



2025 WORKFORCE PLANNING

STEVE WANDERS, PE, PURDUE UNIVERSITY
MARK JACOB, CITIZENS ENERGY GROUP

MODERATOR: HEATHER DEVOCELLE, INDOT

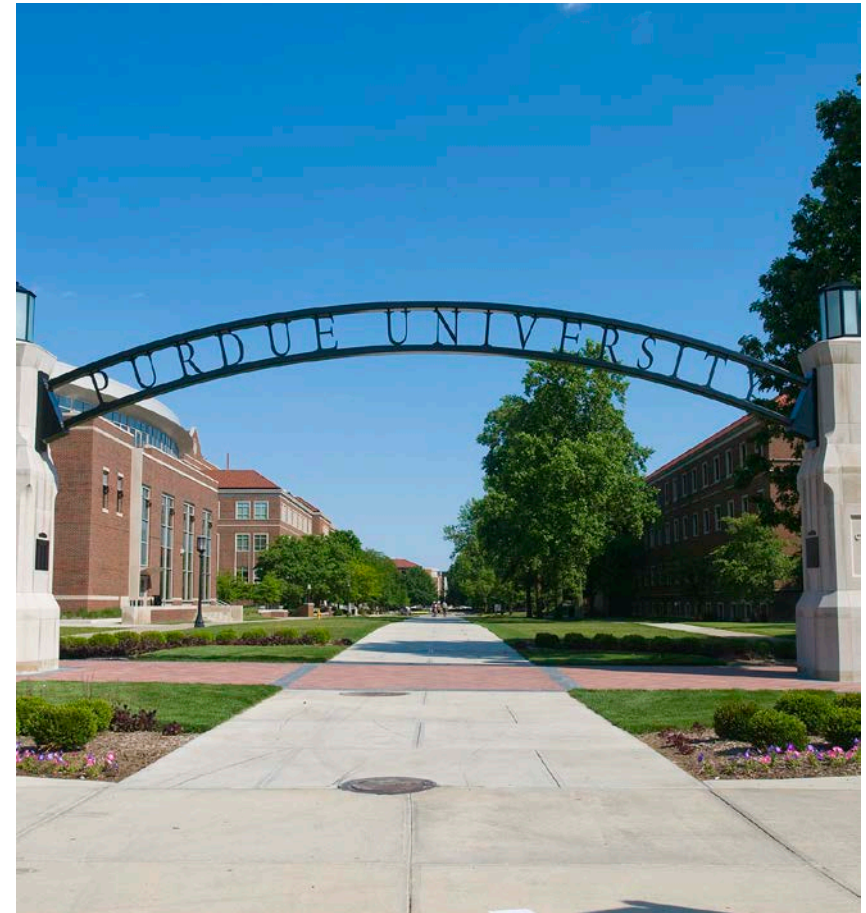
Purdue Road School

March 8, 2016

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AGENDA

- Topic Overview, Statistics and Trends—
Steve Wanders
- Citizens Energy Group Talent
Development Initiatives – Marc Jacob
- Cooperative Education at Purdue,
("Recruit Once, Hire TWICE") – Steve
Wanders





TOPIC OVERVIEW

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TOPIC OVERVIEW

- High demand for additional STEM graduates in ALL disciplines, however:
 - From 1990 to 2010, overall U.S. college graduation levels **GREW 50%**
 - During same period, number of U.S. engineering graduates **fell flat at 120,000**
 - India and China each produce nearly 1 Million engineers annually.

"President's Council on Jobs and Competitiveness Announces Industry Leaders' Commitment to Double Engineering Internships in 2012." *The White House*. The White House, 31 Aug. 2011. Web. 01 Mar. 2016.



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TOPIC OVERVIEW (CONT'D)

- Clearly, there is a limited supply, but high demand for STEM professionals, especially for Biomedical and CIVIL Engineering graduates
 - “According to the U.S. Bureau of Labor Statistics, employment of civil engineers is projected to **grow 20%** from 2012 to 2022.”
- In December 2015, Congress passed the **Fixing America’s Surface Transportation Act**:
 - 5-year, \$305 Billion in funding for transportation infrastructure improvements

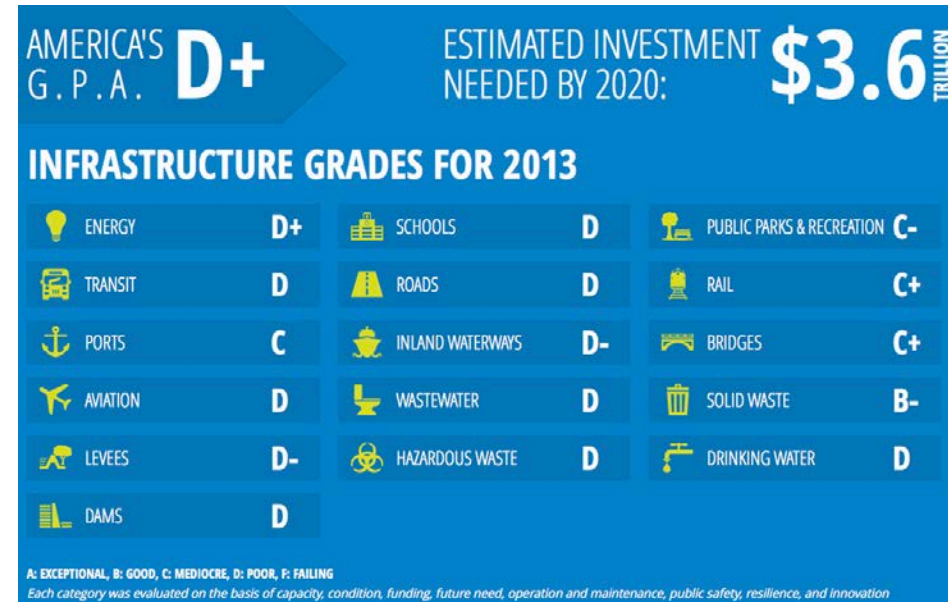


"Demand for Biomedical, Civil Engineers Continues to Rise." *Houston Chronicle*. 4 Jan. 2016. Web. 01 Mar. 2016.

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TOPIC OVERVIEW (CONT'D)

- So, what does all of this mean?
 - With 2013 ASCE Infrastructure grade of D+ AND
 - Estimated investment of \$3.6 Trillion needed to revitalize infrastructure AND
 - Increased investment in/development of tech-centric enterprises:
- **Industry must invest in STEM graduates**



"About America's Infrastructure." *2013 Report Card for Americas Infrastructure*. American Society of Civil Engineers. Web. 01 Mar. 2016.



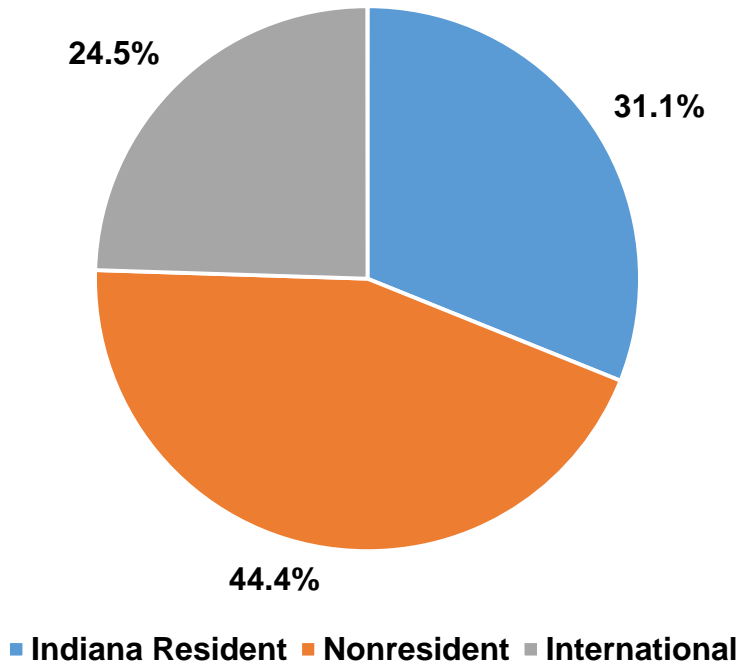
STATISTICS AND TRENDS

2025 WORKFORCE PLANNING

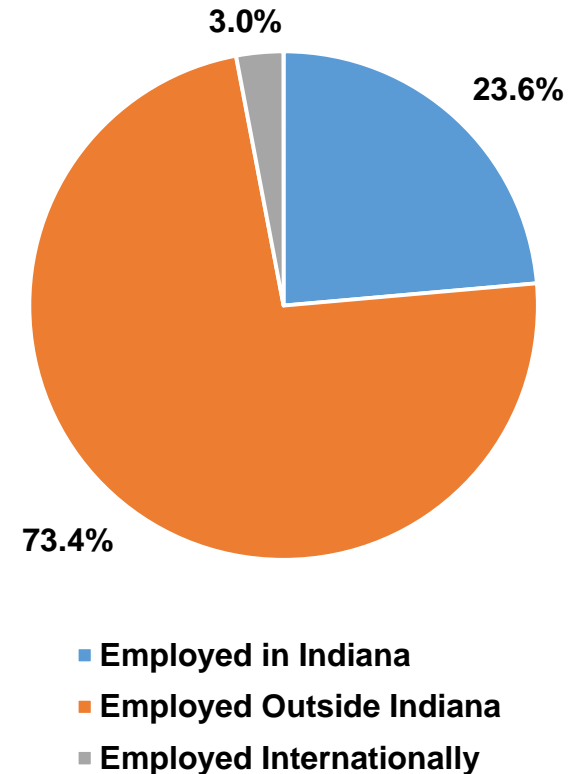
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STATISTICS AND TRENDS

