

CADMUS



Restoring Parks, Creating Jobs

How Infrastructure
Restoration in the National
Park System Can Create
or Support Jobs

FY 2017 Data Analysis

Commissioned by
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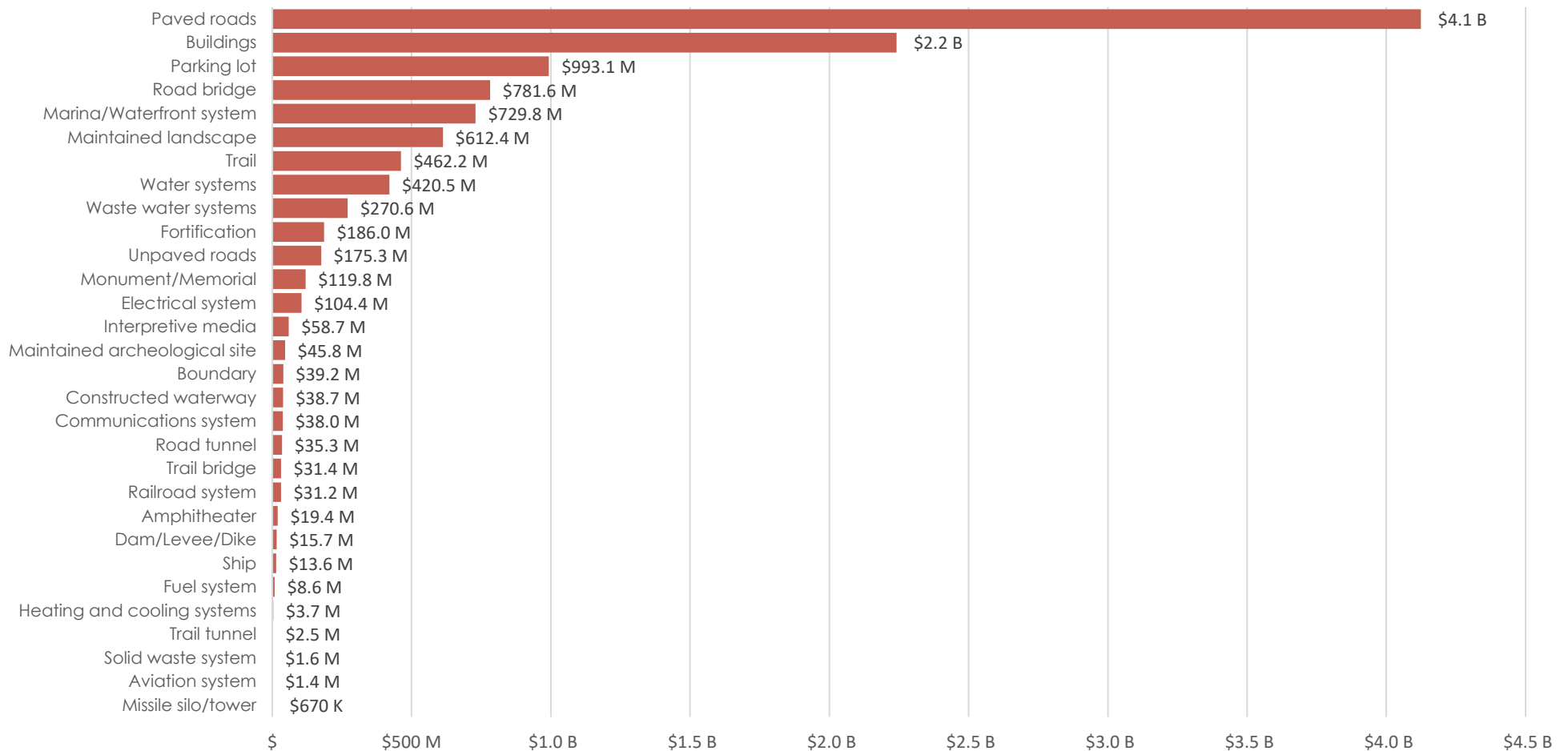
National Park Service Overview

- The National Park Service (NPS) manages and protects over 400 units nationwide, including wild landscapes, cultural and historical sites, urban areas, waterfronts, battlefields, cemeteries, trail systems, and parkways that preserve and interpret significant pieces of America's history.
- The NPS maintains over 75,000 built assets.
- NPS assets include more than:
 - 7,100 miles of roads
 - 18,800 miles of trails
 - 28,000 buildings
 - 1,800 sewage systems
- The NPS is over 100 years old.



