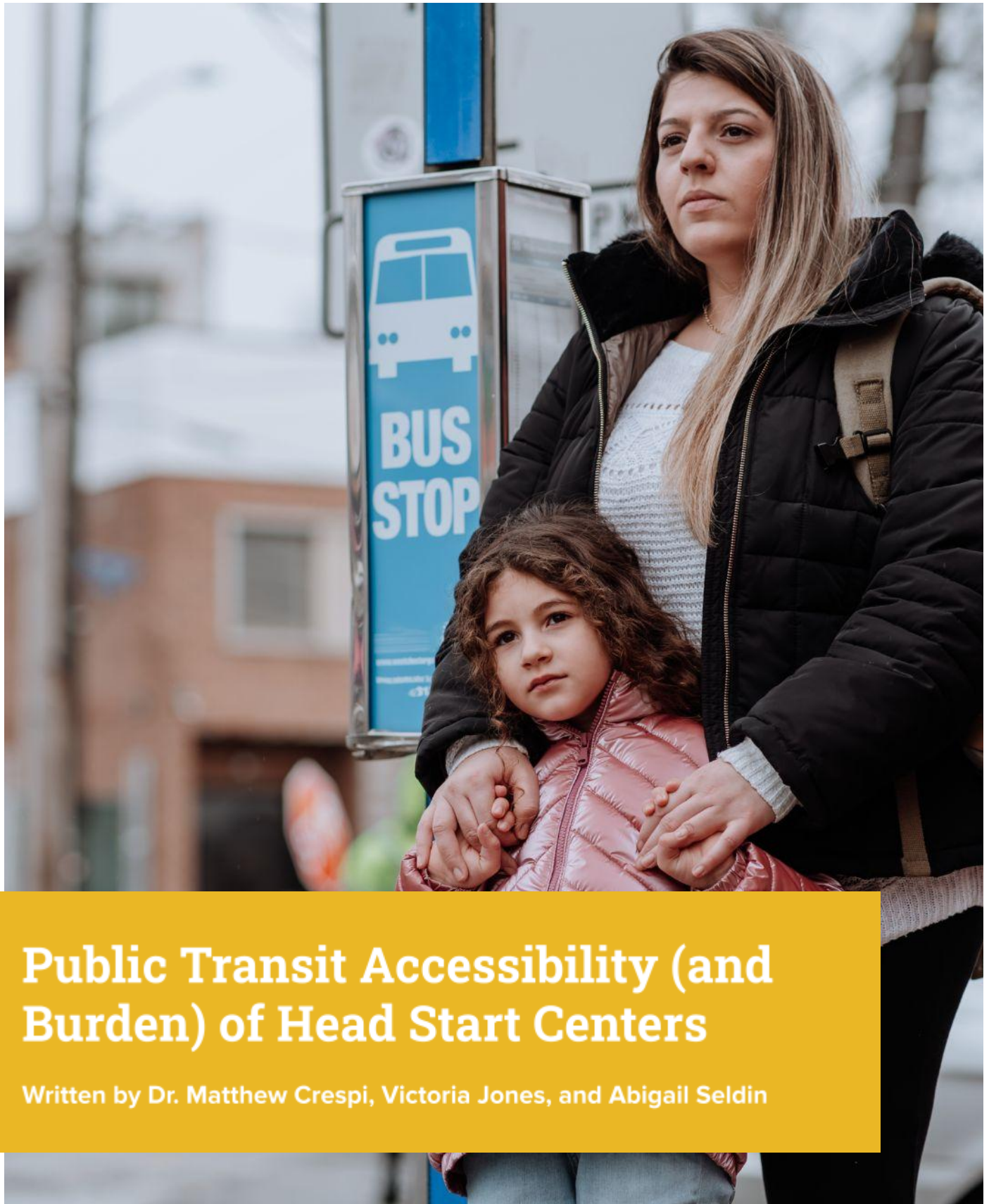




Public Transit Accessibility (and Burden) of Head Start Centers

Written by Dr. Matthew Crespi, Victoria Jones, and Abigail Seldin



Executive Summary

Since 1965, Head Start has served approximately 37 million children and families with high-quality early learning experiences and wraparound support in areas such as health and family economic stability. Administered by the US Department of Health and Human Services, Head Start operates through a federal-to-local funding model. Grant recipients include school districts, nonprofit and for-profit groups, faith-based institutions, tribal governments, and more; these entities often blend funding from multiple sources, from state or local preschool dollars to child care vouchers, with federal Head Start dollars to provide services in their local communities.

One of the most successful anti-poverty programs in the United States, Head Start reduces costs—and increases revenue—for both state and local governments. Compared to control groups, Head Start alumni are less likely to require special education services in elementary school, less likely to be incarcerated, less likely to smoke, and more likely to receive immunizations. Single mothers of Head Start children have both higher earnings and labor market participation rates, compared to control groups and across multiple studies. The return on investment for each dollar spent on Head Start is estimated to be at least seven dollars.

