MCWEC maintains a database of all businesses located within each of the seven wellfields. Currently, the database consists of approximately 2,650 total records which include all non-residential active, historic, or vacant sites within these wellfields. For some wellfields, sites near the W-5 border but outside of the wellfield are also included. The database is currently maintained with Microsoft Excel. All business records within the database have been categorized with primary and secondary codes based on business activities. The categorizations used are summarized in **Attachment 8**. The uses of this database include analysis, outreach/education to businesses, and records of potential contaminant sources.

This database is populated with sites from the following data sources:

- IDEM's Community Right to Know (CRTK) database;
- IDEM's hazardous waste notifiers database;
- IDEM's underground storage tank (UST) and leaking underground storage tank (LUST) database (ULCERS);
- U.S. EPA's National Priority List/Superfund Sites (NPL) database;
- IDEM's solid waste facilities database;
- IDEM's Resource Conservation and Recovery Act (RCRA) ID number database; and
- MUNDELL's Improvement Location Plan Technically Qualified Person (TQP) program database.

The MCWEC database is generally updated during the fourth quarter of each year with the most updated data from each data source available. Notably, the CRTK database only provides information that is current as of 2014 and IDEM was not responsive to data requests for 2016 exports from ULCERS. When updated datasets from these two sources become available, the MCWEC database will be updated.

Other limitations of the MCWEC database are due to the data sources collated. The permitting process that populates the associated regulatory databases does not always provide enough information to reliably determine an exact number of hazardous waste related facilities or number/status of USTs and LUSTs. As such, these totals represent conservative estimates based on the limitations of the source data.

Database entries are used to generate maps using ArcGIS to display the locations of wellfield businesses. These maps allow for more efficient site visits and drive surveys. The maps will also provide an effective visual representation of the registered potential wellhead contaminant sources in the event that unexpected impacts to the drinking water supply should occur. These locations are displayed by corresponding address in the attachments.

### **MCWEC Website**

MUNDELL maintains the MCWEC website (found at <http://indyh2o.org/>). The purpose of the website is to provide information about Marion County's wellfields, MCWEC, and the resources available for groundwater protection for business owners, the general public, and all other parties interested in wellfield protection. In 2016, MUNDELL completed numerous updates to the website and added information, including:

- Updated wellfield facts;
- Added "Am I in a Wellfield?" page for businesses to easily determine whether their site is located within a wellfield;
- Created a news section and generated content throughout the year;
- Updated information about waste disposal services available to businesses and residents of Marion County;
- Provided links to educational resources including wellfields related documents;
- Refined BMP recommendations for several business types and added new business types when needed; and
- Reorganized the site for increased usability

MUNDELL analyzed data from the website including page views, user information, and download history in order to better understand how people are using the website and ways to improve it in the future. Website traffic nearly tripled from 2015 to 2016. In 2016, approximately 1,579 new website users from Indiana viewed the website, totaling 2,137 pages visited. The traffic increase can partly be attributed to the hazardous waste disposal page ranking very high in search engine results. In fact, 54% of the Indiana users entered the site via this page. MUNDELL has revised this page in order to better provide assistance by providing information about *Indy ToxDrop* and other commercial waste disposal services.

Data about visitors to the website shows that many new users are visiting the website each year and a significant portion of users are not from Indiana. This indicates that the website provides information about wellfield protection that is useful across the country. About 55% of users to the site were first time visitors from Indiana, with only 6% identified as returning visitors from Indiana. Almost 39% of website users were not from Indiana. Of the users from Indiana, 90% were new users and 54% browsed the website via their desktop computers. In addition to search engines and directly typing in the website URL, visitors were directed to the site from links embedded in websites for Citizens Water, City of Lawrence, Indianatrails.com, Town of Speedway, and the MUNDELL company website.

The most popular downloads from the website are the detailed printable maps for each wellfield, followed by example drinking water protection signs for businesses, the MCWEC informational brochure and then by various assistance documents.

MUNDELL will continue to analyze data from the website in order to improve it for the benefit of visitors. Plans for 2017 include additional news posts and updates for business BMP recommendation pages.

## Business Education Program Successes and Challenges

Since the initiation of the program in 2001, the education program has communicated with nearly all of the many wellfield businesses and organizations to increase wellhead protection awareness and encourage use of best management practices. The program has conducted nearly 150 site assessments, providing free and confidential waste management and chemical storage technical advice. In addition, when budgets have permitted, free spill prevention materials and secondary containment equipment have been provided to those facilities requesting support for controlling potential releases. In accordance with the wellfield ordinance, the educational approach has conducted in a voluntary, non-threatening, non-regulatory manner.

Thus far, the greatest challenge for the wellfield protection program has been the voluntary nature of the program. Historically, less than 10 percent of the identified potential chemical sources in the wellfields have requested site assessments. The recent adoption of new city and county wellfield business ordinances in 2016 will ideally address this challenge and promote broader wellfield protection.

Another on-going challenge to wellfield protection in Marion County is the rapid pace of constant and inevitable turnover in property ownership, leased space, business operations, and personnel, all of which result in loss of institutional awareness and knowledge of wellfield protection requirements and practices. Such turnover within Marion County's densely populated, urban wellfields necessitates rigorous data management and continuous wellfield business outreach to support a successful wellfield protection program.

## 2017 Wellfield Activities

With the adoption of new Marion County Wellfield Ordinances and Marion County Health Department (MCHD) ordinances in 2016, additional efforts will be required to educate the 933 potential contaminant source sites about changes in the requirements for operating in the wellfields. As such, MCWEC, MCHD and MUNDELL will continue to work together to:

- 1) Provide outreach, education, and compliance assistance to wellfield businesses. These activities will be achieved by distributing flyers and promotional information and visiting wellfield businesses to conduct site assessments. As a supplement to these tasks, MUNDELL will provide secondary containment and spill protection materials as MCWEC donations allow.
- 2) Increase public awareness of MCWEC and general wellfield and groundwater protection. This will be achieved by identifying and collaborating with other stakeholders, such as breweries and other businesses that depend on clean public water supplies, and engaging in other opportunities for spreading awareness such as with the media, conferences, and other engagements.
- 3) Improve the accuracy and efficiency of the PSI/Education database and continue to make it available to the water utilities to fulfill the utilities' reporting requirements for the state wellhead protection program under IDEM. Updated or new business operation information will be added to the database via site-visit observations and regulatory database merges.
- 4) Leverage the MCWEC internet website ([www.INDYH2O.org](http://www.INDYH2O.org)) for broad distribution of free technical support, answers to frequently asked questions (FAQs), and relevant links and guidance documents. MUNDELL will continue to generate content for the news section of the website with relevant and timely information.
- 5) Produce a report summarizing annual activities conducted during 2017.

## **TABLES**

Table 1 – 2016 Marion County Wellfield Business Types

Table 2 – 2016 Regulated Marion County Wellfield Businesses



## **ATTACHMENTS**

- Attachment 1 – Fall Creek Wellfield Summary
- Attachment 2 – Ford Wellfield Summary
- Attachment 3 – Geist Wellfield Summary
- Attachment 4 – Lawrence Wellfield Summary
- Attachment 5 – Riverside Wellfield Summary
- Attachment 6 – South Wellfield Summary
- Attachment 7 – Speedway Wellfield Summary
- Attachment 8 – Potential Contaminant Source Business Categories

## **TABLES**

Table 1 – 2016 Marion County Wellfield Business Types

Table 2 – 2016 Regulated Marion County Wellfield Businesses

**Table 1. 2016 Marion County Wellfield Business Types**

WELLFIELD	Total Active and Non-Vacant Sites	BUSINESS TYPE									
		<i>Agriculture/Turf/Landscaping</i>	<i>Auto</i>	<i>Waste Management/Chemical Storage</i>	<i>Industrial (covered)</i>	<i>Industrial (exposed)</i>	<i>Laundry</i>	<i>Medical/Scientific</i>	<i>Graphics</i>	<i>Miscellaneous</i>	<i>Non-Potential Source</i>
Fall Creek	766	3	94	8	31	0	10	11	5	20	584
Ford	7	3	0	0	0	0	0	0	0	2	2
Geist	60	0	1	5	0	0	2	8	1	3	40
Lawrence	41	2	3	7	0	0	0	6	0	6	17
Riverside	919	20	148	68	27	26	8	94	16	61	451
South	264	8	58	31	30	23	3	7	2	3	99
Speedway	211	1	24	2	0	0	1	29	0	15	139
<b>Totals</b>	<b>2,264</b>	<b>37</b>	<b>328</b>	<b>120</b>	<b>88</b>	<b>47</b>	<b>24</b>	<b>155</b>	<b>24</b>	<b>109</b>	<b>1331</b>

Notes:

This table was prepared using the databases maintained for each wellfield excluding businesses noted as historic or vacant or outside of the current wellfield boundaries. Each site was assigned a single category.

