An aerial night photograph of a city, likely Boston, showing a river (the Charles River) winding through the urban landscape. The city is illuminated with various lights, and long-exposure light trails from traffic are visible on the roads. A large stadium with bright lights is visible in the upper left. The text 'BERDO 2.0: A Bird's Eye View of Local Carbon Abatement Options' is overlaid on the left side of the image in a large, orange, sans-serif font.

# BERDO 2.0: A Bird's Eye View of Local Carbon Abatement Options

Climate Solutions Living Lab  
Team 2





Image: Boston.gov

# BERDO'S COMMITMENT: CARBON NEUTRALITY BY 2050

**4%**

of buildings

**60%**

of carbon emissions

# ORDINANCE SELECTION CRITERIA

## From BERDO 2.0 Ordinance:

"Local building carbon abatement projects that ***benefit the City of Boston's emissions reduction goals.***"

## Project Prioritization:

- Environmental Justice Populations
- Populations disproportionately affected by air pollution

## By Improving and Promoting:

- Low-income affordable housing
- Local air quality
- Indoor environmental quality and health
- Economic inclusion, training, and technical assistance for Minority, Women, and Disadvantaged Business Enterprises (MWDBE) and cooperative contractors
- Equitable workforce
- Projects with community ownership of housing and renewable energy Infrastructure
- Reduced energy burdens
- Any further environmental initiatives.