Spring 2016 College of Engineering Undergraduate Enrollment by Residency



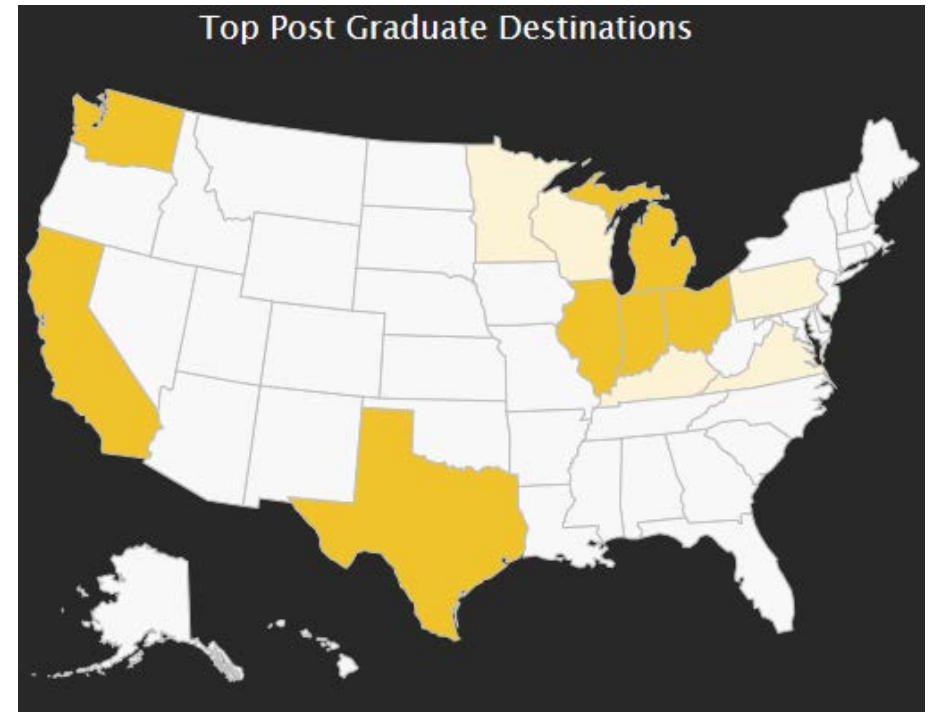
Initial Post-Graduation Work Location (3-Year Survey of College of Engineering Baccalaureate Completers)



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STATISTICS AND TRENDS

- According to the Purdue Center for Career Opportunities, top five destinations for baccalaureate engineering completers are:
 - Indiana, 23.6%
 - Illinois, 12.2%
 - Texas, 9.5%
 - Ohio, 6.4%
 - Michigan, 6.4%
- Average salary as of May 2014:
 - **\$61,434**





CITIZENS ENERGY GROUP TALENT DEVELOPMENT INITIATIVES

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citizens
energy group[™]

gas | thermal | water

Purdue Road School

March 2016

Workforce Development

Mark C. Jacob | **citizens energy group**

Vice President | Capital Programs & Engineering and Quality Systems

Safety Topic

Accident Causes & Prevention

- Accident –an unplanned and unwanted event which may or may not cause injury and/or property damage
- 88% of accidents - caused by unsafe acts
- 10% of accidents - caused by unsafe conditions



The Citizens Public Charitable Trust

- Established 1887
- Operated since then as a public charitable trust
- For the benefits of the inhabitants of Marion County
- Does not operate the Trust passively
- Devise and implement strategies to build and renew the businesses of the Trust
- Keeping the Trust competitive and adding value creates greatest long term benefit for the beneficiaries of the Trust

Citizens Energy Group and CWA Authority Inc.

A Public Charitable Trust

- Energy
 - Citizens Gas
 - Steam
 - Chilled Water



Citizens' Perry K Steam Plant utilizes clean-burning natural gas in its 8 boilers to generate 240°-600° F steam to heat buildings throughout the downtown area.

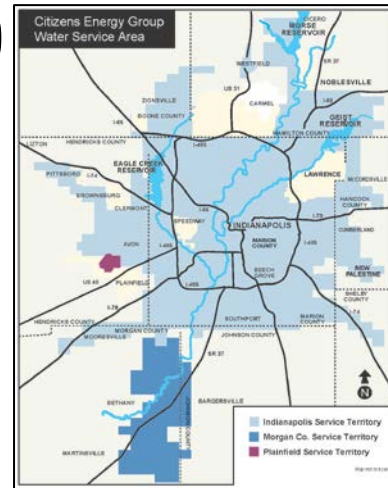
- Water
 - Indianapolis (area) Water (1M customers)
 - Indianapolis (area) Wastewater (CWA)

- Citizens Resources
 - Kinetrex Energy
 - Oil Exploration & Production
 - Citizens Gas of Westfield
 - Citizens Southern Madison
 - Westfield Water
 - Westfield Wastewater



Underground Storage Operations in Greene County has 160 gas wells operating at 500-750 psi.

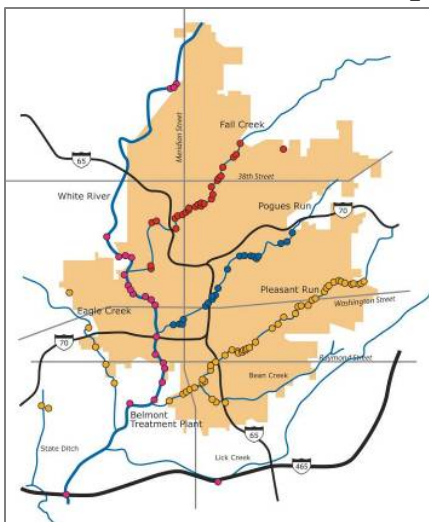
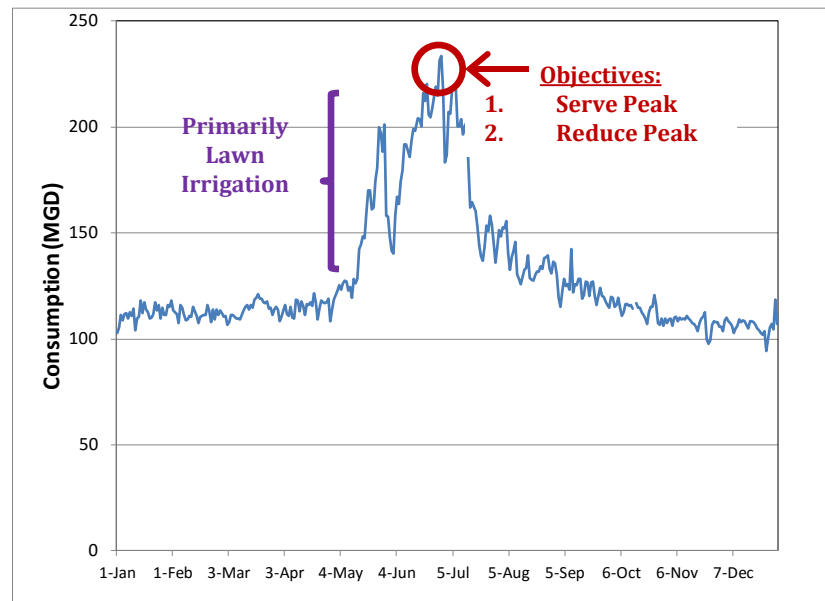
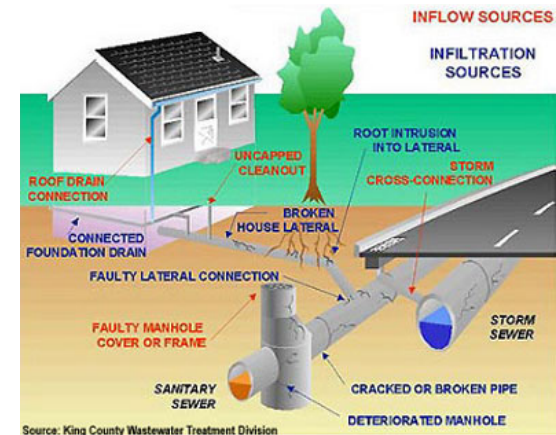
- Shared Services
 - Corporate Support Services
 - Shared Field Services