National Park Service Deferred Maintenance: The Numbers

Deferred Maintenance Categories, FY 2017



According to the 2006 NPS *Real Property Management Reference Manual*, “deferred maintenance” is maintenance and repairs of assets that was not performed when it should have been and is delayed for a future period.

Infrastructure Restoration Creates and Supports Jobs

41,900

NPS assets with
deferred
maintenance
needs

\$11.6B

Federal
investment
needed for NPS
repairs

109,498

Jobs created or
supported by
\$11.6B federal
investment in NPS
infrastructure

- Of the more than 75,000 NPS assets, nearly 42,000 require repairs.
- The NPS deferred-maintenance backlog for FY 2017 is estimated at \$11.6 billion.
- 109,498 jobs could be created or supported by investing in infrastructure and preservation projects that are on the NPS complete deferred-maintenance list.

This report measures jobs in terms of job-years. A job-year is the equivalent of one full-time job that lasts for one full year. For example, one person working full time for two years is equivalent to two job-years. Two people working half time for one year is equivalent to one job-year.

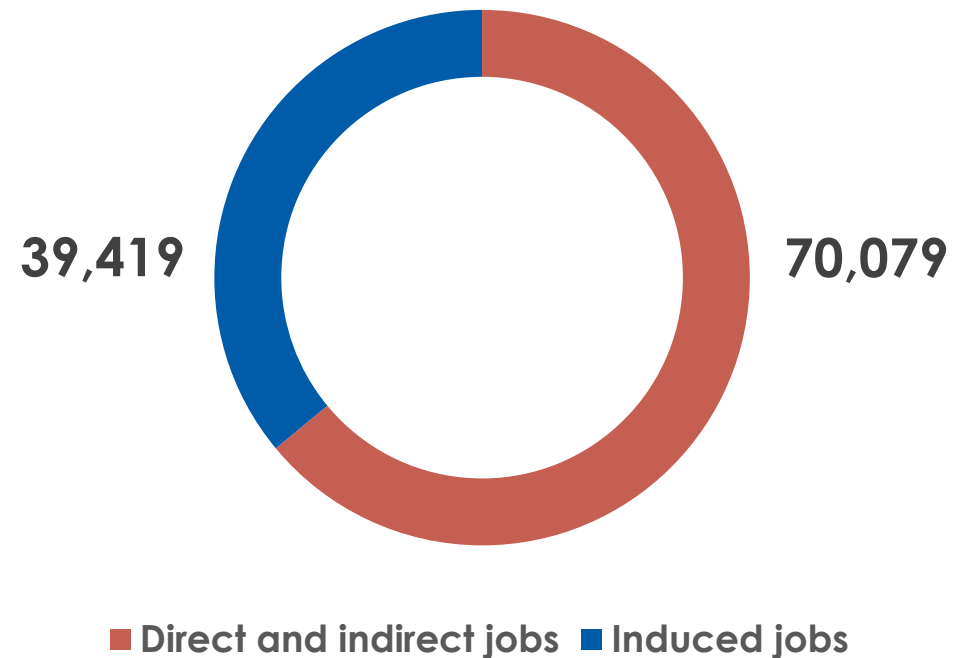
Job Numbers

Total potential jobs are split across direct, indirect, and induced jobs.

Of the 109,498 potential infrastructure-related NPS jobs, 64 percent would be direct and indirect jobs. Direct jobs are actual restoration- and construction-related jobs; indirect jobs refer to supplying materials to the construction site and other off-site support activities.

The remaining 36 percent of potential jobs are considered induced because of money circulating within the local economy as a result of income generated from NPS infrastructure-related projects.

