

# **IPRO 350 Final Report Summer 2011**

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## **1. Abstract**

The purpose of this project was to provide the framework for creating the most feasible and sustainable economic development model for the village of Coal City using generalized approaches that could be emulated in other small towns. In this report, we take a look at the issues identified in Coal City and the possible measures to alleviate them.

By creating this firm foundation, we have set the stage for future IPRO members to further the development process by learning from our initial setbacks, reviewing the information we have gathered and discussions with community business leaders, village officials and the ordinary citizens. For this to be a truly successful initiative, a multidisciplinary approach is required; the use business & economic knowledge to provide jobs for the community, engineering & technical knowledge to generate solutions to extant problems, and the social sciences to understand community and governmental resources. Economic development of a community affects not only the plan formulators but the average citizen's quality of life; therefore this project will remain sensitive to the opinions of Coal City residents.

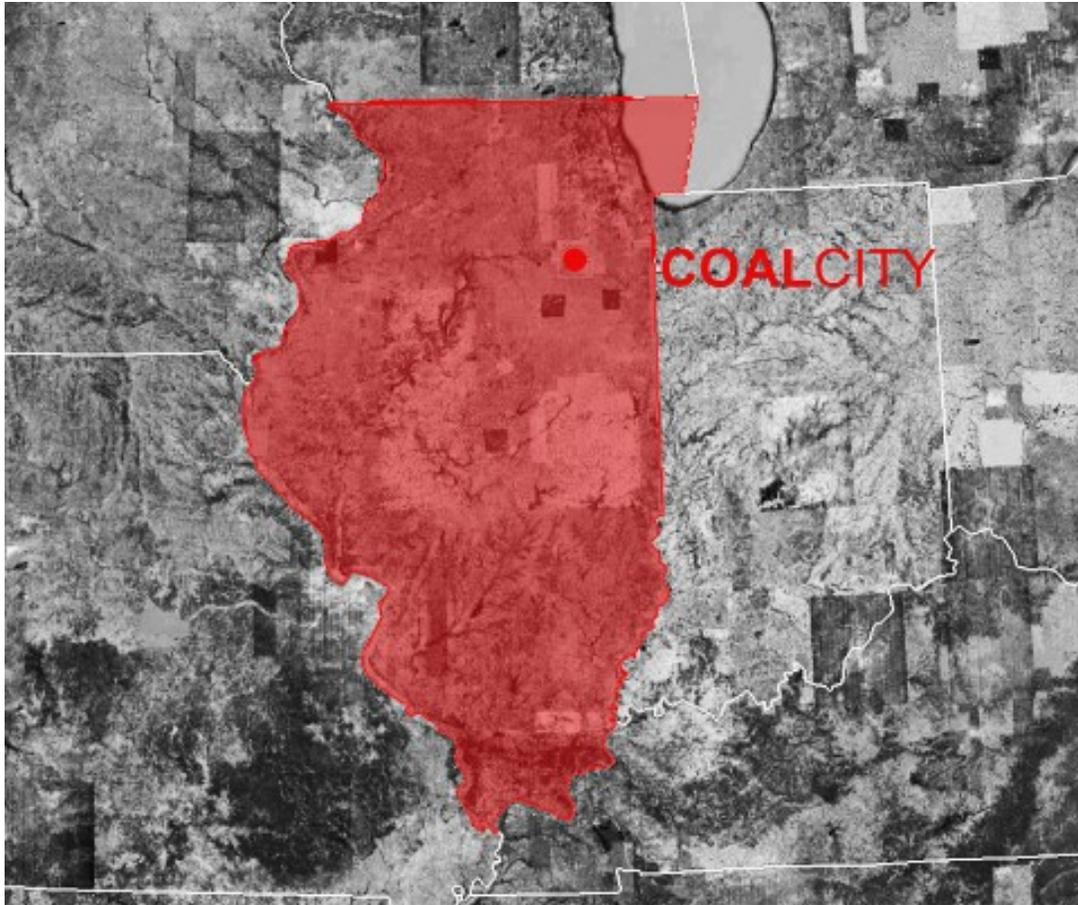


Fig 1: Location of Coal City in the state of Illinois

## 2. Background and Objective

Coal city is a small town in Illinois that has partnered with IIT. Its current population is 5,152 people and has been steadily increasing. Coal City is located just south of I-80 along the I-55 corridor and less than an hour from Bolingbrook and Oakbrook. Along the northern border of Coal city, are adjoining lakes and abandoned coal mines. Small town atmosphere is conducive to community interaction and pride. Several buildings important to the village's history include: Castle Hall, Opera House, Old Village Hall, Fire Bell, and the Old Store. The village comes together for several events each year, including Oktoberfest, where the downtown area shutdowns and the streets are overcome with vendors, people, and businesses celebrating together.

