



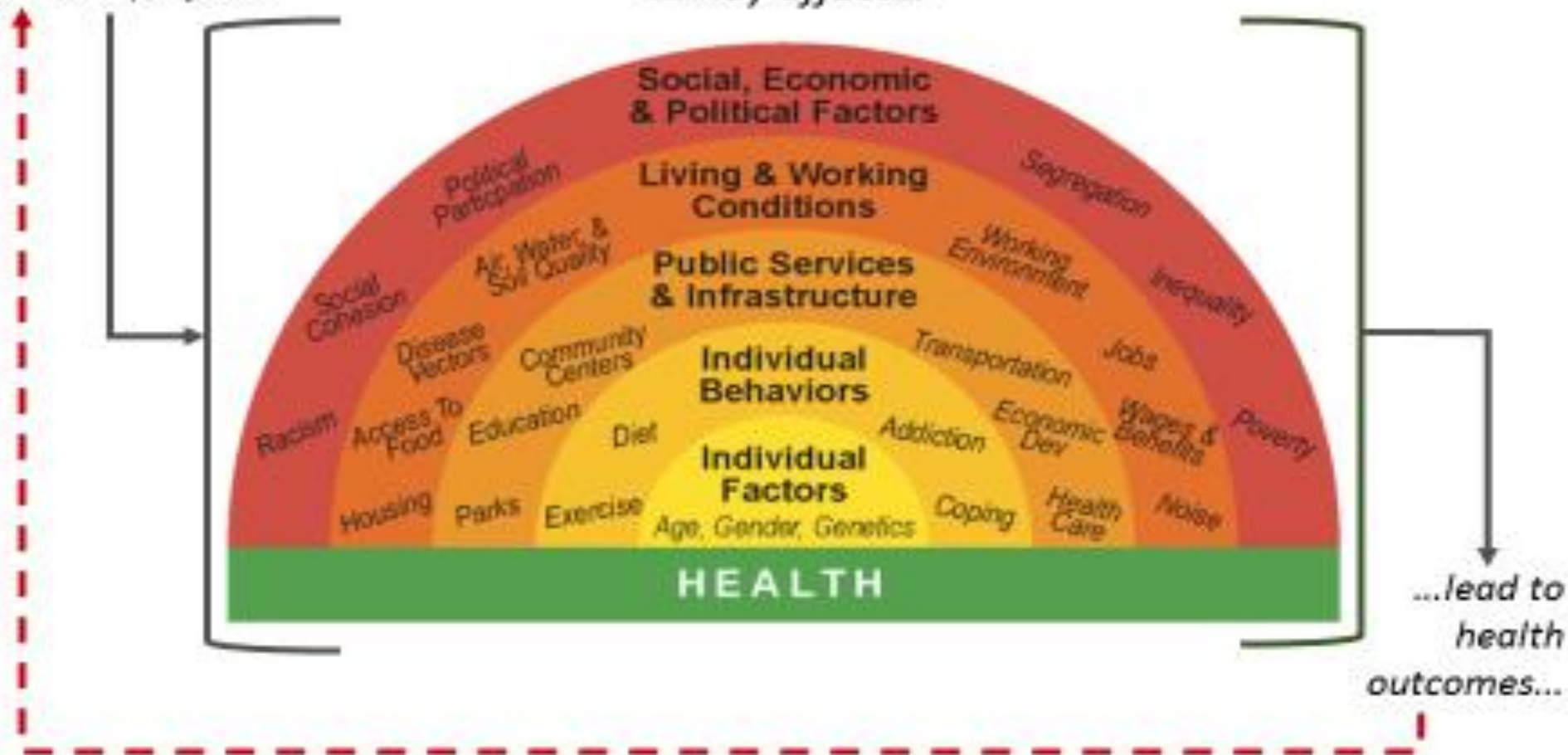
HEALTH IMPACT ASSESSMENTS FOR BROWNFIELDS REDEVELOPMENT

*FORMER CHESAPEAKE SUPPLY BROWNFIELD
REVITALIZATION: RAPID HEALTH IMPACT
ASSESSMENT*

In a nutshell, HIAs:

*Evaluate how a
proposed policy, plan,
program, or project...*

...may affect...