Potential Jobs



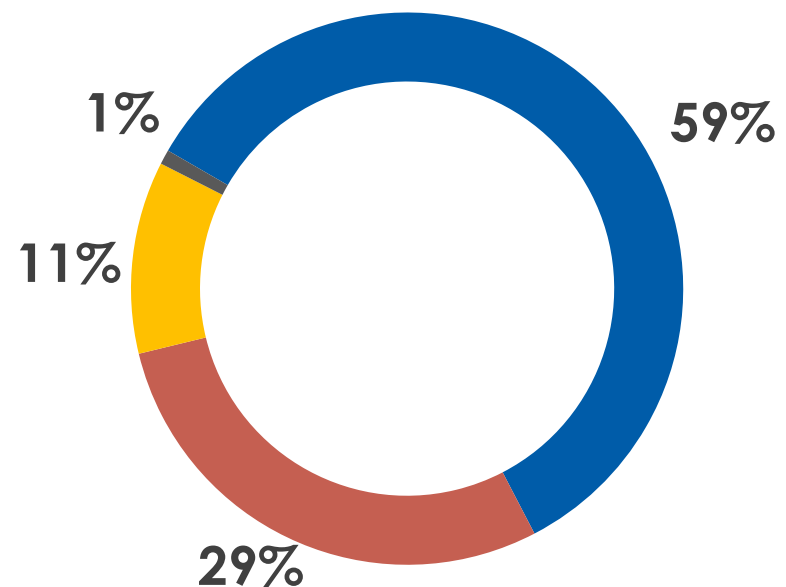
States With Higher Unemployment Rates May Benefit Most

Of the NPS infrastructure-related jobs that would be created or supported by addressing the maintenance backlog, 59 percent would be in states with unemployment rates that exceed the national average unemployment rate.*

**Based on August 2018 BLS data; 3.9% national average unemployment*

*‡Includes the District of Columbia.
Unemployment data not available for U.S. Territories.*

Potential Jobs in States with High Unemployment Rates[‡]



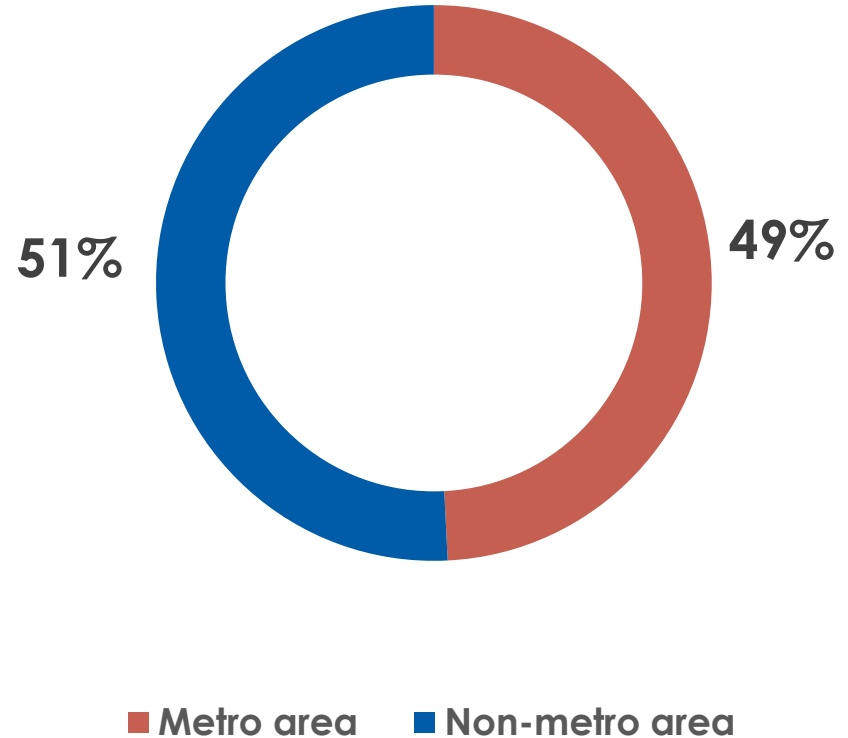
- State unemployment > National
- State unemployment < National
- State unemployment = National
- Unemployment data not available