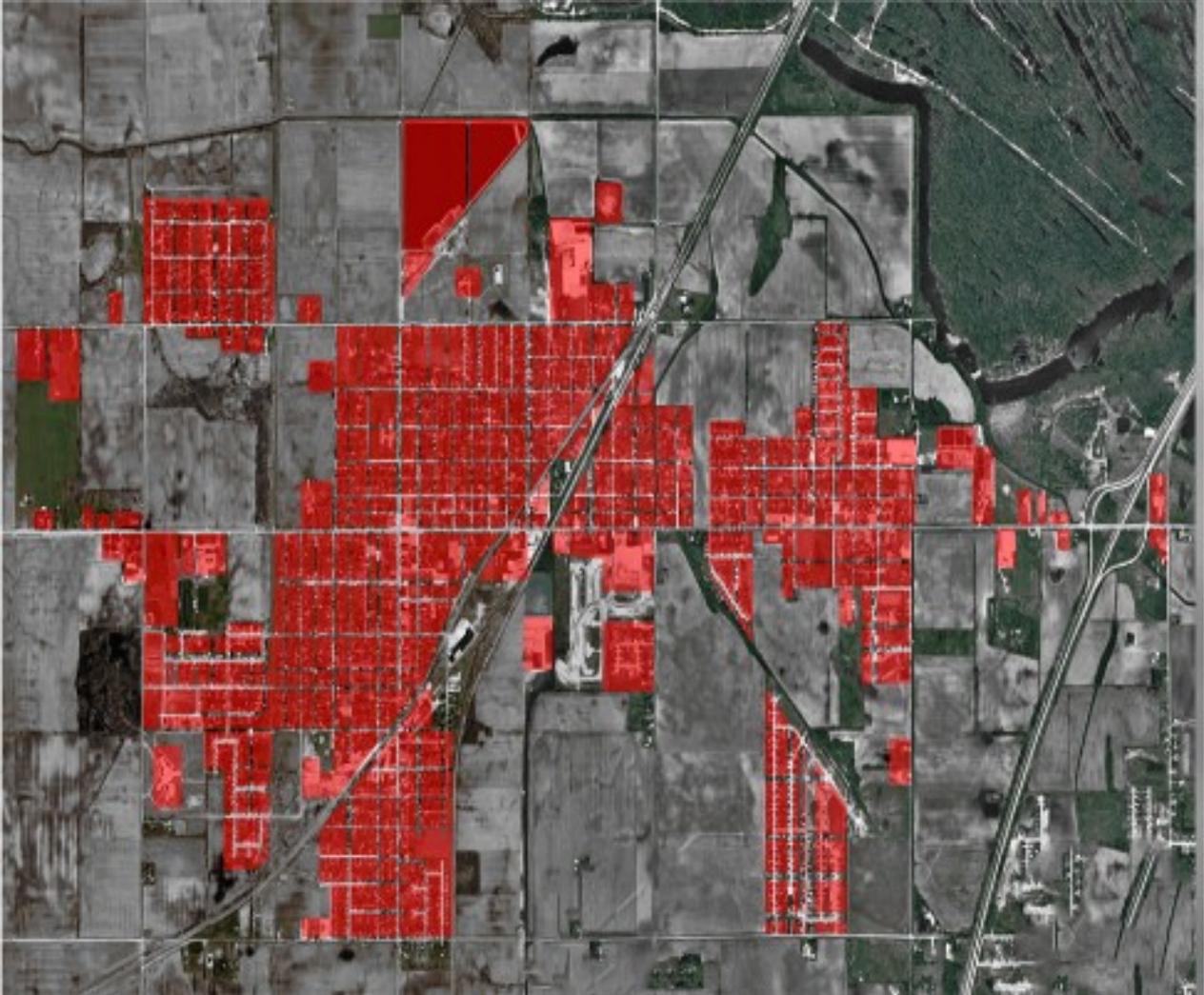


Fig 2: Map highlighting areas of focus in Coal City

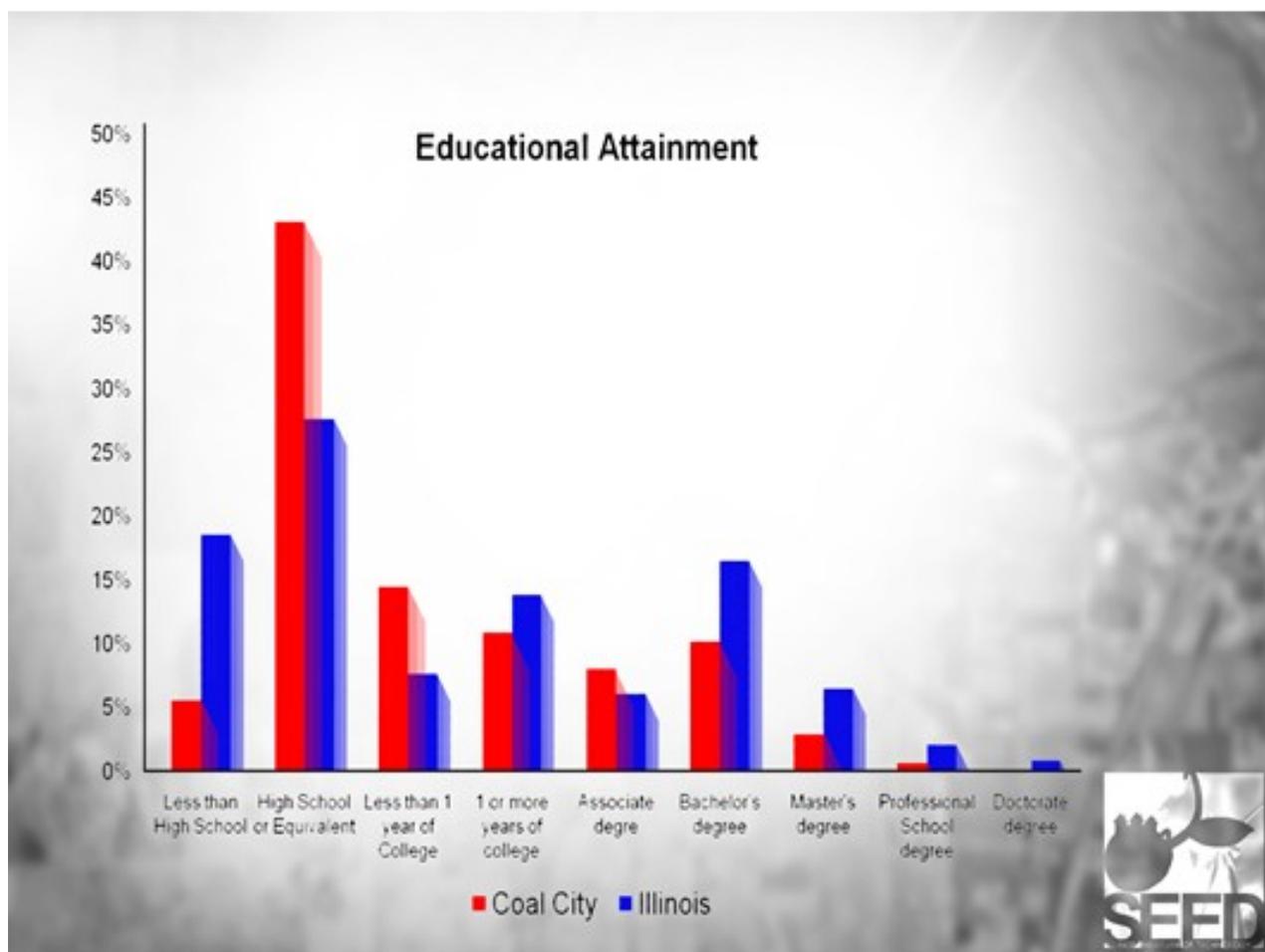


Fig 3: Graph showing varied levels of educational attainment amongst Coal City residents.