*...lead to
health
outcomes...*

...and provide recommendations for impact management.

Why perform an HIA?

Benefits of HIA

- Promotes a greater **understanding of health** and the health impacts of decisions
- Improves the **evidence** on which stakeholder and policy decisions are made
- Engages and **empowers communities**
- Provides **recommendations** for changes to the design, adoption, or implementation of proposed decisions to include health
- Promotes **healthy and sustainable communities**





HIA PROCESS

- Is it feasible?
- Create a Plan
- Establish Baseline
- Develop Practical Strategies
- Communicate Progress
- Evaluate and Monitor

Types of HIA

Vary based on effort, complexity, and duration

Rapid

- 2 To 12 weeks
- Broad overview of potential health impacts (little to no data collection and/or stakeholder engagement)
- Applied when time and resources very limited

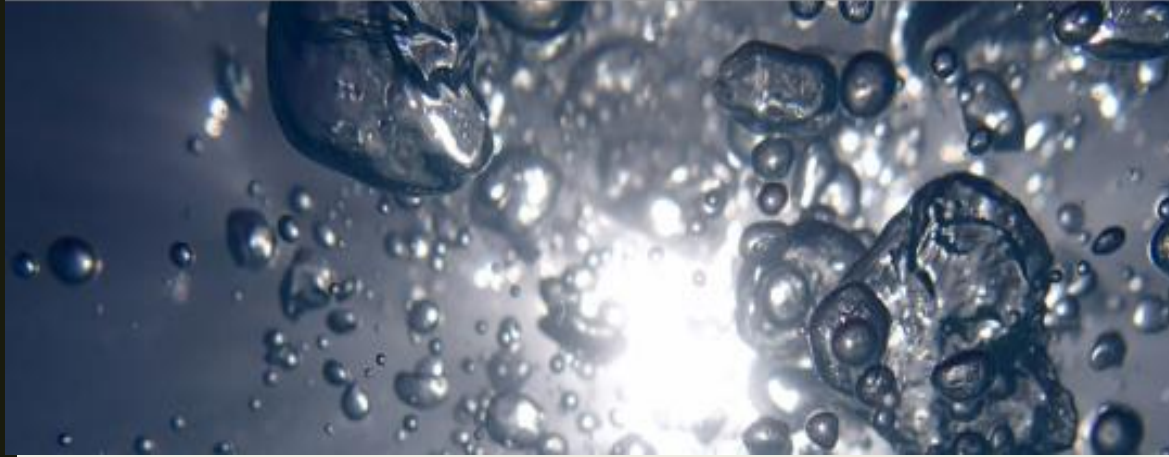
Intermediate

- 12 weeks to 6 months
- Involves collection and analysis of existing data with limited stakeholder input
- Requires moderate time and resources

Comprehensive

- 6 months to 1 year+
- Involves collection and analysis of existing data with extensive stakeholder input
- Requires significant time and resources

AQUAPONICS BUSINESS PLAN USER GUIDE



The Aquaponics Business Plan User Guide provides guidance for developing a business plan for the startup and operation of an urban aquaponic farm.