Image: Boston Indicators



# PRESENTATION GOALS

1

**Project selection framework:** Review proposed framework for evaluating local building carbon abatement projects

2

**Case application examples:** Apply framework to sample hypothetical projects in Boston

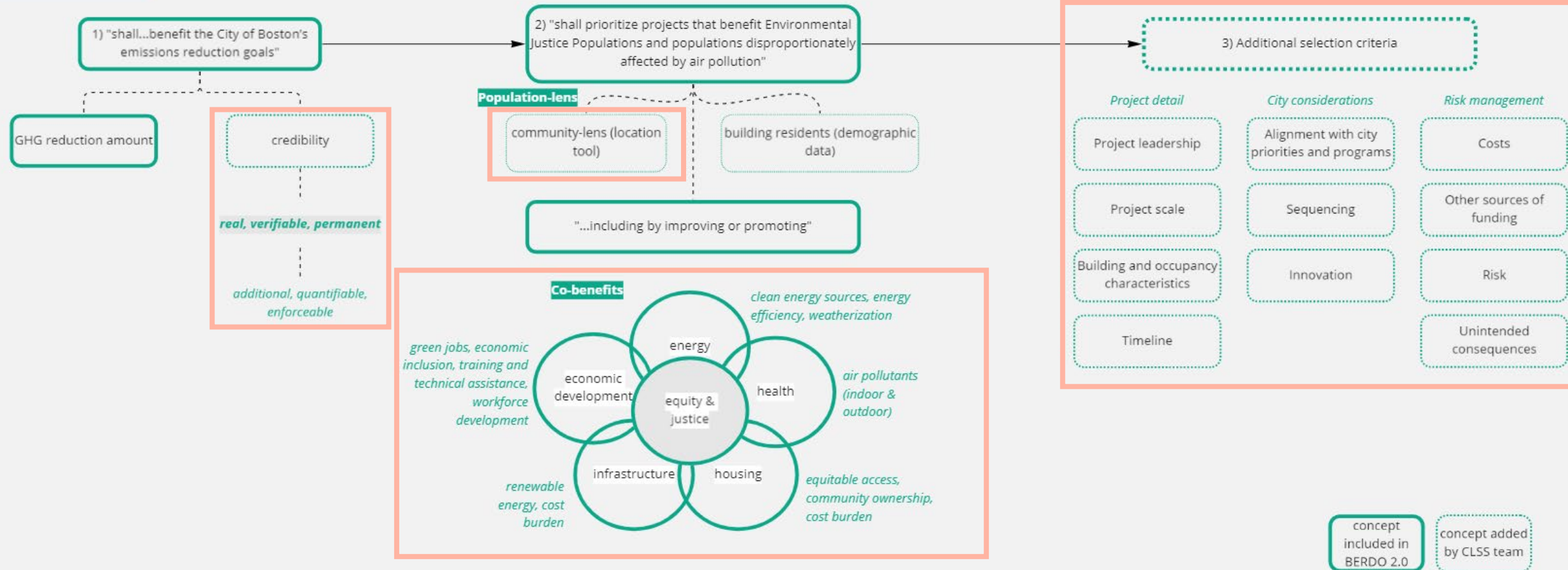
3

**Fund management:** Discuss fund management considerations and key takeaways from