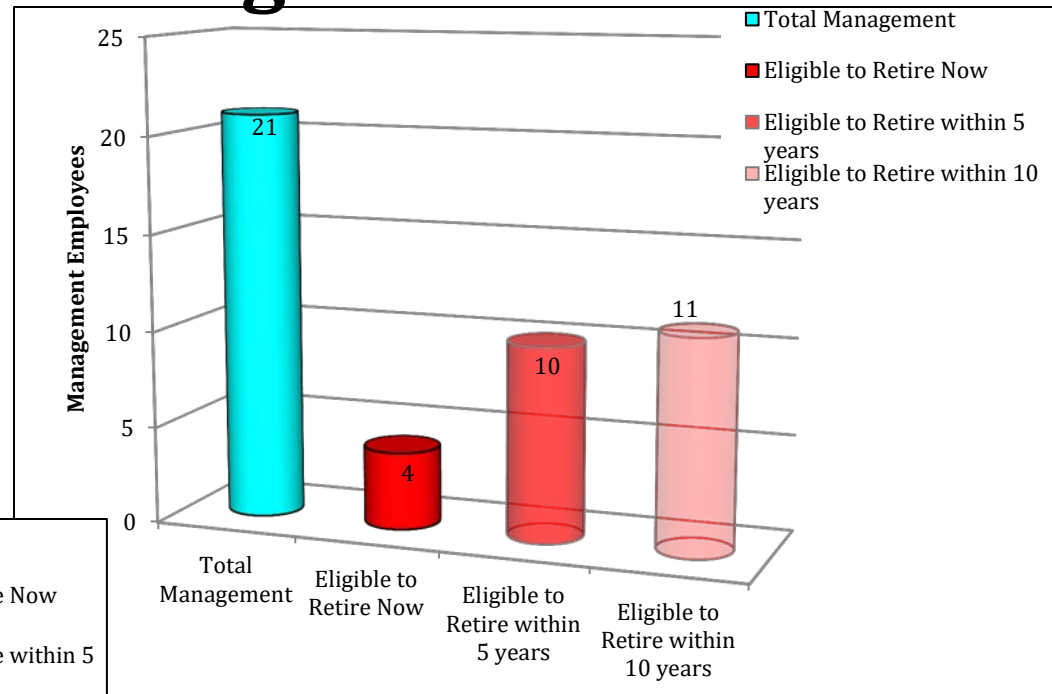
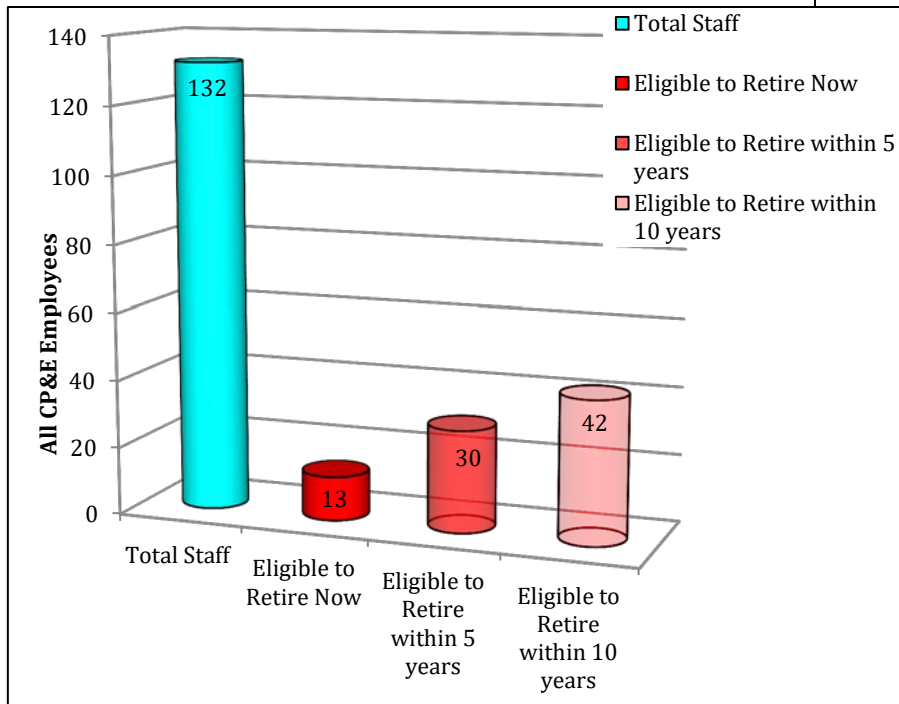
A tunnel boring machine with a 20-foot diameter cutter head is now drilling the Deep Rock Tunnel Connector, the first segment of the 25-mile Indianapolis Tunnel System that will capture combined sewer overflows.

Infrastructure Challenges We Face

- Annually - 6 Billion gallons of sewage was flowing to the city's streams and rivers
- \$1.9 B Combined Sewer Overflow (CSO) Consent Decree
- Aging infrastructure and expansion needs
- Aging workforce
- Capital investments are a constant need
- Bring / keep our Water, Wastewater and Energy Utilities at acceptable / affordable performance levels
- Large and diversified water system
- Significant septic tank elimination project (STEP) needs
- Future water supply



Workforce Challenges We Face



Our Mission

To contribute to the affordability and quality of life in our communities

- Safe, reliable services
- Low rates and sound financial management
- Build and renew the Trust
- Good stewards of the environment

Our Key Work Systems

Obtain & Deliver Gas – Produce and Deliver Steam – Produce and Deliver Chilled Water
Obtain, Treat and Deliver Water – Collect and Treat Wastewater

Our Pathways

CUSTOMER SATISFACTION

Needs Assessment – Service Commitment – Knowledgeable Employees – Relationships
Options – Assistance

OPERATIONAL EXCELLENCE

Safety – Technology – Reliable Systems – Continuous Improvement – Innovation

COMMUNITY COLLABORATION

Economic Development – Neighborhood Revitalization – Supplier Diversity
Environmental Leadership – Philanthropy – Education – Volunteerism

EFFICIENCY AND VALUE

Synergies across all businesses – Corporate Shared Services – Shared Field Services
Construction Planning and Engineering

FINANCIAL INTEGRITY

Regulatory Expertise – Bond Rating – Risk Management – Growth – Capital/Cost Management

EMPLOYEE ENGAGEMENT

Leadership – Meaningful Work – Inclusion – Learning & Professional Development – Teamwork
Communication – Recognition

PERFORMANCE MANAGEMENT

Strategic Objectives – Key Performance Indicators – Trust Scorecard – Divisional Scorecards
Initiatives – Action Plans – PPR/DPF

Our Vision

We will fulfill the promise of the Trust to serve our customers and communities with unparalleled excellence and integrity.

Our Values

Quality – Teamwork – Safety – Diversity – Integrity

Engineers....

III. Professional Obligations

2. Engineers shall at all times strive to serve the public interest.

a. Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.

Strategies for Long Term Success

- Incorporate **Sustainability** – ‘EBC’s – Environment, Business, Community
- **Voice of the Customer**
- **Customer Affordability**
- **Safe, Affordable, Reliable** utility services
- **Partnerships for Excellence in Research & Learning (PERL)** – Partnerships with Purdue, IUPUI, Rose-Hulman, etc.
- **Vendor Partnerships** – Cost Controls, Innovation, Community Involvement
- **Economic Benefits** – Jobs
- **Peer City Collaboration** – Share experiences with other cities – Two way learning opportunities
- **Effective management of the CSO Consent Decree** - Our single biggest capital investment



Strategies for Long Term Success

Partnership for Excellence in Research and Learning (PERL)

POTENTIAL PARTNERSHIP OPPORTUNITIES:

- Enhanced consideration and use of Co-ops & Interns
- Partnership opportunities for senior design projects
- Sharing university research data (e.g. Purdue's data on regional water supply or infrastructure integrity)
- Evaluate use of university technologies (e.g. Purdue owns 'Soilermaker'...soil remediation ([Soilermaker](#)))
- Research partnerships on topics such as:
 - Sustainability
 - Energy efficiencies
 - GIS applications
 - Water reuse
 - Water-quality modeling
 - Water and wastewater treatment alternatives
- Collaborate on infrastructure needs, trends, and patterns
- Training opportunities on active construction projects

SHORT AND LONG TERM GOALS & VISIONS ('EBC's):

- ✓ *Gain better access to more / better data to benefit our environment (E)*
- ✓ *Help create more opportunities for our future business leaders and technical talent (B)*
- ✓ *Encourage more students to remain in Indiana / Indianapolis, after graduation (C)*

Strategies for Long Term Success

Diversity

- Strengthening a diverse business community economically contributes to the overall economic growth of our markets.
- Minimum participation goals
 - 15% for Minority – Owned Businesses
 - 8% for Woman – Owned Businesses
 - 3% for Veteran – Owned Businesses
- In 2015, Citizens exceeded these goals with \$128.6 million of spending with diverse suppliers:

Citizens Celebrates Diversity & Inclusion

Citizens Supply Chain Department Reaches Major Milestone



Employee representatives of Citizens are among the attendees of the 2015 National Association of Women Business Owners (NAWBO) Leadership Breakfast Luncheon.