This table is based primarily on drive survey information with regulatory data used when available.

The categorizations reflect the categories approved during the MCWEC April 18, 2016 board meeting.

This table is intended to illustrate the current state of businesses within the wellfield, and does not consider past businesses or prior site usage (example: a restaurant that was previously a gas station is listed as a non-potential source rather than under the automobile-related category).

Windshield surveys were conducted in the winter of 2015 with internet based QA/QC occurring in fall 2016 (using Google Maps, Map Indy, and other internet sources).



**Table 2. 2016 Regulated Marion County Wellfield Businesses**

WELLFIELD	Total Active and Non-Vacant Regulated Sites	REGULATORY DATABASE								
		Community Right-to-Know (CRTK)	Hazardous Waste Notifier	Underground Storage Tank (UST)	Leaking Underground Storage Tank (LUST)	Superfund Site*	Solid Waste Site	RCRA ID	NPDES	Marion County TQP
Fall Creek	164	3	68	74	43	1	0	67	2	59
Ford	0	0	0	0	0	0	0	0	0	0
Geist	11	0	4	0	0	0	0	4	0	7
Lawrence	7	0	1	3	3	0	0	1	0	4
Riverside	246	30	98	94	36	1	3	98	5	96
South	106	8	19	24	11	0	0	18	1	86
Speedway	35	3	12	14	7	0	0	1	1	14
<b>Totals</b>	<b>565</b>	<b>44</b>	<b>202</b>	<b>209</b>	<b>100</b>	<b>2</b>	<b>3</b>	<b>189</b>	<b>9</b>	<b>257</b>

Notes:

\*Superfund site category includes sites proposed for listing on the U.S. EPA's NPL.

This table was prepared using the databases maintained for each wellfield excluding businesses noted as historic or vacant or outside of the current wellfield boundaries. Most regulated sites exist in more than one regulatory database, so the Total Regulated Sites column is not a sum of the records shown in each regulatory database column.

CRTK data is current as of 2014 (most up-to date data available from IDEM)

Hazardous Waste Notifier current as of 10/03/2016

UST/LUST information is current as of 10/05/2015 (IDEM has not responded to records request, but will be updated when available)

Superfund information is current as of 10/27/2016

Solid Waste Sites are current as of 10/16/2016

RCRA ID current as of 10/03/2016

NPDES current as of 9/16/16

Marion County TQP is current as of 11/2/16



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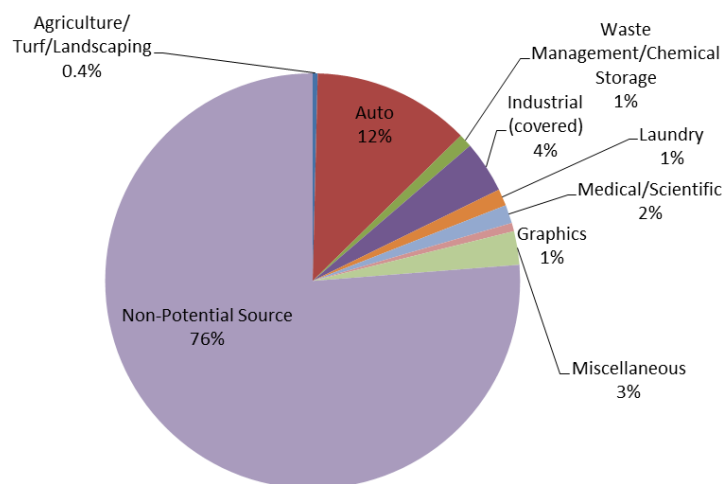
# ATTACHMENT 1

## Fall Creek Wellfield

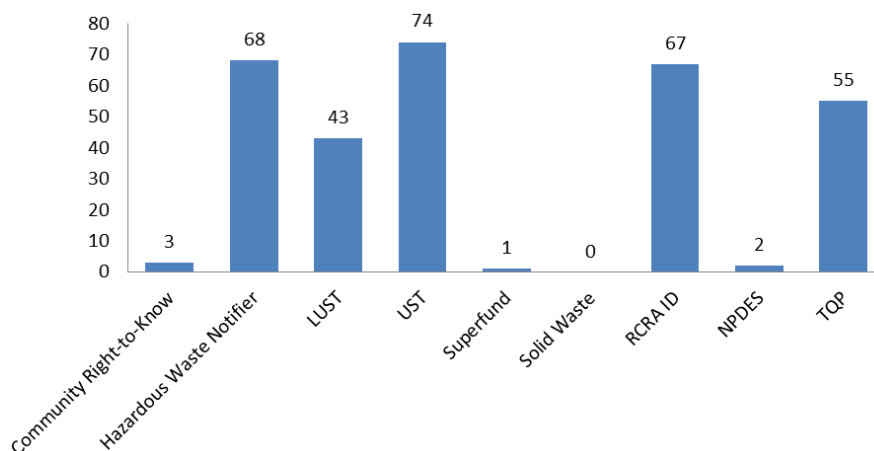
Within the Fall Creek Wellfield, there are 766 active (non-historic and non-vacant) nonresidential sites, of which 182 are potential contaminant sources and 584 with low to no risk as a potential source. The potential sources include: 94 automobile-related sources, eleven (11) medical/scientific use sources, ten (10) commercial laundry sources, eight (8) waste management/chemical storage sources, five (5) production of graphic sources, three (3) agriculture/turf/landscaping sources and nineteen (19) miscellaneous sources (see **Table 1** for additional information).

Based on the information maintained by IDEM, the U.S. EPA and MUNDELL, there are 164 regulated sites within this wellfield (with some sites noted within multiple databases), with three (3) sites within Community Right-to-Know (CRTK) databases, 68 sites noted as hazardous waste notifiers (with no distinction for sites no longer serving as hazardous waste notifiers), 74 sites within the underground storage tank (UST) database (including sites where tanks have been permanently removed), 43 sites within the Leaking UST (LUST) database (including sites where No Further Action (NFA) status has been achieved), one (1) Superfund site, no solid waste registered sites, 67 sites with Resource Conservation and Recovery Act (RCRA) identification numbers (with no distinction for sites no longer using their ID), two (2) sites with NPDES identification numbers, and 59 sites identified through the Improvement Location Plan Technically Qualified Person (TQP) program that imposes design requirements on the development of new building within the wellfields (see **Table 2** for additional information).

