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WORKING PAPER

Next stop, access! An exploratory paper on disability rights and justice throughout the transition to electric school buses

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CONTENTS

Working Papers contain preliminary research, analysis, findings, and recommendations. They are circulated to stimulate timely discussion and critical feedback, and to influence ongoing debate on emerging issues.

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Translated by Julia Wolhandler

PART 1: TO START

What is the Next Stop, Access! Plain Language Version about?

"Next Stop, Access! An Exploratory Paper on Disability Rights and Justice Throughout the Transition to Electric School Buses" is a research paper. This is a Plain Language version of the original paper, which was not written in plain language. The original paper can be found at doi.org/10.46830/wriwp.23.00046.

A "Before You Read" toolkit helps explain this research paper and gives definitions used in this research paper. The Plain Language version of the "Next Stop, Access! Before You Read" toolkit can be found at doi.org/10.46830/wriwp.23.00046.

Disability Justice and Environmental Justice are ideas that helped researchers focus the paper on communities most affected by climate change and environmental issues. The Electric School Bus Initiative wants all school buses in the United States to switch from gas buses to electric buses. Electric school buses will create a healthier environment for both children and families. Electric school buses can also help lower the costs of running school buses. Electric school buses should be accessible to everyone.

PART 2: DEDICATION

This research paper honors and is for students and youth with disabilities. Disabled people have died because of inaccessible and unsafe transportation. We hope that you will honor their memory by reading this research paper. We hope that this research paper will help everyone think of new ways to have more safe and equal transportation for people with disabilities. And we hope that this research will create new safe and inclusive transportation practices.

This research paper should affect policy makers and decision makers (such as school districts and manufacturers). Policy makers and decision makers must include the needs of diverse students with disabilities when they create electric school buses.

PART 3: HIGHLIGHTS

Below are highlights from the research paper. It shows some of the most important findings from the research.

- Students, young people, parents and interested professionals gave answers to questions about using electric school buses.
- Students and young people said it is important to include students with disabilities and their families in the research.
- Students with disabilities and their families must be included in all decisions for school transportation programs.
- Students and young people said that all school buses need to be accessible.
- People with disabilities need to have equal access to transportation with electric school buses.
- People with disabilities will not have equal access to transportation if electric school buses are not accessible.
- Electric school buses that are not accessible are not safe and create barriers.
- More research is needed about accessible school transportation.

Recommendations include:

- Disabled youth must be included in decisions on electric school buses.
- Put accessibility first.
- Look at current design issues.
- Improve how people follow disability laws.

PART 4: SUMMARY

About this paper

The paper was created because of diverse ideas and needs for using electric school buses. The important needs of people with disabilities in transportation are shared in this paper.

Disability Justice and Environmental Justice helped researchers to focus the paper on communities most affected when using electric school buses.

People with disabilities from diverse backgrounds gave recommendations on how to create accessible electric school buses. They gave recommendations on how people with disabilities can get equal access to electric school buses.

This paper talks about important topics, including:

- The good and bad about switching to electric school buses for students with disabilities
- Available accessible school buses
- Health effects of using electric school buses
- Using school buses for other reasons not related to school
- How location affects people using school buses

Injustices in transportation affect diverse groups of people, today and in the past. This paper recognizes the harm caused to people because of inaccessible transportation. This paper shows the different ways we can make transportation better and more equal. Making sure that everyone can use electric school buses is important.

Who was part of the research?

24 people were part of the research.

Participants included:

- 9 students and other youth
- 3 disability, environmental, and parental advocates
- 2 school bus makers and sellers
- 2 government officials
- 3 school leaders
- 3 lawyers
- 1 researcher
- 1 person from a transit union

Information was collected through:

- Surveys
- Interviews
- Guided conversations
- Public documents

What did the research find?

School transportation programs, currently used, had the following issues:

- Ramps and wheelchair lifts do not always work
- Students feel overwhelmed by strong smells of gas
- Unsafe experiences because of untrained bus drivers and monitors
- Many programs don't follow disability laws
- Sidewalks are too narrow, have no curb cuts (ramps from the sidewalk to cross the road), or block walking paths
- People of color with disabilities are more affected by local air pollution and climate change. Both affects their health, where they live, and how they feel better after disasters
- There is not enough money for schools to support people with disabilities
- Intersectional issues. A person who is part of multiple oppressed or marginalized social categories experiences several types of discrimination and oppression.
  - For example, working parents with disabilities could not attend Parent Teacher Association meetings. The Parent Teacher Association did not make changes that would allow the parents to go.
  - Another example was neighborhoods with fewer resources had more air pollution.

What recommendations did participants make?

Participants made many recommendations. Schools and those working in transportation will get the recommendations. We hope that the recommendations will make transportation better for disabled students and their families.

The recommendations are:

- **Include youth with disabilities**
  - Talking with youth with disabilities should happen before, during, and after the switch to electric school buses.
- **Create better accessibility options**
  - The most important focus should be making electric school buses that can be used by students with disabilities.
  - Accessibility features should be included on all buses that are bought. This means including a wheelchair ramp or lift.
  - Buses should provide more accessibility options than what are used now.
  - Make sure student transportation is accessible to people with disabilities who experience different levels of oppression.
  - Create new ways to solve issues.
    - One example is how to quickly fix a wheelchair ramp or lift that stops working or is not safe.
    - Another example is creating a warning sound or noise for electric school buses. This is because electric vehicles are usually very quiet. A person who is crossing the street and who is blind or low vision might not hear it. Creating a sound for the bus will make it safer.
  - Include Universal Design, which means creating things that are accessible to everyone, with or without a disability.
  - Review policies (rules and guidance) to make sure schools and bus makers follow the Americans with Disabilities Act (ADA) and the Individuals with Disabilities Education Act (IDEA).

- **Make school buses easier for everyone to use**
  - Create more opportunities for students with disabilities to use electric school buses for different reasons. This will help students with disabilities participate in other fun or educational activities.
  - Use technology for:
    - Making buses more comfortable
    - Creating better communication
    - Better safety on the bus
  - Look for other bus uses that will benefit the community

PART 5: INTRODUCTION

This section gives more information about the paper including the Electric School Bus Initiative.

This section talks about:

- The Electric School Bus Initiative
- The money for electric school buses
- Why this paper was created
- Who the Electric School Bus Initiative focuses on
- Who electric school buses affect
- The goals of the research

What is The Electric School Bus Initiative?

The Electric School Bus Initiative wants to change all school buses in the United States from gas buses to electric buses. Their goal is to have this done by 2030. The Electric School Bus Initiative believes that electric school buses will create a healthier environment for both children and families. Using all electric school buses will also help reduce the costs of running school buses.

Where are electric school buses, and who is paying for them?