Though a proven, high-impact program driving economic value, some Head Start programs still struggle to enroll and retain children. According to a previous report from the National Head Start Association (NHSA), one of the top barriers to enrollment and retention for some families is transportation. For this report, NHSA and the Civic Mapping Initiative (CMI) partnered to produce an interactive, national map and analysis measuring the distance between each Head Start location and the nearest fixed-route transit stop. With “walking distance” for a toddler defined as 0.2 miles, only 42% of Head Start programs have a transit stop accessible to their young students and their families. Still, an additional 19% of locations *do* have a stop within one mile, offering transit agencies across the country low-cost opportunities to support participating families and the critical early childhood workforce.

Though engagement between Head Start programs and transit agencies is inconsistent across the United States, new collaborations have arisen in Memphis, Cincinnati, and Cleveland over the past year since we circulated the preliminary results of this study. The first joint event between NHSA members and members of the American Public Transportation Association drew an enthusiastic audience of over a hundred in July 2023. Based on these early successes, our teams distilled new policy and practice recommendations to improve coordination across public transit and Head Start providers. As transit planners rethink service provision in a pandemic-changed world, expanding access to resources like Head Start is a way to expand ridership and improve not just physical mobility, but social and economic mobility as well.

Introduction

When Head Start was first launched in 1965, the idea of providing comprehensive health, nutrition, and education services to children experiencing poverty was revolutionary. The Head Start Model, developed over the decades, has been built on evidence-based practices and is constantly adapting—using the best available science and teaching techniques to meet the needs of local communities.

Administered by the US Department of Health and Human Services, Head Start operates through a federal-to-local funding model. Grant recipients include school districts, nonprofit and for-profit groups, faith-based institutions, tribal councils, and other organizations; these entities often blend funding from local and state governments with federal Head Start dollars to provide services in their local communities. Since its launch, Head Start has served approximately 37 million children and families with wraparound services that include no-cost early learning and support for health and family economic stability.

Today, nearly one million of our nation's most vulnerable children and families participate in Head Start annually. The majority are living below the federal poverty line, which is just \$30,000 for a family of four in 2023. Others are experiencing homelessness, are involved in the foster care system, or are receiving other public benefits. Participation in Head Start has been proven to break the cycle of poverty, affecting everything from high school graduation to teen parenthood and long-term adult health outcomes. Compared to control groups, Head Start alumni are less likely to require special education services in elementary school, less likely to be incarcerated, less likely to smoke, and more likely to receive immunizations. Single mothers of Head Start children have both higher earnings and labor market participation rates, compared to control groups and across multiple studies. One of the most successful anti-poverty programs in the United States, Head Start reduces costs—and increases revenue—for both state and local governments. The return on investment for each dollar spent on Head Start is estimated to be at least seven dollars.

Top Barriers from NHSA's Head Start United Report



A lack of **transportation** and outdated **geolocation** of center-based care



Various **family socio-economic issues** related to living in poverty, including housing instability, frequent moves, and an inability to be contacted reliably



Low income **eligibility limits** and a lack of subsidized alternatives



A lack of **overall supply**, especially of birth-to-three Early Head Start slots



Inadequate **hours of service** for some Head Start families



A **workforce crisis**, including hiring challenges, turnover, and difficulty finding diverse staff



A lack of **parent awareness** of Head Start's services and a perceived **bias** for school-based services

Though a proven, high-impact program driving economic value, Head Start still struggles to enroll and retain children facing transportation challenges: in a recent NHSA study, [Head Start United: Removing Barriers to Access for Children and Families](#), lack of transportation emerged as one of the most significant systemic barriers to enrollment and retention.

In the 2021-2022 program year, Head Start programs provided transportation to and from classes for about 100,000 children. Fewer than 100,000 children are served through the home-visiting option, leaving the rest to commute to more than 16,000 centers nationwide. Programs are allowed, but not required, to provide transportation based on community need. While many families could benefit from transportation services, programs often have to make difficult decisions with limited budgets, and there are significant barriers and costs associated with owning or leasing, maintaining, and staffing buses.

How do the rest of the children get to Head Start? Each day, nearly 800,000 children must commute with a caregiver, many of whom do not have regular access to a reliable car. Researchers at the [Brookings Institution](#) found that “hundreds of thousands of zero-vehicle households live out of transit’s reach, particularly in the South and in the suburbs.” Some families report spending multiple hours by bus to access Head Start; still others drop from the program when faced with a flat tire or car trouble.

With a two-pronged goal of scoping the transit challenge facing Head Start families and sourcing high-impact opportunities for improvement, National Head Start Association (NHSA) and the Civic Mapping Initiative (CMI) partnered to produce an interactive, national map and analysis measuring the distance between each Head Start location and the nearest fixed-route transit stop. With “walking distance” for a toddler defined as 0.2 miles, only 42% of Head Start programs have a transit stop accessible to their young students and their families. Still, an additional 19% of locations *do* have a stop within one mile; many locations are even situated along an existing transit route. We identified thousands of prospective low-cost opportunities for transit agencies around the country to support participating families and the critical early childhood workforce.

Though engagement between Head Start programs and transit agencies is inconsistent across the United States, new collaborations have arisen in Memphis, Cincinnati, Cleveland, and Alexandria over the past year since we circulated the preliminary results of this study. The first joint event between NHSA members and members of the American Public Transportation Association drew an enthusiastic audience of over a hundred in July 2023. Based on these early successes, our teams distilled new policy and practice recommendations to improve coordination across public transit and Head Start providers. Partnerships between Head Start agencies and local transit agencies are a (largely) untapped opportunity to support families accessing Head Start centers and other community resources.

