

escalent

The Funding Gap in Rural America

Research Methodology:
US Rural Community Facility Capital Needs Study



AUGUST 2023



Introduction

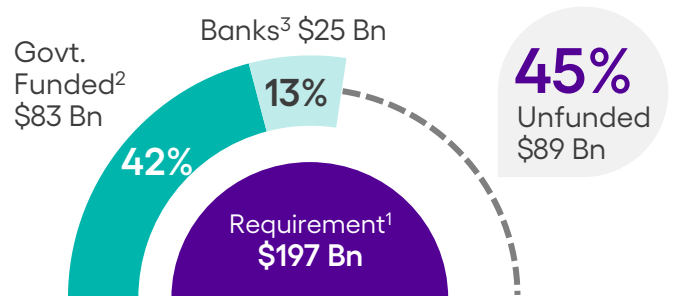
Rural communities across America are struggling to get the funding they need to support critical infrastructure, such as hospitals and fire stations, to serve their citizens. Driven by years of population decline, 149 hospitals in rural America have either closed down since 2010, or no longer provide in-patient services.¹ As current policies limit investment in community facilities, the funding gap is predicted to compound over the next several years.

In June of 2023, Escalent conducted a study to estimate the capital shortfall for community facility development in rural America. We found that community facilities in rural America are grossly underfunded as of 2023, and that this gap is expected to grow drastically over the next five to 10 years. This persistent underfunding poses a serious and growing threat to rural communities.

- The annual CAPEX funding gap in the US stands at \$182 billion, while the CAPEX funding gap of rural America accounts for \$89 billion. Given our highly conservative CAPEX estimation, we believe the actual funding gap to potentially be much greater.
- The annual CAPEX requirement in rural US amounts to \$197 billion.

FIGURE 1

Total capital expenditure (CAPEX) requirements, funding, and shortfall for community facilities in Rural America.



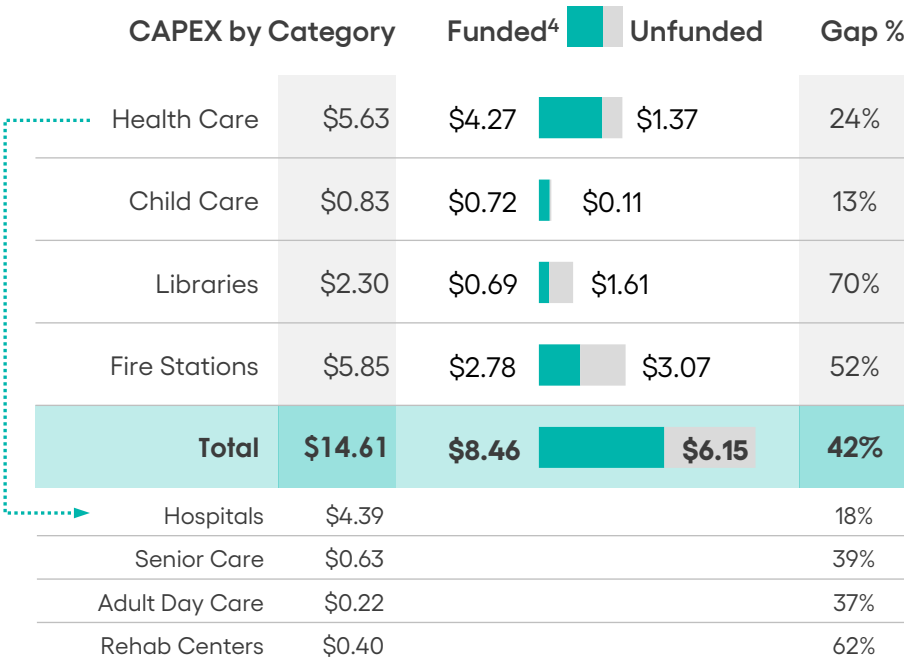
- Government funding addresses an estimated \$83 billion of that need, while the traditional banking sector is estimated to only address 13% of the requirement.
- Based on these findings, a funding increase of 82% from the current level will be needed to bridge the annual CAPEX funding gap for community facilities in rural America.

¹Rural Hospital Closures. University of North Carolina, The Cecil G. Sheps Center for Health Services Research.