Potential Jobs Would Be Located in Metro and Non-Metro Areas

Of the potential NPS infrastructure-related jobs, 51 percent would be in non-metro areas (areas with fewer than 100,000 residents).*

**Based on U.S. Census Bureau data.*

**Potential NPS Jobs
Metro and Non-Metro Areas**



20 States With the Most Job Potential[‡]

- | | | | |
|----|----------------------|----|---------------|
| 1 | California | 11 | Tennessee |
| 2 | District of Columbia | 12 | Utah |
| 3 | Virginia | 13 | Florida |
| 4 | New York | 14 | Maryland |
| 5 | Wyoming | 15 | Colorado |
| 6 | Arizona | 16 | Massachusetts |
| 7 | North Carolina | 17 | Montana |
| 8 | Washington | 18 | New Jersey |
| 9 | Mississippi | 19 | Texas |
| 10 | Pennsylvania | 20 | Hawaii |

[‡] Includes the District of Columbia and the U.S. Territories.

Potential Jobs by State[‡]

State	Jobs	Job rank	State	Jobs	Job rank	State	Jobs	Job rank
AK	997	24	KY	928	27	OH	976	26
AL	262	38	LA	90	44	OK	221	40
AR	355	35	MA	2,235	16	OR	1,099	23
AS	9	56	MD	2,258	14	PA	2,820	10
AZ	5,656	6	ME	573	30	PR	263	37
CA	17,063	1	MI	491	32	RI	11	55
CO	2,247	15	MN	168	41	SC	238	39
CT	34	52	MO	754	28	SD	628	29
DC	11,851	2	MP	86	45	TN	2,650	11
DE	12	54	MS	2,950	9	TX	1,582	19
FL	2,474	13	MT	2,053	17	UT	2,537	12
GA	992	25	NC	4,127	7	VA	9,610	3
GU	46	50	ND	491	31	VI	360	34
HI	1,443	20	NE	73	48	VT	32	53
IA	42	51	NH	50	49	WA	3,763	8
ID	144	43	NJ	2,012	18	WI	82	46
IL	155	42	NM	1,164	22	WV	430	33
IN	317	36	NV	1,438	21	WY	6,622	5
KS	75	47	NY	9,292	4	Other*	170	-

* “Other” represents potential jobs created or supported from repairing the Appalachian National Scenic Trail, which crosses several state boundaries.

[‡] Includes the District of Columbia and the U.S. Territories.

Methodology

Report Prepared by the Cadmus Group

This analysis used fiscal year 2017 NPS deferred-maintenance data from the National Park Service's Facility Management Software System. The system tracks all the known deferred maintenance by project and includes several project fields, such as asset type, condition, and estimated repair cost. To transform the cost data into jobs, this report used the Council of Economic Advisers (CEA) job-creation formula (2009). This formula estimates that each \$92,000 of infrastructure investment creates one job-year (one full-time employee for one year). In FY 2017, the total government spending required to generate one job-year was raised to \$106,000, based on CPI inflation data from the U.S. Bureau of Labor Statistics. Although the CPI tracks increases in the cost of goods as well as labor, inflation remained low over the 2009-17 period, and adjusted job estimates are substantially similar to those created by using the employment cost index 2009-17.

The total job creation is split across direct/indirect and induced job creation. The formula predicts that 64 percent of jobs would be direct and indirect jobs; these are jobs that are either involved at the construction site or in supplying materials and labor to the construction site. The remaining 36 percent of jobs are induced jobs; these are jobs created by spending effects from money circulating within the local economy. Although more detailed job-estimation models are available, they work best at a local level when supplied with community-specific materials and labor-market variables. The CEA formula is not as accurate on a local level, but it should provide a reasonably accurate job-creation estimate at a state and national level across the NPS system.

In addition to data provided by the NPS in its *FY 2017 NPS Asset Inventory Summary Report 2017_09_30*, this report uses publicly available information from the U.S. Census Bureau on metropolitan-area boundaries and the U.S. Bureau of Labor Statistics on unemployment (as of August 2018). Data analysis is based on the "State" field supplied by the NPS; the state information for some entries was modified to better reflect the on-the-ground physical location of some assets in multistate parks.