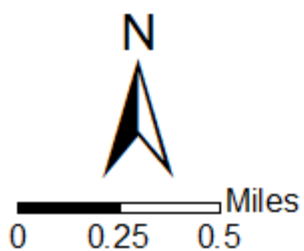
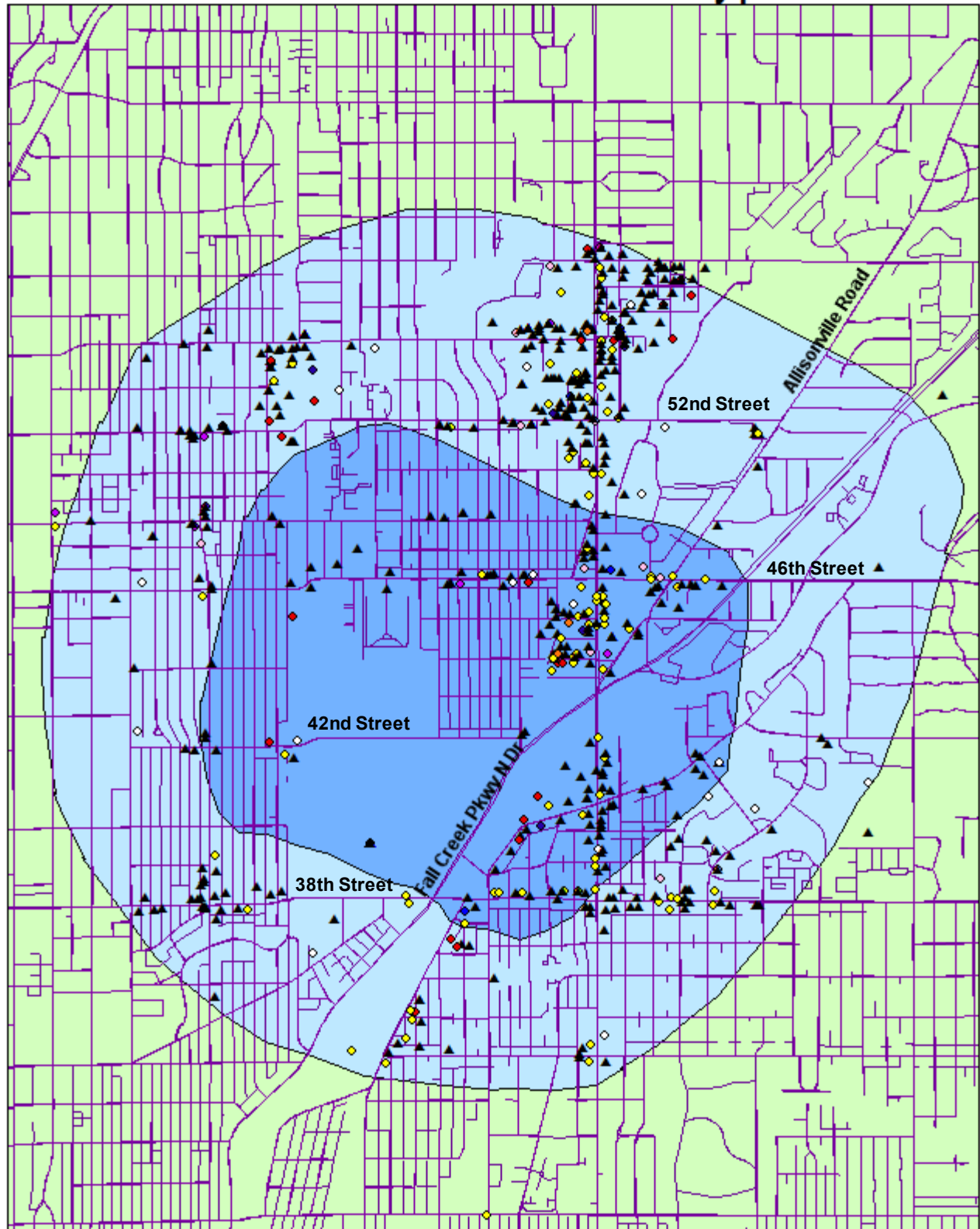
*Business Types in Fall Creek Wellfield*



*Regulated Businesses in Fall Creek Wellfield*



# Fall Creek Wellfield Business Types - 2016



- |                                 |                                     |
|---------------------------------|-------------------------------------|
| ● Agricultural/Turf/Landscaping | ● Laundry                           |
| ● Auto                          | ○ Medical/Scientific                |
| ● Graphics                      | ○ Miscellaneous                     |
| ● Industrial (covered)          | ● Waste Management/Chemical Storage |
| ● Industrial (exposed)          | ▲ Non-Potential Source              |
| ■ Marion County                 | ■ 1-Year Time of Travel             |
| ■ Outside of Marion County      | ■ 5-Year Time of Travel             |
| — Roads                         |                                     |

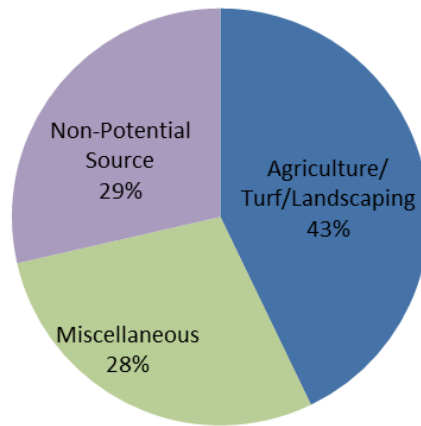
# ATTACHMENT 2

## Ford Wellfield

Within the Ford Wellfield, there are seven (7) active (non-historic and non-vacant) nonresidential sites, with five (5) of those potential contaminant sources and two (2) with low to no risk as a source. The potential sources include: three (3) agricultural/turf/landscaping sources and two (2) miscellaneous sources (see **Table 1** for additional information).

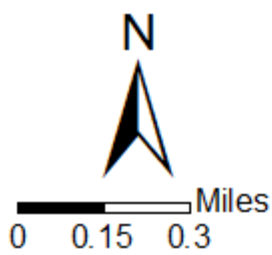
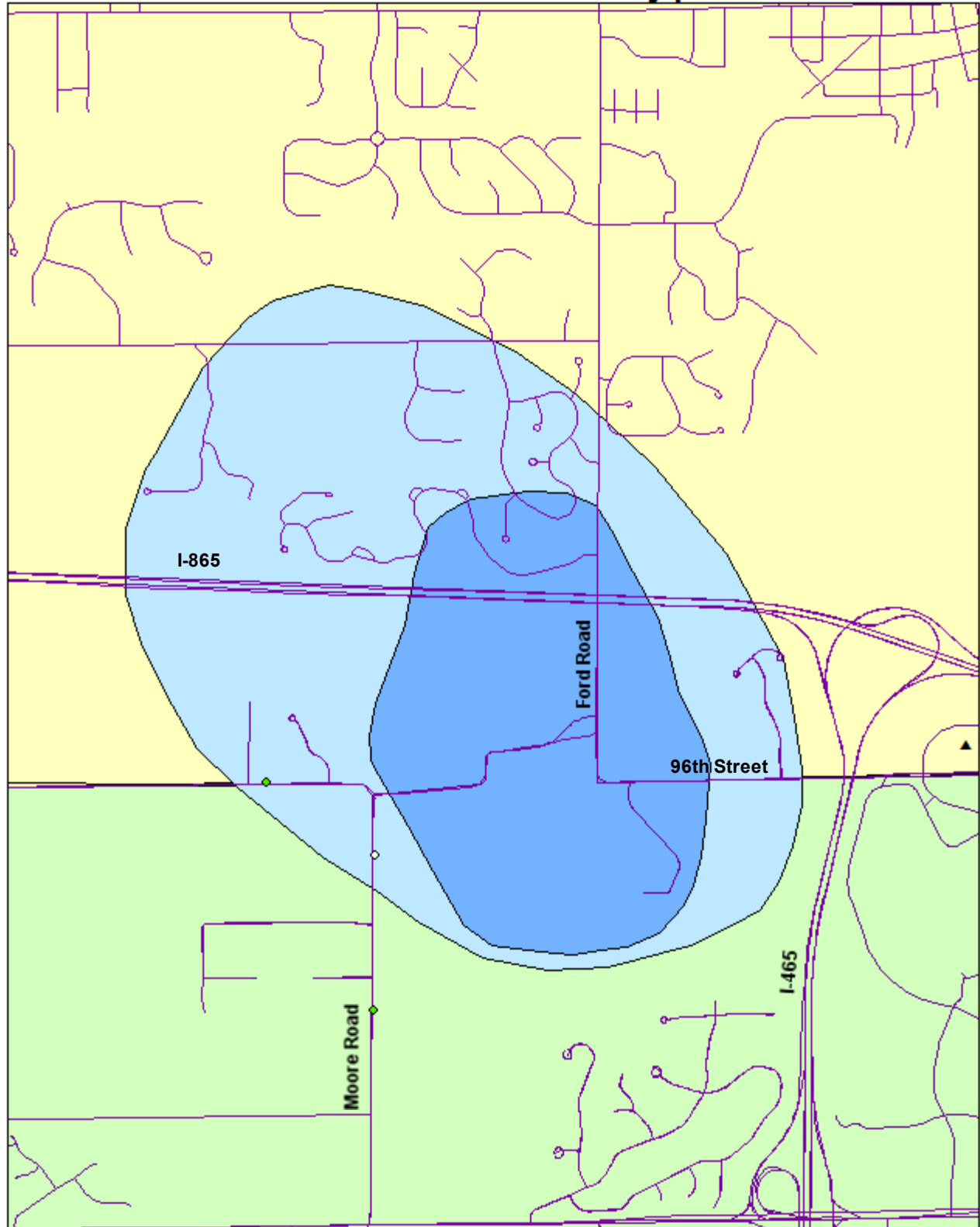
Based on the information maintained by IDEM, the U.S. EPA and MUNDELL, there are no regulated sites noted within CRTK, hazardous waste notifier, UST, LUST, Superfund, solid waste, RCRA, NPDES, or Marion County TQP databases.