2016 HIA Training in Dover



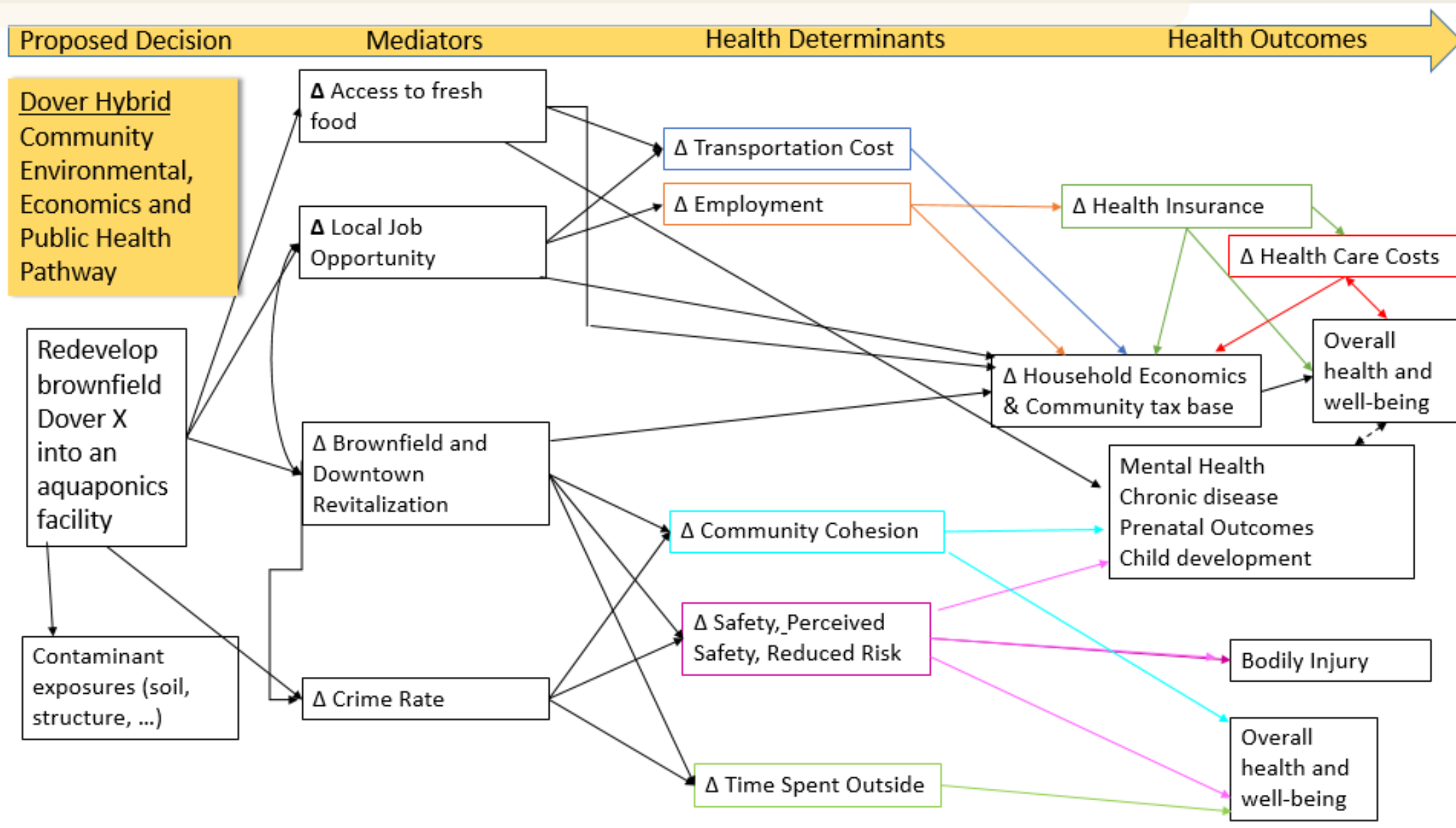
A full day workshop at the Kent County Administration Building June 21, 2016

- *Introduction to HIA and the steps of the HIA process*
- *Case study to gain hands-on experience*





Combined Pathway: 2016 HIA Training in Dover





RAPID HIA PROCESS FOR FCSS IN DOVER

- Is it feasible?
- Create a plan
- Establish baseline
- Develop practical strategies
- Communicate Progress
- Evaluate and Monitor



SCREENING

Determined the rHIA was feasible.

Health impacts of different revitalization choices to support food production on brownfields in Dover could be associated with changes in:

- Risk reduction from brownfield site cleanup for revitalization.
- Employment prospects and job creation impacts for brownfield reuse and food production construction and operation.
- Public health and environmental impacts of a brownfield revitalization resulting in a food production reuse choice.
- Improved food access and local food market access. - Increased food production training, employment, and job creation.



SCOPING

Developed a plan.

- Formed the HIA Leadership Team and an HIA Dover Project Team and key roles.
- Established the methods of communication (webinar, teleconference, email) and a timeline.
- Determined scope of HIA and study area.

The HIA Project Team conducted the rapid HIA with the assistance of other local organizations, such as the Downtown Dover District Partnership and the National Council on Agricultural Life and Labor Research Fund, Inc. (NCALL).



