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Modeling Visitation at Coltsville National Historical Park

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Coltsville National Historical Park (NHP)

Coltsville NHP was first approved as a National Park in 2014 and has been in the process of acquiring land and funding since. The park will be made up mainly of two buildings in the Colt Armory complex and will use land that is part of the City of Hartford's Colt Park. It is one of the first projects where the National Park Service (NPS) will be sharing the management of land with a city government. In order to secure full funding the NPS needs an understanding of what the visitation to Colt Park and the Historical Park will look like. Because this is a new direction for the Park Service, there is not a set method of determining the usage. **This projects seeks to find a simple estimation of what visitation to Colt Park and Coltsville National Historical Park will look like so that they can receive full funding.**

Park Usage Measurement Methods

Various methods exist to measure park visitation but not all were easily applied to Coltsville's present capabilities.

In-Person Counting	• Uses volunteers to manually log visitors in the park • Time consuming and costly
Infrared Sensors	• Installed at entrances to the park logging every pass • Expensive and often inaccurate
Video Monitoring	• Visitors counted from images taken at set times by mounted cameras • Typically costly
Statistical Models	• Available data used to estimate visits • Less accurate but most suitable for Colt Park's requirements

Creating a Model for Coltsville

Original Model	• Designed for city parks in Australia • Uses the area of the park, the population around it, and an assessment of park features as parameters
City vs Historic Park	• The draw for the NHP is not included in the model
Final Model	• Modifies the original to estimate visits for both the city and historic aspects

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The Model & Parameters

Usage = **1.63 x Service Standard^2 x Catchment Population$^{0.14}$ x Area$^{0.34}$** + **Measured Visitation** + **Historical Park Estimate**

■ = Zanon Model ■ = Measured Visitation ■ = Historical Park Estimate

Catchment Population

The population of the surrounding area was approximated with the 12 closest and most accessible census tracts.

Census Tract	Population
5001	4,029
5002	2,660
5003	2,177
5004	1,890
5005	1,460
5021	1,742
5024	6,291
5025	1,768
5026	4,210
5027	5,046
5028	2,999
5030	3,213
Total:	**37,485**

Area

The park consists of a main green space and two pre-civil war factory buildings.
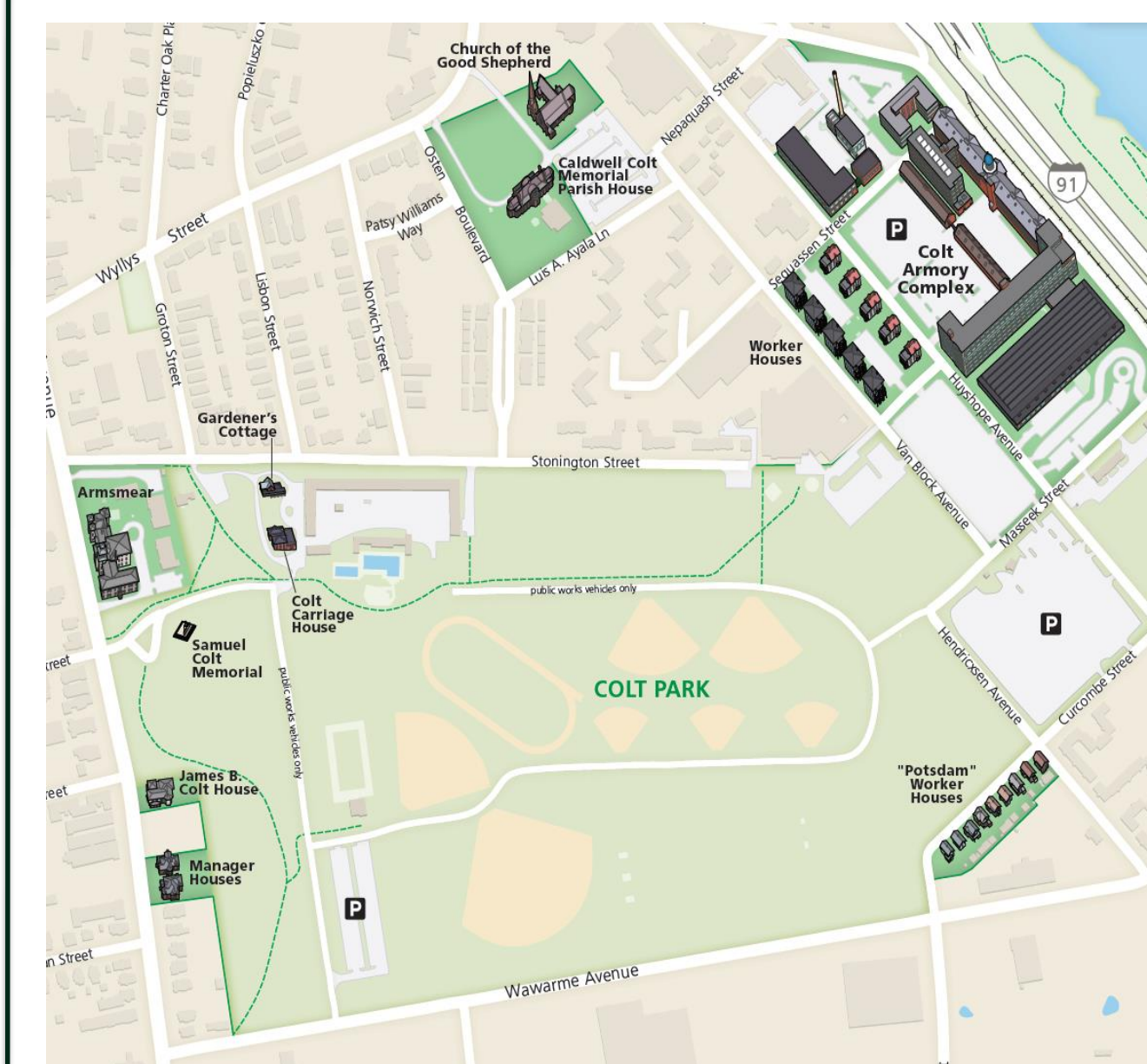
Size of Colt Park: 43.536 hectares
Size of two buildings: 18,000 ft^2