FIGURE 2

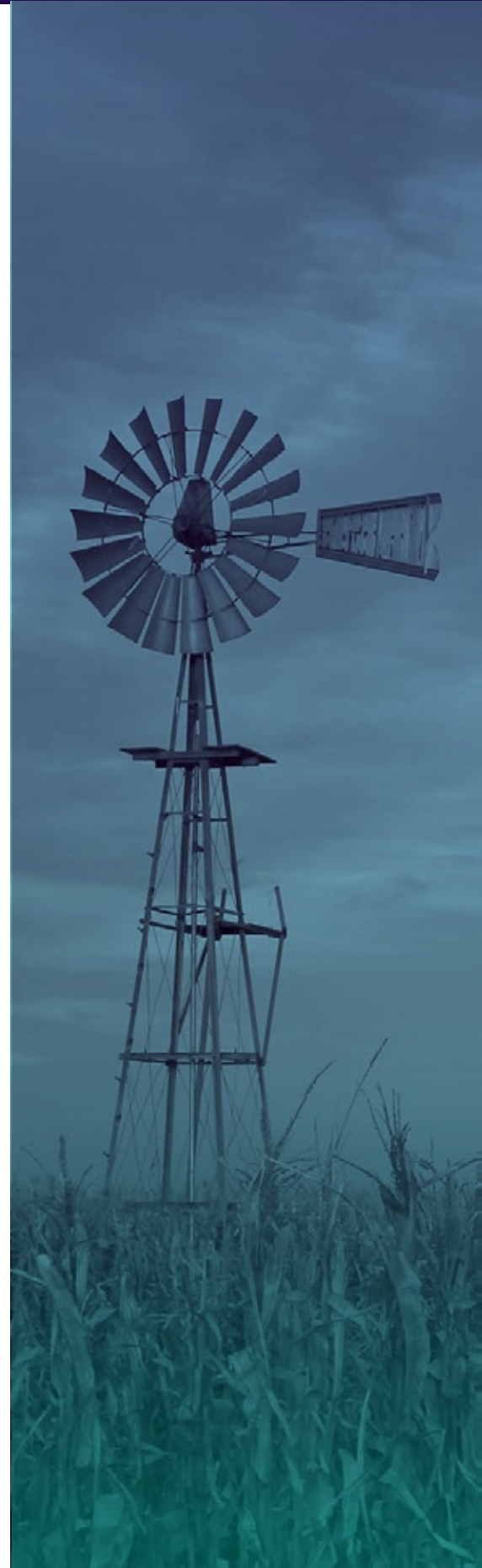
CAPEX requirements for select rural community facility categories of interest.

(below numbers represent in USD billion)



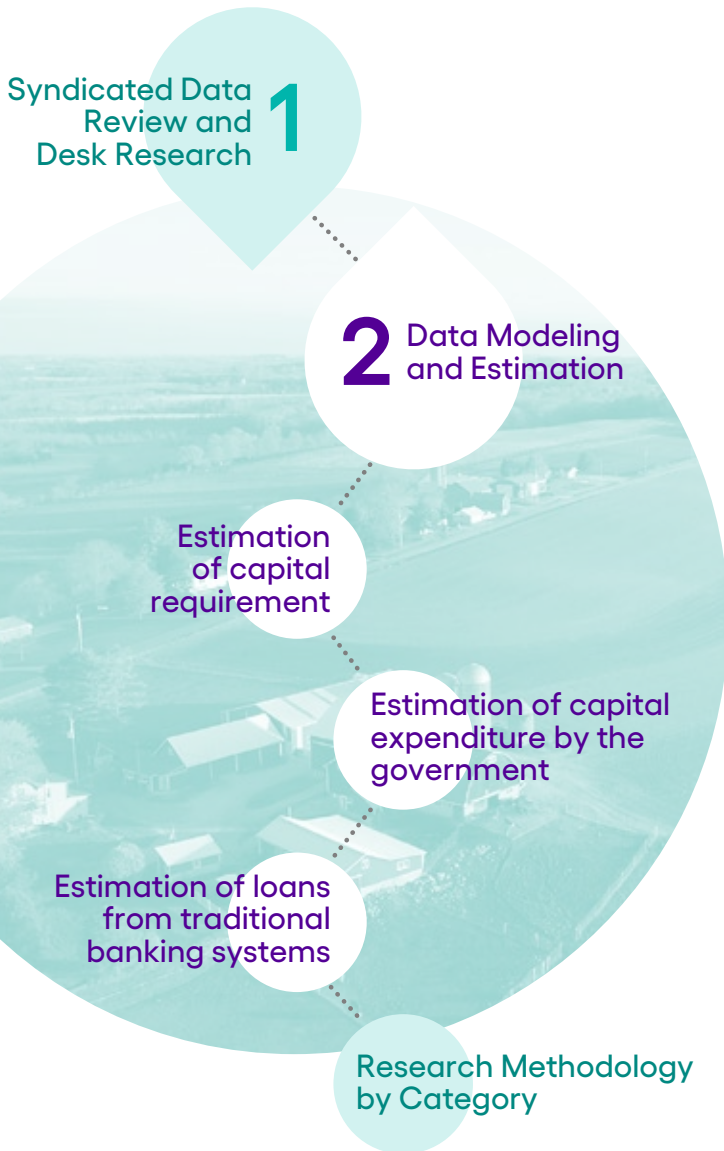
Drilling specifically into the selection of community facility categories shown in Figure 2, a combined funding gap exists of over \$6 billion annually that is not currently addressed by government funding, nor traditional banking.