*Business Types in Ford Wellfield*





# Ford Wellfield Business Types - 2016



- |                                 |                                     |
|---------------------------------|-------------------------------------|
| ● Agricultural/Turf/Landscaping | ● Laundry                           |
| ● Auto                          | ○ Medical/Scientific                |
| ● Graphics                      | ○ Miscellaneous                     |
| ● Industrial (covered)          | ● Waste Management/Chemical Storage |
| ● Industrial (exposed)          | ▲ Non-Potential Source              |
| ■ Marion County                 | ■ 1-Year Time of Travel             |
| ■ Outside of Marion County      | ■ 5-Year Time of Travel             |
| — Roads                         |                                     |

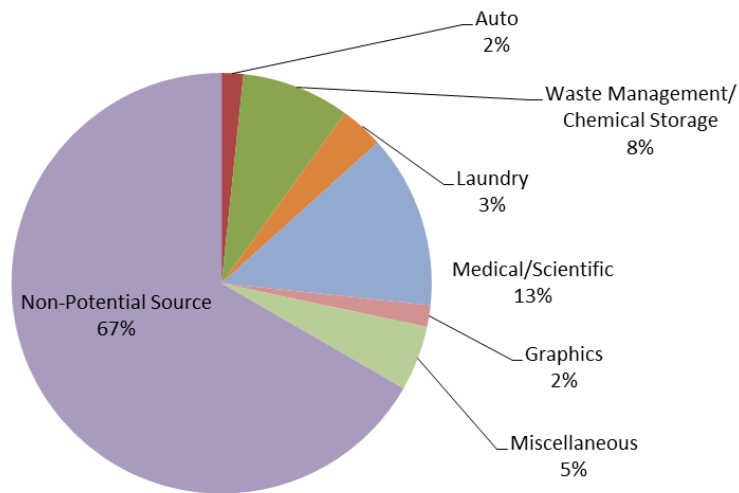
# ATTACHMENT 3

## Geist Wellfield

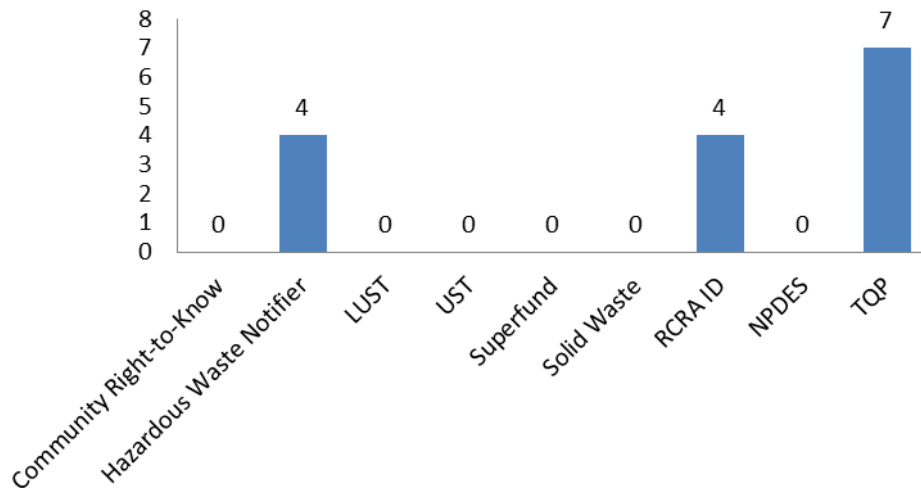
Within the Geist Wellfield, there are 60 active (non-historic and non-vacant) nonresidential sites, with 20 potential contaminant sources and 40 with low to no risk as a potential source. The potential sources include: eight (8) medical/scientific use sources, five (5) waste management/chemical storage sources, two (2) commercial laundry sources, one (1) automobile-related source, one (1) production of graphic sources, and three (3) miscellaneous sources (see **Table 1** for additional information).

Based on the information maintained by IDEM, the U.S. EPA and MUNDELL, there are eleven (11) regulated sites (with some sites noted within multiple databases) within this wellfield, with four (4) sites noted as hazardous waste notifiers, four (4) sites holding RCRA ID numbers, and seven (7) sites identified through the Marion County TQP program (see **Table 2** for additional information).

*Business Types in Fall Creek Wellfield*



*Regulated Businesses in Geist Wellfield*



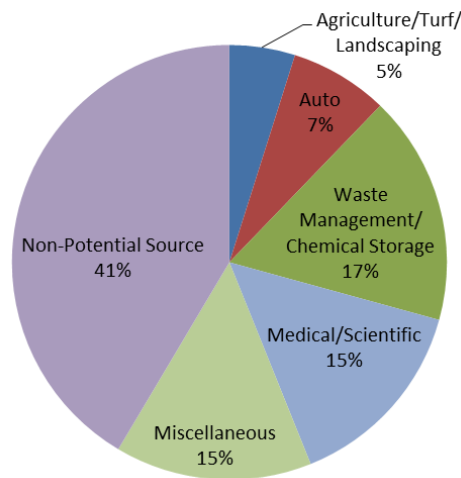
# ATTACHMENT 4

## Lawrence Wellfield

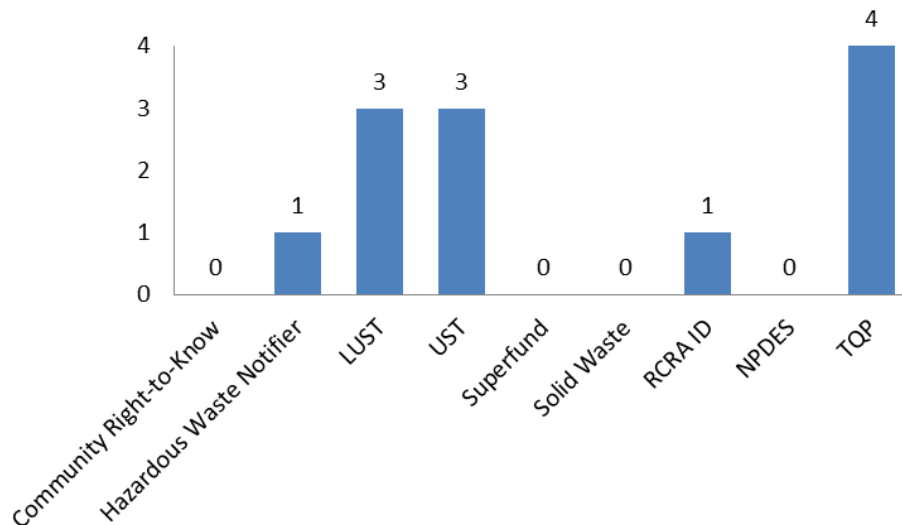
Within the Lawrence Wellfield, there are 41 active (non-historic and non-vacant) nonresidential sites, with 24 potential contaminant sources and seventeen (17) with low to no risk as potential sources. The potential sources include: seven (7) waste management/chemical storage sources, six (6) medical/scientific use source, three (3) automobile-related sources, two (2) agriculture/turf/landscaping sources, and six (6) miscellaneous sources (see **Table 1** for additional information).

Based on the information maintained by IDEM, the U.S. EPA and MUNDELL, there are seven (7) regulated sites (with some sites noted within multiple databases) within this wellfield, with one (1) site noted as a hazardous waste notifier, three (3) UST sites, three (3) LUST sites, one (1) sites holding RCRA ID numbers, and four (4) sites identified through the Marion County TQP program (see **Table 2** for additional information).