case application examples

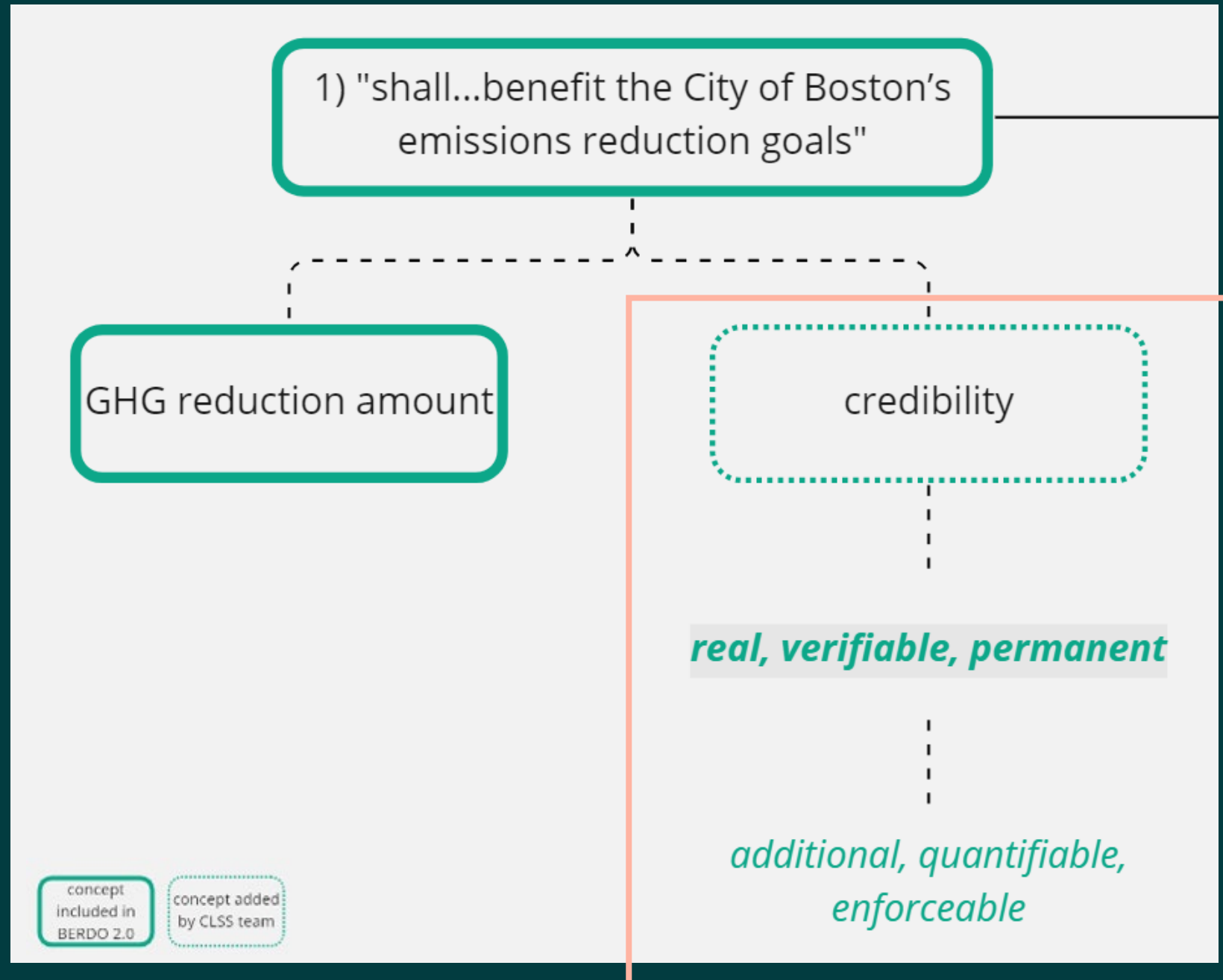


# OVERVIEW

## Project selection framework



## CREDIBILITY

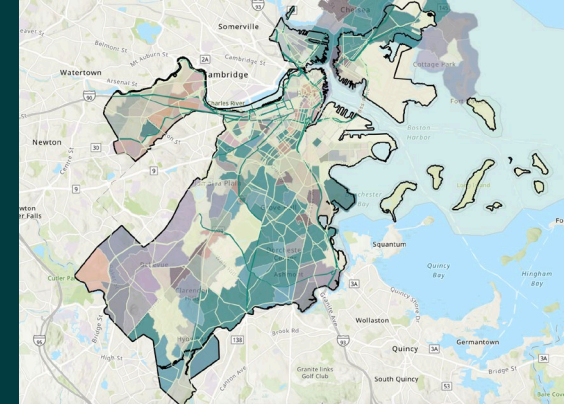
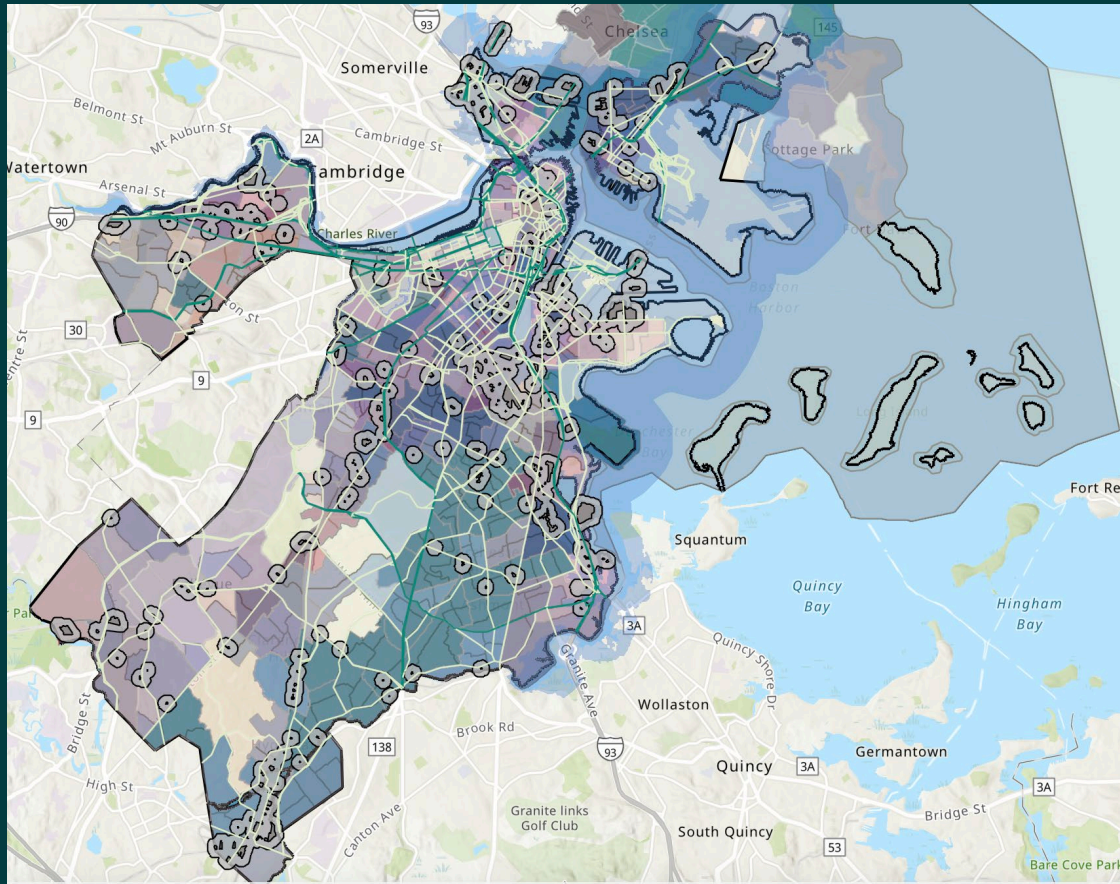
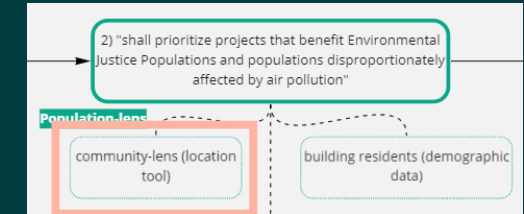




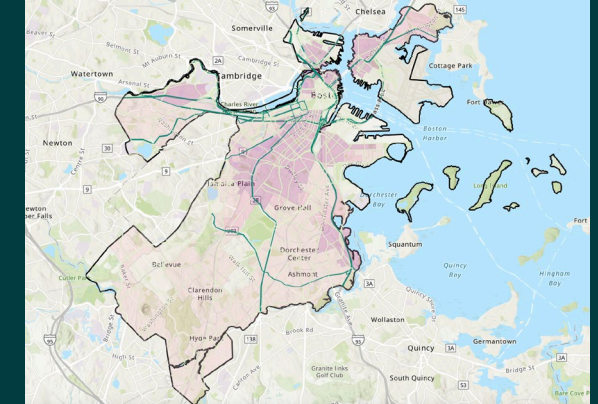
# LOCATION

Publicly Available: [bit.ly/CSLL-EJ-Mapping](https://bit.ly/CSLL-EJ-Mapping)