One of the major findings shown by our research showed that majority of Coal City residents were high-school graduates, a statistic primarily associated with blue-collar workers. Another striking figure was the amount of time taken to commute to places of work, since they mostly worked in and around Coal City.

Our objective is sustainable economic development; a strategy that looks at further improving the quality of life of Coal City residents, is economically viable in the long run, has minimal systematic risks and produces minimal adverse effects. We will foster an environment where small businesses can flourish and create jobs, minimize the adverse impact to the environment, improve the quality of life on the town by focusing on the residents' wants and needs, and preserve the stable small town feel of Coal City.

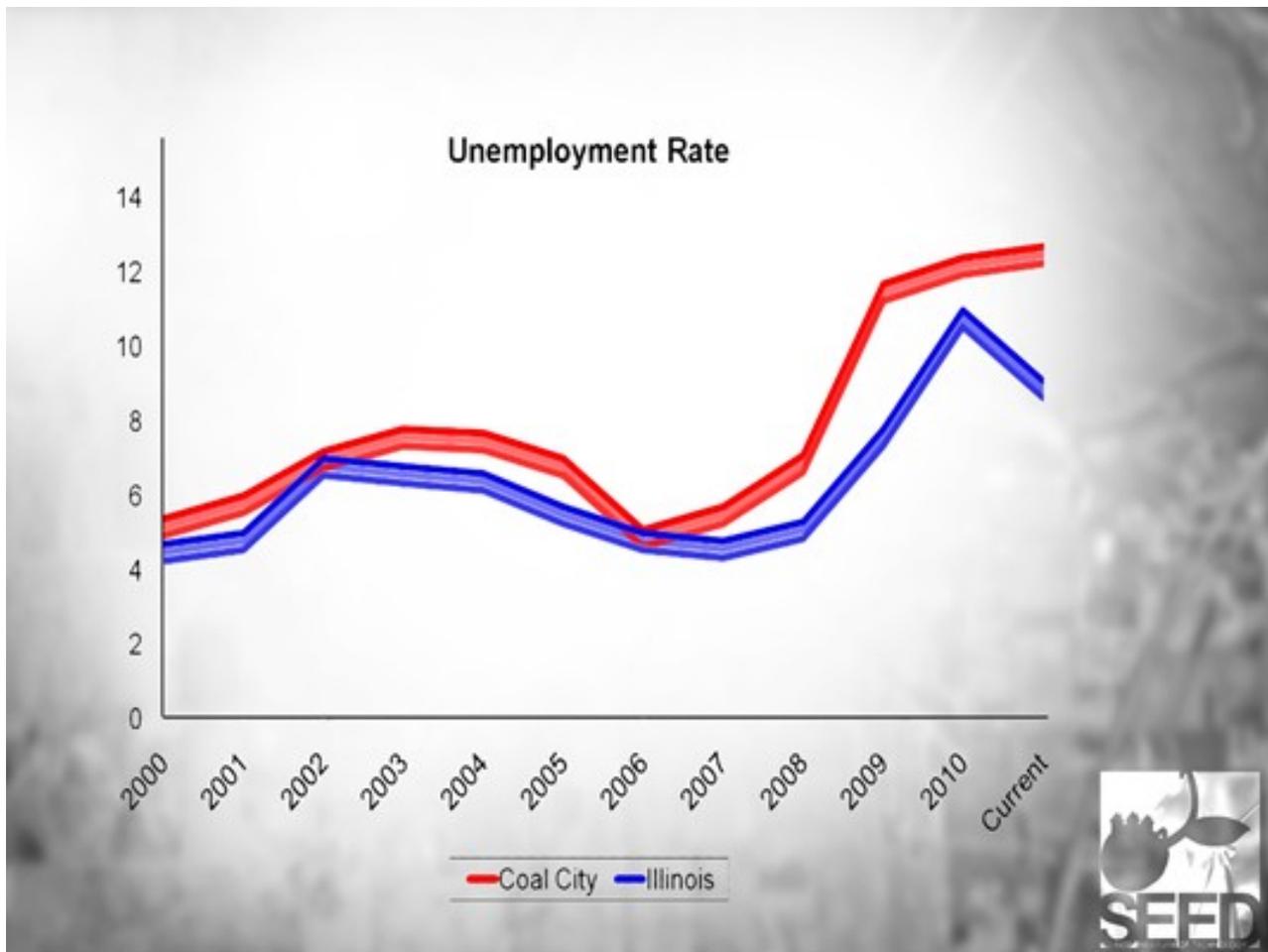


Fig 4: Graph showing the variations in unemployment rate throughout the years.

### 3. Organization and Approach

- **Industry description:** The Industrial team was tasked with the roles of observing and identifying any industry-specific technological problems, given the members' engineering and technology backgrounds. Examples of inquiry are; the use of wind-mills for power generation, sewer/waste water treatment and land reclamation for a lagoon.
- **Demographics description:** This team performed research into the demographic background of the area; average income, population density, and used that information to remodel the landscape using their architectural design experience.
- **Human Systems description:** Given the social-science background of the team-members, it was tasked with observing and identifying the religious, community and volunteer organizations present in the town. In order to make more informed decisions, this team created a survey to gauge interest in our proposed projects and to gather additional information for the team to guide our development process.
- **Economic description:** This team was given the task of analyzing the scope of sustainable economic development, assisting other teams with understanding the current

economic model in Coal City and looking into the further development of entrepreneurial ventures.

- **Research methods**

- **Literature Review:** A comprehensive review of small towns, economic development and problems in rural communities in various academic journals. An annotated Bibliography is available in Appendix B.
- **Survey:** A survey was constructed to gather information we desired that was not readily available such as the percentage of uninsured residents in the town, the use of credit unions in Coal City, and public opinion on a few suggested projects. The survey is attached in Appendix C.
- **Site Visit:** During a trip to the town on July 1<sup>st</sup>, we were shown around the town. Our visits included: Chicago Aerosol, Coal City High School, D Construction, Coal City Utility Plant and the Town of Morris—the seat of Grundy County.
- **Interview with town officials:** Matt Fritz, a Coal City administrator has been in constant contact with the IPRO team. Additionally, during the visit to Coal City we had an opportunity to interact with Mr. Gideon Blustein from the Illinois Chamber of Commerce and Coal City Mayor, Nel Nelson.