SURROUNDING COMMUNITY

Former Chesapeake Supply Brownfield



Before remediation (2013)



After remediation (2014)

Source: Compliance Environmental, Inc.

- 238 Railroad Avenue was the target site for potential revitalization and the focus of this rapid HIA.
- One of five brownfield properties in the area.
- This property is the location of the Former Chesapeake Supply.
- Target area shows indicators, such as poverty, unemployment, environmental degradation, and a lack of access to healthy foods, which may suggest environmental justice concerns in the focus area.



Former Chesapeake Supply Co. Site Aerial 2015



LEGEND

⊕ = Approximate Location of Ground Monitoring Wells
with top of casing (TOC) elevations.

NOTE: THIS DRAWING IS ADAPTED FROM A GOOGLE EARTH 2015 IMAGE, AND IS DIAGRAMMATIC. NOT TO
SCALE OR PROPORTION.

Elevations were calculated using MW-4 top of casing (27.56') as the benchmark.

Downtown Dover Partnership
Former Chesapeake Supply Site (DE-1334)
238 Railroad Avenue, Dover, Delaware 19904
2015 Well Site Investigation
November 13, 2015

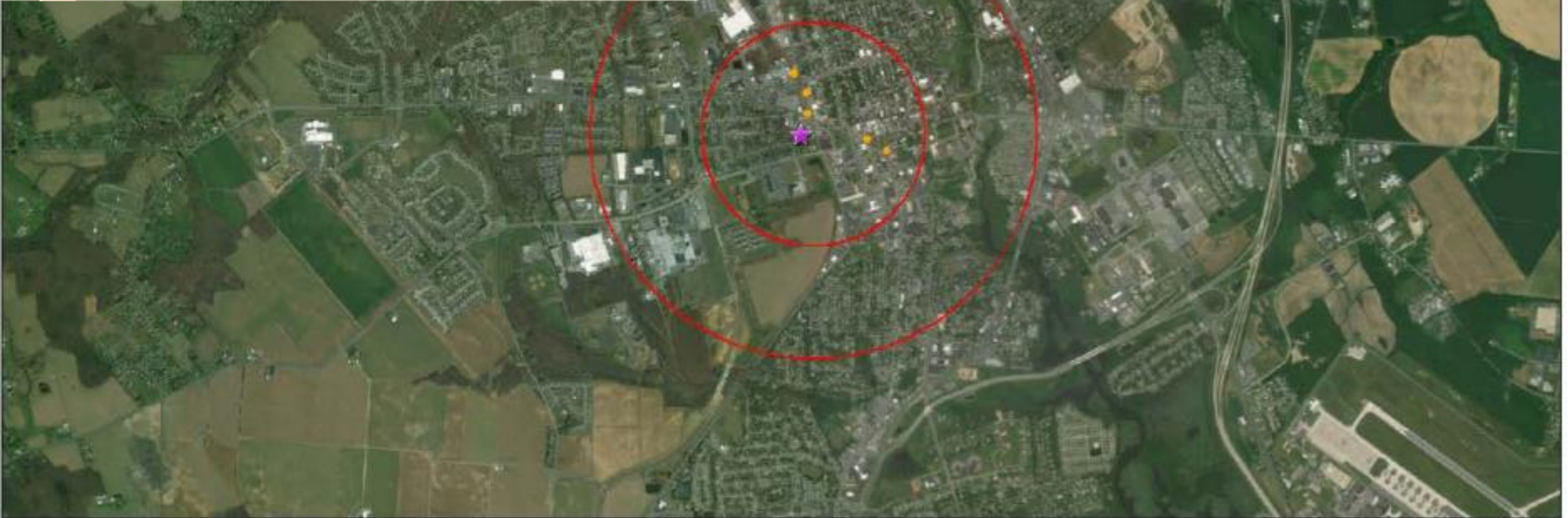


COMPLIANCE ENVIRONMENTAL, INC.
Environmental Health & Safety Consultants
150 South Bradford Street, Dover, Delaware 19904
Phone: 302-674-4427 www.compliancecanhelp.com