Eligible Expenditures`	\$364.2 million	% of Eligible Total	Supplier Diversity Goals
MBE Expenditures	\$63.4 million	17.5%	15%
WBE Expenditures	\$49.8 million	13.7%	8%
VBE Expenditures	\$15.4 million	4.2%	3%
Total MBE/WBE/VBE	\$128.6 million	35%	26%

Strategies for Long Term Success

Community Involvement Statistics and Benefits

- Spreads the word about your values and intentions
- Get to know our customers and helps build stronger relationships with them
- Getting to know our vendors and build stronger relationships with them
- Over 50% of 18-26 year olds “would prefer to work for a company that offers volunteer opportunities
- Over 50% of those surveyed said a company’s work on charitable causes helped influence them to accept job
- Most consumers have a better outlook on businesses that give to a charity that they care about
- Americans gave over \$350 billion in 2014 (a 7.1% increase from 2013)
- It is estimated total charitable contributions will total between \$21 and \$55 trillion between 1998 – 2052
- Over 98% of high net worth households give to charity
- 63% of high net worth donors cite “giving back to the community” as a chief motivation for giving
- In 2015 there were over 1.5 million charitable organizations in the United States

Strategies for Long Term Success Part of the Community

Employees Pave the Way for Another Successful United Way Campaign in 2014



Thanks to the 475 employees (including 60 new donors) who contributed to Citizens' United Way Campaign drive for 2014. As a result of their generosity, employee (including leadership) contributions totaled \$304,958. After adding the company contribution which matches the employee-giving amount, and additional employee donations through special events, the grand total contribution for 2014 was over \$620,000.

As is the case each year, the United Way Campaign provides our employees an opportunity to help those who are less fortunate in our community by participating in the company's various fundraising events, and making cash and paycheck pledge donations.

Here is a breakdown of this year's contributions:

- Employee contribution: \$83,357
- Leadership contribution: \$220,110
- Company employee-match contribution: \$303,477
- Special event contribution (dollars donated outside of pledging): \$13,500

In addition, El Lilly Endowment is matching Citizens' new donor contribution amount.

2014 United Way Campaign Key Events and Highlights:

- Citizens' United Way Golf Outing conducted on June 21 at the Wood Wind Golf Club in Westfield.
- Pre-Campaign Corn Roast at the Waterway facility on August 19
- Chick-R-A Breakfast at the Langsdale and Perry K facilities on September 9th
- Chick-R-A Breakfast at Waterway on September 10th
- Hamburger and Hot Dog Cook-Out at the Corporate Office on September 11th
- Ten employee raffle winners will have the parking spot of their choice next year at the Langsdale and Corporate Office facilities.
- Over \$2,000 in prizes were awarded to winning employees through the daily donor raffles conducted during campaign week.
- A total of 110 fleece jackets were ordered for first-time donors who contributed a minimum amount.

Help Three Local Families this Holiday Season through the Paul Riggins Giving Tree

*Events conducted, September 8 through September 11

Special thanks to the Campaign Committee for executing this year's Paul Dicken, Robert Gut Longenecker, Cassandr Shutters, Greg Sawyers additional employees of the campaign week.

About United Way of Central Indiana
United Way of Central Indiana is a 501(c)(3) nonprofit organization that provides a wide range of social services to the community.

As the upcoming holiday season draws near, Citizens looks forward to ushering in an annual company tradition. The Paul Riggins Giving Tree provides another opportunity to make a difference for those who are less fortunate by honoring the memory of the late, Citizens retiree Paul Riggins. The project started 10 days before Christmas in 1992, when Paul taped a \$5 bill to the outline of a tree, expecting that someone would take it. He vowed that if it remained, he would give it to charity. To Paul's surprise, other employees started taping on bills, and word spread quickly about what is now an annual tradition, the "Paul Riggins' Giving Tree." Again this year, Citizens has partnered with United Way to identify three Marion County families; and with your help, we will be able to present them with clothes, toys, groceries and other essentials the week before the Christmas holiday. Members of Citizens' United Way Committee will be hanging the family wish lists on trees for employees to have the option to purchase some of the items along with presenting monetary donations from designated Citizens locations. (The



July 23, 2014

PURDUE
UNIVERSITY

OFFICE OF THE PRESIDENT

Citizens Energy Group
Attn: Mark C. Jacob
Vice President, Major Capital Projects
2150 Dr. Martin Luther King Jr. Street
Indianapolis, IN 46202

Dear Mr. Jacob,

On behalf of Purdue University, thank you for the gift of \$62,102 from Citizens Energy Group to the Science Bound program.

At Purdue, we recognize that early college preparation is vital to student success. By partnering with the Indianapolis Public Schools and local school corporations, we can introduce and better prepare middle and high school students for careers in the science, technology, engineering, and mathematics (STEM) disciplines.

Through this partnership, you help us provide the ongoing support Science Bound participants need to reach their goals. We all benefit when people are given the opportunity to succeed. Thank you!

Sincerely,

Mitchell E. Daniels Jr.
President

Citizens Partners with IFD Recruits in "Badges to Burn Camp" Hydrant Project

Project Intended to Help Citizens and IFD Give Back to Burn Survivors and Community

Citizens Energy Group teamed up with the Indianapolis Fire Department (IFD) on October 3 to paint the town teal and raise money for a great cause. Under the direction and supervision of Paul Dicken, Director of Citizens Energy Group, Citizens Water Distribution members of the IFD Recruit training and repainting 150 hydrants in the downtown area. Citizens also provided all of the supplies needed from the inventory. This project, which is known as "Badges to Burn" is part of a requirement classes to select, develop, and complete a community project during their 22



IFD recruits are joined by (left to right, on the far left) Paul Dicken, Jeff Wilman and IFD Chief Ernest



Many Thanks to our Employees Who Contributed to This Year's United Way Campaign



Mike Sullivan, Director of Energy Distribution Engineering, takes a turn for a plunge in the dunk tank to help raise donations during Citizens' United Way Campaign Week.

This year's United Way campaign was another one to put in the books. Multiple events were conducted at the Trust throughout the week of August 10. The campaign kicked off on Monday with breakfast sandwiches from Chick-R-A at Langsdale and the General Office, and our annual corn roast lunch at Langsdale on Tuesday. On Thursday, there was an ice cream social during the noon hour at the General Office, and another ice cream social with a water dunk tank at Langsdale that afternoon. In addition, directors from a number of departments volunteered to be dunked numerous times by their fellow employees.

Despite the decision to drop the rollover option (automatic paycheck deduction donations year-after-year without further action), 253 employees still made pledges for 2016. Of those 252 individuals, 213 increased their pledge donation from last year, and 29 employees are new pledgers. In total, our employees pledged \$186,605 to United Way this year, and their donations will certainly help to benefit many in need in Central Indiana.



Citizens Supports United Way's Day of Caring pg. 5

Strategies for Long Term Success

Sustainability

What the Engineer Said: “The purpose of this white paper is to start the discussion for an outline of potential elements of an overall sustainability initiative or charter for Citizens Energy Group (CEG), which consist of green infrastructure projects, the use of sustainability rating systems, sustainable metrics, and coordination across CEG business units and potentially with partners outside the utility as well. Due to its recent integration of energy, water, and wastewater business units, CEG currently has an unprecedented opportunity to implement sustainable projects and initiatives to reduce capital costs, improve the natural environment, increase energy efficiency, and provide aesthetic benefits and reduced costs to its customers, within its unique characteristics and consolidated utilities and significant operational and capital programs....”

What the CEO Said: “...it’s really about the EBC’s....The **E**nvironment, the **B**usinesses, and the **C**ommunity. A strong utility supports strong EBC’s and strong EBC’s make a strong utility.”

Environment: *“...our efforts to sustain our environment are being achieved through unprecedented infrastructure investments in each of our utility systems.”*

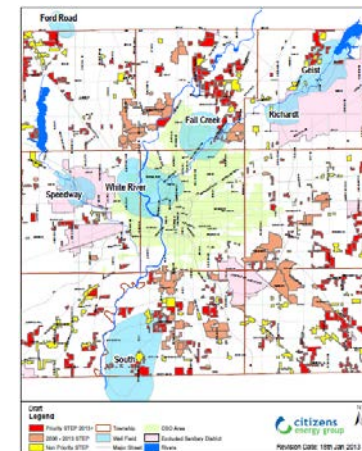
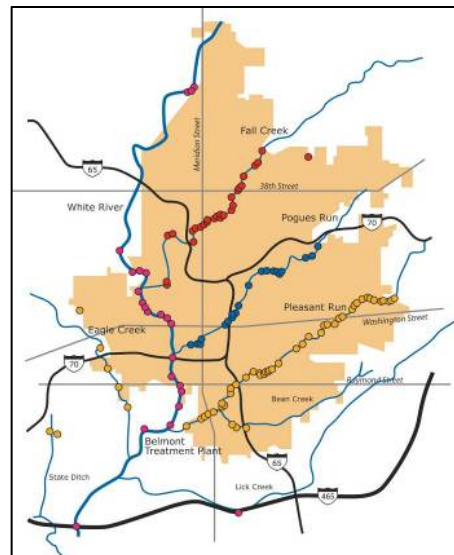
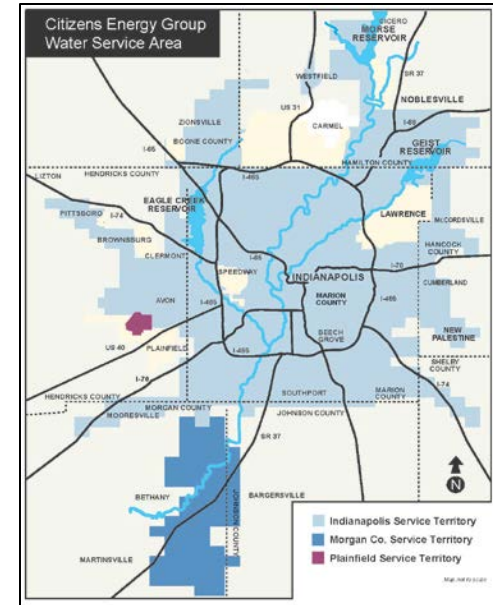
Business: *“As we make wise long-term investments in our utility systems, we are sustaining our business through disciplined cost control efforts; sound financial and strategic planning; adherence to documented quality processes; and development of new businesses to support community investment activities”.*