To arrive at our findings, we analyzed the current capital expenditure requirement for select community facility categories and associated funding from the government and the traditional banking system. In addition to secondary research, we created a bottom-up model using exhaustive and intensive research using a wide range of sources over five to six weeks. In this paper, we'll explore the research methodology used to derive our findings.



Research Methodology

To determine the capital needs for the development of US rural community facilities, we conducted extensive secondary research, followed by data modeling and estimation for 15 categories across healthcare, education, public infrastructure, and public facilities sectors.



Phase 1: Syndicated Data Review and Desk Research

To determine the capital needs for the development of US rural community facilities, we conducted extensive secondary research, followed by data modeling and estimation for 15 categories across healthcare, education, public infrastructure, and public facilities sectors.

Phase 2: Data Modeling and Estimation

Bottom-up Approach

We took a bottom-up approach to fill in any gaps not uncovered in our secondary research.

Estimation of capital requirement

We determined funding requirements at the state or overall US level and rolled up to size the overall rural America funding requirement for each sub-category. Wherever rural-level data was not available for requirement and funding for specific categories, an urban-rural population ratio was applied to estimate the data points.

We used the urban-rural population split assumption as a base to derive the number of people who need these community facilities. We then estimated the number of facilities needed to accommodate an increasing population and multiplied by the average cost to build one facility to reach the rural CAPEX requirement.

(continued)

Phase 2: Data Modeling and Estimation

(continued)

Estimation of capital expenditure by the government

To determine available funding, we used US Census data for local and state expenditures where data is available to estimate capital expenditure for community infrastructure at state and local government levels, including pass-through funds by the federal government.

Estimation of loans from traditional banking systems

We began with a top-down approach to source loan information from published sources such as FDIC Quarterly Reports, Bankstrategist.com, community development financial institutions (CDFIs), and Small Business Administration (SBA). Because traditional banking system loan data is only available at the aggregate level, once we got to the category level, we had to apply more assumptions to reach the rural contribution figure.

We considered loans from community and non-community banks, CDFIs, and SBA, making assumptions about which proportion of loan categories would reflect rural category share. In select categories, we applied a discount factor of 50% to our calculated CAPEX gap.

Expert Validation: To validate available estimates and assumptions, we interviewed and gathered input from three subject matter experts in the fields of rural economic development, USDA, and community banking.

Research Methodology by Category

Healthcare, child care, libraries, and fire stations together present a major CAPEX funding gap in community facilities development in the US. CAPEX shortfall for these categories stands at \$29 billion in the US and \$6 billion in rural America.