Many schools in the United States are using electric school buses. Governments support electric school buses with money. The Federal Government gave up to 5 billion dollars to switch to electric school buses through a program called the Clean School Bus Program. In August 2021 there were only 1,000 electric school buses. Now there are many more. In April 2024, there are over 12,000 electric school buses. These 12,000 electric school buses will be used in 49 states, territories and Tribal nations.

Some money for transportation programs will be more equal and fair. For example, some of the money from the government will go to communities that need it most. And some of the money from the government will go to accessible features like wheelchair ramps and lifts. The Electric School Bus Initiative is watching to see if these policies work well.

Why was this paper created?

This paper is part of The Electric School Bus Initiative. We researched how important it is to have equal access and fairness when switching to electric school buses. Another report showed that more research was needed about this.

More research was needed on disability rights and disability justice when moving to electric school buses. That is why this research paper was created. The first step was to collect experiences and recommendations. The next step is to use the recommendations so people with disabilities can use electric school buses.

Who is the Electric School Bus Initiative focused on?

When switching to electric school buses, students and adults with disabilities should be a priority so they can use cleaner transportation. Students with disabilities experience transportation issues because of inaccessibility.

Some school buses do not have ramps or wheelchair lifts. Students and adults with disabilities have to ride separate from other people because not all buses are accessible. For example, students with disabilities ride on special education buses. Special education buses have wheelchair ramps and lifts. And their non-disabled classmates and other students ride on other buses that do not have wheelchair ramps or lifts.

The definition of disability is diverse and includes:

- Physical or mobility disabilities (like arthritis or a spinal cord injury)
- Cognitive or intellectual disabilities (like memory loss or down syndrome)
- Hearing loss or deafness
- Vision loss or blindness

- Deaf-blindness
- Speech or communication disabilities (like stuttering or a person who is nonspeaking)
- Learning disabilities (like dyslexia or attention hyperactivity disorder)
- Mental health or psychiatric disabilities (like depression or anxiety)
- Traumatic brain injuries (an injury to the brain)
- Autism
- Chronic illnesses (like diabetes or cancer)

Wheelchair ramps and lifts are not the only things needed to make a bus accessible. For example, accessibility means that students with disabilities are able to ride on school buses with comfort and without any barriers. Accessibility means students with disabilities are able to use school buses with working equipment, trained bus drivers, monitors and aides.

Accessible school bus features can include:

- Adjustable seats and seatbelts
- Storage spaces
- Temperature control
- Good air flow
- Clear communications through sound and sight
- Reduced stimulation (like noise, vibration, etc.)

Students with disabilities come from diverse backgrounds. Many people have more than one identity. Those identities are combined to make them who they are as a person. Having multiple identities and being part of different social categories can change a person's experiences and opportunities. A person who is part of multiple oppressed or marginalized social categories might experience several types of discrimination and oppression. And they might face different challenges. This is called Intersectionality[1].

Different social categories or identities under intersectionality might include:

- Gender
- Race
- Ethnicity
- Sexual orientation
- Gender identity
- Disability
- Class
- Social status

Schools in the United States have issues with not providing the same types of resources to students. Each school is different. Some schools provide more resources and others do not provide a lot. The amount of resources a school has is often because of the social categories or identities of their students and community.

The difference in the amount of resources that schools have is obvious when switching to electric school buses. One example is a school in Montgomery County, Maryland. In 2021, the Maryland Board of Education promised to make all their buses electric in four years. After about a year, they could not find enough electric school buses to buy. So, they said they would keep buying gas buses but only for students with disabilities in the special education program[2]. The students who go to this school are mostly black, Indigenous, and people of color. Students, parents, and environmental activists protested[3]. They wanted electric school buses for all the students, including students with disabilities. This is what was promised and was fair and equal.

Who do electric school buses affect?

Switching to electric school buses affects students with disabilities from diverse communities. For example, it affects students with disabilities from rural areas, Tribal lands, and communities with mostly people of color.

These communities often face issues like:

- Using separate school buses
- Poverty
- Having less resources
- More air pollution

What is the goal of the research?

The goal of the research is:

- To share the needs of students with disabilities from diverse communities
- Make recommendations that are fair and equal for students with disabilities using electric school buses

PART 6: BACKGROUND

About 20 million children take the bus to school, in the United States[4]. About 7.3 million children have a disability[5]. Disabled students have only been in public schools for 50 years. Disabled students are in public schools because of the Education for All Children Act (a disability rights law).

Before the Education for All Children Act, and before 1975, students with disabilities were not in the same school as their classmates. They were separate from them. Some students with disabilities did not go to school[6]. Even though the law says students with disabilities must be in the same school as their classmates without disabilities, many students with disabilities still have to take separate buses[78]

Many buses are not accessible because they do not have what people with disabilities need to ride on them.

For example, the buses do not have:

- Wheelchair ramps or lifts
- Areas to keep a wheelchair safe and secure
- Tie-downs to keep a wheelchair from moving
- Trained drivers, monitors, and aides
- And some trained bus drivers, monitors, and aides don't stay in their jobs long[iv]

What are some accessible features for electric school buses?

Adding a wheelchair lift to an electric school bus is important. Electric school buses are quieter than school buses that use gas. However, quieter buses can be unsafe for people who are blind or low vision[9]. This is because they might not be able to hear them and may not be able to see them.

Many different people need to be included in the decisions for making electric school buses.

This includes:

- Students with disabilities
- Parents of students with disabilities
- Decision makers for school transportation
- Transportation agencies
- Teachers
- Health staff like doctors, nurses, and physical therapists
- Disability advocates
- Environmental advocates

What types of buses do disabled students ride?

Some disabled students ride Type C or Type D school buses with their nondisabled classmates. Type C school buses are the kind of buses most people think of and are more common. Some disabled students ride Type A buses. Type A buses are the smallest school bus and can only carry 10-30 people.

What does the research say?

Research says that disabled students often have longer bus rides because of where they live (where they get picked up). And because there are not enough accessible buses available.

What students are separated in transportation?

Students with disabilities often ride separate from their nondisabled classmates. Other people might also have separate transportation. A person's identity (like race) also affects their access to transportation. Government policies kept some neighborhoods separate from each other. Neighborhoods that have different identities like race and social status are often separate. Some neighborhoods are separated from important resources. These important resources include schools and stores.

An example of a government policy that separated people of different races is called the Federal Housing Administration's redlining policies. The redlining policies were rules that did not let African Americans get money to buy a home[10]. Communities in many parts of the United States had rules that said only white people could buy or live in certain areas. A decision in 1948 said these rules were no longer allowed in the United States. But many neighborhoods today still separate people of different races[11].

In history, buses have been used to bring students of different races together. An example of a legal decision that said schools can't separate students by race was called Brown v. Board of Education. The decision was made in 1954. The goal was to make access to all schools more fair to all children. But it did not exactly do that. After the decision, many white families moved and sent their children to schools that were mostly white. This created even more separation in neighborhoods and schools[12].

