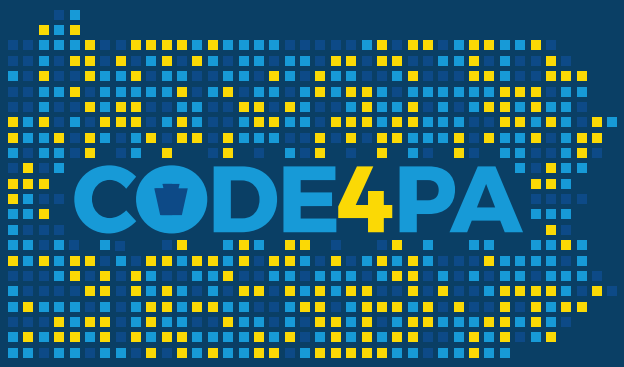
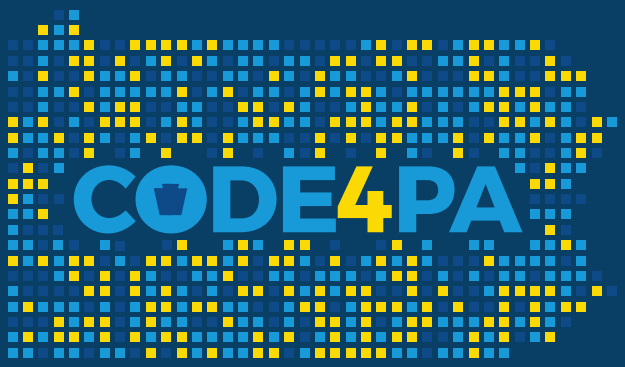


USE CASES

2017



USE CASE

PA Historical Markers

Use Case Name: PA Historical Markers Use Case

Use Case Description: Create a location-based application that can be used to generate education and learning, promote tourism, and provide opportunities for fun family outings in Pennsylvania. Making learning fun motivates students and helps them pay attention and stay focused. Families can participate in fun, exercise, and learning for all ages. Pokémon anyone? Make it a game or a scavenger hunt. Promote exercise with a walking tour. Provide driving tours to combat cabin fever during cold weather. Giving many options to PA citizens for entertainment and learning opportunities all while promoting the rich history in Pennsylvania in an efficient and effective manner. Check out our annual state tourism budgets for our competition NY $70 million, MI $34 Million and VA $21 Million and our own state PA is $4 Million. PA tourism industry is losing market share to our competition. Tourism generates jobs, taxes and revenues. Let's use our data to potentially help generate jobs, taxes and revenues while building family fun moments that include educational awareness and opportunities about the history of our great state of Pennsylvania. Use your creativity and imagination to come up with an amazing app. Marker in need of maintenance, anyone can send a picture to the app, PHMC can review and send out maintenance crew for repair. The survey report can be completed by the any of the Actor's or by a PHMC staff person or Maintenance Contractor. Upon completion, a picture can be posted to the app showing all is repaired and alert sent back to PHMC.

Actors:

- Citizens and Families (using the app for fun, exercise, bonding, and educational opportunities)
- Educators (using the app for learning opportunities, field trips, summer trips)
- Tourism/ Marketing (promoting the state of Pennsylvania, it's rich history, as an attraction bringing PA citizens and surrounding citizens on adventures around the entire state which could bring revenues to the state)
- Maintenance crew and integrated component of the Family/Educator/Tourist actor (marker needs service, picture sent in by citizen, anyone, goes to maintenance to determine repair and then repair picture is uploaded upon completion) review attached current paper survey in use today.

Triggers:

- Citizen opening the app
- Educator opening the app for learning opportunities
- Tourism agencies promoting the app
- Marketing campaign
- Maintenance request/need

Preconditions:

- Weather
- Walking or Driving tour
- Historical markers data regularly refreshed

Post-conditions:

- Education
- Tourism
- Revenues
- Marker Maintenance survey app to record the basic maintenance needs
- Families bonding and learning about PA
- PA promotion of all the state has to offer

Normal flow:

1. Open the app and be alerted what is in my current area.
2. Open the app and search on an area to which I will travel.
3. Open the app as PHMC and review maintenance alerts/ completions.
4. Comments submitted through the app for PHMC to review.
5. Open the app and have it guide me through a walking or driving tour.
6. Open the app to learn about a particular marker and the history connection.

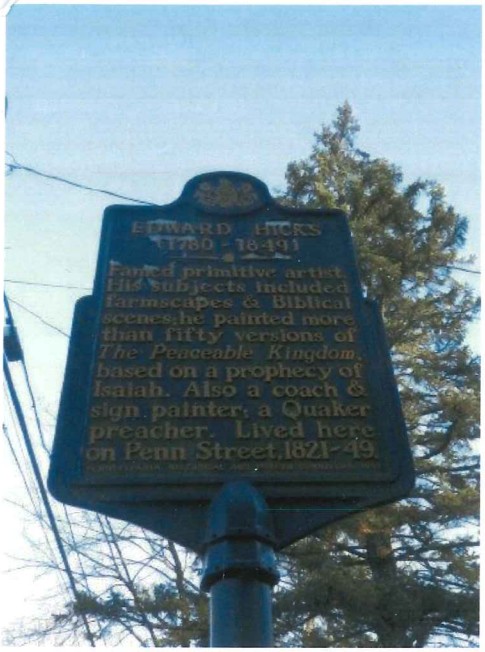
Summary

Use your creativity to develop an app that gives a lot of information about the rich history that lies within the state of Pennsylvania. The developed product will also supply alerts to PHMC for multiple reasons, have the ability to take pictures, store and send them to a designated email address. It may have the ability to find a current location or searchable location and show all historical makers within that area. Be innovative and create a game, a scavenger hunt or other ideas you have. Make it a one of kind, unique, something to promote this rich dataset while giving information back to PHMC, promoting tourism, education, while bringing revenue to the state.

Historical Marker Data can be found at www.data.pa.gov PA Historical Marker current Pennsylvania Historical and Museum Commission

Pennsylvania Historical and Museum Commission

Historical Marker Inventory & Assessment



Marker Characteristics

Marker Name:

Edward Hicks (1780-1849)