Measured Visitation

Certain aspects of Colt Park visitation are already measured by other organizations. These include visits relating to:
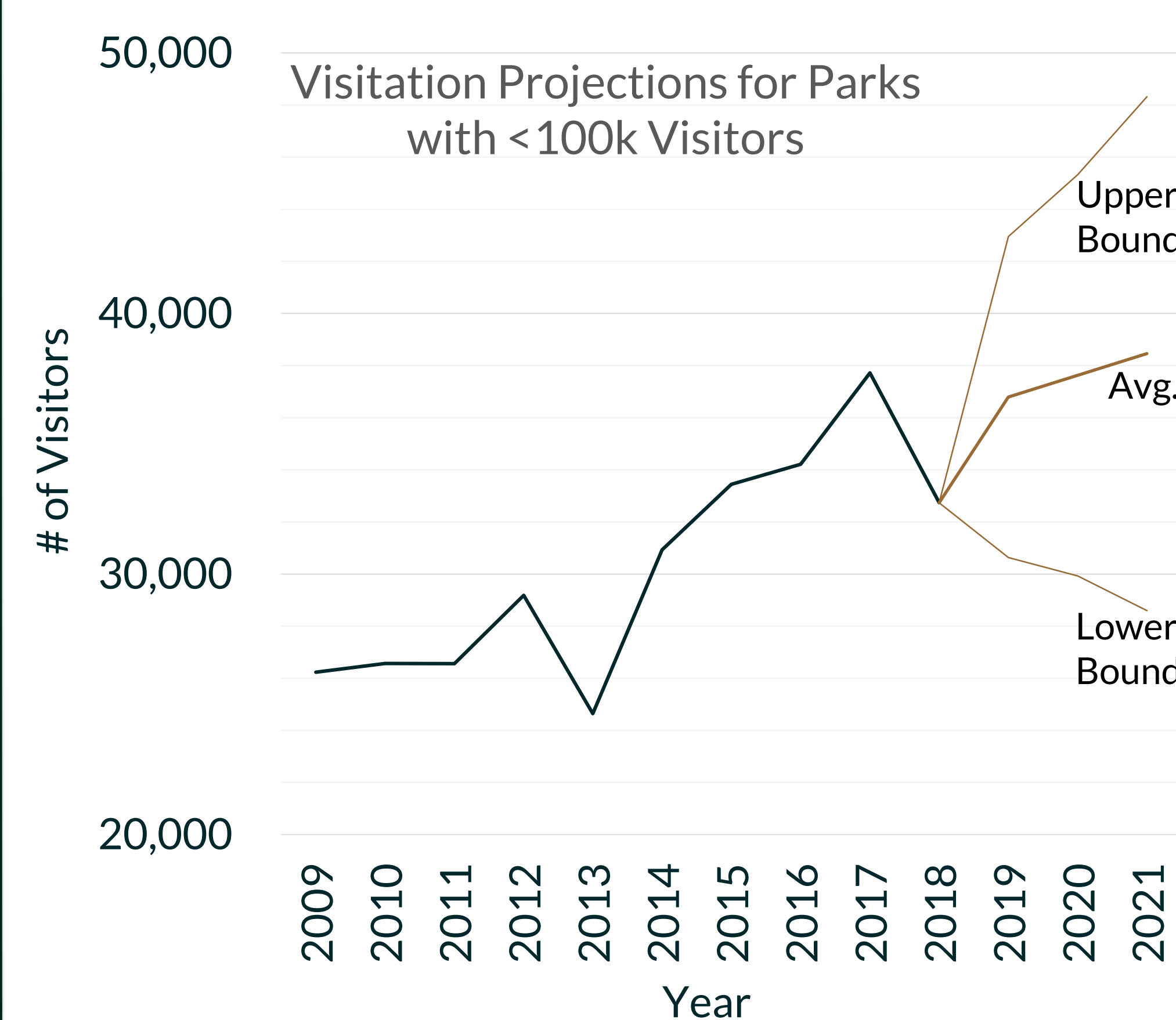
19 sport facilities   A public swimming pool   3 public schools in the area