Because of this, a second legal decision was made. This decision said that school buses could be used to send students of different racial backgrounds to schools outside of their neighborhoods. This meant that schools could use buses to mix students from different areas and make schools more equal[13].

Even after these decisions and laws, many schools in the United States are still separated by race[14]. This means that students of color with disabilities are separated in multiple ways because of both race and disability.

How does separation affect students of color with disabilities?

Example One:

Students with disabilities and students of color have longer rides than white and nondisabled students. This means that they are breathing in unsafe air for a long time[1516]. This is because of the gas the buses run on. Children are most affected by unsafe air[17]. Unsafe air can cause breathing problems. Millions of children with disabilities in the United States have breathing problems like asthma[18]. These children are from families who are mostly Black, American Indian, or Alaskan Native. Some of these families do not have enough money for basic things like food, housing, and clothing [xv].

Example Two:

Longer rides happened in 2022 because there were not enough drivers. More than 1,200 disabled students did not have school transportation. And 350 disabled students had to ride a bus for more than an hour and a half. Students without disabilities only had to ride a bus for 39 minutes[19]. Longer rides are connected to not getting good sleep. This can make health issues worse and create new ones[20].

Why is using electric school buses better?

Electric school buses are fairer and safer for students with disabilities. And they are fairer and safer for students of color with disabilities from neighborhoods that do not have a lot of resources[2122]. Moving from buses that use gas to electric school buses is better for a person's health. There are children of color, who might have disabilities, already living in areas with unsafe air. Riding on electric school buses can lower the amount of unsafe air they breathe in each day [xiii].

Why did researchers use disability justice and environmental justice?

Disability justice and environmental justice were used in the research on electric school buses. They focus on the importance of accessibility and the environment for people with disabilities. Both Disability and Environmental Justice are ideas that say that diverse communities should make decisions for themselves. And they day that diverse communities should lead the conversations on electric school buses.

Disability Justice and Environmental Justice say that governments should use money to create more safe, fair, and accessible environments.

An example of what the government can do is:

- Fix damage to the environment
- Fix broken sidewalks
- Make sure businesses follow rules to keep the community safe and healthy

Using electric school buses is one example of addressing environmental issues. Electric school buses can give more resources to communities of color, communities living in rural areas, and Tribal Nations. Electric school buses are healthier because they do not use gas. Electric school buses are a safer option for students with disabilities who live in areas with unsafe air and not a lot of resources.

Box 1. Issues with using natural materials

This section talks about the issues with using natural materials to make electric school buses. Using electric school buses is good for children and adults with disabilities. However, some people might be affected in a bad way from electric school buses[23]. It is important to talk about these issues.

Natural materials make the batteries in electric vehicles. Natural materials come from the earth. Natural materials are dug up near the land of Indigenous (native) people[24]. About 85 percent of natural materials that make batteries are from Indigenous land[25]. It is important that native communities only agree to something after fully understanding all the information about it[26].

Laws about getting natural materials from and near Indigenous lands need to include:

- Safe work areas
- Keeping air and water clean
- No harm to food sources or burial grounds
- No harm to sacred or religious areas
- No harm to Indigenous homes, buildings, roads, or other structures

Stories of people who live or work on Indigenous land must be shared. This includes stories of the "Global Majority". Global Majority means people who are racially identified as Indigenous, African, Asian, or Latin American, or belong to other communities of color[27].

Indigenous environmental justice activists try to protect the environment, natural materials, and their culture. Indigenous environmental justice activists have shared that they want their land back. They ask companies to stop digging up natural materials that affect Indigenous cemeteries. Digging up natural materials in these areas hurt Indigenous objects, foods, and plants used as medicine[28].

The Battery Passport is an idea created by The Global Battery Alliance[29]. The Battery Passport lets people learn where their batteries come from and how they are made. The goal of the Battery Passport is for batteries to be used in a way that are good for the environment.

The Battery Passport is one example of trying to do good. Electric school buses are another example of trying to do good. But the materials used to make electric school buses can also create issues. People who are most affected, like Indigenous people, need to be included in conversations and decisions.

PART 7: TRANSPORTATION & DISABILITY LAWS

In the United States there are many laws for schools and transportation. In this section we will talk about the laws and how they affect students with disabilities.

Students with disabilities of different ages are protected by different transportation and school laws. Researchers found that many laws and rules are not always followed. We need to look at these laws and how they are used.

What is the Rehabilitation Act of 1973?

Schools that get money from the government must follow a law called the Rehabilitation Act of 1973. There are different parts of the Rehabilitation Act. One part is called Section 504. Section 504 says that federal governments and any program receiving money by the federal government must be accessible to people with disabilities. This means that students with disabilities must be able to use schools and buses[3031].

What is the Individuals with Disabilities Education Act (IDEA)?

IDEA says that public education must be available and free to qualified children with disabilities. IDEA says that public schools must provide special education and support services to students with disabilities.

Free transportation for students with disabilities to school must be provided under IDEA[32]. Education plans or Section 504 plans might include transportation plans[33]. The transportation plan might include training on how to get a wheelchair on a bus. And the transportation plan might include having a transportation aide.

Sometimes these laws are not followed. When laws are not followed students with disabilities are treated unfairly.

For example, in 2022, some disabled students in New York did not go on a field trip for school. This was because there were not enough nurses to go with them. The nurses were needed to go with the students who had diabetes. The New York Department of Education did not follow the law[34]. The students with disabilities should have been included on the field trip.

What is the Federal Motor Vehicles Safety Standards?

The Federal Motor Vehicles Safety Standards makes sure that cars and trucks are safe to drive. This law makes sure that brakes, lights, and other parts of vehicles are safe. For example, it says that a car or bus must be safe for people with disabilities using a wheelchair lift.

Even with laws, it does not mean that every person is safe.

For example, a six-year-old using a wheelchair died because she could not breathe. A seatbelt was used to keep her and her wheelchair from moving around on the bus. When the bus went over bumps in the road, she was not able to breathe because her body shifted and no bus aide came to change her position[35].

Why are safe sidewalks important?

Safe sidewalks and crossings to get across the street are needed for disabled students. If a sidewalk is broken or has holes it is unsafe to disabled students. Many cities in the United States have paid millions of dollars to fix unsafe sidewalks because they did not follow the law. The Americans with Disabilities Act, also called the ADA, says that most public places have to be accessible to people with disabilities. This includes sidewalks and street crossings.

What laws and rules are being created for electric school buses?

There are different laws in each State for electric school buses. Laws in Illinois and Washington say that fairness must be included when buying electric school buses in neighborhoods without a lot of resources. In New York, there is a plan to switch to all electric school buses[36]. As of the spring of 2024 there was not a lot of money to make these buses accessible. More research is needed to decide on the amount of money needed to make the buses accessible.