#### 4. Analysis and Findings

Through our research we have identified a number of projects that we would recommend to the Coal City council, they are described below. We are sending out a survey to measure public opinion of our proposals and gather some other statistics that will help guide the decision making process

**i. Urgent Health Care Centre:** Coal City does not possess an emergency or urgent care center, the nearest one is located in Morris, Illinois. A facility is needed to take care of the health care needs of this community. We looked into the feasibility of urgent care centers and determined that a large urgent care center that services an area of 50,000-60,000 residents was the most financially stable center. The towns of Coal City, Diamond and Carbon Hill are not that large so a smaller less expensive center with a minimum of 1-2 staff, physicians, nurse practitioners, or physician's assistants. A successful urgent care center will have 12,000 to 13,000 visits per year with one provider available for a 10 to 11 hour day, seven days per week. With this volume level you will need four exam rooms and one physician available during the open hours.

Use of urgent care centers reduces loads on emergency rooms as patients with the flu and other lesser ailments can come here for treatment. The federal government provides Community Development Block Grants to address human service needs such as health-care. There are also loan forgiveness programs to waive the federal student loans of doctors who relocate to underserved areas.

The hospital group in Morris, Illinois has the capital to build a facility in Coal City and has been in talks with the administration but they are reluctant to build a center. There are two health services companies in the region that have a compete/non-compete relationship: before any form of expansion takes place there must first be discussions between them. Additionally, Willow and Broadway have a pool for occupational rehab.

**ii. Water Lagoon:** The former water treatment lagoon appeared to be a promising project but the water was fairly toxic and to convert it into a recreational/open park area, the site must be flushed clean of water and the sludge dried and removed, which would entail further expenses. Utilizing part of the lagoon as a detention basin would be beneficial to the village as this would help to mitigate the destruction caused by flooding. The city owns the land so the major expenses would be detoxifying the area. The town administrator Matt Fritz believes that this is a great, if expensive idea. There is a bike path just south of the lagoon and new homes are being built. The bike path in conjunction with the lagoon adds to the appeal. A section of the lagoon can also be used for water storage for bouncing during storms. This also would probably be the best place for installing some wind turbines. There could also be charged a few dollars for duck hunting or general hunting permits, since just north is the local area hunting club.



Fig 5 (above): Some of the areas of interest for Wildlife Preservation



Fig 6: Possible areas for setting up parks for recreation.

**iii. Sidewalks:** There is currently a lack of sidewalks in part of Coal City and this hampers bike-riding and ease of walking in the town. The town is currently seeking matching funds from the Federal government to build sidewalks in the town. Coal City and the neighboring towns in the region have a few bike trails but there is a need to connect them so they all lead to the camping grounds and other areas. The town is highly supportive of this project. Additionally, sidewalks could be augmented with landscaped embankments would act as noise suppressors.

There would be some trouble getting north through Carbon Hill to travel to Morris, since there is a ComEd facility that gets in the way. There are no sidewalks in Eileen. Sound attenuation of passing trains is a proposal that has support from Mr. Matt Fritz. There may be need to get BNSF on board, but Mr. Fritz believes this should not be a major problem.