“The bus stops are located far from our locations. Parents that use public transportation spend on average three to four hours on the bus for their child to attend the program.”

- Survey Respondent

As transit planners rethink service provision in a pandemic-changed world, a world in which demand from commuters is a little lower but the needs of riders are increasingly focused on life and family needs, expanding access to resources like Head Start is a way to expand ridership and improve not just physical mobility, but social and economic mobility as well.

Methods

We started with the location of each Head Start site (provided by the U.S. Department of Health and Human Services) serving as our anchor points, with collocated offerings being treated as a single site. Pins on the map correspond to GPS coordinates provided in the dataset.¹ From there, we used the Google Places API to identify the nearest transit stop to each location. For this project, a “transit stop” means a bus stop, a passenger rail station of any kind, or anything else Google’s data has coded as a “transit_station” (such as a ferry terminal or funicular). As not every provider of public transit shares data with aggregators like Google, we are unable to reliably differentiate between the absence of a transit stop and the absence of data on transit stops, though the missing transit agencies have a strong tendency to be among the smallest ones, affecting fewer matches in our data set.

Stops that were identifiable as Amtrak or Greyhound stops (either by one of those words in the description or URL, or by an “(E)” at the end of the stop name, which signifies a Greyhound stop), national providers of long distance inter-city travel, were removed and replaced with the next closest location identified as a transit station but not identifiable as an Amtrak or Greyhound stop, if one was available.

In cleaning the original data set provided by Health and Human Services (HHS), we filtered out rows in the US territories, and a low-double-digit number of lines of data were modified by hand when our usual processes resulted in an error (usually from some minor one-off quirk in either HHS or Google data).

Our data cleaning procedures resulted in a final dataset of 16,402 Head Start locations. Of the 16,402 Head Start locations, a transit stop was identified within five miles of 11,628 of them.

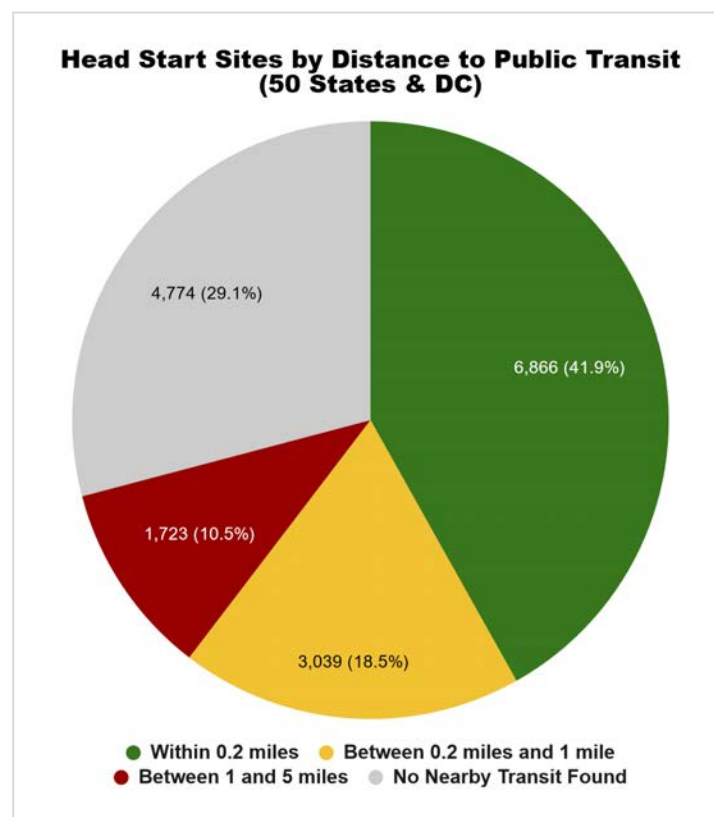
We calculated the straight-line (“as the crow flies”) distance between each school and its nearest transit station. While this method creates a known downward bias, it avoids the substantial noise in both directions associated with walking directions. Pedestrian infrastructure is not well mapped in most of the country (with only a “handful of alternative pedestrian paths” well documented), and imputing walking directions from road networks risks either missing a pedestrian path inaccessible to cars or assuming a dangerous highway is safe to walk along (Bolten and Caspi, 2021). The distances we used are therefore a lower bound on the walk required of staff and families commuting to the locations via public transit. The resulting locations and distances were plotted using Google Maps, with each node representing a Head Start location, colored to correspond to the calculated distance from transit.

More technical details can be found in Appendix B.

¹ According to HHS personnel, Head Start centers have the ability to change the coordinates associated with their center if the software used to suggest a location is inaccurate. For this reason, we skipped the usual investigation into how to get the most accurate geocoding of locations in a dataset.