Community: *“...promote development of a more sustainable community” (e.g. Winter wise, education, Earth Day, environmental clean up, day of sharing, sustainable neighborhoods, youth programs, etc.).*

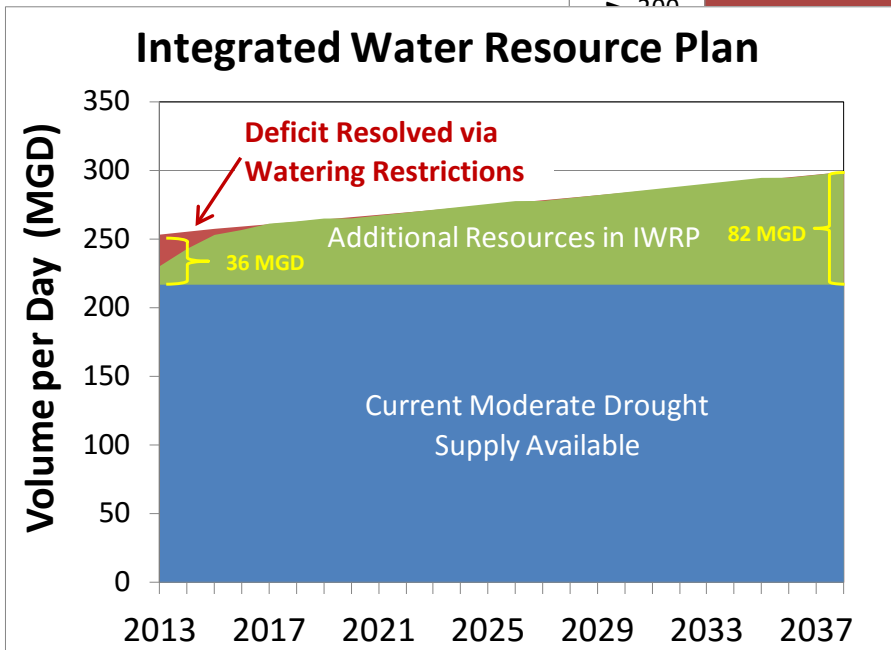
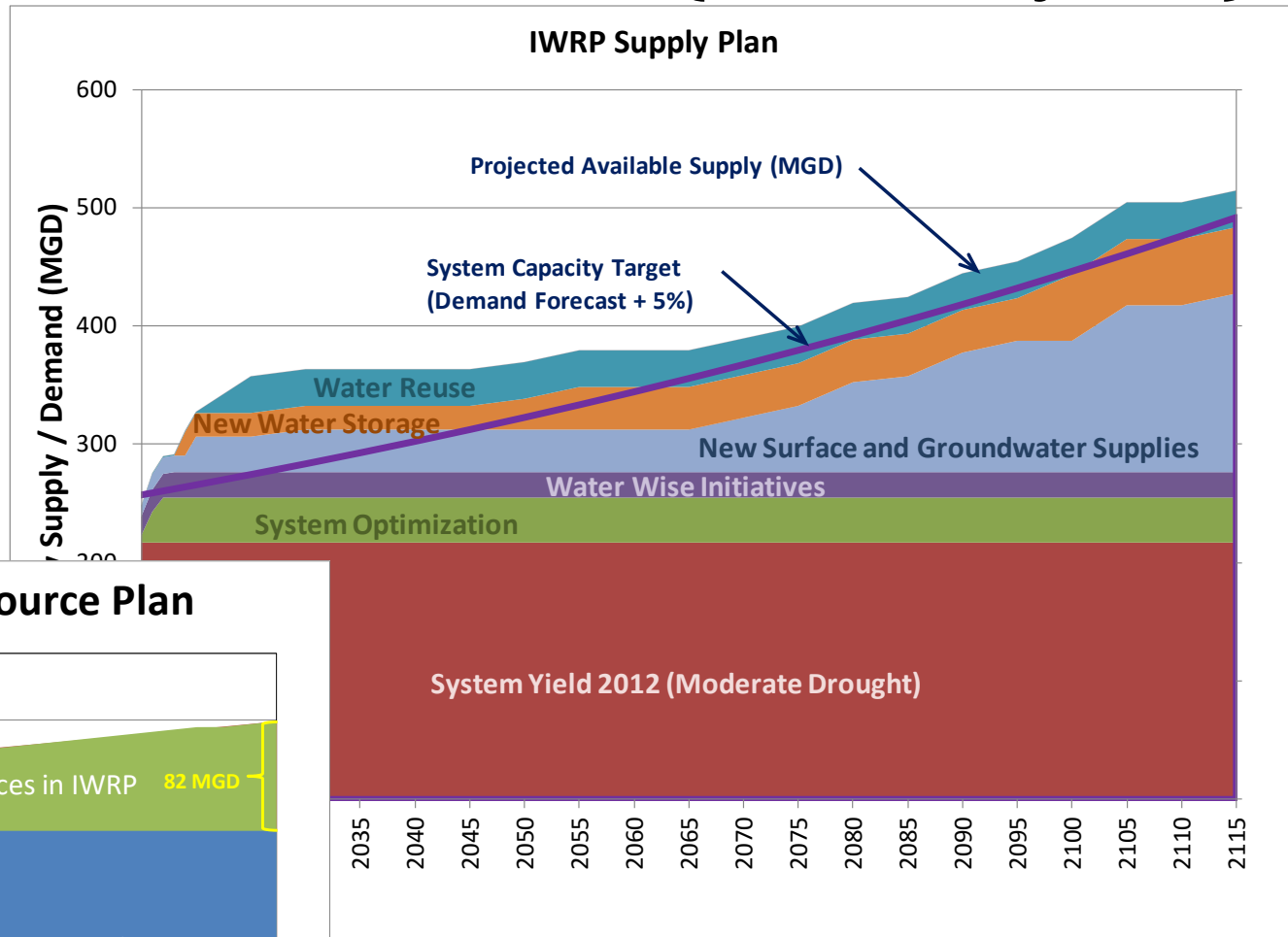
Water Utilities – At a Glance

(Acquired August 26, 2011)

- Acquired Indianapolis Water Utility
 - serving 1 million customers in 6-county area
 - system previously operated by Veolia Water
 - now operated by staff transferred to CEG
- Acquired Indianapolis Wastewater Utility
 - system serving 800,000 people in Marion County
 - operated by United Water under contract to CEG
 - 8,000 septics to address
 - \$2 B CSO Consent Decree



Integrated Water Resource Plan (25 & 100 years)

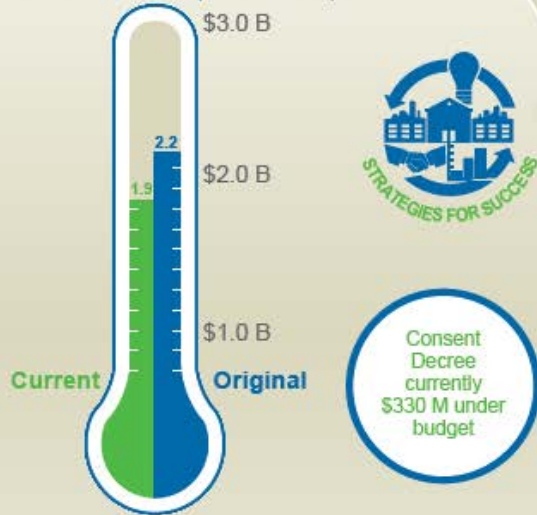


GEIST DEEP WATER STORAGE

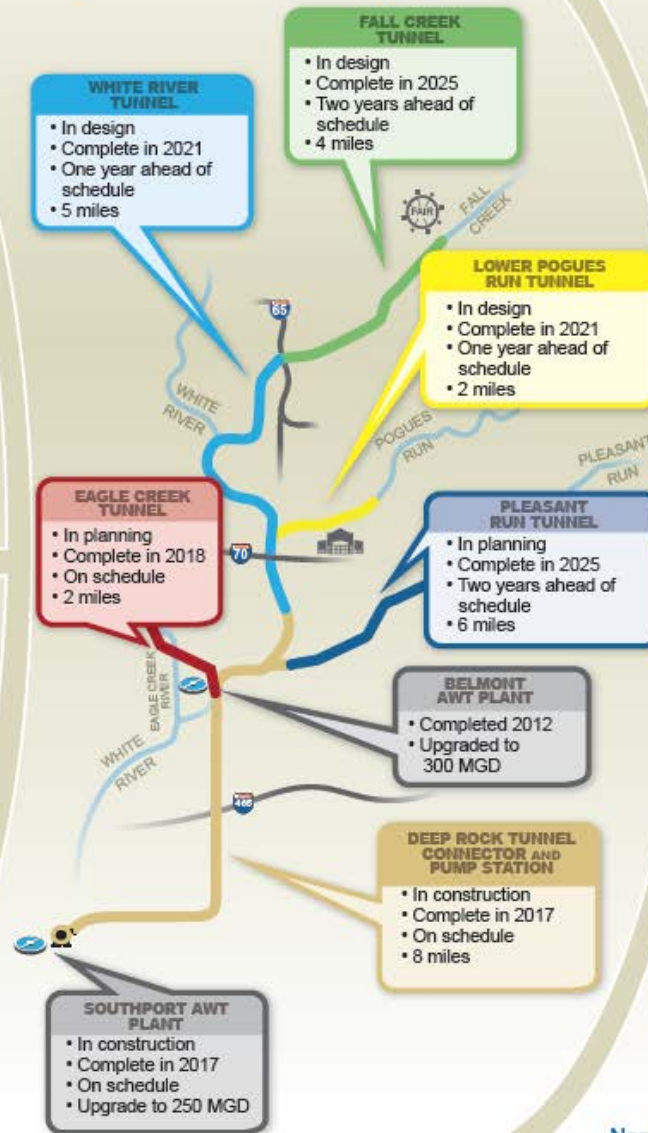
- **Location:** Olio Road & Geist Reservoir
- **Property:** 74 Acre / 8 Acre Potential Plant Site
- **Quarry Depth:** 230 Feet
- **Geist Reservoir:** 6.7 Billion Gallons
- **Quarry Water Storage:** 3.2 Billion Gallons
- **Supply:** 20-25 MGD (Summer Supply)
- **Projection:** 10-15 Years System Growth