DDP-FCSS-SiteMap-WellLocations-2015.srf



Map of Former Chesapeake Supply target site and surrounding brownfields (Source: ESRI)



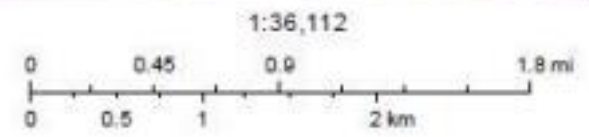
February 14, 2018

Brownfields Properties

- Former Chesapeake Supply property
- Brownfields Properties

Dover DE .5 mile 1 mile Radii

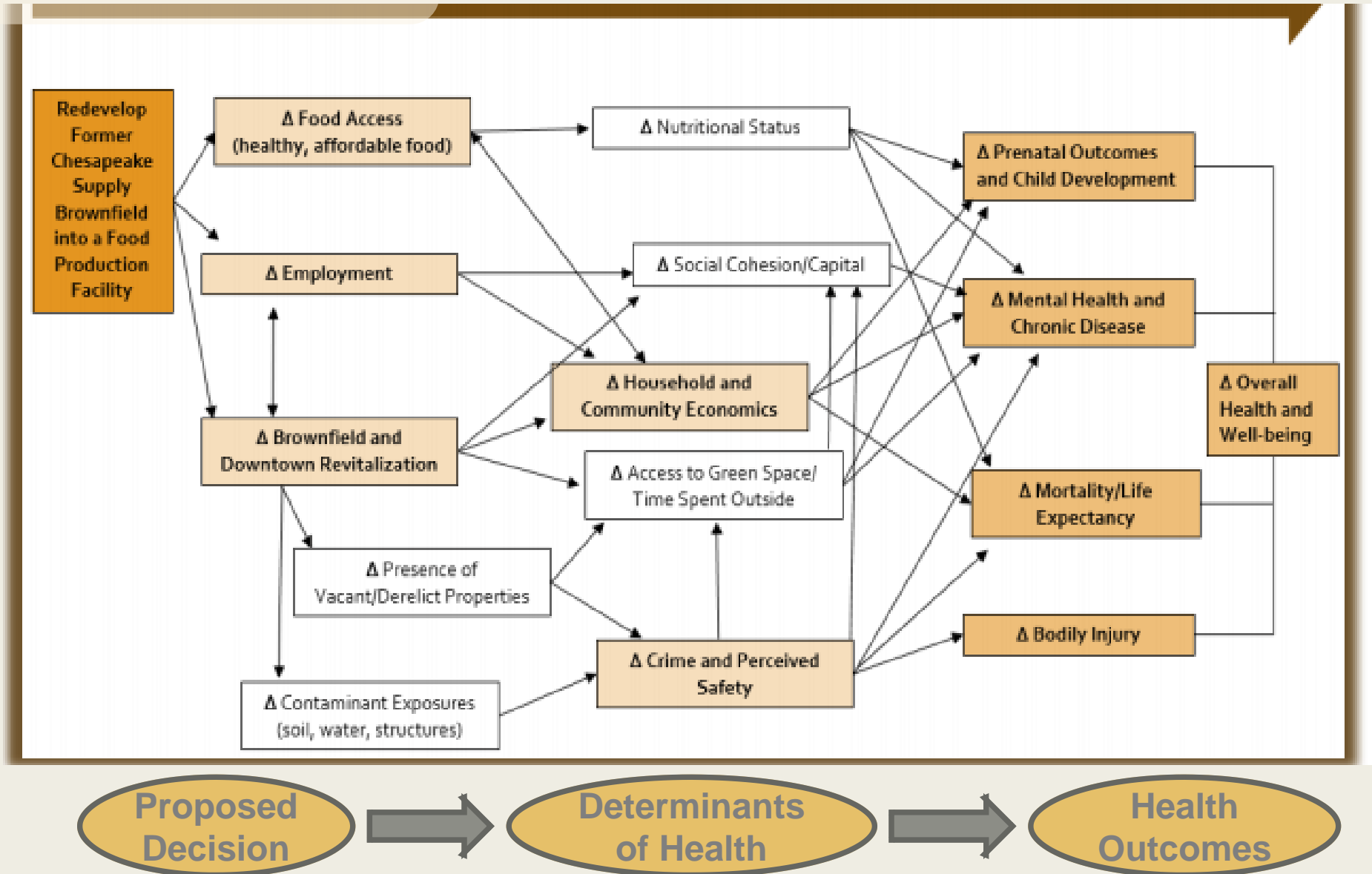
- 0.5 mile
- 1 mile



US EPA
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



ASSESSMENT





Impact Characterization Table

Potential impacts based on six criteria:

- 1) likelihood, 2) direction, 3) magnitude; 4) permanence; 5) distribution; and , 4) strength of evidence.