The researchers asked the Environmental Protection Agency (EPA), the government agency that makes laws and rules to protect the environment, about the Clean School Bus Program. They asked if the Clean School Bus Program follows disability laws.

The response they got back by email said, "It is important to the EPA Clean School Bus (CSB) Program to assist disadvantaged communities and vulnerable populations. Special needs students spend more time in and around school buses, resulting in these students breathing in higher levels of bus exhaust. To help mitigate this issue, EPA will be awarding additional funds for ADA-compliant buses equipped with wheelchair lifts under the 2023 CSB Rebates Program that was launched yesterday (September 28, 2023)."

This means that the EPA believes it is important for the Clean School Bus Program to help diverse communities. The Clean School Bus Program will give more money to make accessible school buses, which could help school districts follow the ADA.

There is some work being done to make electric school buses accessible but not enough. Our research found that most government laws and rules do not require buying and making accessible electric school buses.

PART 8: THE PROCESS USED TO CREATE THIS PAPER

This section will talk about the process the researchers used to write this paper. If you would like to see the research questions that were used, visit Appendix B in the original document at https://doi.org/10.46830/wriwp.23.00046. The researchers of this paper included Indigenous and Black feminist research processes[37][38].

The goal of this type of research process is to:

- Add new information and stories
- Include more diverse groups of people and diverse ways of sharing knowledge
- Practice care for the research topics and research participants
- Make changes that help diverse communities

The stories and histories of Indigenous and Black communities are not always included in research. We included their voices and stories in this paper. People with disabilities are not always included in research, similar to Indigenous and Black Communities. We also included their voices and stories in this paper.

Disability Justice and Environmental Justice were used as a research process. Both disability and environmental justice are ideas that say diverse communities should make decisions for themselves. And they say diverse communities should lead conversations on electric school buses.

This paper is only a beginning look at how electric school buses affect disabled students. Disabled students shared what is important to them and what their needs are. This paper shares that information.

How did we do our research?

Research was collected through:

- Gray literature (for example, reports and government documents)
- Conversations between researchers and participants (like students with disabilities and parents)
- Online surveys
- Reading legal cases
- Reading public comments

How did we do interviews?

Researchers did interviews through Zoom. The interviews were between 45 minutes and an hour. Follow-up questions were asked after the participant gave an answer to the original question. Researchers asked participants to create additional research questions. This helped find new ways to look at the information and learn more about things we didn't know.

How did we do surveys?

An online survey was used through Google. Two surveys were used. One survey was for students and young adults. The second survey was for parents and professionals. 6 surveys were completed.

How did we have a group discussion?

The group discussion with youth was on Zoom. The conversation was 1.5 hours long. The conversation was with 6 students and other children. The conversation was about the good and bad of using electric school buses for people with disabilities.

How did we find legal cases and public comments?

Researchers looked for stories about buses and people with disabilities. Researchers also searched for different words to try and find legal cases and public comments. The words were searched on different federal government's websites.

The words included:

- Disability
- Special Education
- School Bus
- Transportation

Who was included in the research?

Participants came from several organizations. Researchers reached out to 70 different organizations.

The groups included:

- **Advocacy organizations** (for example, disability-led organizations and organizations interested in switching to electric school buses)
- **Government departments** involved in school transport
- **Law organizations** working on environmental and disability issues
- **Bus makers and sellers** (for example, bus companies most used by schools)
- **Medical research centers** (for example, hospitals that do research on health and disability)
- **Membership organizations** (with interests in health, transportation, disability, education and the environment)
    - Parents, students, and young people were contacted through these membership organizations
- **Schools in different areas**
- **Transportation unions**

Participants were grouped either as "students or other young people" or "parents and professionals."

24 people were part of the research. Appendix A has more details. To access Appendix A visit to the original research paper at https://doi.org/10.46830/wriwp.23.00046.

The participants were:

- 9 students and other young people
- 15 parents and professionals

There was only a small amount of money available for research. The participant group was smaller because of this. Participants were offered money. The offer was $50 for completing surveys and $100 for interviews or discussions.

To see the guide and questions used for interviews, surveys, and discussions, you can visit Appendixes D (Student Survey) and E (Parents and Professional Survey) in the original research paper at https://doi.org/10.46830/wriwp.23.00046.

Limits to the research

Research happened in the summer of 2023. This was an issue because of school summer break. It was hard to do conversations with teachers, parents, and others interested because they were on summer break. The sample size did not include all people affected by the switch to electric school buses.

There is not enough information on disabled students and accessible electric school buses. Schools, bus makers, and bus sellers do not have information on the number of accessible electric school buses. They only say that electric school buses can be made accessible.

PART 9: WHAT WE FOUND IN OUR RESEARCH

This section will be divided into smaller sections. Participant's thoughts and ideas about accessible electric school buses will be shared in these smaller sections. We will share what participants said in the smaller sections.

The smaller sections will go in this order:

1. Inclusion, challenges, and ways to make things better
2. The environment, sidewalks, roads, and different experiences
3. Accessible transportation and technology issues
4. Effects on education
5. Making accessibility better
6. New opportunities and other ways to use the bus

1. Inclusion, challenges, and ways to make things better

One young participant said in a survey, "Please don't wait to think of marginalized folks until the last minute! Everyone deserves to have access to transportation. Electric buses need to accommodate everybody."

This means people from diverse backgrounds should always be included in conversations about transportation. Everyone should be able to use transportation. Electric school buses need to be accessible.

Young participants said that they are not currently included in making decisions. Students and families with disabilities said that they are not included in discussions on accessible transportation and programs. They said it feels like making accessible buses for disabled students is a choice instead of a requirement.

Another young participant said in a survey, "Have advisory groups with disabled students and adults, and actually include that group in decision making or require their stamp of approval.Consistently asking, 'Is this as accessible as possible?' and/or 'How are disabled people affected by this decision?' throughout the process would also help. Ensuring accessible school buses are transitioned to electric at the same rate or better compared to regular school buses is important."

This means that there should be groups of disabled students and adults to make decisions. These groups should be given the chance to talk about the different types of accessible school buses. These groups should approve decisions about accessible buses.