The following methodology discussion focuses on seven key categories:

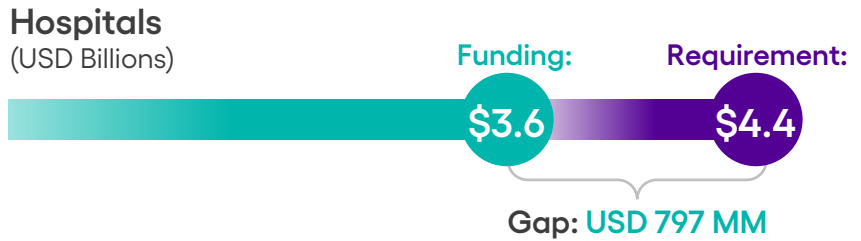
1. Hospitals
2. Senior Care (including Nursing Homes and Assisted Living Facilities)
3. Adult Day Care
4. Rehab Centers
5. Child Care
6. Libraries
7. Fire Stations

Capital Building, Little Rock, Arkansas

Hospitals



Total capital expenditure (CAPEX) requirements, funding, and shortfall for Hospitals in rural America*



Capital Expenditure Requirement

To identify the capital expenditure requirement for hospitals, we devised various scenarios based on hospitals per capita and hospital beds per capita. We based our calculations on hospital size, including:

- Average-sized hospital (120 beds)
- Micro-hospitals (60 beds)
- Critical access hospitals (25 beds)

We did not consider large hospitals, assuming the absence of such hospitals in rural areas of the US.

For hospitals per capita scenarios: We identified the number of respective-sized hospitals needed to be constructed in the US, and additional hospitals required per 1,000,000 population as per the global country average.

Assumptions

- Assumed the national average of construction of one large/average hospital to determine total construction cost of additional average-sized and micro-hospitals in the US
- Assumed the share of rural hospitals based on current percentage of hospitals in rural and urban settings through American Hospitals Association data² to determine share of construction cost for average-sized and micro hospitals in the rural US

For hospital beds per capita scenarios: We identified the current number of community hospital beds in the US, and the additional beds required per 1,000 population as per the OECD country average.

Assumptions

- Assumed the number of large/average-sized and micro-hospitals hospitals needed to be constructed in the US based on additional beds
- Assumed national average of construction of one large/average hospital to determine total construction cost of additional average-sized/micro/critical access hospitals in the US
- Assumed the share of rural hospitals based on current percentage of hospitals in rural and urban settings through American Hospitals Association data³ to determine the share of construction cost for average-sized/micro/critical access hospitals in the rural US

We chose the “critical access hospitals of 25 beds and hospitals per capita data” scenario to identify the capital expenditure funding gap, as we determined that critical access hospitals are the major type of hospitals in rural areas of the US. We assume that the standing capital expenditure will be spread over a period of 10 years.

Government Funding

We identified the total government funding on the capital outlay of hospitals through data from Urban Institute⁴.

Assumptions

- Assumed share of government funding for capital for hospitals in rural US based on share of hospitals in rural and urban settings through American Hospitals Association data

Sources

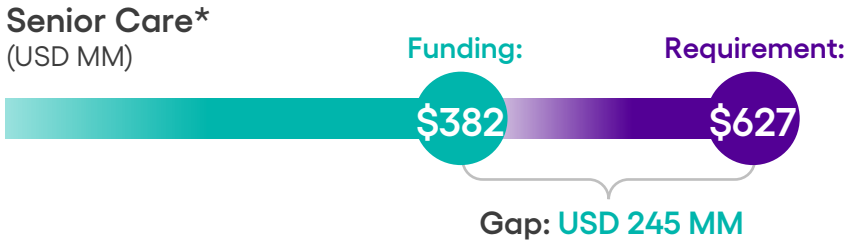
Center for Healthcare Quality and Payment Reform (CHQPR), Saving Rural Hospitals

Notes: We have considered the data anywhere between 2017 and 2022 to estimate the current gap in funding and these figures have not been adjusted for inflation; The above figures of requirement, funding, and gap include only capital expenditure (CAPEX) data. (Source: Escalent Analysis)

*Rural hospitals are those not located within a metropolitan area (urbanized area of 50,000 or more population or are adjacent to such a county and linked to it based on a high degree of social and economic integration).

Senior Care (Including Nursing Homes and Assisted Living Facilities)

Total capital expenditure (CAPEX) requirements, funding, and shortfall for Senior Care in rural America*



Nursing Homes

Capital Expenditure Requirement

We first identified the total number of elderly population above 65 years of age in the US, the total number of people living in nursing homes, and how many of those people are above age 65. We then calculated the percentage of population above age 65 staying in nursing homes as compared to the total population above age 65 in the US.