Findings

Nationwide, about 42% of Head Start sites have a public transit stop within 0.2 miles (about a thousand feet), meaning almost three out of every seven locations have a transit stop within walking distance for a small child. These locations are colored green in the pie chart below and on the map. An additional 18.5% of sites have a transit stop more than 0.2 miles away, but within a mile; this distance may be walkable for some, but is difficult for a small child or an adult carrying a child. These sites are colored yellow in the chart and on the map. 10.5% of Head Start locations are one to five miles away from their nearest identified transit stop. These sites are in areas with at least some kind of public transportation, but they are not currently served. The 29% of sites colored yellow and red represent almost 5,000 individual locations (4,762) where small changes by transit agencies would improve Head Start accessibility for caregivers – and early childhood staff! – who do not have regular access to a reliable car.



The 29% of locations colored gray represent areas where local transit does not exist, or where the local transit agency does not share data with Google. The missing data problem is getting smaller every year as transit providers upgrade and modernize. Thanks to the Federal Transit Administration's efforts encouraging agencies to share data for federal mapping efforts, we expect the already steady pace of improvements to accelerate. For the gray nodes where there's simply no transit, however, we do not consider the lack of access to be a failure. Not every community, especially those in sparsely populated rural areas, needs or could sustain a transit agency. Still, Head Start does – and must! – operate in rural areas. Consequently, an ideal map wouldn't look all green (which would necessitate pulling Head Start out of communities that need it) but rather, mostly green *and* gray.

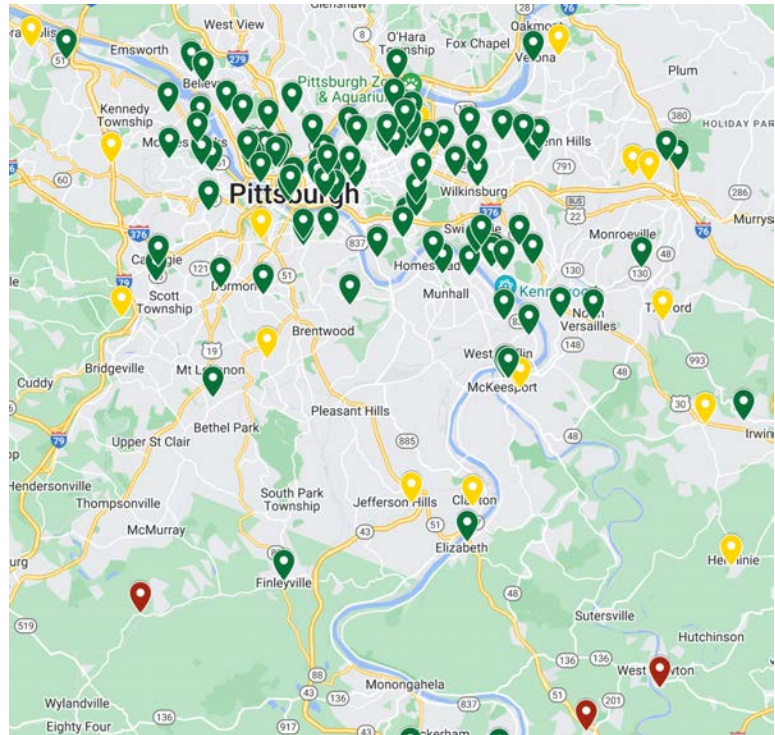
The national picture offers a first look at the breadth and scale of the transit challenges facing Head Start across the country, but those challenges are not evenly dispersed. Dense urban areas do better than most

places on transit access, and many don't even need to explicitly make Head Start a priority to have a lot of green nodes: it's enough to have a robust transit network serving a large and compact population. Elsewhere, providing good transit access requires coordination, both when selecting where to put Head Start sites and when making decisions about transit routes.

We observed that many cities offer good transit coverage for Head Start in the urban core, but not in the periphery of the transit network, where service becomes more sparse and routes are designed around commuting patterns.