Thoughts from students and other young participants

- Think about the needs of disabled students when creating buses and planning transportation
- Include disabled students in decision making and as testers
- Talk to disabled students about their needs
- Create student committees and decision-making groups
  - Give equal votes to young people and explain the process of meetings
  - Make sure meetings are accessible
  - Have more than one young person in the group
  - Include students with disabilities from diverse backgrounds are in the group
- Keep talking to students and families during and after switching to electric school buses
- Ask for ideas from students and their families about transportation. This should be done through meetings and group conversations
- Make sure every bus is accessible

Thoughts from parents, professionals and advocates

- Education Plans for students with disabilities must include transportation information. People working with disabled students, for example teachers and aides, should have access to their transportation needs/information.
- All buses should be accessible to all students

2. The environment, sidewalks, roads, and different experiences

One young participant said in a survey, "I wonder about energy efficiency with bus routing for students in the more rural parts of the district...I worry about pushback on [bus electrification] and taking climate action even though our community has been affected by the impacts of climate change already [and] inequitable transitioning of buses across the district and state."

This means that the participant is worried about how well we're using energy for school buses, especially for buses that travel in rural areas. The participant is worried that people might resist switching to electric buses and other important changes for the environment. And the participant is worried about the switch to electric buses in different areas being unfair.

Young participants talked about accessibility issues. They talked about the issues of the environment, sidewalks and roads in communities of color, and communities without a lot of resources. These same communities have unsafe air. And they do not have many options for transportation. These communities do not have equal access to resources. These communities are not treated fairly.

One student said during a group discussion, "The transition to electric school buses is so important when we think of climate crisis and the effect of the climate crisis on students with disabilities".

Students and other young participants shared their experiences. They explained that people living in cities and rural areas without resources have related issues. Some issues include unsafe or missing sidewalks and roads. Participants also talked about emergency plans. They shared concerns about emergency transportation plans that don't fully include disabled students. Many parents work long hours and have more than one job. Participants worried about their parents not being able to go to Parent Teacher Association meetings. Parent Teacher Association meetings talk about ways to improve school related issues for students. They shared that these meetings should offer reasonable accommodations for disabled parents and offer different times for parents from diverse communities to participate.

Young people were concerned that people from areas with more resources might get electric school buses before people from areas that need the buses most. Communities with few resources may also feel they have to accept any type of transportation given to them. Even if that means it is an old bus that uses gas[39].

A lawyer from the Native American Disability Law Center said, "Many of the roads on the Navajo nation are unpaved. And so, families will get down to a central meeting place because it's paved and the school bus doesn't have to go off of the main highways. Because if it rains or it's snowy, these unpaved roads can get very muddy. I've had clients who have missed a week of school because the family truck just cannot get out of the property. We've had issues where people who use wheelchairs are essentially not able to get out of their homes and get down to the school bus. And so, kids are missing school."

Another issue was found for students and families who live without houses. Buses do not go to students who live without housing. Students who live in a shelter or a short-term location might not be able to get to school.

One participant shared information about families that moved to Hawai'i from Micronesia. Families moved to Hawai'i for a better life. They wanted to find more work opportunities and a home for their family in Hawai'i. Because of discrimination, government decisions, and a lack of money, many people ended up without housing[40].

Some schools are trying to help. The schools trying to help bought vans to pick up students without housing. It has helped a little bit but doesn't fix the problem. Many disabled people are more likely to be without housing for a long time. Disabled people make up about one-third (31 percent) of all homeless individuals in 2023[41].

Another issue is that electric school buses are heavy. Because they are heavy, they can damage the road. Holes and cracks in the road can be unsafe for disabled students. Gas buses that are turned on but not moving can be unsafe for disabled students. This is because disabled students are breathing in more fumes while they are waiting for the wheelchair lift. This is unsafe for students and adults who have breathing disabilities.

Two big problems that were found are:

1. Health problems caused by buses that use gas
2. Switching to electric school buses is expensive

A representative from a school bus maker called Blue Bird said, "There is a challenge related to the range of an electric school bus that can limit its usability in rural or Tribal areas that have longer routes. In addition, the charging infrastructure can be

very costly to install. Many school bus facilities do not have the available power to install chargers, which can require costly upgrades from the local utility."

This means that:

- Electric vehicles do not have enough battery for long trips (for example in rural and Tribal areas)
- The cost to charge a battery is expensive
- Some schools do not have enough power to charge the battery

Thoughts from all participants

- The environment changing affects people with disabilities. And it affects people of color with disabilities more
- When a bus stops working there are not safe emergency plans for students with disabilities
- Areas that have more resources will get more electric school buses and faster. Areas with less resources will not switch to electric school buses as fast
- Areas with less resources have less transportation. Especially in communities of color
- Disabled parents and parents with different work schedules often cannot attend Parent Teacher Association Meetings. Parent Teacher Association Meetings do not always provide support so that disabled parents can go to the meetings.
- Sidewalks and roads in rural areas are unsafe or sometimes missing. Especially in communities with people who come from another country.
- There is unsafe air in neighborhoods with less resources

Thoughts from parents, professionals, and advocates

- Students without housing have few transportation options

3. Accessible transportation and technology issues

During a group discussion, one student said, "Just because something is not broken, does not mean it is accessible." This means that just because something works fine doesn't mean it's easy for everyone to use.

Buses using gas have issues with accessibility. They are old and the wheelchair lifts do not always work. Some students using wheelchairs have to get on the lift backwards. This is hard to do for some students who have less use of their hands, or have vision and hearing disabilities. Bad weather like rain and ice make it hard too. One student said they experience issues with the wheelchair lift three times a week.

Some examples of accessibility issues are:

- Broken wheelchair lifts
- Broken seatbelts that are supposed to keep wheelchairs in place
- Longer wait time to get on and off a bus. This can be because of budget cuts or untrained bus drivers and aides

Participants said these issues need to be worked on when switching to electric school buses. Drivers, aides, and caregivers need to be included in the access plans for electric school buses.

Drivers can develop back injuries and other physical health issues because buses with gas shake a lot. One person from the Transit Union said, "Electric buses offer a smoother and less bumpy ride for everyone, including bus drivers. Improvements such as these can contribute to better work conditions for drivers and will ideally lead to greater availability of skilled drivers [and] mechanics. Back injuries for bus drivers and truck drivers are incredibly high. It's because of how buses and trucks are designed. They don't have to be that way. If buses were made to work better for bus operators, people would stick around in those jobs longer, and you wouldn't have as many staffing shortages. You wouldn't have people calling out sick as often or going on as much leave."

This means that using electric school buses will:

- Provide more comfortable rides for both the rider and driver
- Provide drivers with a safer work environment
- Allow more bus drivers to stay in their job
- Allow less bus drivers to be sick or get hurt

The person from Transit Union said, "Inaccessibility for school buses is also when buses don't show up. The number one reason for that is because they don't have a bus operator, or maybe a monitor. They [schools] can't send the bus out. And some of that, of course, is the ability to attract and retain skilled mechanics. There needs to be training also for maintenance staff to make sure that they know what they're doing when it comes to wheelchair lifts and battery electric buses when districts transition."