County: Bucks

Municipality: Newtown

Installation Date: 1997

Assessment Date: Jan 2017

Street Location: 122 Penn St., Newtown

GPS -Latitude: 40.22642

GPS -Longitude: -74.9348

Marker Condition

Overall: Fair

Text Plate: Poor, paint peeling

Yoke: N/A

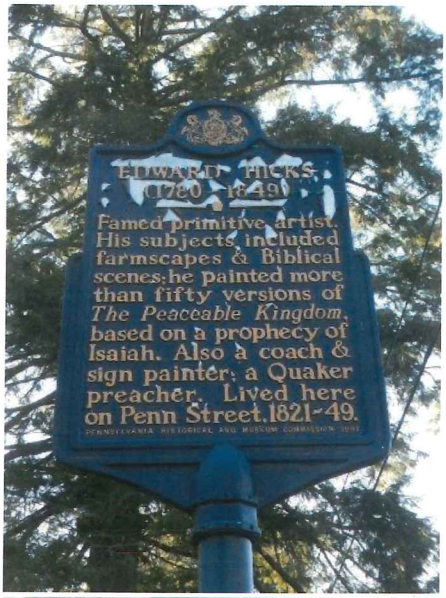
Pole : Fair, leaning & paint peeling

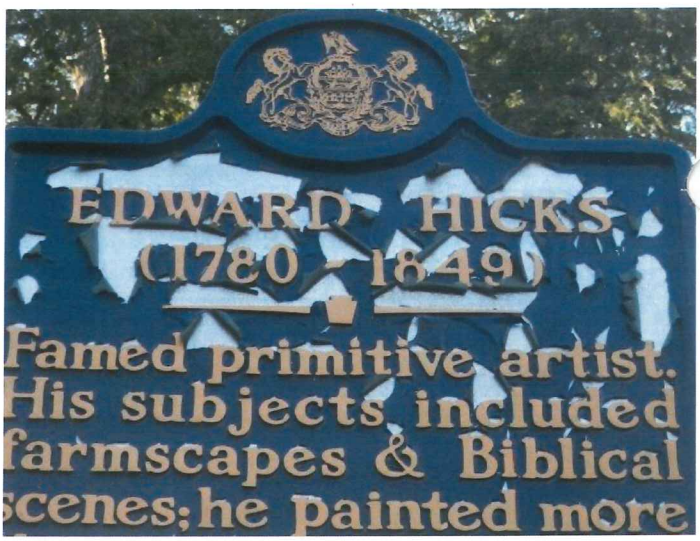
Foundation: Solid

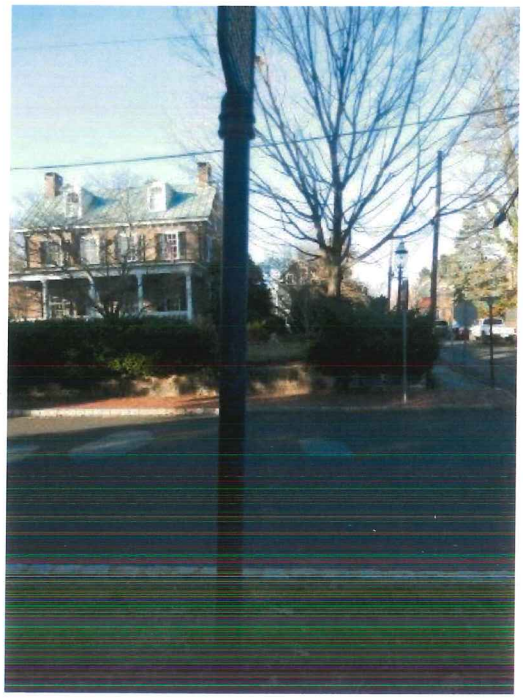
Set Screws: Good, standard

additional location information:

At intersection of Congress St. and Penn St.


EDWARD HICKS
(1780 - 1849)
Famed primitive artist. His subjects included farmscapes & Biblical scenes; he painted more than fifty versions of *The Peaceable Kingdom*, based on a prophecy of Isaiah. Also a coach & sign painter; a Quaker preacher. Lived here on Penn Street 1821-49.


EDWARD HICKS
(1780 - 1849)
Famed primitive artist.
His subjects included
farmscapes & Biblical
scenes; he painted more



STOP

Pennsylvania Historical and Museum Commission

Historical Marker Inventory & Assessment

Marker Characteristics

Marker Name:

Famous Indian Walk (The) - PLAQUE

County: Bucks

Municipality: Springtown

Installation Date: 1925

Assessment Date: Jan 2017

Street Location: PA 412 (Hellertown Rd.) just E of Moyer Rd., ~ a mile SW of Springtown

GPS -Latitude: 40.54579

GPS -Longitude: -75.30381

Marker Condition

Overall: Fair

Text Plate: actual plaque is missing but a temp small plate is located on rock foundation.

Yoke: N/A

Pole : N/A

Foundation: Solid

Set Screws: N/A

additional location information:

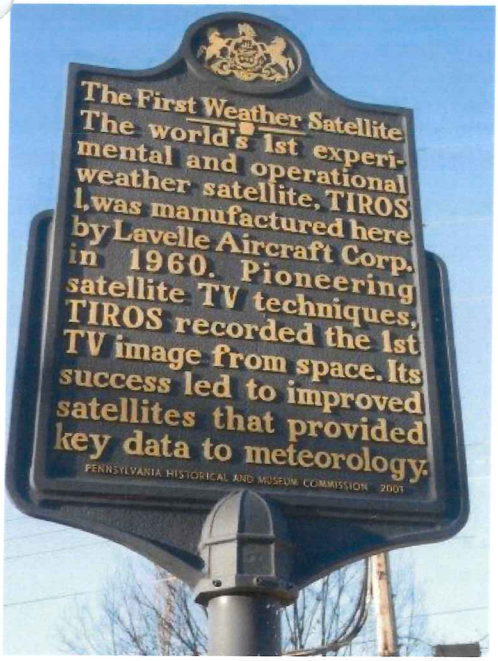
at Creek.

THIS STONE MARKS THE LUNCHEON SITE
OF THE FAMOUS WALKING PURCHASE BY
EDWARD MARSHALL AND HIS ASSOCIATES
IN THE YEAR 1737

POSTED

Pennsylvania Historical and Museum Commission

Historical Marker Inventory & Assessment



Marker Characteristics

Marker Name:

First Weather Satellite, The

County: Bucks

Municipality: Newtown

Installation Date: 2001

Assessment Date: Jan 2017

Street Location: State & Sterling Streets, Newtown

GPS -Latitude: 40.22399

GPS -Longitude: -74.93607

Marker Condition

Overall: Fair

Text Plate: Fair, faded paint on south side

Yoke: N/A

Pole : Fair, chipped & paint peeling

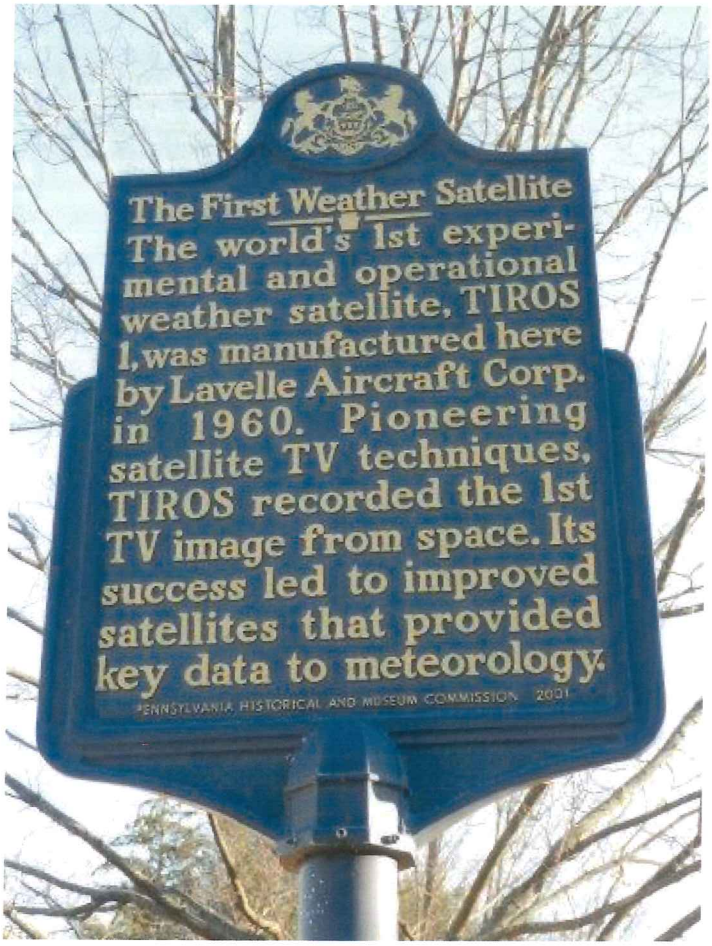
Foundation: Solid

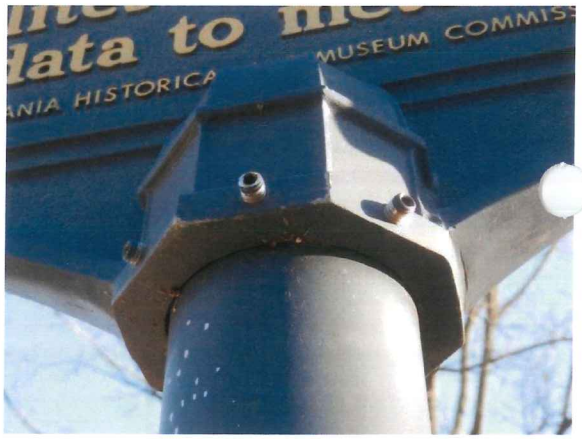
Set Screws: Good, standard

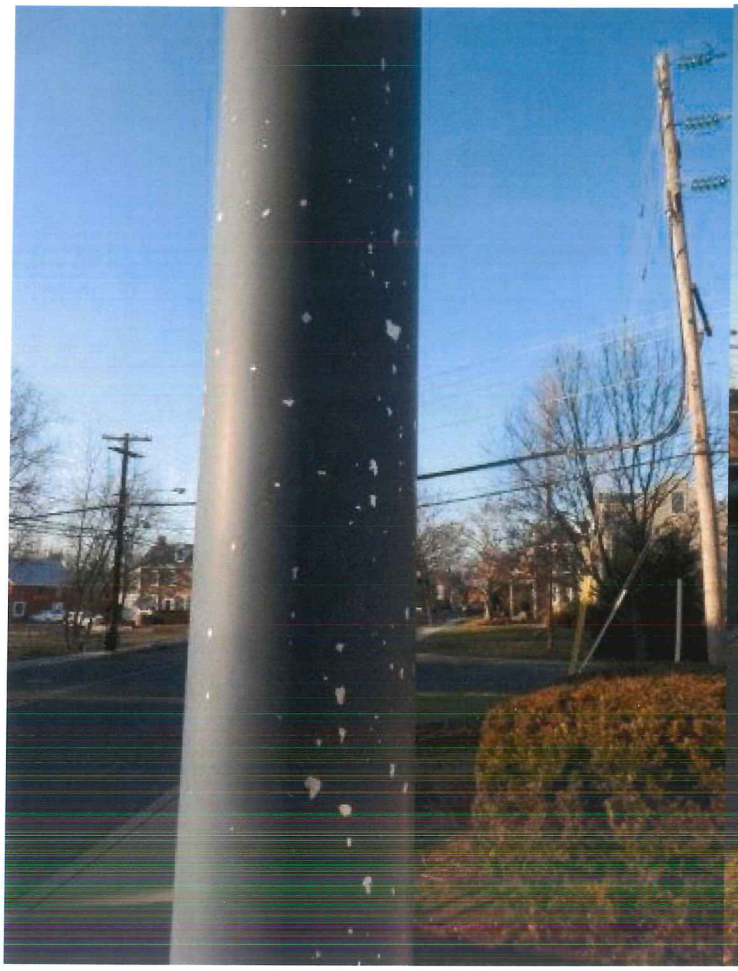
additional location information:

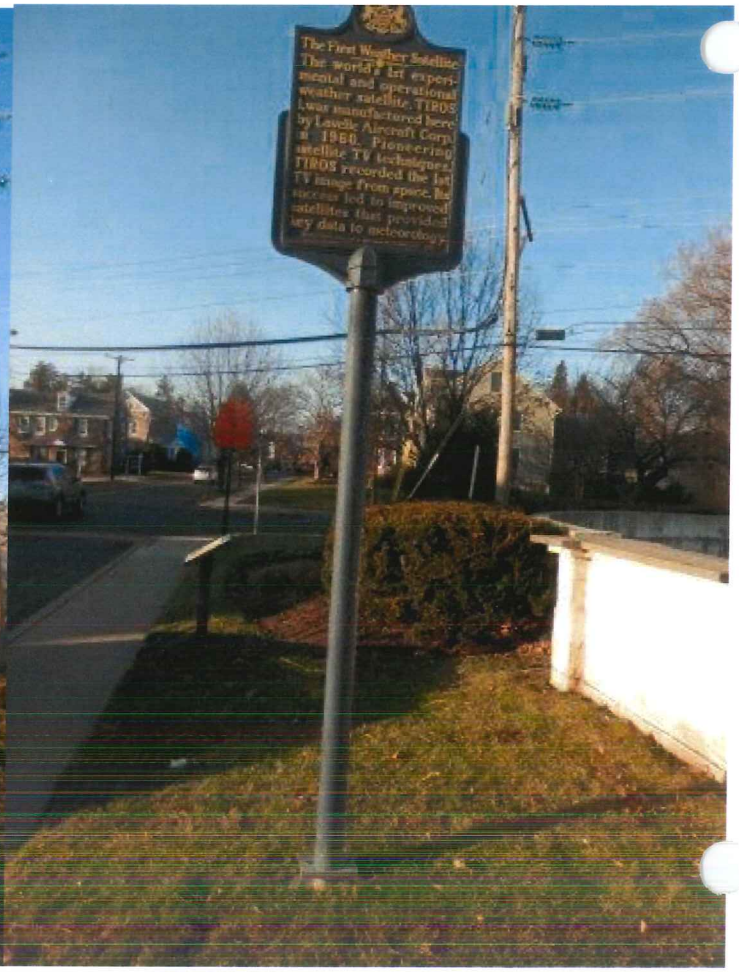
Add South to State St.

Opposite 258 South State St.


The First Weather Satellite
The world's 1st experimental and operational weather satellite, TIROS 1, was manufactured here by Lavelle Aircraft Corp. in 1960. Pioneering satellite TV techniques, TIROS recorded the 1st TV image from space. Its success led to improved satellites that provided key data to meteorology.
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION 2001


MUSEUM COMMIS

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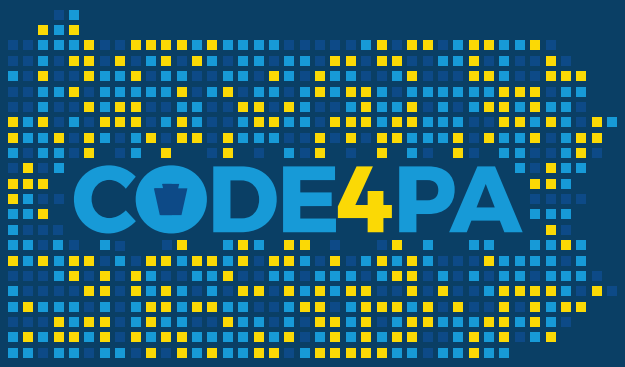
The world's 1st experimental and operational weather satellite, TIROS 1, was manufactured here by Lavelle Aircraft Corp. in 1960. Pioneering satellite TV techniques, TIROS recorded the 1st TV image from space. Its success led to improved satellites that provided key data to meteorology.