Consent Decree Budget (2012 Dollars)



Primary Consent Decree Projects



CSO Volume Removed (2012–2025)

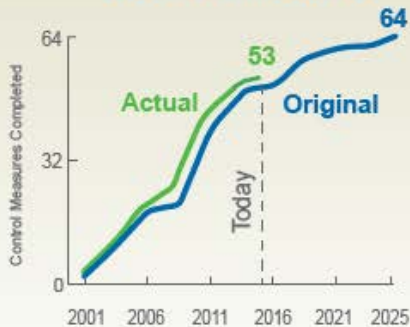
The total volume of CSO prevented from entering Indianapolis waterways would fill Lucas Oil Stadium more than 650 times.



10 Lucas Oil Stadiums (approximately 3250 million gallons)

From 2012–2025, Citizens will prevent 213.4 billion gallons (BG) of combined sewer overflows from entering Indianapolis waterways by implementing Consent Decree projects and by effectively operating and maintaining their treatment plants and wastewater system.

Combined Sewer Overflow Control Measures



Control Measures are associated with projects and specific design and performance criteria in the Consent Decree. Citizens is currently ahead of schedule on Control Measure completion.

Quick Links

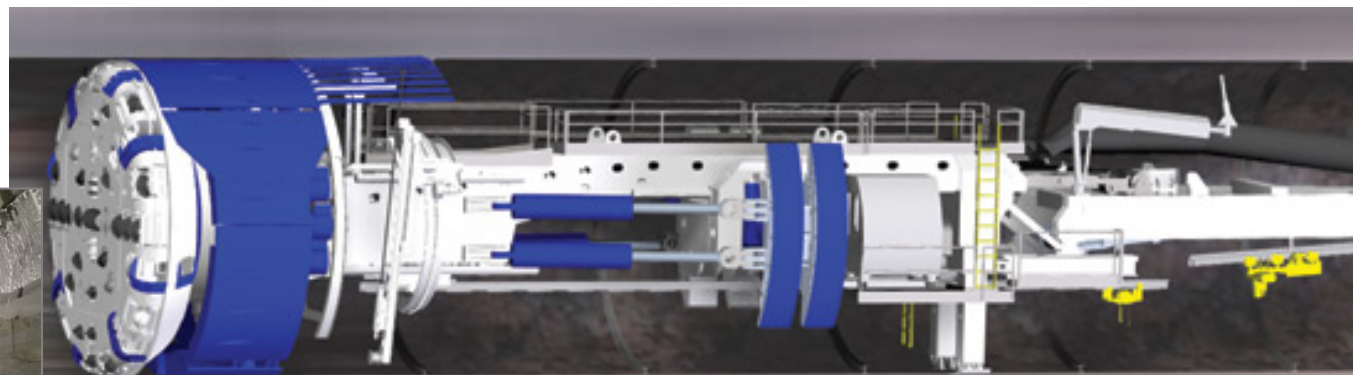
Follow these links to learn more about Consent Decree projects and programs.

- [Overview 1](#)
- [DigIndy Tunnel System 2](#)
- [Deep Rock Tunnel Connector Pump Station 7](#)
- [Eagle Creek CSO Abatement Project 9](#)
- [Advanced Wastewater Treatment Plants 10](#)
- [Consent Decree Schedule 13](#)
- [Timeline of Key Consent Decree Dates 14](#)
- [Annual CSO Remaining 15](#)
- [Economic Impacts 16](#)
- [Strategies for Success 17](#)
- [Non-Project Programs and Requirements 18](#)

DigIndy Tunnel System Construction Timeline

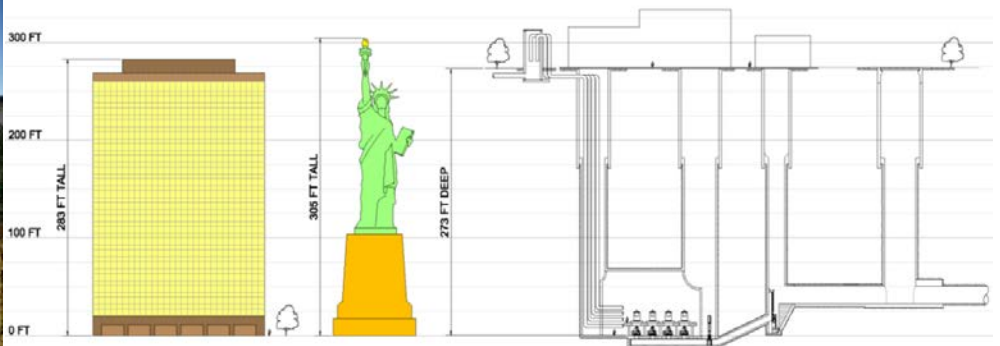
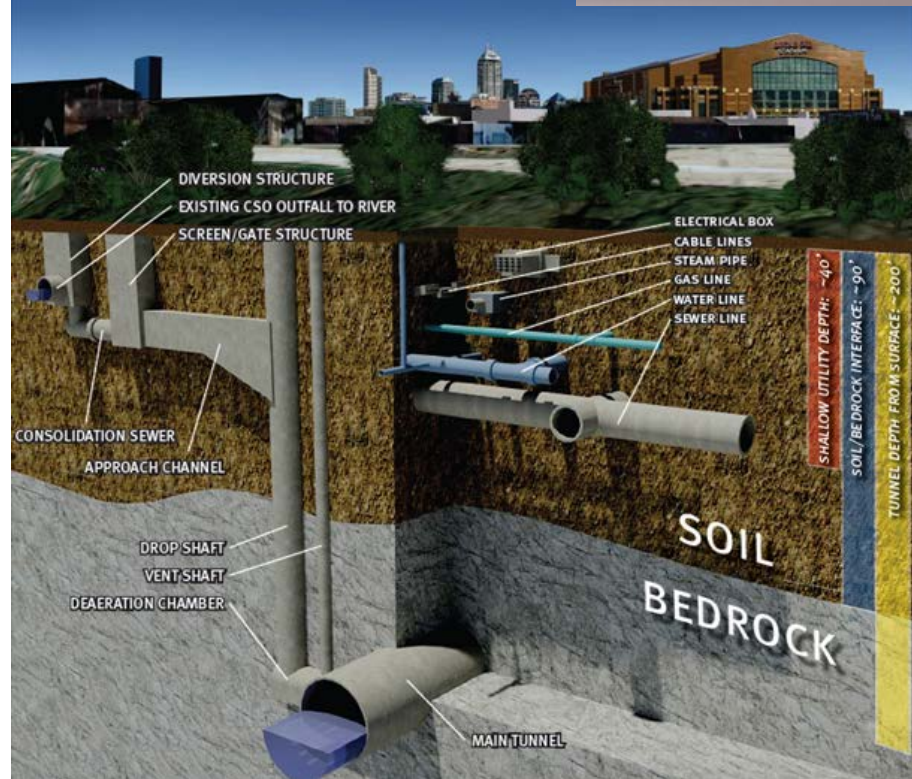