This means that school buses can also be inaccessible because of:

- The lack of available drivers
- The lack of trained workers who know how to fix a bus. Training needs to include how to fix wheelchair lifts and how to charge an electric school bus

One person from a school said, "In our district, our goal was to target routes that transport students with disabilities. However, I was informed that we needed to purchase the bigger buses. Typically, we transport students with disabilities in smaller buses. I wonder if there's a way to strategically indicate the need to allocate some of those resources to transport the disabled students. I also see it from the lens of retention. If we have nice buses, our drivers will be incentivized to stay within our district. Therefore, we will have the available resources to ensure we can meet the needs of our district."

This means that the school representative needs to buy bigger buses to be able to better transport students with disabilities. Smaller buses are currently used for students with disabilities. Bus drivers might stay in the job longer, if they can drive better and larger buses.

When this paper was written, it was unclear how many electric school buses are being provided for all bus types. Builders of electric buses were unable to share how many accessible electric buses they have sold to schools across the country. More information is needed about this.

One parent and disability justice advocate said, "Students of color with disabilities and/or disabled students who are low-income or in geographically low-resourced areas, often reside in school districts with limited funds and as such, are less likely to be in a position to be early adopters of bus electrification. They might face a shortage of bus drivers and might have to contend with an already aging fleet of buses. They are also more likely to encounter bus sharing as well. The public might have safety fears or concerns due to limited familiarity with bus electrification. For decision-makers, cost could be a concern, even though in the long run this will be a worthwhile investment that is better for the environment and cost-effective. But because there will need to be sufficient investment of initial and ongoing resources to make things happen, the high short-term costs could be a deterrent."

This means that students of color with disabilities, or those who are low-income and live in areas with less resources, often attend schools with tight budgets. Because of having less resources, they may not be able to switch to electric buses as quickly.

Some of the issues students of color with disabilities might have are:

- Not having enough bus drivers
- Having older buses
- Sharing the buses with others

This also means that there might be safety concerns from the public because of a lack of experience with electric buses. For decision-makers, the cost of electric buses could be a problem, even though, over time, they will save money and be better for the environment. The high cost in the beginning might make it hard to get started.

One person from a New York Lawyers group said, "We found that in some cases you have hundreds of diesels and gasoline school buses clustered together. And they are in the same environmental justice communities where other pollution sources are also concentrated.... Our policy push has been for the city and the state not just to mandate, as they have, an all-electric bus fleet by 2035 but to prioritize getting electrification to happen first in disadvantaged communities that are most impacted by the current polluting school bus fleet and other pollution sources."

This means that the lawyer's group has a policy to focus on communities with less resources first. Their policy asks the government to have both all electric buses by 2035 and electric buses available in communities with less resources first. These communities are most affected by buses with gas and unsafe air. Participants support this and said this should be a "priority without penalty."

Priority without penalty means giving top attention to communities with less resources without any negative side effects. But being the first to use and test new technology can be expensive and take a lot of time. Sometimes new technology costs more in the beginning. Sometimes new technology has issues that are fixed later[42].

Being first also sometimes means feeling pressured to do everything perfectly. The participants shared a concern that governments might not put low resourced communities first in the future if electric school bus transition plans are not perfectly completed now. This high expectation is unfair to communities without the needed support to succeed.

Box 2. Paratransit

What is paratransit? Paratransit is transportation for people with disabilities. Accessible vehicles most of the time do a door-to-door pick up. Paratransit vehicles can be vans with wheelchair lifts or taxis.

The ADA, a law, requires transportation organizations to provide paratransit as another transportation option[43].

Sometimes paratransit is used for students with disabilities. This happens when public buses and school buses are not accessible.

Some of the issues with paratransit are[44]:

- A long wait time for pick up
- It can only be provided if there is money for it from the government
- No rides are available in some rural and tribal areas

Thoughts from students and other young participants

- Wheelchair ramps and lifts are sometimes broken and unsafe
- Not enough room for multiple wheelchairs on the bus
- Too much stimulation (for example, noise and smells from gas). This can create migraines, anxiety, and breathing issues
- Untrained bus workers can make riding the bus unsafe

Thoughts from parents, professionals, and advocates

- Disabled students' needs must be put first when switching to new technology
- Concerns about how much the transition will cost
- Concerns about low resourced communities not receiving the support needed to use the new electric school bus technologies
- Making sure the workplace is safe and good for the bus driver
- Gas buses still have many issues with accessibility
- Issues with the current sidewalk and road
- Buses must include easy-to-understand information for everyone
- Buses must include universal design (Creating things that are accessible to everyone, with or without a disability). Some examples might be:
  - The material on seats
  - Spaces for wheelchairs
  - Temperature control
  - Good air flow
  - Good lighting
  - Quieter spaces

4. Effects on education

A lawyer from the Native American Disability Law Center said, "Some students require door-to-door transportation. And [they] are legally entitled to transportation as a related service and any of the other accommodations needed to be transported. I've had clients who feel like they're at the bottom of the list because the general education students are typically transported first, and then maybe the students with disabilities arrive at school an hour or two later."

This means that some students need the bus to pick them up and drop them off outside of their home and at school. Students with disabilities have a right to this type of transportation and other accommodations they might need. Many students with disabilities feel like students without disabilities get to ride the bus first. This means that students with disabilities might be late to school. Sometime students with disabilities are late by an hour or two hours.

Youth participants talked about the effects on their education because of transportation that is not accessible. Youth participants asked school officials (like principles), not to punish students for being late because of bus issues. Youth participants said during a group discussion, "No one should be punished for being late or missing class due to failure of transportation." Bus issues like being late or not getting to school can mean students miss out on learning.

Participants asked for updates to policies for switching to electric school buses. Schools should find other solutions for students who are late because of bus issues.

Thoughts from all participants

- Schools should find ways to help students catch up in school. Examples of how schools can provide more support:
  - Start school at a later time to accommodate transportation schedules
  - Support summer school
  - Support winter sessions
  - Support after-school tutors
- Schools should find a way to fix late attendance records. These records can affect a student's opportunities with colleges and jobs. Late attendance records because of bus issues are not the student's fault.
- School schedules for activities and trips should be changed based on the needs of bus drivers and students

5. Making accessibility better

One youth participant said, "Just like Walt Disney World buses, every bus should have a wheelchair ramp. What makes a bus comfortable is being close to peers. It is uncomfortable having to be stuck in the back of the bus. Another good design would be to have an accessible area in the center of the bus so there are a variety of areas for friends to sit near you."

Students, parents, professionals, and advocates shared a lot of ideas for making school buses better. They recommended changes on how buses are designed and how schools manage their bus services. Many participants recognize that money is an important part of the switch. Schools need more money to update their buses. Bus makers need more money to make buses more accessible.