Table 4: List of characterized health impacts of the Dover Brownfield Revitalization Project HIA

Health Determinant	Likelihood	Direction	Magnitude	Permanence	Distribution	Evidence
Food Access	Highly likely	Positive	Limited	Long lasting	Most vulnerable populations, including low income and food insecure households and those with limited transportation	Strong
Employment	Plausible	Positive	Limited	Long lasting	Those unemployed, underemployed or employed, but living below the poverty line	Strong
Brownfield Redevelopment & Urban Revitalization	Plausible	Positive	Moderate	Long lasting	Most vulnerable populations, including those living nearest the target site	Sufficient
Crime	Plausible	Positive	Limited	Long lasting	Most vulnerable populations, including the elderly, disabled, and children	Limited
Household and Community Economics	Plausible	Positive and Negative	Moderate	Long lasting	Including, but not limited to, most vulnerable populations, such as those with low food access and fewer job opportunities	Sufficient



RECOMMENDATIONS

- Recommendations by health determinant.
- Focus on practical strategies for promoting positive health impacts and/or mitigating adverse health impacts during project implementation.

Table 15. General urban revitalization recommendations by health determinant

Health Determinant	Recommendation
1. Food Access	A. Incorporate ease of access planning, such as green spaces, well-lit streets and sidewalks, ramps and wheelchair accessible areas for walkability and access to site.
1. Food Access	B. Include outreach efforts and partnerships with local organizations, food tourism and gardening networks with similar healthy food access goals, as well as plan for expansion with other nearby revitalizations projects.
1. Food Access	C. Work with Delaware State University to establish SNAP-Ed at the nearby schools, and institute outreach programs in the community through the university's Extension Program.
1. Food Access	D. Engage local students to assist in neighborhood research on the food environment and with outreach and information collection among peers and family members.
2. Employment	A. Provide funding opportunities for local entrepreneurs (e.g. small business grants, foundation matching, matching grants for job creation, etc.) aimed at creating jobs.
3. Brownfield and Downtown Revitalization	A. Work with DNREC to clarify the specific conditions of the site, use restrictions and review how the proposed food reuse and similar food production uses at a former brownfield will not pose a health risk to workers, residents and neighbors or consumers.
3. Brownfield and Downtown Revitalization	B. Inform residents about past hazards, ongoing land use controls and how proposed reuse does not pose risks. Future public meetings also can engage residents in identifying other potential brownfields as well as sites now serving or planned for gardens or food production.
3. Brownfield and Downtown Revitalization	C. Collect information baseline information on population food access, participation in nutrition assistance programs, consumption and dietary disease prevalence may need to be collected or existing information examined. Local students may be able to assist in neighborhood research on the food environment and assist with outreach and information collection among peers and family members.
	A. Consider other community crime prevention measures such as community



Proposed Plan for Monitoring Health Impacts

- Monitoring and evaluation are the final steps.
- Evaluates the HIA process and its impacts on decision-making.
- Monitors changes in health in affected communities.
- rHIA is pre-decisional, while monitoring and evaluation are traditionally post-decisional steps of HIA.