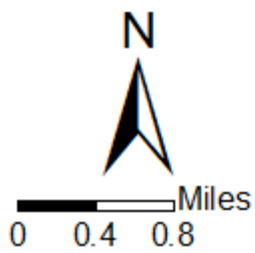
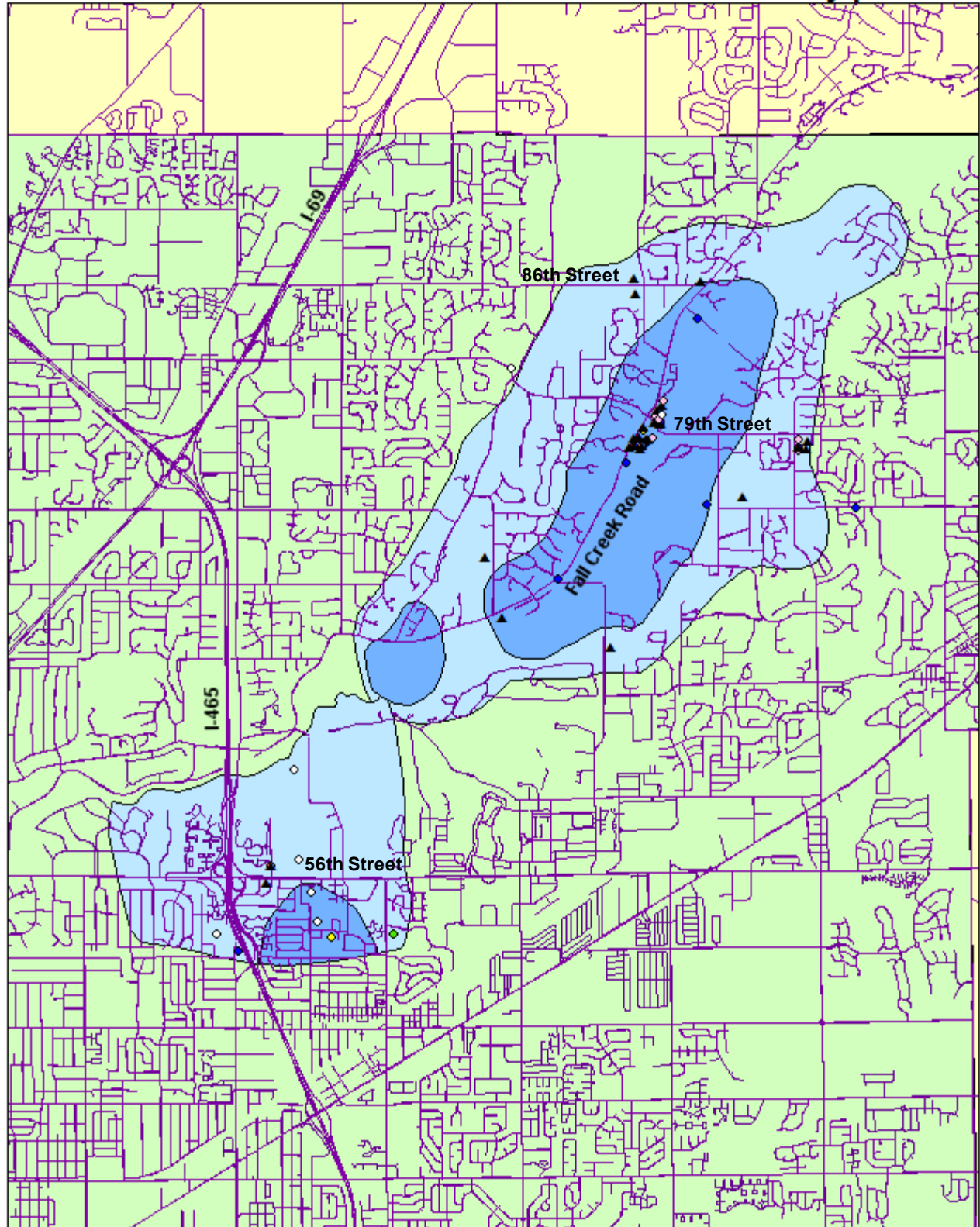
*Business Types in Lawrence Wellfield*



*Regulated Businesses in Lawrence Wellfield*



# Lawrence and Geist Wellfield Business Types - 2016



- |                                 |                                     |
|---------------------------------|-------------------------------------|
| ● Agricultural/Turf/Landscaping | ● Laundry                           |
| ● Auto                          | ● Medical/Scientific                |
| ● Graphics                      | ● Miscellaneous                     |
| ● Industrial (covered)          | ● Waste Management/Chemical Storage |
| ● Industrial (exposed)          | ▲ Non-Potential Source              |
| ■ Marion County                 | ■ 1-Year Time of Travel             |
| ■ Outside of Marion County      | ■ 5-Year Time of Travel             |
| — Roads                         |                                     |

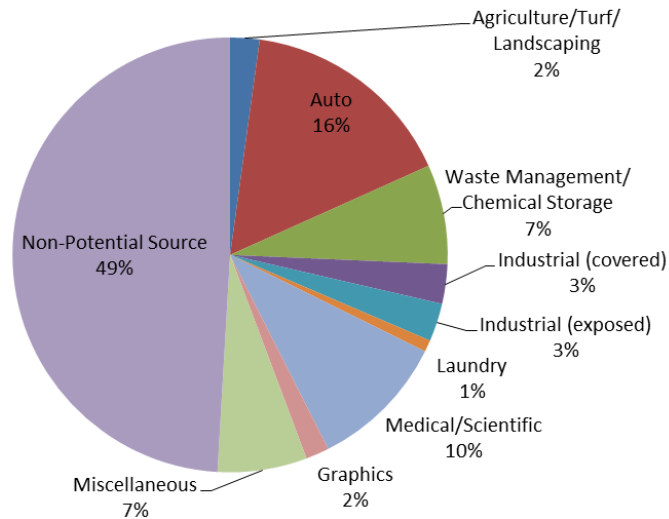
# ATTACHMENT 5

## Riverside Wellfield

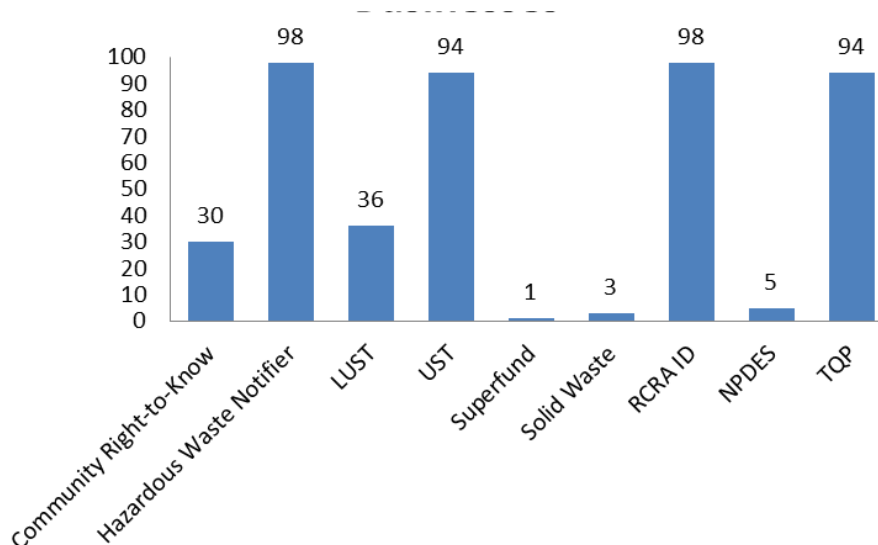
Within the Riverside Wellfield, there are 919 active (non-historic and non-vacant) nonresidential sites, with 468 of those potential contaminant sources and 451 with low to no risk as potential sources. The potential source sites include: 148 automobile-related sources, 94 medical/scientific use sources, 68 waste management/chemical storage sources, 27 covered industrial sources, 26 exposed industrial sources, twenty (20) agriculture/turf/landscaping sources, sixteen (16) production of graphic sources, eight (8) commercial laundry sources and 61 miscellaneous sources (see **Table 1** for additional information).

Based on the information maintained by IDEM, the U.S. EPA and MUNDELL, there are 246 regulated sites (with some sites noted within multiple databases) within this wellfield, with 30 sites within the CRTK database, 98 sites noted as hazardous waste notifiers, 94 UST sites, 36 LUST sites, one (1) site considered to be listed as a Superfund site, three (3) solid waste sites, 98 sites holding RCRA ID numbers, five (5) sites with NPDES permits, and 86 sites identified through the Marion County TQP program (see **Table 2** for additional information).