Another youth participant said in a survey, "My accessibility dream would be for electric school buses to be designed similarly to public transit buses. As a kid, I always wanted to ride the bus with all the nondisabled kids as opposed to being segregated to an accessible bus. I do absolutely understand that some students need that separate bus in a more directly supportive environment, but it seems like school buses should be able to be made inclusive, especially as they're already being designed differently to be electric."

This means that the youth participant shared a hope for disabled students to always have the option to ride on the same bus as everyone else. And not have to ride on a separate school bus just because they are disabled. This youth participant understands that some students with disabilities might need a separate bus. This is because more one-on-one support might be needed. Electric school buses can be made and used by everyone if they are accessible.

Thoughts from students and other youth participants

- Bus makers need to create more accessibility features. That doesn't just mean wheelchair ramps and lifts. Some examples can be:
  - Different options for seat material
  - Different areas on the bus for multiple wheelchairs
  - Temperature control
  - Good air flow
  - Good lighting
  - Better seatbelt material
- Seats that can change temperature between warm and cold. This is helpful for students who cannot control their body temperature
- Multiple wheelchair tie-down areas. A school bus that can have more than 12 riders should have multiple areas to keep a wheelchair from moving around
- Openings on the roof need to be bigger. During emergencies, a bigger opening will help get all students out. The bigger opening will also help get medical equipment in and out of the bus
- More accessible ways to get on the bus. Students with disabilities who have a hard time using both the wheelchair lift and steep stairs need a safer and more accessible way to get on and off the bus
- Visual and spoken announcements for stops or important school updates
- A fast plan to fix broken wheelchair lifts and ramps
- A safety plan for students with disabilities if their bus stops working. It is not safe for students to be carried off by bus workers. It is not safe if students who have to leave their wheelchairs or mobility devices on the bus.
- A safety plan for switching from a broken bus to a working bus
- Meetings between students with disabilities and the designers of electric school buses
- Testing new designs with students with disabilities

- All school buses should follow disability and transportation laws

Thoughts from parents, professionals, and advocates

- Schools need to update their transportation policies for students with disabilities. If harmful policies do not change, the same transportation barriers will happen with electric school buses
- Schools must follow laws like the ADA and IDEA
- Schools need to fix unsafe practices and issues that happen because of untrained bus drivers and monitors
- Bus makers need to create more accessible options for students with disabilities
- There should be more Type D buses with wheelchairs ramps. All students can use the same door to enter the bus on Type D buses
- Bus aisles should be bigger to give more room for students with different body sizes and assistive devices
- Add air filters to fossil fuel buses. Air filters will help students who have weak immune systems. Air filters will help students who are sensitive to fumes
- Put handrails on all school buses. Handrails will help students be safer
- Create phone apps for students and parents to track where a school bus is. The phone apps could also allow students and parents to talk to drivers or dispatchers
- Create a quieter space. Provide noise-canceling headphones or something similar for diesel gasbuses that haven't been switched out for electric buses

6. New opportunities and other ways to use the bus

A youth participant said in a survey, "It would be amazing if accessible electric buses could also provide transportation options for disabled people outside of getting students to school, especially in communities without public transportation. Many disabled people can't get to medical appointments, errands, work, or social events without relying on friends or family because there's no public transportation."

Participants shared that accessible electric school buses can be used for many things, not just for transportation to school. Accessible electric buses can help students with disabilities and their families be able to do other activities.

Some examples of other ways to use accessible electric school buses are:

- A safe place during severe weather and storms
- A moving library

However, a professional participant was worried and said, "taking buses away from the central mission of transporting students could create problems…those problems mostly fall on people with disabilities or parents with students with disabilities."

This means that the professional participant is worried about using the buses for other activities. They're worried because there are already issues with getting students with disabilities to school. So, the participant explained that the main goal is to first use the buses to bring students with disabilities to school. There is also concern about the small amount of bus workers. Many bus workers do not get paid enough for working past their regular hours. Many bus workers do not have worker protections. More money and worker protections provided to bus drivers and monitors when switching to electric school buses might fix this issue. And it might help with being able to use the buses for activities not related to school.

Student participants want better accessibility on the buses. Student participants also want more accessible buses so that students with disabilities are not separate from other students. One participant from a disability rights and justice group said, "Do NOT separate us"[45]. When students with disabilities are separated they can feel alone.

What do students and other youth participants want from electric school buses?

- Getting to activities outside of school
- More resources for families to go to school and community events
- Work opportunities and trainings. Disabled people get unfair treatment when trying to find a job. Transportation to work opportunities and trainings can help disabled people get a job
- Transportation to activities like festivals, parks, and movies
- Transportation to libraries, community centers, college tours, and field trips

- Making accessible electric school buses a priority for public community transportation. Private transportation is not always accessible. Private transportation can be expensive

What do parents, professionals, and advocates want from electric school buses?

- To be used as heating and cooling centers during severe weather and storms
- To be used as mobile health clinics
- Better accessible emergency plans during a disaster
- To be used as a charging station when the power goes out. It can be used to provide power to wheelchairs and other assistive devices
- Transportation to community gatherings
- Getting to areas for learning and working together
- Providing Wi-fi in areas that do not have good internet
- To be used as a mobile library
- Public transportation in rural areas when school buses are not being used for school
- Accessible transportation to camps, sports events and practices, theater rehearsals and shows

PART 10. DISCUSSION

Everyone interested in switching to electric school buses must know the needs of students and bus workers. Knowing the needs of students and bus workers makes transportation safer for everyone.

Students with disabilities can experience a more comfortable and quieter bus ride. An example from West Virginia confirmed that bus drivers and students talk more easily because electric buses don't have loud diesel engines[46]. Quieter buses can mean less sensory overload.

More bus drivers, bus workers, and aides will likely stay in their job if given:

- Better training
- Better healthcare
- Better options for taking vacation and being out sick
- Equal pay
- Better working environments
- More charging areas for electric school buses
- Better accessible charging areas for electric school buses. Some examples might be:
  - The battery charger has a clear space on the floor or ground
  - Raised parts to feel, spoken directions, or audio explanations[47]

Echo Exposure is a phrase that the researchers created. Echo Exposure means old school buses have unsafe chemicals that affect communities and not just students. Old school buses will no longer transport students to school. But, these school buses may now be used for other activities in the community or in other countries. We ask that the government track these buses to make sure old school buses are not continuing to be used. For example, they should research if old school buses are used by nursing homes, churches, or community centers that have a lot of disabled people. Old school buses used in these places are unsafe for the community. These communities are breathing in unsafe air because of the gas.

It is important to ask if the old school buses will be sold or given to countries that do not have as many resources. If the answer is yes, this means that they will have unsafe and unhealthy buses. Passing on the problem is not the same as making things better or fairer for everyone. 31 out of 89 programs that give money for electric school buses have recycling requirements[48].

Students and other youth with disabilities who ride older school buses with gas to and from day programs must be included in switching to electric school buses.