USE CASE

PA Crash Risk Prediction

Use Case Name: PA Crash Risk Prediction Use Case

Use Case Description: National fatalities have been on the rise by more than 7% over each of the last two years. In Pennsylvania, there were 1,188 roadway fatalities in 2016. Citizens and law enforcement want to be more proactive in avoiding or preventing serious crashes.

Possibly work with another team and use some of the analysis (key indicators) from the Crash Risk Identification use case and/or work off the Pennsylvania Crash Open Data Set, to **build a model that can help identify the risk of collisions for the next few hours (in the future) on any day**?

Actors:

- Immediate Drivers (operating personal/company/main vehicle)
- Other Drivers (other vehicles on the same roadway)
- Pedestrians (individuals walking along the roadway)
- Passengers (riders in any vehicle)
- Police Officers (individual presence patrolling roadways)
- Police Cars (marked/unmarked car presence patrolling roadways)
- Signage (warnings, information for drivers on roadways)
- Education (new drivers, current drivers, passengers)
- Marketing (ongoing info of individual decisions/actions and outcomes of crashes)

Triggers:

- Historical Weather information
- Historical crash data key indicators
- Road conditions/construction areas

Preconditions:

- Weather
- Road condition
- Lighting
- Time of day
- Other key indicators

Post-conditions:

- Drivers avoid high risk areas during high risk time frames; possibly making for less risk of a serious collision.
- Law enforcement could be proactively deployed to help with the risk situation
- Medical personnel could be alerted of potential risk for injuries
-

Normal flow:

1. Using a map load in the current time and have it display high crash risk areas for the next 3 hours.
2. Time periods in the past can be selected to be shown.
3. Have different colors representing different severity levels.
4. Lists out prior crash sites and they can help identify locations within the map grid that may be susceptible to crashes. Only relevant crashes such as occurred recently, at the same time of day, or in the same month.

Summary

By utilizing almost 20 years of crash data provide a solution that utilizes smart and modern ways of leveraging data that predicts high risk collision areas. This app will help city planners, law enforcement, emergency management, and citizens identify roads with high risk of crashes, possibly to avoid that location or to consider additional precautions. The defined algorithm will help PDOT identify these risks, so they can proactively discuss improvements to these areas during strategic planning sessions.

Crash dataset is found in Commonwealth Open Data Portal https://data.pa.gov/ Under the Data Catalog Named - **Crash Data, 1997 to Current, Transportation**

Example - Indiana Daily Crash Prediction Map,
https://www.in.gov/isp/ispCrashApp/main.html

Weather Dataset is found at http://www.noaa.gov/weather

USE CASE

Reduce Vehicle Collision Fatalities; Create Safer Roads

Use Case Name: Reduce Vehicle Collision Fatalities; Create Safer Roads

Use Case Description: National fatalities have been on the rise by more than 7% over each of the last two years. In Pennsylvania, there were 1,188 roadway fatalities in 2016. Insights and indicators are needed to make safer roads and drivers.

Actors:

- Immediate Drivers (operating personal/company/main vehicle)
- Other Drivers (other vehicles on the same roadway)
- Pedestrians (individuals walking along the roadway)
- Passengers (riders in any vehicle)
- Police Officers (individual presence patrolling roadways)
- Police Cars (marked/unmarked car presence patrolling roadways)
- Signage (warnings, information for drivers on roadways)
- Education (new drivers, current drivers, passengers)
- Marketing (ongoing info of individual decisions/actions and outcomes of crashes)

Triggers:

- Speed
- Substance presence
- Road conditions
- Improper or lacking signage
- Other reasons/conditions that submit to a vehicle/driver encountering an accident or collision singularly or with another vehicle?

Preconditions:

- Valid driver license
- Valid vehicle inspection
- Weather
- Road condition
- Lighting
- Time of day
- Medical condition

Post-conditions:

- Driver evaluation
- Driver/Passenger taken for treatment
- Coroner called to the scene
- Citation issued
- Road repair
- Signage replacement/improvement

Normal Flow:

1. Driver and Vehicle move from point A to Point B with safe conditions and no incidents nor collisions.

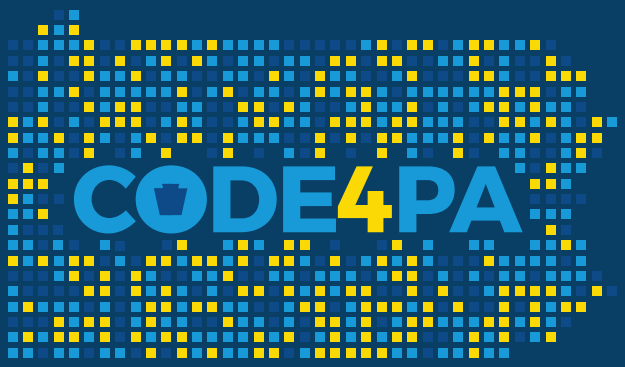
Alternate Flows:

1. Driver(s) and vehicle(s) move from Point A and some type of incidents delays, or deters, or prevents the arrival at Point B.

Summary

By utilizing almost 20 years of crash data provide a solution that utilizes smart and modern ways of leveraging data and analysis to help PDOT reduce vehicle collisions, making for safer roadways and fewer fatalities.

Dataset is found in Commonwealth Open Data Portal https://data.pa.gov/ Under the Data Catalog Named - **Crash Data, 1997 to Current, Transportation**



USE CASE

Create an Innovative & Modern Multi-layered Geospatial Visual

by Combining Departments of Human Services (DHS); Labor and Industry (DLI); Health (DOH); Education (PDE) datasets

Use Case Name: DHS, DOH, DLI, PDE Use Case

Use Case Description: Bring together datasets from various Agencies (DHS, DLI, DOH, PDE) and create an innovative and modern multi-layered geospatial visual. Use various datasets to layer/integrate metrics together. Give program experts an easy way to visualize and review the relationships a measure may or may not have to another measure. Give Program experts new ways to review data to make data-driven decisions in finding solutions. Create the ability to layer one to all the metrics you choose together. Give the ability for future additions of new datasets (creating another layer) should program experts want to analyze the effect a measure may have in an area. Does unemployment impact death or birth rates? As the unemployment rate increases/decreases does the uninsured, Medicaid enrollments, and/or SNAP enrollments follow the trend? How do the school drop-out rates or high school graduations look in these areas? Does the trend of children under 5 living in poverty follow unemployment trends?