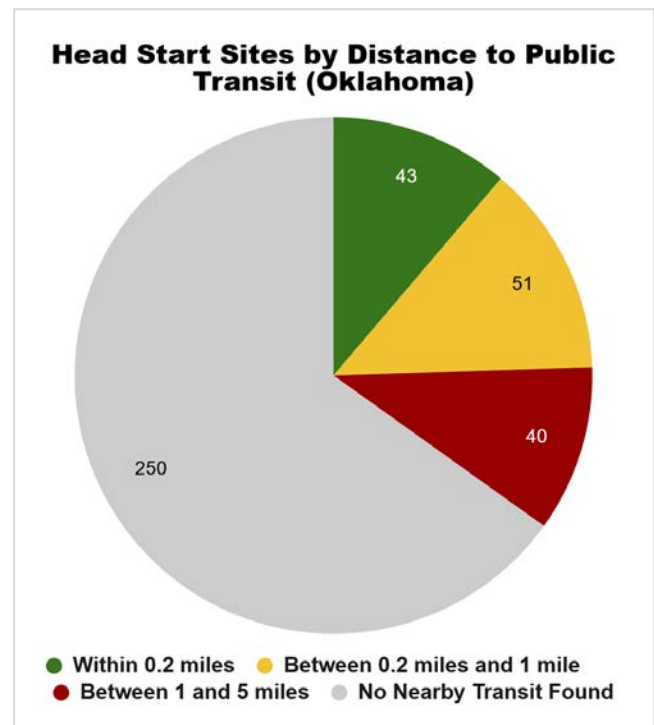
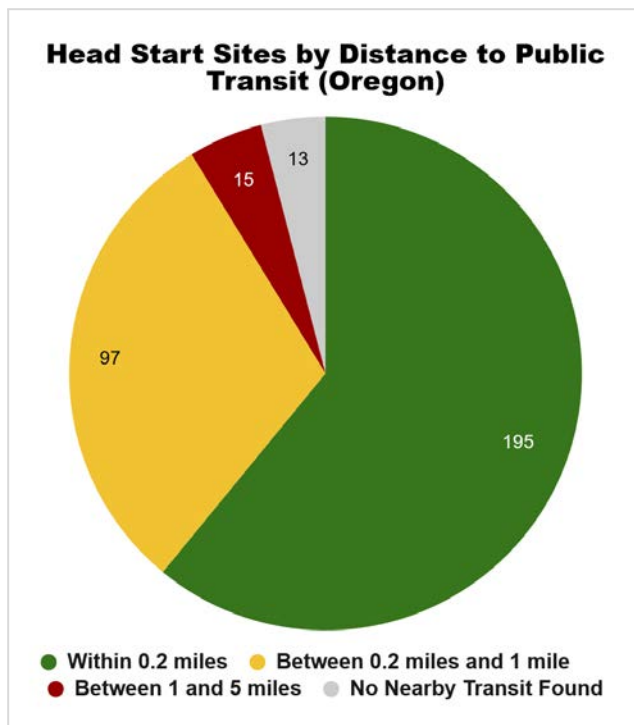
This map excerpt of Pittsburgh's Downtown, East End, and South Hills areas is a good example of this pattern. This area has a hilly geography with harsh winters, where carrying a toddler or pushing a stroller could pose extra challenges compared to, say, a flat area of Santa Barbara. Local conditions can turn otherwise manageable walking distances in the transit network's periphery into more serious obstacles.

In addition to patterns varying by density and community type, we also observed regional differences.



Some states provide more support to public transportation in general, while planning priorities vary by region. The west coast, for example, seems to make access a bigger priority than in much of the south and midwest. Let's compare two similar states: Oregon and Oklahoma. These two states have a similar population (4.2 and 4.0 million), lots of rural areas. (Oregon has slightly more people but an overall lower density). The two states even have similarly-sized larger cities; Oklahoma City has a larger population than Portland within city limits, though Portland's metro area is the larger one. Despite these similarities, their Head Start accessibility profiles are very different.





Ignoring the gray areas, which could be a sign of differing data availability or more Head Start rural activity in Oklahoma, the Head Start sites in Oregon are mostly within 0.2 miles of transit, whereas the green wedge in Oklahoma's graph is the smallest of the set. This clearly is about far more than Head Start prioritization, and is more a sign of how transit investment, acceptance, and enthusiasm can vary widely by region.

“When interpreting the results of this map, it’s important not to assume that a green node means the Head Start site has excellent transit service.”

A nearby stop is necessary for a site to be served well, but that stop then also needs to be served by a route, for a cost, and at times that work for Head Start families and staff.

Overall, for every three Head Start sites with a walkable stop, there are two more sites out there that are proximate to existing transit but beyond walking distance for Head Start families. In many cases, serving these sites would require only minor adjustments to existing bus routes. While there is a lot of room for improvement, there are also many success stories we can learn from alongside many opportunities to improve access to a critical service for many American families.

Local Profile: Memphis, TN

John Lancaster, Chief Development Officer at Memphis Area Transit Authority (MATA), learned about the National Head Start Transit Map through the American Public Transportation Association in April 2023. Mr. Lancaster shared, "Public transportation is more than just a way to connect people to places. It's a vehicle for opportunities. The Civic Mapping Initiative and the National Head Start Association project appealed to MATA because we continuously explore innovative solutions to enhance mobility options and accessibility throughout the Greater Memphis community."

With Mr. Lancaster's support and key context provided by local Head Start providers, MATA transit planners engaged with new data from the Civic Mapping Initiative and the National Head Start Association. The MATA identified three Head Start locations situated on existing bus routes that lacked stops within walking distance manageable for a toddler. MATA will open the three new bus stops in October 2023, in honor of Head Start Awareness Month. Additional changes – including expanding an on-demand transit zone to serve additional Head Start centers – are under consideration for 2024.

Sheronda Smith, President of the Tennessee Head Start Association, shared, "One of Head Start's core values is 'fostering a relationship with the larger community.' The National Head Start Association, Memphis Area Transit Authority, Porter-Leath, and Memphis Shelby County Schools are collaborating to serve as Head Start's larger community. Shorter commutes reduce barriers to accessing Head Start services, benefiting both the children and staff members involved. The additional bus stops also have the potential to boost attendance by keeping children enrolled, which directly impacts educational advancement. While staffing is a concern for all employers, closer bus stops can help recruit and retain staff. I am excited about how this affects the Memphis community and the potential it has to affect other communities in Tennessee."