People with disabilities must have good options to live in their communities.

People in jail, prison, and other facilities must have safe and accessible transportation.

PART 11. RECOMMENDATIONS

In this section we will share recommendations from students, parents, and professionals. These recommendations are for different groups of people.

The different groups of people include:

- Anyone with interests in electric school buses
- School and transportation decision makers
- Bus makers
- People who make policies

These recommendations talk about the switch to electric school buses. Switching to electric school buses must include the needs and rights of disabled students and adults. This section will be divided into two smaller sections.

The two smaller sections will go in this order:

1. Involve Young People with Disabilities in The Switch
2. New Electric School Buses Must Be More Accessible Than Older Buses with Gas

1. Involve young people with disabilities in the switch

Recommendations for anyone with interests in electric school buses

- Ask students with disabilities for their ideas on electric school buses.
- Reach out to students with disabilities and their families first. Do not wait for them to reach out first.
- Host conversations through meetings, surveys, and discussion groups. Conversations should happen during all parts of the switch to electric school buses.
- Create different ways for people to share their opinions.
- Include students with disabilities on all committees. Have more than one young person on the committees.
- Create rules and a process for meetings that include everyone.

2. New electric school buses must be more accessible than older buses with gas

Recommendations by participants

- Disabled students' needs must be included in advocating for, making, getting, and giving electric school buses
- Students and adults with disabilities should have opportunities to help lead advocacy efforts
- Make sure student transportation is accessible to people with disabilities who experience different levels of oppression
- Figure out the cost of making these recommendations real. Figure out the cost of making transportation accessible to everyone

Recommendations for school and transportation decision makers

- Make buses used by students with disabilities a priority
- Include accessibility features on every bus. For example, include a wheelchair ramp or lift
- Fix current issues on buses. For example, fix wheelchair lifts that do not work well and are not safe for students, bus drivers, and monitors
- Make sure bus drivers and monitors are trained and have worker protections
- Provide other types of accessible transportation
- Use electric school buses for other reasons. For example, as a mobile library, battery charger, and a way to get people out during an emergency

Recommendations for bus makers

- Create new ways for disabled students to get what they need
- Show the different ways that new buses can work for everyone
- Fix current issues on buses. For example, fix wheelchair lifts that do not work well and are not safe for students, bus drivers, and monitors
- Create ways to alert people with vision disabilities that there is a quiet bus there
- Include Universal Design in everything. This means making designs that are accessible to everyone.

Recommendations for people who make policies

- Make sure schools follow laws like the ADA and IDEA. Do this before there are issues that come up
- Encourage schools to switch the buses used by students with disabilities first
- Encourage schools to have more accessible buses
- Give attention and money to those requesting accessible electric school buses first
- Give extra money to schools that are buying accessible electric school buses

PART 12. FINAL THOUGHTS

This paper explains how students and adults with disabilities are affected by electric school buses.

Participants shared their experiences about using current school buses. Participants talked about how current transportation is unfair and not equal. Participants shared ideas for making future transportation with electric school buses fair and equal.

The research shows important findings. Disabled students and adults experience issues with the environment, sidewalks, roads, and accessibility. The recommendations show good ways to fix these issues. And to make transportation more accessible.

One important recommendation is that all transportation should be accessible.

People interested in transportation (for example, bus makers and sellers, governments, and policy makers) can do the following:

- Make sure disability laws are followed
- Include people with disabilities in decisions

More research is needed. Research in the future should include:

- Knowing how much everything costs, and not just cutting accessibility because costs are higher
- The importance of making many accessible electric school buses

Students with disabilities should be included on any team that makes decisions.

These teams include:

- Design
- Planning
- Policy
- Checking and Reviewing

All of the following can be possible:

- Students can use any bus
- Bus drivers work in safe environments
- Bus drivers and monitors having good healthcare and time to take days off
- Community-based solutions to the damage caused by a lack of government resources
- Everyone follows disability laws during the switch to electric school buses

There are many possibilities if we use environmental and disability justice goals when we switch to electric school buses.

Electric school buses help reduce pollution and health issues. Communities with less resources need to have access to electric school buses. More money is needed to provide equal and fair resources. Leaders from diverse communities are needed to help make decisions. Everyone involved in switching to electric school buses should work to make these changes a reality.

Disabilities are sometimes used as an easy reason to ignore someone's needs. Not enough money is sometimes used as a reason for why things don't happen. But communities of color and those with less resources put their safety at risk. They have to wait longer for help. They succeed without enough support. And they sometimes have to accept unsafe environmental conditions. All of this is not fair or equal. We need to recognize and fix this. Fixing these issues will help with how we make decisions in the future.

Students, parents, caregivers, advocates, educators, drivers, monitors, policymakers, bus makers, and other professionals are important in the switch to accessible electric school buses. Everyone has an important part in getting fair and accessible electric school buses.

Students and other young people with disabilities have creative ideas. Their worries come from real-life experiences on and off school buses. Students and other young people are an important part in making real changes. Students and other young people are the leaders we need to make these changes.

Students and other young people, as leaders, can help make these things happen:

- All riders can get on and off a bus with no issues
- All riders will have a comfortable ride
- All riders will be safe on the electric school bus

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ABOUT WRI

World Resources Institute is a global research organization that turns big ideas into action at the nexus of environment, economic opportunity, and human well-being.

Our challenge

Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our vision

We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

Our approach

COUNT IT

We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

CHANGE IT

We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring.

SCALE IT

We don't think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people's lives and sustain a healthy environment.

ABOUT ELECTRIC SCHOOL BUS INITIATIVE

In 2020, WRI was awarded a $30 million gift by the Bezos Earth Fund to launch the **Electric School Bus Initiative** (ESB Initiative). In collaboration with partners and communities, WRI's ESB Initiative aims to build unstoppable momentum toward the equitable transition of the US school bus fleet to electric by 2030, bringing health, climate, and economic benefits to children and families across the country. The ESB Initiative seeks to engage with the broader constellation of e-bus stakeholders to influence and build on growing electrification momentum by offering technical assistance to school districts, convening industry experts in working groups, collecting data, providing analysis for research dissemination, advocating for policies at the federal and state level, and engaging in a variety of partnerships with environmental, equity, and community organizations.

ABOUT SEEDEDGROUND

SeededGround, formed by Justice Shorter, is an agency devoted to content creation that centers people with disabilities in general and people of color with disabilities in particular. We sow justice and harvest dreams through projects that are imaginative and intersectional. Projects are curated in consideration of community needs, creative capacities, and client requests. Our portfolio is composed of projects that involve accessibility standards and practices, cultural work, advocacy campaigns, cross-movement organizing, multimedia productions, strategic and operational plans, research studies, generative gatherings, and archival efforts. Our work is lovingly wedded to world-building disabled dreams to fruition.