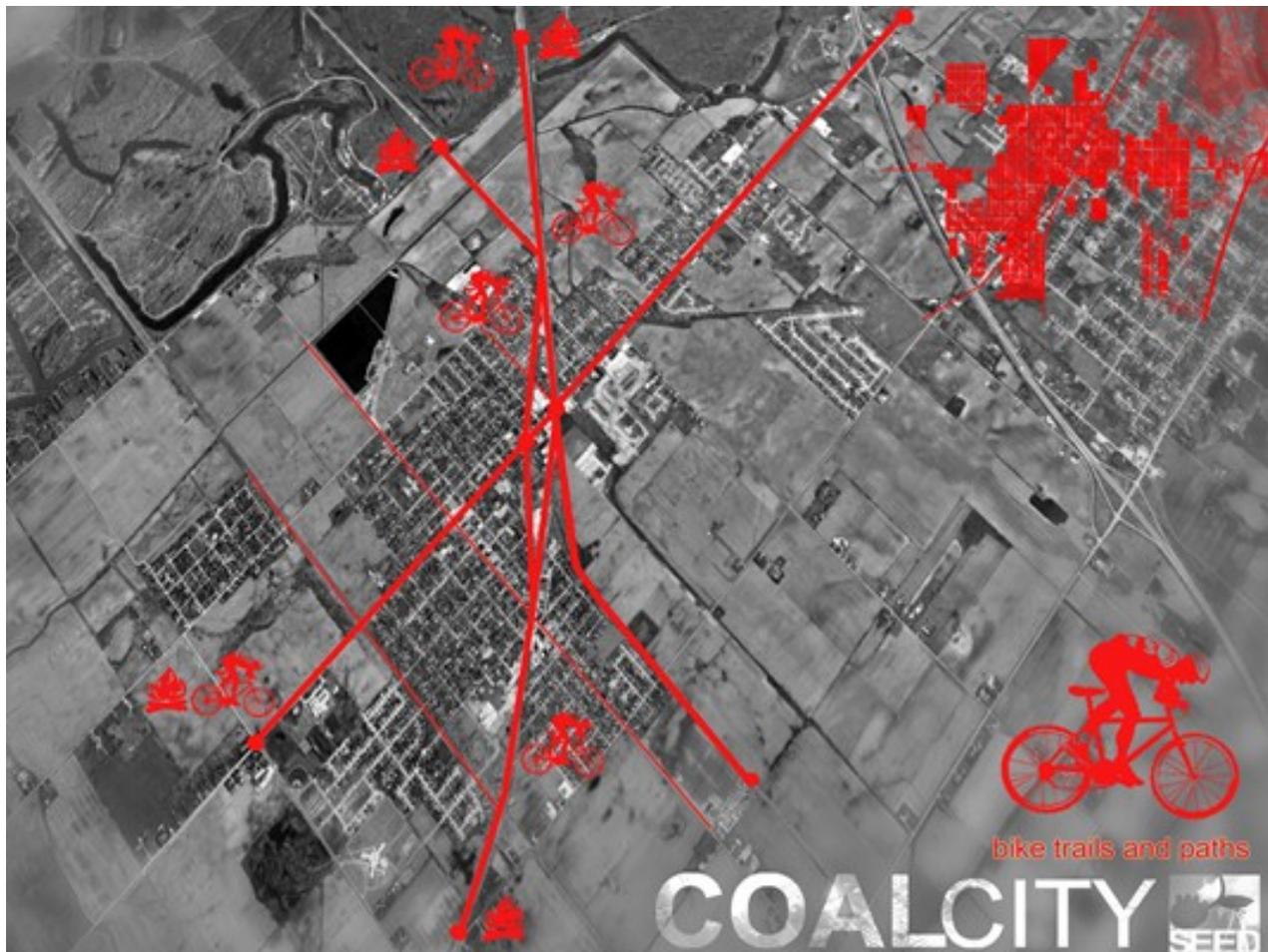


Fig 7: Trail of Proposed Bike Paths in Coal City

**iv. Movie Theatre:** The construction of a movie theatre in Coal City is another proposed venture. Lots of unused space/buildings are already present and the land could be acquired for a low price. There is an existing opera house in Coal City but it will be preserved by the historical sites committee. Renovating the opera house would preserve a historical landmark and a venerable building, save money and not dislocate any tenants. There is a small theatre group in town that is growing fast; they may want to use space in the theatre for shows.

**v. Museum:** The town has a history that it would like to preserve and advertise to others. A site for a museum would be easy to acquire because aforementioned; the large numbers of vacant buildings in downtown Coal City. There is an old, all-brick BNSF train station that got pulled off the demolition list that can be used for the museum.

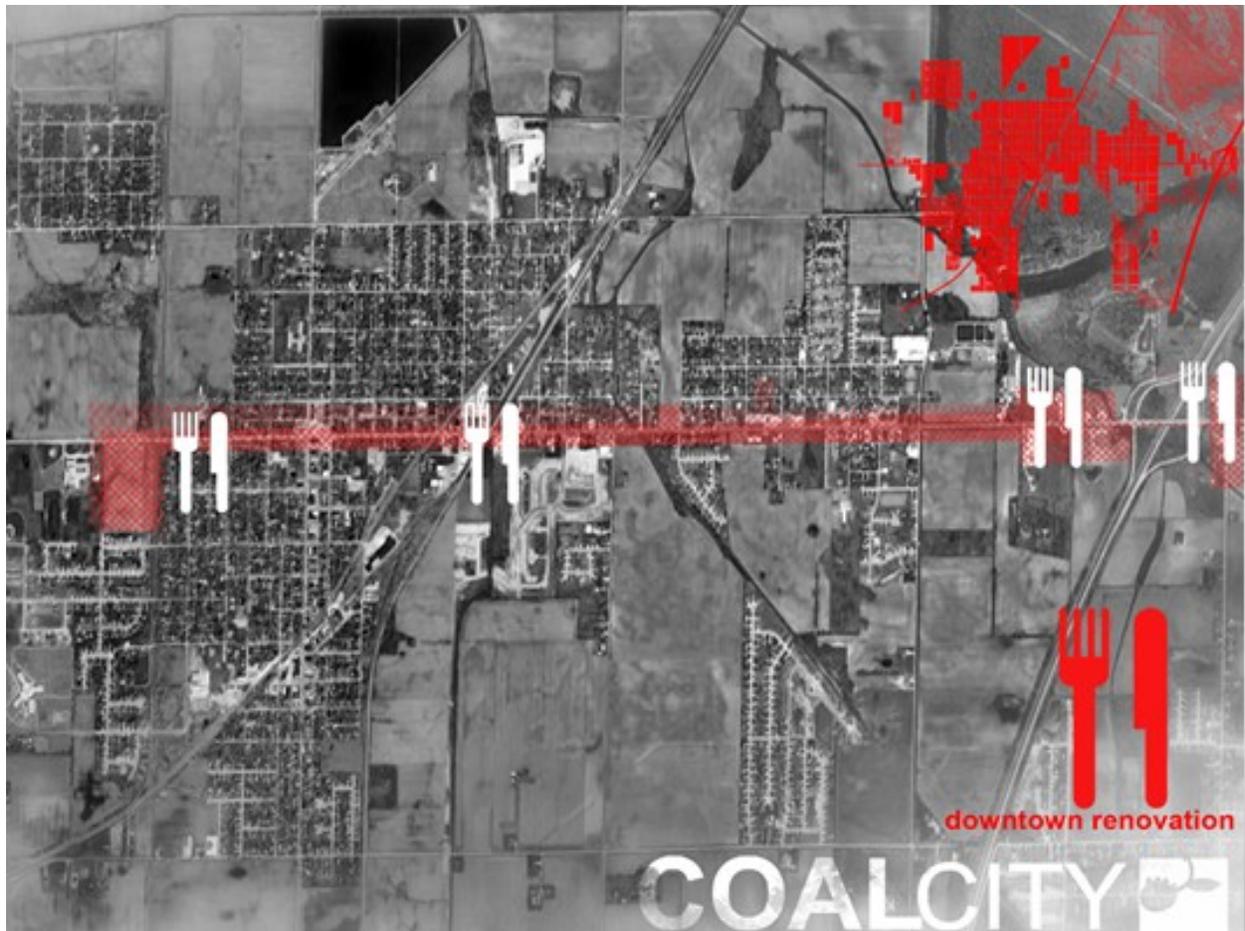


Fig 8: Highlighted area shows Broadway strip that can be transformed into a lively downtown.

**vi. Entrepreneurship Incubator:** Coal City is facing the same demographic challenges that many small towns in the United States are facing; the flight of young residents. After college, young graduates do not see many opportunities back home and move to larger cities leaving a lack of educated workers in these regions. We would like to propose a Business Incubator/Entrepreneurship Center to create startups that have use for college graduates. To understand how to implement this program we looked at similar ideas tried elsewhere in the country.

The City of Ord in Nebraska and Valley County, in partnership with the Chamber of Commerce, worked out an inter-local agreement under which the three entities committed to contribute \$15,000 per year for a three-year contract to build a cohesive program. The residents also passed a 1-cent local optional sales tax for economic development. Revenue from this tax could be used for business loans and other incentives or leveraged as matching monies for grant funding. In the schools, local leaders have been active in creating curricula and programs in entrepreneurship and business development through a nine-month local leadership development program called Leadership Quest for ages 18 to 72. This town is building a community endowment by tapping into the wealth transfer from land-rich farmers, the interest from which is

being used to finance economic development projects. Thanks to a growing revenue stream from the local option sales tax, the town staffed an economic development office that markets the area to outsiders, works with existing small businesses and entrepreneurs, and attracts new industries into the town.