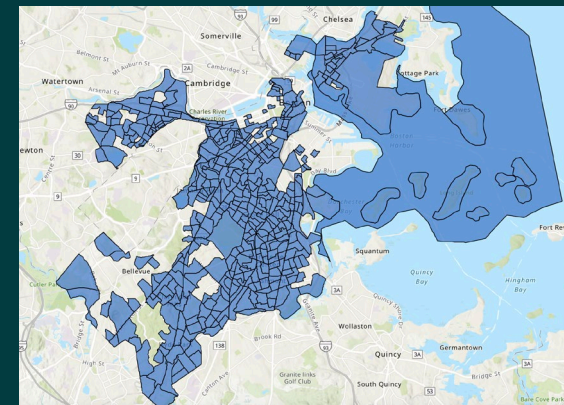
## Combined Location Tool



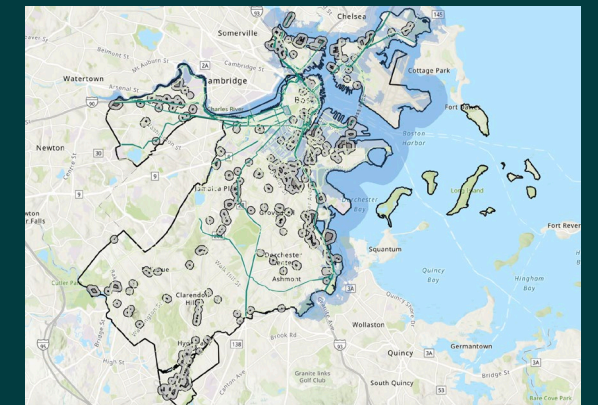
Social Vulnerability Index



Historical Redlining in Boston



MA Environmental Justice Communities



Climate & Environment:  
Industrial Zoning & Flooding

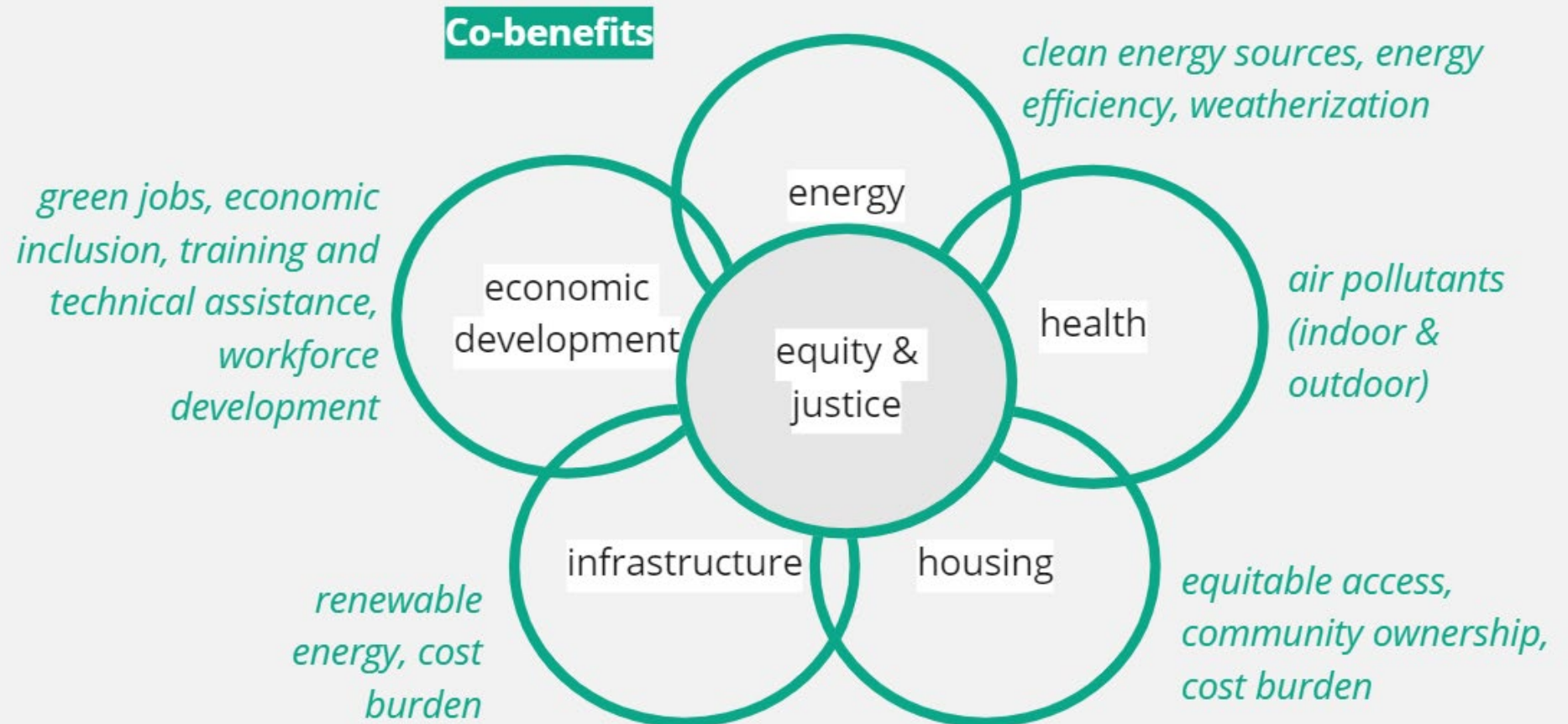


concept  
included in  
BERDO 2.0

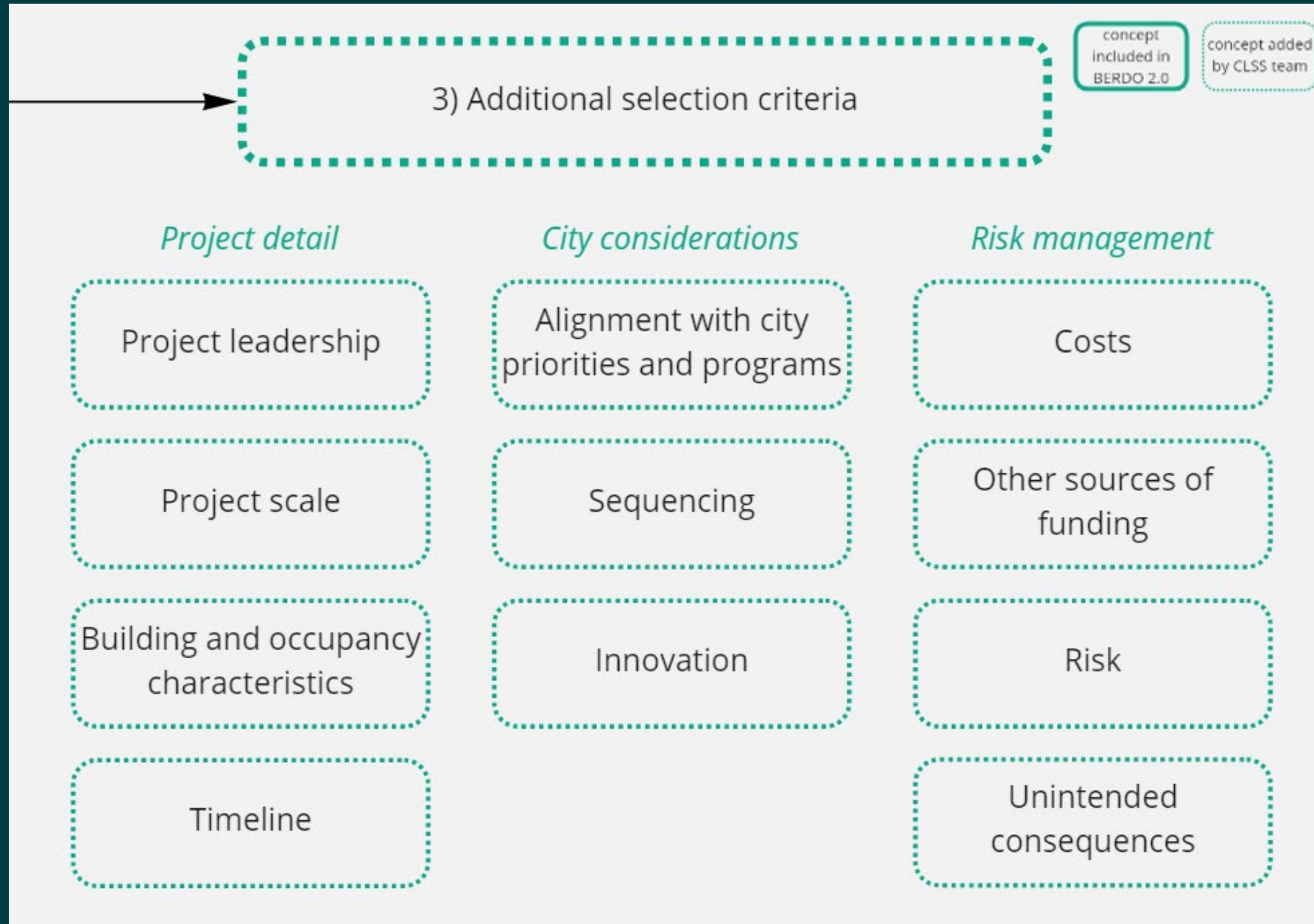
concept added  
by CLSS team

"...including by improving or promoting"

# CO-BENEFITS







## ADDITIONAL SELECTION CRITERIA



# ELECTRIFICATION

## *Project Overview*



Owner recently acquired a **large commercial building** constructed in the 1950s with inefficient lighting, heating, and cooling.



Owner wants to achieve a **high and prompt economic return on investment** and is considering LED, modern heat pumps, and on-site solar.

*Necessary but not sufficient: "The only credible path to net zero includes electrifying vast majority of buildings."*