Next, we estimated the number of people above 65 years of age who would live in nursing homes in 2030 to estimate the additional number of people who would require nursing homes. We found the number of existing nursing homes with average bed count and estimated the average number of beds required by people above age 65.

We then estimated the number of additional nursing home facilities that need to be built by 2030 by dividing the initial number by the average number of beds for people above age 65. Using the average cost of building one facility, we calculated the total standing and annual CAPEX requirement for nursing homes in the US by 2030.

Finally, we applied the rural cut of 20% to the calculated CAPEX requirement to reach the rural requirement.

Government Funding

From the total national healthcare capital expenditure, we eliminated the share of expenditure that goes directly to hospitals to calculate funding for other healthcare infrastructure. The share of CAPEX requirement for nursing homes and continued care retirement communities was assumed to be the same as the share of this category's total healthcare infrastructure expenditure (O&M and CAPEX). Using this CAPEX share, the total CAPEX funding for nursing homes and continued care retirement communities was calculated.

We then subtracted the continued care retirement communities share to calculate the CAPEX funding for nursing homes only and applied the rural cut of 20% to estimate funding for nursing homes in the rural US.

Sources

KFF, Consumer Unified (ConsumerAffairs)

Notes: We have considered the data anywhere between 2017 and 2022 to estimate the current gap in funding and these figures have not been adjusted for inflation; The above figures of requirement, funding, and gap include only capital expenditure (CAPEX) data. Includes Nursing Homes and Assisted Living Facilities. (Source: Escalent Analysis)

*Rural areas are defined as a territory encompassing less than 2,000 housing units or with a population of less than 5,000.

Senior Care (Including Nursing Homes and Assisted Living Facilities)

Assisted Living Facilities

Capital Expenditure Requirement

Capital expenditure was estimated by forecasting the need for new assisted living facilities by 2030 and then annualizing the requirement. The existing number of assisted living facilities and 65+ years population using assisted living facilities was used to estimate the average number of people per facility in a year in 2021.

To estimate the data for 2030, we first looked at the expected increase in the 65+ years population. Based on the existing percentage of 65+ years population using assisted living facilities, the total number of 65+ years needing assisted living facilities in 2030 was estimated.

Using the average number of people per assisted living facility, the total number of assisted living facilities needed by 2030 was calculated. From here, the need for additional assisted living facilities by 2030 was estimated. Using reliable data sources providing the average cost of setting up new assisted living facilities, capital funding requirement at the US level was estimated. The urban-rural population split was used to reach the rural capital requirement.

Government Funding

It has been assumed that capital funding from the government meets 50% of the capital requirement for assisted living facilities. This percentage has been estimated based on the average share of government funding (federal, state, and local) for other healthcare facilities such as hospitals, child care, nursing homes, and rehab centers, which currently stands at 52%. *Government funding data for Assisted Living Facilities was unavailable.*

Sources

Haven Senior Investments, National Investment Center for Seniors Housing & Care (NIC)

Notes: We have considered the data anywhere between 2017 and 2022 to estimate the current gap in funding and these figures have not been adjusted for inflation; The above figures of requirement, funding, and gap include only capital expenditure (CAPEX) data. Includes Nursing Homes and Assisted Living Facilities. (Source: Escalent Analysis)

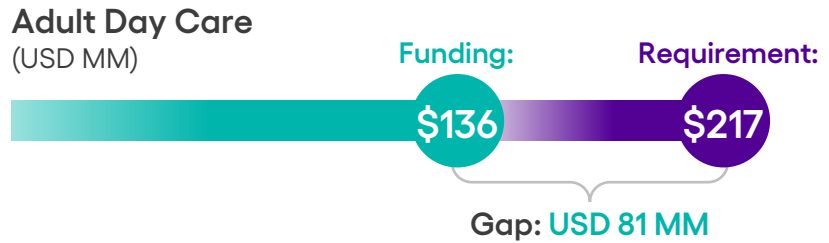
**Rural areas are defined as a territory encompassing less than 2,000 housing units or with a population of less than 5,000.*



Adult Day Care



Total capital expenditure (CAPEX) requirements, funding, and shortfall for Adult Day Care in rural America*



Capital Expenditure Requirement

The capital expenditure requirement was estimated by forecasting the need for new adult day care centers by 2030 and then annualizing the requirement. The existing number of adult day care centers and a daily number of participants at these centers was used to estimate the average number of participants using an adult day care facility in a year in 2021.