Actors:

- Program Area experts from all 4 Agencies (opening the visual, reviewing results, logging their feedback or questions for the other program areas experts to review and a place to provide their thoughts/comments)

Preconditions:

- Currently some of these datasets are aggregated. Use the datasets as provided. Determination can be made by program area experts later if this shows there is value in publicly providing further refined details, [if allowable by program policies and legal].

Post-conditions:

- Provide program experts a product to easily review impacts of these integrated datasets. Having the ability to analyze data together from multiple agencies to make life better for Pennsylvania citizens is priceless.
- Provide a visualization product that any non-technical citizen is comfortable using to review information telling the story about the area where they live or are considering moving into.
- Provide transparency to stories within our integrated datasets for anyone to easily use and understand. Give Pennsylvania program experts a product to create and share the story the data is telling and the ability to share that with our citizens.

Normal flow:

1. Open the visualization.
2. Select the measures to review.
3. Add in 1 – x indicators.
4. Review the data and if there are any impacts or other conclusions that can be drawn from the data analysis.

5. Record thoughts and questions for the other subject matter experts. This allows for further collaboration among the subject matter experts.
6. Provide the ability to print out the final resulting map visual with details on how the dataset was created for sharing with others; for example, to use in a handout for a meeting with program executives.

Summary

Be innovative and leverage modern technologies to bring data together in a visual from various agencies that have data in the open data portal. Other datasets that are public such as federal data can be added. Show the value in creating correlations and comparisons, providing abilities for analyzing various datasets together for a more holistic understanding of the landscape of populated areas. Having the ability to easily conduct in-depth observations and research with our data may potentially lead to a better understanding of how we can positively impact the lives of Pennsylvania citizens.

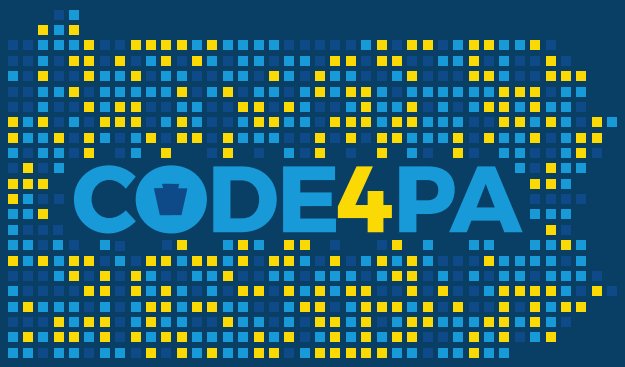
Initial datasets can be found at https://data.pa.gov/ Some to consider are as follows:

DHS – Uninsured Population Census Data, Medical Assistance Enrollment, Supplemental Nutrition Assistance Program Individuals, and Dollars

DOH – Enterprise Data Dissemination Informatics Exchange

DLI – Local Area Unemployment Statistics (to be released before event)

PDE – High School Drop-out Rates, Graduation rates by institution (both to be released before event)



USE CASE

DCED PA Municipal Distress Early Warning System

Use Case Name

PA Municipal Distress Early Warning System

Use Case Description

Many Pennsylvania municipalities have been faced with fiscal crisis, either as the result of a sudden loss of tax base caused by the closing of a major industrial employer or the cumulative effects of a long-term decline in the local economy. The Department of Community and Economic Development (DCED) has responsibility to help identify municipal financial emergencies before they become a crisis, and provide assistance as needed.

DCED is seeking innovate solutions to create an Early Warning System (EWS). The EWS should be a program that can generate reports from statistical data. The reports will rank all Pennsylvania municipalities, by Municipal Class, based on the sum of the scores of all Indicators. The EWS should have the capability of being updated annually by staff without programming expertise.

Municipal Class

53 Third Class Cities (excluding Philadelphia, Pittsburg, Scranton)

1,452 First Class Townships

93 Second Class Townships

957 Boroughs

Indicators

Socio-Demographic Indicators

% population over 65 (Direction: Positive, the higher the % the higher the distress)

% population with Bachelor's degree or higher (Direction: Negative, the higher the % the lower the distress)

% families at or below the poverty line (Direction: Positive, the higher the % the higher the distress)

Economic Indicators

Unemployment rate (Direction: Positive, the higher the % the higher the distress)

% vacant housing units (Direction: Positive, the higher the % the higher the distress)

% owner-occupied housing units (Direction: Negative, the higher the % the lower the distress)

Median household income (Direction: Negative, the higher the value the lower the distress)

Median home value (Direction: Negative, the higher the value the lower the distress)

Financial Indicators

Factor 1 - REVCAP: Include all the funds, in the Statement of Revenues and Expenditures (SR&E) except Col 7.

Factor 1 – Revenue Per Capita (REVCAP)
Total Revenue (all funds except Fiduciary Funds) Population
(Lines 301.00 to 389.00 in the 2015 SR&E – use all fund columns, except Col 7) Population
Direction: Negative - The higher the REVCAP, the lower the risk of distress

Factor 2 - IGR: Include all the funds, except fiduciary fund.

Factor 2 – Intergovernmental Revenue (IGR)
Intergovernmental Revenue (all funds except fiduciary funds) Total Revenue (all funds except fiduciary funds)
(Lines 351.03 to 359.00 in the 2015 SR&E all funds except Col 7) (Lines 301.00 to 389.00 in the 2015 SR&E all funds except Col 7)
Direction: Positive - The higher the IGR, the higher the risk of distress

Factor 3 - EXPCAP: Include all funds, except fiduciary fund.

Factor 3 – Expenditures per Capita (EXPCAP)
Total Expenditures (all funds except fiduciary funds) Population
(Lines 400.00 to 465.00 all fnds in the 2015 SR&E except Col 7) + (481.00 to 489.00 all fnds in the 2015 SR&E except Col 7)/Population
Direction: Positive - The higher the EXPCAP, the higher the risk of distress

Factor 4 - DEBTSVC: Include all funds, except fiduciary funds.

Factor 4 – Debt Service (DEBTSVC)
Debt Service (all funds except fiduciary funds) Total Revenue (all funds except fiduciary funds)
(Lines 471.00 to 475.00 all funds in the 2015 SR&E except Col 7) (Lines 301.00 to 389.00 all funds in the 2015 SR&E except Col7)
Direction: Positive - The higher the DEBTSVC, the higher the risk of distress

Factor 5 - DEBTREV: Use total outstanding debt from Debt Statement (page 24 of AFR).

Factor 5 – Long-Term Debt (DEBTREV)
Total Outstanding Debt in Debt Statement – page 24 of AFR) Total Revenue (all funds except fiduciary funds)
Total Outstanding Debt (See 2015 TL Outstanding Debt/ (Lines 301.00 to 389.00 all funds in the 2015 SR&E except Col 7)

Direction: Positive - The higher the DEBTREV, the higher the risk of distress

Factor 6 - DEBTCAP: Use total outstanding debt from Debt Statement (page 24 of AFR).

Factor 6 – Debt per Capita (DEBTCAP)
Total Outstanding Debt in Debt Statement (from Debt Statement – page 24 of AFR) Population
Total Outstanding Debt (see 2015 TL Outstanding Debt) Population
Direction: Positive - The higher the DEBTCAP, the higher the risk of distress

Factor 7 - OPERPOS: Include all the funds, except the fiduciary funds.