"The collaboration with and support of MATA in ensuring that parents of young children have access to stops that are within 500 - 1,000 feet of a Head Start center is an absolute 'win' for everyone. These enhancements for parents improve the system for all riders, including staff. The entire community will benefit from the additional stops. It has been an honor to collaborate with MATA, Porter-Leath and the National Head Start Association on the City Mapping Initiative. What an awesome way to celebrate National Head Start Awareness Month!"

- Dr. Detris Crane, Head Start Director, Shelby County Schools

Local Profile - Lansing, MI



Dr. Nolana Nobles and a CACS bus. (Photo credit: CACS)

In 2018, Capital Area Community Services (CACS) Head Start reached out to the CEO of Capital Area Transit Authority (CATA) and asked if a representative from CATA would join the Head Start Policy Council. Craig Frazier, who had served as the transportation director for a school system, already had relationships with local Head Start and was appointed as CATA's representative. Mr. Frazier noted that the relationship blossomed in 2020, "because of our relationship, we were able to immediately assist CACS with food delivery during the pandemic. This has also grown into other areas of assistance."

Dr. Nolana Nobles, associate director at Capital Area Community Services, shared, "An immediate change enabled by our close relationship with CATA is that parents have expressed more confidence in their ability to assure their children are in school on time, safely. Additionally, families are utilizing the public transit system more effectively, to get to work, medical appointments and to take their children to engage in the richness that the Lansing community provides, such as parks and museums."

To address transit access issues faced by their students, CACS operates its own buses and has partnered with the local public school district. "We are very fortunate to have written agreements with some of our public-school transit providers. These relationships allow us to share the school buses provided by the school districts, to transport our Head Start children to sites we share in the district. I am very proud of the comprehensive and coordinated approach we utilize to assure the best experience for children and families served in the Greater Lansing Community," said Dr. Nobles. The partnership with the school district is especially critical in light of the national driver shortage; in response to the hiring difficulty, CACS has reduced the number of bus routes.

Following a 2023 review of the new National Head Start Transit Map, CATA is considering new bus stops at two CACS locations in Lansing.

"The timing for such a collaboration as ours is now, allowing organizations like CACS and CATA to demonstrate their commitment to the community. This collaboration is in-line with CATA's mission statement which is, 'To meet the mobility needs of our region by providing innovative solutions in partnership with the communities we serve.'"

- Craig Frazier,
Capital Area Transit Authority

Policy Recommendations

Transportation access is a critical support for enrollment, retention, and child safety. With that in mind, we have included recommendations for core stakeholders. These recommendations are drawn both from our observations and from existing practices at Head Start centers and transit agencies across the country, though they are not yet widely adopted.

Recommendations for Local Transit Agencies

- Ensure transit planners have a list of current Head Start locations.
- Engage with Head Start providers and families in transit planning.
- Make transit routes easy to find and understand.
- Set a specific definition of “accessible” to reflect the needs of families with young children.
- Establish or clarify rules about young children using paratransit.

Engage with Head Start providers and families in transit planning. All local transit agencies should, as standard practice, include Head Start families and program leadership in their planning, priority-setting, and decision-making processes. Regular engagement between programs, families, and transit agencies will increase knowledge and understanding about the evolving needs of the community’s most vulnerable constituents and provide agencies with valuable feedback on transit changes being considered. It’s increasingly incumbent on transit agencies to plan for far more than the simple home-to-work commuting patterns many systems were set up to handle. Making sure route networks prioritize connection between housing areas and community resources, such as Head Start locations, is a critical first step in ensuring access for those who need it most.

Set a specific definition of “accessible” to reflect the needs of families with young children.

Whether using a stroller, walking alongside, or carrying a small child, caregivers traveling with young children simply aren’t as mobile as the average commuter. Transit stops should be placed as close as possible to Head Start centers and similar community resources. We recommend no more than 0.2 miles, though within 0.1 miles is preferable. We also recommend setting goals around route schedules and trip lengths. Route schedules should enable parents to drop off a child and make it to work on time; we propose that no parent should have to spend more than 45 minutes (though ideally less than 30) on public transportation with a small child for pick-up or drop-off. Public transit routes and schedules, as well as coordination at common transfer points, should prioritize this goal.





Establish or clarify rules about young children using paratransit. Between changing commuting patterns and promising advances in technology, the use of paratransit is on the rise nationwide. Paratransit is usually some form of on-demand transportation provided by a public transit agency, and it often involves smaller vehicles making more specialized trips based on demand. While there are many challenges in operating and growing a reliable paratransit service, one that gets comparatively little attention is whether or not young children can ride safely. Paratransit services are far more likely than fixed route offerings to use smaller vehicles which would require a car seat to be safe for young children. At this time, very few paratransit offerings even mention child safety. As paratransit expands in use, it's long past time to address the issue of car seats and child safety. Local transit agencies with paratransit programs should commit to providing safe options for families, especially where these options are poised to or already often replace traditional bus service.