Deep Tunnel System Components

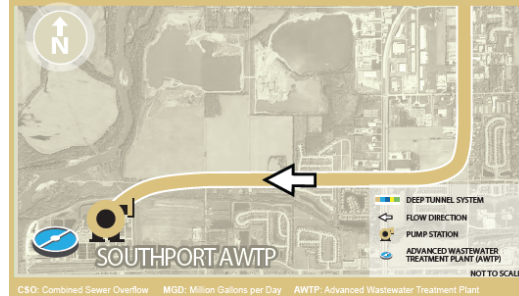
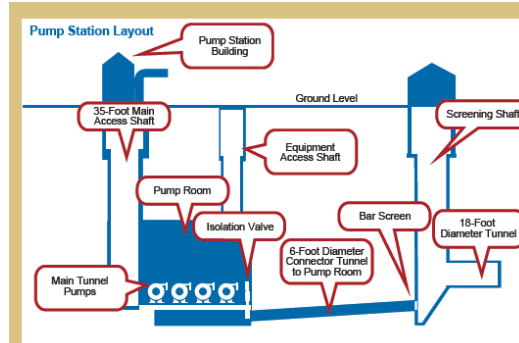
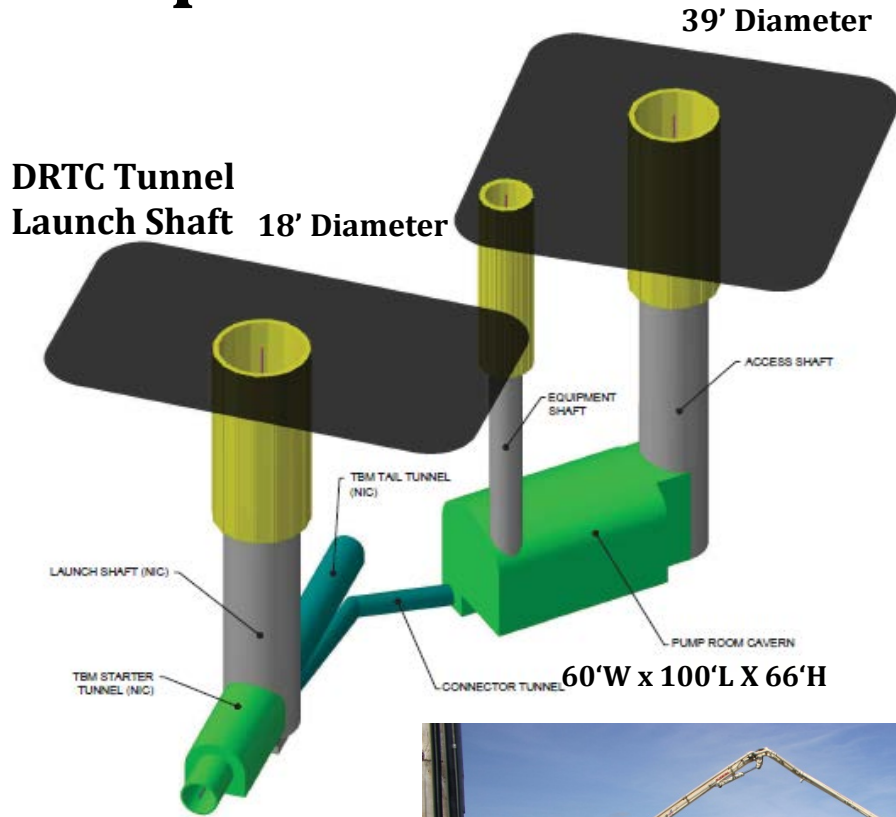


Robbins Main Beam Tunnel Boring Machine

<http://www.youtube.com/watch?v=JOYqpZCoYEQ>



Deep Rock Tunnel Connector Pump Station Update



PROJECT DESCRIPTION

The Deep Rock Tunnel Connector captures and conveys combined sewer overflows to the pump station. The core function of the pump station is to empty the tunnel system and deliver the flow to the Southport Advanced Wastewater Treatment Plant.

PROJECT STATS

- Project in construction
- Pump room is approximately 270 feet below grade
- Located at Southport Advanced Wastewater Treatment Plant
- Four main tunnel pumps for dewatering are each rated at 30 MGD
- Pump station firm capacity (with one pump out of service) of 90 MGD
- Project to be completed by December 31, 2017



- **FACT SHEET**
- Pumps are “dry pit vertical centrifugal”.
- 3 pumps need 4,500 kilowatt - hours
- Deepest floor is almost 280 feet below the ground surface
- Cavern excavation produced over 16,000 cubic yards of rock
- Pump Station houses four (4) 30MGD pumps
- Each pump is rated at 2,000 horsepower
- Flow enters the Pump Station through a 72-inch diameter tunnel extending from the Screen & Grit Shaft
- Pumps discharge into twin 42-inch diameter pipes
- Water is lifted over 300 feet before flowing into Southport AWT

Southport Advanced Wastewater Treatment Plant Update

- *New screening and grit removal @ Headworks*
- *Evaluate need for pump station upgrades*

Secondary

- *Convert ANS tanks to reverse flow*
- *New mixed liquor channel to convey flow to ONS*
- *Increase ONS capacity and rehab clarifiers*

DRTC Pump Station

Headworks

Primary Clarifiers

Secondary Treatment

- *Rehab north Primary Clarifiers – wet weather flow*
- *Convert south primary clarifiers – dry weather flow*

Disinfection

- *Add UV Disinfection for 150 MGD*
- *Rehab existing 60" ANS effluent line (now online)*

Projects: 1) Headworks 2) Secondary Expansion 3) Primary Clarifiers and 4) Wet Weather (UV) Disinfection

Contractor: Bowen Engineering Corporation

Bid Price: \$87,584,040.00

Notice To Proceed Issued: March 27, 2014

Steam System Overview

- Perry K - Second largest steam utility in U.S.
- 8 boilers: Converted to natural gas
- 24 Miles of Distribution Piping / 700 Manholes
- Covanta Energy – Refuse incinerator provides 50% of steam supply for Citizens' steam system
- Natural Gas usage nearly 4.5 BCF
- Controls are newest technology
- System peak is 1,500,000 lb/hr (Jan 2014)
- Serves about 200 institutional, commercial and industrial customers (Including: Eli Lilly, Lucas Oil Stadium, IU Health, IN Gov Center, downtown hotels)
- O & M



Gas and Oil System Overview

- 260,000 customers – Marion County
- 3,000 customers – Westfield
- 245 miles of 20" transmission line including line from Greene County
- Five primary suppliers – Panhandle, Texas Gas, Rockies Express, Heartland, Midwest Gas Transmission
- 4,000 miles of distribution mains
- 4,000 miles of service lines
- Underground Storage – 7 Bcf
- LNG storage facility, 1 Bcf
- Oil Field producing 225 barrels a day





COOPERATIVE EDUCATION AT PURDUE

2025 WORKFORCE PLANNING

2025 WORKFORCE PLANNING

COOPERATIVE EDUCATION AT PURDUE

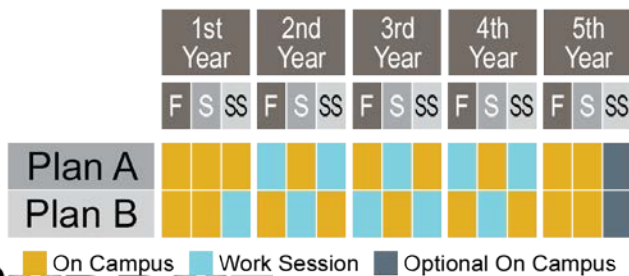
- Started in ME in 1954
- Now serving **45** majors in **8** colleges:
 - Agriculture, Engineering, Health & Human Sciences, Liberal Arts, Management, Pharmacy, Purdue Polytechnic, and Science
 - **32** faculty coordinators
 - **26** faculty coordinators in Engineering, Polytechnic, and Science
- **8** staff members

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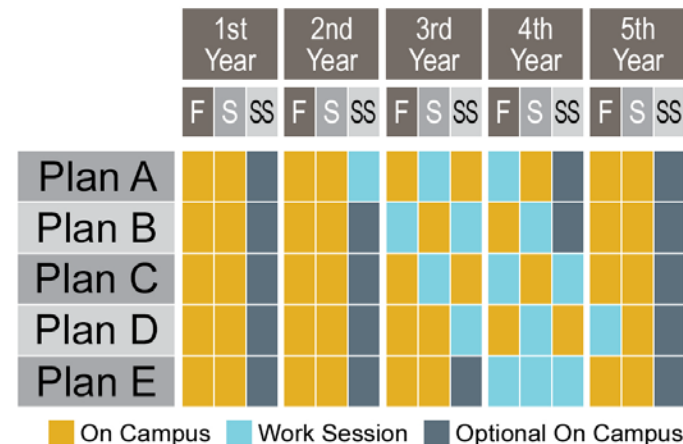
5-Session Co-Op Program

- Recruit students during first year
- Attend callout beginning of second semester
- Minimum GPA of 2.8
- First work session either summer or fall after first year
- Alternating academic and work sessions afterward
- Total of 5 work sessions (~16-20 months)
- Typically 2 summer and 3 spring and/or fall
- Students graduate in 5 years
- Global work sessions are possible