Factor 7 – Operating Position (OPERPOS)
Total Revenues (all funds except fiduciary funds) Total Expenditures (all funds except fiduciary funds)
(Lines 301.00 to 389.00 the 2015 SR&E all funds except Col 7) (Lines 400.00 to 465.00 in the 2015 SR&E all funds except Col 7) + (481.00 to 489.00 in the 2015 SR&E all funds except Col 7)
Direction: Positive - The higher the OPERPOS, the lower the risk of distress

Factor 8 - USERCHG: Include all the funds, except the fiduciary funds.

Factor 8 – User Charges (USERCHG)
Fees and User Charges (all funds except fiduciary funds) Total Expenditures for Services (all funds except fiduciary funds)

(Lines 361.00 to 379.00 in the 2015 SR&E all funds accept Col 7) (Lines 410.00 to 469.00 in the 2015 SR&E all funds except Col 7)
Direction: Negative - The higher the USERCHG, the lower the risk of distress

Factor 9 CAPOUT: Obtain total capital expenditures from the Statement of Capital Expenditures on page 25 of AFR.

Factor 9 – Capital Outlay (CAPOUT)
Total Capital Expenditures (from Statement of Capital Expend - page 25 AFR) Total Expenditures (all funds except fiduciary funds)
Total Capital Expenditures (see 2015 TL Cap Expenditures) (Lines 400.00 to 465.00 in the 2015 SR&E all funds except Col 7) + (481.00 to 487.00 in the 2015 SR&E all funds except Col 7)
Direction: Negative - The higher the CAPOUT, the lower the risk of distress

Factor 10 EQUITY1: Include all the funds, except the fiduciary funds.

Factor 10 – Fund Equity (EQUITY1)
Fund Equity (all funds except fiduciary fund) Total Revenue (all funds except fiduciary fund)
(Lines 270 to 299 in the 2015 Balance Sheet all funds except Col 7) (Lines 301.00 to 389.00 in the 2015 SR&E all funds except Col 7)
Direction: Negative - The higher the EQUITY1, the lower the risk of distress

Factor 11 EQUITY2: Include all funds, except the fiduciary funds.

Factor 11 – Fund Equity (EQUITY2)
Fund Equity (all funds except fiduciary fund) Total Assets (all funds except fiduciary fund)

(Lines 270 to 299 in the 2015 Balance Sheet all funds Col 7) (Lines 100 to 189 in the 2015 Balance Sheet all funds except Col 7)
Direction: Negative - The higher the EQUITY2, the lower the risk of distress

Note: Include columns 8 and 9 in the fund equity amount and Total Assets amount.

Factor 12 LIQUID1: Include all the funds, except the fiduciary funds.

Factor 12 – Liquidity (LIQUID1)
Cash and Investments (all funds except fiduciary fund) Total Revenue (all fund except fiduciary fund)
(Lines 100 to 120 in the 2015 Balance Sheet all funds except Col 7) (Lines 300.01 to 389.00 in the 2015 SR&E all funds except Col 7)
Direction: Negative - The higher the LIQUID1, the lower the risk of distress

Factor 13 LIQUID2: Include all the funds, except the fiduciary funds.

Factor 13 – Liquidity (LIQUID2)
Cash and Investments (all funds except fiduciary fund) Total Outstanding Debt (Debt Statement – page 24 of AFR)
(Lines 100 to 120 in the 2015 Balance Sheet all funds except Co 7) 2015 TL Outstanding Debt
Direction: Negative - The higher the LIQUID2, the lower the risk of distress

Factor 14 LIQUID3: Include all the funds, except the fiduciary funds.

Factor 14 – Liquidity (LIQUID3)
Current Assets (all funds except fiduciary fund) Current Liabilities (all fund except fiduciary fund)

(Lines 100 to 159 in the 2015 Balance Sheet all funds except Col 7) (Lines 210 to 259 in the 2015 Balance Sheet all funds except Col 7)
Direction: Negative - The higher the LIQUID, the lower the risk of distress

Factor 15 ROADS: Include only general and special revenue funds.

Factor 15 – Public Works – Highways and Streets (ROADS)
Roadway Revenue (Gen Fund and Special Revenue Fund) Roadway Expenditures (Gen Fund and Special Revenue Fund)
[351.03 + 354.03 + (355.02 to 355.03) + 355.09 + 357.03 + 363.00 in the 2015 SR&E only Col 1 & 2] (Lines 430.00 to 439.00 in the 2015 SR&E only Col 1 & 2)
Direction: Positive - The higher the WORKS, the higher the risk of distress

Factor 16 PENSION: Include only pension items from the general and fiduciary funds.

Factor 16 – Pension Costs (PENSION)
Pension Revenue (Fiduciary Fund and Gen Fund) Pension Expenditures (Fiduciary Fund and Gen Fund)
In the 2015 SR&E (341.00 + 388.00 Col 7) + (Lines 355.05 Col 1) In the 2015 SR&E (Lines 400.00 to 465.00 + 482.00 + 488.00 + 489.00 Col 7) + 483.00 Col 1
Direction: Negative - The higher the PENSION, the lower the risk of distress.

Factor 17: CAPSTR: Include all the funds, except the fiduciary funds.

Factor 17 – Capital Structure (CAPSTR)
Total Outstanding Debt Statement (from Debt Statement – page 24 of AFR)

Total Assets (all funds except fiduciary funds)
2015 TL Outstanding Debt (Lines 100 to 189 in the 2015 Balance Sheet all funds except Col 7)
Direction: Positive - The higher the CAPSTR, the higher the risk of distress.

Note: Include Columns 8 and 9 in the total asset amount.

Factor 18: Obtain Total Employee Compensation from W-3 wages on page 25 of AFR.

Factor 18 – Employee Benefits (BENEFIT)
Employee Benefit Costs (all funds expect fiduciary funds) Total Employee Compensation (W-3 wages - page 25 of AFR)
(Lines 481.00 to 487.00 in the 2015 SR & E all funds except Col 7) 2015 TL Salaries
Direction: Positive - The higher the BENEFIT, the higher the risk of distress

Factor 19: Revenue Concentration

Factor 19 – Tax Revenue (CONCEN)
Total Tax Revenue (all funds except fiduciary funds) Total Revenues (all funds except fiduciary funds)
(Lines 301.00 to 310.90 in the 2015 SR&E all funds except Col 7) (Lines 301.00 to 389.00 in the 2015 SR & E all funds except Col 7)
Direction: Positive - The higher the CONCEN, the higher the risk of distress

Factor 20: Tax Capacity

Factor 20 – Tax Capacity (TAXCAP)
$\frac{\text{Tax Mills Charged}}{\text{Tax Mills Limit}}$
$\frac{\text{Tax files}}{\text{Tax CAP}}$
Direction: Positive - The higher the TAXCAP, the higher the risk of distress

Note: municipalities of the same type have the same limit on tax mills.

Output

The EWS will incorporate data sets from a number of sources (see below). It will be necessary to extract data sets from various sources and place them into one table. If there is a component of the EWS that could aid in cross-walking the various data sets, it would be beneficial to the efficiency of the end product.