Summer lunch program   Other large events

Service Standard

14 different park attributes were ranked on a weighted scale with a maximum value of 100. Two scores are presented, one for the current park and one for pending renovations.

Attributes Scored	Current Score	With Renovations
Safe Access to Park Facilities	3.8 / 5.8	5.8 / 5.8
Car Parking	6.2 / 6.2	6.2 / 6.2
Adequate Toilet Facilities	4.9 / 14.9	9.9 / 14.9
Tracks, Trails, and Paths	3.9 / 11.8	7.8 / 11.8
BBQ Facilities	0 / 6.5	0 / 6.5
Picnic Facilities	4.8 / 7.2	7.2 / 7.2
Children's Playground/Play Areas	6.1 / 6.1	6.1 / 6.1
Litter Control Measures	2.1 / 6.3	4.2 / 6.3
Signposting & Directions	0 / 4.7	3.1 / 4.7
Shelter	2.6 / 8.0	8.0 / 8.0
Length of Grass	4.5 / 4.5	4.5 / 4.5
General Maintenance Standards	3.9 / 5.9	5.9 / 5.9
Ranger Present or Available	3.8 / 3.8	3.8 / 3.8
Information about the Park	0 / 4.2	4.2 / 4.2
Suitable Opening & Closing Times	4.2 / 4.2	4.2 / 4.2
Totals	**50.8 / 100**	**80.9 / 100**

