

## The CEHI Community Assessment Project: A Tool for Linking the Built Environment With Key Health Outcomes

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**Background and Objectives:** Research shows evidence of associations between the built environment (BE) and health outcomes. However, there is less research describing instruments able to assess the spatial variation of the BE and its impact on birth outcomes. The Children's Environmental Health Initiative's (CEHI) Community Assessment Project (CAP) documents the spatial variation of the BE using a comprehensive assessment tool. The CAP objectives are to: (1) systematically characterize BE conditions over a substantial geography; and (2) assess the relationship between BE conditions and health outcomes.

**Methods:** Trained assessors canvassed more than 17,000 tax parcels in Central Durham, North Carolina, using a standardized visual assessment of 40 distinct BE variables. Data were summarized by eight indices: housing damage, property damage, territoriality, tenure, vacancy, crime, amenities, and nuisances. Census blocks were assigned an index based on the summary score of primarily and secondarily adjacent blocks. As a first public health outcome application, the indices were then spatially linked to birth weight data in Durham.

**Results:** Regression analysis indicates a strong relationship between the indices and birth weight. That is, pregnancies in neighborhoods characterized by poor housing conditions and high rates of renteroccupancy and vacancies are associated with lower birth weights. Furthermore, this association strengthens with increasing spatial aggregation, indicating that depauperate BEs that manifest over a wider geography have a greater impact on health outcomes.

**Conclusions:** The CAP offers a comprehensive inventory of the BE, facilitating the generation of indices describing neighborhood quality. Clear linkages exist between neighborhood quality and public health outcomes.