Table 13. Proposed plan for monitoring health impacts post-decision

Health Determinant	Potential Indicators	Potential Data Sources	Potential Partners
Food Access	<ul style="list-style-type: none"> Increased position in the Retail Food Environment Index Food production at the site with distribution plan to local community 	<ul style="list-style-type: none"> Delaware Plan4Health Site operators 	<ul style="list-style-type: none"> Kent County Delaware Office of State Planning Coordination Delaware Health and Social Services Delaware State University Delaware Department of Education Delaware Department of Agriculture U.S. Department of Agriculture
Employment	<ul style="list-style-type: none"> Increased employment at the site, including employment from local zip codes 	<ul style="list-style-type: none"> Site operators Job Corps 	<ul style="list-style-type: none"> Kent County Downtown District Partnership Site operators
Brownfield Redevelopment and Urban Revitalization	<ul style="list-style-type: none"> Increased economic activity in the neighborhood as seen by an increase in the number of businesses or tax revenue Future grants leveraged for further brownfield remediation and redevelopment Increased public and private investment in the area. 	<ul style="list-style-type: none"> Downtown Dover Development Corporation U.S. Environmental Protection Agency Office of Brownfields U.S. Environmental Protection Agency Region 3 	<ul style="list-style-type: none"> Kent County Downtown Dover Partnership Delaware Office of State Planning Coordination Delaware Department of Natural Resources and Environmental Control U.S. Environmental Protection Agency Region 3
Crime	<ul style="list-style-type: none"> Rates of violent and non-violent crime 	<ul style="list-style-type: none"> Dover Police Department records Kent County Sheriff's Office Local Hospitals 	<ul style="list-style-type: none"> Dover Police Department Kent County Sheriff's Office Delaware State University



Successes:

- Bringing City and Stakeholders together to discuss improving health.
- Project expanded the effort to illustrate how health can be incorporated into future urban revitalization projects.

Challenges:

- Lack of specificity in the project design and decision point.
- Limited time and resources dedicated to this project.

Table 12. Evaluation of HIA goal achievement

HIA Goal	Achieved?	Documentation
Develop a rapid HIA that promotes the consideration of health in the brownfield revitalization project for Dover, Delaware	Yes	The HIA assessed the potential direct and indirect health impacts of the proposal develop a food production facility on a remediated brownfield site in downtown Dover. Impacts on food access, employment, brownfield redevelopment, crime, and individual and community economics were assessed at the request of the City of Dover and their partners.
Bring evidence-based information to help inform the City of Dover's decision to pursue a food production project, such as an aquaponics facility, on a remediated brownfield site.	Yes	The recommendations included in the HIA are based on evidence found in scientific literature and other urban revitalization projects.
Raise awareness of HIA as a decision-support tool that considers direct and indirect consequences, both benefits and harms, before a decision is made.	Yes	Through the HIA Process, EPA raised awareness of HIA as a decision support tool with the city of Dover, the State of Delaware, EPA Region 3, the Office of Brownfields and Land Revitalization, and the public. Both potential positive and negative health impacts of the proposal were identified.
Demonstrate the use of HIA on a brownfield revitalization project.	Yes	This rapid HIA serves as a model for future application of HIA on brownfield revitalization projects.



rHIA DELIVERABLE

Rapid

- 2 To 12 weeks
- Broad overview of potential health impacts (little to no data collection and/or stakeholder engagement)
- Applied when time and resources very limited

Dover Brownfield Redevelopment Project Rapid Health Impact Assessment

Executive Summary, Main Findings and Recommendations

- Executive Summary
- Main Findings -“Determinants of Health” summaries, which include:
 - Review of Literature
 - Existing Conditions
 - Predicted Health Impact
(change of existing conditions due to redevelopment project)
 - Short-term Recommendations
- Conclusion
- References



CONCLUSION

rHIA Goals:

- Inform revitalization choices.
- Compile and provide evidence-based recommendations to decision-makers.
- Allow for integration of this project into other local programs.

<https://www.epa.gov/healthresearch/final-report-former-chesapeake-supply-brownfield-revitalization-rapid-health-impact>

EPA/600/R-18/105
June 2018



FORMER CHESAPEAKE SUPPLY BROWNFIELD REVITALIZATION: RAPID HEALTH IMPACT ASSESSMENT



U.S. Environmental Protection Agency
Office of Research and Development
Region 3 (Mid-Atlantic)
Office of Brownfields and Land Revitalization



TAKEAWAYS

1. Relationships and existing partnerships are key.
2. A strong leadership team and structured project team is required.
3. Firm parameters and flexibility for adjustments.



Thank You!

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