### Large Commercial Building *Deep Energy Retrofit*

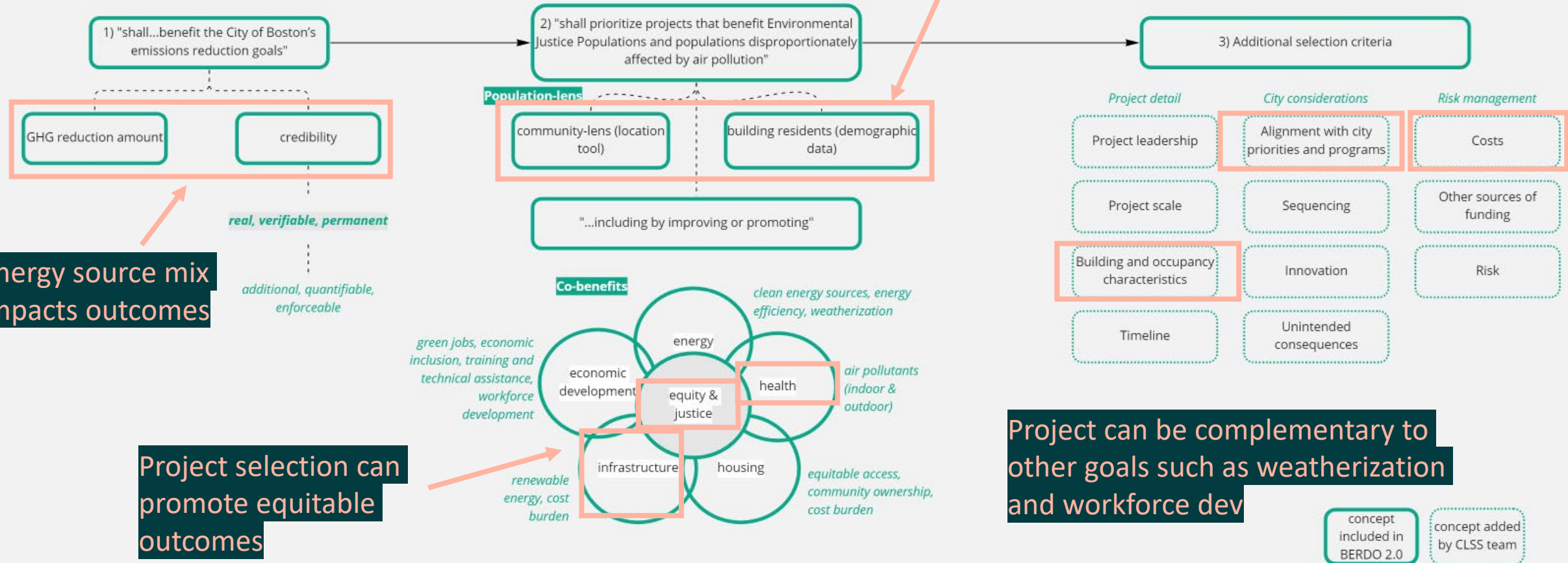


### Multi-Family Building *Marginal Interventions* (Furnace Heating, Central Cooling)



# ELECTRIFICATION

## Project selection framework





# ELECTRIFICATION

## Takeaways



Large commercial building promises high reduction in energy use in absolute terms (50%+) and relative to peers, but *credibility of emissions reduction is constrained by energy source mix*



The project will not improve housing affordability, but depending on its location, *it may improve air quality* in an EV community and reduce asthma



Large investment for commercial building developers may be feasible due to aligned incentives, but may require *coupling with weatherization efforts* to achieve strong returns

# WEATHERIZATION

## *Project overview*



Owner of **triple-decker** in EJ community with naturally occurring affordable housing wants to weatherize building



Project partner has history of **low-cost weatherization projects**. Owner needs financing for up front project costs after grants from ABCD/MassSaves