To estimate the data for 2030, we first looked at the expected increase in the 65+ years population. Using the existing percentage of 65+ years population attending adult day care centers, the total number of population 65+ years needing adult day care in 2030 was estimated.

The average yearly visits by an adult to a center were used to calculate the total number of visits by the 65+ year population and the total adult care centers needed by 2030. From here, the need for additional adult day care centers was estimated.

Using reliable data sources providing the average cost of setting up new adult day care centers, capital funding requirement for adult day care centers in the US was estimated. The urban-rural population split was used to reach the rural capital requirement.

Government Funding

It has been assumed that capital funding from the government meets 50% of the capital requirement for adult day care centers. This percentage has been estimated based on the average share of funding made by governments (federal, state, and local) in other healthcare facilities such as hospitals, child care, nursing homes, and rehab centers, which currently stands at 52%. Government funding data for Adult Day Centers was unavailable.

Sources

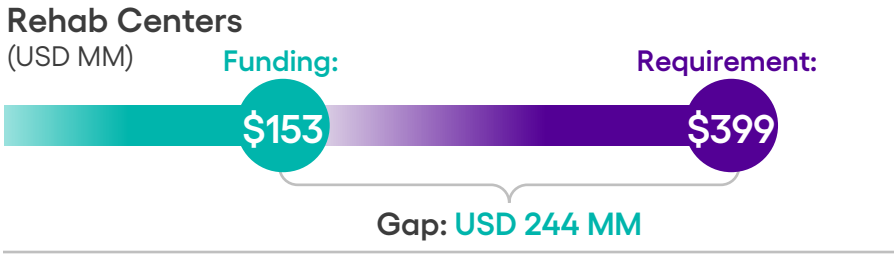
Haven Senior Investments, National Investment Center for Seniors Housing & Care (NIC)

Notes: We have considered the data anywhere between 2017 and 2022 to estimate the current gap in funding and these figures have not been adjusted for inflation; The above figures of requirement, funding, and gap include only capital expenditure (CAPEX) data. (Source: Escalent Analysis)

*Rural areas are defined as settlements with < 2,500 residents.

Rehab Centers

Total capital expenditure (CAPEX) requirements, funding, and shortfall for Rehab Centers in rural America*



Capital Expenditure Requirement

We first identified the total population above 12 years of age needing substance use treatment and the total number of substance use treatment facilities available in the US. We also identified the total number and percentage of people currently receiving treatment and those not receiving treatment in the US. Through this, we arrived at the number of patients receiving treatment per facility.

We then assumed that the number of people above age 12 who would get treatment from substance use treatment facilities would double by 2025 due to government programs, and estimated the additional number of people who would require treatment facilities. We further estimated the additional number of treatment facilities that would be needed to cater to these additional patients.

Using the average cost of building one facility, we calculated the total standing and annual CAPEX requirement for rehab centers or clinics in the US by 2025. We finally put the rural cut of 20% on the calculated CAPEX requirement to reach the rural requirement.

Government Funding

From the total national healthcare capital expenditure, we eliminated the share of expenditure that goes directly to hospitals to calculate the funding for other healthcare infrastructure.

The share of CAPEX requirement for other health, residential, and personal care was assumed from other healthcare infrastructure. Further, the share of rehab centers was estimated based on proportionate share of rehab centers of the total other health, residential, and personal care.

We finally put the rural cut of 20% on the calculated CAPEX funding by government to reach the overall funding for rural US.