3-Session Co-Op Program

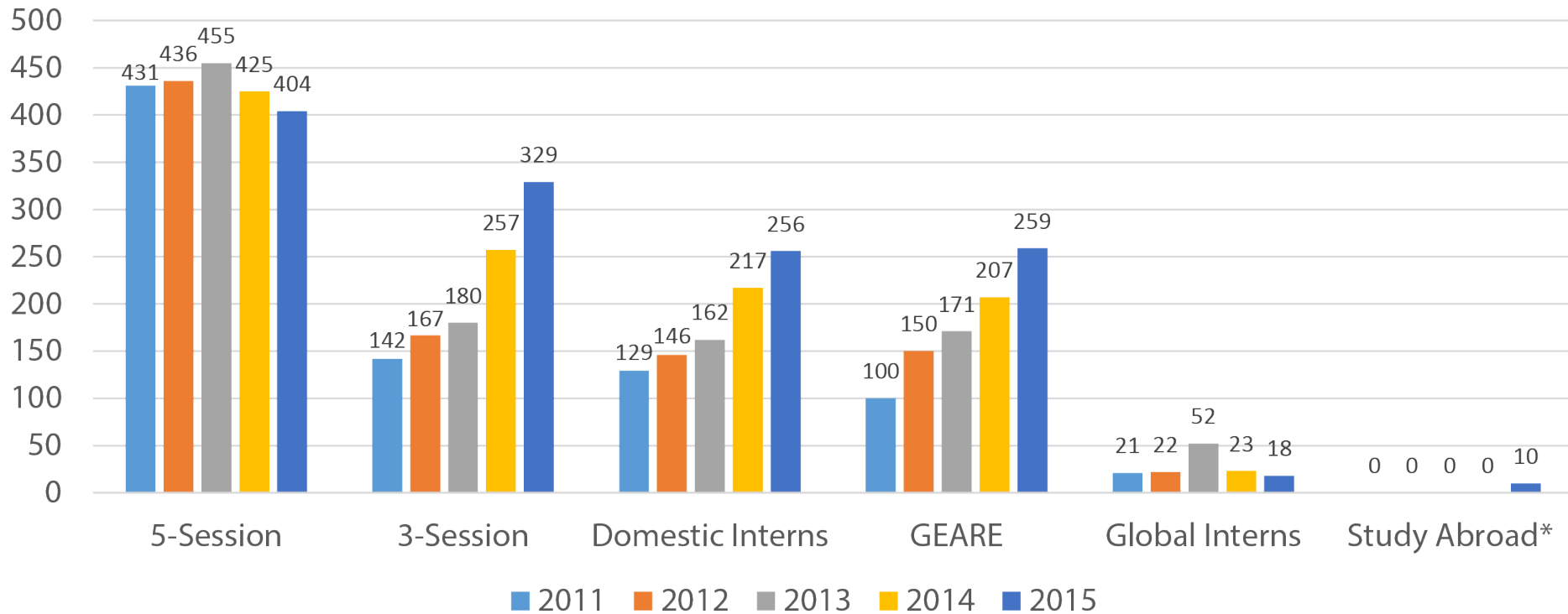
- Callouts year round, focused during IR
- Minimum GPA of 2.6
- Students in fourth semester or higher
- Much more flexible, can start as late as third or fourth year in summer, fall, or spring
- Alternating academic and work sessions afterward
- Total of 3 work sessions (~12 months)
- Typically 1 summer, 1 spring, and 1 fall
- Students graduate in 5 years
- Global work session possible

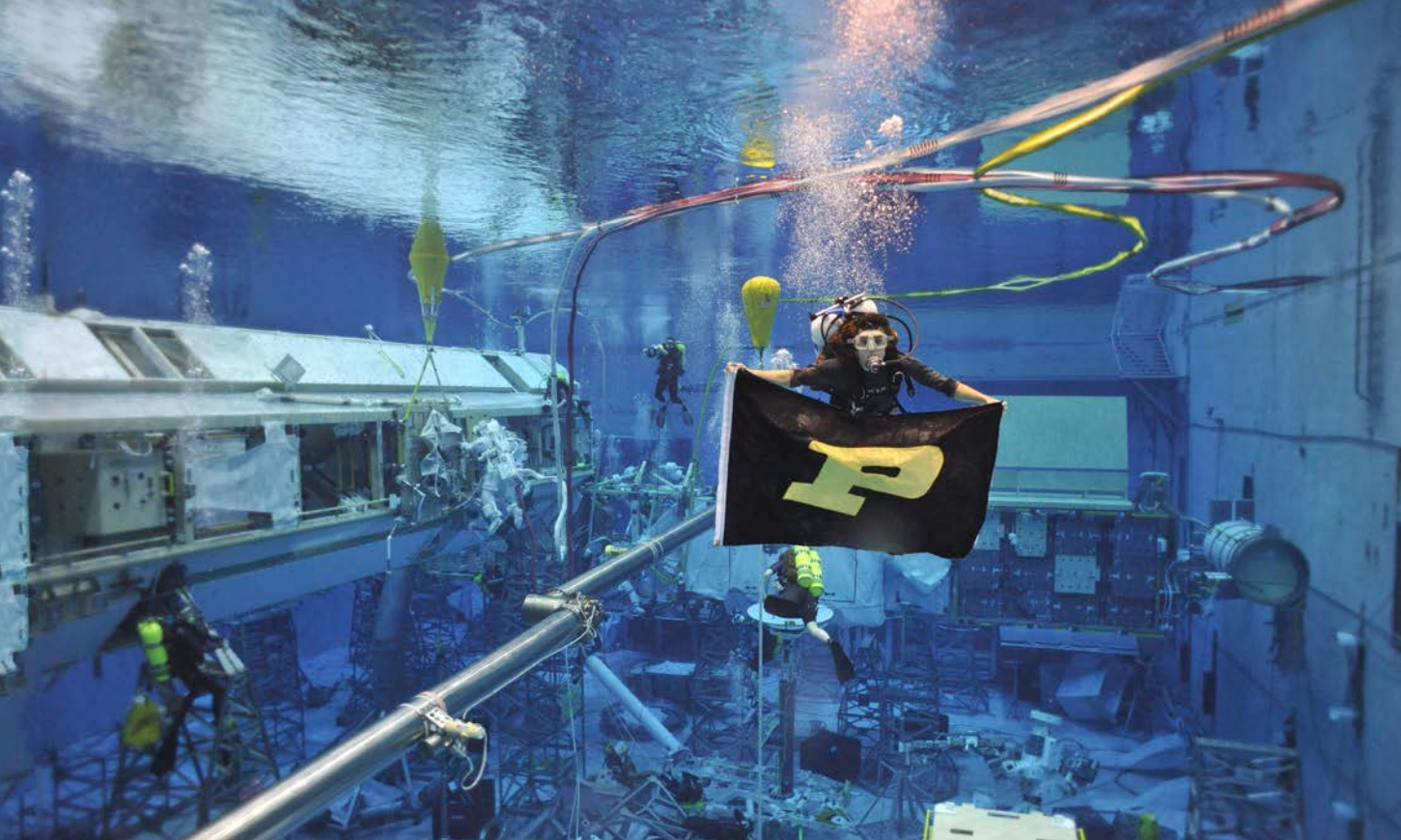


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Active Professional Practice Students by Program





RECRUIT ONCE, HIRE TWICE

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RECRUIT ONCE, HIRE TWICE

- Why utilize Cooperative Education as a means to realize Human Resource needs?
 - Discover ambitious students early
 - Assess potential permanent hire prior to graduation
 - Enhance campus recruiting reputation
- Average recruiting cost:
 - **\$3,582**



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RECRUIT ONCE, HIRE TWICE (CONT'D)

- Co-Op Students vs. Interns
 - Duration of Engagement
 - Intern: generally, one semester or summer in length.
 - Co-Op: Three or Five work rotations over four years.
 - Work Product
 - Intern: Usually, one limited duration project.
 - Co-Op: Several projects, occasionally spanning multiple work rotations. Tasks escalate in complexity as student progresses in studies.
 - Work Experiences
 - Intern: Limited exposure to one segment of business/engineering cycle.
 - Co-Op: Deep exposure to one segment of business across multiple rotations OR opportunity to experience multiple areas of business.

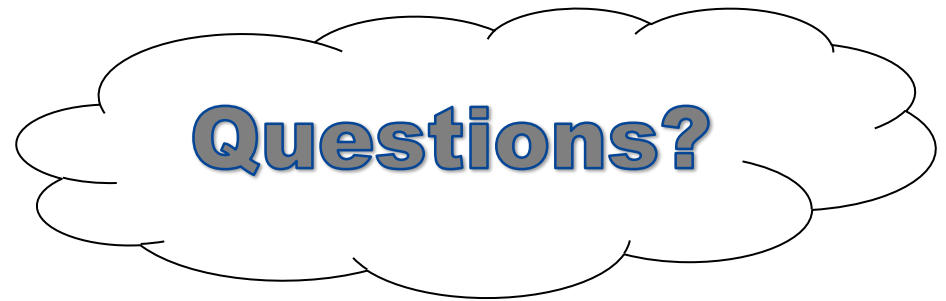
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WRAP-UP

- In next ten years, there will be an exceptionally high demand for STEM graduates.
 - FAST Act creates significant investment in infrastructure, yielding large demand for new Civil Engineers.
- Indiana MUST retain the STEM talent it produces.
 - Only 23.6% of Purdue Engineering BS graduates remain in Indiana post-graduation.
- Talent Development Initiative: Citizens Energy Group established **Partnerships for Excellence in Research & Learning (PERL)** to better connect with Indiana's STEM institutions, creating a sustainable talent pipeline.
- Establishing a Cooperative Education program can help organizations to “Recruit ONCE, Hire TWICE.”
 - Reduce recruitment costs, fill talent pipeline.
 - Cooperative Education at Purdue is facilitated by the Office of Professional Practice (www.opp.purdue.edu).

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QUESTIONS



Stephen P. Wanders, P.E.
Associate Director, Cooperative Education
Purdue University
swander@purdue.edu
765.494.7428

Mark C. Jacob
Vice President, Capital Programs & Engineering
Citizens Energy Group
mjacob@citizensenergygroup.com
317.677.6242