The municipalities will need to be sorted by their Municipal Class (3rd Class City, First Class Township, Second Class Township, Borough).

Once the datasets are compiled and sorted by Municipal Class, the EWS will score each municipality by using the various Indicators to create totals for each Sub-Indicator (Socio-Demographic, Economic, Financial) for each municipality.

Scoring the municipalities will occur by ranking order (for example, Boroughs 1-957) which is determined by how they perform for each Indicator. If possible, there should be an option to weigh the Indicators based on the potential for financial risk.

Once a Sub-Indicator total is calculated for each municipality, all Sub-Indicators should be totaled to create a final Factor Total. The municipality with the highest Factor Total will be determined to be the most distressed. The EWS application should be able to generate reports that display these rankings.

Further, we would like the flexibility to be able to add or subtract indicators in order for the system to adapt to trends as we seem them. Finally, we would like the system to be able to function if one or more municipalities is removed from the system. It is sometimes the case where two municipalities will merge or consolidate, thereby leaving an empty data set in one of the municipal type categories.

Data sets:

STEB/TED Reports:

STEB 2016 School District Yearly Market Value Report Certified

U.S. Bureau of Census:

American Fact Finder: https://www.census.gov/programs-surveys/acs/

PennDOT

2018 Municipal Liquid Fuels Estimated Allocation Report

DCED Munstats: (available through the Open Data Portal at https://data.pa.gov/)

Municipal Annual Financial Report:

http://munstats.pa.gov/Reports/ReportInformation2.aspx?report=mAfrForm

County / Municipal Demographic:

http://munstats.pa.gov/Reports/ReportInformation2.aspx?report=CountyMuniDemo_Excel

Municipal Tax Information:

http://munstats.pa.gov/Reports/ReportInformation2.aspx?report=taxes_Dyn_Excel

Point of contact

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USE CASE

DOH Healthy Dashboard

pennsylvania
DEPARTMENT OF HEALTH

Code4PA Hackathon – Use Case Template

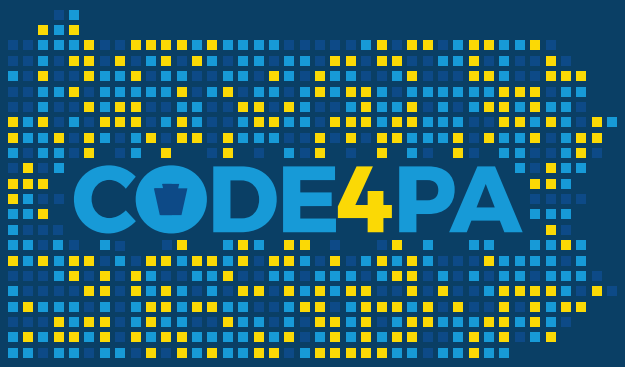
Use Case Name	Pennsylvania Regional Healthy Score Card
Use Case Description	Trust for America's Health (TFAH) is a non-profit, non-partisan organization dedicated to saving lives by protecting the health of every community and working to make disease prevention a national priority. TFAH works on a variety of issues to help protect the health of every community and make disease prevention a national priority. TFAH recently came out with a report: *"Special Analysis: How Healthy Is Your Congressional District?"* The report was generated by using data from the Centers for Disease Control and Prevention's (CDC) 2015 Behavioral Risk Factor Surveillance System (BRFSS). These seven BRFSS questions are not intended as the definitive definition of "healthy." Rather they represent a quick dashboard of indications of self-reported health, access to clinical care and healthy behaviors. Additional data is needed to truly assess the overall health of a community. The seven indicators included are: 1 - Adults Reporting Fair or Poor Health 2 - Adults Reporting They Are Frequently Mentally Distressed 3 - Nonelderly Adults Who Are Uninsured 4 - Adults Who Couldn't See a Physician Due to Cost 5 - Adults Who Had a Check-Up Last Year 6 - Adults Who Had a Cholesterol Screening 7 - Adults Who Are Currently Smoking This use case would create a dashboard specific to Pennsylvania that could be modified on the fly using BRFSS data and showing descriptive charts and maps, including a listing of the range of healthiest to least healthy by chosen regional set up. Additionally, the end user would be able to select up to 10 BRFSS elements on the fly to create custom "Healthy" dashboards.
Bureau	Bureau of Health Promotion and Risk Reduction
DOH Dataset	BRFSS

Below are the DOH aggregate datasets available in EDDIE

Air Quality	Childhood Lead Poisoning	Infant Deaths
BRFSS	Child Poverty	Population
Birth Defects	Communicable Diseases (non-STD)	Reported Pregnancies
Births	Deaths	Reproductive Health Outcomes
Cancer Incidence	Drinking Water Quality	Sexually Transmitted Diseases
Carbon Monoxide Poisoning Mortality	Hospitalizations	
Childhood Cancer Incidence	Housing by Year Built	

Check out the Open Data Portal – Data Catalog *of publicly available datasets from other agencies*

Solutions created may also be selected to be presented at the ***Data Analytics Summit – Healthcare Analytics: Making the World Better*** on December 8th"



USE CASE

DEP Radon App

Use Case Name: PA Zip Code Radon App

Use Case Description: Radon is a known human carcinogen and leading cause of lung cancer, and an estimated 40% of PA homes have radon levels above the EPA's action guideline of 4 picocuries per liter.

Design a user-friendly app that can use GPS coordinates or data entered locations to provide Radon statistics and information that can lead to actionable steps to help increase homeowners' knowledge about Radon. This information would in turn lead to increased radon testing, and subsequent radon mitigation, if applicable. Please note the DEP Radon Hotline 800-237-2366.

Actors:

- Homeowners
- Home Inspectors
- Marketing toward increasing the knowledge of Radon risks and actionable levels

Triggers:

- Use of application to obtain regional Radon statistics

Preconditions:

- Zip Code

Post-conditions:

- Increased knowledge of historical Radon results by area, by providing statistics such as range, average, maximum, number of data points, and/or number of tests.

Normal flow:

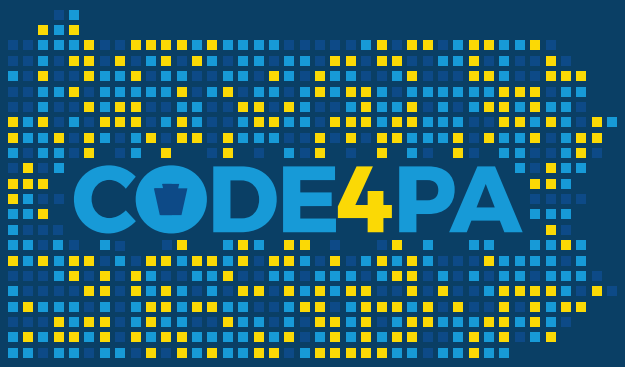
1. Application opened by individual
2. Either through use of GPS for smartphones or through the manual entry of a zip code, provide statistics or visuals for Radon levels and number of data points/tests.
3. Provide Radon background information and action steps. [Recommended average/next steps]

Summary

By utilizing 17 years of radon data, homeowners can have a better idea of their risk for local radon levels, and can be motivated to test their home and to mitigate their radon levels.