Such a model could very well work for Coal City. Grundy County is well connected via highways, so there is ease of transportation. There could be development of industries to supplement existing logistics industries in the county area. An entrepreneurship incubator can be created in the downtown.

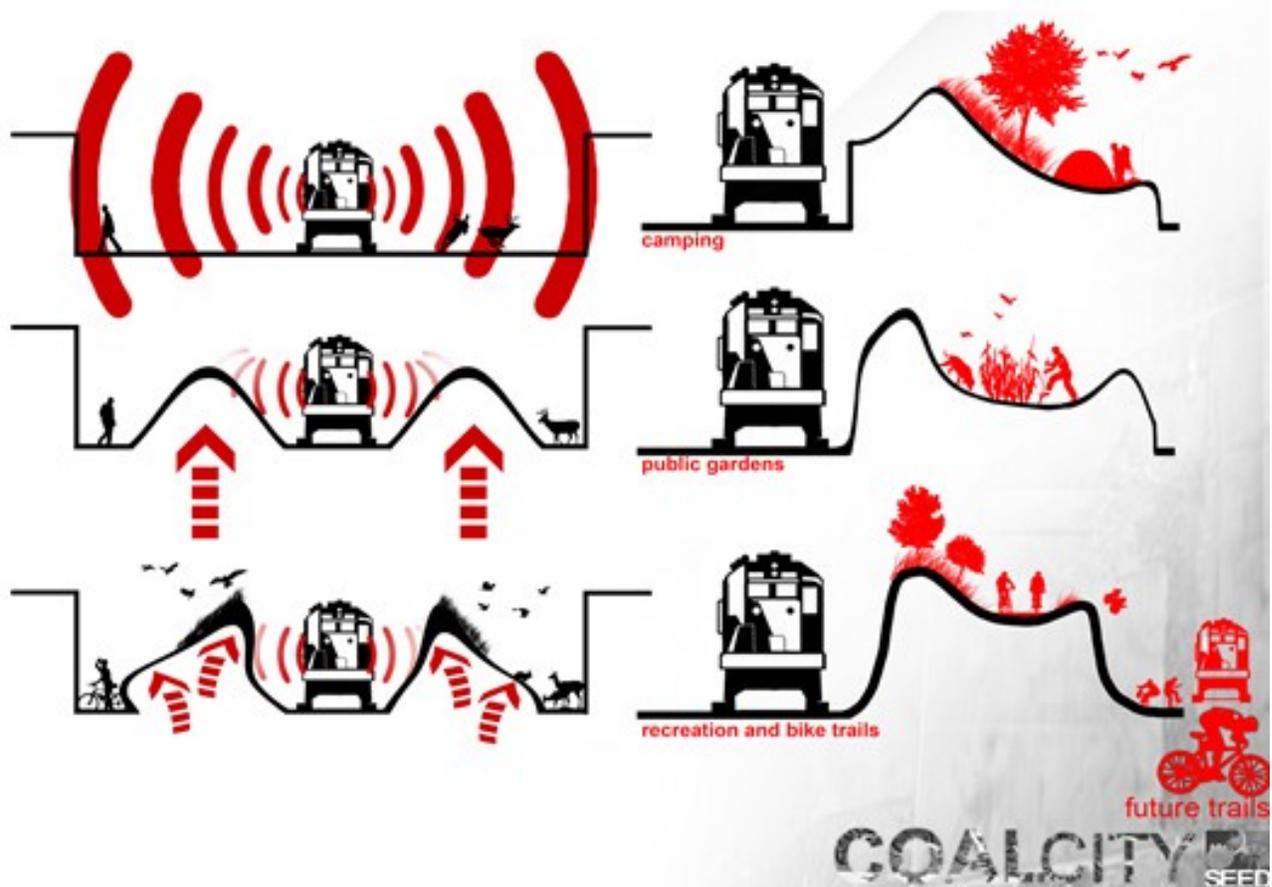


Fig 9: Graphic depicting how the addition of side embankments to the sidewalks near rail roads would help in sound attenuation.

**vii. Ease of Higher Education:** During the trip to Coal City, it was evident that high school students were faced with a lack of educational facilities in the village, and were forced to move out or commute to nearby towns with community colleges or technical education. Many of the students who receive a higher education move away from Coal City because few jobs in the region require a college education.

## Sustainable Entrepreneurial Economic Development: Coal City

There are some resources available in the town though. Many education-focused service organizations in Coal City such as the 4-H club would be willing to partner up with any education/training initiative. School superintendent is looking for more ways to employ his students. Due to the structure and funding available to Grundy County, it is not possible to set up community colleges, since there are some in the city of Joliet which is under their jurisdiction.

**viii. Alternative Energy:** The wind in Coal City rarely drops below 8 miles an hour which makes it an ideal location for wind farm. The only issues are power storage and transmission through the electric grid. These systems are expensive, to the tune of 3-5 million US dollars, and outside the reach of Coal City. As the cost of production of these systems drops, they might be considered implementable by the town. The grid needs constant power so battery storage, or a consistent method of generating power, is required. Storing highly compressed air to be released when needed to power the generator is a way to maintain a constant feed to the grid (although not as efficient). To address the storage problem, we suggest using a NAS system. Energy storing batteries for wind turbines serve the purpose of harnessing energy at times when the power is not needed and storing it for the times when it is needed and wind is not available. This is known as smoothing because it allows a smooth output of energy and stabilizes intermittent delays in renewable energy.