Project partner plans to **hire local contractors**

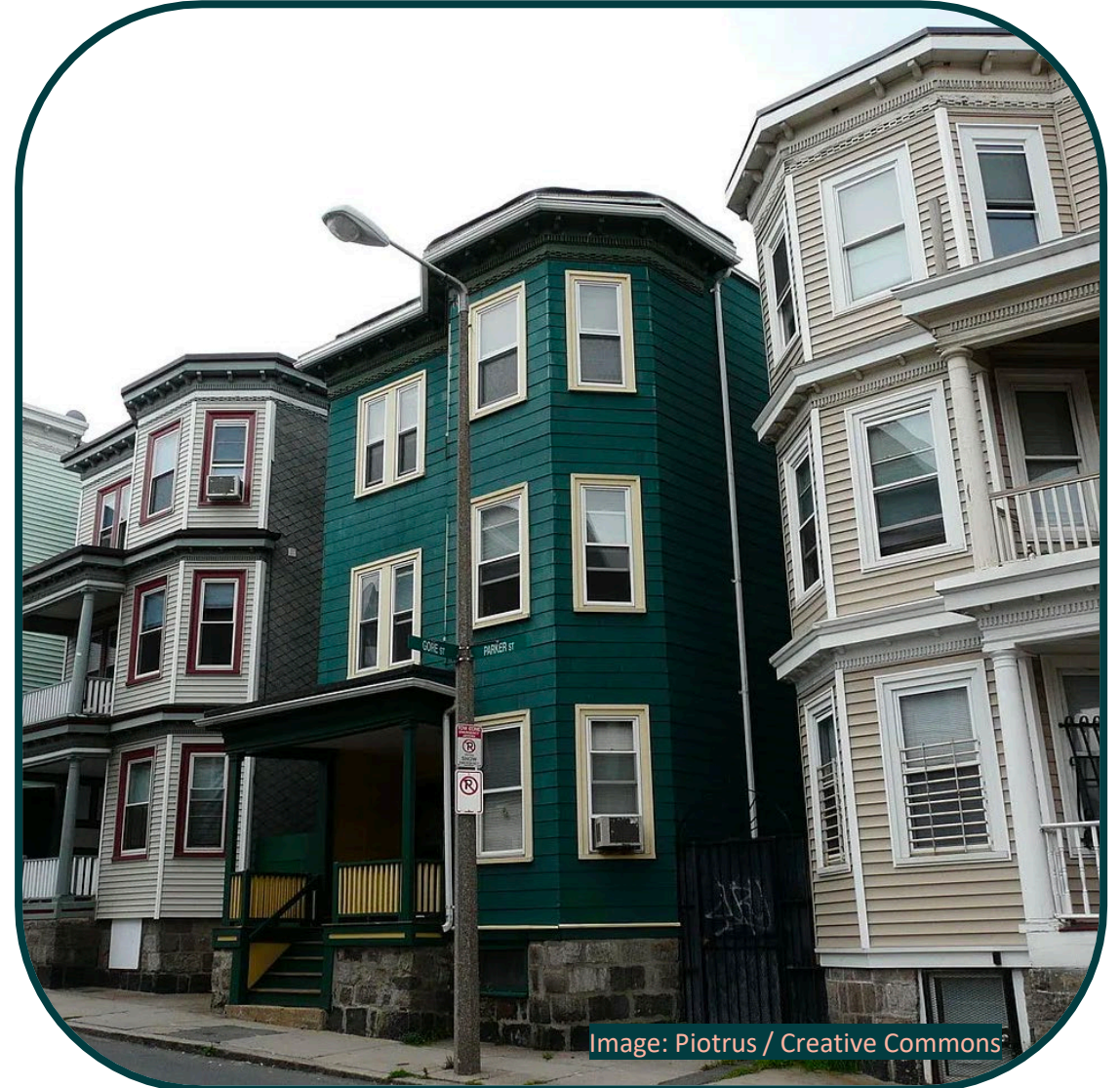
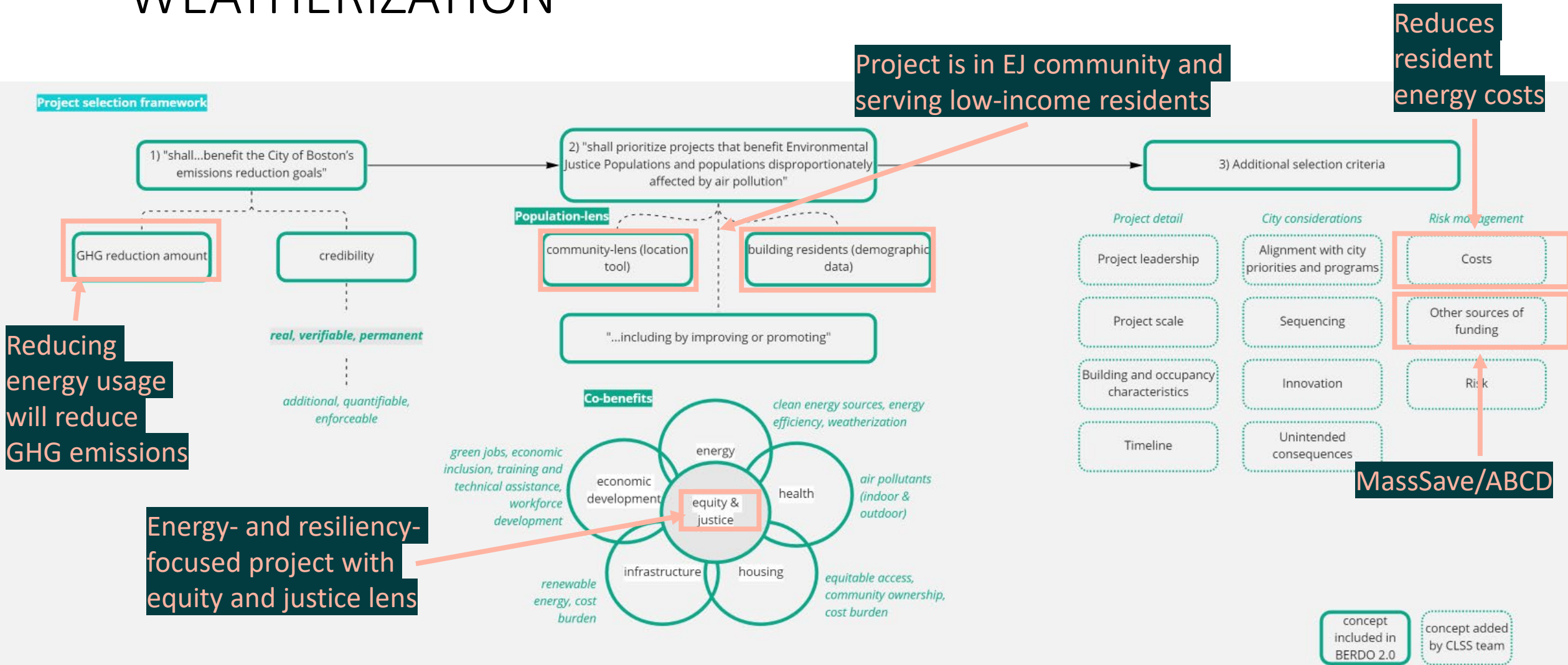