Historical Park Visitation

Visitation Projections for Parks with <100k Visitors

(line chart: # of Visitors vs Year 2009–2021, showing Upper Bound, Avg., Lower Bound projections)
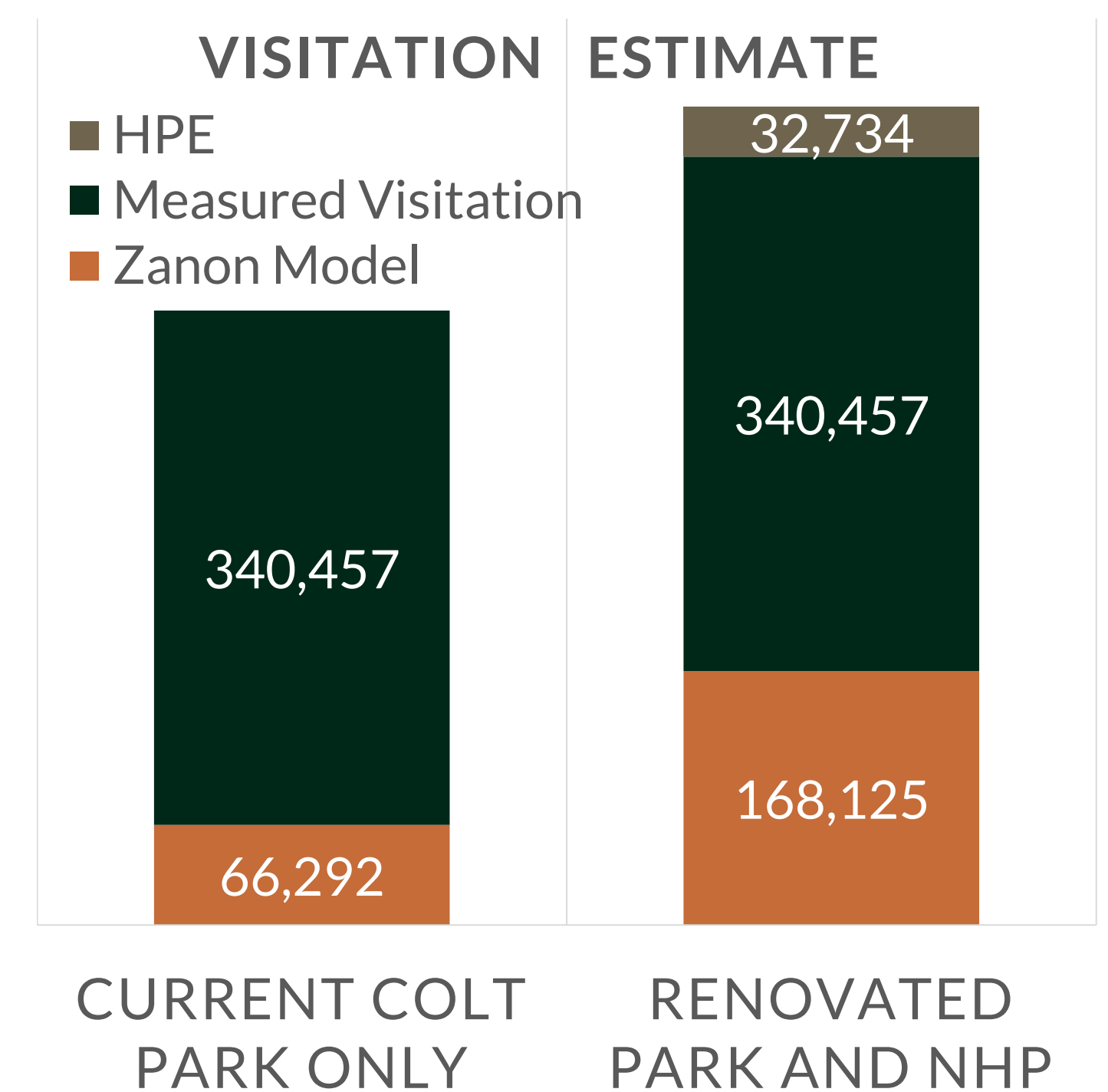
- Visitation data since 1999 for 16 National Historic Parks in the New England area were analyzed to estimate visitation
- Data was sourced from the NPS who tracks visitation of established parks annually
- Those which saw < 100,000 visitors a year were seen as closest to Coltsville's prospects
- From the average of these parks' visitation, a forecast of future visitation was projected with a 95% confidence interval

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Projected Annual Park Visitation

Total annual visitation to Coltsville NHP at present standards is estimated as **439,483** with 60% confidence. With new renovations, visitation is estimated at **541,316** with 60% confidence. Additions to the original model are unaffected by any of the renovations to the park.

VISITATION   ESTIMATE

(bar chart legend:)
■ HPE
■ Measured Visitation
■ Zanon Model

Current Colt Park Only: Measured Visitation 340,457; Zanon Model 66,292
Renovated Park and NHP: HPE 32,734; Measured Visitation 340,457; Zanon Model 168,125

CURRENT COLT PARK ONLY   RENOVATED PARK AND NHP

- The Historical Park is estimated to attract 32,734 visitors a year regardless of pending renovations
- Without renovations the city park alone should attract 406,749 visitors a year
- With renovations the city park should attract 508,582 visitors a year, an **increase of more than 100,000**

With these numbers, Coltsville NHP can continue the process of receiving full federal funding – the next step in its process to become a full National Park

The City of Hartford can also see where its funding of the park is heading and how pending renovations can increase visitation to the park as well as park quality

Suggestions for Further Research

- Incorporating measures of local awareness to the model as another parameter can increase confidence to roughly 75%
- While out of the scale of this project, a small team could accomplish this at relatively little cost and time compared to previously listed visitation measurement methods
- While for visitation estimation these surveys only need to determine a basic awareness of the park they could be used for a variety of other methods as well, including:
  - What kind of residents visit the park
  - How far away visitors of the park come from
  - How often visitors come in a month or year

Acknowledgements

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