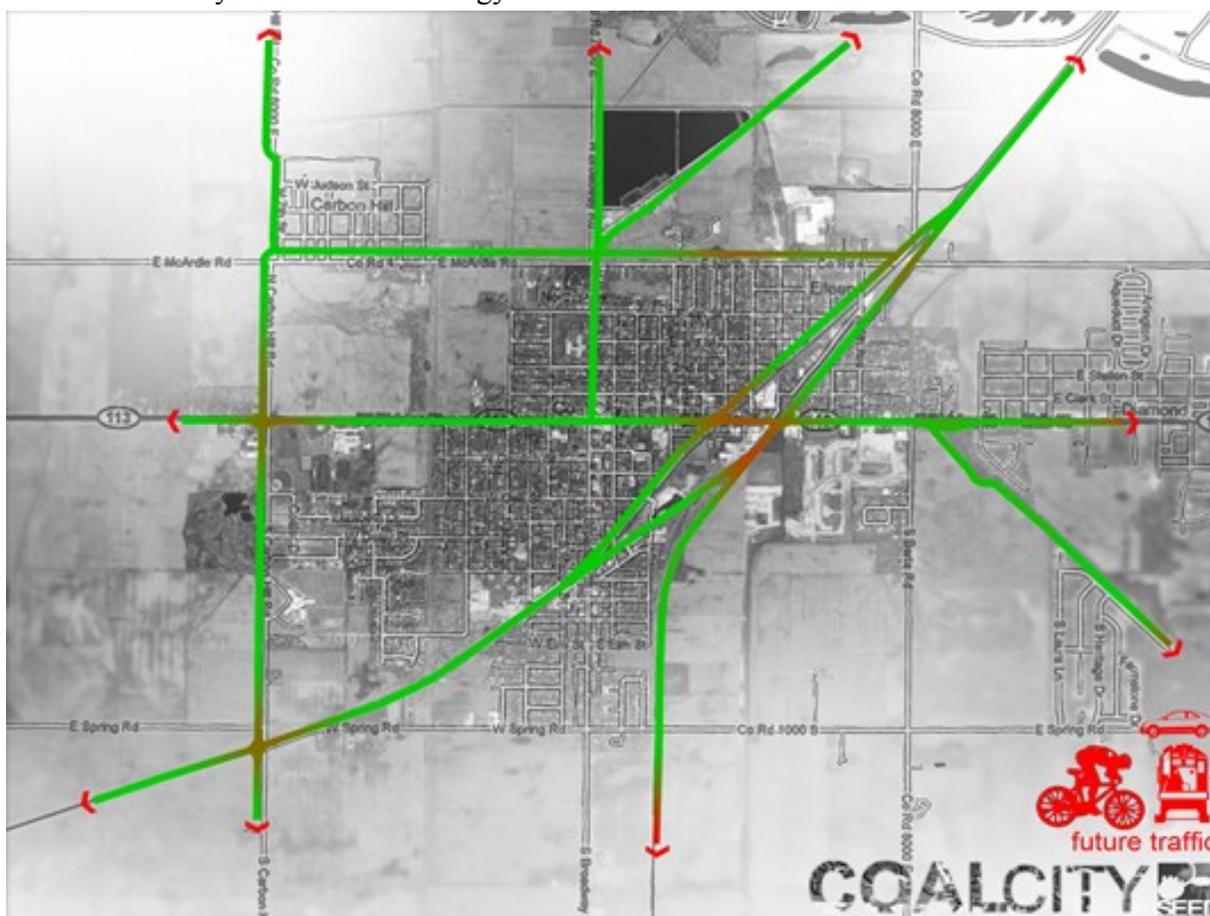


Fig 10: An overview of how bike paths and carpooling would affect traffic distribution.

**ix. Ease of Transportation:** Coal City has traffic problems. To relieve congestion a shuttle bus program/carpooling will be implemented to take residents to common destinations. This would make commuting within Coal City and Grundy County far more accessible and eco-friendly.

## 5. Conclusion and Recommendations

At this moment, there are three ideas that can be considered as ‘low-hanging fruit’, goals that are low risk and high reward, and can be easily executed by the team, namely: Construction of the movie theater, the bike trail project and the Coal City museum.

We have further developed a survey that will soon be distributed among Coal City residents in order to gauge their interest, opinions and enthusiasm on various projects planned. Future IPRO teams will find the results of this survey to be great interest and can prioritize the next steps for Coal City.

## 6. Acknowledgements and References

We would like to acknowledge the tireless devotion of our advisor, Dr. Nasin Khalili. Mr. Matt Fritz, the Village Administrator has been in constant contact with the IPRO team, and was gracious enough to join us during one of our class sessions. Additionally, during the visit to Coal City we had an opportunity to meet and work with Gideon Blustein from the Illinois Chamber of Commerce and Coal City Mayor Nel Nelson.