Make transit routes easy to find and understand. Potential riders need to be able to quickly find out what public transit options are available to them and the relevant timetable. In some communities, it's as easy as a quick online query, but many transit agencies don't share General Transit Feed Specification (GTFS) data with trip mapping and planning services like Google Maps. Among these agencies, it should be a priority to publish a full list of detailed stop locations for each route and approximate timetables. Agencies should also have (and make clear) policies around route flexibility. For example, some transit agencies allow riders to request extra stops along the route or even minor detours. While these policies won't work everywhere, they can't work at all if riders don't know about them. For a caregiver with a young child, clear information on routes and potential flexibilities can make a significant difference. Finally, we hope it should go without saying that all route and timetable information should be accessible in multiple languages and at a basic reading level. While many transit agencies are doing exemplary work in this area, we found that Head Start providers are often unaware of route flexibility and/or demand-response options. Closer collaboration between Head Start and transit agencies will ensure greater community knowledge of these investments.

Recommendations for State Agencies

- Incentivize partnerships between public schools, Head Start programs, and local municipalities.
- Invest in free transportation for certain populations.

Incentivize partnerships between public schools, Head Start programs, and local municipalities. State agencies have a number of tools at their disposal for encouraging partnerships between entities and programs with overlapping service areas. These include soft interventions, like introductions, or hard interventions, like incentive structures. A natural vehicle for this work is the agreement that schools and Head Start programs are required to have under both the federal Head Start Act and the federal Every Student Succeeds Act. States should lay the groundwork for local and regional coordination, particularly when service areas overlap.

Invest in free transportation for certain populations, especially for families with low incomes, with children in foster care, or those experiencing homelessness. Cost can be a significant barrier to accessibility of public transportation, rendering almost all other fixes irrelevant. States often have the best data on who's most in need and the best ability to reach those families, through administration of programs like foster care, Medicaid, Supplemental Nutrition Assistance Program (SNAP), and Temporary Assistance for Needy Families (TANF). Low-income families, households with foster children, and families experiencing homelessness may be most in need of transportation assistance, but working with transit providers to offer discounted fares to a wider range of struggling families could have a meaningful impact on access to many important resources, including but certainly not limited to Head Start.



Recommendations for Congress and Federal Agencies

- Make access to Head Start facilities a component of transit funding grant applications.
- Provide ongoing Quality Improvement Funding to enable expanded transportation options.

Make access to Head Start facilities a component of transit funding grant applications (and subsequent decision making). Highlighting the importance of access to Head Start facilities in applications for federal transportation funding will ensure Head Start's inclusion in priority-setting and decision-making for local agencies using federal resources to support local infrastructure.

Provide ongoing Quality Improvement Funding to enable expanded transportation options. Quality improvement funds are another avenue by which the federal government can offer direct financial support for customized local solutions.

Practice Recommendations

Recommendations for Head Start Programs

- Utilize this map as a resource for program planning activities.
- Build connections with local transit agencies and other potential partners.
- Invite transit agency representatives to join your Policy Council.
- Consider co-location with other community programs.

Utilize this map as a resource for program planning activities. We intentionally developed this publicly-available map so that it can inform users across agencies. Head Start programs should use this resource throughout their activities, including program planning meetings, community assessments, and transportation meetings. This map can inform decisions such as: center location (or relocation), provision of transportation for enrolled families, and even staffing assignments across centers.

Build connections with local transit agencies and other potential partners. Local transit agencies support their constituents, and Head Start should be a trusted partner and resource for these agencies when it comes to understanding the needs of local families. Head Start programs should reach out and establish partnerships, whether formal or informal, with local transit agencies and other departments or partners in the community. **One path to regular engagement is inviting a representative from the transit agency to sit on a program's policy council.** Programs should also set up alerts for public comment periods from local transit agencies and coordinate responses from both the program and community members advocating for meeting the needs of families. In addition, programs should research paratransit services in their communities and share results with Head Start families.

Consider co-location with other community programs. When considering center location and accessibility, Head Start programs should look for opportunities to co-locate with existing resources in their communities, such as community and technical college campuses, YMCAs, public schools, and government buildings. These organizations may already be accessible by public transit, and may even have space that they should contribute to Head Start at discounted rates or no cost.

Recommendations for State Resources

- Support programs with forming state and local partnerships.

Support programs with forming state and local partnerships. State Head Start Associations should leverage their role as conveners to help programs connect with state and local transit agencies and to share best practices among programs in creating these partnerships. The State Collaboration Offices can also play a vital role within state government to get the right parties to the table to support ongoing partnerships between programs and transit authorities.

Looking Ahead

While awareness is not always a useful indicator for improving access to public services, it is a prerequisite for ensuring that local departments of transportation understand the Head Start program and prioritize usable service to local centers. At present, familiarity with the Head Start program varies widely by transit agency. **How can we expect transit designers to prioritize service to locations operating a program they may never have heard of?** As noted in the policy section of this brief, greater engagement between Head Start operators and local transportation agencies must lie at the center of any effort to improve accessibility.

With the publication of this brief and the accompanying map, policymakers and advocates can now measure progress toward transit accessibility at state and national levels. We hope that efforts at all levels of government and amongst all relevant partners in a community will help make progress towards accessibility of community resources for our constituents that need it most.



National Head Start Association | nhsa.org

NHSA's mission is to coalesce, inspire, and support the Head Start field as a leader in early childhood development and education.

NHSA is committed to the belief that every child, regardless of circumstances at birth, has the ability to succeed in life. We are the voice for more than 800,000 children, 275,000 staff, and 1,600 grant recipients in the U.S. Since 1974, NHSA has worked for policy changes that ensure all income-eligible children have access to the Head Start model.