The Radon data set is found at https://data.pa.gov/ under the Data Catalog and owned by the Department of Environmental Protection.

Example zip code data is available on the DEP website at http://www.depreportingservices.state.pa.us/ReportServer/Pages/ReportViewer.aspx?/Radon/RadonZip.



USE CASE

DEP Water Quality

Use Case Name: PA Location Water Monitoring Station

Use Case Description: There are approximately 240 Water Quality Monitoring Stations throughout Pennsylvania where water sampling is periodically monitored and recorded.

Design a user-friendly app that can use GPS coordinates or data entered zip code to provide the latest sampling results from the closest Water Quality Station to help increase citizens' knowledge about types of characteristics found in water sampling. This information could be used to help with identifying sources that may be contributing to potential water pollutants or issues, as well as identify

Actors:

- Homeowners
- Citizens
- Marketing toward increasing the knowledge of local water quality

Triggers:

- Use of application to obtain sampling results

Preconditions:

- Current Location or Zip Code

Post-conditions:

- Increased knowledge of monitoring station test results by area, by providing recent sampling results

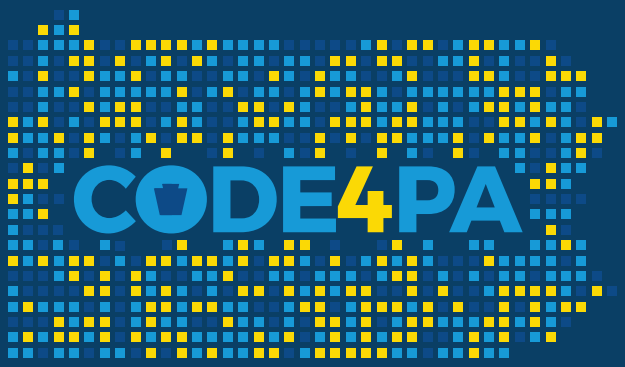
Normal flow:

1. Application opened by individual
2. Either through use of GPS for smartphones or through the manual entry of a zip code, provide most recent results, as well as total samples taken at a particular monitoring station, for the earliest year in the dataset for that station.

Summary

By utilizing 19 years of samples data, citizens can have a better understanding of the quality of water in their locality.

The Water Quality data set is found at https://data.pa.gov/ under the Data Catalog and owned by Department of Environmental Protection



USE CASE

PASSHE Gap Analysis

Use Case Name: PASSHE Gap Analysis Use Case

Use Case Description: For many current and potential students in postsecondary education, the connections from college majors to jobs after graduation are not always clear. Furthermore, there is a risk that a chosen program of study may lead to poor job prospects if employer demand for workers with those skills is much less than the number of students graduating from that program.

To help students investigate the links between educational programs and occupations, and to help them plan for employment after college, the goal of this challenge is to use the PASSHE Gap Analysis open data set to build an application that lets users choose a program of study and then shows them which occupations typically employ graduates from that program, how much those jobs typically pay, how many annual job openings are projected for that occupation, how many graduates are projected to enter that occupation each year, and whether there is a net undersupply or oversupply of graduates into that occupation.

Alternatively, the user can start by picking an occupation first and then see the corresponding wage and jobs data for that occupation as well as the programs of study that are linked to that occupation.

As a bonus challenge, the user would be able to choose the geographical region to be used for their analysis, with the options being (1) statewide, (2) by workforce region, or (3) by PA State System University region. If the app has access to the user's current location, enable the user to see the workforce region or the university region(s) in which they are currently located.

Actors:

- High school students (using the app to plan for college and their employment after college)
- Postsecondary students (using the app to select/change/add majors and plan their career)
- Adult learners considering going back to school or already enrolled (using the app to align their programs of study with their career interests)

Triggers:

- Current/future students are seeking information on which major/program they should pursue in college in order to get a job that interests them
- Current/future workers want to explore economic forecasts for different occupations and see what educational backgrounds workers in those fields typically have

Preconditions:

- The application has access to the PASSHE Gap Analysis open data sets, including the following three data sets:
    1. Gap Analysis

2. CIP-SOC Crosswalk
3. County Lookup

Post-conditions:

- The user can select a program of study and (optionally) a geographic region, and they will be presented with the associated occupations for that program, along with the economic forecast data for those occupations (how much those jobs typically pay, how many annual job openings are projected for that occupation, how many graduates are projected to enter that occupation each year, and whether there is a net undersupply or oversupply of graduates into that occupation).
- The user can select an occupation and (optionally) a geographic region, and they will be presented with the economic forecast data for that occupation as well as the associated programs of study for that occupation.

Normal flow:

1. Open the app and do a search for a program of study
2. Open the app and do a search for an occupation
3. Enable easy switching back and forth between looking at programs and looking at occupations

Summary:

By giving current and future students and workers access to information on the linkages between educational programs and the careers that can follow from them, users of this application will be able to make more informed decisions about their postsecondary education and occupational pathways, improving both their own economic success as well as the Commonwealth's.

The State System Gap Analysis data set is found at https://data.pa.gov/ under the Data Catalog and owned by the Pennsylvania State System of Higher Education.

USE CASE

PA Snowmobile Trails

Use Case Name: PA Snowmobile Trails

Description: Create a community-driven application that allows citizens to provide feedback on snowmobile trails and their current condition. Trail condition information is particularly important when it comes to snowmobiling (can't ride if there is no snow!). While DCNR does currently provide some general information on snowmobile trail conditions (see http://www.snowatvreg.dcnr.state.pa.us/forestry) it would be helpful for riders to know about specific conditions along the trail. For example, the trail overall may be in good shape, but there is a stretch that is bare or ice and so riders should plan accordingly. A couple points of functionality are mentioned below, but feel free to add others!

Actors:

- Riders (both as consumers and providers of condition data).

Triggers/Events:

- User looking for snowmobile trails
- User providing input on trail (rating, condition, pictures, comments)

Flow - Search

1. User opens app and is presented with map/trail search options (GIS – location based search or through data).
2. From search results (or by selecting on map), user can open a details page for a trail.
3. Details page displays things like reviews, ratings, pictures taken, overall trail condition status, etc.
4. Would also have a section for any location-specific input, e.g., "icy road" and show that location on the trail with a pin. Location-specific reviews would need to be cleaned up automatically after so long so as not to clog up the map (maybe filter out?).
5. Trail info submitted should be time/date stamped so users know if a review is out of date. Perhaps even a "last updated" field for the trail as a whole.

Flow – Input

1. User opens app and searches/selects a trail. User may be on or near a trail when providing input, so option to suggest/find trails near the user would be helpful.
2. User opens up trail details page as per above.
3. From here, user is able to provide rating, reviews etc for the trail as a whole.
4. User can also provide input on a specific section of the trail. So, drop a pin where input is applicable or use device location.

Post Conditions:

1. User can search for snowmobile trails by location.
2. User can "drill down" on a trail to see more detailed information about it (reviews, ratings, etc.)
3. User can post reviews, ratings etc. on a trail as a whole.
4. User can provide status or comments on specific sections of a trail.
5. User input is time/date stamped and other users can sort or filter it to ensure recent information is displayed.

Data

Trail information found under DCNR open data portal – trails section.