**Appendix A: Team Organization**

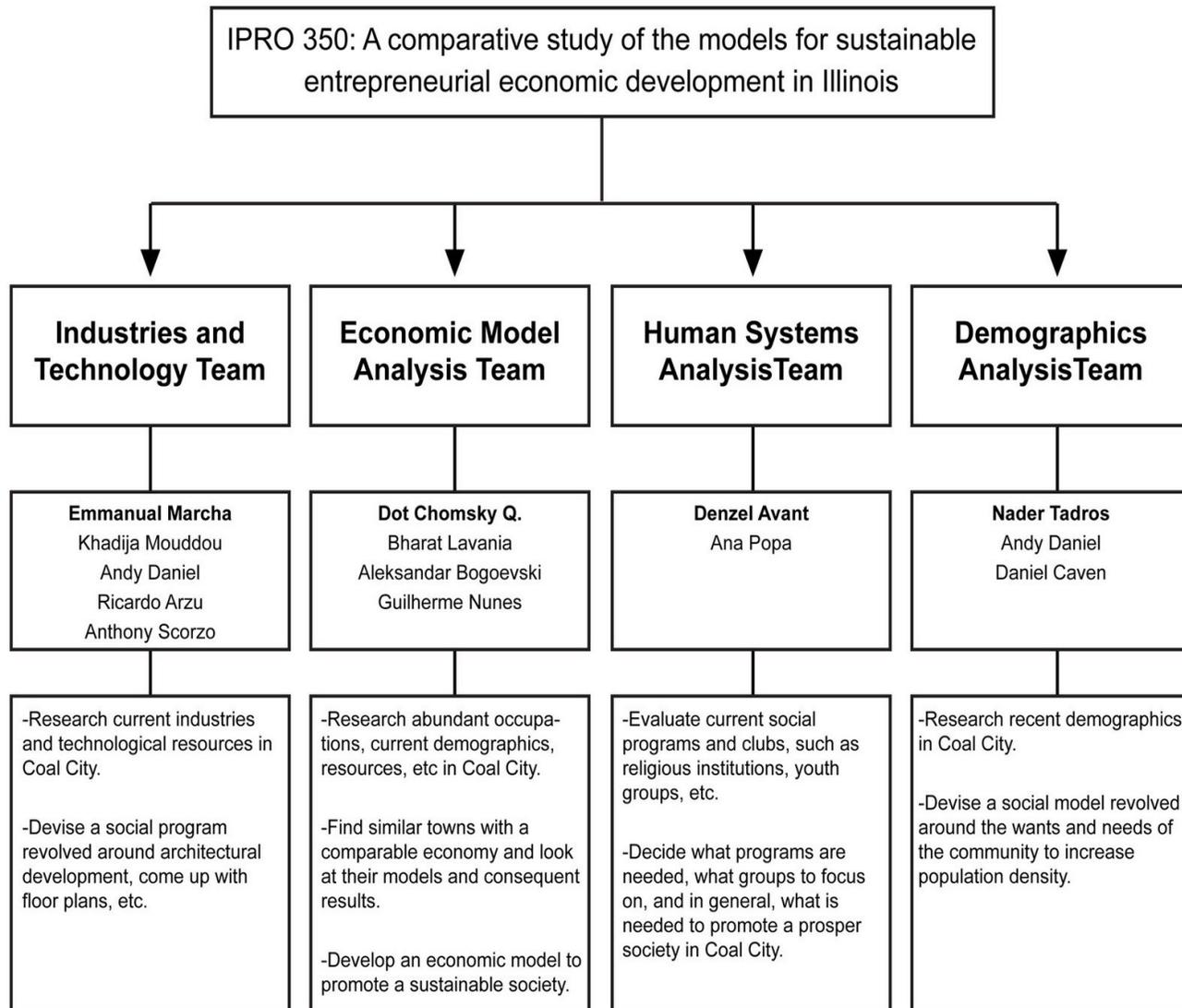


Fig 11: Distribution of team and work load.

**Appendix B: Annotated Bibliography**

1. Summary Report – Coal City Strategic Planning and Goal Identification Workshops for the Village of Coal City, Illinois, May 2009
2. Village of Coal City, Official News Blog
3. “Small Towns, Big Ideas – Case Studies in Small Town Community Economic Development”, UNC School of Government, N.C. Rural Economic Development Center

**Appendix C: Survey**

**Coal City Survey 2011**

Demographic Information

- 7. Age
  - a. 16-20
  - b. 20-30
  - c. 30-40
  - d. 40-50
  - e. 50-6565+
- 8. Sex
  - a. Male
  - b. Female
- 9. Marital Status
  - a. Married
  - b. Single
  - c. Divorced

**I PRO 350 Survey**

|                   |                 |              |              |                       |
|-------------------|-----------------|--------------|--------------|-----------------------|
| 1                 | 2               | 3            | 4            | 5                     |
| Strongly Disagree | <b>Disagree</b> | <b>Maybe</b> | <b>Agree</b> | <b>Strongly Agree</b> |

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| <b>If bike lanes and parking stations were installed, I would be more likely to ride my bike around town.</b>   | 1 | 2 | 3 | 4 | 5 |
| <b>I am interested in a low cost bicycle rental service with several pick-up and drop-off locations throughout town.</b>  | 1 | 2 | 3 | 4 | 5 |
| <b>If there was a bus in town, I would ride instead of driving.</b>   | 1 | 2 | 3 | 4 | 5 |
| <b>If a Park &amp; Ride or Shuttle Bus station were introduced to Coal City, I would be more likely to use public transportation to get to work instead of driving.</b> | 1 | 2 | 3 | 4 | 5 |
| <b>An increase in tourists and out of town visitors helps local businesses.</b>   | 1 | 2 | 3 | 4 | 5 |
| <b>I would not be bothered if more tourists came to Coal City for an amusement park or other attractions.</b>   | 1 | 2 | 3 | 4 | 5 |
| <b>I would consider going back to school (university), if it helps me get a better job.</b>   | 1 | 2 | 3 | 4 | 5 |

Sustainable Entrepreneurial Economic Development: Coal City

|  |   |   |   |   |   |
|--|---|---|---|---|---|
| I approve of wind farms being constructed in the area.                                   | 1 | 2 | 3 | 4 | 5 |
| I would continue to live in Coal City for the foreseeable future.                        | 1 | 2 | 3 | 4 | 5 |
| If there was more entertainment/recreational opportunities in Coal City, I would use it. | 1 | 2 | 3 | 4 | 5 |
| Coal City needs an <b>urgent</b> care center.  | 1 | 2 | 3 | 4 | 5 |
| Coal City needs a convention center.   | 1 | 2 | 3 | 4 | 5 |
| Coal City needs a big box store.   | 1 | 2 | 3 | 4 | 5 |
| If there were more stores downtown, I would shop locally.                                | 1 | 2 | 3 | 4 | 5 |
| I would like to see the construction of a town square.                                   | 1 | 2 | 3 | 4 | 5 |

- What do you do with most of your savings? (*check all that apply*)
  - a. Savings account
  - b. Certificates of deposit
  - c. Stocks
  - d. Bonds
  - e. Checking account
  - f. Retirement fund
  - g. Starting own business
- 2. Do you use your local bank or credit union?
  - a. Yes
  - b. No
- 3. (*to residents under 25*) Where would you see yourself working in the future?

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- 3. (*to residents under 25*) Would you be more likely to stay in Coal City if more companies moved there?
  - a. Yes
  - b. No
  - c. I don't know
- 4. Where do most commuters travel to?

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- 5. Where would you like to see bicycle parking installed?

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- 6. What type of internet connection do you have?
  - a. Satellite

## Sustainable Entrepreneurial Economic Development: Coal City

- b. DSL
  - c. Cable
  - d. Dial-up
7. What speed is your internet connection?
- a. 2mbs
  - b. 1mbs
  - c. 128k
  - d. 56k
  - e. I don't know
8. Do you have health insurance?
- a. Yes
  - b. No
9. Which of these amusement/entertainment options would you like to see in Coal City?  
*(check all that apply)*
- a. water park
  - b. bike trails
  - c. campgrounds
  - d. drive in cinema
  - e. movie theater
  - f. opera house

**Thank you for taking Illinois Institute of Technology  
IPRO 350's Survey!**