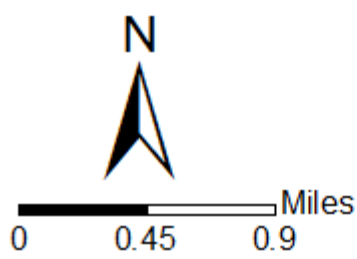
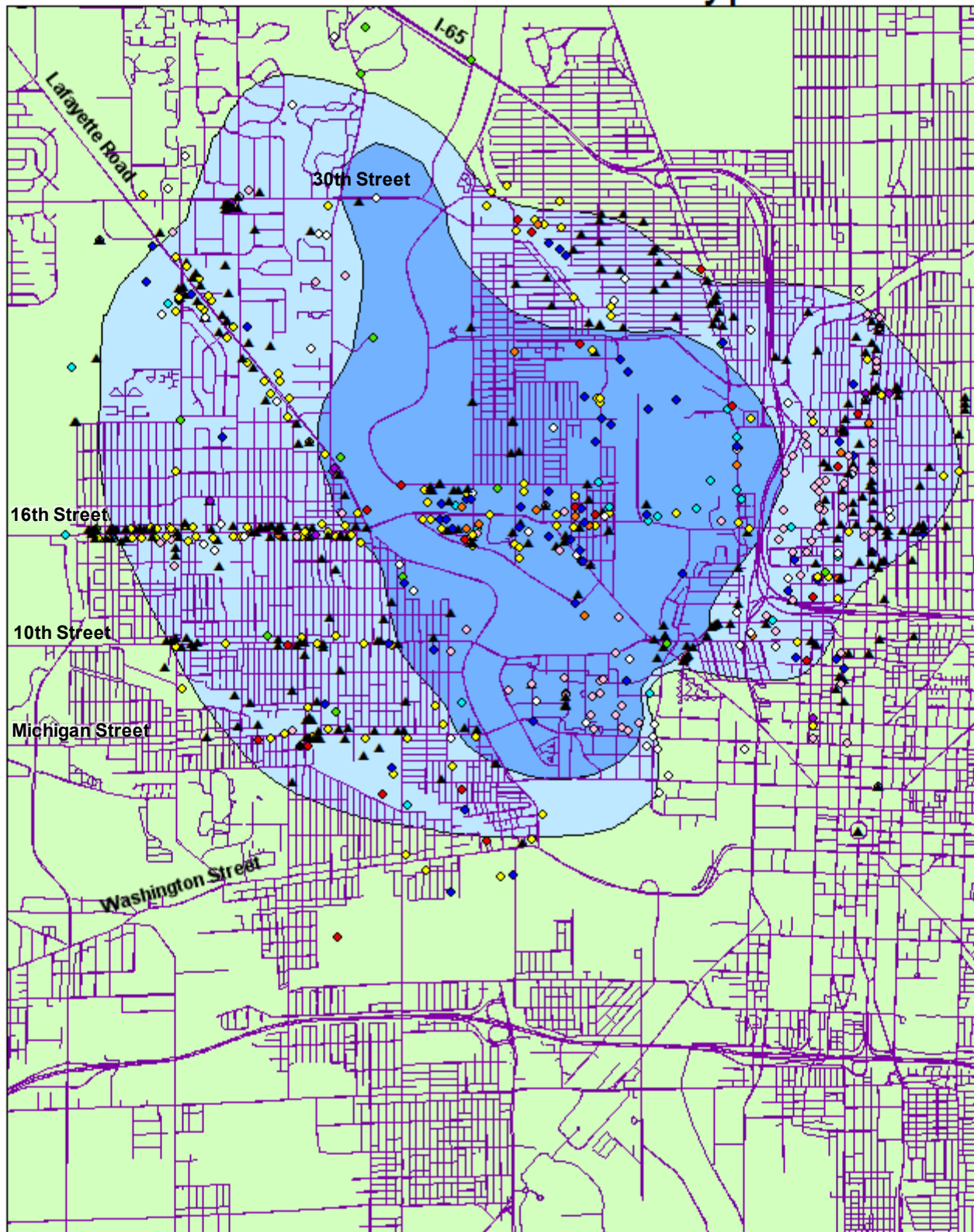
*Business Types in Riverside Wellfield*



*Regulated Businesses in Riverside Wellfield*



# Riverside Wellfield Business Types - 2016



- |                                 |                                     |
|---------------------------------|-------------------------------------|
| ● Agricultural/Turf/Landscaping | ● Laundry                           |
| ● Auto                          | ○ Medical/Scientific                |
| ● Graphics                      | ○ Miscellaneous                     |
| ● Industrial (covered)          | ● Waste Management/Chemical Storage |
| ● Industrial (exposed)          | ▲ Non-Potential Source              |
| ■ Marion County                 | ■ 1-Year Time of Travel             |
| ■ Outside of Marion County      | ■ 5-Year Time of Travel             |
| — Roads                         |                                     |

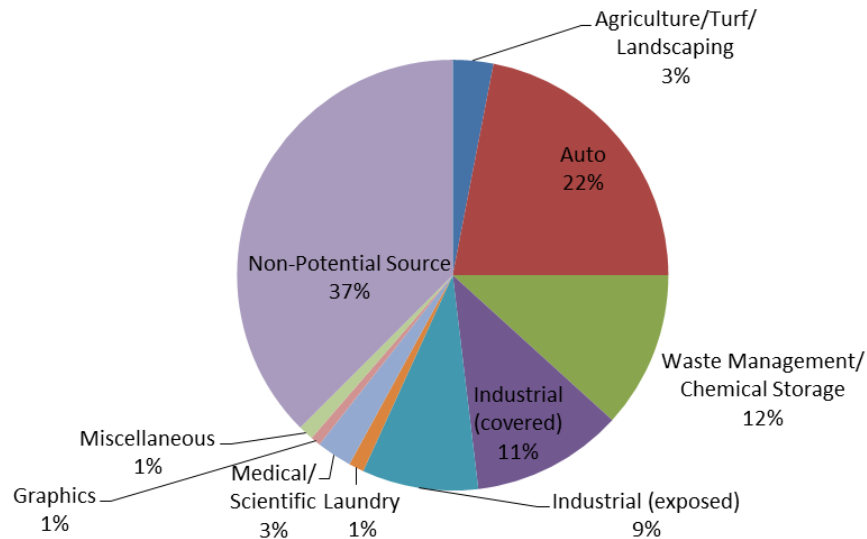
# ATTACHMENT 6

## South Wellfield

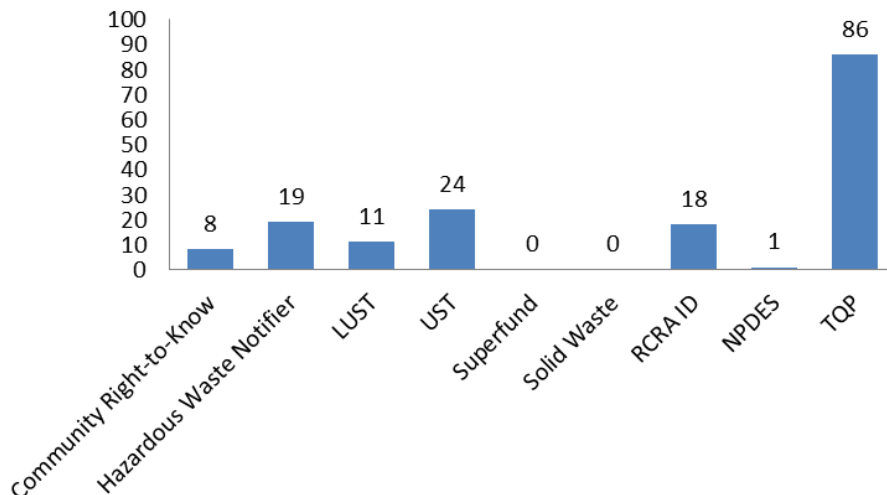
Within the South Wellfield, there are 264 active (non-historic and non-vacant) nonresidential sites, with 165 of those sites considered potential contaminant sources and 99 sites with low to no potential as a source. The potential sources include: 58 automobile-related sources, 31 waste management/chemical storage sources, 30 covered industrial sources, 23 exposed industrial sources, eight (8) agriculture/turf/landscaping sources, seven (7) medical/scientific use sources, three (3) commercial laundry sources, two (2) production of graphic sources, and three (3) miscellaneous sources (see **Table 1** for additional information).