Sources

US National Health Expenditure, Substance Abuse and Mental Health Services Administration (SAMHSA), [Whitehouse.gov](https://www.whitehouse.gov)

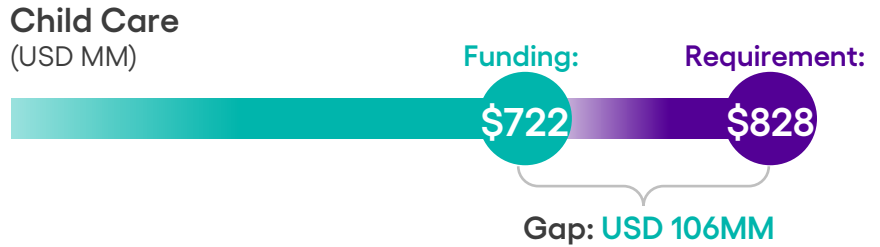
Notes: We have considered the data anywhere between 2017 and 2022 to estimate the current gap in funding and these figures have not been adjusted for inflation; The above figures of requirement, funding, and gap include only capital expenditure (CAPEX) data. (Source: Escalent Analysis)

*Rural areas are defined as a territory encompassing less than 2,000 housing units or have a population of less than 5,000.

Child Care



Total capital expenditure (CAPEX) requirements, funding, and shortfall for Child Care in rural America*



Capital Expenditure Requirement

We extracted the number of children who needed child care in urban and rural US from the report, *Child Care in 35 states: What we know and don't know*⁵. From the same report, we identified the number of children in the rural US needing formal child care centers and family child care homes.

We assumed a single child care center has a capacity of 76 children, while child care homes have a capacity of 10 children. This helped us identify the number of child care centers and child care homes needed in the rural US to fill the need. We identified the cost of setting up a single child care center and child care home in the US to reach the overall cost of setting up child care centers and child care homes in the rural US.

We further identified the renovation cost of existing child care centers in the rural US to determine the overall funding requirement (new child care centers + child care homes + renovation cost of existing child care centers). Because data available in the report covered only 35 states, we extrapolated the data for all 50 states to determine the overall US gap. The standing capital expenditure is assumed to be spread over a period of five years.

Government Funding

Per our secondary research, we found that federal, state, and local government spend 11% on capital outlay for education.⁶ Hence, we considered the same (11%) for child care capital expenditure to determine the total funding for child care for the US.

Assumptions

- We assumed the percentage of child care facilities in rural US based on the urban-rural population split to calculate funding for child care in the rural US.

Sources

Urban Institute, Bipartisan Policy Center, Self-Help Org

Notes: We have considered the data anywhere between 2017 and 2022 to estimate the current gap in funding and these figures have not been adjusted for inflation; The above figures of requirement, funding, and gap include only capital expenditure (CAPEX) data. (Source: Escalent Analysis)

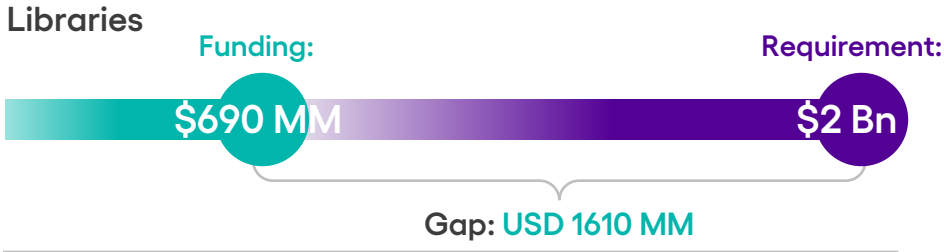
Rural areas are defined as a territory encompassing less than 2,000 housing units or have a population of less than 5,000.

⁵Smith, Linda K., et al. Child Care in 35 States: What We Know and Don't Know. Bipartisan Policy Center, 2021.

⁶"State and Local Backgrounders Elementary and Secondary Education Expenditures." *Urban Institute*, <https://www.urban.org/policy-centers/cross-center-initiatives/state-and-local-finance-initiative/state-and-local-backgrounders/elementary-and-secondary-education-expenditures>.

Libraries

Total capital expenditure (CAPEX) requirements, funding, and shortfall for Libraries in rural America*



Capital Expenditure Requirement

The capital requirement was sourced from the report, *America's public libraries need billions of dollars for construction and renovation*⁷. We spread this funding requirement over five years to reach the annual capital requirement for libraries.

To reach the rural number, we identified the number of libraries in the US and the total number of libraries in rural areas. The percentage of libraries in the rural US was calculated and applied to the overall requirement.

Government Funding

The capital funding figure includes funding from federal, state, and local governments. To reach the rural number, we identified the number of libraries in the US and the total number of libraries in rural areas. The percentage of libraries in the rural US was calculated and applied to the overall funding.