Civic Mapping Initiative is sponsored by the Seldin/Haring-Smith Foundation (SHSF) | civicmaps.org

At Civic Mapping Initiative, we are charting the proximity of public transit stops to public services. We produce interactive maps to highlight transit burdens that impede access to public services — and to identify opportunities for improvement.

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Appendix A: Primer on Head Start

Head Start is the national commitment to give every vulnerable child an opportunity to succeed. When Head Start was first launched in 1965, the idea of providing comprehensive health, nutrition, and education services to children in poverty was revolutionary, if not radical. The Head Start Model, developed over the decades, has been built on evidence-based practices and is constantly adapting—using the best available science and teaching techniques to meet the needs of local communities.

Head Start takes a “whole child, whole family” approach to services, addressing not just a child’s educational needs, but their mental and physical needs as well, and partnering with families to enhance their stability in a way that will support children long after they have left the program.

Today, approximately 1,600 local organizations receive Head Start grants, supporting nearly one million children and families each year. Fewer than 100,000 children are served through the home-visiting option, leaving the rest to commute to the more than 16,000 centers nationwide.

The children and families participating in Head Start are some of our nation’s most vulnerable. The majority are living below the federal poverty line, which is just \$30,000 for a family of four in 2023. Others are experiencing homelessness, are involved in the foster care system, or are receiving other public benefits. Accessibility, or inaccessibility, of Head Start centers is just one item on a long list of potential barriers that families face.



The term “Head Start ” encompasses several program types, each uniquely meeting the needs of children and families nationwide. Head Start programs serve children ages three to five. Early Head Start programs serve children from birth to age three, as well as pregnant mothers. Migrant-Seasonal Head Start programs serve children birth to five from families doing migrant farm worker or seasonal agricultural labor. American Indian and Alaska Native programs (AIAN) are run by sovereign AIAN entities, serving AIAN children and families with an emphasis on their unique cultural heritage.

Appendix B: Additional Methodology Notes

Notes on Transit Finding

For those interested in replicating the transit finding method (and for the sake of transparency), the code we used is provided below. Note that this method involves purchasing data using the [Google Places API](#), which requires an [API key](#) (a unique identifier tied to your account that they'll use to bill you for your usage). In the code below, the spot for the API key is identified with the text string "INSERT-API-KEY-HERE." There are several functions below, but the one that gets used by the Google Sheets user is called `findTransitFromLatLonNum`, and it takes three arguments: the latitude of the starting location, the longitude of the starting location, and an integer N to indicate that the user wants the Nth closest transit stop returned (for the closest one, enter "1" for the third argument). As a mnemonic, the arguments are listed in the name of the function as well (LatLonNum is short for Latitude, Longitude, Number). Any or all of the arguments can be references to cells containing the information.

The functions we used are as follows:

```
function findTransitFromLatLonNum(LocLat, LocLon, resultNum) {
  var nearbyPlaces2 = findNearbyPlaces2(LocLat, LocLon);
  if (nearbyPlaces2.length < resultNum) {
    return "Search found "+nearbyPlaces2.length+" station(s)"
  } else {
    var nearestTransit = formatPlaceInformation(nearbyPlaces2[resultNum-1]);
    return nearestTransit;
  }
}

function findNearbyPlaces2(LocLat, LocLon){
  var API_KEY = 'INSERT-API-KEY-HERE';
  var baseUrl = 'https://maps.googleapis.com/maps/api/place/nearbysearch/json';
  var queryUrl = baseUrl + '?location=' + LocLat + ',' + LocLon
  '&rankby=distance&types=transit_station&key=' + API_KEY;
  Logger.log(queryUrl)
  var response = UrlFetchApp.fetch(queryUrl);
  var responseText = response.getContentText();
  var responseJson = JSON.parse(responseText);
  if (responseJson.status == "OK") {
    return responseJson.results;
  }
  return responseJson.status + ": " + responseJson.error_message;
}

function formatPlaceInformation(place) {
  Logger.log(place.place_id);
  var website = getWebsite(place.place_id);
  return Utilities.formatString("%s - (%s) (%f, %f)", place.name,
  place.types.toString(), place.geometry.location.lat, place.geometry.location.lng) +
  "###" + website;
}
```

One important feature of these functions is that in `findNearbyPlaces2`, the “type” of location it searches for is “transit_station.” Google Places stores public transit stops as five [different types](#) of places (transit stations, bus stations, subway stations, train stations, and light rail stations), but recently has been applying the “transit_station” place type to all active transit stops. So a bus stop may be listed as both a `bus_station` and a `transit_station` or just as a `transit_station` (use of the other four tags isn’t consistent), but in our testing we found zero active stops that were listed as a `bus_station` but not a `transit_station`. To save resources, most of the transit finding was done off of that one place type, and those using this method for their own purposes can do the same (though we of course can’t guarantee Google will indefinitely continue its practice of universally applying the `transit_station` label to the other transit stop types). By changing “transit_station” in the code, users can search for the Nth closest location of any type with a corresponding Place type identifier (for example, if you wanted to find the closest post office or aquarium to a list of geocoded locations).