Based on the information maintained by IDEM, the U.S. EPA and MUNDELL, there are 106 regulated sites (with some sites noted within multiple databases) within this wellfield, with eight (8) sites within the CRTK database, 19 sites noted as hazardous waste notifiers, 24 UST sites, 11 LUST sites, eighteen (18) sites holding a RCRA ID numbers, one (1) site with an NPDES permit, and 86 sites identified through the Marion County TQP program (see **Table 2** for additional information).

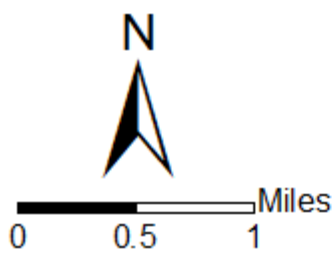
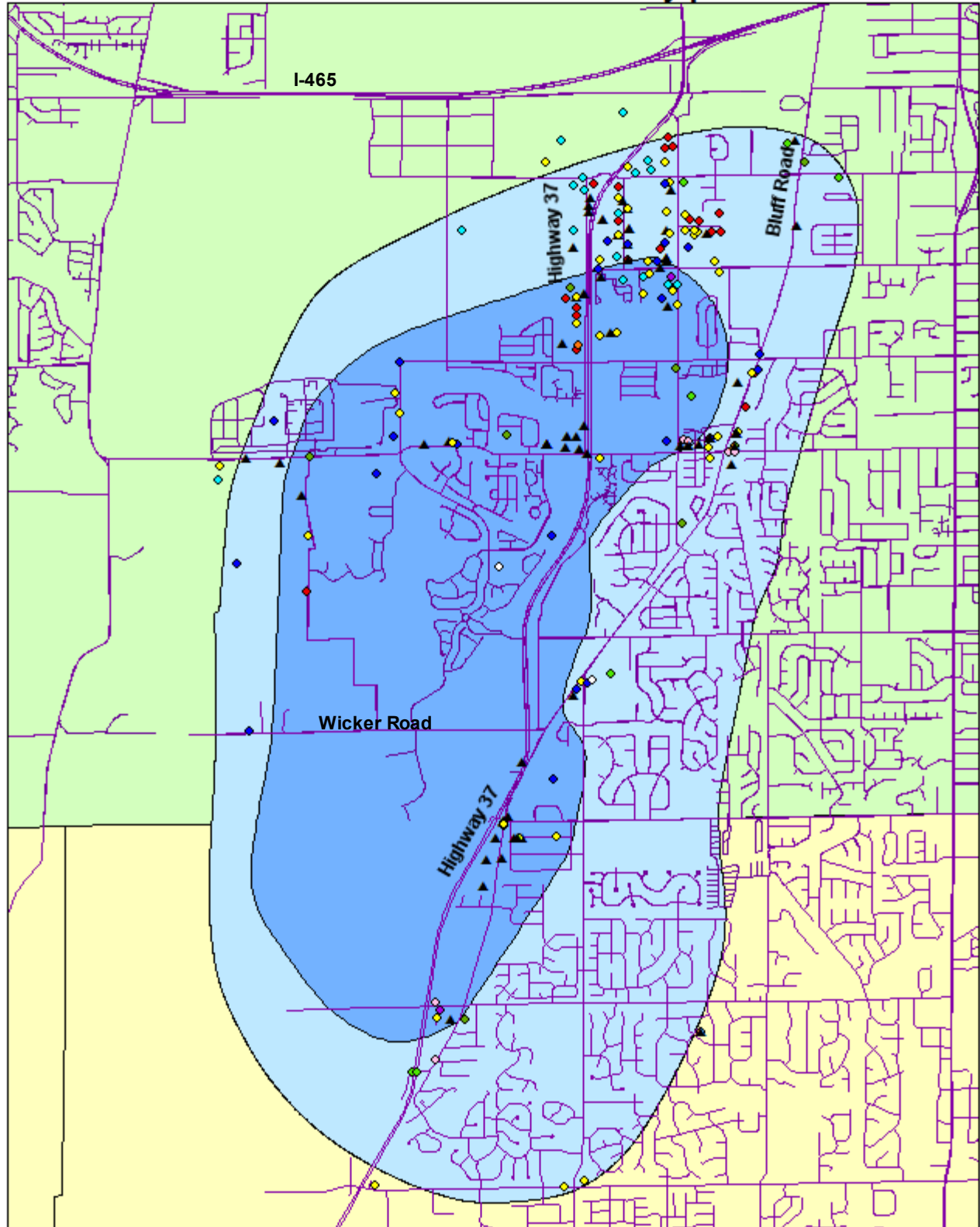
*Business Types in South Wellfield*



*Regulated Businesses in South Wellfield*



# South Wellfield Business Types - 2016



- |                                 |                                     |
|---------------------------------|-------------------------------------|
| ● Agricultural/Turf/Landscaping | ● Laundry                           |
| ● Auto                          | ○ Medical/Scientific                |
| ● Graphics                      | ○ Miscellaneous                     |
| ● Industrial (covered)          | ● Waste Management/Chemical Storage |
| ● Industrial (exposed)          | ▲ Non-Potential Source              |
| ■ Marion County                 | ■ 1-Year Time of Travel             |
| ■ Outside of Marion County      | ■ 5-Year Time of Travel             |
| — Roads                         |                                     |



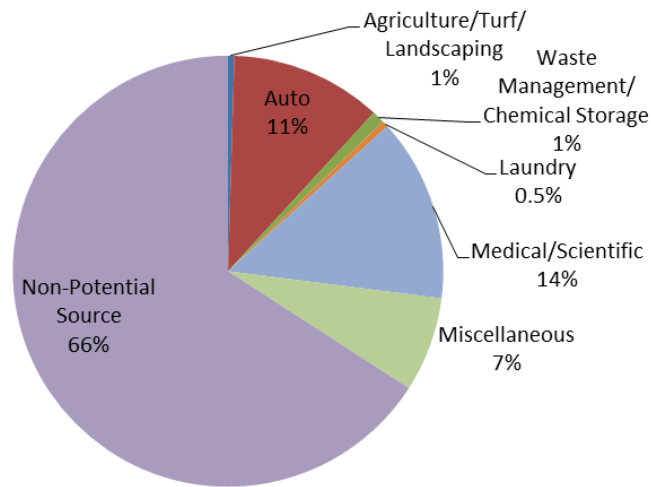
# ATTACHMENT 7

## Speedway Wellfield

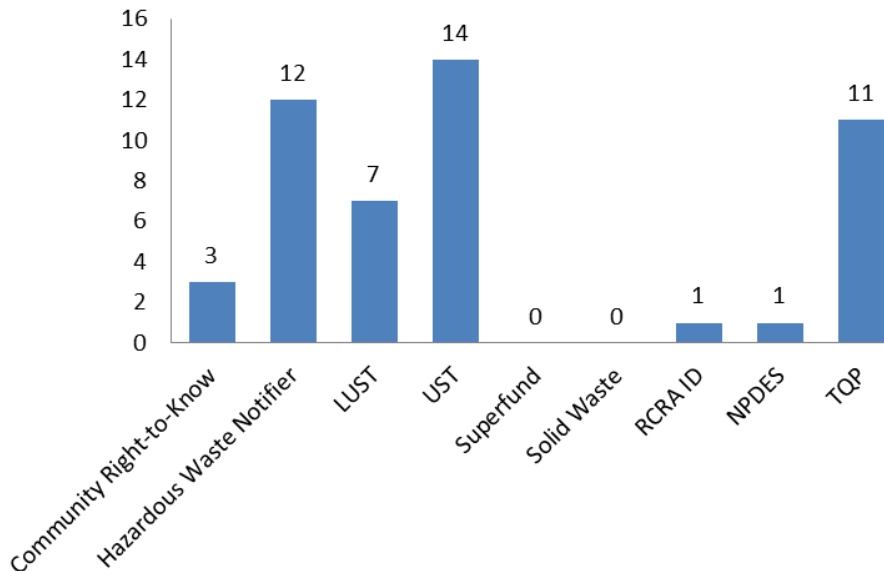
Within the Speedway Wellfield, there are 211 active (non-historic and non-vacant) nonresidential sites, with 72 sites considered potential contaminant sources and 139 with low to no risk as a source. The potential sources include: 29 medical/scientific use sources, 24 automobile-related sources, two (2) waste management/chemical storage sources, one (1) agriculture/turf/landscaping source, one (1) commercial laundry source, and fifteen (15) miscellaneous sources (see **Table 1** for additional information).