Sources

Institute of Museum and Library Services, American Library Association

Notes: We have considered the data anywhere between 2017 and 2022 to estimate the current gap in funding and these figures have not been adjusted for inflation; The above figures of requirement, funding, and gap include only capital expenditure (CAPEX) data; *Actual gap for libraries is USD 2 Bn; however, this has been factored by 50%; Capex Gap has been estimated after deducting government funding and does not consider loans from traditional banking system.

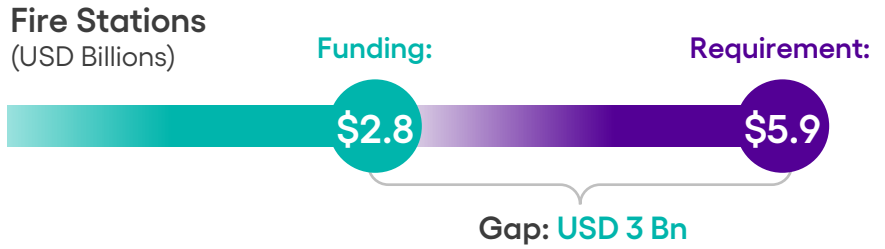
* Rural areas are divided into three sectors: Fringe (rural territory ≤ 5 miles from an urbanized area as well as rural territory ≤ to 2.5 miles from an urban cluster); Distant (rural territory > 5 miles and ≤ 25 miles from an urbanized area as well as rural territory > 2.5 miles but ≤ 10 miles from an urban cluster); and Remote (rural territory > 25 miles from an urbanized area and > 10 miles from an urban cluster). A discount factor of 50% was applied for a conservative approach and to avoid overestimation.

⁷America's public libraries need billions of dollars for construction and renovation. American Library Association, 2021.

Fire Stations



Total capital expenditure (CAPEX) requirements, funding, and shortfall for Fire Stations in rural America*



Capital Expenditure Requirement

The US capital requirement was estimated from the CAPEX requirement data provided by the National Fire Protection Association⁸. This standing CAPEX requirement was spread over a period of 10 years to reach to an annual figure.

To calculate the rural number, we identified the total number of fire departments in the US and the total number of fire departments in the rural US serving communities with a population of less than 2,500. We applied the rural percentage to the requirement.

Government Funding

This funding was estimated by aggregating the CAPEX funding data from federal grants allocated for firefighting, and local and state capital expenditures on firefighting. We applied the rural percentage to the funding to derive the rural CAPEX gap.

Sources

Short Elliott Hendrickson, U.S. Department of Agriculture, National Fire Protection Association, Congressional Research Services, Urban Institute

Notes: We have considered the data anywhere between 2017 and 2022 to estimate the current gap in funding and these figures have not been adjusted for inflation; The above figures of requirement, funding, and gap include only capital expenditure (CAPEX) data. (Source: Escalent Analysis)

*Rural areas are defined as settlements with < 2,500 residents.

⁸Fahy, Rita, et al. *US Fire Department Profile 2020*. National Fire Protection Association, 2022.

Additional Categories

While this paper provides a deep dive into the research methodology for select categories, we applied the same bottom-up approach to the remaining categories in the study.

Education

- Schools
- Libraries
- Child Care

Public Infrastructure

- Water infrastructure (includes wastewater and drinking water)
- Transport infrastructure
 - Bridges, Aviation, Transit, Highway
- Broadband
- Electrical Infrastructure

Healthcare

- Hospitals
- Assisted Living Facilities
- Adult Care
- Nursing Homes
- Rehab Centers

Public Facilities

- Parks & Recreational Centers
- Courthouses
- Fire Stations

Conclusion

The CAPEX funding gap for rural communities is substantial and will impair growth for smaller communities who are dependent on these critical facilities for survival. The inability to bridge the current gap will further deteriorate the state of community facilities, resulting in a gap of \$1.2 trillion in rural America by 2030.

Closing the gap requires a change in sourcing strategies, bringing together all sources of public, private, and nonprofit funding.

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Library Requirement and Funding - "America's public libraries need billions of dollars for construction and renovation". *American Library Association*, May 2021, www.ala.org/advocacy/sites/ala.org.ala.org.advocacy/files/content/libfunding/fed/public%20library%20construction%20needs.pdf.

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