Image: Piotrus / Creative Commons<sup>2</sup>



# WEATHERIZATION

## Project selection framework



# WEATHERIZATION

## Takeaways



Equitable Emissions Investment Funds can be *coupled with existing programs* to drive additional impact



*Leverage community nonprofit groups* to identify strong potential projects and improve project recruitment process



Funds can address *both carbon emissions mitigation and provide resilience* against climate impacts for vulnerable community members



# WORKFORCE DEVELOPMENT

## *Project overview*



BERDO funds requested for **Green Jobs workforce development program**



Project partner is **coalition of two local Boston organizations** which have a focus on workforce and community development



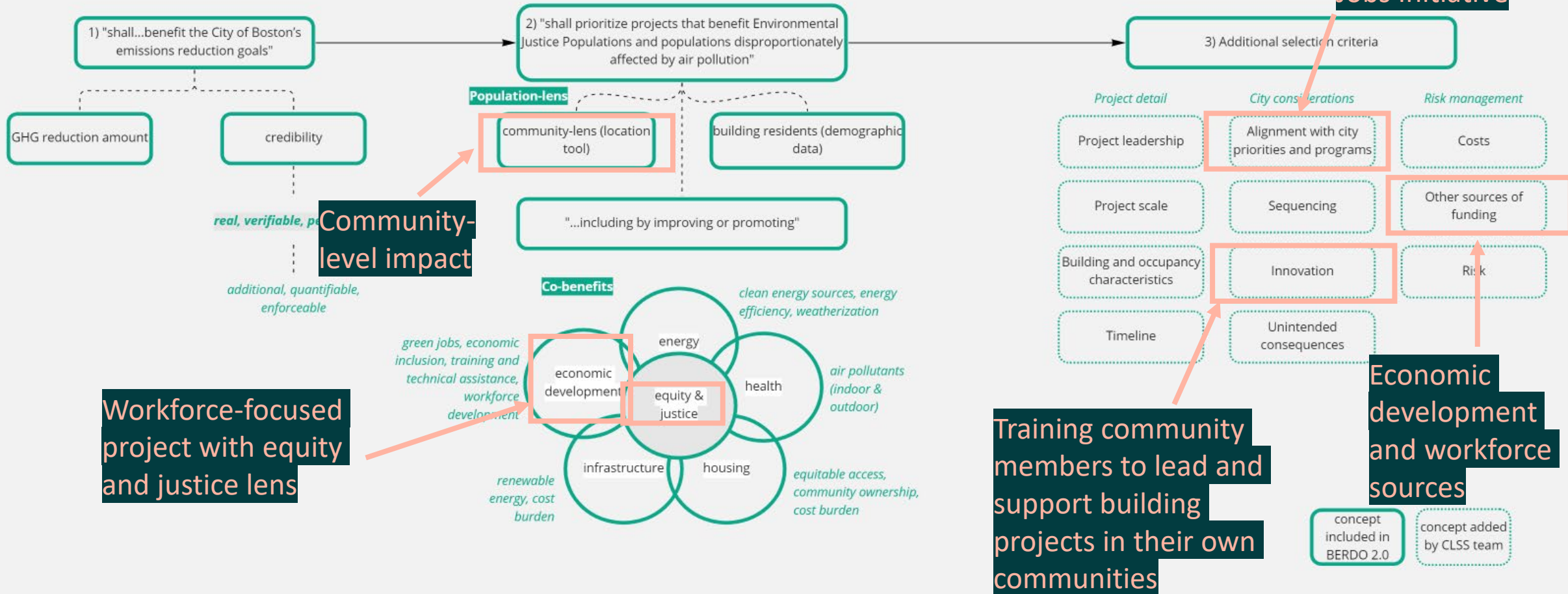
**Project partners have strong relationships** in construction industry and with lower-income communities of color in Boston



Image: Green Biz

# WORKFORCE DEVELOPMENT

## Project selection framework





# WORKFORCE DEVELOPMENT

## Takeaways



Project creates a pipeline of skilled labor *critical to facilitating the green transition* by reducing cost of compliance for building owners



While this project will positively impact EJ communities and facilitate the green transition, it *does not directly reduce GHG emissions*



Project *may be able to access other sources of funding* supporting workforce development, especially since GHG impacts may not be limited to Boston

# FUND MANAGEMENT: DIVERSITY ON FOUR AXES

## Selecting projects



*several  
small  
projects*

vs.

*a few  
large  
projects*



## Disbursing funds



*grants*

vs.

*low  
interest  
loans*



## Measuring success



*individual  
projects*

vs.

*across the  
portfolio*



## Project focus



*carbon  
abatement*

vs.

*community &  
co-benefits*





# CONCLUSION

## *Takeaways*



We have developed a *project selection framework* that can support the City with choosing projects with the key goals of reducing emissions, serving environmental justice communities, providing co-benefits, and additional selection criteria



We have showed how these *tools can be applied to diverse project proposals* to evaluate them against the priorities stated in the BERDO 2.0 ordinance.



*Decisions around fund structure* including sizing, measuring success, disbursing funds, and project focus shall need to be made by the Review Board

THANK YOU



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