Based on the information maintained by IDEM, the U.S. EPA and MUNDELL, there are 35 regulated sites (with some sites noted within multiple databases) within this wellfield, with three (3) sites within the CRTK database, 12 sites noted as hazardous waste notifiers, fourteen (14) UST sites, seven (7) LUST sites, one (1) site holding a RCRA ID number, one (1) site with an NPDES permit, and fourteen (14) sites identified through the Marion County TQP program (see **Table 2** for additional information).

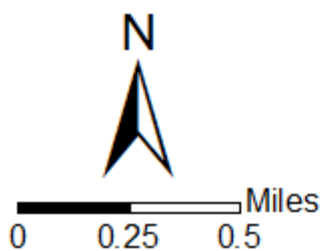
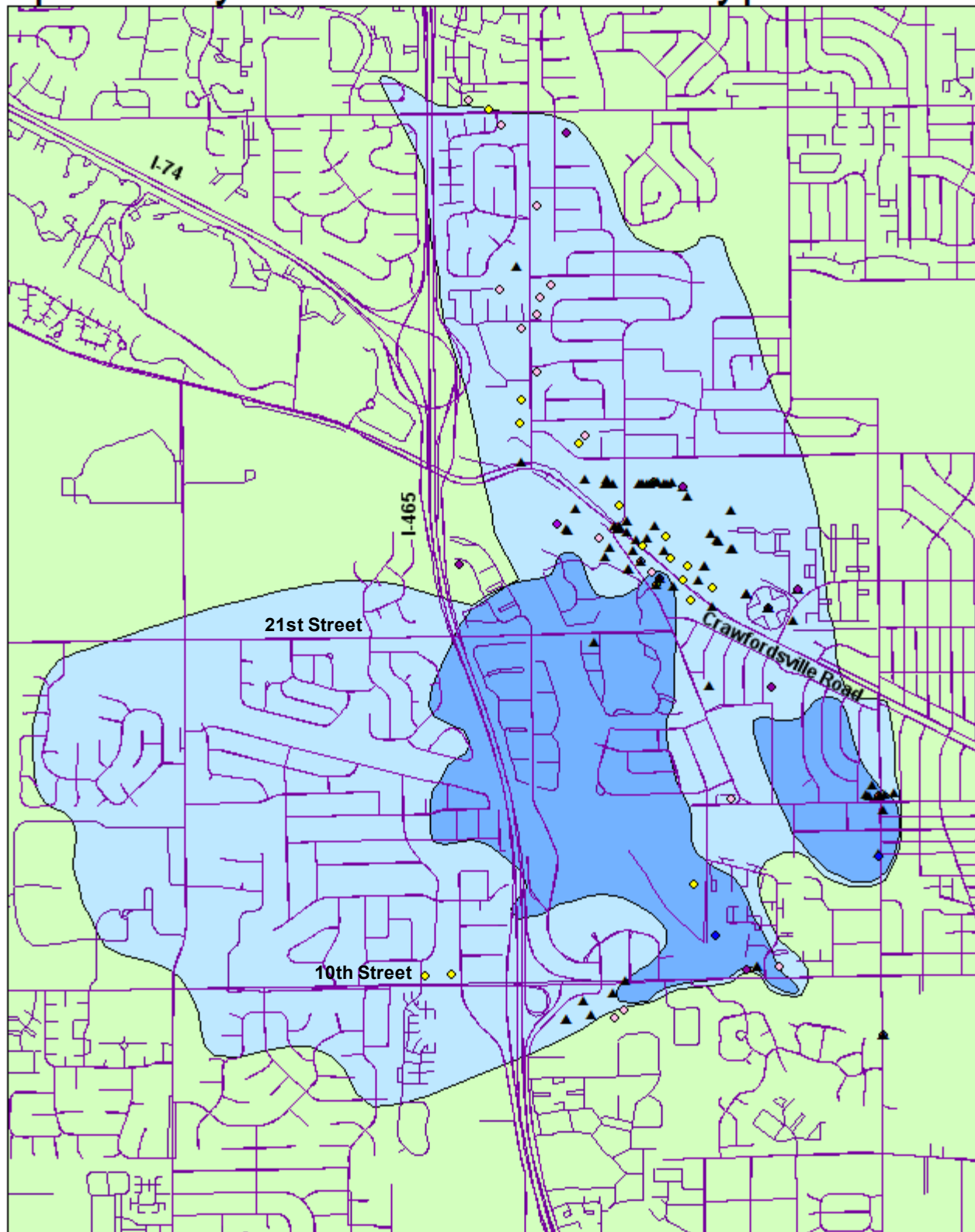
*Business Types in Speedway Wellfield*



*Regulated Businesses in Speedway Wellfield*



# Speedway Wellfield Business Types - 2016



- |                                 |                                     |
|---------------------------------|-------------------------------------|
| ● Agricultural/Turf/Landscaping | ● Laundry                           |
| ● Auto                          | ○ Medical/Scientific                |
| ● Graphics                      | ○ Miscellaneous                     |
| ● Industrial (covered)          | ● Waste Management/Chemical Storage |
| ● Industrial (exposed)          | ▲ Non-Potential Source              |
| ■ Marion County                 | ■ 1-Year Time of Travel             |
| ■ Outside of Marion County      | ■ 5-Year Time of Travel             |
| — Roads                         |                                     |

# ATTACHMENT 8

## Potential Contaminant Source Business Categories:

### ***Agricultural/Turf/Landscape:***

- Agricultural chemical storage
- Animal feedlots or stockyards
- Golf courses or driving ranges
- Landscape or lawn installation or maintenance service (commercial)
- Pesticide or fertilizer application

### ***Auto:***

- Car or truck wash
- Fuel dispensing facilities
- Motor or body repair: auto, truck, lawnmower, airplane, boat, motorcycle
- Equipment repair
- Construction contractors' equipment or materials storage
- Educational, engineering or vocational shops or laboratories
- Scrap or junkyards
- Painting or coating shops

### ***Waste Management/Chemical Storage:***

- Hazardous waste treatment, storage, or disposal
- Municipal waste landfill or transfer station
- Radioactive waste handling or storage
- Solid waste treatment, storage or disposal (involving potential groundwater contaminants)
- Warehousing of potential groundwater contaminants
- Wastewater treatment facilities
- Chemical or petroleum storage or sales
- Chemical, blending or distribution
- Sludge treatment disposal
- Recycling centers

### ***Industrial (Covered):***

- Machine, tool, or die shop
- Slaughter house or meat packing
- Blast furnaces, steel works, rolling or finishing mills
- Building materials production
- Creosote manufacturing or treatment
- Electroplating operations or metal finishers
- Fat rendering
- Leather tanning
- Manufacture of: (many sub categories)
- Stamping or fabricating metal shops using press, brakes, or rolls
- Rubber or plastics processing or production
- Textile production

### ***Industrial (Exposed):***

- Wood preservers or treating
- Clay, ceramic, or refractory minerals mining and quarrying
- Limestone, sand or gravel mining or quarrying
- Materials transport or transfer operations (truck terminals)
- Metal mining
- Road salt storage
- Oil or gas production wells
- Oil or liquid materials pipeline
- Petroleum refining

### ***Laundry:***

- Dry cleaning plants or commercial laundries

### ***Medical/Scientific:***

- Hospitals
- Laboratories: medical, biological, bacteriological, chemical

### ***Graphics:***

- Photographic processing facilities
- Printing industries (utilizing liquids or water soluble solids)

### ***Miscellaneous:***

- Large institutional uses: convalescent or nursing homes, correctional or penal institutions, schools, colleges or universities
- Food or beverage production (excluding restaurants, catering and other retail food establishments)
- Furniture or wood strippers, refinishers